snap link is worn in the right suspender fabric loop. It holds a pair of black leather glove shells hung through the adjusting straps. The glove finger and thumb tips should be cut off so the hands and palms are protected and hidden while allowing normal feeling and finger control. Nothing bulky should be worn on the right suspender because it could interfere with the soldier's ability to rapidly shoulder and fire his M16 rifle.

The protective mask and case are worn slung across the right shoulder, with the case resting on the left side under the arm and the lower strap fastened around the chest. This position is better than on the left hip because the case will not get caught on vehicle hatches and equipment, and the soldier can protect it, or hold it down with his arm, while running. Wearing it under the arm also prevents the case from being snagged during crawling and allows better control while putting on the mask. The protective mask and case are worn beneath the LBE suspenders and pistol belt, not over them, so that the soldier always has it on him.

In spite of a desire to present a good military appearance, the helmet camouflage cover must not be stretched and shrunk down to fit snugly over the helmet. It must be loose enough so that extra material can be pulled out to break up the helmet's outline and permit natural camouflage to be stuck into the holes in the cover.

A common defense of a garrison-oriented battle dress SOP is that it allows soldiers to ride comfortably in vehicles and go about their usual routine training duties with a minimum of inconvenience. After all, it is argued, soldiers can quickly change their equipment around if they actually go into combat. That may be true, but in some cases it may be too late. Generally, individual changes will not be made uniformly, and the unit will quickly lose the benefits of a preplanned and practiced battle dress SOP.

It is better for a leader to train his soldiers the way he believes they will have to fight instead of the way they would prefer to fight. The distinction is small, but it is important. Training reinforces all behavior, both good and bad. Although soldiers may learn new tasks faster in combat, the habits they enter the fight with are the only ones they have to build from. And since poor behavior gets worse under stress, it is important that the right behavior be reinforced to begin with.

In a similar manner, our battle dress SOPs must conform to the environment we may have to fight in, not the one we usually train in. A good leader will recognize this critical difference and will develop a battle dress SOP that lives up to its name. His soldiers will then be better equipped to fit the ground when they have to hit the dirt for real.

Captain Noyes B. Livingston III is assigned to the 2d Battalion, 141st Infantry, 49th Armored Division, Texas Army National Guard. He served four years as a U.S. Navy enlisted man during the 1960s and is also a former enlisted man in the Texas Army National Guard.

Space Systems

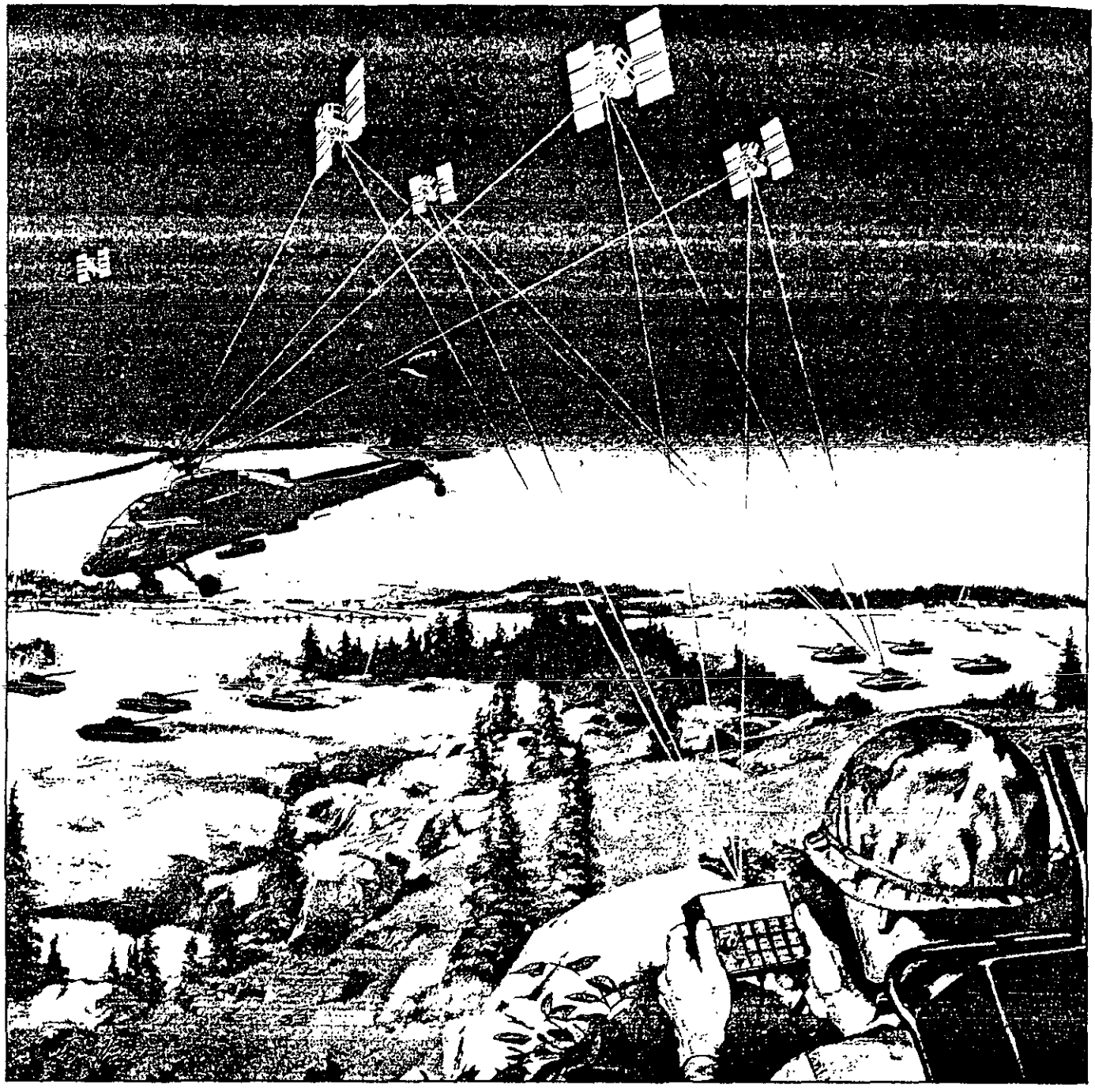
The Ultimate High Ground

MAJOR FREDERICK W. CONARD

The infantry has always known how important it is to use the high ground. But the ultimate high ground is space, and we need to know how to use that ground, too. We don't have to own it—just borrow it now and then.

Space systems are becoming indispensable to the execution of infantry missions. We already use them for everyday purposes. Aside from the obvious AUTOVON overseas telephone links, divisions and corps use AN/TSC-85/93As, and RDF units have the portable PSC-3/VSC-7 TACSATs (tactical satellites) and URC-100s, all of which use military or leased communication satellites. We are already controlling the first of a constellation called DSCS III—the Defense Satellite Communication System—which is our most advanced and reliable communication satellite. It significantly improves communication, and its anti-jam features make it highly desirable for any level from corps to special operations force.

We are all familiar with weather satellite information. The Defense Meteorological Satellite Program (DMSP) provides near real-time weather information to both tactical and strategic force commanders for staff weather office predictions. Unfortunately, sometimes the weather still arrives before the prediction. The Army has therefore defined the need for an Army Environmental Satellite System (AESS)



GPS satellites will provide two- and three-dimensional positioning with incredible accuracy.

constellation of satellites that would provide weather support directly to the tactical commander on demand.

It is clear, then, that systems such as these are not just for the theater army commander. The AESS program is intended to provide environmental information even to the brigade or the battalion tactical operations center. DSCS III provides reliable, jam-resistant communications to division or separate brigade headquarters, as well as to the detached company defending a critical site.

At an even lower level, space also provides a solution to the problem of position location. We now have flying the first block of NAVSTAR/GPS (Global Positioning System) satellites. The fully operational constellation of 18 satellites, plus spares, will provide two-dimensional and three-dimensional positioning with incredible accuracy for combat and supporting forces; and the GPS receiver can be mounted in aircraft, trucks, tanks, and ships and can be carried in rucksacks.

We already have a fine navigation aid in the Position Location Reporting System (PLRS). The hybird PLRS/JTIDS (Joint Tactical Information Distribution System) is of exceptional help in real-time data communication. But for all its benefits, PLRS is a radiating system that gives off 360 degrees of signature; and it relies on network control stations that are as vulnerable on the battlefield as anything

else. GPS, by contrast, is a passive (nonradiating) receiver, always within view of four or more positioning satellites about 11,000 nautical miles out.

Obviously, GPS will help the infantryman in many ways—with close air support, link-up operations, air drop, and logistics delivery. A contact team will no longer have to roam through the night looking for a damaged vehicle or for the first sergeant when he is taking out chow. Field artillery first round hit probability will certainly improve, while mine emplacement and countermeasure operations will become more accurate and safer.

Space support for the man on the ground is not going to happen by magic, though. Infantry units will have to have some space-smart staff people at battalion, brigade, and higher levels who have been in the trenches to interpret for the commander, for example, how his command, control, communications, and intelligence (C^3I) is affected if a satellite is lost, or what support is best to request for a new mission.

From the high ground on earth, we can see what's on the other side of the hill. From the high ground of space, we can see what's on the other side of the globe. Information can be passed to units throughout the world to make possible the early tailoring of units and to allow quick-thinking, flexible leaders the agility they need to avoid the enemy's strengths and attack his weaknesses. With their "speed of light" communications and data relay, global navigation improvement, and timely environmental pictures, space systems will enable us to synchronize and orchestrate all our armed forces toward our singular goal.

The Army is getting smarter in space, and the infantry needs to get smart right along with it. We cannot palm this responsibility off on the Signal, Air Defense Artillery, or Military Intelligence branch to do for us. We are the ultimate users of space support, and we have to make our needs known.

Fortunately, there are ways to accomplish this. The Army Space Institute at Fort Leavenworth is integrating the space-related activities of the Training and Doctrine Command (TRADOC). In addition, the Army Space Agency, recently activated as a component element of the U.S. Space Command in Colorado Springs, is working on improving space systems support for the field army. Inherent in the Agency's mission is providing information, establishing contacts, and opening channels of communication with the users, such as the infantry.

What is in the future? We can only imagine. But it is not unrealistic to expect such things as multi-spectral imaging satellites that can "see" fallout patterns, or show the size and density (perhaps even the type) of chemical contamination in an area of operations, or determine soil moisture content and therefore vehicle trafficability (for them as well as for us). It is entirely possible to develop a system that can read a vehicle's or a weapon's health and operational status from a bar code, much like those read by scanning devices in the commissary, or can digitally map areas that are otherwise denied to us.

Space is the ultimate high ground. What can it do for the infantry? How far can your imagination go?

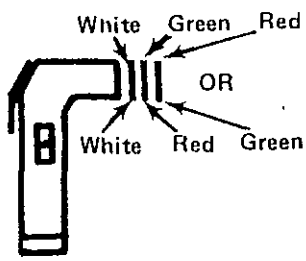
Major Frederick W. Conard is an Infantry officer assigned to the U.S. Army Space Agency in Colorado. In addition to various command and staff assignments, he has served as a satellite engineer with the U.S. Air Force and also as a tactical support exercise officer. He is a 1970 graduate of the United States Military Academy.

SWAP SHOP

In a combat environment most infantry missions will be conducted during the hours of darkness or limited visibility. With the increased authorization of AN/PVS-5As, just about every soldier will have a set of night observation devices (NODs).

For a few pennies, a standard flashlight and three colored lenses can be turned into an effective signaling tool when used with a set of NODs. This method provides a secure means of signaling that cannot be detected by the naked eye. It has a variety of uses for close-in signaling on the ground or distant signaling from the air. And this signal has the added advantage of being cost effective: A BA-30 costs 18 cents, compared to an infrared chem-light, which costs $3.51.

To set up the flashlight, place the white lens closest to the bulb, followed by the red lens and then the green, or by the green and then the red (see sketch).



(Submitted by 2LT Robert G. Johnson, Jr., Company B, 2d Battalion, 27th Infantry, Fort Ord, California.)