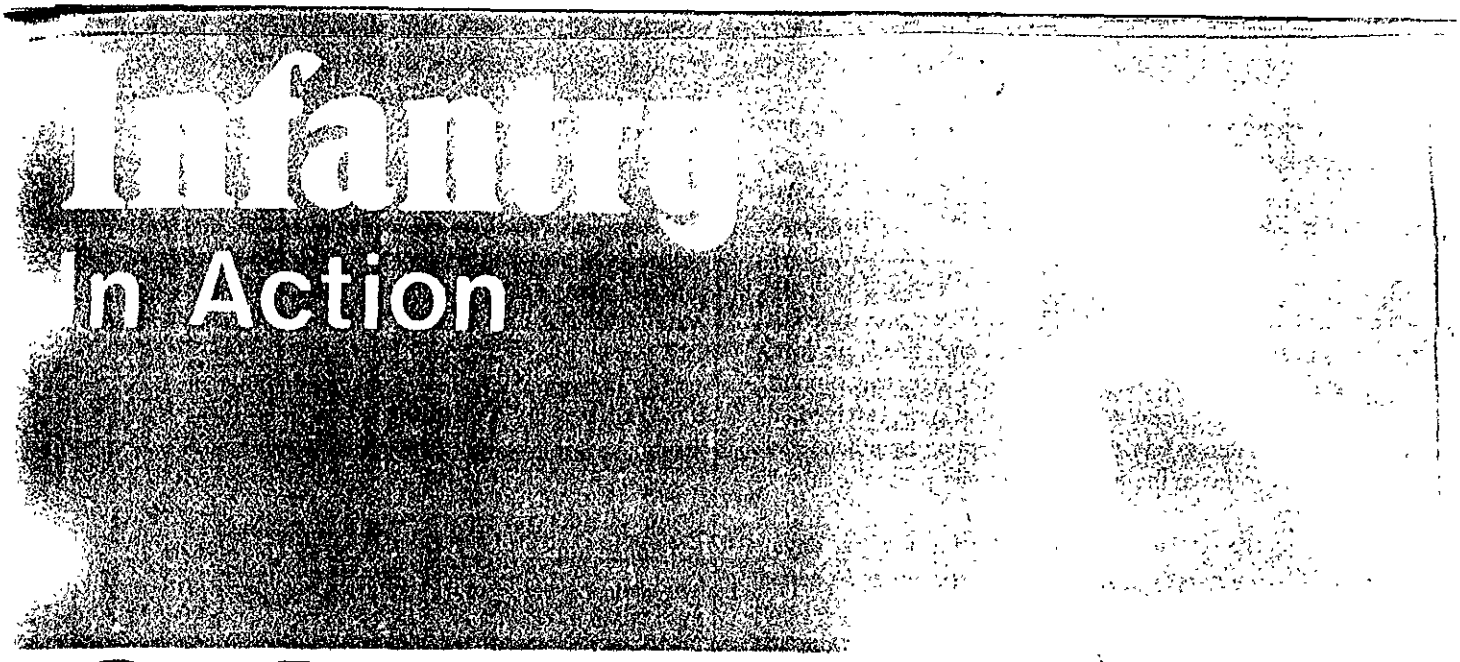


SUSTAINABILITY

CAPTAIN CHRISTOPHER S. BARNTHOUSE

"For want of a nail," begins the old saying we all learned in our youth, reminding us that even the smallest detail can have a devastating effect on the outcome of historical events. Unfortunately, few military men ever ponder its meaning. Military staff colleges throughout the world teach maneuver and tactics, and generals scratch worried brows, trying to increase the "tooth to tail ratio" of the modern fighting force while giving little thought to how the teeth are to sustain themselves.

How little we seem to have learned from history concerning the role logistics plays on the battlefield. From its first recording, history has been filled with heroic tales of brilliant leaders maneuvering brave armies across the globe, altering borders and history; yet, reading between the lines, one is struck by how often the better logistician has won the battle.

The history of the U.S. Army has been filled with stories of logistical privation and the efforts of our military leaders to overcome it. Yet even today, when tactical operations are being planned, logistical support for the soldier in the field is often treated as a necessary evil. Too often, commanders seem to rely on a combination of Divine Providence and an unsupervised staff to keep their forces supplied, giving little personal attention to the matter. A wise commander plans not only his maneuver, but how he will sustain that maneuver throughout the battle and the campaign. It is an *unwise* commander who plans only his maneuver.

Several examples from the past half century will illustrate the wise and the unwise.

GERMANY

On 24 April 1945, Company B, 1st Battalion, 14th Infantry, commanded by Captain Lloyd W. Engelland, was involved in a movement to contact as part of a regimental pursuit south of Nurnberg, Germany. The company's mission was to cover the right flank of the battalion as it moved from its assembly area in Berlengenfeld to objectives along the Danube River east of Regensburg, 10 miles distant.

The terrain over which it was to travel was hilly and wooded, with only one road usable for supply between its line of departure and the objective. The enemy situation was vague, although intelligence sources indicated that only scattered sniper resistance would be encountered along the route of advance, with probably no more than 40 enemy troops in the entire area between Berlengenfeld and Regensburg. The friendly supply situation was uncertain, with the logistical support elements having a great deal of difficulty keeping pace with the rapid advance of the combat elements.

Company B had three rifle platoons and a weapons platoon with light machineguns and 60mm mortars. Tank support was promised, but could not be relied upon — the tank platoon that had been assigned to the battalion for this operation would not be able to advance until fuel and other maintenance items could catch up with it.

Because resupply during the operation would be uncertain at best, the company commander ordered three days' rations and extra ammunition issued to each man. He also loaded his two organic vehicles with as much additional ammunition as he could get, especially 60mm mortar ammunition.

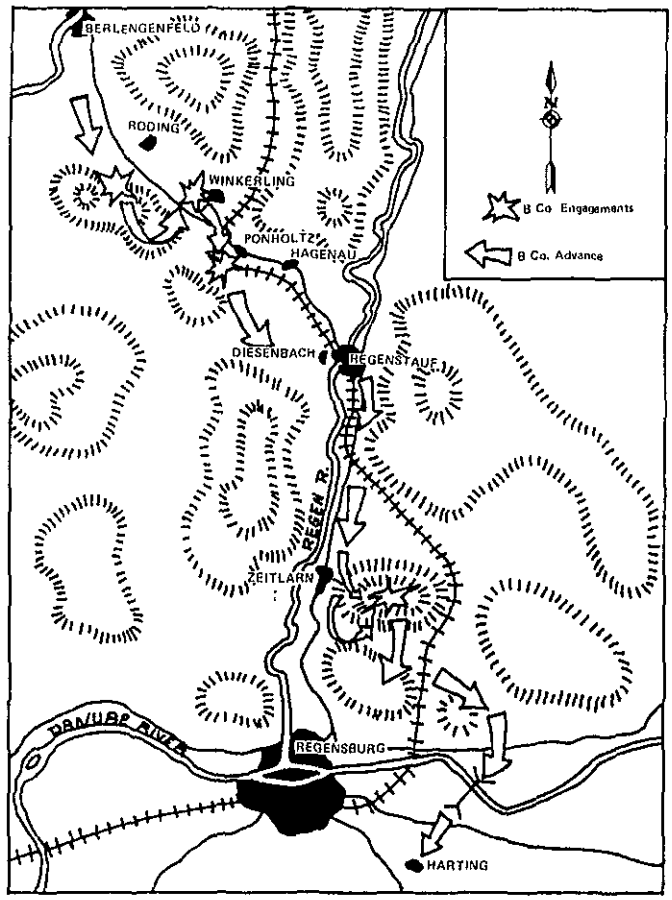
Within 45 minutes after jumping off at 0830, Company B was in a firefight with an estimated platoon-sized unit. Similar encounters by other units in the battalion indicated that the enemy's strength was far greater than estimated.

By noon, Company B had been involved in two more sharp engagements, expending ammunition and taking casualties. The company soon found itself outside the village of Ponholtz faced by an estimated 25 to 30 enemy engineer troops equipped with an 88mm antitank gun. Confronted with this amount of determined resistance, Captain Engelland requested more sup-

port and was promised some tanks that were on their way up from Berlengenfeld (see map).

At 1230, three tanks arrived at Ponholtz and were ordered to advance. The first one to advance beyond the village was immediately engaged by the 88mm gun and had a tread blown off. The other two tanks then reported that they could not advance in support of the lead tank because one had magneto trouble and the other was nearly out of fuel. Both, in fact, were nearly out of fuel. Even though the logistical support the tank platoon had been waiting for had never arrived, it had been committed to battle anyway. Captain Engelland had no choice but to leave the tanks behind and press the attack without them.

Throughout the rest of 24 April and for the next two days, Company B continued its advance against scattered enemy resistance. During their advance, the soldiers fought four engagements, captured five villages, and forced a crossing of the Danube before going into a defensive position during the night of 26 April. They had been opposed in their advance by an estimated 100 Germans, of which they killed 14 and captured 50. Although the engagements were sharp and Company B relied upon direct fire suppression and the indirect fires of the company mortars to overwhelm the enemy defenders, at no time during the operation was the company resupplied.



Discussion

Even though Company B was told that enemy resistance between Berlengenfeld and Regensburg would be spotty, Captain Engelland made sure his company was prepared for the worst. Because the company had stockpiled enough food and ammunition to fight for three days without resupply, when it faced enemy forces delaying in much greater strength and with much greater tenacity than anticipated, Company B was able to press the attack without let-up. Because it had additional rations and ammunition, when the supply situation turned out to be as bad as had been feared, the company was able to operate with the supplies it was already carrying.

In sharp contrast to the infantrymen of Company B was the tank platoon that was sent forward to help them reduce the strongly held German position. Although the tank platoon had been instructed to remain in the rear until resupplied, once the battalion found itself in heavy contact, the tanks were committed without regard to their condition. The end result was that one tank was severely damaged and the other two withdrawn without affecting the enemy.

NORMANDY

In the late afternoon of 5 June 1944, Private Donald R. Burgett of the 101st Airborne Division was getting ready for the airborne role in the invasion of Normandy. He later reported that the equipment he carried on the jump consisted of the following:

One suit of O.D.s worn under my jumpsuit — this was an order for everyone — helmet, boots, gloves, main chute, reserve chute, Mae West, rifle, .45 caliber automatic pistol, trench knife, jump knife, hunting knife, machete, one cartridge belt, two bandoliers, two cans of machinegun ammunition totaling 676 rounds of .30 caliber ammo, 66 rounds of .45 caliber ammo, one Hawkins mine capable of blowing the track off a tank, four blocks of TNT, one entrenching tool with two blasting caps taped on the outside of the steel part, three first-aid kits, two morphine needles, one gas mask, a canteen of water, three days' supply of K rations, two days' supply of D rations (hard tropical chocolate bars), six fragmentation grenades, one Gammon grenade, one orange smoke and one red smoke grenade, one orange panel, one blanket, one raincoat, one change of socks and underwear, two cartons of cigarettes, and a few other odds and ends.

Private Burgett said his load was so heavy that when he tried to stand up, "I found it impossible to even get to my knees...two men lifted me bodily, and with much boosting and grunting shoved me up into the plane where I pulled myself along the floor and, with the aid of the crew chief, got into a bucket seat."

A few hours after Burgett and his fellow paratroopers jumped into the inky blackness of the early morning sky, Company E, 16th Infantry Regiment, assaulted Omaha Beach. In the assault, each man carried a load similar to that described by Burgett, including three days' rations and four cartons of cigarettes. As soon as the men of Company E left their landing craft, they waded ashore, where they paused at the water's edge to get organized and orient themselves for the assault across the beach.

Enemy fire raked the area, and the company's leaders,

realizing that they were in a death trap, ordered their men forward. When the soldiers tried to move, however, they found that sheer exhaustion, rather than enemy fire, prevented anything other than a slow advance. Several noncommissioned officers reported later that after they had advanced only a few steps they had been forced to stop because their legs would no longer support them. It took the company an hour to cross 250 yards of beach.

Not far from where Company E landed, Company M of the 116th Infantry Regiment went ashore. These men were similarly weighted down but managed to make the beach crossing in about 10 minutes. Private First Class Hugo de Santis said of the experience, "We all knew we were carrying too much weight. It was pinning us down when the situation called for us to bound forward. The equipment had some of us whipped before we started. We would have either dropped it at the edge of the beach or remained there with it, if we had not been vigorously led."

Sergeant Bruce Heisley concurred, "I was carrying part of a machinegun. Normally, I could run with it. I wanted to do so now but I found I couldn't even walk with it. I could barely lift it. So I crawled across the sand dragging it with me. I felt ashamed of my own weakness. But on looking around, I saw the others crawling and dragging the weights which they normally carried."

Staff Sergeant Thomas B. Turner said, "We were all surprised to find that we had suddenly gone weak, and we were surprised to discover how much fire men can move through without getting hit. Under fire we learned what we had never been told, that fear and fatigue are about the same in their effect on an advance."

Discussion

All the units that participated in the invasion of Normandy in June 1944 experienced severe problems because the individual soldiers were overloaded. The paratroopers could not stand up and when actually aboard the aircraft, knelt on the floor so they could rest their heavy loads on their seats. Many reports following the landing indicated that the airborne units were able to regain their maneuverability once they got on the ground, but only because most of the soldiers had abandoned their heavy equipment.

The regular infantry soldiers who went across the beaches were similarly burdened in spite of the fact that the Normandy invasion included the greatest logistical effort in the history of mankind. Although resupply of the airborne elements would be problematic, the resupply of the infantry units was, in fact, offshore waiting to be unloaded even as the first wave of troops was hitting the beach. These supplies were in stockpiles on the beach by nightfall.

In addition to the stress of carrying the excessive loads through heavy surf and onto the beach, fear itself caused the soldiers to become weak, further reducing their ability to carry the weight of their equipment.

Thus it is apparent that when a decision is made to carry additional equipment into combat, leaders must understand the unique leadership problems that will be generated when the men carrying that equipment come under fire and subsequently suffer from the reduced stamina that fear induces.

Most notable is a comparison between the performances of Company E, 16th Infantry, which took one hour to cross 250 yards of beach and incurred 105 casualties during the day, only one of which occurred after the company got off the beach, and Company M, 116th Infantry, which managed to push across the beach in 10 minutes to achieve the greatest advance of any unit that landed at Omaha Beach on D-Day.

BREST

From 9 September through 14 September 1944, Company F, 2d Battalion, 23d Infantry Regiment, commanded by Captain George H. Duckworth, fought its way through St. Marc, a suburb of Brest, France, and then through the center of the French port city against heavy opposition. The company had never been involved in fighting in a major built-up area and was largely unprepared, tactically or technically, for that type of combat.

By late afternoon on 9 September, in St. Marc, the company had advanced 1,200 yards; it had been meeting platoon-strength pockets of resistance throughout the day, had taken casualties, and had expended large quantities of ammunition. At 1700, Captain Duckworth called a halt and put his company into a hasty defensive position in a three-block area of the village.

He then ordered his supply sergeant to bring up a jeep that was kept immediately behind the company. It had in its trailer additional ammunition and wire communication equipment, some of it captured German gear. (Captain Duckworth said of this system, "This was not TOE, but it was necessary for the maintenance of good communication within the company.") The ammunition was immediately distributed and the wire communication laid.

While the ammunition was being distributed, the company mess sergeant brought forward a hot meal. It was Captain Duckworth's policy, wherever possible, to serve a hot meal soon after the company had stopped for the night. The food was brought to a central point within the company and was taken forward by porters provided by the platoons.

As soon as the ammunition had been distributed, the supply sergeant and the company executive officer went back to the regimental trains to get more. By company SOP, a jeep trailer full of ammunition was to be in reserve at all times.

During the next four days, in Brest proper, the company found that its radios did not work in the buildings and that it had to use field wire for its communications. This took large quantities of wire, all of which had to be brought up over terrain and in an environment not conducive to resupply. The company also discovered that fighting in a city led to greater than usual expenditures of ammunition and to a high casualty rate.

To add to its problems, the company discovered that its normal method of resupply, that of bringing materials forward in a quarter-ton trailer, could not be used. According to Cap-

tain Duckworth, "It was sudden death to step into the streets, as we soon learned...the only way the streets could be crossed was by throwing a smoke grenade and dashing quickly from one covered position to another." This was hardly the sort of environment in which a jeep could be expected to survive for very long.

After two days of heavy fighting with notable lack of success, Company F developed the tactic of breaching holes in buildings with demolition charges and using those breaches as supply routes. The sustainment of the company remained a risky matter for service support personnel. On the afternoon of 12 September, for example, "an aidman...was killed by an enemy bullet which pierced the red cross on his helmet."

To prevent additional casualties among service support personnel, the unit decided to resupply itself, as much as possible, during hours of limited visibility. A plan was then made and implemented whereby ammunition and food would be brought up along the routes blasted through the buildings and stockpiled at the forward positions in such quantities that the attack could be continued throughout the next day without additional resupply.

According to Captain Duckworth, this was no small accomplishment. "In the darkness," he later reported, "it was difficult to get food and ammunition to the two forward platoons, as many doorways, passages, and holes had to be traversed before reaching their positions. Parties from the company headquarters and the support platoon worked far into the night carrying the necessary supplies." Because the support platoon and parties from the company headquarters brought the ammunition forward, no porters had to be taken from the infantry platoons. This allowed the infantrymen to sleep during the night and to wake up in the morning rested, resupplied, and ready to carry the fight to the enemy.

Discussion

Although the type of combat the company encountered in Brest was new to its soldiers, Captain Duckworth and his subordinates were able to modify their previous SOPs to meet the new requirements. By trial and error, they learned that the best way to advance in a city was by using demolitions to breach holes in walls, thereby avoiding the murderous fire in the streets. In this process, however, the company's leaders did not lose sight of the fact that somehow the company would have to sustain itself.

Thus, they produced and implemented a plan by which they projected the amount of ammunition the platoons would expend during each 24-hour period and moved that amount forward during each night. They used the routes cleared and held open by the infantry, and used service support and headquarters personnel to get the supplies forward. In this way, they were able to get needed supplies up in a timely manner while reducing the exposure time of the support personnel to enemy fires and allowing the infantrymen to get as much rest as possible. The key to the company's sustainment during this operation was the ability of the commander and his subordinates to meet new supply problems and to produce a plan for overcoming them.

GRENADA

On the morning of 25 October 1983, Company A, 2d Battalion, 325th Infantry, conducted a combat air assault at the Point Salines airfield on the island of Grenada during the assault phase of the United States' intervention there. Because the unit had initially expected to jump in, each soldier carried the following items — one M16 rifle with bayonet, one M17 chemical-biological protective mask, one rucksack (medium) with frame, individual load-bearing equipment with two one-quart canteens and one two-quart canteen, seven 30-round magazines, one poncho with liner, three C-ration meals, 210 rounds 5.56mm ball ammunition, and one light antiarmor weapon. In addition, each machinegun crew carried 2,000 rounds of 7.62mm linked ammunition, each grenadier carried 36 rounds of 40mm ammunition, and the company carried six Dragon rounds. (No mines or grenades were carried.) Company commander Captain Charles Jacoby estimated that each rucksack weighed in excess of 65 pounds. A resupply was expected within 24 hours after landing.

In the initial phase of the operation, resupply proved to be no problem to the company. The First Sergeant, the company supply sergeant, and the company NBC NCO handled the supply efforts on Grenada itself. The company executive officer (who had stayed behind because he had broken his leg on a training jump) and the company supply clerk pushed the

needed items forward from the base of operations at Fort Bragg, North Carolina.

Ammunition began arriving at the airhead shortly after the initial assault and, because the secured area was small, resupply was easy: Ammunition-bearing parties from each platoon were placed under the First Sergeant and used to ferry ammunition forward. Although there was initially a shortage of fragmentation grenades, a stock of Soviet hand grenades that had been captured made up the shortage.

On 26 October, Company A got its first resupply. Among the items airlifted in from Fort Bragg was the much-needed Gamma Goat that the company XO had somehow managed to get loaded onto an aircraft and sent into the airhead. (How this was accomplished, Captain Jacoby did not know, as his was the only company to receive its Gamma Goat during the incursion.) This vehicle played a critical role in company resupply operations. By SOP, it was kept in the company combat trains, which for this operation was located with the battalion combat trains. There, it was kept loaded with "push packages" of ammunition and other critical supplies so that it could be sent forward at a moment's notice. By the time Company A was withdrawn from Grenada, its combat trains had been expanded by two jeeps with trailers that had been brought into the airhead and a Russian ambulance that the company had "liberated."

Throughout the operation, Captain Jacoby reported few supply problems. The First Sergeant and other company administrative personnel kept the supply vehicles well stocked and were generally able to respond to any supply request within 20 minutes. Since the unit had practiced sustainment drills in peacetime, these procedures worked well in combat. The platoons automatically sent ammunition bearers back to a central point when ammunition was brought forward, and casualties were taken back to the battalion aid station in the company supply vehicles after they had been unloaded.

The only major supply problem encountered was with clothing. To cut down on weight, each soldier had only the uniform he was wearing when he landed in Grenada, and some of these were in tatters within the first 24 hours. In addition, the weather was extremely hot and only about half of the soldiers had been issued jungle fatigues before deployment. Because clothing resupply had never been practiced, the unit had no established procedures for moving stocks of jungle fatigues forward from the supply base at Port Salinas to the troops in the field.

Additionally, Captain Jacoby reported that some of the leather boots worn by the soldiers in his company began to deteriorate during the operation, but that this problem was solved when a local cobbler volunteered to repair them and did so in a single night.

At no time during the operation did Company A have a severe supply shortage or a logistical problem that it could not overcome.

Discussion

The success of Company A in this operation was due, in part, to the excellent logistical support it received upon arrival. This, in turn, was due primarily to the company's sound sustainment SOPs. These procedures, which had been practiced during peacetime training operations, fell neatly into place when the company arrived on the ground. In its planning, the company had carefully considered its logistical requirements, including the soldiers' loads, which were prudently reduced to the minimum required items. The early arrival of ammunition and food items was also planned for, and this plan was carried out efficiently. The soldiers were therefore able to carry a reduced load of ammunition and food while a steady supply of those critical items was assured.

Also important to the mission was the use of company administrative personnel in the sustainment operations. The First Sergeant was in charge of the immediate needs of the company, while the XO, albeit by accident rather than intent, functioned as the company's chief logistician rather than as its second-in-command, and was able to handle the long range needs of the company. It is important to note here that Company A's XO was the only one in the battalion who was used in such a manner and that Company A was the only one to have all of its organic vehicles delivered to it.

Worthy of note, also, is the company's use of locally procured items to fill in the gaps in its logistical support. Since the company was not issued fragmentation grenades before deployment, it used the captured grenades. When its soldiers' leather boots began to disintegrate and a resupply of them could not be procured from approved sources, the company used the volunteer cobbler to repair them. And, finding its supply of vehicles inadequate for the task of sustaining itself, Company A pressed the captured enemy vehicle into service.

The only problem that was not solved was clothing resupply, which had never been practiced previously. This leads one to conclude that in this operation, quite simply, the sustainment operations that had been planned and practiced and firmly established in SOPs, worked; those that had not, did not.

CONCLUSIONS

In reviewing these and similar military operations, one is struck by the similarity in the logistical procedures used by the units that succeeded and the similarity in the lack of sustainability shared by those that did not.

The guiding principle among the victors was a well-defined plan, not merely for the tactical disposition of combat and combat support elements for the battle at hand but for the disposition of combat service support personnel as well. Additionally, those units that were successful on the battlefield had consistently looked beyond the current engagement to those ahead and had carefully projected when, where, and in what quantity resupply would be accomplished.

The units that were unsuccessful had looked only to the maneuver of combat elements, trusting in some unseen and misunderstood "system" to sustain them. When that system failed, so did the mission.

When supplies were being pushed forward on a regular basis, as in Brest and Grenada, the prudent commander planned for a lower on-hand stockage rate and a more frequent

resupply of critical items. But he still kept a readily available emergency stock in his company trains to rapidly resupply his forward elements if necessary. When he could not be sure supplies could be brought forward in a timely manner, the prudent commander stocked enough supplies to sustain his unit for an extended period without resupply, relying upon the capacity of his company vehicles and the strength of his soldiers to transport the required supplies.

The imprudent commander, on the other hand, stocked too few supplies for a given operation or went to the other extreme and stocked too many.

The rule of thumb among mule packers, when mules were still the standard means of moving supplies to the front, was that one animal should not have to carry a load weighing more than one-third of its body weight. In the U.S. infantry, however, soldiers have often been required to carry into combat one-half to two-thirds of their body weight.

This is unfortunate and also often unnecessary, as it was during the Normandy invasion.

At times, there may be situations when it is necessary for soldiers to carry heavy loads. At such times, though, leaders must recognize the special leadership problems inherent in forcing their soldiers to do so. They will move slower, tire faster, and once in contact, fatigue may indeed make cowards of them all.

In trying to decrease the soldier's load or increase the speed of operations, however, a commander must not sacrifice unit sustainability. If he enters the field of battle without a firm logistical plan or without enough resources to sustain a fight, the unit will not be able to accomplish its mission.

Planning sustainment operations means preparing for them in peacetime by firmly establishing supply SOPs that are both sound and flexible and then training on them. Although no records exist of sustainability training in most of the units mentioned in this article, it is apparent that some of them, most particularly Company F, 23d Infantry, under Captain Duckworth, had some extremely well entrenched SOPs. Company administrative personnel—most notably the XO, the First Sergeant, and the supply sergeant—were in charge of keeping the company supplied, and a vehicle with critical supply items was kept in the combat trains, available on a moment's notice.

Captain Jacoby of Company A, 2d Battalion, 325th Infantry, used similar procedures some 40 years later during the invasion of Grenada. It is worthy of note that Captain Jacoby attributed much of his success during that operation to his logistical support, especially ammunition resupply and casualty evacuation; these had been part of his unit's peacetime training exercises. It is also worthy of note that the only supply channels that failed to work during the operation were those that the unit had *not* practiced.

Another similarity between Captains Duckworth and Jacoby was their willingness and ability to use locally procured and captured items to meet their logistical needs.

In all wars and in all places, the existing system will never meet all of the needs of all of its units. Neither will it be able to plan for all contingencies. Local commanders, then, must use any resources that may become available to them to meet the needs of their units.

A commander, of course, cannot completely ensure that his unit is sustained. Indeed, he should keep his eyes on the guns once the battle begins, relying upon his subordinates to carry out the sustainment plan that was formulated earlier. To this end, it is necessary for the XO, the First Sergeant, and all other administrative personnel to have well-defined duties during sustainment operations. It is also important for the XO to be viewed at least as much a logistician as a second-in-command.

Military history teaches that the most brilliant tactician faces ignominious defeat if he cannot sustain the fight. In order to do this, he must plan his logistical support as an integral part of maneuver. This means that SOPs must be developed — and used.

Key personnel must be trained to handle sustainment operations in much the same manner as weapon crews are trained to carry out their missions in support of their units. And while the main thrust of all sustainment operations is pushing supplies to the front, those who occupy positions at the front must always be on the lookout for ways to augment materials that are coming up from the rear or to replace those that are not.

In the final analysis, it is the commander upon whose shoulders and in whose imaginative analysis the key to sustainment lies. He must decide what his soldiers will carry and what they will not carry. He must decide where and how they will be resupplied. And he must decide how the operation will be supported.

Above all, he must decide whether the resources are available to support the planned operation. He must at all costs avoid the temptation to engage in operations that cannot be supported logistically. Otherwise, he will learn firsthand just what can result from the "want of a nail."

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