

RICHARD LYNN STALNAKER, Ph.D. CURRICULUM VITAE

EDUCATION

B.S.	Aerospace Engineering, West Virginia University, Morgantown, West Virginia	1964
M.S.	Aerospace Engineering, West Virginia University, Morgantown, West Virginia	1966
Ph.D.	Theoretical and Applied Mechanics, West Virginia University, Morgantown, West Virginia	1969

PROFESSIONAL EXPERIENCE

Associate Research Scientist, Highway Safety Research Institute, the University of Michigan	1968-1978
Instrumentation Consultant, Institut fuer Rechtsmedizin, The University of Heidelberg,	1978
Technical Consultant, Instituut voor Wegtransportmiddelen, TNO-Complex Zuidpolder	1978
Design Engineer, Laboratoire de Physiologie et de Biomechanique, Association Peugeot-Renault	1978
Senior Biomechanical Engineer, Instituut voor Wegtransportmiddelen, TNO-Complex Zuidpolder	1979-1980
Senior Research Engineer, Department of Biomechanics, Southwest Research Institute	1981-1982
Associate Professor, Department of Mechanical Engineering, the Ohio State University	1982-1995

Associate Professor, Department of Biomedical Engineering, the Ohio State University 1994-1995

Adjunct Associate Professor, Department of Mechanical Engineering, the Ohio State University 1995-1996

Adjunct Associate Professor, Department of Biomedical Engineering, the Ohio State University 1995-1996

HONORS AND BIOGRAPHICAL REFERENCES

American Society for Testing and Materials (Award 1968) Sigma Xi.

National Aeronautics and Space Administration (NASA) Research Fellowship.

MEMBERSHIPS

American Society of Mechanical Engineers.

Society of Automotive Engineers (SAE).

Association for the Advancement of Automotive Medicine (AAAM).

PROFESSIONAL ORGANIZATIONS (Active and Inactive)

Member of the Mechanical Human Simulation Task Force; Human Biomechanics and Simulation Subcommittee; Motor Vehicle Safety Systems Testing Committee; Society of Automotive Engineers.

Member of the Analytical Human Simulation Task Force; Human Biomechanics and Simulation Subcommittee; Motor Vehicle Safety Systems Testing Committee; Society of Automotive Engineers.

Member of Working Group 1, Child Restraint Systems (in road vehicles), Sub-Committee 12, Technical Committee 22, International Standards Organization.

Member of Working Group 5, Anthropomorphic Test Devices, Sub-Committee 12, Technical Committee 22, International Standards Organization.

Member of Working Group 6, "Criteres de performance exprimes en terme de biomechanique", Sub-Committee 12, Technical Committee 22, International Standards Organization.

Member of the United States Advisory Committee to Working Group 5 & 6.

Reviewer for Reader's Committee, Passenger Protection Committee, Society of Automotive Engineers.

Member of the Stapp Conference Advisory Committee.

Member of the "Injury Research Grants Review Committee For Biomechanics", Centers for Disease Control, Division of Injury Epidemiology and Control.

Reviewer for Accident Analysis & Prevention.

Reviewer for American Society of Mechanical Engineers.

Guest Lecturer for SAE Seminar on Anthropomorphic Test Devices.

Member, Editorial Board, Safe Ride News.

Chairman, Child Occupant Protection Second Symposium.

PATENTS

"Lateral Impact Thorax", (Renault) France, 1980.

"Tip-up Table, Child Restraint System", (Römer - Britax) Germany, 1980.

PUBLICATIONS AND PRESENTATIONS

"Secondary - Injection of Reacting Gas", The 1964 Middle Atlantic Student Conference of the AIAA, Drexel Institute of Technology, Philadelphia, Pennsylvania, Abstract, April, 1964.

"Electric Fields and Calcium Mobility in Bone", West Virginia University, Morgantown, West Virginia, Final Report, NASA, Grant No. NsG-533, Sub-Project E, September, 1966.

"Electric Fields and Bone Loss of Disuse", Journal of Biomechanics, Vol. 1, No. 1, pp. 47-52, January, 1968.

"Determination of the Physical Properties of Tissues", West Virginia University, Morgantown, West Virginia, Progress Report, National Institute of Neurological Disease and Blindness, Contract No. PH 43-67-1137, August, 1968.

"Mechanical Properties of the Head", West Virginia University, Morgantown, West Virginia, Dissertation, September, 1969.

"Dynamic Mechanical Properties of Scalp and Brain", Proceedings, Rocky Mountain Bioengineering Symposium, pp. 67-73, Laramie, Wyoming, May, 1970.

"Head Injury Tolerance for Linear Impacts by Mechanical Impedance Methods", The American Society of Mechanical Engineers, Paper No. 70-WA/BHF-4, New York, New York, Winter Annual Meeting, November-December, 1970.

"A Mechanical Impedance Model for Head Injury Due to Linear Impacts", 1970 Proceedings, Symposium on Biodynamic Models and Their Applications, pp. 905-931, Dayton, Ohio, 1971.

"Driving Point Impedance Characteristics of the Head", Journal of Biomechanics, Vol. 4, No. 2, pp.127-139, March, 1971.

"The Biomechanical Aspects of Crash Helmet Design", Proceedings, AGARD Conference, June, 1971.

"Door Crashworthiness Criteria", National Technical Information Service, Springfield, Virginia, 22151, Final Report, DOT-HS-800 534, June, 1971.

"Impact Tolerance - Abdominal Injury", Highway Safety Research Institute, the University of Michigan, Ann Arbor, Michigan, Final Report No. HSRI-71-102, Vol. 1 & 2, June, 1971.

"Human Side Impact Tolerances Obtained from Sub-Human Primate Scaling Relationship", Proceedings, 24th Annual Conference in Engineering in Medicine and Biology, pp. 307-308, Las Vegas, Nevada, October-November, 1971.

"Human Tolerance", Part 1 & 2, Motor Vehicle Manufacturers Association, Detroit, Michigan, Highway Safety Research Institute, Final Report, 1971.

"Door Crashworthiness Criteria", Proceedings, 15th Stapp Car Crash Conference, pp. 489-517, Coronado, California, November, 1971.

"MSC Tolerance Curve for Human Head Impacts", The American Society of Mechanical Engineers, Paper No. 71-WA/BHF-10, New York, New York, Winter Annual Meeting, November - December, 1971.

"Evaluation of Current Child Restraint Systems", Highway Safety Research Institute, The University of Michigan, Ann Arbor, Michigan, Prepared for Consumers Union of U.S., Inc., Auto Test Division, 367 Boston Post Road, Orange, Connecticut, 16477, April, 1972.

"Side Impact Tolerance to Blunt Trauma", Motor Vehicle Manufacturers Association, Detroit, Michigan, Final Report, 1972.

"Dummy Head Mechanical Impedance Test", Ann Arbor, Michigan, Highway Safety Research Institute, 1972.

"Automobile Races - A Proving Ground for Restraint System Effectiveness", Speaking text of presentation at the 4th International Congress of Accident Medicine, Paris, France, September, 1972.

"A Brain Injury Model for Crash Helmet Design", Proceedings, 18th Annual Meeting of the Institute of Environmental Sciences, 1972.

"Injury Tolerance Levels in Blunt Abdominal Trauma", Proceedings, International Conference on the Biomechanics of Impacts, pp 431-440, Amsterdam, The Netherlands, June, 1973.

"Door Crashworthiness Criteria", National Technical Information Service, Springfield, Virginia, 22151, Final Report, DOT-HS-800 924, September, 1973.

"Dynamic Performance of Child Restraint Systems", Highway Safety Research Institute, The University of Michigan, Ann Arbor, Michigan, Prepared for Consumers Union of U.S., Inc., Auto Test Division, 367 Boston Post Road, Orange, Connecticut, 06477, October, 1973.

"Biomechanical Aspects of Head Injury", Human Impact Response Measurement and Simulation, pp. 85-112, Plenum Press, New York-London, 1973.

"Human Torso Response to Blunt Trauma", Human Impact Response Measurement and Simulation, pp. 181-199, Plenum Press, New York-London, 1973.

"Impact Injury Mechanism in Abdominal Organs", Proceedings, 17th Stapp Car Crash Conference, pp. 115-126, Oklahoma City, Oklahoma, November, 1973.

"Mechanical Impedance Response of the Prototype and Production Anthropomorphic Dummy Heads", Highway Safety Research, Ann Arbor, Michigan, November, 1973.

"Side Impact Tolerance to Blunt Trauma", Proceedings, 17th Stapp Car Crash Conference, pp. 377-408, Oklahoma City, Oklahoma, November, 1973.

"The Mechanism of Injury in Blunt Abdominal Trauma", Journal of Trauma, Vol. 13, No. 11, pp. 962-970, November, 1973.

"Test of Current and Experimental Child Restraint Systems", Society of Automotive Engineers, Paper No. 740045, Detroit, Michigan, February-March, 1974.

"A Technical Analysis of Complications Following External Cardiac Massage", 1974 SAMA/UTEMB National Student Research Forum, Galveston, Texas, 1974.

"Evaluation of Current Production and Prototype Child Restraint Systems in the U.S.A.", Proceedings of the International Meeting on Biomechanics of Trauma in Children, pp. 288-300, Lyon, France, September, 1974.

"Fabrication of a Standard Bench Vehicle Seat", Highway Safety Research Institute, the University of Michigan, Ann Arbor, Michigan, Final Report Number UM-HSRI-BI-74-5, Vol. 1,2,3,4,5, September, 1974.

"Basic Design Principles of Child Auto Restraints", Society of Automotive Engineers, Paper No. 740936, Toronto, Canada, October, 1974.

"Test Report for the National Highway Traffic Safety Administration on the Infant Simulator - Mark 2 (S/N 3-3)", Highway Safety Research Institute, the University of Michigan, Ann Arbor, Michigan, Final Report, 1974.

"Test Report for the National Highway Traffic Safety Administration on the Infant Simulator - Mark 2 (S/N 3-2)", Highway Safety Research Institute, the University of Michigan, Ann Arbor, Michigan, Final Report, 1974.

"Test Report for the National Highway Traffic Safety Administration on the Infant Simulator - Mark 2 (S/N 3-1)", Highway Safety Research Institute, the University of Michigan, Ann Arbor, Michigan, Final Report, 1974.

"Otologic Hazards of Airbag Restraint System", Proceedings, 18th Stapp Car Crash Conference, pp. 339-349, Ann Arbor, Michigan, December, 1974.

"Dynamic and Static Load Response of The Head", Second International conference

of the International Research Committee on the Biokinetics of Impacts, pp. 1-19, Birmingham, England, September, 1975.

"Human Chest Impact Protection Criteria", Society of Automotive Engineers, Paper No. 750589, Detroit, Michigan October, 1975.

"Occupant Injury Assessment Criteria", Society of Automotive Engineers, Paper No. 750914, Detroit, Michigan, October, 1975.

"Impact Response and Tolerance of the Lower Extremities", Proceedings, 19th Stapp Car Crash Conference, pp. 543-559, San Diego, California, November, 1975.

"Performance Evaluation of Child Dummies and Baboons in Child Restraint Systems in a Systemized Crash Environment", Proceedings, 19th Stapp Car Crash Conference, pp. 345-403, San Diego, California, November, 1975.

"Practical Aspects of Child Safety Restraint System Standards", Presented at the 5th International Congress on Automotive Safety, San Francisco, California, 1975.

"Head Injury Evaluation: Criteria for Assessment of Field, Clinical and Laboratory Data", Proceedings, American Association of Automotive Medicine, pp. 168-179, San Diego, California, November, 1975.

"Human Tolerance of Lower Extremities Impacts", Proceedings, International Conference on the Biokinetics of Impacts, pp 362-374, Amsterdam, The Netherlands, September, 1976.

"Side Impact Response and Injury", 6th International Technical Conference on Experimental Safety Vehicles, pp. 681-689, Washington, D.C., October, 1976.

"Human Temporal Bone Impact Trauma", Proceedings, 20th American Association of Automotive Medicine, Atlanta, Georgia, October, 1976.

"Vascular System Pressurization Techniques", Highway Safety Research Institute, the University of Michigan, Ann Arbor, Michigan, Final Report No. UM-HSRI-76-35, October, 1976.

"Tolerance and Response of the Knee - Femur - Pelvis Complex to Axial Impact", Highway Safety Research Institute, the University of Michigan, Ann Arbor, Michigan, Final Report No. UM-HSRI-76-33, October, 1976.

"The Prediction of Thoracic Impact Injuries", Proceedings, 20th Stapp Car Crash Conference, pp. 697-729, Dearborn, Michigan, October, 1976.

"A High-Speed Cineradiographic Technique for Biomechanical Impact", Proceedings, 20th Stapp Car Crash Conference, pp 767-781, Dearborn, Michigan, October, 1976.

"Femur Impact Study", Highway Safety Research Institute, the University of Michigan, Ann Arbor, Michigan, Final Report No. UM-HSRI-77-25, May, 1977.

"Survey of the Performance of Infant Auto Restraint Systems Sold in the United States and Canada", Highway Safety Research Institutet the University of Michigan, Ann Arbor, Michigan, Final Report No. UM-HSRI-77-21, Vol. 1, 2, 3 & Film, May, 1977.

"Measurement of Head Impact Response", Proceedings, International Conference on the Biokinetics of Impacts, pp 152-162, Berlin, West Germany, September, 1977.

"Head Injury Research Program - Human Cadaver Head Impact", Highway Safety Research Institute, the University of Michigan, Ann Arbor, Michigan, Final Report No. UM-HSRI-77-41, June, 1977.

"A Report of Impact Tests Conducted for Bobby-Mac Co., Inc.", Tandelta Associates, Ann Arbor, Michigan, August, 1977.

"Validation Studies for Head Impact Injury Model, Highway Safety Research Institute, The University of Michigan, Ann Arbor, Michigan, Final Report No. DOT HS-802 566, September, 1977.

"Safety Helmet - Head Interaction Study Using High-Speed Cineradiography", Highway Safety Research Institute, The University of Michigan, Ann Arbor, Michigan, Final Report No. UM-HSRI-77-48, Film, October, 1977.

"Head Impact Response", Proceedings, 21st Stapp Car Crash Conference, pp.305-335, New Orleans, Louisiana, October, 1977.

"Impact Trauma of the Human Temporal Bone", Journal of Trauma, Vol. 17, No. 10, p. 761-766, October, 1977.

"Child Auto Restraint Design Principles", The Southeastern Conference on Safe Product Design and Failure Analysis, pp. 43-57, Durham, North Carolina, November, 1977.

"Feasibility of Investigating the Mechanisms of Aortic Trauma using High - Speed Cineradiography - A Pilot Study", Highway Safety Research Institute, The University of Michigan, Ann Arbor, Michigan, Final Report No. UM-HSRI-77-53, December, 1977.

"Prediction of Multidirectional Thoracic Impact Injuries", Proceedings, International Conference on the Biokinetics of Impacts, International Conference on Impact Trauma, pp. 281-285A, Berlin, West Germany, 1977.

"Evaluation of Intrathoracic Response Using High-Speed Cineradiography", Proceedings, 6th New England Bioengineering Conference, Kingston, Rhode Island, March, 1978.

"Letselbiomechanica", Instituut voor Wegtransportmiddelen, TNO, Delft, Nederland, Lectures, July, 1978.

"Protection of Child Occupants in Automobile Crashes", Proceedings, 22nd Stapp Car Crash Conference, pp. 671-695, Ann Arbor, Michigan, October, 1978.

"Child Auto Restraint Design Principles", *Journal of Products Liability*, Vol. 2, pp. 43-58, 1978.

"Presentation of a Frontal Impact and Side Impact Dummy, Defined from Human Data and Realized from a 'Part 572' Basis", Proceedings, 7th International Technical Conference on Experimental Safety Vehicles, pp. 407-416, Paris, France, June, 1979.

"Child Restraint Evaluation by Experimental and Mathematical Simulation", Proceedings, 23rd Stapp Car Crash Conference, pp. 383-415, San Diego, California, 1979.

"TNO - Full Scale Crash Facility Instrumentation Checkout - Crash Test Volvo 343 DL", Instituut voor Wegtransportmiddelen, TNO, Delft, Nederland, Report No. 700710102 A, August, 1979.

"TNO - Full Scale Crash Facility Instrumentation Checkout - Crash Test Volvo 343 DL", Instituut voor Wegtransportmiddelen, TNO, Delft, Nederland, Report No. 700710102 B, August, 1979.

"TNO - Full Scale Crash Facility Instrumentation Checkout - Crash Test Volvo 343 DL", Instituut voor Wegtransportmiddelen, TNO, Delft, Nederland, Report No. 700710102 C, August, 1979.

"Modification of Part 572 Dummy for Lateral Impact According to Biomechanical Data", Proceedings, 23rd Stapp Car Crash Conference, pp. 841-872, San Diego, California, October 1979.

"Construction, Validation and Sensitivity Analysis of Child-Restraint Model", Instituut voor Wegtransportmiddelen, TNO, Delft, Nederland, Report No. 700120002-E, 1980.

"Frontal and Lateral Comparison Tests on PSA/Renault Lateral Dummy Equipped

with Part 572 and Hybrid III Ribs", Instituut voor Wegtransportmiddelen, TNO, Delft, Nederland, Final Report No. 7001230003-7, 1980.

"Development of Anthropomorphic Test Dummies for Frontal and Lateral Collisions-Development of Abdominal Injury Detection", Instituut voor Wegtransportmiddelen, TNO, Delft, Nederland, Final Report No. 700120003-6, 1980.

"Submarining Sled Tests Part 572 Pelvis Without PSA/Renault Submarining Transducers and PSA/Renault Modified Part 572 Pelvis with Submarining Transducers", Instituut voor Wegtransportmiddelen, TNO, Delft, Nederland, Report No. 70012003-7, 1980.

"Mechanisms of Femoral Fracture", Journal of Biomechanics, Vol. 13, No. 8, pp. 701-715, August, 1980.

Conference on the Biomechanics of Impacts, pp. 105-119, Zurich, Switzerland, September, 1986.

"Impact Biomechanics at The Ohio State University", Proceedings, Injury Biomechanics, Government/Industry Meeting and Exposition, SAE Publication SP-731, pp. 63-70, Washington, D.C., May 18-21, 1987.

"MADYMO Used for Computer Aided Design of a Dynamic Acting Child Restraint Seat", Vth International IRCOBI Conference, pp. 107-116, Birmingham, England, September, 1980.

"Designing of a Dummy's Abdomen for Detecting Injuries in Side Impact Collisions", Vth International IRCOBI Conference on Biomechanics of Impacts, pp. 149-164, Birmingham, England, September, 1980.

"Comparison Study of Two 3-year-old Child Dummies (Part 572 and P3) in a Harness Type Child Restraint System", VI th International IRCOBI Conference on the Biomechanics of Impacts, pp. 321-330, Salon de Provence, France, September, 1981.

"Unrestrained, Front Seat, Child Surrogate Trajectories Produced by Hard Braking", Southwest Research Institute, San Antonio, Texas, Final Report 11-6014, September, 1981. (Industrial Confidential).

"Development of a Dummy Abdomen Capable of Injury Detection in Side Impacts", Proceedings, 25th Stapp Car Crash Conference, pp. 651-682, San Francisco, California, September, 1981.

"Comparison Study of Two 3-year-old Child Dummies: The Part 572 and the P3", Proceedings, 25th American Association for Automotive Medicine, pp 397-406, San Francisco, California, October, 1981.

"Unrestrained, Front Seat, Child Surrogate Trajectories Produced by Hard Braking", Proceedings, 26th Stapp Car Crash Conference, pp. 231-247, Ann Arbor, Michigan, October, 1982.

"Development of Neck Injury Tolerance Criteria in Human Surrogates, I. Static Tensile Loading in the Baboon Neck: Preliminary Observations", Proceedings, 9th International Technical Conference on Experimental Safety Vehicles, pp. 279-286, Kyoto, Japan, November, 1982.

"Computer Simulation of a Child During Panic Braking", Southwest Research Institute, San Antonio, Texas, Report No. 14-9341, March, 1983. (Industrial Confidential).

"Interpretation of Neck Loads Transduced by Advanced Anthropomorphic Test Dummies. I. Biomechanical Data", Proceedings, Second Southern Biomedical Engineering Conference, pp. 1-4, San Antonio, Texas, September, 1983.

"Crash Victim Simulation - A First Step in Child Auto Safety", Proceedings, SAE Child Injury and Restraint Conference, pp. 135, 145-162, San Diego, California, October, 1983.

"Application of The Mean Strain Criteria (MSC)", Proceedings, 12th Annual International Workshop on Human Subjects for Biomechanical Research, pp. 173-189, Chicago, Illinois, November, 1984.

"AIS and Probability of Death", Proceedings, 12th Annual International Workshop on Human Subjects for Biomechanical Research, pp. 11-30, Chicago, Illinois, November, 1984.

"The Application of the New Mean Strain Criterion (NMSC)", 1985 International IRCOBI/AAAM Conference on the Biomechanics of Impacts, pp. 191-209, Goteborg, Sweden, June, 1985.

"Abdominal Trauma - Review, Response, and Criteria", Proceedings, 29th Stapp Car Crash Conference, pp. 1-16, Washington, D.C., October, 1985.

"Evaluation of the AIS as a Measure of Probability of Death", Proceedings of the 1986 International IRCOBI

"International Funding, Training and Laboratory Facility: Getting the Job Done", Panel Discussion: Proceedings, Injury Biomechanics Government/Industry Meeting and Exposition, SAE Publication SP-731, pp 189-204, Washington, D.C., May 18-21, 1987.

"A Lumped Parameter Approach to Simulate the Rotational Head Motion", 1987 International IRCOBI Conference on the Biomechanics of Impacts, pp. 203-215, Birmingham, England, September, 1987.

"Translational Energy Criteria and It's Correlation with Head Injury in the Sub-Human Primate", 1987 International IRCOBI Conference on the Biomechanics of Impacts, pp. 223-238, Birmingham, England, September, 1987.

"The Biofidelity of the Eurosid Neck", 1987 International IRCOBI Conference on the Biomechanics of Impacts, pp. 263-283, Birmingham, England, September, 1987.

"Parametric Studies of the Translational Head Injury Model", 1988 International IRCOBI Conference on the Biomechanics of Impacts, pp 181-194, Germany, September 14-16, 1988.

"Size, Weight and Biomechanical Impact Response Requirements for Adult Size Small Female and Large Male Dummies", Proceedings, International Congress and Exposition, SAE Publication SP-782, pp. 133-144, Detroit, Michigan, February 27-March 3, 1989.

"Multi-Directional Dummy Neck Prototype", Proceedings, 12th International Conference on Experimental Safety Vehicles, pp. 645-649, Goteborg, Sweden, May 24-June 1, 1989.

"Sensitivity Analysis for the Translational Energy Criteria: Overall Head Injuries", Proceedings, International Conference on the Biomechanics of Impacts, pp 13-25, Stockholm, Sweden, September, 1989.

"A Child Dummy Family For Future Child Restraint Evaluation", Prepared for: Special Workshop on the Theme "Future in Child Restraints", Co-organized by National Highway Traffic Safety Administration and the International Research Council on Biokinetics of Impacts, Stockholm, Sweden, September 15, 1989.

"The Unified Head Injury Theory", First World Congress of Biomechanics, Volume II, pp 259, La Jolla, California, August 30 - September 4, 1990.

"A Practical Application of the Translational Energy Criteria: Evaluation of

"Baseball and Softball Head Impact Injury Potentials", Proceedings of the 1990 International IRCOBI Conference on the Biomechanics of Impacts, pp. 225-244, Bron, France, September, 1990.

"State of the Art of Rotational Head Injury Modeling", 1st Annual National Biomechanical Symposium on Injury Prevention Through Biomechanics, pp. 105-112, Wayne State University, April 11-13, 1991.

"A Development of Approximate Impedance Functions to Estimate General Human Head Impact Response for Off-Axis Impacts", Proceedings of the 1991 International IRCOBI Conference on the Biomechanics of Impacts, pp. 63-75, Germany, September, 1991.

"Development of A Multisized Hybrid III Based Dummy Family", 2nd Annual Injury Prevention Through Biomechanics Symposium, p. 49, Wayne State University, April 10, 1992.

"The Unified Head Injury Theory", Proceedings, 1992 Engineering Systems Design and Analysis Conference, Vol. 2, pp. 105-114, , Turkey, June 29 - July 3, 1992.

"Brain Injury Prediction Using the Translational Energy Criterion: An Experimental Study", NHTSA Report No. DOT HS 808 093, National Highway Traffic Safety Administration, August, 1992.

"Translational Energy Criteria: Development and Applications", VRTC SRL-096, NHTSA Final Report, National Highway Traffic Safety Administration, U.S. Department of Transportation, 10 Year Report, Pending NHTSA Approval, 1992.

"A Constitutive Relationship for Large Deformation Finite Element Modeling of Brain Tissue", accepted for publication in Journal of Biomechanical Engineering, April 1993.

"An Overview of the Mean Strain Criterion Development", VRTC 91-S8-W-21, 1992.
"An Overview of the Mean Strain Criterion Development", VRTC-88-0107, Report No. 880107-01, pending publication by NHTSA, 1993.

"Validation of Translational Energy Criteria", Proceedings of the 3rd Injury Prevention through Biomechanics Symposium, pp. 13-24, Atlanta, Georgia, May 20-23, 1993.
"Validation of Translational Energy Criteria", Abstracts of The Second World Conference On Injury Control, pp. 28-29, Atlanta, Georgia, May 20-23, 1993.

"Spinal Cord Injuries To Children In Real World Accidents", Proceedings of the Child Occupant Protection Symposium, pp. 173-183, San Antonio, Texas, November 7-8, 1993.

"Validation Study of Translational Energy Criteria", American Society of Mechanical Engineers Joint Applied Mechanics and Materials Summer Conference, AMD-MD '95 Abstracts, p. 414, Los Angeles, California, June 28-30, 1995.

"Real World Side Impact Accidents with Children in Infant and Child Restraint Systems", Third International Conference of Injury Prevention and Control, Melbourne, Australia, February, 1996.

"The Translational Energy Criteria: A Validation Study for Non-Fracture Head Impacts", Proceedings, 41st Stapp Car Crash Conference, pp. 301-314, Orlando, Florida, November, 1997.

PROFESSIONAL EXPERIENCE

Dr. Stalnaker has over 40 years of experience in the field of Biomechanics and has authored or co-authored articles on the subject. His work began with studies on electric field in bone and its effects on bone mass losses, and has included efforts to establish the mechanical properties of the brain, skull bone and scalp. In 1970 he conducted

studies to identify impact tolerances on the head, chest and abdomen. These studies resulted in a head injury criteria called, "Mean Strain Criterion"(MSC), which is now used in helmet design. Additionally, he developed a method for scaling abdominal injuries. Dr. Stalnaker has also worked on the design of Child Auto Restraint Systems, Anthropomorphic Test Devices (ATD) design and test equipment for standard testing.

In addition to his research in this country, Dr. Stalnaker worked for three years in Europe. His first European position was at the Institut fuer Rechtsmedizin at the University of Heidelberg, West Germany. Under contracts with the German Automotive Manufacturers Association and Volvo of Sweden, his responsibilities were to extend their cadaver impact sled testing capability and to help run cadaver

tests. While at the Institut fuer Rechtsmedizin, he studied autopsy techniques and assisted in over one hundred autopsies on trauma victims. This work was followed by a short stay at the Instituut voor Wegtransportmiddelen, (Research Institute for Road Vehicles) at TNO-Delft, The Netherlands. His responsibilities included conducting classes in Biomechanics and constructing data sets for crash victim simulation mathematical models.

He then went to work at the Laboratoire de Physiologie et de Biomechanique of the Association Peugeot-Renault in La Garenne-Colombes, France. While at Peugeot-Renault, he redesigned the Part 572 dummy's thorax for use in lateral impacts. In 1979 he returned to TNO-Delft, where he developed an instrumented dummy abdomen, a child restraint system design using computer simulation, and conducted many tests at the sled laboratory using dummies and cars. While in The Netherlands, representing the Dutch, he was very active in the European Economic Community (EEC) and International Organization for Standards (ISO) committees that set standards for automobiles in Europe. He left TNO at the end of his contract, in the autumn of 1980, to take up a position at Southwest Research Institute (SWRI) in San Antonio, Texas. While at SWRI, he carried out experiments on neck injuries and the "out of position child problem" associated with airbags. He also worked extensively on Crash Victim Simulations, using the MADYMO program.

Dr. Stalnaker became an Associate Professor, at The Ohio State University, in the Autumn of 1982. While at The Ohio State University, he taught courses in instrumentation and system dynamics, as well as a course in which his students designed, built, and raced a Formula Car. In 1984, he was tenured. He continued his research in biomechanics, with emphasis on human tolerance, dummy development, and mathematical modeling. In 1994, he was appointed to the faculty of the Department of Biomedical Engineering at The Ohio State University.

Along with these research programs, Dr. Stalnaker managed masters and Ph.D. students who worked on these projects and used this research towards their degree. He has continued his national and international biomechanics committee work.