

PROJECT

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Historical  
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REPORT

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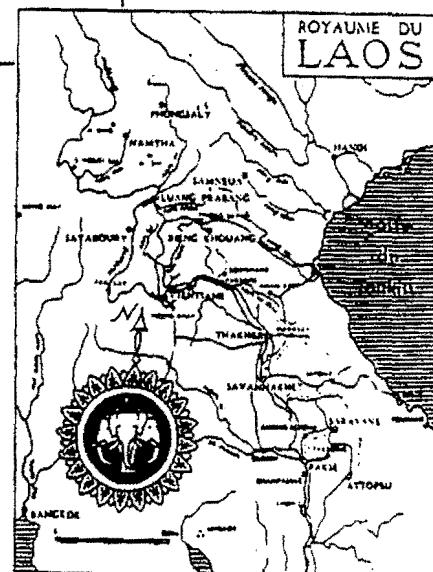
# USAF Operations in Laos

1 January 1970 - 30 June 1971

31 May 1972

**HQ PACAF  
With Support of SAC  
A Project Corona Harvest Study**

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The CORONA HARVEST reports were prepared to acquaint present and future Air Force leaders with air power lessons learned during the Southeast Asia conflict. The CORONA HARVEST project was not undertaken to produce a historical report, but rather was designed to point out problems experienced, identify areas which deserved further study, and recommend future courses of action. Little effort was made to balance this material by pointing out the achievements of airpower during the conflict.

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## ABSTRACT

(U) This study addresses U.S. air operations in Laos during the 1970-1971 dry season. It documents significant developments in air interdiction operations and air support of friendly forces during COMMANDO HUNT V and Lam Son 719, enumerates lessons learned, and offers recommendations.

(U) This PACAF study was revised to incorporate the Air Staff editor's comments which enhanced clarity, consistency, syntax, and grammar. The result is a greatly improved, more readable volume.

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## I. BACKGROUND

(S) [REDACTED] A broad U.S. goal in Southeast Asia (SEA) has been a peace in which the peoples of the region could devote themselves to the development of their own societies and could determine their own political future without outside interference. In support of this overall objective, U.S. activities in Laos were aimed at the preservation of a neutral buffer zone between Thailand and the People's Republic of China and North Vietnam (PRC/NVN). Further, the U.S. sought continued Royal Laotian Government (RLG) authorization of U.S. air interdiction operations in Laos, in return for U.S. support to the RLG in combating the NVN-directed insurgency. USAF activities in Laos were thus an essential element of U.S. strategy in SEA.<sup>1/</sup>

(S) [REDACTED] Air interdiction operations in Laos had assumed increased importance in November 1968 when the U.S. announced a bombing halt throughout North Vietnam. This action precluded the possibility of destroying enemy supplies before they entered the maze of roads and trails in Laos. During the 1968-1969 northeast monsoon, following the bombing halt, the U.S. mounted a concentrated air interdiction campaign, called COMMANDO HUNT I (CH I), with the objectives of reducing the flow of men and materiel from NVN through Laos into South Vietnam (SVN), and increasing the cost to NVN of waging war. During the 1969-1970 northeast monsoon season, another major interdiction campaign, CH III, was directed against the NVN in Laos. Although it had the same objectives as CH I, it was conducted



with reduced resources, a reflection of a major redirection of U.S. strategy in SEA.  
2/

(S) During 1969 and 1970, although stated U.S. objectives in SEA remained the same, the strategy for achieving these objectives had undergone fundamental revision. The United States committed itself to the Nixon Doctrine in Southeast Asia, and a policy of Vietnamization and withdrawal from South Vietnam. Maintenance of a secure environment in SVN was considered essential to the success of Vietnamization during the critical withdrawal phase. The presence of enemy forces and supplies in sanctuaries along the SVN/Cambodian border threatened the security of friendly forces and major population centers throughout SVN. To fore-stall enemy offensives while Vietnamese forces were preparing to assume the burden of defense, U.S. and Republic of Vietnam Armed Forces (RVNAF), during the spring of 1970, struck a decisive blow against enemy forces and stockpiles in Cambodia. The incursion into the Cambodian sanctuary, together with subsequent FANK\* and RVNAF operations, had a strong impact on the enemy. These operations denied him his Cambodian sanctuary, and tied down a significant number of his forces in fighting in Cambodia. This forced him to place almost total reliance on his Laotian infiltration system for external logistics support of his forces throughout Cambodia and South Vietnam.  
3/

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\*FANK, Forces Armees Nationales Khmers, Cambodian Armed Forces.

(S) [REDACTED] Southern Laos thus became critically important to the enemy. NVN built up its forces there in preparation for both the dry season logistics surge, and a possible RVNAF thrust against its vital infiltration system. The U.S. prepared to meet the enemy's logistics surge with a maximum interdiction effort during the COMMANDO HUNT V campaign.\* Continuing redeployment of U.S. air resources reduced the availability of attack sorties in Southeast Asia (SEA) to only half that which had been available during the period of CH I. However, by adjusting the allocation of these remaining resources, the USAF was able to concentrate its effort against targets in the Laotian panhandle.

(S) [REDACTED] To compensate for the reduction of U.S. air assets in SEA, U.S. air strikes projected for northern Laos, Cambodia and South Vietnam were cut back to minimum levels. In BARREL ROLL (BR, northern Laos), the RLG adopted a holding strategy in the ground war. This development, coupled with an expected increase in Royal Laotian Air Force (RLAF) capabilities, allowed the U.S. to significantly reduce its air support in that area. In South Vietnam, air strike requirements were at a lower level than in previous years. Additionally, increased reliance was to be placed on the Vietnamese Air Force (VNAF) to provide needed air strikes in Cambodia and South Vietnam. By reducing strikes in northern Laos, Cambodia and South Vietnam, the U.S.

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*\*The plan for the 1970-71 dry season campaign, COMMANDO HUNT V, besides providing for interdiction operations in southern Laos (STEEL TIGER), also allocated U.S. air resources for support of RLG forces throughout Laos, air operations in Cambodia, and air operations in South Vietnam.*

was able to allocate 70 percent of its total SEA air strike sorties to the interdiction effort in southern Laos. As a result, the projected sortie level for interdiction operations in STEEL TIGER (SL) during CH V was actually slightly higher than the level flown during CH III, and only about one-sixth less than the level attained during CH I. <sup>4/</sup>

(S) [REDACTED] It had long been recognized that air interdiction alone could not completely cut off the flow of supplies from North Vietnam through the maze of roads in Laos. <sup>5/</sup> Air interdiction in Laos, however, was considered a significant aspect of the overall strategy of attacking the enemy's logistics system in its entirety. As strikes against the source in NVN were prohibited, the most important aspect of the enemy's logistics system was off-limits to U.S. interdiction. That subject, however, has already been addressed in PACAF CORONA HARVEST volumes, Subtask IIId, pp. 9-10, and Subtask IIe, pp. 1-6. Therefore, for the purpose of this study, such terms as "all aspects," "all elements," and "the entirety of" the enemy's logistics system refer to all those elements of his logistics system beyond the borders of NVN.

(S) [REDACTED] Outside the borders of NVN, there was no single portion of the enemy's logistics system whose destruction would stop the flow of supplies, but attacks against all the parts of the system could have a serious cumulative effect on the enemy's efforts. Naval operations (MARKET TIME) countered North Vietnamese attempts to supply its forces in South Vietnam by sea. Continuing ground operations in Cambodia

denied communist use of Cambodian ports, compelled the enemy to defend his logistics system in Cambodia, and forced him to rely more heavily on resupply through the southern Laotian panhandle. U.S. air resources were marshalled for an all-out effort against the enemy in STEEL TIGER, and RVNAF ground units were readied for Operation Lam Son 719, a bold strike against the core of the enemy's Laotian logistics system. The stage was set for a major confrontation between friendly and enemy forces in southern Laos.

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## II. DISCUSSION

### A. [REDACTED] (U) OVERVIEW

#### 1. (S) [REDACTED] (U) COMMANDO HUNT V Begins

(S) [REDACTED] COMMANDO HUNT V operations were patterned after the tactics and experiences of earlier campaigns in Laos. The central theme of CH V was to attack all aspects of the enemy's logistics system in Laos, with the concentration of effort at any given time against those targets whose destruction would be most damaging to the enemy. Trucks, truck parks/storage areas, lines of communication (LOC), and air defenses were the major target categories.

(S) [REDACTED] The air interdiction campaign started favorably as the enemy's initial logistics surge was delayed by unseasonably heavy rains during October and November 1970. The impact of the bad weather on enemy LOC was intensified by a concentrated B-52 and tactical air (TAC AIR)\* bombing effort against the infiltration corridors entering Laos from NVN. Although the CH V campaign had officially started on 10 October 1970, it was not until late November that the weather started to improve, and enemy truck traffic into Laos began its seasonal surge.

(S) [REDACTED] During the first three months of the campaign, two-thirds of the attack sorties, including nearly all of the B-52 sorties,

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\*"Tactical Air" and "TAC AIR," as used in this study, refer to tactical strike aircraft, including fighters and fixed-wing gunships, but excluding B-52s. The term "tactical air support," however, encompasses strikes by B-52s when used in a tactical role.

were flown against the entry corridors or other parts of the enemy's route structure. Some considered the size of this effort far out of proportion to the value of the strikes, and believed that the bombing of the entry areas had little impact on the enemy. Others, however, were convinced that the strikes, in conjunction with the poor weather, had caused the enemy numerous difficulties and had delayed the build-up of his logistics offensive. They considered this delay particularly important in light of the unexpectedly poor results from gunship operations during the first two months of the campaign.

(S) [REDACTED] Trucks, generally considered the most vulnerable element of the enemy's system, were a prime target. With the improvements and expansion of the gunship fleet, together with the introduction into SEA of the B-57G aircraft, the truck-killing fleet promised to be the most effective ever employed in Laos. Although gunship achievements early in the campaign were poor, by the end of December initial difficulties were corrected and the gunships began to achieve impressive results.

(S) [REDACTED] As trucks moved through the entry areas and supplies piled up throughout STEEL TIGER (SL), attacks against truck parks and storage areas assumed greater importance. As was expected, these targets were extremely difficult to observe and destroy due to dense foliage, the weather, and enemy dispersal, hardening, and camouflage tactics. Many sorties were expended by Forward Air Controllers (FACs) in an attempt to pinpoint lucrative targets within the general locations

provided by intelligence. A large number of sorties thus reported little bomb damage; but when a lucrative target was located, results were sometimes spectacular.

(S) [REDACTED] While U.S. air power was engaged in an all-out interdiction campaign in SL, RLG forces throughout Laos were surviving a fairly normal Communist dry season offensive with a minimum level of U.S. air support. In northern Laos, friendly forces were not experiencing unusually heavy fighting despite the fact U.S. air support was averaging less than 30 sorties per day. In southern Laos, Communist activities were normal for a dry season. The primary difference there between activities during CH V and the previous dry season was the launching of Operation Lam Son 719 in conjunction with multi-battalion sized forays by Laotian irregulars against the western portions of the enemy's logistics system. The scope and importance of these RLG interdiction operations, however, were far overshadowed by Lam Son 719, a major RVNAF thrust into Laos against the core of the enemy's logistics system.

2. (S) [REDACTED] (U) Lam Son 719

(S) [REDACTED] While the U.S. was waging its air interdiction campaign during January, last-minute planning was underway for an RVNAF invasion of the enemy's logistics system in southern Laos. Lam Son was a vitally important operation. The seizure and occupation of enemy LOC from the Laos border to and throughout the Tchepone area would deal a serious blow to Communist attempts to resupply their forces in South Vietnam and Cambodia. Even if it were

less than successful, the operation would end the restriction prohibiting major ground attacks against the NVN logistics system--in the future the enemy would have to take into account the possibility of such attacks. Perhaps most important, however, were the implications of Lam Son 719 with regard to Vietnamization. Success would score a significant psychological victory for the South Vietnamese and the Vietnamization process, while failure would cast doubts on the effectiveness of Vietnamization and the ability of South Vietnam to survive following U.S. withdrawal from SEA.

(S) [REDACTED] As the RVNAF prepared and began their incursion, requirements for U.S. air support grew rapidly. The heavy B-52 and tactical air effort which had been devoted to the entry areas was drastically cut back as air interdiction resources shifted to support Lam Son 719. At the same time, a surge in RLAF and USAF sortie rates was also needed in northern Laos to help resist a North Vietnamese Army (NVA) offensive there.

(S) [REDACTED] The out-country portion of Lam Son 719 got underway on 8 February as RVNAF forces began entering Laos in strength. Initial progress of the RVNAF was slowed by bad weather, enemy harassment, and unexpectedly poor road conditions. Even though the incursion was not met by heavy opposition, the RVNAF were unable to secure Route 9 adequately, thereby restricting their major source of ground logistics support. In view of the slow progress, the possibility of attacks from the northern flank and the inability to secure Route 9, President Thieu decided

to temporarily shift primary emphasis from Tchepone to the Ban Dong area.

(S) [REDACTED] As RVNAF westward momentum stopped, some units began to probe south, but others in and north of the Route 9 vicinity were less aggressive in their patrolling and preferred to stay close to their encampments. The enemy exploited this weakness by moving in around static RVNAF bases and subjecting them to standoff attacks and ground probes. By "hugging" RVNAF positions, NVA units reduced the effectiveness of friendly artillery and close air support, and increased the difficulty of resupplying these positions by helicopter.

(S) [REDACTED] By late February an enemy offensive was underway throughout the Lam Son\* tactical area of operations. Key friendly positions were subjected to coordinated attacks by infantry, tanks and heavy artillery. Nearly all RVNAF encampments received intense artillery, mortar, and small arms fire which at some times precluded helicopter resupply or evacuation. Air strikes proved extremely valuable during the offensive, many times preserving positions which would otherwise have been lost. Though friendly casualties mounted, the RVNAF withstood the enemy's offensive and prepared to assault Tchepone.

(S) [REDACTED] During the first week of March, the RVNAF planned and executed a series of heliborne assaults which culminated in the temporary occupation of Tchepone. The first assault occurred at Landing Zone Lolo, about halfway between Ban Dong and Tchepone. The Army ignored a proposed Air Force support package for the insertion

\*Historically, many RVNAF operations have been designated "Lam Son," with each operation assigned a different numerical suffix. Within this study, however, only Lam Son 719 is discussed, and any reference to "Lam Son" is a reference to "Lam Son 719."

and requested minimal preparatory strikes. A wall of fire greeted the assault helicopters. By the time the assault was completed at night-fall, nearly all the choppers had taken hits, 20 were shot down and unflyable, and seven more were totally destroyed.

(S) After the disastrous Lolo assault, the Army was ordered to implement an Air Force preparatory strike package for its combat assaults. Increased tactical air support was used on the 4 March assault into Landing Zone Liz and helicopter losses, though still high, were significantly reduced. Extensive TAC AIR and B-52 preparation was used during the final two helicopter assaults which carried ARVN forces into the Tchepone area. Surprisingly light resistance was encountered in these latter assaults. The enemy had apparently withdrawn his forces to the west to defend his remaining LOC, which were still supporting the flow of supplies to the south.

(S) During early March enemy activity was relatively light as he built up and positioned his forces throughout the combat area. By this time enemy forces in the battlefield area outnumbered the friendlies by two to one. During the relative calm, the RVNAF conducted search and destroy operations, pinpointed numerous targets for air strikes, and began preparing for their withdrawal.

(S) As the RVNAF began redeploying east from the Tchepone area, the enemy unleashed an all-out offensive, designed to inflict a humiliating and unequivocal defeat upon the outnumbered RVNAF regardless of the cost. By 19 March all friendly ground units involved in Lam Son

were under attack. Intense attacks by fire and tank-supported ground assaults precluded resupply or evacuation of a number of key sites on the northern, western and southern flanks, and heavy fighting around Fire Support Bases (FSBs) near Route 9 in the vicinity of the Laos/South Vietnam border threatened to cut off thousands of ARVN troops struggling east from Ban Dong in a huge armored task force.

(S) [REDACTED] Air strikes against the massed enemy inflicted severe casualties and at times were the only means of providing temporary breaks for defenders in contact with the enemy. However, the enemy offensive continued at peak intensity. In many cases, the inability of helicopters to effect resupply, together with heavy enemy fire and ground assaults, made RVNAF positions untenable. Defenders were forced to fight their way through main force enemy units to reach helicopter pickup points which were in more permissive locations. It was during these final, hectic days that friendly casualties and helicopter losses were most severe. However, by repeated attempts, supported by heavy air strikes, helicopters managed to extract most of the survivors of these beleaguered units from Laos.

(S) [REDACTED] While RVNAF units at scattered FSBs were engaged in desperate fighting with the enemy, the huge ARVN task force withdrawing down Route 9 was being ravaged by enemy attacks. Short of petroleum, oil and lubricants (POL) and other supplies, the convoy struggled to within five miles of the border and bogged down at the Xepon River. With several thousand troops and the bulk of ARVN armor

temporarily stranded, the enemy committed his tanks in broad daylight and sent them speeding down Route 9. Fortunately, FACs spotted the tanks and in what may have been the most crucial strikes of the Lam Son operation, fighter bombers hit and scattered them only five kilometers from their goal. Needed equipment and POL were flown in by helicopter, and the remains of the battered RVNAF task force crossed into SVN. However, the enemy attacks had only been partially thwarted. The ARVN entered Laos with 71 tanks and 127 armored personnel carriers (APCs); they left with only 22 tanks and 54 APCs.

(S) [REDACTED] By the 24th of March, all RVNAF units were officially out of Laos, although stragglers continued to find their way to South Vietnam during subsequent days. The operation had ended on a bad note for the RVNAF. Although they inflicted heavy casualties on the enemy and destroyed a significant amount of supplies, they barely survived the offensive which hurled them out of Laos. The enemy was simply too strong in the area, and placed too much importance on his infiltration network, to allow an outnumbered RVNAF force to cut off his dry season logistics offensive. Although some major enemy LOC were blocked during the operation, the RVNAF failed to penetrate far enough to block vital routes in the western portion of the infiltration system, and the enemy by-passed the combat area by concentrating his movements on these western routes.

(S) [REDACTED] As for U.S. participation in the operation, helicopter and tactical air support both proved to be essential elements

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of Lam Son 719. Even so, the effectiveness of these resources fell short of their potential due to the reluctance of the Army to work closely with the Air Force, particularly during the first month of the operation. In a large measure, the inadequate coordination was a reflection of the fact that Army helicopter assets used in the operation were not under the control of a single manager of air. Until staggering helicopter losses and direct order from General Creighton Abrams changed their minds, Army planners refused to coordinate their activities with the Air Force, or to take advantage of the extensive tactical air support available for their operations. Basically, this failure to exploit the potential of air strikes stemmed from their mistaken attitude that the helicopter could survive in a high intensity combat environment and did not need tactical air support.

(S) [REDACTED] Failure to coordinate plans was not the only flaw in U.S. support. Army helicopters seriously aggravated already difficult airspace control problems. Besides presenting a serious safety hazard, the lack of communication and coordination between the helicopters and FACs was cited as a major reason for the failure of recce helicopters and TAC AIR to work effectively as a team. Many of these helicopter related airspace difficulties could have been avoided by designating a central airspace control agency with which all U.S. air resources were required to check in upon entering or exiting the area of operations.

(S) [REDACTED] Desirable as it was, however, improved coordination between the Army and Air Force would not have entirely eliminated the immense problems faced by the helicopter in the combat environment. The intense concentration of enemy small arms and automatic weapons fire was just too much for the helicopter to cope with. Tactical air support, when employed properly, unquestionably reduced helicopter losses, but even heavy support could not always eliminate serious losses or guarantee completion of the mission. By the time the six-week operation was over, the number of Army helicopters destroyed or damaged was equivalent to the total projected VNAF helicopter strength.

3. (S) [REDACTED] (U) Transition to the Wet Season

(S) [REDACTED] By the end of March, the RVNAF were gone from Laos, but the effects of Lam Son continued to be felt as air strikes hit enemy targets uncovered during the operation. Analysts believed that although the operation had diverted air assets from the interdiction effort, the creation of lucrative targets as the enemy massed in reaction to the operation had more than compensated for the reduced effort in other areas of STEEL TIGER.

(S) [REDACTED] By the end of April, weather was deteriorating throughout SL. Although enemy truck traffic slackened with the fitful start of the rains, a significant level of truck activity continued further into the wet season than for the previous year. The enemy's logistics offensive had started, peaked, and was now ending, later than during CH III. During these final days of the CH V campaign,

TAC AIR and B-52s continued to strike a wide range of enemy targets, including trucks, storage areas, and air defenses. Also, a sizeable effort was devoted to closing the exit routes leading from Laos to South Vietnam and Cambodia. Although these routes were less suited to interdiction than the entry areas, continuous strikes were directed there in an attempt to further reduce enemy throughput. These strikes continued during May, well beyond the official 30 April termination date for CH V.

(S) [REDACTED] Meanwhile, the enemy offensive in northern Laos began to slacken with the coming of the rains. After suffering serious reversals in early February, the reinforcement of Meo irregular forces permitted them to hold on throughout the rest of the dry season. A significant contribution to this achievement was the surge in RLAF and USAF sortie rates, and the concentration of almost all available air support in the battlefield area.

(S) [REDACTED] In southern Laos, the military situation appeared to be reasonably stable by the end of April. In early May, however, before the wet season was fully underway, the enemy launched a coordinated offensive in Military Regions (MRs) III and IV. Government forces were driven from the strategic Bolovens Plateau as the enemy captured Paksong, a key town on its western edge. To the north, overwhelming enemy forces swept RLG units from the Muong Phalane area and unexpectedly continued to drive west, capturing Dong Hene by the middle of May. The situation indeed looked grim, and once again friendlies in southern Laos were reminded that there would be no chance of defeating an all-out Communist offensive should it ever come.

(S) [REDACTED] Analysts felt that the major reason behind the Communist drive was the desire to forestall a repeat of RLG dry season interdiction operations. There was also speculation that the drive was aimed at the westward expansion of the enemy's route structure in reaction to the threat posed by Lam Son 719 or possible future incursions. Although the RLG dry season operations against the enemy route structure and Lam Son 719 both contributed to the interdiction effort, and therefore were in consonance with U.S. objectives relative to South Vietnam, these operations were less desirable from the standpoint of U.S. objectives in Laos. They both had run the risk of provoking either a strong NVA reaction which would topple the shaky Geneva Accords in Laos, or a lesser reaction which would result in a further erosion of RLG influence in southern Laos.

4. [REDACTED] (U) Air Interdiction Results

(S) [REDACTED] Assessing the results of CH V air interdiction operations proved a difficult task, but judging from the record BDA reported by aircrews, the campaign was more damaging to the enemy than any previous interdiction effort in Laos. Increased effectiveness of the strike force, particularly the truck-killing fleet, formation of lucrative targets as a result of Lam Son 719, and devotion of a high percentage of U.S. SEA strike resources to the interdiction effort all contributed to the increased impact of air interdiction during CH V.

(S) [REDACTED] As damaging as CH V was to the enemy, however, there were indications that claims of damage were excessive. Despite efforts to make truck BDA as accurate as possible, the truck attrition reported was out of proportion to other indicators of truck losses, such as the estimated number of trucks entering Laos during CH V, and the number of truck replacements requested by NVN from the Communist Bloc. Additionally, it was discovered near the end of the campaign that the criteria used by the AC-130 gunships for trucks claimed destroyed or damaged had been too lenient. More accurate criteria were put into effect early in May. However, even after the new criteria were applied retroactively to the results reported for CH V,\* the number of trucks claimed destroyed or damaged exceeded the estimated number of trucks in the NVN inventory and were inconsistent with estimates of the number of trucks entering Laos. It appeared that either claims of truck attrition were inflated or the NVN truck inventory, inventory replacements, and truck entries into Laos were all grossly underestimated.

(S) [REDACTED] Estimates of enemy throughput reported by 7AF were also open to question. Experience during Lam Son 719 verified the suspicion that much of the enemy's LOC complex was unobservable from the air, and indicated that the enemy made greater use of these unmonitored roads and trails than was expected. Experience in the entry areas also indicated that a portion of the enemy's traffic was missed due to LOC proliferation and his use of sparsely monitored routes. In

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*\*The results reported during CH V were not retroactively adjusted. The "retroactive" application referred to here was only for the purpose of analysis.*

addition, the enemy's use of waterways and non-motorized means of transportation in the exit areas further reduced the accuracy of throughput estimates.

(S) [REDACTED] There were other indications that the low throughput estimates for CH V did not reflect the enemy's logistics posture at the end of the dry season. Enemy logistics activity in southernmost Laos near the border areas occurred on a scale which seemed inconsistent with the low level of reported throughput and implied the existence of large stockpiles in the border areas. However, estimates as to the extent of those stockpiles varied greatly.

(S) [REDACTED] Limitations of BDA and throughput estimates notwithstanding, on a relative basis CH V was more effective than previous air interdiction campaigns in Laos. Damage to enemy resources and restriction of his flow of supplies were greater than during CH III. Although difficult to determine accurately, the absolute impact of CH V on the enemy's logistics posture--and ultimately on his ability to wage war--would provide a more meaningful measure of CH V than would a statistical comparison with previous campaigns.

(S) [REDACTED] Estimates of the enemy's logistics posture were difficult to make due to the uncertain validity of both estimates of minimum enemy requirements and of enemy supply throughput. However, an evaluation of the absolute impact of CH V operations on the enemy was made by the JCS in June 1971. They concluded that the men and materiel infiltrated through Laos during the dry season, together with those supplies stockpiled in southern Laos for later throughput, were adequate to meet the enemy's minimum requirements. With the level of logistics supply

achieved during CH V, the enemy could continue to wage war at the level of that conducted during the 1970-71 dry season, and would have enough additional supplies to launch isolated offensives in either Cambodia or the northern military regions of SVN. On the other hand, his resupply level was so close to his minimum needs, as estimated by the intelligence community, that he would not be able to support simultaneous, sustained offensives in more than one area.

5. (S) [REDACTED] (0) Summary

(S) [REDACTED] Another air interdiction campaign had come and gone in Laos. The U.S. had marshalled its diminishing SEA air resources and waged an all-out effort to interdict enemy supplies flowing through Laos. What is more, during the peak months of enemy resupply activities the RVNAF had launched a bold ground attack against the very core of the enemy's logistics system in southern Laos. The NVA reacted violently to the incursion, and in a dramatic confrontation they drove the RVNAF from Laos despite heavy U.S. air support. In doing so, however, they suffered heavy casualties and damage.

(S) [REDACTED] As the dry season drew to a close, it was apparent that CH V had been the most destructive campaign waged against the enemy's logistics offensive, yet the war dragged on throughout Indochina. Even at the modest resupply levels estimated for Communist forces during CH V, they could continue to wage protracted war and they clearly retained the capability to undertake damaging offensives. Still, it was believed that CH V air interdiction, together with the whole range of other

[REDACTED]

Allied operations against the enemy's logistics system, had restricted his capability to support simultaneous, sustained offensives throughout both Cambodia and South Vietnam. Whether or not these assessments of enemy capabilities were accurate would become more clear during the year following the campaign, as U.S. withdrawals and the Vietnamization program continued. Enemy activities during that crucial period would provide the ultimate answer as to the extent that Allied operations during CH V had restricted the enemy's capability to wage war.

B. [REDACTED] (U) INTERDICTION

1. (S) [REDACTED] (U) Concepts and Tactics

a. (S) [REDACTED] (U) Introduction.

(S) [REDACTED] For several years, Air Force planners had recognized that in the type of war being waged in Southeast Asia, and within the existing state of aviation technology, air interdiction could not by itself reduce enemy logistics support below the level needed for his survival as an effective fighting force. In the first place, the logistics level needed for enemy survival was so low that it was virtually unassailable. Indeed, there was little hope of forcing higher enemy supply consumption in a war which, by permitting sanctuaries near the battle area, allowed him the choice of engagement or disengagement. Second, the availability of Cambodian ports had enhanced the enemy's supply posture. Even if interdiction in Laos could block his resupply effort, he had the option of relatively unopposed resupply through Cambodia. Finally, air interdiction of the enemy's land lines of communication from NVN to Cambodia and South Vietnam was a difficult task. Strikes against the source of the enemy's logistics system in North Vietnam had been prohibited, restricting air interdiction to Laotian LOCs. The enemy, immune from significant ground attacks against his Laotian logistics system, built a maze of redundant jungle roads and trails which were extremely difficult to interdict by air alone. <sup>7/</sup>

(S) [REDACTED] COMMANDO HUNT I and III planners recognized the limitations of air interdiction. They insisted, however, that by

reducing the flow of supplies and raising the cost to the enemy of supporting his military activities, air interdiction operations could limit the intensity of enemy activities in South Vietnam, and force him to devote an increasing portion of his resources to his logistics system. His capabilities, though considerable, were finite, and resources destroyed, consumed, or tied down in Laos could not be used to support the war in the south. <sup>8/</sup>

(S) [REDACTED] During the period between the end of COMMANDO HUNT III and the beginning of COMMANDO HUNT V there were some very basic changes in the situation which faced friendly and enemy forces in Southeast Asia. One of the long-standing factors which had limited the impact of air interdiction in Laos was removed. A marked change in the enemy's logistics posture resulted from the elimination of his Cambodian sanctuary, and the removal of the option to resupply his forces through Cambodian ports. This forced the enemy to place almost total reliance on his Laotian LOC for logistics support of his military needs. It was important that Allied forces counter the enemy's resupply efforts, particularly in view of continuing U.S. withdrawals from SEA, and the potentially vulnerable position into which remaining forces were placed. However, the level of U.S. air resources available in SEA to oppose the vital Communist resupply effort during COMMANDO HUNT V was below that available during previous campaigns. The monthly fighter attack sortie levels approved for Southeast Asia during the COMMANDO HUNT V period (14,000) were half those approved during the COMMANDO

HUNT I period (28,000), and 70 percent of those available during the COMMANDO HUNT III (20,000) time period. However, by devoting 70 percent of available tactical strike assets to the CH V interdiction effort (as compared to about 45 percent during CH I and CH III), U.S. forces were able to forecast a CH V interdiction sortie level slightly greater than that attained in COMMANDO HUNT III. <sup>9/</sup>

(S) [REDACTED] During COMMANDO HUNT V, another of the long-standing factors which lessened the capability of interdicting the Communist flow of supplies through Laos was lifted: a sizeable RVNAF ground force entered Laos to disrupt enemy supply activities during a period of peak activity. The implications of this action, taken together with the increased importance to the enemy of the Laotian resupply effort, were significant. A maximum air interdiction effort, already recognized as critical before the ground incursion, became even more important as major NVN forces were tied down reacting to the ground forces threatening the heart of their Laotian infiltration system. During COMMANDO HUNT V, the contribution of air interdiction to the overall Allied effort assumed greater importance than it had since the halt of the bombing <sup>10/</sup> over NVN, and perhaps since the beginning of the Vietnam war.

(S) [REDACTED] Allied planners recognized the importance of an effective interdiction campaign during COMMANDO HUNT V. The Military Assistance Command, Vietnam (MACV) considered the blocking, disruption and destruction of supply throughput vital to the successful accomplishment of its mission. Planners and analysts believed that a

successful interdiction campaign during the 1970-71 dry season could be a decisive factor in determining the outcome of the war in Indochina. Accordingly, an all-out air interdiction effort was planned for CH V. As previously stated, 70 percent of available U.S. fighter attack sorties were allocated to the campaign. Additionally, almost all of the B-52 sorties available in SEA were devoted to the interdiction effort, and an expanded, improved truck-killing fleet was fielded against the enemy. <sup>11/</sup>

b. (S) <sup>12/</sup> (U) CH V Strategy.

(S) The strategy for CH V was based upon the exploitation and refinement of concepts and techniques developed during earlier campaigns, the employment of new tactics and weapon systems which were considered valuable, and the flexible application of air strikes against targets whose destruction would be most damaging to the enemy. As in earlier operations, emphasis was placed on attacking all major elements of the enemy's logistics system in Laos, the primary target categories being trucks, lines of communication, truck parks/storage areas, and air defenses.

1) (S) Trucks. As was the case for CH III, the greatest weight of effort in CH V was to be applied against trucks, considered the most vulnerable component of the enemy's infiltration system. COMMANDO HUNT V planners forecast higher truck levels for the campaign than for any previous year, and they planned a greater weight of effort against trucks than the 32 percent of the strike sorties during CH III. More significantly, numerous modifications and improvements

had been made to truck-killing resources. Perhaps the most significant improvement was the expansion and modification of the AC-130 gunship inventory during the wet season preceding CH V. These reconfigured aircraft promised a considerably higher truck kill potential. Although the improved AC-130s could operate at somewhat higher altitudes than most of their CH III predecessors, the gunship fleet continued to be restricted from the higher threat portions of STEEL TIGER, and still required F-4 flak suppression escorts. Gunship capabilities were to be supplemented by fast mover strikes in the higher threat areas, and by the introduction into SEA of the B-57G.<sup>13/</sup>

(S) [REDACTED] Eleven B-57Gs were introduced during CH V to augment the truck-killing force. They were equipped with sophisticated sensors and weapon systems, high-powered engines, crew armor, and an improved ejection capability. They were expected to be able to operate in the less permissive portions of the route structure, and under poor weather conditions. The B-57Gs [in conjunction with COMMANDO BOLT\* operations employing Long Range Air Navigation (LORAN) equipped F-4s and Airborne Moving Target Indicator (AMTI) equipped A-6s] were to provide the strike force with the capability of attacking enemy trucks operating under the cover of weather.<sup>14/</sup>

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\*For a description of COMMANDO BOLT operations, see p. 45.

2) (S) [REDACTED] Lines of Communication. COMMANDO HUNT V plans called for a concentrated, sustained TAC AIR/B-52 bombing effort against the Laotian entry corridors from NVN. Mounting a sustained TAC AIR effort against the enemy's input corridors into Laos was not in itself an innovation; it had been attempted in one form or another during every major interdiction campaign in Laos. Never before, however, had plans included the consistent employment of large numbers of B-52 strikes in the entry interdiction effort.

(S) [REDACTED] During CH I, 38 percent of the strike force was allocated against the critical choke points along the enemy's LOC, since this concept had proven successful in southern NVN. Most of these strikes were concentrated in the Nape, Mu Gia, Ban Karai, and Ban Nathon (Ban Raving vicinity) entry areas. During CH III, considerable effort was again devoted against the entry corridors, particularly during the early part of the campaign, but the overall percentage of the strike force employed against the entry corridors and other LOC targets throughout STEEL TIGER dropped to 23 percent for the campaign. The reduction in LOC attack sorties was prompted by the proliferation of routes, the inability to measure results of the attacks, and the reduced level of sorties available for the interdiction effort.

(S) [REDACTED] CH V planners noted that the enemy route structure was likely to be even more extensive and redundant than during previous campaigns, making effective LOC interdiction that much more difficult.

However, they felt that devoting a level of effort against the road network comparable to the level during CH III (23 percent of strike sorties), would produce results which justified the cost. Prior to the campaign, there were indications that the enemy would try to move record levels of supplies through Laos during CH V, and that his dry season push would start earlier than during CH III. Therefore, particularly heavy emphasis was placed on bombing the entry corridors into Laos to delay and hamper the expected early logistics surge. Most of the ARC LIGHT sorties available in SEA were to be employed in this concentrated effort against enemy movement through the entry areas. Essentially, B-52s were to deliver the weight of the ordnance, cutting the roads, while TAC AIR was to prevent repair activity and maintain a presence to deter movement through the areas. <sup>16/</sup>

(S) Near the beginning of CH III most entry point interdiction sorties were directed against the Mu Gia and Ban Karai passes, the two primary corridors used by the NVN to enter Laos. As the campaign unfolded, however, enemy development of new routes in the Ban Raving/Demilitarized Zone (DMZ) area had become apparent. His roads in the area were supplemented by POL pipelines which were hard to locate and by waterway systems which were difficult to interdict. The enemy's use of his LOC in the Ban Raving/DMZ area, small at first, increased steadily throughout the CH III campaign. During the month of April (1970), use of these routes had increased to the

point that they accounted for more input than either the Mu Gia and  
17/ Ban Karai areas. Accordingly, CH V plans called for concentrated  
strikes against all four entry corridors.

(S) [REDACTED] Four major interdiction areas were established  
at vulnerable locations below the Mu Gia (Box A), Ban Karai (Box B), Ban  
Raving (Box C), and the DMZ (Box D) entry areas. Flexibility was to be  
maintained in relocating target boxes and in adjusting the level of strikes  
18/  
directed against each of them.

(S) [REDACTED] Strikes against the entry corridors were  
not the only aspect of attacks planned against the enemy's LOC system.  
In addition, selective road cuts and timely strikes against vulnerable  
Interdiction Points (IDPs) were to be executed. Finally, strikes  
against enemy exit routes from Laos were planned to restrict the out-  
put of those enemy supplies which had evaded air strikes up to that  
19/  
point.

3) (S) [REDACTED] Truck Parks/Storage Areas. During CH I and  
III, the NVN had practiced extensive dispersal, hardening, and camouflage  
of their complex system of truck parks and storage areas throughout the  
Laotian panhandle. Location and destruction of these targets had proven  
particularly difficult. The enemy was expected to continue to employ  
techniques during CH V which would reduce the vulnerability of his  
manpower, facilities, and supplies to air attacks. It was estimated  
that these targets would be less lucrative during CH V, and planners

forecast a decrease in the 31 percent of the strike force devoted to these targets during CH III.

4) (S) [REDACTED] Air Defenses. The strategy against enemy air defenses remained unchanged for CH V operations; i.e., enemy Anti-aircraft Artillery (AAA) guns and Surface-to-Air Missile (SAM) sites in STEEL TIGER or on the NVN side of the border were to be attacked insofar as they threatened mission accomplishment. Since expanded employment of enemy AAA and SAM resources was expected during CH V, it was anticipated that the percentage of the force allocated against defenses would exceed the 14 percent used in CH III. A greater use of laser-guided bombs was planned, which promised to increase the effectiveness of strikes against enemy defenses.

c. (S) [REDACTED] (U) Interdiction by Ground Forces.

(S) [REDACTED] During COMMANDO HUNT V, the Royal Laotian Government planned a number of ground actions in the Laotian panhandle. These operations were intended to harass enemy infiltration efforts, particularly in the western portions of his route structure. They were to be supported by Royal Laotian Air Force T-28 and AC-47 resources, and by U.S. air strikes when needed. The scale of these operations was to be small in comparison to Lam Son 719, and the number of sorties required to support them was expected to be a relatively insignificant fraction of the total sorties flown in STEEL TIGER. Though the impact of these RLG ground operations was not expected to be a major factor in the success of the campaign, they were considered to be supplementary to

air interdiction operations, and were in consonance with the concept of using every means available of attacking all permitted aspects of the enemy's logistics system. <sup>22/</sup> A brief description of these operations can be found in Section C, Support of RLG Forces.

(C) [REDACTED] Lam Son 719, the South Vietnamese ground incursion into Laos, had a major impact on air interdiction operations and the strategy of interdiction during COMMANDO HUNT V. Detailed coverage of the operation is provided in Section D, Lam Son 719.

2. (S) [REDACTED] (U) Operations

a. (S) [REDACTED] (U) Summary of Events.

(S) [REDACTED] COMMANDO HUNT V operations officially began on 10 October 1970 with strikes against the entry corridor areas. Traditionally, enemy truck activity in Laos began to build-up in October or November, depending primarily on weather conditions. The last three months of the year were a transitional period between the wet and dry seasons in the Laotian panhandle, and the severity of weather conditions during these months varied considerably from year to year.

During the 1967-1968 northeast monsoon campaign, favorable weather conditions had allowed the enemy to begin his truck surge in early October 1967. In the next campaign, CH I, traffic began to rise in early November 1968, slackened somewhat, and then rose again in mid-December. During CH III the wet season had subsided relatively early, and traffic had begun to increase by late October 1969.

Weather during October and November 1970 (CH V) was unusually bad,

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and a series of typhoons hampered both enemy truck activity and U.S. air strike operations. In the last half of November, the weather improved and truck activity began to build up, about three weeks later <sup>23/</sup> than it had during the previous campaign.

(S) [REDACTED] The impact of the bad weather on enemy LOC during October and November 1970 was compounded by concentrated B-52 and TAC AIR bombing of key areas near the entry passes. Planners had established target boxes in areas below each of the entry corridors where the route structures converged, were constricted, or for other reasons were particularly vulnerable. These boxes were approximately one by two kilometers in size, and an average of 125 TAC AIR and 27 B-52 sorties were divided among them on a daily basis. General purpose bombs were the ordnance most often used. In order to harass and delay road repair, many of the bombs delivered by TAC AIR were time-delayed for periods up to five hours. The enemy responded to the bombing in a number of ways, primarily by surging supplies through the boxes between strikes, or by building bypasses around them. When it became obvious that a box was no longer effective because of by-passes around or movement through it, it was reestablished at a new, more suitable <sup>24/</sup> location.

(S) [REDACTED] While a major effort was being devoted against the entry boxes during October through December, the expanding gunship fleet began searching out and destroying trucks throughout STEEL TIGER. Many of the gunships arriving in SEA, however, were not meeting

expectations. Throughout November and early December, gunship problems, compounded by poor weather and low enemy truck activity, resulted in a low level of truck kills. By the end of December, however, the major difficulties had been overcome, and assessed truck kills were rising. <sup>25/</sup>

(S) [REDACTED] Relatively few sorties were flown against truck park/storage areas during October and November, but by December enemy supply build-ups were creating lucrative targets throughout the STEEL TIGER area and the number of sorties flown against these targets began to rise. Although such targets were not normally observable from the air, when they were located and struck the results were impressive.

(S) [REDACTED] One of the most lucrative truck park/storage area targets ever encountered during air interdiction operations in Laos was the Ban Bak target area uncovered during CH V. Since the beginning of the campaign, sensor and special intelligence had indicated the presence of a major storage complex in Ban Bak vicinity. Poor weather and the inability to locate the target from the air prohibited exploiting it throughout October, November, and most of December. On 19 December, strikes against a Forward Air Controller (FAC)-observed target in the area produced numerous secondary explosions and fire. In the next two and a half weeks, 331 air strikes were reported to have produced over 10,000 secondary explosions and fires in the Ban Bak storage complex. The air strikes against the Ban Bak storage complex amounted to only 3 to 4 percent of the total CH V tactical air strikes against truck parks/storage areas, but the 10,000 secondaries

at Ban Bak represented one-third of the total secondary fires and explosions resulting from truck park/storage area attacks during CH V. <sup>26/</sup>

(S) <sup>27/</sup> Sustained bombing of the entry boxes was maintained throughout January, but "portering, bypassing and surging of enemy supplies continued through and/or around all four interdiction areas." <sup>28/</sup> Seventh Air Force analysts remained convinced that the attacks against the entry corridors were delaying supply input and that results still justified directing a reduced level of sorties against them. They pointed out that the enemy was still being forced to react to the bombing. He had built numerous bypasses, surged his supplies in phase with lulls in the bombing rather than in phase with the moon (cyclical movement by moon phase was observed for traffic throughout the rest of STEEL TIGER), and increased the SAM threat in some entry areas. On the other hand, it was recognized that the boxes were becoming less effective. Continuous bombing leveled previously rugged terrain and pulverized the soil, reducing the number and severity of slides and diminishing the size and effects of bomb craters. At the same time, bypasses around the boxes proliferated, thus diluting the concentration of air strikes at a particular target area. In light of the diminishing effectiveness of entry interdiction, the number of sorties flown against the entry boxes during January was reduced from the record number flown during the previous month, but still remained high. Enemy logistics input was up during January, and for the first time in the campaign, CH V monthly input exceeded CH III monthly input. <sup>28/</sup>

(S) [REDACTED] On 8 February, the RVNAF launched Lam Son 719, a ground attack against the heart of the NVN logistics system in the Laotian panhandle. To meet growing RVNAF air support needs, there was a surge in U.S. sortie rates and a major shift of interdiction resources to support the ground combat. Almost all B-52 sorties were diverted from the entry interdiction program, and tactical air sorties against the boxes were heavily reduced. During the last three weeks of the operation, nearly half of the strike sorties flown in SEA were in support of Lam Son 719. Despite the shift of air interdiction resources to Lam Son, 7AF analysts considered that the ground operation had intensified rather than reduced the impact of air interdiction on the enemy. In reaction to the RVNAF incursion, the enemy massed his forces, thereby creating <sup>29/</sup> lucrative targets which were exploited by air strikes.

(S) [REDACTED] Friendly and enemy activity in STEEL TIGER peaked during February and March, as a result of both Lam Son 719 and the enemy's logistics surge through the panhandle. During March, RVNAF ground operations in Laos, and the enemy reaction to them, reached their most intense level. U.S. air strikes flown in STEEL TIGER also crested during the month, and most categories of aircrew-reported Bomb Damage Assessment (BDA) in STEEL TIGER reached their greatest monthly levels. The reported BDA continued high throughout April, although enemy truck activity and U.S. strike sorties were down from March <sup>30/</sup> levels.

(S) [REDACTED] During April, a maximum effort was directed against the known exit routes from Laos to South Vietnam and Cambodia. Unfortunately, these routes were less suited to interdiction than those in entry areas. There were few natural interdiction points in the exit areas, suitable alternates and bypasses were available to the enemy for most routes, and the best interdiction points had already been eroded by the bombing of previous campaigns. Nevertheless, concentrated attacks were made against the exit routes in an attempt to restrict the flow of supplies until the rains could again close the enemy LOC. These attacks <sup>31/</sup> continued well into May.

(S) [REDACTED] By the end of April, weather was deteriorating throughout STEEL TIGER, as the transitional period between the dry and wet seasons in Laos got underway. Enemy truck activity finally began to slacken but was still at a significant level. During CH V, the enemy's logistics campaign had started and peaked later, and was also maintained further into the transitional period than during CH III. Air interdiction operations continued against the enemy's infiltration system in Laos, but were no longer referred to as part of CH V, which officially <sup>32/</sup> terminated on 30 April 1971.

b. (S) [REDACTED] (U) New or Significant Developments.

1) (S) [REDACTED] Gunships. The gunships had been the most effective truck-killing systems used during CH III, accounting for 48 percent of the trucks reported destroyed and damaged while flying only 8 percent of the sorties. Vulnerability was a major limitation

of the gunships, necessitating fighter escorts for most missions. Even so, the gunships were considered the most effective night truck-killers available, and actions were taken to improve and expand the gunship fleet for COMMANDO HUNT V. <sup>33/</sup>

(S) [REDACTED] During the CH III campaign, the gunship fleet in SEA had consisted of six AC-130 gunships, one specially configured AC-130 known as Surprise Package, and two AC-123 gunships. These aircraft were used almost exclusively in the truck-killing role in Laos. In addition, there was a larger number of AC-119\* aircraft in SEA, only a portion of which were devoted to operations in Laos. Gunships flew 1,279 sorties on truck-killing missions in STEEL TIGER during CH III: 703 by AC-130s, 435 by AC-119s, and 141 by the AC-123s. At the end of CH III, most of the gunships returned to the United States for calibration and modification in preparation for CH V.

(S) [REDACTED] During CH V, the AC-130 fleet built up to a high of 14 aircraft. One was a Surprise Package configured AC-130, five were standard AC-130 gunships which had been equipped with BLACK CROW sensors and two 40 millimeter (mm) guns, and the rest were modified AC-130s patterned after the Surprise Package configuration. There were no AC-123s supporting CH V. AC-119 assets were about the same as had been available during the previous campaign. <sup>34/</sup>

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\*AC-119Gs and AC-119Ks. Only the AC-119Ks were flown in Laos.

(S) [REDACTED] Near the beginning of CH V, as the number of gunships in SEA began to build up from the wet season low, it became evident that the AC-130s were not performing as well as expected. A large number of problems were being encountered in the arriving AC-130s, including leaking fuel tanks, missing parts, and faulty wiring. Perhaps more serious, however, were personnel training deficiencies. Training of aircrews and maintenance personnel had not kept pace with the rapid modification and expansion of the AC-130 force during the wet season, and 70 percent of the aircrews were inexperienced, as were many maintenance personnel.\* Some "growing pains" had been expected while crews became proficient and equipment was brought up to peak performance, but gunship effectiveness during November failed to <sup>35/</sup> show the expected improvement.

(S) [REDACTED] In late November 1971, 8th Tactical Fighter Wing (TFW) personnel expressed disappointment with the results and indicated that the interface between the sensor systems, the computer, and the boresight of the guns was causing the greatest difficulty, <sup>36/</sup> rather than the performance of the individual systems or the aircrews.

(S) [REDACTED] An operational assistance team was dispatched to SEA to investigate, and if possible, remedy the AC-130 problems. By

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\*Although the AC-119 gunships were configured the same during CH V as in CH III, initial problems were also experienced in crew and maintenance training levels for them. Their problems resulted from large personnel turnovers during November and December.

the end of December, reported BDA for the AC-130 gunships began to improve dramatically. The assistance team played a significant role in the improvement. However, better weather conditions, increased truck traffic, and the additional experience of air crews and maintenance personnel also had a positive influence on the situation. 37/

(S) [REDACTED] The primary drawback of the gunships during COMMANDO HUNT V continued to be their vulnerability. F-4 escorts were required for most missions, but even with escorts, a number of constraining factors had to be considered before fragging the gunships on truck-killing missions over the Laotian route structure. Some of these factors were intelligence estimates of enemy defenses, defenses encountered during the mission, moon illumination and elevation factors, and weather conditions. The gunships did not fly over well defended portions of the route structure during conditions of high moon illumination. Besides the normal target detection and strike problems encountered during poor weather conditions, gunships did not operate under an overcast because of the silhouetting effect. Furthermore, gunship search and strike tactics were geared to minimize the enemy AAA threat. They operated from the maximum altitude which was compatible with their sensor equipment and aircraft capabilities. AC-130s generally flew armed reconnaissance at about 9,500 feet, while the AC-119s flew near 7,000 feet. Despite the problems of vulnerability, gunships operated, at one time or another, throughout the enemy route structure except 38/ for the most heavily defended portions in the entry/border areas.

(S) [REDACTED] The exact results of gunship attacks on trucks during CH V could not be determined, but truck destruction was clearly greater than that attained by gunships during any previous campaign. More gunships were flying than before, and they were equipped with better sensing devices and armament. Gunship crews reported more trucks destroyed and damaged during CH V than the total claimed by all strike aircraft during CH III. The BDA criteria used by AC-130 crews came into serious question toward the end of the campaign and were amended. (See section on Truck BDA Credibility.) Even so, revised estimates of the damage inflicted on the enemy's logistics system by gunships during CH V clearly indicated that they were--both individually and collectively--the most effective night truck-killing systems in the strike force. Based upon their success during CH V, plans were implemented to increase the gunship (AC-130) fleet to 18 aircraft during the next dry season <sup>39/</sup> campaign.

2) (S) [REDACTED] B-57G. An important addition to the truck-killing force during COMMANDO HUNT V was the introduction into SEA of eleven B-57Gs. These specially modified B-57s were equipped with sophisticated target detection and acquisition systems, and with advanced weapons delivery systems. The aircraft was designed to provide a self-contained, single pass, night capability that would allow it to operate over some of the less permissive portions of the <sup>40/</sup> route structure which were not accessible to the gunships.

Secretary of the Air Force Robert Seamans, Jr., commented on the potential of the aircraft just before their deployment to SEA in <sup>41/</sup> September 1970:

We have worked long and hard to achieve a truly effective night strike capability. Now in the B-57G we have the only aircraft of this type capable of operating in the more sophisticated enemy environment. I hold the highest expectations for the success of this pioneering program, but keep in mind that this equipment is just that - pioneering. It will take real dedication on the part of everybody concerned to make it work. . . . I see the B-57G as the vanguard of future night attack systems. Certainly it will provide the base line for evaluating new systems in the years ahead. . . .

(S) <sup>42/</sup> Between 17 October 1970 and 14 January 1971, a combat evaluation of the B-57G was conducted to determine its effectiveness in the night interdiction role against fixed and moving targets. Particular emphasis was placed on evaluating its capability to detect, track, and destroy enemy traffic on the Laotian LOC. During October and November, poor weather and low enemy traffic hampered the evaluation. These factors, combined with some system deficiencies, resulted in initially low system performance. As the weather improved and truck traffic increased, and as initial deficiencies were overcome, system performance improved markedly. During the 90-day evaluation period, 543 sorties were flown resulting in 363 trucks reported destroyed, 28 damaged, and 2,025 secondary explosions and fires.

(S) [REDACTED] The report summarizing the results of the 90-day combat evaluation of the B-57G concluded that the self-contained night attack system could "detect, attack and destroy trucks and other tactical targets at night," and that it was "effective in the night interdiction role in the environment in which it was evaluated." However, it fell short of the level of effectiveness "envisioned in the predeployment concept of operations."<sup>43/</sup> One disappointment was the inability of the Moving Target Indicator (MTI) radar to detect targets at ranges great enough to permit one-pass attacks. A one-pass capability was important if the system was to operate in the higher threat portions of the enemy LOC. Fortunately, the poor performance of the MTI radar was partially offset by the unexpectedly long detection range of the Low Light Level Television (LLLTV) sensor, which frequently provided initial detection at sufficient range to allow one-pass attacks. The remaining sensor subsystem, the Forward Looking Infrared detector, complemented the LLLTV and also performed better than had been expected; however, its detection range was not sufficient to permit one-pass attacks using this system alone.

(S) [REDACTED] The evaluation report concluded that the B-57G was effective and should continue its role in interdiction operations in SEA, but that a concerted effort should be made to improve the aircraft's navigation and MTI radar detection capabilities. It stressed that follow-on systems should have greater bomb-load capabilities, better speed and maneuverability, improved navigation

equipment, and all weather capable sensors. Additionally, the detection range of the sensors needed to be extended in order to enable one-pass attacks.

(S) ~~SECRET~~ B-57G performance continued to improve subsequent to the evaluation. Whereas the number of trucks destroyed or damaged per B-57G sortie during the 90-day evaluation was about .72, performance during the two months following the evaluation was 2.0 destroyed or damaged per sortie flown. (Secondary fires and explosions during this period also increased sharply.) During the campaign, B-57G crews reported destroying or damaging over 1,900 trucks. Of these, fewer than 100 were reported in the damaged category, making the results even more impressive. Part of the credit for the B-57G performance must be attributed to the munitions it employed throughout the campaign. The standard ordnance load was four M-36E1 (incendiary) bombs and two MK-82 Laser Guided Bombs (LGBs), both of which were considered particularly effective in the truck-killing role.

(S) ~~SECRET~~ The B-57G complemented the rest of the truck-killing force during CH V. The AC-130 and AC-119 gunships, considered the most effective truck-killing systems, were employed in the most lucrative portions of the route structure, with due consideration to weather and the AAA environment. The B-57Gs were fraged to the less lucrative areas, but still managed to produce impressive results. Significantly, the B-57G sorties did not require escorts as did the gunships--an important consideration in view of diminishing strike resources in SEA.

(S) [REDACTED] In summary, the B-57G demonstrated during CH V that it could be successfully employed in the self-contained, night attack role for which it had been designed. Though there was much room for improvement in the system, it was an important step forward in the effort to develop an effective night attack capability which could be employed in relatively high threat environments. <sup>46/</sup> A Hq USAF report summarized: "All-in-all, the B-57G has helped to open the door for future night operations, and represents the baseline for further development of high performance night-attack aircraft." <sup>47/</sup>

3) (S) [REDACTED] IGLOO WHITE. The hub of the IGLOO WHITE (IW) electronic surveillance system was the Infiltration Surveillance Center, located at Nakhon Phanom Royal Thai Air Force Base (RTAFB), and under the control of a group known as Task Force Alpha (TFA). By and large, the employment of sensor information in support of CH V paralleled IW support of the previous campaign. IGLOO WHITE intelligence was still the prime source for estimates of enemy logistics movements into, through, and out of STEEL TIGER. TFA continued to develop targets based on sensor data, visual reconnaissance, photo interpretation, and all-source intelligence. These targets were nominated to 7AF on a daily basis. TFA also continued to provide 7AF with traffic predictions, based on recent truck activity and known enemy tactics, and 7AF placed increased emphasis on <sup>48/</sup> the use of these predictions in fragging its strike resources.

(S) [REDACTED] During CH V, TFA again used sensor information under the COMMANDO BOLT program to direct strike aircraft against

moving or stationary targets during periods of poor weather. The basic concept of COMMANDO BOLT remained the same as during CH III. Elongated sensor strings were emplaced in the high-threat areas of STEEL TIGER, and as trucks were detected, orbiting strike aircraft were directed against them at predetermined points along the strings. Timing of the strikes was based on TFA computer estimates of truck passage along the points. Strike aircraft were LORAN configured F-4s or Navy/Marine A-6s equipped with precision bombing and navigation systems, including AMTI radar. If no trucks were detected during an aircraft's orbit time, the aircraft expended ordnance against one of <sup>49/</sup> a number of point targets chosen on a daily basis by TFA.

(S) [REDACTED] Optimum delivery altitude for F-4 COMMANDO BOLT aircraft was a subject of controversy during the campaign. During CH V the F-4s normally carried CBU-24\* munitions which they delivered from 15,000 feet Above Ground Level (AGL). By way of comparison, the A-6s carried Rockeyes (MK 20) and general purpose (MK 82) bombs and delivered from about 5,000 feet AGL. The high delivery altitude for the F-4 had been chosen at the beginning of the campaign to provide quicker reaction time from the F-4s orbit and to facilitate less <sup>50/</sup> restrictive delivery parameters. The F-4 wing involved (8 TFW) felt that there was little or no reduction of bombing accuracy resulting from the high delivery altitude, and in fact requested that it be

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\*Cluster Bomblet Unit.

increased to 17,000 feet. TFA opposed such high COMMANDO BOLT delivery altitudes, stating that they resulted in "a definite degradation in bombing accuracy and observed BDA."<sup>51/</sup>

(S) [REDACTED] The accurate assessment of COMMANDO BOLT strike results continued to be a problem during CH V. Since many strikes were made during periods of inclement weather and/or from high altitudes, aircrews were often unable to obtain accurate BDA. TFA noted that the results of nearly 40 percent of the COMMANDO BOLT strikes against trucks (between 1 July 70 and 31 March 71) were totally obscured by weather. Results reported by aircrews for COMMANDO BOLT strikes were considered conservative by both TFA and 7AF analysts, but provided the only available measure of strike results. Between 1 October 1970 and 30 April 1971, aircrews reported that a total of 2,586 strikes against movers resulted in 338 trucks destroyed and 1,460 secondary explosions and fires. Additionally, 1,150 strikes against point targets reportedly resulted in 740 secondaries.<sup>52/</sup>

(S) [REDACTED] Not all IW operations during CH V paralleled those of earlier campaigns. One development in the employment of IW information was the expansion and improvement of the traffic advisory program. With the exception of COMMANDO BOLT operations, there had been little success during previous campaigns in exploiting the near real-time traffic information generated by the IW system. TFA was able to detect truck movements throughout STEEL TIGER, but directing strike aircraft efficiently against these targets proved a difficult

task. Reporting all truck movements (sequences) to the Airborne Battlefield Command and Control Center (ABCCC) was unworkable because of the sheer volume of intelligence involved. Therefore, during earlier campaigns the procedure was established whereby only the more lucrative targets were passed to the ABCCC. This reduced the volume of reporting to a manageable level, but the potential of available intelligence was not realized since most of the information was not reported to the ABCCC.

(S) [REDACTED] During CH III, it was estimated that only 4 percent of the sequences processed by TFA were passed to the ABCCC, and only about one-eighth of these were in turn passed to a FAC or strike aircraft. Trucks reported destroyed or damaged as a result of the IW information passed to the ABCCC were an insignificant percentage (less than 1 percent) of the total reported for STEEL TIGER. During CH V, for the first time, procedures were established whereby traffic advisories could be passed directly from TFA to FACs, gunships, and strike aircraft throughout STEEL TIGER. The TFA traffic advisory service began officially on 1 October 1970 and was known by the call sign 53/ HEADSHED.

(S) [REDACTED] Initially, HEADSHED advisories were looked upon with skepticism and were not fully exploited. When advisories were used, the results of their employment were often not accurately reported and recorded. As the campaign progressed, however, deficiencies in the system were corrected, and aircrew confidence in advisories improved somewhat.

By March 1971, the system was considered fully operational, and results were being more accurately recorded. During March and April 1971, about 30 percent of the sequences processed by TFA were passed to FACs, gunships, armed recce aircraft, COMMANDO BOLT, or the ABCCC (compared to the 4 percent passed during CH III). Failure to pass sequences resulted from either the absence of aircraft in the area of the truck activity, or the fact that aircraft in the area were already busy with other traffic. According to aircrew reports (via OPREP-4 reports), the advisories which were passed resulted in 1,885 trucks destroyed, 398 damaged, and 2,116 secondary explosions and fires. (Although this represented 20 percent of the trucks reported destroyed or damaged throughout STEEL TIGER during those two months, the Advisory Service cannot be given total credit for these kills. There was no way of knowing how many trucks would have been destroyed had these aircrews searched for their own targets rather than heading towards target areas indicated by the advisories.)<sup>54/</sup>

4) (S) All-weather Bombing Systems. For a number of years, the Air Force had recognized the need to improve the all-weather capabilities of the tactical air force. In fact, Pacific Air Forces (PACAF) considered an all-weather bombing system its "most urgent and critical requirement."<sup>55/</sup> In 1965, the Air Staff selected LORAN as the best short-term solution to navigational deficiencies. After LORAN was introduced into SEA and was established as the most accurate navigation system available, efforts were made to exploit its inherent reliability and accuracy by adapting it for use in an all-weather bombing system. Since COMMANDO HUNT I, LORAN-equipped F-4s

had been used to accurately deliver IGLOO WHITE sensors on the route structures throughout STEEL TIGER. In CH III, LORAN-equipped F-4s were used with some success in COMMANDO BOLT operations in an attempt to provide an all-weather strike capability. During CH V, a big step was taken in the development of an all-weather strike capability based on the LORAN navigational system with the introduction into SEA of PAVE <sup>56/</sup> PHANTOM.

(S) [REDACTED] PAVE PHANTOM F-4 aircraft were equipped with an improved LORAN receiver coupled with a ballistics computer. A primary advantage of the new equipment was flexibility in attack parameters. Previously, LORAN-equipped F-4s were restricted to pre-planned release parameters, but the PAVE PHANTOM system allowed random attack headings, altitudes, and air speeds. In conjunction with the PAVE PHANTOM program, new methods of increasing the accuracy of target coordinates were investigated and employed during CH V, since the accuracy of the bombing system would be no better than the accuracy of the coordinates being attacked.\* Because the PAVE PHANTOM system was needed to help fulfill a 7AF operational requirement for an all-weather strike capability, it was developed on an accelerated schedule and was deployed to SEA before completion of operational testing and evaluation. At the same time the system was being exploited in CH V operations, extensive testing and evaluation was to be conducted in SEA by the 8 TFW, <sup>57/</sup> 432nd Tactical Reconnaissance Wing (432 TRW), and by TFA.

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\*For a description of these methods, see p. 186 of the 7AF COMMANDO HUNT V report.

(S) [REDACTED] By the end of CH V, not all of the test results had been formally compiled, but the indications were that PAVE PHANTOM was providing a Circular Error Probable (CEP) of about 110 to 130 meters. (Previous LORAN tests with non-PAVE PHANTOM equipment resulted in a CEP on the order of 150 meters.) Additionally, when the PAVE PHANTOM aircraft released a string of bombs, the CEP of the closest bomb in the string to the target was 60 meters. These CEPs were far better than either the COMBAT SKYSPOT or COMMANDO NAIL bombing systems used by the USAF in SEA. Though not without some problems, the PAVE PHANTOM system represented an important step forward toward <sup>58/</sup> the attainment of an accurate, all-weather USAF bombing capability.

5) (S) [REDACTED] The B-52 Role in Entry Interdiction. Prior to CH V, most B-52 strikes in Laos were delivered against targets such as truck park/storage areas and bivouac areas. Although some B-52 strikes had been directed against enemy LOC in the entry areas,\* the backbone of entry interdiction had been the heavy, daily bombing of key choke points by TAC AIR resources. During the initial months of CH V, however, almost all of the ARC LIGHT sorties authorized in SEA were devoted to entry interdiction, and for the first time a coordinated, concentrated, and sustained TAC AIR/B-52 entry interdiction bombing campaign was conducted. A daily average of 27 B-52 and 125 TAC AIR

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*\*Perhaps the most notable such strike occurred early in CH I when B-52 sorties struck and successfully destroyed a previously uninterdicted underwater rock causeway at the Ban Laboy ford.*

sorties struck LOC in four critical target areas in Laos near the  
59/  
NVN border.

(S) [REDACTED] Essentially, the role of the B-52 was to crater the enemy LOC, while TAC AIR was to hamper enemy road reconstruction in and movement through the target boxes between ARC LIGHT strikes. The fuzing of ordnance and the timing of attacks were both important considerations in achieving maximum effectiveness for the B-52 in its role. To maximize cratering of the enemy road network, fuzing for the 66 general purpose bombs (42 X 750-pound bombs and 24 X 500-pound bombs) delivered by each B-52 sortie was initially set for a .1 second delay for the 750-pound bombs and .025 second delay for the 500-pound bombs. With regards to timing, strikes at maximum frequency and unpredictable times were planned since they would provide enemy crews 60/  
minimum time for road repair.

(S) [REDACTED] Original plans called for daily B-52 strikes by nine cells of three ships each. However, ARC LIGHT missions into the high threat entry areas required protective air support from TINY TIM\* resources. Unfortunately, these resources were limited and could support only five strike packages per day, as opposed to the nine that would be needed to support ARC LIGHT strikes in the entry areas. A compromise was reached whereby two B-52 cells of three ships each flew

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\*A TINY TIM support package included two EB-66s for anti-SAM Electronic Countermeasure (ECM) support, two F-105Gs for SAM suppression, and MIG CAP (Combat Air Patrol).

their missions about one and one-half hours apart, so that they could both be supported by the same TINY TIM package. Although this slightly reduced the flexibility and increased the predictability of ARC LIGHT strikes, it did allow nine separate daily ARC LIGHT attacks in the entry areas.<sup>61/</sup>

(S) [REDACTED] The entry interdiction program began on 9 October 1970, well before the monsoon rains had ended. After a week of bombing, LOC in three of the four entry boxes were heavily cratered and there were few signs of enemy activity. In the fourth, Box B in the Ban Karai entry corridor, there were signs of enemy repairs and use. It was discovered that B-52 ordnance had been impacting an average of 1600 feet northwest of the desired point. After verifying that there was no error in MSQ bombing directions, the release point for the B-52s was adjusted 1600 feet to the southeast. Following the adjustment, bombs began impacting at the desired point, indicating that the inaccurate bombing had been caused by a geodetic error in target charts, rather than by an error at the MSQ sites or by the B-52 bombing system.<sup>62/</sup>

(S) [REDACTED] During October, the incessant air strikes severely cratered the entry boxes, while typhoon rains turned them into "impassable quagmires." At the beginning of November, however, there was a shift in ARC LIGHT tactics as a result of bombing saturation\* in the boxes and enemy attempts to counter the effects of the

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\*After about a month of the bombing, it appeared that maximum destruction had been achieved in the boxes. By then the soil had become so pulverized that new roads could be cleared through the boxes in a relatively short time.

bombing. While the primary objective of B-52 strikes during October had been the cratering of critical LOC in the boxes, emphasis during November was placed on extending road damage out from the interdicted choke points, and destroying supplies, fuel, road repair equipment and AAA moved into the vicinity of the choke points. This approach was designed to increase the distance over which the enemy had to <sup>63/</sup> porter supplies, and to increase the time required to open the roads.

(S) [REDACTED] In pursuit of these objectives there was a change in ARC LIGHT bomb trains and fuzing tactics. Bomb trains for a portion of the strikes were changed from the standard 3200-foot length to almost 15,000 feet. While these bomb train lengths lessened the probability that an individual sortie would interdict a road, the destruction of enemy resources was extended outward from the interdiction point being struck. Additionally, bomb fuzing was set for instantaneous detonation to insure maximum damage to AAA positions, <sup>64/</sup> surface storage areas, and personnel.

(S) [REDACTED] Heavy rain continued to be an ally of the enemy interdiction program during early November. Nevertheless, enemy activities in and around the boxes began to increase, prompting planners to seek ways of improving the interdiction program's effectiveness. One of the steps needed to improve effectiveness was to increase the frequency of ordnance delivery. Eighth AF recommended that this be accomplished by using a combination of two and three-ship cells. By using a number of two-ship cells, the frequency of B-52 attacks against

targets in the entry boxes could be increased by about half (although the total ordnance delivered would remain the same). Additionally, tactics could be devised utilizing tandem attacks by several cells so that TINY TIM support package requirements would remain at only five packages per day. After review, however, Strategic Air Command (SAC) decided not to authorize the change in cell size proposed by 8AF until mutual ECM support of two-ship cells could be investigated. <sup>65/</sup>

(S) [REDACTED] By late November weather in the entry areas finally began to improve, and the enemy launched his dry season logistics offensive three weeks later than he had during CH III. Its beginning coincided with a lull in B-52 strikes caused by the temporary diversion of TINY TIM resources to the support of FREEDOM BAIT, a two-day protective reaction raid against NVN. The enemy took full advantage of the short lull in the bombing, rapidly repairing his roads and increasing his logistics surge. <sup>66/</sup>

(S) [REDACTED] Strikes during the remaining days of November attempted to blunt the enemy's recently initiated logistics offensive. Despite this, he demonstrated a determined resolve to keep the supplies moving. He rebuilt roads in the boxes, constructed by-passes, and, in the Ban Raving area, began using Waterway 7 to float supplies through the heavily bombed Box C\* area. Also, there were indications that he

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\*During early December, ARC LIGHT strikes were directed against an active trans-shipment point on Waterway 7 near Box C. The strikes destroyed the trans-shipment point, destroyed the enemy's channeling guides in the river, and heavily cratered the LOC leading to the trans-shipment point. Additionally, the heavy bombing in Box C had eroded the banks of the river within the box. Enemy waterway activity in the Box C area ceased and was not resumed during the campaign.

was able to use the time between ARC LIGHT strikes with relative impunity. ARC LIGHT strikes were, therefore, concentrated on routes that were being reopened on a regular basis, and delayed fuzing was again used on B-52 ordnance to produce maximum cratering effects. <sup>67/</sup>

(S) [REDACTED] Supply input for the month of December increased greatly over the November level but was still slightly lower than that during the previous December. The B-52/TAC AIR pressure on the interdiction areas continued at a high level; but the NVA continued to counter this pressure through the use of by-passes, by repairing and reorienting routes, and by surging through the boxes. One example of the intensity of road repair efforts was provided when combined B-52/TAC AIR strikes in a karst area in Box A produced a 200-yard slide, 20 to 30 feet high: the NVA cleared the slide in a single day despite the fact that all TAC AIR strikes scheduled into Box A during that 24-hour period were concentrated on the slide area. <sup>68/</sup>

(S) [REDACTED] On 1 January, SAMs were fired at B-52s striking Box B near the Ban Karai pass. As a result, between 2 and 14 January B-52s were prohibited from striking the heavily traveled roads in the box. TAC AIR continued to hit Box B, but the ARC LIGHT effort was shifted southwest to a safer but less suitable interdiction area. The enemy took advantage of the lull in B-52 bombing and surged large amounts of supplies through the box. <sup>69/</sup>

(S) [REDACTED] Concentrated attacks continued against all the entry boxes during January, but the impact of these attacks on the

enemy had clearly diminished. The boxes themselves had been struck so many times that the originally rugged terrain had been leveled, and bomb craters in the pulverized soil had been reduced to about a third of their original depth. Under these conditions, the enemy had little difficulty clearing a new roadway shortly after strikes. Furthermore, the proliferation of enemy by-passes had necessitated striking an increasing number of target areas, thus diluting the concentration of strikes at any given interdiction point. Also during January, for the first time during the campaign, monthly supply input into Laos exceeded the amount input in the corresponding month during CH III. <sup>70/</sup>

(S) [REDACTED] The month of February saw the commencement of Operation Lam Son 719 and the ultimate demise of the 1970-71 dry season interdiction campaign against the Laotian entry areas. During the month, the large effort in the entry areas ended as air assets shifted <sup>71/</sup> to support Vietnamese ground forces in Lam Son 719.

(S) [REDACTED] The interdiction effort along the entry corridors had a significant impact on the enemy, but whether or not that impact justified the high level of air resources devoted to the program was open to debate. Regardless of the uncertainty concerning the overall effectiveness of entry interdiction, however, it was clear that ARC LIGHT strikes had played a major role in the program. Perhaps the best indicator of the impact of B-52 strikes on the enemy was provided

by his immediate reaction to standdowns in ARC LIGHT attacks caused by the SAM threat or diversion of TINY TIM resources to strikes in NVN. During these lulls, even though TAC AIR continued to hit the target areas, the enemy concentrated his road repair efforts, and was able to surge great quantities of supplies. While being struck by daily B-52 sorties, these same target areas supported only a fraction of the traffic experienced during the ARC LIGHT lulls. B-52s had clearly proven to be an important and formidable element of the <sup>72/</sup> entry interdiction program.

3. (OS) (U) Results of U.S. Air Interdiction

a. (S) (U) Allocation of Effort.

(S) During CH V, the United States devoted 63 percent of the sorties flown in SEA to the interdiction effort in STEEL TIGER (SL). Although total U.S. air resources in SEA were down from previous years, concentration of its resources in SL enabled the United States to apply a greater weight of effort to interdiction during CH V than was the case during CH III. In fact, the sortie level flown in SL during CH V was only about 6 percent less than the record <sup>73/</sup> level flown during CH I. (See Table 1.)

(S) Table 2 shows the U.S. strike resources directed against the various target categories during CH V. Table 3 compares CH V sortie allocations with those of CH I and CH III. Although the figures indicate a reduced emphasis on attacks against trucks during CH V, in actuality this was not the case. Increased employment of

TABLE 1

SORTIES FLOWN IN STEEL TIGER BY U.S. STRIKE RESOURCES (U)  
(Includes Fighters, Gunships and B-52s)

	<u>Nov</u>	<u>Dec</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>Daily Average</u>
CH I	6,554*	14,196	13,771	12,268	12,271	11,845	425
CH III	8,711	11,013	11,065	9,526	9,728	7,416	318
CH V	9,860	11,485	12,680	12,217	15,005	11,228	400

\*CH I figures for November include only 15-30 November.

Source: Report, COMMANDO HUNT I (U), 7AF, 20 May 69, pp. 79-80. (S)  
 Report, COMMANDO HUNT III (U), 7AF, May 70, pp. 64, 68. (S)  
 Report, COMMANDO HUNT V (U), 7AF, May 71, p. 159. (S)

TABLE 2  
U.S. STRIKE SORTIES\* IN SL BY TARGET TYPE (U)

		<u>Trucks</u>	<u>Trk Parks/ Storage Areas</u>	<u>LOC (Includes IDPs)</u>	<u>Defenses</u>	<u>Other</u>
10-31 Oct 70		158	507	2,798	40	366
Nov 70		584	636	4,940	216	741
Dec 70		1,344	1,172	5,464	433	688
Jan 71		2,336	2,369	4,120	651	1,097
Feb 71		2,262	2,120	2,334	1,102	1,951
Mar 71		1,927	1,791	2,041	1,737	5,086
Apr 71		2,155	1,604	2,766	1,107	1,225
<b>Total</b>		<b>10,766</b>	<b>10,199</b>	<b>24,463</b>	<b>5,286</b>	<b>11,172</b>

\*Includes fighter-attack, gunship, and B-52 sorties which expended ordnance.

Source: Report, COMMANDO HUNT V (U), 7AF, May 71, p. 161. (S)

TABLE 3  
U.S. STRIKE SORTIES\* IN SL BY TARGET TYPE (IN PERCENTS) (U)

	<u>CH I**</u>	<u>CH III**</u>	<u>CH V</u>
Trucks	15	31	17
Trk Parks/ Storage Areas	35	27	16
LOC	39	21	40
Defenses	6	12	9
OTHER	<u>5</u>	<u>9</u>	<u>18</u>
	100	100	100

\*Strike sorties that expended ordnance.

\*\*Figures do not include B-52 strikes.

Source: Report, COMMANDO HUNT I (U), 7AF, 20 May 69, pp. 79-80. (S)  
 Report, COMMANDO HUNT III (U), 7AF, May 70, pp. 64, 68. (S)  
 Report, COMMANDO HUNT V (U), 7AF, May 71, p. 159. (S)

gunships and introduction of the B-57G during CH V more than offset reductions in the large, less efficient effort which had been applied against trucks by fighter aircraft during CH III. Reported results of the smaller but more efficient truck-killing force during CH V were twice as high as for CH III. Table 3 also indicates that strikes against truck parks and storage areas continued to diminish during CH V, reflecting continuing enemy efforts to disperse, harden, and camouflage these targets. The sharp increase in strike resources devoted to the "other" category can be attributed to close air support provided for <sup>74/</sup> Lam Son 719.

(S) [REDACTED] In comparing CH V to the previous campaign, probably the most significant change in force application was in the LOC target category. During the initial months of the campaign (October, November, and December 1970), two-thirds of the strike sorties attacked enemy LOC targets, primarily in the entry areas. Overall, 40 percent of the CH V attack sorties struck enemy LOC in the entry corridors, throughout the route structure, and in the exit areas.

b. (S) [REDACTED] (U) Reported Results for Each Target Category.

(S) [REDACTED] Overall aircrew reported BDA is shown in Table 4.

1) (S) [REDACTED] LOC. The results of the sustained, daily bombing of the entry corridors during CH V were difficult to determine. Seventh Air Force analysts believed that the entry point interdiction

TABLE 4  
AIRCREW REPORTED STRIKE RESULTS (U)

<u>TYPE TARGET</u>	<u>CH V</u>	<u>CH III</u>
<u>TRUCKS</u>		
DES	16,226	6,428
DAM	4,700	3,604
FIRES	7,169	11,537
SEC EXP	9,135	10,462
<u>TRUCK PARKS/STORAGE AREAS</u>		
<u>TAC AIR</u>		
FIRES	4,343	6,182
SEC EXP	27,980	6,516
<u>ARC LIGHT</u>		
FIRES, EXP	1,164	8,584
<u>LOCs</u>		
CUTS, SLIDES	8,078	3,753
BRIDGES DES	19	26
BRIDGES DAM	9	18
<u>TAC AIR</u>		
FIRES	874	418
SEC EXP	840	271
<u>ARC LIGHT</u>		
FIRES, EXP	3,522	*
<u>DEFENSES</u>		
GUNS DES	834	548
GUNS DAM	170	202
FIRES	644	1,848
SEC EXP	1,012	1,845
<u>OTHER</u>		
KILLED BY AIR	4,008	879
WOUNDED BY AIR	200	62
WATERCRAFT DESTROYED	108	68
WATERCRAFT DAMAGED	52	36
BULLDOZERS DESTROYED	41	30
BULLDOZERS DAMAGED	28	30
<u>TAC AIR</u>		
FIRES	4,968	1,137
SEC EXP	17,050	423
<u>ARC LIGHT</u>		
FIRES, EXP	2,705	*

\*Included under Truck Parks/Storage Areas.

Source: Report, COMMANDO HUNT V (U), 7AF, May 71, p. 162. (S)

effort, combined with unusually bad weather, delayed the enemy's infiltration timetable during the early part of the campaign. They pointed out that he had started his logistics surge three weeks behind his previous year's schedule, which was considered particularly significant in light of problems with the gunship fleet during the early part of the campaign. (Once the enemy started his logistics offensive, however, the rate of his supply input was very close to that of the previous campaign.) Also, the enemy was forced to expend a considerable amount of resources to build by-passes, or to surge through the interdiction <sup>75/</sup> boxes, particularly during the first two months of the campaign.

(S) [REDACTED] It was also clear, however, that large quantities of enemy supplies continued to flow around and through the entry boxes, despite the heavy bombing. Continuous strikes leveled the terrain and pulverized the soil in the boxes, reducing the effects of the bombing, and making it easier for the enemy to go through them. As this occurred, or as enemy by-passes were discovered, new boxes were formed in an attempt to counter the enemy reactions. The timely establishment of new boxes in the most suitable locations hinged upon continuous surveillance of enemy activities in the entry areas. Unfortunately, observation of enemy reactions to the bombing was severely limited by the weather, which often prevented visual or photographic reconnaissance of the boxes. Sensor strings below the boxes were frequently the only means of observation available. However, even when enemy by-passes were quickly discovered and suitable terrain was available, the

establishment of new boxes was only partially successful in that it diluted the concentration of air strikes at other target areas.

(S) [REDACTED] Whether or not the impact of entry box saturation bombing justified the resources expended was open to debate, but 7AF continued the strikes in the belief that they were hurting the enemy. <sup>76/</sup> A message from the Commander of 7AF stated <sup>77/</sup> the case for entry interdiction:

. . . Entry interdiction is a delaying action, and it is difficult to compare the delays of supply input with the destruction of supplies. . . . Command level judgement must be taken into account. . . . It has been apparent that a definite cause and effect relationship existed between our actions in the boxes and the enemy's reactions. Concentrated applications led to decreased enemy traffic, and below-threshold applications led to increased traffic. . . . It is the judgement of this command that entry interdiction has been effective and has been an important part of the overall strategy for COMMANDO HUNT V.

The option of continuing the sustained effort against the boxes was essentially preempted in early February by Operation Lam Son 719, which placed heavy demands on U.S. tactical air and B-52 support. <sup>78/</sup>

(S) [REDACTED] Questions concerning the value of entry interdiction continued to surface after the close of the CH V campaign. Detailed analyses conducted by the Office of the Secretary of Defense/Systems Analysis (OSD/SA) indicated that entry interdiction had resulted in no significant decrease of input into Laos during CH V. They further concluded there was no evidence that entry interdiction

had significantly increased truck kills during the campaign. Another analysis, conducted at 7AF after the end of the campaign, also questioned the value of an entry interdiction program in Laos. While noting that during CH V such a program may have been of value in delaying enemy input until the truck-killing force was built up, the study recommended <sup>79/</sup> against repeating a similar entry interdiction effort during CH VII.

(S) [REDACTED] Attacks against the entry boxes accounted for the majority of sorties in the LOC category, but sizeable efforts were also directed against interdiction points throughout the route structure and at the exit areas. Analyses of previous campaigns indicated that the tactic of creating "choke points" had never been more than marginally effective in Laos because of the proliferation of by-passes and the unsuitable terrain. During CH V the effects of attacks against enemy LOC remained difficult to quantify and the degree of impact on the enemy was still unknown. Some analysts felt that these were the least effective strikes flown during the campaign, and that the number of strikes in this category should be sizeably reduced. Others, however, considered them a harassment to the enemy, noting that the attacks sometimes disrupted his logistics flow and forced him to expend effort to counter the bombing. During CH V, 10,340 sorties were flown against LOC targets other than the entry boxes, resulting in a reported 4,513 cuts and slides. <sup>80/</sup>

2) (S) [REDACTED] Trucks. Increased effectiveness in the destruction of enemy trucks was one of the most impressive accomplishments of the strike force during CH V. Aircrews reported over 20,000

trucks destroyed or damaged--more than twice the number reported in CH III. (Curiously, the secondary explosions and fires that were reported in association with truck kills during CH V numbered only about 16,000, as compared with 22,000 for CH III.) A comparison of the major truck-killing systems used in CH III and CH V is provided in Table 5. The primary reason for the increased effectiveness of the force was the improvement and expansion of the gunship force. The addition of the B-57G, and an increase in the efficiency of most of the other strike aircraft involved, also contributed to the improvement. Although the accuracy of reported truck kills came into question after CH V (and this is covered later in this study), it is apparent that, relative to CH III results, there was a dramatic increase in the truck attrition inflicted on the enemy. <sup>81/</sup>

3) (S) Truck Parks/Storage Areas. Despite continued enemy attempts to disperse, harden, and camouflage his supplies and facilities, aircrues reported record levels of secondary explosions and fires during attacks against this target category. Intelligence often indicated general areas of enemy activity, but precise location of targets was left to the FACs. Weather, foliage, and high operating altitudes made the pinpointing of enemy targets very difficult from the air. Experiences during Lam Son 719 verified that a great deal of intelligence was unobtainable in aerial photography or through observation by the FACs.

TABLE 5  
AIRCRAFT PERFORMANCE AGAINST TRUCKS: CH III/CH V (U)

	Sorties Attacking Trucks CH III/V	Truck BDA* CH III/V	DD/Sortie CH III/V
AC-130**	703/ 1,311	3,384/12,741	4.81/9.72
AC-123	141/ ***	440/ ***	3.12/***
AC-119K	435/ 558	987/ 2,400	2.27/4.30
B-57G	***/ 840	***/ 1,931	***/2.30
A-1	2,332/ 24	1,271/ 7	.55/ .29
A-6	1,486/ 1,052	977/ 518	.66/ .49
F-100	***/ 200	***/ 87	***/ .44
A-4	1,223/ 1,389	245/ 396	.20/ .29
A-7	3,147/ 2,070	959/ 703	.30/ .34
F-4	6,310/ 6,708	1,576/ 2,136	.25/ .32
Total	15,777/14,152	9,839/20,909	.62/1.48

\*Sum of Destroyed and Damaged

\*\*Includes all three versions of the AC-130 gunship.

\*\*\*Either not flown during the campaign, or the statistics were unavailable.

Source: Report, COMMANDO HUNT III (U), 7AF, May 70, p. 86. (S)  
Report, COMMANDO HUNT V (U), 7AF, May 71, p. 61. (S)

(S) [REDACTED] During CH V, the tactic of "probing" was used extensively by the FACs as a way of locating lucrative targets which they were unable to observe directly. Air strikes were directed against suspected or likely areas of enemy activities until positive results were observed. When a target yielded good results, more air strikes were devoted to that area until the results diminished. Thus, a large number of sorties reported no bomb damage, but when a lucrative area was uncovered, the results could be spectacular. Strikes against 19 lucrative target areas, which involved less than 10 percent of the sorties flown against such targets, resulted in 83 percent of the secondaries reported. In these 19 logistics complexes, 88 individual sorties (which represented only 1 percent of the tactical air effort against truck park/storage areas) accounted for two-thirds of the secondaries reported for strikes against this target category during the campaign. Results reported for strikes against truck parks and storage areas during CH V were far greater than CH III results, even though fewer sorties were flown against such targets. Table 6 shows the results reported during both campaigns for strikes against this <sup>82/</sup> target category.

4) (S) [REDACTED] Air Defenses. During CH V, the estimated enemy gun inventory in SL peaked at 665, as compared to 795 the year before. (Although the enemy gun count was down, his employment of SAMs during CH V was more extensive than in previous years. SAM sites were struck as they were located.) Reported AAA firings in SL

TABLE 6

TRUCK PARK/STORAGE AREA SORTIES AND AIRCREW  
REPORTED RESULTS (U)

	<u>CH III Sorties</u>	<u>CH III Results (Explosions/ Fires)</u>	<u>CH V Sorties</u>	<u>CH V Results (Explosions/ Fires)</u>
TACAIR	14,545	6,516/6,182	8,866	27,980/4,343
ARC LIGHT	4,139*	8,584**	1,333	1,164**

\*Total CH III ARC LIGHT sorties, most of which were flown against truck park/storage area targets.

\*\*Combined explosions/fires

Source: Report, COMMANDO HUNT III (U), 7AF, May 70, pp. 64, 68, 69.  
Report, COMMANDO HUNT V (U), 7AF, May 71, pp. 92, 162.

were lower in CH V, even though the number of combat sorties flown was higher than for CH III. Table 7 demonstrates the reduced hit and loss rates experienced during CH V. The majority of hits and losses were attributed to small arms/automatic weapons fire.

(S) [REDACTED] Though there were fewer guns, and fewer sorties flown against them, aircrews reported significantly more guns destroyed or damaged than during CH III. A major factor in the increased force effectiveness against enemy AAA targets was the expanded use of Laser Guided Bombs (LGBs). Aircraft employing LGBs accounted for only 12 percent of the sorties striking AAA targets, but were credited with about 60 percent of the guns destroyed. Table 8 compares the results <sup>83/</sup> of attacks against AAA guns during CH V and CH III.

5) (S) [REDACTED] Other Targets. The "other" category was a catch-all which included strikes against targets which either did not fit under any of the four target categories, or which were coded as unknown in the data base. Most strikes in the "other" category during CH V were attributable to close air support of Lam Son 719 or, to a lesser degree, of other ground operations in SL. Also included were strikes against such targets as bunkers, trenches, personnel concentrations, and headquarters complexes. <sup>84/</sup> Support of Lam Son 719 resulted in a marked increase in the number of secondary explosions and fires and enemy killed by air in this target category as compared with the results for CH III. (See Table 4.)

TABLE 7  
HITS AND LOSSES INFILCTED BY AAA GUNS IN STEEL TIGER (U)

	<u>CH III</u>	<u>CH V</u>
Sorties	81,416	93,526
Reported Firings	16,264	14,000
A/C Hit	310	179
A/C Lost	60	25
Hit/1000 Sorties	3.80	1.91
Loss/1000 Sorties	.74	.27

Source: Report, COMMANDO HUNT III (U), 7AF, May 70, p. 125. (S)  
Report, COMMANDO HUNT V (U), 7AF, May 71, p. 181. (S)

TABLE 8  
RESULTS OF SORTIES ATTACKING AAA DEFENSES (U)

	<u>CH III</u>	<u>CH V</u>
Total Sorties	6481	5865
Destroyed/Damaged/Silenced	548/202/1330	834/170/830
D/D Per Sortie	.12	.17
D/D/S Per Sortie	.32	.31

Source: Report, COMMANDO HUNT III (U), 7AF, May 70, p. 132. (S)  
Report, COMMANDO HUNT V (U), 7AF, May 71, p. 94. (S)

6) (S) [REDACTED] Input/Throughput Estimates. Enemy supply input to Laos between 1 October 1970 and the end of April 1971 was estimated at 60,518 tons, while throughput during the same period was reported as 7,070 tons. Significant enemy logistics activities continued beyond the official 31 April closing date for CH V, however, and by the end of June, throughput was reported to be in the vicinity of 9,500 tons, while input was placed at about 68,000 tons. These figures represented a sharp reduction in enemy throughput compared to the CH III campaign, even though input during CH V was slightly greater than that for CH III. (Estimated throughput for the previous dry season, November 1969 through June 1970, had been placed at nearly 21,000 tons, while input had totaled just under 64,000 tons.)<sup>85/</sup>

c. (S) [REDACTED] (U) Credibility of Reported Results.

1) (S) [REDACTED] Truck BDA. For a number of years, the difficulty of obtaining accurate BDA had been recognized, and numerous attempts were made to make aircrew reported results as meaningful and accurate as possible.<sup>86/</sup> During CH III, extensive efforts were made to confirm reported truck kills with photographic evidence. The results of the program were less than encouraging, however, and caused the Commander of the 460th Tactical Reconnaissance Wing (TRW) to comment:<sup>87/</sup>

The concept of the Commando Hunt III BDA program required tactical fighter and gunship units to transmit truck kill coordinates directly to the 460 TRW. These were

photographed on a daily ASAP\* basis. During the six months of this program (Dec 69-Jun 70), we received 2,575 requests for BDA on 4,747 claimed truck kills. Although the majority of these claims were covered with good photos, only 171 kills were confirmed.

We know that in some cases the coordinates were in error. Also, the enemy had a procedure of moving damaged or destroyed trucks under protective jungle canopy, and other kills may have occurred under heavy foliage. However, even when giving due consideration to these factors, I believe that we should have been able to achieve a much higher confirmed success rate.

Although visual reports of strike results from FACs and other aircrews are of great benefit, they should not be relied upon exclusively in assessing bomb damage. . . .

During CH V, attempts to verify reported truck results met with equal  
88/  
difficulty.

(S) [REDACTED] There were also other, more direct indications that the numbers of truck kills being reported by aircrews were inflated. A PACAF message to 7AF in May 1970 noted that there was a discrepancy between reported truck kills, and the "net trucks"\*\* entering Laos during the campaign. The message pointed out that a maximum of 2,100 net trucks entered Laos during the campaign (based on sensor estimates from TFA), but the aircrews reported 6,294 trucks destroyed and 3,688 damaged during CH III operations. The 7AF reply stated that sensor estimates of net truck traffic into Laos were not a valid

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\*ASAP - As Soon As Possible.

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\*\*"Net trucks" is taken to mean the trucks entering Laos at the entry areas, less the trucks returning to NVN through those entry areas.

measure of truck losses by the enemy, a primary reason being that a large portion of enemy traffic was not monitored by the sensors due to proliferation of enemy roads and the presence of sparsely monitored routes. <sup>89/</sup> If 7AF arguments were correct, truck kills could indeed have been much higher than the 2,100 estimate, but estimates of Laotian input and throughput would then be brought into serious question. If net truck entries into Laos could not be measured with accuracy, then exits from Laos were also subject to uncertainty.

(S) [REDACTED] The question of BDA credibility came to a head in the latter stages of CH V. There were a number of reasons for this, the primary one being the record number of trucks being claimed destroyed and damaged in the campaign. There was no argument with the claim that the truck-killing force was achieving record results relative to previous years, but there were doubts that the total kills being reported were correct. The total trucks claimed destroyed or damaged during CH V exceeded the estimated number of trucks in the NVN inventory, yet many thousands of trucks continued to be photographed in NVN, while others continued to operate throughout the Laotian LOC. Furthermore, sensor-based estimates of the net number of trucks entering Laos during CH V, even allowing for a considerable amount of unmonitored entry traffic, indicated that the actual number of trucks which had to be replaced by the enemy was about one-third of the reported destroyed/damaged totals. (During CH V, net sensor-detected truck entries totaled about 4,500 vehicles. Allowing 1,500 more vehicles for undetected truck entries, or drawdown of the Laotian truck inventory,

the resulting total of 6,000 net truck entries still fell far short of  
the 16,226 destroyed/4,700 damaged trucks reported by aircrews.)<sup>90/</sup>

(S) [REDACTED] Another indication of the destruction of enemy trucks actually achieved during CH V was provided by examining NVN requests for vehicle imports from the Communist Bloc. The fact that record attrition had been inflicted upon the enemy's truck inventory was supported by record requests for truck imports. On the other hand, the requests fell far short of the number which would have been needed had actual truck losses been as high as reported. NVN requested 5,000-6,000 trucks from the Communist Bloc for FY 72, not all of which would be used for Laotian infiltration.<sup>91/</sup>

2) (S) [REDACTED] BDA Criteria. Part of the inflation of reported truck kills was traced to the BDA criteria used by AC-130 gunship crews during CH V. Throughout the campaign, a direct hit by a 40mm round was reported as a destroyed truck, regardless of whether a secondary explosion or fire resulted. Furthermore, a 40mm round impacting just short of the target was reported as a damaged truck. Although these criteria were never officially directed by Commander in Chief Pacific (CINCPAC), PACAF, or 7AF, they were inexplicably initiated during the build-up of the gunship fleet in late 1970, and continued throughout the campaign.<sup>92/</sup>

(S) [REDACTED] During CH III, there had been only one AC-130 gunship equipped with 40mm cannon, the Surprise Package. During CH V all the AC-130s had the 40mm gun, and they began using new, more effective ammunition. It was estimated that a direct hit with a 40mm

Misch metal round\* would destroy a truck. Furthermore, experience with the rounds indicated that "considerable fragment damage was done even with rounds which missed as much as 10 to 30 feet," and that maximum damage resulted from a miss roughly five feet below the target. <sup>93/</sup> Strike crews used those criteria throughout the campaign.

(S) [REDACTED] Near the end of CH V, a controlled test was held at Bien Hoa. In the test, AC-130 gunships attacked standard U.S. trucks with 40mm rounds, and the results were observed. Damage done by near misses was much less than had been expected, the only significant damage being flat tires. Direct hits (without associated explosions or fires) not only did not destroy a truck, but in some cases did only minor damage which could easily be repaired. As a result of the test, 7AF directed gunship crews to revise the criteria they had been using. To be considered destroyed, a truck had to explode <sup>94/</sup> or burn after projectile impact.

(S) [REDACTED] The majority of the trucks reported destroyed by AC-130 gunships had been the result of direct hits by 40mm projectiles without associated secondary explosions or fires. Seventh Air Force did not retroactively reduce reported truck destruction for the campaign. However, in the CH V report, 7AF made an estimate of the number of trucks which would have been reported destroyed or damaged had the revised criteria been in effect during CH V. It was concluded that

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\*The improved High Explosive Incendiary 40mm Misch metal round was a standard 40mm round modified by the addition of one one-eighth-inch Misch metal liner which provided increased incendiary effects. Misch metal itself is a metal alloy which ignites upon impact, and burns until it consumes itself.

under the new criteria, the gunships probably destroyed about 4,595 trucks (as compared to 10,112 reported during the campaign) and damaged 6,137 (as compared to 2,629 reported). Using the revised 7AF estimate for AC-130 truck kills, the truck attrition attained by the whole CH V <sup>95/</sup> strike force, would total about 11,000 destroyed and 8,000 damaged. The truck BDA criteria used for AC-130s had thus accounted for a major portion, but by no means all, of the discrepancy between truck attrition as reported by visual observation and as estimated by truck inventory and replacement calculations.

(S) [REDACTED] There were some indications that strikes against derelict trucks accounted for some reported truck kills, and could thus have been a factor in inflating reported BDA. However, a majority of CH V truck attacks were against moving targets, which obviously were not derelicts. Also, the new gunship criteria, which required a secondary explosion or fire for a truck to be considered destroyed, tended to further reduce the chance that the target was a <sup>96/</sup> derelict.

(S) [REDACTED] Other than the original AC-130 BDA criteria referenced above, the most apparent cause for the inconsistency between reported truck destruction and estimated inventory reduction was the terminology involved. That is, a "destroyed truck" did not necessarily equate to a "truck removed from the inventory." By reporting a truck destroyed, an aircrew indicated that the criteria for a truck destroyed had been fulfilled. The criteria, in turn, were an approximation of the conditions which would result in a destroyed truck. In actuality, such a truck might have been only heavily damaged.

(S) [REDACTED] In the case of the revised AC-130 criteria, for example, a secondary explosion or fire after projectile impact would result in a reported truck destroyed. The test at Bien Hoa, however, showed that even a sustained fire did not guarantee that the truck was a total loss. Although a secondary might very well destroy a truck's cargo, it was unlikely that all components of the truck would be destroyed. By cannibalizing or salvaging such trucks, the enemy could considerably reduce the number of losses to his inventory, and despite accurate aircrew reporting in accordance with BDA criteria, reported truck losses would exceed actual losses to the NVN truck fleet.

3) (S) [REDACTED] Throughput Estimates. The system used for monitoring and estimating enemy throughput during CH V was essentially the same as used during CH III. Both were independent of estimated input, or destruction of supplies within the enemy's infiltration system, and both were based primarily on information provided by sensor strings monitoring enemy traffic on known routes in the exit areas. Visual observations by aircrews were used to supplement sensor information, and reports by riverwatch teams formed a basis for estimates of enemy use of key waterways. Sensors, however, were the only source of information which combined consistency, reliability, and all-weather monitoring capability, and thus were relied upon almost exclusively as the basis for throughput calculations. Estimated throughput was based on the number of trucks detected by the exit strings, minus the number reported destroyed between the strings and the Cambodian or SVN border, plus a nominal figure for waterway throughput which was <sup>97/</sup> based on riverwatch reports.

(S) [REDACTED] Analysts at 7AF estimated that enemy throughput during CH V was lower than during either CH I or CH III, and represented only about 12 percent of the supplies entering Laos. That CH V was more successful than earlier campaigns in reducing the percentage of enemy throughput is consistent with and supported by the events of the CH V campaign. Aircrues reported record results for strikes against trucks and storage areas during CH V. In addition to the damage inflicted by air interdiction operations, the enemy also had to absorb the impact of Lam Son 719, during which impressive BDA was reported. Although reduction of enemy throughput was more successful during CH V than during prior campaigns, 7AF throughput estimates for the campaign represented a lower limit and did not necessarily reflect the capability of the enemy to support his forces in Cambodia and South Vietnam.

(S) [REDACTED] Throughput estimates tended to be on the low side for a number of reasons. As noted previously, only the truck traffic monitored by sensors or observed by aircrues would result in reported throughput. From all indications, however, a sizeable amount of enemy traffic occurred on unknown or sparsely monitored routes or trails. The problem of unmonitored enemy routes was recognized as early as June 1970 when a 7AF message noted that "a substantial portion of input traffic has been missed during the campaign due to the proliferation of roads and the enemy's use of sparsely monitored routes." If this were true in the rugged entry areas where the enemy had constructed numerous bypasses in reaction to the U.S. bombing, it must also have had validity in the heavily

bombed exit areas where enemy road and trail construction was generally less restricted by mountainous terrain. The degree to which the enemy used roads and trails which were unobservable from the air and unmonitored by sensors was not known with exactness, but experience during Lam Son 719 revealed that the proliferation of such unobservable routes was greater than had been suspected. With regard to the enemy LOC network encountered in the Lam Son area, a 7AF analysis of the lessons learned during Lam Son 719 concluded:

99/

It was discovered that the number of motorable roads and trails was more extensive than anticipated. Enemy trucks, tanks, and other mobile equipment used routes not visible in aerial photographs or to FACs flying above 1500 feet. Because of the complexity and number of routes, blocking this structure and isolating the battle area was not possible.

(S) [REDACTED] Another factor which tended to reduce the accuracy of throughput measurements was the enemy's use of waterways in the exit areas. During CH V, "the enemy had hundreds of watercraft available within the system, and he requisitioned still more from the local populace." 100/ In spite of this, estimates of enemy activities on exit waterways were surprisingly low, representing less than 1 percent of the total reported throughput. However, it is likely that in actuality the enemy made much more extensive use of the waterways than was reflected in reported throughput. A February 1971 Commander, U.S. 101/ Military Assistance Command, Vietnam (COMUSMACV) message stated:

At present, Route 110A is the entry gate for measuring, by sensor, truck traffic into Cambodia. . . . To date, a total of only 11 vehicles have been detected by sensors on route 110A in Laos as throughput to Cambodia. This is probably a result of the enemy using the Tonle Kong river in Laos to move a major amount of his supplies down to the Cambodian border. From the border, supplies can be portered by non-motorized means such as oxcarts and bicycles. Thus, by using these types of transport the enemy can, to a large extent, render the sensor strings on the border ineffective.

(S) [REDACTED] Throughput calculations thus had a tendency to underestimate enemy cross-border supply. Coupled with that, however, was the additional problem that throughput, if considered in isolation from other indicators, can paint a misleading picture of the enemy's logistics posture. For example, the level of enemy logistics activity in southern STEEL TIGER, near the border areas, occurred on a scale which seemed to be inconsistent with the low level of throughput. A case in point was provided by the unprecedented results obtained during the bombing of the Ban Bac storage area, which was located in southern STEEL TIGER about 40 miles southwest of the A Shau Valley. During strikes in late December and the first week of January, over 10,000 <sup>102/</sup> secondary explosions and fires were reported in the huge storage complex. The presence of such large quantities of supplies so far south and so early in the campaign suggested an enemy logistics posture quite different than that implied by the low level of the reported throughput alone.

(S) [REDACTED] Other evidence of the presence of large quantities of supplies in southern STEEL TIGER was available. The Chavane area is located almost 50 miles southeast of Ban Bac, and is only about 25 miles from the South Vietnamese border and 60 miles north of the Cambodian border. A PACAF analysis of CH V truck traffic into

and out of the area revealed that approximately 5,000 more tons of supplies were detected entering the area than were reported leaving it. Though some of these supplies could have been destroyed or consumed, such a discrepancy assumed major significance in view of the 7,000-ton total throughput reported for the campaign. A PACAF briefing noted that if these unaccounted-for supplies were indeed stockpiled in the Chavane area, they could be rapidly deployed at the end of the wet season, and "could provide early dry season support to forces throughout Cambodia and the southern portions of South Vietnam, allowing the initial logistic surges to be directed towards Military Region I of the Republic."<sup>103/</sup>

d. (S) (U) The Impact of Interdiction on the Enemy.

(S) From all indications, CH V was more successful than any previous interdiction campaign in Laos. Results of attacks against nearly all aspects of the enemy's infiltration system exceeded those reported in earlier campaigns. Increased effectiveness of the strike force and the devotion of a high percentage of air resources to the interdiction effort made this increased effectiveness possible. Although interdiction was more effective than in earlier campaigns, conclusions concerning its absolute effectiveness in restricting the enemy's logistics support of his forces were much more difficult to pin down.

(S) Numerous studies were conducted by the Air Force and other governmental agencies in an effort to assess the effectiveness of the various COMMANDO HUNT campaigns and to determine their ultimate

impact on the enemy. Air Force studies generally emphasized that air interdiction operations in Laos made a major contribution to the imposition of a ceiling on the level of enemy activity. However, it was the cumulative effects of all attacks against the various elements of the enemy's system which restricted his ability to take the initiative <sup>104/</sup> in the south or to impose his will on the South Vietnamese people.

(S) [REDACTED] On the other hand, a number of non-military government agencies reached conclusions contrary to the Air Force position. An interdepartmental study sponsored by the OSD at the <sup>105/</sup> end of the CH III campaign concluded that:

The bombing in Laos has not imposed a ceiling on enemy activity levels, nor should it have been expected to do so. First, available traffic flow statistics show adequate supplies actually were shipped into South Vietnam from Laos to sustain higher activity levels than the enemy actually chose to initiate. Second, the enemy's Laotian resupply system has much additional unused capacity. Third, 85 percent of the enemy supplies come from sources unaffected by the bombing. [Prior to the Cambodian incursion.] And finally, constraints, other than logistic support (such as casualties), impose the effective ceiling on enemy activity levels.

Because of external support from the Communist Bloc, the costs of replacing bomb damage in Southern Laos are shifted largely to the Communist Bloc. The casualties and manpower requirements resulting from the bombing are small relative to amounts the North Vietnamese were willing to accept in the past. Therefore, the bombing seems to impose no substantial costs on the North Vietnamese.

(S) [REDACTED] Military leaders disagreed strongly with these conclusions. In reviewing the OSD study the Joint Chiefs of Staff (JCS) did not feel that a credible analysis of the CH III air interdiction

campaign conducted in the Laotian panhandle had been presented. They felt the analysis had a basic weakness in that it was inconsistent with observed enemy behavior. The study stated that the enemy had large amounts of excess logistic capability and that his logistics throughput exceeded requirements in the Republic of Vietnam, but it did not explain why he continued to expand his logistics system in Laos. It also did not explain why the enemy had failed to use his alleged excess capacity to initiate such militarily desirable actions as providing his forces with adequate supplies of food, medicine, equipment, and increased firepower.

(S) [REDACTED] The JCS concluded that the U.S. bombing in southern Laos during CH III, in conjunction with other combat activities in Southern Asia, had narrowed the enemy's range of options. It was the cumulative effect of U.S. bombing and related combat operations that was intended to force the enemy to abandon his aggression. They noted that the bombing in southern Laos had imposed a substantial cost on the enemy: the supplies, trucks, construction equipment, and trained personnel employed in Laos were denied to North Vietnam for rebuilding its industrial base. The substantial nature of these costs was confirmed by the political pressures exerted to stop the bombing, and by the ground offensives in northern Laos which placed pressure on the Royal Lao Government to withdraw its support of the interdiction campaign. Interdiction costs of destroying enemy equipment and munitions enroute were considered less in both lives and dollars than the cost of eliminating the enemy capability when deployed on the battle-

field. Also, the relatively low level of U.S. and Allied casualties  
was attributed in part to the bombing in southern Laos. <sup>106/</sup>

(S) [REDACTED] The reduced level of enemy strength and activity in SVN during 1970 and 1971 indirectly lent support to claims that the Allied strategy of attacking all permitted aspects of the enemy's logistics system in SEA hurt him. <sup>107/</sup> Without knowing his intentions, however, it was difficult to prove that the lower level of activity was forced on the enemy by Allied operations, rather than being a part of his strategy during the withdrawal of Allied forces. Nevertheless, claims of success in Allied military operations in general, and air interdiction operations in particular, tended to be substantiated by the apparently weakened posture of the enemy in SVN.

(S) [REDACTED] Admittedly, the impact of Allied operations on the enemy was difficult to determine since estimates of minimum enemy requirements and of enemy supply throughput were both of uncertain validity. The JCS evaluated the enemy's logistics posture in Cambodia and SVN following the CH V campaign. They estimated that for the year ending in October 1971, enemy throughput, together with stockpiles built up in southern Laos for later throughput, would total about one-fourth of the enemy input into Laos during the year. Having estimated the enemy's logistics and manpower requirements in Cambodia and SVN, they concluded that the enemy could sustain, almost indefinitely, his force levels in Laos, SVN, and Cambodia. Even if the following year's interdiction program (COMMANDO HUNT VII) were as effective as CH V, the enemy would have sufficient supplies and manpower for protracted war. While

allowing that the enemy could maintain protracted war of the type observed since 1 October 1970, the JCS believed that his ability to support high levels of combat activity was limited. Since his estimated requirements (for a protracted war level of activity) were slightly less than his estimated logistics support, he did appear to retain a marginal capability to mount offensives in Military Region (MR) I, MR II, or Cambodia. On the other hand, the JCS indicated that he did not retain the capability to mount simultaneous, sustained <sup>108/</sup> offensives in both Cambodia and the northern regions of SVN.

(S) [REDACTED] On the basis of the above estimates of enemy logistics requirements, and the level of resupply for his forces in Cambodia and South Vietnam achieved during CH V, it appeared that air interdiction in Laos made a major contribution toward imposing a ceiling of activity on Communist forces. Also, the BDA reported for the campaign indicated that the cost to the enemy resulting from interdiction operations in Laos was greater than for any prior campaign. Nevertheless, despite air interdiction, it was evident that the enemy could support a protracted war strategy indefinitely, and retained the capability to mount limited offensives.

C. (S) (U) SUPPORT OF RLG FORCES(S) 1. (U) Concepts and Tactics(S) a. (U) U.S. Objectives and Strategy in Laos.

(S) [REDACTED] As noted in the background section, the U.S. sought to assist the RLG in maintaining its neutrality and independence, and thereby to preserve a buffer state between Thailand and the PRC/North Vietnam. The U.S. further sought to continue the arrangement whereby air and unconventional warfare operations were permitted against the North Vietnamese Army (NVA) logistics system in Laos in return for support of the RLG in combating the Hanoi-directed and supported insurgency. <sup>109/</sup> Although these broad U.S. goals remained unchanged during 1970-71, a number of new factors and circumstances arose which affected the importance and strategy of achieving these goals, and carried Laos into a period during which its neutrality and independence were to be threatened more than ever before.

(S) [REDACTED] New developments which had a crucial impact on the achievement of U.S. objectives in Laos included the elimination of the Cambodian sanctuary and its implications for southern Laos, the withdrawal of U.S. forces from SEA, and the repercussions of the RVNAF incursion into Laos. The first factor, brought about by the fall of the Sihanouk regime and the subsequent U.S./RVNAF incursion into Cambodia, held implications which were ominous for the RLG. In early 1970, following their reverses in Cambodia, Communist forces captured the key southern Laotian towns of Attopeu and Saravane. This in effect

swept away long-standing tacit agreements concerning territorial control of the important towns on the RLG side of the tenuous 1961-62 cease-fire line. After the turn of events in Cambodia, the southern panhandle became vital to Communist forces, and an unprecedented number of NVA troops moved into the region to improve, expand, and protect their LOC network. The situation in northern Laos was not much better. Friendly forces there were stretched thin and the Communists were in a more menacing posture than ever before. The NVA nullified RLG successes achieved during late 1969 and by early 1970 threatened Long Tieng <sup>110/</sup> itself, the heart of the RLG's defense for northern Laos.

(S) [REDACTED] Moreover, just at the time that the RLG's needs were increasing, U.S. resources available for supporting them were decreasing due to withdrawals from SEA. The outbreak of hostilities in Cambodia created a need for support there, further reducing the resources available for supporting the RLG. Support of the RLG, in comparison to other needs, was considered to be of lowest priority, for even though the fall of Laos would be serious, it would not have immediate consequences as grave to U.S. national interests as the fall of Cambodia, the failure of the interdiction program, or the collapse of Vietnamization.

(S) [REDACTED] With Laotian needs rising and U.S. resources diminishing, there was a temptation to step up Thai or RVNAF activities in Laos. Such activities might produce short-term military benefits, but would further erode Laotian neutrality. Furthermore, such assistance

could cause the type of confrontation that U.S. policy was trying to  
111/  
prevent by maintaining a Laotian buffer.

(S) [REDACTED] The Laotian dilemma--how to maintain the independence of Laos while preserving its neutrality--was made all the more difficult by an apparent lack of viable military alternatives. Whereas, in Vietnam, withdrawal of U.S. forces was to coincide with an increase in SVN capabilities through Vietnamization, there was no such parallel alternative in Laos. In a May 1970 assessment of U.S. policy in Laos, 112/  
G. McMurtie Godley, the Ambassador to Laos, summed up the situation:

The dilemma for Laos and for U.S. policy in Laos is that in the absence of an overall political settlement in Indochina U.S. military disengagement will occur through successfully transferring the burden of the war to the states of the region. There is a name for this process in Vietnam--"Vietnamization." In Laos there is no name, no process and no inherent capability to defend itself against its large neighbors. Laos will always have to play one against the other and also rely on strong friends outside the area. It can however develop greater internal strength and cohesiveness and must do so if it is to survive. U.S. policy should encourage this by developing to a greater extent than before an integrated program of military and civilian assistance to Laos. . . .

Laos is infinitely less self-reliant than any state in Indochina because it is weak militarily and economically; unawakened politically, and possesses limited resources of skilled and unskilled manpower to develop economic or social momentum.

(S) [REDACTED] Thus, at the beginning of CH V, the RLG entered a period in which the fabric of the Geneva Agreements that held the

country together would be strained more than ever before. The Vientiane government found itself facing greater demands, but having fewer options. The North Vietnamese and Chinese in Laos were stronger and controlled more RLG territory than before. The level of U.S. air support available to counter increased NVA activities was lower, and the RLG's best fighting units in northern Laos had been seriously reduced by the casualties experienced during years of fighting.

Temptation on the part of Vientiane to seek outside assistance for its problems was tempered by the knowledge that such assistance could topple the already unsteady Geneva Accords for Laos. The RLG's bargaining power with the NVA was being whittled away, and the options for RLG counter-moves were dwindling with the passage of time. The problem of maintaining the RLG's independence without violating its neutrality <sup>113/</sup> was greater than ever.

(S) [REDACTED] Operation Lam Son 719, the large-scale RVNAF thrust into the southern Laotian panhandle, further complicated the already complex situation. Viewed from the standpoint of U.S. objectives in Laos, the repercussions of Lam Son 719 were potentially dangerous. If the operation were at all successful, it could force the westward expansion of the Communist infiltration system in Laos toward the Mekong and the Thai border. Elimination of RLG influence in that area would destroy the viability of Laos as a buffer between North Vietnam and Thailand. Even if the operation failed to cut the enemy LOC in the southern panhandle, it could still cause a collapse of the neutralist political arrangement which had resulted from the Geneva

[REDACTED] ~~SECRET~~ [REDACTED]

Agreements. For some time, NVA forces in Laos had been strong enough to overrun the country quickly should they have decided, for political reasons, to do so. The Lam Son incursion could provoke an NVA reaction which would signal the end of the RLG. <sup>114/</sup>

(S) [REDACTED] Considering all these complex factors, the United States maintained its objective of a neutral Laos to provide a buffer in Indochina. Since this objective did not appear to be directly attainable by any military action which the United States was prepared to take, the military strategy followed in Laos was designed not to attain a military victory, but rather a military stabilization along the lines of the 1962 Geneva Accords. Diplomatic and political pressures were to provide the real basis for settlement.

(S) [REDACTED] Even if it were possible, the establishment of a Laotian army strong enough to overpower the North Vietnamese/ Pathet Lao forces in Laos would spell an end to the neutral tripartite government in Laos. Realistically, Laos did not have the potential to raise or support such an Army. On the other hand, in order to maintain a strong bargaining position with the Communists and to make them pay a maximum price for their aggression in Laos, the U.S. continued to provide military support to economize and improve the effectiveness of RLG air and ground forces. If the Communists did decide to overrun Laos, they would have to pay the military price. Additionally, it would be clear to all that Laos fell to overt aggression, and not to an internal dissident force.

[REDACTED] In return for U.S. support the RLG permitted the bombing of the NVA logistics system. Although the bombing appeared to be contrary to U.S. policy for Laotian neutrality, it was considered necessary for the achievement of U.S. objectives in South Vietnam. Additionally, during CH V the United States encouraged the Lao forces to do their part in reducing NVA infiltration through Laos by conducting a number of interdiction raids against enemy LOC. As was the case for the Lam Son 719 operation, both the stepped up RLG interdiction attacks and U.S. air interdiction operations supported U.S. objectives for SVN, but could have ramifications which would be detrimental to the attainment of U.S. objectives in Laos. Effective air interdiction in STEEL TIGER would force the NVA to expand his logistics system to the west, thereby further reducing RLG controlled territory in southern Laos. Similarly, stepped up RLG ground interdiction operations could provoke a strong enemy reaction, which would further erode RLG control and influence in southern Laos. However, the benefits of these operations, from the standpoint of attainment of U.S. objectives in SVN, <sup>115/</sup> were considered to outweigh the possible adverse effects in Laos.

(S) [REDACTED] In summary, during CH V the following military strategies were to be pursued by friendly forces in Laos: in northern Laos, the emphasis was placed on a defensive posture. Military stabilization along the lines of the 1962 Genera Accords and preservation of threatened RLG forces were the primary goals. In southern Laos, the strategy was twofold: the defense of strategic friendly positions,

and the harassment of enemy LOC by conducting forays into the western portions of the enemy's infiltration system. The emphasis placed on these raids was greater than during previous campaigns. <sup>116/</sup>

b. [REDACTED] (S) USAF Role in Laos.

1) (S) [REDACTED] Air Strikes. The largest and most visible aspect of USAF support of the RLG during CH V continued to be the provision of air strikes, which was a critical factor in the survival of RLG forces. With U.S. SEA air assets declining, however, and with an increasing weight of effort devoted to interdiction, the level of attack sorties flown in support of the RLG during CH V was only one-third the number flown during CH III. Mitigating this decline, RLAF T-28 and AC-47 gunship sorties increased significantly, assuming a greater portion of the load during CH V than ever before. Nevertheless, the overall level of air sorties available for RLG support was still much lower than for CH III. Accordingly, the emphasis for USAF air support during CH V was on better management and control of <sup>117/</sup> reduced air resources.

(S) [REDACTED] Almost all visual USAF strikes in support of RLG forces were directed by RAVEN FACs. The RAVENs were USAF FACs who performed visual reconnaissance (recce) and directed U.S. and Lao/Thai air strikes in support of friendly forces. They were stationed in Laos at each of the five Air Operations Centers (AOCs), and thus became intimately familiar with the day-to-day events of

the war. During CH V, the number of RAVENS was increased, resulting in more efficient control and direction of air strikes. <sup>118/</sup>

2) (S) Helicopter Support. A very important aspect of USAF support of the RLG was the provision of resupply or troop transport by CH-3 and CH-53 helicopter resources located at Nakhon Phanom RTAFB, Thailand. These helicopters were normally used to support Controlled American Source (CAS) sponsored irregular forces, or PRAIRIE FIRE\* missions, rather than FAR\*\* or FAN\*\* operations. (Troop transport for FAR or FAN operations was provided by Air America or RLAF operated H-34 helicopters.)

(S) The CAS missions were generally of two types. One type was the insertion or extraction of teams (consisting of six to 35 men) for long-range patrol, road watch, agent plant, or other special actions. The other type of CAS operation was the transport of large irregular forces of from one to five battalions. One example of such an operation was DESERT RAT, covered later in this study, in which a multi-battalion irregular force was flown into the Route 23 area northwest of Tchepone in southern Laos.

(S) In addition to supporting such CAS operations, the USAF helicopters were sometimes used to supply isolated

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\*Discussed in PACAF CORONA HARVEST Volumes, Subtasks IIc and IID, Strike Operations in Laos.

\*\*Laotian Regular and Neutralist Forces. FAR - Forces Armee Royale, FAN - Forces Armee Neutrale.

sites in Thailand and Laos, though most aerial resupply was accomplished by light, fixed-wing Air America aircraft or by H-34 helicopters. Finally, the helicopters were used for medevac, and for emergency evacuation of large groups of refugees in Laos (though the latter capability was not used during CH V). Helicopter assets were an important element of USAF support, because they provided <sup>119/</sup> outnumbered irregular forces with the advantage of mobility.

3(5) [REDACTED] Training/Maintenance. The USAF was also tasked to train RLAF pilots under the WATERPUMP program. Training and upgrading of RLAF pilots was a continuous process, and was accomplished at Udorn RTAFB, Thailand. In addition to their training mission, WATERPUMP instructor pilots flew occasional strike/recce or contingency combat sorties in Laos. Also under the WATERPUMP program, USAF mechanics and munition/armament specialists were sent, in a temporary duty status, to AOCs in Laos to provide assistance in maintaining Military Assistance Program aircraft. The WATERPUMP program must be given at least partial credit for the high quality of RLAF pilots, and for the <sup>120/</sup> high T-28 sortie rate flown during CH V.

4(5) [REDACTED] Other Activities. Under Projects 404 and PALACE DOG, USAF personnel manned five AOCs throughout Laos, one at each of the military region headquarters in Vientiane, Pakse, Savannakhet, Long Tieng, and Luang Prabang. These AOCs provided the U.S. Ambassador to Laos with intelligence, operations, administrative, communications, and supply expertise in support of the air effort. Because of the Geneva

Accords, the emphasis on these two projects, as well as for training/maintenance and helicopter support, was to keep participation of U.S. personnel as low key as possible. Manning of these projects was austere and every effort was made to avoid incidents which would bring attention to U.S. personnel in, or operating over, Laos. <sup>121/</sup>

5) (S) [REDACTED] Command and Control. The complex command and control relationships described in earlier PACAF CORONA HARVEST Volumes on Laos\* continued to exist during CH V. The Ambassador to Laos maintained overall responsibility for management and control of all U.S. activities in support of the RLG. Reporting directly to him was the Air Attaché (AIRA), the Ambassador's senior military advisor during CH V. (The AIRA, an Air Force Colonel, supervised all USAF personnel in Laos.) The Ambassador also exercised direct control over CAS activities in Laos. His relationship was less well defined, however, with respect to the personnel and air resources under the operational control of 7AF.

(S) [REDACTED] The actual application of USAF air resources in Laos was planned and coordinated by means of joint 7/13AF, CAS, and AIRA working agreements and meetings. The opportunities for disagreement and conflict were numerous, and since the Air Attaché and CAS personnel were directly under the Ambassador's control and worked closely with him, they were in a good position to influence his

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\*Subtask IIc, IIId and IIe, Strike Operations in Laos.

decisions. Conversely, the contact of 7AF, 7/13AF personnel with the Ambassador was much less frequent. Although most of the expertise concerning air operations was in the staffs of 7AF and 7/13AF, the only connection between this expertise and the Ambassador rested in the personal relationship between himself and the Deputy Commander, 7/13AF, who was the focal point for coordination between USAF air resources and other U.S. activities in Laos. On the one hand, the Deputy Commander 7/13AF was the deputy to both the 7AF and 13AF commanders. On the other, he established personal working relationships with the Ambassador, the Air Attaché, and senior CAS officials, even though he had no official connection with or control over any of these <sup>122/</sup> individuals.

(S) [REDACTED] On the whole, cooperation between CAS, AIRA, and 7/13AF personnel improved during CH V, although some disagreements and coordination problems continued to surface. The improvements that did occur were largely the fruition of efforts by the Deputy Commander 7/13AF and his staff to smooth working relationships between the involved agencies. The BARREL ROLL Working Group (BRWG) meeting, held bi-weekly at Headquarters 7/13AF at Udorn, RTAFB, was a primary vehicle for improving coordination and cooperation among the various agencies. Whereas in the past the BRWG was concerned primarily with the exchange of operational and intelligence information between the various agencies, during CH V its role was expanded to encompass the creation, by the multiple agencies, of joint monthly plans for the application of <sup>123/</sup> airpower in northern Laos.

[REDACTED]

(S) [REDACTED] Though CAS, AIRA, and 7/13AF relationships generally experienced an upswing during CH V, command and control relationships continued to cause problems. In his end-of-tour report, Major General Andrew J. Evans, Jr., Deputy Commander of 7/13AF during <sup>124/</sup> CH V, commented:

As long as the U.S. Ambassador has overall responsibility for military actions in Laos there seems little likelihood that significant improvements can be made in existing working relationships between 7/13AF, CAS, and AIRA-- the three principal U.S. agencies coordinating military operations in Laos. However, the leveling influence of the Deputy Commander 7/13AF is essential and is considered to have contributed significantly to whatever success was achieved in military operations in Laos during this reporting period.

c. (S) [REDACTED] (U) The Increasing Role of the RLAF.

(S) [REDACTED] With the level of USAF air support for the RLG lower during CH V, and Communist activities more menacing than ever, the outlook was not encouraging for the 1970-71 dry season. To make matters worse from the standpoint of the RLG, the USAF fighter considered most effective in the close air support role, the A-1, was one of the weapon systems being withdrawn. In a September 1970 message <sup>125/</sup> Ambassador Godley stated:

Withdrawal of the A-1 units places the Laos mission in the position of not possessing a single U.S. air weapons system available with the characteristics necessary for mission objectives for TAC AIR in the Laos ground war.

... subsequent to withdrawal we find . . . RLAf T-28s and AC-47s will constitute the most effective close support force available.

With the heavy cut back in USAF air support of the RLG, it was imperative that the remaining sorties be employed in the most effective manner possible, and that the RLAf take over a greater share of the air effort by increasing its sortie rates. Another message from the Ambassador, <sup>126/</sup> during October 1970, summarized:

There is absolutely no doubt that we face a difficult dry season - perhaps the toughest since the war in Laos began. Air power saved the Lao skins last year. This year with so much less fast mover support available we will have to improvise. The Lao and ourselves are prepared to milk every last sortie out of [the] RLAf. . . .

d.5) (U) Ground Strategy for the Dry Season.

(S) (U) Ambassador Godley summed up the general military strategy planned for Laos during the 1970-71 dry season: <sup>127/</sup>

As in previous years our main concern is to create a flexible defense which will economize the RLG's limited forces and firepower and make the most effective possible use of the only advantages the RLG possesses in defending itself against a powerful aggressor--mobility and TAC AIR.

Specific military strategies were outlined by him for each of the RLG's five Military Regions (MRs). (See Figure 1, which outlines the MRs for Laos.)

[REDACTED] The bulk of USAF air support to RLG forces was directed to MR II in northern Laos, in support of irregular forces led by General Vang Pao and equipped and supported by CAS. During CH V, a holding strategy was to be followed in MR II, where the primary concern was the protection of Long Tieng (headquarters for Vang Pao and also for MR II), and the preservation of the integrity of Vang Pao's irregular forces which constituted the backbone of the RLG's military strength in northern Laos. Both of these actions were essential if overall objectives in MR II, the stabilization of the military situation along the lines of the 1962 Geneva Accords, and the prevention of enemy incursions into RLG territory, were to be pursued. In addition, MR II forces were tasked with conducting spoiling actions in enemy rear areas, and inflicting maximum practicable casualties on the enemy.

(S) [REDACTED] Irregular forces were not in a good position at the start of the 1970-71 dry season, having sustained heavy casualties over the years of fighting in northern Laos. In view of the weakened condition of friendly forces, a strategy of de-escalation was considered. Such a strategy, though desirable in principal, was rejected as unworkable and unrealistic. <sup>128/</sup> Ambassador Godley <sup>129/</sup> summarized:

... The Vientiane country team does not believe that Hanoi would be encouraged to lower the level of hostilities in north Laos if we forced the RLG forces to limit their mobility and form a defensive ring around Long Tieng. We believe on the contrary that the communist adversary will

negotiate only when the cost of achieving his objectives by military means is higher than he is willing to pay. Conversely we are convinced that he will exploit mercilessly any sign of military weakness or indecision on the part of friendly forces. Particularly at the present time when there is an increasing possibility that talks between the Laos factions will actually occur, it is extremely important to help the Souvanna government to work from a position that has not been completely whittled away by communist military actions. Souvanna is an excellent negotiator but whatever slight chance he has to reach a viable compromise with the communists would be utterly destroyed if RLG military forces were pushed out of Long Tieng.

(S) [REDACTED] Large portions of MR I in northernmost Laos had gradually been wrested from the RLG and were under the control of Chinese, North Vietnamese, and Pathet Lao forces. Communist strategy in the area was traditionally aimed at whittling away areas controlled by friendly forces and eliminating RLG influence throughout the region. Government forces in the area were totally inadequate to cope with the threat, and the strategy during the 1970-71 dry season was aimed at limiting the erosion of government positions and improving intelligence gathering capabilities in the area. Small scale operations were planned in an attempt to keep the enemy off balance, but there was 130/ no capability to mount major operations in the area.

(S) [REDACTED] MR III was south of MR II in Laos, and sat astride the northern half of the enemy's infiltration system. Enemy intentions in the area were primarily related to maintenance of his

logistics system. During the 1970-71 dry season, RLG irregular forces were to conduct a number of interdiction operations (up to multi-battalion size) against the western portions of the enemy's LOC. They were also to assist the FAR if enemy activity threatened RLG controlled areas in the region. 131/

(S) [REDACTED] The most difficult situation to be faced by RLG forces during the dry season was expected to be in MR IV, which was situated in southernmost Laos where the enemy's vital LOC network exited into South Vietnam and Cambodia. The consensus in the Vientiane Mission was that events in Cambodia would force the enemy to strengthen and possibly expand his LOC throughout the Laotian panhandle. It was considered likely that the enemy would seek to develop a new route through the strategic Bolovens Plateau area into Cambodia. Friendly strategy for the dry season in MR IV was twofold: effective defense of the Bolovens Plateau, and interdiction of the flow of supplies through the enemy's western route structure to Cambodia and South Vietnam. 132/

(S) [REDACTED] MR V was located in northern Laos in a pocket to the south of MRs I and II, and contained the administrative capital, Vientiane. (The Royal capital of Laos was Luang Prabang, where the king resided.) Enemy activity in the area was expected to take the form of small harassing actions or raids, and friendly forces were considered capable of handling the threat. Emphasis was to be placed on patrolling and security operations of a preventive nature. 133/

2. (S) [REDACTED] (U) Operations

a. (S) [REDACTED] (U) Summary of the Ground War.

1) (S) [REDACTED] MR I. At the end of the 1970-71 dry season, friendly and enemy controlled territory showed little change from positions held a year earlier. Events in the region generally followed the patterns of earlier dry seasons, with one major exception: for the first time, enemy forces posed a serious threat against Luang Prabang, military headquarters of MR I, and residence of the King of Laos. In previous dry seasons, the enemy had engaged in harassment in the Luang Prabang area and shelled its airfield, but the scope of enemy activities in the area during CH V far exceeded those of earlier dry seasons. 134/

(S) [REDACTED] Enemy intentions in the Luang Prabang area during CH V were not clear. However, it seemed that his strategy was not to take the city itself, but to drain RLG strength from other areas in Laos and to force the RLG to negotiate from a position of disadvantage rather than strength. A direct attack on the city would probably have had serious repercussions for the NVA, since the Lao (including the Pathet Lao) were devoted to their King. On the other hand, because of this devotion, the Lao would be willing to employ almost any means necessary to defend the town, even if it meant seriously jeopardizing the defense of other important positions in Laos. This proved true during the dry season as the RLG reinforced the Luang Prabang area with several thousand troops. Though these forces were eventually

successful in expanding the friendly perimeter, thereby reducing the enemy threat to the city, they seriously drained RLG assets which were 135/ badly needed in other areas of Laos.

2) (S) [REDACTED] MR II. For several years irregular forces in MR II, led by Major General Vang Pao, had occupied strategic blocking positions between NVA forces and the Vientiane plain. Though seriously outnumbered, they had been able to maintain their positions in the vicinity of the Plaine Des Jarres and exact a high toll of enemy resources in the region.

(S) [REDACTED] Typically, enemy activities and the extent of his encroachment upon RLG territory peaked near the end of the dry season, while friendly gains crested near the end of the wet season. During the 1969-70 dry season the Communist offensive had surged to the ridges overlooking Long Tieng before it was turned back. During the 1970 wet season, however, friendly gains had been unusually modest, and by its end the enemy was in a more advanced position to launch his offensives than ever before. The situation did not look encouraging in MR II at the beginning of the 1970-71 dry season, and it was feared that Long Tieng might fall to the enemy. If it did, it could eliminate the presence of the irregular forces as an effective blocking force, which in turn would give the NVA virtual control of 136/ northern Laos.

(S) [REDACTED] It was uncertain whether the enemy intended to overrun Long Tieng and to eliminate the irregulars as a fighting force, or whether his intention was only to maintain heavy pressure against them throughout the dry season. Whatever his intentions, the enemy's activities during the first half of the dry season were ominous. By early February, only a handful of friendly positions remained, and enemy sapper companies executed a damaging ground attack against Long Tieng itself on 13 February. Further enemy attacks against Long Tieng, however, did not materialize, and friendly forces in the area were reinforced. Reinforcements, the increasingly effective employment of artillery, and the advantage of close air support (enhanced by a surge in RLAF and USAF sorties), were among the factors that enabled the friendly forces to maintain their hold on the remaining critical positions in the area. By the end of the dry season, enemy forces had pushed the friendly forces back to the last few strategic sites defending the Long Tieng complex, and had maintained constant pressure on Vang Pao's irregulars. However, the Long Tieng complex held, and the viability of the irregulars as an effective fighting force was maintained.

137/

3) (S) [REDACTED] MR III. During the dry season, friendly activities in MR III were to involve multi-battalion operations into the enemy's infiltration system, as well as defense of RLG controlled territory. Irregular forces conducted three major interdiction operations against the Ho Chi Minh Trail during CH V: Operations GAUNTLET,

138/

SILVER BUCKLE, and DESERT RAT. These operations were of relatively short duration (about one month each) and depended on mobility, surprise, and air support for their success.

(S) [REDACTED] Operation GAUNTLET, Phase II\*, initiated on 20 October, was directed against enemy LOC west and south of Tchepone. In the operation, six guerrilla battalions (over 1,600 men total strength) mined key intersections and route segments in the area, ambushed enemy traffic, and pinpointed enemy targets for air strikes (the majority provided by RLAF T-28 sorties). The operation officially ended on 13 November 1970, after heavy casualties had been inflicted on enemy forces massing against GAUNTLET units. <sup>139/</sup>

(S) [REDACTED] Operation SILVER BUCKLE began on 12 January 1971, and had as its objective the interdiction, mining, and disruption of enemy LOC in an area of the Ho Chi Minh Trail about 35 nautical miles (NM) south of Tchepone. Additionally, it was hoped that the four-battalion force would be able to locate lucrative targets for air strikes. USAF helicopters airlifted the troops into the area and the USAF provided the majority of tactical air strikes supporting the operation. Enemy reaction was at first very light, but after several weeks it increased markedly. The operation was officially ended on 11 February, after friendly ground forces had made their way overland to RLG positions to the west.

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*\*Phase I was conducted during the rainy season in the Bolovens Plateau area (MR IV) and terminated near the end of September.*

(S) [REDACTED] SILVER BUCKLE apparently did not produce results commensurate with its size, and most aircrews reported little BDA for their strikes. Dense foliage in the area was probably the primary factor influencing the unimpressive results. Because of the dense jungle foliage and rugged terrain in the area, ground teams had difficulty in passing target coordinates, and aircrews had a hard time assessing strike results. <sup>140/</sup>

(S) [REDACTED] Operation DESERT RAT was launched on 16 February with a USAF helicopter airlift of a four-battalion irregular force into an area near Route 23 about eight NM south of Muong Phine. The objective of the operation was to interdict and mine Routes 23 and 238 and to block or disrupt traffic forced west by the Lam Son incursion. If the enemy decided to use these routes, he would first have to mount an operation to remove the DESERT RAT forces from the area. Air support of the operation was provided primarily by the RLAF, and coordination between air and ground units during the operation was particularly good. Lucrative targets located by ground units were passed to RLAF pilots and were struck rapidly, yielding favorable results. After mining, cratering, obstructing, and occupying Routes 23 and 238 for several weeks, and conducting numerous ambushes of truck convoys in the area, the task force moved north through Muong Phine and fought its way west toward friendly positions. <sup>141/</sup>

(S) [REDACTED] While irregulars were engaged in operations against the enemy's infiltration system, other government forces were

battling the enemy in the Muong Phalane vicinity. The city changed hands a number of times during the dry season, but in early May an overwhelming enemy force moved into the area and forced the FAR to withdraw west towards Dong Hene. The enemy force unexpectedly continued its advance and by the middle of May had captured Dong Hene. Intelligence analysts believed the enemy's westward drive was designed to forestall a future repetition of the RLG dry season interdiction operations against his infiltration system. The enemy actions, however, could also have been aimed at westward expansion of his route structure in reaction to the threat caused by Lam Son 719, or possible future RVNAF incursions. Whatever the causes, the enemy movement west in MR III near the end of the dry season again placed RLG military forces in the area in a particularly precarious position.

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4) (S) MR IV. Activity in MR IV during the dry season was related to two RLG objectives: harassment of the western portion of the enemy's infiltration system, and defense of RLG positions on the Bolovens Plateau. Irregular ambush teams, using the Bolovens Plateau as their staging point, conducted truck, boat, and patrol ambushes throughout the dry season. By April, forces defending friendly positions on the Bolovens were forced to fall back to strongholds on the western portion of the plateau, but it appeared that enemy gains on the plateau were not unusual for a normal wet season offensive. Additionally, Saravane, a key town which had been captured

by the enemy during the 1970 wet season, again came under government control during the 1970-71 dry season. Unfortunately, the tolerable military situation in MR IV changed dramatically during May 1971, when the enemy forced RLG forces from their blocking positions on the Bolovens and captured the key town of Paksong. With the fall of the Bolovens Plateau, the path was cleared for an enemy attack against Pakse, the MR IV provincial capital on the Mekong. These attacks coincided with the westward push of NVA forces to Dong Hene in MR III.

(S) [REDACTED] The situation in southern Laos looked bleak. The attacks there during May were apparently designed to drive RLG forces farther west from the enemy's infiltration corridor, and even if additional NVA attacks did not materialize, the prospects were dim for future RLG operations against the Ho Chi Minh Trail in MR IV. RLG officials expressed alarm and designated the recapture of Paksong and nearby positions as the priority objective <sup>143/</sup> in southern Laos.

5) (S) [REDACTED] MR V. There were no significant or unusual military developments in MR V during the dry season.

b. (S) [REDACTED] (U) USAF Support of Friendly Forces, New or Significant Developments.

1) (S) [REDACTED] Reduction of U.S. Forces. The drastic cutback in the level of TAC AIR was the biggest change in USAF support of RLG forces during the 1970-71 dry season. USAF sorties

flown in support of RLG forces in northern Laos dropped from 114 a day during CH III to 38 per day in CH V. Although USAF air strikes continued to play an important role in the ground war, their influence on the ground situation was less than during the previous year. Two factors, however, helped to offset the reduced sortie level: there was a sharp increase in RLAf T-28 and AC-47 sorties during the dry season, and the USAF effort was better applied and tailored more to the needs of the ground forces than during previous years. <sup>144/</sup>

a) (S) Increased Role of the RLAf. During the 1970-71 dry season, the majority of sorties flown in support of ground forces were provided by the RLAf, which was much improved compared to previous years. The RLAf AC-47 gunships "flew more frequently, flew further from their bases, and achieved a greater effectiveness <sup>145/</sup> supporting ground troops." The T-28 pilots also did an outstanding job. During the dry season, T-28 sortie rates peaked at more than 100 flown per day, an impressive figure considering that the RLAf had but 40 pilots and an average of only 36 operationally ready aircraft. Even though the T-28s carried small bomb loads, the aggressiveness and pinpoint accuracy of their pilots made them the favorite <sup>146/</sup> close air support aircraft of the ground forces.

b) (S) Changes in USAF Support. With the low level of USAF air support during CH V, greater efforts were made to apply the few available sorties in the most efficient and effective manner possible. The number of RAVEN FACs was increased, and as a

result USAF air strikes were better controlled. The RAVENs also made important contributions as fire adjusters for increasingly effective friendly artillery. Improved munitions were used by USAF aircraft supporting RLG forces, and the USAF all-weather capability in BARREL ROLL was enhanced by improvements in LORAN targeting procedures and increased radar coverage of northern Laos. Finally, a technique which had been tried on earlier occasions in Laos was reestablished during CH V: F-4s on alert at Udorn RTAFB provided a quick reaction capability for strikes against lucrative perishable targets, or for support of unanticipated critical situations. The Quick Reaction Force (QRF) was considered effective, and was maintained throughout CH V.

(S) [REDACTED] Another significant development during CH V was the allocation of most USAF tactical air in northern Laos to the close air support rather than interdiction role. During the CH V dry season in northern Laos, the great majority of available USAF sorties were directed to critical areas in the vicinity of friendly positions. There were not enough air assets to devote to both interdiction of the enemy's logistics system supporting northern Laos, and air support of friendly forces in the battle area. In the face of enemy advances towards the Long Tieng complex in early February, the Air Attaché established a Designated Battle Area (DBA) into which almost all tactical air was directed. B-52 strikes, however, continued to be allocated to interdiction points in the PDJ vicinity, and a few

TAC AIR sorties continued to strike the most lucrative targets in the area.

(S) [REDACTED] The DBA was formed around key RLG strongholds in MR II, and the concentration of available TAC AIR in that area was considered essential to the survival of irregular forces in northern Laos. Even if devotion of air support to this relatively small area should produce less reported bomb damage than strikes against other areas, it was still considered a valid tactic by those closest to the ground war. <sup>148/</sup> <sup>149/</sup> The AIRA explained:

Washington has said they want the . . . complex held--Long Tieng, Sam Tong, LS-15.\* . . . we developed what we call a priority area of responsibility. We've drawn a perimeter around these complexes that encompass most of the major headquarters areas--it encompasses the range of the 122s,\*\* the 85s,\*\*\* the mortars and this sort of thing. I feel the only contribution the Air Force can make is to pound that area all day long. . . . if we can keep their heads down in the daytime, so they can't get into position and do the night work, . . . and have the gunships and flareships up at night to let them not forget that air is overhead, sun-up, sun-down; sundown to sunup, I don't know of any other contribution the AF can make. They have enough supplies in the area right now to fight through the rest of the dry season.

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\*LS - Lima Site.

\*\*122mm rockets.

\*\*\*85mm artillery.

... I can't overemphasize the name of the game is keep their heads down. . . . All we are trying to do in the confines of that priority area is slow them down, keep them in their caves, restrict their movements, kill a few of them, knock out weapons, particularly their mortars and their 85s and 122s, pound at those things so that when the rain comes the property belongs to us. . . .

(S) [REDACTED] Not everyone agreed, however, with the emphasis on strikes in the battlefield area to the exclusion of a sizeable interdiction effort. The wings were anxious to hit targets for which results could be directly observed. The AC-119 gunship crews, for example, were frustrated standing by over the DBA night after night while lucrative targets went unstruck to the east of the battle area.\* On most occasions the gunships were required to fly their orbit over the DBA, even though the situation on the ground may have been relatively quiet. From the point of view of the aircrews this represented a misuse of their weapon system, which was specially configured for truck-killing operations. To the troops on the ground, however, the mere presence of gunships overhead was important because it bolstered friendly morale and discouraged enemy <sup>150/</sup> attacks.

2) (S) [REDACTED] The Role of the Fast Mover. The primary USAF fighter used to support RLG ground forces in Laos during CH V

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\*On some occasions the gunships were allowed to leave the DBA and search for trucks as long as they stayed close enough to respond to Troops in Contact situations within 10 minutes.

was the F-4. Only a third of the A-1 resources employed in Laos during CH III were available during the 1970-71 dry season, and most of these were used in support of covert CAS operations, or for Search and Rescue (SAR) support. The F-4, therefore, had to provide the bulk of USAF support of RLG forces. It performed a variety of missions, varying from close air support of Troops in Contact (TIC) to LOC interdiction. There was general agreement that the F-4 was effective in its flak suppression, quick reaction, and interdiction roles, where its high speed and heavy ordnance load worked to its advantage, and that it provided an all-weather capability not possessed by the T-28s.

Agreement concerning its effectiveness in close proximity to friendly forces, however, was less than unanimous. For close air support, ground forces preferred slow movers--the A-1s or T-28s--rather than the F-4. <sup>151/</sup>

Ambassador Godley expressed the feeling of the Vientiane mission in the <sup>152/</sup> previously quoted 14 September 1970 message:

Withdrawal of the A-1 units\* places the Laos Mission in the position of not possessing a single U.S. air weapons system available with the characteristics necessary for mission objectives for TAC AIR in the Laos ground war.

. . . The F-4 fleet, operating under current release altitude restrictions, does not possess sufficient delivery accuracy for employment in close proximity to friendlies. The Mission has proposed a program for F-4s utilizing low level release of high drag

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\*One A-1 squadron was retained at Nakhon Phanom RTAFB, and two were deactivated.

weaponry in permissive areas which may partially alleviate the problem.\* Inherent jet aircraft performance factors do not permit continuous observation of a small target or long loiter capability, thus will not satisfactorily replace the A-1 system.

(S) [REDACTED] There was concern, especially during the first half of the 1970-71 dry season, that aircraft from some F-4 wings were not coming in low enough to provide the type of close air support needed by the ground forces. Some wing commanders wanted to press in on targets aggressively, at low altitudes, while others believed that safer delivery altitudes were just as effective. The Air Attaché expressed his concern in this matter and stated that different wings had different policies concerning delivery tactics and altitudes, but that in his opinion most of those policies sacrificed too much accuracy. Further, CAS officials felt that operating restrictions, imposed in the interest of safety and oriented to the AAA threat in STEEL TIGER, were overly restrictive for the areas in which friendly troops were operating, and did not permit the F-4s to realize their maximum potential in the close air support role. One CAS official commented, however, that these restrictions were eased somewhat during the second half of the dry season, and that the fighters began to come in lower. <sup>153/</sup>

*\*High drag bombs and napalm ("snake and nape") were delivered by F-4s throughout the 1970-71 dry season.*

(S) [REDACTED] As far as the RAVENS and ground Forward Air Guides (FAGs) were concerned, however, they preferred to have a "slow mover" for close air support. The situation was aggravated by a short round incident in which an F-4 delivered CBU anti-personnel munitions, well off target, into the American compound during an enemy sapper attack against Long Tieng. The bomblets had friendlies pinned down in the area for nearly an hour, and caused considerable confusion and damage. News of the incident spread quickly among Laotian forces, and further eroded their confidence in the F-4 as a close air support system. <sup>154/</sup>

(S) [REDACTED] Following the incident, a senior CAS official with seven years experience in Laos commented that the Long Tieng incident was just an isolated accident which should not have been important in itself, but that its widespread dissemination through the "Bamboo Telegraph" had caused a confidence problem among the Lao. He hoped the Lao forward air guides could eventually "be brought back to the point where they can use the F-4s--if not within 50 meters, at <sup>155/</sup> least within a thousand meters." At the same time, however, he hastened to point out the unchallenged value of the F-4 in a variety <sup>156/</sup> of other missions:

. . . we who supervise the Laos paramilitary effort feel that the fast movers are certainly valuable for--if not necessarily close support, until we break down the ground FAGs' opinion of us--at least for troop concentrations, area weaponry. The T-28s, of course, in pin-point bombing are superb. . . . but all the other targets require area work, and this is where the F-4s are great.

... What the AF has to do is cover those targets that require area bombing with the heavy fighters, and of course, as the AAA moves in as a threat against the RAVENS and Tiao Pha Kaoas [T-28s] the AF has to take care of this. And they are doing just fine.

3. (S) (U) Results

(S) At the end of the 1970-71 dry season, there had been little change in the amount of territory controlled by the RLG in northern Laos as compared with the situation a year earlier, and the viability of irregular forces in the area had been maintained. In southern Laos the picture was less favorable, particularly in MR IV where Communist forces gained control of the strategic Bolovens Plateau. Nevertheless, the RLG forces there had survived another dry season, and were preparing to recoup some of their losses. Throughout Laos, most friendly forces remained intact and most key areas held by the RLG at the end of the previous dry season were still under government control. That the RLG forces had been able to do as well as they did was attributed in large part to RLAF and USAF air support.

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a. (S) (U) USAF Sortie Allocation.

(S) The bulk of USAF support of RLG forces was applied in BARREL ROLL (northern Laos). USAF support in BR was anticipated

to be about 30 sorties per day, with a surge capability during critical periods. This amounted to about 6 percent of the U.S. attack sorties authorized in SEA. A sortie level was not established for USAF support of forces in southern Laos. This support was provided, as needed, from <sup>158/</sup> STEEL TIGER sortie allocations.

(S) [REDACTED] During the first half of the dry season, a daily average of 36 USAF strike sorties (F-4 and A-1) were scheduled into BR. Because of bad weather, cancellations, and diverts, only about two-thirds of these were "effective sorties," i.e., were actually flown and delivered ordnance. In early February, the widespread enemy offensive caused both the USAF and RLAF to surge their sortie rates in northern Laos. Scheduled USAF support for BR during the surge (10 February-31 April 1971) jumped to 56 sorties per day. Furthermore, due to an increase in the use of all-weather bombing techniques during the surge period, nearly 90 percent of the sorties scheduled were "effective." Table 9 lists the "effective" strike sorties flown in BR during <sup>159/</sup> CH V, by aircraft type, compared to those flown during CH III.

b. (S) [REDACTED] (U) BDA.

(S) [REDACTED] During CH V, USAF air support of RLG forces continued to play an essential role in the ground war, although accurate measurement of strike results was not possible. The results reported for USAF strikes in BR during CH V and CH III are shown in <sup>160/</sup> Table 10, but they are at best only crude estimates. The difficulty of quantifying strike results during the 1970-71 dry season was

TABLE 9  
USAF TAC AIR ATTACK SORTIES IN BR, CH III/CH V (U)

	<u>F-4</u>	<u>A-1</u>	<u>F-105</u>	<u>Gunships</u>	<u>Total</u>
Nov	1429/438*	517/278	979/0	154/59	3079/775
Dec	1522/641	551/192	1043/0	164/80	3280/913
Jan	1584/591	574/108	1086/0	171/67	3415/766
Feb	1865/932	675/90	1278/0	201/74	4019/1096
Mar	1604/1479	581/140	1100/0	173/109	3458/1728
Apr	1632/1407	591/122	1119/0	176/122	3519/1651
Total	9636/5488	3489/930	6605/0	1039/538	20796/6929

\*CH III sorties/CH V sorties.

Source: Report, Statistical Summary: BARREL ROLL, COMMANDO HUNT V, COMMANDO HUNT III (U), 7/13AF, May 71, p. 23. (S)

TABLE 10  
BDA FOR USAF STRIKES IN BARREL ROLL (U)

	<u>CH III</u>	<u>CH V</u>
Secondary Explosions	13,238	6,020
Secondary Fires	4,890	935
Killed By Air	2,936	882
AAA Guns D/D*	266	202
Trucks D/D*	1,157	998

*\*Destroyed or Damaged.*

Source: Report, Statistical Summary: BARREL ROLL, COMMANDO HUNT V,  
COMMANDO HUNT III (U), 7/13AF, May 71, p. 25. (S)

increased by the nature of the targets struck. Most USAF strikes in support of RLG forces during CH V were aimed at restricting enemy movement and activities within the battlefield area, rather than intercepting the enemy's logistics system supporting his troops. Therefore, such things as suspected enemy locations or antiaircraft/automatic weapons positions were more likely to be targets than were enemy LOC, storage areas, or trucks. Results of strikes against the former were often unobservable. For example, strikes against suspected enemy locations or provision of gunship presence over the battlefield area were less likely to produce directly observable results than striking enemy LOC or trucks.

(S) [REDACTED] Aircrews preferred hitting targets for which they could see positive results, and they voiced concern that strikes in the battlefield area were not yielding the BDA attainable in other areas. CAS officials, however, expressed confidence that the strikes against targets in the battlefield area were yielding solid results, even though accurate BDA for these strikes was not obtained. One senior CAS official commented:

Airpower is killing the enemy . . . but we can't put a quantitative value on [it]. . . . I think that air power is reducing the potential of the enemy to a great extent; to what extent, I can't define. I'm absolutely sure that we're really hurting them badly with air power. . . .

That's BDA, really, a long term analysis of enemy capabilities. He should have been able to invest Ban Na. He should have been able to overrun the

LS 72\* area. They haven't been able to. This is a negative approach, but in my opinion, it's air power that's done it. In fact, I'm absolutely sure of it.

(S) [REDACTED] Whether or not concentration of strikes into the battlefield area resulted in the maximum damage to the enemy and represented the most effective use of air power was debatable. To those most directly concerned with the ground war, however, the real effectiveness of USAF support was better reflected by the successful defense of friendly controlled areas and protection of friendly forces than it was by such statistics as secondary explosions/fires, road cuts, and trucks destroyed/damaged. The Air Attache expressed strong feelings that too much stress was being placed on BDA as opposed to the overall effects of airpower. He emphasized that retaining control of Ban Na, Sam Thong, and Long Tieng at the end of the dry season was the true measure of effectiveness.

c. (S) [REDACTED] (U) RLAF.

(S) [REDACTED] RLAf participation in the ground war during CH V showed an improvement in both the quantity and quality of support provided. For the first time, RLAf sorties consistently exceeded the

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\*Lima Site.

monthly totals flown by USAF aircraft. Table 11 reflects the marked increase in the level of support provided by RLAF T-28 and AC-47 aircraft during the 1970-71 dry season as compared to the previous year. Especially significant was the RLAF surge during the critical February through April 1971 time period in which NVA offensives were at their peak. During those months RLAF T-28 sortie rates throughout Laos exceeded 100 per day, more than doubling their CH III rate. RLAF AC-47 gunship sorties also peaked during the period, averaging well <sup>164/</sup> over 200 per month.

(S) [REDACTED] Just as important as the quantity was the quality of air support provided by the RLAF. The RLAF T-28 pilots were dedicated, skilled, and courageous. Their pinpoint accuracy and aggressive low altitude bombing and strafing gave them a reputation in close air support which was unexcelled. Although they lacked an all-weather capability and carried much smaller bomb loads than USAF fighters, the T-28s played an increasingly important and effective role in support of RLG forces during the dry season.

(S) [REDACTED] Complementing the daytime T-28 strikes, RLAF AC-47 gunships provided coverage for friendly forces at night. During the 1970-71 dry season, there was a tremendous improvement in the

TABLE 11  
RLAF ATTACK SORTIES (U)

	T-28		Gunship	
	CH III	CH V	CH III	CH V
Oct (69/70)	1476*	2744	--	103
Nov (69/70)	1476*	2138	--	120
Dec (69/70)	1476*	1964	--	187
Jan (70/71)	1024	1911	28	110
Feb (70/71)	1542	3413	38	202
Mar (70/71)	1693	3508	20	249
Apr (70/71)	1771	2739	30	205

\*Sortie rate not available by month for CY 4/69. Figures shown are the total CY 4/69 sorties (4,427) divided by 3.

Source: Report, USAF Management Summary Southeast Asia (U), USAF, 19 Jan 71 and 21 May 71 editions. (S)

effectiveness of RLAF AC-47 support. With the help of a USAF advisor, the gunship crews evolved from an unmotivated, disorganized, and ineffective group at the beginning of the dry season, to a dedicated and capable group by its end. The performance of the RLAF T-28s and AC-47s, particularly during the critical February through April months, was a major factor in the preservation of friendly forces and positions during the height of the Communist offensive. <sup>165/</sup>

(S) Although the RLAF successfully assumed a greater portion of the close air support burden during the 1970-71 dry season, it was recognized that their capacity for continued improvement and expansion was limited. <sup>166/</sup> RLAF resources were stretched to the limit to reach the sortie rates attained during CH V. Greater sortie rates would require provision of more aircraft, training of more Lao pilots, and additional U.S. maintenance personnel. Furthermore, the capacity of the T-28 to assume the roles previously carried out by higher performance U.S. aircraft was limited by its small bomb load and lack of an all-weather capability.

(S) Over and above these problems, another major obstacle blocked the path to RLAF self-sufficiency--airfield security. Throughout the years of war in Laos, RLAF airfields had been periodically subjected to costly mortar and sapper attacks. No airfield was secure, <sup>167/</sup> and if the RLAF were to expand and successfully assume the entire burden of air support, airfields would become a prime target for sabotage, standoff, or sapper attacks. If the NVA decided to

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eliminate the RLAF, it was doubtful that the RLAF could continue to operate from Lao airfields without suffering excessive losses.

1. [REDACTED] (U) Concepts, Planning and Tactics

a. (S) [REDACTED] (U) Background.

(S) [REDACTED] Lam Son 719, the South Vietnamese incursion into Laos, was a continuation of the overall Allied strategy of attacking all elements of the enemy's infiltration system. As noted previously, the fall of the Sihanouk regime denied the Communists the use of the port of Kompong Som. The joint U.S./Vietnamese sweep into Cambodia beginning in April 1970, together with subsequent RVNAF ground/air and U.S. air operations, deprived the enemy of large quantities of captured/destroyed supplies, and ended his unchallenged use of sanctuaries along the Cambodian/SVN border. MARKET TIME operations, the joint U.S./Vietnamese naval barrier, kept Communist infiltration into SVN by sea at a low level. Thus, events during 1970 made the enemy increasingly dependent upon his LOC through Laos. The enemy's Laotian infiltration system had to function effectively if he were to adequately support his <sup>168/</sup> forces in South Vietnam and Cambodia.

(U) President Richard M. Nixon summarized the situation <sup>169/</sup> in a February 1971 report to the congress:

Southern Laos became critical to Hanoi after the allied Cambodian operations deprived it of the port of Sihanoukville and the border sanctuaries. They swelled their forces in the area by more than 25,000, captured the towns of Saravane and Attopeu, and intensively built up their supplies and their logistics network. Whereas for years southern Laos

had been central to Hanoi's operations in northern South Vietnam, at the end of 1970 it was becoming the hub and cross-roads of Hanoi's campaigns throughout Indochina. Almost all of its men and supplies were now flowing through this area. . . . Hanoi deepened the area's part in the Vietnam war, with direct implications for Vietnamization and our withdrawals.

(S) [REDACTED] Recognizing the importance of the Communists' infiltration efforts during the 1970-71 dry season, the United States continued with renewed vigor its air interdiction program of previous years. It had long been recognized, however, that air interdiction alone could not choke off the maze of roads and trails in the Communists' Laotian infiltration network. In view of the value of ground interdiction operations, and considering the critical importance of the Communists' network in southern Laos, an RVNAF strike was planned 170/ against the heart of the infiltration system.

(S) [REDACTED] Although Lam Son 719 was an important operation, it was but one of several Allied air, ground, and sea efforts against the different parts of the enemy's infiltration system. It was a large operation, but not unprecedented from the standpoint of numbers of friendly forces involved. It was actually much smaller than the 171/ U.S./Vietnamese incursion into Cambodia a year earlier, and was in fact but one of two major RVNAF cross-border ground operations being undertaken almost simultaneously against the enemy's logistics system. On 4 February 1971, a 20,000-man RVNAF force

launched a drive into Cambodia along Route 7. This operation, TOAN THANG 1/71, was directed against Communist border sanctuaries and logistics activities. It received little attention, even though both sides eventually suffered heavy casualties during the course of the <sup>172/</sup> operation. <sup>173/</sup> A few days later, on 8 February, RVNAF forces launched Lam Son 719, a drive along Route 9 into the Laotian panhandle. RVNAF strength in Laos peaked at 17,000 during operation Lam Son 719, yet it was this operation, not the larger TOAN THANG 1/71, which was to receive universal attention. <sup>173/</sup> A number of factors made Lam Son 719 important, and focused Allied, enemy, and world-wide attention on it.

(S) [REDACTED] First, the RVNAF incursion into Laos, in addition to its short-term logistics implications, was important in that it could set a precedent for further RVNAF operations in Laos. As was the case for the Cambodian incursion a year earlier, the Laotian incursion was a "first." It was a departure from the earlier Allied policy of at least superficial adherence to the Geneva Accords regarding ground operations in Laos; and the possible enemy reactions to the operation, both short and long term, were unpredictable and subject to widespread speculation. This tended to focus attention on the operation.

(S) [REDACTED] In addition, though not necessarily intended by the planners, the RVNAF incursion into Laos came to be widely viewed as a test case for the progress of Vietnamization. As in concurrent RVNAF operations in Cambodia, no U.S. ground forces or advisors would accompany

South Vietnamese troops beyond the borders of South Vietnam. Though the U.S. would provide air support, the Vietnamese were on their own on the ground. They were going into an area of critical importance which had long been occupied by enemy forces. Furthermore, unlike earlier operations in Cambodia, the enemy's logistics lines to the battlefield were short, and supplies and reinforcements would be readily available. If the South Vietnamese could make a good showing under such circumstances, it would be a demonstration of real progress in Vietnamization. On the other hand, if the South Vietnamese were to suffer a disastrous defeat, <sup>174/</sup> the whole Vietnamization program could be jeopardized.

b. (S) [REDACTED] (U) Combined Operation.

(S) [REDACTED] Lam Son 719 was a combined operation of RVNAF/U.S. forces, with U.S. forces in a support and advisory role. There was no single commander of the forces involved in the operation. RVNAF forces were under the command of Lt General Hoang Xuan Lam, the Commanding General of Army of the Republic of Vietnam (ARVN) I Corps. General Lam was in charge of the operation, though he did not, of course, command U.S. forces. General Creighton W. Abrams, as COMUSMACV, commanded all U.S. forces supporting the operation. Again, the U.S. role was unquestionably one of support and advice, and at times major decisions were made and executed without the advice or coordination of U.S. representatives. Further complicating matters, General Lam reported directly to President Nguyen Van Thieu, who on several occasions became <sup>175/</sup> intimately involved in major decisions regarding the operation.

(S) [REDACTED] Army units under the command of Lt General James W. Sutherland, Commanding General of U.S. Army XXIV Corps, were to provide artillery, air mobility, and logistics support to the Laotian operation from within SVN, and were also to provide blocking forces in case of a major enemy reaction across the DMZ into northern SVN. All U.S. helicopter support for Operation Lam Son 719, except for very limited USAF SAR efforts, was to be provided by the 101st Airborne Division (Airmobile). Organic assets of the 101st were supplemented by aviation and air cavalry units from other Army divisions throughout SVN. These additional air resources were placed under operational control of the 101st. They did not come under the single management concept, but were managed independently by the Army. <sup>176/</sup>

(S) [REDACTED] The Commander of 7AF, General Lucius D. Clay, Jr., was in command of USAF forces supporting the operation. In addition, under the single management concept, U.S. Navy and U.S. Marine Corps air resources were also under the direction of General Clay in <sup>177/</sup> his role as DEPCOMUSMACV for Air Operations.

(S) [REDACTED] Participation of U.S. forces in Lam Son 719 closely paralleled U.S. support of concurrent Allied operations in Cambodia. In both cases RVNAF forces were on their own on the ground, and no U.S. ground forces or advisors were allowed to go beyond the borders of SVN. In both cases, RVNAF forces were supported by USAF and Army air resources (though air support was more extensive for

Lam Son 719). In both cases, U.S. forces were in a support and advisory role. Command and control arrangements for U.S. air resources were also similar, with one important exception: in Cambodian operations, some Army air assets were flagged by the Tactical Air Control Center Network and thus were under the management of DEPCOMUSMACV for Air, <sup>178/</sup> while in Lam Son 719, they were not; they were totally independent.

c. ~~████████~~ (U) Planning.

1) (S) ~~████████~~ U.S. Approval. Allied plans for an incursion into Laos had been under consideration for some time, but final approval of the operation did not come until late January 1971. On 19 January 1971, the Chairman of the Joint Chiefs of Staff announced that the Lam Son 719 operation had been approved, and outlined operational authorities. Laotian Prime Minister Souvanna Phouma and the U.S. State Department had both expressed opposition to the operation. Based upon political considerations, COMUSMACV and CINCPAC had recommended the operation be cancelled. Considering only military factors, however, both COMUSMACV and CINCPAC strongly supported the operation. In the end, United States support of Lam Son 719 was approved, and the first phase of the operation, named DEWEY CANYON II, started on 29 <sup>179/</sup> January 1971.

2) (S) ~~████████~~ Planning U.S. Air Support. United States air support was a prerequisite to the conduct of Operation Lam Son 719. Although the VNAF was capable of supporting RVNAF operations in Cambodia, the hostile environment in the Laotian panhandle, coupled with aircraft

Limitations and limited resources, required additional, extensive air support by U.S. forces. <sup>180/</sup> Accordingly, heavy reliance was placed on U.S. helicopter and tactical air support during planning for the operation. This dependence of RVNAF forces on U.S. air support created a situation in which coordination between, and joint planning by, the various participating ground and air forces was critical.

(S) ~~████████~~ In an effort to prevent leaks to the enemy, however, access to information concerning the operation was extremely restricted, and planning staffs were unusually limited. Most of the initial, detailed planning was done on short notice by selected members of U.S. XXIV Corps and ARVN I Corps staffs and a handful of representatives from MACV and 7AF. Even these few 7AF representatives were not brought into planning until 14 January, two weeks before the scheduled start of the operation. As the starting date drew nearer, more 7AF planners became involved, although unusually tight security restrictions remained in effect. Further complicating matters, the Vietnamese commander, General Lam, due primarily to security problems, often did not release details of the operation to planners until the last minute. The high degree of limited access and the last-minute release of information "hampered rather than assisted" <sup>181/</sup> the operation. Planning suffered from lack of coordination between the various units involved, overestimation of Allied capabilities, and underestimation of the enemy's <sup>182/</sup> strength.

~~SECRET~~  
d. (S) (U) Objectives/Planned Tactics.

(S) The primary objective of Lam Son 719 was ground interdiction of the central route structure in southern Laos. This was to be accomplished by executing a rapid air/ground advance astride Route 9 to Tchepone, blocking the major north/south LOC in the vicinity of Tchepone and the junction of Routes 9 and 92, and conducting extensive search and destroy operations throughout the interdicted area (known as Base Area 604). Finally, RVNAF forces were to attack to the southeast, destroying enemy forces and supplies in Base Area 611, located in the vicinity of the A Shau Valley. Duration of the operation was flexible, but it was expected to continue until the beginning of the wet season. <sup>183/</sup>

(S) The two most important factors considered in planning the timing and geographical location of the Laotian incursion were the desires to cause the maximum disruption of the enemy's logistics flow and to take advantage of the most favorable weather. The general time of the operation, January through March, was, therefore, chosen, since that period would coincide with the peak in enemy logistics activities and with the season when the weather was relatively good in Laos and improving in northern SVN. <sup>184/</sup> Base Area 604 was selected as the entry point, and Base Area 611 (or alternatively Base Area 604) was chosen as the exit route. The selected entry route, Base Area 604, offered a number of advantages: there was a direct line of communication from South Vietnam (Route 9); it was an area where the roads, trails, and streams of the enemy's logistics system came together within effective range of friendly helicopter

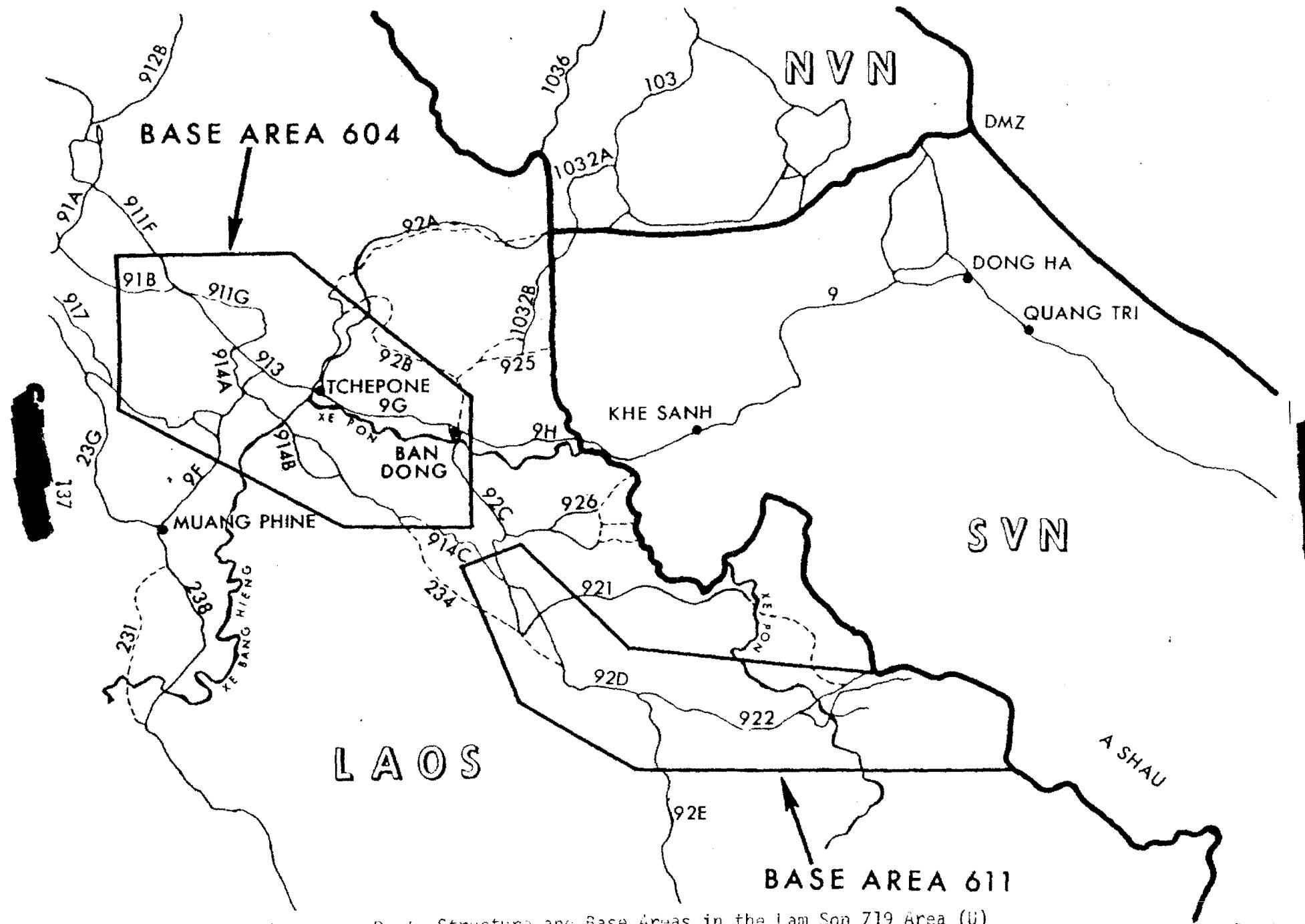


Figure 2: Route Structure and Base Areas in the Lam Son 719 Area (U)

support; and, it was in the northern portion of the enemy's system, close to the source of infiltration. The exit route, Base Area 611, was desirable in that it contained large quantities of enemy stockpiles. <sup>185/</sup>

(S) [REDACTED] The operation was to be conducted in four phases.

Phase I called for the securing of vital LOC in the northern SVN/Laos border area and the deployment of the incursion force to the border.

This was to be accomplished in the following manner: United States forces were to clear and secure Route 9 from Dong Ha to the border; secure Khe Sanh and Vandegrift Fire Support Base (FSB); position and cover heavy artillery near the Laos/SVN border; and, in conjunction with RVNAF forces, screen the northern flank along the central and <sup>186/</sup> eastern DMZ southward along the Laos/SVN border to the incursion area.

(S) [REDACTED] While these operations were underway, RVNAF forces were to deploy to the border area and position themselves for the drive along Route 9. Many of these forces were in the Saigon area, and a USAF C-130 airlift was planned to move them to Dong Ha/Quang Tri. Nearly ten thousand RVNAF troops were involved, all to be airlifted in a four-day period. In addition, during Phase I several thousand U.S. troops were to be airlifted to Military Region I. Round the clock C-130 operations were planned to accomplish Phase I airlift objectives. After D day plus four, resupply operations from Da Nang and Quang Tri to Khe Sanh were to begin, requiring an estimated 40 to 60 sorties a <sup>187/</sup> day for about 90 days.

(S) [REDACTED] A number of actions were taken in an attempt to confuse the enemy concerning the intent and location of Lam Son 719. Phase I, the in-country portion of the operation, was referred to as DEWEY CANYON II, thus implying to the enemy that the operation would be in the A Shau Valley area.\* To further disguise the friendly intentions, locations in Lam Son 719 area were referred to with the names of locations in the A Shau Valley area. In addition, diversionary friendly activities were initiated in the A Shau area. Phase I of Lam Son 719 was to last from five to eight days.

(S) [REDACTED] Two days prior to the end of Phase I, TAC AIR was to launch a concentrated AAA suppression campaign along Route 9 and in the vicinity of Tchepone. The AAA suppression was expected to require three to seven days.

(S) [REDACTED] Phase II of the operation was to consist of coordinated ground/air mobile attacks into Laos along Route 9 aimed at a rapid (two to three days) seizure of Tchepone. The first objective of ARVN airborne and armored forces attacking along Route 9 was Ban Dong (code name Aloui), at the junction of Routes 9 and 92. After securing Ban Dong, airborne troops were to conduct heliborne operations to seize Tchepone, while ARVN infantry, in a series of heliborne operations, was to secure the high ground south of Route 9 between Ban Dong

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\*DEWEY CANYON I was an earlier in-country operation in the A Shau Valley area.

and Tchepone. Meanwhile, ARVN Rangers were to establish blocking positions north of Route 9 in order to provide security on the northern flank. During Phase II, Vietnamese Marines were to conduct operations south and east of Khe Sanh and, upon order, cross into Laos south of <sup>190/</sup> Route 9.

(S) ~~████████~~ Phase III was to commence upon capture of Tchepone. In this phase, RVNAF forces were to consolidate their positions and conduct extensive search and destroy operations in Base Area 604. Air-borne troops were to establish numerous blocking positions north and south of Tchepone along Routes 9 and 91 to isolate the Tchepone area. ARVN infantry was to conduct search and destroy operations in the area south of the Xepon River near Tchepone, just south of Route 9. During these operations, ARVN Rangers were to continue blocking and screening the northern flank. Tactical air and B-52s were to support all aspects of the operations. The duration of Phase III of the operation was flexible, but it was expected to continue until the end of the dry <sup>191/</sup> season.

(S) ~~████████~~ Phase IV of the operation, the withdrawal phase, was to consist of either a concerted assault through Base Area 611 toward the A Shau Valley (Option I), or a more limited attack on the northern portion of Base Area 611, with RVNAF units withdrawing through the Route 9 area (Option II). Both options were to include the insertion of guerrilla forces and RVNAF "stay behind" elements into Base Areas 604 <sup>192/</sup> and 611.

(S) [REDACTED] Under Option I, airborne units were to leave their blocking positions in the Tchepone area and withdraw to Ban Dong, the junction of Routes 9 and 92, to cover ARVN infantry who were to attack into Base Area 611 southeast from their positions below the Xepon River. The Rangers were to continue to screen the northern flank. Upon order, ARVN armored units, and later the Rangers, would withdraw along Route 9 to Khe Sanh where the armored units would prepare to attack south. Meanwhile, the airborne units in the Ban Dong area would either return to Khe Sanh along Route 9 or follow ARVN infantry units southward and support them in their attack through Base Area 611. Vietnamese Marine units <sup>193/</sup> were to attack Base Area 611 upon order.

(S) [REDACTED] Under Option II, the general maneuver concept of RVNAF forces was the same with the exception that the ARVN airborne and infantry units attacking through Base Area 611 would turn north after attacking only the western portion of 611, and would exit Laos south of Route 9 and Khe Sanh, but well to the north of the A Shau <sup>194/</sup> Valley.

e. (S) [REDACTED] (U) Planned U.S. Air Support.

(S) [REDACTED] The XXIV Corps Operations Order (Opord) for Lam Son 719, dated 23 January, established the concept and the operational procedures for U.S. ground and air support of RVNAF ground forces. The operations order stated that the RVNAF incursion into Laos was to be supported by "maximum tactical air, heavy bomber, artillery and <sup>195/</sup> gunships," and outlined in detail the role of U.S. Army ground

and air assets. The XXIV Corps Opord was augmented by I DASC\* (Air Force) Opord 1-71, dated 28 January, and by the 7AF Opord 71-2 of 6 February. I DASC Opord 1-71 dealt mainly with the reestablishment\*\* of VICTOR DASC (V DASC), and with the provision of forward air control and visual reconnaissance in support of XXIV Corps Opord Lam Son 719. Seventh Air Force Opord 71-2 established the air plan for support of the XXIV Corps Opord and tasked various Air Force units to provide the necessary fragging, tactical air control, and airlift functions. <sup>196/</sup>

1) (S) Fixed Wing Air Support. In order to provide continuous coverage of the operation, initial plans for out-country operations called for a stream of TAC AIR in the day, with a pair of fighters arriving every fifteen minutes over a 12-hour period (96 sorties per day), and for continuous gunship and flareship coverage at night (eight sorties per night). Assurance was given to the RVNAF that additional strike resources would be provided if needed. Aircraft would report in to the Airborne Battlefield Command and Control Center (ABCCC), and then be handed off to the appropriate HAMMER FAC.\*\*\*

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\*DASC--Direct Air Support Center.

\*\*VICTOR DASC was originally established in March 1968 to provide more responsive air support to U.S. forces in the northern provinces of I Corps. It was downgraded to a TACP during 1969, and was reestablished in January 1971 to support RVNAF operations in Laos during Lam Son 719.

\*\*\*The call sign for FACs supporting Lam Son 719 on the Laos side of the border was HAMMER.

Initial plans called for two OV-10s (HAMMER FACs) to be on station at all times during the day, based upon RVNAF plans for a two-division force operating in Laos. <sup>197/</sup> If the planned sorties were insufficient, a secondary source of TAC AIR was available in the form of diverts from the ABCCC. If diverts were not available, the FACs could request <sup>198/</sup> the ABCCC to scramble alert aircraft.

(S) REDACTED Extensive use of B-52 resources was also planned for Lam Son 719. Initial plans written at 7AF, and approved by General Sutherland, called for the use of B-52 strikes against enemy LOC entering the combat area, as a means of blocking enemy reinforcement and resupply efforts. As the operation developed, ARC LIGHT strikes were used against a wide variety of targets including LOC, storage areas, landing zones, and troop concentrations in close proximity to friendly forces. Planning had called for selection of ARC LIGHT targets by MACV, but in actuality General Lam selected the ARC LIGHT targets based on <sup>199/</sup> daily sortie allocations from MACV.

(S) REDACTED Reconnaissance requirements were identified and coordinated between the Commanders 7AF and XXIV Corps, and guidance concerning Army reconnaissance efforts were contained in the XXIV Corps Opord Lam Son 719. The XXIV Corps approach was that "maximum use" would be made of U.S. Army air reconnaissance assets and that Air Force resources would be used only for "missions beyond Army capability." <sup>200/</sup> In accordance with that philosophy, the task of the Air Force was to "wall-to-wall photograph" an area about 30 miles

long and 15 miles wide, in order to obtain coverage of the LOC in the Lam Son area. In addition, the whole DMZ and an area ten miles deep into North Vietnam was to be photographed to locate artillery pieces  
201/  
in the area.

(S) [REDACTED] Plans called for extensive tactical airlift support for the operation, including an initial surge effort during the Phase I build-up, and a sustained airlift to Khe Sanh to resupply Lam Son forces during Phases II through IV. Preparations were also made for fixed-wing resupply of RVNAF forces in Laos, though this capability was never utilized during the operation. Planners envisioned that this requirement might materialize during Phase III of the operation in conjunction with RVNAF occupation of, and activities in, the Tchepone area.  
202/

2) (S) [REDACTED] Helicopter Support. The whole concept of Lam Son 719 was woven around extensive U.S. helicopter support. Helicopter assault, resupply, and extraction were essential to all phases of the operation. In addition, XXIV Corps placed heavy emphasis on the maximum exploitation of helicopter reconnaissance and fire power in support of the operation. Lam Son 719 plans were tailored to take advantage of the mobility, speed, and flexibility offered by  
203/  
airmobile operations.

(S) [REDACTED] Helicopter vulnerability became a source of debate during the planning phase, particularly in view of the major role which they were programmed to take. Air Force planners, based on their experience

~~SECRET~~

in the nonpermissive environment in Laos, cautioned that the threat against helicopters would be difficult to overcome, and that plans should be made for heavy tactical air support of helicopter operations, particularly in activities such as landing zone preparation. Based on their own experience in the lower AAA threat of South Vietnam, however, Army planners felt minimal tactical air support was needed, and that suppressive fire by helicopter gunships would prove adequate. <sup>204/</sup>

f. (S) [REDACTED] (U) Estimates of Opposing Forces.

(S) [REDACTED] It would become apparent that Lam Son 719 plans underestimated the strength and capabilities of enemy forces that would be encountered in the operation. The enemy had positioned an unexpectedly large force in the target area, and had deployed far more armor than anticipated. His rear service forces were surprisingly well prepared for battle and were well coordinated with his main force units. In addition, the enemy skillfully deployed a well-integrated and highly-mobile air defense system throughout the area, making use of tactics <sup>205/</sup> tailored to counter the airmobile techniques employed by RVNAF forces.

(S) [REDACTED] The capabilities of the enemy's antiaircraft system were seriously underestimated by Army planners. As far as the number of enemy antiaircraft weapons was concerned, there was essentially no difference between Army and Air Force estimates. The Army XXIV Corps Operations Order for Lam Son 719 estimated 170-200 medium caliber (23mm, 37mm, 57mm, and 100mm) weapons in the area, while the Air Force estimated about 155 of these types of weapons. Subsequent

experience in Lam Son 719 supported these Army/Air Force estimates.

It was not possible, of course, to estimate the number of automatic weapons (12.7mm and 14.5mm) in the area. The Air Force regarded these weapons, however, as a serious threat to helicopter operations. It was this category of weapons which XXIV Corps planners seriously underestimated, and which accounted for most of the helicopter losses. Again, Army planners felt that the antiaircraft threat would not really be a serious problem, and that the helicopter could survive in the Lam Son 719 environment. <sup>206/</sup>

g. (S) [REDACTED] (C) Enemy Awareness of the Operation.

(S) [REDACTED] Enemy awareness of the possibility of an RVNAF incursion into Laos was in evidence as early as the autumn of 1970. In October 1970, NVN agents in the Da Nang area were seeking details of the invasion plans, and during the same month an NVA headquarters was established in Laos to defend the Tchepone LOC area against an RVNAF incursion. Throughout the last quarter of 1970, aerial observers and friendly agents reported enemy troop build-ups in the Tchepone <sup>207/</sup> area and throughout Base Area 604.

(S) [REDACTED] As the date for the operation drew near, the friendly troop build-up in western Military Region I (in SVN) was countered by enemy reinforcement of rear service units in Base Area 604. During this period, rear service unit defenses were strengthened and coordinated with main force infantry units. By the time the incursion was launched, the enemy had deployed ground forces, a sizeable

tank force, heavy artillery, and formidable air defenses throughout  
208/  
the area.

2. (S) [REDACTED] (U) Operations

a. (S) [REDACTED] (U) Conduct of the Operation.

1) (S) [REDACTED] Phase I, the Build-up in Northern SVN. On 30 January 1971, U.S. Army mechanized and engineer units moved out from Dong Ha to secure Route 9 to Khe Sanh, the forward operating base for the operation, and then on to the Laos/SVN border. Simultaneously, diversionary movements were made toward A Shau, supported by heavy artillery fire and tactical air strikes. By the next day, 31 January, Route 9 was open to Khe Sanh, and Army engineers began restoring the Khe Sanh air strip and emplacing heavy artillery in the area. By 3 February, Army ground forces clearing Route 9 had reached the border. Subsequently, U.S. and RVNAF units initiated sweeping operations north of Route 9 and south of Khe Sanh to the border, and established block-  
209/  
ing positions below the DMZ.

(S) [REDACTED] This initial phase of the operation was supported by an around-the-clock airlift of RVNAF and U.S. forces from the Saigon area to Dong Ha and Quang Tri. By 6 February, over 2,000 U.S. and 9,000 RVNAF troops, together with more than 4,200 tons of cargo, had been airlifted by C-130 to the Dong Ha/Quang Tri area. Following completion of this initial airlift of forces, plans placed heavy reliance on C-130 support in supplying Khe Sanh, and therefore hinged on the restoration of that airfield. When Army engineers

arrived at Khe Sanh, however, they decided that the old airstrip was too badly damaged and that a new airstrip would have to be constructed. They finished the new strip on schedule, on 4 February, but it was too soft to support C-130 operations. A usable airstrip was not completed until the middle of February, and up to that time resupply of Khe Sanh <sup>210/</sup> was accomplished primarily by Army truck convoys.

(S) [REDACTED] Also during Phase I of the operation, DASC Victor was organized to control tactical air support for Lam Son 719. BARKY FACs (I DASC) controlled in-country strikes in support of the operation throughout the build-up phase. During this period, HAMMER FACs (V DASC) were organized to control out-country air support of the operation. Near the end of Phase I, artillery and a limited number of air strikes were directed against suspected antiaircraft positions in the region. Additionally, some air strikes were placed on prime inter-<sup>211/</sup> diction points in the Tchepone/Route 9 area.

2) (S) [REDACTED] Assault to Ban Dong. The RVNAF incursion into Laos began on 8 February with helicopter assaults coordinated with a ground invasion along Route 9. Movement of the armored task force along Route 9 was slower than expected. Enemy harassment, compounded by dense underbrush along the road, slowed ARVN infantry screening for the column. Poor road conditions, heavy rain, and enemy interference hindered road improvements by ARVN engineers and <sup>212/</sup> further delayed progress of the column.

(S) [REDACTED] While the armored task force was slowly progressing along the 20 kilometers to Ban Dong, helicopter assaults were being made into key areas. On the first day, heliborne forces seized high ground positions north and south of Route 9. Poor weather cancelled insertions scheduled on the second day and hampered tactical air strikes. On the third day, the insertion of troops into Landing Zone Aloui (near Ban Dong at the intersection of Routes 9 and 92) was delayed by anti-aircraft (AA) weapons fire. The insertion was carried out during the afternoon, after TAC AIR and helicopter gunships suppressed the AA fire. Lead units of the armored task force reached the intersection <sup>213/</sup> on the same afternoon and linked up with the airborne units.

(S) [REDACTED] Enemy ground reaction during these first three days was relatively light. Intelligence indicated that the enemy was moving out of the area, and resistance encountered during most of the heliborne combat assaults was not particularly heavy. The relatively light enemy antiaircraft reaction to insertions during the initial days of Lam Son 719 reinforced Army beliefs that helicopter gunships and artillery could provide most of the suppressive fire needed for heliborne combat assaults. Thus, minimum emphasis was placed on TAC AIR preparation of landing zones. To complicate matters, General Lam often ordered the insertions at the last minute, without prior coordination of the U.S. units involved. Further, the ARVN preferred that heliborne assaults be conducted as early in the morning as possible, to allow the inserted troops enough time to set up defensive positions.

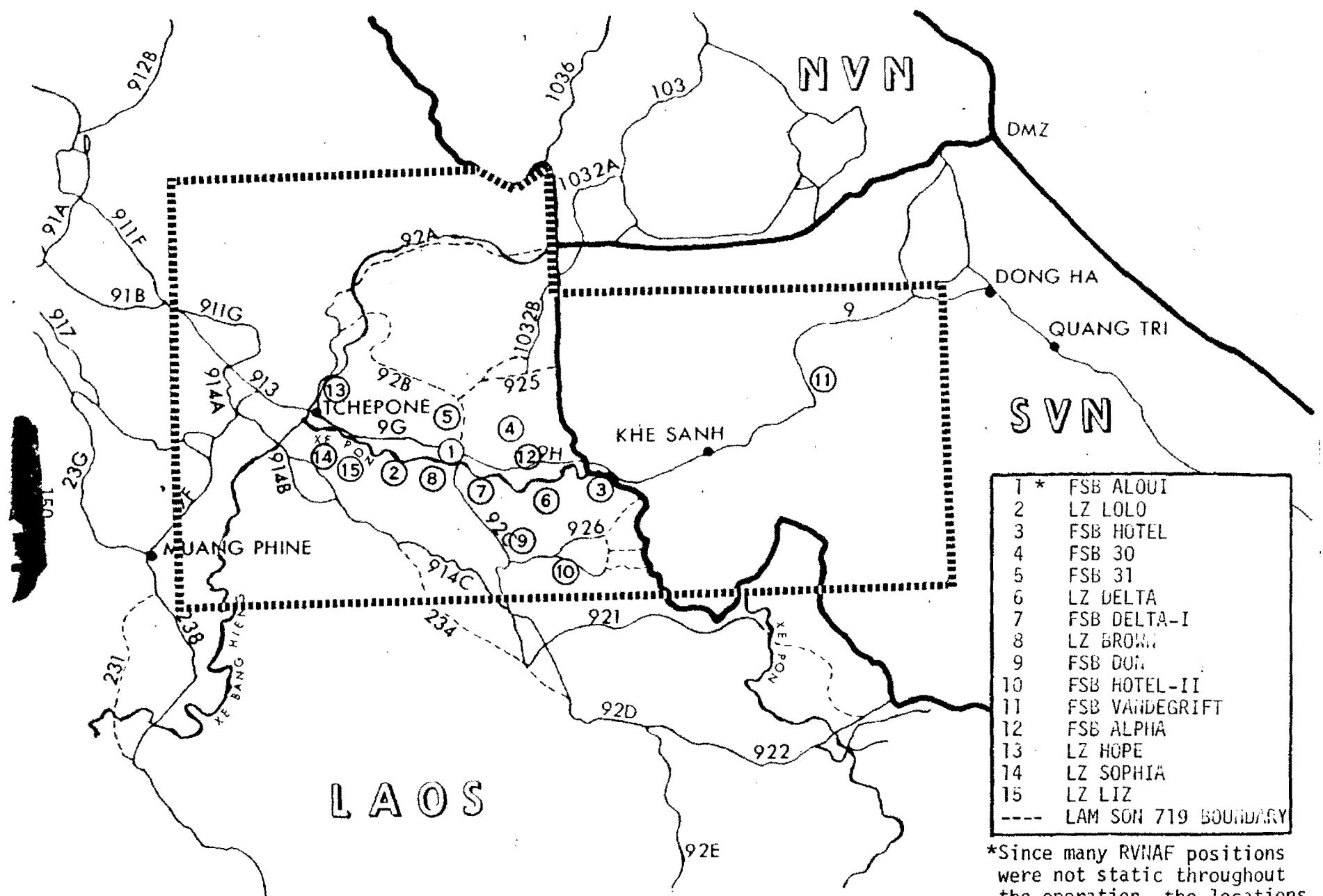


Figure 3: Lam Son 719 Positions and Boundary (U)

\*Since many RVNAF positions were not static throughout the operation, the locations shown here should not be considered exact.

This permitted little or no time for TAC AIR preparation. TAC AIR was consistently placed in the position of reacting to enemy resistance encountered during the assault, rather than being given time to prepare the landing zone and the surrounding area prior to the insertion attempt.

3) (S) A Change in Plans. On 12 February, President Thieu made a decision which changed the entire character of the South Vietnamese incursion into Laos. General Lam, having experienced difficulties in securing Route 9 for logistics support, and concerned about protecting his flank, gave his assessment of the situation to President Thieu. The President decided that, at least for the time being, emphasis would be shifted from Tchepone to the Ban Dong area. Effort was to be concentrated on cleaning out the caches in the Ban Dong vicinity with only a limited force planned for entry into the Tchepone area. With RVNAF forward momentum stalled, the enemy seized

(S) [REDACTED] As the RVNAF stopped and consolidated, expanding their defensive positions and searching for caches, the enemy began to surround their encampments. Typically, three or four days after the establishment of a fixed FSB, the enemy had already organized and reinforced. Attacks by fire increased, followed by nighttime ground attacks. Positions on the northern flank were the 216/ first to feel the increasing pressure.

(S) [REDACTED] By 14 February, the northernmost positions were subjected to heavy ground assaults, but air support helped repel the attacks. Continuous gunship coverage was provided at night, and fighters struck enemy positions throughout the day. B-52 strikes were used in support of troops in contact for the first time on 14 February, and this tactic was used increasingly throughout the campaign. In order to reduce the effectiveness of the air strikes and RVNAF artillery, the NVA used the tactic of "hugging"\*\* the friendly positions. Friendly units were reluctant to patrol aggressively from their positions, preferring to stay close to their bases, and the NVA took advantage of <sup>217/</sup> the situation.

4) (S) [REDACTED] Enemy Attacks. Mounting enemy resistance to the RVNAF incursion exploded into an enemy offensive which began on 18 February and lasted about two weeks. On the 18th, the 39th ARVN Ranger Battalion, positioned well to the north of FSBs 30 and 31 on the northern flank, was subjected to intense shelling followed by coordinated tank and infantry attacks by multi-battalion forces. Intense automatic weapons and small arms fire made helicopter resupply of the Ranger camp increasingly difficult, until finally it could no longer <sup>218/</sup> be sustained.

(S) [REDACTED] During the next two days, the outnumbered Ranger battalion continued to fight, supported continuously by fighters,

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\*Moving in and staying close to RVNAF positions.

B-52s, helicopter gunships, and artillery. During the critical night-time hours, continuous flareship/gunship support was provided. On numerous occasions the gunships struck the enemy in the outer trenches, within the camp's perimeter. Though subjected to continuous, air strikes, the enemy attacks proceeded with increasing intensity. Helicopter resupply and medical evacuation were attempted without success. The remains of the badly mauled Ranger battalion exfiltrated to a nearby Ranger (21st Battalion) position, having suffered 178 killed or missing and 145 wounded, with only 108 remaining combat effective--a casualty rate of 75 percent. The price to the enemy was even higher, <sup>219/</sup> estimated at over 600 dead.

(S) [REDACTED] While these attacks were occurring on the northern flank, elements of the ARVN 1st Infantry Division ranged deep into enemy territory. These infantry units patrolled from their fire support bases more aggressively than their compatriots to the north. They moved southeasterly to Routes 92D and 914, uncovering and destroying enemy pipelines and supplies, in spite of mounting enemy resistance. <sup>220/</sup>

(S) [REDACTED] By 25 February, a widespread enemy counter offensive was underway. Supported by tanks and heavy artillery, the NVA placed heavy pressure on the northernmost RVNAF positions, forcing evacuation of remaining forward Ranger positions and removal of the survivors from the operation. Key airborne infantry positions north of Route 9, FSBs 30 and 31, were subjected to severe assaults. FSB 31 was hardest hit and was overrun on the night of the

25th by coordinated tank and infantry attacks while a thunderstorm prevented air support of the position. The defenders of the FSB, the 3rd Airborne Brigade, were so badly battered that they were withdrawn from the operation, and were still refitting and replacing losses in early April. Enemy losses were also high. TAC AIR, B-52s, artillery, and helicopter gunships had attacked the enemy continuously until the deteriorating weather prevented further air strikes. The weather cleared again the following day, and more strikes were put in on enemy armor and positions. An estimated 250 enemy were killed, and 15 tanks <sup>221/</sup> destroyed. The RVNAF reinforced, and on 28 February airborne and armored units reported that they had retaken FSB 31. Enemy tank and infantry attacks continued against FSBs 30 and 31 but, with heavy <sup>222/</sup> air support, were driven back.

(S) [REDACTED] The northern positions, though hardest hit, were not the only targets of the enemy offensive. Enemy attacks were directed against units throughout the combat area, with the fiercest attacks directed against forward RVNAF forces along the entire periphery of the operation. Units of the ARVN 1st Division had progressed as far as Routes 92D and 914, but were bogged down by stiff enemy resistance and heavy attacks by fire. For some of these units, resupply by helicopter was precluded by the intense standoff attacks. Units positioned south of Route 926, at Fire Support Base Hotel-II, could not be resupplied for four consecutive days, and attempts to evacuate the position were unsuccessful because of heavy enemy fire. The units abandoned the FSB

in search of a secure landing zone and were finally lifted out of the area on 28 February. All RVNAF positions were at times subjected to heavy attacks by fire, particularly during troop deployment or resupply operations. These attacks seemed designed to neutralize RVNAF mobility and impose a static posture on friendly forces while the enemy positioned for attack. <sup>223/</sup>

(S) Around the 28th of February the intensity of the fighting throughout the Lam Son area began to slacken, although locally heavy fighting occurred at times, particularly in the FSB 30/31 area. Both friendly and enemy forces introduced reinforcements during this period, so that near the end of the first week of March friendly strength had reached nearly 17,000 men, while enemy strength, including rear service personnel, was estimated at 35,000. <sup>224/</sup>

5) (S) The Assault to Tchepone. The severity of enemy attacks, particularly on the northern flank, prompted further adjustment of RVNAF plans. The airborne forces north of Route 9 had originally been assigned the task of capturing Tchepone, while the Rangers were to stay behind to screen the northern flank. With the Rangers removed from the fray, and the Airborne troops tied down north of Route 9, the 1st ARVN Infantry Division was assigned the task of capturing Tchepone. Vietnamese Marines were to move into 1st Infantry positions on the southern flank as the 1st Division evacuated these positions and leap-frogged to Tchepone. On three consecutive days, the ARVN 1st Infantry Division was to conduct battalion-sized heliborne assaults into

three landing zones on the ridgelines south of Route 9 leading to Tchepone. On the fourth day, a two-battalion assault was planned into a site northeast of Tchepone, to be followed by the capture of the abandoned town. The first heliborne assault on the way to Tchepone was to be conducted on 3 March at Landing Zone Lolo. <sup>225/</sup>

(S) **[REDACTED]** By this time, the enemy build-up throughout the Lam Son area was tremendous. Enemy forces outnumbered friendly forces two to one. Enemy automatic weapons and mortar teams were well deployed throughout the area, and helicopter insertion, resupply, and evacuation operations became more and more difficult and, at times, impossible. Helicopter hits and losses were mounting, yet U.S. Army officers continued to ignore General Abrams directions to emphasize TAC AIR support of helicopter operations. The apparent belief that helicopters could survive in the Lam Son area without heavy tactical air support prepared the way for staggering losses at Landing Zone <sup>226/</sup> Lolo.

a) (S) **[REDACTED]** Landing Zone Lolo. The site for Landing Zone Lolo was situated on a high ridgeline to the south of and overlooking Route 9, somewhat less than half way to Tchepone from Ban Dong. During the night of 2-3 March, eight B-52 sorties struck positions south of the site, and on the morning of the 3rd, six TAC AIR sorties cleared the primary and alternate landing zones. Subsequently, three more sorties delivered anti-personnel ordnance on the primary landing zone, and artillery support began. Up to the time

was interrupted after four of the first 19 helicopters arriving at the site were shot down, and many others hit. By 1300 hours 18 more TAC AIR sorties had been directed against suspected enemy positions and another insertion was attempted and repulsed. Fourteen more sorties were expended, and the assault was resumed at 1600, and finally completed at 1830. Of the 40-odd helicopters involved, almost all took <sup>227/</sup> hits, 20 were shot down, and seven more were totally destroyed.

(S) [REDACTED] Throughout the hectic day, the FACs supporting the insertion were unable to pinpoint enemy positions under the heavy foliage in the area. The FACs relied on Army helicopters and the ARVN ground commander to provide the locations <sup>228/</sup> from which fire was being taken.

(S) [REDACTED] Following the disastrous Lolo assault, General Abrams called together a group of Army and Air Force officers and directed General Sutherland and his staff to follow the Air Force plan for landing zone preparation. That plan had originally been presented to Army planners in January but they rejected it as unnecessary. Only a week before the Lolo assault, General Abrams had directed 7AF and XXIV Corps to coordinate landing zone preparation between themselves and ARVN representatives, and the Air Force again outlined the plan in detail and urged that it be followed--it was not followed at Landing Zone Lolo. General Abrams relieved a high-ranking U.S. Army officer of his duties, and formed a Coordination Board composed of

an Army artillery, an Army helicopter, and an Air Force TAC AIR representative. The General directed these three officers to control U.S. resources for General Lam, and to respond to his requests in a well-coordinated, professional manner. He then told the U.S. Army representatives present that they had ignored the Air Force's plan for landing zone preparation from the beginning of the operation, that this had cost them terribly, and that the Air Force's plan <sup>229/</sup> would now be followed.

b) (S) Landing Zone Liz. The site chosen for Landing Zone Liz was located on the ridgeline south of Route 9 several miles to the west of Landing Zone Lolo. The site had been cleared by a 1 March COMMANDO VAULT\* drop, and the assault was scheduled for 4 March. Fourteen ARC LIGHT sorties struck the area surrounding the primary and alternate landing zones during the pre-dawn hours before the assault. At first light, TAC AIR cleared the primary and alternate landing zones with heavy ordnance, and then began to lay down anti-personnel ordnance. By 1000, the scheduled time of the assault, 25 sorties had prepped the area, which was, in the opinion of the on-scene FAC, ready for the insertion. Unfortunately, weather at Khe Sanh had temporarily grounded the helicopters. TAC AIR continued to strike the area while waiting

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\*A COMMANDO VAULT drop employed the BLU-82 (15,000 pound) bomb delivered by a C-130 aircraft to create helicopter landing zones in densely foliated areas. (Prior to Aug 1970, the M-121 (10,000 pound) bomb was also employed in COMMANDO VAULT drops.)

for the arrival of the helicopters. Once the helicopters arrived, the assault was delayed by enemy fire until 1715, by which time a total of 61 TAC AIR sorties had prepped the area. During the insertion, nine more sorties struck the area. Despite the extensive preparation, losses were still heavy, though much reduced in comparison to the Landing Zone Lolo insertion the day before. Of 65 troop lift helicopters involved, <sup>230/</sup> 18 were shot down, two of which were destroyed.

c) (S) ~~████████~~ Landing Zones Sophia and Hope. On the remaining two heliborne assaults in the Tchepone area, surprisingly little enemy resistance was encountered. On 5 March Landing Zone Sophia, southeast of Tchepone, was assaulted by a two-battalion force after weather had temporarily delayed the insertion. Employment of tactical air support was extensive, with 16 B-52 strikes and 41 TAC AIR sorties supporting the operation. Only three helicopters were shot down. On the next day, a two-battalion force was lifted into Landing Zone Hope, northeast of Tchepone. Twenty-five ARC LIGHT sorties struck the area the night and morning before the insertion, two COMMANDO VAULT drops were executed during the morning, and 74 TAC AIR sorties prepped the primary and alternate landing zone areas and supported the insertion. The assault of the two-battalion force began about noon in two successive waves of 60 helicopters each and was completed in about an hour and a half. No enemy ground fire was reported from the vicinity of the landing zone; however, one helicopter was shot down near Sophia <sup>231/</sup> enroute to Hope.

SECRET  
6) (S) Reduced Contact, Search and Destroy Operations.

There were indications that the NVA were either outflanked by the ARVN assault to Tchepone, or that they were gathering their strength and waiting for an opportune moment to unleash a crushing blow against overextended or withdrawing RVNAF units. Enemy resistance to the ARVN heliborne assaults in the Tchepone area had been surprisingly light. After fierce resistance at Landing Zone Lolo, enemy reaction lessened at Landing Zone Liz, and was almost nonexistent at Landing Zones Sophia and Hope, which were both in close proximity to Tchepone. It is probable that most enemy units in the Tchepone area withdrew to the west to guard their vital LOC. That route structure continued to support an unobstructed flow of supplies to the south, but was threatened by the presence of ARVN forces in the Tchepone area. As the ARVN swept out from their newly established landing zones in the Tchepone area, finding and destroying sizable caches, they were met by little enemy resistance. Intelligence reports indicated that the enemy was reinforcing and positioning himself to exploit weaknesses that developed as the RVNAF extended or began to withdraw. Nevertheless, guarded optimism began to mount as the light enemy resistance to ARVN forces in the west continued. 232/

(S) Following their insertion, troops of the ARVN 1st Division searched for enemy supply caches in the Tchepone area. They reported locating numerous caches and finding hundreds of enemy bodies which were attributed to air strikes. On 10 March,

only four days after their arrival, ARVN units inserted at Landing Zone Hope began withdrawing from the Tchepone vicinity to the escarpment south of Route 9. From there some friendly units began to redeploy east along the ridgeline, while others probed to the south, conducting operations aimed at interdicting Route 914. By 14 March, elements of an ARVN battalion had reached the high ground overlooking a portion of Route 914 and conducted some limited probes down <sup>233/</sup> to the road.

(S) [REDACTED] While the ARVN were conducting the heliborne assaults to Tchepone, and subsequent search and destroy operations, enemy resistance throughout the area slackened. During the first few days of March, stiff enemy ground attacks were still occurring, particularly on the northern flank; but by the end of the first week the size and frequency of main force ground attacks had noticeably diminished. Attacks by fire were still extensive, <sup>234/</sup> however, and at times precluded adequate helicopter resupply.

7) (S) [REDACTED] Enemy Attacks, RVNAF Withdrawal. During the first two weeks of March, enemy forces were preparing a major counterattack as RVNAF forces began their withdrawal from Laos. The enemy positioned his units at critical points throughout the area, and ringed FSBs and expected pick-up zones with automatic weapons, mortars, rockets and infantry. On 14 March the enemy began his counteroffensive with intense attacks by fire and locally heavy ground attacks, particularly

in the vicinity of FSB Lolo. Because of enemy fire and poor weather, FSB Lolo could not be resupplied or evacuated and was abandoned the night of 15-16 March in the face of continuous enemy assaults. Enemy tanks began to appear throughout the combat zone, as the <sup>235/</sup> tempo and severity of attacks mounted.

(S) [REDACTED] By 19 March all friendly units in Laos were under attack. Intense antiaircraft, mortar, rocket, and small arms fire precluded resupply and evacuation of many key sites, including FSB 30 on the northern flank, FSB Brown on the western flank, FSB Hotel on the southern flank, and FSB Delta south of Route 9 near the Laos/SVN border. Heavy ground assaults, coupled with unsuccessful resupply, forced many RVNAF units from their positions. Artillery was abandoned, and friendly units were forced to fight their way to alternate pick-up zones, exposing themselves to direct confrontation with main force maneuver elements. During these days of intense fighting, it was difficult to provide TAC AIR support because friendly ground commanders were sometimes unaware of the location of their own troops. Both friendly and enemy casualties during these last days of the cam-  
<sup>236/</sup> paign were extremely heavy.

(S) [REDACTED] Army helicopters braved the enemy fire and by repeated attempts, with tactical air support, managed to evacuate most of these forces, although in so doing they suffered severe losses. As a case in point, the 2nd Regiment (1st ARVN Infantry Division) which had conducted operations down to Route 914 after the Tchepone raid, was working its way east to FSB Delta I for extraction. By 18 March the

2nd Regiment was under continuous attack by main force enemy units supported by heavy artillery. At the same time, intense attacks at FSB Delta I prevented helicopter support of that site. On 20 March, extraction of the 2nd Regiment was attempted four kilometers west of FSB Delta I. Planning of the extraction was inadequate, and failure to coordinate the "when and where" of the operation with the Air Force prevented proper tactical air support. Enemy fire inflicted heavy losses on the helicopters with 28 of the 40 participating shot down (rendered unflyable), of which seven were reported as totally destroyed. Only one of three battalions was extracted before the operation had to be cancelled. The survivors were extracted the next day after they had <sup>237/</sup> made their way to a nearby location.

(S) On 19 March, while RVNAF units on the northern, western and southern flanks were locked in combat with the enemy, a large ARVN convoy composed of armored and airborne units headed east from the Ban Dong crossroads (FSB Aloui), along Route 9 towards the Laos/SVN border. Throughout the campaign, the armored task force and airborne units were unable to secure Route 9 adequately for truck resupply convoys, forcing helicopters to bear the entire load. Now as the large ARVN convoy headed down that road, it was subjected to frequent ambushes and attacks by fire. During the first day, numerous vehicles, including tanks, howitzers, and armored personnel carriers (APCs), were destroyed or abandoned in confusion. A score of these abandoned vehicles were destroyed by tactical air <sup>238/</sup> strikes to prevent them from falling into enemy hands.

(S) [REDACTED] By 21 March, the task force had fought to within five kilometers of the border but was stalled by enemy ambushes. Fighting raged around the task force throughout the day, and by nightfall 20 more tanks and APCs had been destroyed. It was evident that the enemy had set a trap for the several thousand RVNAF troops retreating along Route 9. He had worsened already bad road conditions by blowing up road culverts and had lined the route with numerous ambushes. Complicating matters, the RVNAF column was suffering from fuel shortages. Faced with the prospects of disaster on the road ahead, the task force commander took a gamble and left the road. He headed his convoy of more than 100 vehicles away from the road, toward the Xepon River and the border. Throughout the night, continuous gunship coverage defended the task force, but no major <sup>239/</sup> enemy attack materialized.

(S) [REDACTED] The task force reached the Xepon River on the next morning, 22 March, but was unable to ford. During the day, Army helicopters lifted in POL and the equipment needed to construct a ford across the river. While the armor was stalled at the river, ground forces were sent across to secure the opposite bank, and other units deployed to protect the column from attacks from the north. During the afternoon, in broad daylight, FACs sighted approximately 20 tanks racing down Route 9 towards the stranded ARVN task force. A few minutes later, only five kilometers from their goal, the lead tanks were struck by F-100s. Antiaircraft barrages from the tanks shot down one aircraft, but another F-100 destroyed the lead tank. Within minutes, further strikes by F-100s and F-4s accounted for four

more tanks destroyed, one of which had been disabled by an ARVN land mine. The remaining tanks fled into the jungle. During the last critical days of the campaign, between 19 and 23 March, TAC AIR neutralized the enemy's tank advantage by destroying or immobilizing an <sup>240/</sup> estimated 30 tanks in the combat area.

(S) [REDACTED] The task force spent another night at the river, but by leaving the road the convoy had apparently surprised and confused the enemy. His tanks scattered by air strikes, and his forces deployed along Route 9 waiting to ambush the column, the enemy was unable to react and no attacks were made against the task force that night. The remains of the battered column crossed the river on the morning of the 23rd, and headed towards the border. The ARVN had entered Laos with 71 tanks and 127 APCs; they left with 22 tanks and 54 APCs. <sup>241/</sup>

(S) [REDACTED] On the nights of 22 and 23 March, while the ARVN task force waited to cross the Xepo, Marine positions to the south, in the FSB Delta vicinity, came under heavy attack. They had been in continuous contact with the enemy for two full days, and ground fire was too intense to effect resupply or evacuation. During the night, USAF gunships were available, but could not fire because enemy and friendly positions could not be distinguished with certainty. The Marines abandoned the position during the night, and TAC AIR was called in to destroy more than a dozen abandoned artillery pieces and ammunition supplies. Four hundred Marines, half of them wounded, were extracted on the 23rd, before concentrated enemy fire cancelled further evacuation. The remaining Marines fought their way to the FSB Hotel vicinity where they were extracted on the 24th. With the

removal of these last Marines, all RVNAF units were out of Laos, although numerous stragglers continued to find their way across the border in subsequent days. <sup>242/</sup>

8) (S) Summary. The NVA had met the RVNAF incursion with unanticipated swiftness and strength. Effectiveness of RVNAF units varied. Some units patrolled aggressively and fought well. Too often, however, they were reluctant to range out from their positions, thus allowing the enemy to encircle them. ARVN units were unable to secure Route 9 to permit resupply by truck, and thus were forced to rely on helicopter resupply. The NVA ringed the RVNAF FSBs, and subjected the bases and incoming helicopters to intense fire, in many instances precluding resupply or evacuation. The heavy attacks by fire were often followed by full-scale infantry charges supported by NVA tanks and heavy artillery. These attacks sometimes dislodged RVNAF defenders, but by employing these tactics the enemy exposed himself to air strikes and suffered many casualties. Nevertheless, he chose to ignore the heavy losses, for he apparently recognized the seriousness of his position if the RVNAF incursion succeeded. Well prepared with supplies and reinforcements, he launched an all-out effort to defeat the RVNAF in Laos regardless of cost. <sup>243/</sup> After RVNAF units reached Tchepone and scored some gains by destroying enemy pipelines and supplies throughout the Lam Son area, the enemy unleashed an offensive which drove the RVNAF from Laos.

(S) The enemy had wanted to do more. He wanted to inflict an overwhelming defeat on the South Vietnamese forces, a defeat of such magnitude as would shatter the Vietnamization program. This he failed to do. The RVNAF had also wanted to do more. They

planned on sweeping to Tchepone in only a matter of a few days. They wanted to range north, west, and east of Tchepone, blocking the LOC in the area, and destroying enemy caches throughout Base Area 604. They intended to remain until the end of the dry season, and to withdraw through Base Area 611, destroying the enemy's stockpiles as they withdrew. They, too, fell far short of their goals.

b. (S) (U) Employment of Air Support.

1) (S) (U) Tactical Air Control. During Lam Son 719, tactical air support of forces in northern SVN continued to be controlled by the I Corps Direct Air Support Center (I DASC), located at Danang and under the control of the Tactical Air Control Center at 7AF. To provide control for tactical air support of RVNAF forces in Laos, however, the Deputy Director I DASC was appointed as the Director of a special DASC established at Quang Tri and known as Victor DASC (V DASC). Thus, during the first week of February, V DASC was reactivated and placed under the control of the 7AF Command Post which was the agency responsible for controlling out-country air strikes. Victor DASC was to coordinate, and forward to 7AF, requests for preplanned air support (excluding, of course, air mobile operations). Such requests for preplanned TAC AIR came through the RVNAF chain of command up to the Division Tactical Operations Center (DTOCs), located in SVN, to I DASC, and from there to V DASC. Seventh AF then fragged the requested preplanned sorties.

(S) [REDACTED] Immediate air requests were handled differently. Immediate requests were often passed directly from the ground unit to the airborne FAC. Alternately, immediate requests were passed up through the RVNAF chain of command to one of the three RVNAF DTOCs. At each DTOC there was a USAF Tactical Air Control Party (TACP), which relayed the request either directly to the FAC, or to V DASC which in turn relayed it to the FAC. If the FAC did not have TAC AIR available, he could request it from the ABCCC, which would either divert it from other lower priority missions, or, if necessary, request a 244/ scramble of alert aircraft.

(S) [REDACTED] FACs were assigned to V DASC mainly from units in Thailand, and were given the call sign HAMMER. Most of the FACs had been supporting out-country operations and were thus familiar with the Laotian terrain and environment, though many of them were less familiar with providing close air support to ground units. It was felt that it would be quicker and easier to train these FACs to provide close air support than to acquaint in-country FACs with the Laotian terrain and AAA environment. Because of the unusually restricted access to planning information and the short lead time provided for forming the V DASC, the FAC aircrues had only two days prior to initiation of operations to organize, study Rules of Engagement and operational procedures, establish a working relationship with their 245/ Vietnamese observers, and review close air support procedures.

(S) [REDACTED] Initially, plans called for two HAMMER FACs on station in Laos at all times, one north and one south of Route 9. Throughout the daytime hours each FAC was to receive a set of fighters every 30 minutes, for a total of 96 sorties per day, with the understanding that more sorties would be provided if needed. As the operation unfolded, the number of FACs on station at any given time during the day increased from two to seven, six for directing strikes, and one for spotting hostile artillery. Strike sorties also increased, and fighters arrived every 15 minutes. Three FACs were on station at night. Army commanders requested even more FACs, apparently assuming that an increase in the number of FACs would result in a direct increase in the number of strike sorties. Seventh Air Force, however, felt very strongly that the addition of more FACs, considering the small, congested air space, would be counterproductive. On several days late in the operation, the number of strike sorties flown daily in the area of operation exceeded 300. In addition, throughout the month of March, there was an average of 30 to 40 ARC LIGHT sorties per day. With all the FACs, fighters, and B-52s operating in such a small area, there were serious air traffic control problems and hazards. The FACs were hard pressed to handle all the airspace control problems and language difficulties, as well as find the best targets for continuously arriving aircraft with minimum on-station times. The situation was complicated by friendly artillery and enemy AAA fire, and was particularly aggravated by the presence of helicopters at altitudes and locations unknown to the 246/ FACs.

(S) [REDACTED] As pointed out earlier, Army air mobile assets employed in Lam Son 719 were not under the control of a single manager for air resources. Army helicopters operated throughout the Lam Son area without prior coordination with V DASC or the HAMMER FACs. Air support routes were established for helicopter support of FSBs, but they were not followed. On numerous occasions, helicopters suddenly appeared in an area without advance warning, and, more often than not, the FAC was unable to establish radio contact with them. In an attempt to alleviate the communication problem, the FACs and helicopter pilots exchanged operating frequencies, but on many occasions the helicopters worked on alternate frequencies. Communication 247/ remained a problem throughout the operation.

(S) [REDACTED] FACs characterized airspace control problems as "gigantic," one FAC stating that a fighter he was controlling experienced three near misses with helicopters on a single pass. No mid-air collisions occurred between fighters and helicopters during the operation. However, some fighter and B-52 strikes were called off due to the unexpected presence of helicopters and the potential 248/ hazard for mid-air collision.

(S) [REDACTED] Another problem in providing proper tactical air control was the language barrier. No American advisors were allowed on the ground, so a Vietnamese interpreter was assigned to each FAC to provide the necessary communication link with the ground.

Unfortunately, most of these interpreters had no experience in aircraft of the OV-10 type, and in the first days of the campaign air-sickness was a problem. Because of the restricted lead time, most of the interpreters arrived at V DASC only two days before the Laos incursion, which allowed for only one ride in the aircraft before entering combat. Though some of these interpreters were proficient in English and devoted themselves to their work, others spoke poor English and were unmotivated. As Lam Son developed, the FACs placed increasing reliance on English-speaking commanders on the ground rather than on interpreters in the aircraft.

2) (S) TAC AIR Roles. Tactical air power played a vital role in Lam Son 719. Without it, such an operation could not have been seriously considered by the South Vietnamese. Review of the events during the operation clearly demonstrates that the RVNAF incursion, if attempted without the advantages of air support, would have ended in a catastrophe.

a) (S) Close Air Support. About 42 percent of the total tactical air sorties flown in support of Lam Son 719 were directed against enemy personnel. Of these sorties, only about 18 percent (or 8 percent of the total) were in support of troops in contact. This relatively small percentage of the total sorties nevertheless accounted for some of the most dramatic and vital strikes of the campaign. Time after time, TAC AIR was the factor which provided the edge needed to turn back enemy assaults. Very often, the critical

strikes were provided at night by AC-119 or AC-130 gunships. On other occasions, daytime fighter strikes against enemy tanks or waves of attacking infantry provided the essential advantage. 251/

(S) [REDACTED] It is difficult to overemphasize the value of the AC-119 and AC-130 gunship support provided to friendly forces. Nighttime gunship defense of besieged RVNAF positions was frequently so critical that the absence of gunship support, even for only a few minutes, turned the tide of battle. When gunship support appeared, almost without exception, enemy contact was broken. (It is significant to note that this continuous effective coverage was accomplished with only eight gunship/flareship sorties per night. This was possible because of the long on-station time and the large ordnance-carrying capacity of the gunships.) Daytime fighter strikes in support of surrounded defenders were also crucial, at times providing the only breaks in continuous enemy attacks. Fighter and fixed-wing gunship strikes against enemy armor were especially critical. In a large measure, these strikes denied the enemy the advantage he had expected 252/ from his surprising deployment of large numbers of tanks.

(S) [REDACTED] Effective as these air strikes were, however, they could not always prevent the enemy from overrunning the forces being supported. On occasion, enemy strength and resolve were too much for air strikes to overcome, and the enemy was able to overwhelm the friendly position. In some such cases, a temporary deterioration in the weather prevented air strikes and provided the

enemy enough time to overpower weakened RVNAF defenses. In other instances, the enemy fire was too heavy to permit resupply of RVNAF positions. In these cases, the poorly supplied defenders were unable to resist continuing enemy attacks and were forced from their positions. But whatever the circumstances, it was again clearly demonstrated that air support is indeed a valuable asset, but one which cannot always provide the advantage needed for victory. A successful application of air support presupposes a well-equipped, motivated, and effective ground force.

253/

b) (S) Interdiction Near the Battle Area.

An extensive air effort was mounted against the enemy logistics system supporting NVA troops in the area. The effort already underway in southern STEEL TIGER, as a part of the COMMANDO HUNT V campaign, was intensified in an attempt to block enemy resupply and reinforcement of his forces and to deal a severe blow to enemy attempt to transit or bypass the area with supplies destined for SVN and Cambodia. Thirty percent of the Lam Son strike sorties were devoted to this category. In addition to these strikes against the LOC and vehicles, another 6 percent of the total sorties were devoted to striking storage area targets as they were discovered within the area. These latter strikes, though small in number when compared to other categories, accounted for a large percentage of the secondary explosions and fires reported throughout the operation. The extensive effort devoted to interdiction resulted in considerable reported

bomb damage. Nevertheless, considering the swiftness of enemy reinforcement and the severity of his reaction to the incursion, there is little evidence that the enemy suffered from serious supply or reinforcement shortages during Lam Son 719. <sup>254/</sup>

c) (S) Support of Helicopter Assaults.

Tactical air support of U.S. Army helicopter operations in Laos represented a sizable and influential aspect of tactical air operations during Lam Son 719. Large numbers of air strikes were used in preparing helicopter landing zones and the surrounding area for air-mobile assaults, and for supporting helicopter resupply and evacuation missions throughout the operation. Unfortunately, the exploitation of tactical air in support of these operations was less than the potential available. For the first four weeks of the operation, TAC AIR was consistently put in a position of reacting to enemy resistance <sup>255/</sup> encountered after an assault had begun.

(S) An Air Force plan for support of air-mobile assaults had been proposed during January 1971, and again in February, but it was not implemented. The Air Force plan called for ARC LIGHT strikes in the early morning hours, followed by a COMMANDO VAULT drop. Fighters were then to employ heavy ordnance with fuze extenders to clear away remaining obstructions in the landing zone itself. Next, to suppress enemy fire, TAC AIR was to systematically deliver antipersonnel and general purpose bombs on key points throughout the area. Finally, a smoke screen would be set up, followed

immediately by the insertion. Throughout the preparation phase, full use would be made of other sources of firepower including artillery <sup>256/</sup> and helicopter gunships.

(S) Until the costly Landing Zone Lolo assault on 3 March, Army planners requested only enough sorties to clear the landing zone and provide a minimum effort to suppress enemy fire. Following Lolo, however, the total Air Force plan was accepted and Army planners began to take greater advantage of tactical air support of their assault operations. Furthermore, the planners began to treat any insertion, resupply, or extraction missions into high enemy density areas as combat assaults, and began coordinating more of these missions with the Air Force. Although a few isolated, but costly, instances of the Army's "go it alone" attitude continued to surface as the operation progressed, in general, coordination of critical helicopter insertion, resupply, and <sup>257/</sup> evacuation missions improved.

(S) The increased tactical air support of Army helicopter operations helped ease the problem of helicopter losses, but by no means solved it. Although tactical air preparation of landing zones significantly reduced the volume of enemy fire, during some insertions helicopters continued to experience serious losses. Similarly, many attempts to resupply or extract encircled RVNAF forces were unsuccessful in spite of TAC AIR attempts to suppress enemy fire. In many instances, the RVNAF ground troops were not aggressive enough in patrolling out from their positions, and thus allowed the enemy to come

in too close. This increased the threat to the helicopters and reduced the effectiveness of air strikes. At other times, however, the enemy was too strong to hold back, and the volume of his fire was too great for the helicopter, even with TAC AIR support. <sup>258/</sup>

d) (S) The Effort Against the Air Defense

System. Air Force planners recognized from the very beginning of the campaign that the high AAA threat in the combat area would be a major factor in the operation, and that it would be difficult to counter by air strikes. Before the RVNAF forces entered Laos, an AAA suppression campaign was directed along Route 9 from the SVN border to the Tchepone area, and consisted primarily of mass drops of CBU along the edges of the highway. In the beginning of the operation, the FACs considered AAA positions to be targets of a high priority, and devoted a considerable amount of their time to locating and striking them. As activity on the ground increased, however, the FACs had less and less time to search for these targets. As a result, one FAC was assigned full time to spotting hostile AAA positions on the northern flank of the Lam Son area. STEEL TIGER FACs flying on the periphery of the area also devoted a great deal of effort to finding and destroying these positions. Fifteen percent of Lam Son tactical air strikes were delivered against the enemy air defenses. <sup>259/</sup>

(S) The primary antiaircraft artillery  
threat to fixed-wing aircraft consisted of 23, 37, and 57mm guns. It was automatic weapons fire, not AAA fire, however, which inflicted

the most hits and losses of fixed-wing aircraft, and it was also these weapons which were the most mobile and most difficult to locate.

Similarly, but on even a more pronounced scale, small arms and automatic weapons (less than 23mm) were by far the most serious threat to helicopters, accounting for nearly 90 percent of the reported hits and losses. Mortar fire was the next most serious threat. Antiaircraft guns were reported to have caused less than 1 percent of helicopter hits and losses.

(S) [REDACTED] The whole family of enemy antiaircraft weapons was well-camouflaged, well-positioned, and mobile, but the small arms and automatic weapons threat was the most elusive. One Army general commented:

The NVA has skillfully deployed through the operational area an extensive, sophisticated, well-integrated, highly mobile air defense system. Large numbers of antiaircraft weapons of several calibers are well-positioned, well-camouflaged, well-dug-in, and well-employed. . . .

An effective technique used by the NVA is employment throughout the operational area of ten-twelve man combat teams armed with small arms, at least one 12.7mm machine gun, at least one 82mm mortar, and one or two RPG\* rocket launchers. Positioned on or near critical terrain, located in bunkers and trenches, well-supplied with ammunition, these combat teams attack by fire aircraft and infantry operating within their weapons range. The teams are capable of placing 12.7mm machine gun and 82mm mortar fire on virtually every friendly position, landing zone, and pick-up zone in the Lam Son 719 operational area. . . .

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\*RPG--Rocket Propelled Grenade.

... every airmobile operation, even single-ship resupply or medical evacuation operations, must be planned and conducted as a combat operation, complete with fire plan, escorting gunships, and plans for securing and recovering downed crews and aircraft.

(S) [REDACTED] Tactical air was reasonably successful in destroying antiaircraft guns, claiming 147 AAA pieces destroyed, 20 damaged, and 61 silenced. The estimated gun count showed a modest decrease by the end of the operation, from 155 guns at the beginning to 135 at the end. However, these weapons were not the primary threat to U.S. air support of the operation; small arms and automatic weapons fire were by far the more serious factor. These automatic weapons were much more numerous, mobile, and difficult to spot. TAC AIR was credited with only 65 automatic weapons destroyed, <sup>262/</sup> 12 damaged, and 11 silenced.

3) (S) [REDACTED] B-52 Roles. ARC LIGHT strikes were an important element in U.S. air support of Lam Son 719. During the early days of the operation, they were used to impede the flow of enemy reinforcements and logistics support to the battle area, and to "soften up" areas along the avenues of approach for RVNAF ground advances. Later, they also came to be a standard part of helicopter landing zone preparations, complementing tactical air strikes, artillery fire, and helicopter gunship fire. Throughout the operation, they were successfully <sup>263/</sup> employed against storage areas and troop concentrations.

(S) [REDACTED] ARC LIGHT strikes were also employed in close support of ground forces. They were used not only to soften areas in advance of ground movements, but also to strike massed enemy forces in close proximity to friendly units. On occasion the RVNAF used tactics especially devised to exploit B-52 strikes and counter the enemy's "hugging" tactics. They set up forward positions, inviting the enemy to move in close to them, and then withdrew to their rear positions a short time before the ARC LIGHT strike, which frequently caught the enemy still massed in the target area. ARC LIGHT strikes in close proximity to besieged friendly units were especially crucial in the final days of the operation, inflicting heavy casualties on the enemy, and at times providing friendly units <sup>264/...</sup> with the only lulls in enemy attacks.

(S) [REDACTED] A fundamental difference between normal ARC LIGHT operations and those during Lam Son 719 was that General Lam, the South Vietnamese commander of the operation, personally selected the ARC LIGHT targets on a daily basis. MACV, which previously allocated the targeted B-52 strikes, provided General Lam with available ARC LIGHT targeting information and allowed him to select the targets. As General Lam also had access to the intelligence information of his field commanders, this procedure seemed to work well, and probably accounted for the increased use of B-52 in direct support of ground <sup>265/</sup> forces.

(S) [REDACTED] Early in the operation it became apparent that a major battle was shaping up in Lam Son 719. After initially light enemy resistance, the RVNAF began to encounter increasingly stiff opposition. In order to provide as much support for the RVNAF as possible, a three-month surge in SEA ARC LIGHT sorties was authorized (from 33 to 40 sorties per day). Within two days, the necessary B-52s, men, and equipment had been transferred from Anderson AFB, Guam, to 266/ U-Tapao RTAFB, and the surge began.

(S) [REDACTED] Not only was the number of sorties increased, but also, later, the aircraft were again fitted with the larger-capacity bomb racks to carry more bombs per sortie. On 6 March, three B-52Ds carried 108 bombs instead of the normal 66 bombs per sortie. Thereafter, one additional "D" aircraft per day was refitted to carry the larger 267/ bomb load.

(S) [REDACTED] Besides increasing the quantity of B-52 support for Lam Son 719, actions were taken to improve the responsiveness of these strikes to the ground commander's needs. During the initial planning for Lam Son 719, MACV requested that SAC develop the capability to change targets at the latest possible time prior to the Time on Target (TOT). Such a capability would give the field commander the greatest amount of flexibility in the application of ARC LIGHT

strikes in a fluid ground tactical situation. On 1 March new delivery procedures were implemented, allowing ARC LIGHT targets to be changed within three hours of their TOT. This new tactic gave the field commander a timely, massive firepower response which heretofore had not been available in close support situations, and although the new procedures had been designed specifically for Lam Son 719, they could 268/ be utilized in other areas or operations.

(S) 269/ The application of B-52s in support of Lam Son 719, however, was not without problems. One difficulty was in the area of air traffic control. As noted earlier in this study, air traffic control problems in the congested area were serious. ARC LIGHT operations were a complicating factor because they required clearing air traffic from the target area for a distance of several miles, and for a period up to 20 minutes, thus hindering the provision of continuous close air support within the area cleared.

(S) 269/ Another problem related to ARC LIGHT strikes was revealed in interrogation of NVN soldiers captured during Lam Son 719. The prisoners reported that B-52 strikes had a serious impact on the enemy and that the concussion effects of the strikes were especially feared. However, they also indicated that the impact of the strikes was somewhat reduced by warning prior to the strikes. An

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\*Killed By Air (BDA).

RVNAF agent also indicated that the enemy frequently had 15 minutes advanced warning of ARC LIGHT strikes, enough time for personnel to clear the area or to take shelter prior to the strikes. 270/

(S) [REDACTED] Overall, however, both U.S. and RVNAF personnel recognized that B-52 strikes were a valuable element of U.S. air support during Lam Son 719. The RVNAF were particularly enthusiastic over the results of B-52 strikes, and as previously mentioned, developed special tactics to take full advantage of B-52 strikes against massed enemy forces in close proximity to friendly positions. The RVNAF attributed half of the tonnage destroyed and nearly two-thirds of the enemy killed in the operation to B-52s. They based these estimates on ground sweeps conducted for approximately 10 percent of the ARC LIGHT targets struck. 271/

(S) [REDACTED] Although the RVNAF reported remarkable results for the target areas investigated, those reports were tempered somewhat by the fact that their BDA was considered inflated (see p. 197). Additionally, U.S. analysts pointed out that many of the areas swept had also been subject to heavy tactical air strikes and artillery fire. In such cases, RVNAF forces sweeping the area had attributed all the BDA to B-52 strikes, when in actuality it was not possible to determine what percentage of the BDA reported was attributable to ARC LIGHT strikes or to other causes. 272/

(S) [REDACTED] Even allowing for these shortcomings in RVNAF reporting, however, U.S. analysts were convinced that ARC LIGHT strikes had inflicted severe damage and casualties on the enemy.

They were valuable in all the roles in which they were used during the operation, including interdiction, landing zone preparation, and close support. They were considered especially effective in the last role. Enemy forces concentrated around RVNAF positions, thereby forming particularly lucrative targets which ARC LIGHT strikes had been able to exploit. Clearly, the B-52 had made a major contribution to the results achieved by U.S. air support during Lam Son 719. <sup>273/</sup>

4) (S) Targeting and Centralized Control Problems.

The difficulties experienced in coordinating tactical air support and helicopter assaults were not the only problems brought about by the combined nature of the operation. Two other major problem areas were evident: first, there was a need for a central agency to assimilate or analyze all the intelligence provided by the various Air Force, Army, and RVNAF sources. Targets were developed by USAF, U.S. Army and RVNAF analysts, but there was a lack of truly centralized targeting based on the detailed information available to all these agencies. Second, TAC AIR strikes, helicopter strikes, artillery fire, and ground force maneuvers were often planned in isolation from each other particularly during the first month of the operation. There was no central agency <sup>274/</sup> which controlled all elements of Allied firepower in the Lam Son area.

(S) Concerning the need for centralized targeting, each agency assessed its own intelligence and passed on its targets to the Air Force intelligence personnel at the V DASC, who examined the inputs and passed them to the FACs for reconnaissance or strike.

However, there was no central agency with access to all the detailed intelligence available to the various units involved. Summing up the problem, the V DASC Director commented:

Development of targets should be made so that the available air can be most effectively employed against the best targets. . . . I don't have any doubt that . . . we don't have a system of this type now. Much intelligence information is available from many sources and each of these sources develop into good targets. However, there is not an organization or system established, that can assimilate this tremendous amount of intelligence and targetry information; nor is there available a central channel that can most effectively and efficiently be used to strike the best targets that are available.

(S) [REDACTED] With regard to the need for a centralized control agency, the commander of one Army unit involved in Lam Son concluded:

Whenever the U.S. is in a predominantly support role, a centralized control element must be established to coordinate all U.S. assets. In Lam Son 719, no such agency existed at Corps level; thus, U.S. assets were not managed to the best advantage. Such a control agency should include artillery, air, transportation, and supply representatives.

(S) [REDACTED] One problem related to the lack of a central control agency was the difficulty in determining the relative priorities

for the allocation of air assets to the battlefield.\* Since no U.S. advisors were allowed to be colocated with RVNAF units in Laos, reliance had to be placed on information relayed up through RVNAF channels. The RVNAF did not have an effective system by which ground priorities for air were established. Within each division, the flow of information to the DTOC was often inadequate to determine priorities for air support of division units. Further, since each division operated independently and was usually unaware of activities in adjacent areas, the DTOCs were unable to determine priorities relative to units in other divisions. When simultaneous requests for immediate support were forwarded to the FACs, someone had to determine which unit should receive the priority for air support. V DASC, which continually monitored air operations and had contact with its TACPs at each of the DTOCs, was sometimes able to inform the FAC which RVNAF unit needed air support most badly. In most cases, however, the many different operating frequencies involved in monitoring air operations prohibited V DASC from seeing the total picture, and the communications between V DASC and its TACPs at the DTOCs was inadequate for the close coordination required. Thus, more often than not it was up to the FACs to determine which ground unit should be given first priority for air support. <sup>277/</sup> In a briefing

*\*Overall priorities for various categories of air support were established and followed. For example, a TIC situation was a higher priority than a preplanned strike. It was within each category, however, that the decision had to be made concerning which request for support would be honored. For example, if four TICs were underway, which one should have priority for air support.*

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delivered to the Joint Chiefs of Staff, the problem was summarized:

From the beginning of Phase II, control and coordination problems were apparent. The ARVN simply did not have a responsive central command and control system. As a result, each division operated individually, little aware of action in adjacent sectors and even more critically unable to establish priorities on battlefield situations.

... In one area a base may have had only incoming mortar fire while another might well be on the verge of being overrun. The determination as to who needed air the fastest was usually left to the FAC who tried to ascertain the criticality of the situation through his VNAF interpreter in the back seat. Certainly, this was not desirable but to cope with on-scene critical situations, it was the only expediency available.

(S) [REDACTED] Seventh Air Force conducted a thorough study of U.S. support of the Lam Son 719 operation. After having considered the air traffic control, coordination, and targeting problems [REDACTED] 279/ encountered during the operation they concluded:

There should be a single control agency for all aircraft operating within each area. In addition, all aircraft should check in to a single agency, state their flight intention, and maintain a listening watch on the same frequency while in the area.

Provisions for control and coordination of all firepower, artillery, tac air, Arc Light and helicopters should be established, including the capability to clear aircraft into and out of control areas via corridors.

During an operation, a joint Intelligence and Targeting Center should be established.

(S) [REDACTED] It should be noted that these findings were not particularly surprising. Air Force agencies involved in Lam Son 719 had recognized these problems at an early date and made every effort to

convince the other participants of the necessity of their solution. With regard to air traffic control problems, for example, the Air Force repeatedly urged Army personnel to coordinate helicopter operations, to include: reporting to the DASC or FACs when entering the operational area, following established flight corridors, exchanging and monitoring FAC/helicopter communications frequencies. In most cases, however, these efforts met with unenthusiastic reception by Army personnel.

(S) [REDACTED] Again, in the area of control and coordination of firepower, USAF personnel made efforts to improve coordination and to project Air Force expertise into the management of the overall air effort. Air Force efforts were frustrated not only by a reluctance of Army personnel to coordinate their activities, but also by a tendency of General Lam to minimize staff coordination, and to release or change his plans at the last minute. The establishment of a Joint Planning Group, mid-way during the operation, represented only a partial solution to the problem.

3. (S) [REDACTED] (U) Results

a. (S) [REDACTED] (U) Assessment of Overall Results.

(S) [REDACTED] The results of Lam Son 719 were mixed--it was neither a complete success nor a total failure. The RVNAF failed to achieve their primary objectives in the operation, suffered heavy casualties, and were compelled to leave Laos long before they had intended. Conversely, the enemy sustained heavy casualties dislodging the RVNAF, suffered significant supply losses and damage to his logistics system, and, despite an all-out commitment of his forces, failed to inflict an unequivocal defeat on the outnumbered invasion force.

It was difficult to determine with certainty whether the operation as a whole was more of a success or a failure, largely because its ultimate effect on the enemy and his plans remained unknown. In many respects, however, the negative aspects of the operation outweighed the gains scored. Unfortunately, the enemy may have achieved a psychological victory over the RVNAF in Laos. The lasting impression most will have of Lam Son 719 is likely to be the vision of terrified soldiers clinging to the skids of American helicopters returning to South Vietnam, rather than the reported number of enemy killed or tons of supplies destroyed. (See Table 12.)

1) (S) Positive Aspects. There were a number of positive results of the South Vietnamese incursion into Laos. In the first place, the fact that the South Vietnamese could enter the Laotian sanctuary, an area of vital importance to the enemy, and at the same time conduct another major cross-border operation into Cambodia, is an indication of the progress made in the military strength of the South Vietnamese. Also, the fact that these major operations were confronting the enemy outside of Vietnam was significant in that the RVNAF had shifted the fighting away from major population areas in South Vietnam. By attacking the enemy's logistics system in the Laotian panhandle during the height of the dry season, the RVNAF forced the North Vietnamese to either protect their lifeline to their forces in the south or see those forces cut off from logistics support. The enemy chose to defend his vital logistics network, the only practical option available. He decided to go even further, reacting violently to the incursion and massing his troops in an all-out effort

TABLE 12  
TOTAL ENEMY LOSSES IN LAM SON 719\* (U)

Killed in Action	13,642 (includes 4364 KBA)
Detained	54
Ammunition	
Small Arms (rounds)	480,566
Other (Tons)	20,000**
Food (Tons)	1,282
POL (Gallons)	217,710
Structures	1,270
Bunkers	1,328
Weapons	
Individual	5,066
Crew Served	1,936
Vehicles	528

\*As reported by ground units and compiled by MACV.

\*\*RVNAF units reported 170,000 tons. MACV reported 20,000 tons.

Source: Report, COMMANDO HUNT V Report, 7AF, May 71, p. 72. (S)

to overwhelm the invasion force. By doing so, however, he exposed himself to damaging air strikes. The RVNAF estimated that the enemy suffered more than 13,600 deaths during the operation, over 4,300 of which were attributed to air strikes. Although RVNAF estimates of overall enemy deaths (13,600) were probably considerably inflated, U.S. intelligence agencies, as will be discussed later, did not consider the reported KBA figure (4,300) to be exorbitant. In addition to heavy losses, the enemy must have sustained a large number of wounded. Though overall enemy casualties are not known with certainty, <sup>280/</sup> he clearly suffered much greater losses than the RVNAF.

(S) [REDACTED] During the operation, the NVA was forced to bypass the routes blocked by the RVNAF by shifting his supply movements to Route 914 in the western portion of the central route structure. Concentrating his logistics flow to fewer routes increased his vulnerability to air strikes. Aircrues reported high levels of truck kills and secondary explosions/fires during the operation. Extensive damage was also done to the enemy's logistics system throughout Base Area 604. Thousands of tons of POL, ammunition, supplies, and equipment were reported destroyed by ground forces, tactical air and B-52 strikes, helicopters, and artillery. The enemy was forced to divert units and replacements heading south in order to resist the incursion. Furthermore, his forces must have consumed large amounts of supplies during the fighting. In addition to the damage done to the enemy's logistics system during the operation, RVNAF forces gained detailed knowledge

concerning the complex system of depot locations, POL pipelines, and road networks through Base Area 604. As a result of this new intelligence, numerous targets were developed and struck by TAC AIR and B-52s <sup>281/</sup> following the withdrawal from Laos.

(S) [REDACTED] There were also positive long-term implications for Lam Son 719 operations. Some RVNAF units fought well, while the performance of others was erratic. The experience gained by RVNAF units during Lam Son 719, however, could be invaluable in identifying and overcoming the deficiencies encountered during the operation.

There were significant lessons to be learned in the areas of command and control, coordination, and RVNAF capabilities and tactics for such an operation. If these are recognized and acted upon, RVNAF combat effectiveness could be significantly enhanced. Many of these lessons were recognized by high South Vietnamese officials. A report by the Joint General Staff (JGS) to the president of South Vietnam, after <sup>282/</sup> noting the serious impact of the operation on the enemy, summarized:

. . . certain armor squadrons should be converted into mixed units having organic and well-trained infantry. Our future force structure plans will capitalize on this point.

As regard to infantry training, our troops have never been accustomed to fight enemy armor. . . . Anti-tank training will be given in the near future.

The enemy is able to employ tactical air support in case of escalation of the war. The ARVN has no air-defense units and our troops have not been trained in anti-air defense. The JGS will pay close attention to all these shortcomings.

On the tactical point of view, we have met with a lot of difficulties in staff technique, in the coordination between different arms and services because our units have never been operating in such a large-scale environment.

However, the overriding tactical consideration is the employment of the Fire Support Base (FSB).

If the FSB tactic has paid off in in-country operations; on the contrary, it has proven ineffective in the lower-Laos battlefield.  
. . . two reasons:

(1) Enemy artillery . . . is not deployed by units like ours. It is scattered around our FSB and thus, makes our counter-battery ineffective. As it is familiar with the terrain, it can pour its shellings on our FSB with speed and accuracy.

Tacair attacks are not very effective either: the enemy guns are well dug-in and protected.

(2) FSBs are dependent on supply and medevac by air. The enemy air-defense net in Laos . . . neutralizes our supply and evacuation activities and affects adversely our troops' morale.

. . . on a battlefield well organized and defended by the enemy, the appropriate tactic is that of hit and run. Supported by strategic and tactical air, our heliborne assault troops can hit anywhere . . . destroy his installations, weapons, ammunitions and storages then withdraw swiftly. Such an operation should not last more than 7 days. . . .

(S) [REDACTED] Long-term implications to the enemy were also clear. Laos was no longer a sanctuary from ground assaults, and thus the enemy could no longer discount the possibility of an attack anywhere within his Laotian logistics system. This was bound to restrict his planning options, and tie down a significant amount of

his resources in defense of areas previously considered secure. Viewed only in its positive results, Lam Son 719 was an extension of Allied efforts against the enemy's entire logistics system through which the RVN seized the initiative, carried the battle away from South Vietnamese population centers, restricted the enemy's planning options, and raised <sup>283/</sup> the cost of war to the enemy.

2) (S) Negative Aspects. The stated objective of the incursion was to interdict the enemy's logistics system in Laos. In particular, the RVNAF planned to block enemy LOC throughout Base Area 604, and destroy the enemy's logistics system throughout Base Areas 604 and 611. There was to be a rapid blitz to Tchepone, where friendly units were to block major LOC into and out of the area and conduct extensive search and destroy operations. Though not firmly committed on duration of the operation, the RVNAF intended to remain in the Tchepone vicinity until the end of the dry season. They were then to withdraw through Base Area 611, ravaging the enemy's logistics system, and possibly departing from Laos as far south as the A Shau Valley.

(S) The operation fell far short of these objectives, and did not go at all according to plan. Since the degree to which the enemy intended to increase his flow during February and March was not known, the overall impact of Lam Son on his throughput was unknown. However, truck activity and throughput did not decrease during the operation; in fact, they increased. The presence of RVN

forces did compel the enemy to direct the bulk of his logistics effort down Route 914, but he refused to be driven west from the central route structure to the more vulnerable Route 23.\* The RVNAF had planned to interdict Route 914, but as it turned out, 914 represented the western extremity of RVNAF probes, and enemy traffic down this vital route was relatively unopposed by ground forces. In addition, the damage which was planned against enemy supplies, equipment, and forces as RVNAF troops withdrew through Base Area 611 never materialized. RVNAF operations penetrated only the northeast tip of Base Area 611. <sup>284/</sup>

(S) [REDACTED] The incursion was no surprise to the enemy, and he was well prepared to meet it. By early March, the enemy had massed his troops throughout the area, and friendly forces were outnumbered two to one. Despite massive U.S. air support of some of the best units in the RVNAF, the NVA mounted an overwhelming offensive which forced the RVNAF from Laos.

(S) [REDACTED] There was actually no choice concerning RVNAF reinforcement or withdrawal. RVNAF units were in an untenable position and not even heavy air support could have sustained them. Evidence of that statement was provided in the final days of the operation when orderly withdrawal turned to hasty retreat. Major

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\*Additionally, following the operation, NVA forces in southern Laos drove west into RLG territory adjacent to their western LOC network. However, it was not known with certainty whether their offensive was a result of Lam Son 719, RLG interdiction operations, or both. See pp. 92-93, 110.

RVNAF units were stranded at a number of scattered FSBs. Only by making their way to new extraction locations, and by repeated helicopter extraction attempts in the face of withering fire, were they able to escape. Along Route 9 enemy ambushes blocked the path of a huge ARVN armored task force, and enemy tanks closed in from behind. Fighter strikes scattered the approaching enemy tanks. Needed supplies and equipment were brought in by helicopter enabling the task force to cross the Xepon River and return to SVN. With the help of extensive TAC AIR and helicopter support, the RVNAF units managed to escape the trap set for them during their withdrawal, but not before suffering heavy losses. The RVNAF sustained 45 to 50 percent losses of tanks, artillery and APCs. As discussed later, numerous <sup>285/</sup> helicopters were destroyed.

(S) [REDACTED] As a result of Lam Son 719, there was an RVNAF manpower shortage in Military Region I at the end of the first quarter of CY 71. Most RVNAF units which had participated in the operation were at reduced effectiveness, suffering from personnel and equipment shortages. The RVNAF reported nearly 7,400 casualties (1,358 killed, 4,943 wounded, and 1,089 missing). Significantly, there were nearly 500 RVNAF officer casualties during the operation. The RVNAF in Laos did not have an adequate battlefield replacement system, thus limiting the stamina of units which suffered heavy casualties. In contrast, the enemy replacement system worked well and his units continued to <sup>286/</sup> fight effectively despite heavy losses.

(S) [REDACTED] The Laotian incursion was overly dependent on air support. An over-reliance was placed on helicopters, which were almost the only means of transportation used even for short distances and low priority missions. RVNAF units were unable to keep Route 9 open, and all resupply had to be accomplished by air, further taxing helicopter capabilities. In many cases, helicopters were too vulnerable to enemy fire and could not supply critical South Vietnamese bases. In a large measure this was attributable not only to the environment, but also to the failure of the FSB concept as employed by RVN forces in the operation. As previously noted, the RVNAF formed static FSBs, and though some units were aggressive, actively patrolling from their positions and keeping the enemy at a distance, most units were unaggressive and reluctant to move out from their bases. In addition, the enemy was present in the battlefield in unexpected numbers, and RVNAF armored units were unprepared for the surprising enemy armored strength. The NVA ringed the FSBs and subjected both the bases and incoming helicopters to heavy fire. TAC AIR was unable to locate and destroy the numerous, mobile enemy positions, and in many cases helicopters were either unable to effect resupply, or sustained heavy losses.

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(S) [REDACTED] Undoubtedly, heavy damage was inflicted on the enemy's logistics system, and he sustained heavy personnel losses. The extent of those losses, however, was unknown. RVNAF estimations

of enemy losses during the operation were highly questionable. For example, the Joint General Staff reported to President Thieu that more than 170,000 tons of enemy ammunition were destroyed during the operation.\* That figure was clearly unreasonable. It exceeded the aggregate total of supplies input into Laos from North Vietnam during the COMMANDO HUNT I, III, and V campaigns, which added up to 160,000 tons. Looked at in another way, 170,000 tons was about nine times the estimated enemy throughput during COMMANDO HUNT III, and more than 20 times the throughput estimated for COMMANDO HUNT V. In U.S. reports of enemy losses in the operation, the RVNAF figure was greatly reduced. MACV and 7AF sources estimated that roughly 20,000 tons of enemy <sup>288/</sup> ammunition were destroyed.

(S) [REDACTED] The estimate of over 13,600 enemy deaths also deserves scrutiny. If that estimate is to be believed, and assuming that the enemy suffered two wounded for each killed (considerably less than the more than three wounded to one killed for the RVNAF), then total enemy casualties (wounded and killed) would stand at 40,000, or more than the total forces committed by the enemy to Lam Son. Even if the enemy suffered only one wounded for each killed, total enemy casualties would stand at over 27,000, an unrealistic estimate considering the total force of the enemy in the area, and considering the sustained <sup>289/</sup> intensity of enemy attacks in the closing days of the operation.

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\*Half of this figure was attributed to B-52 strikes.

(S) [REDACTED] Even using RVNAF reported casualties, results of Lam Son 719 did not necessarily appear favorable. A Tactical Air Command intelligence report made an interesting comparison between Lam Son 719 and the Cambodian incursion a year earlier. The report noted that some estimates placed Lam Son captured weapons, ammunition, and rice at levels far below those attained in the Cambodian incursion. Additionally, reported enemy deaths in Lam Son were comparable to those claimed in Cambodia, while RVNAF losses in Lam Son were much higher than those sustained in the Cambodian <sup>290/</sup> incursion.

(S) [REDACTED] The true measure of the impact of Lam Son 719 on the enemy was unknown as the operation ended, though it doubtlessly would be reflected by his activities during the 12-18 months <sup>291/</sup> following the operation. However, one indicator of the immediate impact is provided by the severity of enemy attacks which drove the RVNAF out of Laos in the final days of Lam Son. In a 15 March message to CINCPACAF, before the final enemy offensive had gotten underway, the Commander of 7AF stated: "The full impact on the enemy of Lam Son 719 actions to date is yet to be manifested; much of it will be reflected in his ability to react to friendly actions during <sup>292/</sup> the remainder of the operation."

b. (S) [REDACTED] (U) Assessment of U.S. Support.

- 1) (S) [REDACTED] Contributions of U.S. Support. The performance of U.S. Air Force, Navy, and Marine tactical aircrews, Air Force FACs

and B-52 crews, and Army helicopter crews during Lam Son 719 was especially noteworthy. Taken together, these various forms of U.S. support had a crucial impact on the outcome of the operation.

(S) [REDACTED] The conduct of an operation such as Lam Son 719 into the hostile Laotian environment would have been unthinkable without heavy tactical air support. Time and time again air strikes proved their worth in supporting RVNAF offensive operations, and defending besieged RVNAF positions. Air Force fixed-wing gunships were invaluable. Their appearance on the scene was often enough to cause the enemy to abandon his attacks. Their true value is reflected by the fact that their absence for even a short time during periods of bad weather was sometimes enough for the enemy to overwhelm the ground defenders. Fighter strikes were also critical. The destruction or heavy damage of approximately a hundred enemy tanks during the operation virtually denied the enemy the advantage of his surprising armored strength. Approximately two-thirds of these tanks were destroyed by fighters during the day. (The remainder were destroyed by fixed-wing gunships at night. Army helicopters accounted for an additional five tanks destroyed.) Tactical air strikes against tanks were particularly critical in the last days of the campaign, when the enemy committed large numbers of tanks against the vulnerable RVN forces during their disorderly withdrawal. Additionally, USAF support of helicopter operations was an important factor in preventing already high helicopter losses from going completely out of bounds. B-52

strikes also played a major role in the operation, and on a number of occasions were used in close proximity to ground forces. RVNAF units 293/ highly praised these strikes.

(S) [REDACTED] HAMMER FACs were the focal point for TAC AIR support of Lam Son 719. Under extremely difficult circumstances these FACs demonstrated skill in obtaining the maximum effectiveness possible from U.S. air support of the operation. The HAMMERS faced serious air traffic control problems, language barriers, coordination hurdles, and heavy enemy fire in Laos, but nevertheless continued to 294/ effectively direct strikes against the enemy.

(S) [REDACTED] U.S. helicopters played a crucial role in Lam Son 719, and were used extensively in insertion, resupply, and extraction operations. Resupply operations turned out to be more extensive than planned. RVNAF units were unable to adequately secure Route 9 for logistics support, and the helicopters were left to bear the entire resupply load. Perhaps their most dramatic contribution occurred in extraction operations in the withdrawal phase during which high helicopter losses were experienced. Had it not been for repeated extraction attempts in the face of heavy enemy fire, a large number of RVNAF would have been stranded in Laos, surrounded by overwhelming 295/ forces.

(S) [REDACTED] U.S. ground forces on the South Vietnam side of the border also played an important role. They kept supplies moving along Route 9 to Khe Sanh, though faced with enemy harassment and

ambushes. Enemy resistance was not light, as is evidenced by the fact that U.S. forces lost 67 trucks, 76 combat vehicles, and 17 tanks on the South Vietnamese side of the border during their participation in the operation. <sup>296/</sup>

(S) U.S. support was planned as an integral element of Lam Son 719. In view of the size and severity of the enemy reaction to the operation, helicopter and tactical air support of the RVNAF became even more critical. Individually, U.S. personnel displayed professionalism and bravery in the face of unexpected problems and fierce enemy resistance, and without their support RVNAF casualties would have increased markedly. Despite its value, however, U.S. support was marred by a number of serious problems which surfaced during the operation. These problems contributed to increased U.S. and RVNAF casualties and, in general, reduced the potential effectiveness of U.S. support of the operation. The problems should be squarely faced and solved, lest they continue to surface in future operations.

2) (S) (U) Problem Areas.

a) (S) Coordination of U.S. Support. By far the most serious flaw in the U.S. support provided for Lam Son 719 was that the planning and coordination required in such a joint service and combined nation operation was lacking. The 7AF Commander, General Lucius D. Clay, Jr., noted that during the first month of the operation, "TAC AIR, ARC LIGHT, and helicopter strikes [were] planned in isolation of each other and divorced from the ground scheme of <sup>297/</sup> maneuver." There was no single control agency for all aircraft

entering the operational area, no provision for the effective control and coordination of different types of firepower (TAC AIR, ARC LIGHT, helicopter, and artillery), and no central agency for the assimilation of <sup>298/</sup> all the various sources of intelligence. Some of these problems were caused by inadequacy in RVNAF command and control capabilities and failure of RVNAF planners to coordinate their operations with U.S. supporting forces. Others, however, were attributable to divergent assessments and organizational viewpoints of the U.S. Armed Services.

(S) [REDACTED] As noted earlier, mid-way through the operation General Abrams established a Joint Planning Group (JPG) consisting of high-ranking ARVN, USAF, and U.S. Army representatives who met daily with General Lam. The group served as a means of coordination among U.S. airmobile, artillery, and TAC AIR resources, and also between U.S. and RVNAF operations, providing information and advice to General Lam based on the status and availability of U.S. assets. The JPG resulted in a lessening, but not an elimination, of the coordination problems. Airspace control problems continued as did the need for a combined intelligence agency. Coordination of firepower, though improved in the case of combat assaults, also continued to be a <sup>299/</sup> problem in other operations.

(S) [REDACTED] Coordination with helicopter reconnaissance units was especially difficult since their missions were often scheduled at the last minute. In an attempt to reduce the problem, a

USAF tactical air control party was established at 2/17 Cavalry headquarters, and FACs were directed to provide Combat Air Patrol for helicopter operations, when a FAC was available and the helicopter operations were coordinated with the Air Force via the TACP. All that was needed by the Air Force was a departure time for the helicopters. Sometimes the time was provided, other times it was not. 300/

(S) [REDACTED] Despite Air Force willingness to provide support for helicopter operations, teamwork was an elusive goal. One FAC characterized work with helicopters as "disappointingly unproductive," and cited lack of communication/coordination, area congestion, short helicopter on-station times, and high altitudes imposed by the AA threat as the primary reasons. What made the lack of coordination even more frustrating was that when FACs and helicopters did work as a team, they were capable of achieving very good results. In cases where the environment permitted, the helicopter's ability to get down low and spot the targets complemented the ability of TAC AIR to destroy the target once found. Such teamwork was, unfortunately, more often the 301/ exception rather than the rule.

(S) [REDACTED] The failure of U.S. forces supporting the operation to work effectively as a team, particularly during the first month of the operation, was a serious and disturbing matter. The situation, though complicated by the joint U.S./RVNAF nature of the operation and the desire to keep planning as secure as possible, was particularly aggravated by the dependence of the operation on helicopters

coupled with the Army's assessment that extensive tactical air support of helicopter operations was not required. The difficulties encountered during Lam Son 719 operations were of such a magnitude that they call into question the advisability of using airmobile assets under such conditions. The many problems encountered would appear to warrant serious re-evaluation of the role of airmobile operations and the tactics employed in such an environment.

(S) [REDACTED] There is evidence that some Army commanders became skeptical as a result of the difficulties experienced during Lam Son, and were re-evaluating the tactics, if not the role, of airmobile operations in such an environment. Others, however, continued to express the opinion that the helicopter could survive, even thrive, in such an environment, and insisted that the heavy losses sustained were not unacceptable. The opinion most commonly expressed was that airmobility principles were sound, even in such an environment, but that different airmobile tactics and weapons needed to be developed and employed. It seemed that most Army commanders did not see the necessity to seek improved coordination between TAC AIR and helicopters operations, because they felt that better armed and shielded helicopters would not need tactical air support for most of their missions. Consequently, they showed a lack of concern for the difficulties involved in providing massive TAC AIR firepower, with optimum ordnance loads, at minimum advance notice.

(S) [REDACTED] There was little in the attitudes expressed by many Army personnel after Lam Son 719 to indicate that if another such operation were to be held in the future, there would be any significant change in their concept of airmobile operations, particularly with respect to coordinating TAC AIR support. (This statement applies to all operations with the exception of combat assaults into well defended areas, in which case there seemed to be a general awakening to the value of TAC AIR support.) The coordination problems which surfaced during Lam Son 719, since they reflected basic service attitudes and beliefs concerning the capabilities of organic resources, may be difficult to overcome. Considering the seriousness of their implications, however, they should not be ignored.

b) (S) [REDACTED] Inadequate Planning Prior to the Operation. In an effort to maintain tight security, very few people were involved in the planning for Lam Son. This exclusiveness proved to be a detriment to the operation. Evidence of inadequate planning was abundant during the early days of the operation. In some cases, planning problems were overcome, and did not have a serious impact on the operation. In other cases, however, effects of the poor planning were serious, and sometimes continued throughout the entire <sup>304/</sup> <sup>305/</sup> operation. One outspoken Army commander commented:

Lam Son 719 was hampered rather than assisted by the high degree of limited access. Staff planning at XXIV Corps level appeared to suffer from inadequate knowledge of ARVN organization,

overestimation of U.S. capabilities . . . and underestimation of the enemy's disposition and strength.

(S) [REDACTED] That U.S. planners underestimated the strength of the enemy reaction was clear. Intelligence agencies were surprised by the enemy armored strength that appeared in the combat area, and the Army underestimated the enemy threat against helicopter operations. The unexpected strength of enemy opposition caused changes in RVNAF <sup>306/</sup> plans and objectives, and forced greater reliance on U.S. support. <sup>307/</sup> Following the operation, a MACV report acknowledged the problem:

ARVN forces were prepared psychologically and physically for a smaller, swifter, less violent confrontation. Intelligence agencies greatly underestimated the number and type forces that would be encountered in the operational area.

3) (S) [REDACTED] Tactical Air Support and Results.

a) (S) [REDACTED] Overall Results. The shift of air power from interdiction to support of RVNAF forces in Lam Son 719 again demonstrated air power's ability to change roles on short notice and deliver a massive volume of firepower as needed. Between 8 February and 24 March, 8,512 tactical air, 1,358 ARC LIGHT, 1,291 HAMMER FAC, and 2,809 tactical airlift sorties were flown in support of the operation. The majority of sorties in support of Lam Son came from a drawdown of the sorties normally allocated to interdiction in STEEL TIGER, and <sup>308/</sup> from a surge effort by the units supporting the operation.

(S) [REDACTED] Table 13 contains the BDA reported by aircrews and FACs for strikes in support of Lam Son 719 between 8 February and 31 March. The accuracy of these figures is admittedly open to question. Since the results of many air strikes were unobservable from the air, aircrew reported BDA was generally considered to be an incomplete, conservative representation of the damage inflicted upon the enemy by air strikes. Also, because of the difficulty of eliminating duplicate reporting, damage confirmed by ground forces is <sup>309/</sup> not included in the table.

(S) [REDACTED] The number of enemy troops killed or wounded by air strikes is not known, though it is believed to be high. The 2,504 KBA reported by aircrews is not considered to be an accurate figure. Because of the altitude at which they operate, fighter and FAC aircraft normally do not actually see ground troops. The KBA figures reported for Lam Son were generally based on estimates which the ground commander sometimes made and passed to the FAC. These figures were not necessarily body counts, but estimates.

(S) [REDACTED] In comparison to KBA reported by aircrews, RVNAF forces estimated that air strikes accounted for 4,364 KBA. Sweeps made of approximately 55 targets struck by B-52s credited ARC LIGHT strikes with 2,674 of these. Many of these areas had also been struck by tactical air strikes or artillery, and it really was not possible to distribute the casualties among the various causes.

TABLE 13

LAM SON 719 BDA RESULTING FROM AIR STRIKES,  
8 FEB - 31 MAR (U)

	<u>Dest/Dmgd</u>	<u>Sec Exp</u>	<u>Sec Fires</u>
AAA	147/20	125	47
ENEMY POSITIONS	777/96	69	30
TRUCKS	2,073/639	1,062	830
WATERCRAFT	0/1	1	2
STORAGE		1,546	166
KEL		952	303
TANKS	99/34	46	25
OTHER*		9,939**	1,171
TOTAL		13,740	2,574
KBA - 2504			
LOC CUTS - 356			

\*"OTHER" includes categories such as AMMO, POL, Transshipment Points, etc.

\*\*Includes 2568 secondaries reported by ARC LIGHT. Results for the other categories listed do not include ARC LIGHT BDA.

Source: Report, "Draft of Intelligence Analysis of Lam Son 719 (U),"  
7AF, Apr 71, p. 56. (S)

Also, RVNAF reports for the sweeps made were considered inflated. Overall, however, U.S. intelligence agencies did not feel that the KBA reported by the RVNAF was exorbitant. Considering the large number of strikes which reported no BDA, and the small percentage of target areas which were actually investigated by ground forces, it was felt that any inflation in RVNAF reported KBA was offset by the casualties which went <sup>310/</sup> unreported.

(S) [REDACTED] Many of the missions flown in support of Lam Son 719 were taken from sorties normally allocated to STEEL TIGER interdiction operations. Therefore, the high BDA achieved in support of the operation was at the expense of reduced BDA throughout the remainder of STEEL TIGER. Overall, however, the aggregate BDA reported throughout STEEL TIGER, including the Lam Son area, was higher during this period than it was before or after the operation. The incursion caused the enemy to concentrate his forces in a small area, thus creating targets vulnerable to air strikes. In addition, surges in sortie rates of supporting units provided more strike assets than normally available. The net effect of Lam Son 719 was increased concentration of enemy <sup>311/</sup> resources and increased exploitation of these targets by air strikes.

b) (S) [REDACTED] Special Considerations. One of the most important and impressive contributions of tactical air strikes during Lam Son 719 was the virtual destruction of an enemy tank regiment. It was estimated that no less than 120 enemy tanks were committed to the Lam Son 719 area. Statistics indicated that between 8 February

and 24 March, 98 tanks were destroyed or damaged by TAC AIR. Ground  
312/  
teams or FACs confirmed 61 of the destroyed tanks.

(S) [REDACTED] Usually tanks appeared without warning and were fleeting targets. As a result, they were struck with the aircraft and ordnance that were immediately available. General purpose bombs and napalm were the ordnance most frequently fragged in support of ground troops, and accordingly were the most common types of ordnance used against enemy armor. Table 14 shows the results of attacks against enemy armor for the various types ordnance used. Laser Guided Bombs (LGBs) were considered to be the most successful ordnance against tanks because of their reliability and safe delivery parameters. Gunships reported considerable success against thin skinned PT-76 tanks, though the criteria for destroyed or damaged tanks may have been somewhat lenient.  
313/

(S) [REDACTED] The problem of getting the right ordnance at the right time was not limited to strikes against tanks. For example, LGBs were considered to be the best ordnance for employment against hostile antiaircraft guns. The LGBs offered accuracy, destructive fire-power, and safe delivery parameters, but it was not practical to frag such a special purpose ordnance against targets whose location was not known in advance. A partial solution to the problem in the case of AAA targets was the use of a Quick Reaction Force (QRF) loaded with LGBs. The AAA sites were less fleeting than the tank targets, which made the time required to scramble QRF aircraft less critical. Ninety-nine

TABLE 14

RESULTS OF TAC AIR ATTACKS AGAINST ENEMY TANKS DURING LAM SON 719 (U)  
(8 FEB-24 MAR 71)

<u>Ordnance</u>	<u>Attacks</u>	<u>Destroyed</u>	<u>Damaged</u>	<u>SF/E*</u>	<u>RNO**</u>
MK-82 HD/BLU-27	47	10	4	39	6
20MM HEI/API & 7.62MM (AC-119K)	11	10	1	18	
MK-82/CBU-24	24	4	4	11	3
MK-82/MK-20 (ROCKEYE)	22	5	2	1	4
MK-84 LGB	6	5			
MK-82/LAU-10 (ZUNI)	4	4			
MK-82/(NAPALM)	24	7	4	2	2
MK-83/CBU-24	3	2	1		
MK-82	44	3		1	11
BLU-27	6	2			
40MM HEI (AC-130)	28	14	3	3	
CBU-24	4	1		1	
AGM-62A	3				3
NAPALM	1	1			
M-118 LGB	2	2			
MK-82/MK-81	7	4	3	8	
MK-82 HD	2		1		
MK-82/20MM	3	—	1	6	—
<b>TOTALS</b>	<b>241</b>	<b>74</b>	<b>24</b>	<b>90</b>	<b>29</b>

\*Secondary fires and explosions.

\*\*Results not observed.

Source: Report, "Lam Son 719, SVN Incursion (U)", 7AF, 24 Mar 71, p. 114. (S)

attacks were made with LGBs resulting in 70 antiaircraft weapons destroyed and five damaged. These represented only about 8 percent of the sorties attacking AA weapons and positions, but resulted in about 27 percent of the weapons reported destroyed or damaged. <sup>314/</sup>

4) (S) [REDACTED] (U) Losses.

a) (S) [REDACTED] Aircraft Losses. U.S. fixed-wing aircraft flew more than 9,800 sorties (1,291 FAC sorties included, 1,358 B-52 sorties excluded) in Laos in support of Lam Son 719, in which they made over 25,000 passes against well-defended enemy targets. Between 8 February and 1 April, tactical aircraft reported 1,208 instances of ground fire, 36 hits, and seven losses. Even though the loss rate was greater than for normal STEEL TIGER operations, it was low considering the number of sorties flown in close air support and the concentration of enemy fire in the area. The majority of losses were caused by small arms or automatic weapons fire, which would not represent a threat at the altitudes flown during normal STEEL TIGER operations. Table 15 lists the fixed-wing losses for the operation, <sup>315/</sup> together with their causes.

b) (S) [REDACTED] Helicopter Losses. One of the most controversial aspects of U.S. support of Lam Son 719 was the massive use of U.S. Army helicopter resources and the losses they sustained. Army reporting procedures for helicopter losses were confusing and incomplete. Air Force analysts had difficulty in interpreting the limited Army reports available to them, and noted that these reports

TABLE 15  
U.S. FIXED-WING LOSSES IN LAM SON 719\* (U)

<u>Aircraft</u>	<u>Date</u>	<u>Cause</u>
F-4D	11 Feb 71	12.7mm Automatic Weapons
F-4D	25 Feb 71	Unknown, attacking tank
F-4D	25 Feb 71	.51 Cal
A-1H	6 Mar 71	Small Arms
A-7**	13 Mar 71	23mm
O-2A	16 Mar 71	37mm
F-100D	22 Mar 71	12.7mm tank fire

\*Includes only losses for U.S. aircraft flying missions in support of Lam Son 719. Loss of an Australian B-57 to a SAM in RVN near the DMZ is, therefore, not included.

\*\*Hit outside Lam Son area but flying in support of the operation.

Source: Report, Lam Son 719, SVN Incursion (U), 7AF, 24 Mar 71, p. 122. (S)

understated losses. Some press reporters, frustrated by Army loss reports, implied that the Army was playing a numbers game in recording losses and questioned the use of helicopters in a high intensity combat environment. They were not unjustified in their suspicions, as it was later revealed that roughly 20 percent of the helicopters reported as damaged would never fly again. <sup>316/</sup>

(S) Between 8 February and 1 April, 7AF intelligence reported 114 helicopters lost, 674 hit, and 793 fired upon. Nearly 90 percent of the hits were caused by enemy small arms and automatic weapons fire. Considering the fact that approximately 20 percent of the helicopters reported as damaged would never be repaired, the total loss was estimated to actually be well over 200, or roughly a third of the U.S. helicopter resources devoted to the <sup>317/</sup> operation. A Director of Defense Research and Engineering memorandum addressed the subject of helicopter losses in another <sup>318/</sup> light:

U.S. supporting helicopter losses were very high. Although they may be interpreted as being modest through manipulation of the statistics and comparison to the total available in-country U.S. Forces (both fixed and rotary wing), the fact remains that the totals lost and damaged in six weeks approach the total projected for the ultimate VNAF force structure. . . .

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III. LESSONS LEARNED/RECOMMENDATIONS

A. [REDACTED] (U) COMMANDO HUNT V

(u) [REDACTED] Air operations in STEEL TIGER and BARREL ROLL during CH V were characterized by the employment of new or improved tactics and weapon systems introduced to increase the effectiveness of air interdiction and close air support operations in Laos. The events and developments during CH V, together with the experience gained during the campaign, have led to the development of significant lessons learned and recommendations which are presented below.

1. [REDACTED] (U) Lesson Learned.

(U) Specialized weapon systems, employing advanced or improved technology, helped offset the limited level of air resources available to 7AF and contributed significantly to the effectiveness of the CH V campaign.

Rationale

(u) [REDACTED] There were at least four examples of this lesson during CH V. First, an expanded and modified AC-130 gunship force was highly successful in inflicting damage on the enemy during CH V. Second, specially modified B-57Gs, introduced during CH V, were designed to provide a self-contained, first pass, night attack capability for the less permissive environment. Though only a pioneering effort, the employment of the B-57Gs contributed significantly to the effectiveness of the truck-killing force. Third, the expanded use of LGBs was a major factor in the increased effectiveness of attacks against enemy air defenses and other

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point targets. Fourth, the development and introduction into SEA of the PAVE PHANTOM (LORAN) bombing system enhanced CH V operations and represented an important step in the effort to provide the Air Force with an accurate, all-weather bombing capability. (pp. 26-27, 37-45, 49-51, 58, 62, 71, 210, 212.)

2. (u) [REDACTED] (U) Lesson Learned.

(u) [REDACTED] COMMANDO HUNT V apparently made a greater contribution toward containing enemy activities than any earlier campaign. Nevertheless, it verified previous experience that, by itself, air interdiction in Laos could not reduce enemy resupply below the level needed to support his minimum needs. Even at the low rate of resupply estimated for the 1970-71 dry season, the enemy moved enough supplies to support a protracted war strategy during 1971

Rationale

(u) [REDACTED] Reported BDA for CH V air operations was at a record level, while throughput during the campaign was estimated to be far below that observed during CH III, and somewhat less than that of CH I. Although reported BDA and throughput estimates were not exact, they demonstrated an increase in interdiction effectiveness relative to previous campaigns. Assessment of enemy capabilities based on the level of logistics resupply estimated for CH V indicated that the campaign had made a significant contribution toward imposing a ceiling on the level of enemy activities during the months following the campaign. It was also true, however, that even at his rate of resupply

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during CH V, the enemy could pursue a limited protracted war strategy indefinitely and could mount limited offensives in some areas. Estimates by the JCS indicated that he retained the capacity to launch damaging offensives in either Cambodia or the northern regions of South Vietnam, but that the level of resupply during CH V was insufficient to support simultaneous, sustained offensives in both areas. (pp. 23-26, 84-88.)

## 3. (u) [REDACTED] (U) Lesson Learned.

[REDACTED] Accurate assessment of the overall effectiveness of air interdiction and tactical air support operations in Laos continued to be a formidable task during CH V.

### Rationale

(u) (u) See sub-lessons learned a, b, and c, below.

### Recommendation

(u) [REDACTED] Continuing efforts must be made to insure that strike results and the associated impact of air operations on the enemy are measured and reported as accurately and meaningfully as possible.

a(u) [REDACTED] Sub-Lesson Learned. Estimated throughput reported by 7AF during CH V did not by itself accurately reflect the enemy's logistic capability to support his forces in South Vietnam and Cambodia.

(u) [REDACTED] Rationale. Input and throughput estimates were based upon the number of trucks entering or leaving Laos on known enemy routes, as observed primarily by sensors and as verified where possible by aircrew observations. Sensor estimates of truck entries and exits,

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however, were admittedly low due to the proliferation of enemy bypasses which were difficult to discover and monitor. Thus, by the very nature of the information upon which they were based, throughput calculations tended to underestimate the flow of enemy supplies through the exit areas. Even allowing for the undetermined degree of underestimation inherent in throughput calculations, CH V throughput estimates did not alone provide a valid measure of the enemy's capability to support his forces in the south. This was so because throughput only addresses the observed input into Cambodia and South Vietnam, and does not take into account the accumulation of stockpiles in the exit areas. (pp. 74, 80-84.)

b.(u) **Sub-Lesson Learned.** Reported truck destruction, while it provided an insight into enemy supply losses and damage to his truck fleet, did not represent the actual number of trucks removed from his inventory. Valid interpretation of strike results, when reported in simplistic, short-hand categories like "trucks destroyed," requires that they be viewed in light of the BDA criteria upon which they were based.

(u) **Rationale.** Despite efforts to make truck BDA as accurate as possible, the number of trucks reported destroyed/damaged during CH V was out of proportion to other indicators of truck losses, such as estimates of the NVN truck inventory, truck replacements entering Laos, and NVN requests for truck replacements from Communist countries. These indicators, in themselves of uncertain validity, dealt in numbers of trucks, per se.

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(u) [REDACTED] The problem appeared to be largely a matter of terminology. A truck reported "destroyed" did not necessarily imply a "loss" to the enemy's inventory. For example, because of the BDA criteria used, a secondary explosion or fire during an attack on a truck would result in a reported "truck destroyed." In actuality, while such a secondary might well imply the destruction of the truck's cargo, and severely damage the truck itself, it still did not guarantee "destruction" in the sense of obliteration. Moreover, the criteria in effect for AC-130 gunships during the campaign called a truck destroyed if it had sustained a direct 40mm projectile impact, with or without a secondary fire or explosion. The distinction between a truck reported "destroyed" and an actual loss to the inventory was even more pronounced in this case.

(u) [REDACTED] By salvaging or cannibalizing such "destroyed" trucks, the enemy could reduce the losses to his inventory, and visually reported results would then be inconsistent with actual losses. Thus, no matter how strictly aircrews adhered to truck BDA criteria, reported losses were apt to be misleading unless consideration was given to the BDA criteria as well as the reported results.

(pp. 74-80)

c(u) [REDACTED] Sub-Lesson Learned. Aircrew-reported BDA, by itself, did not provide a measure of the effectiveness of close air support to friendly Laotian forces.

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(u) [REDACTED] Rationale. Quantitative results for USAF support of RLG forces were usually either unobtainable, due to a lack of ground follow-up, or inapplicable, due to the nature of the support given. For example, strikes against suspected enemy troop concentrations or positions, or the provision of gunship presence over an area, were unlikely to produce observable damage. Such strikes, however, could be more damaging to the enemy and more critical to the survival of friendly forces than attacks against trucks or storage areas, even though these attacks were more likely to result in positive BDA. Those closely associated with the ground war in Laos repeatedly stated that air support was playing a crucial role, but that they were unable to quantify its results. In the absence of quantifiable results, the best measure of the impact of air power on the enemy during CH V was the successful defense of strategic positions in northern Laos, which would likely have been lost without air power. (pp. 113-115, 120-124.)

4 (u) [REDACTED] (U) Lesson Learned.

[REDACTED] The application of a large segment of the CH V strike effort against the enemy's entry route structure was of questionable value.

Rationale

(u) [REDACTED] A concentrated, sustained TAC AIR and ARC LIGHT saturation bombing effort was directed against the entry areas during the months of October, November, and December of the CH V campaign. Although the saturation bombing accounted for more than half the sorties expending ordnance in STEEL TIGER during those months, it did not

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prevent the enemy from introducing record quantities of supplies into Laos. At best, it delayed enemy input for limited periods. Although entry interdiction forced the enemy to expend some level of effort to counter its effects, it was not at all clear that the results justified the high level of air resources employed in the program. Some positive results were obtained from the concentrated strikes against enemy LOC in the entry areas, throughout the route structure, and in the exit areas. However, the 40 percent of CH V sorties flown against such targets seemed excessive in view of the questionable results of the strikes, and the limited air resources available for the campaign. (pp. 28-30, 33-37, 51-58, 62-66.)

## 5. [REDACTED] (U) Other

### a/(u) [REDACTED] (U) Lesson Learned.

[REDACTED] During the 1970-71 dry season, when faced with a significant reduction in U.S. air support, the RLAf successfully assumed an increasing portion of RLG close air support requirements. This would not have been possible without the assistance of USAF training, maintenance and advisory personnel.

### Rationale

(u) [REDACTED] With U.S. air support resources diminishing, it was essential that the RLAf assume a greater share of RLG close air support requirements during CH V. With the assistance of USAF training, maintenance, and advisory personnel, the RLAf for the first time

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reached long-established sortie goals. Also for the first time RLAF sortie rates consistently surpassed the number provided by U.S. aircraft. The effectiveness as well as the quantity of RLAF strikes increased. This was especially evident in the AC-47 gunship fleet which, with the assistance of a U.S. advisor, evolved from a state of nearly total ineffectiveness at the beginning of the campaign, to a decisive and effective fighting force by its end. (pp. 95, 112, 125-128.)

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B. (U) LAM SON 719

1 (U) (U) Lesson Learned

Up until two weeks prior to the start of Lam Son 719, preliminary U.S. and RVNAF planning was hindered by unusually tight security restrictions imposed on details of the operation.

Rationale

(U) As a result of unusually tight security restrictions, no Air Force planners were involved in preparation for Lam Son 719 until 14 January 1971. The preliminary, overall planning was done on a rushed basis by U.S. XXIV Corps and ARVN I Corps staffs. It was not until 14 January that 7AF representatives were called in to develop plans covering the provision of air support to the operation. In addition, planning throughout Lam Son 719 was complicated by the fact that General Lam, South Vietnamese commander of the operation, did not release some details until the last minute. Despite the close hold nature of planning, the required plans were completed in time for the operation. (pp. 135, 142-146, 205-206.)

Recommendation

(U) Unrealistic efforts to maintain tight security should not be allowed to inhibit the planning process. Planning, especially for joint service or combined operations, must involve sufficient numbers of planners early enough to develop a comprehensive plan which provides for coordination among participating forces and prepares for contingencies.

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2. (U) Lesson Learned.

(U) (U) The failure to establish a single airspace control agency for all air resources operating within the Lam Son 719 area aggravated airspace control problems, created safety hazards, and reduced the effectiveness of U.S. support of the operation.

Rationale

(U) (U) The small size of the Lam Son area, together with the large number of fighters, FACs, and B-52s operating in the area, created serious airspace control problems. The situation was severely aggravated by the presence of helicopters flying at random altitudes on a variety of missions. Lack of communication with these helicopters was a problem throughout the operation. They were not required to check in to a central airspace control agency upon entering or exiting the Lam Son area, nor did they maintain communications on any predictable frequency. There were occasions when ARC LIGHT or fighter strikes were cancelled at the appearance of helicopters with which communication could not be established. Airspace control was further complicated by artillery fire throughout the Lam Son area. Furthermore, there was no provision for central control and coordination of all the various types of firepower: TAC AIR, ARC LIGHT, helicopter, artillery. (pp. 132-134, 167-171, 183-187.)

Recommendation

(U) (U) In any operation such as Lam Son 719, a single agency must be designated to control air traffic and coordinate delivery of all firepower in the area of concern.

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3. (U) Lesson Learned.

(U) Inadequate interface and coordination between Army and Air Force agencies, and between U.S./RVNAF forces, reduced the effectiveness of U.S. support of Lam Son 719.

Rationale

(U) No centralized control element was established to manage the various U.S. assets supporting Lam Son 719. Also, no authoritative joint or combined organization was initially established through which Air Force, Army, and RVNAF expertise could be blended to provide coordination of operations. As a result, coordination problems were numerous.

(U) During the first month of the operation, most daily helicopter and tactical air strike operations were conducted independently. Army personnel, influenced by prior experiences in South Vietnam, were convinced that the helicopter could survive in the Lam Son environment with minimal tactical air support, and, therefore, did not coordinate their operations in advance with the Air Force. Requests for tactical air support of helicopter operations were usually last-minute reactions to encountered enemy resistance, rather than a pre-planned measure to prevent difficulties before they occurred. During the latter part of the operation, after the establishment of a joint coordinating group, the employment of tactical air strikes in support of helicopter assaults and extractions increased, but other significant coordination problems continued to surface. The failure of Army and Air Force units to coordinate their activities on a daily

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basis--their inability to effectively fight together as a team-- seriously degraded their support of Lam Son, particularly during the first month of the operation.

(u) [REDACTED] Not only was U.S. joint service coordination inadequate, but the initial failure to establish an effective combined organization resulted in poor coordination of U.S. and RVNAF activities during the first month of the operation. The commander of the operation, General Lam, often did not inform the Army and Air Force of support requirements until the last minute. Also, he was not fully aware of the status and availability of U.S. resources supporting the operation. (pp. 132-134, 144-145, 183-187, 201-204.)

Recommendation

(u) [REDACTED] When U.S. forces are engaged in a combined operation such as Lam Son 719, a joint U.S. staff element must immediately be established and given the authority necessary to coordinate the employment of U.S. forces. Additionally, this staff element should be integrated with those of other countries involved, and should work closely with the overall commander of the operation so that the combined resources will be effectively coordinated and employed.

4. [REDACTED] (U) Lesson Learned.

(u) [REDACTED] During Lam Son 719, there was no centralized intelligence agency which could assimilate intelligence from the various sources to develop the best possible targets for the strike resources available.

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Rationale

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(u) [REDACTED] Each of the participating forces in Lam Son had access to a wealth of intelligence, much of which was unique to its own organization. In addition to the intelligence provided by recce aircraft, other USAF aircrews, particularly FACs, accumulated potentially valuable information. Helicopters, especially during reconnaissance missions, uncovered targets which were unobservable from higher altitudes. Ground forces, too, were a potential source of useful intelligence as a result of their extensive probes and contacts with the enemy. Though each agency developed its own targets based on its limited range of intelligence, there was no central agency established to digest the various items of intelligence to provide targets based on the total range of information available. (pp. 183-187, 202-203.)

Recommendation

(U) During a combined operation, a joint intelligence center must be established to take advantage of all available information to provide the best possible targets for strike resources.

5. [REDACTED] (U) Lesson Learned.

(u) [REDACTED] Lam Son 719 demonstrated that the RVNAF did not, and implied that in the foreseeable future they would not, have the capability or the resources to cut off infiltration through Laos by ground interdiction. However, the operation did show that they had the capability to harass infiltration by conducting mobile, hard-hitting forays of limited depth and duration.

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Rationale

(u) Even with extensive U.S. support, South Vietnamese troops were forced from Laos by determined enemy resistance. Based upon projected force structures, the South Vietnamese would not have the resources to provide the level of support provided by U.S. forces in the operation. The number of helicopters destroyed and damaged in the six-week campaign approximated the total helicopter resources projected for the RVNAF. Planned South Vietnamese tactical air resources would be inadequate both in number and sophistication to equal the U.S. support provided in Lam Son 719. If the South Vietnamese attempted to cut the Laotian LOC by a large-scale, long-duration operation of the Lam Son type, determined enemy resistance would force the RVNAF to withdraw due to inadequate logistics support and sortie generation capabilities. On the other hand, South Vietnamese forces did show that they had the potential capability to conduct damaging attacks against the enemy's logistics system capitalizing on mobility and hit-and-run tactics. Although they experienced a number of problems related to planning, coordination, and tactics during Lam Son, the shortcomings were of the type which could be corrected without necessarily increasing projected RVNAF force structures. If these deficiencies were corrected, hard-hitting raids, even of only limited depth and duration, could be a serious harassment to the enemy, and tie down a large number of his troops in a defensive role. (pp. 166-167, 187-198.)

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Recommendation

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(u) [REDACTED] U.S. forces should assist the RVNAF in identifying and correcting the deficiencies experienced during Lam Son 719 so that any future attacks against the enemy's infiltration system will be based on sound tactics and will be compatible with limited RVNAF resources and capabilities.

6. [REDACTED] (U) Lesson Learned.

(u) [REDACTED] During Lam Son 719, even with tactical air support, helicopters suffered unacceptable losses and could not provide the degree of support needed by ground forces.

Rationale

(u) [REDACTED] Helicopters are valuable when employed in permissive areas, but they were out of their element in the Lam Son environment even though that environment was considered permissive for tactical air operations. Small arms and automatic weapons fire during the operation caused severe helicopter losses, and at times prohibited insertion/extraction of troops, and resupply of besieged positions. Tactical air support demonstrated the capability to reduce helicopter losses, but could not always prevent serious losses or guarantee completion of the assault, extraction, or resupply mission. The situation became critical during the final days of the operation when the enemy launched an all-out offensive against the withdrawing RVNAF. Friendly casualty rates, already high, were increased by the inability of helicopters to resupply or evacuate a number of key positions. By repeated attempts

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in the face of deadly enemy fire, and with heavy tactical air support, helicopter crews ultimately managed to extract most of the RVNAF survivors from the Lam Son area, though they sustained heavy helicopter losses in the process. It is clear that U.S. Army and RVNAF planners relied too heavily on helicopter resources during Lam Son, and overestimated the ability of helicopters to survive in that type of environment. (pp. 144-145, 155-159, 161-167, 174-176, 203-205, 212, 214.)

Recommendation

(U) Extensive helicopter operations in areas of high enemy concentration should be avoided since such operations are far more costly and less effective than when conducted in permissive areas. If helicopter operations are absolutely necessary in less permissive areas, however, maximum use must be made of tactical air strikes to suppress ground fire. The Air Force and Army should develop joint operational doctrine to provide guidance for tactical air support of heliborne operations.

7. (U) Lesson Learned.

(U) Lam Son 719 again verified previous experience that air power is a powerful and valuable tool in supporting ground forces. Nevertheless, air strikes alone could not repel strong and determined enemy assaults against static positions without aggressive and effective ground defense forces.

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Rationale

(u) [REDACTED] Repeatedly during the Lam Son operation, air strikes provided the margin of survival for besieged ground forces. Night gunship support of defensive positions and fighter strikes against enemy tanks were particularly critical and dramatically effective. Air strikes were often the only means of forcing the enemy to break contact and abandon his assaults, if only temporarily. Although successful and influential, air strikes could not always provide the margin needed. In some cases, the enemy was too strong and determined to be turned back. Inevitably, there were occasions when tactical air support was not available at a critical time because of factors such as weather, limited resources, and conflicting priorities. In these situations, ground defenses were often not strong enough to hold back the enemy. Close air support can be a valuable and decisive asset, but to be most effective must be employed in conjunction with a well-trained, equipped, and motivated ground force. (pp. 152-155, 161-165, 171-173, 206-210.)

8. [REDACTED] (U) Lesson Learned.

(u) [REDACTED] Timely tactical air support of helicopter assaults into heavily defended areas significantly reduced losses and increased the chances for successful completion of the mission.

Rationale

(u) [REDACTED] Tactical air and B-52 preparation for helicopter landing zones and surrounding areas reduced the volume of enemy fire, thereby

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reducing losses and increasing the chances for completion of the assault. In Lam Son 719, COMMANDO VAULT, ARC LIGHT, fighters, and FACs all proved valuable in supporting assaults. Preparatory strikes were most effective when delivered just prior to an assault, thus minimizing the warning to the enemy of the landing zone location. Strikes during the assault reduced the volume of fire from the enemy remaining in the area. Tactical air support of insertion, extraction, or resupply efforts was most successful when supported by aggressive ground forces who, by patrolling out from the landing zone, kept the enemy at a distance and pinpointed his position for air strikes. (pp. 156-160, 174-178.)

## Recommendation

(U) The Air Force and Army should develop joint operational doctrine to provide comprehensive guidance for providing tactical air support of helicopter assaults.

### 9. (U) Lesson Learned.

(U) By providing nearly continuous coverage of the battlefield area, the "stream concept" resulted in short response times for close air support needs. It should be recognized, however, that because of the loiter times and ordnance loads of most of the aircraft used, successful employment of the "stream concept" requires the preplanned availability of large quantities of air resources.

## Rationale

(U) A nearly continuous stream of TAC AIR was provided to the Lam Son 719 operation, with fighters scheduled to arrive

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in the battlefield area every fifteen minutes. This continuous air cover was successful in that it provided short response times for support of ground actions. However, due to the loiter times and ordnance loads of most of the aircraft employed, provision of continuous air presence required the commitment of large quantities of air resources. A long-loiter close air support aircraft capable of carrying heavy and varied ordnance loads would have considerably reduced the amount of resources needed to provide continuous air cover. During the operation, fixed-wing gunships demonstrated the value of a long-loiter capability and large ordnance loads by providing continuous night coverage of the ground forces with a minimum amount of air resources. (pp. 142-144, 169, 172, 206.)

## 10. (U) Lesson Learned.

(U) During Lam Son 719, the B-52 proved to be an effective weapon system in close support of ground forces.

### Rationale

(U) During Lam Son 719, B-52s were employed in a variety of tactical roles, including not only interdiction in or near the battlefield area, but also close support of ground forces. Their usefulness in the latter role was enhanced during the operation when new SAC procedures were implemented to allow target changes as close as three hours before the scheduled time over target. Throughout the operation, B-52s struck enemy positions in preparation for friendly ground advances,

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and were employed in proximity to friendly troops. These latter strikes proved to be particularly effective, inflicting severe casualties on massed enemy units, and at times providing the only lulls in otherwise continuous enemy attacks. (pp. 178-183.)

Recommendation

(u) [REDACTED] The capability for employment in a tactical role should be considered during the development of follow-on manned strategic weapons systems.

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## GLOSSARY

### A

AA Anti-Aircraft  
AAA Anti-Aircraft Artillery  
ABCCC Airborne Battlefield Command and Control Center  
AGL Above Ground Level  
AIRA Air Attaché  
AMTI Airborne Moving Target Indicator  
AOC Air Operations Center  
APC Armored Personnel Carrier  
ARVN Army of the Republic of Vietnam  
ASAP As Soon As Possible

### B

BDA Bomb Damage Assessment/Battle Damage Assessment  
BR BARREL ROLL  
BRWG BARREL ROLL Working Group

### C

CAP Combat Air Patrol  
CAS Controlled American Source  
CBU Cluster Bomblet Unit  
CEP Circular Error Probable  
CH COMMANDO HUNT/CORONA HARVEST  
CINCPAC Commander in Chief, Pacific  
COMUSMACV Commander U.S. Military Assistance Command, Vietnam  
CPR Communist People's Republic

### D

DASC Direct Air Support Center  
DBA Designated Battle Area  
D/D Destroyed or Damaged  
DMZ Demilitarized Zone  
DTOC Division Tactical Operations Center

### E

ECM Electronic Countermeasure

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## F

FAC Forward Air Controller  
FAG Forward Air Guide  
FAN Forces Armee Neutrale (Neutral Army Forces)  
FANK Forces Armees Nationales Khmers (Cambodian Armed Forces)  
FAR Forces Armee Royale (RLG Army Forces)  
FSB Fire Support Base

## I

IDP Interdiction Point  
IW IGLOO WHITE

## J

JCS Joint Chiefs of Staff  
JGS Joint General Staff  
JPG Joint Planning Group

## K

KBA Killed By Air

## L

LGB Laser Guided Bomb  
LLLTV Low Light Level Television  
LOC Lines of Communication  
LORAN Long Range Air Navigation  
LS Lima Site

## M

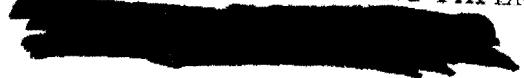
MACV Military Assistance Command, Vietnam  
mm millimeter  
MR Military Region  
MTI Moving Target Indicator

## N

NM Nautical Mile  
NVA North Vietnamese Army  
NVN North Vietnam/North Vietnamese

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O

OPORD Operations Order  
OSD/SA Office of the Secretary of Defense, Systems Analysis

P

PACAF Pacific Air Forces  
POL Petroleum, Oil and Lubricants

Q

QRF Quick Reaction Force

R

Recce Reconnaissance  
RLAF Royal Laotian Air Force  
RLG Royal Laotian Government  
RPG Rocket Propelled Grenade  
RTAFB Royal Thai Air Force Base  
RVNAF Republic of Vietnam Armed Forces

S

SAM Surface-to-Air Missile  
SAR Search and Rescue  
SEA Southeast Asia  
SL STEEL TIGER/Southern Laos  
SVN South Vietnam/South Vietnamese

T

TAC AIR Tactical Air (Tactical strike aircraft--includes fighters and fixed-wing gunships, excludes B-52s)  
TACP Tactical Air Control Party  
TFA Task Force Alpha  
TFW Tactical Fighter Wing  
TIC Troops-in-Contact  
TOT Time On Target  
TRW Tactical Reconnaissance Wing

V

VDASC Victor DASC (Established for Lam Son 719)  
VNAF Vietnamese Air Force

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