



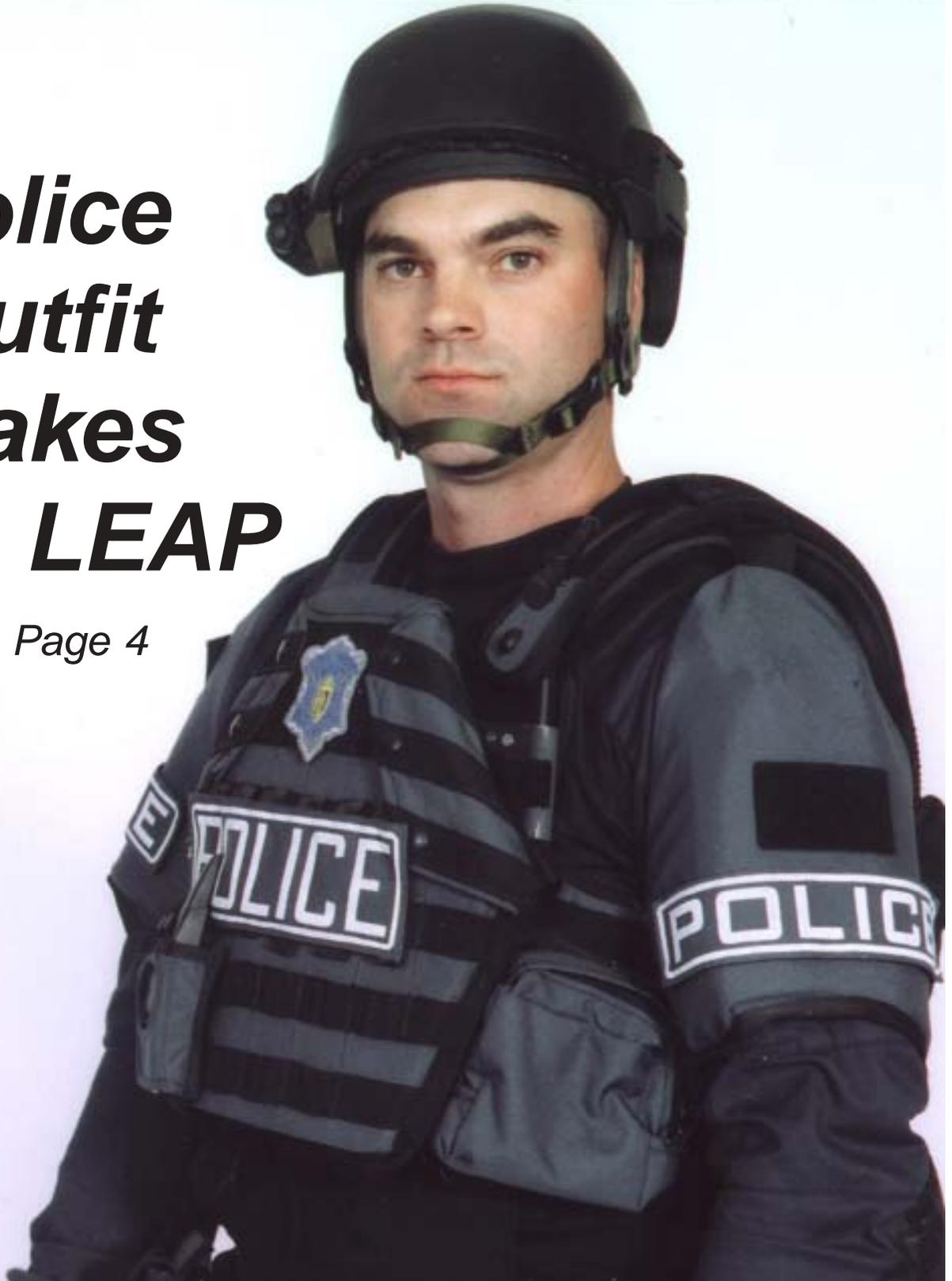
# THE WARRIOR

Natick, Massachusetts

November-December 2004

## *Police outfit takes LEAP*

*See Page 4*



# Contents

## 3 *Versatile threads*

Team ready to spin out advanced fibers for military textiles.

## 4 *LEAP*

Uniform ensemble tailored for special operations police.

## 6 *Free electricity*

Photovoltaics harness sunlight to power the military.

## 8 *Floatation devices*

MOBIs and strobes ease rescue for overboard sailors.

## 10 *ISSC*

Conference on soldier systems comes to Boston.

## 11 *Lab of the Year*

Natick Soldier Center wins top award again.



Cover photo: Massachusetts State Trooper Sgt. Dan Wildgrube wears the Law Enforcement Advanced Protection (LEAP) prototype. (Warrior/Underhill)



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# Spin out

## Team to develop new capabilities in synthetic fibers

By Curt Biberdorf  
Editor

High-performance synthetic fibers for military textiles and other applications are beginning to spin out of the expanded Fiber Plant at the U.S. Army Soldier Systems Center in Natick, Mass.

The Fiber Plant opened here in 1977 to research and develop novel fibers because of the experience, technology, academia and government resources in the region, according to Tom Rohnstock, an equipment specialist on the Fiber Processing and Technology Team.

It started with a monofilament extruder to develop homogeneous fibers. Newer fibers have since been developed, and in 2002 the team took the next step in fiber technology when it acquired a multicomponent extruder.

Instead of producing a single homogeneous fiber, the multicomponent extruder combines a "sheath" material over a "core" material to produce a unique fiber. The resulting fiber may comprise one or more polymers and additives that could be positioned in a specific point of the fiber to provide features including anti-microbial properties, fire retardance, thermal protection, electrical conductivity or radar wave



Warrior/Underhill

**Fibers are spun with the monofilament extruder.**

absorption, according to Peter Olejarz, Fiber Processing and Technology team leader.

"It's advantageous in a number of ways," said Louis Dittami, a research physicist. "You can position the additives just under the surface where they can exercise their function while enjoying the protection of the outer layer polymer."

He said materials are normally coated onto a fiber to increase their durability, such as water resistance or flame retardance, but they have a limited life because it's a surface treatment vs. a multicomponent fiber that embeds and protects the material within the fiber itself.

The monofilament extruder remains useful in research and development of nylon, polyester,

polyethylene and other synthetic fibers that are woven into items such as outerwear and tents.

Additives are evenly dispersed throughout the fiber in the monofilament extruder, Olejarz said. With the machine, researchers have spun experimental varieties of snow camouflage fibers with ultraviolet properties, experimented on incorporating unique signature-modifying materials or identification capability directly into fibers for camouflage, and supported U.S. Department of Agriculture and Navy-sponsored efforts on biodegradable packaging.

Besides the new multicomponent machine, the facility's staff has grown from two to eight employees in the past 15 years, and in September, the Fiber Plant was accredited by the International Organization for Standardization.

After settling into the expanded plant, the team has re-focused its attention to provide research and development assistance on warfighter needs, Olejarz said, and is accepting experimental ideas from Soldier Systems Center community to take advantage of their expertise.

"This day and age, most textile manufacturers are getting out of research and development because they can't afford it," Olejarz said. "It's mostly done by the government. There are companies who can do it, and it would cost a fortune."

The Fiber Processing and Technology Team is working with other government agencies to develop a new program in 2006 for innovative fiber performance to enhance comfort and survivability for warfighters.

An optical lab is in the process of being created to study additives and polymers, Rohnstock said.

The facility also is involved in a large nanotechnology program to more thoroughly integrate additives and polymers to fibers for lightweight materials. Olejarz said with vast improvements in technology in the last 10 years, there's no telling what discoveries lie ahead.



Warrior/Underhill

**A multicomponent extruder at the Fiber Plant offers new possibilities in advancing fiber technology.**

## **Chemical protection is the next focus of a futuristic police tactical uniform ensemble called...**

# LEAP

*Story by Curt Biberdorf  
Photos by Sarah Underhill*

**I**n seconds, a special operations police officer could be protected against chemical or biological agents with the Law Enforcement Advanced Protection (LEAP) uniform ensemble in development at the U.S. Army Soldier Systems Center in Natick, Mass.

First unveiled as the Law Enforcement/Corrections Tactical Uniform System (LECTUS) in 2002, the project, renamed LEAP last year, has revamped its prototype ensemble that portrays what research-

ers envision as potential relevant military technology to the law enforcement community.

“The LECTUS was an overall demonstration. It was our first vision of a prototype,” said Jonathan Rich, project manager at the National Protection Center. “We’re looking at the chemical-biological piece now to see if they work and eventually demonstrate a functional ensemble.”

LEAP leverages concepts from the Army’s Future Force Warrior (FFW) combat ensemble. Just as

FFW represents the future in an integrated and modular systems approach to equipping Soldiers, LEAP represents a new level of capability for law enforcement officers on a special operations team.

“This is the civilian version of FFW. When we’re displaying the LEAP ensemble, we like to show it next to FFW because they directly relate to each other,” Rich said. “Operators that have had a chance to see it think it’s a great concept. Law enforcement currently has big plastic hazmat suits that make it tough to perform tactical operations.”

Project LEAP is a Department of Homeland Security-Office of Science and Technology-sponsored multi-agency effort. The Materials and System Integration Team at Natick oversees and executes all technical aspects with support from the U.S. Army Edgewood Chemical Biological Center, National Institute of Justice, Center for Technology Commercialization and Office of Law Enforcement Technology Commercialization.

LEAP focuses on standards and certification gaps that affect the emergency responder’s ability to access grants and procure equipment, said Rita Gonzalez, National Protection Center director.

“Without standards it’s difficult to define what emergency responders can buy,” she said. “With the push for military-type technologies and integrated systems, the impact on standards and equipment certification becomes more challenging.”

Rich said the plan, after dealing with the chemical-biological protec-



**The LEAP uniform leverages concepts from the Army’s Future Force Warrior combat ensemble. The helmet and stand-off body armor vest are examples of similar components.**



Carried around the officer's waist, the LEAP's chemical-biological top is rolled out and donned for complete protection. A hood and gloves are integrated into the top, and a mask may be integrated into either the hood or helmet.

tive alternatives and standards phase of LEAP, is to work progressively on a suite of capabilities including ballistic protection, load bearing, electronics and other integrated components.

Chemical-biological agent protection has top emphasis as the entire emergency response community has been seeking upgrades in their equipment since the Oklahoma City bombing in 1995, according to Gonzalez.

In this latest effort, engineers adopted an "over-under" hybrid concept. What appears to be an officer's "spare tire" just above the waist is actually the top part of what would be a chemical-biological protective material connected to a non-permeable bottom.

When the need arises, the officer dons the mask, unfastens and drops the load-carriage vest, and slips into the rolled out top half with built-in gloves and a hood that fits over a mask. The officer then can don the vest over the protective top.

"We hope to integrate the mask into the hood or into the helmet, but it depends how technology advances," Rich said. "(The type of material) below the waist may be too hot, but it may not matter since most of the heat is released at the top half."

For instance, heat wouldn't matter much in a 20-minute mission, but

sometimes they're in situations that last for hours, such as guarding attendees at a political convention, according to Rich.

Besides protecting the head against ballistic and blunt trauma, the LEAP ensemble's modular helmet will incorporate a global positioning system, radio antenna suite, flashlight, drop-down visor with heads-up display, and a detachable mandible to cover the face and neck.

Electronics are mostly contained in the helmet, and he said it's probably the most complicated part of the LEAP system and furthest away from reality. The LEAP Team is tracking the progress of FFW, and other DoD programs, in this area.

"Everything's modular, so you can replace a piece if something breaks or improved technology becomes available, but integrated so you can reduce bulk and weight," Rich said.

On the torso, LEAP adopts FFW's stand-off body armor plating front and rear in a quick don and doff load-carriage vest. A new body armor design reduces the need for soft armor and lessens the blow by giving space for bullet deformation, Rich said. Soft armor covers the shoulders and upper arm.

Attachment loops along the vest enable any combination of items to be easily carried, including a hydration pouch and extra ammunition. "It's up to whoever is wearing it how



it is configured," he said.

An ergonomic load-bearing belt holds a drop-down holster for a pistol and cases for a radio, magazines, handcuffs, flash bangs and other police equipment. Rich said the Massachusetts State Trooper who wears the outfit for display reported that it's much more comfortable because of its improved weight distribution.

Knee and elbow pads are integrated into the black cotton/nylon blend fabric uniform, complete with the FFW's waste management zipper, that's worn with commercially-available gloves and boots.

The Massachusetts State Police, U.S. Capitol Police and Mount Weather Police Department in Virginia are assisting in evaluating the LEAP because they have different specialized missions, Rich said.

"We're looking to mesh everything together to look at the commonalities so that when it is available for purchase, it will fit most users," he said.

# Light to electricity

## Advances in photovoltaic technology shine into new territory

By Curt Biberdorf  
Editor

Sunlight is the bright filling station above that never asks for money or runs out of fuel for photovoltaic products, and some scientists believe that “the sky is the limit” for a new generation of photovoltaic technologies in development at the U.S. Army Soldier Systems Center in Natick, Mass.

A promising technology that’s existed for decades, photovoltaic (PV) solar cells convert light energy into electricity without noise, moving parts, fuel consumption or pollutant emissions. A breakthrough arrived in the past five years when PV technology transformed from the traditional large, heavy, rigid, reflective and expensive glass panels into lightweight, conformal and inexpensive devices that now can be directly integrated into textiles and warfighter systems, according to Lynne Samuelson, a research chemist in the Science and Technology Directorate.

“There’s a lot of room to grow on how power is harvested according to the ambient light,” Samuelson said. “Already it’s at a usable level.”

It’s seen as boon to the military for a variety of reasons. Warfighters

could cut their battery load weight in half when PV cells are used in combination with rechargeable batteries to power individual items such as night vision goggles, according to Steven Tucker, an electrical engineer in the Collective Protection Directorate.

“On 72-hour and longer missions, it makes a lot more sense to carry rechargeable batteries,” Tucker said. “You get rid of that logistics tail by minimizing re-supply with disposable batteries. The benefit/weight payback for a photovoltaic charger and rechargeable battery combination is incredibly quick, and out past 72 hours it just keeps getting better.”

Less weight means better mobility, and the ability to recharge batteries on-the-move can increase

sustainability, extend mission times and distance from tactical operations centers, and reduce logistics support requirements.

Replacing or decreasing the number of liquid-fuel-powered generators further reduces logistics, and lowers the heat and sound signature in the field for improved stealth.

It’s also a potential lifesaver as an emergency back-up power in case generators fail, say, in a field hospital.

These benefits are possible because of new lightweight and flexible solar cells made with two complementary PV technologies, amorphous silicon and dye-sensitized nanocomposites.

Of the two, the mature amorphous silicon is the “workhorse” of photovoltaic technology, Samuelson said. “Basically, wherever there’s a surface, you can lay it out and generate electricity. These things are so



Sun shines through the prototype photovoltaic “Power Shade” (upper left) shown setup (bottom left). The shade is designed to cover two kinds of Army tents. The “Quadrant” (above) was designed to be placed wherever convenient and can be adjusted for better exposure to the sun. (Courtesy photos)

versatile, you can make them to do whatever you want.”

Iowa Thin Film Technologies in Ames, Iowa, advanced this technology through a quality award-winning Phase II Small Business Innovative Research (SBIR) effort by manufacturing a PV cell .005 inch thick, rollable to 3 inches diameter and less than 1.7 ounce per 250 mm by 300 mm frame.

Furthermore, the company developed a high-speed manufacturing process for the film and a unique process that allows finished PV product to be roll-laminated directly onto large swaths of shelter fabric.

“This gets away from the heavy glass of prior PV technologies,” Tucker said. “PV made from amorphous silicon is mobile and deployable. It can take abuse. I’ve seen it cut and punctured and still be usable. What degrades over time is the protective covering, not really the PV cell itself.”

Three prototype power-generating solar units were manufactured using the speedy process. A “Power Shade” that fits over two kinds of Army tents has PV material laminated into a mesh fabric that reduces solar load by 80-90 percent while generating up to 1 kilowatt of power for shelter electronics or battery recharging. The smaller TEMPER tent fly generates up to 750 watts, and at one-fourth the size of the fly, the “Quadrant” was designed to be placed wherever convenient and can be adjusted for better exposure to the sun. Its maximum power output is about 190 watts.

On a larger scale, PV cells on shelters for aircraft or field hospitals that cover thousands of square feet could generate 40-60 kilowatts of energy in peak sunlight.

“These shelters are out there in the sun baking away, so why not try to take advantage of it?” Tucker said. “This is not just a one-pronged approach. We’re approaching the issue of getting power to the warfighter from all sides.”

A spin-off from the SBIR is a roll-up module that charges AA batteries. Tucker said the software algorithm that controls the charger was designed to deliver more current to the battery.

“This is a big one. There’s noth-



Warrior/Underhill

**A mock prototype of a camouflage-patterned dye-sensitized nanocomposite photovoltaic is shown. The technology allows for the selection of colored dyes to match camouflage patterns. All other PV technologies require a camouflage netting to go over the photovoltaic cells, blocking some of the light and decreasing power output.**

ing out there like this that we’re aware of,” said Samuelson. “This is the one (Special Operations Command) is excited about and is willing to try.”

A “colorful” approach to PV technology is seen in dye-sensitized nanocomposites, which brings a new wave of possibilities without any sacrifice in power output to amorphous silicon.

Out of an Army Science and Technology Objective, Konarka Technologies in Lowell, Mass., formed to develop PV cells based on light-harvesting dyes that are adsorbed onto titanium dioxide nanoparticles.

Reliable, flexible power for warfighters can be manufactured from a PV layer less than .0005 inch thick that is manufactured onto plastic and into textiles, according to Samuelson. It’s made possible because of lower manufacturing temperatures that won’t melt the plastic.

“The molecules give it color. We’re looking at different color dyes and want to mimic the pattern used in the military,” she said.

Demonstration of a photovoltaic fiber is a unique breakthrough for dye-sensitized nanocomposites, according to Samuelson, which could

be woven into novel fabric-based PV devices that could be used where traditional PV devices were never thought possible, such as a detachable patch worn to prevent friendly fire or alert to chemical or biological agent contamination.

Konarka’s reel-to-reel processing advantage is that it’s inexpensive and widely available in foreign countries, and it may fulfill a dream of the late company founder as a way to produce inexpensive electricity in underdeveloped countries, said Samuelson.

“The applications will evolve with the technology,” said Tucker. “It could be applied to toys so they don’t need batteries or be a way to recharge cell phones or (personal digital assistants).”

Eventually, direct integration into soldier-borne systems may create electronically-active textiles to minimize cables and connections, and provide a more streamlined and multi-functional warfighter system, according to Samuelson.

A new Science and Technology Objective, beginning this year and continuing through 2008, looks to branch out the self-powered electrotiles theme to achieve PV power generation from virtually any surface.

# Staying afloat

## Navy line of life preservers improves chances of fast rescue

By Curt Biberdorf  
Editor

Accidentally blown off the flight deck of an aircraft carrier and plummeting 60 feet into the ocean, it's reassuring to know your life preserver can automatically go to work to keep you afloat and hasten your recovery.

A water-activated Man Overboard Indicator (MOBI) and strobe light are the latest life-saving features designed into two kinds of Navy life preservers through a program led by the U.S. Navy Clothing and Textile Research Facility (NCTRF) located at the U.S. Army Soldier Systems Center in Natick, Mass.

In 2000, the Navy Sea Systems Command requested NCTRF consolidate an array of life preservers into three improved vests, said Richard Wojtaszek, a textile technologist and project officer for protective clothing.

Instead of the traditional method of developing military specifications and tasking a company to design and manufacture a product to meet the specifications, Wojtaszek worked directly with life preserver manufacturers to modify their Coast Guard-approved products to meet the Navy's needs.

"The goal in this was to try to design vests that meet UL (Underwriters Laboratory) standards," Wojtaszek said. "They were never tested before to meet current commercial standards. (Companies) are guaranteeing it's UL-approved, and that's what we requested."

He added that the process enables the Navy to easily change and improve an existing product, such as adding or re-designing a pocket to accommodate a MOBI or strobe light.

The Navy has narrowed their family of life preservers to the Mark I vest, Inherently Buoyant vest and Abandon Ship waist pack, which are available for purchase through the



Courtesy photo

**Known as a "float coat," the new Mark I life preserver protects both inflation devices with flaps and contains a Man Overboard Indicator along with a strobe light to assist rescuers.**

Defense Supply Center-Philadelphia Prime Vendor Program and are gradually replacing the old vests, Wojtaszek said.

### **Float coats**

The Mark I vest, known as a "float coat," is authorized for all ships but is primarily worn by sailors working on an aircraft carrier's flight deck because its minimal bulk enables sailors to operate unencumbered, Wojtaszek said. It comes in seven colors, each representing a sailor's specific job, and five sizes.

The vest design is a modified commercial Sportsman's Utility life preserver containing an inflatable bladder placed inside a flame-retardant-treated cotton/nylon vest cover. The washable cover has reflector strips

for safety, and a heavy-duty plastic zipper and two buckles to secure the vest.

One size bladder fits all vests and is interchangeable between any of the three companies approved to supply the vest. The vest inflates automatically upon water immersion through an inflator with a carbon dioxide cylinder positioned on the lower front and will self-right the wearer even if he is unconscious. The bladder also can be orally inflated through a tube located on the upper front. Both inflator and oral tube are covered by a flap to protect them from damage.

In an upper pocket, the new vest contains a tethered whistle and strobe light that flashes automatically upon water immersion. The



**The Inherently Buoyant life preserver (left) needs no inflation devices. It also carries the Man Overboard Indicator and strobe light in two redesigned pockets. Used in case of an emergency, the Abandon Ship life preserver (above) folds out from a pouch and inflates with a carbon dioxide tube or oral inflator. A new pouch attached to the belt is the latest modification. (Courtesy photos)**

light is visible secured in the pocket or can be removed and stuck on a Velcro shoulder patch to improve the wearer's chances of detection.

Another pocket below the light holds a dye pack used to mark the location of the sailor and a MOBI. After considering several concepts to hold the MOBI device with its antenna, the final design inserted the antenna along an inner loop around the vest's edge leading to the top of the collar. This provides the best signal and also protects the antenna from damage, according to Wojtaszek.

The commercial MOBI technology is able to tell the ship the serial number of the transmitter to determine who is overboard, even if more than one person is in the water, and indicate the direction of the signal up to 1 nautical mile away, Wojtaszek said.

Without the technology, he said it is possible to lose track of a sailor in the open seas, and in some cases

not even know he had been blown over the side by jet blast.

"All of these things are pluses that basically can save the guy's life out there," he said.

Inspecting the bladder as part of preventive maintenance is now easier, and sailors don't have to remove the inflator and cylinder, which reduces the risk of failure. Another modification created an opening at the back to allow the D ring safety harness to fit through, and Wojtaszek said the manufacturers liked it and adapted it to their other life preservers.

### **Foam cells**

The orange Inherently Buoyant vest is made in two sizes and uses closed-cell foam. It's bulky and intended for topside sailors on watch who don't need extra mobility, Wojtaszek said.

It has the same MOBI, strobe light, whistle, dye pack and opening in the back, and meets all UL stan-

dards for buoyancy.

Of particular importance is sufficient head support in rough, open seas, he said. A unique feature is the vertical collar tabs that when pulled tight give the sailor 1-2 extra inches between the water and the sailor's mouth.

### **Abandoned**

Aside from a pouch attached to a belt that holds a whistle, strobe light and buddy line, the Abandon Ship vest is identical to inflatable belt styles worn around the waist and sold commercially by several manufacturers. It is used in case of an emergency for all surface ships and submarines, according to Wojtaszek.

An inflatable bladder folded out of a blue rugged nylon pouch is manually inflated with a pull-tab trigger inflator discharging a carbon dioxide cylinder or through a mouth tube. Enough of the vests are aboard each ship for everyone.

# International Conference scheduled for Boston

The 2004 International Soldier Systems Center Conference (ISSC) will be held this year at the Marriott Copley Place in Boston Dec. 13-16.

ISSC 2004 is the fourth in the series of conferences jointly supported by the U.S. Army Natick Soldier Center (NSC) and United Kingdom (UK) Ministry of Defense, Director of Defense Equipment Capability (Ground Maneuvers).

The focus is on cutting-edge Soldier system technologies presented in an international forum with the aim of making the allied soldier the best-equipped, best-clothed, best-fed and best-protected soldier in the world.

Parallel technical panels will address topics such as interoperability and systems integration, survivability, soldier power, soldier load, materials, clothing and textiles, anthropometrics and fit, and modeling and simulation.

Attendees will include representatives from NATO governments, research organizations, military personnel, academia and industry. Philip Brandler, NSC director, will host the conference, and the highlight will be the scheduled keynote speaker, Army Vice Chief of Staff Gen. Richard Cody.

“(These conferences) are beneficial because it’s the only time you get this kind of focus. It’s a one-stop opportunity to let you know what everybody else (among allied countries) is doing and leverage the technology for Soldiers,” said Arnold Boucher, NSC’s Business Development and Management Team leader.

He said he was concerned about interest in attending a conference in Boston during the winter, but more than 500 attendees are registered, and every one of the 45 exhibit spaces has been reserved.

In addition, a food safety workshop will run concurrently with the ISSC on Dec. 14. It will provide an opportunity for other government agencies, academia and industry to present information and potential so-

lutions on their respective food safety initiatives, and to learn of others.

This workshop will focus on detection of technologies, innovative processing and preservation techniques, and intervention steps needed to protect our military’s and nation’s food supply from foodborne pathogens as well as the threat of bioterrorism.

Previous ISSC conferences were held in Bath, England, in November 2001; Orlando, Fla., in September 1999 and Colchester, England, in September 1997.

*Editor’s Note: The National Defense Industrial Association is sponsoring the conference. For registration information, contact Ann Saliski at 703-247-2577 or e-mail at [asaliski@ndia.org](mailto:asaliski@ndia.org).*



Warrior/Underhill

**Future Force Warrior will be on display at the International Soldier Systems Center Conference in Boston Dec. 13-16.**

# NSC wins 2004 Lab of Year

For the third time in the past four years, the Natick Soldier Center (NSC) at the U.S. Army Soldier Systems Center in Natick, Mass., has won the Department of the Army Research and Development of the Year Award (Small Development Lab Category).

Claude M. Bolton Jr., assistant secretary of the Army for Acquisition, Logistics and Technology and Army acquisition executive, presented the 2004 award at the Army Acquisition Ball in Arlington, Va., Oct. 24.

A group of science and technology experts assembled by the Army judged the competition, ranking the results based on a written report and oral presentation delivered by Philip Brandler, NSC director.

“Being recognized as the Army Small Development Lab of the Year for the third time in four years is an outstanding accomplishment for the Natick Soldier Center that reflects upon the high quality of our work force, as well as the significant collaborative relationships we maintain with our corporate and academic partners, and the DoD partners collocated with us at the Soldier Systems Center,” Brandler said.

Selection for the most prestigious award the Army bestows upon a research and development organization is based on extensive evaluation of the organization’s vision, strategy and business plans; strategic management of human capital; competitive sourcing; improved financial performance; use of expanded electronic government; budget and performance integration; major management achievements; and major technical achievements.

This year, many of the criteria chosen for evaluation were directly linked to the president’s management agenda. The NSC used its balanced scorecard strategic map to link resources, human capital, business practices and strategic initiatives to its core competencies of warrior-related technology generation, application and transition; warrior systems technology integration and transition; and solving warrior and warrior support-related field problems rapidly.

NSC’s vision is to be the recognized center of choice for individual warrior-related technologies and warrior systems, and internationally known as a pre-eminent provider of Soldier-related research, development, engineering and integration services.

Identified as its most significant management accomplishment, partnering and leveraging helps the NSC to achieve its vision. NSC’s nomination highlighted part-

nerships with Malden Mills for protective clothing, the Massachusetts Institute of Technology with their Institute for Soldier Nanotechnologies focused on creating new materials to dramatically improve the survival of Soldiers, the Institute for Collaborative Biotechnologies for biologically-derived or inspired materials for sensors, electronics and information processing, and the MIT Auto-ID Center, which is revolutionizing the supply management chain with radio frequency identification.

NSC chose its Joint Precision Airdrop System Advanced Concept Technology Demonstration program (JPADS ACTD) to highlight as a significant technical accomplishment.

Ranked the No. 2 priority by Defense Department’s Joint Requirements Oversight Council, JPADS enables warfighters to have equipment or supplies airdropped precisely where they want them to minimize ground troop detection, and dramatically reduce risk to the aircraft and aircrew from enemy fire.

Other advantages are smaller and more numerous drop zones, and multiple load delivery to multiple destinations from one release point. A technology

segment from the ACTD transitioned through NSC’s installation partner, Product Manager Force Sustainment Systems, for initial fielding in July in support of Operation Iraqi Freedom and Operation Enduring Freedom.

NSC’s nomination also demonstrated the crucial role it plays in supporting the Global War on Terror and homeland security. Most significant was support to Special Operations Forces for individual and small unit equipment.

The Raven handheld Unmanned Aerial Vehicle, Protective Combat Uniform, and Low Visibility Body Armor Vest are a few examples of individual and small-unit items that were fielded in short notice to support ongoing operations in Southwest Asia.

“This award also underscores the significant impact that the Natick Soldier Center is having on the Global War on Terrorism, particularly as it relates to Soldier survivability, sustainment and quality of life in the field.” Brandler said. “The Army and all of DoD enjoy the advantages we gain from the technology hub that surrounds us and our ability to access it for the benefit of the Soldier.”



File photo

**The Sherpa Guided Parachute Cargo System is a segment of the JPADS ACTD that was highlighted as a significant technical accomplishment.**