

September 19, 2003

Dr. Jeff Runge
Administrator
National Highway Traffic Safety Administration
U.S. Department of Transportation
400 Seventh St. SW
Washington D.C., 20590-7938

Re: Initiatives to Address Safety Belt Use
NHTSA-2003-14620

Dear Dr. Runge:

It is fair to say the majority of Americans believe that people taking normal precautions--those simply going about the business of life--ought not to die from sudden violent death and suffer serious injury. Our role in public health is to see that Americans are provided a reasonably safe environment and tools that make lifesaving choices more likely.

Just as different architecture in the World Trade Center Towers might have saved many more victims, engineering can save more victims on our highways. Every year, more than 14 times the number of victims of the September 11 attacks die on our highways, and more than three million suffer serious injuries that are costly to the victims and to American citizens in general. Though the public may not grasp the magnitude of the rolling war zone out there, we know you do.

In the search for weapons of mass preservation, however, we would argue that NHTSA needs to add to and reprioritize the artillery rolled out in the new Safety Belt Use Report. There are fundamental discriminations and gaps in the initiatives put forth.

A safety belt worn sounds like a tried and true fix--and it is, at least part of the time--if you're a male of average build, the 50th percentile male, and seated in a vehicle's front seat. It's unfortunate, however, that our existing federal standards for occupant safety do not consider the restraint system as a whole--a unified, systems engineering approach.

An occupant should be protected in a crash by a comprehensive, systems approach to restraint design. Restraint systems have three basic functions: (1) to prevent occupant ejection from the vehicle; (2) to prevent or minimize the effects of secondary collisions, such as hitting something or someone else inside the car, and (3) to safely manage the energy of a crash imposed on the occupant. Within the automotive environment, a comprehensive occupant-restraint system must necessarily include the belt restraint, seat design, padding of interior components, and structural integrity of the occupant survival space, including roof, front, and side structures. Anything less is misleading, particularly for occupants who differ in size from the 50th percentile male.

The goal of NHTSA and the global automotive industry must be to extend "the vehicle design envelope to all road users in all accidents."

To this end, it is our opinion that at a minimum the following details must be added to the initiatives published on July 30 of this year:

Belt restraint-performance standards must be established to protect a child (and the small-statured adult) in all seat positions.

Why? Because the principle on which seat belts work is all about the geometry of fit in all three dimensions.

For example, we must look at the shoulder belt as it lies in the Y direction. How close is the shoulder belt to the neck? In the X direction, does the shoulder belt touch the chest or is there a gap? In the Z direction, does the shoulder belt rest on the shoulder or is it suspended some distance above the shoulder?

Fit is NOT just an indicator of comfort and use. It is a direct indicator of belt performance in crashes and the risk of death or catastrophic injury.

The federal standards as written are inadequate. Without requiring flexibility of appropriate fit for the full range of passengers--verified through performance testing--the present safety belts installed in American vehicles lack equitable efficacy. Indeed, the present standards translate to institutionalized discrimination.

In order to protect American youth--some four million born each year--plus the burgeoning numbers of senior drivers--most of whom will lose height and weight--it is appropriate and just that federal motor vehicle regulations be revamped. We need safety belt systems that protect different-size passengers equally in every seating position.

Back seat passengers, more often than not, are small-statured people, usually women or children. Yet apparently they are without equal protections as those riding in front for there is no rear seat crash testing. Front and rear occupant compartments must be designed to safely accommodate all travelers in all crashes. Anything less compromises the ability of a "safety" belt restraint to function safely. The problem of child "slouching" that has been reported in the literature is not the fault of the child or the parent; it is the responsibility of the auto manufacturer to provide a seat that safely accommodates such passengers.

Partial and full ejection of restrained occupants, particularly children and small-statured adults remains a significant problem, especially in rollover crashes. Thus, increasing use of currently available safety belts is necessary but insufficient to protect such occupants in rollovers. Advanced side glazing should be required all around the vehicle as standard safety equipment to enhance occupant retention.

Enactment of primary belt laws is linked to impressive statistics, e.g., lives saved in motor vehicle crashes. However, making primary laws without the accompaniment of systems-engineering solutions could backfire. We may climb in mortality improvements, but what of morbidity? Between safety belts' poor fit and the evisceration tendencies of lap belts, the quick fix of increased belt use may unfortunately have a cruel price tag in injury. Just as legislative initiatives examine economic costs of change, blanket laws such as these must be weighed against the price of pain. This is especially true for low-income folks, who may not have properly designed, adequately performing belt systems in their cars. Retrofitting responsibilities on the part of the auto industry and/or automotive dealers should be tied to primary belt laws, which would round out the law's good intentions.

The auto industry simply must take full responsibility for the safe transport of children in the vehicles they manufacture. The incompatibility between vehicle seats and existing after-market child seats, notwithstanding the "new" but imperfect LATCH system, continues to unacceptably compromise children. It is the responsibility of each and every automotive manufacturer to design, manufacture and sell a proper child passenger safety restraint system harmonized specifically for its own fleet of vehicles. Alternatively, the automotive

manufacturer must explicitly recommend (based on its own test data) the proper after-market restraint system for child passengers in their vehicles. Anything less is conscious disregard and negligence toward children riding in the automotive industry's vehicles.

In closing, we want to thank the integrated project team for its efforts to develop the 2003 seatbelt initiatives. The team's alarm about our nation's present state of affairs--our highway fatality and morbidity statistics--is loud and clear. But again we must reiterate that initiatives such as these must go beyond behavioral solutions. The near future must include engineered vehicular solutions, even if that means ordering the auto industry to put safety, particularly for children and other small statured occupants, at the top of its priorities.

The hindsight of the Twin Towers collapse showed that architectural flaws contributed to the loss of life, and we would argue that without question, vehicle design is contributing to the carnage on our highways. Engineering solutions already exist; they can be found in court records and the archives of the U.S. Patent and Trademark Office. These solutions are not rocket science; they can and must be implemented. It is critical, as champions of the driving American public, that NHTSA require standard auto-safety equipment to protect young and old, big and small alike. Equal protections are as much a part of the American way as mobility.

Sincerely,

Martha Warren Bidez, Ph.D.

and Autumn Alexander