



November 5, 2004

Mr. Chuck Shulock
AB 1493 Draft Adopted Comments
California Air Resources Board
P.O. Box 2815
Sacramento, California 95812

**Comments on the California Air Resources Board's
October 19, 2004, Notice of Public Availability of Modified Text,
Attachment II: Additional Supporting Documents and Information**

Dear Mr. Shulock:

Public Citizen welcomes this opportunity to provide the California Air Resources Board (CARB) with additional comments on the adopted regulations for motor vehicle greenhouse gas (GHG) emissions.

CARB has demonstrated leadership and vision with these new standards. While the federal government has ignored the need to prevent global warming, CARB has carefully formulated a regulatory standard to significantly reduce GHG tailpipe emissions over a reasonable timeframe. We also laud the California legislature for passing the landmark legislation in 2002, AB 1493, on which this regulatory proposal is based, and we hope that Gov. Schwarzenegger stands by his pledge to defend this proposal.

We can provide a unique and highly credible perspective on the vehicle safety implications of the regulation. Public Citizen is a national non-profit public interest organization with over 150,000 members nationwide. We represent consumer interests through lobbying, litigation, regulatory oversight, research, and public education. Under the leadership of our President, former National Highway Traffic Safety Administration (NHTSA) head Joan Claybrook, Public Citizen has worked for decades to improve motor vehicle safety by lobbying Congress to pass critical legislation, monitoring the Department of Transportation to be sure it carries out the will of Congress, conducting public awareness campaigns on critical issues, and participating in lawsuits to force government action when necessary. Often, in our experience, whether the issue is rollover safety or air bags, the auto industry wages what the Supreme Court called in a landmark air bags case, the "regulatory equivalent of war"¹ against improvements in safety standards.

In our comments, we make the following points for CARB's consideration:

- Weight is not a good predictor of a vehicle's safety. As shown by the high death rates in light trucks and their infliction of greater violence upon occupants in other vehicles: greater mass does not result in greater safety, particularly from a societal perspective;
- The wide range in safety outcomes among vehicles of similar type or weight demonstrates the overwhelming significance of differences in safety design for survival rates;
- Unlike the Wenzel and Ross paper, many studies on the issue confound the effects of vehicle weight with vehicle size and safety design. The importance of the 2003 technical report by NHTSA researcher Charles Kahane is greatly diminished by that study's failure to distinguish make/model design differences and its confusion that weight is a correlate to, rather than a cause of, its safety-related outcomes;
- The hypothetical weight reductions studied by Kahane are arbitrary and without an historical basis; and
- The rebound effect that would allegedly occur as a result of the new emissions standard is unlikely to have significant safety implications.

Wenzel and Ross Study Demonstrates that Vehicle Size and Design, Not Weight, Are Critical to Safety

Public Citizen would like to focus specifically on one of the supporting documents listed in Attachment II of the October 19 notice by Tom Wenzel, of Lawrence Berkeley National Laboratory, and Marc Ross, of the University of Michigan, *The Effects of Vehicle Model and Driver Behavior on Risk*.² The paper demonstrates that weight is not a good predictor of a vehicle's safety. Wenzel and Ross indicate that vehicle size and design, not weight, are the critical factors.

In the paper, Wenzel and Ross conclude that their results are robust despite differences in driver behavior and driving conditions. The authors observe: "Much has been made in the past about the high risk of low-mass cars in certain kinds of collisions. We find there are other plausible explanations for this pattern of risk, which suggest that *mass may not be fundamental to safety*."³ (Emphasis added.)

This is important because a myth now in circulation is that the new CARB regulations on vehicle GHG emissions will compel automakers to reduce the weight of the vehicles they produce. This claim has no basis in fact. CARB has laid out clear and extraordinarily comprehensive technology packages for all vehicles, including SUVs and pickups, to meet the proposed standard without adjusting weight, as required by law. The Wenzel and Ross paper indicates that *even if* automakers reduced the weight of vehicles, it would not increase highway fatalities. Were automakers to reduce the weight of their vehicle fleets, it would be most cost-effective for them to take weight out of their largest vehicles — large SUVs and pickups — which would improve safety because these vehicles, as Wenzel and Ross demonstrate, tend to be the most rollover-prone and aggressive vehicles on the road. Wenzel and Ross show a wide variety of safety within vehicle types depending on make model design, and they prove that more

massive vehicles are not inherently safer than less massive vehicles — in fact, heavier vehicles are often more dangerous.

Greater Mass Does Not Improve Safety

Greater vehicle mass clearly does not correspond with superior safety, according to the Wenzel and Ross analysis. In general, driving an SUV poses about the same risk to the driver as driving a passenger car: “[SUVs] are not safer for their drivers than cars, in spite of the popular belief that weight increases safety.”⁴ According to Wenzel’s and Ross’s study, the safest SUVs are still not as safe to their drivers as the safest cars and minivans. Moreover, most compact and one-ton pickups are more risky to drive than the majority of cars and SUVs.⁵

The rollovers are a major source of unnecessary SUV and pickup driver deaths. Most SUVs and all pickups have body-on-frame designs, leaving them with a high center of gravity and narrow track width — a recipe for disaster when it comes to rollover risk. In 2002, an appalling 70 percent of deaths in SUVs in California occurred in rollover crashes, while half of fatalities in pickup trucks involved rollovers. That compares to only a quarter of passenger car fatalities being attributable to rollovers. Light truck rollover fatalities in California total well over 500 deaths annually.⁶

SUV and Pickup Aggressivity Is a Major Source of Highway Carnage

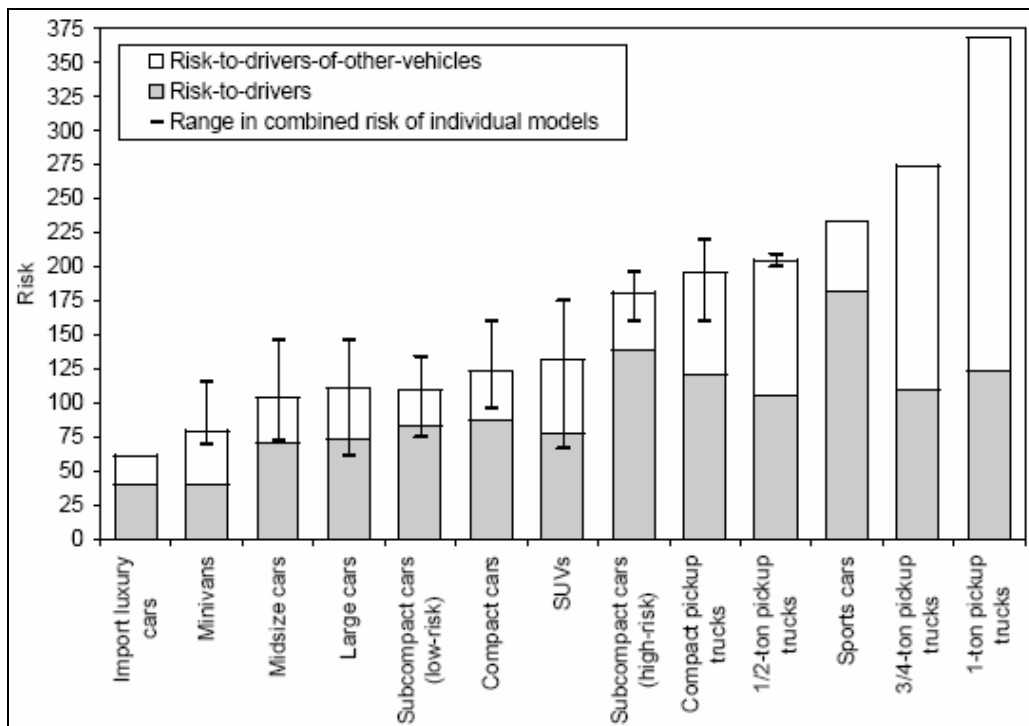
Not only are more massive vehicles like SUVs and pickup trucks not safer than passenger cars, but they are exceptionally destructive in crashes with other vehicles. The high bumper, stiff frame and steel-panel construction of light trucks override crash protections of other vehicles, and the steel-beam truck chassis can puncture struck passenger cars like fork tines. Manufacturers have for years unblinkingly faced the carnage inflicted on other motorists from light trucks’ high bumpers and rigid frames, building ever-more heavy and terrible SUVs over time and marketing them militaristically, such as with ads calling the Lincoln Navigator an “urban assault vehicle.” In fact General Motors’ new Hummer is a direct adaptation of a military vehicle.

SUVs and pickups were never designed to be as safe as cars. Cars are designed as one frame, a “unibody,” or steel lattice that is lightweight, yet safe, for occupants and others on the road. The form crushes inward in a predictable manner, absorbing energy so that occupants and others are saved from the gravitational forces expended in a crash. In contrast, the body-on-frame construction used for most SUVs and all pickup trucks uses long, stiff, steel rails which act as battering rams in a crash and do not absorb energy well. For every Ford Explorer driver saved in a two-vehicle crash because that driver chose an Explorer over a large car, five drivers are killed in vehicles hit by Explorers.⁷

Wenzel’s and Ross’s analysis indicates that the most popular SUVs are almost twice as deadly in two-vehicle crashes as passenger cars. Moreover, heavy pickup trucks are far and away the most harmful passenger vehicles on the road. And risk to other drivers only increases as pickup truck weight increases.⁸ In fact, Wenzel and Ross found, shockingly, that the average 1-ton pickup truck kills ten times more people in other vehicles than an average Camry. When

the risk light trucks pose to others on the road is added to their already at-best average level of risk to their own drivers, SUVs and pickup trucks stack up poorly in comparison to most passenger cars (see **Figure A**). Moreover, the aggressivity of light trucks compromises the safety of passenger vehicles and makes cars appear less safe than they would be in a vehicle fleet less populated with SUVs and pickups. Wenzel and Ross conclude that, just among cars, “models driven in the U.S. exhibit widely different levels of risk-to-driver, ranging over a factor of five, and of risk-to-others, ranging over a factor of two.”⁹

Figure A: Combined Risk-to-Drivers and Risk-to-Drivers-of-Other-Vehicles, by Vehicle Type



Source: Wenzel and Ross, at 32.

The Wide Range in Safety among Vehicles of Similar Type or Weight Demonstrates the Significance of Differences in Make/Model Safety Design

Not only does the Wenzel and Ross paper show that more vehicle mass does not mean greater safety, but the analysis is even more precise and shows that within broad vehicle categories — SUV, minivan, midsize car, compact pickup, etc. — there is a wide variety of risk, both in terms of the vehicle driver’s safety and the safety of other drivers in the case of a two-vehicle crash (see **Figure B**).

For example, some of the most dangerous