

Water Resupply and Heat Casualty Prevention

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Non-mechanized infantry units operating in tropical climates must pay particular attention to water resupply and heat casualties. Not only do footmobile soldiers generally consume more water than mechanized infantrymen, they often have fewer resupply and medical evacuation resources to depend upon.

During a joint readiness exercise conducted in Puerto Rico in May 1990, two light infantry battalions of the 2d Brigade, 10th Mountain Division, had an opportunity to gain some valuable experience in planning and conducting water resupply operations and in treating heat casualties in a challenging combat environment.

The exercise culminated in a joint Marine Corps amphibious landing and an Army air assault against a light infantry opposing force (OPFOR) defending Vieques Island, 10 kilometers off Puerto Rico's east coast. One 10th Division battalion served as part of the air assault task force while its sister battalion acted as the OPFOR.

Certain characteristics of the area of operations led the commanders and staffs of both battalions to concentrate on water resupply during their planning. The daily mean temperature on the island in May varied between 75 and 86 degrees Fahrenheit with extreme highs reaching above 90 degrees, and the relative humidity raising the apparent temperature even further. The skies were generally clear, which intensified the sun's effects. Moreover, much of the area consisted of rocky barren hills that afforded the soldiers little protection from solar rays:

Additionally, dismounted movement was strenuous because of the dense vegetation in the low ground, which included numerous mesquite bushes with two-inch thorns. There was also considerable dead-fall on the island from previous hurricanes in the area. Finally, the establishment of an early morning H-hour implied that most of the combat operations would occur during daylight, which would increase the effects of the climate and the terrain on water consumption.

The commander of the air assault task force, in an effort to reduce his soldiers' loads, directed that they carry only the combat patrol pack of the large field pack (Alpine Lowe rucksack). But each man carried six quarts of water — two one-quart canteens on his load-bearing vest (LBV) and two two-quart canteens in his assault pack.

Different logistic courses of action were

developed to deal with water resupply. Enough UH-60 helicopters were available to the battalion initially to slingload two HMMWVs (high mobility multipurpose wheeled vehicles) with the air assault force. The commander elected to use one of these vehicles for command, control, and communications and the other for water and Class V resupply. Both HMMWVs were fully loaded with five-gallon cans to provide the battalion's support platoon with an initial resupply source. Since a resupply operation was scheduled for H+7 hours, slingloading additional quantities of water during the air assault was not considered necessary.

The battalion's mission was to move from its landing zone to clear sectors and occupy blocking positions three to five kilometers away. The company commanders and platoon leaders moved their forces at a steady but moderate pace to



avoid unnecessary heat casualties. Nevertheless, enemy contacts led to strenuous physical exertion, and a small number of soldiers in each unit exhibited heat injury symptoms. The chain of command effectively used combat lifesavers to administer intravenous (IV) solutions and rapidly stabilized heat casualties. Although most of the soldiers recovered quickly and returned to duty, several had to be evacuated by the support platoon's HMMWV to the battalion aid station near the landing zone. There, the battalion physician's assistant supervised medical treatment and monitored the patients to determine whether air evacuation would be required. Eventually, aeromedical evacuation was requested for one casualty, but his condition had stabilized by the time the helicopter arrived and his evacuation was not necessary. Overall, although some 15 soldiers displayed heat injury symptoms, the use of combat lifesavers and an emphasis on medical treatment at the lowest level saved combat power and precluded medical evacuation.

As scheduled, at H+7, UH-60s delivered several 55-gallon collapsible blivets filled with water. The timing was excellent, since most of the soldiers had consumed four to five quarts of water by then. Although efforts to keep the water cool at the logistic base had not been effective, the support platoon quickly distributed five-gallon cans to the dispersed platoons in its HMMWV, and by dusk every soldier was again carrying six quarts of water. The tempo of operations then slowed, and the battalion encountered no further water resupply or heat injury problems.

Meanwhile, the OPFOR battalion, whose mission was to defend the island from widely dispersed positions against an attack, had about five days to prepare its defenses. Because of his opponent's overwhelming superiority in firepower, the OPFOR battalion commander knew he could not count on vehicular resupply once the battle began. Furthermore, he realized that his units' movements would be limited during daylight hours if they were to avoid hostile tactical air and attack helicopters.

Each of his soldiers carried four quarts of water, two one-quart canteens on his LBV and one two-quart canteen in his

combat patrol pack. As with the soldiers in their sister battalion, they did not carry rucksacks.

Upon arriving on the island, the commander directed his units to prepare positions and establish obstacles at night and to "go to ground" during the day. Consequently, the battalion maintained excellent operational security as its units were difficult to spot; furthermore, water consumption was reduced and work was more efficient.

The wide dispersal of the battalion posed unique water resupply problems, though, because most of the squad and platoon defensive positions were not accessible by road. During the five-day preparation phase, the soldiers made extensive use of liquid packs with water bags. (A liquid pack is a 20-liter, or 5.28-gallon, portable water container that can be carried like a rucksack.) The support platoon transported water in five-gallon cans to points along the roads and trails; from which the infantrymen transferred the water to liquid packs and carried them to their positions. Small units also maintained five-gallon cans at their locations as a reserve stock.

The OPFOR battalion relied upon caches as its primary method of resupply. Class I and V stocks were prepared and carefully concealed throughout the area of operations. Platoons and squads were carefully briefed on the locations of the caches and thoroughly rehearsed on the resupply plans.

Despite the intensity of the first day of combat operations when the battalion was attacked by two brigade-sized elements, no OPFOR soldiers ran out of water. By making sure that their maneuvering was consistent with the location of the caches, the junior leaders kept their soldiers both on the offensive and resupplied. In this battalion, too, combat lifesavers immediately administered IVs to soldiers who showed signs of heat exhaustion, and the unit suffered no significant casualties.

From the after action reviews (AARs) conducted at the end of the exercise, it was evident that a detailed consideration of the conditions of METT-T (mission, enemy, terrain, troops, and time) and an emphasis on logistic planning in both battalions had contributed substantially to the success of

the operations. By reducing the soldiers' loads, increasing the amount of water each man carried, and factoring in the effects of the climate on performance when developing work and maneuver plans, the leaders were able to conserve their units' fighting power. Staff officers displayed initiative and imagination when planning resupply operations, continually coordinating with commanders to develop realistic anticipated water consumption rates. The leaders did feel, however, that more attention should have been paid to cooling the water, because soldiers are more likely to drink cold fluids.

It also became clear during the AARs that the combat lifesaver program had been validated. Combat lifesavers in both battalions had administered numerous IVs and had helped the brigade avoid any serious heat casualties. In future operations, since light infantry squads are frequently dispersed and may be some distance from a platoon medic, combat lifesavers can bridge the gap between buddy-aid and combat medic treatment.

It was also brought to light that the supplies of Ringer's lactated (IV) solution carried by the medics and combat lifesavers were barely adequate. In hot, humid climates, every infantryman must carry at least one package if a unit is to sustain itself without resupply for an extended period.

Non-mechanized infantry forces based in the continental United States must be prepared to deploy immediately to tropical areas, fight when they arrive, and win. If commanders emphasize water resupply and heat injury prevention during the planning process, and if they carefully weigh logistic constraints in developing their concept of the operation, they and their units will be far better able to accomplish their missions.

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