

CHAPTER 14

THE ENVIRONMENT OF COMBAT

Warfare presents a challenging environment to any military organization and its soldiers. In a force-projection army, soldiers and units must remain trained and ready for rapid deployment anywhere in the world. The environment will often be harsh. Extreme temperatures, rugged terrain, fear, uncertainty, confusion, exertion, and fatigue will take their toll. Poorly trained soldiers and units succumb to the hostilities of the environment, withdraw inside themselves, and permanently surrender the initiative. Conversely, soldiers and units that are prepared to cope with a tough environment take a giant step toward victory.

The environment of combat combines human and physical dimensions. Soldiers, the first dimension, are the centerpiece of the Army's doctrine and warfighting ability. Their training, initiative, resilience, and understanding of the demands put on them are key to success on the battlefield.

Their physiological and psychological limitations make them the most vulnerable part of the warfighting system. Their characters individuals and as members of their units--makes them the most valuable. Their spirit and perseverance, their will to win, their dedication to the cause and their devotion to fellow soldiers and their unit are distinctly human elements that can make the difference between victory and defeat.

The second dimension of this environment is physical. In accordance with the US *National Military Strategy*, US Army forces must be prepared to fight and win on short notice anywhere in the world, from blistering deserts to frigid wastelands, in rain forests, tundra, mountains, jungles and swamps, urban sprawl, and all types of terrain in between. Combat operations occur day and night, for weeks or months on end, among friendly or hostile populations, and in areas infested with blight, disease, and epidemics.

Mastering environmental dimensions is vital to survival on the battlefield. Operational and tactical commanders lead their organizations to overcome and take advantage of dimensions. Only then can they hope to achieve decisive results at minimum cost to soldiers

and materiel. Understanding the total environment and its potential impact on combat is essential to successful planning and execution.

THE HUMAN DIMENSION

Soldiers are central to Army doctrine. They are the foundation of the Army's will to win. Their spirit, initiative, intelligence, discipline, courage, and competence comprise the basic building blocks of a victorious Army. The combination of quality soldiers with professional, caring, and competent leaders in versatile, cohesive units presents an indomitable force on the battlefield.

Leaders have special challenges and responsibilities in regard to soldiers. They successfully lead them through danger, mold and protect their spirit, and channel their energies toward mission accomplishment. Leaders consider the physiological, psychological, and ethical challenges soldiers will face, providing them the proper training and leadership that give them the will to fight. They build units and teams that have the courage to overcome odds to accomplish the mission and the determination to press on to victory.

The geopolitical and social realities of the modern world often obscure the reasons for following a particular course of action to achieve national goals. Leaders

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must ensure they and their soldiers clearly understand why their nation is engaged in a particular course of action and how it is essential for protecting America's vital national interests. When soldiers understand why American forces have been committed, they follow their leaders and risk their lives to accomplish the mission despite all odds.

THE PHYSIOLOGICAL PERSPECTIVE

Physically unfit or unhealthy soldiers do not withstand the rigors of combat well. Hardened soldiers, kept healthy and reasonably rested, can persevere under harsh conditions. Commanders ensure their soldiers' fitness and enhance their self-confidence through tough, realistic training, provision of proper uniforms and equipment, disciplined hygiene and health practices, enforced rest plans, and intelligent assignment of operational missions.

Soldiers are capable of withstanding a great deal of physical exertion, but they must be cared for. Commanders may find it necessary to drive their soldiers hard, but they must not abuse them.

THE PSYCHOLOGICAL PERSPECTIVE

The harsh environment of combat is likely to have a greater effect on the soldier's mind than on his body. Since the mind directly affects the soldier's will to win, it must be prepared to accept the stress of combat.

Combatants no longer deploy or defend in the ranks, files, and echelons of the nineteenth and early twentieth centuries. Distance from fellow soldiers can heighten fear and a sense of abandonment on the modern battlefield. The threat of chemical and biological weapons compounds psychological challenges because of the debilitating protective measures that have to be taken to conduct operations and survive. Loneliness and fear on the battlefield increase the fog of war. They can be overcome by effective training, unit cohesion, and a sense of leadership so imbued in the members of a unit that each soldier, in turn, is prepared to step forward and give direction toward mission accomplishment.

In battle it can also be overcome by unit chatter, soldiers talking to each other and constantly reinforcing other members of the team. New or replacement soldiers must be quickly made to feel part of the team and not isolated. Mutual trust, confidence, self-respect, and a strong sense of teamwork are elements that build a

cohesive combat unit. FM 22-102 outlines methods to create an effective, combat-ready soldier team.

Psychiatric casualties decrease when morale, unit cohesion, leadership, and training are strong. The leader is the key. He must develop realistic, tough training programs that promote individual confidence and unit capabilities. At the same time, he must inspire in his soldiers the confidence that he will do everything in his power to protect them as the unit drives toward its objective. Leaders must understand the conditions that can lead to battlefield stress and deal with them quickly and effectively. A well-led, disciplined, and mentally conditioned soldier can overcome extremes of hardship and uncertainty.

THE ETHICAL PERSPECTIVE

The nation expects its Army to adhere to the highest standards of professional conduct and to reflect the ideals of American values. The American people demand a high-quality Army that honors the core values of the Constitution it is sworn to uphold—a strong respect for the rule of law, human dignity, and individual rights.

Despite the difficult environments in which Army forces operate, soldiers are expected to obey the laws of land warfare, to protect civilians and other noncombatants, to limit collateral damage, to respect private property, and to treat EPWs with dignity. Amid the rigors of combat, the integrity of every soldier—from the highest to the lowest ranks—is of paramount importance. Since lives hinge on accurate reporting, there can be no room for half-truths or falsehoods. Soldiers must be counted on to do what is right even when no one is watching.

Leaders have a special responsibility to subordinates. They must never risk their soldiers' lives needlessly. They return their soldiers' trust with the greatest care for their well-being, while aggressively pursuing the accomplishment of the mission. Leaders treat subordinates with respect; never do they seek self-gain at the expense of their soldiers or their subordinate commanders. Leaders imbue soldiers with a sense of honor, share their hardships, and acknowledge their accomplishments. Leaders set the example by ethical behavior and a selflessness that puts duty above all personal concerns.

The human dimension of war will be decisive in the campaigns and battles of the future, just as in the past. In this difficult environment, soldiers must have faith

in their leaders and fellow soldiers. Trust is the basic bond of leadership. Good leaders occupy a position of special trust and confidence in the eyes of their soldiers. A motivated soldier in the hands of a competent leader, loyal to and supported by his fellow soldiers, can accomplish the most difficult of missions.

Wars are fought and won by soldiers, not machines. The human dimension of war will be decisive in the campaigns and battles of the future, just as in the past. Soldiers are the heart and soul of the Army. Leaders mold them, discipline their efforts, supply them resources, and give them direction. But, in the end, it is soldiers who do the job. Ultimately, soldiers make the difference.

THE PHYSICAL DIMENSION

The four major physical elements of the environment of operations are *geography, terrain, weather, and infrastructure*. These greatly affect Army operations within the physical dimension. They form an important component of the planning tool-METT-T. The combinations of effects of the physical elements are infinite. Good commanders have an eye for ground, understand the effects of weather, and can turn a tough environment to advantage. They use the IPB process to help them understand the environmental conditions of the physical dimensions on military operations.

Factors of the physical dimension normally affect the time required to accomplish a mission. For example, the time necessary to move a large, armored force over dry, open terrain may increase dramatically after a day of heavy rain. Factors such as drainage, soil composition, and vehicle characteristics affect movement. Infrastructure availability may increase or decrease time required for operations. A well-established road net may greatly aid movement toward or away from the enemy but limit lateral movement if the roads are built on berms. The physical environment may include operations in an NBC environment as well as night and limited visibility conditions. These dimensions must be considered in operations planning. The net effect may be a decrease in the commander's ability to maneuver against the enemy.

GEOGRAPHY

Commanders may operate over many different terrain types within a single geographic area. The Army must be able to operate in any geographic area. Each area presents a unique set of physical characteristics

and requires a unique set of operational and tactical guidelines. A human factor is also associated with geography. Populations in an area of conflict may directly affect the commander's operations. The will of the people, their urbanization and industrial efforts, their agricultural underpinnings, their social and cultural predilections, their political leanings, and, from a tactical perspective, their physical movement during conflict may all impact.

Mountain Operations

Light forces and aviation units can operate more effectively than heavy forces in mountainous regions because their movement is less limited by the terrain. Effective communications and air operations are important factors in obtaining the advantage in mountainous regions. FM 90-6 discusses mountain combat.

Jungle Operations

The features of jungles and swamps combine to restrict movement, observation, fields of fire, signal systems, battlefield surveillance, and target acquisition. The use of advanced technology navigation devices helps overcome these challenges. Air operations are very important in the jungle environment. They facilitate troop movement and provide a degree of firepower not otherwise available due to the shortened fields of fire and thick vegetation. FM 90-5 discusses jungle warfare.

Desert Operations

All types of forces can operate in desert environments. Armored, mechanized, and aviation forces are especially suitable. The lack of prominent terrain features complicates land navigation and requires the use of dead reckoning and advanced technology navigation devices. This environment has a debilitating effect on soldiers who are not properly trained and acclimated. It induces mental fatigue, impaired perception, and possible depression that can overwhelm unprepared soldiers. The impact on machines can be even more severe unless commanders establish appropriate maintenance programs. FM 90-3 discusses combat in desert areas.

Cold Weather Operations

The weather conditions in extremely cold areas make operations for friendly and enemy forces difficult. Special training is required to acclimate soldiers. Leaders must ensure that troops and their equipment are protected from the physical effects of extremely

low temperatures. FM 90-11 discusses cold weather operations.

Urban Operations

Urban operations present unique and complex challenges to Army forces. Urban operations can occur in any of the geographical environments. They can constrain technological advantages; they impact on battle tempo; they force units to fight in small, decentralized elements; they also create difficult moral dilemmas due to the proximity of large numbers of civilians. Commanders must enforce discipline in their operations to minimize unnecessary collateral damage and civilian casualties. FM 90-10 discusses fighting on urbanized terrain.

TERRAIN

Terrain is not neutral—it either helps or hinders each of the opposed forces. Commanders must develop an eye for terrain; they must recognize its limitations and possibilities for protecting friendly forces and putting the enemy at a disadvantage. Successful commanders understand terrain and how it affects operations. They are able to grasp the potential capabilities and limitations of the space in which they operate.

At each level of war commanders view and evaluate terrain differently. At the tactical level, commanders are concerned with close-in terrain such as hills, rivers, mountains, swamps and marshes, streams, and valleys. Their perspectives influence the conditions for engagements and battles.

At the operational level, the commander's analysis broadens to major road systems and movement corridors that can accommodate large friendly and enemy maneuver forces. The operational-level commander is also concerned with air corridors for both friendly and enemy air and aviation operations. He considers the opportunities for the movement of large units and the posturing of the force, where he must disperse, and where he should concentrate his forces. He understands where intelligence assets will serve him best and where and when he will begin to operate in a less clear environment.

At the strategic level, analysis of the terrain encompasses both tactical and operational considerations, but it broadens to include the considerations associated with the value of occupying or controlling large amounts of territory (at its larger expansion, terrain

begins to define geography). The strategic-level commander considers the constraints and opportunities affecting deployment and supporting the force over the duration of the campaign. He considers the assets that are available to him within his assigned geographic space and how they help or limit his operations.

Commanders consider terrain from not only their perspective but also from the enemy's perspective. They conduct detailed personal reconnaissance wherever possible. Sources of terrain intelligence include, but are not limited to, military and civilian topographic studies, civilian officials and area residents, EPW, and air, space, and ground reconnaissance units. Commanders ensure that terrain information gets down to the level where it can assist in operations planning.

WEATHER

Weather conditions affect soldier performance, the capabilities of equipment to perform at the optimum level, and the ability of forces to maneuver on the ground and in the air. Commanders pay attention to local tactical weather in the ground environment as it may differ from broader weather patterns in the AO. They also understand the effects of weather patterns on future operations and the enemy. The commander who can best measure and take advantage of weather and terrain conditions has a decided advantage over his opponent. By understanding the effects of weather, seeing the opportunities it offers, and anticipating when they will come into play, the commander can set the terms for battle to maximize his performance and take advantage of limits on enemy forces. Weather forecasts must be tailored to the specific operational and tactical environment to assist commanders and staffs to determine effects on the operation. Moreover, different weather conditions impact parts of the organization and weapons systems differently.

Weather and terrain information systems provide commanders and their planning staffs with known and forecasted conditions in the air and on the ground. These enable them to plan for conditions before a battle, helping the commander to choose the time, manner, and place of engagement. For example, in adverse weather the effectiveness of long-range, precision-strike weapons with electro-optical sensors and laser-guided systems becomes severely limited. In such cases, employment of conventional systems would be more effective. Technological developments, such as

direct, satellite-linked forecasting and observing systems that provide advance knowledge of environmental conditions on the battlefield, can serve as a force multiplier.

Training, physical conditioning, and discipline at the small-unit level remains the most effective way to offset adverse effects of the weather. Training in poor weather conditions builds confidence and teaches soldiers and commanders how to adjust to weather extremes. This training should supplement map and weather analysis. Good training can mitigate the effects of weather so that the unit's combat power increases relative to the enemy's. The commander's primary tool for analyzing the effects of terrain and weather is the IPB.

INFRASTRUCTURE

Infrastructure consists of the facilities, equipment, and framework needed for the functioning of a system, city, or region. The area's infrastructure impacts on the commander's planning for entering and operating within a theater. Commanders consider not only the physical structures but also the cultural, religious, and ethnic customs in the region that affect their use. In considering infrastructure, commanders must analyze its impact upon operations; its impact upon the enemy; how its condition promotes or hinders postconflict activities; and the extent of indigenous public support.

At the strategic level, commanders assess the availability of seaports, airfields, power networks, road and rail networks, communications networks, and natural fuel reserves. The availability of warehousing, water, and food sources is crucial to planning. At the

operational level, the presence or absence of an underlying infrastructure framework affects operational tempo. Local transportation networks, for example, can contribute greatly to force movement, maneuver, and logistics. If a combat force has long lines of resupply and cannot rely on existing infrastructures within a country, robust operations are limited. Regeneration of forces is also more difficult in an area of limited infrastructure. Similar considerations apply at the tactical level.

In Operation Just Cause, the proximity and utility of key airfields to both friendly and enemy forces influenced planning for the early hours of fighting. In Operation Desert Shield, the great expanses of terrain, austere landscapes, and limited road nets affected operational and logistics planning. In Operation Restore Hope, Army units had to build an infrastructure since little was present in the host country. Extending the uninterrupted flow of units and supplies from the well-developed seaports influenced the tactical, operational, and strategic levels. As these recent operations demonstrate, consideration of infrastructure is crucial to both rapid contingency operations and those of longer duration.

While the physical environment of combat often presents harsh conditions to soldiers, they cannot only persevere but can predominate over the environment and the enemy. A well-led, force-projection army, prepared to go anywhere in the world on short notice, remains trained and ready at all times to meet whatever conditions present themselves in the environment of combat.