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# VOLUME I

## 1. (U) PURPOSE

The purpose of Volume I of this Final Report is to summarize salient points, observations, and considerations concerning the airmobile operations the 101st Airborne Division (Airmobile) (reinforced) conducted in support of Republic of Vietnam Armed Forces (RVNAF) in Laos during LAMSON 719 for the period 8 February - 6 April 1971.

a

## 2. (U) LAMSON 719

LAMSON 719 was an allied offensive operation of limited objectives and duration against North Vietnamese Army (NVA) supplies, base areas, lines of communication, and forces in the part of Laos immediately adjacent to the two northern provinces of the Republic of Vietnam. The objectives were to destroy supplies and installations, disrupt lines of communication, and destroy NVA forces. The broad aim was to reduce NVA capability for waging war in the south and to advance the security of the people of the Republic of Vietnam.

Strict rules governing United States military operations across the Laotian border made LAMSON 719 a special situation. While RVNAF could operate freely on the ground and in the air within the operational area in Laos, United States forces were restricted to air operations under specific rules of engagement and were prohibited from operating on the ground.

The result was that the Republic of Vietnam Armed Forces under command of the Commanding General, I Corps, Army of the Republic of Vietnam, planned and conducted ground operations in Laos; and United States forces under command of the Commanding General, XXIV Corps, United States Army, planned, coordinated, and conducted airmobile and aviation operations in support of RVNAF ground operations. There was some participation by aircraft of the Republic of Vietnam Air Force.

The Commanding General, XXIV Corps, assigned Commanding General, 101st Airborne Division (Airmobile), the mission of planning and conducting airmobile operations in support of RVNAF in LAMSON 719.

3. (U) MISSION OF 101ST AIRBORNE DIVISION (AIRMOBILE)

The governing mission of the 101st Airborne Division (Airmobile) during LAMSON 719 was to plan and conduct airmobile operations in support of Republic of Vietnam Armed Forces. But the division had other missions as well, all related to or affected by LAMSON 719.

Other missions included the following:

a. Operating in Thua Thien province, the division's pre LAMSON 719 area of responsibility.

b. Providing an infantry battalion to the 1st Brigade, 5th Infantry Division (Mechanized) in Quang Tri province for the duration of LAMSON 719.

c. Taking over operational and security responsibilities of units of the 1st ARVN Infantry Division in Thua Thien and Quang Tri provinces and along the Demilitarized Zone thus permitting their deployment into LAMSON 719 operations.

d. Opening Route 547 from the Hue area into the A Shau Valley and conducting operations in the A Shau Valley as a diversion for LAMSON 719.

e. Moving a brigade of four infantry battalions into Quang Tri province.

f. Assuming command in March of all United States Army tactical units and responsibility for operations in the two northern provinces of the Republic of Vietnam to include security of staging areas, logistic installations, and lines of communication supporting LAMSON 719.

g. Supervising the closing of Khe Sanh combat base during the latter stages of LAMSON 719 and securing the movement out of western Quang Tri of RVNAF and US units.

In support of these missions, the division operated from three headquarters; the main headquarters at CAMP EAGLE in Thua Thien province, a tactical headquarters at Quang Tri Combat Base, and an advanced headquarters at Khe Sanh.

From the beginning, the Division Commander devoted his major attention to LAMSON 719 and kept at least one of his Assistant Division Commanders in fulltime support of the operations. During late January and most of February, the Assistant Division Commander (Support) operated from the forward headquarters at Quang Tri. From late February until early April, the Assistant Division Commander (Operations) operated from the advance headquarters at Khe Sanh. During March and early April, the Division Commander operated from the tactical headquarters at Quang Tri, while the Assistant Division Commander (Support) operated from main headquarters at CAMP EAGLE. The division staff was spread among the three headquarters.

Always, airmobile support of LAMSON 719 had first priority in the division's plans, operations, and considerations. All the division's assets and resources were a reservoir from which LAMSON 719 was supported.

4. (C) OPERATIONAL ENVIRONMENT

Several factors shaped the environment in which airmobile operations were conducted in support of LAMSON 719. Chief among these were:

a. Location - operational area

LAMSON 719 was conducted on NVA home territory. (Figure I-1) The operational area was a long-occupied, extensively developed, heavily defended supply and logistic base, staging area, and communications and transportation center. Resident forces included administrative, logistic, quartermaster, and transportation units with organic

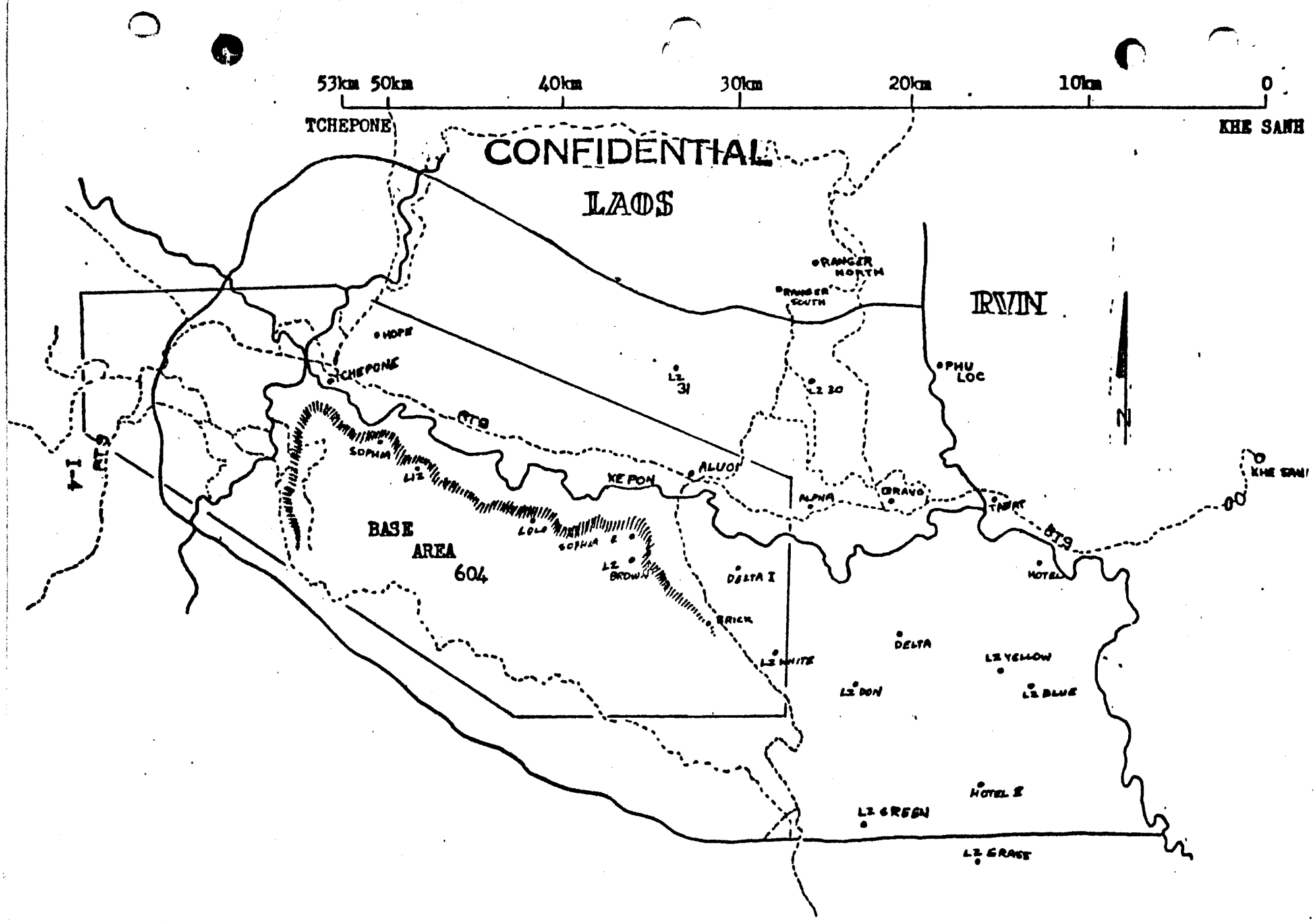


FIGURE I-1 (C). Area of Operations, LAMSON 719 (U)

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security and air defense forces, as well as some tactical units. Familiar with the operational area, supported by local supply and logistic bases, dependent upon ground transportation, operating at the hub of a transportation and communications network, the NVA were relatively unaffected by the vagaries of weather, even though the operational area was located generally along the edge of the zone affected by significant weather variation.

b. Location - allied bases and staging areas

Allied bases and logistic installations were located along the coastal area of the northern provinces of the Republic of Vietnam. (Figure I-2) Consequently, it was necessary to open roads westward and establish supply bases, logistic installations, and staging areas in western Quang Tri province before airmobile and ground operations could be launched into Laos. Considerations of space, security, and maintenance dictated that most aircraft which supported LAMSON 719 should be positioned nightly at maintenance and support bases along the coast ranging from Quang Tri to Da Nang. This meant that weather conditions over a wide area affected aircraft which supported LAMSON 719. Logistic support of allied forces operating from western Quang Tri province depended upon keeping open Route 9 from Dong Ha and Quang Tri westward to Khe Sanh and upon weather conditions that affected flying from the coastal base areas to Khe Sanh staging area and then into the operational area in Laos. As RVNAF advanced westward, supply lines grew longer, more exposed to enemy action, and more greatly affected by weather conditions over a larger area.

c. Weather

Weather had a major effect on the timing of airmobile operations in support of LAMSON 719. The operational area itself was affected by the winds, clouds, precipitation, and ceilings of both the northeast and southwest monsoons during a seasonal transition from northeast to southwest monsoon. Weather conditions at any one or all of three locations directly affected airmobile operations: at coastal base camps where most helicopters were kept at night, the forward staging area at Khe Sanh, where only a few helicopters remained overnight, and in the operational area over Laos. The right combination

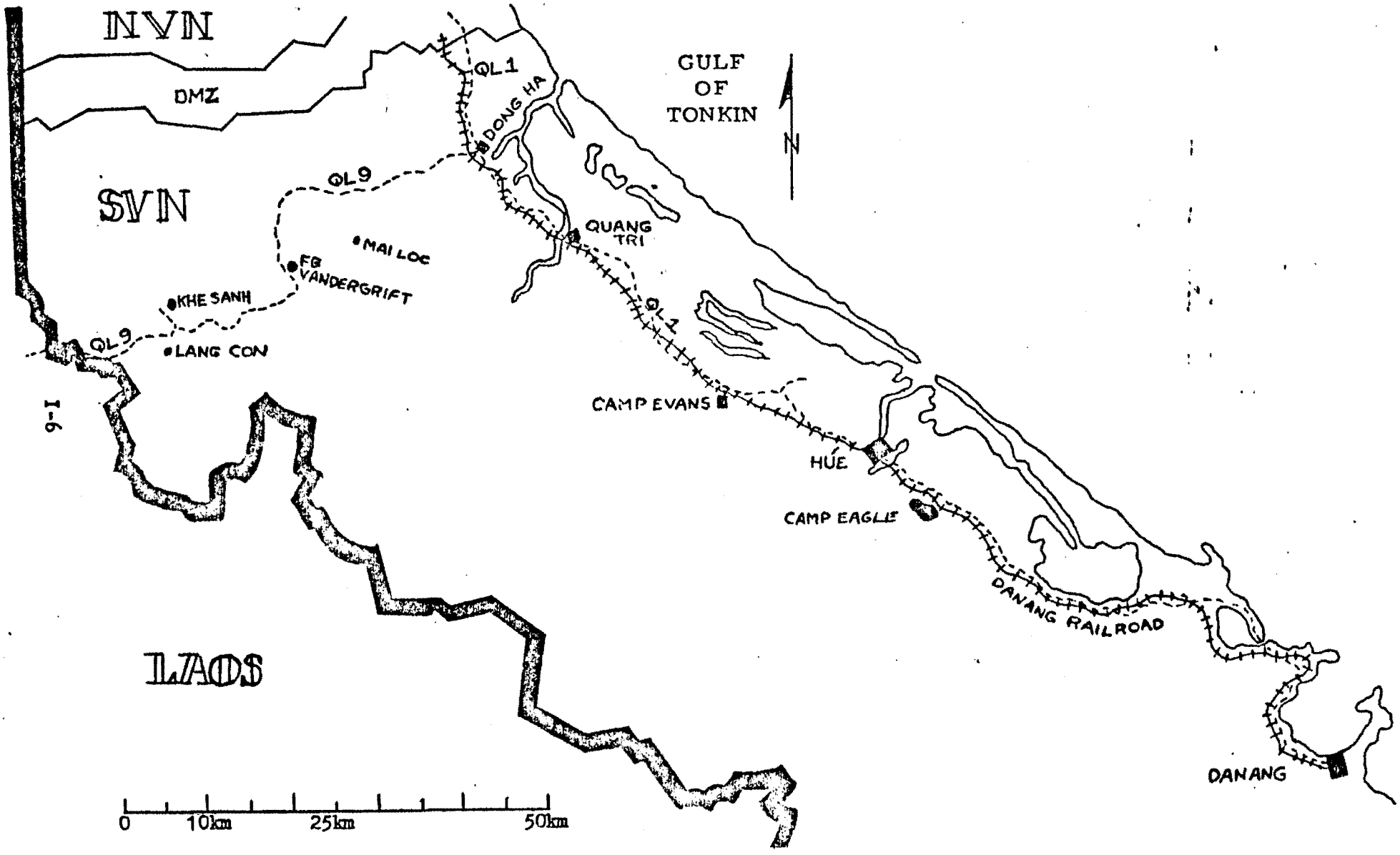


FIGURE I-2 (U). Allied Bases and Staging Areas (U)

of weather conditions had to exist before helicopters could take off from night bases, land at Khe Sanh to refuel and be briefed for missions, and fly into the operational area over Laos. Early morning fog, rain, and cloud cover sometimes delayed airmobile and tactical air operations until late morning or early afternoon. Rarely did weather conditions preclude airmobile and tactical air operations all day long throughout the operational area. Occasionally airmobile operations were conducted under ceilings and weather conditions that precluded employment of close tactical air support. Sharply reduced visibility caused by a combination of natural haze, smoke and dust raised by artillery and air strikes, and flying into the afternoon sun frequently caused flying safety hazards and complicated command and control of aircraft.

d. Terrain

The landform of the operational area is divided into three fairly distinct parts. Central to the area and determinant of the direction of attack is the Xe Pon River valley which runs generally east-west with Route 9 paralleling the north bank of the river from the Laotian border to Tchepone. The floor of the valley varies in width from about two kilometers at its narrowest point to about five kilometers in the Tchepone area and has an average width of about three kilometers. The Xe Pon River is the single most useful navigational aid for aircraft flying under conditions of greatly restricted visibility.

The landform of the ground north of the Xe Pon River is broken, uneven, and mountainous with elevations increasing northward from the floor of the river valley and with the highest ground being north of and outside the operational area.

The landform of the ground south of the Xe Pon River valley is generally mountainous and uneven, although the mountains south of the river tend to be lower and more rolling than those to the north. There are, however, two distinct features that dominate the terrain and influence military operations: the Co Roc, a rectangular plateau about four kilometers long that rises abruptly just on the Laotian side of the border and dominates the Khe Sanh plateau in the Republic of Vietnam and Route 9 on both sides of the border; and an escarpment lying two

or more kilometers to the south of and running parallel to the Xe Pon River that begins about twenty kilometers west of the border and extends westward for another twenty-five kilometers to a point south of Tchepone where the escarpment abruptly turns southward. Both of these pieces of high ground are dominant terrain. Both must be controlled by any military force that wishes to use Route 9 and move forces along the Xe Pon River valley into the Tchepone Plain.

Heavy vegetation covers the river valley, mountain slopes, and most mountain tops. Some clearings are located irregularly throughout the area, but these are usually small and on steep slopes. Some mountain tops have spots fairly free of vegetation, but they are usually littered with large boulders and outcropings of rock.

The north-south feeder roads to Route 9 generally run along ridges or streams. Not all are visible from the air.

e. Landing Zones

There is a paucity of natural helicopter landing zones in the operational area. The few which do exist are usually one-ship or two-ship landing zones requiring hovering approaches and departures, are located either on high points or on low ground, and are so obvious to friend and foe alike that they were habitually defended by the NVA. Consequently, throughout LAMSON 719 it was usually desirable and necessary to construct new landing zones with USAF-delivered weapons at places selected jointly by the ground force and air mission commanders during the preparatory phases preliminary to an airmobile combat assault.

f. RVNAF ground operations

Ground operations of Republic of Vietnam Armed Forces had a determinant influence on supporting airmobile operations.

The original RVNAF concept of operations visualized an advance along three axes as far west as Tchepone. (Figure I-3) The Armored Brigade was to attack in the center along Route 9; the 1st ARVN Infantry Division, was to conduct a series of airmobile assaults westward in the

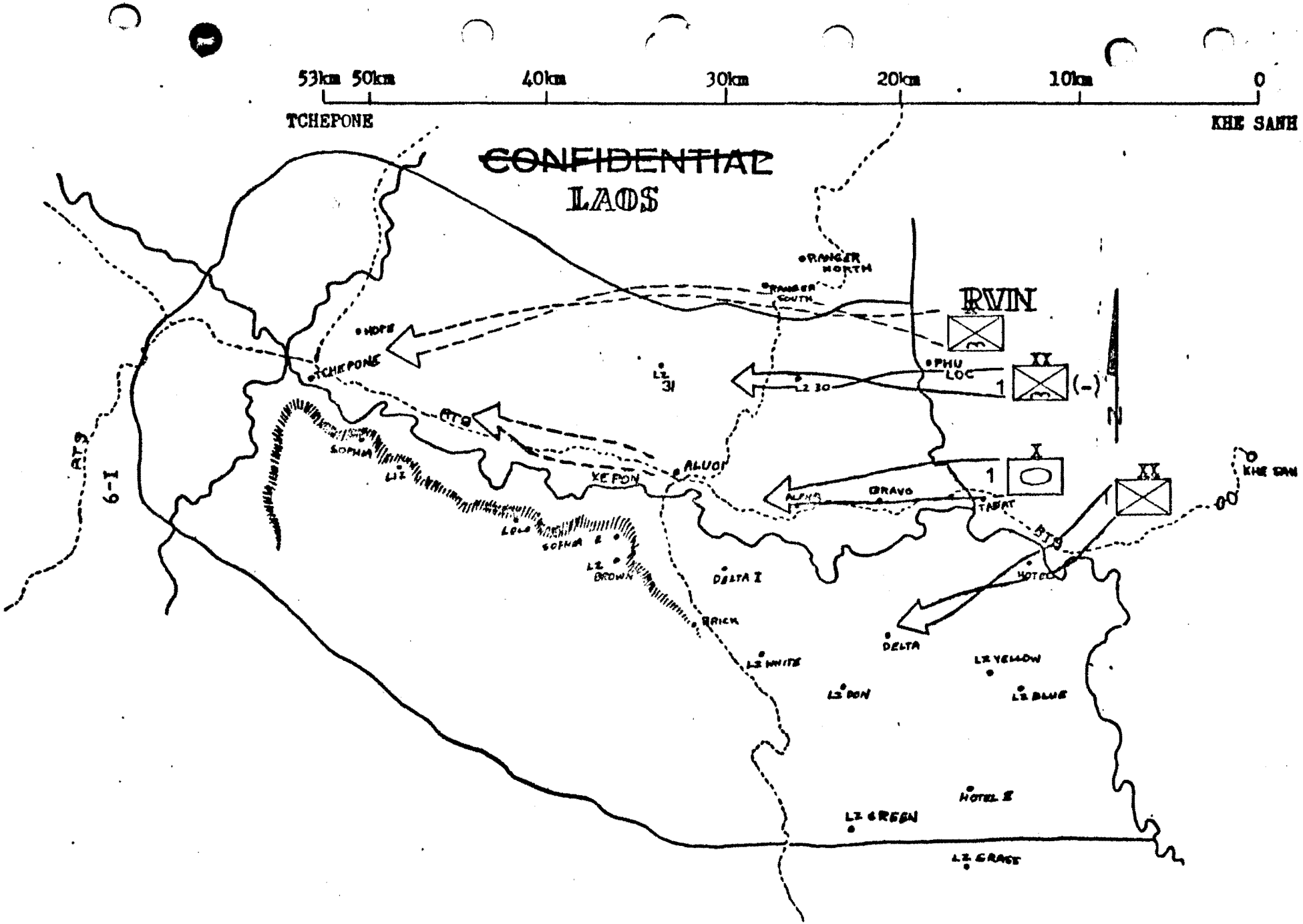


FIGURE I-3 (C) Concept of the Operation (U)

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rolling ground south of Route 9. The 1st ARVN Airborne Division was visualized as conducting the main airmobile attack all the way to Tchepone, where the Armored Brigade attacking westward along Route 9 would linkup with the Airborne Division. It was visualized that the Armored Brigade be resupplied by ground transport along Route 9 while the Airborne and 1st ARVN Infantry Divisions would be resupplied by helicopter. The Vietnamese Marine Division was initially in reserve. Fire support was to be provided by B-52 bombers, tactical air strikes, armed helicopters, and artillery firing from fire support bases located along Route 9 and high ground positions to the north and south of Route 9. Implicit in the planning was the assumption that RVNAF would be able to provide enough security to the fire support bases to permit helicopter landings and takeoffs free from direct small arms fire.

As normally occurs in war, the original concept of operations was modified according to the realities of the developing battle. (Figure I-4) The enemy violently contested the advance and moved his forces and weapons close around fire support bases. The armored Brigade advanced as far west as Firebase ALUOI less than halfway to Tchepone; halted; and was unable to keep Route 9 open for ground resupply. The 1st ARVN Airborne Division advanced by airmobile assault to Landing Zone 3] to the north of Firebase ALUOI; and the 1st ARVN Infantry Division advanced by airmobile assault to Firebase DELTA 1 to the south of Firebase ALUOI. Along this general line the advance westward paused for consolidation, while all units, including the Armored Brigade depended upon helicopter for resupply. Then the main airmobile assault effort was shifted southward to the 1st ARVN Infantry Division's area of operations, and freed the 1st ARVN Infantry Division to launch a series of airmobile assaults along the escarpment south of the Xe Pon River valley and Route 9 that led to seizure of the Tchepone area on March 6th. All the while, every RVNAF unit depended upon helicopters for resupply, medical evacuation, and logistic support; and it became normal for helicopters landing at and taking off from fire support bases, landing zones, and pickup zones to be subjected to direct small arms, rocket launcher, mortar, artillery, and 12.7mm machine gun fire.

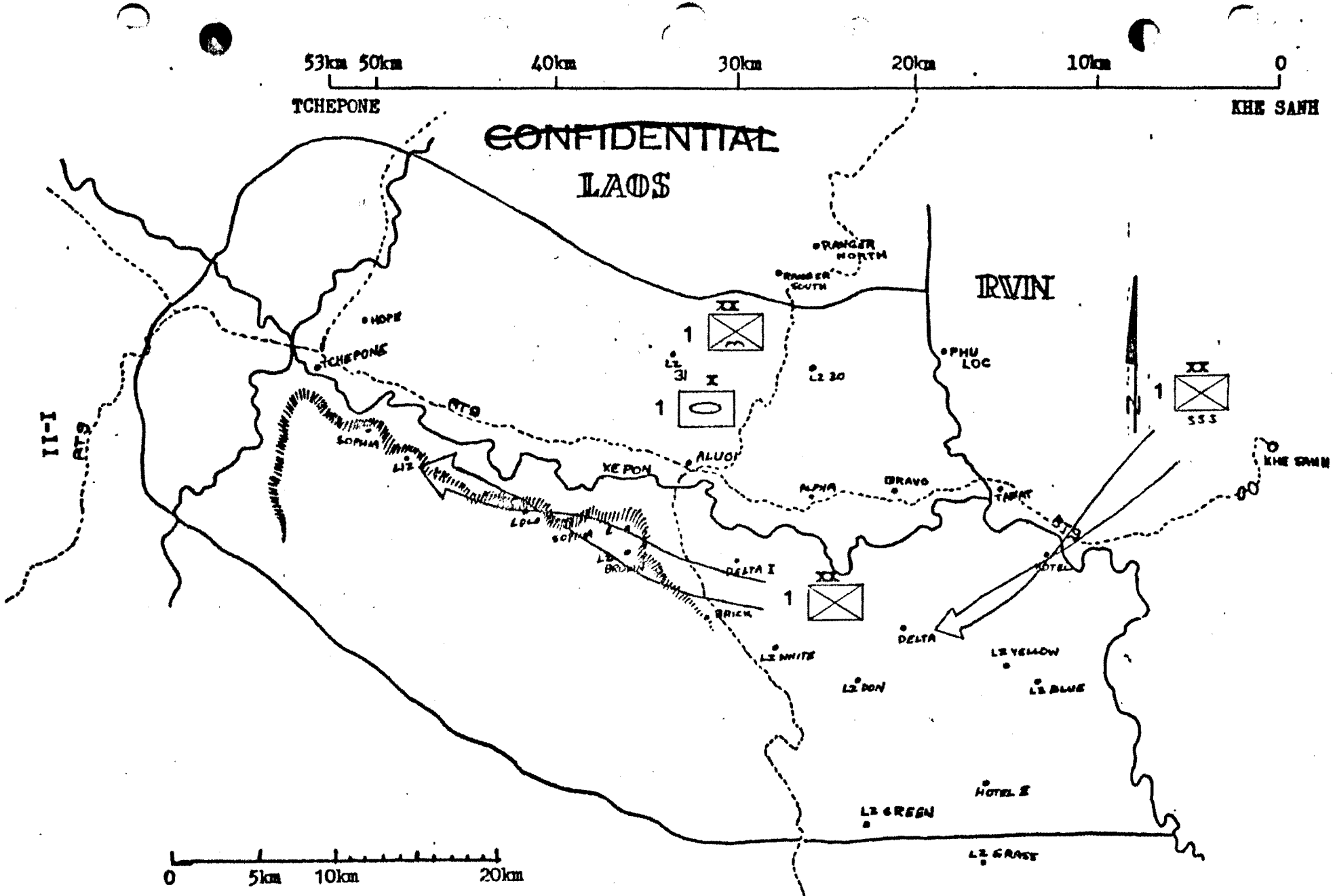


FIGURE I-4 (C). Modified Concept - Actual Operation (U)

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g. Enemy (Figures I-5 and I-6)

The NVA reacted violently to the allied offensive in LAMSON 719. He aggressively employed his weapons and troops already present in the operational area, against allied forces using many of his service troops in a combat role. He reinforced heavily and committed a variety of weapons to include tanks, rockets, mortars, artillery, and antiaircraft weapons.

Ultimately, NVA forces in the area included elements of five divisions, twelve infantry regiments, at least two battalions of an armor regiment, and at least nineteen antiaircraft battalions. Reinforcements came from North Vietnam, the Republic of Vietnam, and other parts of Laos.

Throughout the operational area the NVA deployed an extensive, well-integrated, highly mobile air defense system which included large numbers of antiaircraft weapons of several calibers, the basic weapon being the 12.7mm machine gun. (Figure I-7) Some antiaircraft weapons were apparently radar-controlled. NVA forces had registered mortar, artillery, and rocket fires on most of the potential landing and pickup zones in the area, particularly those on high ground, and habitually employed indirect fire attack against most airmobile operations. The NVA was quick to mass its infantry and antiaircraft weapons around landing zones, pickup zones, and RVNAF troop positions and seized every opportunity to employ its entire family of antiaircraft, artillery, and infantry weapons against aircraft on the ground and in the air.

The 1st ARVN Infantry Division reported that throughout the operational area the NVA employed ten to twelve-man combat teams armed with small arms, one or two 12.7mm machine guns, an 82mm mortar, and one or two rocket launchers. Positioned on or near critical terrain, protected by bunkers and trenches, these combat teams attacked allied aircraft and infantry operating within range of their weapons. The teams could place 12.7mm machine gun, 82mm mortar, and often small arms and rocket launcher fire on virtually every landing zone, pickup zone, and friendly troop position in the operational area.

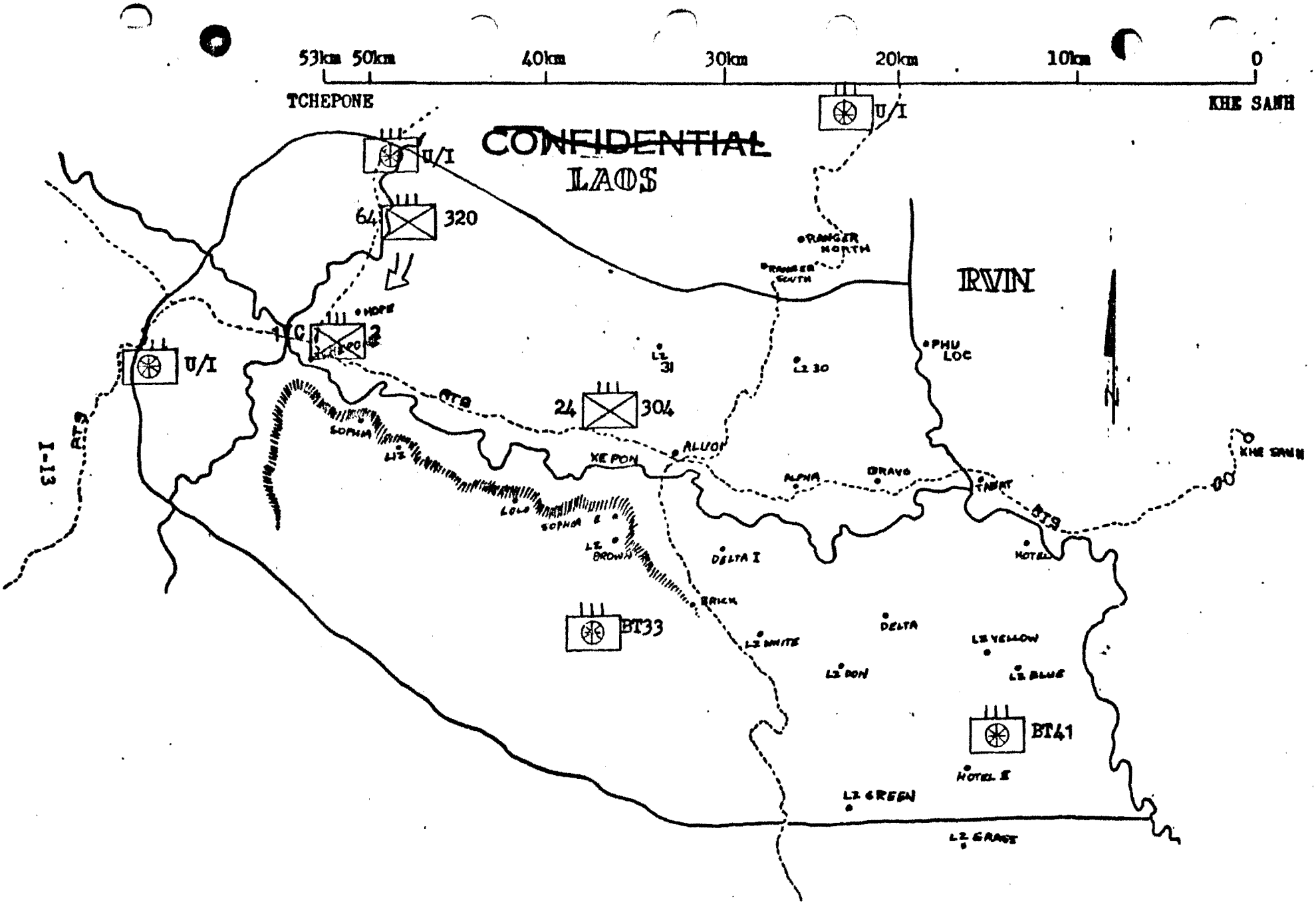


FIGURE I-5 (C). Enemy Dispositions, 1 Feb 71 (U)

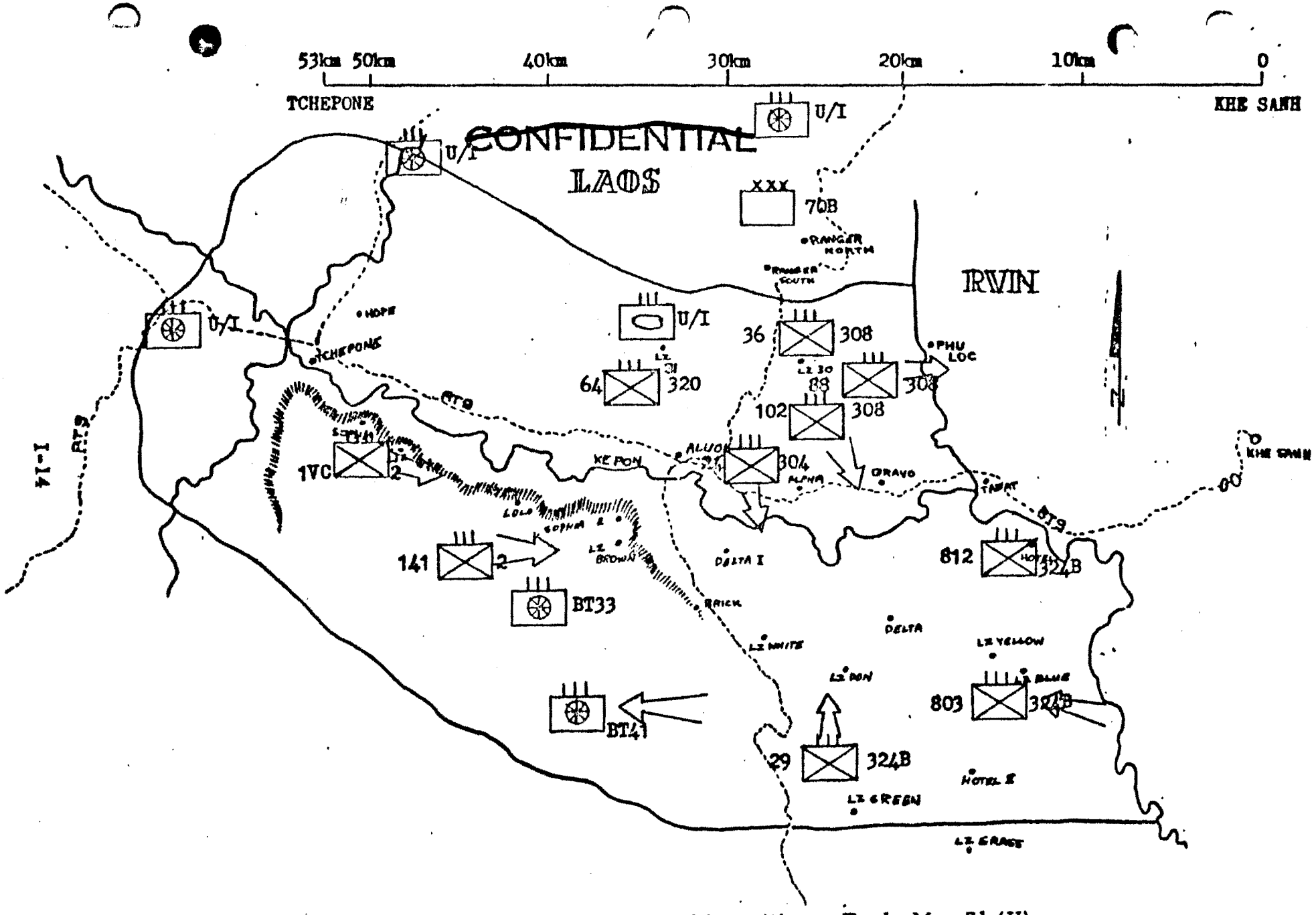


FIGURE I-6 (C). Subsequent Enemy Dispositions, Early Mar 71 (U)

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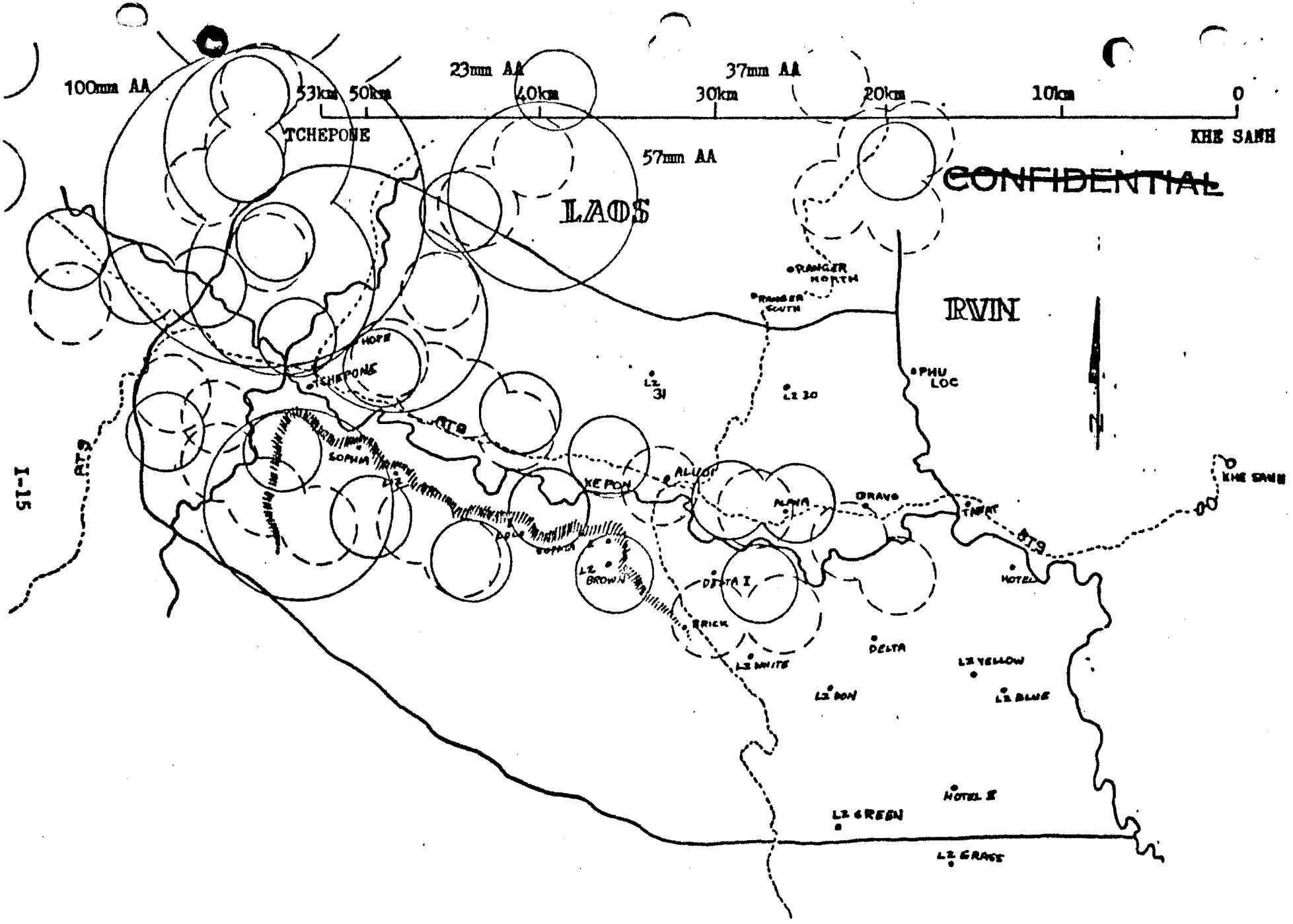


FIGURE I-7 (C). Initial NVA Anti craft Artillery Dispositions (U)

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An effective technique the NVA used was the "hugging" tactic of moving infantry and antiaircraft weapons as close as possible to friendly troop positions and landing and pickup zones. Using this tactic, NVA forces sometimes moved within 10 or 20 meters of friendly units manning perimeters and securing positions. This "hugging" tactic afforded the NVA a large measure of protection from supporting fires which friendly forces were often reluctant to bring in close enough to their own positions to harm the enemy and permitted the enemy to direct a heavy volume of short range small arms, antiaircraft weapons, and rocket launcher fire against helicopters flying in and out of the friendly position. On occasion, helicopters were fired at and hit by NVA riflemen lying on their back inside the barbed wire barrier surrounding a friendly position. On some occasions, helicopters landed in a pickup zone to be engaged by direct small arms fire from NVA infantrymen standing in or directly beside the pickup zone.

In summary, the NVA air defense system was built around the fire of numerous 12.7mm machine guns located throughout the operational area supplemented by the fires of larger caliber antiaircraft weapons for high-flying aircraft and the fires of small arms, light machine guns, rocket launchers, mortars, and artillery against aircraft flying in and out of landing zones, pickup zones, and troop positions surrounded by NVA forces using the "hugging" tactic. The enemy was usually quick to engage aggressively any aircraft passing within range with fire from all available weapons.

Consequently, every airmobile operation, even single-ship resupply and medical evacuation missions, had to be planned and conducted as combat operations complete with fire plan, escorting armed helicopters, and plans for securing and recovering downed crews and helicopters.

h. Mid-intensity conflict

The term "mid-intensity conflict" seems the most apt description for the level and type of combat and the operational environment experienced in LAMSON 719 by allied forces. Allied forces conducted ground and airmobile assaults against NVA base areas and lines of communication. Divisions, regiments, and battalions opposed each

other. Each side employed tanks, artillery, rockets, mortars, and a complete family of infantry weapons. NVA forces opposed allied air and airmobile operations with heavy antiaircraft fire from an extensive air defense system which effectively integrated its fires with those from infantry and field artillery weapons. The NVA engaged helicopters with fire from small arms, rocket launchers, light machine guns, 12.7mm and 14.5mm machine guns, and it seems accurate therefore to describe the operational environment of LAMSON 719 as approaching a "mid-intensity conflict with a hostile air defense environment." It is recognized that the absence of any NVA air assets were a significant factor in this special situation. Exactly where this particular hostile air defense environment falls in a total spectrum of potential enemy reaction is open ended. Whatever label is affixed to the air defense environment encountered in LAMSON 719, it represented the most intensive sustained antiaircraft fire experienced by US helicopters in this war.

5. (U) SPECIAL FACTORS

Several factors existed which made LAMSON 719 a special situation and which must be considered in any evaluation of airmobile operations conducted in support of LAMSON 719, particularly before drawing any conclusions applicable to airmobile operations conducted by the United States Army and supported by the United States Air Force.

a. Combined operation

LAMSON 719 was a combined operation conducted under unique circumstances. Being a combined operation, there was absence of the unity of command of ground and airmobile forces that characterizes airmobile operations conducted unilaterally by the United States Army. The operation, therefore, was conducted on a basis of cooperation and coordination between the ground and supporting airmobile forces. The operation was conducted across an international boundary which sharply and significantly defined the roles of the two participating national forces and delimited the role of United States Forces. The fact that United States personnel were forbidden to go on the ground in Laos required modification of normal procedures for supporting firepower, coordination and conduct of airmobile operations, and rescue and recovery

of downed crews and aircraft. Absence of United States advisors with the ground forces and language difficulties added further complications. Nonetheless, a remarkable high degree of success was achieved in the conduct of airmobile operations based upon cooperation and coordination between the ground and aviation forces.

b. Airmobile Command Arrangements

Although it stems from the combined nature of the operation, the separate command of the ground units and supporting aviation units warrants special mention.

In airmobile operations conducted unilaterally by the United States Army, there is unit of command of ground and supporting aviation forces. The Airmobile Task Force Commander, normally the senior commander of the ground forces being airmobile assaulted or extracted, is in overall command of the airmobile operation. He is supported and assisted by the Air Mission Commander, normally the commander of the supporting aviation unit. The Airmobile Task Force Commander has the "go" or "no-go" power of decision in a United States Army airmobile operation, although he obviously gives great weight to the recommendation of the supporting Air Mission Commander.

During airmobile operations conducted in support of LAMSON 719, the ground forces and the Ground Commander were Vietnamese while the Air Mission Commander and the supporting aviation crews and assets providing airmobility were American. There was no Airmobile Task Force Commander in the sense used by the United States Army. The Ground Commander and the Air Mission Commander, although engaged in a common enterprise, were coordinate and co-equal. Each was responsible for a separate national force. Each national force had a different function. Therefore, "go" or "no-go" decisions were arrived at jointly through discussion, cooperation, and coordination. The same decision-making process governed selection of landing and pickup zones for airmobile assaults or extractions. Decisions were made by agreement. While no unmanageable problems arose from this situation, the decision-making process was slowed, complicated, and sometimes uncertain. Always there existed the potential

for communications difficulty. Often there was room for doubt that there had been complete communication and full understanding. But the system worked.

c. Aviation Task Force Organization

A special aviation task force organization was created to provide the extensive aviation support required by LAMSON 719. This aviation task force was built around the structure of the 101st Airborne Division (Airmobile) by supplementing the Division's organic assets with aviation and air cavalry units from other divisions, the 1st Aviation Brigade, and from units scheduled for deactivation or redeployment. The Division's 2d Squadron, 17th Cavalry, took operational control of supplemental air cavalry troops. The Division Support Command provided logistic and maintenance support for supplemental and organic units and established forward refueling and rearming points to support the operation. The 101st Airborne Division (Airmobile) used its command control structure to command the aviation and air cavalry units and to plan and conduct the airmobile operations in support of LAMSON 719.

d. USARV Support

LAMSON 719 was a unique operation accorded highest priority and massive support by United States Army, Vietnam. Circumstances permitted USARV to provide concentrated administrative, logistic, and maintenance support to United States Army units involved in LAMSON 719, particularly to the aviation units. Aviation units were ordered overnight into support of LAMSON 719. Supporting maintenance units were supplemented with men, parts, tools, and equipment. Aviation units supporting LAMSON 719 were given highest priority in repair and replacement of aircraft. The USARV Aviation Officer and key members of his staff and of the 1st Aviation Brigade spent many days in residence in the support and staging areas used by LAMSON 719 aviation units. Any evaluation of airmobile operations in support of LAMSON 719 should recognize that the priority and level of support provided aviation units during this unique operation was probably atypical of what can be expected during the average airmobile operation.

e. USAF Support

In the normal airmobile operation conducted by the United States Army, the United States Air Force provides support according to provisions of the Air Ground Operations System agreed to for worldwide use by the Departments of the Army and the Air Force. The key element of this system is the Tactical Air Control Party which places at division, brigade, and battalion level, when appropriate, experienced tactical pilots who assist in planning tactical air support and controlling missions in support of ground forces. Key roles are played by the Air Liaison Officers and Forward Air Controllers who become full-fledged members of the ground units they support. These United States Air Force Officers provide valuable assistance to Army commanders planning and conducting airmobile operations and quickly become familiar with the operational concepts, methods, and techniques of the Army units they support. The personal and professional rapport established between Army and Air Force members of this team guarantees a high level of combat effectivenss, particularly in airmobile operations. The Air Ground Operations System employed by United States Forces has proven highly effective and satisfactory.

The special circumstances of LAMSON 719 influenced the normal working of the Air Ground Operations System insofar as the Army aviation and air cavalry units were concerned. The USAF Tactical Air Control Party attached to the 101st Airborne Division (Airmobile) contined working with the Division's ground units in its normally assigned area of operations in South Vietnam in a greatly increased area of responsibility. Most of the Division's aviation units, however, moved into support of RVNAF ground units operating in Laos. Forward Air Controllers attached to 101st Airborne Division (Airmobile) who were accustomed to working in support of in-country airmobile operations were not authorized to cross the border into Laos. Similarly, RVNAF ground units operating in Laos experienced modification of the implementation of the Air Ground Operations System they were accustomed to during operations in the Republic of Vietnam. Their normal supporting Forward Air Controllers were not authorized to operate in Laos, and their ground units operated without the United States advisors through whom most Vietnamese ground commanders usually talked to the Forward Air Controller providing close air support.

The result of the unique set of circumstances of LAMSON 719 was that the bulk of the close air support missions flown in support of RVNAF ground and airmobile operations were directed by "out of country" Forward Air Controllers who were accustomed to working in Laos independent of ground operations and governed by classified rules of engagement and who were unaccustomed to working in close support of ground and airmobile operations. As the operation progressed, RVNAF, US Army, and US Air Force units and individuals became accustomed to working with each other in the operational environment of LAMSON 719.

f. Sense of Urgency in Providing Airmobile Support

The special circumstances of LAMSON 719 and its obvious critical importance to the Republic of Vietnam and the United States led to an unusual sense of urgency on the part of commanders, crews, and units who provided airmobile support to RVNAF units in Laos. Provision of airmobile support was the principal, most visible, most obvious American contribution to LAMSON 719. Indeed, the success of LAMSON 719 appeared to depend on the effectiveness of supporting airmobile operations. United States Army aviation provided RVNAF its principal means of mobility, medical evacuation, resupply, and transportation for senior commanders, as well as a major source of supporting fire and reconnaissance. As the campaign progressed, it became evident that for some RVNAF units, United States Army aviation offered the only means for extraction from the battlefield.

6. (U) AVIATION ORGANIZATION (Figure I-8)

The 101st Airborne Division (Airmobile) commanded all United States Army aviation units employed in direct support of LAMSON 719. From the beginning to the end of LAMSON 719 the following aviation units augmented those organic to the division: four assault helicopter companies (UH-1H), three armed helicopter companies (2-AH-1G and 1-UH-1C), two assault support helicopter companies (CH-47), two air cavalry troops, and two assault helicopter battalion headquarters. Additional aviation units were placed under the operational control of the division during peak airmobile operations.

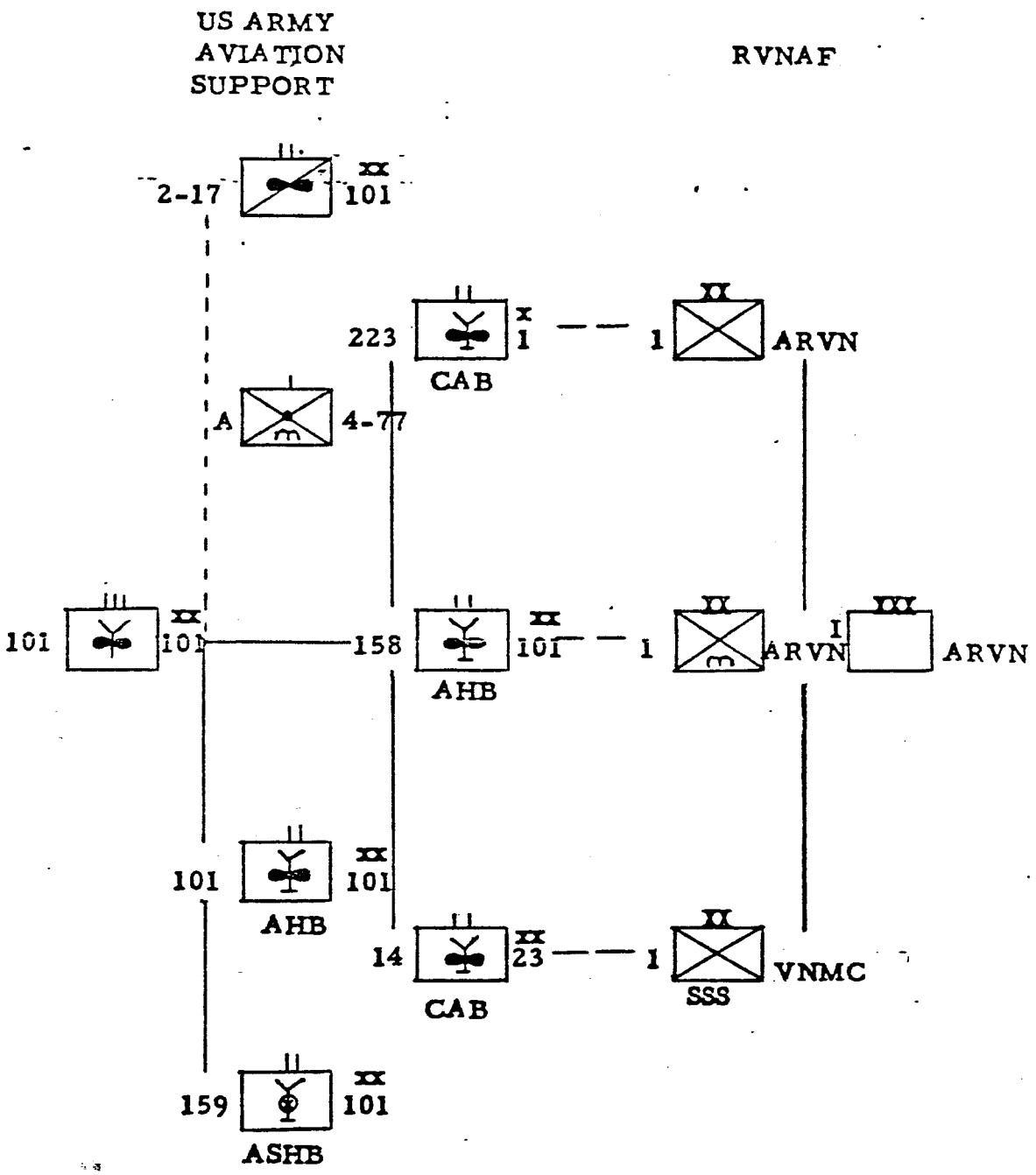


FIGURE I-8 (U). Aviation Task Organization (U).

a. Command and Control

Command Officer, 101st Aviation Group commanded all assault, assault support, and aerial weapons helicopter units. Commanding officer, 2d Squadron, 17th Cavalry commanded all air cavalry units. Commanding Officer, 4th Battalion (Aerial Artillery), 77th Artillery commanded all aerial rocket artillery. Commanding Officer, Division Support Command was responsible for medical evacuation operations. Commanding Officer, 101st Aviation Group employed his staff and his headquarters as the central planning and coordinating headquarters for all aviation activities in support of LAMSON 719. The Assistant Division Commander (Operations) was the Division Commander's on-the-ground representative and was overall coordinator of all aviation units supporting LAMSON 719. The collocation at Khe Sanh of the Division's advance headquarters and the tactical headquarters of the 101st Aviation Group facilitated and simplified command control. Located nearby were tactical headquarters from all supporting helicopter battalions, the aerial rocket artillery, the air cavalry, the Division Support Command and a control headquarters for medical evacuation helicopters. This facilitated the holding of briefings daily at 2000 hours at which was covered a review of the day's airmobile operations, a preview of the next day's operations, and discussion and policy guidance as appropriate. The evening briefings were essential to the conduct of airmobile operations in support of LAMSON 719.

b. Assault Helicopters (UH-1H)

An assault helicopter battalion provided direct support to each major RVNAF unit. The 158th Assault Helicopter Battalion supported the 1st ARVN Airborne Division, Ranger Group, and Armored Brigade. The 223rd Combat Assault Battalion supported the 1st ARVN Infantry Division. The 14th Combat Assault Battalion supported the Vietnamese Marine Division. The direct support helicopter battalion planned and controlled all combat assaults and general support missions for the supported unit. Each assault helicopter battalion kept an aviation liaison officer full time with the supported unit, and each battalion commander visited the commander of the supported unit at least once daily. Regardless of what aviation units provided helicopters to support of RVNAF unit, the direct support assault helicopter battalion headquarters always commanded the operations.

c. Medium and Heavy Lift Helicopters (CH-47, CH-53, CH-54)

Commanding Officer, 159th Assault Support Helicopter Battalion, 101st Airborne Division (Airmobile) was responsible for coordinating and performing all heavy-lift missions. Available to support this mission were five CH-47 Assault Support Helicopter Companies and one HC-54 Heavy Helicopter Company. Additional support was provided on a mission basis by a CH-53 helicopter squadron of the United States Marine Corps. An aviation liaison officer was provided each major RVNAF unit to plan and coordinate all heavy lift missions, and a Pathfinder Team of the 101st Aviation Group was located at all resupply bases and pads.

d. Attack Helicopters (AH-1G and UH-1C)

Availability of armed helicopters for the escort role was a limiting factor in how many different airmobile operations and missions could be conducted simultaneously. Virtually every mission into Laos required armed helicopter escort: combat assaults and extractions, single and multiple ship resupply, medical evacuation, and some command and control missions. The presence of many UH-1C armed helicopters complicated planning armed helicopter support, for this early-model armed helicopter could not keep up with or perform as well as the preferred AH-1G armed helicopter.

e. Aerial Rocket Artillery (AH-1G)

Although the aerial rocket artillery is normally controlled through artillery fire support channels, LAMSON 719 was an abnormal situation. A wide variety of communications channels were used to call for and control aerial rocket artillery in direct support of ground and airmobile operations in LAMSON 719. Aviation, artillery, advisory, air cavalry, and RVNAF communication channels all were used to call for and direct the fires of the aerial rocket artillery, the aerial rocket artillery responded with flexibility and effectiveness to this unpredictable variety and heavy volume of calls upon its service. In view of the situation, the Commanding Officer, 101st Aviation Group exercised de facto coordination through the 4/77 Artillery forward fire direction center at Khe Sanh of the employment and allocation of the aerial rocket artillery.

f. Air Cavalry

The air cavalry performed two principal missions during LAMSON 719: reconnaissance to the front and flanks of ground operations and reconnaissance and security of landing and pickup zones before and during combat assaults and extractions. Operating with four air cavalry troops in direct support of LAMSON 719, the commanding Officer, 2d Squadron, 17th Cavalry was the principal reconnassance officer for the operation. He was assigned tasks directly by the Commanding General, I Corps and delivered his reports directly to the Commanding General, I Corps and the Commanding General, XXIV Corps as well as to the Commanding General, 101st Airborne Division (Airmobile). This system of assigning tasks and multiplicity of reporting channels testifies to the critical role played by the air cavalry. Because of their great confidence in the air cavalry, RVNAF units initially tended to employ the air cavalry in the close fire support role rather than in a reconnaissance role.

7. (U) XXIV CORPS JOINT COORDINATING GROUP

In early March 1971 an organization was established which greatly facilitated the planning and conduct of airmobile operations in support of LAMSON 719. The Commanding General, XXIV Corps established the XXIV Corps Joint Coordinating Group as his personal liaison group to the Commanding General, I Corps, ARVN. This group was collocated with the tactical headquarters and usual personal location of the CG, I Corps in the Khe Sanh area.

The purpose of the XXIV Corps Joint Coordinating Group was to expedite the process of planning and coordinating the use of United States assets in support of RVNAF operations in Laos. The Group provided information and advice to the two Corps Commanders: assured response to the requirements and priorities of the Commanding General, I Corps; and expedited implementation of the orders of the Commanding General, I Corps; and expedited implementation of the orders of the Commanding General, XXIV Corps.

The Commanding General, XXIV Corps directed the Commanding General XXIV Corps Artillery to establish the Joint Coordinating Group

and designated him as Chief. In this capacity, the Commanding General, XXIV Corps Artillery acted as the personal representative of the Commanding General, XXIV Corps and not as Corps Artillery Commander. Further, the Commanding General, XXIV Corps designated the Assistant Division Commander (Operations), 101st Airborne Division (Airmobile) as Army Aviation Officer of the Joint Coordinating Group with headquarters at Khe Sanh itself. A general officer from ODCSOPS, 7th United States Air Force participated in the Joint Coordinating Group on a periodic basis.

To support the work of the Joint Coordinating Group, a Tactical Coordination Center was established immediately adjacent to I Corps Tactical Headquarters. It provided an extensive communications network with XXIV Corps units and headquarters, and included representatives and liaison officers from ACofS, G3 XXIV Corps; XXIV Corps Artillery; the Direct Air Support Center which supported LAMSON 719: and the 101st Airborne Division (Airmobile).

Existence of the XXIV Corps Joint Coordinating Group and the membership thereon of the Assitant Division Commander (Operations) greatly facilitated planning and conduct of airmobile operations in support of LAMSON 719 in accordance with the needs and priorities of the Commanding General, I Corps. The Assistant Division Commander (Operations), usually accompanied by the Commanding Officer, 101st Aviation Group, or the Group S-3, regularly attended sessions conducted by the Commanding General, I Corps and his staff. The Commanding Officer, 2d Squadron 17th Cavalry usually attended the late afternoon meetings. During these two regular meeting the I Corps Commander gave his planning guidance and stated his priorities for airmobile support. The Assistant Division Commander (Operations) acquainted the Corps Commander with the availability, capabilities, and limitations of aviation support, recommended allocations of aviation assets in accordance with the announced priorities, and reported status and results of airmobile operations. As airmobile operations progressed during the day, the Assistant Division Commander (Operations) would either personally or through the Chief, Joint Coordinating Group, pass information, recommendations, and reports to the Commanding General, I Corps, and, when appropriate, seek additional guidance or re-ordering of priorities. Additionally, the

Assistant Division Commander (Operations) visited commanders of major subordinate RVNAF units and daily acquainted them with the availability, capabilities, and limitations of aviation units and their allocation according to priorities established by the Commanding General, I Corps. The fact that the Assistant Division Commander (Operations) was speaking as the de facto Army Aviation Officer of the Commanding General, I Corps gave him credibility with Vietnamese commanders and made them aware that aviation assets were allocated according to priorities established by the Vietnamese Corps Commander.

8. (U) ALLOCATING AVIATION RESOURCES

Several steps were involved in allocating aviation resources in support of LAMSON 719. The starting place was the priority of allocation established by the Commanding General, I Corps. Everything else followed. Major RVNAF units requested aviation support through the resident aviation liaison officer, who forwarded the request to his parent aviation battalion headquarters. The supporting aviation battalion reviewed and consolidated requests, discussed them as appropriate with the RVNAF unit, developed plans for complying with the requests, and forwarded the consolidated requests and plans to 101st Aviation Group. The Aviation Group then consolidated, analysed, and reviewed all requests; determined how best they could be accomplished; and allocated aviation resources in accordance with priorities established by the I Corps Commander. The final step in the allocation process was the Aviation Group Commander's early morning presentation of missions, plans, and recommended aviation allocations for the I Corps Commander's approval.

Three regular daily meetings provided the decision-making framework for allocating aviation resources. The Assistant Division Commander (Operations) and the 101st Aviation Group Commander attended all three meetings. At 1730 hours daily at his tactical headquarters near Khe Sanh, the I Corps Commander reviewed the day's events and provided planning guidance for the following day. At 2000 hours at the Division's advance headquarters, all aviation unit commanders met to review the day's operations, discuss subjects of common interest, and review missions, plans and tentative

allocation of aviation assets for the next day. Receipt of requests, planning, and allocation of aviation resources continued throughout each night at the 101st Aviation Group headquarters. Each morning at 0815 hours at his tactical headquarters the I Corps Commander reviewed the night's events, gave additional guidance for the day, and heard and approved the Aviation Group Commander's recommendations for allocation of aviation resources. It is significant that the Commanding General, I Corps, always approved without change the Aviation Group Commander's recommendations.

Invariably, as operations and battle actions developed each day, modifications in allocation and shifts of aviation resources became appropriate. These modifications and shifts were made on a case by case basis by the Commanding Officer of the 101st Aviation Group.

9. (U) PLANNING AIRMOBILE OPERATIONS

Detailed planning conferences preceded all combat assaults, extractions, and resupply missions. The basic planning conference at which detailed ground and airmobile plans were developed was conducted at the appropriate RVNAF major unit headquarters. It was attended by the appropriate Vietnamese commanders and staff members, by the direct support aviation battalion commander and his key staff members, and by the Aviation Group Commander or one of his staff officers. This planning conference was commonly referred to as the "AMC meeting" since its key element was the meeting of the aviation Air Mission Commander and the Ground Commander to work out the details of blending the aviation and ground units into an airmobile operation. Once the basic plan was developed for an airmobile operation, it was reviewed by the 101st Aviation Group Commander, Assistant Division Commander (Operations), and I Corps Commander and modified and scheduled according to the Corps Commander's priorities and the availability of supporting aviation resources. The planning and allocation processes were interdependent.

## 10. (U) THE AIRMOBILE TEAM AND ITS TECHNIQUES

The team that conducted airmobile operations in support of LAMSON 719 was built around the characteristics and capabilities of the family of helicopters and the abilities of the men who flew them. The team consisted of ground, helicopter, and fixed-wing aircraft units that combined their capabilities and efforts in a common enterprise. The airmobile team can be divided into six functional elements: command and control, reconnaissance, firepower, troop-lift, heavy-lift, and support. Armed helicopters were integral to the reconnaissance element (air cavalry gunships), firepower element (aerial rocket artillery), and troop-lift element (escort gunships). These aircraft habitually escorted the heavy-lift and support elements and benefited the command and control element.

The following comments describe the function elements of this team and the techniques used during LAMSON 719:

### a. Command and control

This element consisted of the Ground and Air Mission Commanders, their deputies, and staff members who planned, coordinated, directed, and commanded an airmobile operation. During an airmobile operation, a command and control party was continuously airborne over each critical point to direct the operation, assess its progress, provide guidance, and make decisions. The senior Ground Commander of the troops involved and the senior aviation commander of the aviation units involved, the Air Mission Commander, rode together in the same helicopter. All other command and control aircraft had aboard representatives of the Ground and Air Mission Commanders authorized to make recommendations and decisions in the name of their commanders.

Ideally, each command and control party was mounted in a UH-1H helicopter equipped with a radio console which provided an array of radios that permitted commanders and staff officers to communicate readily with appropriate ground and aviation units and elements. In fact, the number of UH-1H helicopters equipped with radio consoles with dependable operating radios was a limiting

factor. Often command and control parties were required to fly in UH-1H aircraft that lacked radio consoles and were forced to depend on PRC-25 radios for communications.

Occasionally, four command and control aircraft and parties were required to provide continuous airborne coverage over the critical points of an airmobile operation which involved extraction of troops from one field location and combat assault into another field location. It frequently happened during LAMSON 719 that the enemy attacked both the pickup and the landing zones used by a unit. Under such conditions, a command and control party was required above the pickup zone and another above the landing zone. Two other command and control parties were often required to replace on station the principal command and control parties, particularly when there was a lengthly turnaround time between the operational area and the refueling point.

Before each operation, Ground and Air Mission Commanders established for themselves and within their organizations a clear succession of command in the event that they or their subordinate commanders became casualties. In a fast moving airmobile operation, it was essential to make plans that would reduce the possibility of a commander's loss disrupting the operation.

b. Reconnaissance

The reconnaissance element consisted of air cavalry units who performed the classic cavalry mission of reconnaissance and security. The air cavalry troop was the smallest unit normally assigned a reconnaissance and security mission. Prior to combat assaults, large resupply mission, and heavy-lift operations, air cavalry reconnoitered flight routes to and from the objective area, tentatively selected landing and pickup zones, detected enemy activity, located targets, and directed attacks by supporting firepower on enemy forces, weapons, installations, and suspicious areas in the objective area. The air cavalry commander initiated the preparatory fires on the landing and pickup zones, the approach and departure routes, and appropriate portions of the objective area. Whenever assets and circumstances permitted, the air cavalry

provided continuous reconnaissance at and near the objective area during the entire airmobile operation.

Specifically, it was normal for the air cavalry commander to arrive first at the objective area designated by the Ground Commander, commence his reconnaissance, and select tentative landing or pickup zones, approach and departure routes, and flight routes for recommendation to the Ground and Air Mission Commanders when they arrived over the objective area. Having made his tentative selection, the air cavalry commander, in conjuction with the artillery observer and forward air controller, commenced preparatory fires on landing or pickup zones and the approach and departure routes. By the time the Ground and Air Mission Commanders arrived over the objective area, the preparatory phases of the airmobile operation were well under way. In most cases, the Ground and Air Mission Commanders approved the recommendations of the air cavalry commander. In the few cases where the Ground and Air Mission Commanders selected landing or pickup zones other than those recommended by the air cavalry commander, the new zones were near enough to those recommended by the air cavalry commander to benefit by any preparatory fires already employed.

After the Ground and Air Mission Commanders arrived over the objective area and assumed direction of the preparatory fires, the air cavalry commander continued his reconnaissance around the objective area and assisted in target acquisition and employment of supporting fires. When the Ground and Air Mission Commanders judged the landing zones and approaches adequately prepared for combat assault, they shifted supporting fires and directed the air cavalry commander to conduct low-level reconnaissance of the landing zone to determine if it was ready for the combat assault to begin. This final reconnaissance just before the launching of the combat assault was the most crucial reconnaissance of all. The Air Mission and Ground Commanders usually approved the air cavalry commander's recommendation either to begin the combat assault or employ additional preparatory firepower. The air cavalry commander played a major role in target acquisition and direction of supporting fires, and he assumed interim command and control of the airmobile operation when the need arose. When a single airmobile operation involved

simultaneous extraction from one field location and combat assault into another field location, one air cavalry troop was employed over the pickup zone and a second troop over the landing zone. The air cavalry commander was accompanied by an artillery liaison officer and worked directly with a USAF Forward Air Controller flying overhead and working as an intimate member of the reconnaissance-firepower team. LAMSON 719 reaffirmed the value and importance of the air cavalry reconnaissance element to the airmobile team.

c. Firepower

The firepower element consisted of all who brought destructive and suppressive fire to bear on the objective, particularly on and around landing and pickup zones and their approach and departure routes. This element included ground artillerymen, aerial rocket artillerymen, armed helicopter crews, United States Air Force liaison officer, forward air controllers, and crews of B-52 bombers and fighter bombers.

The employment of firepower was planned, coordinated, and directed by the Ground and Air Mission Commanders ably assisted by the air cavalry commander. The governing principle was to place maximum firepower in minimum time in and around landing and pickup zones and along approach and departure routes. Massive and accurate application of preparatory firepower did more than any other single factor to guarantee success of airmobile operations, particularly combat assaults and extractions.

While all sources of firepower contributed to the success of airmobile operations, the mass of destructive firepower was delivered by the USAF. Multiple B-52 strikes prepared objective areas. Commando vaults and daisy cutter bombs constructed landing and pickup zones and alternate touchdown points. Bombs, rockets, CBU, napalm, and 20mm gunfire destroyed or neutralized enemy weapons positions and troop units. Then USAF aircraft laid a smoke screen to shield troop-lift aircraft from enemy fire and observation as they entered and departed landing or pickup zones.

The role of US artillery was limited by the range of the 175mm guns of XXIV Corps Artillery during airmobile combat assaults in LAMSON 719. RVNAF artillery in Laos was limited by the paucity of secure or geographically suitable fire bases and by the significant NVA antiaircraft capability against the heavy-lift helicopters. Language problems hindered the use by US commanders aloft of RVNAF artillery. For those landing zones within the range of the 175mm guns (32,000 meters) and 8" howitzers (16,800 meters), the volume of fire support delivered from forward position at TABAT just east of the Laotian border frequently contributed significantly to the success of the insertions and subsequent defense. Flak suppression fires were planned and executed in preparation of flight routes for combat assaults, combat resupply, and combat extractions. Targeting intelligence was a key factor in reacting to constant relocation of NVA antiaircraft weapons. As a technique, artillery fire was generally employed in both suppressive and destructive roles on the flanks of landing and pickup zones. US artillery was also actively engaged in target acquisition of NVA artillery positions and in the delivery of counterbattery fires into Laos. One significant limiting factor in the employment of artillery was the frequently necessary enroute changes in the locations of the LZ. This resulted in delays in firing the artillery preparations or in the cancellation of preplanned fires altogether. Additionally, early firing of LZ preparations risked the exposure of RVNAF intentions and consequent NVA reaction.

Armed helicopters provided the capability for detecting and immediately engaging battlefield targets of opportunity close to friendly troops on the ground unmatched by any other weapons system in the United States inventory. Armed helicopters operating with the air cavalry, aerial rocket artillery, and escorting troop-lift, heavy-lift, and support aircraft literally covered the battle area with their ability to respond immediately and accurately with their fire against known and suspected enemy weapons and positions. Armed helicopters often operated under low ceilings and weather conditions that restricted or precluded use of tactical air in close support of ground units or airmobile operations. Armed helicopters, particularly those of the air cavalry, played a key role in acquiring targets, directing artillery fire and tactical air strikes against them, and conducting battle damage assessments.

With specific reference to firepower used to prepare the landing zones, when the Ground and Air Mission Commanders considered the landing zone and approaches to have been adequately prepared with firepower, they shifted the fires to adjacent areas and sent the air cavalry to conduct low-level reconnaissance. If the air cavalry drew enemy fire or saw enemy activity or installations or suspicious areas judged to require additional firepower, resumption or preparatory fires was recommended. The fires were resumed until once again the Ground and Air Mission Commanders decided that the time has come to shift the fires and have the air cavalry conduct another low level reconnaissance. Only when the air cavalry recommended and the Ground and Air Commanders decided that the landing zone and approach route firepower preparation was adequate did the Air Mission Commander launch the assault. When the combat assault began, supporting fires shifted to adjacent targets and areas. The supporting fires continued until the combat assault was completed.

All commanders were alert to the possibility of the NVA concealing themselves and withholding fire during the air cavalry's low-level reconnaissance in order to deliver surprise fire against the troop-lift aircraft when they entered the landing zone.

The air cavalry-armed helicopter-artillery-tactical air combination proved unbeatable as a reconnaissance-target acquisition-firepower-battle damage assessment team.

d. Troop-lift

The troop-lift element consisted of the troop-lift helicopters, their escorting armed helicopters, and their commanders. The troop-lift is the raison d'etre of the airmobile combat assault or extraction. These troop-lift helicopters present the most lucrative, most vulnerable targets for enemy fire. Therefore, everything possible was done to secure the flight, landing, and takeoff of the troop-lift aircraft. Flight routes, flight altitudes, approach and departure routes, landing and pickup zones were all reconnoitered, selected, and prepared with firepower to provide maximum security for the troop-lift aircraft. Spacing between troop-lift aircraft was determined primarily by

conditions of visibility and size of the landing and pickup zones. For the combat assault, the most crucial phase began with the final approach and touchdown of the first troop-lift and continued until sufficient troop strength was landed to sustain itself in combat. The airmobile troop extraction entered its most crucial phase when the number of troops remaining on the ground dropped below that strength adequate to sustain itself against enemy attack. In each of these crucial situations the troop-lift commander found it necessary on behalf of the welfare of the troops on the ground to fly his crews and aircraft into situations whose level of risk would have been unacceptably high under other circumstances.

e. Heavy-Lift

The heavy-lift element consisted of CH-47, CH-53, and CH-54 helicopters used to lift and transport heavy equipment and bulk supplies, their escorting armed helicopters, and their command and control helicopters.

The heavy-lift aircraft brought into landing zones bulldozers which prepared artillery positions, cleared fields of fire, and dug in key installations and ammunition storage areas; artillery pieces and ammunition; CONEX containers equipped as communications centers and tactical command posts; barrier and fortification construction material; fuel, food, water, ammunition, and other bulk supplies or heavy equipment which could not be hauled by smaller aircraft.

Phasing of heavy-lift helicopters into a landing zone depended upon factors as progress of the combat assault into a landing zone, the clearing and securing of the landing zone and vicinity, fire support plan, relative freedom of the landing zone from enemy fires, and the Ground Commander's tactical plan. The large size of heavy-lift aircraft and the necessity for slow hovering flight when approaching or departing a landing zone make heavy-lift aircraft especially vulnerable to enemy fire near and on the landing zone. Frequently, it was appropriate to intersperse heavy-lift aircraft in the stream of troop-lift aircraft going into a landing zone. When this was done, the heavy-lift aircraft were given the right of way. Heavy-lift operations required continuous airborne command and control aircraft and parties just as much as other phases of the airmobile operation.

f. Support

The support element consisted of a variety of aircraft that played a supporting role to the other elements involved in an airmobile operation and whose major function was the security and recovery of downed crews and helicopters. The support element included the following:

(1) Chase ships prepared to land promptly to extract crews of downed helicopters.

(2) Medical evacuation helicopters equipped with jungle penetrators for extraction of wounded ground troops and crew members whose helicopter went down in vegetation that offered no nearby landing zone for a chase ship to land.

(3) Maintenance helicopters prepared to land maintenance crews and riggers to repair or rig downed helicopters for extraction.

(4) Troop-lift helicopters carrying one or more aerial rifle platoons prepared to land and to secure downed helicopters and crew when appropriate.

(5) Included also in the support element were command and control helicopters and escorting armed helicopters.

The support element had responsibility for missions ancillary to the combat assault or extraction itself, but these missions were of critical interest to all aircraft crews involved in the airmobile operation. These support operations were planned, coordinated, and conducted just as carefully and thoroughly as every other phase of the airmobile operations and perhaps even more so, since the effectiveness of the support element operation had a direct effect on the morale of all aircraft crews involved in the airmobile operation.

Riggers, maintenance personnel, and medical evacuation helicopter crewmen were the only Americans authorized to set foot on Laotian ground and then only for specific missions of necessity to be completed in as short a time as possible.

Whereas American aerial rifle platoons of the air cavalry squadron were landed to secure and recover downed crews and helicopters in the Republic of Vietnam, they were not authorized to land in Laos. During LAMSON 719 aerial platoons were formed from the 1st ARVN Infantry Division's elite Ranger company known as the Black Panther (HAC BAO) to be used for securing downed crews and helicopters. The Black Panthers were under OPCON of the 2d Squadron, 17th Cavalry, during all of LAMSON 719.

The airmobile team then consisted of these elements: command and control, reconnaissance, firepower, troop-lift, heavy-lift, and support. In addition to the techniques specifically used by these elements, certain other airmobile techniques are discussed in the following section.

11. (U) OTHER TECHNIQUES

Some of the other airmobile techniques employed to cope with the operational environment and specific situations of LAMSON 719 are briefly described below.

a. Selecting Landing Zones

Commanders varied practices and avoided patterns in selecting landing zones and usually preferred landing zones constructed or created with bombs to natural landing zones. High ground landing zones were vulnerable to pre-registered enemy mortar and artillery fires and afforded enemy weapons on surrounding low ground 360 degree coverage of approach and departure routes. Landing zones on slopes and on relatively low ground were less likely to be anticipated by the enemy, less likely to receive pre-registered indirect fire attack, and offered some defilade from enemy fires. Constructed LZ's had obvious advantages over natural LZ's, the principal one being that their location was unexpected and required the enemy to make new calculations. Whenever possible, a minimum of three relatively widely separated touchdown points were constructed in the same general LZ area to permit aircraft to shift from one touchdown point to another when enemy fire zeroed in on the touchdown point being used.

b. Selecting Pickup Zones

Air Mission Commanders preferred to extract troops from pickup zones never previously used and at which the troops had recently arrived. This set of circumstances contributed to the possibility of surprising the enemy and completing the extraction before the enemy had time to react. On the other hand, Ground Commanders often preferred to have their troops extracted from occupied positions or from previously used pickup zones. As LAMSON 719 progressed, both Ground and Air Mission Commanders came to agree that, as a rule, extractions were conducted with greatest success and fewest casualties when a pickup zone was used for the first time by troops newly arrived at the location and when alternate pickup zones were located nearby for use when the enemy directed his fires on the pickup zone in use.

c. "Secure" Landing and Pickup Zones

Secure landing and pickup zones did not exist in LAMSON 719. Friendly firebases and positions were so small and widely dispersed and enemy forces and weapons so numerous and pressed in so close to friendly forces and positions that every landing zone and pickup zone in Laos was always potentially and usually in fact subject to enemy fire. Consequently, every mission including resupply and medical evacuation was planned and executed as a combat operation, complete with reconnaissance and fire support. Proximity of friendly forces inhibited use of defensive fires during missions into "secure" LZ's and PZ's. Commanders and aviators preferred going into new LZ's by combat assault supported by unrestricted firepower rather than into the so-called "secure" LZ's and PZ's when friendly troop locations inhibited employment of supporting and defensive fires.

d. Approach and Departure Routes

Commanders selected approach and departure routes with several factors in mind. Among these factors were direction of prevailing wind, landform, visual navigational aids during periods of reduced visibility, location of friendly forces and weapons, location of enemy forces and weapons, and potential defilade from enemy

weapons. The common practice developed of using the same route for approaches and departures since this maximized the benefits of preparatory firepower and concentrated the effect of the armed helicopters escorting and providing protective fires for the troop-lift helicopters flying in and out of the landing or pickup zone. Air Mission Commanders varied the approach and departure routes during the conduct of airmobile operations as required by wind, weather, and enemy action.

e. Determining LZ Time

Determination of LZ time was based on no arbitrary schedule or set of conditions. Rather the time of landing was based on the adequacy of the preparatory firepower, the assessment of the air cavalry commander on his low-level reconnaissance, and the judgment of the Ground and Air Mission Commanders as to when the landing zone and its approach and departure routes were reasonable secure for the beginning of the combat assault and the insertion of troops. Toward the end of LAMSON 719 the practice of setting "tentative" LZ times fell into disuse and "decision times" were used instead. The point being made was that there was no such thing as an LZ time until the appropriate commanders established one based on their judgment of the situation in the objective area. It was not unusual for a commander to take the necessary time to apply massive amounts of firepower before commencing a combat assault. It was realized that it was far better to use too much rather than too little firepower before exposing men and aircraft to the dangers of a hostile landing zone.

f. Determining PZ Time

The Ground and Air Mission Commanders had far less flexibility in establishing PZ times for troop extraction from field locations than for establishing LZ times. Frequently, troop units engaged in a moving fight with the enemy would require extraction. In that event, the Ground and Air Mission Commanders would fly over the moving troop unit, guide them to a pickup zone, and commence extraction as soon as the lead troop elements reached the pickup zone. Under these circumstances it frequently became necessary to break off use

of one pickup zone as it came under heavy enemy fire and guide the troop unit to another pickup zone where the extraction would be resumed. Setting a PZ time under these circumstances was a matter of seizing the opportunity rather than keeping a predetermined schedule and required the maximum flexibility and resourcefulness.

g. Air Strikes

The massive firepower provided by air strikes was especially useful in support of airmobile operations, particularly combat assaults and extractions. Multiple B-52 strikes frequently began preparatory fires on objective areas. Tactical airstrikes were employed to assist in preparing landing and pickup zones and approach and departure routes. Ideally, a forward air controller was continuously overhead and air strikes were scheduled on station every ten or fifteen minutes from beginning of preparatory fires until completion of the combat assault or extraction. In LAMSON 719 both Vietnamese and US commanders normally gave first priority of air strkes to support of combat assaults or extractions, and it required a senior commander's decision to change this priority.

h. Armed Helicopters

The armed helicopter was an essential weapon in the operational environment of LAMSON 719. It provided a capability to locate and engage immediately targets of opportunity possessed by no other weapons system and it provided close fire support under weather conditions that precluded fixed-wing aircraft close support. The AH-1G (Cobra) was quite effectiv . The UH-1C was beyond its capability in this environment and tended to be more of a liability than advantage. Yet, every armed helicopter available including the UH-1C was flown daily because the armed helicopter was so essential to all phases of airmobile operations.

In the hostile air defense environment of LAMSON 719, it was necessary to provide armed helicopter escort for virtually every aircraft or group of aircraft that flew missions over Laos. Thus, the number of armed helicopters available for escort was a limiting factor in how m ny separate missions could be flown simultaneously.

Armed helicopters effectively performed the helicopter escort role. Escort armed helicopters were normally employed on the rear flanks of the lift helicopter formation, in position to provide immediate enroute suppressive fire. Prior clearance to fire along the flight route facilitated maximum effectiveness of escort armed helicopter fires. Escort armed helicopters immediately engaged enemy targets they observed. Lift helicopters receiving enemy fire marked the targets with smoke, and the lift flight leader directed armed helicopters to engage the target.

One technique for employment of aerial rocket artillery in support of combat assaults was particularly effective. During the combat assault when the artillery and air strkes shifted to adjacent targets and the troop-lift aircraft were landing the troops, aerial rocket artillery gunships orbited over the landing zone. When a target appeared, aerial rocket artillery gunships were directed from overhead orbit to engage the target immediately. They did so with promptness, accuracy, and capability for placing fires close to the friendly troops on the ground.

i. Smoke

Frequently United States Air Force fixed-wing aircraft laid smoke screens to shield landing and pickup zones from enemy observation during combat assaults and extractions. Ideally, sufficient smoke-laying aircraft were available to keep the smoke screen effective from before the first troop-lift helicopter touched down until the last departed. Six sets of air or twelve sorties proved most satisfactory for this mission. To have the smoke-laying aircraft on station at a specified time required sixty minutes advance notice. This requirement together with the flexibility of establishing LZ and PZ times did lead to problems of coordination and resulted occasionally in combat assaults or extractions being conducted without smoke or resulted in aircraft orbiting overhead, running out of fuel, and being sent back to their base without having been used. Most smoke screens laid by the Air Force were combined with casualty-producing CBU munitions. This gave added effectiveness to the smoke screen but also necessitated additional care to insure that the smoke was kept a safe distance from friendly troops.

j. Flight Routes

Flight routes were planned to avoid known enemy antiaircraft weapons and to pass over friendly positions when possible, thus providing safe havens for aircraft and crews that were forced to land. Flight routes were varied and changed from day to day and mission to mission depending upon location of friendly units and enemy antiaircraft weapons.

k. Flight Altitudes

Whereas in most areas of RVN, aircraft flying 1500 feet above ground level are considered relatively safe from ground fire, heavy small arms and antiaircraft weapons fire over Laos drove aircraft to fly at considerable higher altitudes. Altitudes between 4,000 and 6,000 feet above ground level were considered optimum for preventing losses to small arms and 12.7mm machine gun fire and for remaining below effective engagement altitude of larger caliber antiaircraft weapons.

l. Aircraft Dispersion in Flight

Single-ship and two-ship landing and pickup zones precluded use of mass formation flying. Flights of helicopters normally proceeded to objective areas in widely dispersed trail formation to reduce the possibility of loss of more than one aircraft to a single enemy weapons engagement. Conditions of restricted visibility occasionally necessitated aircraft to close up their trail formation in order to maintain visual contact with each other sometimes to a degree that aircraft were uncomfortably close together as they went into a landing or pickup zone.

m. Approaches and Departures

Steep, rapid descents into and ascents from landing zones while maintaining varying velocities in three direction were employed to reduce the accuracy and effectivenss of fire against aircraft from enemy weapons located near the landing zone and along approach and departure routes. Approaches and departures normally followed the

same route in order to take maximum advantage of the pre-landing reconnaissance and preparatory firepower.

n. Nap of the Earth Flight

Under certain circumstances combat assaults, resupply missions, and medical evacuation were better conducted by low-level, nap of the earth flight than by high altitude flight. Aircraft flying the nap of the earth presented fleeting targets to enemy gunners and gained surprise by their sudden and unexpected appearance in the landing zone and quick departure. When this tactic was used, a guide aircraft flew at a higher altitude above the low-flying aircraft to vector them to their objective. Nap of the earth flight was sometimes appropriate and effective when aircraft flew into a firebase or friendly position surrounded by enemy who used "hugging" tactics and placed accurate fire on the landing zone or when low ceiling forced pilots into choosing between flying the dangerous intermediate altitudes or at treetop level. Nap of the earth flight was not used frequently.

o. Downed Crew Recovery

The best time to rescue a downed crew proved to be immediately after the aircraft had gone down and before the enemy could react deliberately to the situation. The optimum situation existed when an aircraft went down, the unharmed crew got out, a chase ship landed beside the downed aircraft, the downed crew boarded the chase ship, and the rescuing helicopter departed without drawing fire. The usual ratio was one chase ship for every ten troop-lift helicopters, but a ratio of 1:5 was used in operations that promised to be particularly difficult.

The medical evacuation helicopters equipped with jungle penetrators rescued a sizeable number of downed crew members whose aircraft went down in areas that had no nearby landing zones for chase ships. Two medical evacuation helicopters with jungle penetrators were kept orbiting near the objective area for the quick rescue of downed crews during airmobile operations that promised to be difficult.

Whenever a crew went down, every attempt was made to rescue the crew or to determine for certain that there was no chance of survival. Remarkable success was enjoyed in recovery of downed crews.

p. Downed Helicopter Recovery

Whenever a helicopter went down in a relatively secure area such as a firebase, a friendly troop position, or a relatively quiet area where there was no known enemy activity and a good landing zone adjacent to the downed aircraft, there was a good possibility of recovering the downed aircraft if the attempt was begun immediately. First priority, of course, went to recovering the downed crew.

The usual downed aircraft recovery procedure was to conduct a low-level reconnaissance to determine if the condition of the downed aircraft warranted the risks involved to man and machines attempting the recovery. If the results of the reconnaissance so indicated, maintenance and rigging personnel were landed to determine the condition of the aircraft and to rig it for extraction. The next step was to bring in the recovery aircraft, usually a CH-47, to sling out the downed aircraft and return it to a base in the Republic of Vietnam.

In the recovery of downed aircraft as in the recovery of downed crews, promptness was the key to success.

q. Breaking Off a Combat Assault or Extraction

One of the most difficult decisions faced during airmobile operations in support of LAMSON 719 was that of breaking off combat assaults or extractions once begun. But when enemy fire against troop-lift helicopters entering and departing landing and pickup zones became so heavy and accurate and human losses and aircraft damage so great that the success of the airmobile operation was jeopardized, then the commander had to break off the operation and create conditions that permitted resumption of the operation.

There were several actions commanders took to create conditions that permitted resumption of interrupted combat assaults or