

10:32 AM February 27, 2008

Building a safer restraint system

Wolf Technical's belt invention undergoing testing by Lifeline and under contract to military

By Tom Spalding

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For a quarter century, the forensic engineers at Wolf Technical Services built their business model by using science to sort through sorrow.

The Indianapolis company's specialty includes detailed reconstructions of car crashes and workplace mishaps.

"The guys get called after something bad happens to someone typically," said Joe Ward, a company vice president.

But for the past five years, Wolf Technical's crash-test dummies also have been used for a potentially more profitable cause: the Universal Mobile Aircrew Restraint System.

Known by its acronym, UMARS, the versatile, seat-belt-like harness promises to improve safety inside thousands of civilian and military fixed-wing aircraft and helicopters worldwide. Total sales for the device could reach \$160 million, Ward said.

Already endorsed in concept by the U.S. Air Force, the UMARS is toaster-sized, nonmotorized and roughly 10 pounds. Its energy-absorbing gears and restraint system look like a car seat belt but allow a person to move about a cabin while staying tethered.

Wolf scored a contract with the military for UMARS, contingent on its passing an array of final-stage environmental and flight tests.

Ward estimates each device will cost from \$3,000 to \$5,000 to make. With a goal of 20,000 domestic orders, U.S. sales could reach \$80 million, and foreign sales could equal or top that, Ward said.

The company also is negotiating with governments of Western Europe and Canada, which has been so interested in the product that it plans to help Wolf with testing over the summer to move the process along, Ward said.

The spinoff of similar technology could be far larger than just the restraint system, Ward said, adding "there are many applications of similar technologies that could have a much larger marketplace than this."

How and where the restraints will be produced hasn't been determined, but the contract is with several military branches, which means there likely will be a number of small orders, Ward said.

And though it's still being tested, the invention garnered the company a spot in the prestigious Indiana Venture Idol competition three months ago. The Indiana Economic Development Corp. lauded Wolf Technical this month as an example of spry, high-tech Hoosier companies.

"We are commercializing new technology that has the potential to translate into more high-paying jobs," said Nathan Feltman, the state's commerce secretary and chief executive of the IEDC.

What's good for one Indiana business can be good for others.



Real-world experience: The Universal Mobile Aircrew Restraint System, invented by Wolf Technical Services of Indianapolis, is being tested on helicopters used for Clarian Health's Life Line medical transportation service. Here, a Life Line copter sits on the helipad at Methodist Hospital.

WOLF TECHNICAL SERVICES

>> **Location:** 6836 Hawthorn Park Drive, Indianapolis.

>> **Employees:** 30.

>> **Leader:** Michael Pepe, president and chief executive.

>> **About:** Privately held company, founded in 1977 to assist the legal and insurance markets, provides scientifically based expert opinions to determine cause and effect in accidents related to motor vehicle and property-damage incidents.

>> **To learn more:** Visit www.wolftechnical.com.

Westfield-based IMMI, whose Lifeguard Technologies division makes safety-restraint systems for vehicles, has provided manufacturing expertise to Wolf, said Stuart Nightenhelser, Wolf's director of advanced programs.

Wolf is testing the device with Clarian Health's Life Line helicopter at Methodist Hospital.

Werner Winkler, a member of Omniflight, the company which provides helicopters for the Life Line service, said he loves the concept because typical in-cabin lap-belt restraints limit mobility.

A crew member conducting an in-air task must unbuckle first, running the risk of being injured during turbulence or a hard landing. By contrast, the UMARS belt is long and durable and works like a shock absorber, protecting the user. It's also made of Kevlar, the material in bulletproof vests.

"The advantage of this system is their safety would not be an issue, as far as being thrown around," Winkler said.