No. 07-4342-cv(L)

IN THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

GREEN MOUNTAIN CHRYSLER PLYMOUTH DODGE JEEP, GREEN MOUNTAIN FORD MERCURY, JOE TORNABENE'S GMC, ALLIANCE OF AUTOMOBILE MANUFACTURERS; DAIMLERCHRYSLER CORPORATION, and GENERAL MOTORS CORPORATION

Plaintiffs-Appellants,

v.

GEORGE CROMBIE, Secretary of the Vermont Agency of Natural Resources, JEFFREY WENNBERG, Commissioner of the Vermont Department of Environmental Conservation, and RICHARD VALENTINETTI, Director of the Air Pollution Control Division of the Vermont Department of Environmental Conservation

Defendants-Appellees

CONSERVATION LAW FOUNDATION, SIERRA CLUB, NATURAL RESOURCES DEFENSE COUNCIL, ENVIRONMENTAL DEFENSE, VERMONT PUBLIC INTEREST RESEARCH GROUP, STATE OF NEW YORK, and DENISE M. SHEEHAN, in her official capacity as Commissioner of Environmental Conservation of the State of New York

Defendants-Intervenors-Appellees.

ON APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF VERMONT, Nos. 2:05-cv-302, 304

INSURANCE INSTITUTE FOR HIGHWAY SAFETY BRIEF *AMICUS CURIAE* IN SUPPORT OF APPELLANTS

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March 21, 2008

CORPORATE DISCLOSURE STATEMENT OF *AMICUS CURIAE* INSURANCE INSTITUTE FOR HIGHWAY SAFETY

Pursuant to Fed. R. App. P.26.1, *Amicus Curiae* states as follows:

Amicus Insurance Institute for Highway Safety, Inc., states that it is a non-profit organization incorporated under the laws of the District of Columbia.

Amicus Curiae have not issued shares to the public nor does it have any parent corporation, subsidiaries or affiliates that have issued shares to the public.

Dated: March 20, 2008

Respectfully Submitted,

Michele Fields
Attorney for *Amicus Curiae*
Insurance Institute for Highway Safety

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Identity and Interest of *Amicus Curiae*

The Insurance Institute for Highway Safety (the Institute) is a nonprofit research and communications organization, supported by U.S. motor vehicle insurers, that identifies ways to reduce motor vehicle crashes and crash losses. The Institute has been a leader in researching the relationships between vehicle size, weight, and occupant protection in crashes. These relationships have important implications for fuel economy regulations. For over 20 years, the Institute has submitted its research findings on fuel economy and safety in comments to federal rulemakings on corporate average fuel economy (CAFE) standards and federal motor vehicle safety standards.[1] Institute representatives have testified, by invitation,

[1] Insurance Institute for Highway Safety, Comment on Intent to Prepare Environmental Impact Statement for Fuel Economy Program, Docket No. 89-19, Notice 3 (Jan. 7, 1991); Insurance Institute for Highway Safety, Comment on Light Truck Average Fuel Economy Standards, Model Years 2005-07, NHTSA-2002-11419, Not. 2 (Feb. 12, 2003); Insurance Institute for Highway Safety, Comment on National Academy of Sciences Study and Future Fuel Econ. Improvements, Model Years 2005-2010, Docket Number NHTSA 2002-11419 (May 8, 2002); Insurance Institute for Highway Safety, Comment on Passenger Automobile Average Fuel Economy Standard for Model Year 1990 Docket No. FE-88-01; Notice 5 (Dec. 28, 1992); Insurance Institute for Highway Safety, Comment on Passenger Automobile Average Fuel Economy Standards, Model Years 1987-1988, Docket No. FE-85-01, Notice 4 (Mar. 24, 1986); Insurance Institute for Highway Safety, Comment on Proposed Changes to Average Fuel Economy Targets for Light Trucks, Model Years 2008-11, Docket No. NHTSA-2005-22223 (Nov. 29, 2005); Insurance Institute for Highway Safety, Comment on Reform of the Automobile Fuel Economy Standards Program, Docket No. NHTSA-2003-

before congressional committees considering changes in the federal fuel economy standards regarding the potential implications of more stringent fuel economy standards on motor vehicle safety.[2] In addition, the Institute's President, Adrian K. Lund, served on the National Academy of Sciences Committee to Review the Effectiveness and Impact of Corporate Average Fuel Economy Standards. Among other things, the Committee reviewed implications of existing and future fuel economy standards on motor vehicle safety.[3]

The Institute's supporters have a humanitarian and financial interest in reducing the deaths and injuries from motor vehicle crashes. Because the Institute is concerned that state regulations could increase the risk of serious

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16128 (Jul. 13, 2004).

[2] Hearing on CAFE Standards Before the Senate Comm. on Commerce, Sci. & Transp., 107th Cong. (Jan. 24, 2002) (statement of Adrian K. Lund, Ins. Inst. for Highway Safety). On the web at www.iihs.org/laws/testimony/pdf/testimony_akl_012302.pdf. See also, Hearing on Safety & Fuel Economy Before House Comm. on Commerce, Subcomm. on Energy & Power, 104th Cong. (Jul. 24, 1995) (statement of Brian O'Neill, President, Ins. Inst. for Highway Safety); Hearing on Proposals to Increase Fuel Economy Before House Comm. on Energy & Commerce, Subcomm. on Energy & Power, 102nd Cong. (Apr. 17, 1991) (statement of Brian O'Neill, President, Ins. Inst. for Highway Safety); Hearing on Fuel Economy and Safety Before House Comm. on Energy & Commerce, Subcomm. on Energy & Power, 101st Cong. (Oct. 1, 1990) (statement of Brian O'Neill, President, Ins. Inst. for Highway Safety).

[3] National Academy of Sciences, Effectiveness and Impact of Corporate Average Fuel Economy (CAFE) Standards, 24, National Academy Press

injury in motor vehicle crashes, it supports the Appellants in this case.

Summary of Argument

The preemption doctrine exists to protect national standards from interference from state and local authorities. It guarantees business that it will be accountable to one authority with respect to matters the federal government has seen fit to regulate. From a public health perspective, because health and safety problems do not respect political boundaries, the preemption doctrine is critical to their solution through the uniform application of health and safety regulations. Most important with respect to this case, if it were not for preemption, the difficult decisions about balancing competing national interests would be made through a haphazard patchwork of conflicting law.

The Institute's position is that the laws of physics limit both the gains that can be made using current technology to improve air quality and our efforts to protect people in crashes. Crash safety should be a consideration in how the balance is struck between programs to improve air quality and protect people in crashes. Physics dictates that vehicle weight and size will always matter in a crash. Researchers in the private, public, and nonprofit sectors have demonstrated the relationship between vehicle size and weight

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(2002). On the web at www.nap.edu/openbook.php?isbn=0309076013.

and crash injuries. Simply put, Vermont's regulation encourages production of smaller, lighter vehicles which will lead to increased traffic fatalities.

ARGUMENT

I. Public Health Requires a National Energy Policy that Considers Vehicle Safety and Energy Savings

A. *Background*

This case is about the impacts of motor vehicles on public health. It involves striking a balance between programs to improve the quality of the air and programs to reduce deaths and injuries resulting from vehicle crashes. These are national problems requiring national solutions.

In 1966, Congress enacted the National Traffic and Motor Vehicle Safety Act[4] which created the predecessor of the current National Highway Traffic Safety Administration (NHTSA) and tasked it with adopting and enforcing national standards to reduce the deaths and injuries resulting from motor vehicle crashes. For decades, the Institute has been studying the effects of the Federal Motor Vehicle Safety Standards (FMVSS) and it has been in the forefront of efforts to push the envelope on crash safety technology on all fronts. Some of the most significant recent improvements in vehicle crashworthiness have been the result of Institute crashworthiness evaluations that are published widely and have encouraged manufacturers to

compete aggressively in the safety marketplace. In the mid 1990s, when the Institute began evaluating frontal crashworthiness, about half of the 80 vehicles that were tested earned marginal or poor ratings. More were rated poor than good. Manufacturers responded by changing the designs of their vehicles to improve frontal crashworthiness. The result has been a turnaround in the frontal ratings. By 2006 eighty-eight of the 106 then current passenger vehicle designs the Institute evaluated earned good ratings. None received a poor rating, and only two of the 106 designs were rated marginal. This is the result of voluntary decisions made by manufacturers, not government regulation.[5] If manufacturers are forced to make fuel economy their highest priority, they will not be able to continue to compete aggressively to improve vehicle crashworthiness.

Congress addressed the air pollution problem in 1970 with the Clean Air Act.[6] Subsequent amendments specifically allow California to regulate the level of air pollutants generated by motor vehicles. Furthermore, if the

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[4] 15 U.S.C. 1381 *et seq.*

[5] NHTSA has noted that, "there are several safety improvements being made voluntarily. Some of these are for marketing purposes and others are to do better on government or insurance industry tests involving vehicle ratings. Likely voluntary safety improvements will add 11.75 pounds or more (5.34 kg or more) compared to MY 2003 installations." Light Trucks, Average Fuel Economy; Model Years 2008-2011; Proposed Rules, 70 *Fed. Reg*. 51414, 51453 (Aug. 30, 2005).

Environmental Protection Agency approves, the Clean Air Act allows other states to adopt air pollution standards identical to the California standards.

In response to the Arab oil embargo of 1973-74, in the following year, Congress passed the Energy Policy Conservation Act (EPCA),[7] establishing minimum requirements for corporate average fuel economy (CAFE). CAFE is the sales weighted average fuel economy (miles per gallon) of a manufacturer's fleet of passenger vehicles and light trucks in any given model year. NHTSA also administers the CAFE program.

Since the 1970s, vehicle manufacturers have been reducing the size and weight of their vehicles to save fuel consumption thereby offsetting the higher fuel consumption of their larger vehicles. Vehicle downsizing has compromised safety because in most cases, smaller and lighter vehicles are less protective of their occupants than larger, heavier vehicles. Research by NHTSA and the Institute demonstrating the adverse safety consequences of downsizing vehicles to improve fuel economy has played an important role in subsequent legislative and regulatory deliberations on proposed changes to the CAFE standard.[8]

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[6] 42 U.S.C. 7544(2).
[7] 49 USC 32901-19.
[8] Average Fuel Economy Standards for Light Trucks Model Years 2008-2011; Final Rule, 71 *Fed. Reg*. 17565, 17574 (Apr. 6, 2006).

In this case, the court will decide whether the EPCA's preemption provision applies to state regulation of greenhouse gas emissions. Because carbon dioxide is a byproduct of burning gasoline, a greenhouse gas standard is a *de facto* fuel consumption standard. By placing CAFE standards under the authority of the Secretary of Transportation, with the express mandate to adopt fuel economy standards taking into consideration "the effect of other motor vehicle standards of the Government on fuel economy,"[9] Congress ensured that safety would not be left out of the fuel economy debate.

In effect, the California standard that Vermont has adopted has made an end run around the CAFE standard. This is particularly troublesome because it did so without any consideration of implications for motor vehicle safety.[10] The Vermont regulation will encourage the production, sale, and use of significantly smaller and lighter vehicles than would be needed to meet the federal CAFE standards. An inevitable consequence will be an increase in motor vehicle crash deaths and injuries. The decision to solve the emissions problem by sacrificing gains made in highway safety

[9] 49 U.S.C. 32902(f).
[10] California Air Resources Board, Peer Review by Joseph M. Norbeck; Shulock Dep. 258:18 - 259:7; 263:2 - 263:20.

is one that should be made at the national level by those accountable to citizens of every state.

It is ironic that Vermont and other states are adopting emissions standards that will perpetuate incentives for manufacturers to downsize vehicles thereby compromising safety just as NHTSA has abandoned an overall average fuel economy standard in favor of a vehicle-attribute standard that separates fuel economy and safety. Under the original CAFE regulations, manufacturers used new fuel efficiency technologies to boost horsepower while downsizing to meet their corporate average fuel consumption targets, actions which adversely affected vehicle safety. Under NHTSA's new vehicle-attribute standard, the agency has indexed the fuel economy requirements to the size of the vehicle, so that manufacturers cannot comply simply by selling more small vehicles. The Reformed CAFE also encourages manufacturers to use engine technology to increase fuel economy instead of horsepower. The emissions standards imposed by California and Vermont do not take safety into consideration and will undermine the federal attribute based fuel economy standard that is designed to promote fuel economy and vehicle safety.

B. *The Physics of Crashes*

A key determinant of a vehicle's fuel consumption is its weight, which in turn is related to vehicle size. Lightweight vehicles are small vehicles. Thus, because fuel consumption is related to vehicle weight, it is related also to size. Light/small vehicles consume less fuel than heavy/large vehicles, but they also provide less occupant protection in crashes.[11]

To illustrate the role of vehicle weight in the physics of crashes, consider a head-on collision between two cars. If the two vehicles are of unequal weights, the heavier vehicle will drive the lighter vehicle backward during the crash. Thus, in a head-on collision when both vehicles are traveling at 30 mph and one vehicle weighs twice as much as the other, the passenger compartment of the lighter vehicle will be decelerated from 30 to 0 mph and then accelerated backward to 10 mph. The sudden speed change during the crash will be 40 mph for the lighter vehicle, but the heavier vehicle will experience a speed change of only 20 mph. Because of the greater speed change, the occupants of the lighter vehicle will experience

[11] B. O'Neill, The Physics of Car Crashes and the Role of Vehicle Size and Weight in Occupant Protection, 12 Physical Med. & Rehab.: St. of the Art Revs. 23 (Feb. 1998).

much higher forces than the occupants of the heavier vehicle and, therefore, will be exposed to a greater injury risk.[12]

Vehicle weight plays a protective role not only in crashes with other vehicles but also in many single-vehicle crashes. This is because when heavier vehicles strike a roadside obstacle, they are more likely to deform or move the obstacle than lighter vehicles. As a result the heavier vehicles will decelerate less rapidly, so their occupants will be less likely to be injured.[13]

Separate and apart from weight, vehicle size also is an important factor in occupant safety. Larger vehicles typically have more exterior structure, and this structure plays an important role in occupant protection by acting as "crush space," buckling and bending to absorb the crash energy, thereby allowing restrained occupants to be decelerated within their compartments, or "safety cages," which need to be strong. Longer crush spaces allow occupant compartments to decelerate at lower rates, reducing the crash forces that reach those within. Thus, larger exterior vehicle dimensions are important factors in protecting people in a crash.

[12] *Id.*

[13] National Academy of Sciences, note 3, *supra*.

II. Decreases in vehicle size and weight adversely affect safety

A. *Compliance with federal safety standards does not eliminate make/model differences in crashworthiness.*

There is a common misperception that because all vehicle manufacturers are held to the same federal motor vehicle safety standards, new vehicles are comparable with respect to safety. Federal motor vehicle safety standards do not make all vehicles equally safe. As long as vehicles differ in weight and size, physics dictates that there will be differences in crashworthiness. Even though modern vehicles have many more safety features and are designed to meet more stringent federal motor vehicle safety standards than vehicles made in the 1970s, the fatality rates for small cars are still more than double the rates in large cars.[14]

B. *Both projected and actual death rates increase as vehicle size and weight decrease.*

Due in part to the federal fuel economy standards, vehicles in 1993 were, on average, 700 pounds lighter than they were in 1976, and light-duty trucks were 300 pounds lighter. A 1997 NHTSA report estimated that each 100-pound decrease in car weight was associated with a 1.13 percent

[14] The rate for vehicles weighing between 3,500 and 4,000 lbs. was 93 deaths per million registered vehicles in 1995-99 models for calendar years 1996-2000. The comparable figure for vehicles weighing less than 2,500 lbs. was 181 (Analysis on file with Ins. Inst. for Highway Safety).

increase in fatality risk in crashes in calendar year 1993.[15] That report was superseded by a new report in 2003.[16] (NHTSA found methodological problems with the 1997 study that resulted in consistent underestimation of the adverse safety impact of downsizing.)[17]

For the 2003 report, NHTSA looked at model year 1991-99 vehicles during calendar years 1995-2000. Using registration and crash data, NHTSA calculated the crash fatality rates per billion miles by vehicle weight, vehicle type, driver age and gender, location (urban/rural), and other vehicle, driver, and environmental factors. It found that for the lighter light trucks and vans (LTVs), heavier cars, and especially lighter cars, fatality rates increased as weights decreased. Table 1 summarizes NHTSA's findings with respect to death rates per billion miles by vehicle size, 1996-99 models during 1996-2000.

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[15] NHTSA, Relationships between Vehicle Size and Fatality Risk in Model Year 1985-93 Passenger Cars and Light Trucks, NHTSA Publication DOT HS 808 570 (1997).

[16] NHTSA, Vehicle Weight, Fatality Risk and Crash Compatibility of Model Year 1991-99 Passenger Cars and Light Trucks, NHTSA Publication DOT HS 809 662 (2003).

[17] *Id*. at vii.

Table 1. Death rates by body style

Body style	Size	Curb weight range (lbs.)	Death rate
Cars 4-door	Very small	1,950-2,274	11.6
	Small	2,208-2,878	7.8
	Midsize	2,566-3,567	5.3
	Large	3,035-4,819	3.3
Minivans		3,354-4,819	2.8
SUVs 4-door	Small	2,636-3,437	5.7
	Midsize	3,476-4,484	6.7
	Large	4,332-5,899	3.8
Pickups	Lighter	2,625-4,178	6.8
	Heavier	3,404-5,268	4.1

NHTSA also recalculated its 1997 estimation of the likely consequences in the event of a crash of reducing the unladen weight of different classes of vehicles by 100-lbs. and found the downsizing would cost from about 250 to 1,500 lives per year (as much as twice that many fatalities if the reduction were 200-lbs.). Occupants of the lightest vehicles would bear the largest share of the increases in fatalities. A 100-lb. reduction in the weight of the lightest cars would result in 226 to 715 more deaths each year. However, reducing the heaviest SUVs and pick up trucks by 100 lbs. might not increase crash deaths, and could even reduce them by making them less aggressive and therefore less likely to kill occupants of the

vehicles they strike. Table 2 shows NHTSA's estimated changes in the numbers of driver deaths during 1999 if vehicles had been 100 lbs. lighter.

Table 2. Effect on fatalities of downsizing by 100 lbs.

Body style	Curb weight (lbs.)	Change in deaths (+/-)
Cars 4-door	Lighter than 2,950	+226 to +715
	2,950 or heavier	+129 to +303
SUVs, pickups, vans	Lighter than 3,870	+59 to +296
	3,870 or heavier	-156 to +241
All vehicles		+258 to +1,555

NHTSA's researchers calculated death rates for vehicles involved in fatal crashes using as its measure all deaths in fatal crashes per billion miles traveled. (NHTSA's rates included all occupants of vehicles involved in single and multiple vehicle crashes and all pedestrian deaths.) Institute researchers calculated death rates using a different measure with similar results. The Institute calculated vehicle death rates by make/model for drivers using driver deaths per million registered vehicle years. A "registered vehicle year" is one vehicle registered for a full year. Tables 3 and 4 compare vehicles with the lowest driver death rates and the highest driver death rates, respectively. Death rates are shown for various crash configurations (multiple vehicle, single vehicle, and rollover) along with an

Table 3. Lowest Rates of Driver Death

Fewer than 20 deaths/million registered vehicle years, 2001-04 models, CY 2002-05

			driver death rate by crash type			
			overall	multiple vehicle	single vehicle	rollover
Chevrolet Astro	minivan	very lg.	7	4	4	4
Infiniti G35	luxury car	midsize	11	7	3	0
BMW 7 series	luxury car	very lg.	11	4	7	0
Toyota 4Runner	4WD SUV	midsize	13	4	8	8
Audi A4/S4 Quatro	4 door car	midsize	14	9	4	4
Mercedes E class	Luxury car	large	14	5	9	5
Toyota Highlander	4WD SUV	midsize	14	9	5	5
Mercedes M class	4WD SUV	midsize	14	10	5	0
Toyota Sienna	minivan	very lg.	17	4	13	4
Honda Odyssey	minivan	very lg.	17	8	8	4
Lexus ES 330	luxury car	midsize	18	8	11	6
Lexus RX 330	2WD SUV	midsize	18	15	3	0
Toyota Sequoia	2WD SUV	large	18	7	11	0
Honda Pilot	4WD SUV	midsize	19	7	14	6
BMW X5	4WD SUV	midsize	19	8	11	9

overall death rate for the crash configurations combined. The overall driver death rates for the midsize and large vehicles shown in Table 3 range from 11 to 19 deaths per million registered vehicle years. None of the 15 vehicles with the lowest driver death rates were mini or small models.

As shown in Table 4 on the following page, the fatality rates for the worst 16 vehicles in the Institute study ranged from a high of 232 to a low of 146 deaths per million registered vehicle years. Eleven of the 16 vehicles with the highest driver death rates were small cars, and none were large or very large.

Table 4. Highest Rates of Driver Death

More than 140 deaths/million registered vehicle years, 2001-04 models during CY 2002-05

			driver death rate by crash type			
			overall	multiple vehicle	single vehicle	rollover
Chevrolet Blazer 2 dr	2WD SUV	midsize	232	83	151	134
Acura RSX	2 door car	small	202	80	113	65
Nissan 350Z	Sports car	midsize	193	65	123	74
Kia Spectra hatchback	4 door car	small	191	128	57	41
Pontiac Sunfire	2 door car	small	179	100	77	40
Kia Rio	4 door car	mini	175	105	68	35
Chevrolet Cavalier	2 door car	small	171	93	76	45
Mitsubishi Eclipse	2 door car	small	169	76	94	37
Dodge Neon	4 door car	small	161	107	49	26
Pontiac Grand Am	2 door car	midsize	160	89	65	35
Chevrolet Cavalier	4 door car	small	150	82	68	35
Ford Mustang	sports car	midsize	150	67	83	42
Ford Ranger	4WD pickup	small	150	42	106	77
Mazda B series	2WD pickup	small	147	48	95	78
Mitsubishi Eclipse convertible	sports car	small	146	53	93	33
Mitsubishi Montero Sport	2WD SUV	midsize	146	40	112	75

Table 5 shown on the following page presents the same data grouped according to vehicle body style, and by size within each style. The pattern is unmistakable. There is an inverse relationship between driver death rates and vehicle size in almost every grouping. For example, the driver death rate for the lightest SUVs is much higher than in the heaviest ones (131 compared to 47 driver deaths per million registered vehicle years).

Table 5. Driver death rates by body style group and by size

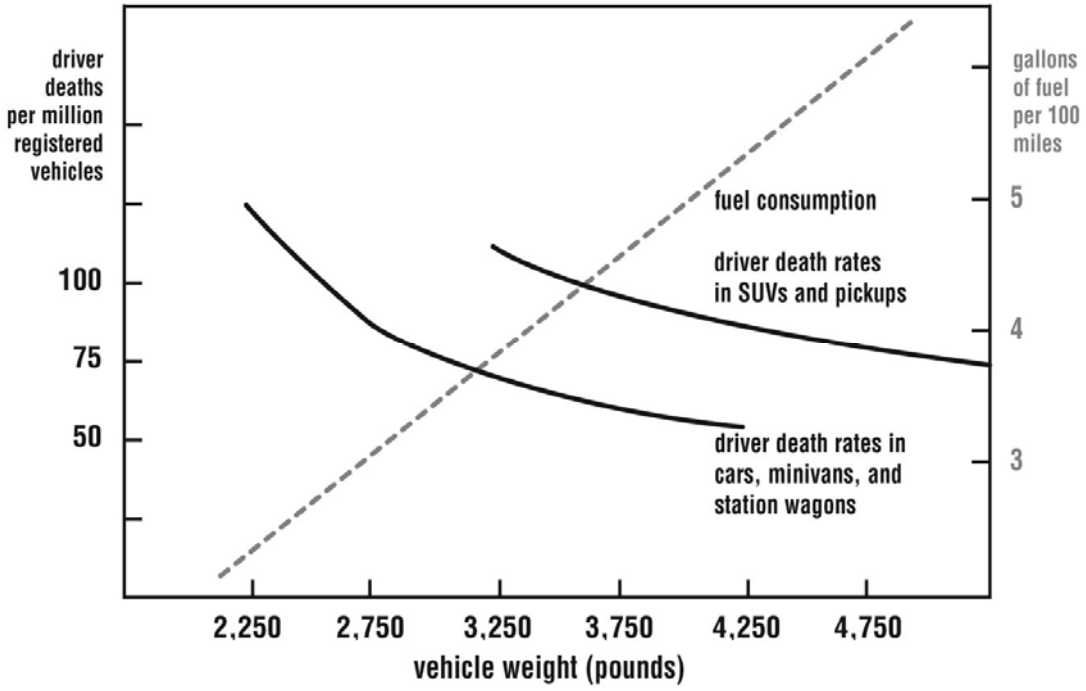
		overall	multiple vehicle	single vehicle	rollover
Cars (4 door)	mini	148	92	55	32
	small	103	61	42	20
	midsize	71	41	30	14
	large	81	53	27	13
	very large	61	43	19	3
Cars (2 door)	mini	137	75	61	48
	small	134	65	68	37
	midsize	103	50	52	26
Sports cars	mini	107	54	54	26
	small	71	23	48	15
	midsize	115	51	64	31
	large	41	13	28	16
Luxury cars	midsize	33	17	16	6
	large	41	24	17	4
	very large	34	15	19	10
Specialty cars	small	50	37	11	6
Station wagons	small	87	48	38	23
	midsize	51	24	28	12
	large	99	83	11	4
Minivans[18]	large	66	44	21	9
	very large	39	25	14	8
SUVs 4WD	small	77	34	43	29
	midsize	59	20	40	28
	large	47	16	33	23
	very large	76	21	57	47
SUVs 2WD	small	76	40	37	23
	midsize	81	32	51	38
	large	57	20	39	34
Pickups 4WD	small	97	33	64	42
	large	83	27	57	38
	very large	89	19	70	53
Pickups 2WD	small	110	50	59	37
	large	102	38	66	40
	very large	60	23	37	24

The Institute has also factored fuel economy directly into its analyses. Figure 1 illustrates the relationships among driver deaths, vehicle weight,

[18] The Institute classifies minivans, which typically are built on modified car

and fuel consumption for 1999-2003 model passenger vehicles during 2000-2004.[19] The lightest vehicles have the lowest fuel consumption and the highest death rates. Heavier vehicles have lower death rates and consume more fuel per mile, but the safety benefits of the added weight diminish as

Figure 1. Vehicle weight, driver deaths, and fuel consumption



vehicles get heavier and heavier (but fuel consumption continues to increase).

platforms, as cars rather than trucks.

[19] The driver death rates are adjusted to account for some differences in vehicle use patterns and driver demographics may account for some of the death rate differences.

The optimum fleet mix to enhance safety would include fewer of the heaviest vehicles and fewer of the lightest ones.[20]

It is important to note that the fatality rates by vehicle weight shown in Figure 1 are the overall risks, not just the risks after a crash has occurred. This is important because it is sometimes claimed that small cars can avoid crashes better than larger cars because they are more maneuverable. Fatalities per registered vehicle, as shown in the figure, include both the likelihood and the consequences of involvement in serious crashes.

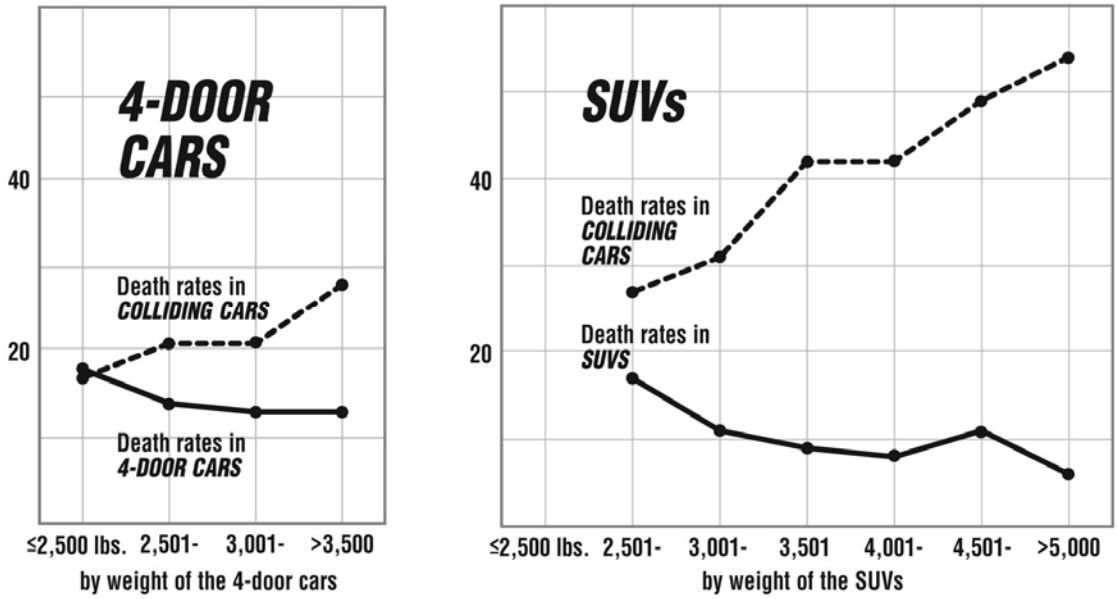
C. *Large disparities in size and weight of vehicles increase the risk of death in multiple vehicle crashes.*

To address the extent to which various vehicle types and sizes contribute to crash incompatibilities and how this problem has changed over the years, Institute researchers computed deaths per million registered vehicle years in collisions involving two vehicles by vehicle type and weight. Figure 2 on the following page shows rates for 1999-2002 model 4-door cars and SUVs during 2000-03 and deaths in the cars with which they collided (all model years). Data are from the federal government's Fatality Analysis Reporting System, and registration counts are from The Polk Company.

[20] NHTSA Final Rule at 17574, note 8 *supra*.

As vehicle weight increased for four-door cars and for SUVs, the deaths in the vehicles with which they collided rose steeply. To evaluate the

Figure 2. Fatal Two-Vehicle Crashes



relationship between vehicle weight and fatalities in two-vehicle crashes over time, the Institute looked at deaths in cars (all model years) that crashed with four-door cars, SUVs, or pickups, per million registered years of each vehicle type, for 1989-92 models and for 1999-2002 models during calendar years 2000-03. Although in virtually every vehicle type and weight category occupant death rates were lower during 2000-03 than a decade earlier, as weights increased for each class of vehicle, the death rates for occupants in the vehicles with which they collided raised dramatically.[21]

[21] Insurance Institute for Highway Safety, 40 *Status Report* 5: 4-5, April 28,

The emission standard is becoming even more stringent. California will require that vehicles meet an emissions standard that would require manufacturers to achieve 50 miles per gallon by the year 2020.[22] When Vermont and other states follow California's lead, it will further encourage manufacturers to meet these requirements by significantly reducing vehicle size and weight. The new car fleet will have increasingly larger proportions of small, and very small vehicles that have very high death rates.

The parties do not dispute that significantly more stringent emission standards will add to the cost of vehicles and result in consumers delaying the purchase of newer vehicles.[23] Consequently, the vehicle compatibility problem will get worse as the disparity between the heaviest and lightest vehicles continues to grow as lighter vehicles are introduced to the fleet faster than larger vehicles are being replaced.

2005. On the web at www.iihs.org/sr/pdfs/sr4005.pdf.

[22] California Air Resources Board, Comparison of Greenhouse Gas Reductions for the United States and Canada under U.S. Café Standards and California Air Resources Board Greenhouse Gas Regulations, at 10, California Air Resources Board (February 25, 2008). On the web at www.arb.ca.gov/cc/ccms/reports/pavleycafe_reportfeb25_08.pdf.

[23] See for example, testimony of David Harrison, trial transcript, Vol. 5-A, 90 ff. (Apr. 19, 2007).

III. State emission regulations will undermine the benefits of NHTSA's reformed CAFE standard.

NHTSA is the agency tasked with establishing target national fuel economy and safety standards for manufacturers. Two of the four most pressing problems in auto safety identified by NHTSA in 2002 were vehicle rollover and vehicle compatibility. A 2003 NHTSA report identified strategies for addressing these problems. Both reports stressed the importance of CAFE reform to reduce the incidence of rollover and crash fatalities resulting from vehicle incompatibilities.

> The current structure of the CAFE system can provide an incentive to manufacturers to downweight vehicles, increase production of vehicle classes that are more susceptible to rollover crashes, and produce a less homogenous fleet mix. As a result, CAFE is critical to the vehicle compatibility and rollover problems.[24]

NHTSA announced as its goal to "identify and implement reforms to the CAFE system that will facilitate improvements in fuel economy *without compromising motor vehicle safety* or American jobs." (Emphasis added.) The final Reformed CAFE standard ties fuel economy standards to specific market segments, replacing the single standard that made it possible for manufacturers to offset larger, low mileage vehicles with smaller, lighter,

[24] NHTSA, Initiatives to Address Vehicle Compatibility (June 2003). On the web at www. nrd.nhtsa.dot.gov/departments/nrd-11/aggressivity/IPTVehicleCompatibilityReport/.

high mileage vehicles. The result will be across-the-board increases in fuel economy with far less incentives to downsize. The Vermont regulation will maintain the incentive for manufacturers to downsize and increase the disparity in the vehicle mix and compromise occupant protection in crashes.

Permitting states to adopt a regulatory scheme for emissions that perpetuates a *de facto* single fuel economy standard is not only inconsistent with the federal Reformed CAFE standard, but undermines it. The Reformed CAFE standard represents a thoughtful balancing of manufacturers needs to operate under a consistent set of rules, their need to respond to consumer demand, and the public's need for safe transportation that does not waste limited fuel resources.

Furthermore, Congress has endorsed NHTSA's vehicle attribute system throughout the vehicle fleet by allowing NHTSA to adopt it for passenger vehicles.[25]

Conclusion

Motor vehicle regulations that encourage manufacturers to reduce vehicle weight or sell more lightweight vehicles will result in additional deaths and injuries in motor vehicle crashes, and will undermine the

[25] Energy Independence and Security Act of 2007, Pub. L. 110-140, 121 Stat. 1492.

significant improvements that have occurred over the past three decades in crashworthiness as a result of improved federal safety standards and voluntary efforts by manufacturers.

Respectfully submitted,

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