

PROJECT
Contemporary
Historical
Examination of
Current
Operations
REPORT

AIR OPERATIONS IN NORTHERN LAOS

1 NOV 70 - 1 APR 71
3 MAY 1971

HQ PACAF

Directorate of Operations Analysis
CHECO/CORONA HARVEST DIVISION

Prepared by: Lt. Col Harry D. Blout
Mr. Melvin F. Porter
Project CHECO 7th AF, DOAC



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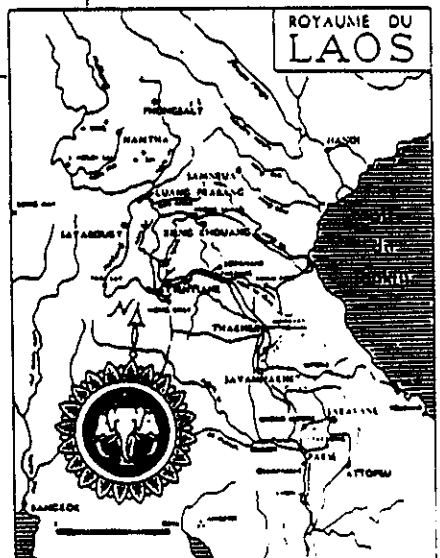
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**DEPARTMENT OF THE AIR FORCE
HEADQUARTERS PACIFIC AIR FORCES
APO SAN FRANCISCO 96353**



OFFICE OF THE CHIEF OF STAFF

PROJECT CHECO REPORTS

The counterinsurgency and unconventional warfare environment of Southeast Asia has resulted in the employment of USAF airpower to meet a multitude of requirements. The varied applications of airpower have involved the full spectrum of USAF aerospace vehicles, support equipment, and manpower. As a result, there has been an accumulation of operational data and experiences that, as a priority, must be collected, documented, and analyzed as to current and future impact upon USAF policies, concepts, and doctrine.

Fortunately, the value of collecting and documenting our SEA experiences was recognized at an early date. In 1962, Hq USAF directed CINCPACAF to establish an activity that would be primarily responsive to Air Staff requirements and direction, and would provide timely and analytical studies of USAF combat operations in SEA.

Project CHECO, an acronym for Contemporary Historical Examination of Current Operations, was established to meet this Air Staff requirement. Managed by Hq PACAF, with elements at Hq 7AF and 7AF/13AF, Project CHECO provides a scholarly, "on-going" historical examination, documentation, and reporting on USAF policies, concepts, and doctrine in PACOM. This CHECO report is part of the overall documentation and examination which is being accomplished. Along with the other CHECO publications, this is an authentic source for an assessment of the effectiveness of USAF airpower in PACOM.


ROLAND A. CAMPBELL, Major General, USAF
Chief of Staff

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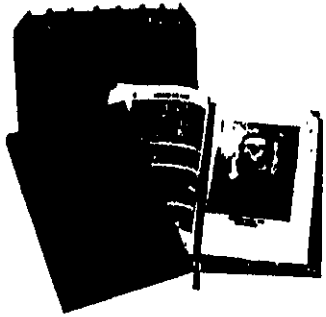
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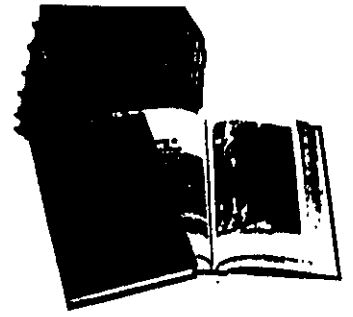
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CHAPTER I

OVERVIEW

The historically cyclic nature of the air and ground war in northern Laos, specifically Military Region (MR) I and II, essentially repeated itself in 1970 and early 1971, with some major differences in the scenario. During the normal course of summer wet season events, with roads washed out and under pressure by Major General Vang Pao's guerrillas, the communist Pathet Lao and North Vietnamese Army (NVA/PL) regulars retreated or withdrew to their traditional strongholds east of the Plain of Jars (PDJ). With the advent of the October-November dry season, the enemy regrouped, repaired the roads, and began their annual dry season surge, culminating with a series of sharp attacks against such key friendly points as Vang Pao's headquarters area and the important Lima Site airfields used for forward tactical air support and resupply.

Enemy successes in the dry season surges varied, but by mid-March 1970 the NVA/PL had penetrated to Skyline Ridge, adjacent to Major General Vang Pao's headquarters at Long Tieng. The enemy was subsequently repulsed by tactical air support and airlifted reinforcements, which held Long Tieng until the transition into the wet season, when the threat subsided.

Significant differences in the 1970-71 picture created an altered tactical situation. The enemy had withdrawn to the east during the wet season, but was poised on the west edge of the Plain of Jars. With the exception of fairly strong forces at Lima Site 32, Vang Pao had only

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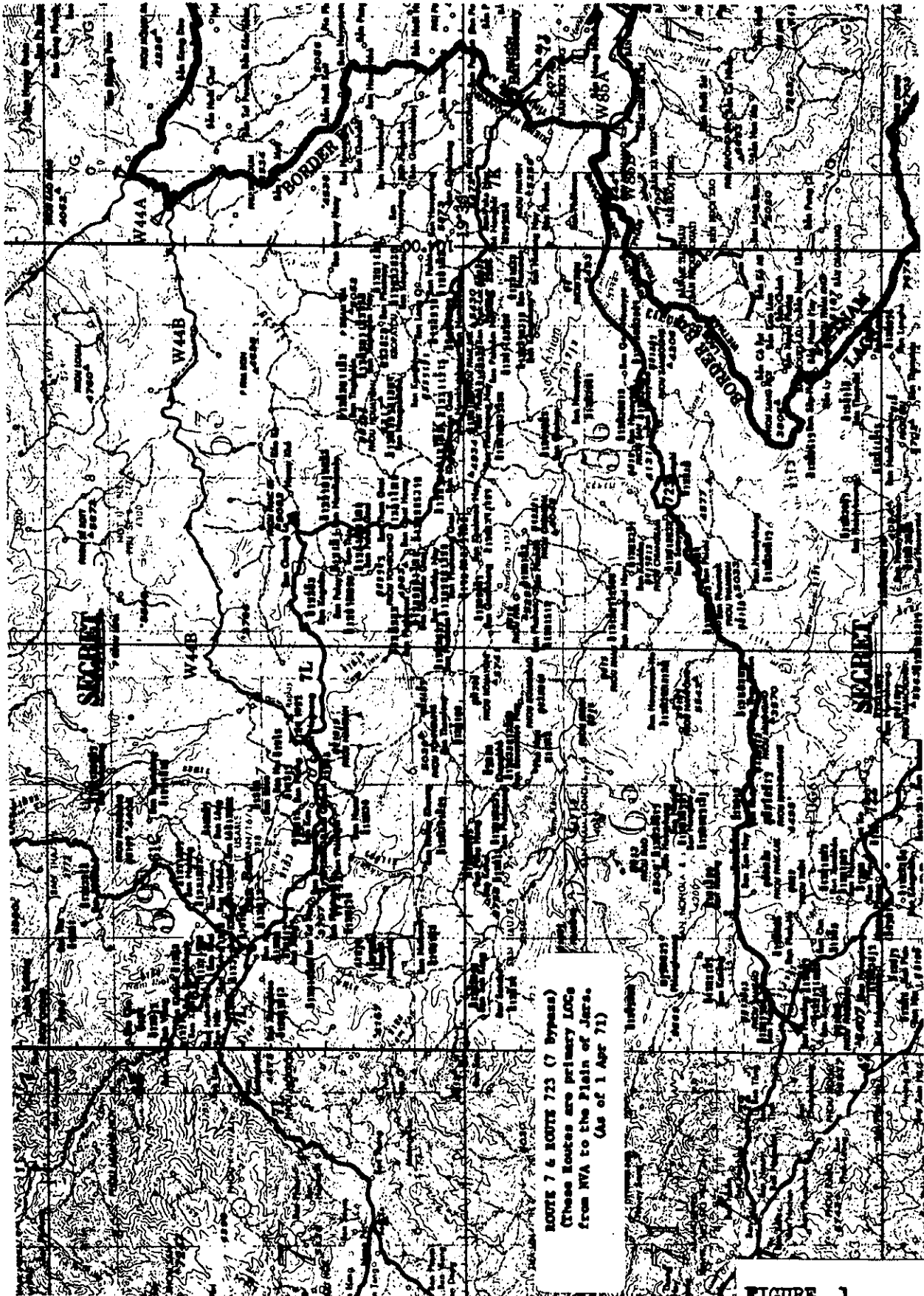
tenuous control of the Lima Site "crescent" stretching across the north edge of the Plain of Jars. To ease the pressure on the easily interdicted Route 7, the NVA/PL had completed a bypass, designated Route 723. This Route, later renamed Route 72, came directly west out of North Vietnam to its terminus at or near Xieng Khouangville and Route 4, relieving the supply pinch the enemy suffered using Route 7 as his primary LOC to the PDJ. (See Figure 1.) Route 73 was also completed during the period of this report, and offered a bypass for Route 7 around the major interdiction points between Ban Ban and the Plain of Jars. Visual sightings of vehicle movement during the period of the report indicated that most of the supplies entering the Plain of Jars travelled down Route 73 from the major storage facilities in the Ban Ban Valley.^{1/}

With COUNTERPUNCH III in the Ban Ban area achieving limited success, the enemy appeared to have a time and tactical advantage he had not previously enjoyed at the outset of the dry season. November and December were typically repair and resupply months for the NVA/PL, but as early as 1 November 1970, the enemy took over a strategic mountaintop northeast of Ban Na (Lima Site 15) overlooking the Plain of Jars, and Ban Na itself took incoming fire that night. Through mid-November the enemy signaled his intentions by engaging in several "push-pull" clashes with Vang Pao's forces for control of mountaintops north of LS-15, northernmost of the important Lima Sites comprising the Vang Pao stronghold.^{2/}

Sporadic contact and attacks by fire (ABF) continued through December, but in January 1971 the enemy indicated his intention to mount an offensive in MR I and MR II. In Military Region I, pressure began to build against Luang Prabang. In the Route 19, Nam (River) Bac, Nam Ou, Mekong LOC, through which the enemy supplied much of MR I, an estimated 20 boats were

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ROUTE 7 & ROUTE 723 (7 Bypass)
 (These Routes are primary LOCs
 from NVA to the Plain of Jars.
 (As of 1 Apr 71)

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FIGURE 1

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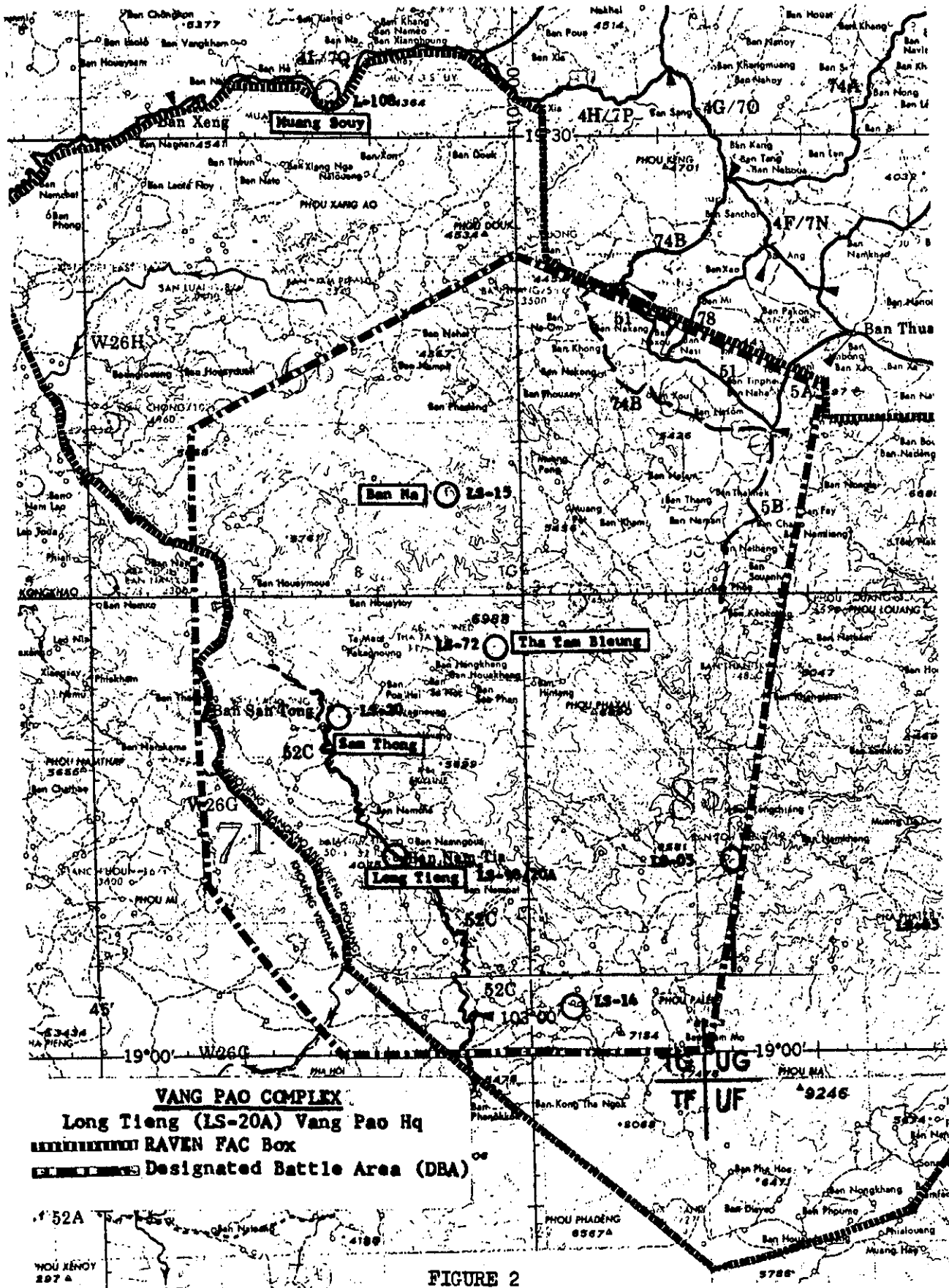


FIGURE 2

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While the NVA/PL presence around Luang Prabang and Long Tieng was political in nature, no question existed that the pressure in the Long Tieng area was militarily important as well. It remained the last block to the plains of Military Region V, the Vang Vieng area astride Route 13-- the only major road linking Vientiane and Luang Prabang. Capture of the complex would provide the enemy with complete domination of all of north-eastern Laos, which then could evolve into a solid domination of any bargaining talks. Such talks had been pending between representatives of the RLG and PL since early in 1970.

In previous years air power and last minute reinforcements had saved the sites--especially LS-20A--before the onset of the rainy season. In February 1971 the enemy had a three-week head start with their takeover of L-108, Muong Soui, and attacks were launched day and night against LS-15, LS-72, and LS-20, along with limited assaults on Long Tieng itself. These continued through February and March, ending with the imminent loss of Lima Site 15, but the overall complex still held.

Points in Favor

Vang Pao, in February, had but 6,000 friendly troops facing an estimated 8,000 to 10,500 of the 16,500 enemy positioned in MR II. The overall enemy order of battle (OB) in MR II, not including conscripted and minor supporting elements, was estimated as of 5 March 1971 to comprise the following: ^{8/}

- 316th NVA Div (174th and 148th Regts), SW of LS-20, 20A, 15, and 72.

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- 312th NVA Div (165 and 209th Regts), PDJ and S of PDJ, SW PDJ, LS 15 and 72.
- 866th Ind Regt, SW PDJ vs LS 72 and 20A, possibly vic LS-14.
- 766th Ind Regt, Ban Ban, LS 32, Khang Khai vicinity.
- Deuanist Neutralists (pro-Pathet Lao), Xieng Khouang-ville sector.

However, several factors - some of which were significant changes from the previous years' defense against the enemy dry season offensive - worked to the friendlies' favor.

Although the tacair sortie rate was lower than the 1969-1970 dry season rate, several improvements in the management of tacair helped to offset the reduction. ^{9/} USAF tacair was better controlled. More Ravens were available to work the strike sorties hitting the enemy in MR II. As the situation around the Long Tieng complex became critical, tacair concentrated on close air support in the complex area. Target boxes were approved by the Embassy, and allowed around-the-clock, all-weather strikes against materiel and enemy staging areas. A new procedure called Loran Targetting Grid Annotated Photography (LT GAP) was added to Combat Skyspot as a means for Instrument Flight Rules (IFR) bomb delivery. In addition, less USAF tacair was offset by a significantly increased Royal Laotian Air Force (RLAF) T-28 sortie rate. Although the T-28s carried much smaller ordnance loads, their pilots were noted for their bombing accuracy and their ability to work their T-28s in confined areas.

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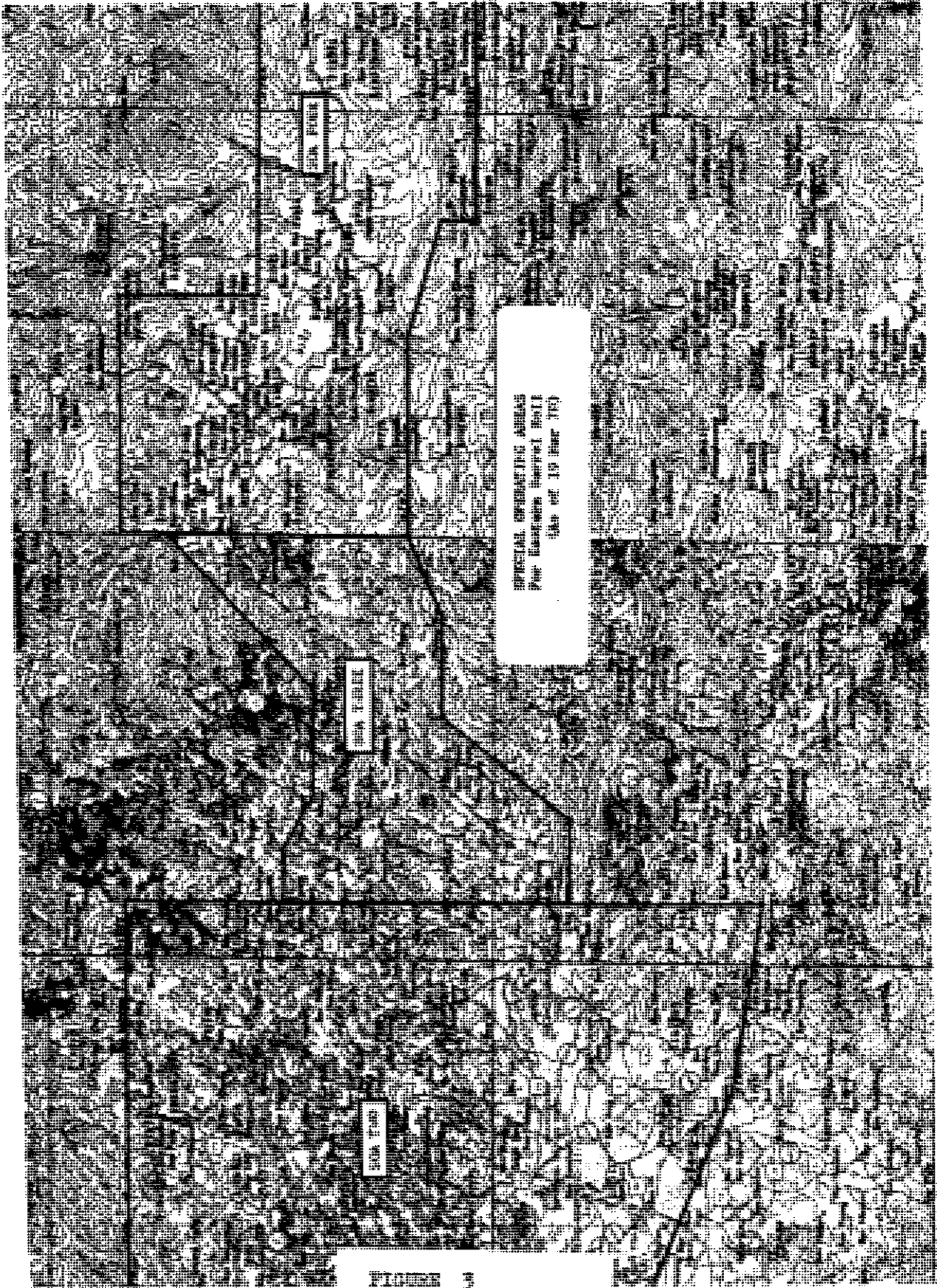


FIGURE 3

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CHAPTER II

THE WAR IN NORTHERN LAOS

The war in Northern Laos had ominous portents as the dry season of 1970-71 began. ^{26/} The wet season offensive just concluded by Major General Vang Pao's guerrillas had been a hard-fought campaign achieving limited objectives against a determined North Vietnamese Army (NVA) force supplemented by some Pathet Lao (PL). From the slopes adjoining the Long Tieng (LS-20A) airstrip, the enemy retreated slowly to the southwest rim of the Plaine des Jarres (PDJ). They gave up the traditionally Lao Neutralist headquarters at Moung Soui (L-108) to Vang Pao's Operation LEAP FROG, but only after 40 days of attacks and counter-attacks. The enemy resisted Operations LEAP FROG and COUNTERPUNCH II from August until October before giving up Ban Na (LS-15) and the twin peaks of Phou Seu on the southwest rim of the PDJ. ^{27/} The start of the dry season, which favored the enemy's advances, found the NVA/PL entrenched further west than ever before at that time of year. They held pockets of resistance in friendly territory and were building up troops and supplies on the PDJ. Vang Pao's exhausted guerrillas returned to the defensive after their wet season campaign had gained them only about 30 kilometers.

As in previous offensives, Vang Pao's army relied upon U.S. and RLAF tactical air support and airlift to push back the larger, better-equipped PL/NVA force. F-4s, A-1s, and T-28s helped repulse the enemy as they threatened Long Tieng in March 1970. The enemy's long siege of Bouam Long (LS-32) was broken with the aid of tactical air. There the fighters

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were applied to support troops-in-contact (TIC) or struck against crew weapon pinpoint targets or target box areas established over enemy concentrations. In August, Raven FACs were used extensively for visual reconnaissance and to identify suitable helicopter landing zones (HLZ) in preparation for Vang Pao's Operation LEAP FROG, a push toward the PDJ. ^{28/} USAF and U.S.-contracted transports and helicopters moved guerrilla forces to attack positions near ground objectives such as Ban Na. Airlift was also provided to infiltrate/exfiltrate raiding parties which destroyed the enemy's supply complexes. The guerrillas knew that during night TICs USAF or RLAFF gunships could be called upon for heavy fire support. The enemy, on the other hand, moved slowly over water-soaked roads. Whenever he concentrated troops, they were vulnerable to airstrikes; when he massed supplies, the caches might be destroyed or seized by helicopter-supported operations.

The 1970 wet season ushered in several changes to the way forces friendly to the Royal Laotian Government (RLG) fought the PL/NVA. Using Raven FACs for fire adjusters, Vang Pao and his army of irregulars gained experience in the use of artillery. The RLAFF AC-47s flew more frequently, flew further from their bases, and achieved a greater effectiveness supporting ground troops. Changes in the way the USAF supported the ground fighting took the form of new force application techniques and new ordnance. ^{29/} Side-looking airborne radar (SLAR)-equipped Army OV-1s teamed up to feed almost real-time truck targets to AC-119s. A quick reaction force (QRF) of F-4s was on continuous alert at Udorn for use against perishable targets

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and to support TICs. Loran targeting was being developed for all-weather bombing and a new SAC radar with special flight tracking features at Udorn improved IFR bombing in Northern Laos. A newly developed, significantly improved antimateriel cluster bomb, CBU-38, and the highly accurate high-drag bombs commonly used in Vietnam were introduced into the war in Northern Laos. All-in-all, the USAF was achieving greater effectiveness from fewer sorties applied to the Northern Laos war.

The way in which the USAF supported the RLG with a 1970 wet season sortie rate drastically reduced from that of the 1969 wet season was the most significant development in the air war in Northern Laos in the wet season of 1970.^{30/} A daily sortie rate which had gone to over 200 was, by the end of the wet season, more-or-less pegged at about 30.^{31/} That lowered sortie rate was addressed in the CHECO report "Air Operations in Northern Laos--1 Apr - 1 Nov 1970."

The NVA Moves to the Offensive

In the last days of the 1970 wet season, elements of Vang Pao's army of Meo guerrillas and some companies of Forces Armee Royale (FAR) had inched to the limits of their offensive.^{32/} Ban Na and the twin peaks of Phou Seu on the southwest of the PDJ were taken. These locations, plus Moung Soui (L-108) to the northwest and Khang Kho (LS-204) to the southeast, delineated the furthest forward advance that Vang Pao was to achieve. This delineation, however, was in no way like the front lines of conventional ground war. These mountaintop and airstrip sites were won in

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hard-fought battles in the surrounding expanse of jungle where considerable numbers of the enemy still roamed freely.

At the beginning of the dry season, which traditionally favored the enemy's offensive, the NVA moved quickly to counter the guerrillas' recent gains. On the morning of 1 November, the day arbitrarily chosen for the start of this report of the dry season war in Northern Laos, the enemy overran several of the mountaintop positions on Phou Seu. ^{33/} A hundred rounds of 105mm artillery fire, probably from the plains below, were fired into the positions after midnight. In attacks launched throughout the night, three battalions of NVA swept friendly troops from several of the peak's higher outposts. Over at Ban Na, the friendlies occupying positions there endured a night of artillery fire lobbed in from guns to the north and northwest. ^{34/}

The enemy also increased his efforts to repair rain-damaged roads into the PDJ area to support his dry season surge of men and materiel. Old routes were repaired where possible and bypasses were built around obstructions too formidable to remove. Some interdiction points (IDPs) were cleared by hand. ^{35/} In addition, a bypass, Route 723, paralleling Route 7 from the Fish's Mouth on the North Vietnam border to the PDJ via Xieng Khouangville and Route 4 was pressed toward completion from both ends. The enemy was seeking a way to end his almost total reliance upon Route 7 as his line of communications (LOC) for his forces fighting Vang Pao. As his road work proceeded, traffic increased from light foot traffic over

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certain short segments in November ^{36/} to moderate to heavy truck and foot traffic throughout the LOC structure in January. ^{37/}

As the enemy's resources in the PDJ area increased, so did his pressure against friendly Lima Sites. Before November was over the enemy began to fortify his newly won positions on Phou Seu. Hill 1470, three kilometers north of Ban Na, was taken by the enemy on 14 November, lost on the 15th, and retaken on the 16th. Friendly forces attacking again on the 19th, found that the enemy had abandoned it. ^{38/} Such attacks and counterattacks attested that the enemy was close by and a constant threat to site security. ^{39/}

Continual patrolling, harassing, probing attacks, and shelling characterized the enemy's efforts against sites west and southwest of the PDJ as he prepared for more aggressive action in early February. No significant changes occurred in the occupancy of sites in the PDJ area.

Vang Pao's Spoiling Action at Ban Ban

Friendly intelligence indicated that as of November the enemy resupply surge was resulting in an even greater stockpiling in the enemy's supply complexes along Route 7 east and west of Ban Ban. This area had long been the area of primary interest for interdiction in northern Laos by 7AF. The value of the area also as a target for a spoiling and interdicting raid became apparent to Vang Pao and the officials responsible for the U.S. support provided to the guerrilla army.

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In mid-November, Vang Pao, Ambassador G. McMurtrie Godley and high-ranking CAS officials developed plans for Operation COUNTERPUNCH III aimed at the Ban Ban area. Headquarters 7/13AF at Udorn worked out plans for air support.^{40/} The plan called for friendly paramilitary forces moving from Bouam Long (LS-32) on the north side and forces heli-lifted into San Tiau (LS-2) on the south side to pinch off Route 7 east of Ban Ban and to destroy supplies cached in the area. The heli-lifted forces would have to come from the defense of friendly Lima Sites, but the existing level of enemy threat and the defensive preparations of such sites made the temporary use of some of the troops defending them an acceptable risk.

In addition to helicopter support, an increased tacair effort was required. The established allocation of 30 USAF fighter-attack sorties for Northern Laos had been set with the understanding that additional strikes were obtainable for crises or special requirements.^{41/} Clearly Operation COUNTERPUNCH III was planned to be of sufficient size and scope to warrant a significant increase in the daily tacair sortie rate provided by Seventh Air Force.

The execution of COUNTERPUNCH III was fitful and suffered from marginal weather. The operation began on 26 November with USAF helicopter lifting 40 paramilitary Commando Raiders and the Forward Air Guide (FAG) BADMAN into the LS-2 area to secure HLZs for the main force to follow.^{42/} Ground fire and marginal weather, however, delayed the operation. A last-minute change of HLZs was made by CAS, but weather and faulty execution precluded proper zone preparation by tacair. The delivery of friendly troops to the

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attack was pressed with 200 rounds of 122mm rocket fire, 82mm mortar fire, the tanks' guns, and the infantry advance. Shortly after 0600 hours the defenders withdrew toward Phou Fa (LS-16), abandoning the Moug Soui area to the NVA and leaving behind four 75mm pack howitzers.

Action against the heart of Vang Pao's defensive positions, LS-15 LS-72, LS-20, and LS-20A, became critical as of early February. In particular the NVA pressed against known FAG positions in the area. The FAGs were the contact with the Raven FACs, who controlled the tactical air directed at the enemy. LS-15 was subjected to increased harassment by 122mm rocket and mortar fire. On the night of 5-6 February, an NVA sapper unit got onto Skyline Ridge between Sam Thong and Long Tieng and destroyed the low frequency air navigation radio beacon.^{50/} Eighty-five millimeter howitzers were brought into the area, and artillery fire damaged a friendly 155mm howitzer. On the night of 6-7 February, eight outposts guarding the eastern approaches to Long Tieng were lost.^{51/} Throughout the day and night of 7 February, LS-15 and friendly positions on Phou Long Mat took shelling by the enemy. LS-15 faced encirclement by NVA battalions and enemy 12.7mm automatic weapons were brought in to restrict its aerial resupply.^{52/} Long Tieng received five 122mm rockets at dawn on 13 February. At predawn on the 14th, the NVA again rocketed key defensive positions and overran a 105mm howitzer position south of Long Tieng.

The U.S. Tactical Air Surge

The heavy increase in enemy activity brought a doubling of the fighter-attack air effort in defense of Vang Pao's Lima Site strongholds.^{53/} The

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USAF sortie rate for F-4s, A-1s, plus gunships flown for Barrel Roll, had been fairly stable, averaging 30 per day from 1 November until early February when the rate jumped to an average of 58 until 31 March. The USAF tacair daily sortie rate flown in support of just MR II and Vang Pao for approximately the same period rose from 15 to 24. The RLAF combined T-28 and AC-47 daily sortie rate flown for Barrel Roll increased from 45 to 77 from 1 November to 31 March. Within MR II, for approximately the same periods, the Lao doubled their effort from 22 per day to 44.^{54/}

As the marginal weather of the first few days of February improved, the Ravens concentrated almost exclusively on close air support and troop concentrations. Visual reconnaissance (VR) was drastically reduced because of the concentration on site support. There were attacks and shellings against at least one of Lima Sites 15, 20, 20A and 72 more or less at all times. With the pressure on Vang Pao's positions increasing as expected, the flexibility provided for by the 7AF Commander in setting sortie allocations had arrived. With reduced forces the 1971 7AF Commander, General Lucius D. Clay, Jr. could provide sorties only for targets which could be justified as worth an A-1 or F-4 sortie and for which suitable control would be provided. Requirements to support TICs were fulfilled by AC-119 gunships with a scheduled nightly sortie rate that rose to five and by a quick reaction force (QRF) of from six to twelve F-4s at Udorn.

To further concentrate the available daily rate of 60 USAF sorties in the defense of Vang Pao's strongholds, the Air Attache (AIRA) in Vientiane, Colonel Hayden C. Curry, on 11 February established, with the

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and that the rate was accomplished with only 35 aircraft and 40 pilots.^{62/} USAF personnel working at Lao bases and providing maintenance support to these aircraft also deserved notice and credit. Without these Air Force personnel such an all-out effort on the part of the RLAF would not have been possible.

The RLAF AC-47 Spookies became more effective and provided critical support as the enemy's dry season offensive intensified. As the dry season began, crew-related problems detracted greatly from the RLAF gunship capabilities.^{63/} Crews scheduled for alert duty period strolled in when they found it convenient, and then left the alert area for meals. Although radio operators had been given basic instructions suitable for dead reckoning and pilotage navigation in Laos, the pilots relied entirely on TACAN and would not range farther from the station if the cockpit navigation information became "unlocked." Because the money from selling scrap ammunition shells was divided among the crews and RLAF base officials,^{64/} generally all of the ammunition was expended on every mission, with or without suitable targets. The fast fire rate was usually selected, again, irrespective of targets, and greatly increased the cost of replacing barrels, batteries, and guide bars, not to mention ammunition. Improved performance by the crews in all of these areas was achieved throughout the dry season as the RLAF slowly continued to come of age. Prodded by a U.S. AC-47 advisor, the crews were made to feel a firmer commitment to their alert responsibilities, to conserve the guns and ammunition, and to navigate to targets without TACAN assistance.^{65/} The RLAF gunships' effectiveness in the dry season of 1970-71 was indicated by their ability to respond quickly to

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calls for TIC support in the Long Tieng complex. The Spookies and the AC-119 Stingers from Nakhon Phanom, and an occasional AC-130 Spectre from Ubon, teamed up to provide night coverage over the Long Tieng complex in the critical period of mid-February.^{66/} The proud words of the U.S. advisor with the RLAF AC-47s further indicated their effectiveness:^{67/} "Very seldom will they (the AC-47s) get secondary targets. It's all primary TIC."

Attack on Long Tieng

As it had in March 1970, Long Tieng became the focus of exciting action in the 1971 enemy offensive. Enemy pressure against and around Long Tieng increased during January and early February. In the second week of February, the action was characterized by daily shellings and mortarings, sapper attacks against targets such as the air navigation radio beacon and friendly howitzers, and ground attacks that overran several Long Tieng outposts.^{68/} (See Figure 4 which shows Long Tieng to the NW.)

Dramatic action occurred on 13-14 February.^{69/} Beginning at 0600 hours, the enemy fired 122mm rockets that hit Long Tieng, killing two friendlies. Three NVA sapper companies infiltrated into the area south of Long Tieng and were able to silence a 105mm howitzer. This in turn allowed the enemy to set up mortar positions that provided him coverage of the site's strip and cantonment area and the adjoining village. The subsequent shelling of the Air America, CAS and AIRA facilities by a variety of rockets, artillery, and mortars resulted in a suspenseful day and night for the U.S. personnel who worked at Long Tieng.

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Long Tieng, Headquarters of Military
Region II in Laos and Capital of Xieng
Khouang Province.

FIGURE 4

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One of the Ravens who experienced the shellings reviewed his activities of 13-14 February: ^{70/}

We had a little bit of forewarning on the night of the 12th-13th. About six A.M. on the thirteenth we took about five or six rockets. They came down the valley; we all heard them. I heard the first whistle go over the top, and I was under the bed. We had been rocketed before, but not for several months, so we knew they were close enough to do some damage.

We went out and looked the area over as usual and found they had come from southwest of Sam Thong, up in fairly rugged karst. Very difficult to see anything. Early that afternoon there was a report from a patroller straight west about three miles out, that he had spotted 200 enemy close to the river. I worked over the area most of the afternoon--two flights, about four hours. Before that I don't know how many flights of air: lot of Tiao Pha Koas and F-4s, and I believe some A-1s, too. We covered the area pretty well. The reports we got later said it was actually about 20 men; I don't know.

We knew they were close, and that day our line chief along with the AOC Commander and a couple of crew chiefs got together and built us a beautiful bunker. It was a dandy; just everything right. They put it up in the afternoon. They just worked like crazy, and I'm glad they had it.

That night they had moved a friendly 105 howitzer--I believe; I'm not quite sure--up by the King's house on a ridge just south of the base itself, firing H and I, harassment and interdiction, firing all night long to the west. We could hear it boom every 60 seconds, two minutes, or so. Sometime during the night, I believe about midnight, we had an alarm, but I don't recall what it was for. It was a false alarm. We stayed up about an hour, manned the windows, and then went back to bed.

The American compound up there is in a slightly elevated position; there is a large karst peak rising very rapidly on the north side and a small one on the southwest side, which has a .50 calibre machine gun bunkered position. The perimeter of the American compound is fairly ill-defined. Some of the Americans

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(CAS)----their command post has concertina wire around it. Our BOQ is a two-story concrete block that faces south...So what we would do is a few people would go to the corner windows upstairs and keep track of what was going on. We were armed with our M-16s, two M-79 grenade launchers, and a box of hand grenades. Some were issue; some were strictly scrounge-type weapons.

About 3:30 that morning I was awakened by increasing explosions, rather rapid and rather close, that didn't sound like a 105. It sounded more like a mortar. From my side window I could look out and see flashes up on the hill by the King's house and someone said there was a firefight up on the hill. I thought it was friendly mortars shooting at this ridge, but in fact it was enemy guns shooting at us with a small ridge in between us, the back side of which I couldn't see, and I heard they were DK-82s. They were coming from two different spots, though.

We watched until about 4:00 when someone yelled "Incoming, hit the bunkers." We ran out the door and down the stairs. We had several locals there, our house boys, who came to see what was going on. They kind of clung close to us. And about that time the first rounds hit. They were almost direct hits. I guess they had just swung the tubes around. Apparently one of our people saw the gun fire. They say with the DK-82 you can see it trail fire behind it when it's coming to you. It's rocket-type charge that burns. There were three DK-82 positions firing on us directly and later I heard it was six positions, mixed DK-82s and 60mm mortars. Besides that we came under rocket attack at about the same time. The debris we picked up indicated 107, 122, and 140mm rockets were coming in. The charges were going off every few seconds. They seemed to be hammering the American compound.

As soon as they got the friendlies to abandon their positions on the south, which they did, they swung the barrels around, put them over the ridge, and fired directly into us. Some of the wooden EM quarters took a few direct hits, just random rounds, but by that time everyone was in the bunker. The bunker was great; I can't say enough for it. One round hit on top of us, but no problem...I stayed in the bunker probably about two hours.

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As the shelling and rocket-firing died down after about an hour and a half--about forty or fifty B-40 rockets had been fired at us which means they were fairly close to us, possibly in the village we sent a couple of people out to look out the back windows, because in the bunker we were blind; we didn't know what was going on. We fully anticipated a sapper attack to follow...It was dark and hazy but our people did report seeing what they were sure were enemy firing in the village. They fired .50 cal machine guns against the hill, trying to silence the mortar positions.

With the coming of dawn I recommended to Mr. Rostermount, I was acting senior FAC--that Raven 24, Lt Swedberg, or myself move into the forward position in the rooms to direct any airstrikes that might come in. We were the two most experienced. He said "fine" and Lt Swedberg went in and I followed about five or ten minutes later. The fighters actually did come in.

Let me back up here a minute. We did have a Spooky in the area after the first rounds hit, a Lao Spooky. On his first rounds he was a long way away; we could hardly hear him. Then he moved in closer; then he left. I don't know why. Maybe he was out of ammo. We were virtually without any air cover for an hour and a half. This was the morning of the 14th. So, we didn't get any other gunship support at all that day.

As soon as it got light enough we got a flight of F-4s checked in overhead. Lt Swedberg, myself, a radio operator, and an Intel sergeant tried to establish contact with a portable Fox Mike radio relaying through Cricket (ABCCC) with UHF to the fighters, but it didn't work, so we used the survival radio...and it worked out well; we had them loud and clear; they had us loud and clear. As the dawn came up, the enemy pulled back.

Two Ravens launched out of Vientiane...They came overhead at first light. As the dawn came up the enemy fell back. We were unable to actually locate any of them. Because they were through, we were able to leave the base. Air America came up and evacuated their wounded by helicopter. One American had been wounded by the first shell. We were able to go down and fly out all of the O-1s except one that was damaged.

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I stayed and directed airstrikes that morning; cycled out of there most of the day, then went back to Vientiane. That night and the next day when most of the first people who had gone directly down had changed aircraft, some came back to relieve me. So we were able to keep our coverage in there; we didn't miss a day.

When asked about the villagers who populated Long Tieng, the Raven's account ^{71/} was reminiscent of the description given by an eye witness during the March 1970 attack on the village: ^{72/}

Most of the village had left by that time (time of the shelling). They headed south. There's a road down that goes most of the way, and a bridge across the river. Some of the villagers are left. Sometimes they'll go out of the valley, and live in the hills at night and come back in the daytime. But the greatest majority of them are gone. Stores were depleted. They just packed up and left.

The F-4s that were contacted by the Ravens aided in repelling the attack on the American compound, but with some unfortunate consequences. ^{73/} The flight of two fighters was armed with CBU 24/49 and had been diverted after gunship escort duty in Steel Tiger. ^{74/} Upon arrival over TACAN channel 108, the flight was instructed by ABCCC to contact Raven Control, in this case a Raven controlling airstrikes from a ground position. With the desperate ground situation, the controller was hoping for any tacair support and felt that the location of friendly troops would allow a CBU 24/49 drop. ^{75/} The first F-4 dropped two CBU-24s and one CBU-49 which although not exactly on target, helped to break the enemy's attack. ^{76/} The second F-4 delivered its ordnance well off target, right into the American compound. The resulting explosions and delayed

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Ban Na (LS-15) with PDJ in Background

FIGURE 5

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Ground operations by the NVA had resulted in a fairly stable deployment of battalions threatening the four Lima Sites by the middle of March. They successfully overran friendly defensive outposts down to within seven kilometers northeast of LS-20A, six kilometers northwest of LS-20, and five kilometers south of LS-72. From the middle of February on friendly intelligence agencies considered a major ground thrust by the enemy to be imminent, but by 1 April none had occurred. Minor probes and clashes were undertaken by both sides, each hoping to find a weakness to be further exploited, but none of the four Lima Sites had been required to withstand a major ground assault as the period covered by this report ended.

Tac Air Defense of the Lima Sites

The defenders of the four Lima Sites, and the agencies supporting them responded to the enemy's pressure and hoped their efforts would be adequate to hold the sites until the wet season returned. For the guerrilla forces, reinforced with additional guerrilla and FAR battalions from MR III, ^{85/} this generally meant hanging on to the Lima Sites and their outposts, meeting the enemy's ground probes, counterfiring at rocket, mortar and artillery locations, and launching occasional probes at the enemy. For those responsible for tacair support it meant day-by-day evaluation of how the allotment of sorties could best be applied to support TICs, destroy enemy artillery, provide escort resupply and medevac at LS-15, and, where possible, to strike interdiction targets. ^{86/}

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The air defense of the four Lima Sites in large measure was related to a patchwork of areas covering the designated battlefield area IFR boxes within the DBA, the Raven Box overlying the DBA and protruding western PDJ, and Routes 7 and 723 between the NVN border buffer zone and the PDJ.^{87/} (See Figure 6 for location of IFR boxes.)

As requested by AIRA, the main USAF tacair effort was flown to provide close air support in the DBA. From 1 to 27 March, for example, 1437 of 1796 fighter-attack sorties struck in the DBA.^{88/} The rules of the Raven Box in which the DBA was generally located made it mandatory that VFR, close air support strikes be flown under FAC control. Between 1 and 27 March Ravens controlled 45 percent of Barrel Roll sorties, mostly into the DBA. OV-10 Nail FACs and F-4 Tiger FACs generally worked in the SOAs and were occasionally requested to direct strikes in the DBA. Nails and Tigers in all areas controlled seven per cent of the Barrel Roll sorties. Also existing within the DBA were 28 IFR boxes where approval was given for IFR bombing. The three Special Operating Areas (SOA) (See Figure 3) to the east were validated for strikes within the restrictions provided by the Rules of Engagement (ROE). Again using data from 1-27 March, targets in the boxes were most commonly struck by IFR sorties. A total of 577 sorties expended ordnance using all-weather techniques, Combat Skyspot (447), Loran (118) and Commando Nail (12).

Although the DBA received first priority and most of the tac-air support, some interdiction targets became so clearly lucrative

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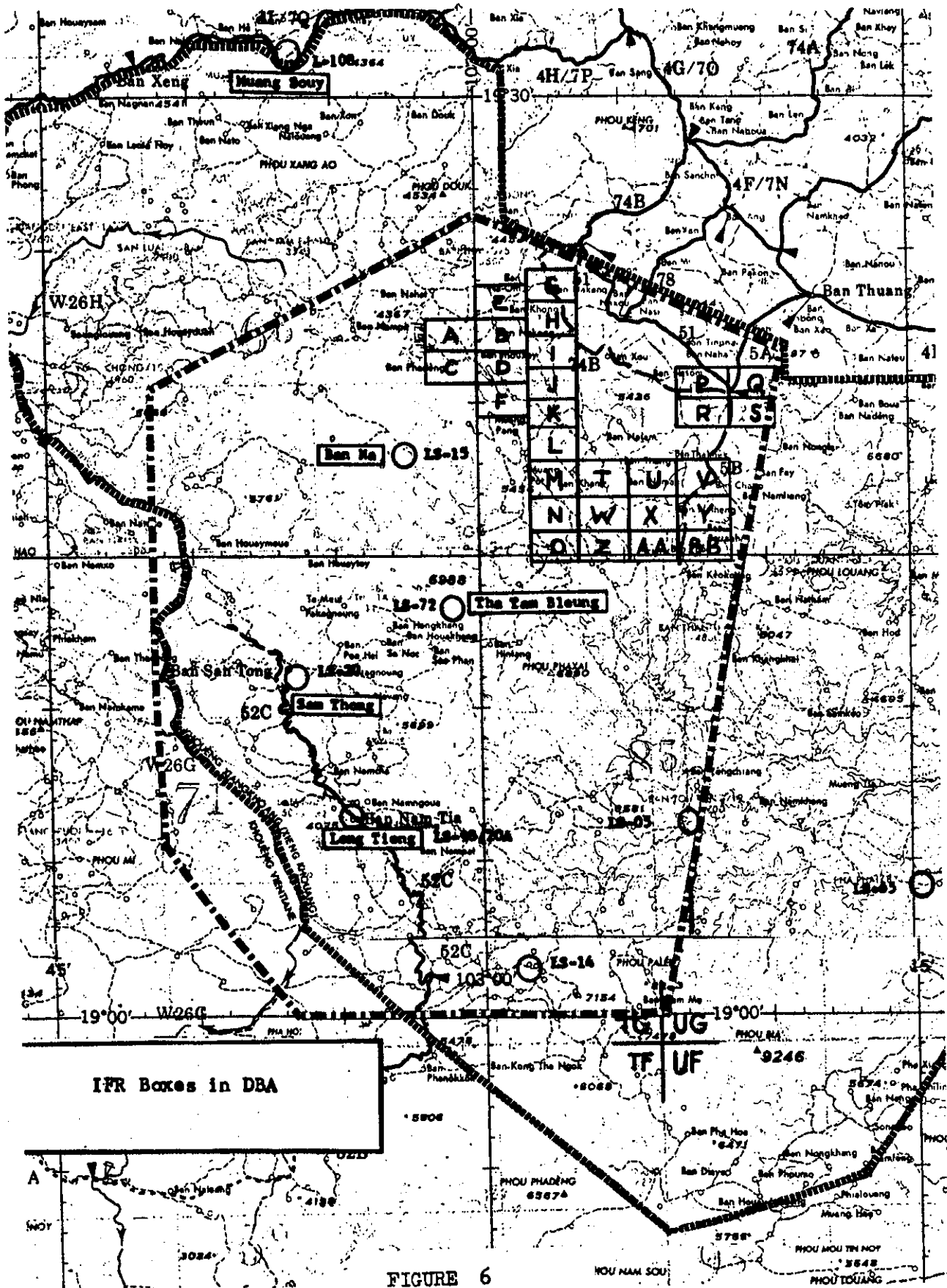


FIGURE 6

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Plain of Jars

Ban Na (LS-15)

Sam Thong (LS-20)

Tha Tam Bleung (LS-72)

Long Tieng (LS-20A)
Vang Pao's Headquarters

LS-5

FIGURE 7

LS-14

The F-4s demonstrated their ability to work in all areas of northern Laos. Fast-moving, rugged, and capable of carrying a large load of big bombs, the F-4s could work either in the DBA for close support or in the high threat areas to the east where 37mm (and up) AAA existed. These jets struck under Nail or Tiger FAC direction in the SOAs, and in the DBA under Raven FAC direction when required to work close in with low level delivery ordnance such as MK 82 high drags and napalm. The F-4s proved themselves to be effective in close support even though Raven FACs indicated a preference for A-1s in this mission.

Royal Laotian Air Force AC-47 Spookies and Nakhon Phanom-based AC-119K Stingers provided night coverage over the battle area, primarily in support of TICs, but also to simply provide presence. The Spookies, when initially turned over to the Laos did not inspire them to any great feats of combat. It was said that they would merely fly over a ridge, out of sight of the forward air guide, fire off their 21,000 rounds into the trees, and return to base. A year of patient advice and encouragement by U.S. advisors, however, turned the pilots and crews into a group of dedicated and capable combat flyers. ^{102/}

AC-119s were drab old airplanes with a sophisticated interior and a lethal punch from four 7.62 miniguns and two 20mm Vulcan Gatling guns. A computer linked the sensors-Forward Looking Infrared (FLIR) and Night Observation Device (NOD) - to the pilot's gunsight, so that he could superimpose a movable reticle (from the sensor) upon a fixed reticle

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(the guns' boresight) and, all components being in working order, kill whatever he was aiming at. The aircraft also carried MK 24 flares and other illumination ordnance so that in the event poor weather degraded the sensors, the aircraft commander could at least provide light for the ground troops.^{103/} The primary frailty of the weapon system was the mismatch between the old and the new. The old aircraft demanded substantial maintenance to keep it in the air. On at least one occasion, such a minor malfunction as a poor autopilot was sufficient reason for abort, as were "tired" engines and inaccurate instruments. Five aircraft a night were normally fragged for north Laos, usually to the Designated Battlefield Area to support troops in contact. During this period the actual sortie rate was over four per night. When aborts occurred on the ground, all attempts were made to scramble other aircraft, or make a quick turnaround of a returning Stinger, but maintenance reliability hampered the program for some time during the period of this report. Standing by over the DBA was unpopular with the AC-119 crews. The crews had what they considered a valid complaint; the Stingers were configured for and well-suited for truck killing, and trucks were there. In March, 895 were detected by the OV-1s' SLAR on 31 nightly flights, each of an hour and a half duration.^{104/} On nights when no TICs demanded their attention, the AC-119 pilots felt their orbit was wasted, and they requested permission to go out and work the LOCs. The Air Attache, CAS and the troops on the ground were interested not just in the ability of a gunship to respond to a TIC, but in its presence--the sound of the motors--for morale purposes. A compromise was

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worked out where the AC-119s were authorized to work outside the DBA on a "ten minute tether" when the ground situation was quiet--in other words, that they range no further than that which would allow them to respond to troops-in-contact within ten minutes.^{105/} However, this release happened only occasionally due to the real or imagined enemy troops around friendlies on the ground. The Spooky-Stinger combination was credited with excellent night support in the Vang Pao area. All-night coverage by Candlesticks, and F-4 QRF did the rest.

LORAN Targeting, Grid Annotated Photography (LT GAP)

Perhaps the most serious drawback to the 24-hour coverage concept was that of achieving accurate night and all-weather bombing. Combat Skyspot radar bombing was electronically accurate to a six or eight figure coordinate (UTM) on a map - but most of the maps were inaccurate, in some cases up to hundreds of meters. For several months, the 432d Tactical Reconnaissance Wing flew LORAN-equipped RF-4s over the Barrel Roll, LORAN-photographing broad areas of tactical interest. These photographs were then grid annotated, through use of an overlay.^{106/} By finding a target through visual observation, and then locating it on the grid annotated photo, LT GAP target coordinates could be determined. These coordinates could then be converted to accurate Loran coordinates.

In use, a FAC could determine the LT GAP target coordinates, and pass then to the 432d TRW for conversion to Loran coordinates. These coordinates would be relayed (following proper command and control channels for

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approval of the strike) to the pilot of the Loran-equipped aircraft. The pilot would insert these coordinates into his Pave Phantom bombing computer, and by following its steering indications, release his ordnance on target with a high degree of accuracy. One variation, dubbed Pathfinder, provided for a Loran-equipped RF-4 to lead a flight or flights of F-4s on a bombing run. 107/

The value of the system derived from the fact that maps were not required; the Loran coordinates of the point photographed directly below the aircraft were determined at the instant the photo was taken, and therefore corresponded with the actual territory. A previous combat evaluation using a different code name, ended in November 1970 involved 100 drops on five targets. Tests were made from 8,000, 9,000, and 10,000 feet, using 14 aircraft. Ninety-eight impacts were scored and showed a CEA of 110.9, with a CEP of 100 meters. Throwing out seven gross errors, the CEA/CEP was 92.3/90 meters. 108/

The LT GAP, or Loran Targeting by Grid Annotated Photography, system was extended to cover four particular areas of interest in northern Laos; the Plain of Jars, the Long Tieng area, Routes 7/71 and Route 723 from the border to Xieng Khouangville. In addition to providing LT photo kits to the Raven FACs, plans were made to distribute the kits to the 23d TASS, 56th SPOP Wing, Det 1, 56th SPOPWg, 7th AF DO, 432d TRW and the 8th TFW. Some discrepancies were found in the photo kits initially provided, but the errors were correctable.

Following preliminary discussions with Ambassador Godley and the Air Attache, Vientiane, both of whom confirmed their interest and support of the project, the 432d TRW received 7th AF approval for a 24-hour evaluation of the system to answer several issues effectively. They were: ^{109/}

Establish the validity of the LT GAP techniques over a variety of targets.

Establish in the Raven FACs a capability to generate targets of opportunity using the LT GAP techniques.

By flying the reconnaissance and strike role during the period, validate BDA and CEA/CEP .

Establish upper capability to respond to all-weather conditions in Barrel Roll.

Determine, establish, and refine procedures for the oncoming southwest monsoon season.

Estimate Wing can approximate 15 Arc Light sorties per day using LT GAP. Because of improved CEAs, may demonstrate substitution value of Loran tac air for B-52. Could have implications important to Air Force operations.

The approved 24-hour evaluation was flown 27 March 1971, and although photographic evaluation of the BDA was minimal because of weather, the Director of Operations for the 432d TRW expected accuracies to be well within 100 meters. ^{110/} It was noted that the system could lead to FAC-less VFR strikes under flight lead control. This led to the corollary that such strikes could be made without giving the enemy the warning received from a FAC's marker. The strike aircraft, by offsetting and flying an "innocent" heading, could roll in from a point and pick up his target from the picture his grid photo gave him. ^{111/}

If the expected accuracies envisioned for the LT GAP system proved out, the USAF would have added a valuable adjunct to its all-weather bombing repertoire; one which not only would have value during the upcoming wet season in Laos but also could have significant and far-reaching effects in the future role of tactical air.

More Changes at Headquarters, 7/13AF

The review of how 7/13 activities in Thailand supported the war effort in Laos, instituted by the 7/13AF Deputy Commander, Major General Andrew J. Evans, Jr., began to produce some improvements, especially in the conduct of the Barrel Roll war. General Evans was particularly interested in smoothing out the way 7/13AF, AIRA and CAS routinely conducted business. ^{112/}

In January, the Barrel Roll Working Group meetings of all interested agencies stopped being simply a clearing house to exchange operations and intelligence data and began to prepare a proposed written plan for the following month's air operations in northern Laos. ^{113/} To write the proposal, estimates of the situation and known, forecast operations of 7AF, 7/13AF, AIRA and CAS were solicited. Considering these, plus the overall level of activity, competing priorities and resources available, a typical frag day could be constructed and variations highlighted. In this way, the goals for the following month were stated and the program for supporting air identified. When the proposal was developed to the satisfaction of all inputting agencies, copies were forwarded to 7AF. The Operations people at 7AF thereby knew on a month-long basis what 7/13AF recommended be provided in support of AIRA and CAS requirements. As the month of the

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proposal unfolded, many phone calls between 7/13AF and 7AF Operations sections resulted in frequent changes and updates to the proposal, but at least both headquarters had a point of departure on what might be expected in Barrel Roll.

As personnel turned over in key positions of 7/13AF, AIRA and CAS, relationships were formed that developed into a smoothly functioning interplay. The important relationship between 7/13AF and AIRA, having suffered varying periods of improvement and deterioration, was noticeably on the upswing in the period of this report.

An old problem with CAS, lack of coordination as ground operations requiring air support were planned, was still apparent as the launch of Operations COUNTERPUNCH III was announced with short notice. Other pressing high-level commitments for 7AF resources precluded the requested support for the CAS-backed operations on the launch date picked. ^{114/} COUNTERPUNCH III moved out on time, but reduced air support initially was a factor that hindered the overall operation. Again the lesson was learned that all interested agencies must develop such operations by working together throughout the planning phase. Current Operations and Targeting personnel at 7/13AF thereafter were selected on an extremely limited basis to accomplish plans to support future CAS-backed ground operations and relationships with CAS steadily improved during this reporting period.

Headquarters 7/13AF Operations and Intelligence people worked hard in their role of studying and recommending targets and sorties for the

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^{115/} Barrel Roll war. Seventh Air Force published the frag, but inputs from 7/13AF were increasingly more evident for northern Laos. On a daily basis 7/13AF held a meeting between Current Operations and Targeting people to prepare a message for 7AF fraggers recommending targets, providing intelligence data, identifying ordnance, and recommending priorities in consideration of data provided by AIRA and CAS. As regards the IFR boxes, 7/13AF was not content with simply bomb release into the box area, but provided 7AF in the daily message the desired mean point of impact (DMPI) based on all-intelligence sources.^{116/}

As the relationship between 7/13AF and AIRA developed, Operations people at AIRA were able to draw more upon the experience of Operations planners at 7/13AF, and better planning was achieved which benefited both agencies.^{117/} To the extent possible the flow of requests by AIRA for air support and special research of weapons or tactics was put on a routine basis, and hurried, last-minute efforts were minimized. Smoothing out activity by allowing sufficient lead time resulted in an improved rapport between AIRA, 7/13AF and in turn, 7AF.

Another improvement in the way 7/13AF supported the Barrel Roll war was in the way targets were developed. Where previously 7/13AF Intelligence had requested the FACs flying north to conduct VR over designated areas, the FACs were later given specific points to investigate based on other Intelligence sources that indicated a promising target.^{118/} By working from such leads, the FACs VR gave confirmation to a target's particular

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worth and provided an update of target information. Such designation of particular points for VR was a key method in insuring that the extremely limited sorties striking outside the DBA did, in fact, hit targets well worth the sorties allowed to interdiction and hard targets. In passing, it is noteworthy that the FACs were still allowed time to explore areas on their own and through their own initiative find additional targets for consideration.^{119/}