

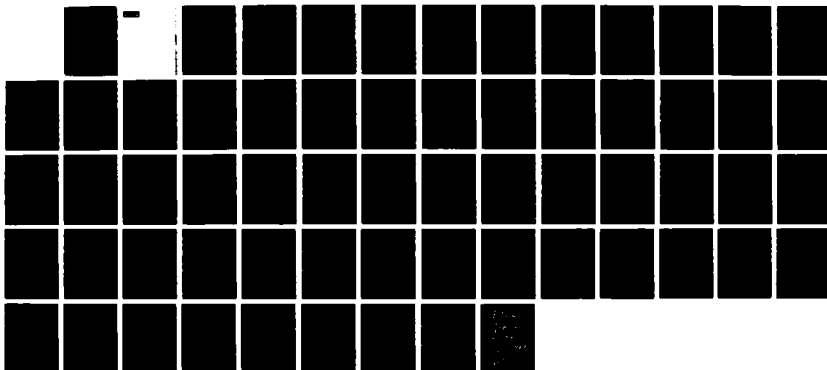
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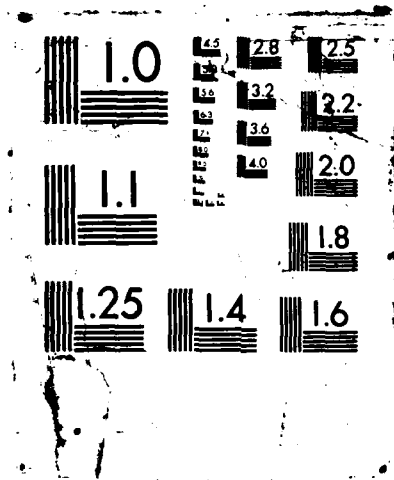
AIR ASSAULT - RAPID RESPONSE AT THE OPERATIONAL LEVEL
(U) ARMY WAR COLL CARLISLE BARRACKS PA B W HOWELL
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giving it the tactical and operational advantage over its ground restricted counterpart on the battlefield. There is a danger, as any analysis of Soviet air assault doctrine will demonstrate, that the Soviets are more innovative in the integration of large air assault formations into operational level maneuver. Building upon the Soviet concept, one can visualize a number of operational applications for air assault units on the European battlefield. The key to their employment at this level is for commanders to understand how principles of AirLand Battle may actually be enhanced by the integration of air assault and mechanized forces. The challenge is not, however, limited to learning the options available to operational commanders for employment of air assault units. Tactical commanders must ensure that the air and ground components of the air assault force are trained as a team. As shown in this paper, teamwork is the key ingredient separating the current air assault doctrine from the airmobile doctrine of the Vietnam War. An investigation of the possibilities for the future demonstrates that air assault and armor doctrines may actually converge. Evolution of armor technology may actually cause the tank to give up weight in order to gain mobility. New directed energy weapons will no doubt give the helicopter greater lethality than is currently realized. The tank and helicopter each has its advantages and vulnerabilities. If they operate independently at the theater level, they may fall victim to these vulnerabilities. Only a proper doctrine which synchronizes their capabilities will lead to optimum performance on the operational battlefield.

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AIR ASSAULT - RAPID RESPONSE AT THE OPERATIONAL LEVEL

An Individual Study Project
Intended for Publication

by

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ABSTRACT

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The technology of the modern battlefield has become so complex that it is difficult for operational level commanders to fully understand the capability of forces assigned to their commands. Air assault doctrine has been particularly difficult to adapt to the mid-to-high intensity battlefield because commanders are still influenced by the tactics used in Vietnam. Commanders have not yet learned to take advantage of the helicopters' mobility, giving it the tactical and operational advantage over its ground restricted counterpart on the battlefield. There is a danger, as any analysis of Soviet air assault doctrine will demonstrate, that the Soviets are more innovative in the integration of large air assault formations into operational level maneuver. Building upon the Soviet concept, one can visualize a number of operational applications for air assault units on the European battlefield. The key to their employment at this level is for commanders to understand how principles of AirLand Battle may actually be enhanced by the integration of air assault and mechanized forces. The challenge is not, however, limited to learning the options available to operational commanders for employment of air assault units. Tactical commanders must ensure that the air and ground components of the air assault force are trained as a team. As shown in this paper, teamwork is the key ingredient separating the current air assault doctrine from the airmobile doctrine of the Vietnam War. An investigation of the possibilities for the future demonstrates that air assault and armor doctrines may actually converge. Evolution of armor technology may actually cause the tank to give up weight in order to gain mobility. New directed energy weapons will no doubt give the helicopter greater lethality than is currently realized. The tank and helicopter each has its advantages and vulnerabilities. If they operate independently at the theater level, they may fall victim to these vulnerabilities. Only a proper doctrine which synchronizes their capabilities will lead to optimum performance on the operational battlefield.

INTRODUCTION

Technology has made the modern battlefield so complex that our war fighters have become specialists. Analogous to the variety of surgical specialists in a modern hospital, our military men dedicate themselves to becoming experts on a wide range of specialized tactical functions in order to win on the battlefield. Consider the infantry. Our ground gaining soldiers can no longer wear the "crossed rifles" with pride proclaiming "I Am The Infantry." A more appropriate expression may be "We Are The Infantries." As an infantryman in the 1980's, a soldier may be "light", "airborne", "mechanized", "motorized", "air assault", "ranger", or a "mountain fighter". Although they all have similar missions of capturing and holding ground, the how-to-get-there is the edge that will decide the difference between success and failure. Our system of training has accepted this necessity for specialization in the high technology environment of warfare. However, are we preparing our commanders, especially at the operational level, to command armies consisting of all these specialized skills? Is anyone capable of acquiring the full spectrum of skills necessary to employ these forces effectively in combined arms warfare?

This article recognizes that leaders develop tactical personalities which are functions of their experience. Can a senior general officer whose background is in heavy units fully understand the capability of light forces? As a case study, this essay focuses on one of the more recently developed and frequently misunderstood specialized tactics - AIR ASSAULT. First, analysis considers the Soviet air assault threat by reviewing doctrinal employment and possible good ideas for our adoption. Second, the hand-in-glove training relationship of air assault infantry

and their supporting aviation is stressed. In this context, we will contrast with the airmobile operations of the Vietnam War, during which soldiers were primarily considered to be passengers in troop carrying helicopters. Third, discussion identifies the operations for which the specialized skills of air assault forces are uniquely qualified at the operational level. The analysis will conclude with a brief look into the future to consider the role air assault forces may play beyond the year 2000.

SOVIET AIR ASSAULT THREAT

Until the early 1960's, the Soviet Armed Forces considered the helicopter to be useful primarily as a logistics support vehicle¹. However, the United States Army's development of airmobile operations during the Vietnam War created new combat troop carrying and fire support roles for the helicopter. In 1969, the Soviet Union realized a need for this new combat helicopter technology. Border clashes with China created problems for the Soviets. It could only defend 7,000 kilometers simultaneously, considering the requirement for tanks to concentrate within a few hours at any one of the sectors on this frontier². The mobility of the helicopter could, to a great extent, solve the problem of concentrating limited forces at the appropriate time and place along the border. More importantly, it indicated the value of heliborne operations and enabled the concept to develop into a major combat force multiplier by the 1980's. Currently, heliborne forces are organic to all levels of Soviet combat organization from division through TVD front. To understand the effectiveness of their employment in support of combat operations, one must be familiar with the capability of heliborne forces at each organizational level. Further, an examination of the roles Soviet air assault forces may play up through the year 2000, provides conclusive evidence of their long term commitment to this concept. First, however, one must understand the Soviet doctrine which supports the current use of the helicopter in battle.

AIR ASSAULT DOCTRINE

The helicopter is a "Flying Tank"³. Many will debate the comparison of the helicopter and tank. However, it is important to note that the Soviets do not question the helicopters' usefulness as a lightly armored and highly mobile tank-like vehicle. This theory is further supported by the fact that German combat developers have been working on the flying tank concept since the late sixties⁴. Unlike a fixed wing aircraft, the helicopter and tank can both dominate terrain. The helicopter is more mobile than the tank and is less restrained by irregular surfaces and natural or man made obstacles. This mobility is key in offsetting the helicopters' "thin skin" vulnerability to direct and indirect fire engagements, situations for which the tank is better protected. Since the helicopters' mobility enables it to engage targets from a variety of directions (i.e., ambushes against the flanks and rear of armored formations is the desired method of attack), it may actually have an advantage over the tank in weapons employment against vehicles with frontal protection of reactive or compound armor⁵. They have tremendous multi-dimensional fire power; considering the helicopters' ability to employ folding fin aerial rockets capable of accurate indirect fire out to 5km, 23mm cannons capable of piercing light armor out to 2km, and ATGMs which have a 90 percent probability of first round hits upon moving armor at ranges in excess of 4km⁶. Furthermore, the Soviet heliborne forces' lack of terrain restriction enables them to move to objectives in dispersed formations and concentrate at the appropriate time to achieve maximum surprise and destruction.

SOVIET HELICOPTERS

To fulfill the philosophy of helicopter employment outlined above, the Soviets have fielded a number of combat and combat support aircraft. However, the Mi-24 Hind and Mi-8 Hip currently play the most significant roles in Soviet air assault doctrine.

Since its introduction to the battlefield in the Sino-Soviet border clashes of the early seventies, the Mi-24 Hind has become the workhorse of Soviet rotary wing aviation. Today, it is considered to be the most effective weapon against the Mujahidin resistance in Afghanistan⁷. The modernized E model configuration can achieve speeds up to 320 Km/h and engage a variety of targets with four 32-shot 57 mm rocket pods, 4 anti-tank guided missiles and a turret mounted Gatling gun⁸. Configurations of the gun system include the fixed forward firing GSh-23 twin barrel 23mm gun, capable of 3,000 rounds per minute, and the turret mounted four-barrel 12.7mm UBK Gatlin gun, capable of 4,000 rounds per minute⁹. With a significant reduction in normal ordnance loads, the Hind is even capable of carrying combinations of 250 and 500 Kg bombs.

Armor protection for the crew, fuel tanks, and ammunition storage area makes the Hind capable of performing a number of combat missions. One may expect to see Hinds attack tanks and other lesser armed vehicles throughout the battlefield, create obstacles with aerial delivered mines, provide close air support, escort air assault operations, conduct commando missions, destroy hardened points such as bridges, and reduce the mobility of ground forces with aerial rocketry. A relatively new mission for the Hind, primarily in response to the United States'

development of air assault doctrine, is that of counter-air. This counter-air mission may be accomplished against NATO helicopters through the use of ATGMs (primarily employed against tanks) and the gun systems referred to above¹⁰. In addition to these armament systems, there are also hints in the Soviet literature about the development of air-to-air guided missiles. One author, Colonel M. Belov, stated as early as 1979 that "certain armies", surely including the Soviets, are working on a helicopter mounted air-to-air guided missile¹¹.

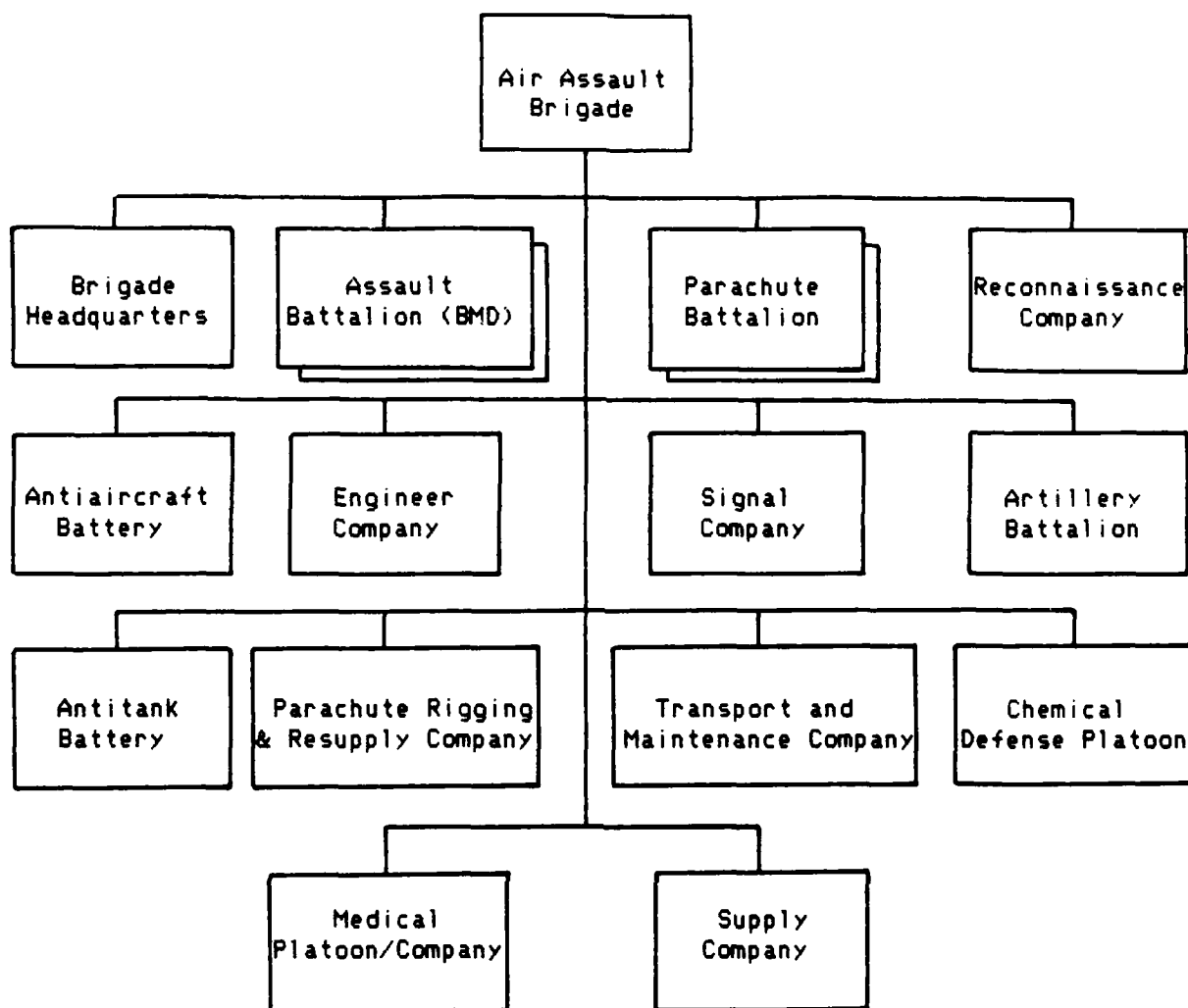
The Mi-8 Hip helicopter appeared as the C model in 1964. Since that time, it has been upgraded to an E model capable of carrying 32 combat equipped troops or 4,000 Kg of supplies and vehicles¹². An important capability of the Hip-E is that it can provide assault landing support for itself from organic weapons systems. These weapons systems include six 32-round rocket pods, four ATGMs, and a single barrel semifixed 12.7 mm machinegun in a nose mount¹³.

Although the capabilities of the Hind, Hip and other combat support helicopters in the Soviet arsenal are significant, it is their interface with the ground component of the heliborne force that makes the Soviet air assault concept a flexible and highly mobile threat. As previously mentioned, these forces are assigned to division, army, and front levels of command. The heliborne missions normally assigned at the division and army levels are quite similar, differing principally in the scope of overall tactical employment. However, front level air assault operations are accomplished with independent heliborne forces, focusing on strategic and operational objectives.

AIR ASSAULT BRIGADE

Heliborne forces at the front (Operational) level are organized into independent units called air assault brigades. The primary fighting force, containing approximately 2,000 men, consists of two motorized infantry battalions, two parachute battalions, an artillery battalion, and other supporting company size units (see figure 1)14. So much importance is assigned to these units that their priority for high quality soldiers is ranked five places above army level15. Combat value of the air assault brigade has been considered a revolution by much of the Soviet military. It provides operational commanders with a force that is able to concentrate and disperse independently of terrain features and obstacles. Most importantly, the Soviets consider air assault brigades to be equivalent to a tank division in combat value, with much greater mobility than any other mechanized mobile force16.

The dedicated helicopters of the air assault brigade provide a great deal of flexibility in the types of missions it can perform at the operational level. Such units may be expected to operate at depths exceeding 100 Km into the rear of their adversaries. Objectives may include critical choke points and political objectives well behind the forward line of troops (FLOT), bridgeheads, river crossing sites, key industrial access routes, logistical centers, nuclear delivery means and storage sites, and airfields. It is key to recognize that these targets are planned at TVD or front level. Logically, the accomplishment of these objectives relates more to the strategic aim than that of heliborne forces located at army and division levels.



Principal Items of Equipment

D30 122mm towed howitzer	18	SD 85mm field gun	6
M1943 120mm Mortar	6	RPG16D antitank grenade launcher	150
SA7 Grail surface-to-air missile	45	AGS17 30mm auto grenade launcher	24
ZU23 23mm antiaircraft gun	6	RPKS74 5.45mm light machinegun	111
BRDM AT3/5 ATGM launcher	9	BMD abn amphib inf cmbt vehicle	64
Manpack AT3/4 ATGM	14	BRDM & BRDM2 amphib scout cars	4
SPG9 73mm recoilless AT gun	36		

Note: Assault Helicopter Regiment supports with approximately 40 Mi-24 Hinds and 20 Mi-8 Hips.

Source: Major Robert E. Bork, "Air Assault Brigades: New Element in the Soviet Desant Force Structure." Military Review, October 1983, pp. 23-38.

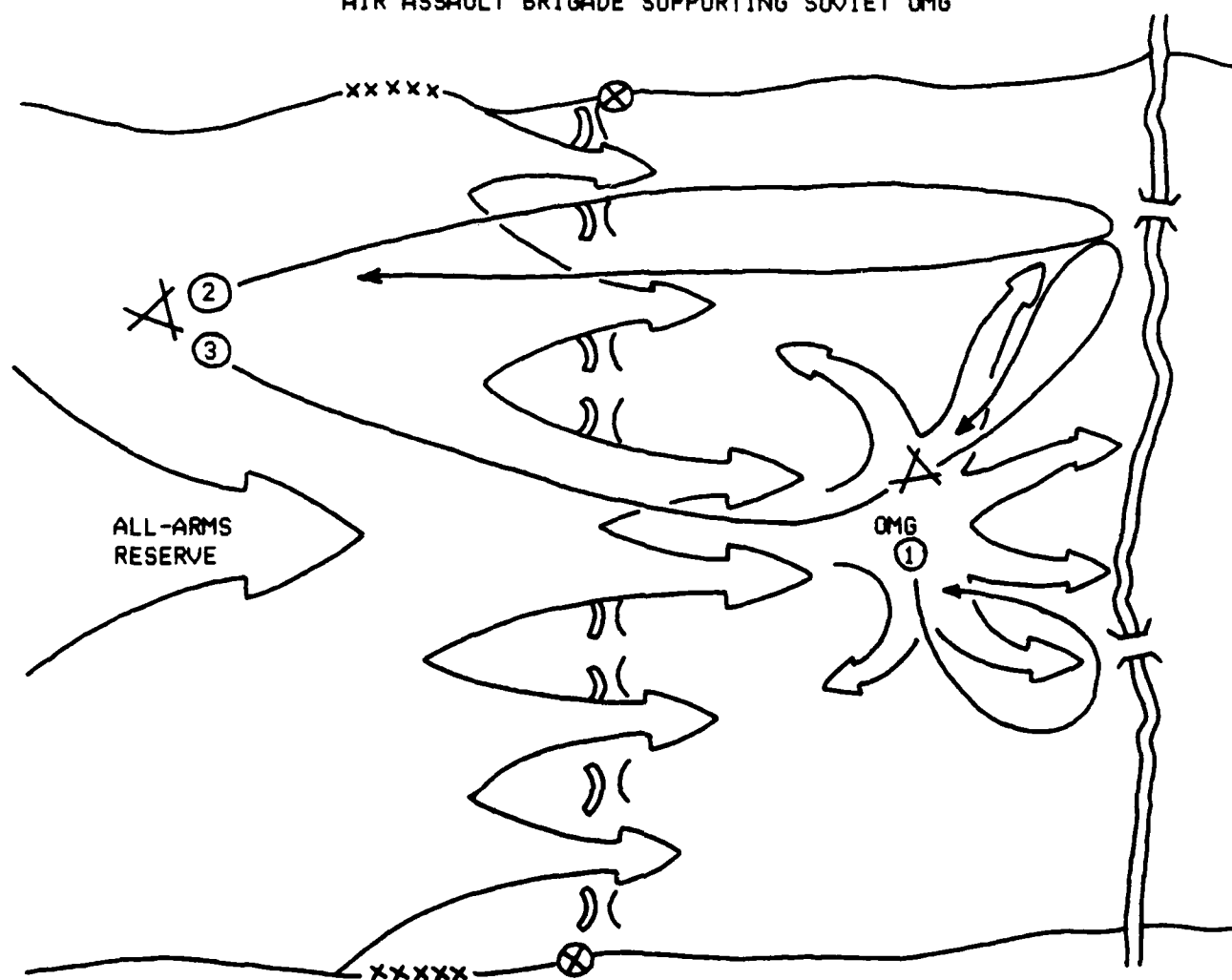
Figure 1

OPERATIONAL MANEUVER GROUP

Before concluding the discussion of the air assault brigade concept, it is useful to see how these forces are related to the current Soviet offensive concept - the operational maneuver group (OMG). Traditional Soviet offensive doctrine has included first and second echelon forces at all levels of command. Because Soviet doctrine calls for the first echelon to penetrate deliberate forward defenses, with the second echelon passing through and exploiting into the enemy rear, NATO countries have adopted an operational counter stroke called Follow On Forces Attack (FOFA). The FOFA concept is designed to interdict the second operational echelon before it can enter the battle. This concept is reinforced by the AirLand Battle Doctrine of the United States Army. Realizing this, the Soviets have developed the OMG. This force may be part of the first echelon, be located between the first and second echelons, or actually replace the second echelon¹⁷. The employment options available to this doctrinal innovation are designed to confuse intelligence collection for a deep strike by NATO forces.

At the front level where air assault brigades normally operate, OMG forces usually consist of an armor heavy corps with supplemental long range communications. The air assault forces support OMG operations in one of three ways (see figure 2). First, they may be integrated into the OMG for movement to cover the flanks or rear and react to rapidly changing situations and counterattacks¹⁸. The second method of employment is in support of OMG operations from an external home base¹⁹. This method of support is particularly hazardous because of exposure to air defense weapons enroute from the support base. The third and most

AIR ASSAULT BRIGADE SUPPORTING SOVIET OMG



1. The air assault brigade is integrated into the OMG and travels with ground forces into the depths of the enemy area. This method provides responsive support; but places the aircraft at great risk from enemy ground fire, fixed wing aircraft, and helicopters.

2. Helicopters operate from bases within the operational rear and "commute" to the battle zone. The aircraft will avoid the close contact of option 1, however, frequent FLOT crossings will subject them unnecessarily to hostile air defense fire. Also, the rapid tempo of the OMG may cause it to move rapidly outside helicopter range.

3. Helicopters initially operate from a home base and the echelon forward as the tactical situation permits. In this option, there is no requirement to return to the original home base for resupply.

Figure 2

desirable method of support combines the first two. Helicopters operate from bases within the main force, enabling the air assault brigade to be very responsive to the OMB commander 20.

At army and division level, the Soviets have regimental and squadron size aviation assets available, respectively. The main difference between these organizations and the air assault brigade is that they contain no dedicated ground forces. Normally, one motorized rifle battalion in each regiment is trained in air assault tactics, providing each division with three battalions and each army with thirteen²¹. Unlike the air assault brigade operations, heliborne operations at division and army level are in direct support of units deployed along the FLOT. These operations are conducted at a tactical depth of 20 to 50 kilometers and include linkup by ground forces within 4 to 6 hours²².

COMMAND AND CONTROL

There are a number of command, control and maneuver techniques that the Soviets use to plan and conduct air assault operations²³. To reduce the effects of jamming on command and control, HF and VHF radio communications are provided to the assault force. The assault and helicopter force commanders fly together to ensure good communications during movement to the objective area. Landing zones are normally company size (three per battalion), enabling the target to be attacked simultaneously from converging directions. Finally, alternate flight routes are taken by redeploying helicopters to avoid lock-on by air defense systems.

LESSONS OF AFGHANISTAN

Since its integration into Soviet combat forces, the helicopter has made a significant contribution to the operational art of "aktivnost" (acting with drive and aggression in combat)²⁴. The helicopter has particularly given units greater mobility to concentrate their efforts and strike swiftly against an enemy's vulnerabilities through the indirect approach. With at least one air assault brigade and over 600 helicopters currently fighting in Afghanistan, the Soviets are learning a great deal about the capability of heliborne operations²⁵. Although the Soviets still depend on the hammer and anvil operations of motorized and tank forces, they are increasingly relying on the use of air assault troops in conjunction with heavy forces. Special combined arms reinforced battalions (CARB's) have been organized to take advantage of this Soviet version of "heavy-light" operations²⁶. These operations are characterized by the landing of air assault troops in the enemy rear to control the heights and capture choke-points. Thereafter, the CARB attacks, supported by Hind gunships, to seize the main objective(s). These operations have enabled helicopter pilot training in Afghanistan to be superb but costly in lost aircraft and lives, a result of the anti-aircraft threat and frequent requirement to fly in mountainous terrain in conditions of poor visibility²⁷. The success of air assault operations has generally caused these soldiers to be held in higher esteem by the freedom fighters than are troops from motorized rifle units²⁸. Does this mean that the Soviet air assault soldier is unbeatable? Certainly not. The Soviet experience in Afghanistan has also revealed a number of weaknesses in their air assault doctrine.

Many of the problems the Soviets have encountered with heliborne operations in Afghanistan may be attributed to overly restrictive leadership, technologically inferior equipment, and inappropriate tactical doctrine. The requirement for officers to request permission to deviate from battle orders has virtually eliminated the tenants of initiative and agility from their air assault doctrine. Observers have frequently noticed helicopter gunships bypassing lucrative "unscheduled" objectives such as arms caravans so that they may attack others in compliance with instructions²⁹. An Afghan army colonel who defected to the resistance characterized the forces as "oversupervised," "lacking initiative," and dedicated to "cookbook warfare" wherein proven "battle recipes" are blindly applied to all situations³⁰.

The Soviets have lost over 600 helicopters during the Afghanistan War. One would expect that most of these have fallen victim to hostile ground fire. However, as many as 80 to 85 percent of these losses may have been the result of accidents³¹. Most were due to pilot error but many were attributable to mechanical failures. Since 1983, the resistance has contributed to the helicopter toll with heavy machine guns and missiles³². Initially, the Soviet reaction was to fly increasingly higher, thereby voiding the surprise necessary to conduct effective air assault operations. Recent trends have been to fly more at night (the Stinger missile has no night capability) and stay under the 30 foot engagement envelope of the Stinger missile. However, inadequate instrumentation and insufficient pilot night training has severely limited the scope of night heliborne operations³³.

FUTURE OF AIR ASSAULT

It appears that the future may require heliborne forces to play an increasingly valuable role in Soviet tactical doctrine. Because of its success in training exercises and in Afghanistan, the air assault brigade concept has probably already been expanded to include division level air assault units. To further develop this capability, the Soviets may consider helicopter battles (like tank battles of past wars) as the key feature of future wars between modern, state-of-the-art armies³⁴. Development of the Soviet Mi-28 Havoc and Hokum (not yet fielded) appears to further support this trend.

The replacement for the aging Hind attack helicopter is the Mi-28 Havoc. Having been in development for over ten years, this helicopter may already be in the field in limited quantities. During the design phase, the Soviets stressed that the production system must be able to effectively combat tanks, other helicopters, and close air support aircraft³⁵. Also, they specified that it be able to intercept fast and low flying aircraft and cruise missiles, conduct battlefield reconnaissance, and attack point targets³⁶. To make the aircraft survivable, the Soviets have focused on armor shielding (protection from ground fire) and reducing the visual and electronic signature. This has been accomplished by giving it a smaller silhouette than the Hind, by reducing the noise signature of spherical intake shields and IR-reducing jet pipes, and by reducing blade-tip noise (achieved by lower tip-speeds than that of Western counterparts)³⁷. The aircraft's avionics include a direct optical night-viewing system that is based on a millimeter-wave radar and a FLIR, enabling the helicopter to approach the target area

using its passive (IR) sensor, switching on the radar only when a positive target is identified³⁸. The aircraft will most likely be armed with an advanced version of the AT-6 Spiral anti-tank missile. Currently, this missile flies 5km before motor burnout, with an additional 3km of direction control³⁹. If, however, a "seeker" is added; the gunner will be able to detect targets at 9-10km and engage at about 7km. In the air-to-air role, the aircraft will probably be armed with the SA-14 missile for engagements between 300 and 6,000 meters⁴⁰. However, the 23mm gun will probably be the primary weapon at ranges less than 1,500 meters.

The Soviet "LHX", the Hokum, will no doubt carry their aviation technology into the 21st century. The counter-rotating rotors of the Hokum will provide the excellent lift and maneuverability necessary for a helicopter designed with counter-air as one of its primary missions⁴¹. This tail rotorless aircraft, speeding at 350 Km/h with a radius of 250 Km; will be less vulnerable to enemy fire and unaffected by the exhaust of its rockets⁴². If the Hokum is used in conjunction with the Havoc, the Soviets will have an attack helicopter team capable of engaging armor forces and providing counter-air protection, concurrently.

RECENT EXPERIENCE IN HELIBORNE OPERATIONS

Since the end of the Vietnam War, the United States Army has been trying to justify a role for air assault doctrine in the mid-to-high intensity battlefield. Within the past 20 years, the Soviets have, as we have seen, also wrestled with this dilemma. The threat doctrine previously discussed has shown their resolve for making the air assault concept work as a component of the combined arms team. Within our Army, many have debated the propriety of integrating light forces (with or without helicopters) into an environment normally restricted to heavy mechanized formations. Much has been written about the "heavy-light mix," but few soldiers have been trained in the "how-to" implementation of this doctrine. The invaluable experience of airmobile warfare in Vietnam's low intensity conflict has, however, made it clear there is a place for helicopters on the North German Plains or in Southwest Asia.

AIRMOBILE VERSUS AIR ASSAULT

Although the airmobile concept was justified in the early 1960's as a highly mobile capability to disperse forces in a nuclear threatened European battlefield, it received its first practical application in the Vietnam War. Did the United States Army's airmobile experience in this war provide a good foundation upon which to build current air assault doctrine? The answer is both "yes" and "no". In the positive sense, the airmobile concept confirmed the helicopters' capability to out-maneuver and surprise a ground restricted adversary. The Vietnam War enabled a generation of aviators and commanders to be trained under conditions of actual combat and learn the strengths and vulnerabilities

of the helicopter as a weapons platform. It also confirmed the usefulness of the attack helicopter as a fire support weapons system. Conversely, the low-intensity nature of the war spared us the hazards of a high threat air defense environment (the exception being Lamson 719 in Laos), we were seldom opposed by any armor formations, and we always conducted operations under conditions of air superiority.

The primary difference between airmobile doctrine as implemented during the Vietnam war and the air assault doctrine of the 1980's concerns the relationship of the supporting and supported units. In Vietnam, the enemy was generally guerrilla infantry. The helicopter afforded the opportunity to apply the economy-of-force principle of war by enabling the commander to insert small "search" units in a "checkerboard" concept to find the enemy. After initial contact with the enemy, the commander, operating from his command and control helicopter, could "pile-on" sufficient forces to fix and finish him. In these operations, the helicopter was used simply as a means of transporting soldiers to the battle. Since the air defense threat was usually low, the only time the flight was in danger occurred in the landing zone (LZ). To reduce the threat of a "hot" LZ, attack helicopters frequently preceded the flight by several minutes in order to suppress any hostile elements in the area. Deviations from this tactical scheme of employment were numerous, but the dominating theme was one whereby troop lifts, accompanied by attack helicopters, were accomplished as point-to-point moves.

Unlike the airmobile experience of the Vietnam war, current air assault doctrine relies upon an inseparable coordination between the air

and ground elements, each benefiting from a mutually supporting combat capability. Today's mid-to-high intensity battlefield poses a threat that would be devastating to the tactics the Army used successfully in that war. As we investigate the characteristics of the air assault concept, one will understand why the airmobile tactics used successfully in Vietnam were appropriate for that period, but irrelevant to the mid-to-high intensity battlefield of the 1980's.

UNDERSTANDING THE CAPABILITY

The dispersion of limited helicopter assets across a variety of aviation units is one of the reasons the Army is not currently realizing the maximum capability of the air assault concept. The combat power enhancement that this dimension provides cannot be achieved merely by assigning helicopters to a unit. There must be a focus toward ensuring ground commanders, staffs, and especially aviators understand the nature and capability of the combined air assault force. To be successful, they must take advantage of their most precious asset - mobility. Because of this often misunderstood concept of air assault tactical employment, we have convinced ourselves at the National Training Center (Fort Irwin) that helicopters and heliborne light forces have limited usefulness on the mid-to-high intensity battlefield⁴³. If the air assault concept is to succeed, we cannot land these forces in open desert terrain to be quickly overrun by armored reserves. Nor can our attack helicopters duel with tanks at close range. The misunderstanding of air assault capability is not, however, restricted to training. History is well documented with situations in which heliborne forces were not skillfully employed.

1973 ARAB-ISRAELI WAR

The 1973 Arab-Israeli War provides some valuable lessons concerning the conduct of air assault operations. On 6 October, Egyptian commandos air assaulted thirty to forty kilometers inside the Sinai to disrupt counterattacking Israeli armored forces⁴⁴. In the Ras Sudar section, helicopters carrying more than 200 men were destroyed⁴⁵. Throughout the Sinai, as many as fourteen other helicopters were shot down before reaching their initial assault objectives⁴⁶. These losses to Israeli Air Force attacks may largely be attributed to leaders' failing to take advantage of terrain to conceal flight routes. Furthermore, poor coordination of landing zones and objective areas in the north doomed many ambushes that survived the flight because commandos were unable to canalize the counterattacking Israeli forces into light anti-armor killing zones.

In spite of the fact that both sides of the conflict failed to take advantage of the strengths afforded by air assault operations, there were a number of successful engagements which emphasize its' potential as a tactical concept. In the Sedr Defile a commando unit was able to prevent Israeli use of the pass for sixteen days⁴⁷. The Israeli's were able to successfully accomplish a daylight air assault raid against an Egyptian electronic monitoring station at Gebel Ataka⁴⁸. In another raid, they landed a commando unit 60 miles northeast of Damascus to destroy a bridge and attack an Iraqi convoy⁴⁹. The Syrians were able to successfully conduct a key 1500 hour air assault on a Mt. Hermon observation post⁵⁰. Although these operations were successful, their accomplishments may not be attributed to sound tactics. Referring to

the comparison of airmobile and air assault tactical concepts, the planners lacked imagination in their tactics and failed to consider the advantage of air assault mobility.

During after action reviews, there were a number of interesting observations concerning the 1973 War. The Israeli Air Force commander had a very negative attitude toward the helicopter, claiming that it was useful only as a "clutch weapon" and then only at night⁵¹. His units were successful because they intercepted Arab helicopters in the open plains and desert during daylight. In a positive sense, both Arab and Israeli leaders realized that rapid technological developments in anti-tank warfare had made the tank more vulnerable than previously thought possible. Light and air assault infantry soldiers had engaged tanks with the RPG-7 rocket grenade and the Soviet made Sagger and Snapper anti-tank guided missiles. Of the 840 Israeli tanks lost in the war, observers in the field claim that many were victims of these weapons⁵².

FALKLANDS CAMPAIGN

The outcome of the 1982 Falklands War was not particularly influenced by the helicopter. However, the British were able to effectively employ helicopters in some instances. They used helicopter gunships to attack Ports Darwin and Stanley, an Argentine submarine near Port Grytviken, and South Georgia⁵³. British heliborne commandos destroyed the airstrip at Pebble Island and conducted an assault against Port San Carlos⁵⁴. Also, British helicopters were used to ferry paratroopers from Port San Carlos to Darwin and Goose Green⁵⁵. These operations were not, however, conducted without a significant cost.

A British Sea King carrying a unit of Army SAS commandos crashed into the sea, killing nineteen soldiers and two crewmen⁵⁶. Many have speculated that extremely bad weather or a collision with a large bird caused this mishap. Several other helicopters were lost in daylight during confrontations with Argentine air. Most of these losses could have been prevented had they used the cover of darkness for movement. The combat value of the night was effectively demonstrated during one Argentine operation. Argentine commandos of the Buzo Tactico Force successfully conducted a 0430 air assault raid against Government House and the barracks at Moody Brook⁵⁷. British defenders thought they could hear rotar blades; but, because of darkness could determine neither their direction of flight nor landing point⁵⁸. A key factor in the success of this operation was the element of surprise made possible by its' being conducted at night⁵⁹. Unfortunately, Britain's opportunity to improve upon operational techniques and survivability of heliborne forces was terminated quite suddenly by the loss of the container ship, Atlantic Conveyor, and all but one of its CH-47 Chinoks during an Exocet missile attack⁶⁰. This loss was a blow to their operational mobility and challenged the propriety of consolidating these precious assets on a single ship.

UNITED STATES ARMY EXPERIENCE

The United States Army's experience with air assault operations in combat has also failed to set an enviable example. The rescue mission on Son Tay Prison was a well led and rehearsed operation. With the exception of one helicopter landing about a mile from it's intended site, all went exactly as planned⁶¹. Although this mission contained

competent leadership, a good plan designed to achieve surprise by attacking at night, and a well trained and team-oriented unified force; the lack of timely intelligence allowed it to be staged against an empty target. As we will discuss in more depth later, timely and accurate intelligence is absolutely necessary during the conduct of air assault operations.

The Marine Corps air assault against Koh Tang Island, during the Mayaguez rescue mission, was neither well planned or executed. The extended turn-around from Thailand, fragmented plan, poor intelligence concerning disposition of hostages and strength of enemy forces in the objective area, and the repeated attempts to conduct an unrehearsed daylight insertion under direct enemy fire (without supporting weapons), cost the lives of a number of good men⁶². It is worth mentioning that the extraction of Marine forces from Koh Tang Island was successfully accomplished only under cover of darkness.

The 1979 Iranian hostage rescue mission added to the list of poorly executed air assault operations. A very complicated and compartmented plan (for intelligence reasons), a poor aircraft maintenance track record, and interservice rivalry virtually ensured the operation would not succeed⁶³. Furthermore, the right pilots were not selected for the mission. The Marine Corps pilots were unrehearsed and not as skilled as their Air Force counterparts in long range low level cross country flights. Unlike the Sontay mission, the failure of this operation may be directly attributed to the fact that the force was not a well rehearsed and integrated team.

The most recent example of poorly executed air assault operations happened in Grenada in 1983. Having the experience of past air assault failures, we nevertheless continued to make the same mistakes. Special operations forces assaulted Richmond Prison during the daylight with poor intelligence concerning landing zones and the enemy situation⁶⁴. As a result, there was considerable loss of life and equipment. A Marine air assault force had to search for a landing zone at Pearls Airport because dated maps showed open areas that no longer existed⁶⁵. These situations, in addition to other instances of unnecessary risk, confirms the suspicion that our Army is still committed to airmobile type operations of the Vietnam War.

ROAD TO RECOVERY

Commanders must get serious about how to train for and conduct air assault operations. We have seen the costly mistakes of our past. The airmobile operations of the Vietnam era, although appropriate for that period, failed to fully exploit the potential of heliborne maneuver forces. In the extremely lethal environment of the 1973 Arab-Israeli War, commanders consistently failed to take advantage of the cover provided by terrain and the night. During the Falklands Campaign, British plans for use of helicopters were foiled by the piecemeal loss of assets. The recent experience of our Army has also been hampered by inaccurate intelligence, fragmented planning, and a misunderstanding of the combat power multipliers an air assault force can provide. To be successful, the ground force commander and staff, and especially the soldier, must have a coordinated relationship with their supporting aviation. Conversely, the challenge to the Army Aviation Branch is to

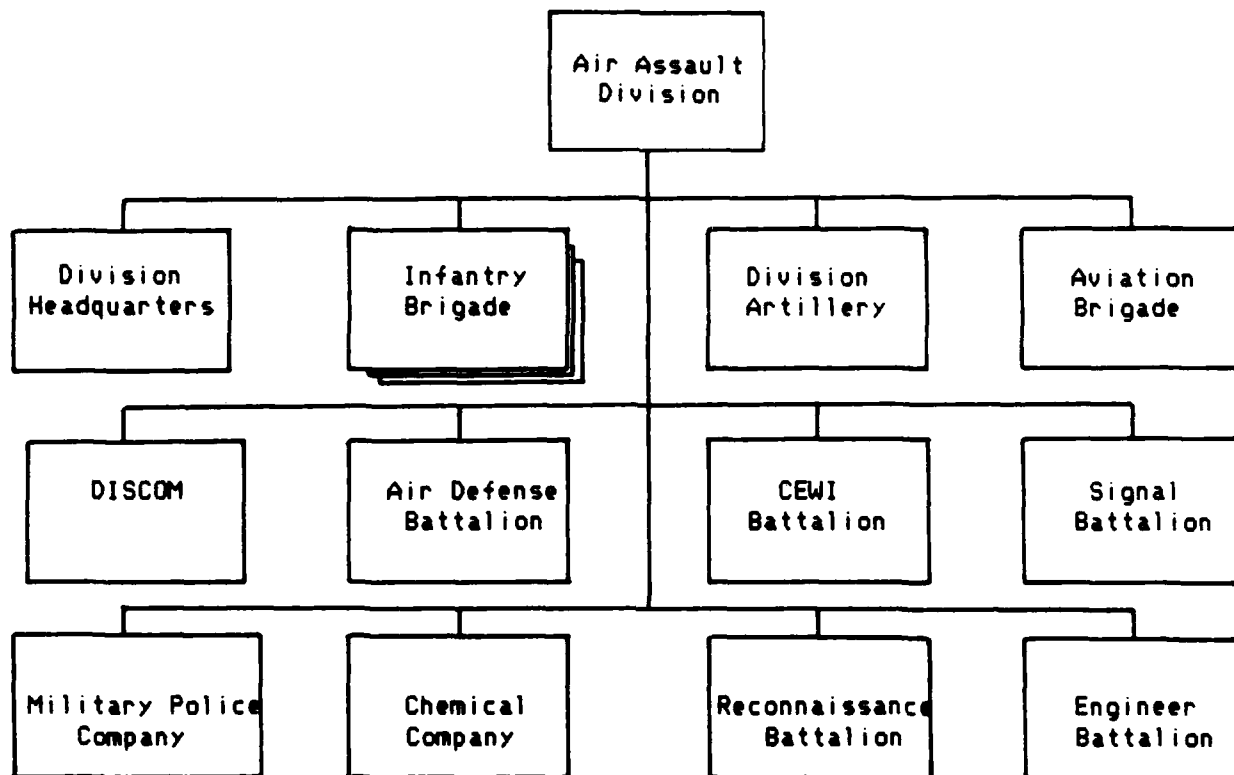
ensure that aviators understand how to integrate their flying skills into the ground tactical plan. The only way we can accomplish this integrated air assault concept is through training the ground and air components as a team.

TRAINING THE AIR ASSAULT FORCE

At the operational level of war, the air assault tactical concept cannot be successfully employed simply by loading untrained infantry soldiers on helicopters and flying them off to battle. Similarly to the Soviet air assault brigade concept, our heliborne operational forces must consist of soldiers and leaders who are well trained in air assault doctrine. The 101st Airborne Division (Air Assault) currently fulfills this role within the United States Army (see figure 3). Conversely; at the tactical level a variety of aviation brigades provide command and control, air reconnaissance, combat support, attack helicopter support, and logistics support to the full spectrum of Army units. Since these brigades are not organized with sufficient air assets to perform air assault missions at the operational level, their role is analogous to that accomplished by tactical level heliborne units in Soviet divisions and armies. These aviation brigades have important missions. However, this discussion is limited to the specialized training required of both the ground and air components of air assault units, and the integrated training necessary to make them an effective fighting team.

AIR ASSAULT SOLDIER

The soldier is the most important ground component asset of an air assault unit. To be effective, he must be proficient in his military occupational specialty (MOS) and other skills unique to air assault doctrine. The fully trained soldier understands the characteristics of the aircraft around which he will work. He is knowledgeable in the pathfinder operations necessary to provide landing instructions to aircraft formations. The air assault soldier is an expert at rigging



Principal Sub-Unit Organizations

Infantry Brigade: 3 Infantry battalions per brigade for a total of 9.

Division Artillery: 3 M102 Howitzer battalions, one in direct support of each maneuver brigade.

Aviation Brigade: General Support Aviation battalion, Combat Aviation battalion (2), Combat Support Aviation battalion, and Attack Helicopter battalion (3).

DISCOM: Maintenance battalion, Supply & Transport battalion, Aircraft Maintenance battalion, and Medical battalion.

Reconnaissance Squadron: Air Reconnaissance troop (4).

Figure 3

and hooking-up external aircraft loads. For special situations requiring vertical insertion, he is proficient in helicopter rappelling operations. These unique and mandatory tools of the air assault soldier are taught at Army air assault schools.

In addition to specific MOS and air assault unique skills, some common skills are especially important to the air assault soldier. He is an excellent land navigator, especially at night. Although his tactical advantage is achieved through the helicopter's speed and mobility, adverse weather or an unfavorable tactical situation may require him to navigate dismounted through unfamiliar terrain. Individually employed anti-armor weapons, such as the Dragon and AT-4, are second nature to the air assault infantryman. Also, indirect fire employment opportunities may require the air assault soldier to perform forward observer (FO) duties, a mission that cannot be accomplished without knowledge of supporting weapons capabilities and call-for-fire procedures. He understands the capability of tactical radios and exercises communications security through brief and concise transmissions and the use of directional antennas. The air assault soldier is a master at field-craft. The dilemma of packing a heavy combat load to sustain operations and minimizing weight to increase mobility has forced him to be a very efficient load planner. To help overcome the mental and physical demands placed on the air assault soldier, he is subjected to a rigorous physical fitness program that encourages individual excellence and teamwork. These skills and others, based upon the training priorities of the commander, contribute to the

teamwork necessary to conduct independent across FLOT operations in a mid-to-high intensity environment.

AIR ASSAULT COMMANDER

The success of an air assault operation depends upon the commanders' ability to orchestrate the time and place his assets enter the battle, especially at the battalion and brigade levels. When planning these operations, commanders must think at 100 miles per hour and be able to see the fighting potential of terrain in a much broader sense than their mechanized associates. The success of their operations will largely depend upon surprise and mobility. Unlike their Soviet counterpart who is rigidly tied to a doctrinally supported plan, regardless of the circumstances; our AirLand Battle Doctrine encourages commanders to take the initiative⁶⁶. Commanders who aggressively seize and hold the initiative when opportunity strikes, may ensure victory on the next battlefield⁶⁷. They train their units to react instinctively through the use of standard operating procedures (SOP's). As argued by Richard Simpkin, we cannot allow these SOP's to be too restrictive to the independent rational thought of junior leaders:

In sum SOPs must provide a framework of discipline within which the trained mind can safely roam free. Their purpose is not to restrict human judgement, but free it for all the tasks only it can perform; not to exclude it from the primary control loop, but to sustain it there⁶⁸.

Finally, successful commanders cultivate an intangible and time proven combat power multiplier in their units - pride. These soldiers are part of a special combat capability. Commanders can promote this uniqueness and build the esprit and teamwork necessary to win on the battlefield.

THE AVIATOR

Helicopter pilot training is another area that requires emphasis in order to maximize the capability of air assault operations. This discussion has nothing to do with training officers to fly helicopters, a mission reserved for the Aviation School. It focuses, instead, on the tactical flying skills necessary to survive as a maneuver force on the mid-to-high intensity battlefield. Before discussing tactics, a brief comment is necessary concerning the helicopters' role on the modern battlefield. First, it is neither a fixed-wing fighter or commercial passenger aircraft. As such, the "dive bomber" attack helicopter tactics and high altitude point-to-point troop flights of the Vietnam era are no longer valid. The Soviet experience has taught us that the wisely employed helicopter is a very mobile combat troop carrier or anti-armor (flying tank) weapons system that is unconstrained by natural or man made obstacles. The key is that we must use its mobility, fire power, and unique capability to operate close to the ground, as combat multipliers.

In a mid-to-high intensity environment, the primary threat to the helicopter will include anti-aircraft missiles and guns, high performance aircraft, other helicopters, tanks, and the individual rifleman. There is a strong probability that the entire battlefield will be saturated with weapons capable of killing helicopters. To minimize the threat of these weapons, there are a number of tactics our aviators can use. First, to limit the air defense threat, they must conceal their aircraft by using the terrain wisely and employing very low level flight tactics. Quite often, one can observe scout pilots

flying in the vicinity of an objective area. This allows the enemy to concentrate on a possible air assault landing zone or easily target the aircraft and pilot. Given the mobility of the aircraft, scout pilots can often fly to a hide position and move dismounted to an observation point without being detected. This tactic is especially effective in mountainous and desert terrain. Unnecessary exposure is not limited to scout pilots. Frequently, attack aircraft will violate their traditional doctrine of "standoff" by hovering above tree lines while dueling with armor forces. At 1500 meters or less, tanks are very effective against other vehicles, especially helicopters. These pilots must ensure their engagement positions do not skyline them for their opponents or reduce the survivability and effectiveness aspects of maneuver and mobility. Furthermore, the TOW mounted attack helicopter has the standoff necessary (3,500m plus) to make it quite effective against a tank. The tank v. helicopter exchange rate has been found to be as high as 10:1 (TASVAL tests claim 20:1) at 2500m, rising rapidly as the range opens to 3000m where helicopter casualties are negligible⁶⁹. For troop carrying combat assault aircraft, terrain masking opportunities should be sought when planning flight routes to landing zones. Using terrain masking and defiles in irregular terrain provides an excellent opportunity to avoid optical and electromagnetic discovery of the flight route, especially during across FLOT operations. The second flying tactic that will improve an air assault unit's survivability in a mid-to-high intensity environment was mentioned several times in the lessons learned discussion - night operations. If pilots are flying low and using sound operational techniques, especially

at night, it is difficult to pinpoint their location or direction of flight and surprise is virtually assured. The Sontay and Argentine Raids achieved the element of surprise because they were conducted at night. In order to conduct night missions reliably, pilots will have to become experts at flying in the nap-of-the-earth (NOE) or low level environment using night vision goggles (NVG's) and Forward Looking Infrared Radar (FLIR) devices. The night training is tough, but the reward is a survivable tactical concept for the armor threat environment. Fortunately, rapidly advancing technology in the development of sight intensifying devices, Pilots Night Vision System (PNVS) and Enhanced Forward Looking Infrared Radar (EFLIR), presents a bright picture for low level night flying⁷⁰.

If air assault pilots are expected to move rapidly to the objective by incorporating the terrain flying and night operations capabilities previously discussed, navigating without "searching around" is absolutely essential. Again referring to one of the Soviet principles, air assault forces move in dispersed formations to the objective area and concentrate rapidly. Penetrating along multiple routes, pilots will not be able to conduct pre-exercise reconnaissances or navigate along major highways enroute to the objective area, especially during across FLOT operations. Their training must include exercises in low level land navigation with the aid of aircraft navigational instruments such as Doppler and Global Positioning Systems. Again, this is tough at night. Immerging technology in navigational instrumentation and night vision devices will help.

AIR ASSAULT TEAM

The final training challenge to the air assault force commander concerns the creation of a cohesiveness between the ground and air components. To do this, he ensures within the limits of safety, that they train as they will fight. In a well trained unit, aviators are as concerned about details of the ground tactical plan as their ground counterparts. Conversely, ground commanders carefully study flight routes and review downed aircraft procedures. To further ensure this oneness between the air and ground components, battalion and brigade commanders demand operations orders and air mission briefs be inseparable. Everyone knows what he is to do and how it relates to the overall plan. During execution, plans are well rehearsed to minimize radio communications, a dead-give-away for air assault operations. Finally, the task force commander is actively involved in leading the operation from the front. His personal presence of leadership and ability to make decisions based upon direct observation will function as a combat multiplier for the force.

OPERATIONAL AIR ASSAULT EMPLOYMENT

As previously mentioned, our operational level leadership is faced with the challenge of commanding and synchronizing the employment of a variety of specialized combat forces. With no less than nine families of infantry related Army Training and Evaluation Plans (ARTEP's) on the drawing board, it appears that our chief doctrine writers agree that the age of specialization has arrived⁷¹. The capability for which the air assault infantry ARTEP provides training standards may be found in a number of publications. Among these publications; FM 100-5, Operations, and FM 90-4, Air Assault Operations; provide the doctrinal guidance that enables an air assault unit to become an effective part of the combined arms team on the mid-to-high intensity battlefield.

AIRLAND BATTLE DOCTRINE

The fundamental principle of AirLand Battle Doctrine is to seize the initiative early and exercise it aggressively to accomplish the mission⁷². It's purpose is to strike enemy forces in critical areas in order to degrade their ability to react. These operations must be rapid, violent, unpredictable, and disorienting to the enemy⁷³. To accomplish these fast pace operations on the modern battlefield, the Army has focused on the four tenets of AirLand Battle; initiative, agility, synchronization, and depth. The 100 MPH thinking necessary for the conduct of air assault operations is especially applicable to these tenets. The speed with which these heliborne forces can react provides operational commanders the opportunity to quickly gain the initiative and catch the enemy off balance. Air assault forces are extremely agile because they can move rapidly, strike hard and concentrate against enemy

vulnerabilities. Successful air assault operations are achieved through the commanders' ability to synchronize the full spectrum of weapons systems available to him. Air assault forces can deploy rapidly throughout the entire depth of the battlefield on both sides of the FLOT. In little more than one hour, an air assault unit can fly dispersed for 200 Km and then concentrate, deploy, and engage the enemy; a situation which would require ten hours for an armor force moving along one route⁷⁴.

TACTICAL LIMITATIONS

Before discussing the operations for which air assault forces are ideally suited, it is also important to understand the situations in which its employment could be disastrous. It is key to realize that the air assault tactical concept is not a panacea for the operational battlefield. Senior commanders and their staffs must carefully compare missions and air assault capabilities before deciding to commit them. Since these forces derive much of their combat worth from speed and mobility rather than physical fighting power, they are less effective when employed in situations where they cannot maneuver to develop momentum⁷⁵. In the offense, air assault soldiers inserted in highly trafficable terrain are easily accessible to enemy armor reserves. Air assault operations should seldom be conducted during daylight, especially in across FLOT missions. The combat value of darkness during air assault operations cannot be overemphasized. In a mid-to-high intensity environment, air assault forces should not be inserted against heavy forces in the first echelon. The high threat air defense envelope

and mobility of forces in this area could easily target aircraft and outmaneuver air assault infantry on the ground.

In the defense, air assault forces should not be positioned astride highly mobile avenues of approach unless the zone is sufficiently narrow (or restrictive) to allow defense in depth⁷⁶. Commanders should not plan for the air component of an air assault force to loiter within range of opposing artillery systems or along high speed avenues of approach. Equally important is the requirement to balance forward area refueling and rearming positioning with the threat this forward location causes to these relatively immobile facilities. Finally, the weather is a key planning component of air assault operations. There will be times when the operation must go, in spite of the weather. Commanders are responsible, however, for evaluating the consequences that adverse weather may have on the success of the operation.

ORGANIZATION FOR COMBAT

Before discussing air assault missions, we should first look at the air assault capability in terms of organization for combat. As previously mentioned, the 101st Airborne Division (Air Assault) is currently the Army's only air assault unit. Under its present organization, there are sufficient troop lift assets to conduct a simultaneous combat assault with one maneuver brigade. This is based upon the assumption that the tactical situation will normally not permit multiple lift serials, especially during across FLOT operations. To maximize the flexibility of command and control and the speed of employment, the air assault battalion task force is actually the optimum size combat organization for simultaneous assault. Given this

assertion, although the operational commander may have a divisional size unit operating within his theater, the assignment of air assault missions will normally be restricted to brigade and battalion task force level.

AIR ASSAULT OFFENSE

The air assault task force is especially capable of across FLOT operations deep into the enemy rear. Operations designed to secure key facilities for future link-up by heavy forces may include river crossing sites, key terrain, airfields, communications centers, and canalizing mobility corridors, as objectives. Also, the air assault raid against enemy lines of communications and key logistics facilities can have a significant impact on the first and second echelon forces. If the air assault task force can destroy fuel and tank ammunition in the enemy rear before it is delivered to the user, there is little need to fight armor forces directly to be effective against them. However, detailed planning for these operations is absolutely necessary to avoid the air defense umbrella and minimize the risk of early detection or a meeting engagement. The use of available intelligence cannot be overemphasized. This is so important that an all source intelligence update must be available to the air assault task force commander (AATFC) just prior to pickup zone (PZ) time. During execution, across FLOT air assaults into a high threat air defense environment will seldom enjoy the luxury of being able to land on the objective. Consequently, commanders should consider inserting scouts or a long range surveillance detachment (LRSD) in an alternate landing zone (LZ) before conducting the raid. This will

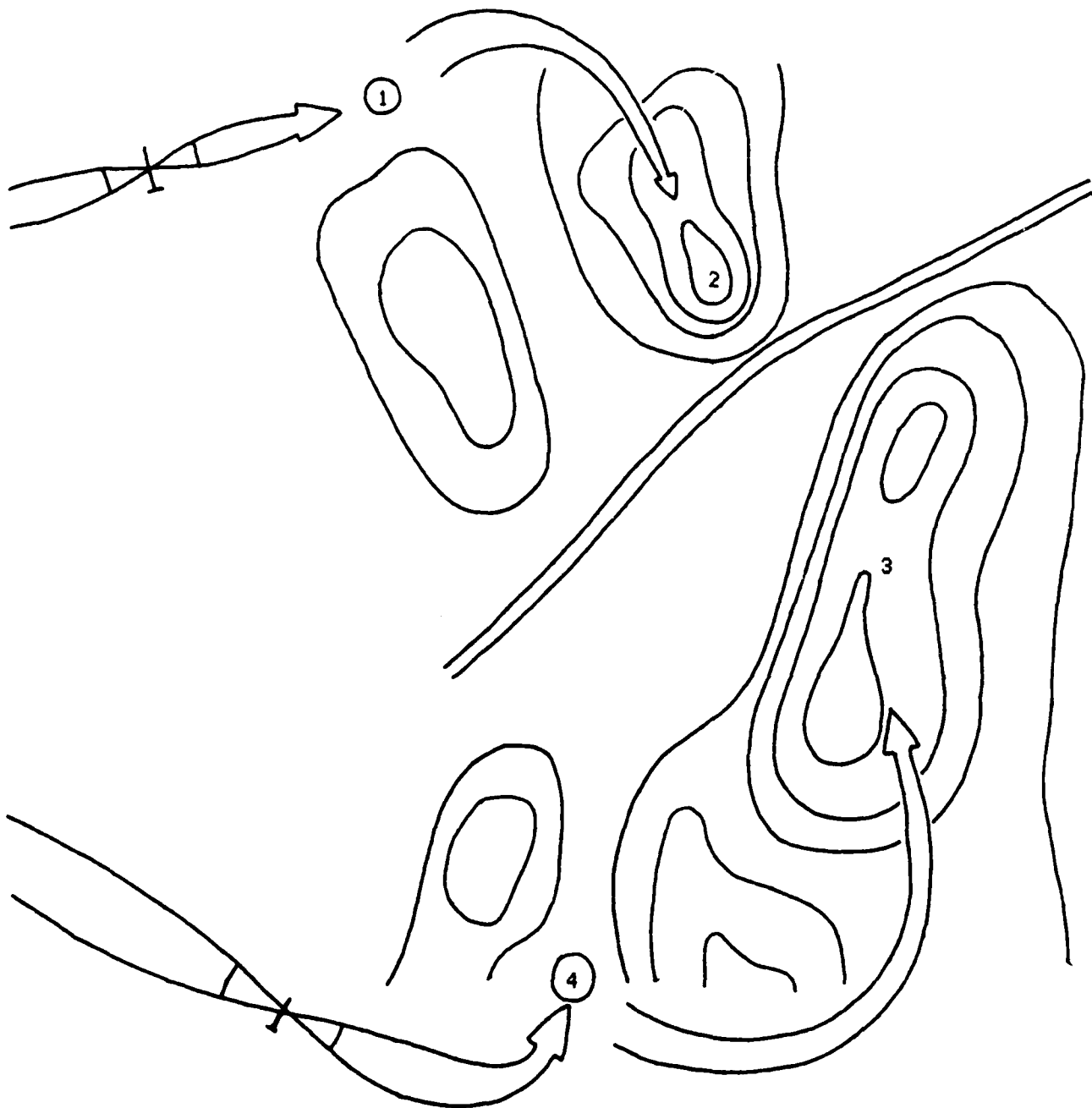
enable the scouts to move to the assault LZ, the objective area, or both; and conduct pre-assault observation and reporting (see figure 4).

There are other offensive operations for which the mobility of an air assault force is well suited. Under conditions of exploitation and pursuit by heavy forces, attack helicopters may support by concentrating on the destruction of fleeing headquarters, combat support, and combat service support units⁷⁷. In the pursuit, air assault forces can easily bypass pockets of resistance and move deep to block avenues of retreat. Also, the mobility of the air assault task force enables it to support deception operations by conducting frequent moves to confuse the enemy's perception of friendly force intentions.

AIR ASSAULT DEFENSE

In the defense, the air assault task force can also make significant contributions at the operational level. The covering force battle is ideally suited for the mobility of attack helicopters. Although the ground component is less mobile, it can perform quite effectively in the covering force area through anti-armor ambushes, counterreconnaissance, and reconnaissance roles. As a reserve force, the air assault concept enables the operational commander to commit a greater percentage of his forces to the current battle. This is possible because the mobile air assault reserve has the ability to reinforce or relieve his forces quickly throughout the operational zone⁷⁸. Another defensive operation for which the air assault task force is ideally suited is actually offensive in nature - counterattack. Because of its mobility and tank killing capability, the air assault reserve may be effectively employed as a counterattack force. Also as an operational reserve, the air

PRE-ASSAULT RECONNAISSANCE



1. Scouts or LRSD are air assaulted into an alternate LZ.
2. Scouting party moves to a location from which they can observe the objective and main body assault LZ and report combat information.
3. Objective.
4. Main body lands in assault LZ and maneuvers against the objective.

Figure 4

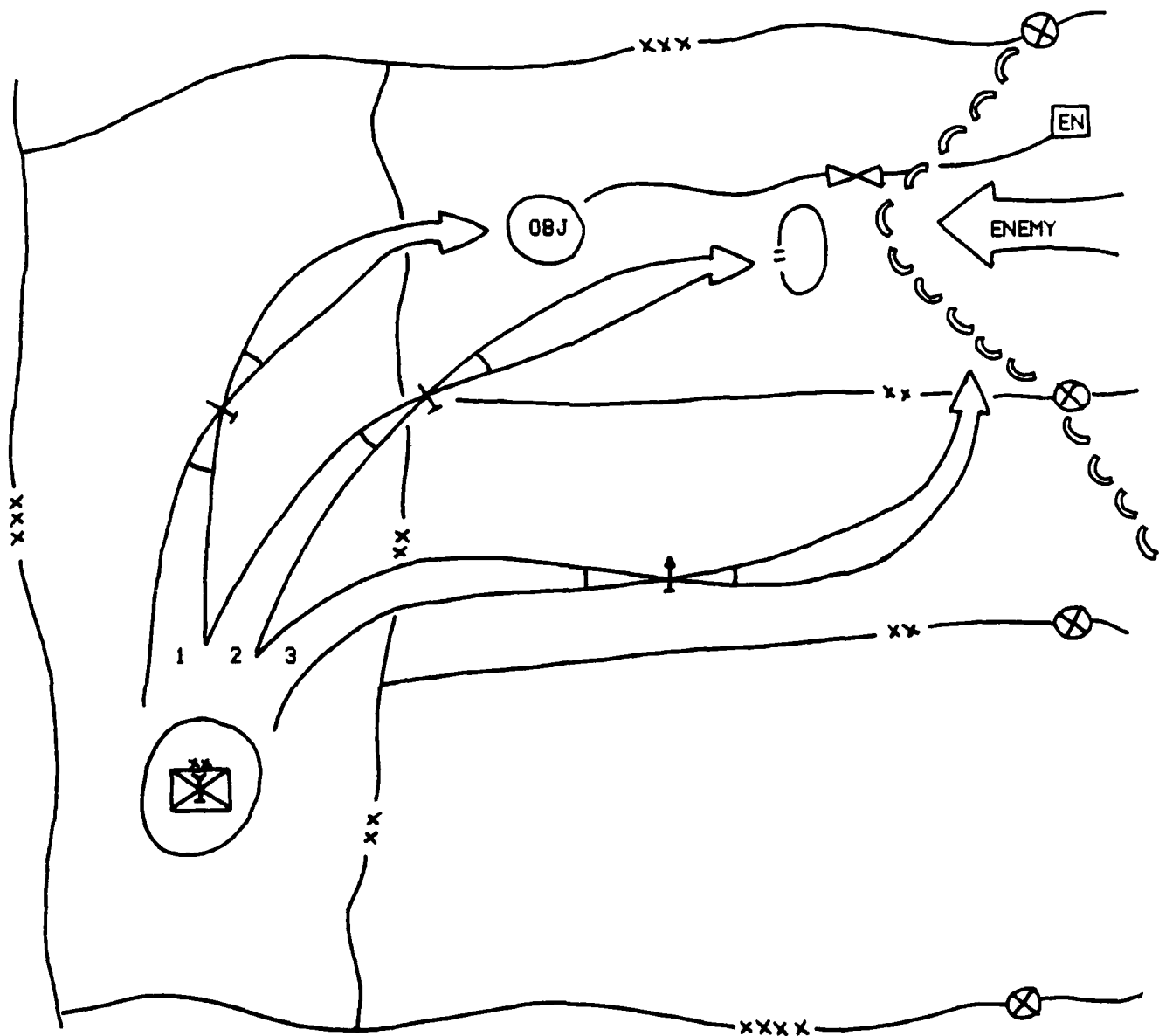
assault force may be used for rear area protection. Considering the large area consumed by the operational rear, the air assault reserve can respond quickly to the greatest Soviet rear area threat - the air assault brigade (see figure 5).

As previously mentioned, air assault forces can conduct themselves responsibly when placed in a defensive position along the line of contact. Careful consideration must be given to the width and depth of the primary defense zone, as its fighting character will assume the nature of a static defense. Furthermore, the likely discontinuous nature of the battlefield may cause these forces to be occasionally bypassed. When this occurs, soldiers may be repositioned by air only as the tactical situation permits. Anytime the ground element of an air assault force is in direct contact with heavy armor or mechanized enemy forces, the capability of supporting aviation to reposition the unit is limited by the proximity of direct fire weapons. Therefore, retrograde operations such as the air assault delay and withdrawal under pressure are extremely difficult to execute at the tactical level when artillery suppression is inadequate or the unit is unable to break contact.

TRAINING DIVERSITY

How should we tackle the task of preparing our officers and soldiers to operate effectively on the diversified battlefield of the 80's? As with most issues, there is no easy answer. There are, however, some options to consider. We should probably not allow the assignment of our officers, especially at the junior grade level, to categorize them as "light" or "heavy" specialists. Our infantry soldiers must be able to understand and appreciate the capabilities and limitations of both heavy

AIR ASSAULT DIVISION RESERVE MISSIONS



1. As previously discussed, the air assault ground and attack helicopter assets are the most responsive countermeasure to Soviet heliborne rear area attacks.
2. Air assault ground forces can be rapidly inserted to add depth to the battlefield or block a penetration.
3. Attack helicopters from the air assault division can mass rapidly to counterattack the flanks of a penetration.

Figure 5

and light forces. This cannot be learned in a classroom at the Infantry Center. Practical experience will be the most enduring teacher. At the operational level of command, senior officers must be committed to ensuring that staff positions are occupied by competent officers who can make sound recommendations based upon proven experience. Finally, senior commanders must realize, especially in this era of rapidly changing technology, that the need for education never stops, regardless of the grade and position.

FUTURE OF AIR ASSAULT DOCTRINE

Will the twenty-first century battlefield be dominated by "flying tanks?" Probably not. However, helicopters will become increasingly compatible with armor as a combined arms operational force. The staying power of a tank combined with the agility of an attack helicopter and the tenacity of air assault infantry will constitute a formidable force. The helicopters' mobility may have actually planted a "seed" that will revolutionize the character of its ground restricted armor counterpart. It may, in fact, supplant the heavy main battle tank by encouraging a shift to a faster and lighter family of armored vehicles⁷⁹. With advancing technology in weapons systems, by the 1990's light armored forces will be able to accomplish all the heavy missions except attack organized defenses containing main battle tanks⁸⁰. The helicopter is even splitting into heavy and light forces. The AH-64 Apache; with eight hellfire missiles, two pods of 19 light anti-armor multi-purpose rockets each, and a 30mm chain gun; certainly qualifies as a heavy attack helicopter. However, light helicopters such as the MD500 Defender are currently acquitting themselves very well in the Persian Gulf. A rocket capable version of the MD500 has proved to be a very agile weapons system in this campaign. The Israeli Army is also working on an attack helicopter doctrine that employs heavy and light attack helicopters in the defensive (securing the battlefield) and offensive (attacking enemy armor forces) modes, concurrently⁸¹.

HELICOPTER OF THE FUTURE

Realizing the helicopter will evolve into the twenty-first century as a viable fighting concept, what will it look like? Since funding constraints will have much to do with the pace of technological evolution, one can only speculate about the capability that may be incorporated within the helicopter. Given the requirement to fly at very high speeds close to the ground in all weather conditions, the helicopter should have extremely accurate point-to-point global navigation avionics. It should be able to avoid lock-on by continuous wave radar guided air defense systems, a situation which may be helped by construction with materials incorporating stealth technology. The engine(s) must be fuel efficient, cool (to defeat tracking by heat seeking missiles), and be able to support heavy loads of armament, equipment, and/or soldiers. The weapon systems will have greater lethality than those currently fielded. This will be accomplished by hyper-velocity direct fire weapons, and missile targeting systems that include multiple fire-and-forget engagements from covered positions. In the near term, the indirect engagement nature of the FOGM (currently under development) may provide the attack helicopter with improved survivability. However, advancing technology in directed energy lasers, microwave energy, and radio frequency and particle beam weapons; presents an unlimited scope to the capability that attack helicopters may someday possess.

LHX BRIDGES THE GAP

Will the LHX program bridge the technology gap between the present and the year 2000? Unfortunately, cost cuts may have a significant

impact on research and development, reducing the technological horizons of the completed product. Currently, the Army concept plans for a light transport version (LHX-U) and scout or light attack (LHX-SCAT) version of the same airframe, to keep costs down⁸². It's exterior design incorporates stealth technology, featuring sharply canted fuselage sides, a V-tail instead of the traditional vertical fin, and a ducted tail rotor⁸³. The aircraft is controlled by a single pilot (still under debate), a situation that complicates the man-machine instrument interface under NOE flying conditions at 170MPH⁸⁴. To assist the pilot, cockpit automation may include: automatic target acquisition and hand over, hands-off hovering, voice controlled weapon systems, digitized maps, and voice warning of threat acquisition systems and laser activity⁸⁵. On board computers may apply artificial intelligence programs concerning enemy tactics and doctrine for pilot reference during air-to-ground or air-to-air engagements⁸⁶. Aircraft survivability packages will include full NBC protection and composite construction (honeycomb skinned for radar absorbency) to make the airframe lighter (3,600Kg weight limit), more durable, and easier to repair⁸⁷.

The LHX will replace the current scout aircraft (OH-58C) and programmed intermediary, AHIP (OH-58D), as a second member of the the Apache tank killing team. In the troop carrying mode (seven combat equipped soldiers), the LHX will be able to clandestinely insert anti-armor ambush teams or perform low threat command and control missions⁸⁸. Since there is no plan to develop a combat assault aircraft within the LHX family, the UH-60 Blackhawk, numbering about 1100

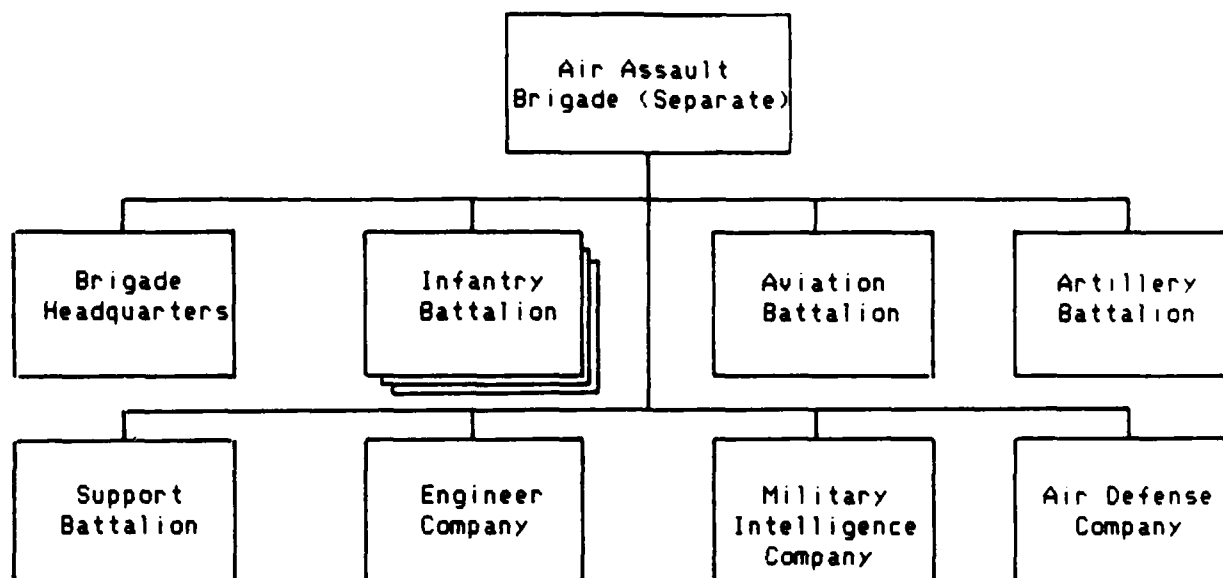
airframes, will continue to perform the combat assault helicopter role for the air assault forces into the 1990's89.

FUTURE AIR ASSAULT UNITS

What will our air assault units look like in the twenty-first century. Again, cost will significantly impact force structure and the number and type of airframes we are able to acquire. One consideration pertains to the Soviet experience. Possibly, the air assault brigade is the optimal size unit (see figure 6). As previously stated, aircraft and logistical support constraints prevent us from employing more than one brigade simultaneously from our only air assault division. The air assault separate brigade concept would offer more responsive command and control, greater flexibility and operational mobility, and would have a more autonomous logistics capability than does a divisional brigade under the current TOE.

FUTURE AIR ASSAULT SOLDIER

The Army has much research and development to accomplish before the twenty-first century concerning the fighting capability and sustainment of the individual air assault soldier. Given the soldiers capability to infiltrate mechanized and armor defenses, the Army desperately needs to arm him with a short range (200m) light anti-armor (fire-and-forget) weapon that can kill tanks with a flank or rear shot. In these lethal situations, the soldier can not afford the time to fly a Dragon missile to the target. However, the conceptual design of the Dragon and TOW will remain valid. Flank shots from anti-armor ambushes arrayed along primary avenues of approach will continue to be ideal situations for an improved Dragon. The TOW has traditionally enabled air assault defenses



Principal Sub-Unit Organizations

Brigade Headquarters: Military Police platoon, Signal platoon, Chemical platoon, 120mm Mortar platoon, and Reconnaissance platoon.

Infantry Battalion: Air Assault Infantry company (3), Antiarmor company, Scout platoon, 81mm Mortar platoon, Communications platoon, and Medical platoon.

Aviation Battalion: Command and Control section, Combat Support Aviation company (2), Attack Helicopter company, Air Reconnaissance troop, General Support Aviation company.

Artillery Battalion: Headquarters and Headquarters battery and M102 (light) Howitzer battery (3).

Figure 6

to add depth to the battlefield. In the narrow defense zones previously discussed, an improved TOW will be an effective anti-armor weapon.

Night fighting is one of the keys to keeping the enemy off balance and protecting the air assault ground component. To maximize the effectiveness of the air assault soldier at night, he must be equipped with state-of-the-art night vision aids. Ideally, these devices will be passive (to prevent detection by enemy systems), light weight and small enough to fit in the soldiers vest pocket. They should also provide him the capability to scan for thermal images at least one kilometer to his front.

Individual clothing protection and combat load weight are problems for the air assault soldier in the 1980's. The Army is obligated to continue exploration of clothing technology that protects the soldier in all climates and provides adequate ventilation to prevent heat casualties during periods of extreme physical stress. Also, during war the soldier's combat load will primarily consist of ammunition, rations, and water. His load carrying equipment must be light weight, compartmented to provide logical storage, comfortable to wear (weight carried high on the shoulders), and large enough to include the previously mentioned clothing and equipment.

CONCLUSION

Technological innovations for the battlefield of the 1980's are placing significant demands upon our leaders' ability to orchestrate the myriad of combat assets assigned to their commands. Successful leaders are those who understand the dynamics of the modern battlefield and are able to exploit the unique capabilities of every component under their command. The study of air assault doctrine has confirmed how costly the battlefield experience can be when our understanding of its capability is constrained by conservative thinking. Surely, we ought to learn from the mistakes of the past. We can study the history of modern warfare and benefit from the positive and negative examples of air assault employment in campaigns such as the Arab-Israeli and Falklands Wars and Grenada. If only to reinforce this point, the Soviet Union has demonstrated a commitment to developing the concept of air assault brigades and integrating their employment into massive armor formations at the operational level. Furthermore, since 1979 their understanding of air assault doctrine has been refined in actual combat on the Afghanistan battlefield.

How can we improve our war fighting capability in the 1980's? The concepts outlined within FM's 100-5 and 90-4 are adequate for the implementation of AirLand Battle doctrine. The challenge, however, is to translate this doctrine into executable training tasks that cover the full spectrum of command. At the operational level, commanders should have a better understanding of the potential and limitations that an air assault force may bring to their scheme of maneuver. The primary way to

accomplish this is through command post exercises (CPX's) that tax the ability of senior commanders and their staffs to orchestrate a very "fluid" battlefield. Similarly to the experience of battalion level task forces at NTC, these exercises should provide corps and higher level commanders the opportunity to identify weaknesses in their battle staffs. Of equal importance, these CPX's will identify areas in which senior commanders need to expand their individual study. This structured approach to training may be supplemented by war fighting seminars within which commanders and their staffs could exchange ideas for implementation of current doctrine.

At the tactical level of command, the challenge for innovative training methods is just as important as that for the operational level. If air assault units are to survive in the high risk environment of the mid-to-high intensity battlefield, they must be well trained. Tactical level commanders, soldiers, and aviators must be proficient in the skills for which they are responsible. They should understand how these skills support the integrated training program of an effective air assault team. Since the fundamental principle for success within an air assault unit is teamwork, prudent commanders will ensure that air and ground components understand and respect the contributions made by each to accomplishment of the mission.

The assignment process will also have an impact on our ability to understand the capability of air assault forces on the diverse operational battlefield. If we persist in allowing our young officers to receive repeated assignments in either "heavy" or "light" units, another generation of specialists will be on the way to operational

level command. The time to emphasize the diverse nature of heavy and light forces is at the "muddy boots" phase of an officers' career. As a minimum, infantry lieutenants and captains should have the opportunity to serve a tour in each of these forces. This will provide a foundation upon which the officer can build throughout the remainder of his career.

Where do we go from here? The argument has been offered that the helicopter and tank will become increasingly complimentary as we near the twenty-first century. The case for a sixty ton tank is becoming more difficult to support, given the lethality of weapons systems that are currently being fielded. Assuming research and development experts agree that thicker and heavier armor is not better if it fails to defeat anti-armor weapons, then the requirement for mobility acquires increased significance in the armor community. To achieve this mobility, a much lighter version of the tank (20-30 tons) may actually assume a tactical role quite similar to its airborne counterpart. Deep attacks become more feasible because armor formations are less restricted by natural obstacles. Rapid repositioning in response to enemy initiatives or to take advantage of a tactical opportunity may become easier because new light armored vehicles are faster and more agile. From the helicopters' prospective, the research on directed energy weapons and hypervelocity missiles will give attack helicopters the "teeth" that, when added to mobility, will be devastating to armor formations in the near future. With air assault and armor doctrine moving on a converging axis toward the twenty-first century, we may find attack helicopters performing anti-helicopter overwatch missions for armor formations. We may see air assault ground forces conduct deep attacks with subsequent link-up by

armor or perform flank guard missions to protect armor movement, in an environment that makes them relatively immune to air defense systems because they fly during the night at high speeds and under engagement envelopes.

The future of the air assault concept will depend upon the pace of technological advancements, our ability to visualize the helicopters' place on the battlefield and our willingness to bear the costs of this research. To operate in the high threat environment, soldiers should be provided with the most advanced aviation hardware that research and development can produce. As the capability to improve the mobility and survivability of these assets becomes available, air assault forces may become an increasingly valuable asset to the operational commander. The danger we should avoid is to allow selfish interests to prevent us from clearly examining the opportunities that an air assault force may provide to the mid-to-high intensity battlefield at the operational level. If the man-machine interface proposed in the LHX technology is achieved, twenty-first century operational doctrine will certainly challenge future commanders' ability to maintain the pace. Without speculating on the configuration of future air assault units, the equipping of soldiers, or the fielding schedule of modernized aircraft; the air assault concept will remain an important part of the Army into the twenty-first century. On a battlefield depending upon firepower, protection, and mobility; it can provide a dimension of combat power unmatched by any other tactical weapons platform. The challenge is to expand our vision of it's capability beyond that which has been thought

possible, and then to train the air and ground components to fight effectively as an air assault team.

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