

Background of Byron Bloch

Independent Consultant in Auto Safety Design and Vehicle Crashworthiness

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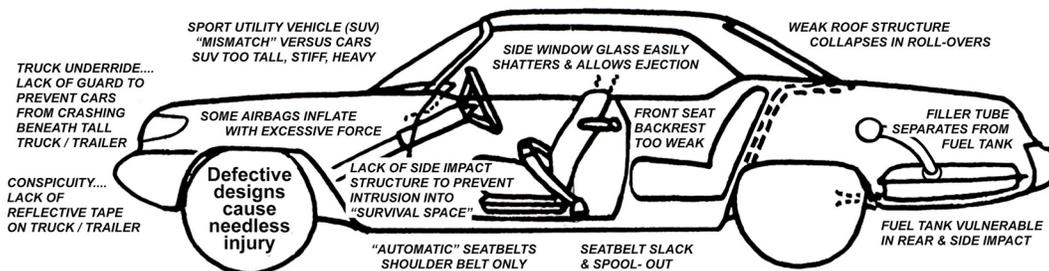
Website: www.AutoSafetyExpert.com

Mr. Bloch's background and expertise arises from over 40 years of experience as an independent consultant and court-qualified expert in **Auto Safety Design and Vehicle Crashworthiness**. From 1965 through 2010, he has personally inspected and evaluated hundreds of motor vehicle collision accident vehicles across America, as well as conducting his own "hands-on *autopsy*" or dissection of exemplar vehicles.

Mr. Bloch has compared and evaluated various vehicle body structures and features as to their "**crashworthiness**" - how well or how poorly they protect vehicle occupants from severe injury or death in collisions. Areas of specialization include:

- **Rollover – Roof Crush**
- **Truck Underride & Conspicuity**
- **Fuel Tank – Fire**
- **Side Impact – Intrusion**
- **Seatback Failure**
- **Airbag-Caused Injuries**
- **Ineffective Seatbelts**
- **Door Latch Failure - Ejection**
- **Window Glazing - Ejection**
- **Heavy Truck Safety & Mismatch**

He has testified at **Congressional Hearings**, and in many TV newsmagazine reports on vehicle safety issues, including his own *Auto Safety Reports* on KABC TV News in Los Angeles, to inform the at-risk public about vehicle safety concerns.



Mr. Bloch has consistently analyzed crash test reports and films from U.S. and foreign automakers, and from the **National Highway Traffic Safety Administration (NHTSA)**. These crash tests show how vehicles and their occupants perform in front impacts, side impacts, rear impacts, rollovers, and truck underride crashes. He served as **crash test coordinator** for a few crash tests, including a 63 mph car-to-car test in 1975 to assess safer performance of a forward-of-axle fuel tank system he designed.

In **Product Liability cases across the nation**, he has testified on behalf of the injured plaintiffs, in cases where he evaluates and describes what he believes are the accident vehicle's needless "**design defects**" that caused the severity of injury or death.

(Continued.... Total of 8 pages.)

OVERVIEW of SOME RELEVANT ACTIVITIES

Served as Research Editor of ROAD TEST Magazine, in the 1965-1968 era, with emphasis on evaluating the design and safety technology features of U.S. and foreign cars.

Served as invited judge to evaluate Research in Accident Prevention, for the National Safety Council, 1968 and 1971.

Submitted testimony or testified in-person at U.S. Congressional Hearings and DOT Hearings on motor vehicle safety, concerning: Fuel tank hazards. Weak seat hazards. Energy-absorbing bumper systems. NHTSA's defect investigations. Needless delay in implementing airbags. Unsafe seatbelt designs. Truck underride hazards. (1971-1997)

Lectured at colleges, universities, and professional groups nationally... including the Society of Automotive Engineers (SAE), trial lawyer seminars, plus the British Safety Council and the *First World Congress on Product Liability*, in London. (from 1970 thru the present)

Taught a seminar series at the University of Maryland, College of Engineering, on "***Auto Safety Design & Vehicle Crashworthiness***", a series of 4 sessions presented as guest lecturer, 1994.

Presented "Auto Safety Reports" on KABC-TV Channel 7 News, Los Angeles, typically twice weekly for seven years (1978-1985), often based on his on-going concurrent professional consulting work in vehicle safety & crashworthiness; plus test drive reports, defect investigations, court cases.

Auto Safety Expert Consultant to ABC Network News "20/20" and "Primetime Live" and interviewed as auto safety expert for seven featured reports on:

- (1) "**Beyond the Pinto**": Fuel Tank Fire Hazards (1978) (Won Emmy Award)
- (2) Volkswagen "**Ejector Seat**" Failure (1979) (Won Emmy Award)
- (3) **Pickup Truck In-Cab Fire Hazard** (1981)
- (4) **Kentucky Schoolbus Fire Hazard** (1988)
- (5) **Bad Seatbelts: Slack & Automatics** (1991)
- (6) **Truck Underride Hazard: Decapitation** (1992)
- (7) **Roof Crush in Rollovers** (1992)

Appeared on "Inside Edition", "Good Morning, America", "Dateline NBC", 1992, on the fire hazards of GM pickups with vulnerable side-mount fuel tanks outboard of the main frame rails.

Appeared on ABC "Nightline" and "World in Action" (England) in 1997 on airbag dangers to children, noting some needlessly unsafe design features; and showing 1973 Chevrolet Impala sedan that had been equipped by GM in 1973 with dual-mode "*softer*" and "*firmer*" airbags.

Appeared on ABC "Primetime Live" on September 3, 1997, Bloch's analysis of the Princess Diana tragic crash in the Paris tunnel, pointing out that a simple guardrail would have deflected the Mercedes away from impacting the concrete pillar, and all occupants would have survived.

Auto Safety Expert Consultant to CBS Network News and "Public Eye with Bryant Gumbel", on safety stories (1997-98), including *Why Some Airbag Designs are More Injurious to Children*, and on *Truck Underride & Visibility Hazards*... lack of any side guards on trailers, lack of rear guards on trucks, and lack of reflective tape to make trucks and trailers more perceivable (conspicuous) at night, including a night demonstration without any tape and then repeated with reflective tape.

Consulted to Automotive Safety Devices, Inc., on the performance and upgrading of their inertially-responsive safety seat system; and crash test demonstrations, 1967-1969.

Consulted to Inca Manufacturing Corp. on performance & upgrading of their energy-absorbing Belleville spring-washer-piston system as an energy-absorbing bumper for motor vehicles; 1971.

Conceived and built the "Bio-Medical Automobile", 1970-1971, to demonstrate the feasibility of having resuscitative, diagnostic, and life-support medical equipment accompany doctors and paramedics, including into remote rural communities. Functional prototype vehicle was built, and went on national tour to Houston, Chicago, New York, and Washington, D.C.

Performed studies of how reflective materials can enhance visibility or "conspicuity" of motor vehicles at night. Project "*Auto-Glo*" in 1967. Demonstrations of reflective tape on rear and sides of trailers for "conspicuity" perception-of-danger-ahead safety enhancement, 1992-99.

COURT-QUALIFIED as an AUTO SAFETY EXPERT

For over 40 years, 1968 through the present, Byron Bloch has repeatedly qualified in Federal and State Courts across the nation as an independent Auto Safety Expert in motor vehicle “defective design” cases. The central focus is the allegation that the accident vehicle was needlessly unsafe and defectively designed and not crashworthy.... and thereby either caused the accident, or caused the severity of injuries or death to the vehicle’s driver or passengers. Some examples of his trial testimony include:

Bratton vs. Chrysler, 1971, Texas. On occupant movements and forces (*kinematics*) during the rear-impact collision.

Biehle vs. Ford, 1974, California. On the design of pickup trucks with the “*inside-the-cab*” fuel tank and its protruding filler tube and vulnerably exposed filler cap.

Dawson vs. Chrysler, 1978, New Jersey. On the crashworthiness of unitized body structures in side impacts (of a Dodge police car). This became an often-cited appellate court “*landmark case*” on crashworthiness.

Seese vs. Volkswagen, 1979, New Jersey. Inadequate window retention to prevent occupant ejection in rollover accidents, and inadequate roof structure that allows “*matchboxing*” distortion.

Mistich vs. Volkswagen, 1991, Louisiana. The VW Beetle “*ejector seat*” defect, causing seat failure in rear impacts. Plaintiff verdict and Bloch expertise were affirmed by the Louisiana Supreme Court.

Winningham vs. Trailmobile, 1992, California. Lack of reflective material to enhance truck’s conspicuity at night, and lack of effective underride guard to prevent cars from crashing deeply under rear of trailers.

Carmona vs. Kidron, 1994, Florida. Lack of an effective underride guard to prevent a small pickup from going under the rear of a large truck equipped with a tuck-under liftgate.

Carpenter vs. General Motors, 1994, Texas. Slack and spool-out hazards of GM’s door-mounted seatbelts, and roof structure defects that encourage buckling down into the driver’s “*survival space*”.

Carland vs. Ryder Truck Rental, 1994, Minnesota. Lack of reflective tape to make the Ryder truck more conspicuous in the dark of night, and the lack of an adequate rear underride guard.

Kelleher vs. Strick, 1995, Illinois.... Lack of an effective underride guard to prevent a passenger vehicle from penetrating beneath the rear of a large trailer.

Detillier vs. Lufkin, 1995, Louisiana. Lack of an effective underride guard to prevent a passenger vehicle from penetrating beneath the rear of a large trailer.

Mullins vs. Mack Truck, 1997, Kentucky. Lack of any rear underride guard device on a coal dump-truck, and failure of truck cab-chassis manufacturer to warn or coordinate with vehicle body builder to provide a rear underride guard.

Loayaza vs. Volkswagen, 1997, California. Hazardous location of fuel tank and vulnerable easily-separable filler tube assembly in VW Beetle front luggage compartment, lack of firewall barrier, and inadequate side impact protection.

Kanoff vs. Jaguar Cars and Ford, 1998, Pennsylvania. Airbag system defects, including crash sensors triggering in underbody minor impact, high-force driver airbag, and failure to warn. Fully qualified as auto safety expert after *Daubert Hearing* in court.

Rodriguez-Olvera, et.al. vs. Salant Corp, 1999, Eagle Pass, Texas. 1983 schoolbus used to transport factory workers overturned onto its side and ensuing fire burned 14 entrapped passengers to death. Testified on lack of roof hatch escape exits, emergency exit windows, flammable seat materials, and no fire extinguisher, and the feasibility and cost of retrofitting these safety measures.

Waters vs. Wilson Trailers, 1999, Lexington, Kentucky. Lack of backup lights or backup alarm on tractor-trailer, resulting in worker being crushed to death against loading dock at night.

Maravilla vs. Lufkin Industries, 2000, Laredo, Texas. Lack of any side guards to prevent the underride of a car beneath the open side of a long, tall trailer, which thereby crushed into the car’s “*survival space*”. Jury found defective design of the Lufkin trailer, and that Lufkin Industries acted with malice. A *Daubert-Robinson Hearing* confirmed Bloch’s expertise as an expert in vehicle safety design and truck underride.

Caleb vs. Strick Trailers, 2000, Philadelphia, Pennsylvania. Minimal support for vertical struts of rear guard, which broke away when impacted by Toyota passenger car, which then continued to underride beneath the rear of the parked trailer.

Simms vs. Ford Motor Company, 2001, Ellicott City, Maryland. Plaintiff Simms sought equitable reimbursement for the cost of installing a retrofit safety fuel tank, including an internal fuel cell bladder, in his "classic" Ford Mustang. I testified about the dangers of the Mustang's "drop-in" fuel tank, and Ford's knowledge of its leakage problems in rear impacts. Ford was ordered to reimburse Simms.

Pourcho vs. BMW, 2002, Detroit, Michigan. Failure of seatbelt in 1992 BMW 7-series sedan to protect driver in low-speed impact, and lack of automatic pre-tensioner to tighten belt at start of crash.

Jackson vs. Heartland Express, 2003, Montgomery, Alabama. Rearward protruding load of lumber increased truck underride hazard of flatbed trailer, and use of the truck's Jake Brake engine-compression retarder does not cause any brake lights to come on and warn following drivers.

Kraybill – Simmons vs. DaimlerChrysler, 2004, Philadelphia, Pennsylvania. Rear impact to a 1978 Dodge multi-passenger B-Van caused an immediate fuel-fed fire that engulfed the vehicle and occupants. I testified about the unsafe fuel tank location in the rear "crush zone", with a filler tube that easily pulled out of its insertion hole at the bottom side of the tank, thereby allowing the gasoline to continuously pour out.

Rider vs. BMW, 2005, Freehold, New Jersey Side impact of 1986 BMW 325 sedan into a pole on passenger side, with inadequate side structures to prevent deep intrusion that caused fatal head injuries to far-side driver, wearing ineffective seatbelt.

Scott vs. Toyota, 2007, New Brunswick, New Jersey. Rollover and roof crush of a 1999 Toyota RAV4, with inadequate roof structure (incl. open-section windshield header) that caused roof buckling and crush, causing cervical loads to William Scott, rendering him a quadriplegic.

Garcia vs. Ford Motor Company, 2007, Tallulah, Louisiana. Rollover and roof crush of a 1989 Ford Escort, with inadequate roof structure (open-section windshield header and un-reinforced A-pillar) that caused roof buckling and crush, causing cervical loads to David Garcia, rendering him a quadriplegic.

Vogel vs. General Motors, 2008, Freehold, New Jersey. Side impact into a 1994 Geo Tracker with inadequate side structure to prevent deep intrusion into the occupants' "survival space" that caused fatal injuries. Qualified as expert in auto safety design and crashworthiness.

Harvey vs. General Motors, 2008, London, Ohio. Side impact into the right side of a 1997 GM Saturn SL1 sedan, with inadequate side structure to prevent deep intrusion into the occupants' "survival space" that caused severe injuries to the far-side occupant, the driver. Qualified as expert in auto safety design and crashworthiness.

Rotter vs. Ford, 2008, Mineola, New York. Lack of stability and controllability, and rollover propensity, of a 2000 Ford Explorer Sport 2-door SUV. Vehicle rolled over and the driver was ejected. Issues included the roof's structural design. Qualified as expert in auto safety.

Powers vs. Heil, 2009, Philadelphia, Pennsylvania. Defective design of trash truck, which did not provide safe step-platform for trash workers to ride during their house-to-house trash pickup, and lack of effective method to alert driver to stop truck in emergencies.. Qualified as expert in vehicle safety.

PRIOR CORPORATE AND CONSULTING EXPERIENCE

After graduating from UCLA, Mr. Bloch was initially employed in company staff positions, including:

Industrial Electronic Engineers, Inc. (1963-1964) *Product Planning Coordinator*... between research and development, engineering, production, marketing, and corporate management. The company manufactured technical control and display components and assemblies.

Dunlap and Associates, Inc. (1961-1963) *Staff Industrial Designer and Human Factors Engineer*... worked on various military weapons systems, such as Polaris missile launch control, Minuteman missile launch control, etc. Dunlap is one of America's foremost human factors engineering consulting firms.

Heart Surgery Facilities for Houston Methodist Hospital. (1964-1966) Consulted on project to help design avant-garde cardiovascular surgical facilities for Dr. Michael DeBakey. Conceived and designed Integrated Anesthetic-Monitoring-Surgical Console. Described in Modern Hospital magazine, Feb. 1966.

Analysis of Human Factors Engineering for Chevy Corvair Safety Issues. (1966) California law firm, on behalf of General Motors Corporation, to evaluate the safety, operability, and design factors regarding the handling, oversteer, and rollover propensities of the Chevrolet Corvair

Consulting Project to Volvo on Fuel Tank Design (1976) Bloch's critique and recommendations for safety upgrades of Volvo's fuel tank system design and vehicle safety, at Volvo's agency in New York.

COLLEGE EDUCATION

(Name of University, Dates Attended, and Major Field of Study)

Northwestern University. Science Engineering, 1955-57.

University of Kansas. Industrial Design, 1957-58.

University of California, Los Angeles (UCLA). Industrial Design (Product Design), 1958-60.

University of California, Los Angeles (UCLA). Industrial Design (Product Design), 1961-63.

Graduate Program, including Human Factors Engineering. All required courses were completed, with straight-A grade point average. Advanced to Candidacy for Master's Degree.

COLLEGE DEGREE

Bachelor of Arts, from the College of Applied Arts, UCLA, 1960.

Emphasis was in Industrial Design (Product Design), including Human Factors Engineering.

LIFETIME ACHIEVEMENT AWARD and SMITHSONIAN RECOGNITION

12th Annual World Traffic Safety Symposium, New York City, April 20, 2001.

"Lifetime Achievement Award" presented to Byron Bloch *"For twenty-five years of dedication and persistence in stimulating auto safety improvements."* Award was presented by the regional director of the National Highway Traffic Safety Administration, NHTSA.

"Inventing Automobile Safety" – Display at Smithsonian National Museum of American History, in Washington, D.C. Exhibit launched in November 2010. Among various historic auto safety innovations, this display case exhibit includes artifacts and synopsis of Byron Bloch's efforts on fuel tank safety and for stronger roofs. His history in auto safety is summarized on the Smithsonian's *"On the Move"* website at: http://americanhistory.si.edu/onthemove/themes/story_86_16.html

PUBLICATIONS and PRESENTATIONS

"Courtroom Drama" Article published in *VISION ZERO International*, January 2011. Preemption from liability would not advance justice for injured victims nor encourage safer vehicles. What will the US Supreme Court decide in *Williamson versus Mazda?* (Subsequent decision was 8-to-0 against granting any preemption from liability.)

"A Mismatch Made in Hell?" Article published in *VISION ZERO International*, June 2010. How heavy trucks can be safer to protect occupants and to minimize mis-match accidents and damage.

"Recalls and Reform" Article published in *VISION ZERO International* magazine, June 2010. How to speed-up vehicle safety requirements and technologies to be implemented sooner.

"A Shattering Saga" Article published in *Crash Test Technology International*, June 2010. Laminated glazing for side windows and rear hatch windows can reduce occupant ejections.

"Gentle Giants?" Article published in *Crash Test Technology International*, June 2010. How to improve heavy truck safety for occupants and for mismatch collisions with other vehicles.

"Total Recall" Article published in *Automotive Testing International*, June 2010. How the Toyota runaway acceleration fiasco developed; how to develop and test safer products to avoid recalls.

- “Toyota Sudden Acceleration”** Article and interview published in *Corporate Crime Reporter*, May 31, 2010. The Toyota and NHTSA fiasco, how it happened, the issues, what to do.
- “Delayed Reaction”** Article published in *VISION ZERO International* magazine, January 2010. How to speed-up vehicle safety requirements and technologies to be implemented sooner.
- “On the Safe Side”** Article published in *Crash Test Technology International*, May-June 2009. How to improve side-impact crashworthiness beyond minimal requirements of FMVSS 214.
- “Crash Course”** Article published in *VISION ZERO International* magazine, June 2009. With 1.2-million crash fatalities worldwide per year, how can we make vehicles more crashworthy..
- “Deep Impact – Truck Underride”** Article published in *Crash Test Technology International*, Sept. 2008. Importance of rear and side guards to prevent the lethal underride hazard.
- “Rollover Revolution”** Article published in *Crash Test Technology International*, May 2008. Technical evaluation of why pending upgrade of FMVSS 216 on Roof Strength must be stronger.
- “A Smashing Future”** Article published in *Automotive Testing Technology International*, Nov/Dec 2007. Projection on what the crash test lab of 2028 will be like, to assess vehicle safety performance in comprehensive front-side-rear-rollover-underride dynamic testing.
- “Improved Side Window Glass for Vehicle Safety: Laminated vs. Tempered”** Keynote presentation at the *AGRSS Conference, Automotive Glass Repair and Replacement Safety Standards Conference*, November 2006, in Las Vegas. (Interview in AGRR magazine, 2006.)
- “Ford Police Car Fire Hazards – How It Happened, and What’s the Remedy ?”** Presentation at the *PCNY Annual Convention*, of the Police Conference of New York, Inc., May 2003, in Binghamton, N.Y.
- “Ford Police Car Fire Hazards – How It Happened, and What’s the Remedy ?”** Presentation at the *NAPO Legal Rights and Legislative Seminar*, of the National Association of Police Organizations, May 2003, in Washington, D.C.
- “Auto Safety Defects You Shouldn’t Overlook”** Presentation at the *Professional Investigators and Security Association Symposium*, March 2003, in Williamsburg, Virginia.
- “Commercial Vehicle Related Accidents”** Presentation via video at the session on Vehicle Design - Safe Cars of the Future, at *The First European Summit on SAFE Highways of the Future*, sponsored by Traffic Technology International, in Cannes, France, January 2001.
- “Protecting Our Children in Crashes.... Lessons from What Really Happened”** Presentation at the *10th Annual World Traffic Safety Symposium*, on airbags, school buses, and how safer designs emerge by learning from actual accidents, in New York, April 2000.
- “The Truck Underride Hazard... Truck Safety Defects That Crush Cars and Decapitate Their Occupants”** Presentation at the 1999 Pennsylvania Bar Institute Seminar Series on *Goliaths of the Highways: Truck Accident Litigation*, Sept.-Oct. 1999, in Philadelphia., Pittsburgh., Scranton, etc. Design and performance of rear guards and side guards for underride prevention.
- “The Ethics of Compassion in Car Design”** Presentation at the *9th World Traffic Safety Symposium*, on design solutions to vehicle safety issues, in New York, April 1999.
- “Unlocking the Mysteries of Car Crash Murder”** Presentation at the 1999 Northeast Super Conference, of the *National Association of Legal Investigators*, in Atlantic City, April 1999.
- “Auto Safety Defects You Shouldn’t Overlook”** Presentation at *National Association of Legal Investigators (NALI)*, National Convention in Baltimore, Maryland, June 1998.
- “Improved Crashworthy Designs for Truck Underride Guards”** Published and presented at the *16th International Technical Conference on the Enhanced Safety of Vehicles*, U.S. Dept. of Transportation, June 1998, in Windsor, Canada.

“Advanced Designs for Side Impact and Rollover Protection” Published in the *16th International Technical Conference on the Enhanced Safety of Vehicles*, U.S. Dept. of Transportation, June 1998, in Windsor, Canada.

“The Coming Revolution in Airbag Technology” Published in the *16th International Technical Conference on the Enhanced Safety of Vehicles*, U.S. Dept. of Transportation, June 1998, in Windsor, Canada.

“Side Impact Protection in Vehicle Design” Presented at the Federal Highway Administration (FHWA) Turner-Fairbanks Research Center, May 1997, in McLean, Virginia.

“Underride Guards: Is the New NHTSA Regulation Good Enough?” Paper presented at the Society of Automotive Engineers *SAE TOPTec Symposium on Heavy Vehicle Underride Protection*, April 1997, in Palm Springs, California.

“Truck Underride Tragedies”, *TRIAL Magazine*, Feb. 1993. Co-authored article, on the history and technical principles of the truck underride hazard, regulations, and cases.

“Ten Auto Defects You Shouldn’t Overlook”, *EXPERTS-AT-LAW Magazine*, May 1990. Truck underride, roof crush, side impact, seat backrests, fuel tanks, seatbelts, etc.

“Busing: The Ultimate Disaster” (Kentucky Accident), *EXPERTS-AT-LAW Magazine*, March 1990. Safety defects that caused 27 needless burn deaths in schoolbus collision accident.

“Interview with Byron Bloch”, *Corporate Crime Reporter*, June 5, 1989. Discussion of vehicle safety defect issues, fuel tanks, roof crush, airbags, and historical overview.

“Seiner Sache Sicher”, interview in *AUTO MOTOR UND SPORT* (German), Nov. 1983. How and why Mr. Bloch presents auto safety information to the public via television in Los Angeles.

“Checklist for Selecting the Best Car” (Safety), *AUTO EXPO ‘83 Magazine*, Los Angeles, 1983. Overview of some basic safety points to look for in selecting a car.

ROAD TEST Magazine, Research Editor, various articles with emphasis on safety, including the “*On the Choppin’ Bloch*” columns, 1965-68. Crashworthiness. G.E. Electric Car. Air pollution.

“An Overview of Safety in Automobile Design”, *Annual Symposium of Human Factors Society*, at UCLA, June 1966. (Version also published in *ROAD TEST Magazine*.) Presentation and discussion of the leading causes of car crash injuries, with correlation to vehicle design features, including seatbelts, head restraints, and structural crashworthiness.

PROFESSIONAL MEMBERSHIPS

(Present and Prior)

- ◆ Society of Automotive Engineers (SAE)
- ◆ Industrial Designers Society of America (IDSA)
- ◆ American Society of Safety Engineers (ASSE)
- ◆ Washington Automotive Press Association (WAPA)

TESTIMONY and SUBMISSIONS TO GOVERNMENTAL BODIES

Recommendations for FMVSS 216 – Roof Crush Resistance. Submission to NHTSA, March 2008. Recommendations for testing roof strength and performance in rollovers. Includes increasing Strength-to-Weight Ratios, dynamic rollover testing, elimination of preemption, etc.

DOT Commercial Motor Vehicle Safety Workshop, of the U.S. Dept. of Transportation, July-August 1999. Participant to assess future scenarios and potential solutions to help reduce commercial truck and bus fatalities from 5,300 annually in half by the year 2010.

NHTSA Side Impact Airbags Public Meeting, April 1999, in Washington, D.C. Presentation on need for systems approach, including vehicle body structure, side window glass-plastic, wrap-around seats, seatbelt pre-tensioners, crash tests with matrix of dummies, need for vehicle rollover tests, comparative information on side airbag performance, warning labels.

Safety Maximization within the Global Harmonization of Motor Vehicle Safety Standards.

Presentation at NHTSA Public Meeting on Global Harmonization, Feb. 1999. Need to focus on strongest standards internationally re: truck underride, vehicle conspicuity, seat strength, side windows to prevent ejection, dynamic rollover tests, fuel tank protection, etc.

Occupant Crash Protection, Requirement for Advanced Airbags, Submission to NHTSA Docket 98-4405, Dec. 1998. Recommendations for crash test matrix, various dummies, crash thresholds, to help ensure safer airbag systems for children and adults of all sizes.

NHTSA Smart Air Bag Public Meeting, Feb. 1997, in Washington, D.C. Presentation about dual-mode softer/firmer airbags, 1973 GM ACRS dual-pressure airbags, tethers to control shape, need to modify crash sensor actuation thresholds, and crash testing protocol.

Air Bag Deactivation and Depowering of Air Bags, Submission to NHTSA Docket 74-14,

February 1997. Noted opposition to allowing mass deactivation of airbags, and discussed safer alternatives such as raising the crash threshold that actuates airbags, having variable airbag inflation tailored to crash severity and occupant size.

Rear Impact Guards / Rear Impact Underride Protection for Heavy Trucks and Trailers,

Submission to NHTSA Docket 1-11, June 1992. Urgent need to adopt underride guard FMVSS (after 25 year delay) with guard height at 16-18 inches above ground, apply to trailers *and* trucks, need for *side* underride guards, enhanced conspicuity, retrofit of existing trailers with underride guards.

Rollover Prevention, Submission to NHTSA Docket 91-68, April 1992. Recommended use of dynamic vehicle rollover testing with crash dummies; and noted roof structure defects and the need for stronger roof structures to minimize intrusion into occupant "*survival space*".

"Automotive Safety: Are We Doing Enough to Protect America's Families"

Hearing before the select Committee on Children, Youth, and Families, U.S. House of Representatives. December 4, 1991. Testimony on hazardous seatbelt designs and truck underride hazard and 20+-year delay, urging that NHTSA finally mandate underride guards. (A new regulation ensued, requiring safer rear underride guards for new trailers as of Jan. 1998.)

Testimony in Support of Mandatory Requirements for Airbags, Hearings by U.S. Dept. of Transportation, NHTSA, in Los Angeles, November 28-29, 1983. Pointed out basis for implementing safety airbags, the prior needless delay, and feasible technology since 1973.

"Failures of NHTSA to Conduct Safety Defect Investigations in an Expeditious & Open Manner"

U.S. House of Representatives, Subcommittee Hearings, March 1983. Noted examples of safety defect investigations that could and should have proceeded, with recommendations to improve NHTSA's defect investigation processes.

"Seat Design and Fuel Tank Systems... Defect Dilemmas in Need of Attention"

Safety Defects Conference, National Motor Vehicle Safety Advisory Council, DOT, Oct. 1973. Pointed out weak seats and unsafe fuel tanks, and urged upgrade of FMVSS 207 and 301, including the need for rear-impact crash tests to evaluate seat and fuel tank performance.

Volkswagen "Ejector Seat" Epidemic, and Pinto-Vega Fuel Tank Hazards

Hearings on Amendments to Motor Vehicle Safety Act, U.S. House Subcommittee., April 1973. Pointed out epidemic of VW Beetle seat failures in rear impacts and need to upgrade FMVSS 207 to require rear-impact crash testing for seat evaluation, also presented Pinto-Vega-etc. fuel tank - fire case examples and the need to upgrade FMVSS 301 to require rear-impact crash testing.

The Inca Energy-Absorbing Bumper System

Hearings of Committee on Commerce, U.S. Senate, Washington, D.C., May 1971. Presentation of principles, designs, and low-speed crash tests of energy-absorbing bumper system based on Inca design using stacked Belleville spring-washers in pistons.

Please also refer to the website at: **www.AutoSafetyExpert.com**

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