

**Remarks of Jeffrey W. Runge, M.D.**  
**National Highway Traffic Safety Administration**

**3<sup>rd</sup> National Intelligent Vehicle Meeting**  
**Panel Presentation 6/25/03**

- Thank you Emil for the introduction.
- I have been given the job here today of painting the overall safety picture in America, of setting the stage for my colleagues on this panel.
- I will not only talk about how Americans are dying in epidemic numbers on our highways and what we are doing about that now, but I will also talk about how the Intelligent Vehicle Initiative will be the next frontier, offering solutions to save lives that we just don't have available to us today.
- The technologies that are under development will pick up where our current programs leave off, creating safer futures for all road users of tomorrow.
- But here is what we are dealing with now.
- President Bush has continued to stress that safety and security are his number one transportation priorities.
- The President and this Administration are committed to fostering the safest, most secure national transportation system possible, even as we seek to enhance mobility, reduce congestion, and expand our economy.
- These are completely compatible goals. Indeed, it is essential that the Nation's transportation system be both safe and secure while we are making our economy more efficient and productive.
- Our role at the Department of Transportation is to be safety advocates. We will not waiver from this role. This goes beyond my agency, and the Secretary has made sure that all of us understand this. Safety is something we have embraced across the board in all parts of the Department.
- All of us here, every one of us that you see here on this stage, share a commitment with you to enhance the safety and security of the American public, particularly when they are traveling on our nation's highways.
- The Secretary recently placed renewed emphasis on safety, charging our entire Department with working toward a common goal: a reduction in motor vehicle highway fatalities. He said:

“For the past year and a half we have dedicated ourselves to improving transportation security for Americans. Faced with the scourge of terrorism our Department responded by creating unprecedented partnerships with the private sector, with Congress, and other groups and federal agencies.

Together we succeeded in decreasing the dangers of terrorism through new and better technology, necessary personnel, improved laws, and increased education.

Well, we are going to do the same thing with car crashes. More than 42,000 Americans dying each year and millions more injured are statistics we will not let stand. This year we are going to take the same passion, call on the same partnerships, and build the same record of success through enforcement, education, and engineering. Why? Because we can – and we will.

(So), I am giving another mandate to my Department: dramatically reduce the number of Americans killed or injured in car crashes.”

- And you can believe it. The Secretary backs up what he says. This is not just lip service. President Bush and Secretary Mineta have made reducing highway fatalities a priority for the Department and for the reauthorization of TEA-21.
- Let me be clear about this: This is not just about cars, it’s not just about trucks, or pavement, or guardrails, or rumble strips, or high speed trains anything else. This is a conjoined effort and we are all in this together.
- This past year has included some encouraging and some discouraging news regarding highway safety in America. I’d like to review some of the highlights.
- Although we are making progress on some fronts, in 2002 preliminary estimates show that 42,850 people lost their lives in highway crashes. Just under 3 million more were injured.
- These 2002 numbers represent a slight increase in fatalities over 2001 and a modest decrease in injuries.
- One piece of good news from the 2002 numbers concerns the total number of fatalities relative to increasing exposure. The total number of vehicle miles traveled continued to increase last year as they have for many years. Despite this upward trend, the death rate per VMT has held steady.
- Motor vehicle crashes are responsible for 95% of transportation related deaths and 99% of transportation related injuries. Unintentional injuries are the leading

cause of death for Americans after the first year of life through age 34, and crashes are *the* leading cause of these deaths.

- They also represent a staggering loss – in terms of human lives lost and the estimated \$230 billion annual impact on the economy.
- Human action – or inaction – largely contributes to these costs. Failure to wear a safety belt is responsible for \$20 billion, impaired driving contributes \$51 billion, and speed related crashes account for \$40 billion.
- It is an unspeakable tragedy that we lose so many lives each year. This is all the more tragic since, in most cases, these losses are preventable.
- So the Secretary has set a goal for all of us to work together in reducing motor vehicle fatalities to not more than 1.0 per 100 million vehicle miles traveled by 2008.
- It will take all of us working in new and creative ways to reach this goal. Because we know that if we do nothing and allow the current fatality rate to remain unchanged, we will have about 7,000 – 8,000 more deaths in 2008.
- My agency is devoting resources currently to those areas where we know we can achieve the greatest immediate benefits in terms of saving lives. Our analysis tells us that the greatest gains will come now from increasing safety belt use and reducing impaired driving.
- As you will see in the next little while, IVI offers the potential to pick up where human behavior takes off, overriding bad judgments or errors that people make even in those 2 arenas where we are focusing our current efforts, safety belts and impaired driving.
- This is critical as we look back over the history of improving belt use during the past 2 decades.
- Safety belts are a proven, no-cost, readily available remedy to protect the public from preventable injury and death. Each 1% increase in belt use represents huge savings for the American public, in terms of both costs and lives saved.
- Another area where we know that IVI offers tremendous potential to save lives is with impaired driving. While good progress was made in bringing down the number of deaths through about the mid-90's, the past 3 years have seen fatality increases.
- In 2002 the number of people killed by impaired driving collisions increased about 3% over the prior year.

- One of my top priorities is to improve the growing problem with fatalities from rollover collisions. Rollovers account for just 2% of all collisions but 33% of occupant deaths. Rollovers are a particularly deadly type of crash, and IVI technologies can address road departure and other factors that contribute to rollovers.
- This Administration is proposing a new reauthorization following on the current TEA-21. The reauthorization proposal contains funding at record levels to address these safety concerns.
- While formulating this proposal, the Federal Highway Administration, the Federal Motor Carrier Safety Administration, FTA and NHTSA worked together to develop a different approach to addressing the Nation's substantial highway safety problems.
- The approach creates a *safer, simpler and smarter* program. This bill will make U.S. transportation safe and secure, and also make our economy more efficient and productive.
- The bill provides funding at record levels to increase safety.
- It is clear why resources of this magnitude are needed when you look at the overall magnitude of the current safety problem. There is a challenge before us.
- Now that we've discussed the extent of the current problem I want to move into some of the new technologies currently being investigated through the IVI program.
- Dr. Bill Haddon was the first Administrator at NHTSA, and he conceived of a way of addressing all vehicle, environmental and human factors that can contribute, individually or in combination, to a collision.
- Each cell represents opportunities for application of advanced safety-enhancing technologies, such as:
  - Automatic restraint systems
  - Communications of road/weather conditions (e.g. fog) to vehicle
  - Systems to deter alcohol-impaired drivers
  - Sophisticated tire pressure monitoring systems
- To put this into perspective, most of what we have done historically in highway safety is to concentrate on 2 key areas: behavior change and vehicle crashworthiness. Safety advances have been achieved through these 2 areas as well as improvements in EMS systems and roadway design.

- The IVI program is a “problem-driven” program. It’s purpose is to develop a better understanding of how vehicle-based technologies can be brought to bear on the huge highway safety problem that we have in this country. This picks up where what we have done historically leaves off.
- The IVI horizon is limitless when we look ahead to where technological advances and safety can take us. The full safety benefits from IVI will not be achieved in this budget year or even within the context of the Departments’ next reauthorization cycle of 6 years. It is much longer term than anything we have ever had.
- The very first benefits of these new technologies are already with us – I’ll mention a few right now. Others are under development and others still are way ahead in the future – your children will enjoy the benefits of these.
- I want to tell you about an actual crash where advanced technologies were not available. Had these technologies been present they could have played a significant safety role.
- This crash occurred on an Interstate at 10PM. A passenger vehicle was following a truck at a reasonable distance (500 – 700 feet). The truck stopped for construction related congestion but the driver of passenger vehicle failed to recognize this.
- With no braking whatsoever the passenger vehicle rear-ended the truck at a high rate of speed. Even though the driver was wearing a safety belt and the air bag deployed, the driver died shortly after he was transported for emergency care.
- IVI offers potential at many, many places along this path that could have saved that driver.
  - What would have happened if this car had been equipped with an adaptive cruise control system?
    - This system would have automatically slowed the vehicle and contributed to a safe stop.
  - How about if it had a rear-end crash warning system?
    - This system would have emitted both visual and audible warnings, allowing the driver to respond after a typical reaction time of about 1.5 seconds. The driver could have braked and would then have come to a safe stop behind the truck.
  - Early interventions for a distracted or drowsy driver in IVI might include sensory stimulations (e.g. buzzers, lights, visual displays, shaking seats).
  - These systems rely on new technologies such as millimeter-wave radar and heads up displays.

- This is a system that is already available in some models but is expected to be more broadly available in greater numbers of new cars in the future. It helps to establish a safe following distance behind other vehicles.
- In a pre-crash situation ACC would intervene to slow (but not stop) the following vehicle and help alert the driver of the need to take immediate action. Even if the collision occurs with ACC the vehicle is slowed and the impact is less severe.
- A crash warning system is, in effect, an extension of the capabilities of adaptive cruise control. It is a more sophisticated system that warns the driver at a time that is early enough to allow him to take effective braking action.
- Some of the new technologies can sense when a driver is distracted by the use of electronic device in the vehicle or is drowsy. These systems issue visual and/or auditory warnings to the driver.
- In some cases of distraction the alert system may also override the driver's use of the distracting device and actually shut it off.
- IVI offers a multitude of mechanisms for sensing when a vehicle is starting to stray off course or going too fast for an upcoming curve on the road ahead. These systems currently being tested also warn the driver of these situations.
- Future development of this technology is expected to help return the vehicle to its proper lane position.
- Many of the crashes that might be prevented by this type of system are the often-fatal rollover collisions. Because of the increasing popularity of SUVs, which are prone to rollovers, measures to prevent this type of crash will become critical in our combined efforts to save lives on the highway.
- Technologies that are currently under development to avoid road departure crashes include forward looking cameras mounted on the car that help advise the driver of imminent events and seats that can shake when driver drowsiness is detected.
- Intersection collisions represent another large segment of the crash problem.
- We believe that complete solutions to this problem are going to require communication between vehicles traveling down the highway and the highway itself.
- My colleague, Federal Highway Administrator Mary Peters, will be addressing many specific interventions under review to address intersection collisions.

- These remarks have barely scratched the surface of the vast array of technological mitigations that will help increase occupant and pedestrian safety in the future. Now my colleagues will speak to more of the details of these systems.
- Ms. Sandberg.....