

# NEWS



TRANSPORTATION RESEARCH BOARD

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News Release

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## PAPER DESCRIBING LOW-DEFLECTION PORTABLE CONCRETE BARRIER WINS TRB'S K. B. WOODS AWARD

*"Low-Deflection Portable Concrete Barrier"* earned the Transportation Research Board's (TRB's) K. B. Woods Award for its authors Roger P. Bligh, Nauman Mansoor Sheikh, Dean C. Alberson, and Akram Y. Abu-Odeh all of the Texas Transportation Institute (TTI). The award for the winning paper, which was published in the *Transportation Research Record: Journal of the Transportation Research Board*, No. 1984, will be presented on January 22, 2007, at the Thomas B. Deen Distinguished Lecture and Presentation of Outstanding Paper Awards during the Board's 86th Annual Meeting. The K. B. Woods Award, given annually for the best paper in the area of design and construction of transportation facilities, honors the 19<sup>th</sup> Chairman of the Board's Executive Committee.

Temporary barriers installed in a highway work zone can sometimes restrict the available lateral space for accommodating traffic flow and work activity. The award-winning paper describes a new barrier system, developed through a program of finite element simulation and full-scale crash testing, that would maximize the space and number of lanes available for traffic. The new design achieves the objective of low dynamic barrier design deflection without sacrificing constructability, and is also easy to install, inspect, and repair.

Roger Bligh is a Research Engineer and Manager of the Roadside Safety Program at TTI. He also serves as Director of the Center for Transportation Computational Mechanics. Some of Bligh's recent research accomplishments include developing safe practices for encasing guardrail in pavement mowing strips, designing a cost-effective guardrail-to-bridge rail transition system for low-speed roadways, and developing guidance for placement of concrete median barrier on slopes. A co-author of more than 80 publications, Bligh has contributed to the design and development of guidelines for the use of a number of roadside safety devices. He currently serves on the TRB Committee on Roadside Safety Design. Bligh holds a Ph.D. in civil engineering from Texas A&M University and is a registered professional engineer in Texas.

Nauman Mansoor Sheikh is an Associate Transportation Researcher in the Roadside Safety Program at TTI. His specialty is in the field of computational mechanics. Sheikh is actively involved in the design and evaluation of roadside safety appurtenances using non-linear dynamic finite element modeling and simulation. He has contributed to the design and analysis of several roadside safety appurtenances including concrete median barrier systems, guardrail end treatments,

and high energy-absorbing crash cushions. Sheikh holds bachelor and master of science degrees in mechanical engineering, respectively, from Ghulam Ishaq Khan Institute of Engineering Sciences and Technology, Pakistan, and Texas A&M University.

Dean Alberson is a Research Engineer and Program Manager of the Crashworthy Structures Program at TTI. At TTI, he has been actively involved in the full-scale testing and evaluation of numerous highway safety features, including the w-beam guardrail, cable guardrail, guardrail terminals, crash cushions, and breakaway sign supports. Following 9/11, Alberson has served as the principal investigator on several projects for the U.S. Department of State and has been personally involved in the testing of more than 50 security and anti-terror and anti-ram devices. A registered professional engineer, Alberson holds a Ph.D. in civil engineering structures from Texas A&M University.

Akram Abu-Odeh is an Associate Research Scientist in the Center for Transportation Computational Mechanics at TTI. He holds a Ph.D. in civil engineering from Texas A&M University. At TTI, Dr. Abu-Odeh has been actively involved in finite element modeling and simulation of vehicular impacts with roadside safety structures using the LS-DYNA simulation program. Some of his simulation projects include portable concrete barriers, guardrails, transitions, and bridge rails developed for FHWA and the states of Texas, Washington, Florida, and New York; and the development of models for use in vehicular impact simulations for a tubular W-beam bridge rail, a W-beam guardrail system encased in a pavement mowstrip, and a box beam transition to a tubular steel bridge rail. Active in TRB, Abu-Odeh is a member of the Roadside Safety Features Committee.

More than 10,000 policy makers, administrators, practitioners, researchers, and representatives of government, industry, and academic institutions are expected to attend the Transportation Research Board (TRB) 86th Annual Meeting, in Washington, DC, January 21-25, 2007. The meeting, held at the Marriott Wardman Park, Omni Shoreham, and Hilton Washington hotels, includes more than 2,800 presentations in 500 sessions, 75 workshops, and 400 TRB committee meetings covering all aspects of transportation.

TRB's mission is to promote innovation and progress in transportation through research. In an objective and interdisciplinary setting, TRB facilitates the sharing of information on transportation practice and policy by researchers and practitioners; stimulates research and offers research management services that promote technical excellence; provides expert advice on transportation policy and programs; and disseminates research results broadly and encourages their implementation. A major focal point of TRB's activities, the Annual Meeting provides an opportunity for transportation professionals from all over the world to exchange information of common interest.

Organized in 1920, TRB is a division of the National Academies, which include the National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council. The nation turns to the National Academies for independent, objective advice on issues that affect people's lives worldwide.

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