

# INFANTRY NEWS



THE MILITARY EYE PROTECTION System (MEPS) will soon replace an assortment of protective eyewear.

Since the mid-1990s, the Army and the Marine Corps have used a combination of ballistic/laser protective spectacles (BLPSs), special protective eyewear, cylindrical system (SPECS), and sun, wind, and dust goggles (SWDGs) to shield troops from eye injury.

With the new protective gear, the number of lenses is cut in half, and the level of protection is increased. Troops will have one system in sleek goggles or spectacles, with interchangeable lenses for both.

The new protection system carries over the lightweight but tough polycarbonate used in these earlier spectacles and goggles that passed tests for ballistic resistance. The new spectacles add peripheral coverage that was limited with the SPECS. Like SPECS and BLPS, they also meet the American National Standards Institute requirements for occupational eye and face protection.

BLPS, SPECS, and SWDG use four lenses designed for each item: clear, sunglass, three-line laser protective, and two-line laser protective. When lasers are not a hazard, soldiers can use the clear lens to protect against ballistic and ultraviolet rays day or night. Or they can use a darkened sunglass lens with added glare protection during the day.

When lasers are a danger, soldiers currently switch to a green lens that blocks two wavelengths for use in dim light, or a dark lens that shields three wavelengths for use in daylight. Special coloring and coatings absorb the laser to minimize or eliminate injuries.

For durability, the new system uses two types of laser reflective materials sandwiched between two layers of polycarbonate. It also covers a wider band of near-infrared wavelength energy than the current systems. Separate

daytime and nighttime lenses have been eliminated.

Natick is looking at blocking broad bands of laser while minimizing the effect on color vision. This color vision is critical to the soldier's ability to read maps and use such devices as image intensifiers. Also being considered are better light transmission and, ultimately, tunable laser protection that adjusts to the hazard.

Other improvements are in fit, comfort, and logistical efficiency. The BLPS was designed to accommodate wearers of prescription eyeglasses. They were all in one size and difficult to fit the entire user population. SPECS come in two sizes for more precise fit, but they can be worn only by soldiers with normal vision. Military-issued eyeglasses fit inside the SWDG, but often with just enough room.

The new system can be worn by anyone and comes in two spectacle sizes for an improved fit while retaining a single size for the goggles. A prescription lens carrier snaps into the goggles and spectacle frames if needed.

Clear, sunglass, and laser lenses, all with ballistic protection, are interchangeable between the large spectacles and goggles for simpler supply and storage. Spectacles or goggles, along with two extra lenses, are stored and carried in a rigid foam case with a green cloth cover.

The goggles are easy to tighten, or to loosen so they can fall to the chest—a feature important to a gunner looking through a vehicle's internal sights. The currently used goggles have a simple elastic strap and are stowed on the helmet, where they interfere with the proper use of the sighting system in a fighting vehicle or tank.

Goggles are undergoing user evaluation at the Marine Corps Air Ground Combat Center in California; and both goggle and spectacle prototypes are

being evaluated at Fort Campbell, Kentucky. Fielding is expected to begin in 2005.

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PRECISION AERIAL DELIVERY (PAD) prototype equipment, data processing, and system procedures were tested last summer at the U.S. Army Yuma Proving Ground, aboard an Air Force C-130E. The system provides onboard, real-time modeling of load release, fall trajectory, and aircraft dynamics to improve the accuracy of high-altitude air-drops.

Two container delivery system loads (2,225 pounds and 1,485 pounds)—each with standard 26-foot parachute canopies—were deployed from 10,000 feet above ground level on two separate passes. The impact points were within 98 and 130 meters of the intended point. This is considered good performance, especially for an initial test.

The model that was tested used high-resolution atmospheric forecast fields and real-time atmospheric wind profile data received in-flight from a GPS-based free-falling wind probe released from the drop aircraft. This enabled the PAD team to update and refine the Computed Aerial Release Point in real-time while aboard the aircraft.

The system is the result of a four-year development effort of the PAD Team.

Yuma Proving Ground will conduct additional tests and proof-of-concept aerial demonstrations of the prototype system in August and September 2002 at altitudes up to 18,000 feet above mean sea level.

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THE HIGH EXPANSION RATIO shelter for long-term deployments has been developed from a new technology in rigid-wall manufacturing. Wood beams assembled on the ground to support plywood floors, and sheets of plywood

for walls and doors, have turned ordinary modular tents into almost-permanent housing.

This shelter is largely composed of 13 modules that are stored and carried in a container measuring 8 feet by 8 feet by 20 feet. Each folded 500-pound module is stored vertically and slides out of the container at four inches thick. Panels connected by hinges unfold on each side to form walls and then a peaked roof. Modules are connected with gasketed aluminum closeouts to seal the roof and walls from the outdoors.

Adjustable steel jacks at each end and in the middle of the module support the shelter and lift it off the ground for a smooth floor in uneven terrain. The modules provide an expansion ratio of 12:1 to make a shelter 19 feet wide by up to 96 feet long. Space can be adjusted, however, by adding or removing modules.

Comfort, stability, and noise level in windy conditions are a big improvement over tents, and a hinged door makes it easy for soldiers to enter and exit. Besides the panels—which take up the most space—all necessary beams, jacks, and lights fit inside the container.

A goal of the program is for four soldiers to be able to set up the entire shelter in three and one-half hours. No material handling equipment, such as forklifts, is required—only stepladders and simple tools.

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THE U.S. ARMY SOLDIER SYSTEMS Center (Natick) has merged two special-purpose combat rations into a single product, called the Meal, Cold Weather/Food Packet, Long Range Patrol (MCW/LRP).

The new item streamlines production and offers greater operational flexibility than the Ration, Cold Weather, used by soldiers in frigid climates and the Food Packet, Long Range Patrol (LRP), consumed by Special Operations Forces, which shared the same primary components.

The meal/packet expanded the variety to 12 menus from the Ration, Cold Weather's six menus and the LRP's eight menus. Aside from all-white

packaging for cold weather locations and tan wrapping for special operators, the products are nearly identical. Still, the features of the products serve different needs.

Freeze-dried food can be eaten as it is, or rehydrated with hot or cold water. It is resistant to storage damage, and with vacuum packing the entrees have a shelf life as long as 20 years. The new MCW/LRP meets or exceeds the military's shelf life standards of three years at 80 degrees F. or six months at 100 degrees F. The process also makes the food lighter and easier to carry.

The new MCW/LRP weighs one pound, compared to the Meals, Ready-to-Eat (MRE's) one and one-half pounds, and it is compatible with MRE production.

It is designed so a soldier can have a good meal without carrying extra weight and bulk. He gets eight ounces of entrée with the MRE, but a rehydrated LRP provides 16 ounces of food. Special Forces like that, because they feel full at least once a day.

This is important because one packet of the new LRP contains 1,540 calories and is intended to give the special operator his food each day for up to 10 days. A study in 1992 concluded that the extra calories provided by an LRP ration over a 1,200-calorie MRE can make a critical difference in physical performance and immune function.

Future changes to the MCW/LRP may include switching to a single pale-green color for easier procurement, standard use of a peel-open seal for the entrée, and replacement of the peanut brittle bar and granola bar with products that have a longer shelf life.

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NEW URBAN OPERATIONS DOCTRINE has been published by the Infantry School. Under the Army's new field manual numbering system, this manual is now known as FM 3-06.11, *Combined Arms Operations in Urban Terrain*. It replaces FM 90-10-1, *Military Operations on Urbanized Terrain*, dated May 1993 with Change 1.

Worldwide urban growth and population shifts from rural to urban have significantly affected Army operations, both combat and non-combat. All fu-

ture significant military operations are likely to involve the Infantry as part of a combined arms team in urban areas.

This manual provides brigade and battalion commanders and staffs, company commanders, small-unit leaders, and individual Infantrymen with detailed discussions of doctrinal principles as well as tactics and techniques for conducting full-spectrum urban operations.

The new version updates and expands the information provided in the previous manual and adds discussions on the following subjects:

- Stability and support operations.
- Sniper and countersniper techniques.
- Employment of Army aviation.
- Operations under limited visibility.
- Precision room clearing.
- Considerations for coalition operations.
- Hazards of toxic industrial materials.
- Subterranean operations.
- Weapons effects against urban targets.
- Techniques for marking buildings and rooms.

An added appendix provides a discussion of the numerous lessons learned from modern urban operations, not just by U.S. forces but by the Israelis, the French, the Russians, and UN forces.

Although it is primarily focused on the traditional Infantry, Armor, Artillery, and Engineer combat team, this manual may also be used as a reference for other leaders of combat, combat support, and combat service support units who will participate in combined arms urban operations.

The new manual will soon be available on the Reimer Digital Library. The document search form can then be found at <http://www.adtdl.army.mil/atdl.html>.

Readers who need to download a copy immediately can log onto the internet and go to the Infantry School's File Transfer Protocol (FTP) site. The web address is [<ftp://moutftp.out99tftp@ftp.benning.army.mil/>](ftp://moutftp.out99tftp@ftp.benning.army.mil/). Open the folder titled Doctrine, and then the folder titled FM 3-06.11.