

Light Infantry In Cold-Wet Conditions

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In late-1992, my battalion of the 7th Infantry Division took part in two training exercises. I was sure we were ready for them. We had prepared our soldiers for the tough conditions they would face—a determined enemy, trenches and bunkers, vast terrain, chemicals, and so on. But we were surprised in both cases by an adversary I hadn't taken seriously enough—cold and wet weather—conditions that desperately reduced the battalion's ability to fight:

- In October, while training at Fort Hunter Liggett, the battalion was preparing for and executing a truck movement and dismounted infiltration. The rain began at mid-morning. The soldiers donned their suits of PTFE (polytetrafluoroethylene—commercially known as Gore-Tex) and conducted rehearsals and preparations for combat in the rain. The suits were saturated within an hour. After 14 hours of continuous rain and wind, with temperatures near 38 degrees, a dozen soldiers had to be evacuated to the combat trains for warming. To protect the rest of the force, I delayed a portion of the operation for about 12 hours; by that time, everyone was soaked and the temperature was dropping.

- In December, while training at the National Training Center (NTC), the battalion was preparing for a live fire defense. At about 0300, heavy rain began. Since the weather report had not forecast rain, our soldiers had not erected shelter halves or poncho shelters. Many soldiers awoke in rain-soaked sleeping bags. After more than 14 hours of continuous rain, temperatures of 35 to 40 degrees, and very high winds, some 16 soldiers were evacuated for cold-

related conditions. We went all out to dry and warm our soldiers, setting up tents, using borrowed heaters, and positioning running M1A1 tanks so the exhausts would dry them. As nightfall approached, with forecasts of a wind-chill factor of 20 degrees below zero, the battalion still had more than two companies' worth of cold and wet soldiers.

Later, as we looked into what had happened, we learned more about preparations for and operations during cold-wet conditions. The question was: How can we protect light or dismounted infantry soldiers in cold and wet weather? We came up with some answers. I would like to share with other units an outline of the training and equipment necessary to keep infantry soldiers effective when exposed to cold and wet weather for long periods.

Training and Planning

We found that many of the soldiers had not waterproofed their equipment by putting it in their rucksacks and B-bags. Accustomed to the normally dry conditions of Fort Ord, and not expecting rain at Hunter Liggett or the NTC, leaders and soldiers had not been concerned with waterproofing. We discovered, in fact, that many soldiers had forgotten how to waterproof themselves and their gear.

A more detailed weather forecast during the NTC rotation would have offered some warning and allowed soldiers to erect cover. At least, they could have ensured that their sleeping bags were kept dry.

Leaders have to plan for cold and wet operations. When these conditions seem likely, leaders must figure out how to

better protect their soldiers from the elements. Further, they need to determine what actions they will take when soldiers and their equipment do get wet. Careful planning beforehand will decrease cold weather injuries and maintain combat effectiveness.

Individual Equipment

In both incidents, the PTFE jackets or suits issued to our light infantry soldiers did not protect them from continuous rain; they became saturated within an hour. We were surprised that this "high-tech" gear had failed to keep us dry. That surprise led to many phone calls around the country, to Fort Benning and to the U.S. Army Natick Research, Development, and Engineering Center in Massachusetts. The answers were that the PTFE suit's water-resistant capability might be degraded after repeated wear and laundering. But more important, we learned that the PTFE jacket and trousers, while allegedly water-resistant, were not designed to protect against rain.

To protect themselves against wet conditions, soldiers in light infantry units and other dismounted infantry soldiers must have the standard Army wet-weather suit (parka and trousers) commonly referred to as "the Gumby suit." These items, designed to protect soldiers against wet weather, are the best equipment currently available to keep them dry. Some new equipment may be in the testing phase; all I know is that my soldiers needed waterproof gear last year, and other units still have soldiers operating under such conditions today.

The sleeping bags (intermediate cold)

now issued to light infantrymen get wet easily and are extremely difficult to dry. Obviously, a wet sleeping bag reduces a soldier's ability to operate for an extended period in a cold environment.

An excellent solution to this problem is to purchase and issue less absorbent sleeping bags, with PTFE-like waterproof covers. Combined, these two items are commonly referred to as the "Gore-Tex sleeping bag." First, this equipment is less prone to getting soaked in its highly water-resistant cover. Second, if it does get soaked it dries faster than a standard sleeping bag. Finally, PTFE bags reduce a soldier's load in both weight and bulk.

One bright spot in the battalion's two encounters with cold-wet conditions was the intermediate cold-wet boot, the PTFE boots or "Rockies" that we have been issued in the 7th Division. Soldiers who were wearing these boots kept their feet warm and dry during both encounters.

The age-old problem of the soldier's load also comes into play as we discuss individual equipment. A soldier's rucksack is already filled with his sleeping bag, chemical protective over-garments, additional clothing, ammunition, food, water, batteries, night vision goggles, and the like. Any additional equipment for combating rain and cold must be lightweight, compact, and resistant to water retention, thus adding weight.

Tentage and Drying Equipment

Training in field skills, advanced warning from accurate weather forecasts, and waterproof wet-weather suits and boots should help keep light infantrymen dry. But sometimes even these measures fall short, and when the soldiers get wet in cold weather, unit leaders need access to tents and heaters to warm and dry them. Units need only enough tents and heaters to rotate soldiers through.

Clearly, the disadvantage to adding more equipment to infantry companies is transporting it to the theater of operations and then moving it close enough to the battlefield to be of use. One of the more serious weaknesses in the light infantry design is the shortage of organic transportation within a light brigade, in-

cluding its associated forward support battalion. Any additional tents and heaters need to be accompanied by the additional transportation assets to move them.

It's easy to say that light fighters don't need all this additional equipment; they're tough. But when leaders find that a good portion of each company's soldiers have rapidly dropping core body temperatures, they have moved from tough to vulnerable. Individual and unit equipment should be tailored to meet the demands of the expected conditions. A leader's analysis of mission, enemy, terrain, troops, and time (METT-T) must consider the subtleties of weather and, specifically, wet and cold conditions. Light infantry soldiers can go anywhere if they are properly equipped for the conditions they will find.

The subject of operations in cold-wet weather short of arctic conditions has not received the attention it deserves. Doctrine writers need to review the current literature dealing with cold-wet conditions. When they do, they may decide to develop documents or lesson plans, including videotapes and publications, that deal with such field skills as the proper wear of waterproof or water-resistant clothing, waterproofing gear in rucksacks and B-bags, and building shelters to keep soldiers dry.

Commanders from brigade through company level should require weather forecasts every 12 hours while in the field. When cold-wet weather is possible, these commanders should require subordinate leaders to backbrief their plans for preventing their soldiers from getting wet and for drying them and their equipment when they do.

To fix current problems with our PTFE gear, commanders should immediately requisition enough standard wet-weather suits (top and trousers) for every soldier in their units. The standard wet-weather suits are described as *parka, wet weather, coated nylon*, with a basic NSN of 8405-00-001-1547, and *trousers, wet weather, coated nylon*, with a basic NSN of 8405-00-001-8025. (These NSNs vary by size.)

Officials at Natick Laboratories may want to review once again the problems

with the current family of PTFE equipment. Further, I would ask them to work on the next generation of gear to give us an enhanced wet-weather suit.

PTFE sleeping bags should be bought along with waterproof cases and issued to soldiers in light, airborne, and airmobile divisions. These sleeping bags are far lighter and less bulky than the current cold-weather sleeping bags, and they dry much faster. The specific items include *sleeping bag* (NSN 8465-01-259-4868); *case, sleeping bag* (NSN 8465-01-305-4688); and *bag, extreme cold weather* (NSN 8465-01-305-6360).

Tents and heaters should be issued to infantry units so they can warm and dry any soldiers who do get wet. One option is to issue one GP medium tent and two diesel/JP8-fueled stoves per company. Another option is to issue one 10-man arctic tent and gravity-feed heater to each platoon. This equipment can be stored on pallets in the field trains until it is needed.

Intermediate cold-wet boots should be bought and issued to soldiers as well. These boots must be stocked in the central issue facilities that support units.

I spent my time in battalion command preparing to fight—either in combat or at the NTC—and we were prepared for a well-trained enemy, night operations, trenches and bunkers, and chemicals. Unfortunately, we were not as well prepared for the threat of cold-wet weather. I'm sure other light infantrymen will soon face these same challenges somewhere in the world, and I hope some of these ideas will help them prepare for this additional threat. By properly training and equipping our soldiers to operate under cold/wet conditions, we will ensure that they can fight and win under extremes of weather that would demoralize and defeat a less disciplined force.

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