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## Next best thing to a real explosion

Shock waves from exploding bombs can be just as deadly as flying debris or flames, say University of Rhode Island researchers. They have created a shock tube to test various composite materials that may withstand the forces.

"When chemicals react and burst in a bomb, they create a pressure pulse in the air that expands. That's what we're creating in the shock tube," says Carl-Ernst Rousseau, URI assistant professor of mechanical engineering.

URI scientists pump helium through the 23-ft long, 6-in.-diameter aluminum tube which has a thin barrier placed 6 ft from the end. The pressure builds until the helium bursts through the barrier, speeding the gas down the tube at speeds of up to Mach 6, slamming into material placed at the end. Sensors attached to the material monitor the pressure and strain during impact.



The first material being tested is a composite called 3-Weave from **3Tex**, Cary, N.C., ([3tex.com](http://3tex.com)). Glass fibers are woven in three directions for added strength and, when a ceramic backing is applied, the resulting material can serve as lightweight armor for protecting military vehicles. URI scientists are also planning to test cow bones to evaluate how they react under explosive attack. "We obviously can't study how bombs impact human bodies, but the shock tube lets us do the next best thing," says Rousseau.

## COMPANY NEWS

**RF Micro Devices Inc.**, a provider of RFICs (radiofrequency integrated circuits), for wireless communications applications, recently opened a new sales and customer support office in Shenzhen, China.

**Environmental Tectonics Corp.'s** Driver Training Simulator, commissioned by the Metropolitan Airports Commission, is located in the Airside Operations Training Facility at Minneapolis-St. Paul International Airport. The Simulator will provide airport personnel with training in runway incursion avoidance, airport fire and emergency response, airport orientation, Airside Operations Area driving procedures, aircraft servicing, and snow-removal procedures.