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REGULATORY REFORM - THE REVIEW PROCESS



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INTRODUCTION

On February 17, 1981, President Reagan signed Executive Order 12291 (Titled: Federal Regulations.) The aims of Executive Order 12291 are clear: they are to reduce the unnecessary burdens of existing and future regulations, increase an agency's accountability for regulatory action, provide for Presidential oversight of the regulatory process, minimize duplication and conflict of regulations, and ensure well-reasoned regulations. Executive Order 12291 also emphasizes that attention be paid to the costs and benefits of already existing rules.

In addition to providing these general objectives, the Executive Order established several guidelines to be used by agencies in promulgating new regulations, reviewing existing ones and developing legislative proposals concerning regulation. These guidelines include provisions that regulatory actions not be taken unless the potential benefits to society outweigh the potential costs; regulatory objectives be chosen to maximize net benefits; the alternative involving the least net cost to society be chosen; and regulatory priorities be set to maximize aggregate net benefits to society, taking into account the condition of the affected industries and national economy and future regulatory actions contemplated.

When major proposed regulations are reviewed, a Regulatory Impact Analysis (RIA) is prepared. The RIA includes a description of the

potential benefits and costs of the rule, a determination of the rule's potential net benefits, and a description of alternative approaches that could substantially achieve the same goal at lower cost.

The other major part of regulatory reform, as required by Executive Order 12291, is the review of currently effective rules. Agencies are to select existing regulations for review based on their own assessment, and on direction from the Office of Management and Budget (OMB).

The purpose of this report is to describe that portion of the review process (not the Regulatory Impact Analysis process) used by the National Highway Traffic Safety Administration to determine the effectiveness, benefits and costs of existing regulations so as to trigger the actions necessary to modify, rescind or retain them. It should be pointed out that the review process itself covers a number of specific actions, the first of which is the determination of actual effectiveness, as was just mentioned. Once the effectiveness is determined and published in the form of a study or report, public comments are solicited and further deliberations are required before an overall review is complete and the appropriate regulatory action is taken.

This report describes the process used by the Agency to analyze the effectiveness of existing regulations; what the process has produced, what is underway and what review plans exist for the near future. Other reports will describe different portions of the regulatory review and reform process followed by NHTSA.

Evaluation or review (the words are used interchangeably throughout the report) is not new at NHTSA. In 1975, a plan for reviewing the then current and future regulations was completed. A program to evaluate four existing regulations was subsequently undertaken. After the necessary resources were obtained, the work on methods of evaluation was finished in 1977, and the actual reviews were then begun. The first evaluation report, on Federal Motor Vehicle Safety Standard 214, Side Door Strength, was published in September 1979. Since then, evaluations of four additional standards have been completed.

In the sections that follow, we will describe the evolution of program evaluation (review) under various mandates, and how it forms the basis for regulatory reform. In part, the report is also an update of information published in the Federal Register on July 10, 1980, (45 FR 46459).

The report is divided into five parts. Part I covers the description and "rules" of the review process both from a current and historical perspective, and what the process yields. Discussions of results and subsequent actions for each completed evaluation are presented in Part II. Since there is considerable interest in reducing the administrative burden of regulations, this subject is addressed in Part III. Part IV deals with evaluations underway, including the contractual work, data sources and expected schedules for completing reviews. Part V lays out a preliminary regulatory review plan with a proposed schedule and priorities for regulations to be reviewed and a request for comments.

In preparing this report, our objective is to seek public comment on the review activities of the Agency's regulatory reform actions. The Agency desires to ensure that review resources are targeted to those activities that will result in its regulatory program achieving the greatest safety gain per dollar invested. By sharing the current, preliminary intentions, and seeking comment on those intentions, the Agency hopes to achieve a consensus within the safety community on priorities. To stimulate comment, a list of issues and questions, though by no means exhaustive, completes our report.

The comments submitted will serve a dual purpose, in that they will also be helpful in setting the safety priorities to be used in the Agency's planning process. These priorities will be published in a planning document to be complete in early summer 1982.

PART I

THE REVIEW PROCESS

A. The Evolution of Program Evaluation

In the early sixties, following the Defense Department's "management revolution", all federal agencies were required to adopt a management process called the Planning, Programming and Budgeting System (PPBS). This process called for rigorous analyses of alternatives against certain stated objectives. It was not until sometime later that questions arose about measuring the actual effects of Federal actions, i.e., the cost effectiveness of programs after they had been launched and implemented.

In 1970, Reorganization Plan 2 was transmitted to Congress. It established the Office of Management and Budget (formerly the Bureau of the Budget), and with the plan came a Presidential message which in part read as follows:

"The new Office of Management and Budget will place much greater emphasis on the evaluation of program performance: on assessing the extent to which programs are actually achieving their intended services to the intended recipients. This is needed on a continuing basis, not as a one-time effort. Program evaluation will remain a function of the individual agencies as it is today. However, a single agency cannot fairly be expected to judge overall effectiveness in programs

that cross agency lines and the difference between agency and Presidential perspectives requires a capability in the Executive Office to evaluate program performance whenever appropriate."

It was not long thereafter that the National Highway Safety Bureau (now NHTSA) was taken from the Federal Highway Administration and established as a separate Agency in DOT. At this time, a program evaluation office, independent from program implementation activities, was organized as part of the NHTSA's planning office.

Despite OMB's mandate to evaluate the effectiveness of ongoing programs, it was not until 1978 that an Executive Order was issued which called for government-wide reviews of existing regulations. The policy goals against which the reviews were to be addressed required regulations to be simple and clear, achieve legislative goals effectively, not impose unnecessary burdens on the economy, or individuals, on public or private organizations or on State and local governments. The issue of regulatory reform did not emerge as a formal policy until Executive Order 12291 was issued in early 1981. It requires that, when promulgating new or reviewing existing regulations, agencies are to adhere to the extent permissible under their individual regulatory statutes, to the following requirements [E.O. 12291, Sec. 2]:

- o Administrative decisions shall be based on adequate information concerning the need for and consequences of proposed government action;

- o Regulatory action shall not be undertaken unless the potential benefits to society from the regulation outweigh the potential costs to society;
- o Regulatory objectives shall be chosen to maximize the net benefits to society;
- o Among alternative approaches to any given regulatory objective, the alternative involving the least net cost to society shall be chosen; and
- o Agencies shall set regulatory priorities with the aim of maximizing the aggregate net benefits to society, taking into account the condition of the particular industries affected by regulations, the condition of the national economy, and other regulatory actions contemplated for the future."

E.O. 12291 went considerably beyond previous policies in order to build the concepts of economic efficiency into regulatory decisionmaking. It also established the criteria of considering significant adverse effects on competition, investment, productivity, innovation and the ability of domestic companies to compete at home or abroad.

On January 1, 1981, the Regulatory Flexibility Act (PL 96-354) became effective. It, too, requires reviews of existing regulations but focuses on the impact rules would have on small entities (small businesses). Reviews are to be completed within ten years.

The recent requirements - Executive Orders, legislation and concurrent Departmental policies - have institutionalized program evaluation (review).

B. Operation of NHTSA's Evaluation Program

1. Evaluation Principles

Before proceeding with a description of review mechanisms, it is well to set forth several principles that guide the Agency's program evaluations. Any review that is conducted is based upon objective consideration of all information obtained. By arriving at conclusions on costs and effectiveness only after a thorough analysis of data, the Agency believes that its review results will be viewed with confidence by the public

These principles are in no way to be interpreted as preempting or avoiding challenges and criticisms, which our experience has shown are far from lacking. No analysis, no data set, and no fact gathering method is unchallengeable. "Facts" are often based on assumptions and judgements and these will usually be subject to challenge. For this reason the Agency has always sought public comment on its review results prior to taking regulatory action, should that course of action be appropriate.

Another principle is that the plan of regulations to be reviewed should be based on the consensus of what is considered

to be high priority. Review priorities should reflect a combination of the criteria of regulations' costs, extent of safety benefits, public controversy and public burden. Comments in response to our Federal Register Notice of July 10, 1980, (45 FR 46459) included not only those regulations which the public felt should receive priority reviews, but also other numerous suggested selection criteria. A summary of the comments was placed in Docket No. 80-13, Notice 1.

2. Informing the Public

As has been mentioned, the status of the evaluation program was made public in the 1980 Federal Register notice. This report is designed to update and expand that initial effort. These are, however not the only public communication initiatives. The Department of Transportation publishes a Semi-annual Regulations Agenda and Review List which is available each April and October. It also lists regulations scheduled for review, the criteria for review choice, persons to contact for more information and target completion dates. Each publication requests comments.

Evaluation findings are also incorporated in the subjects of public hearings. Recent examples were the bumper hearings held in October and November 1981, in Washington, D.C. For those participating in

that hearing, the conduct of, and results of the bumper evaluation were the primary basis for each party's view. Similarly, the findings of the Agency's side impact review were presented at a public hearing in early 1980.

3. Practical Review Objectives

What does the review of a regulation contribute to policy formulation? There is no simplistic mechanical transmission of results into actions. One objective then is to establish the "real world" experience of a regulation, in quantitative terms, conditioned to reflect the limitations of whatever analytical procedure was used. That is, the Agency attempts to determine whether its assumptions of performance, made prior to the issuance of a regulation, were actually borne out in on-the-road use of vehicles.

The ultimate objective, of course, is that the evaluation yields or suggests an array of possible options for action. There are essentially four action channels open for consideration upon the completion of a review of an existing regulation:

- o No change
- o Change - upgrade by adding to, or increasing performance and test parameters

- o Change - modify by reducing performance requirements, eliminating tests, etc.

- o Rescind

The reform of regulations and the regulatory process have been on the public's agenda for some time. It is now administration policy, and the NHTSA plans to carry out regulatory reform through action in the above "channels". The basis for this plan and its objectives, are the results, conclusions and potential options produced by regulation reviews, public comments, research findings and expected resources required to carry out the plan.

4. Conducting Evaluation of Regulations

Once a regulation is selected for review it becomes the focal point for evaluation design. Most automobile safety standards were promulgated in 1967 based on existing General Services Administration standards and industry practice. By 1976, approximately 50 regulations were in place, which is a way of saying that pre-standard cars are fast disappearing from the traffic scene. Our basic evaluation design calls for comparing the frequency of specific accidents (fatal and injury) involving pre and post regulation cars

(and light trucks and vans). Using screening techniques to factor out effects such as other standards and vehicle age, we attempt to assess the effectiveness of the regulation under review.

None of these steps are simple, though. Accident data sets which include the older car population are limited. The National Crash Severity Study (NCSS) and Fatal Accident Reporting Systems (FARS) files are the most specific but the former is limited to the size of the data sample (8000 injury accident cases). Very large case files are available from States such as Texas, North Carolina, New York, Michigan, etc., but problems exist because of the limited number and lack of specificity of data elements (the files are built on police accident reports) necessary for a scientific quantitative review.

When specific data are needed, such as the incidence of crash fires in order to conduct an evaluation of FMVSS 301 - Fuel System Integrity, or child injuries to evaluate, FMVSS 213 - Child Restraints, the collection of data becomes a project in itself. This is usually performed by contract, which includes some preliminary analyses. Contractual services are often used in support of evaluations. These efforts are limited to providing the expertise not available within the Agency. No contractor, however,

is ever responsible for conducting the evaluation itself. This responsibility is carried out solely by the Agency.

Contracts are also used in support of determining actual costs of a regulation. The services of private organizations are used to perform vehicle "tear-down" work, which, by isolating the components and parts that are present to meet a regulation's performance requirements, results in the determination of weight and manufacturer cost. The cost (and weight) differentials are in turn used to calculate the consumer cost burden of the regulation over the life of a car. Agency contractors in this area are often the same firms which do cost estimating work for vehicle manufacturers.

One other technique deserves mentioning. While the Agency always seeks "real world" data to evaluate regulations, there are regulations whose effects just cannot be, even superficially, measured out there. The accident avoidance regulations, sometimes referred to as the "100 series", are cases in point. The administrative burden review will be discussed in Part III, but for the first time, the Agency has used a test method to evaluate certain aspects of a regulation -- the hydraulic brake standard (FMVSS-105). The review report, which was prepared recently, does not address the question of accident avoidance, only the performance of cars when subjected to a compliance test after having been in use for some time. The limitations of such test methods for regulation review purposes, (by testing only a few cars or car pairs because of testing cost) are recognized. But here again,

as long as the conditions for review are plainly stated and feedback is received from the public, the future of such a method can be decided.

These descriptions of techniques, though brief, cover the significant parts of the work done in a review. There is more, such as thorough literature searches and information that must be digested to properly describe and use previous research and analysis on the regulation in question. There are other time-consuming tasks, such as data reduction and statistical calculations.

Finally, a word should be said about "conclusions". One of the most difficult tasks is creating the language of a conclusion. It must reflect results -- which are mere numbers and from which inferences must be obtained -- and be brief, to the point, and contain constraints to avoid misinterpretation. Speculation about the reasons for a result may well appear in the discussion of results, but is indicated as such. The Agency does not include recommendations in its evaluation reports, because as previously stated, it is desired to first seek public comments on the report's conclusions before undertaking regulatory action. Any regulatory action resulting from an evaluation report will fully consider alternative courses of action, with their associated costs and benefits, as required by Executive Order and contained in Regulatory Impact statements.

Problems in Evaluating Some Regulations

What has been apparent to NHTSA, and was pointed out in comments received in response to our July 1980 request, is that many regulations do not readily lend themselves to straightforward methods of evaluation. Evaluation of the crash avoidance standards may require unique evaluation methods and data from other than accident case files, as accident data alone will not necessarily lead to valid results. This is because of several factors:

- Many vehicles have had the required equipment even before a regulation went into effect because of installation having been recommended industry practice or because a manufacturer anticipated the requirement.
- Accident data focuses on injury accidents with frequent underreporting of property damage accidents.
- While injury-producing mechanisms can be clearly measured, the vehicle in essence being a written record, accident producing mechanisms are only subjectively determined by the investigating officer.
- There are no data on the many "near misses" for which the regulation-required performance may have prevented an accident.

- Relating to the subjective determination of an accident cause, many accident avoidance standards relate to the same possible cause of a class of accidents, such as driver inability to see another vehicle at night in a rainstorm. In this example, anything from the windshield wipers, defogger, windshield light transmissibility, headlamp intensity, to side marker lamps could have been involved. It is thus difficult to separate effects of different regulations.

PART II

COMPLETED REVIEWS

This section contains brief discussions of the Agency's completed reviews. It is presented to: (1) show previous review priorities (2) acquaint the reader with the scope of a review report; and (3) direct those interested in details to the reports themselves.

Federal Motor Vehicle Safety Standard No. 214 - Side Door Strength - Passenger Cars; Preliminary evaluation published September 1979 (An Evaluation of Standard 214, DOT-HS-804-858)

The target population for the standard is the car occupants who were seated adjacent to a door that was struck during a side impact collision (nearside occupants). They account for two-thirds of the fatalities and serious injuries in side impact collisions and are four times as vulnerable as farside occupants. Their excess casualty risk is thought largely due to the intrusion of the damaged door structure into the passenger compartment - only the nearside occupant immediately contacts the intruding door. The performance test for Standard 214 specifies the static load, imposed at the middle of the door, that must be resisted under certain crush conditions. The standard has been complied with by the installation of reinforcement beams in the doors - little other equipment is required. The rationale for the standard was that such beams would significantly reduce intrusion in crashes.

Subsequent research indicated that, quite possibly, different approaches were needed to reduce intrusion and, more generally, to protect occupants in side impacts. In view of this, it was considered urgent to perform a preliminary evaluation of Standard 214 using available data, in order to provide information should actual rulemaking be undertaken by the Agency. The preliminary evaluation was based on a National Crash Severity Study (NCSS) data file that was slightly less than half complete at the time and a component-by-component analysis of reinforcement beams and their attachments in actual vehicles. (In: Cost Evaluations of Four Federal Motor Vehicle Safety Standards, October 1978, DOT-HS-803-871.) The evaluation consisted of five parts. The findings were:

- (1) Based on NCSS, the target population was estimated to be 7,000 nearside occupant fatalities and 16,000 serious nonfatal injuries (3 or greater on the Abbreviated Injury Scale) per year.
- (2) In the available NCSS data, beams were observed to reduce fatalities and serious injuries of nearside occupants in side impacts with fixed objects by a statistically significant 66 percent but to increase them in side impacts with other vehicles by a nonsignificant 20 percent. The overall effectiveness of beams (weighted average of the above) was 17 percent, which was not statistically significant given

the available sample size. Also, beams were found effective in oblique side impacts, but not in perpendicular side impacts. All estimates were subject to considerable statistical uncertainty.

- (3) The average cost of beams was \$93 per car (in 1981 dollars). More than half of this cost is due to the lifetime fuel consumption resulting from the 36 pound weight increase.
- (4) It was proposed to determine the cost of beams per fatality or serious injury prevented. Because of the uncertainty of the effectiveness estimates, the report could not give a firm estimate of this cost.
- (5) Beams significantly reduced the likelihood of door intrusion in oblique vehicle-to-vehicle side impacts, but not in perpendicular or fixed object crashes.

The evaluation was published for public comment in September 1979. Only the Motor Vehicle Manufacturers Association submitted a letter to the public docket. Their principal comments were that the high effectiveness we found in fixed object crashes (Item (2), above) may, in part, be due to safety devices other than beams and that the limited size of the NCSS data set made it difficult to separate the effects of beams from other devices. They expressed a hope that we would perform a follow-up evaluation when the NCSS file was complete.

The evaluation provided useful information for subsequent Agency research. (The contents of the evaluation were presented at a 1980 public hearing on side impact protection.) To begin with, the evaluation showed that the beams had at best limited benefits in perpendicular crashes, thereby confirming that this was a problem area where safety improvements might be needed. The low effectiveness in vehicle-to-vehicle crashes confirmed the opinion of many researchers that beams, without other structural modifications, cannot materially reduce door intrusion in these crashes. The effectiveness observed in fixed object and oblique crashes confirms the view of some researchers that beams may be more useful in deflecting a striking vehicle or object than in resisting its intrusion and may continue to be needed, for that purpose, even after a major upgrade of other side structure elements.

The NCSS file is now available in full, as are six years of Fatal Accident Reporting System data. The Agency is now in the process of updating the Standard 214 evaluation. The specific objectives of the follow-up evaluation are discussed in Part IV, Section B. of this report.

Federal Motor Vehicle Safety Standards for Passenger Car Steering Assemblies.

Standard No. 203 - Impact Protection for the Driver from the Steering Control System

Standard No. 204 - Steering Control Rearward Displacement

An evaluation report on these two standards was published in January 1981 under the title: An Evaluation of Federal Motor Vehicle Safety Standards for Passenger Car Steering Assemblies. Standard 203 - Impact Protection for the Driver. Standard 204 - Rearward Column Displacement, DOT-HS-805-705.

Standards 203 and 204 are treated in the evaluation as if they were a single standard because, in the majority of cars, the same safety devices are used to gain compliance with both standards and also because no cars exist which meet one but not the other.

Both standards address the steering assembly, the most common source of fatal and serious injuries to drivers in frontal crashes. Standard 203 seeks to cushion the impact of the driver's chest on the steering assembly. It sets limits on loads experienced by a torso-like body block during contact with the steering assembly, in a laboratory test. To meet the performance requirements of the standard, manufacturers have put a compressible, energy-absorbing device in the steering column or under the steering wheel.

Standard 204 seeks to prevent the penetration of the steering column into the passenger compartment; i.e., towards the driver - a hazard that was associated with a large percentage of the then observed fatalities and serious injuries. Specifically, it limits rearward penetration to 5 inches at any time during a 30 mile per hour frontal barrier crash test.

To comply with the performance requirements of the standard, manufacturers have used the compressible device (see above) plus additional telescoping, buckling or articulating devices in the engine compartment.

The supporting contractor report is: Cost Evaluation for Three Federal Motor Vehicle Safety Standards 203, 204, 212, May 1980, DOT-HS-805-602.

The evaluation consisted of nine parts:

- (1) An estimate of the number of fatalities and serious injuries to drivers in frontal crashes that are caused by contact with the steering assembly. The analysis, based on National Crash Severity Study (NCSS) data and a literature review, suggested that 5,000 fatalities and 60,000 hospitalizations resulted annually from contact with the steering assembly, far exceeding the number of driver casualties in frontal crashes due to any other source.
- (2) An estimate of the fatality reduction due to energy-absorbing steering systems, based on Fatal Accident Reporting System data. A statistically significant annual reduction of 1350 fatalities was found.
- (3) An estimate of the reduction in hospitalizations, based on NCSS data. The systems eliminate 23,000 nonfatal hospitalizations per year - i.e., 38 percent of the total estimated in (1), above. The estimate is statistically significant.

- (4) A calculation of the cost of energy-absorbing steering systems based on detailed analysis of the components found in actual vehicles. The average cost per car was \$12 (in 1981 dollars), including the lifetime fuel consumption due to the weight increase.
- (5) A calculation of the number of Equivalent Fatality Units (1 fatality or 20 nonfatal hospitalizations) eliminated by a million dollars worth of the systems, based on items (3-4) above. Energy-absorbing steering systems eliminate 18 EFU's per million dollars of cost.
- (6) A finding, based on NCSS data, that Standard 204 reduced the incidence of steering column displacement toward the driver by 81 percent but led to a moderate increase in upward rotation/displacement of the column.
- (7) A finding that the six major types of energy-absorbing systems were about equally effective, as shown in NCSS, contrary to earlier studies (based on smaller samples) which suggested that some of the types are not effective.
- (8) A finding that post-standard cars were about equally effective in reducing head and abdominal injury as in reducing chest injury (based on NCSS). This analysis indicates that improvements to steering wheels, hubs and spokes, implemented by manufacturers in tandem with the energy-absorbing and telescoping devices, also had major benefits.

- (9) An analysis of column compression in crashes, based on Multidisciplinary Accident Investigation data, suggested that columns were compressing successfully in many crashes but were not compressing under heavy loads in many other crashes. Reasons for not compressing were supplied from a literature review.

The evaluation was published for public comment in January 1981. General Motors and Ford submitted the only letters to the docket, generally expressing agreement with the evaluation results. GM, however, raised objections to the approach used in item (9), above. The Agency agreed with GM's comment and redid the analysis, presenting the results at the 1982 annual meeting of the SAE, in a paper titled, "Evaluation of Current Energy-Absorbing Steering Assemblies". The redone analysis suggests that noncompression is not as frequent as was stated earlier, but that there are large numbers of serious chest injuries in crashes where moderate compression occurred.

The evaluation provided strong support for the Agency's views on what were the main shortcomings of current systems (see items (6), (8) and (9), above). It suggested that the extant research on how to improve the systems was taking the right directions, although, of course, it does not indicate exactly how to improve the systems or what incremental benefits

could be expected. Moreover, since the evaluation shows that current systems are highly cost-effective, it suggests that considerable upgrading may be possible before the point of diminishing returns is reached. Thus, the evaluation has resulted in designating steering column upgrade as one of NHTSA's high priority areas for research.

Evaluation of the Bumper Standard - Published April 1981

(DOT-HS-805-866)

The effectiveness of the bumper standard is evaluated in terms of car damage prevented in low-speed collisions, added auto manufacturing and operating costs, and the cost effectiveness (net benefit) of the standard.

Low-Speed Collisions and the Bumper Standard

Approximately one in five cars on the road (22 percent) is involved in a low-speed collision each year. About two-thirds of these collisions are not reported to the police or an insurance company and most of the remaining collisions involve insurance claims. About half of the

unreported collisions incur damage. The annual summary is shown below:

<u>Low Speed Collisions</u>	<u>Percent of Cars on Road</u>
Unreported, no damage	7 percent
Unreported, with damage	7 percent
Insurance claims	7 percent
Police report, no insurance claim	<u>1 percent</u>
Total percent of cars on road	22 percent

Bumper Standard's Requirements

The current bumper standard is best described in terms of four successive stages dealing with performance requirements and applicable model years. The first standard, FMVSS No. 215, required damage protection to safety parts of 1973 model cars at impact speeds of five miles-per-hour (mph) into a barrier for the front bumper, and 2 1/2 mph for the rear bumper. The standard was made more stringent for 1974 and later model years, requiring five mph front and rear impacts with both a barrier and a pendulum and 3 mph corner pendulum impacts. The pendulum test established bumper height between 16 and 20 inches. Damage protection was still confined to safety parts. The standard was again upgraded as the Part 581 Bumper Standard in two phases: first, for the 1979 model year, and then for 1980 and later model years. The barrier and pendulum test procedures remained the same but the damage protection requirements were changed. For

1979 models, protection was extended to all exterior front and rear surfaces, except the bumper face bar and its fasteners. For 1980 and subsequent model years, damage protection included, in addition to the previously mentioned auto parts, the bumper face bar and its fasteners. The face bar was permitted to have both minor dents and limited change in position after impact.

Evaluation Design and Data Sources

Virtually all cars, starting with the horseless carriage, have had some type of bumper system to protect the front and rear ends of the auto in low-speed collisions. The purpose of the bumper standard is to improve the protective quality of these systems, which means post-standard cars in low-speed collisions are less likely to sustain damage and when damage does occur, the cost to repair the damage should be lower. In addition, the pendulum test had the effect of standardizing bumper heights which should reduce the incidence of over or underride, a condition known to increase the severity of damage in car-to-car collisions.

In order to meet the requirements of the bumper standard, systems were designed which required new parts and generally cost and weighed more than pre-standard systems.

To evaluate the bumper standard, the design included studies of the difference in damage experience of pre and post-standard cars when involved in low-speed collisions. Many low-speed collisions go

unreported because of several reasons: no damage occurred, the damage that occurred was minor and was below either police reporting thresholds or auto insurance policy deductible amounts. The remainder of the low-speed collisions (which were defined as not involving injured occupants or having a damaged car that had to be towed from the scene), included an insurance claim under either collision or property damage liability coverage.

To evaluate the bumper standard the change between pre-standard and post-standard cars for these measures were needed:

- o Frequency of damage in low-speed collisions
- o Extent of damage when it occurred in low-speed collisions
- o Bumper mismatch frequency
- o Cost and weight of bumper systems

In addition, an estimate of the frequency of low-speed collisions, unreported and reported, with and without damage was required.

To gather the data on frequency of low-speed collisions, frequency of damage, extent of damage in an unreported collision, and bumper mismatch, a national survey of drivers in 10,223 households was conducted. Another contractual effort obtained data from 65,000 insurance claims - the frequency of bumper involved property damage claims, and the repair cost for such claims.

Bumper costs and weight came from several tear-down studies of 94 pre- and post-standard bumper systems. The actual documents from which benefits and costs were obtained included:

Analysis of Insurance Claims to Determine Bumper Effect on Crash Damage, 1980, DOT-HS-805-842 and 843

Drivers Survey on Unreported and Low-Damage Accidents Involving Bumpers, 1980, DOT-HS-805-838

Implementation Cost to the Consumer of Part 581 - Bumper Standard, Phase II; Weight and Cost Studies of Three "X" Body Bumper Systems; and Consumer Replacement Cost for Complete Bumper Systems Studied, 1980, DOT-HS-805-779

Cost Evaluation for Four Federal Motor Vehicle Safety Standards, Task VI - Additional Bumpers - FMVSS 215 - Exterior Protection, 1979, DOT-HS-803-873

Cost Evaluation for Four Federal Motor Vehicle Safety Standards, Volume I, 1978, DOT-HS-803-871

Results

- o Between 20 and 30 percent fewer post-standard cars suffered damage when involved in low-speed front or rear collisions compared to pre-standard cars.

- o Post-standard cars involved in unreported front-end collisions where damage occurred cost \$20 less to repair than pre-standard cars.
- o The rear bumpers of 1979 and 1980 model year cars, however, did not appear effective in reducing either damage frequency or repair cost for unreported collisions.
- o The damage repair cost per post-standard car with a front bumper related insurance claim increased over that of pre-standard cars. The number of such claims decreased, however, so that the total dollar amount per insured car of such claims decreased by 51 percent.
- o Post-standard cars struck in the rear incurred damage repair costs that were about 10 percent higher than for pre-standard cars. Again there were fewer claims (20 percent) with a net effect of a decrease of 10 percent in total dollar amount per insured car.
- o There was a 12 percent increase in the number of times bumpers matched in multi-vehicle collisions, compared to cars built before 1974, with a corresponding decrease in damage frequency and repair costs.

- o The 1979 and 1980 bumper systems (front and rear) cost about \$150 to \$200 more than pre-standard systems. This included manufacturing costs, lifetime fuel cost and secondary weight cost.

- o The net benefits of the bumper standard (gross benefits in reduced damage over a car's life minus the increased manufacturing and operating costs) were found to be:
 - for front bumpers - about \$44
 - for rear bumpers - a loss of \$46
 - for the total car - a slight loss due to the rear bumpers

Agency Actions as a Result of the Evaluation

The evaluation of the Bumper Standard was published in April 1981 and placed in a public docket. The results of the evaluation were considered in preparing the April 6, 1981, publication of Actions to Help the U.S. Auto Industry. The evaluation's results suggested the Agency should take action to determine whether changes in the bumper standard were required.

A Notice of Proposed Rulemaking (NPRM) was published October 1, 1981, accompanied by a preliminary Regulatory Impact Analysis (RIA) which used as a prime source document, the evaluation of the Bumper Standard and its supporting studies. The NPRM proposed nine specific alternative amendments to the Part 581 Bumper Standard. A series

of questions asked in both the RIA and NPRM elicited more than 200 docket comments. The Agency also conducted public hearings, which were held on October 22, 1981, and November 12, 1981.

A final decision on the bumper standard is now under review within the Agency.

Federal Motor Vehicle Safety Standard No. 202 - Head Restraints - Passenger Cars: (An Evaluation of Head Restraints, Federal Motor Vehicle Safety Standard 202, February 1982, DOT-HS-806-108)

Standard 202 requires the installation of head restraints at the driver's and right front seat positions of passenger cars. The purpose of a head restraint is to limit rearward motion of the occupant's head in a rear impact crash - thereby preventing whiplash injury due to hyperextension of the neck. In other words, the target population for this standard was the 500,000 drivers and right front passengers who were injured annually in rear impact crashes - specifically those 400,000 who suffered whiplash injuries.

The performance requirements of the standard are that head restraints must attain or exceed a specific height above the seat cushion (27.5 inches), and meet specific width and static strength requirements. (Compliance can also be achieved by passing a specific dynamic test, but this approach has never been used.) It is important to note how the height is measured. There are two kinds of head restraints: integral restraints, which are fixed in one position, and adjustable restraints which can be moved up or down to suit the occupant. Specifically, the standard only requires adjustable restraints to attain a 27.5 inch height when they are in the up position.

Several contractor reports were used to support the Agency Analysis:

Cost Evaluation for Nine Federal Motor Vehicle Safety Standards,

Volume IV: FMVSS 202 and 207, November 1979, DOT-HS-805-318

Statistical Evaluation of the Effectiveness of Federal Motor Vehicle

Safety Standard 202: Head Restraints Report-No. 2 of 7, October 1980,

DOT-HS-805-658

The Effectiveness of Head Restraints: An Analysis of Texas Data, May

1981, DOT-HS-805-907

The evaluation of head restraints had six parts:

- (1) An estimate of the size of the target population - the number of persons injured annually in rear impacts - based on National Accident Sampling System data and other sources. As noted above, it was found that 500,000 persons were injured annually and 80 percent of them had whiplash.
- (2) An estimate of the effectiveness of head restraints in reducing the overall injury risk in rear impact crashes, based on statistical analyses of Texas accident data. It was found that integral restraints reduce overall injury risk by 17 percent; adjustable restraints reduce risk by 10 percent; the mix of adjustable and integral restraints in cars on the road during 1981 reduced it by 13 percent. All three of these reductions are statistically significant; moreover, integral restraints are significantly more effective than adjustable

restraints. The current mix of adjustable and integral head restraints eliminates 65,000 injuries per year. An all-integral restraints fleet would eliminate 85,000 injuries per year; an all-adjustable fleet would eliminate 50,000.

- (3) A calculation of the cost of head restraints, based on detailed analyses of actual head restraint and seatback components. Integral restraints cost \$12 per car (in 1981 dollars, including lifetime fuel consumption due to their added weight); adjustable restraints cost \$40; the sales-weighted average cost is \$32 per car.
- (4) An estimate of the number of whiplash injuries eliminated by a million dollars worth of head restraints, based on (2) and (3), above. Integral restraints eliminate 700 injuries per million dollars of cost; adjustable restraints eliminate 130; the current (1981) mix of head restraints eliminates 200 injuries per million dollars of cost.
- (5) An investigation of whether head restraints have had any significant negative side effects, such as increasing the risk of fatalities and serious injuries or causing accidents by blocking a driver's view to the rear and sides. Analyses of Fatal Accident Reporting System, Multidisciplinary Accident Investigation and other data suggest that there are no significant negative side effects.
- (6) An exploration of the relationship between head restraint height and injury risk, based on anthropometric models, staged test results and accident data. The analyses suggested that head restraint

effectiveness and height are strongly related. Specifically, adjustable restraints are less effective than integral restraints because 75 percent of them are left in the down position. Further increases in restraint height were found likely to increase benefits, although an accurate estimate of incremental benefits could not be made.

The evaluation has been published for public comment (February 1982).

A Federal Register notice (47 FR 7291) announced the availability of the report and requested additional information on topics relevant to the report. Comments on the report are to be submitted to the public docket by April 19, 1982.

Based on the evaluation and the comments that will be received, the Agency will complete the requirements of Executive Order 12291 for regulatory review and the Departmental requirements for priority review of Standard 202. Moreover, the evaluation will form the major basis for any further action the Agency may contemplate in seeking possible modifications of existing head restraints. The evaluation showed that head restraints are effective, but that integral restraints are more effective and far less costly than adjustable restraints, providing a strong basis for potentially modifying existing head restraints. The evaluation also tentatively suggested that taller restraints would be more effective than the current ones.

Semi-Annual Fuel Economy Report

A review of the Semi-Annual Fuel Economy Report was completed in May 1981.

Title V of the Motor Vehicle Information and Cost Savings Act directs the Secretary of Transportation to set fuel economy standards for new cars and light trucks and to require the automobile manufacturers to submit semi-annual fuel economy reports to the Department for each model year after 1977. The purpose of the reports is to inform NHTSA whether manufacturers are complying with the standards, and to allow the Agency to monitor the steps being taken and the degree of effort being made by manufacturers to improve corporate average fuel economy.

The report's five parts include:

- (1) statement of anticipated corporate average fuel economy (CAFE)
- (2) Summary of model type city/highway/combined fuel economy projections and anticipated sales
- (3) For each vehicle configuration (i.e., inertia weight, basic engine, transmission type, rear axle ratio), nearly 30 items of information are required (e.g., from

loaded vehicle weight to optional equipment required for testing)

- (4) Description of technology and sales mix changes from preceding model year that result in higher CAFE
- (5) Description of marketing measures to improve CAFE

The purpose of assessing the Fuel Economy Report was to determine if and how the paperwork burden on the auto manufacturers could be lessened or removed, consistent with the Agency's need for information to fulfill its statutory mission. To assess the report's burden and use, information was sought from these sources:

- o The docket and legislative history files
- o The Information Collection Budget required by OMB
- o EPA's reporting requirements
- o Questionnaires of report users within the Agency

The questionnaire asked users if they currently used the reports, would they continue use in the future, what specific information was used and why, how often were the reports used, what should be added to the report and what alternative data sources could be used.

Findings

- o The bulk of the data collected in the semi-annual fuel economy report was used for future rulemaking rather than compliance.

- o No firm estimates were available on the total industry effort needed to produce the reports. The Information Collection Budget used estimates of 15,000 hours per year for the industry and \$217,000 annually to administer the report. Ford Motor Co. supplied an estimate which translates into 1,000 man-hours per year which would imply that a total industry burden of 5,000 man-hours might be a better estimate.

- o Each manufacturer is required to submit to EPA each year much of the same information provided to NHTSA in part 3 (configuration breakdown) of the fuel economy report. Manufacturers submit two fuel economy reports to EPA -- a preliminary CAFE report within 30 days after the first model type is offered for sale each year and a final CAFE within 60 days after the close of the model year. These reporting dates are different from those required for NHTSA's report and projected sales figures vary considerably as a result. The format of the EPA reports is substantially different from NHTSA's fuel economy report. NHTSA users have to cross-classify the EPA data elements.

Using the evaluation report as the prime source document, a NPRM and a Preliminary Regulatory Evaluation of Proposed Changes to Part 537, Automotive Fuel Economy Reports, were published in February 1982.

The comment period for the NPRM ends on April 30, 1982.

Federal Motor Vehicle Safety Standard 105 - Hydraulic Brakes.
Evaluation of Hydraulic Brake System Tests of Used 1973 and 1978 Vehicles, March 1982, DOT-HS-

This is a supporting study of the evaluation of Federal Motor Vehicle Safety Standard 105-75 and looks at the braking capability of used cars to see if post-standard cars can stop in shorter distances than pre-standard cars.

Sample Vehicles and Performance Requirements

Five 1973 and five 1978 model year vehicles were chosen for study. The vehicles selected represented a large percentage of the vehicle population and manufacturers (the ten cars represented about 60 percent of the new cars sold in their market years). The two model years selected bracketed the 1976 model year -- the first year that cars had to comply with Standard 105-75. The 1973 and 1978 test vehicles were matched as closely as possible by make/model, engine type and size, transmission, and options, including power brakes.

The vehicles chosen were:

1973 Models

Chevrolet Impala
Ford LTD
Plymouth Satellite
Pontiac LeMans
Toyota Corolla

1978 Models

Chevrolet Impala
Ford LTD
Plymouth Fury
Pontiac LeMans
Toyota Corolla

The performance requirements of Standard 105-75 include four effectiveness (stopping distance) tests with the car operating at various speeds, a power assist unit test, two fade and recovery tests, a water recovery test, a system failure test, a post-spike effectiveness test, a master cylinder reservoir inspection, and a parking brake test. Also, the standard requires a brake failure warning light.

Evaluation Design and Data Elements

The ten used vehicles were tested according to the "Laboratory Procedure for Hydraulic Brake System, FMVSS 105-75" with these modifications:

- o The brake test instrument was not used, all brake applications were made manually by the driver

- o No parking brake tests were run
- o Spike stops were conducted only at the conclusion of the final test on each vehicle
- o The inoperative brake power assist unit test, all effectiveness tests and the partial failure test were all run to determine the best stopping distance obtainable with pedal force limited to 150 pounds and only one wheel lockup (the compliance test calls for a pass or fail based on specific maximum allowed stopping distances).
- o The maximum test speed used was 80 mph (compliance tests call for tests at speeds up to 100 mph).

Each test vehicle was prepared by first verifying that its braking systems were in good working order, replacing its tires with new original equipment equivalent tires, aligning its wheels and setting its suspension to manufacturer specifications. Then all

vehicles were tested under a number of different conditions, starting with an "as received" or "as is" braking system condition. In summary, the tests run on the vehicles were:

1973 vehicles

1. tested "as is"
2. tested using original equipment equivalent linings

1978 vehicles

1. tested "as is"
2. tested using aftermarket linings
3. tested using original equipment equivalent linings

For each configuration, the data elements used for evaluation included:

- o best stopping distance per test
- o average stopping distance per test
- o pass/fail compliance results

The best stopping distance results were statistically tested using two non-parametric tests; the rank test and the sign test.

The support contract, used to provide test data for the evaluation, produced the following ten reports:

Hydraulic Brake Systems Compliance Test FMVSS 105-75

one each: 1973 Chevrolet Impala
1973 Ford LTD
1973 Plymouth Satellite
1973 Pontiac Le Mans
1973 Toyota Corolla
1978 Chevrolet Impala
1978 Ford LTD
1978 Plymouth Fury
1978 Pontiac LeMans
1978 Toyota Corolla

These reports were published in October 1981, DOT-HS-806-004 through HS-806-028.

Results

- o None of the 1973 cars complied (pass/fail) "as is" whereas over half of the 1978 cars did.

- o The 1978 cars had significantly shorter stopping distances than the 1973 cars when tested both "as is", and with replacement linings.
- o Replacement linings improved stopping distance. The improvement was more pronounced in 1978 cars than in 1973 cars.
- o Original equipment equivalent and one brand of after-market linings were found to be equally successful in improving stopping distance.
- o No patterns could be found when comparing new versus used vehicle data for the 1978 cars.

The report will be published, entered in the docket and distributed to interested parties. It is a supporting study to a complete evaluation that will include an evaluation of brake-involved accidents.

The Actual Cost of Regulations

The Purpose of Establishing Actual Cost

Each of the preceding completed evaluations incorporates a section on actual cost of the regulation. Cost is a factor considered when selecting regulations for review.

To obtain actual costs, The NHTSA evaluation program has, over the last four years, undertaken and completed a series of studies. Before listing them, several aspects of the term "cost" are presented.

Definition of Actual Cost

The cost of a regulation reflects the change to a vehicle necessary to meet compliance with performance requirements, plus the added lifetime fuel cost if the change included added weight.

The term "cost" means consumer cost, which for consistency is the manufacturers suggested retail price, or sticker price. While a buyer (consumer) may not, in fact, actually pay that price due to a variety of deals, discounts, sales promotion schemes, and pricing strategies, the sticker price serves as the most reliable benchmark.

The cost differential (or increment) due to the regulatory requirement at the consumer cost (sticker price) level is built up as follows:

- o Variable Cost - which is the total of direct materials used, direct labor and a variable burden cost. The latter includes such things as material handling, shipping, set up cost, certain supplies, utilities, and some line supervision - all of which are overhead costs related directly to production volumes (of vehicles).

- o Wholesale Markup - This factor is derived from financial data publicly available in the 10-K reports filed by manufacturers with the Securities and Exchange Commission. The 10-K report includes all major manufacturing expenses (other than variable cost) and net sales (which is equivalent to the wholesale price). The net sales divided by the manufacturing expenses is the wholesale markup factor. The variable cost when multiplied by the wholesale markup factor yields the manufacturer's wholesale price.
- o Dealer Markup - The wholesale price when marked up to cover the dealer's costs and profit yields the manufacturer's suggested retail price. The dealer markup factor is derived from sales information available in auto industry publications listing wholesale and retail car prices.

Estimating Actual Cost

Variable cost is the major portion of consumer cost, usually about 60 percent of it. It is, of course, directly related to the size and complexity of a vehicle and it can be determined by examining, in some detail, the components and parts that make up the vehicle.

The process used to do this is called a "tear down" analysis, where the systems which incorporate the particular regulatory requirement are taken apart and examined. Any change, adaptation, or added element - reflecting the regulatory requirement - is then weighed,

photographed and "processed" through an estimating procedure to determine its production method. The costs of material, labor and variable burden are then separately established by expert production and cost analysis and summed to obtain the variable cost.

After the variable cost is estimated, the wholesale markup up factor is added to derive the manufacturer's wholesale price, and subsequently the dealer markup is applied to yield the manufacturer's suggested retail price (consumer cost).

Some of these procedures are complex when, for example, one wants to detect changes made to meet windshield defrosting performance requirements. Others are simpler when a new component such as a steel beam is placed inside the doors to meet FMVSS 214 - Side Door Strength.

To perform these cost studies, NHTSA uses the services of contractors in support of work to develop actual costs attributable to specific regulations. Since the evaluations reflect the degree of effectiveness of a regulation based on accident experience before and after the regulation, what are now old cars and components must be obtained so that respective systems and parts can be compared. This often means scouring the junkyards.

The following is a list of cost studies that have been published:

Cost Evaluation for Nine Federal Motor Vehicle Safety Standards,
Volume I, FMVSS 105, November 1979, DOT-HS-805-315 (Hydraulic Brake
Systems)

Volume II, FMVSS 108, November 1979, DOT-HS-805-316
(lamps, reflective devices)

Volume III, FMVSS 122, November 1979, DOT-HS-805-317
(motorcycle controls and displays)

Volume IV, FMVSS 202 & 207, November 1979, DOT-HS-805-318
(202 - Head Restraints, 207 - Seating Systems)

Volume V, FMVSS 213, November 1979, November 1979, DOT-HS-805-319
(Child Seating Systems)

Volume VI, FMVSS 220, 221, 222, November 1979, DOT-HS-805-320 (220 -
School Bus Rollover Protection, 221 - School Bus Body Joint Strength,
222 - School Bus Passenger Seating)

Cost Evaluation for Three Federal Motor Vehicle Safety Standards
203, 204, 212, May 1980, DOT-HS-805-602 (203 - Impact Protection -
Steering Control System, 212 - Rearward Column Displacement-Steering
Control System, 212 - Windshield Mounting)

Cost Evaluation for Four Federal Motor Vehicle Safety Standards

October 1978, DOT-HS-803-871 (covers standards: 208 - Occupant Crash Protection-Belt Systems, 214 - Side Door Strength, 215 - Exterior Protection, 301 - Fuel System Integrity)

Task IX, Side Door Strength, Identification and Cost Evaluation of Design and Manufacturing Changes, September 1979, DOT-HS-803-873
(Exterior Protection - Bumpers)

Implementation Cost to Consumer of Part 581 - Bumper Standard, Phase II; Weight and Cost Study of Three X Body Bumper Systems; and Consumer Replacement Cost for Complete Bumper Systems Studied
October 1980, DOT-HS-805-779 (Exterior Protection-Bumpers)

PART III

ADMINISTRATIVE BURDEN REVIEWS

A. Why Administrative Burden Is Addressed.

Definition of Administrative Burden

When NHTSA asked for comments on its evaluation plans and priorities in July 1980, the commentors described many general problems in the cost of compliance with the Agency's regulations and suggested consideration be given to evaluating the need for these costs. The comments included suggestions that:

- There is considerable opportunity to streamline some of the standards without compromising the safety performance of vehicles. The objective of this streamlining would be to reduce direct costs to the manufacturer and to NHTSA (and, ultimately, to the public).
- Some regulations impose a substantial regulatory burden but do not have a clearly established level of safety benefits. This does not imply that the standards are ineffective, only that some standards present a great deal of regulatory burden because of their effect on vehicle structures or extensive test requirements.
- NHTSA should consider elimination of some detail requirements, which have been the source of inconsequential noncompliance determinations and make small changes to reduce the industry recordkeeping burden.

A definition of administrative burden therefore is: the continuing actions required and associated costs incurred to comply with the requirements imposed by a regulation. These actions and costs would fall into several categories. Testing requirements, to determine if the vehicles or equipment meet established performance levels, are imposed on both the manufacturer and NHTSA in compliance testing. Recordkeeping requirements center around the need to retain test data, information on vehicles and equipment produced and lists of purchasers. Reporting requirements come into play when manufacturers notify NHTSA of their test results and other actions required under Agency regulations, with NHTSA in turn perhaps reviewing, publishing and storing the data. While many parts of this administrative burden are essential to assure safe vehicle operation and to facilitate the contacting of purchasers in the event of a defect recall, the burden accounts for the expenditure of many dollars and manhours by both industry and NHTSA, resulting in higher than necessary consumer expenditures.

B. Developing an Administrative Review Process

If NHTSA is to effectively reduce administrative burdens, identification of those regulations which most require revision is needed. A candidate listing of regulations for review will be discussed later in this report. At this point, however, the Agency must begin to lay out the review process we propose to follow, including the means of selecting standards, conducting the review itself and establishing the basis for reaching conclusions.

In selecting the particular regulations for review, the first step is the setting of criteria for selecting those regulations offering the most potential for burden reduction, without affecting vehicle performance. A brief list of questions, which could be used to determine specific criteria to set priorities for review, is:

- Is there a drive to harmonize the U.S. version of a regulation with European or other standards?
- What is the cost of the rule to the industry and ultimately the public?
- Does the regulation overlap or conflict with another?
- Can the objective of the testing be accomplished more efficiently?
- How often are requests for exemption received and how many are granted?
- Is there a continuing need for the regulation? Have there been technological advances which have made portions of the regulation obsolete?
- What are the type and number of complaints, suggestions or petitions received?
- Is a standard design restrictive and does it preclude alternative solutions to the problem being addressed?

Once a priority list of regulations for administrative review has been drawn up, the reviews can begin.

While administrative reviews have, in one form or another been performed, most recently in relation to the Semi-Annual Fuel Economy Report, there are several ways to proceed. An attempt can be made to quantify the reporting, recordkeeping, and testing burden, e.g., time, cost, etc. Exploration of alternative sources for information can be made. Or, a look at the need for the information in light of their effect on safety requirements, and whether the various administrative tasks, and tests are really necessary, could be performed. The details of the review process are undetermined at this time and the Agency seeks public comment on what criteria should be used in setting priorities.

C. Regulations Proposed for Review

The following is a listing of Federal Motor Vehicle Safety Standards (FMVSS) and other regulations of the NHTSA which appear to be candidates for administrative review. The list is presented in order of FMVSS number or Part of the CFR and is not in priority order. Priorities will be considered in a subsequent discussion. Following a brief description of the regulation are three elements which attempt to quantify some of the potential criteria expressed above. Each is a qualitative judgement, one on how many different performance requirements are imposed, the second on the extent of testing or recordkeeping burden required and the third on the present international interest in harmonization. All three are expressed on a five point scale of: very low (no interest, in the case of harmonization, where there are no comparable European standards), low, moderate, high and very high.

Based on these qualitative judgements, a tentative priority for review has been noted, with priority 1 being the highest. It should be noted that these are preliminary suggested designations and are not a final Agency determination of the priority for review.

<u>Safety Standard or Regulation</u>	<u>Performance Requirements</u>	<u>Administrative Burden</u>	<u>Harmonization</u>	<u>Priority</u>
FMVSS 101-80: Controls and Displays (Specifies location, identification and illumination of motor vehicle controls and displays)	moderate	very low	very high	*
FMVSS 102: Transmission shift lever sequence, starter interlock and transmission braking effect. (to reduce the likelihood of shifting errors, starter engagement with vehicle in drive position and to provide supplemental braking at speeds below 25 mph)	low	very low	no	4
FMVSS 103: Windshield defrosting and defogging. (specifies requirements for above items)	low	very low	not known	5
FMVSS 104: Windshield wiping and washing systems. (specifies requirements for above items)	low	low	no	5
FMVSS 105: Hydraulic brake systems. (specifies requirements for hydraulic service brake and associated parking brake systems)	very high	very high	high	1
FMVSS 106: Brake hoses. (specifies labeling and performance requirements for hoses, hose assemblies and end fittings)	high	high	no	2
FMVSS 107: Reflecting Surfaces. (specifies reflecting surface requirements for certain vehicle components in driver's field of view)	very low	very low	no	5

*Already scheduled for Agency review as noted in Actions to Help the U.S. Auto Industry, April 6, 1981.

<u>Safety Standard or Regulation</u>	<u>Performance Requirements</u>	<u>Administrative Burden</u>	<u>Harmonization</u>	<u>Priority</u>
FMVSS 108: Lamps, reflective devices and associated equipment. (specifies requirements for lamps, reflective devices and signalling equipment used at night or with reduced visibility)	very high	moderate	high	1
FMVSS 109: New pneumatic tires. (specifies laboratory test requirements for bead unseating resistance, strength, endurance and high speed performance; defines load ratings and specifies labeling requirements for passenger car tires)	high	high	high	2
FMVSS 110: Tire selection and rims (specifies requirements for tire selection to prevent tire overloading)	very low	very low	no	5
FMVSS 111: Rearview mirrors. (requirements for performance and location)	low	very low	not known	*
FMVSS 112: Headlamp concealment devices. (specifies requirements for above items)	very low	very low	no	*
FMVSS 113: Hood latch systems. (establishes requirement for latch system or systems)	low	very low	no	*
FMVSS 114: Theft protection. (to reduce the incidence of accidents resulting from unauthorized use)	low	very low	not known	*
FMVSS 115: Vehicle identification number. (specifies requirements for a vehicle identification system to simplify information retrieval and reduce accidents by increasing accuracy and efficiency of defect recall campaigns)	low	very low	no	*
FMVSS 116: Motor Vehicle Brake Fluids (specifies requirements for fluids, containers and labelling)	very high	very high	no	2
FMVSS 117: Retreaded pneumatic tires. (specifies performance, labeling and certification requirements)	moderate	very low	no	3

<u>Safety Standard or Regulation</u>	<u>Performance Requirements</u>	<u>Administrative Burden</u>	<u>Harmonization</u>	<u>Priority</u>
FMVSS 118: Power-operated window system. (to minimize likelihood of death or injury from accidental operation of power windows and partitions)	very low	very low	no	5
FMVSS 119: New pneumatic tires for vehicles other than passenger cars. (establish performance and marking requirements)	high	moderate	no	3
FMVSS 120: Tire selection and rims for vehicles other than passenger cars. (specifies selection and marking requirements)	low	very low	no	5
FMVSS 121: Air brake systems. (establishes performance and equipment requirements for vehicles with air brakes)	high	high	low	2
FMVSS 122: Motorcycle brake systems. (specifies performance requirements)	moderate	moderate	moderate	4
FMVSS 123: Motorcycle controls and displays (specifies requirements for location, operation, identification and illumination of controls and displays and requirements for stands and footrests.)	low	very low	high	5
FMVSS 124: Accelerator control systems. (sets requirements for return of the throttle to the idle position)	very low	very low	no	5
FMVSS 125: Warning devices. (sets requirements for these devices without self-contained energy sources)	very low	low	no	4
FMVSS 126: Truck camper loading. (sets labeling requirements on campers for loading, identification and certification and requires more detailed loading information in the owner's manual)	low	very low	no	5

<u>Safety Standard or Regulation</u>	<u>Compliance Requirements</u>	<u>Administrative Burden</u>	<u>Harmonization</u>	<u>Priority</u>
FMVSS 302: Flammability of interior materials (specifies burn resistance requirements for materials used in the occupant compartments of motor vehicles)	moderate	moderate	moderate	3
Part 525: Exemption from average fuel economy standards (petition process for low volume manufacturers)	moderate	high	N/A	2
Part 537: Automotive fuel economy reports (reports on manufacturer's efforts to improve fuel economy)	moderate	high	N/A	1 (Review complete)
Part 555: Temporary Exemption from motor vehicle standards. (based on economic hardship, facilitating development of new features or existence of overall equivalent level of safety)	high	high	N/A	2
Part 556: Exemption for inconsequential defect or noncompliance. (to avoid notification and recall requirements if a defect or non-compliance is inconsequential)	moderate	high	N/A	3
Part 569: Regrooved tires. (sets requirements for manufacture and sale)	low	very low	N/A	5
Part 573: Defect and Non-compliance reports (sets information retention, notification and reporting requirements)	moderate	high	N/A	3
Part 574: Tire identification and recordkeeping. (specifies requirements for labeling and retention of information on purchases)	moderate	very high	N/A	2
Part 575: Consumer Information Regulations (to require that copies of consumer information are available for retention by prospective purchasers)	moderate	moderate	N/A	2

<u>Safety Standard or Regulation</u>	<u>Compliance Requirements</u>	<u>Administrative Burden</u>	<u>Harmonization</u>	<u>Priority</u>
Part 576: Record retention (sets requirements for manufacturers to retain complaints, reports and other records on vehicle malfunction)	low	very high	N/A	3
Part 577: Defect and noncompliance notification (to ensure that notifications adequately inform and motivate vehicle owners to have vehicle inspected and, if needed, repaired)	high	high	N/A	3
Part 580: Odometer disclosure requirements. (provides rules for disclosure of mileage and its accuracy and for retention of mileage statements by dealers and distributors)	moderate	moderate	N/A	3
Part 581: Bumper Standard (establishes requirements for impact resistance in low speed front and rear collisions)	moderate	moderate	high	3

The summary of suggested priorities for review would appear as follows:

Priority 1

FMVSS 101-80, 105, 108, 111, 112, 113, 114, 115
PART 537

Priority 2

FMVSS 106, 109, 116, 121
PARTS 525, 555, 574, 575

Priority 3

FMVSS 117, 119
PARTS 556, 573, 576, 577, 580, 581

Priority 4

FMVSS 102, 122, 125

Priority 5

FMVSS 103, 104, 107, 110, 118, 120, 123, 124, 126
PART 569

The preceding discussion on selecting regulations for administrative review and the process by which they could be evaluated focused principally on the crash avoidance standards. Similar procedures could be devised and used to address the administrative burden of the crashworthiness (200 series) standards. Comments received on this question in response to our July 1980 request focused less on crashworthiness than on crash avoidance standards in terms of their administrative burden. Nevertheless, the array of regulations susceptible to administrative review includes both groups and both will be addressed by NHTSA reviews.

PART IV

REVIEWS UNDERWAY

A. Priority Changes Since mid-1980

After Executive Order 12291 was issued in February 1981, the Department and the Agency selected specific regulations for priority review. These were identified in the April 1981 issue of the Department of Transportation Semi-Annual Regulation Agenda and Review List. The priority review designation applied to a series of both existing regulations and those in the process of going into effect. Among the existing regulations were Head Restraints - FMVSS 202, and Side Impact Protection - FMVSS 214. Both are among the scheduled reviews as published earlier in the Federal Register Notice of July 10, 1980. These two, however, are not at the head of the list. The review of head restraints (Standard 202) was completed and published recently. Side impact protection (Standard 214) was originally published in September 1979, but as has already been discussed, an update is now underway.

The Uniform Tire Quality Grading System was also designated for priority review, but because of growing concern over the standard's utility, the Agency has decided to explore changes to the system and intends to publish an ANPRM shortly. Thus, reviews will be deferred until after any regulatory changes are made.

The July 10, 1980, Federal Register Notice listed several projects relating to existing fuel economy standards. As was noted in the April edition of the DOT Semi-Annual Regulations Agenda, action on the analysis to determine whether and what fuel economy standards should be established beyond model year 1985 was withdrawn. NHTSA believes that the strong market demand for fuel-efficient vehicles will continue, and manufacturers plan to exceed the standard as a result of this demand. Thus, further fuel economy regulation does not appear necessary at this time. Instead, the Agency will monitor trends in fuel economy. As part of this monitoring activity, the Agency has proceeded with its on-the-road fuel economy survey of model year 1977 through 1981 passenger cars and light trucks so as to determine actual vehicle fuel conservation. Work on the cost of fuel economy regulations will be suspended, after an initial contract is complete, since the information that will be obtained will be sufficient for some time to come.

The responses to the July 10, 1980, Federal Register Notice also included a number of issues regarding evaluations. Some of the commenters provided recommendations on the relative evaluation priorities to be assigned. Other commenters suggested new areas to be evaluated or modified approaches to old ones. The majority of commenters, however, focused on the process of evaluation, ranging from selecting particular regulations for review, to using specific published criteria for setting priorities, to providing outside assistance or review of proposed evaluation methodologies.

The major comments were:

- o Consider the economic condition of the auto industry. The cost of compliance with many regulations may be too burdensome to the industry with very little compensating gain in improved safety. Carefully scrutinize future regulations to ensure the survival of a strong economy in which one of every six jobs is related to the automobile.
- o Utilize industry assistance in designing evaluation methodologies and publish these individual evaluation plans for review and comment by interested knowledgeable parties.
- o Many standards, particularly those in the crash avoidance area, do not readily lend themselves to effectiveness evaluation using accident data. Consideration should be given to evaluating the administrative burden these regulations impose. Administrative review could streamline recordkeeping without an effect on safety.

On April 6, 1981, the White House published Actions to Help the U.S. Auto Industry, which together with Executive Order 12291 addressed the issues of regulatory burden, cost and regulatory review. It should be noted that one of the major actions proposed - changes to the bumper regulation - stemmed in part from the NHTSA evaluation report on bumpers. Most of the 17 actions that were proposed have either been completed or are in the process of completion.

An array of evaluation methodologies is in hand and was published in 1977 and 1979.^{1/} A formal evaluation plan for FMVSS 208 - Automatic Occupant Restraints was prepared and published for comment in October 1979. Comments were received, and the plan was being revised pending further action on the automatic protection aspect of the regulation, which has now been rescinded. The Agency believes that publication of detailed evaluation plans, such as that one, are generally unnecessary for the reviews already scheduled and underway. Given the controversial nature of the automatic occupant protection regulation, a complete spectrum of analytic and data collection projects were planned which carried a correspondingly high price tag, and public comment was deemed desirable. In similar cases of extreme complexity and controversy, the Agency will publish evaluation plans. But in most cases, it believes it is unnecessary to do so.

1/ Evaluation Methodologies for Nine Federal Motor Vehicle Safety Standards: FMVSS 105, 108, 122, 202, 207, 213, 220, 221 and 222, March 1978, DOT-HS-803-388.

Review of four Federal Motor Vehicle Safety Standards FMVSS 214, 215, 301 and 208, May 1977, DOT-HS-802-343.

Evaluation Methodologies for Four Federal Motor Vehicle Safety Standards FMVSS 214: Side Door Strength, FMVSS 215: Exterior Protection FMVSS 301: Fuel System Integrity FMVSS 208: Occupant Crash Protection, May 1977, DOT-HS-802-346

The comments relating to administrative review for crash avoidance regulations were addressed in Part III, but it may be of interest to list other priorities representing a consensus of respondents.

Moderate to High Priority for Review

FMVSS 100 Series	Crash avoidance Standards
203/204	Steering Assembly
208	Occupant (passive) restraints
213	Child restraints
214	Side Impact Protection
219	Windshield Intrusion
301	Fuel System Integrity
Part 533	Fuel Economy Standards
Part 581	Bumpers

These priorities are, by and large, compatible with our own. Standard 219 is one we had not planned to evaluate in the near future. It would require analysis of NCSS data to determine the incidence of windshield intrusion followed by a review of hard copy reports to determine what kind of object hit and penetrated the windshield.

At the lower end of the scale there are a set of standards which were not mentioned, considered "low" priority or referred to by only one respondent.

These are:

FMVSS 202	Head Restraints
205	Windshield Glazing
207	Seat back locks
211	Wheel Nuts, Hub Caps
212	Windshield Mounting
222	School Bus Crash Protection
302	Interior Flamability
Part 575	UTQGS

Aside from the obvious discrepancy on head restraints - a review which has been published - these rankings appear to be reasonable priority guidelines to follow.

In the next sections we will present a description of the reviews underway.

B. Reviews Underway

Federal Motor Vehicle Safety Standard No. 105 - Hydraulic Brake Systems - Passenger Cars

Standard 105 sets a number of performance tests for brakes, including tests of stopping distance, fade resistance and water resistance. It requires a split brake system. There are two versions of Standard 105: the first was effective in 1968, the second in 1976 (see Part II, Section F).

The evaluation will consist of three parts: (1) A comparison of the performance requirements of Standard 105 to the actual braking capabilities of vehicles in use, which has already been published (see Part II, Section F); (2) an administrative review of Standard 105 (see Part III, Section C); and (3) an estimate of the number of accidents prevented as a result of specific brake system improvements and an estimate of the cost of these improvements.

Three specific improvements are evaluated: the installation of dual or split master cylinders in the mid-1960's; the use of front disc brakes rather than drums - a practice that began in the mid-1960's and became universal by the mid-1970's; and the possible use of an improved friction material, beginning in 1976.

The analysis technique developed for measuring accident avoidance requires a long time series (10 years or more) of

accident data files. At the moment, only North Carolina has data from so many years in readily accessible form. Contract DTNH22-81-C-06006 includes a statistical analysis of North Carolina data to determine the effect of the brake system improvements in reducing accidents involving brake failure and accident involvements as the striking vehicle. The contract will be completed in Spring 1982.

An initial analysis of the overall cost of brake systems was performed by a contractor in 1979 (Report No. DOT-HS-805-315). It will take additional analysis, however, to determine the costs of the specific brake improvements in question. The analysis could be performed as part of Contract DTNH22-81-A-06002.

Federal Motor Vehicle Safety Standard No. 108 - Lamps, Reflective Devices and Associated Equipment

It is proposed to confine the safety evaluation to side marker lamps, which are the only major lighting equipment item that was installed, from scratch, during the 1960's. Other aspects of this standard will undergo administrative review (see Part III). The purpose of side marker lamps is to prevent angle collisions under reduced lighting conditions by making vehicles more readily visible from the side.

The objective of the evaluation is to estimate the number of accidents that have been eliminated by the installation of side

marker lamps. Accident reduction is measured by comparing the daytime-to-nighttime ratio of angle collisions for cars with and without the lamps (after controlling for certain other factors, besides the lamps, that affect the ratio). An analysis of this type was performed under contract and published in 1980 (Report No. DOT-HS-805-657: however, there are reservations about the analytic approach it used. Since then other analysis methods were developed and will be applied to North Carolina accident data (under contract) and FARS and Texas data (in-house). A cost analysis for side marker lamps was performed under contract and published in 1979 (Report No. DOT-HS-805-316). The Agency is also interested in any laboratory or theoretical studies of side marker lamp effectiveness, but our literature search only turned up limited efforts in this area.

The contractor's analysis of North Carolina data will probably be completed in the summer of 1982. At that time, the in-house analyses will be performed and the evaluation will be completed.

Federal Motor Vehicle Safety Standards for Passenger Car
Windshields:

- Standard No. 205 - Glazing Materials
- Standard No. 212 - Windshielding Mounting

Standard 205 specifies requirements for glazing materials used in windshields and other windows. Its purpose is to reduce lacerations and penetration of the windshield by occupants. Windshields that meet Standard 205 were installed in all cars in

model year 1966. Standard 212 sets requirements for the percentage of the windshield that must remain mounted in a staged impact test area. Mounting techniques that meet Standard 212 were first implemented, depending on the make and model, sometime between 1962 and 1970. A potential side effect of Standard 212 is that it may partially diminish the laceration-reducing benefits of Standard 205.

The objective of the evaluation is to estimate the effectiveness of the two standards, both singly and in combination.

The potential benefits are a reduction of injuries (especially lacerations) in nonejection crashes and a reduction of ejection (and its associated deaths and injuries). The estimates will be derived in-house from statistical analyses of NCSS, FARS and Texas data similar to those in the published evaluations of Standards 202, 203 and 204. The evaluation will also estimate the cost of each standard. The cost of Standard 212 has already been analyzed by a contractor in 1980 (Report No. DOT-HS-805-602). The cost analysis for Standard 205 will be performed under Contract DTNH22-81-A-06002 and will be completed in 1982. The evaluation can be produced at some time thereafter.

Federal Motor Vehicle Safety Standard No. 207 - Seating Systems.

Standard 207 sets a number of performance requirements for seats and their attachment assemblies. The only major, across-the-board change in seats that occurred during the mid-to-late 1960's, however, seems to be the installation of seatback locks in two-door

cars. This is the only part of the standard for which we propose to evaluate benefits and costs. The other aspects of the standard will undergo administrative review (see Part III). The main purpose of a seatback lock is to prevent the seatback from collapsing onto the front seat occupant in a frontal collision.

The objective of the evaluation is to estimate the reduction of injury risk for frontal crashes that is attributable to seatback locks and the cost of the locks. The NCSS file does not contain enough cases of cars without seatback locks for any meaningful analysis of effectiveness. A statistical technique was developed for analyzing the effect of seatback locks in State data; it was applied by a contractor to Texas, New York and North Carolina data (Report No. DOT-HS-805-659, published in 1980). The results of the analysis, however, could not be accepted as a definitive measure of the effectiveness of seatback locks because it appeared that the biases in the technique and the data exceeded the likely effect of the locks. No further accident data analyses are contemplated. We propose to design and conduct, in 1983, a program of sled tests using seating assemblies with and without seatback locks in order to test whether the locks reduce injuries. Since a cost analysis of the locks was completed by a contractor in 1979 (Report No. DOT-HS-805-318), it will be possible to complete the evaluation in 1984, after the sled test results are obtained.

Federal Motor Vehicle Safety Standard No. 213 - Child Seating Systems

Child safety seats are necessary for protecting children who are too small to properly wear the car's lap belt. The purpose of Standard 213 is to set specific performance and labeling requirements for devices sold as child safety seats. There are two versions of Standard 213: the original Standard, effective 1971, which included only static performance tests and the upgrade, effective 1981, which adds dynamic tests.

The objectives of the evaluation are twofold: (1) Find the overall effectiveness of the mix of child safety seats in current use, relative to unrestrained children; and (2) find the incremental effectiveness of seats meeting the 1981 requirements. In addition, we propose to evaluate the extent to which seats are used incorrectly, the safety effects of incorrect usage and the cost of the seats.

The overall effectiveness of child safety seats is determined by analyzing accident data from States that code seat usage. (NHTSA files such as NCSS do not contain large enough samples.) Data from New York (2 years), New Jersey (1 year) and Idaho (3 years) have already been analyzed by a contractor (Report No. DOT-HS-805-660, published in 1980). Contract DTNH221-81-C-06006 - to be completed in Spring 1982 - covers 3 more years of New York data and 4 years

of Maryland data. Published studies from Tennessee will be reviewed. These sources provide sufficient information on overall effectiveness.

The effectiveness of specific types of seats cannot be determined from State data (which do not specify the type of seat) nor from NASS (which will take 15 years to build up needed sample sizes). A potential source of accident data is a special study (Contract DOT-HS-9-02259) with the National Electronic Injury Surveillance System. At this time, however, it is not clear whether NHTSA will have funds for continuing that study. The most likely basis for this part of the evaluation, however, is sled test data using dummies. We will analyze the results of sled tests already conducted, supplemented by additional runs that we will require for a determination of effectiveness. The tests will also be used to estimate the safety effects of incorrectly using the seats. We plan to gather this information in 1983.

Data on the correct vs. incorrect usage of seats will be drawn from the ongoing surveys by Office of Driver and Pedestrian Research contractors. The cost of the seats was studied in a 1979 contract (Report No. DOT-HS-805-319); an update will be needed because of the subsequent changes in Standard 213.

A preliminary evaluation, covering only overall effectiveness, usage and cost, could be completed as early as the end of 1982. A final evaluation including the detailed effectiveness measurements could be completed in 1984.

Federal Motor Vehicle Safety Standard No. 214 - Side Door Strength-Passenger Cars

Standard 214 sets strength requirements for doors. Its purpose was to reduce intrusion in side impacts and protect occupants sitting next to the door. It has led to installation of reinforcement beams in doors (see Part II, Section A for more details). A preliminary evaluation published in September 1979 gave tentative estimates for the injury reducing effectiveness and cost of beams. Effectiveness was estimated: overall, in fixed-object versus vehicle-to-vehicle crashes, and in oblique versus perpendicular crashes. The estimates were based on NCSS data available then, which was less than half of the full NCSS file.

The follow-up evaluation will obtain more accurate effectiveness estimates by using the full NCSS file and improved statistical methods. The Fatal Accident Reporting System will be used for estimates of fatality reduction, and it is expected to provide quite accurate results. Texas data may be used to supplement the NCSS results on injury reduction but are expected to be of limited value because serious injuries cannot reliably be distinguished from minor ones. Moreover, we will perform detailed analyses of NCSS and crash test data to find out why beams may be effective in some kinds of crashes but not in others. We have obtained some additional cost data on beams in recent cars and will use it to refine our earlier cost estimates. In combination with the more accurate effectiveness estimates, this will allow a better assessment of cost-effectiveness of beams.

The follow-up effectiveness analyses are now underway (in-house) and we expect to complete the follow-up report in summer, 1982.

Federal Motor Vehicle Safety Standard No. 222 - School Bus Passenger Seating - Crash Protection.

Standard 222 specifies seating, restraining barrier and impact zone requirements for school buses. It has led to substantial changes in the design of seats, primarily in their padding and dimensions, and in the layout of seats and restraining barriers. The purpose of the standard is to prevent injuries due to contact with unpadded surfaces and to prevent occupants from being thrown out of their seating areas in crashes.

The objective of the evaluation is to estimate the number of injuries prevented or reduced in severity as a result of the improvements, and the cost of the improvements. A contractor developed a preliminary estimate of injury reduction by reviewing in-depth accident cases of pre-standard buses (pre-1977) and judging what the injuries would have been if the bus had been equipped with post-standard systems (Report No. DOT-HS-805-662 published in 1980). By 1984, post-standard buses will have accumulated enough accident experience that effectiveness could be estimated by a statistical analysis of State data on accidents involving both pre and post-standard buses. A cost analysis was performed by a contractor in 1979 (Report No. DOT-HS-805-320).

The Agency could produce a preliminary evaluation of Standard 222, based on the case analysis of injury reduction, at any time. After 1984, a final evaluation based on a statistical analysis of injury reduction will be available.

Federal Motor Vehicle Safety Standard No. 301-
Fuel System Integrity

The purpose of FMVSS - 301 is to reduce the fire hazard in motor vehicle crashes by prescribing certain minimum requirements to enhance the structural integrity of the fuel system under crash-induced forces. Three versions of the regulation exist:

- (1) The first version went into effect in 1968 and applied only to front impact crashes,
- (2) The second version, enacted in 1975, extended the coverage to rollover crashes,
- (3) The third version, enacted in 1976, extended the applicability to crashes involving rear impacts and side impacts.

The objective of the regulatory review is to evaluate the effectiveness of FMVSS - 301 in reducing the hazard of fuel-fed crash fires. In addition to assessing benefits of the regulation, the costs of implementing the standard will also be estimated.

The effect of the regulation is being estimated by comparing the accident experience of vehicles produced before the Standard went into effect (pre-Standard vehicles) with the accident experience of

vehicles produced after the standard went into effect (post-Standard vehicles). Costs attributable to the regulation are being determined through separate vehicle tear-down and cost estimating studies.

Two support contracts (one by the University of Michigan, and another by the University of North Carolina) are being used to collect accident data and perform preliminary analyses. Primary data sources are the police-reported accident data files automated and maintained by the various individual States. An earlier survey of all potential data sources was made and State accident files were concluded to hold the most promise. Data from the States of Michigan, Illinois, and North Carolina State accident files afford the best opportunity for evaluating FMVSS-301, although these data are not without problems. Very few States report crash fires. For those States which do report fires, insufficient detail is contained to permit isolation of the standards effects from other confounding factors such as vehicle size/weight, vehicle age, and crash configuration/severity. Adding to this data problem is the fact that vehicle crash fires are an extremely rare phenomenon, occurring only one to three times per 1,000 crashes. To detect statistically significant differences in rates this small requires rigorous control of the effect of potential extraneous factors. In the real world of motor vehicle crashes, such control is difficult.

On a more optimistic note is the fact that one State, Michigan, has

recently (1978) instituted the reporting of fuel leakage in accidents, as well as fires. Since the intent of Standard 301 is to strengthen the fuel system against crash forces, fuel leakage can be held to be a more direct measure of effectiveness than crash fires. Also, since experience shows that fuel leakage is much more prevalent in accidents than fires, a given difference in Pre- and post-standard rates is likely to be detectable, statistically, since the relative variation in rates will be less for higher rates of occurrence.

Completion of a first phase of data collection and analysis has resulted in preliminary findings of no detectable difference in crash fire rates between the first (1968) version of 301 and vehicles produced prior to the standard. Because of potential confounding factors, and absence of leakage data for this earlier period, this result is considered tentative.

Additional contract support is underway to collect and analyze data relative to the 1975 and 1976 versions of the regulation. Once the results of these additional contracts are in, a final Agency evaluation report on 301 will be developed. The current schedule calls for this report to be completed by the winter of 1982.

Motor Vehicle Fuel Economy Survey

Since passage of the Fuel Economy Legislation, market demand for fuel economy has grown significantly. So strong has this demand become that manufacturers will surpass the fuel economy levels now set by regulation. The need for consideration of further regulatory action, beyond 1985, appears unnecessary at this

time. Nonetheless, motor vehicle usage still represents the largest component of petroleum energy consumption in the Nation and NHTSA retains statutory responsibility for motor vehicle fuel economy.

The objective of this review is to provide data and information to assist NHTSA in monitoring "on-road" improvements in motor vehicle fuel economy. This information will assist in the development and analysis of future initiatives and policy options in this vital sector of national energy consumption and conservation. Additionally, this information will permit the assessment of yearly and total (vehicle lifetime) fuel savings due to the introduction of more fuel efficient vehicles, and provide estimates of the effects of new vehicle technologies such as front-wheel-drive and diesel engines.

Reliable data on in-use fuel economy of the late model vehicle fleet is not now available, nor are any other Agencies planning to collect such information. Although future passenger car fuel economy regulation is not now contemplated, the collection of valid on-road data is deemed an essential ingredient for monitoring the situation. Historical and continuing political realities in the Mideast countries underscore the fact that disruptions in world petroleum supplies could reappear with little or no warning. Even though the near-term chances of such a disruption would appear slim (given current ample world supplies and stabilizing prices), the national impact of such an occurrence could be severe indeed, since the economy is so thoroughly dependent upon petroleum.

Prudence, then, dictates that current and reliable data on motor vehicle fuel economy and consumption be available to aid in contingency planning and action, should such a need arise.

The mechanism of monitoring motor vehicle fuel economy will be a national (probability) sample survey of the Nation's drivers of late model vehicles. A random sample of 46,000 vehicles will be selected from national registration files maintained by R.L. Polk & Company. Selected participants will be asked to maintain a brief record of their fuel purchases for a one month period. Passenger cars and light duty trucks of model years 1977 through 1981 will be represented in the survey. Vehicles manufactured by major domestic and foreign companies will be included. The survey will be spread over a 12-month period in order to properly reflect fuel economy influences due to seasonality, and other environmental, or in-use operating characteristics.

In order to promote cooperation by the selected vehicle owners, a special questionnaire design will be employed, together with pre-notification letters, reminder letters, and follow-up letters.

The survey will be primarily conducted by mail. A nonresponse analysis is also planned in order to investigate the nature and magnitude of any bias due to nonresponse. Most elements of the survey methodology were an outgrowth of an earlier in-house pretest by NHTSA.

A contract has been signed with the National Opinion Research Company, University of Chicago, to conduct the national survey, automate the survey results and produce selected interim (quarterly) and final tabulations. Analyses of the survey data will be the responsibility of in-house staff.

The contract was initiated on September 30, 1981 and is scheduled to be completed within 20 months. Initial work by the contractor covered the development of a survey schedule of events, a review of relevant background material, development of the survey instrument and related letters, and development of sampling plan specifications in cooperation with the subcontractor, R. L. Polk & Company.

Data collection is scheduled to commence in May 1982 with approximately 3,800 vehicle owners being sampled each month. From each month's mailings, approximately 2,200 returns are expected, including responses to both the first wave and follow-up mailings.

Final tabulations will consist of estimates of on-road MPG by model year and major vehicle type (passenger car versus light truck). Subclassification estimates will be made by vehicle size, 2 versus 4-wheel drive (light trucks only), and new technology categories (front-wheel drive, diesel engines, etc.)

Follow-on surveys are planned for FY 83 and FY 84, in order to continue to monitor developments in fuel economy, and to assess the effects of vehicle age on mileage and of potential changes in vehicle use patterns on fuel economy.

The survey is being coordinated with the Environmental Protection Agency, the Department of Energy, Statistics Canada and motor vehicle industry groups.

Bumper Standard

The Part 581 "no damage" Bumper Standard was promulgated in two phases: for the 1979 model year, cars front and rear end parts - except the bumper system itself - were to be free of damage in 5 mph impact tests; for 1980 and subsequent model years, the bumper system was also to be free of damage except for minor blemishes. The Evaluation of the Bumper Standard, published in April 1981, showed no difference between 1979 and 1980 bumpers based on cost and weight studies as well as the unreported collision experience for these two model years. This would imply that there were no Phase I bumper systems on 1979 cars (and these were, in fact, Phase II systems). The missing ingredient from the April evaluation was the collision experience of 1980 model year cars where insurance claims were filed. The objective of this review is to collect insurance claim information on 1980 model year cars and determine if it is significantly different from that of 1979 model year cars.

The proportion of property damage insurance claims that involve the bumper and the average repair cost for these bumper claims is to be obtained for 1980 model year cars, when one year old, and tested for statistical significance against claims for 1979 model year cars. The tests will determine if the differences in proportions and repair costs are due to chance or are caused by the difference in bumper system designs because of the two phases of the standard.

The proportions and repair costs of insurance claims for 1980 model year cars during the 1980 calendar year has been obtained by KLD Associates, the NHTSA contractor, from State Farm Insurance Company (KLD Associates already had the matching insurance data for 1979 model year cars from a previous contract.)

KLD's preliminary statistical testing of the 1980 and 1979 data shows that the proportion of bumper-involved claims is significantly less for 1980 model year cars compared to 1979 cars, but that the average repair cost of a bumper claim has significantly increased when comparing claims of these two model year cars. However, when the proportions and repair costs of bumper claims are multiplied together, as is done when computing the benefits of the bumper standard, there is no significant difference between 1980 and 1979 models in repair costs from bumper-involved insurance claims.

The contractor is currently checking the preliminary tabulations and writing a final report which is scheduled for completion by the end of March 1982. The contractor's report will be submitted to the bumper docket. The data is being used by the Agency in arriving at a final regulatory decision involving the bumper standard. Future evaluation efforts will depend on the Agency's final decision on whether to amend the standard.

Studies of Actual Cost

The objectives, definitions and general methods of cost analysis were described in Part II. The studies underway

include costs for regulations which cannot be evaluated on the basis of accident analysis. Many of the 100 series fall in this category, and priorities for administrative review are included in Part III.

The Vehicle Safety Regulation Cost Studies Underway are:

FMVSS

- 103 Windshield Defrost and Defog (Passenger Cars)
- 104 Windshield Wiping and Washing (Passenger Cars)
- 105 Hydraulic Brake System (Passenger Cars)
- 108 Stop Lamps (Passenger Cars)
- 113 Hood Latches (Passenger Cars)
- 201 Occupant Protection in Interior Impact (Light Trucks)
- 202 Head Restraints (Passenger Cars)
- 203 Impact Protection - Steering Control Systems (Light Trucks)
- 204 Steering Control Rearward Displacement (Light Trucks)
- 205 Glazing (Passenger Cars)
- 216 Roof Crush Resistance (Passenger Cars)
- 219 Windshield Zone Intrusion (Passenger Cars)

Three of these cost studies are designed to yield updated cost information - FMVSS's 105, 108 and 202; both design and technology changes have occurred since the original cost work was completed several years ago.

An analysis of the estimated changes in consumer cost of fuel economy regulations was planned and listed in the July 10, 1980, Federal Register notice on evaluation projects. This cost program will be suspended as explained at the beginning of this Part. The initial study is, however, still underway under a contract awarded in late 1980. When complete, it will identify changes in weight and cost by Product Planning Group (PPG), an automobile industry classification scheme of 20 vehicle component categories. Each PPG consists of four sequential levels of detail: a Uniform Part Grouping, Assembly, Component, and finally the Part. Where appropriate, the weight and cost differentials will be estimated down to the affected level.

Since such analyses are complex - and expensive - the work was limited to comparisons of the following pre/post (meaning before and after major model changes to meet fuel economy requirements and demand) vehicles and components.

- o Three pre and three post-change passenger cars, the six being a set of two each from a major domestic manufacturer
- o Six pre and six post-change engines, transmissions, and axles.

As is expected, the major effect on consumer cost will be from downsizing together with the incorporation of new technology and design.

PART V
Regulatory Review Plan

A. Proposed Schedule and Priorities

The following presents the NHTSA plan for performing effectiveness evaluations and administrative reviews as part of regulatory reform. For the effectiveness evaluations, we present a brief description of each standard (ordered by standard number), a summary of ongoing or planned projects which feed into the regulation's overall evaluation, and target completion dates. It should be noted that, as with most plans, the priority and targets are proposed. Many factors, such as problems with accumulating a sufficient data set on a particular accident type or the availability of Agency resources, can intervene. Nevertheless, the information we have presented here represents our best estimates on the type and extent of work required and of the times by which the efforts can be completed.

The second section of this listing presents our planned reviews for administrative burden imposed by regulations. A brief explanation introduces that section.

Effectiveness Evaluations

	<u>Target Completion Date</u>
FMVSS 105 - Hydraulic Brake Systems - Passenger Cars - Sets performance tests for brakes, including stopping distance, fade resistance, water resistance. The standard also requires a split brake system	
o <u>Statistical Analysis of North Carolina Data</u>: Contractor: Highway Safety Research Center (HSRC); Contract No. DTNH-81-C-06006: Statistical analysis of accident data to determine effect of brake system improvements in reducing frequency of both accidents involving brake failure and accident involvements of post-standard cars as the striking vehicle.	Spring 1982
o <u>Cost Evaluation of Specific Brake Improvements</u>; Contractor: AutoSafety Engineering Corporation; Contract No. DTNH22-81-A-06002: A previous study (DOT-HS-805-315, see below) obtained the costs of brake systems of pre- and post-standard cars and assigned cost and weight changes to the standard. This project will identify specific brake components changed in response to 105 and 105-75 and obtain their cost and weight changes.	Summer 1982
o <u>Analysis and Evaluation of Hydraulic Brake Standard</u>: This study brings together the results of: the two studies listed above; "Cost Evaluation for Nine Federal Motor Vehicle Standards, Vol. 1, FMVSS 105", DOT-HS-805-315; and "Hydraulic Brake System Tests of Used 1973 and 1978 Vehicles". These contractor results and an in-house literature review will be the data sources for a total effectiveness and cost effectiveness evaluation report.	End of 1982

**Target
Completion
Date**

FMVSS 108 - Lamps, Reflective Devices and Associated Equipment - The evaluation is confined to the requirement that passenger cars have side marker lamps.

- o Accident Data Tabulation; Contractor, HSRC; Contract No. DTNH-81-C-06006: North Carolina data of day and nighttime angular collisions will be analyzed to determine side marker lamp effectiveness in reducing these accidents.** Summer 1982

- o Trend Study of Costs of Safety Standards for FMVSS 108 (Side Markers), etc.: This study will look at sidemarker lamps in 1980-81 model year cars versus similar data for 1970 cars to see if any changes have occurred since these lamps were first installed.** Fall 1982

- o Analysis and Evaluation of Side Marker Lamps: This study uses as data sources the results of the two contracts described above plus results of "Statistical Evaluation of the Effectiveness of FMVSS 108: Side Marker Lamps, Report No. 1 of 7", DOT-HS-805-657; and "Cost Evaluation for Nine Motor Vehicle Safety Standards - Volume II - FMVSS 108", DOT-HS-805-316. In addition, an in-house analysis of FARS and Texas data will be performed and a report will be prepared on the total side marker lamp effectiveness and cost effectiveness.** Summer 1983

Target
Completion
Date

FMVSS 201^{*/} Occupant Protection in Interior Impact - This standard specifies requirements (padding, recessed handles, knobs, etc.) to afford protection for occupants when striking vehicle interiors (instrument panel, seat backs, doors) during collisions.

- o Cost Evaluation of Standard 201 (Passenger Cars):** This is a study of changes made to passenger car interiors (instrument panel, seat backs, interiors of doors) to achieve the impact protection requirements of FMVSS 201 and to determine the costs and weights associated with those changes. Fall
1982
- o Evaluation of Dashboard and Other Interior Padding:** Effectiveness of various types of padding will be measured in sled or pendulum tests using dummies or dummy parts and actual vehicle interior surface components (padded and unpadded). End of
1983
- o Feasibility Study of Using Accident Data to Evaluate Standard 201:** Based on results of the cost study and sled test evaluation, specific equipment changes associated with Standard 201 and their laboratory results in reducing impact forces will be identified and used to describe accident modes and data elements which would be needed for evaluating Standard 201. If existing accident data files have the necessary information, this project will be undertaken. Summer
1984
- o Evaluation of Standard 201 for Passenger Cars:** The results of the above studies and an evaluation of accident data (either in-house or under contract) - if feasible - will be used to evaluate standard 201 effectiveness and cost effectiveness. A report will be prepared. End
1984

^{*/} Two of the following standards will be evaluated during the 1982-1984 planning period: FMVSS 201, 207, 213.

**Target
Completion
Date**

FMVSS 205 - Glazing Materials - FMVSS 205 specifies requirements for glazing materials to reduce injuries resulting from impact with glazing surfaces, to ensure a necessary degree of transparency for driver visibility and to minimize the possibility of occupants being thrown through the vehicle windows in collisions.

FMVSS 212 - Windshield Mounting - FMVSS 212 sets requirements for the percentage of the windshield that must remain mounted in a staged impact test, with the intent of preventing occupant ejection through the windshield area.

- o Cost Evaluation of Glazing Materials - FMVSS 205; An ongoing contract will determine the consumer price of laminated windshields which are penetration resistant and of tempered side and rear windows which can be compared with pre-standard windshields and windows to determine the implementation consumer prices of the standard. (Autosafety Engineering Co.; Contract No. DTNH22-81-A-06002). Summer 1982

- o Statistical Analyses can be performed in-house of NCSS, FARS and Texas data to determine reduction in laceration injuries in non-ejection crashes and a reduction in ejection, with its associated deaths and injuries. Winter 1983

- o Overall Evaluation of Standards 205 and 212 will combine the aforementioned studies with a completed one on the cost and benefits of FMVSS 212 (Cost Evaluation for Three Federal Motor Vehicle Standards 203, 204, and 212; DeLorean Motor Co.: DOT-HS-805-603) to estimate benefits/disbenefits of the standards, singly and in combination. Winter 1983

**Target
Completion
Date**

FMVSS 207^{*/} - Seating Systems (Passenger Cars) - This standard establishes requirements for seats, their attachment assemblies, and their installation to minimize the possibility of their failure by forces acting on them as a result of vehicle impact.

- o Evaluation of Seat Back Locks: Seatback locks were installed on front seats of two-door cars to meet the requirements of Standard 207. Previous attempts to measure injury reduction, based on accident data, were unsuccessful because of data bias and small sample size. In this project, effectiveness will be measured in sled tests with dummies and actual post-standard seats, both with locks in place and then with them removed or disabled. A comprehensive set of frontal crash conditions will be tested, including where rear seat occupants contact front-seat backs and increase the load on front seat occupants.**

**End of
1983**

- o Analysis and Evaluation of Seat Back Locks: Using the results of the aforementioned study and previously completed studies ("Statistical Evaluation of the Effectiveness of FMVSS 207: Seat Back Locks Report No. 3 of 7", DOT-HS-805-659; "Cost Evaluation for Nine Federal Motor Vehicle Standards - Volume IV FMVSS 202 and 207", DOT-HS-805-318), the effectiveness and cost effectiveness of seat back locks will be determined and a report written.**

**Summer
1984**

*/See Footnote for FMVSS 201

Target
Completion
Date

FMVSS 213 ^{*/} - Child Seating Systems - This standard specifies requirements for child seating systems to minimize likelihood of death or injury in vehicle crashes or sudden stops by ejection from the vehicle, contact with the vehicle interior, or contact with the child seating system.

- o Statistical Evaluation of State Data; Contractor: HSRC: Contract No. DTNH22-81-06006: New York and Maryland accident data involving children (with and without seating systems) is being studied to add to the existing data base and provide a sufficiently large sample to determine overall effectiveness. Spring 1982

- o Evaluation of Specific Child Seating Systems: Neither State data nor NASS data specify type of child seat in use in accidents. Based on sled tests using child dummies, actual child safety seats and mockups of vehicle interiors, testing under a comprehensive set of conditions should yield effectiveness results of different seating systems. Spring 1983

- o Final Evaluation of Child Seating Systems: Based on the above two studies plus results of "Cost Evaluation for Nine Federal Motor Vehicle Safety Standards, Vol. V, FMVSS 213", DOT-HS-805-319; and "Statistical Evaluation of the Effectiveness of Child Restraints, No. 4 of 7", DOT-HS-805-660, the effectiveness and cost effectiveness of child seating systems will be evaluated and a report prepared. Spring 1984

*/ See Footnote for FMVSS 201

**Target
Completion
Date**

FMVSS 214 - Side Door Strength - This standard specifies strength requirements for side doors of a motor vehicle to minimize the safety hazard caused by intrusion into the passenger compartment in a side impact accident

- o Trend Study of Costs of Safety Standard 214, etc.: This study will look at the design, costs, and weight of side door beams and attachments in 1980-81, model year cars versus similar data of earlier model year cars already studied, to see if any changes have occurred. Summer
1982

- o Final Evaluation of Standard 214: Since the preliminary evaluation was published in September 1979, twice as many accident cases are available on the NCSS file. FARS data are also now available and Texas data may be another potential source. In addition to cost data becoming available from the trend study (see above), another cost study has been completed since the September 1979 evaluation: "Task IX, Side Door Strength, Identification and Cost Evaluation of Design and Manufacturing Changes", DOT-HS-805-450. The follow-up effectiveness analyses are underway and a follow-up report will be prepared. Summer
1982

FMVSS 219 - Windshield Zone Intrusion - This standard specifies limits for the displacement into the windshield area of motor vehicle components (usually the hood) during a crash.

- o Cost Evaluation of FMVSS 219 - Windshield Zone Intrusion; Contractor, Triad; Contract No. DTNH22-81-A-26002: This study will determine vehicle component changes and the cost and weight implications associated with Standard 219. Spring
1982

- o Analyze Accident Data for Incidence of Windshield Zone Intrusion: NCSS accident data will be analyzed to determine incidence of windshield intrusion. Hard copy reports will be reviewed to determine what penetrated the windshield. Winter
1983

- o Evaluation of Windshield Zone Intrusion: Assuming the results of the accident data analysis yield significant results, and using the cost study results (see above), a report on the effectiveness and cost effectiveness of standard 219 will be prepared. Winter
1983

**Target
Completion
Date**

FMVSS 222 - School Bus Passenger Seating and Crash Protection - This standard establishes requirements for seats, restraining barriers and potential impact zones (for heads and legs) to reduce risk of death and injury severity resulting from impact of occupants against structures within the school bus during crashes or sudden driving maneuvers.

- o **State Accident Data Analysis: By 1984, post-standard buses are expected to have been in a sufficient number of crashes so that effectiveness of Standard 222 could be estimated by statistical analysis of State data for accidents involving pre- and post-standard buses.**

**Summer
1984**

- o **Preliminary Evaluation of Standard 222: Using the results of the study above and completed contracts: "Cost Evaluation for Nine Federal Motor Vehicle Safety Standards - Vol. VI - FMVSS 220, 221, 222", DOT-HS-805-320; and "Statistical Evaluation of the Effectiveness of FMVSS 222: School Bus Seating and Crash Protection, Report No. 6 of 7", DOT-HS-805-622, a preliminary evaluation of the effectiveness and cost effectiveness can be determined and reported.**

**End of
1984**

Target-
Completion
Date

FMVSS 301 - Fuel System Integrity - This standard specifies requirements for the integrity of motor vehicle fuel systems during and after impact to reduce deaths and injuries from fires caused by spilled fuel.

- o Evaluation of Accidents Involving Fuel System Rupture and Vehicle Fires: Contractor (HSRI), Contract No. DOT-HS-7-01755: Michigan State data of accidents with either fuel leakage or fire involving pre- and post-standard cars are being statistically analyzed. This will determine the statistical effectiveness of this standard.** Spring 1982
- o Statistical Evaluation of North Carolina Data; Contractor, Highway Safety Research Center (HSRC); Contract No. DTNH22-81-C-06006: North Carolina State data of fire involved crashes are being statistically analyzed to determine Standard 301's effectiveness.** Spring 1982
- o Preliminary Evaluation of Standard 301: The results of the two studies (above), the cost study, "Cost Evaluation for Four Federal Safety Standards", DOT-HS-803-871; and the study, "Statistical Evaluation of the Effectiveness of FMVSS 301: Fuel System Integrity, Report No. 7 of 7", DOT-HS-805-969, will be used to prepare the evaluation report.** Fall 1982

**Target
Completion
Date**

Motor Vehicle Fuel Economy Survey - This is a review, over a three-year period, to provide data and information to the Department of Transportation in its role of monitoring "on-road" improvements in motor vehicle fuel economy.

- o Survey of 1977 through 1981 Model Year Passenger Cars (P.C.) and Light Trucks (L.T.); Contractor: National Opinion Research Corp.; Contract No. DTNH20-80-C-06005: This survey is the first year effort to monitor actual on-road fuel economy of vehicles manufactured since passage of fuel economy legislation. The purpose of this study will be to obtain actual mile-per-gallon data which will become baseline data for monitoring model year changes in fuel economy as well as for tracking changes in fuel economy as vehicles age.**

**Summer
1983**

- o Survey of 1978 through 1982 Model Year P.C. and L.T.: This will be the second-year effort in which one model year is dropped (1977) and one added (1982) and the 1978 through 1981 models are one year older. Model year changes in fuel economy will be tracked and aging effect on fuel economy within each model year will be determined.**

**Spring
1984**

- o Survey of 1979 through 1983 Model Year P.C. and L.T.: This is the third year, and as before, one model year is dropped, another added, and the intervening model years measure the fuel economy effect of vehicles aging.**

**Winter
1985**

Administrative Burden Reviews

This section presents a listing of the reviews for administrative burden which are underway or planned by NHTSA. As discussed in Part III A of this report, the definition of administrative burden is: The continuing actions required and associated costs incurred to comply with the requirements imposed by a regulation. These actions and costs fall into several categories, including testing, recordkeeping, and reporting requirements. It should also be noted that these administrative reviews may be conducted in addition to effectiveness evaluations addressing some of the same regulations. As shown below for several of the reviews, cost studies are already underway.

As there has to be some flexibility on which of the regulations are to be addressed first and on how many will be reviewed concurrently, no specific target dates for completion are designated.

In the interest of removing trade barriers among products produced in different countries, the Agency is participating in discussions with manufacturers and other standard-setting organizations to explore possibilities for harmonizing the motor vehicle safety standards with those of different countries. The Economic Council of Europe (ECE) sets uniform safety standards for vehicles produced by European manufacturers, which often vary from those established by NHTSA. The NHTSA review process will help identify those standards which can be harmonized without significant degradation to safety performance. These standards, as noted in Part III C, are incorporated within the reviews listed below.

FMVSS 101-80 Controls and displays (applies to passenger cars, multipurpose passenger vehicles, trucks, and buses.)

The purpose of this standard is to ensure the accessibility and visibility of motor vehicle controls and displays and to facilitate their selection under daylight and nighttime conditions, in order to reduce the safety hazards caused by the diversion of the driver's attention from the driving task, and by mistakes in selecting controls.

FMVSS 105: Hydraulic brake systems (Passenger Cars and Schoolbuses)

Sets performance tests for brakes, including stopping distance, fade resistance, water resistance. The standard also requires a split brake system.

- o A study to determine the actual cost of production is underway.

FMVSS 106: Brake hoses (applies to passenger cars, multipurpose passenger vehicles, trucks, buses, trailers, and motorcycles, and to hydraulic, air, and vacuum brake hose, brake hose assemblies, and brake hose end fittings for use in those vehicles.)

This standard specifies labeling and performance requirements for motor vehicle brake hose, brake hose assemblies, and brake hose end fittings to reduce deaths and injuries occurring as a result of brake system failure from pressure or vacuum loss due to hose or hose assembly rupture.

FMVSS 108: Lamps, reflective devices, and associated equipment (applies to passenger cars, multipurpose passenger vehicles, trucks, buses, trailers and motorcycles, and to replacement equipment.)

This standard specifies requirements for original and replacement lamps, reflective devices, and associated equipment necessary for signaling and for the safe operation of motor vehicles during darkness and other conditions of reduced visibility.

- o A study to determine the actual production cost is underway.

FMVSS 109: New pneumatic tires (applies to new pneumatic tires for use on passenger cars manufactured after 1948.)

This standard specifies tire dimensions and laboratory test requirements, for bead unseating resistance, strength, endurance, and high speed performance; defines tire load ratings; and specifies labeling requirements for passenger car tires.

FMVSS 110: Tire selection and rims (applies to passenger cars.)

This standard specifies requirements for tire selection to prevent tire overloading.

FMVSS 111: Rearview Mirrors (applies to passenger cars, multipurpose passenger vehicles, trucks, buses, schoolbuses and motorcycles.)

This standard specifies requirements for the performance and location of rearview mirrors to assure that a driver has a clear and reasonably unobstructed view to the rear.

- o A study to determine actual production cost is underway.

FMVSS 112: Headlamp concealment devices (applies to passenger cars, multipurpose passenger vehicles, trucks, buses, and motorcycles.)

This standard specifies requirements for headlamp concealment devices.

- o A study to determine actual costs of production is underway.

FMVSS 113: Hood latch system (applies to passenger cars, multipurpose passenger vehicles, trucks, and buses.)

This standard establishes the requirement for providing a hood latch system or hood latch systems.

- o A study to determine the actual costs of production is underway.

FMVSS 114: Theft protection (applies to passenger cars.)

This standard specifies requirements for theft protection to reduce the incidence of accidents resulting from unauthorized use.

FMVSS 115: Vehicle identification number (applies to passenger cars, multipurpose passenger vehicles, trucks, buses, trailers, incomplete vehicles and motorcycles.)

This standard specifies requirements for a vehicle identification system to simplify vehicle information retrieval and to reduce the incidence of accidents by increasing the accuracy and efficiency of vehicle defect recall campaigns.

FMVSS 116: Motor vehicle brake fluids (applies to all fluid for use in hydraulic brake systems of motor vehicles.)

This standard specifies requirements for fluids for use in hydraulic brake systems of motor vehicles, containers for these fluids, and labeling of the containers to reduce failures in the hydraulic braking systems of motor vehicles which may occur because of the manufacture or use of improper or contaminated fluid.

FMVSS 121: Air brake systems (applies to trucks, buses, and trailers equipped with air brake systems with certain exceptions.)

This standard establishes performance and equipment requirements for braking systems on vehicles equipped with air brake systems to insure safe braking performance under normal and emergency conditions.

Part 525 - Exemptions from Average Fuel Economy Standards (applies to passenger automobile manufacturers.)

This part establishes procedures for the submission and disposition of petitions filed by low volume manufacturers of passenger automobiles to exempt them from the average fuel economy standards for passenger automobiles and to establish alternative average fuel economy standards for those manufacturers.

Part 555 - Temporary Exemption from Motor Vehicle Safety Standards (applies to all manufacturers of motor vehicles.)

This part is designed to provide a means by which manufacturers of motor vehicles may obtain temporary exemptions from Federal motor vehicle safety standards on the basis of substantial economic hardship, facilitation of the development of new motor vehicle safety or low-emission engine features, or existence of an equivalent overall level of motor vehicle safety.

Part 574: Tire identification and recordkeeping (applies to all manufacturers, distributors and dealers of tires.)

This part is designed to facilitate notification to purchasers of defective or nonconforming tires so that they may take appropriate action in the interest of motor vehicle safety.

Part 575: Consumer information regulations (for applicability, see description of the individual regulation.)

575.101 Vehicle stopping distance.

This section requires manufacturers of passenger cars and motorcycles to provide information on vehicle stopping distances under specified speed, brake, loading, and pavement conditions. (applies to passenger cars and motorcycles manufactured on or after January 1, 1970.)

575.103 Truck-camper loading.

This section requires manufacturers of trucks that are capable of accommodating slide-in campers to provide information on the cargo weight rating and the longitudinal limits within which the center of gravity for the cargo weight rating should be located to reduce overloading and improper load distribution in truck-camper combinations, in order to prevent accidents resulting from the adverse effects of these conditions on vehicle steering and braking. (applies to trucks that are capable of accommodating slide-in campers.)

B. Request for Comments

The Agency welcomes public comments on any portion of the preceding report and specifically asks that persons providing comments address the following questions:

- o Does the overall evaluation/review covered in this report provide a sound basis for the regulatory reform process?
- o Has NHTSA proposed an appropriate priority for evaluation or review of each regulation?
- o Are there any comments regarding the manner and approach by which NHTSA conducts the evaluations? Is contractor support appropriate to the tasks outlined?
- o Is the costing methodology we employ reasonable, whereby actual costs are determined through teardown analysis and subsequent expansion to consumer costs?
- o In regard to the use of mentioned data sources, particularly State data, are these sources appropriate and what other specific sources and data sets are suggested?
- o Are the criteria for selecting regulations for administrative review (Section III B) appropriate? Are there others which should be considered?

- o Administrative reviews for the crashworthiness (200 series) standards are contemplated. Which regulations would most benefit from such a review? Why?
- o What ideas or comments would be useful in developing a method for conducting administrative reviews?
- o Are there any comments relating to specific test requirements incorporated in the regulations?
- o Is the public adequately informed of the results of evaluations by requesting comments in a Federal Register notice, the method usually employed by the Agency?