

dynamic rollover test which does not go into effect until September 1, 1977. The legislation which I am introducing today would move these effective dates up 1 year to September 1, 1975 and September 1, 1976 respectively. This would mean that 1977 and 1978 model year cars would have to meet these standards.

The importance of fuel tank safety standards can only be understood when one considers the frightening statistics compiled by the Department of Transportation. The Department estimates that fires in traffic accidents account for somewhere between 2,000 and 3,500 deaths annually. Moreover, the Presidentially established National Commission on Fire Prevention and Control, in its report of last year, estimated that more than 450,000 fires occurred in motor vehicles in 1971. In fact, motor vehicle fires each year cause almost 35 percent of all fire deaths in the United States. A large percentage of these deaths are caused by fires resulting from gasoline leaking from fuel tanks.

All that it takes to cause a deadly fire in the presence of spilled gasoline is a spark from one of many possible sources—from the car's electrical or exhaust system, a burning tire, a lighted cigarette, a broken power line, or the scraping of metallic vehicle parts along the pavement. Thus it is clear that in reality we have had a fuel crisis for a long time: a fuel crisis represented by the threat of gasoline splashing from ruptured fuel tanks, ready to serve as fuel not for cars but rather for a raging and lethal inferno.

The report of the National Commission on Fire Prevention and Control is worth citing:

Since gasoline spillage is a common cause of vehicle fires, the location, construction and security of fuel tanks are important design features for fire safety. The most severe losses, in terms of both life and property, occur from fires following rear end collisions. Next in importance are rollover accidents, followed by front end collisions.

Thus it is very important that the proposed standards, which include both rear end and rollover crash tests, take effect 1 year earlier as proposed in this legislation.

The death toll resulting from traffic accident fires is inexcusably high, especially in light of the fact that the technology exists to remedy the design defects which allow excessive leakage from fuel tanks. The National Commission on Fire Prevention and Control came to this conclusion when it stated:

The indications, then, are that motor vehicles, especially cars, are not as safe as modern technology would allow. Improvements could be made in design and materials, without significant additional costs.

Testimony last year before the House Subcommittee on Commerce and Finance also indicated that the answers to fuel tank hazards are well known. Dr. William Haddon, Jr., currently president of the Insurance Institute for Highway Safety and formerly first director of the National Highway Traffic Safety Administration, the agency in the Department of Transportation which is responsible for the establishment of auto safety

standards, explained that there are several feasible and practical solutions currently available.

One possible approach is to build a structure around the tank in such a way that impact forces are less likely to reach it with violence sufficient to cause rupturing, tearing, and dislocation. In tests conducted by the Insurance Institute for Highway Safety the structure surrounding the fuel tank proved flimsy and provided little protection at all. Tanks themselves could also be made more rugged so that they could withstand impacts without rupturing. In addition, designed-in threats to the integrity of gas tanks could be avoided by the removal of sharp bolts, ridges, and other hardware from positions adjacent to the tank. Fuel lines, filler pipes, and vent lines also could be designed and constructed in ways that make them far less likely to break during impact.

Moreover, in the event of a rupture in the fuel tank, better insulation and placement of electrical wires can reduce the likelihood of a fire starting. And there are also design approaches to stop the exploding gasoline from erupting into the passenger compartment. One of the most reasonable of these approaches is the installation of fire walls. These fire walls have been built into the fronts of cars for decades, but are found on the rear ends of only a few vehicles now sold in the United States.

The technology exists but it has not been put into effect because of the reluctance on the part of the Department of Transportation and its National Highway Traffic Safety Administration to issue adequate and timely safety standards which would require the use of this technology. The National Traffic and Motor Vehicle Safety Act of 1966 granted the Department of Transportation the authority to issue motor vehicle safety standards. Yet there is still no standard presently in effect which would require automobile fuel tanks to withstand a rear end collision with only a minimal amount of leakage. Nor are there currently in effect any standards for side or rollover impacts. According to the proposed standards issued by the Department of Transportation last August passenger cars would not be subject to rear end collision tests until September 1, 1976. And, of course, it is precisely this type of rear end collision which most frequently causes fuel tank leakage and the resultant fire hazards.

The only fuel tank integrity test which presently exists involves frontal collisions. And since the vast percentage of automobiles have their fuel tanks in the rear, the result is that fuel tanks are not required to be very durable or strong and thus not very safe.

The Department of Transportation has received numerous reports indicating that fire-producing deficiencies in vehicle design are killing many people each year. The National Transportation Safety Board in its report on a 1969 multiple-vehicle collision involving fires on the New Jersey Turnpike, recommended that "the National Highway Traffic Safety Administration and the Automobile Manufacturers' Association

By Mr. MONTROYA:

S. 2900. A bill to improve the safety of motor vehicle fuel systems. Referred to the Committee on Commerce.

Mr. MONTROYA. Mr. President, the legislation which I am introducing today concerns motor vehicle fuel tank safety standards. The bill has two basic provisions. First of all, it would advance, by 1 calendar year, the effective date of the Federal standards proposed by the National Highway Traffic Safety Administration in August 1973. Second, it would require that all supplemental fuel tanks which are added to a vehicle after its original sale meet standards which provide for at least as much safety as that provided by original equipment standards.

The magnitude of the dangers involved in unsafe fuel tanks, the existence of available technology to remedy tank deficiencies and the seeming reluctance on the part of the Department of Transportation to implement safety standards in an expeditious fashion provide persuasive evidence of the necessity for this legislation.

Currently the only safety standard applying to fuel tanks involves a frontal collision test—at a speed of 30 miles per hour—which each vehicle sampled must undergo with a maximum allowable fuel loss from its tank of 1 ounce per minute, with fuel loss measured for a 15 minute period.

The standards proposed by the National Highway Traffic Safety Administration in the August 20, 1973 Federal Register would set a maximum allowable fuel loss of 1 ounce per minute when a vehicle is tested under specified impact and rollover conditions. The proposed standards for passenger car fuel tanks include static and dynamic rollover tests as well as a 30-mile-per-hour rear end crash test, a 30-mile-per-hour angular frontal crash test, and a 20-mile-per-hour lateral crash test. All of these proposed standards are due to take effect as of September 1, 1976, except for the dy-

initiate programs leading to the development of automotive fuel tank systems which will minimize the escape of fuel in collisions." This same agency issued a report in 1971 stressing that there had been "no significant reduction of vehicle fires in recent years."

Within the National Highway Traffic Safety Administration over the past several years, there has been received report after report involving accident related fires. These accident investigation re-vestigation reports were designed to prevent future deaths and injuries. Dozens of them blame ruptured fuel systems and fires for accident casualties.

A National Transportation Safety Board study conducted in 1971 contained an appendix entitled "The Continuing Problem of Vehicle Fires." It said in part:

As long as motor vehicles use liquid combustible fuels, the hazard of fire will persist. But this hazard can be materially reduced by attacking both the spillage of fuel and the common ignition sources, since combustion requires both a readily ignitable fuel and ignition.

Therefore, two main goals need to be considered in a systems approach to this problem:

A. The limiting of fuel spillage . . . at present, fuel-system components seem to be among the most vulnerable of all vehicle subsystems in terms of design, construction and placement, when vehicles are involved in crashes; and

B. Better management of electrical ignition potentialities . . . Both of these approaches are well within the state of the art and should require only direction and development to meet realistic performance parameters.

Some of the most recent data providing persuasive evidence of the need for speedy action in setting fuel tank standards came from tests conducted by the Insurance Institute for Highway Safety in April, 1973. The Institute conducted six rear end crash tests with 1973 cars. Despite the fact that these crashes occurred at speeds less than 40 miles per hour, the results were leaking fuel tanks. Each crash produced either fire, or one of fire's prerequisites, namely spilled gasoline. In short, each crash had the potential of becoming a flaming and very deadly inferno.

Unfortunately, the Department's responses to these alarming reports and statistics have been either too little or too late or both. In October 1967, the Department of Transportation issued an advance notice of proposed rule making announcing its plan to set a standard to require "lateral and rear-end longitudinal collision tests, prevention of fuel spillage due to rollover, puncture resistant fuel tanks, and protection of fuel lines and fittings." Then on January 17, 1969, the National Highway Traffic Safety Administration issued a notice of proposed rule making, which, if enacted would have required a rear end impact test effective January 1, 1970. No action was taken on this proposal. On August 24, 1970, the National Highway Traffic Safety Administration, "recognizing that the present requirements are nar-

row in scope," issued another notice of proposed rule making which included rear end collision test requirements more stringent than those proposed in 1969. The agency stated that "the requirements, if implemented, would significantly reduce the likelihood of fuel spillage fires."

And yet the standard requiring rear end collision tests is now not due to take effect until September 1, 1976, a full 7½ years after the only other standard presently applicable, the frontal collision test, came into effect.

Further illustration of the National Highway Traffic Safety Administration's intransigence is provided by a comparison of the actions taken by the agency with the deadlines and timetables set forth in the agency's own program plan books. The first "Program Plan for Motor Vehicle Safety Standards," published in September 1970, proposed March 1971 as the issue date of the standard on fuel system integrity specified in the August 1970 notice. The effective date of that standard was to have been January 1, 1972. The second program plan book, published in October 1971 moved the dates back even further with a proposed issue date of March 1, 1972 for the rule and an effective date of September 1, 1976, for the standard.

As can be seen from the above data, the National Highway Traffic Safety Administration's actions with regard to fuel system integrity safety standards may well rank as one of the foremost instances of bureaucratic delay in recent history. Meanwhile thousands of people every year continue to die on our Nation's roads and highways as a result of this unjustified delay. A postponement of the effective date of a rear-end collision standard until September 1976 would represent a 4-year, 9-month delay past the date proposed in August 1970; a 6-year, 9-month delay since the date proposed in January 1969; and an incredible delay of over 8 years since the National Highway Traffic Safety Administration first announced its intention to devise a fuel system standard covering rear-end collisions.

Mr. President, the legislation which I am introducing today calls for only a modest 1-year speedup in the effective date of the proposed safety standards regarding rear-end crash tests, lateral crash tests, angular frontal crash tests, and static and dynamic rollover tests. This bill would put these standards into effect in 1975 and 1976, depending on the standard and the class of vehicle, instead of on the 1976 and 1977 dates proposed by the National Highway Traffic Safety Administration. This is a limited but very important step which represents the least we can do to accelerate the pace of establishing adequate auto safety standards.

The rationale behind the second part of this legislation, that pertaining to safety standards for supplemental fuel tanks, is the belief that standards for supplemental fuel tanks should provide for just as much safety as that provided by original equipment standards. This

part of the legislation is especially important in light of the current fuel shortage and the increasing tendency for people to install supplemental fuel tanks in order to be able to store more gasoline. At present there are no safety standards applicable to supplemental tanks which are not available as factory options. The increased use of these tanks makes the establishment of safety standards even more imperative.

I think it is clear that we simply cannot in good conscience allow such a long time for these safety standards to become effective. As the Insurance Institute for Highway Safety has indicated, if the standards go into effect as proposed, it would still be well into the 1980's before three-fourths of the cars on the road have the full protection called for in the proposed standards. If some 2,000 to 3,500 people died each year in airplane crashes as a result of faulty fuel tanks, would we see a similarly casual attitude on the part of Government officials toward remedying the situation? I doubt it. We owe it to the millions of drivers of this country to insure that adequate automobile safety standards are implemented as soon as possible. The legislation introduced today is a necessary step in this direction.

Mr. President, I ask unanimous consent to have printed in the RECORD following my remarks the text of the bill as well as three items prepared by the Insurance Institute for Highway Safety: First, a table entitled "Fuel Systems: Present and Proposed," second, a fact sheet entitled "Federal Motor Vehicle Safety Standard No. 301: Anatomy of a Delay," and third, a table giving the "summary of results of the 1973 moderate speed front-into-rear crash tests." It should be pointed out that the legislation introduced today would advance by 1 calendar year the effective dates for the proposed standards listed in the first table.

There being no objection, the bill and material were ordered to be printed in the RECORD, as follows:

S. 2900

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the motor vehicle safety standards with respect to fuel system integrity, proposed by the National Highway Traffic Safety Administration in Docket numbered 73-20, notice 1, 38 Federal Register 160 at page 22417, to be effective as of September 1, 1976, and September 1, 1977, shall be effective, with any modification prior to final promulgation, as of September 1, 1975, and September 1, 1976, respectively.

SEC. 2. Section 402 of title 23 of the United States Code, relating to State highway safety programs, is amended by inserting at the end thereof the following:

"(1) State vehicle inspection programs pursuant to this section shall include provisions to provide assurance that any supplemental fuel tank installed in a motor vehicle after manufacture meets safety standards promulgated by the Secretary for the purpose of this subsection and providing that any such supplemental tank is at least as safe as fuel tanks installed in such vehicle at the time of manufacture."

FUEL SYSTEM TEST PROPOSED

	Effective dates			Effective dates		
	Passenger cars	Other vehicles		Passenger cars	Other vehicles	
		Under 6,000 lbs	6,000 to 10,000 lbs		Under 6,000 lbs	6,000 to 10,000 lbs
Fuel spillage not to exceed 1 ounce per minute after tests as follows:						
Adopted:						
30 mi/h frontal barrier crash.....	In effect	Sept. 1, 1976	Sept. 1, 1976			
Static roll-over (following frontal crash)....	Sept. 1, 1975do.....do.....			
Proposed:						
Static roll-over (following frontal crash).....						Sept. 1, 1977
30 mi/h rear moving barrier crash.....	Sept. 1, 1976		Sept. 1, 1977			Do.
30 mi/h angular frontal barrier crash.....	do		do			Do.
20 mi/h lateral moving barrier crash.....	do		do			Do.
Static roll-over (following each impact test).....	do		Sept. 1, 1976			Do.
Dynamic roll-over.....	Sept. 1, 1977		Sept. 1, 1977			Do.

FEDERAL MOTOR VEHICLE SAFETY STANDARD No. 301: ANATOMY OF A DELAY

1966.—Sept. 9, 1966, President Lyndon B. Johnson signs National Traffic and Motor Vehicle Safety Act, providing first federal authority for motor vehicle safety standards. Advance Notice of Proposed Rulemaking issued for Federal Motor Vehicle Standard No. 301, Oct. 6, 1966, to cover fuel tank integrity. Notice of Proposed Rulemaking issued, Nov. 30, 1966, proposing no loss of fuel greater than one ounce per minute after a 30 mph frontal fixed barrier impact to take effect Sept. 1, 1967.

1967.—Standard No. 301 adopted, Jan. 31, 1967, effective Jan. 1, 1968.

Advance Notices of Proposed Rulemaking issued to extend to rear-end and side collisions, Oct. 10, 1967, as well as extension to multipurpose passenger vehicles, trucks, buses and motorcycles.

1968.—Standard No. 301 takes effect, Jan. 1, 1968, as it turned out, the only protection required in this area for the next 7½ years.

1969.—Notice of Proposed Rulemaking issued, Jan. 17, 1969, for no fuel leakage after panic stop from 80 mph, effective Oct. 1, 1969. Also, a 20 mph rear-end moving barrier test proposed to be effective Jan. 1, 1970.

1970.—Notice of Proposed Rulemaking issued, Aug. 20, 1970, extending and modifying test requirements, to take effect Jan. 1, 1972. Additional test proposed to take effect Jan. 1, 1973.

1971.—October 1971, NHTSA delays proposed effective date to Sept. 1, 1976.

1972.—No action.

1973.—Insurance Institute for Highway Safety reveals its new crash-test research at Congressional hearing, May 29, 1973, showing designed-in deficiencies leading to leaking gasoline and fire even in moderate-speed rear-end impacts in new cars.

Rep. John E. Moss (D-Calif.), chairman of the hearings, writes Transportation Secretary Claude S. Brinegar, May 31, 1973, based on IIHS testimony, rejecting explanations for previous delay.

Center for Auto Safety writes NHTSA seeking amendment to Standard No. 301, June 6, 1973, citing IIHS film results.

June 12, 1973, Acting NHTSA Administrator promises action on stronger fuel tank standards "around Aug. 1, 1973."

Rep. Moss writes Secretary Brinegar again, Aug. 3, 1973, in stronger letter, demands action by Aug. 15, 1973.

Department of Transportation issues new test requirements to strengthen Standard No. 301, Aug. 15, 1973, adopting one previous proposal and proposing others (see chart on page 3) to take effect Sept. 1, 1975-77.

Moving car	Parked car	Speed (miles per hour)	Gas leakage	Fire
1973 Datsun 610...	1973 Ford Pinto.	38.5	Yes; Pinto.	Potential.
1973 Ford Galaxie 500.	1973 AMC Ambassador.	37.2	Yes; Ambassador.	Do.
1973 Volkswagen Beetle.	1973 Plymouth Fury III.	38.8	Yes; Fury.	Initiated.
1973 Chevrolet Impala.	1973 GM Opel 1900.	36.4	Yes; Opel.	Potential.
1973 AMC Gremlin.	1973 Toyota Corona.	39.8	Yes; Corona.	Spontaneous.

Note: In addition to the moderate speed front-into-rear crashes of 1973 vehicles tabulated above, in an earlier pilot test a 1959 Oldsmobile 98 was crashed into the rear end of a 1964 Mercury Comet at 39.2 mi/h. Spontaneous ignition occurred.

INSURANCE INSTITUTE FOR HIGHWAY SAFETY—SUMMARY OF RESULTS, 1973 MODERATE SPEED FRONT-INTO-REAR CRASH TESTS

Moving car	Parked car	Speed (miles per hour)	Gas Leakage	Fire
1973 Plymouth Fury II	1973 Chevrolet Vega	39.8	Yes; Vega.	Potential.