

XII. The Khe Sanh Campaign

549 (28 JAN - 15 MAY) Pg 315

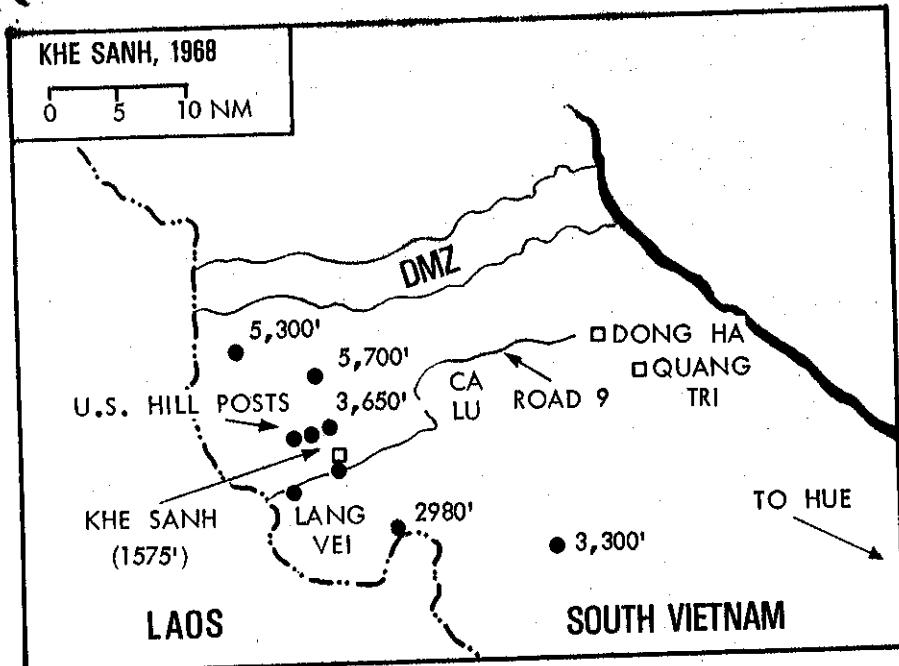
Airlift made possible the allied victory of Khe Sanh in 1968. For eleven weeks early in the year, the defenders of this post were exclusively resupplied by air and withstood the attacks of four North Vietnamese regiments. The campaign bore comparison with the classic combat airlifts of Stalingrad, Burma, and Dien Bien Phu. The success at Khe Sanh reflected the application of lessons drawn from past campaigns, the improved technology for tactical airlift now at hand, and the absolute allied air superiority. The outcome of the struggle was a triumph of tactical defense used in intelligent combination with heavy firepower and air lines of communication.

Fixed-wing transports and helicopters of the Air Force and Marines joined in the air resupply. Favoring the airlift was the close proximity of Khe Sanh to the coastal bases; the site was only thirty minutes by air from Da Nang. The resupply could thus be handled by a small number of transports, generally fewer than ten percent of the in-country airlift force. For the assigned aircrews, however, the missions to Khe Sanh were supreme tests of airmanship. Two factors gave Khe Sanh special significance for the airlifters—weather conditions that often approached the impossible, and the enemy's determined and resourceful use of firepower. Crucial was the ability of the airlifters to perform all-weather paratroops which had been a major weakness of air transport forces. The Common Service Airlift System met the situation primarily by adapting old techniques and hardware in new and imaginative ways.

The allies became aware of the gathering enemy concentration about Khe Sanh in mid-December 1967. North Vietnamese units, which in the past had moved past the post en route southward without stopping, now began to take up positions in the hills and forests to the north and southwest of the airstrip. Perhaps fifteen thousand combat troops, well-camouflaged and resupplied by trucks through Laos, were present. Communist reconnaissance and probes about the airstrip's perimeter during January left little doubt that a major confrontation was at hand.¹

The terrain about Khe Sanh was broken and covered by lush forests or tall elephant grass. Overlooking the airstrip from all directions was a series of mountain peaks, averaging in height about fifteen hundred feet above airstrip elevation and rising to four thousand feet to the north. Overland communications had been severed since mid-1967 because eight bridges were washed out or otherwise destroyed. Engineers estimated that they would need fourteen days to reopen the road assuming no interference from the enemy. Climatological data at MACV indicated that cloud ceil-

TACTICAL AIRLIFT



ings below one thousand feet and visibility of less than two and a half miles could be expected at Khe Sanh on more than half of the mornings from November through April; during the same months, however, ceilings usually improved to about three thousand feet in early afternoon.²

The nature of the enemy buildup and the geographic situation suggested comparisons with the earlier Dien Bien Phu battle. Both campaigns began at the start of the winter wet season. Both garrisons depended entirely upon air resupply although the shorter distance to Khe Sanh made overland reinforcement and resupply a possibility. Study groups at MACV and Joint Chiefs of Staff judged that the enemy about Khe Sanh would try to reenact the full Dien Bien Phu scenario. A historian at MACV briefed Westmoreland on the 1954 campaign noting that both at Dien Bien Phu, and thus far at Khe Sanh, the defenders had failed "to completely suppress antiaircraft fire which could take a heavy toll of cargo aircraft and helicopters." Westmoreland firmly stood by his decision to hold Khe Sanh, supported in his thinking by the senior Marine officer in Vietnam and by the Joint Chiefs. Offensive relief operations, in Westmoreland's judgment, could safely await favorable weather in the spring.³

In early January there were two infantry battalions and an artillery battalion, all from 26th Marine Regiment, at Khe Sanh. Air Force C-130s lifted in a third infantry battalion on the sixteenth.⁴

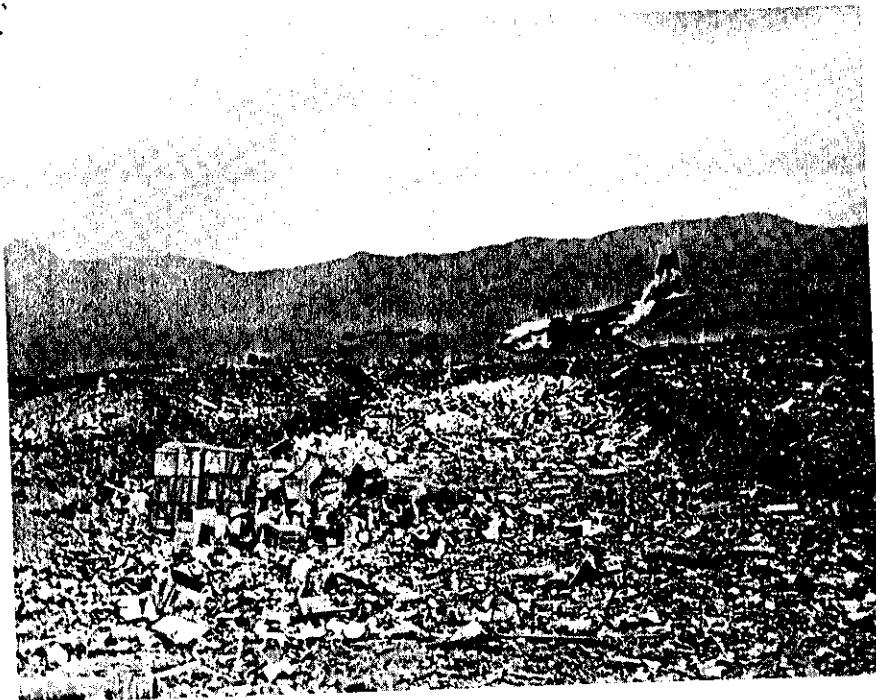
On January 19 stocks of rations, fuel, and munitions on hand at Khe Sanh were sufficient to meet the consumption demands for thirty days.

Much of the ammunition was dispersed around the artillery firing positions, and over one thousand tons were stored near the east end of the runway in the larger of two munitions dumps. The proposed introduction of a fourth infantry battalion raised new supply questions. The MACV logistics chief informed General Westmoreland on the twentieth that the 185-ton daily supply requirement could be accomplished by fifteen C-130 sorties and that an additional seventy-five sorties were needed if stocks were to be built up to a thirty-five-day level for the expanded force. Since fixed-wing transports had been averaging fifteen landings daily at Khe Sanh, mainly by employing three C-130s in back-and-forth shuttles from Da Nang, an airlift effort of this magnitude appeared feasible.⁶

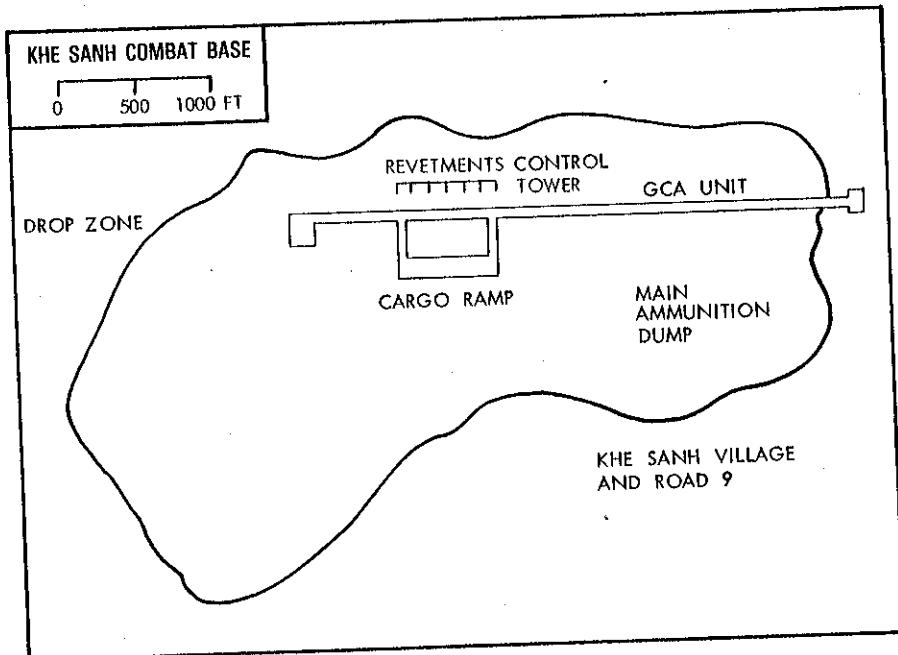
C-123s and C-130s had sustained smaller allied forces at Khe Sanh in the past. Among the airlifters the site's runway was well known for its approach-and-landing difficulties. Further, the runway sat on an eight hundred-foot rise. Pilots landing from the east had trouble judging heights since ground references were absent. And unpredictable wind patterns often caused the aircraft to sink markedly just before touching down. A burnt-out shell of a crashed C-130 was a constant reminder of the criticality of the approach. The difficulty of making a perfect descent resulted in frequent hard landings and severe use of brakes, thus contributing to the periodic deterioration of the runway's surface.⁶

The hitherto sporadic communist mortar, rocket, and artillery fire against the airstrip and hill positions increased to two hundred rounds on January 19. Continued shelling the next day damaged the fuselage and fuel system of a C-130A. At dawn on the twenty-first, shells detonated the main ammunition dump. Fires and intermittent explosions continued throughout the day, and fourteen hundred tons of munitions, nearly the entire stock of the dump, were destroyed. Also, during the course of the day, communist troops constructed bunkers and foxholes in the terrain between the base and the outlying hills, and dispersed the local defenders of Khe Sanh village.⁷

The loss of the ammunition dump prompted an immediate request for "tactical emergency" air resupply. The 311th Squadron detachment at Da Nang was advised of the mission requirement in late afternoon of the twenty-first. Six C-123s were diverted from other air routes and loaded with ammunition at Da Nang. They arrived at Khe Sanh at twilight, and the base was found shrouded by low clouds. Two thousand feet of the airstrip were unusable, and debris from the day's shelling littered the remainder. Adding to the difficulties was the fact that the runway lights had been knocked out earlier in the day. But, aided by the light of flares fired from Marine artillery, all six aircraft landed successfully. Offloading was rapid while shelling and explosions continued in the munitions area. Meanwhile, Marine helicopters completed their cargo deliveries during the day. No C-130s were scheduled in this day.



Beyond the leveled ammunition dump (foreground), a C-123 touches down on the Khe Sanh runway, January 21, 1968.



C-123 landings continued into the next day as the garrison reorganized from the previous day's ordeal. These transports brought in over eighty-eight tons of ammunition and other supplies from Da Nang and airlifted civilian refugees on their return flights. The helicopters, meanwhile, hauled in over five hundred members of a fourth Marine infantry battalion. C-130s resumed landing on the twenty-third. But because of the heavy shelling only two aircraft were allowed on the ground simultaneously, and other planes orbited to the east to await their turn at penetrating the cloud cover. Darkness finally halted the landings after a Hercules pulled up after mistakenly lining up its landing approach on the lights of a parked C-130 on the loading ramp.⁸

For the next eight days Air Force deliveries to Khe Sanh averaged 250 tons per day. The C-130s averaged eighteen landings daily in the same period. On the other hand, Caribous and C-123s each averaged two since their activity was held down to permit fullest utilization of the high-payload C-130s. The Caribous ceased even this limited role after the end of the month. The Air Force C-130s delivered on the twenty-seventh a single-day high of 310 tons for the entire campaign. Also, three sorties on that day transported a Vietnamese ranger battalion from Da Nang. Marine KC-130s and helicopters continued to land at Khe Sanh. Statistics on their contributions are fragmentary, but on at least four days helicopters lifted in more than twenty tons, principally hauling from Dong Ha. The CH-46s mainly worked between the Khe Sanh main base and the hill positions, resupplying the outposts and shifting personnel. For the entire month of January, according to Marine statistics, the C-123s and C-130s hauled thirty-six hundred tons into Khe Sanh, and their own CH-53s carried in 565 tons. Favoring the airlifted effort had been the unseasonably good weather, marred only by early-morning ground fog. An important asset at the site was the Marine ground controlled approach unit which made possible landings in ceilings as low as five hundred feet and visibilities down to two miles.⁹

But less auspicious was the enemy's obvious presence on all sides of the base and his growing capability to attack air communications by ground fire. From positions along the normal landing approach east of the airstrip, small communist units set up automatic weapons and directed antiaircraft fire at the descending transports. The sound of their firing served to inform personnel on the ground at Khe Sanh that another transport was inbound. Enemy fire ripped through the fuselage of a C-130 on the twenty-fifth, but the crew managed a safe landing. Crewmen attempted to pinpoint the location of the communist firing positions for F-4 strike aircraft. Transport crews used passive measures, staying in protective clouds as much as possible, and flew steep, tight patterns. Forward air controllers sometimes coordinated fighter strikes to coincide with transport

TACTICAL AIRLIFT

approaches. Many airlifters experienced chilling moments, watching tracers interlacing their flight path into Khe Sanh.¹⁰

Even more serious was the persistent communist shelling of the airstrip. This typically began while transports were on the ground, apparently an attempt to destroy the aircraft. Craters and debris occasionally forced the temporary closure of the runway. Generally, mortar fire came from within three thousand yards of the base perimeter; the heavier rocket and artillery weapons were dug in well to the west, which was convenient to the communist lines of supply. The Americans tried to silence the shellings with artillery and air strikes, and after firing only a few rounds they forced the communist teams to seek cover. Air transport crews minimized their time on the ground by "speed offloading." This was accomplished by unlocking the dual rails while taxiing gently forward; the loaded pallets thereupon rolled rearward and down the rear ramp. The procedure worked well except that pallets sometimes toppled onto their sides causing extra trouble for forklift operators. C-123 crews were able to reduce their exposure by turning off the runway as quickly as possible and taxiing directly into the parking ramp. The C-130s ordinarily had to roll to the west end for turnaround.¹¹

The daily Khe Sanh supply totals were scrutinized in the White House and the information was of direct concern to the President. The airlift control center on February 4 advised its staff that the airlift effort "in the I Corps area, and particularly the Khe Sanh Air Base area, is vital to the U.S. national interest." Flight requirements thus were to be met by 120 percent overscheduling, and missions were not to be diverted outside the region without special authority. Further, the order specified that those C-130s flying north to work out of Da Nang were not to be used for stops at intermediate points. All missions to Khe Sanh carried an "Emergency Resupply" priority.¹²

Despite these decisions, scheduled deliveries into Khe Sanh declined sharply in the first weeks of February. One explanation was poor weather, which prevented landings about forty percent of the time. Warm moist air tended to rise from the valley to the east, causing morning and evening ground fog over the airstrip. Conditions remained overcast around the clock and visibility was seldom better than four miles. Increased enemy shelling also slowed deliveries. Over two hundred rounds impacted on the fourth, fifth, and sixth, respectively, increasing to six hundred rounds on the eighth. The runway was closed for repairs three times during the week. The aboveground activities at Khe Sanh halted while a Provider or Hercules was on the ground in the realization that the transports were "mortar magnets." Several aircraft were damaged by automatic-weapons fire while on the runway. A more serious setback was the destruction of the ground controlled approach unit on February 7. With the equipment inoperable, C-130 landings (which had averaged eleven daily since the first of the

month) decreased to three on the ninth and to six on the following day. The Marines reported that total resupply was down to thirty-two and fifty-three tons on these respective dates. Concern moreover deepened at Khe Sanh with the fall of the outlying Lang Vei camp to a communist tank and infantry assault on February 7.¹³

During the siege of Khe Sanh, two notable incidents occurred to demonstrate the valorous conduct of airlifter crews. On February 5 a Tuy Hoa-based C-130E landed at Khe Sanh with ammunition aboard. The aircraft commander, Lt. Col. Howard M. Dallman, was an experienced pilot who was admired for his personal qualities by the younger officers serving under him. Upon landing, his aircraft came under heavy machine-gun fire which ignited some wooden ammunition boxes in the cargo compartment. Flames completely spread across the interior of the plane. While the crew fought the fire with hand extinguishers, Dallman backed the aircraft to the end of the runway thus minimizing possible damage to the base from a detonation. The crew managed to put the fire out but the stationary aircraft received further hits, several of which destroyed a main landing-gear tire. The crew quickly unloaded the ammunition and taxied to the parking ramp for tire change. A new tire was installed using an extemporized jacking rig while suppressive air strikes slowed but did not halt the mortar fire. A round detonated directly in front of the plane, showering it with debris and knocking out one engine. While Dallman prepared the aircraft for a three-engine takeoff, the copilot succeeded in restarting the damaged engine. Although low on fuel and still receiving fresh hits, the crew managed a successful takeoff. Dallman received the Air Force Cross for his role in the incident, the highest award thus far to an airlifter in Vietnam.¹⁴

Another Tuy Hoa Hercules C-130E also received mortar damage after landing on February 11. Two passengers were killed and the loadmaster was seriously injured. The aircrew, assisted by two members of an Air Force detachment at Khe Sanh, fought the fire with hand extinguishers. One airman was temporarily blinded by the chemicals. With the blaze out, the plane still remained utterly unflyable. Its tires were blown, the engines were damaged by shrapnel, and the hydraulic systems were badly damaged. The aircrew, joined by a repairman from Da Nang, went to work. One mechanic worked out on the tail assembly in darkness using only a flashlight. On the second day, another mortar round hit the aircraft starting a new fire. After two days on the ground, the battered Hercules lifted off. Ground crewmen at Da Nang afterwards added up over 242 bullet and shrapnel holes, "before they stopped counting." The aircraft's crew, commanded by Capt. Edwin Jenks, was nominated for Silver Stars.¹⁵

No Air Force transports were destroyed in more than a hundred landings during the first eleven days of February. On the other hand, disaster came on February 10 to a Marine KC-130 while it attempted a

landing with a load of fuel bladders. Ground fire penetrated the cockpit and cargo compartment as the plane descended on final approach. One of the fuel bags spilled its contents and a fire erupted in the rear. Several explosions occurred during the landing roll, and, as the aircraft came to a stop well down the runway, it became engulfed in flames. Rescuers saved several crewmen but two died as well as four passengers.¹⁶

During late January and the first weeks of February, alternative delivery methods had come under consideration. MACV alerted commands that Caribous might be utilized at Khe Sanh if the runway became unusable by the heavier transports. A proposal by the airlift control center and the Seventh Air Force operations staff to start Hercules night landings at Khe Sanh was overruled by the Marine base commander. Airdrops remained an obvious alternative. Although the Seventh Air Force indicated that drops were feasible, the difficult weather at the site made questionable a major drop effort using the customary visual methods. A possible solution lay in blind drops guided by the Marine ground radars at the camp or from Dong Ha. The method had been developed the previous year but it remained unproven and appeared to lack the required accuracy.¹⁷

The idea of using Marine ground controlled approach at Khe Sanh for guiding drops was original and this equipment had never before been tried for this purpose. The method was suggested by two experienced airlifters, Majs. Myles A. Rohrlick and Henry B. Van Gieson III, of the 834th Air Division. Rohrlick had first raised the idea soon after reporting to the division in late 1967, and the following January he received permission to arrange test drops at Khe Sanh. Several Hercules test missions were attempted in good weather. On February 4 the airlift control center advised the Marines that ground controlled drops could provide satisfactory accuracy and reliability. Meanwhile, the 834th developed similar procedures for C-123 drops using ground controlled approach equipment. Basically, navigators would adjust the cargo release point according to the prevailing winds and by stopwatch timing from a precise ground controlled fix one-half mile from the end of the runway.¹⁸

C-130 landings at Khe Sanh halted on February 12 by order of the Seventh Air Force. Thereafter landings by C-123s increased. In the five days starting with the twelfth, they made fifty-three landings and delivered a very creditable but inadequate daily average of forty-eight tons. Simultaneously, McLaughlin visited the III Marine Amphibious Force (III MAF) staff at Da Nang, and they reached a decision to resupply Khe Sanh using both C-123s and C-130s. Further, airlandings by the Providers were to continue, backed up as necessary by Caribous, the latter being used only for the delivery of passengers and nondroppable cargo and for medical evacuations. For bulk tonnage deliveries of ammunition, rations, and construction materials, C-130 container delivery and the low-altitude parachute extraction were to be the primary systems. Responding to an

inquiry from Seventh Air Force four days later, the III MAF reaffirmed a daily supply requirement at Khe Sanh of 235 tons (18 tons for day-to-day consumption and the remainder for stock buildup for the remainder of the month). This amount, which was equivalent to sixteen C-130 loads, remained a loosely applied daily goal for the duration of the siege.¹⁹

The C-130 container drops, which began on February 13, coincided with the completion of repairs to the Khe Sanh ground controlled approach facility. The drop zone was situated to the west, just outside the main perimeter of the camp, in deference to the Marines' wish to avoid the complete closing of the airstrip during drops or injury to personnel and equipment from descending loads. The small size of the drop zone (three hundred square yards) made accuracy critical, especially in the final seconds of flight.

The new procedures called for the aircraft to enter the ground controlled approach pattern at several thousands of feet altitude. The aircrew then flew the headings and altitudes provided by the ground control operators. Upon reaching a drop altitude during the descent the pilot leveled off and continued to fly the furnished headings. When exactly over the runway threshold the navigator started his doppler computer-tracker, which commenced measuring actual movement over the ground. The pilot thereafter flew heading information from the doppler steering indicator, which compensated for measured flight-level wind and unintended variations in steering. The navigator computed time and distance to the exact release point, measuring by stopwatch and doppler from the ground controlled fix. Two drops were performed on the thirteenth while the aircrews remained slightly below the cloud overcast in order to make visual identification of the drop zone. In debriefings that followed they reported that blind drops were entirely feasible. Over the next two days, twelve more ground-guided drops were made during marginal visual conditions. Acceptance of the system was immediate; indeed it seemed that clouds were now an advantage in protecting aircrews from enemy fire.²⁰

The new method verified the system's usefulness. During adverse weather conditions on the sixteenth, twelve container-drop sorties were scheduled for the day. The first crews arrived to find Khe Sanh obscured. They were, however, cleared by a senior officer from the 834th, who was aboard one of the aircraft to drop blind. The aircraft entered the ground controlled pattern but coordination was ragged since some of the aircrews had not flown in the earlier trials. At length, six loads were released and impacted on the average sixty yards from the desired point. After a midday break to allow recovery of loads on the ground, the aircrews made two more successful drops. Improved weather during midafternoon permitted five Provider landings (although thirteen had been scheduled) while four C-130 LAPES deliveries were performed. For the day the airlift system delivered 169 tons. Bad weather during the next few days totally prevented

landings and the use of other delivery systems but, when deliveries resumed on the seventeenth, eight container deliveries were accomplished. Ten deliveries were made on the tenth.²¹

The vulnerability of the ground controlled system was brought home on the nineteenth when enemy shells damaged the Marine electronic unit and killed three men. Weather permitted a few visual drops by lining up on the camp's tacan station. The next day, another radar system at Khe Sanh was tried for positioning drop aircraft above the runway's threshold. The first load landed two thousand yards beyond the intended point, apparently because of inaccurate radar information. The second was successful, however, prompting the mission coordinator at Da Nang to launch the remaining supply aircraft. Eight other Hercules dropped their loads accurately.²²

The weather improved sufficiently on the twentieth to permit C-123 landings. These averaged three daily to the end of the month, generally receiving heavy fire while over Khe Sanh. Air Force personnel at Da Nang meantime assured that only nondroppable cargo was carried by the 123s. Marine KC-130s also made occasional landings up to the twenty-second of February; enemy fire damaged two of these aircraft on that date. Air Force C-130s resumed landings four days later and of the two aircraft landing on that day one received fifty-seven hits and departed without offloading its cargo. A total of fifteen C-130s landed during the last four days of the month whereupon their landings again ceased for the duration of the siege. The Air Force mission commander at Khe Sanh predicted that continued landings would soon result in loss of a transport. Marine officers appreciated the landings because of their benefits to troop morale and the simplified cargo handling. Starting on the twenty-fifth, C-123s joined in the airdrops but they averaged three-ton payloads compared with an average of fourteen tons for the C-130s. This disadvantage discouraged the wider use of the C-123s.²³

Supply levels held up satisfactorily at Khe Sanh; stockage on February 23 equated to sixteen days for rations and the principal ammunition types. More than half of the ammunition was stored at the firing positions and the remainder was placed inside bulldozed trenches twelve feet deep. Stocks of jet fuel appeared low (down to a one-day reserve on the twenty-sixth) but this was not critical since helicopters now refueled almost exclusively at Dong Ha, having been forced from the Khe Sanh revetments by the continuous shelling. With improved weather permitting C-130 deliveries above two hundred tons during the last three days of the month, munitions and fuel stockage improved.²⁴

Khe Sanh continued to receive heavy fire, and daily two or three transports received some kind of damage, usually while on the ground during loading. Aircraft employing drop and LAPES were not immune to ground fire. Now enemy trenches appeared near the perimeter, the closest being thirty-five yards away. Despite these omens the airlifters took confi-

dence in the resolution of their most pressing problem of having converted the difficult weather from an adversary to a friend.²⁵

Air Force personnel stationed at Khe Sanh included aerial port, combat control, aeromedical evacuation, weather observation, and aircraft maintenance teams. These men shared the miseries of the Marine garrison enduring dirt, rats, chill, and shelling. Tasks which normally took one hour often became all-day projects in the primitive and dangerous environment at the camp. Air Force personnel served two-week tours at Khe Sanh. Most were enlisted men whose personal courage and resourcefulness earned unfailing praise from their officers.²⁶

A mission commander represented the 834th Air Division at Khe Sanh. He supervised the Air Force detachment and acted as coordinator between the Common Service Airlift System and the Marines. Generally he was a lieutenant colonel and also a tactical airlift pilot on temporary assignment from his squadron. He lived in his "office"—a bunker fashioned by Air Force personnel using scrounged materials—and moved about the base in a much damaged jeep. Each officer was required to submit a detailed report to the 834th upon the conclusion of his tour at Khe Sanh.²⁷

The aerial port mobility team was drawn from the 8th and 15th Aerial Port Squadrons. They worked mainly with the airlanded aircraft assisting in offloading, clearing loads from the ramp, loading casualties, preparing pallets for backhaul, and helping load and unload supply helicopters. Exposure to enemy fire was common since shelling often coincided with the presence on the ground of the transports. Shrapnel caused repeated damage to their equipment. Rough usage further contributed to the breakdowns of forklifts. On occasions all forklifts were out of commission. This prompted a suggestion that a forklift mechanic and spare parts be kept at Khe Sanh. A special problem was the storage of empty pallets awaiting return to the main air bases. The pallets made excellent bunker roofs and too often disappeared from the flight line despite the presence of a Marine guard.²⁸

Several aircraft mechanics at Khe Sanh handled the frequent routine tire changes, but for more complex tasks repair teams with the appropriate equipment flew in from Da Nang. Air Force aeromedics prepared casualties for fixed-wing evacuation. Generally litters were simply placed on the aircraft floor thus minimizing ground time. The air transports lifted out a total of 306 patients, 138 of them litter cases.²⁹

The role of the combat control team varied. They guided aircrews while taxiing and assisted the Marine control tower in directing air traffic. Other team members worked in the drop zone laying out panel markers and placing smoke signals to assist incoming aircrews.³⁰

The decision to curtail landings at Khe Sanh probably prevented the loss of several aircraft and their crews. Load recovery within the drop zone, however, presented serious problems, constituting a major factor

limiting the volume of resupply. Typically, five or six planes made drops during morning raids, releasing their loads at intervals of about twenty-five minutes each. Drops thereupon ceased for several hours while the cargo was picked up. Airdrops resumed in the afternoon and continued until, upon the judgment of a Marine "shore party" officer, they were halted. Since the drop zone was abandoned to the enemy each night, it was important to assure that all loads had been retrieved before dark. Each morning, the Marines swept the drop zone for fresh communist mines and snipers.

The work of retrieval was often harassed by communist shelling and recoilless rifle fire. The drop zone soon gained the reputation as the most dangerous place at Khe Sanh. Because of forklift breakdowns in the rough ground, cargo was sometimes recovered by disassembling the containers on the spot and loading individual boxes of ammunition or rations into trucks. An accurately delivered container required about forty-five minutes to recover; pallets landing in nearby trees or minefields added hours to the effort. Almost daily, loaded transports at Da Nang were canceled while still on the ground when the Marines declared their recovery capability saturated. On a number of occasions, C-130s carried loads back to Da Nang without dropping. Each afternoon, Air Force personnel at Khe Sanh found themselves urging the Marine drop-zone officer to permit a few more airdrops. And upon prodding from the Seventh Air Force, the Marines in late February asserted that efforts were being made to improve load recovery, but they remained unwilling to establish a drop zone inside the perimeter.³¹

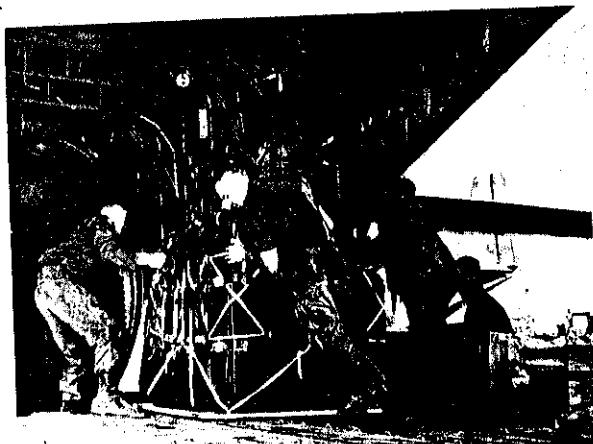
The Marines were also responsible for recovering parachutes and rigging materials from the drop zone. Of approximately fifteen hundred chutes retrieved after a month's drops, sixty percent were found suitable for reuse after repairs. The in-country stocks of parachutes and rigging remained sufficient during this stand.³²

At Da Nang, Army riggers worked in a tent area surrounded by earthworks. Rigged loads were moved to the aerial port ramp and kept ready for loading. Aircraft could be refueled and reloaded for Khe Sanh in forty minutes. But ramp congestion remained a problem, and until very late in the Khe Sanh campaign drop aircraft shared the crowded south ramp with other C-130s. As one means of reducing congestion, planes requiring only refueling were directed to Chu Lai. Another helpful measure was the use of Cam Ranh Bay and Bien Hoa as loading points for some of the container-drop missions. Missions loading at the southern points landed at Da Nang for a second container load before returning to their home base after the second drop.³³

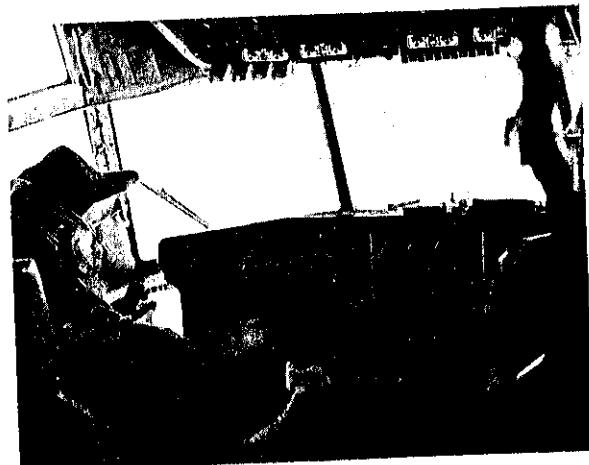
The cruel weather of February abated by the following month. Allied strike aircraft, now unrestricted by cloud cover, pounded the communist trenches and firing positions. Their heavy firepower promised an early end to the campaign, but for the airlifters the improved weather meant an end to the protective overcast which had shielded them from communist gunners.

Three C-123s went down in early March. Mortar fragments claimed one aircraft during lift-off at Khe Sanh on March 1. With one engine out, the pilot forced his plane to the ground to avoid an uncontrolled crash. Communist mortars completed its destruction. All on board survived, although six men were injured. Five days later, an inbound 123 received ground fire several miles to the east, spiraled to the ground, and exploded. The crew had been unable to use evasive tactics customary to Khe Sanh. Ordinarily, crews stayed at a safe altitude as long as possible, descending quickly and intercepting the standard landing slope in the final thirty seconds. In this incident, the crew had broken off its first landing attempt to avoid an unannounced Vietnamese Air Force light aircraft. The C-123 was hit shortly thereafter, while maneuvering at low altitude. The tragedy cost the lives of all forty-nine on board. Later the same afternoon, mortar fire damaged the empennage of a taxiing C-123 necessitating major repair to the aircraft; further shelling totally destroyed the plane the next day. The three destroyed aircraft belonged to the 311th Squadron. The squadron ready room at Da Nang acquired a grim atmosphere as crews waited for the next Khe Sanh run. On March 7, to equalize the risks, the four squadrons of the 315th Wing contributed planes and crews to the Da Nang detachment. The wing commander meanwhile gained assurances that C-123 loads would consist only of medicines, sensitive fuzes, and other items too fragile for airdrops.³⁴

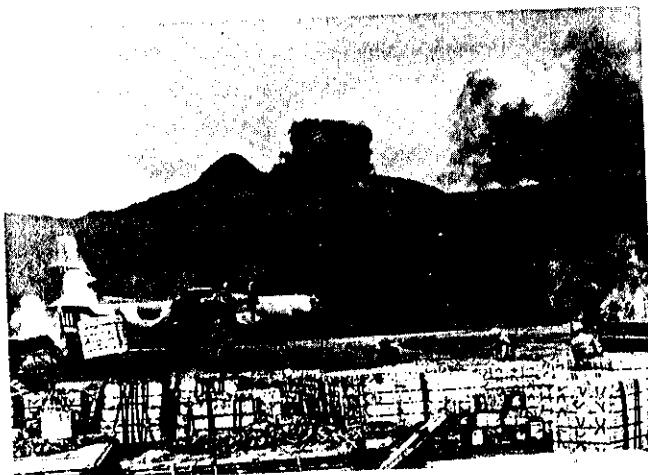
The disappearance of protective clouds forced new arrangements for coordinated fire suppression. The mission coordinator at Khe Sanh arranged locally for a forward air controller to circle east of the runway whenever a transport approached. He reported that enemy fire noticeably decreased whenever this tactic was employed. Apparently reacting to hits on two Hercules and the C-123 losses on March 6, the Seventh Air Force on the same day directed that forward air control and fighter aircraft should furnish escort for all transports if the weather permitted. Fighters scheduled specifically for this purpose were armed with appropriate ordnance. The directive further spelled out details of coordination. Rendezvous was to be to the east of Khe Sanh and during the run-in fighters were to fly racetrack patterns paralleling the transport flightpath. Fragmentation and machinegun ordnance was to be judiciously expended when the transports were within fifteen hundred feet of the ground. Finally, forward air controllers were to guide fighters against any known gun positions. Airlift crews reported the next day that the fighter efforts were



U.S. Army and Air Force
riggers load cargo on a
C-123 for paradrop to
troops at Khe Sanh,
March 6, 1968.



Maj. Jimmy Dennis pilots
a C-130 to the paradrop
zone at Khe Sanh, March
1968.



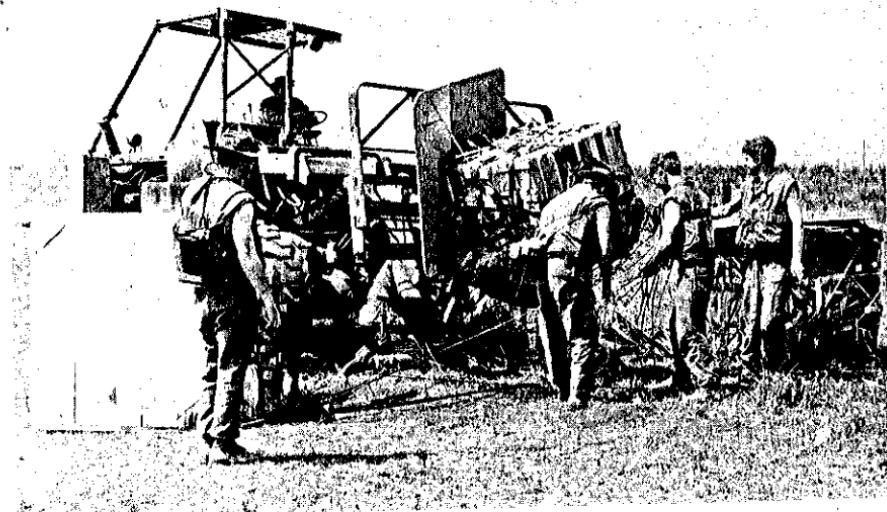
Air Force and Navy
Jets put down a line
of defensive fire to
protect a C-130
departing from Khe
Sanh. Enemy forces
were spotted along
the mountainside
near the base.



An Army rigger aboard a USAF C-130 attaches a static line to a hook-up cable, getting ready for a cargo drop to the Marines under siege, March 6, 1968.



Supplies are dropped into the beleaguered outpost of Khe Sanh.



Marine crews move quickly to recover cargo dropped by transport aircraft from Da Nang, March 1968.

Entering a rice paddy, Marines recover ammunition pallets that overshot the drop zone at Khe Sanh, March 1968.



The trailing hook of the C-130 cargo load catches on the arresting cable stretched across the Khe Sanh runway. The technique, called the Ground Proximity Extraction System, was used successfully at Khe Sanh to decrease the aircrafts' exposure to enemy fire and ensure accurate cargo deliveries.

"excellent." Also tested were smoke screens laid down by fighters on either side of the run-in path. Transport crews agreed that the tactic was worthwhile, although the smoke sometimes made it difficult to sight the drop zone. For the remainder of the siege the effects of enemy ground fire receded as a result of intelligent use of fighter escort, smoke, cloud cover, and evasive tactics.³⁵

During the last stages of the Khe Sanh stand, LAPES missions were limited by shortages of rigging items. In-country stocks became temporarily exhausted on March 3 and efforts were made to recover used components. Unfortunately, ten sets of LAPES electrical components awaiting airlift out of Khe Sanh (half the in-country supply) were destroyed in a mortar attack on March 8. The following day, the Marines requested tests of C-130 modular platform drops as a substitute for delivering outsize items. The 834th Air Division rejected the idea because of the limited size of the drop zone, and instead pressed for Army procurement of additional LAPES units. Although some parachute extraction equipment arrived from the offshore 315th Air Division, LAPES missions were seldom more than two in number daily.³⁶

With little protection from communist shells, Marine teams broke down the eight-ton LAPES loads at the west end of the runway. Shrapnel littered the area, damaging trucks and forklifts. The LAPES sleds themselves proved destructive to the planking. Two events confirmed the hazards of receiving the heavy and fast-moving LAPES platforms. On February 21 a LAPES C-130 inadvertently hit the ground tearing off its rear ramp. The load extracted early and broke apart, killing one man and injuring another. Three weeks later, a load platform extracted without its deceleration parachute. The mass careened beyond the end of the runway hitting a bunker and killing a man. This event followed by one week a misdirected container drop wherein several bundles landed on bunkers and caused five casualties. The LAPES deliveries, however, were clearly more dangerous and at least three subsequent extractions took place without parachute braking, although there were no further serious injuries.³⁷

An alternative to LAPES was the ground proximity extraction system developed in the early 1960s. When discontinued in mid-decade, GPES was determined to be inferior to LAPES because of the need to preposition heavy ground equipment. The ground proximity extraction system seemed well suited for Khe Sanh. The loads came to rest at an exact spot thus simplifying recovery, reducing damage to surfacing, and practically eliminating the chance of an uncontrolled runaway. Operations officers of the 834th Air Division proposed to PACAF on March 5 that GPES ground arresting gear stored in the United States be moved to Vietnam. By mid-month nine sets were airlifted to Vietnam. At Khe Sanh a combat control team detachment, assisted by Marines and naval engineer personnel, installed the arresting cable and twister equipment across the final one thou-

sand feet of runway. Meanwhile, the 374th Wing airmen flew practice GPES missions in Okinawa.

The first ground proximity extraction system combat delivery took place at Khe Sanh on March 30, performed by a crew of the 374th Wing. The Marines reported that the load included a crate of eggs of which only two were broken. During a second attempt two days later, one of the moorings pulled from the ground but the load extracted without damage. Thirteen additional GPES deliveries, mainly of construction materials, followed the next week. Loads averaged just under ten tons, all but one undamaged. Several pilots had difficulty flying the airborne hook into the ground cable, and twice loads were hauled back to the base after a series of unsuccessful passes. The proximity extraction system used the same platforms procured for heavy-equipment drops, platforms that were amply available in Vietnam. The conclusion that GPES was superior to LAPES for conditions at Khe Sanh was clear-cut, and this notion was shared by General McLaughlin as well as the airlift mission commander on the scene.³⁸

A rash of inaccurate container drops in early March gained quick attention. On the seventh, four loads landed four hundred yards or more from the intended point and each was retrieved only with great difficulty. A few days earlier, two loads descended too far from the drop zone to be recovered. The 834th admonished its airmen that this kind of performance was unsatisfactory and crewmen were expected to use professional judgment, aborting when accuracy was uncertain. To reduce drop-altitude errors, an Air Force weatherman arrived at Khe Sanh to furnish current barometric observations so that pilots could set their altimeters. Checks were made of ground controlled approach threshold fixes to determine their exactness. Through visual reference with the ground, it was established that ground control was in error by 250 yards. Other crewmen made checks and one in three reported similar discrepancies. Airmen continued to use the radar information for lining up on the run-in. However, they cross-checked their information and shifted to visual methods for the actual releases whenever possible. It was later determined that the TPQ-10 Marine radar system gave more reliable information than the ground controlled approach equipment.³⁹

The March inaccuracy proved temporary. McLaughlin reported that during the siege the C-130 had an average circular error of 95 yards when dropping visually and 133 yards when using the blind technique. The C-123s averaged 70 yards. Of the more than six hundred container drops, all but three loads were recovered. The rate of damage was ten percent for ammunition and five percent for rations.⁴⁰

Most missions maintained delayed orbits near Hue while airmen waited for clearance to approach Khe Sanh. The improved weather picture meant that airspace about the camp, once largely the preserve of the air-

lifters, was now crowded with strike aircraft and helicopters. Transport crews reported longer delays and several near-collisions. Procedures for coordinating artillery, strike aircraft, helicopters, and transports were tightened and centralized at the Marine fire support coordination center at Khe Sanh. When cleared in, airlift crews began primary radio contact with ground control approach. To reduce the intervals between aircraft, a second ground unit was installed at the site. But problems reappeared on March 27 when the Army took control of several sectors in preparation for 1st Cavalry Division operation. More than half of the scheduled airlift missions on that day could not be completed, and two days later all morning container delivery missions returned to Da Nang without making drops. As a remedy, corridors were designated for the transports along with new arrangements for advising on friendly artillery fire. The new system won the approval of transport crews, and references to the airspace control problem thereafter vanished from the daily reports from Da Nang.⁴¹

For the full month of March, Air Force transports delivered over fifty-one hundred tons. Stockage levels increased or held steady.⁴² The course of the battle meanwhile clearly changed in favor of the allies. Shelling of the airstrip declined after the second. Communist infantry action and close-in digging also slowed, apparently discouraged by allied air and artillery firepower. The air link was now fully developed, assuring that the garrison could wait out the situation indefinitely. The Marines reported that enemy forces appeared to be relocating toward Laos.⁴³

Plans for major ground operations, designed to destroy enemy forces and reopen road communications to Khe Sanh, took form in late January. Operation Pegasus called for Marine units near Dong Ha to attack westward while units of the 1st Cavalry Division assaulted by air along the flanks of Highway 9 and to the west.* The forward staging base for the assaults and resupply was to be at Ca Lu, located about halfway between Dong Ha and Khe Sanh on Highway 9. On March 20 construction of a new airstrip, known as LZ Stud, began at Ca Lu. Six days later, air buildup began with a flight of Caribous. An Army fire support site was set up at Ca Lu, and work continued toward improving the Stud airstrip for Provider use.⁴⁴ As a precaution against the disruption of the overland supply lines to Ca Lu by weather or the enemy, preparations were made for possible emergency air resupply. The objective was a capacity for delivering 360

* The 1st Cavalry Division was now based at Camp Evans, about midway between Quang Tri and Hue.

tons to Ca Lu daily by air, 260 tons in an all-weather airdrop, and one hundred tons through Provider landings. Loads were to be prerigged at Da Nang, Cam Ranh, and Bien Hoa, and additional drop-qualified Hercules crews were sent to Vietnam.⁴⁵

The Pegasus assaults began April 1 and subsequent operations were brisk, though troubled by poor weather conditions most mornings. Stud remained a pivotal logistics point throughout the venture and, although preparations for airdrops proved unnecessary, the efforts of transports were substantial. Caribou pilots shuttled to Ca Lu, overcoming poor visibility and low ceilings. Providers joined the traffic into Stud on April 7 after completion of an extended runway. A Vietnamese airborne company heli-coptered into the Khe Sanh perimeter during the first week and Highway 9 was opened to Khe Sanh by the eleventh. C-123 and C-130 airdrops continued at a reduced level of one hundred tons daily through April 8. The Khe Sanh runway reopened for Hercules use on the following day.⁴⁶

The C-130 landings were as difficult as ever. Aircrews contended daily with enemy shelling, poor weather, and heavy Army helicopter traffic. Deliveries during the period were primarily construction materials, and stocks of consumables were allowed to decline to avoid a major backhaul effort after the battle. Pegasus officially ended on April 15. The cavalry withdrew to prepare for a planned thrust into the A Shau Valley.⁴⁷

The Marine logistics support area at Khe Sanh closed in late April and its supply functions were absorbed by a new facility at Stud. The latter lay beyond the range of communist artillery in Laos, but it could support allied units in the northwest region with artillery fire and heliborne resupply. Transportation into Stud was to be primarily by road. A Seventh Air Force proposal to upgrade Stud for Hercules landings was overruled in the belief that helicopters and airdrop capabilities represented a sufficient backup. The runway at Khe Sanh was allowed to deteriorate, and the combat base itself was dismantled in early July and evacuated.⁴⁸

Through their stand at Khe Sanh, the allies pinned down in combat substantial North Vietnamese forces through the Tet period and inflicted heavy casualties.⁴⁹ On the other hand, the air resupply venture never deteriorated into desperation. Khe Sanh occupied only a fraction of the total airlift work performed by the Common Service Airlift System during the period, although the Khe Sanh effort claimed highest priority. Supply levels never slipped to dangerous lows and, indeed, at times the Air Force appeared determined to haul more cargo than the Marines needed. Statistical data was carefully recorded and accurately conveyed the magnitude of the

airlift effort. Air Force deliveries to Khe Sanh between January 21 and April 8 were as follows:⁵⁰

	<i>Completed Missions</i>	<i>Total Tonnage</i>	<i>Average Payload</i>
C-130 landings	273	3,558	13.2
C-130 CDS	496		
LAPES	52	7,826	14.3
GPES	15		
C-123 landings	179	739	4.1
C-123 drops	105	294	2.3
C-7A landings	8	13	1.8
Total	1,128	12,430	

These achievements rested on the efforts of numerous supporting agencies, including the whole apparatus of the Common Service Airlift System with its aerial port, maintenance, communications, and control activities. Essential were the contributions of the U.S. Army riggers at Da Nang, Cam Ranh Bay, and Bien Hoa; the Marine radar operators at Khe Sanh; the Marine drop-zone recovery parties; the construction battalion men who repeatedly restored the battered Khe Sanh strip to functional condition; and the controllers and strike pilots who furnished escort and fire suppression. With Marine helicopter and KC-130 crews joining in air supply activities, the total endeavor became a multiservice enterprise. Distractions growing from separate outlooks appeared wholly absent in a common purpose.

The activities of the Marine airlifters, controlled apart from the Common Service Airlift System, brought to the surface several difficult questions. The Marine KC-130s were especially useful for lifting fuel bladders. In addition to his normal duties, the tactical airlift officer at Da Nang for a time also administered KC-130 operations, making up their daily itineraries, and even writing performance ratings on some of the pilots. Since the KC aircraft were unable to deliver palletized loads by the speed offload method, the tactical airlift officer generally tried to use them for missions elsewhere than Khe Sanh. Marine pilots were highly experienced and able but were less practiced than their Air Force counterparts in assault landings. The Da Nang tactical airlift officer's unusual and temporary role conceded that the III Marine Amphibious Force headquarters was the only agency for apportioning tasks between the Air Force and Marine Hercules units. The arrangement worked in 1968 because no overall shortage of aircraft prevailed.⁵¹

The organizational separation of the cargo helicopter arm from the common service airlift presented no serious handicap to efficiency. The capabilities of the helicopter and fixed-wing transports were meshed in

TACTICAL AIRLIFT

complementary pattern, albeit without a formal allocations process. The agency directing fuel supply for the region, for example, was an office in the III Marine Amphibious Force logistics section. The logistics officers easily reallocated tasks as the CH-53s assisted and finally replaced the KC-130s in hauling fuel to the Khe Sanh airstrip. When necessary the fuels officers came to the tactical airlift officer for Air Force help. The conjecture remains attractive that a larger force of CH-53s, Air Force or Marine, might have replaced the C-130s in all airdrops except during the most unfavorable weather. This would have ended the problem of recovering loads at the drop zone and thwarted the enemy's concentration of fire along the fixed-wing approach path. That the Common Service Airlift System lacked a transport helicopter arm was a result of decisions dating back more than a decade. The point gave strength to later Air Force contentions in behalf of the development of vertical-flight craft as eventual replacements for the C-123 and Caribou.⁵²

Officially, in addition to the three destroyed C-123s, twenty-six Air Force transports (eighteen C-130s and eight C-123s) received battle damage during the siege, although the data appears incomplete. No known surface-to-air missile firings were directed against transport aircraft although the Khe Sanh approach routes lay within the range of launch sites north of the demilitarized zone. On April 1 a Marine strike pilot observed a missile firing seven miles northwest of Khe Sanh, but this was the only reported incident. Captured in the battle area were enemy 37-mm and 57-mm guns with ammunition caches for both types.⁵³

Although transport crews fully knew the hazards of the Khe Sanh missions, flight refusals were nonexistent. They were proud to be selected for the drop missions and accepted extensions of in-country tours without complaint. C-130 crews landing at Khe Sanh learned the positions of enemy guns mainly by experience or word of mouth from others. Those Air Force personnel on the ground at Khe Sanh, as well as the crews landing during the siege, were entitled to wear the Navy Presidential Unit Citation, a distinction awarded to the 26th Marines.

Ultimately, the success of the Khe Sanh resupply was a product of ingenuity. A foremost innovation was the use of ground radar for guiding airdrops, supplemented with the airborne doppler for the necessary offset capability. The idea of trying the nearly forgotten GPES and the speed with which it was revived can be credited to the existing staff system. Lesser examples of improvisation and resourcefulness among air and ground crewmen were every day commonplaces. The established Common Service Airlift System procedures and the standing doctrines for tactics and techniques were well understood by the airlifters. That room for imaginative ness remained and that individuals were encouraged in its use spoke well for the American military system.

XVII. The War for Laos

The mountainous and primitive country of Laos occupied a crucial location separating North Vietnam and China from the non-communist states of Southeast Asia. The North Vietnamese were vitally interested in southern Laos as an avenue for moving men and materiel to South Vietnam and Cambodia. Hanoi, therefore (like Moscow and Peking), gave materiel and diplomatic support to the Pathet Lao insurgent movement, as increasingly North Vietnamese combat units carried on the war against Vientiane. The allies, for their part, supported the non-communist Laotian coalition with training and materiel, Thai ground troops, and American air power. The result was a rough military equilibrium that lasted for more than a decade.

Given the scarcity of roadways in Laos capable of long-haul truck travel, virtually the entire allied military effort depended on air transport. Airlift provided tactical flexibility, freedom from road lines of communication, and enabled the allies to reinforce or withdraw units at will. Transport airplanes moved and supplied government forces throughout the country and wholly sustained the Meo population, source of the allies' most effective fighters. Campaigns followed the calendar. The communists held the initiative in dry seasons, moving and supplying overland. The allies usually regained ground during the wet summers, their air transport and firepower only marginally affected by the season.

Air transport in Laos was primarily by civilian contract, mainly with Air America, Inc. Air Force equipment and expertise were provided, but with the rarest exceptions civilian crewmen flew all fixed-wing transport missions in Laos. U.S. Air Force transport helicopters and crews, however, regularly flew missions in Laos, augmenting the helicopter forces of Air America and the Laotian government. Late in the war, Air Force helicopters frequently lifted Laotian troops in tactical missions similar to air-mobile operations by U.S. Army helicopters in South Vietnam.

During the late fifties the Pathet Lao movement gradually gained strength, nurtured by technical, materiel, and advisory assistance from the communist states. U.S. Air Force airlift units based in Japan and Okinawa stood ready to send American forces and materiel into north Thailand or Laos. There was a modest American assistance program for Laos to de-

velop roads and airfields, valuable in case of future military operations as well as for the internal political and economic development of the nation. Some dozen airfields were improved, and in some cases the runways were extended and surfaced. Extensive rehabilitation of Wattay Airfield, Vientiane, began in 1958, and a small Royal Laotian Air Force and several civil airlines operated into these fields.¹

U.S. Air Force transports seldom entered Laos. The most noteworthy exception was Operation Boostershot, an American attempt to influence voters living in remote regions. Two C-130 Hercules flew from Japan to Bangkok on March 31, 1958, each carrying a bulldozer rigged for airdrop. From Bangkok the two planes made a total of seven drops inside Laos, delivering the bulldozers, air compressors, and other equipment. The 130s returned to Ashiya on April 3 as planned but remaining at Bangkok were several C-119 Flying Boxcars, also from Japan. As a result of general satisfaction with Boostershot, the 119s shifted to Vientiane for continued operations.

The ensuing C-119 missions in Laos were seldom easy, whether landing at Seino, Pakse, or other semiprepared strips, or making drops in the mountains of the north. The rugged and undeveloped geography made navigation difficult, and afternoon cloud buildups and smoke from agricultural burning added to the difficulties. Crews hauled rice, vehicles, petroleum products, cement, and other items. Drop zones were usually small, often surrounded by homes, and sometimes crowded with onlookers. Takeoffs and landings from Vientiane were a problem for 119s loaded to the safe limit permitted by the 3,900-foot runway. The pierced steel planking surface was harsh on tires, prohibiting hard braking and demanding reliance on prop reversal when stopping. Crews wore civilian clothes, stayed in Vientiane's very primitive hotel, and endured mosquitoes and temperatures constantly over one hundred degrees. Boostershot was extended several times, ending finally on April 27. Of eleven hundred tons delivered during the operation, three hundred tons were airdropped in seventy-two sorties—seven by C-130s, sixty-three by C-119s, and two by C-123s which joined in the final days. The entire effort was accident free and gave the American crews a taste of future operating problems in Southeast Asia. Although the effort failed to prevent communist gains during the May elections, it exemplified the enormous potential for air transport in Laos.²

Another isolated venture was the airdrop of machinery for airstrip construction at Phong Saly in extreme northern Laos. A 315th Air Division C-130 flew to Udorn to be rigged and loaded. In its first drop sortie, April 26, 1960, two trucks and a D-4 bulldozer were dropped successfully. An attempt three days later to drop a second dozer failed when only one of the five descent parachutes opened properly. The dozer was demolished on impact.³

In the second half of 1960 the Americans increased direct materiel assistance to the royalist forces under Phoumi Nosavan, who headed a faction opposed to inclusion of Pathet Lao in the Vientiane coalition government. Shipments reached Bangkok by sea and air while further movements into Laos were by truck or airlift. Substantial deliveries were made by contract C-46s and C-47s to the royalist base at Savannakhet. Successive political crises culminated in the outbreak of overt civil war in December 1960. The civilian transports carried royalist paratroops to jump zones near Vientiane in operations leading to the flight of the neutralist Kong Le forces northward. Air resupply continued on behalf of Phoumi's forces, which were pursuing the departing neutralists. An American officer, Maj. Eleazar Parmly IV, USA, accompanied one royalist unit marching into the mountain country, totally supplied by air. Parmly's column received supplies every Friday, with the narrow mountainside road sometimes the only available drop zone. The C-47s dropped many items without benefit of parachutes, including bags of rice and elephant-skin containers filled with water. Soviet transports, meanwhile, supplied the withdrawing neutralists and the Pathet Lao forces in and about the Plain of Jars.⁴

The C-46s and most of the C-47s belonged to the fleet of Air America, Inc., a firm owned by the CIA. Air America was a direct descendant of Civil Air Transport, Inc. and was organizationally linked to Air Asia, Ltd., which operated large maintenance facilities on Taiwan and leased aircraft to Air America. Like Civil Air Transport, Air America flew over much of the Far East, its operations including overt contract work for MATS in the Pacific. Some fifteen Air America C-46s and C-47s lifted approximately one thousand tons monthly into Laos, principally from Bangkok.⁵

Eager to avoid a communist takeover, President Kennedy in early March 1961 authorized use of U.S. Air Force C-130s for deliveries to Vientiane in case of "urgent delivery requirements." This had been requested by CINCPAC to avoid transshipping across Thailand. The President also approved Joint Chiefs of Staff recommendations that the Air Force provide four C-130s for operation by civilian crews under contract with the CIA. Accordingly four civilian crews were trained in early April, and four aircraft moved to Takhli for CIA scheduling. C-130s hauled a Thai artillery unit and equipment to Seno in the third week of April, and six Air Force C-130s landed at Wattay on the 26th, bringing in parachutes and varied military supplies. The lifts to Wattay continued for several weeks with C-124s supplanting the C-130s.⁶

President Kennedy also approved expansion of the American program to convert two hundred thousand Meo tribesmen into an independent anti-communist force. The Meos inhabited the highlands of northeast Laos, had little loyalty to either Vientiane or the Pathet Lao. Under their acknowledged leader, Lt. Col. Vang Pao, and rallied by CIA field officers and U.S.

Army Special Forces teams, the Meos quickly became an effective force responsive to CIA command. By May 1961 the CIA had equipped some five thousand Meo fighting men and had established a logistics pipeline entirely separate from that supporting other government forces. Vang Pao meanwhile cemented the loyalty of widespread Meo villages northeast of the plain, visiting them by light aircraft and arranging for air delivery of food and arms.⁷

The development of a network of short airstrips to support the Meos in the northeast was largely the work of Air Force Maj. Harry C. (Heinie) Aderholt. Aderholt was assigned in 1959-1960 to command the small Air Force unconventional warfare unit stationed in Okinawa, with an added role as senior air advisor on Southeast Asia for the CIA. Aderholt went to Vientiane in early 1960 to organize single-engine U-10 aircraft operations. He began by arranging U-10 service to distant Phong Saly, where the six hundred-foot airstrip had two twenty-degree turns and was carved into a hillside at elevation of six thousand feet. Working with Colonel Vang Pao, Aderholt criss-crossed much of Laos by U-10, surveying and arranging improvements at short airstrips left by the French, and establishing what became known as "Lima Sites." The resulting airlift service to the Lima Sites by U-10s and other single-engine craft, flown by contract pilots, supplied the CIA-sponsored guerrilla movement in the communist rear.⁸

From April 1961 until the Geneva settlement of 1962, the Americans had an overt, uniformed Military Assistance and Advisory Group in Laos, including Air Force members assigned to work with the fledgling Royal Laotian Air Force. Aderholt brought 1st Lt. Lawrence Ropka, Jr., and two other officers from his Okinawa unit to manage contract airlift activities. The three officers, assisted by several enlisted men, organized evening scheduling meetings, arranged for maps and intelligence services, and developed a rudimentary flight-monitoring system. A small traffic management control center included U.S. Army and CIA representatives. Although mission control was minimal once the transports left the Vientiane area, the expiring MAAG noted in its 1962 final report that the control center had improved ground-handling operations, aircraft utilization, and mission reliability. Air America meanwhile established flight-following locations and installed radio beacons at five Laotian airfields. Monthly lift totals surpassed seventeen hundred tons of cargo and six thousand passengers, including Laotian battalions moving to and from training centers in Thailand.⁹ Airlift capacity increased in early 1962 when Air America added C-123s. TAC crews ferried the C-123s to the Pacific, Air Force instructors checked out the contract crews, and the Air Force Mule Train detachment at Clark contributed periodic maintenance assistance.¹⁰

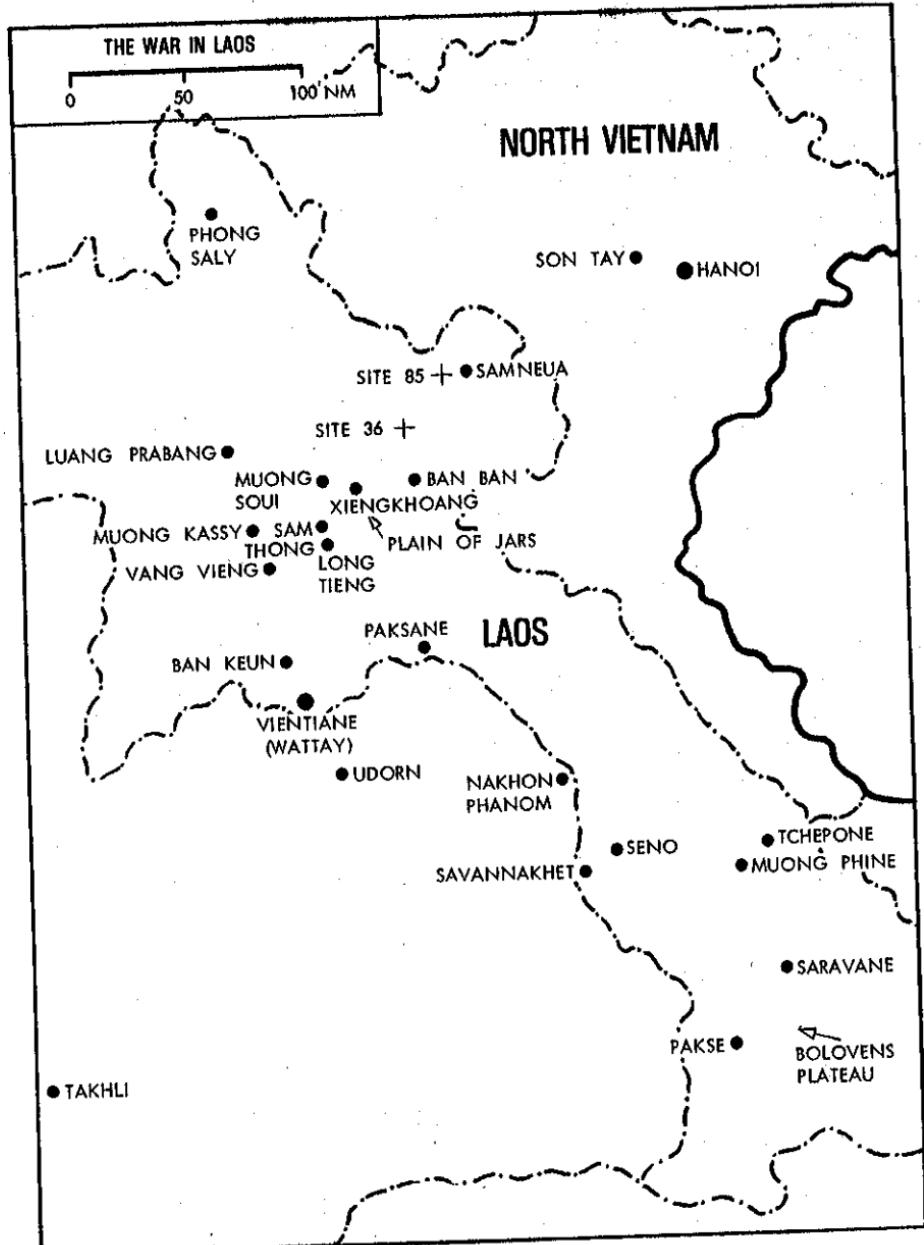
At the time of the Geneva settlement, the North Vietnamese presence in Laos (by American estimates) was twelve battalions with another three

thousand men serving in Pathet Lao units. The Declaration on the Neutrality of Laos in July 1962 called for the neutralization of Laos and the withdrawal of foreign troops. A shaky cease-fire ensued but the allies continued to use the contract airlift fleet. Contracts formerly between Air America and the Air Force were consolidated with others managed by the Agency for International Development. AID also contracted with the American firm of Bird and Sons for airlift by C-46 and smaller fixed-wing craft to support "National Development Projects" in Laos. Much of the hauling consisted of civil and refugee relief flights, especially on behalf of the scattered Meo. Missions into the northeast region were controversial since the Americans considered the Meos to be refugees while the communists saw them as bandits. Both Bird and Sons and Air America hauled troops and munitions, supporting the Meo guerrilla army and the scattered royalist and neutralist forces. The prime minister of Laos, Prince Souvanna Phouma, U.S. Ambassador William H. Sullivan, and most other Americans agreed that the United States should eventually stop such flights but the weakness of the Royal Laotian Air Force airlift arm precluded an immediate shift.¹¹

When fighting resumed in 1963 the contract airlifters directly, and sometimes decisively, influenced events. Following communist victories over neutralist forces on the Plain of Jars in April, contract and Royal Laotian Air Force transports made airdrops and landed on impromptu grass strips, delivering weapons and ammunition from Vientiane, north Thailand, and Bangkok. Two royalist battalions entered the battle area and the combined anti-communist forces clung to positions on the plain's western edge. During 1964 the North Vietnamese and Pathet Lao pushed government forces off the plain and captured much equipment. A second communist drive threatened to reach the Mekong River at the country's waist. Air America transports vigorously supported the defensive operations and took on the additional role of hauling aviation munitions to Vientiane for air strikes by Royal Laotian T-28s. Meanwhile, the communists opened a systematic campaign against the Meos. The defenders were usually able to hold off attacks long enough for helicopters and light transports to shuttle the families to the next Lima Site. The fighting men could then fade into the night, forming again elsewhere, and often reoccupying the original site soon afterwards.¹²

Another important airlift contribution was in day-by-day logistical supply. In this role the transports served as part of the overall theater transportation system, supporting the formal Military Assistance Program

TACTICAL AIRLIFT



and Vientiane's regular forces. Materiel was shipped by sea to either Bangkok or Sattahip. Transport across Thailand was generally by surface, sometimes augmented by fixed-wing airlift, to the helicopter depot just outside Udorn. From Udorn materiel moved into Laos either by air to the several main Laotian airfields or by truck to the Mekong barge crossings near Vientiane, Pakse, and Savannakhet. For transport inside Laos the

Laotian government had five military truck companies, Army-operated barges, the Royal Laotian airlift arm, and funds for contract airlift. The American administration of the military assistance program was under the Deputy Chief, Joint U.S. Military Advisory Group (or "Dep Chief"), set up in late 1962 at Bangkok and moved to Udorn in late 1971.

There was an entirely separate logistics pipeline for the Meos. Materials were channeled from a depot on Okinawa to upcountry Thailand, either by surface through the Thai seaports or directly by air to Takhli. Nearly all shipments from Thailand into Laos were carried by multiengine contract airlift, arriving at one of the main fields for redistribution by contract light transports and helicopters. Thus the Meo supply chain was directly from the Americans to the users, avoiding the diversions and losses likely in Laotian government channels. Materiel airlifted under these programs into and inside Laos was double the tonnage entering the country by surface transports.¹³

The network of semi-improved airfields in Laos gave considerable scope for the twin-engine contract transports. A dozen main strips established the basic route structure. Paved runways existed from the earlier improvement program at Vientiane, Pakse, Seno, and Xiangkhoang in the Plain of Jars. Most of the other strips were surfaced with laterite or gravel and could be used in the winter dry season. At Paksane and Vang Vieng the allies benefited from earlier Russian improvement projects. Typical of Laotian airfields was Luang Prabang where the runway had "many rough spots, chuck holes, and loose rocks on the surface." The runway was only fifty feet wide and (as at many fields) nearby high terrain complicated landing approaches and departures. A new installation at Long Tieng southwest of the Plain of Jars became a main redistribution point. Although U.S. Air Force officers were impressed by the effectiveness of C-123s in forward fieldwork in Laos, the Caribou was superior for landings on soft surfaces. Consequently five U.S. Army Caribous were contracted to Air America.¹⁴

After 1965 the Laotian contract airlift carried approximately sixteen thousand passengers and six thousand tons of cargo monthly, about one-tenth the Air Force workload in South Vietnam. The contract force consisted of ships and crews of Air America and Continental Air Services, Inc. It comprised over ninety craft, including twenty-nine fixed-wing medium transports. AID and the Military Assistance Program had separate contracts for services, but aircraft were freely used for all purposes. This assured operational flexibility, although apportionment of costs among the CIA, AID, and the military became a bureaucratic nightmare. C-46s usually flew scheduled passenger circuits inside Laos, while C-123s hauled bulk cargo, and the Caribous made most of the airdrops.¹⁵

A small Air America staff at Udorn made up the daily mission schedules, and a communications net throughout Laos helped to monitor flights.

TACTICAL AIRLIFT

Sometimes crews operated without fixed itineraries, flying from point to point, hauling people and cargo wherever needed. Certain officers in Laos carried identifier cards that authorized them to make on-the-spot movement requests. For urgent resupply needs a radio call to Udorn often resulted in delivery of items the same day. The system was efficient in terms of managerial overhead and in results, and seldom did a plane fly without a useful load. Major Aderholt, later warmly praised the simplified control system and the willingness of Air America to allow its pilots leeway in interpreting airfield criteria, operating rules, and maintenance standards. This flexibility went far beyond that allowed Air Force transport pilots in Southeast Asia, but was justifiable in view of the daily changing situation.¹⁶

A force of single-engine utility aircraft operated into strips inaccessible to the larger twin-engine transports. The U-10 Helio Courier and the Swiss-built Pilatus Porter were especially useful. Both were all-metal craft with fixed landing gear. The U-10 was rated to carry four persons including crew, the Porter eight. Both had limited internal cargo space, but both could readily operate into 600-foot strips. Late in the war Air America acquired a turboprop version of the Porter, built in the United States by Fairchild. Continental Air Services also had a twin-engine version of a single-engine German Dornier craft. The light transports were economical substitutes for helicopters. One Air Force officer termed the Porter "the real backbone of the resupply effort emanating from the main airfields in northern Laos."¹⁷

Most of the contract pilots were Americans, veterans of years of flying in Indochina. These men knew the terrain, airfields, and operating conditions in Laos, and were skilled in the techniques of low-level navigation, marginal weather operations, and forward field operations. They were highly informal and accustomed to getting things done. Some lived the life of suburbia, settling their families in Vientiane or Thailand. Others preferred more riproaring ways between missions. Salaries and allowances were excellent. One CIA inspector reported that "a common topic of conversation among pilots is how and where to invest their fairly substantial savings."¹⁸

Air America operated a large aircraft service complex at Udorn, maintaining the contract fleets (including C-123s and Caribous), as well as Royal Laotian and certain U.S. Air Force craft. Many Asians were ground crewmen, flight mechanics, and supervisors. Workers were glad to work double shifts for extra pay, and personnel turnover was slight. Middle-level supervision was especially good. The result was highly satisfactory aircraft maintenance. Incommission and flying hour rates for the contracted C-123s, for example, surpassed comparable Air Force performance. Overall costs were not excessive; the contract transport bill for

CONTRACT AIRLIFT FLEETS FOR LAOS*

	June 1966			February 1969		
	Air America	Continental Air	Total	Air America	Continental Air	Total
Medium Fixed-Wing						
C-46	4	5	9	4	6	10
C-47	2	4	6	1	4	5
C-123	9		9	8		8
C-7	5		5	6		6
Total			29			29
Light Fixed-Wing						
U-10	12	3	15	9	3	12
Pilatus Porter		9	9	9	7	16
Volpar/Beechcraft				2		2
Dornier					5	5
Total			24			35
Rotary Wing						
H-34	21		21	22		22
UH-1				7		7
Total			21			29

Note: Of the above, all C-123s, all except one C-7, and a few U-10s were supplied by the U.S. Air Force and U.S. Army to Air America.

* Report, Deputy Chief, Joint United States Military Advisory Group, Thailand, Historical Summary for June 1966-April 1968.

fiscal 1970 was \$26 million. AID paid \$380 for each C-123 flying hour, which included a \$186 fee to the Air Force.¹⁹

The reasons for employing the contract system were reviewed in early 1966. Ambassador Sullivan favored expanding the contract fleets. But PACAF countered that Air Force planes and crews could greatly increase lift capability into Laos at lower cost. Ambassador Sullivan strongly disagreed, and urged that the military continue to contract transports for "our Rube Goldberg fleets." CINCPAC supported Sullivan's judgment and recommended the addition of several more Caribous and C-123s to the contract force.²⁰

Assessments of the contract airlift system by military professionals were favorable. A Joint Staff study group reviewed arrangements in Laos in 1969, determined that CIA efforts were satisfactory, and recommended that the contract system continue without change. Lt. Col. William B. Foster, assistant air attaché at Vientiane in late 1970 and 1971, substantially agreed. Air America personnel were well motivated, in Foster's view, and responded with little urging to awkward working hours and difficult flying situations. Col. Robert S. Ferrari, U.S. Army deputy chief at

TACTICAL AIRLIFT

Bangkok, reported in 1968 that his relations with Air America were "excellent and fruitful" and speculated that the contract idea might provide "an answer to the requirement of flexible support in counter-insurgency situations in general, and not only in Laos."²¹

To a considerable degree the contract force was an extension of the U.S. Air Force, employing many former military airmen and borrowing its larger aircraft from the American military. Like the predominantly military airlift effort in Vietnam, the contract operation in Laos reflected the United States' inclination and ability to use air transport in military operations.

The link between the U.S. Air Force and the contract airlift was most apparent in the use of C-130s in the Laotian war. C-130 flights into Vientiane and the C-130 loan arrangement in 1961 had been of brief duration, and for several years the appearance of a Hercules inside Laos was exceptional. In June 1965 the CIA and the U.S. Embassy recommended that C-130s be used for deliveries from Thailand to Laos, relieving the C-123s and C-46s from this work. A single Hercules could make three or four deliveries in a single day, while a slower C-123 could make the trip only twice and with less than half the payload. C-130 missions began later in the year with Air America flying Air Force planes.²²

In actuality C-130 usage was as originally stated: to transport military cargo. At first missions were exclusively between Takhli and Long Tieng on behalf of the CIA logistics pipeline. Subsequently the 130s landed at Vientiane, Luang Prabang, Sam Thong (near Long Tieng), and at fields in the extreme northwest. Occasional flights reached to the panhandle fields at Pakse, Savannakhet, and Saravane. Missions between Udorn and Luang Prabang to support the military assistance pipeline became significant in 1969. The part-time C-130 project became full-time in 1967 when at least one of the two ships at Takhli flew into Laos every day. Meanwhile the smaller transports ceased missions from Takhli but continued hauling from Udorn as well as within Laos.

The C-130s belonged to E-Flight, established in late 1961 within the 21st Troop Carrier Squadron on Okinawa. Air Force crewmen assigned to E-Flight ferried the ships between Okinawa and Thailand. An aircraft's tour at Takhli varied from a single day to the maximum permitted by maintenance needs. A few 374th Wing maintenance men performed flight-line maintenance tasks at Takhli each evening when the planes reverted to the Air Force. Heavy maintenance, including one hundred-hour periodic inspections, was done at Naha. Unlike other 315th Air Division C-130s,

the four or five E-Flight ships were not camouflaged because in some circles camouflage implied a combat role.

The E-Flight ships were identical in internal configuration to the standard airlift A-models except that dual rails and 463L aluminum pallets were not used. Instead skate-wheel rollers were installed on the cargo-compartment floor over which cheap wood pallets could be moved. The smaller pallets made handling easier at locations without forklifts and eliminated the need to recover pallets. Offloading was often performed by taxiing the ship gently forward while pushing the pallets rearward one by one. Bundles sometimes broke apart during this operation, but without serious damage to the cargo. Loads were diverse, usually including fuel in fifty-five-gallon drums, munitions, or rice. Airdrops were infrequent, most often made when heavy rains temporarily closed one of the usual landing fields. To discharge cargo, the wood pallets, guided by a floor center-slot, were pushed to the rear over the rollers. Releases were from five hundred feet or lower, using inexpensive parachutes procured in the Far East. Air America used a standard five-man crew (including navigator) for all flights and added a second loadmaster for drops and some other missions. Jet fuel was available only at bases in Thailand, since the Laotian fields stocked only aviation gasoline.

Each member of E-Flight was selected from the 374th Wing early in his Far East tour. The flight functioned largely outside squadron control, the flight commander and operations officer exerting direct supervisory authority. E-Flight aircraft and crews flew cargo missions over the western Pacific and often made deliveries at intermediate points during ferry missions to and from Takhli. While in Thailand the Air Force crewmen assisted in loadings and briefings, and flew occasional night airlift missions between bases in Thailand. Many crewmembers were qualified instructors and helped to requalify the Air America crews. E-Flight crewmen periodically flew other 374th aircraft in normal missions, including shuttle duty at Cam Ranh Bay. The uncamouflaged aircraft, however, were scheduled and used entirely separately from the other 374th Wing planes. E-Flight supervisory crewmen occasionally traveled into Laos by lighter transport, surveying and approving airfields prior to C-130 usage.

The C-130 shuttles to Long Tieng supplied a local population of perhaps forty thousand. Access was entirely by airlift. The mile-long asphalt strip was ringed by mountains, with several near-vertical cliffs rising immediately at the northwest end of the runway. Because of the cliffs, all landings were to the northwest and all takeoffs to the southeast. The C-130s offloaded in a paved area at the northwest end, carved out among the cliffs. Meo and Laotian cargo handlers picked up the bundles using forklifts and muscle power, and repackaged them for C-123, helicopter, or light-transport loading. Persistent effort resulted in an efficient operation capable of clearing a fifteen-ton C-130 load out of Long Tieng

TACTICAL AIRLIFT

only a few hours after delivery. Helicopters landed and unloaded in an area on the opposite side of the runway, keeping well clear of fixed-wing traffic. Sometimes ordnance hauled in by C-130 was immediately loaded on T-28 strike aircraft for use the same day. A considerable amount of airlift tonnage consisted of food for the Meo population to supplement the local livestock. This occasioned the quip that Meo children thought rice grew, not in the ground, but in silver airplanes.²³

The possibility of using U.S. Air Force crews routinely for C-130 missions into Laos was reexamined on several occasions. In October 1969 the U.S. Ambassador to Laos, G. McMurtrie Godley, requested that Air Force crews be authorized to fly missions to selected destinations in Laos. The crews would carry military identifications but on no occasion would remain overnight in Laos. Ambassador Godley repeated the recommendation in late 1971 in an effort to reduce costs. The Air Staff opposed the use of unmarked aircraft flown by Air Force crews but supported the standing policy which allowed for use of U.S. crews in Air Force-marked ships in emergencies when Air America crews were unavailable. The Air Force permitted its ground crewmen to go into Laos to repair aircraft with documents identifying them as Air America employees, but only if the embassy ruled the area secure. (At that time ninety percent of C-130 missions into Laos landed at "secure" sites.) At any insecure site, Air Force personnel were required to wear uniforms and carry military identification.²⁴

E-Flight crews flew missions into Laos only on the rarest occasions. During February 4-8, 1970, with all Air America crews occupied in flying evacuation missions from the Plain of Jars, Air Force crews flew twenty-two sorties from Thailand to operating bases in Laos, hauling in 307 tons. Again, during April 22-30, 1970, after the loss of a C-130 with its contract aircrew on a hillside near Long Tieng (the only transport C-130 lost in Laos), an Air Force crew shuttled daily in and out of Long Tieng. On these occasions uncamouflaged E-Flight ships were used, with miniature Air Force insignia. Crewmen wore Air Force flight suits with inconspicuous insignia and carried Air Force and Geneva Convention identification cards. Subsequently, the Seventh/Thirteenth Air Force staff wrote a detailed plan for using Air Force C-130s and crews in Laos in emergencies.²⁵

Air America flew 170 C-130 hours per month in late 1970, and 270 hours each month during much of 1971. The number of flying hours thereafter declined because of increased fuel and operating costs. Charges for the C-130 were approximately \$1,000 per flying hour, roughly triple C-123 costs. Upon deactivation of the A-model wing on Okinawa in the spring of 1971, responsibility for Laos activities shifted to the E-model wing at Ching Chuan Kang. On May 31, 1971, one of the Ching Chuan Kang squadrons was redesignated the 21st and included a special flight to replace the old E-Flight. The E-model ships were left uncamouflaged but were painted gray to retard corrosion.²⁶

Also available to augment Air America were the Vietnam-based C-123s of the 315th Wing. In planning for the possible evacuation of Vientiane in 1964, for example, the wing was prepared to move C-123s to Vientiane, and to arrive twelve hours after MACV received the request.²⁷ C-123 task forces were sent to Udorn on two occasions in response to ambassadorial requests for assistance.

Six 315th Wing aircraft moved to Udorn on March 18, 1970, with maintenance men and equipment. The force arrived from Tan Son Nhut, Da Nang, and Phan Rang within twelve hours of first notice and crews attended briefings the following day. These included a presentation on operating conditions inside Laos by Air America's chief pilot. The primary mission was to evacuate Long Tieng in case of an emergency and secondarily to fly supplies. After a reassessment of needs, three planes were returned to Vietnam on the twentieth. The others, however, made seven supply missions to Laos on that date followed by ten more on the twenty-first. At least two of these sorties were to the Muong Kassy airstrip, west of Long Tieng, used by T-28 strike aircraft. The aircraft and crews remained at Udorn for another five days, available in case of emergency. All returned to Phan Rang on the twenty-seventh.²⁸

Two planes and three crews were sent to Udorn on September 15, 1970, to move a backlog of munitions beyond the capability of the Air America 123s. In 109 sorties over nine days of operations (starting on September 16), the 315th Wing element hauled 375 tons from Udorn into Laos. The C-123s showed the standard Air Force markings and were flown and maintained overtly by Air Force crewmen. Missions were flown in daytime only, and all landing approaches were visual. Eight other sorties were canceled, three because of weather and five because of maintenance problems.²⁹

The occasional airlifts into Laos by Air Force C-130 and C-123 aircrews were of limited significance. They did, however, demonstrate a capacity for a much larger contribution if called upon. Far more important was the sustained Air Force role in furnishing and maintaining the C-130s used daily in Laos, an activity that recalled the C-119 loans at the time of Dien Bien Phu. The Air Force stood willing and able to begin overt airlift operations into Laos, but was reluctant to expose its personnel to capture without the legal protection afforded military combatants.

The airlift capabilities of the Royal Laotian Air Force developed slowly, held back by Laotian inexperience in technical matters, political factionalism, rivalry with the ground forces, and the higher priority given to strike aircraft units. During the late fifties the Laotians had several C-47s, flown primarily by French pilots. Missions included occasional hauls of military units, spare parts runs, and passenger and supply lifts for the ground forces. By April 1961, shortly after the opening of the military assistance group, the number of Americans assigned to work with the

Laotian Air Force reached eighty-nine. The Royal Laotian Air Force itself then consisted of just 447 men, only 49 of them flyers. Despite the large American presence, the Laotian C-47s lagged well behind Air America in flying hour rates.³⁰

Soviet advisory efforts were scarcely more profitable. Soviet instructors flew with Laotian crewmen in nine LI-2 twin-engine transports given to Laos in late 1962. An RLAf officer later recalled:

The Russians had no training program at all. All they did was fly with us. The Russians and the Lao could not understand each other. They had only one interpreter. The Russians only stayed six months.

Afterwards, one LI-2 crashed in the Plain of Jars; the others stopped flying because of parts . . .³¹

A new program for training Laotian crews in the C-47 began at Udorn in July 1964, as a part of Project Water Pump. Instructors from the Air Force Special Air Warfare Center at Hurlburt gave upgrade and refresher instruction, training nineteen Laotian pilots and fifty-nine maintenance men during the ten-month effort. Progress was hampered by language differences and by troubles in keeping the airplanes flyable. Student aptitude varied, ranging from a colonel, "too set in his ways to improve much" to one cadet, "the shining star of the group." Training missions included dirt field landings and night operations. The Americans at one point reported that the instructors were "saving the aircraft on about 8 out of 10 landings."³²

Other conditions hampered effective use of the C-47s. Rivalry with the ground force-dominated general staff produced an unsuccessful Royal Laotian Air Force revolt, resulting in the exile of the RLAf chief in 1966. The episode increased the general staff's mistrust of the RLAf, aggravated by the air force's independent dealings with the Americans. Factionalism within the Royal Laotian Air Force also was strong, with the airlifters remaining aloof from the air strike arm. The C-47s thus remained as much an instrument of internal politics as for military operations against the communists. The absence of a centralized allocations and scheduling system led American attaché officers to judge that the transports were often misused. A single air transport command did come briefly into existence, but operational command was returned to regional commanders in early 1968. More grievously, the American officers became aware that the C-47s were probably used for corrupt purposes, ranging from vastly profitable traffic in opium and gold to the private sale of passenger seats.³³

By late 1968 the RLAf had sixteen C-47s and twenty-six crews. The monthly workload averaged seven hundred tons of cargo and passengers (including that lifted by a force of nine helicopters), up from four hundred tons in 1966. Plans for further expansion (and disappointments with the Laotian-operated training program at Savannakhet) resulted in a fresh American upgrade program at Udorn, begun in early 1969. Ambassador

Sullivan insisted that the instructors should again be drawn from the Hurlburt unit (now called the Special Operations Force), believing that one-year assignees from the general Air Force would be "middle-aged, straight-and-level" (and presumably, poorly motivated) flyers. Laotian instructors gradually replaced the Hurlburt people, and in December 1971 the program was returned to Savannakhet as an RLAf effort monitored by the U.S. Air Force.³⁴

The Laotian air arm was expanded to thirty-four C-47s in late 1970 (including nine AC-47 gunships), and its contributions became more significant. Almost daily three or four ships made passenger and cargo flights scheduled by the ground force transportation staff at Vientiane. One or more C-47s also worked each day under the army's regional transportation offices at Savannakhet, Pakse, and Luang Prabang. A few missions operated out of Long Tieng in support of Vang Pao's forces. Flights from the main bases usually were to outlying places such as Saravane, Vang Vieng, and Seno. The transport C-47s also performed some flareship work.³⁵

From 1967 on the RLAf C-47s were organized in composite squadrons, each including gunships, T-28s, helicopters, and light aircraft; most of the transports belonged to the squadrons at Vientiane and Savannakhet. In effect each squadron was a miniature air force, largely responsive to regional control. C-47s flew an average of thirty-three hours monthly. Spare parts were stocked at the Royal Laotian Air Force supply depot at Vientiane (moved from Savannakhet in late 1969). The Laotians also undertook certain periodic maintenance tasks, although in 1972 some phase inspections and heavy maintenance were still performed by contract in Thailand. Incongruities remained however. One Air Force crew had to fly a plane to Da Nang to have a "spirit" removed. Still, the RLAf C-47 arm made undeniable progress, possibly sufficient for the requirements for a low-grade insurgency situation. But to undertake the work of the contract fleets remained an impossibility given the existing level of hostilities.³⁶

The distances separating the upcountry locations in Laos from the Thailand logistics bases (Takhli, Udorn, and Bangkok) ruled out any substantial use of helicopters for the bulk hauling performed by the fixed-wing transports. Neither were there sufficient helicopters on hand until late in the war to encourage major troop-assault operations of the sort practiced in Vietnam. Important rotary-wing roles remained, however, for team infiltrations and retrieval, local supply redistribution, aeromedical evacuation, liaison hauls, and search-and-rescue. Transport helicopter operations

TACTICAL AIRLIFT

in Laos included those of Air America, the Royal Laotian Air Force, and the U.S. military services, predominantly the Air Force.

H-34s deployed in early 1961 had been nominally furnished to the Royal Laotian Air Force, but were instead flown, maintained, and controlled by Air America. Although limited in payload and passenger capacity, these versatile craft were well suited for the several main missions in Laos. Air America operated a modest-sized H-34 fleet throughout the war, its strength reaching twenty-one aircraft in early 1972. Supported by an excellent maintenance facility at Udorn, the contract helicopters averaged an impressive 120 hours monthly flight time. Air America flew a few UH-1s late in the war and in late 1972 acquired eight CH-47C Chinooks from U.S. Army. In addition a small U.S. Army UH-1 detachment at Udorn hauled Army attaché and advisory personnel about Thailand and Laos.³⁷

There was never a vigorous RLAF helicopter arm, although Souvanna and his military leaders wanted a significant force capable of directly supporting Laotian ground forces. Ambassador Sullivan agreed that Laotian helicopters could "facilitate military operations in the difficult and often trackless terrain of Laos." In 1965 the RLAF controlled and operated only two H-34s. U.S. Army instructors produced a few Laotian pilots and maintenance men and the RLAF slowly absorbed more H-34s, basing them in Laos. The limiting factor was Laotian maintenance capability. Despite heavy reliance on contract maintenance, flying rates were about half those of Air America. One unappreciative Air America mechanic judged a Laotian H-34, "a flying accident going somewhere to happen." The Laotians built a force of twelve H-34s in 1968 and seventeen in 1972. Laotian crews also briefly operated UH-1s in early 1972, using the UH-1s as gunships during dry seasons and for transport during the wet-season offensives. Royal Laotian Air Force craft received more than their share of hostile fire but the Laotian helicopter arm made few significant contributions.³⁸

U.S. Air Force helicopters in Laos augmented and eventually exceeded the efforts of Air America and the Royal Laotian Air Force. A detachment of two CH-3Cs from the 20th Helicopter Squadron in Vietnam arrived in Nakhon Phanom in February 1966. After several realignments during the spring, the detachment (known as the Pony Express) was established at Udorn in May 1968 and soon added several UH-1s from the parent unit.³⁹

Although the CH-3s were originally sent to Nakhon Phanom to support counterinsurgency programs in Thailand, missions into Laos soon predominated. Pony Express joined the contract helicopters in supporting the Vang Pao forces and various refugee and civic action lifts. The CH-3s lifted ordnance disposal teams to towns mistakenly struck by allied aircraft, backed up Air Force rescue helicopters, and hauled investigators to

remote crash sites. One crew lifted out a damaged A-1E after removing its engine and outer wings. A high-priority role was hauling to and from several isolated radar and communications sites. Each of four tacan stations, for example, required three tons of petroleum products, parts, food, and water each week. One station routinely sustained was Lima Site 85, atop a 5,600-foot mountain defended by Vang Pao's forces in the Samneua region of northeast Laos. During installation of heavy radar in late 1967, Pony Express lifted in over 150 tons, assisted by U.S. Army CH-47 Chinooks. One CH-3 went down while approaching Site 85 in December 1967, possibly a victim of enemy fire. Three months later the station fell to the communists, and construction of a new tacan station near Samneua commenced in July 1968. Pony Express contributed seventy flying hours to the construction effort, again aided by Chinook sorties.⁴⁰

The most challenging Pony Express tasks, however, were infiltrations for the Roadwatch program, augmenting the Air America H-34s. Roadwatch teams operated along the length of the eastern panhandle, gathering intelligence and harassing the communists. Pony Express also flew missions from north Thailand for teams operating in North Vietnam and in the region of Laos adjacent to South Vietnam. In 1966 Pony Express logged 315 infiltration sorties.⁴¹

A second CH-3 unit arrived in north Thailand in December 1967. The 21st Helicopter Squadron had been activated the previous summer at Shaw Air Force Base, S.C., and had completed unit training prior to moving overseas. The squadron arrived at Nakhon Phanom with CH-3Es (armed craft, with improved engines over the earlier CH-3Cs). The squadron's intended mission was part of a larger project to inhibit communist use of the panhandle. Early missions placed seismic sensor devices in the panhandle trails and did some roadwatch infiltration. The 21st began Prairie Fire missions in late 1968, inserting and withdrawing teams in the panhandle on behalf of Military Assistance Command Studies and Observations Group. In a reorganization in the summer of 1969, the 21st Helicopter Squadron absorbed the remaining CH-3s of Pony Express, while the UH-1s of the 20th returned to Vietnam. The change permitted a small savings in manpower and left the 21st Squadron with an authorized strength of fifteen CH-3s. The 21st also inherited all the old Pony Express roles including tacan site support, night reconnaissance of the base perimeter, and the insertion and withdrawal of special teams seeking information on downed aircrews.⁴²

The need for heavy-lift capability beyond that of the CH-3 became increasingly evident. During 1967 U.S. Army Chinooks and Marine CH-53s were sent to north Thailand from Vietnam on ten occasions for a total of ninety-six days. CH-54 Flying Cranes were flown from Da Nang on several subsequent occasions to lift artillery, damaged aircraft, generators, and other items in Laos. To meet such needs, the Seventh/Thir-

teenth Air Force in early 1968 requested that several heavy-lift choppers be permanently based at Udorn. MACV, however, was unwilling to spare these craft from Vietnam and instead recommended that the Air Force procure its own CH-53s. The Secretary of Defense on April 20, 1968, approved the procurement of twelve CH-53s for this purpose. The first CH-53C joined the 21st Helicopter Squadron in August 1970, beginning a changeover period not completed until December 1971. The CH-53s thus became the Air Force's first heavy-cargo helicopter, with twice the power of the CH-3E and three times the latter's load-carrying capacity.⁴³

Hostile fire became an increasing concern and required that crews practice precautionary tactics. Prior to 1969, Air Force transport helicopter losses in Laos to enemy fire totaled only three CH-53s and one UH-1. Of the fifteen crewmen, all but one were rescued. During 1969, communist fire brought down and destroyed six CH-3s in Laos, and a seventh was apparently destroyed by enemy troops after a forced landing. Fortunately, thanks to the practice of operating in pairs, all crews but one were rescued. Meanwhile, the circles on situation maps denoting anti-aircraft danger areas began to overlap. Constant reappraisals of tactics, better guns, and introduction of the CH-53s, however, reversed the trend of losses. Through 1973 the Air Force lost a total of eleven CH-3s in Laos, and six elsewhere in Southeast Asia. All but three were lost as a result of enemy action. Enemy fire claimed only two CH-53s, both in early 1971 in Laos—one near Long Tieng, the other near South Vietnam during Lam Son 719.⁴⁴

Hair-raising missions were commonplace. One two-ship team pickup, on December 29, 1967, earned Silver Star recommendations for two Pony Express aircraft commanders, Majs. James S. Villotti and Kyron V. Hall. Protected by armored vests, the pilots of the first plane received nondisabling injuries from enemy bullets, while three other crewmen replied with automatic weapons from side and rear exits. The first helicopter lifted out with twenty-nine passengers; the second completed the evacuation moments later, packing thirty-four men into space rated for twenty-five. A forward air controller later counted twenty-two enemy dead about the landing zone.⁴⁵

Both the 20th and the 21st Helicopter Squadrons had maintenance troubles. Excessive use regularly pushed the CH-3s to the limits of air-frame, engine, and transmission tolerance. Sand and grit got into critical parts, engines were damaged by foreign objects when operating at forward points, and metal fatigue cracks appeared. The new CH-53s increased spare parts difficulties and, despite frequent cannibalization, parts shortages regularly kept ten to twenty percent of these craft on the ground. Pilots warmly praised the efforts of inexperienced maintenance men and supervisors, but several pilots stated they were more concerned by the danger of mechanical failure than by the threat of hostile fire.⁴⁶

The necessity of replacing all Southeast Asia personnel every twelve months strained the Air Force's thin reservoir of experienced helicopter pilots, especially in the later years of the war. One expedient was to train experienced fixed-wing pilots in rotary-wing flying, in many cases selecting older officers who had not flown in recent years. Such individuals, after graduating from the helicopter school at Sheppard Air Force Base, Tex., went through tactical training in the CH-53 at Shaw. After reaching Nakhon Phanom, each individual received further checkout and upgrade training under squadron instructors. Of thirty-nine pilots assigned to the 21st Helicopter Squadron in mid-1970, only ten had previous rotary-wing experience. Twelve were lieutenant colonels although only one lieutenant colonel was authorized. To balance these personnel deficiencies were the excellent flying characteristics of the CH-53 and the craft's large margin of engine power. In another measure, taken largely in response to congressional pressure, the Air Force abandoned its policy that helicopter pilots should first be rated in fixed-wing aircraft. Beginning in late 1970, candidates without fixed-wing ratings entered a 190-flying hour helicopter training program conducted by U.S. Army.⁴⁷

Along with its many other responsibilities the 21st Squadron increasingly made tactical troop lifts, hauling Meo and Laotian battalions in airmobile assault and reinforcement operations. Indeed, in the later years of the war, the history of the whole allied airlift effort in Laos, including contract, Royal Laotian Air Force, and U.S. Air Force helicopter and fixed-wing arms, became increasingly involved in the campaigns on the ground.

The Air Force and Air America helicopter units collaborated in several major efforts in early 1969 in reaction to the communist dry-season offensive. During January 10-15, 1969, the 20th Squadron lifted over five thousand persons, cut off by enemy forces near Samneua, in a total of 539 sorties. Each morning, 20th crews hauled drums of helicopter fuel into the region for refueling during the rest of the day. Precipitous terrain and early morning fog hampered the effort, already made difficult by the 4,700 foot ground elevation at the pickup point. A similar joint helicopter evacuation in March preceded the fall of Site 36, the main Meo staging point north of the Plain of Jars.⁴⁸

Allied defeats continued into early summer of 1969 and were climaxed with the evacuation and loss of Muong Soui. A helicopter task force assembled at Long Tieng on June 27 for the Muong Soui evacuation—ten from 20th and 21st Squadrons, three HH-53s from the Air Force air rescue unit in north Thailand, and eleven Air America H-34s. With

TACTICAL AIRLIFT

drawal of a 350-man Thai unit began that afternoon and was completed in two hours, after which evacuation of Laotian troops and families began. One 21st Squadron CH-3 was shot down, but crews and passengers stood off enemy troops with rifles and grenades until picked up by an Air America H-34. The evacuation continued the next day, at all times plagued by difficult weather. Air attaché officers praised

the aircrews of the unarmed and vulnerable helicopters who time and time again descended into the enemy-controlled area at minimum altitude and airspeed, crammed their burdens into the overgrossed machines, and staggered out of the area to the Long Tieng sanctuary. These deeds should not go unnoticed to the men of the Air Force helicopter units and their comrades of Air America, Inc. . . .⁴⁹

The pattern of defeat gave little hope for the future of Laos. Ambassador Sullivan, leaving the country in March 1969, realized that the Meo forces were being depleted and that the next dry season was likely to bring the communists major successes. Soon afterwards, plans and policy officers of the Joint Staff concluded that only political considerations could prevent the communists from eventually overrunning most of Laos. A pessimistic State-Defense-CIA paper was sent to President Nixon in August, describing American options for Laos. The paper saw a ray of hope in the effectiveness of "fixed-wing and helicopter airlift" and cited the enemy's difficulty in reacting to surprise assaults in his rear.⁵⁰

The success of Operation About Face seemed to verify this airlift effectiveness. About Face was Vang Pao's late summer 1969 offensive which recovered Muong Soui and the Plain of Jars and captured much enemy materiel. Supplied by air, some Meo forces advanced nearly to the border of North Vietnam. Unfortunately the gains of About Face proved temporary. The communist dry season offensive began in December 1969 and soon swept into the Plain of Jars, threatening thousands of civilians in encircled positions immediately northwest of the plain. Again Air Force helicopters joined with Air America in massive evacuations in horrid weather. Ten planes and crews of the 21st Helicopter Squadron flew to Long Tieng on January 4, 1970, for daily operations about Muong Soui. Upon completion of the effort on January 15, the 21st Squadron had lifted over four thousand refugees, along with livestock and personal possessions, from their encircled locations to temporary safety at Muong Soui.⁵¹

The war's most dramatic fixed-wing transport effort soon followed. Under continuing communist military pressure, Laotian officials decided to evacuate all civilians from the southern Plain of Jars, moving them farther to the south. Air America and Continental Air Services ships lifted out over thirteen thousand of these refugees from Lat Sen airfield in the southern plain during February 4-10. Reporters witnessed the flights and described and photographed the loadings of the impoverished people into the silver C-130s, C-123s, and C-7s. At the dusty boarding locations,

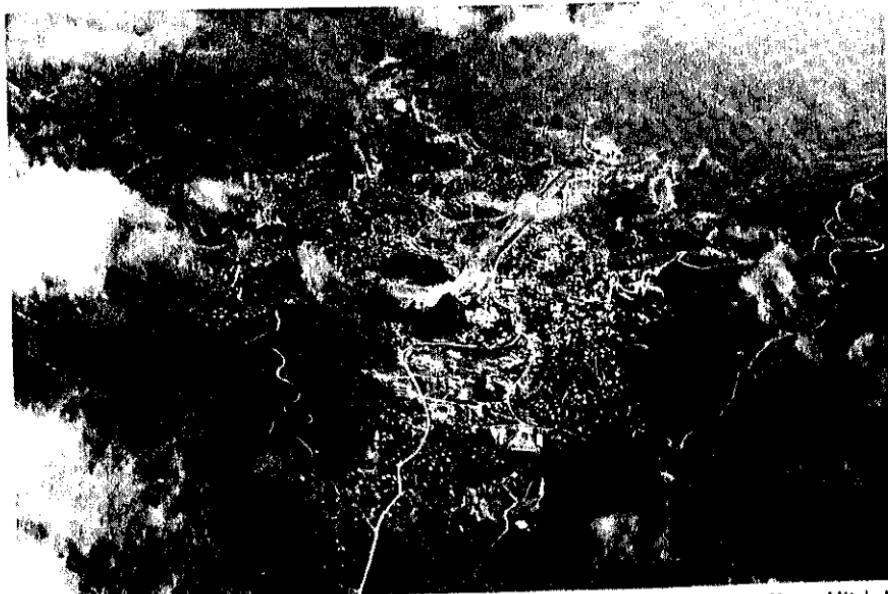
officials guided the refugees aboard while pilots kept their engines running. Most flights landed at Vientiane and Ban Keun airfield north of Vientiane. The Ambassador reported that the evacuation was "accomplished with all the elan we normally associate with such humanitarian efforts."⁶²

The exodus came none too soon. The Xiengkhoang airfield in the plain fell on February 21, Muong Soui three days later. Air America transports managed to evacuate some refugees and most of the equipment used to support the RLAF T-28s at Muong Soui, despite heavy ground fire. Irregular and regular forces withdrew from Muong Soui and the plain in disorder and occupied hill positions in front of Long Tieng—the so-called Vang Pao line. Frightened refugees streamed out of Long Tieng by foot, and others clustered just outside the airfield perimeter begging for air transportation out. C-123s, Caribous, and helicopters continued to land and take off in the smoke and haze at Long Tieng, amid increasing danger of midair collisions, lifting out families of officials along with many villagers. The Air Force physician assigned to the Long Tieng hospital arranged for evacuation of his eighty patients in an Air America C-123. Nearby Sam Thong airfield and base were abandoned after Air America on March 17 lifted out all wounded and American personnel. All aircraft and most American equipment and personnel were evacuated from Long Tieng the next day although most individuals continued to commute each day for work.

Meanwhile transports and helicopters brought in reinforcements. Over three hundred Thai troops landed on March 18, with the base already under shellfire and the enemy reported close in. An American officer at Long Tieng watched the Thais arrive with full field gear and steel helmets, with crewcuts and wearing uniforms without insignia. The contrast with the ragtag and long-haired Meos was marked. Despite nearly prohibitive weather on the nineteenth, over five hundred Laotian and irregular troops arrived at Long Tieng from other military regions. One battalion was lifted in after an all-night march to reach their boarding strip. More reinforcements arrived on the twentieth, and most of them were repositioned to hill defensive positions by Air America and Air Force helicopters.

With visibility again borderline at Long Tieng, and with enemy troops reported a mile from the approach end of the runway, Air America transports delayed takeoffs at Vientiane on the morning of March 21. Reassured by radio from Long Tieng, and by a report that landings could be made by touching down at midfield, the C-123s took off at midmorning. Maj. John C. Pratt, an Air Force officer assigned to the Seventh Air Force, described the scene on landing at Long Tieng on the twenty-first:

Prior to landing, all we could see until directly in the LT Valley were murky mountain peaks obscured by the haze and occasionally blotted out by thick columns of brown smoke from ground fires. Often, black burnt particles, some as large as pieces of carbon paper, flew by the



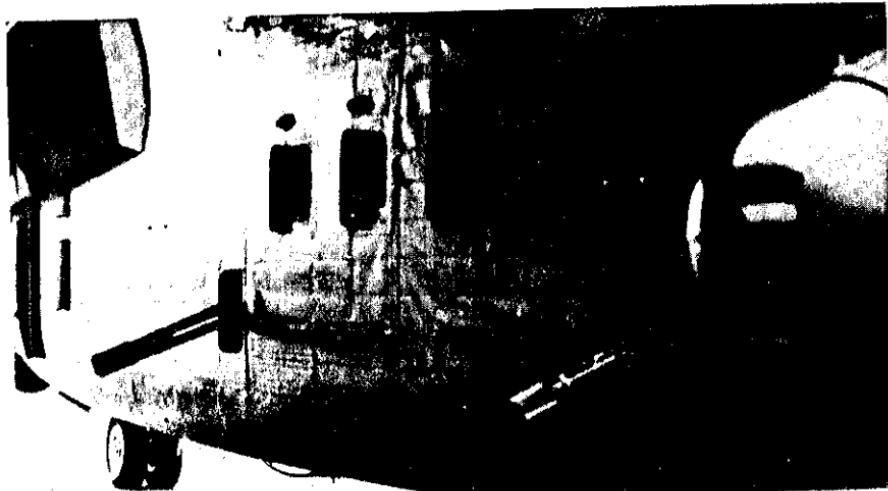
Courtesy: Vance Mitchell

Long Tieng, Laos, January 16, 1972. The city is under siege and intensive fighting is underway on top of Skyline Ridge, the high terrain on the left.



Nighttime firing of tracers by a USAF AC-119K, in support of an outpost north of the Plain of Jars, Laos, January 1972.

Courtesy: Vance Mitchell



Courtesy: Vance Mitchell

Left side of an AC-119K gunship used for air strikes over Laos. The long gun barrels are 20-mm cannon. Four windows house 7.62-mm miniguns.

aircraft. Visibility was about one mile or less with the air-to-air visibility effectively zero. As we broke out over the runway, the hills to either side appeared deserted, with no sign of any activity. Aircraft suddenly appeared from almost all sides, some landing, some taking off—helicopters, C-123s, Caribous, O-1s, T-28s, Porters, and an occasional C-130⁵³

Heavy rains on March 23 helped clear away the persistent cloud cover and disrupted communist resupply movements from the plain to the battle area. The allied buildup about Long Tieng now included thirty-four hundred irregular, Laotian, and Thai troops. Allied air strikes were intensified, favored by the improved visibility. On March 30 the ambassador reported that the formerly "grave" situation at Long Tieng was "brighter." One by one, defensive positions were retaken, and on March 31 Vang Pao forces reoccupied Sam Thong.⁵⁴

Allied helicopters again were in the forefront of Pao's counteroffensive, Operation Leapfrog. Leapfrog began August 18, 1970, with the insertion of five hundred government troops at the rim of the Plain of Jars by Air Force and contract helicopters. A climax for the 21st Squadron occurred in the last week of November with the unit lifting nearly two thousand troops and equipment from Long Tieng to a landing zone near Ban Ban, well east of the plain. Compared with the successes of About Face, however, those of Leapfrog were small and no more permanent. The enemy reclaimed the initiative in early-year pushes against Long Tieng in 1971 and 1972. In both campaigns, allied helicopter and fixed-wing transport forces again provided Long Tieng's only transportation link to the outside.⁵⁵

Although the northern campaigns appeared more critical for the survival of the Vientiane regime, allied initiatives in the southern part of the country represented a threat to communist control of the trails. In these southern campaigns, the allies frequently used their helicopter forces for tactical airmobile assaults. One early effort, on March 25, 1969, against a hill area in the upper panhandle, resulted in near-disaster. Ten Air Force and eight Air America helicopters successfully inserted the two hundred-man assault force, but strong enemy reaction necessitated an unplanned withdrawal. Air America choppers picked up seven hundred troops, but the eight Air Force CH-3s met heavy fire. Five were hit, two lost engines, and one pilot was wounded. The withdrawal was stopped and the helicopters returned home empty. CH-3s and H-34s completed the evacuation the next day, with fire support by A-1 strike aircraft.⁵⁶

During the second half of 1969, Air Force and Air America craft flew numerous troop lifts in support of allied offensives in the central panhandle. The allies captured Muong Phine and neared Tchepone, located square amid the enemy's logistics arteries. Most heliborne assaults were successful but on October 6 enemy fire downed two CH-3s attempting to land near Muong Phine, entering what later appeared an enemy trap. One

TACTICAL AIRLIFT

of the pilots, Maj. Philip J. Conran, was nominated for the Medal of Honor for his role in the six-hour firefight which followed. Conran removed the machineguns from the downed choppers and led the fifty-odd friendly troops in forming a defensive perimeter. HH-53s later rescued all personnel.⁵⁷

The 21st Helicopter Squadron continued to operate in the panhandle during and after 1970, now utilizing the substantial troop capacity of the CH-53s. On February 16, 1971, the squadron's largest effort to that date took place when eight CH-53s and six CH-3s shuttled over fifteen hundred troops and equipment to a landing zone near Muong Phine. The effort was part of Operation Desert Rat and coincided with Lam Son 719.⁵⁸ On June 15-16, 1972, eight CH-53s lifted nearly two thousand troops to jumpoff positions on the western Bolovens Plateau. Further lifts followed and in mid-October the 21st executed a two thousand-man assault near Saravane. Resistance was sometimes hot. On the second shuttle of the Saravane mission, six of the seven choppers were hit. Although technically successful, the Bolovens assaults failed to win the initiative permanently, and by the end of 1972 the allies had retired to the western extremity of the plateau, no longer challenging the trail sectors.⁵⁹

Meanwhile, allied officials preparing fresh offensives northeast of the Plain of Jars for the 1972 rainy season were told that "mobility will be the key here, and mobility means CH-53 support." Air Force and Air America helicopters in August opened another Vang Pao operation, aimed at inserting a 2,400-man task force into the northern plain in the enemy's rear. But plagued by bad weather and rules prohibiting use of the CH-53s without escort, the helicopter force managed to deploy only half the intended assault force. Communist artillery and tank action forced a halt to further insertions. Survivors of the assault force made their way overland to safety over several weeks. Vang Pao nevertheless persisted in aggressive operations during the fall, and the 21st Squadron lifted a total of three thousand troops in several other tactical ventures. The last major combat air assault took place on January 20, 1973, when seven CH-53s and two Air America Chinooks transported over one thousand troops to reopen the Vientiane-Luang Prabang highway. Four helicopters were hit, but the isolation of Luang Prabang was broken prior to the February cease-fire.⁶⁰

The tactics used for assault operations developed from those used in infiltration penetrations. Crews constantly sought refinements in order to stay ahead of the enemy's growing fire capabilities. Nine-ship formations, for example, flew in elements of two or three for safety and flexibility when operating in marginal weather. Some 21st Squadron craft were equipped with 7.62-mm miniguns, primarily for use in laying down suppressive fire during the final approach to the landing zone. Ideas on ways to cut down time on the ground at the landing zone also were tried. In late 1972 the jet-propelled A-7 aircraft largely replaced the A-1 for escort and fire-

suppression work with the helicopters. The early A-7 missions were carefully planned and critiqued. A-1 pilots experienced in escort work rode in the helicopter formation in order to advise the A-7 pilots by radio. Customarily, the A-7s worked slightly in front of the helicopter elements, and made passes over the landing zone several minutes ahead of the choppers.⁶¹

Early planning for the larger assault operations involved CIA officers in Laos and the embassy staff in Vientiane, including the air attaché. CIA operations and intelligence staffs refined plans and coordinated informally with the special activities division of the Seventh/Thirteenth Air Force. Messages requesting employment of Air Force helicopters were passed along the military chain of command, via the Saigon and Hawaii staffs, to the Joint Chiefs of Staff and the Secretary of Defense. Generally multi-battalion lifts required specific mission approval, although blanket authority to use a specified number of helicopters daily in support of a continuing ground operation was sometimes given.⁶²

The Laotian cease-fire of February 22, 1973, left the future of that country uncertain. The communists controlled vast territory and were unhampered in their use of the panhandle trails for movements south. The confrontation in the Plain of Jars region became static, with only occasional minor clashes. The United States continued to view Laos as an important buffer, protecting the non-communist countries of Southeast Asia from Communist China and North Vietnam. The Americans therefore continued a modest military assistance program, administered by a defense attaché office in Vientiane and the subordinate deputy chief agency of Udorn. The latter managed the former dual logistics pipeline, unified since July 1, 1972, under Department of Defense funding.

With the cease-fire the CH-53s and most other Air Force aircraft ended missions within Laos. The CH-53s remained at Nakhon Phanom, however, ready to evacuate Americans from Laos and Cambodia or to assist in locating missing personnel. Contract airlift operations in Laos continued. Meanwhile, the airlift arm of the Royal Laotian Air Force assisted Laotian ground forces in protecting and policing those regions nominally under government control. Expansion just before the cease-fire brought the H-34 force to twenty-six ships, and in June 1973 RLAF received six C-123s. The presence of the transports, and the fact that forty-five airfields in Laos had runways of twenty-five hundred feet or more, promised that airlift would play a large role in the country's reconstruction, whatever its government.⁶³

Events in Laos in 1975 were less turbulent than those in South Vietnam and Cambodia but no less conclusive. The Agency for International Development closed the last American sites outside of Vientiane during the spring, and the contract transport firms (Continental Air Services and Birdair, Inc.) withdrew most of their remaining personnel and aircraft

TACTICAL AIRLIFT

from Laos and north Thailand. The Air Force thereafter provided a single C-130 for operation by Birdair crewmen, making daily trips to Vientiane. The coalition regime, nominally under Souvanna Phouma, proved unable to halt spreading left-wing violence. The Birdair C-130 crew on May 31 reported that armed Pathet Lao soldiers had threatened to seize the aircraft since it had been "stolen from Vietnam." Plans for a final American evacuation went through several evolutions during the summer, but growing communist dominance in Vientiane made it clear that only a quick-snatch helicopter effort was feasible. Communist takeover seemed complete in December 1975, with the dissolution of the coalition regime and the proclamation of the People's Democratic Republic of Laos. But no American emergency evacuation followed.⁶⁴

The communist assumption of power in Laos made the long years of American intervention futile. The final outcome, however, did not detract from the essentially constructive contribution of airlift in the conflict. For more than a decade the Americans used air transport resourcefully and at modest cost as a central element in a strategy that prolonged military equilibrium in a situation otherwise favorable to the communists. Airlift flew over enemy forces and barriers of terrain to deploy and sustain units ranging from teams to multibattalions. The contract system worked, providing effective and responsive airlift, avoiding further commitments for the already strained Air Force airlift force, and making a larger American military presence unnecessary. The Air Force airlift contribution was a significant one. The Air Force provided transport aircraft and technical assistance to the contractors, actively operated a rotary-wing force, and trained and advised the Royal Laotian Air Force transport arm. Satisfaction with Air Force performance in these roles was general. The reasons for the failure of allied policy for the Mountain Kingdom must be sought elsewhere.

XI. Junction City and the Battles of 1967

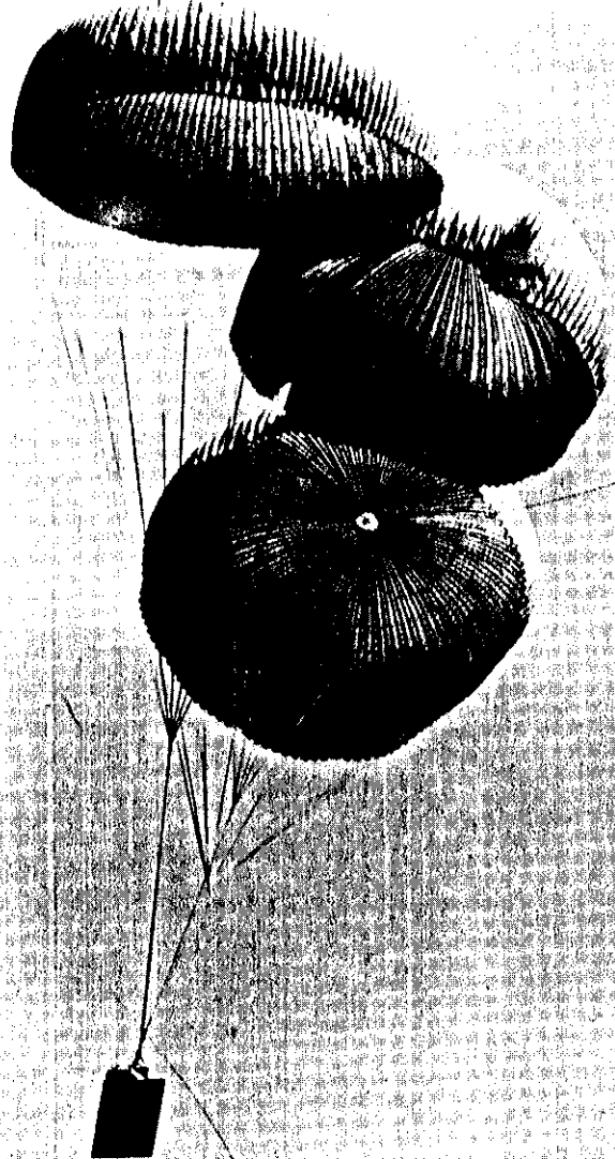
Pg

173; 270 - 277

The infusion of American Army forces assured allied tactical supremacy on the ground in South Vietnam. Offensive search-and-destroy operations penetrated communist base areas and promised to break down the enemy's organized military strength and to provide the conditions essential for long-term pacification. Although communist bases in Cambodia remained largely immune, the Americans set out to make the enemy's situation inside South Vietnam impossible and ultimately to weaken his resolve to fight.

Within this strategy the role of tactical airlift followed the pattern seen in Operation Birmingham. The search-and-destroy ventures typically centered around one or more C-130 airstrips which became the focal points for buildup and resupply. Allied helicopters and infantry combed the surrounding region, sought out the enemy, and exposed him to the killing effects of air and artillery firepower. The C-130s played a central role in Operation Junction City, the largest of the search-and-destroy operations to date. This operation opened in February 1967 with the war's first and only American battalion-size parachute assault and featured substantial use of airdrop resupply.

The allies and communists were willing to fight battles in the border regions. The highlands offered enemy units concealment and ready access to Cambodian sanctuaries. Westmoreland believed that the campaigns in remote areas permitted unrestricted use of allied firepower, afforded scope for airmobile tactics, and helped shield pacification activities in the populated regions. The ability of the C-130s to bring in quickly reinforcements and high volume air resupply made possible this forward stance. The period's heaviest fighting took place at Khe Sanh in mid-1967, and at Loc Ninh and Dak To in the fall. In each battle allied forces entered the confrontation by air and while engaged depended heavily upon air resupply. On the political front the period closed with guarded expressions of confidence for the future among American leaders. They were pleased in particular with the orderliness of the Vietnamese national elections in September.



Military operations in the Saigon plain in late 1966 revealed the viability of the emerging allied offensive capability and the flexibility of the Air Force airlift force. C-123s and C-130s delivered fuel, munitions, and general cargo in support of the offensive ground operations. The airlifters regularly hauled supplies to relatively primitive airstrips at fire support areas such as Lai Khe and Quan Loi and even to more primitive sites beyond Loc Ninh and Minh Thanh.

Operation Attleboro began quietly in the early fall, but by mid-November the venture required fifty-two C-123 and C-130 sorties daily. The fire support area at Dau Tieng for weeks depended exclusively on Provider air resupply from Bien Hoa and Tan Son Nhut.¹ During one phase of the operation, landings at Dau Tieng were made on the average of one every seven minutes. Several times communist shells closed the strip for repairs, and hostile fire brought down one C-123. Maintenance men of the 315th Wing worked around the clock to keep this maximum effort going. On the ground at Dau Tieng the tactical airlift officer coordinated the flow of arriving aircraft without the benefit of radios or the assistance of combat control teams. In terms of enemy losses in men and matériel the operation was an allied success.²

More important, months of planning were devoted to Operation Junction City which was scheduled for late February 1967 and was intended as a massive entrapment of enemy forces in Zone C including northern Tay Ninh Province. During January and February 1967, American forces assumed their positions on three sides of the objective area and established forward logistics bases. Transports in the meantime flew hundreds of sorties in the preparatory effort which included C-130s bringing in over fourteen hundred tons of munitions to Minh Thanh. Further, Westmoreland and the MACV staff planned to lift in forces using all available helicopters, but they desired that a battalion of 173d Airborne Brigade be scheduled to jump from C-130s in the first American parachute assault of the war.³

The American inclination to stage a parachute assault somewhere within Vietnam had been evident the previous year. Responding to Westmoreland's pointed inquiries, subordinate Army commanders in October 1966 forwarded to him several proposals for battalion assault jumps in the border areas. MACV ordered practice missions and more than eight hundred paratroopers of the 173d Brigade jumped from sixteen C-130s near Bien Hoa on October 30. A second practice mission followed the next month.⁴ Meanwhile, the Air Force demonstrated its readiness to cooperate —ten C-130s and three C-123s joined twenty Vietnamese Air Force C-47s in a two-battalion Vietnamese jump in the southernmost delta in late December. All of the men landed on target with the exception of three C-47 strings who jumped too soon after a mixup in cockpit signals.

Though a practice mission, three American transports were hit by ground fire and a C-123 loadmaster incurred fatal wounds.⁵

The 834th Air Division's OPlan 476-67, 1 January 1967, became the guide for airborne operations in Vietnam, including the Junction City assault. The plan prescribed a battalion drop from twenty-six C-130s. Half of the aircraft would carry troops while the others would haul the battalion's equipment. The 130s were to converge at a marshaling base for loading eight hours prior to takeoff and thus preserve surprise and prolong use of the transports for normal tasks. The Air Force, further, would provide certain aerial port personnel and equipment, although the Army retained responsibility for packaging and rigging cargo. Final inspection of loaded aircraft became a joint responsibility. The 834th retained operational control of the transports under MACV mission directives and named an airlift force commander who would accompany the lead aircraft. The plan additionally prescribed the use of in-trail formation tactics at medium en route altitudes with a descent to drop altitudes during the run-in. This approach was a departure from the low-level tactics developed in Close Look and practiced by all C-130 units. The absence of enemy air interceptors and heavy antiaircraft weaponry made the need for low-level flight purposeless. Finally the plan postulated the usefulness of airborne operations in Vietnam as a means to "achieve tactical surprise by sudden, undetected mass delivery of combat forces into the enemy area."⁶

Pilots and navigators from the out-of-country C-130 wings arrived at Tan Son Nhut on February 18 to assist in planning for the Junction City assault. After a briefing by General Moore they joined the planners of the 834th Air Division to work out tactics, write operation orders, and to prepare route and drop-zone briefing aids. Principals in the planning were two 314th Wing navigators assigned to lead the assault formation. Representatives from the other C-130 units worked primarily on the follow-up equipment drops.

The drop zone in Operation Junction City lay near the main highway at Katum, four miles from the Cambodian border. The site was selected for use as the brigade command post and as an artillery fire support base. To insure secrecy only a handful of ground force officers knew the true objective. Army planners chose a cover drop zone of similar size and characteristics but located fifteen miles farther east. Informed by his own staff that the designated drop zone made little sense, Moore raised the question with the 173d commander. The general only then learned of the existence of a plan for deception and gained agreement that his key planners would receive the correct information. The briefing packages, though prepared, were revised although the route up to the final twenty miles remained unchanged. Finally, recent photographs of the true drop zone and the run-in path were obtained.⁷

The troop carrier and airborne planners worked out details without



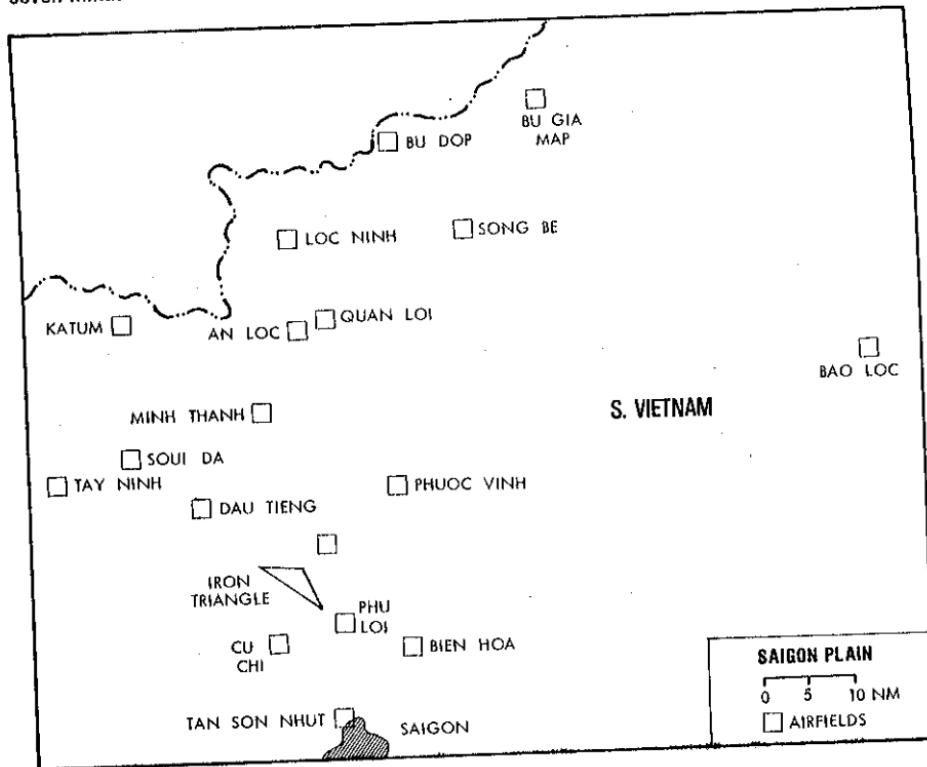
Gen. William G. Moore, 834th Air Division commander, talks with other Air Force Army officers taking part in Operation Attleboro.



C-123 squeezes between a bunker and an old French villa at the Dau Tieng airstrip.



Dust never settled at Dau Tieng during Operation Attleboro. USAF C-123s landed every seven minutes on November 6, 1966.



TACTICAL AIRLIFT

difficulty. The question of the jump altitude was fixed at one thousand feet and each aircraft was to pass over the drop zone within twenty-six seconds. The time was too brief for the safe exit of the sixty-man load. Two passes for the thirteen-ship formation were accordingly planned. Loading plans were so developed that each paratroop company would land in its own sector of the drop zone. Although the possibility of enemy opposition at or near the drop zone was unlikely, nearly two hours of preparatory air strikes were scheduled. Helicopter gunships were to be in proximity of the drop zone during the drops and assembly. The mission for the paratroopers upon landing was perimeter security while the heavy-equipment drops and the initial base consolidation activities continued.

Selected to make the Junction City jump was the 2d Battalion, 503d Infantry, of the 173d Brigade. The unit underwent refresher jump training in early February. On February 21 the men received mission briefing from their commander and were placed in quarantine at Camp Zinn near Bien Hoa. Jump equipment was issued, individual items packed, parachutes fitted and checked. Each aircraft's jumpmaster briefed jump, landing, and emergency procedures. Members of an Air Force combat control team who accompanied the paratroopers had responsibility for guiding the equipment-drop formation.⁸

The C-130 assault force began converging at Bien Hoa after midnight February 22. Ten C-130B* aircraft arrived from Tan Son Nhut in the early morning hours ready to begin loading for the heavy-equipment drops. The four E-models destined to lead the troop-carrying formation arrived from Nha Trang shortly thereafter, followed an hour later by three more B-models from Tan Son Nhut and nine C-130s from Cam Ranh Bay. The troop-carriers were parked tip to tip at the west end of the Bien Hoa ramp. The aircrews, after a predawn breakfast, went by bus to a theater building for mission briefing.

Brig. Gen. John R. Deane, Jr., USA, and General Moore opened the briefing. Subsequent presentations dealt with the flight portion of the assault and the navigational and drop-zone details. Aircrews were surprised to learn of the true site since their earlier preparations had been based on the cover plan. Another last-minute change was the selection of an alternate identification point. A dogleg route was substituted which intercepted the original run-in path several miles closer to the drop zone. After the briefing the navigators reworked their flight plans and studied the Katum site. Copilots and loadmasters returned to the flight line to monitor loading activities.⁹

Meanwhile at Camp Zinn the paratroopers loaded themselves and

* References to the different C-130 models in this section simplifies identification of the units participating. The C-130As were from 374th Wing (at Naha) and from Tachikawa, the C-130Bs were from 463d Wing (Philippines), and the C-130Es were from 314th Wing (Taiwan).

their equipment into trucks for the short trip to the aircraft. At the flight line guides with "chalk number" placards led the men through the darkness to the proper aircraft. Individual loads of the paratroopers with the reserve chutes and personal equipment were heavy. Marshaling and loading were performed without confusion. One C-130 copilot noticed General Deane's pearl-handled pistols but was more surprised to see a diminutive American female correspondent wearing battle garb climbing aboard one of the aircraft.¹⁰

Engine start and runup were performed on schedule. The troop-carrying aircraft taxied first for takeoff. The first aircraft rolled at eight twenty-five in the morning, and the others followed at regular intervals. All aircraft were airborne within three minutes. In the meantime reports of nearby firing delayed the planned turn to an on-course heading.

The planned route took the formation to the south and west of Saigon to the Black Virgin Mountain (Nui Ba Den) just north of Tay Ninh. This indirect path required about thirty minutes of flying time, a procedure believed necessary to permit orderly inflight preparation for the drops by the navigators and loadmasters and to allow for possible adjustment of timing for the run-in. Two navigators shared duties in the lead aircraft, one worked the radar, obtained doppler wind information, and did the table computations, while the second stood behind the pilots and performed mapreading by visual reference with the ground. The two-navigator technique had previously been used in formation lead work, but it was a departure from the method normally practiced whereby pilots gave mapreading assistance to a single navigator. Navigation in any case was simplified by the excellent visibility prevailing throughout the mission. A minor complication resulted when a delay resulted in assuming course, thus requiring the leaders to raise airspeed and to make it difficult for the rear aircraft to take up the correct intervals. The formation maintained absolute radio silence. The identification point was sighted and the planned dogleg successfully negotiated. The run-in began on the planned northeasterly track, and the formation slowed to 125 knots while descending to drop altitude at the prescribed point.

Nearing the drop zone the lead crew could see the final preparatory air strikes and the explosions were audible. An airborne forward air controller spoke to the formation by radio and set off colored smoke bombs at the site. The smoke was helpful in confirming the drop zone.

Each aircraft in the formation generally followed the path of the leaders, although each navigator determined his own alignment and his exact time of release. The first troopers were out at the briefed time and all planes crossed the drop zone at correct twenty-second intervals. Enemy fire was not evident. As the jumpers began landing exactly within the area of the colored smoke, the airborne controller waxed enthusiastic. General Moore, hitherto grim and intent in manner, smiled and lit his cigar in satisfaction.¹¹

TACTICAL AIRLIFT

After crossing the drop zone the troop-carriers turned sharply to the right, remained at drop altitude, and returned to the previous run-in track for a second pass. It was important to turn promptly to avoid crossing the Cambodian border and to reduce exposure to possible ground fire. The second pass was completed at ten minutes after nine; again all paratroopers landed on the correct target. Following this drop, the C-130s gained altitude and set course for Tan Son Nhut and Cam Ranh Bay. The lead aircraft with Moore aboard remained in the area to observe the equipment drops.

The troop drops appeared successful without qualification. Weather had remained excellent, hostile fire was negligible, and only one C-130 received a single bullet hole, discovered after landing. The in-trail formation procedures proved a flexible basis for the employed tactics and were used without the slightest confusion. At the drop zone the 173d was well pleased and the commander of the brigade said the drops went exactly as planned. Deane later remarked that his landing was precisely at the intended spot. The brigade reported only eleven injuries, all minor; no troopers were wounded during descent. A total of 780 men made the jump including 510 from the 2d Battalion and 110 from the artillery battery.

The equipment drops were also in most respects successful. The combat control team had jumped in the second pass and immediately marked the desired impact point with smoke. Of the ten cargo-carrying C-130Bs, eight were rigged for conventional heavy-equipment drops and released their loads from an altitude of fifteen hundred feet; two container deliveries followed immediately. The aircraft thus delivered over eighty tons although the loads were limited by the nature of the weapons and equipment dropped. All ten cargo aircraft returned to Bien Hoa for reloading for another container drop. The Air Force aerial port mobility team there readied the planes in forty-five minutes. The early afternoon drops were successfully completed and they averaged well over ten tons per transport. During the course of the day, five cargo carriers received hits; none was seriously damaged.

* Load recovery during the operation presented some difficulties. The two container loads were heavily damaged, and witnesses on the ground at the drop site concluded that this was caused by releasing from too low an altitude. Other loads landed in swamp areas at the fringe of the drop zone and could be recovered only by tracked vehicles. The combat control teams tried unsuccessfully to warn the afternoon aircrews to drop well away from the swamp. Seeking better ground-to-air communications, the control team later borrowed a radio from the forward air controller. The recovery of parachute canopies and equipment bags was slow. Many items were lost or damaged as a result, and the littering of the site hampered helicopter landings during the morning. On the other hand, activities within the drop

zone proceeded smoothly. Hostile fire occurred only during midmorning, wounding one trooper. Brigade and battalion command posts were fully operational by noon. A senior ground observer sensed in late morning a euphoria and lassitude among the troopers and interpreted this to be a postreaction to the adrenalin generated earlier.¹²

Elsewhere on February 22, in the largest helicopter effort to date, eight infantry battalions assaulted from 250 aircraft along the northern rim of Zone C. Two battalions of the 173d landed several miles from the Katum drop zone. Two other brigades landed at objectives along the border fifteen miles farther west. Meanwhile, two brigades moved overland to form the western cordon above Trai Bi and completed the encirclement of the western Zone C with the 173d.¹³

Airdrops resumed on the twenty-third. All sorties originated at Cam Ranh Bay and all employed the container delivery system. Plans called for airdrops of twelve hundred tons in the first seven days, leaving the riggers of the Army's 109th Quartermaster Company with a surplus capacity of 550 tons for emergencies. The 15th Aerial Port Squadron began loading C-130A transports before sunrise on the twenty-third, and a seven-ship A-model formation departed three hours later. Using standard formation takeoff procedures the seven aircraft joined up off the coast and proceeded to Tay Ninh at about nine thousand feet. Their en route weather was good, but low clouds covered the zone. This latter factor hampered the day's effort. Approaching the objective, the formation descended into the clouds and each plane navigated independently. The flight leader broke out only a mile from the Katum drop zone and was too far to the right to make the drop. Remaining under the clouds, he flew a racetrack course and twice aborted passes because of helicopters below. He finally released on the fourth pass. Meanwhile, a second formation took off from Cam Ranh Bay, consisting of eight B-model C-130s from the Tan Son Nhut detachment. After dropping their cargo, both groups returned to Cam Ranh Bay for reloading.¹⁴

But problems at the drop zones persisted throughout the day. The weather ruined the integrity of formations, and aircraft were left to mill about individually and to coordinate by radio with an airborne forward air controller and the combat control team. Trying to stay underneath the cloud layer some crews dropped loads from too low an altitude, others found themselves in the clouds during the awkward pullup phase upon release. One Hercules crew misidentified the drop zone and released a half-mile short; another misinterpreted the smoke signals, dropped too soon, and confused the trailing crew. Some afternoon drops supported the 196th Brigade in the northwestern corner of the allied ring. Two loads intended for the brigade landed too far from their drop zone for recovery. Prolonged flying at low level resulted in four instances of battle damage and for several aircraft it was sufficient to prevent the crew from taking off again.

TACTICAL AIRLIFT

Some airplanes were fired upon from the Cambodian side of the border. But more significantly, in thirty-eight drops during the day a total of 499 tons were delivered, nearly all munitions.¹⁵

Yet criticisms of the day's results were sharp. Senior Army officers watching a six-ship formation drop at Katum noted that the loads were spread over nearly a mile with five loads landing in swamp areas. A dissatisfied 1st Infantry Division logistician reluctantly agreed at midday to continue the afternoon drop schedule, but he telephoned cancellation of the next day's resupply effort. The aircrews were briefed to move the desired impact point away from the wetlands, but some of the afternoon loads again landed in the difficult areas. Although personnel from the 109th parachuted in to assist in recovering loads, some of the ammunition remained unrecovered the next day, prompting additional requests for more drop-zone workers. Army observers also stated that many C-130 crews released during a very steep pullup, causing the bundles and parachutes to interfere with one another and resulting in damage to loads on impact. Moore acknowledged that it may have been a mistake to assign A-model aircrews to the drops since they were the least qualified in tactical work and until recently had flown only occasionally in Vietnam.¹⁶

Drops over the next five days continued out of Cam Ranh Bay, averaging nearly one hundred tons daily. B-models were primarily used, landing at Tan Son Nhut each night. Normally, four aircraft dropped for the 173d each morning and four for the 196th each afternoon. Accuracy and mission coordination gradually improved. Defective container webbing (apparently resulting from prolonged storage) caused eight of the twelve confirmed rigging malfunctions. On February 27 two containers of 105-mm ammunition separated from their parachutes in midair, detonating upon contact with the ground and destroying eight other containers which had landed normally. The 196th Brigade reported that the 105-mm ammunition packed in wood boxes generally landed undamaged, but that one-fourth of that dropped in metal "jungle packs" was dented and unusable. Despite these sundry difficulties the 196th judged that the week's drops were "excellent," estimating that sixty-five Chinook sorties had been thus saved for other tasks.¹⁷

During the first weeks of Junction City, allied troops moved through Zone C, especially the border areas, maneuvering in many cases by helicopter. These forces drove overland to link with the 173d at Katum. A company of Army engineers began work on an airfield at Katum on February 24, clearing a 2,900-foot strip from jungle cover and surfacing it with local laterite. The field was inspected and received its first Hercules on March 3. Construction of a second field began at Prek Klok located south of Katum. The 196th Brigade also improvised the construction of an air-strip. C-130s and C-123s supplemented road communications into Tay Ninh, the main hub for resupply of fire support areas at Trai Bi, French

Fort (just north of the Black Virgin), and Soui Da. C-130s also landed at Soui Da which was surfaced with T-17 membrane. During one stretch of Operation Junction City, eleven of twelve combat control teams worked the three border drop zones while the others coordinated at the area airstrips.¹⁸

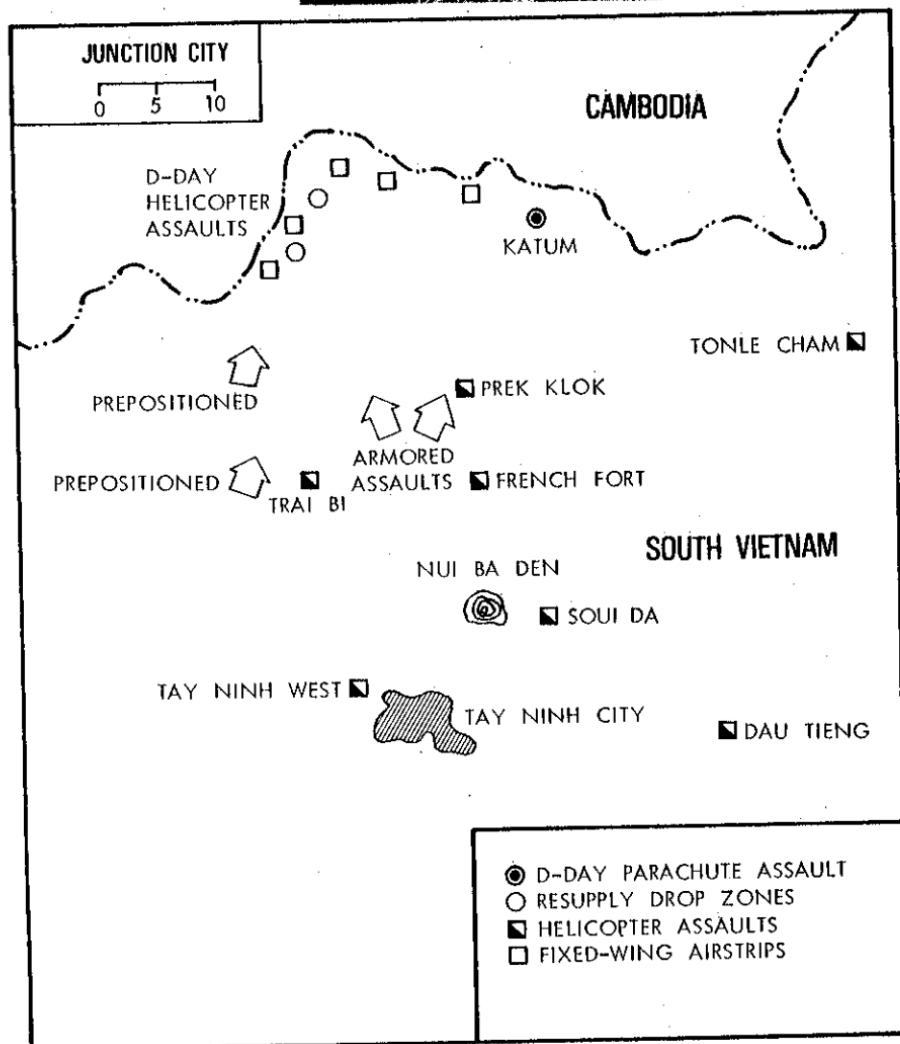
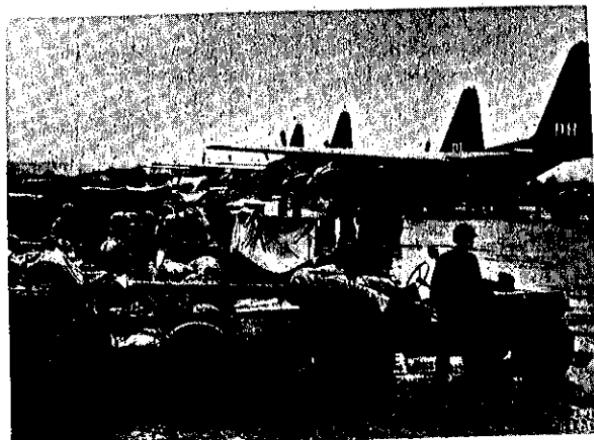
Phase II of the operation began on March 18. Troop units shifted eastward to the construction of a camp and airfield at Tonle Cham, the site formerly designated in the cover plan for the parachute assault. Supplies came through the fire support stations at Minh Thanh and Quan Loi. C-123s and C-130s lifted the 173d out of Junction City on March 15, unloading them at Soui Da. A week later a stream of C-130s returned the brigade from Bien Hoa to Minh Thanh. In the next three weeks, more than four hundred Air Force transport sorties (primarily flown by C-130s) sustained the 173d and other units at Minh Thanh.¹⁹

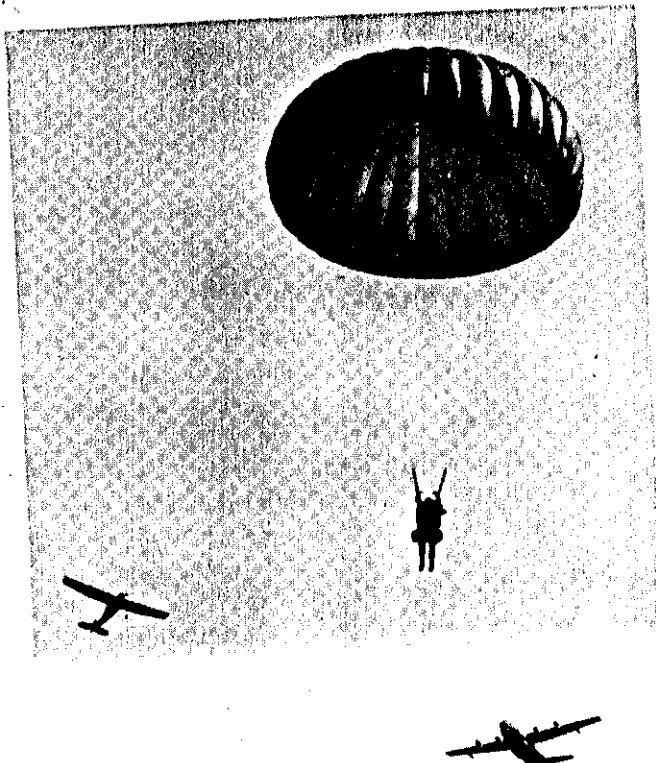
Construction at Tonle Cham illustrates the process of forward airfield preparation. The work was done by D Company, 1st Engineer Battalion, a unit from Katum. Jungle clearing began on March 15. Three weeks later, the runway was opened for use and numerous aircraft landed at Tonle Cham during the remainder of Operation Junction City, including twenty-nine C-130s. The newly constructed airstrips at Tonle Cham, Katum, Prek Klok, and Soui Da, made it possible for the American Army to reenter Zone C at will.²⁰

The idea of keeping a roving brigade in the western part of Zone C, to remain after departure of the main units, received Westmoreland's approval in mid-March. The 196th Brigade, then operating near Prek Klok, was selected. The brigade was capable of operating entirely without ground communications and was resupplied solely by parachute and helicopter. In four preparatory drops C-130s delivered fifty-eight tons to sites several miles north of French Fort. The brigade began its "floating" operations on March 27 upon closure of the fire support area at French Fort. Brigade forces moved overland toward Katum receiving en route over ninety tons of ammunition, fuel, and water in C-130 drops on March 27 and 28. During an eight-day period commencing March 31, C-130Bs dropped a daily average of seventy-four tons. All loads were container-rigged by the 109th Company at Cam Ranh Bay. From Katum the force moved gradually west, reaching its destination by April 6. Combat control teams accompanied each of the brigade's three battalions and each operated in its own drop zone. These sites changed frequently, occasionally while aircraft were en route. Once an aircrew orbited overhead while the control team marked a roadside field. On other occasions airborne controllers in observation aircraft guided drop ships. At one site combat control personnel cleared landing zone for Caribou use only.²¹

Needed for duties elsewhere, the 196th moved to Tay Ninh on April 8, ending the floating brigade experiment. Assessments were favorable.

Airlift of 173rd Airborne
Brigade from Dak To to Phu
Hiep by USAF C-130s,
September 1967.





Member of the 173rd Airborne Brigade, moments after jumping from a C-130 over Tay Ninh. The aircraft in the background is an O-1E Bird Dog, used to direct strikes against enemy ground positions.



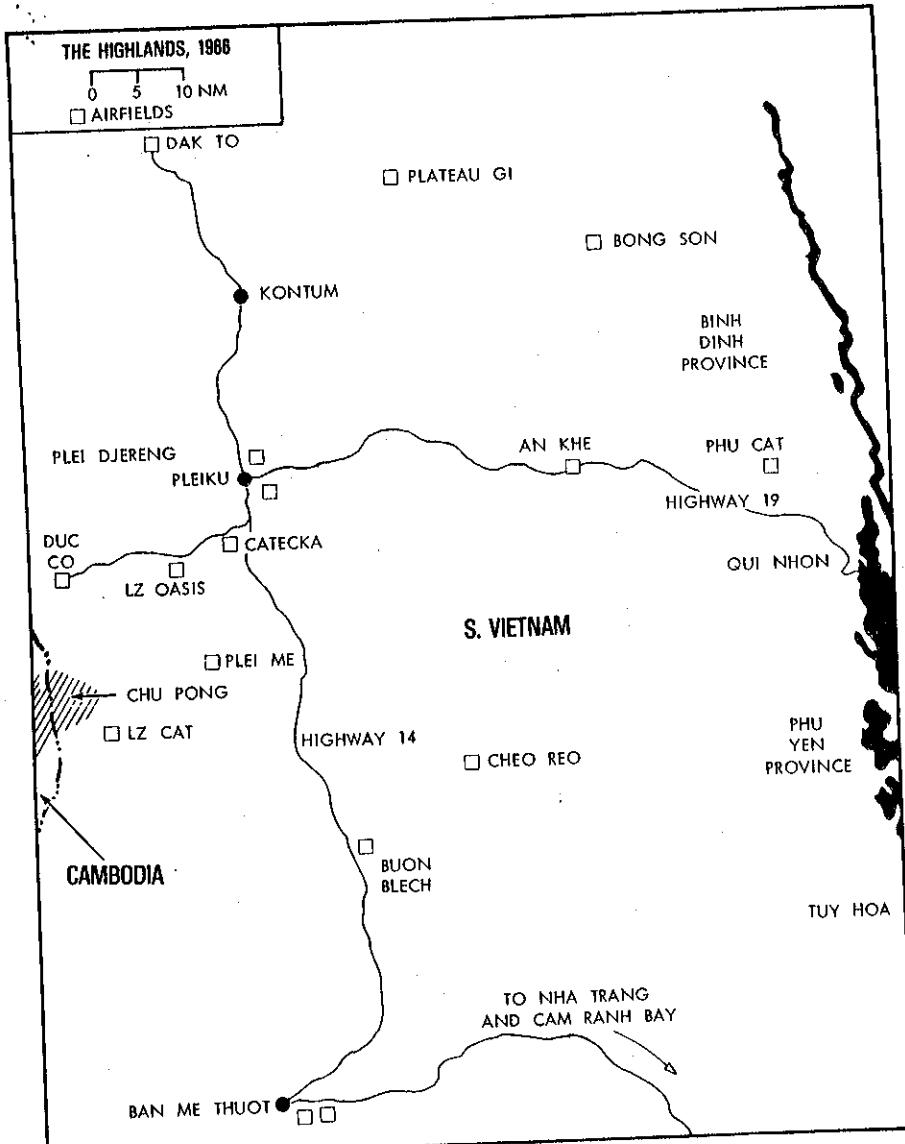
A C-130 Hercules paradrops supplies and equipment to Army forces during Operation Junction City, February 1967.

Maj. Gen. Shelton E. Lollis, USA, commander of 1st Logistical Command, concluded that such a force could be effectively supplied by airdrops in the future. The presence of the combat control team assured full flexibility, General Lollis observed, while the main limiting factor seemed to be the ability of the receiving unit to absorb large deliveries. The 196th agreed that the mobile brigade could deny the enemy an area such as Zone C, and recommended the inclusion of an armored element, supporting artillery, and additional helicopters. The brigade's evaluation of the C-130 drops was favorable.²²

For the complete period of Operation Junction City, C-130s dropped over seventeen hundred tons of equipment and supplies. The recurring handling problems at the drop zones—loads damaged or lost, and the annoying need to recover parachutes—indicated that where feasible helicopter delivery was preferable to parachute supply. The paratroop capability was worth preserving, however, and the Army, after reviewing Junction City, pronounced drops an “extremely efficient” method which offered “not only an emergency but also an expedient means of resupply to tactical units.” By sharpening the Air Force’s and Army’s readiness to conduct airdrop resupply, Junction City became an important forerunner of the major parachute resupply ventures in the next year in Vietnam.²³

The common airlift system met the extra workload of Junction City without difficulty. Countrywide aerial port backlogs rose from three thousand tons on February 21 to more than four thousand tons a week later, but returned to their former level by the end of March. The forty-four-aircraft C-130 shuttle force was not expanded. The effect of Junction City on the overall course of the war remains unclear. Fighting had been generally light. Viet Cong units were forced out of the area, and the principal communist headquarters shifted into Cambodia. A former communist lieutenant colonel later informed the allies that the entire series of Zone C offensives (including Junction City) discouraged them and led to their decision to attempt a general offensive in 1968.²⁴

The confrontations in the highland provinces followed consistent patterns. American and South Vietnamese units based in the region kept the enemy off-balance with localized search-and-destroy operations of short duration. Communist units periodically crossed from Cambodia to menace towns and camps in the border provinces. At such times the Hercules brought in reinforcements, landing on the main airstrips at Pleiku, Kontum, and Ban Me Thuot. Allied truck convoys routinely resupplied the interior from the coast, supplemented by airlifts of mail, passengers, and



special items. Air transport remained available to support full-scale operations in the event of road interruption.

Fighting in early 1966 took place primarily in the plateau region between Pleiku and Ban Me Thuot. A sustained airlink opened into Ban Me Thuot in February with the deployment by C-130 of a U.S. infantry brigade. The C-130s resupplied around the clock, operating from Cam Ranh Bay and meeting a daily cargo quota of three hundred tons. As the brigade gradually shifted its operations farther north, airlifts intermittently reached them at smaller strips such as Buon Blech and Cheo Reo. The

TACTICAL AIRLIFT

highway deliveries slowly replaced air supply to Ban Me Thuot. Meanwhile, the 1st Cavalry Division returned to the Ia Drang battleground south of Pleiku. Fixed-wing airlift supplemented road and helicopter access into the battle area. C-130s landed at Catecka, Duc Co, and a new airstrip southwest of Catecka—Landing Zone (LZ) Oasis, built and surfaced with T-17 membrane by divisional engineers. Providers and Caribous, supporting a two-brigade air assault into the Chu Pong area, landed on a new dirt strip, LZ Cat, adjacent to the communist-held Chu Pong Massif. Another Ia Drang campaign in August coincided with rains and flooding that hampered road movements and softened landing surfaces. C-123s made airdrops at several places; these were plagued by inaccuracy, numerous rigging malfunctions, and an episode in which falling bundles destroyed two helicopters at LZ Cat. The cavalry division nevertheless deemed the drops "responsive."²⁶

Streams of C-130s periodically transported brigade-scale reinforcements in reaction to North Vietnamese movements. The 1st Brigade of the 101st Airborne Division landed at Kontum in December 1966. Two months later the 1st Brigade of the 4th Infantry Division entered the highlands in February 1967, landing at Plei Djereng west of Pleiku. Plei Djereng had been recently opened to C-130 aircraft and it thereafter became a focus for resupply. The 173d Brigade moved from Bien Hoa to Pleiku on May 24–27, 1967. The brigade shifted to the north in mid-June, operating then from a fire support area at Dak To and at times depended exclusively on air resupply. During June transports shifted two Vietnamese airborne battalions to Kontum, and hauled a brigade of the 1st Cavalry Division to Dak To from field operations near the coast. The cavalry battalion completed its move on June 2. The fast troop movement spoke well for the Army's ability to extract its forces from active operations, and to proceed to the nearest C-130 field and then quickly to reenter combat at a new location.²⁷

Such unit movements represented hard work for the transport aircrews. Typically, the aircrew reported to the flight line about dawn and then flew to the loading base. The crew usually found an orderly line of waiting army vehicles, trailers, and troops. An Air Force mission commander supervised flight-line activity, coordinating between aircrews and Army personnel. Discussions sometimes became heated when pilots were reluctant to accept loads weighing to the limit of safety. Such difficulties usually passed after the day's first trip, after pilots became reassured of the conditions at their destination and as their aircraft burned off excess fuel. Crews typically spent the full mission day shuttling back and forth between the two points, but diverted every three or four hours to the nearest Air Force base for refueling. Sometimes, crews on other itineraries would contribute one or two sorties to the unit movement shuttle. The pace of the movement was usually determined by the capacity of approach facilities

and parking space at destination. Troop carrier crews were rarely informed of the tactical purposes behind the unit moves. There was no mistaking, however, the effects of combat on the mud-covered and uncommunicative infantrymen, the "Grunts," each of whom remained detached through his own fatigue and private thoughts.

The C-130 withdrawal of the 173d from Dak To in September coincided with three days of heavy rain. The airstrip quickly deteriorated requiring major patching by engineer troops. This repair work was important because in late October local reconnaissance confirmed that at least four North Vietnamese regiments were converging through the forested hill country around the town. The second battle of Dak To, fought in November 1967, became a foremost example of the usefulness of the C-130 force within the context of allied strategy.²⁷

The 173d returned by C-130 to Dak To in the first week of November. Clouds and rain complicated the airlift at both terminals. As fighting increased in the heights immediately south of the airstrip and in the forest terrain to the west, the flow of reinforcements continued. A Vietnamese airborne battalion arrived from Hue on the fifth and sixth, another from Saigon on the thirteenth, and two more the following week. These latter moves were achieved by Vietnamese Air Force C-47s supplemented by American C-130s. Two battalions from 1st Cavalry Division were sent by C-130 from An Khe in mid-November. Thus, of the fifteen allied battalions in the battle area, most entered by air. Westmoreland later reported that the reinforcements had beaten the enemy to the punch, denying initiative to him.²⁸

The consumption of supplies at the Dak To fire support area soared, particularly of artillery ammunition. On November 6, in the hopes of completing a C-130 resupply within forty-eight hours, the MACV command center proposed to commence night landings using emergency runway lighting. An alternative was night delivery to the airstrip at Kontum which was twenty-five miles away. MACV decided to hold off adopting either approach, but shortly before midnight on the eighth, fire support officers at Dak To forecast a zero balance by the next morning. A sustained high-volume daylight airlift followed until a desired three-day supply was attained. A daily allocation of twenty C-130 sorties was thereafter established while other needs were met by emergency requests. Distribution forward of the fire support area to battalion and artillery locations was by helicopter and truck.²⁹

Conditions on the ground at Dak To reflected the absence of a joint doctrine for airhead control. During the September operations two C-130s collided with Army trucks; the second collision occurred during takeoff. Another departing C-130 hit a bulldozer in mid-October killing its driver; the aircrew landed safely, but the aircraft was damaged beyond economic repair. These incidents resulted from an absence of paved roads at Dak To

TACTICAL AIRLIFT

and vehicles were obliged to stay close to the runway to avoid the mud. Still more dangerous was the heavy and apparently uncontrolled helicopter traffic which sharply increased during the November battle as helicopter crews shuttled in with fresh loads of supplies, ammunition, and fuel. On November 8, Brig. Gen. Hugh E. Wild, acting commander of the 834th Air Division, informed MACV that the possibility of a C-130 loss must be accepted if operations were to continue into Dak To. His warning brought a decision to continue landings, but at the same time attempts were made to improve helicopter and vehicle traffic control. The absence of further tragedy spoke well for the watchfulness of the C-130 crews aided by an overworked combat control team detachment. The air about Dak To contained not only the smoke of battle but the oaths of irritated C-130 pilots.³⁰

At times as many as five C-130s were simultaneously on the ground at Dak To, some waiting for offloading, while others were temporarily blocked from departing the cramped parking area. The ramp and the adjacent ammunition storage area thus offered a fine target for enemy mortar teams, several of which were spotted by allied troops outside the airstrip perimeter. On November 12, several mortar rounds struck the airfield hastening the departure of the aircraft then parked. The attack caused no damage. Despite these warnings the airlifters made no change in their routine. But taking advantage of ranging information which they had gained earlier, communist mortar crews opened fire in early morning three days later, choosing a moment when the last of three C-130s on the ramp had stopped its engines. A fourth aircraft which had just landed took off immediately. About ten mortar rounds hit the parking ramp, destroying two of the C-130s and igniting several fires. A third Hercules received shrapnel damage and leaked fuel. During a lull in the attack, about twenty-five minutes after its beginning, two members of an aircrew ran from shelter to their plane. They started its engines, backed the aircraft away from the others, and taxied away. Their action unquestionably saved all of the aircraft and was lauded by the commander of 4th Infantry Division who witnessed the episode. Capt. Joseph K. Glenn and Sgt. Joseph F. Mack of the 776th Squadron at Ching Chuan Kang received Silver Stars for their heroism. The award was made in person by General McConnell.

Meanwhile, a pallet containing ammunition was still inside one of the other transports and detonated, while the burning fuel on the ramp flowed into the ammunition area. And fresh mortar rounds brought spectacular explosions of the stored ammunition. The explosions continued at intervals well into the night. All Air Force personnel, including the stranded aircrews, the combat control team, and a five-man aerial port mobility team survived the disaster. Lost were thirteen hundred tons of ammunition which represented the entire fire support area stockage, and seventeen thousand gallons of fuel.³¹



Sgt. Joseph F. Mack and Capt. Joseph K. Glenn (center) receive Silver Stars and Distinguished Flying Crosses from Air Force Chief of Staff Gen. John P. McConnell for saving their damaged C-130 during the battle of Dak To.

With the Dak To airstrip closed and supply stocks down to critical levels, extraordinary resupply efforts were clearly required. Airdrops were considered, and drop-rigged loads of munitions were positioned on the ramp at Cam Ranh Bay. Instead, C-130 landings were temporarily shifted to Kontum for overland haul to Dak To. Fast work by Army ordnance disposal personnel cleared the Dak To airstrip, and C-130 landings resumed on the seventeenth, shuttling ammunition in daylight hours only. Only one aircraft was permitted on the ground at a time. The C-130s landed from the east and were met on the opposite end by an aerial port team with its equipment. Offloadings were done rapidly while the engines turned; aircrews took off in minutes toward the east. Meanwhile, ammunition-carrying transports circled overhead awaiting an opportunity to land.³²

The Dak To campaign climaxed with a vicious five-day fight on Hill 875 to the west. The airlift effort phased down rapidly thereafter. Logistics

had been vital and the 1st Logistical Command reported receipt at Dak To of 12,700 tons during November, of which 5,100 arrived by air; the traffic management agency, on the other hand, indicated that the airlift system had delivered 8,600 tons of cargo in support of the operation, including deliveries to Kontum and Pleiku. General Westmoreland, in his public report on the course of the war published in 1968, concluded that "along with the gallantry and tenacity of forces, our tremendously successful air logistics operation was the key to victory."³³

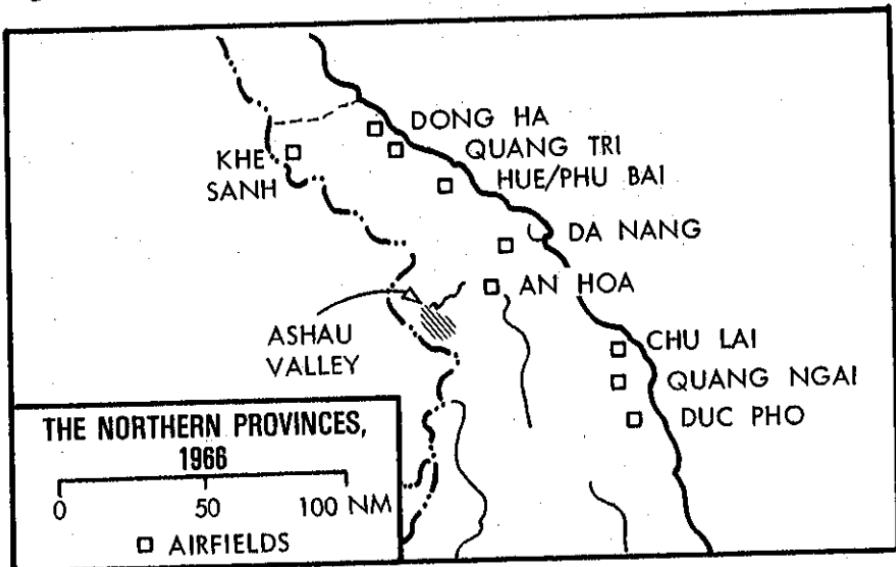
Throughout the first half of 1966, U.S. Marine forces gradually enlarged their pacification and local offensive activities, extending them well beyond the original enclaves of Da Nang and Chu Lai. Marine battalions further deployed into the demilitarized zone in midyear.³⁴ Logistics support for the entire I Corps area was channeled through the major sea and air port of Da Nang. Most shipments came by water, but air deliveries were made from off shore by MAC, the 315th Air Division, and the Marine KC-130 unit on Okinawa.^{*35}

The isolation of the northern region from the rest of South Vietnam made vital the ability to bring in reinforcements, a role for which the speed, range, and capacity of the C-130 were well suited. A series of MACV plans developed in 1966 provided for airlifting north various combinations of airborne and airmobile brigades. Contingency Plan Oregon conceived the idea of introducing below Da Nang a new U.S. Army division and of freeing Marine units for the growing confrontation on the demilitarized zone. The 834th Air Division calculated that a four-brigade force could be lifted from southern bases to Chu Lai in four days. The effort would require forty-four additional C-130s from overseas as well as fifty percent reduction in normal in-country airlift activity.³⁶

Westmoreland decided in April 1967 to deploy Task Force Oregon (later known as the 23d or Americal Division) which required an immediate shift of two brigades. A brigade of the 1st Cavalry Division deployed from nearby regions using its own resources, but the second, the 196th Light, required an airlift of more than three hundred miles. Orders were issued on April 7. Air Force tactical airlift officers worked with the 196th planning the move and setting up the Tay Ninh airstrip for the loading. A combat control team, an aerial port team, and a C-130 maintenance detachment also were moved to Tay Ninh. A tacan aid was installed along with oil-barrel flarepots to supplement the battery-powered lighting.³⁷

C-130 operations began on the morning of April 9. The first 196th troops landed at Chu Lai in early afternoon. Flying time from Tay Ninh to Chu Lai was approximately ninety minutes, and with good fortune and an hour or so extension a crew could make three round trips in a twelve-hour

* Marine Aerial Refueler Squadron 152 shifted from Iwakuni, Japan, to Futenma Marine Corps Airfield (MCAF), Okinawa, August 11, 1965.



day. The aircraft refueled at Chu Lai. Sixteen aircraft were kept steadily in the operation except for a six-hour disruption on April 11 caused by a communist mortar attack at Chu Lai. The movement was completed shortly after nightfall on April 14. Over thirty-five hundred troops and four thousand tons of equipment had been hauled during 350 sorties. Twenty additional C-130s and forty-four aircrews from off shore augmented the in-country force so that normal mission activity was undisturbed. A divisional logistics officer reported that the move of the 196th was accomplished very smoothly. The officer cited the "top-notch job" performed by the airlift liaison officers and aerial port personnel at Tay Ninh, and he contrasted the large number of transports available for this move with the sparse airlift support in the past. Later in April, the 130s assisted in the moves of two additional brigades to the Oregon area as well as in the shift of Marine forces northward.³⁸

A month later, from off shore, C-130s staged a speedy troop reinforcement of the northernmost Marine position. On May 14, planes and aircrews from each of the island bases converged on Naha for loading. All missions then delivered cargo to Dong Ha. The air transports offloaded with engines running, holding their average ground time to twenty minutes; most flew on to Chu Lai for refueling. On the ground at Dong Ha there were an Air Force mission commander, a C-130 maintenance element, an aerial port team, and a combat control team. The thirteen hundred-mile move of twelve hundred Marines and three hundred tons of equipment was completed forty-four hours after the initial notice to the 315th Air Division. The effort demonstrated the readiness of the offshore C-130 force for emergency operations.³⁹

If the airlift into the northern provinces was at all times a useful asset, airlift within the region was sometimes critical. Air transport supplemented the often inadequate surface modes for movements between coastal points, and formed the sole lifeline for Special Forces camps in the thinly populated interior. Available for these air transport duties were the Providers of the 311th Air Commando Squadron at Da Nang, detachments of Caribous and Army utility craft, numerous Marine helicopters, Air Force C-130s transiting the region, and several administrative transports organic to the Navy and Marine commands at Da Nang. In addition, the Marines placed a KC-130 detachment at Da Nang on June 1, 1965, rotating their men and aircraft from the parent squadron offshore. While in-country the KC-130s lifted between Da Nang and the main airfields at Chu Lai and Phu Bai (near Hue), refueled strike aircraft aloft, and made occasional airdrops to field units. The detachment usually consisted of three aircraft but was temporarily expanded to eight during the July 1966 movement to Dong Ha.⁴⁰

Airlifters of the separate services joined in the relief efforts during the final desperate hours of the besieged Special Forces camp in the A Shau Valley, sixty miles west of Da Nang and on the main artery for enemy forces entering South Vietnam from Laos. For years C-123s and Caribous had made landings or drops several times weekly to the post and the nearby A Luoi camps, often encountering enemy ground fire and difficult weather conditions. After December 1965, North Vietnamese forces converged on the A Shau camp. Heavy mortar and infantry attacks began after midnight, March 9, 1966, and destroyed the camp's supply area. Low ceilings hampered resupply that day, but during the afternoon two Army Caribous and two C-123s penetrated the overcast to make successful munitions drops. One of the C-123s was badly damaged by gunfire but made it back to Da Nang. This resupply ended after the Caribou drops on the tenth descended into enemy hands and the camp fell to the enemy.⁴¹

The allied base at Khe Sanh, situated in the hill country in the northwest corner of the republic, was known well to the airlifters. The site had been in use since 1962 as a Special Forces and CIDG camp, and was well situated for launching air-and-ground surveillance operations into the Laotian panhandle. C-130s began landing occasionally in February 1966, and a three thousand-foot runway was completed later in the year. A U.S. Marine company garrisoned the airfield and patrolled the nearby area. In late April 1967 their patrols encountered dug-in communist troops on the heights five miles from the base. Two reinforcing Marine battalions landed at Khe Sanh by helicopter, and KC-130s and C-123s began regular deliveries of rations and munitions. In a four-day fight the Marines took the hill positions at a cost of a hundred men.⁴²

After considerable effort, Marine engineers reopened the primitive road between Dong Ha and Khe Sanh (Highway 9), unused since 1964.

However, frequent communist demolitions and an ambush during the summer led to a command decision to rely solely on airlift into Khe Sanh. Unfortunately, summer rainfall and heavy usage by C-130s caused rapid erosion of the runway and the airstrip was closed to aircraft use in late August. The Marine KC-130s thereupon commenced daily drops of food, fuel, and munitions. Air Force C-130s meanwhile undertook the greater task of delivering construction materials for rebuilding the airstrip.⁴³

Airdrops of construction materials and extractions at Khe Sanh began on September 6. Each day thereafter, three Air Force C-130s flew container-drop missions and two others delivered supplies by LAPES. Recovery of the latter was simple. An M-48 tank dragged the seven-ton packages away from the extraction zone. Pickup of the container loads was less convenient and drops were halted at two each afternoon to permit recovery before darkness when enemy parties moved onto the undefended drop zone. Caribous in the meantime continued to land at Khe Sanh, picking up used parachutes and LAPES components. Empty LAPES platforms, too large for the Caribous, were carried out by helicopters. The effort of bringing in construction materials ended three days later. Nearly all items were serviceable upon arrival, although several loads broke apart from their LAPES platforms on extraction.⁴⁴

The forces at Khe Sanh remained entirely dependent on air resupply throughout the fall. Marine helicopters and Air Force Caribous continued landing, while Providers and Hercules made drops, primarily to deliver bunker materials, barbed wire, and metal for the erection of fortifications at the nearby Lang Vei camp. Misfortune intervened on October 15 when a C-130E crashed and burned under a low ceiling, three hundred feet short of the runway. Of the six crewmen aboard, only one survived. They had attempted to deliver a load of sandbags by the free-fall drop method, a technique used by Caribous and C-123s, and now authorized for C-130s.⁴⁵ The rebuilt Khe Sanh runway opened for Provider use on October 28 and for the C-130s a month later.⁴⁶

The Khe Sanh airdrops were forerunners of a more extensive resupply activity the next year. But in both years their endeavors required the co-operation of Navy suppliers, Army riggers, Air Force airlifters, and the Marines on the ground at Khe Sanh. The 1967 missions introduced the Marines to the capabilities and limitations of drops and extractions, led to refinements in rigging, and gave experience to all in poor-weather operations. Finally, by sustaining the Marines at Khe Sanh and aiding airfield construction, the airlift effort set the stage for the later confrontation at this site.

The increase of allied forces along the demilitarized zone (DMZ) provided extraordinary transportation problems. The northernmost provinces were isolated from Da Nang by a spur of the Annamite Mountains, reaching to the sea below Hue. A winding railway and roadway (Highway

1) which traversed the hill mass at the Hai Van Pass was easily blocked by enemy action. During late 1967, truck convoys moved only five thousand tons monthly over the highway and were hampered by road deterioration due to traffic, weather, and sabotage. Rail shipments were negligible and the tracks were hopelessly vulnerable to sabotage. Most transport north from Da Nang was by water, and landing craft delivered fourteen thousand tons monthly to Phu Bai and twenty-three thousand tons to Dong Ha. Marine trucks and helicopters redistributed forward from these points to units to the north and west.⁴⁷

Paralleling the surface lines of communication, Air Force C-123s and C-130s in late 1967 delivered twelve hundred tons to Phu Bai and twenty-two hundred tons to Dong Ha monthly. Communist artillery made a regular target of the Dong Ha base, and airlifters became acquainted with the waterlogged slit trenches and sandbagged shelters beside the offloading ramp. A notice at Da Nang advised pilots to shut down engines while offloading at Dong Ha so that the sound of incoming rounds could be heard. The destruction of vast fuel and ammunition supplies on September 4 confirmed the need for a second air-field along the demilitarized zone, preferably a site outside of enemy artillery range. General Westmoreland in the same evening ordered MACV to find a site near Quang Tri city, suitable for completion of a runway before the onset of the winter monsoon. Construction of the new base began in mid-September. The effort was given "unconditional first priority" in construction materials, and the first Hercules landed on October 23. The Dong Ha ammunition supply facility moved to the new site promptly and both airfields were thereafter used regularly by the transports. Airlift became the primary means for movements of passengers and patients to and from Dong Ha, Quang Tri, and Phu Bai, and became absolutely vital for munitions shipments during the crisis early in the following year.⁴⁸

The 1967 campaigns against Dak To and Khe Sanh suggested that the communists were trying to draw American forces away from the populated regions. The October attacks against the town of Loc Ninh and the nearby CIDG camp fit into the same pattern. The allies airlifted men and materiel into the battle area. Congestion among Hercules transports and helicopters was heavy, and orbiting aircraft were at times forced to depart without landing. Starting with the end of October, the C-130s flew 225 sorties in support of the battle, lifting reinforcements and over three thousand tons of cargo. A similar relief and resupply airlift went into the improved strip at Bu Dop northeast of Loc Ninh.⁴⁹

General Westmoreland planned to concentrate his winter offensive operations in the Saigon plain, taking advantage of that region's characteristic dry season. For the December Operation Yellowstone a thirty-day air supply effort had been planned for Katum. But priority airlift requirements elsewhere forced the intermittent use of road supply convoys, which occasioned unfair criticisms by Army logisticians about the undependability of airlift. Hercules aircrews landing at Katum found dense jungle vegetation growing close to the airstrip on all sides, and an air of insecurity took strength from the rumor that communist-dug tunnels were discovered under the runway.⁵⁰ The veracity of this is uncertain. Meanwhile, the 1st Brigade of the 101st Airborne Division returned by C-130 from an expedition to the northern provinces, moving first to Bao Loc and then to Song Be. The Bao Loc field was difficult for pilots to land on because of its severely humped runway slope and the sharp drop off at the western approach end. Other units of the 101st Airborne Division joined the 1st Brigade and they arrived at Bien Hoa in December by strategic airlift from Kentucky.⁵¹

Westmoreland's offensive plans were disrupted by communist pressure in the far north. The commandant of the Marine Corps addressed President Johnson by memorandum on September 22 advising that the situation in the demilitarized zone was one of "deteriorating weather and increasing enemy pressure." A senior Marine officer in the Pacific warned that unless the casualties due to enemy shelling were curbed matters would "resound all the way back to Dubuque."⁵² During January 1968 the entire 1st Cavalry Division shifted to the Hue region, supported by eight hundred Air Force transport sorties. Also moving northward was the 2d Brigade of the 101st, and it was hauled primarily by C-130 from Cu Chi to Phu Bai and to the new Quang Tri strip.⁵³

In assessing the course of the war at the end of 1967, the MACV staff calculated that the enemy's casualties were now exceeding his rate of infiltration and recruitment. The staff estimated that the communists could employ large forces only at the edges of their sanctuaries and that future allied pacification programs would therefore be successful. Westmoreland found the enemy "increasingly resorting to desperation tactics in attempting to achieve military/psychological victory." Meeting with the Joint Chiefs in November, he estimated that continued allied military pressure should permit a reduction in American involvement in two years or less. Less encouraging was the evidence in late January 1968 that communist main forces were infiltrating toward Saigon, Hue, Da Nang, and the provincial capitals. This was apparently a sequel to the enemy's attempts to draw allied forces to the border areas.⁵⁴

Although it may not have seemed so to the overworked men, the airlift system was well prepared to meet future tests. Mission control of the airlift force was close but flexible and the aerial port system was well developed. Transport crews knew Vietnam and were familiar with the

TACTICAL AIRLIFT

growing complex of airfields available to the C-130. Airdrop and extraction methods had been improved and rigging capabilities strengthened. On November 29, 1967, Brig. Gen. Burl W. McLaughlin, after a succession of airlift assignments including wing and air division commands in TAC, arrived in Vietnam to assume command of the '834th Air Division.⁶⁶ The instruments of airlift fashioned by Moore and his predecessors thus passed into the experienced hands of McLaughlin.

XIII. Tet and the Battles of 1968

348 — MAP OF DROP ZONES 109-Pg 333

The 1968 communist Tet offensive, probably triggered by a recent pattern of defeat represented a major turning point in enemy strategy. The communists had little hope of igniting a general uprising, but apparently expected the widespread attacks to weaken Saigon's authority and sap America's will. Although surprised by the extent and timing of the attacks, the allies in a few days dislodged communist units from most of their gains, with Viet Cong losses in men and weapons adding up to a serious military defeat for the communists.¹

The initial nationwide attacks momentarily disrupted the airlift system, although Air Force transports continued to make deliveries of troops and supplies to hard-pressed and isolated garrisons. By the fourth day of the offensive, February 3, the airlift system had regained its previous sortie level, but requirements for airlift steadily increased as units exhausted their supplies and surface lines of communication remained cut. The transportation situation was most critical in the northern provinces where the airlifters supported allied forces engaged at Khe Sanh and Hue, and in the eastern demilitarized zone where winter monsoon conditions made aerial transport extremely difficult. To assert that airlift saved the allies during Tet would be an exaggeration, but it is clear that the speed of the allied recovery during February was made possible by air transport.

The airlift system continued at forced volume into the summer of 1968, as intense fighting continued and the number of allied battalions to be supported increased. Two extraordinary episodes highlighted airlift operations. Air resupply of the 1st Cavalry Division's Operation Delaware (the air invasion of the A Shau Valley) succeeded despite conditions at least as difficult as those recently faced at Khe Sanh. And soon afterwards air evacuation of the Kham Duc camp, under threat of imminent communist capture, produced the Common Service Airlift System's only Medal of Honor winner, Lt. Col. Joe M. Jackson. Another late-year airlift activity was the redeployment by air of the 1st Cavalry Division, shifted from the north to the border areas about Saigon.

549th; 333-334
Cam Ranh Bay & Da Nang = 109th ^{1,21594} (Lorrell Hame) ^{1,21594}
Bien Hoa = 383² w/ TDY 549th (Lorrell Hame)
Nha Trang = Special Forces Riggers 31'
33 Marine Riggers in Da Nang Also.



Lt. Col. Joe M. Jackson receives the Medal of Honor from President Lyndon B. Johnson at a White House ceremony, January 16, 1969. The airlifter was commended for his valor during the air evacuation of Kham Duc, 1968.

Early into the lunar New Year—a half hour past midnight on January 30, 1968—communist units launched scattered attacks against government posts in Nha Trang. These soon swelled into a concerted attempt to seize the city. Before dawn, bitter fighting erupted in a half-dozen other cities from Ban Me Thuot north to Da Nang. The night was clear, and C-130 crews could look down on the firefights in the towns and on the perimeters of bases. The airfields at Nha Trang, Kontum, Ban Me Thuot, Pleiku, and Da Nang—all customary stopping points for airlift transports—were shelled and attacked by infantry fire. Transport crews of necessity delayed landing during attacks, either orbiting until things quieted or proceeding to other destinations.

Heavy fighting continued after daylight with allied units counter-attacking at many points. Most fields soon reopened for the airlifters, but crews landing at Nha Trang could watch nearby allied air and helicopter strikes against communist positions inside the city. Communists held the radio and police stations at Qui Nhon most of the day but, despite sniper

fire, the airfield remained open to receive Vietnamese and Korean troop reinforcements. At Ban Me Thuot, the communists temporarily held the civil airport and probed the military airfield further east. The C-130 bases—Tan Son Nhut, Cam Ranh Bay, and Tuy Hoa—were largely untouched, and the entire southern half of the republic remained quiet. It later appeared that the January 30 attacks had been mistakenly launched twenty-four hours earlier than intended.²

The full nationwide offensive opened in darkness the night of January 30/31. For the C-130B airlifters at Tan Son Nhut, the night was one of peril. Multibattalion communist assaults against the air base began shortly after midnight and one enemy battalion penetrated several hundred yards inside the base perimeter bunker line. Small arms harassed the C-130 parking ramp and fire from the roof of a nearby textile mill prevented landings and takeoffs. Helicopters, gunships, and fighter planes pounded communist forces on the airfield perimeter and in the textile mill. Those aircrewmen not flying had been summoned to the base the previous afternoon, but six officers were inadvertently left sleeping in upper floors of their hotel. They were awakened by the sound of grenades and automatic weapons when the communists occupied the hotel's ground floor, but the intruders never penetrated to the upper levels.

The airlift control center at Tan Son Nhut was flooded by emergency situation reports coming from all parts of the country, while hard pressed amid the local fighting to remain on the air. Transports returning to Tan Son Nhut were diverted to other points. Two C-130s landed at Vung Tau, where the local detachment was unaware of the crisis at Saigon. After refueling, the planes took two hundred Vietnamese marines aboard and headed for Saigon. They arrived at dawn to learn that the field was still closed, but after some discussion they were allowed to land. The marines disembarked and immediately joined the battle. Later that day another five hundred troops were airlifted from Vung Tau to Tan Son Nhut. In all, twenty-six transports landed at Tan Son Nhut on January 31, eleven of them from Vung Tau.

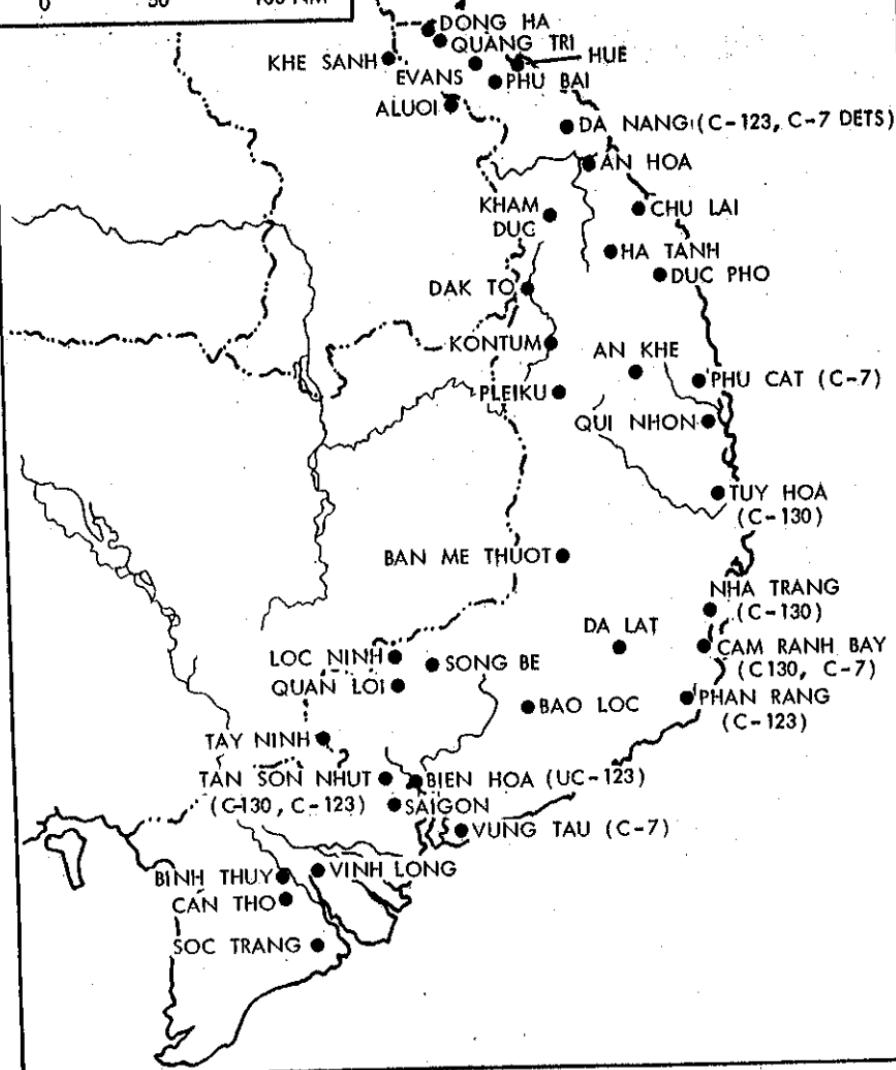
Except for a few aircraft, all C-130Bs were flown from Tan Son Nhut to Cam Ranh during the morning of the thirty-first, and for the next several days the detachment operated from Cam Ranh. The C-123s of the 19th Squadron also were evacuated from Tan Son Nhut on the thirty-first, although many squadron personnel were left behind in scattered downtown billets unable to get to the airfields. Extra crewmen were flown in from the Phan Rang squadrons to help with the evacuation. The aircraft flew missions out of Phan Rang for three days before returning to Saigon.³

The night attacks of January 30/31 raged at hundreds of provincial and district centers. Fighting flared up again at Qui Nhon, Nha Trang, and the other points attacked the night before. The most successful communist attack was at Hue, where eight regular battalions infiltrated and captured

TACTICAL AIRLIFT

COMMON SERVICE AIRLIFT SYSTEM BASES AND OPERATIONS, 1968

0 50 100 NM



much of the city including the Imperial Citadel. Many airfields, including Bien Hoa, were attacked and forced to close for much of the night. Da Nang was pounded by heavy mortar and rocket fire, and pitched battles were fought at Kontum and Ban Me Thuot. C-130 crews attempting to fly night missions soon saw that useful operations were impossible and returned to Cam Ranh. Mission activity through the thirty-first was greatly curtailed; 625 sorties were flown, against a daily average of over eleven

hundred for the previous thirty days. Moreover, many of the sorties flown were unproductive because of intermittent airfield closings during actual or anticipated attacks. The day's missions to Khe Sanh, however, were unaffected by the crisis.⁴

Of several emergency airlifts in the first hours, the most noteworthy was the resupply and reinforcement of the hard-pressed Vietnamese defenders of Ban Me Thuot. The communist forces held numerous strongpoints, threatened both the civil and military airfields, and surrounded the local military headquarters. Late in the afternoon of the thirty-first, C-123s began emergency resupply missions to the Ban Me Thuot military field, and continued into early evening. Oil was burned in oil drums to thwart the dusk. Eleven C-123s and two Caribous touched down with over sixty tons before landings were halted. Shortly after midnight, an emergency troop lift began into the city's civil airfield, near the heavy fighting. Five C-123K crews picked up troops of the 23d Ranger Battalion at Bao Loc, itself under fire. In miserable weather they transported more than three hundred troops to Ban Me Thuot by dawn on February 1. Despite automatic-weapons fire and occasional mortaring of the landing strip, all aircraft survived, but one was hit fifteen times, another thirteen. The headlamps of vehicles placed along the runway provided field lighting. Emergency troop movement directly into battle by night was unprecedented in Vietnam, and earned a message of congratulations from General Westmoreland. Equally meaningful was the admiration of the Army operations officer at Nha Trang, who said of the Air Force, "I'll tell you they'd do anything."⁵

Heavy fighting continued at many points during the first day of February, although it was clear that the Saigon government would survive the onslaught. Reactions of the Vietnamese people to the conflict were pivotal, and most were bitter toward the communists for starting the nightmare. Westmoreland at midday prescribed that counterattacks be made during the expected enemy withdrawals.⁶

For the airlift system, conditions remained difficult but were stabilizing, permitting a total of 887 sorties during the day. Aircraft maintenance work had been disrupted by the evacuations from Tan Son Nhut and by a virtual halt of night labor as Vietnamese civilians failed to show up for aerial port and base housekeeping jobs. Typical of the personnel reaction was that of the control element and aerial port staffs at Qui Nhon. Although fatigued from two sleepless nights in bunkers, they promptly manned their posts around the clock. Airstrips were again open, but flying crews were careful to assure themselves that conditions were safe before landing. It thus appeared that the Common Service Airlift System had weathered the enemy's blows. After hundreds of landings at places under intermittent attack, not a single transport had been lost. The air transport

TACTICAL AIRLIFT

emergency had only begun, however, since reserve stocks of munitions and fuel used in the early battles were beginning to require replenishment at many locations.⁷

U.S. Army logisticians surveying the badly dislocated countrywide transportation system at midday, February 1, found that inland road movements in the II Corps area had been blocked by Viet Cong units since the start of the offensive. A convoy from Qui Nhon for Dak To, starting out earlier that day, was stopped by rifle and mortar fire only a few miles out of town. The roads from Cam Ranh Bay to Da Lat and Ban Me Thuot were officially closed. Heavy fighting continued at Da Lat, Ban Me Thuot, and Kontum, forcing airfields at all three cities to close. The detonation of eight hundred tons of munitions at Qui Nhon on January 31, and another one thousand tons the next day, necessitated temporary realignment of in-country supply routes as well as offshore replenishment airlifts. In the Saigon region all major highways, including the links to Tay Ninh, Phuoc Vinh, and Loc Ninh, were closed by enemy sabotage and roadblocks. Convoys caught at outlying points two days earlier still waited for engineers to clear the way. Truck movements within the delta also were at a standstill since the Vietnamese drivers, fearing reprisals, stayed away from work. River barges which normally served the region were held up at Vung Tau. Rail movements countrywide were entirely stopped. Several priority airlifts provided stopgap transportation, delivering ammunition to Dak To, jet fuel to Song Be, and Phuoc Vinh, and a combat essential airlift was readied for Can Tho. For the next several days, emergency and combat-essential movements monopolized all airlift capability and routine requests were pushed aside.⁸

Two C-123s of the 315th Wing executed a classic night airdrop resupply on February 2 at Kontum. The city had been critically short of ammunition since the previous day although Army helicopters did manage several deliveries. The drop zone was a compound, 75 by 150 yards, at the northwest edge of the town. Helicopter and C-47 gunships intermittently sprayed communist positions and the enemy replied with tracers. As Provider crews circled, the defenders fired a short-duration white-phosphorous grenade, establishing the target location with relation to nearby fires. The airlift crews quickly maneuvered into low-level patterns, and successfully dropped over five tons of munitions inside the darkened perimeter.⁹

Within the II Corps highlands region the transportation picture improved slowly, although road traffic was plagued by daily ambushes, landmines, and sabotage. Airlift transports averaged over thirty landings

daily at Pleiku during the first week of February. And, since road travel to Dak To was at a standstill, C-130s lifted in sixteen loads of munitions from Qui Nhon and Cam Ranh in two days. The Dak To strip remained in use by the Hercules until February 3 when a ten-foot crater reduced usable length by 750 feet. Landings thereafter were mainly by Caribous, although several C-130s landed on the fourth, touching down just past the damaged point. At Ban Me Thuot the Hercules averaged eight landings daily, mainly into the military airfield while, in a maximum single-day effort, C-123 Providers hauled twenty-five loads into the civil strip, beginning at first light February 3 and continuing until dark. At battered Kontum most landings were by U.S. and Australian Caribous, until normal operations resumed on February 7. C-123s and C-130s lifted over one thousand men into the battle at Da Lat from February 2-9. Fighting ended at Kontum on February 4, at Ban Me Thuot on the sixth, and at Da Lat on the tenth. By February 11, road convoy activity in the region was described as normal.¹⁰

Within the III Corps area road clearance was slower, necessitating dependence on fixed-wing and helicopter airlift for resupply of areas usually reached by road convoy. There were numerous requests for ammunition lifts to various base camps and forward airstrips. And frequent emergency resupply lifts of jet fuel to Song Be continued through February 4, C-130 landings at that 101st Division airhead averaging sixteen daily for the first five days of the month. In one tactical emergency lift on February 2, five hundred troops and over one hundred tons of equipment of the 101st Division were moved in seventeen sorties from Song Be to Tan Son Nhut and the Saigon fighting. Road closings also necessitated airlift shuttles between Tan Son Nhut and the Bien Hoa depot, hauling aircraft spare parts for the Vietnamese Air Force. The first convoy for Tay Ninh, consisting of 141 trucks, departed early on February 3. Halted several times by firefights and roadblocks, the convoy finally arrived back at Long Binh after five days, completing a mission normally requiring only a day. Convoys from Saigon to other destinations gradually resumed, although they were frequently delayed by the need for extra security and road repairs.¹¹

Emergency airlift was especially important in the IV Corps delta region where petroleum stocks were relatively low and where reliance on surface transportation had been nearly total. During the first fifteen days of Tet, Hercules and Provider aircraft lifted over thirty thousand tons of cargo in the corps area. This tonnage included jet fuel and 2.75-inch rockets, primarily for Army aviation operations. Airlift focal points were the main Army aviation centers of Soc Trang, Can Tho, and Vinh Long, and the Air Force installation at Binh Thuy near Can Tho. All except Binh Thuy had been attacked heavily on the first day of Tet. At Soc Trang C-130 deliveries of jet fuel began on January 31 when stocks were depleted. The 130s hauled in thirty thousand gallons that day, followed by

TACTICAL AIRLIFT

twenty-six thousand gallons the next, to meet an anticipated consumption of thirty-two thousand gallons daily. Shortages of storage and handling equipment prevented a still greater effort. C-130s also began delivering munitions to the defenders of Can Tho on February 1, hauling them from Cam Ranh to Binh Thuy. Mishandling at Binh Thuy, however, apparently caused some emergency deliveries to be issued to the wrong units, and the confusion was compounded by the experience of 5th Special Forces Group in initiating emergency requests for air delivery into the delta.

Since the C-130 Hercules landed only at Soc Trang and Binh Thuy, operations elsewhere in the delta depended heavily on the C-123 Providers. The 123s flew eight sorties daily into Can Tho, Vinh Long, and several other strips not ordinarily visited by 123s. Especially dramatic was a night emergency resupply into Vinh Long on February 2. Request for the flight was made by friendly forces although they held only the northwest corner of the strip. A Provider was quickly loaded for a five-ton munitions and rations drop. While it was en route the defenders recaptured the rest of the airfield, and it was decided to attempt a landing. Protected by two gunships, the plane made a precision approach by the light of airdropped flares, landed, unloaded its cargo, and was airborne again within five minutes.

In addition to the C-123s and C-130s, other aircraft hauled supplies into the delta region. Three Chinooks bore nearly the entire burden of resupplying some seventy artillery sites, and three Air Force Caribous each averaged seven sorties daily through February 14. U.S. Army fixed-wing Otters delivered to smaller airstrips. Airlift remained absolutely vital in the delta region until February 14 when the heavy fighting near Can Tho from the north resumed.¹²

Other events also swelled the countrywide demand for airlift. Heavy usage of U.S. Army aircraft in the early crisis quickly led to numerous requests for airlifts of spare parts. Three C-123s were allocated for parts deliveries from Tan Son Nhut to various aviation units. Deliveries started February 1 and by the evening of the third the Providers had hauled sixty tons of Army parts. One C-123 was later placed under daily operational control of the Qui Nhon airlift control element to shuttle repair parts to Army aviation units in the northern half of the country. Vietnamese forces likewise needed supplies, so MACV on February 11 granted Vietnamese and American forces equal priority for emergency air resupply.

The Common Service Airlift System flew more than one thousand sorties on February 3, approximately the pre-Tet rate. Tonnage airlifted on that date exceeded the late-1967 daily average of thirty-six hundred tons and thereafter remained generally well above this amount. Despite the fast recovery much routine cargo was left unmoved, intensifying the use of priority requests among those competing for service. Over the first nine days of Tet, priority movements accounted for over one thousand sorties

lifting ten thousand tons, more than ten times the normal rate. As early as February 2, the airlift control center was unable to schedule enough aircraft to meet all priority requests. Two days later, General Westmoreland recognized the "serious strain on our overloaded airlift assets," and directed that resortation of surface transportation take equal priority with the destruction of enemy forces. Expansion of American ground forces in Vietnam, the imminent confrontation at Khe Sanh, and the clear communist capability for fresh attacks—all reinforce the conclusion that an expansion of the Common Services Airlift System was needed.¹³

The events of Tet intensified the already dangerous situation in the northern provinces, which as early as January 1968 required the presence of the 1st Cavalry Division and a brigade of the 101st Division. Marine intelligence reports in February placed enemy strength in the demilitarized zone and Quang Tri Province at fifty thousand combat troops, including thirty-two North Vietnamese infantry battalions. Tet attacks against Quang Tri and other towns were repulsed by February 2, except for Hue where the communists won world attention by holding out until February 25. Communist forces, however, blocked Highway 1 and the river mouths into Hue and Dong Ha, choking transportation from Da Nang to the north. Substituting for surface transportation amid chronic drizzle and low ceilings, the airlift became badly overloaded. Most affected was transportation support for the 1st Cavalry Division at Camp Evans, with four battalions engaged about Quang Tri, and two (eventually four) committed to isolating Hue on the west and north. Two hundred helicopters were based at Evans, with the main supply line running down from Dong Ha, now itself accessible only by air. Evans as yet had no runway capable of accepting C-130s, but in a four-day effort, February 4-7, Air Force C-130s in twenty-six airdrop sorties delivered over 350 tons of supplies, mainly ammunition, to Evans. A five-man Air Force combat control team parachuted in on the first day and controlled the later drops. Most of these sorties came from Cam Ranh, thus by-passing busy Da Nang and Dong Ha, although some ships landed at Da Nang to refuel and pick up second loads.¹⁴

The Evans missions were at least as difficult as those at Khe Sanh. Ceilings were below one thousand feet throughout the period, with scattered cloud cover down to five hundred feet. Crews used ground controlled approaches to line up, located panels on the ground visually, and used stopwatch timing to determine release points. The run-in path lay along Route 1 and the coastal railroad which formed an excellent visual refer-

TACTICAL AIRLIFT

ence for the drop zone, which lay between the road and railway. In order to release cargos visually, crews flew just below the clouds, in many cases releasing loads from well below the normal five hundred to six hundred feet. Hostile fire was severe. One crew—Lt. Col. Virgil H. Rizer, Maj. Billy R. Gibson, and Maj. Eugene Hartman—flew five drop sorties, taking hits on three, losing an engine just before drop on one, and on another using all fuel from three internal tanks. Slightly improved weather on the third day of the airlift allowed normal run-in and drop altitudes and, although ground fire seemed more intense, no hits were received. The 1st Cavalry Division commander later wrote of the "tremendous job" done by the aircrews during the Evans drops, and described the strange sight of parachutes descending out of the clouds. Caribou and Provider landings at Evans, virtually halted since January 31, resumed on February 13 and 19 respectively.¹⁵

Common Service Airlift System C-130s also made over one thousand landings during February at Phu Bai. Cargos included aviation fuels, munitions, military equipment, rice, and relief supplies needed by allied forces engaged in the Hue battle. Return flights lifted out allied dead and wounded, and many civilian refugees. Transport crewmen, used to the impoverished Vietnamese seen about Tuy Hoa, Cam Ranh, and the forward airstrips, were impressed by the well-dressed, urbane appearance of many Hue evacuees. Meanwhile, more than 350 airlift sorties landed at Quang Tri and Dong Ha, supporting allied forces in the eastern DMZ. In one ten-day period C-130s made nearly one hundred sorties bringing in munitions from Qui Nhon. By delivering from Qui Nhon and points south, the C-130s helped reduce congestion at overburdened Da



Members of the 82nd Airborne Division board a MAC C-141 at Pope AFB, North Carolina, for deployment to Southeast Asia, February 1968.



Courtesy: U.S. Army

UH-1D helicopter belonging to the 82nd is loaded onto a C-133, bound for Vietnam.

Nang. The sustained effort in the northern provinces claimed one C-130. It was destroyed while attempting to land at Phu Bai in light rain on the night of March 2, and six passengers were fatally injured.¹⁶

During the second week of February men and equipment for a new Headquarters MACV, Forward, were hauled from Tan Son Nhut to Phu Bai, and a twenty-three-sortie tactical emergency lift hauled a battalion of the 101st Airborne Division north from Song Be. The division's advanced headquarters flew to Quang Tri on the fourteenth, and moved to a new camp west of Hue several days later. C-130s also assisted in moving Vietnamese marines from Tan Son Nhut to Phu Bai on the fourteenth, to replace depleted Vietnamese paratroop units. The biggest troop movement in February was the air and sea shift of the remainder of First Brigade of the 101st Division to Phu Bai. To accomplish this shift, C-130s made 12

sorties from Bien Hoa and Song Be the week February 17-23. Most of these sorties lifted vehicles, equipment, and supplies; the actual hauling of troops amounting to only twenty percent of the airlift. The departures from Song Be brought caustic comment from aircrews who had just finished lifting the brigade and massive supplies into that airhead. During the month of February there were well over two hundred C-130 hauls to Phu Bai from Song Be, Bien Hoa, and Tan Son Nhut. These long hauls, averaging more than an hour's flying time, were a drain on airlift capability, but served a secondary purpose by making aircraft from the southern bases available for further work in the north during the remainder of each crew's twelve-hour mission day.¹⁷

Aware that substantial North Vietnamese forces were still uncommitted, President Johnson on February 12 approved an accelerated air movement from North Carolina to Vietnam of a brigade of the 82d Airborne Division. This long-range move by MAC airlift began on the fourteenth, the President in person bidding the troops farewell. The flights terminated at Chu Lai, but one newly arrived battalion flew on, in forty-seven sorties, to Phu Bai. Also augmenting the allied forces in I Corps were six additional U.S. Marine battalions, deployed late in the month from outside Vietnam.¹⁸

Airlift capabilities in the north were now clearly saturated. Only tactical emergency and emergency resupply priority deliveries could be assured. Positioning a Hercules detachment at Da Nang was considered but ruled out because of the danger of shelling. Instead, a nineteen-man maintenance team was stationed at Da Nang, along with Hercules spare parts and equipment. To reduce landing and takeoff delays, sometimes exceeding an hour, additional radar approach control equipment was brought in and installed. Aerial port mobility teams were sent to Quang Tri and Phu Bai, and a new airlift control element also was established at Phu Bai. Preparations for possible airdrops in the DMZ region, however, proved unnecessary.¹⁹

For the full month of February, Seventh Air Force reported that thirty-six thousand tons of cargo had been airlifted to points in the I Corps area, a fifty percent increase in tonnage from the average of the previous nine months. This amounted to one-third of the countrywide workload. River access to Hue and Dong Ha reopened intermittently during the month, allowing sixty-eight thousand tons of cargo to move by water from Da Nang to other points in I Corps. In addition, Marine Corps CH-53s moved forty-three hundred tons between the coast bases. On March 1, however, restoration of Highway 1 to Phu Bai and Dong Ha brought to an end the critical transportation problem.²⁰

Several circumstances made immediate buildup of in-country airlift capacity difficult. Expansions of the past twelve months had absorbed more

unused ramp and billeting space at South Vietnamese bases and strained existing aerial port and traffic control facilities. Offshore flying hours of C-130 wings were close to the limit consistent with safety, even though most training and overwater airlift flights had been dropped. Moreover, the *Pueblo* incident in January 1968 required 315th Air Division support for nearly two hundred Air Force planes newly sent to South Korea. And sixteen TAC C-130s and crews were moved from Forbes Air Force Base, Kans., and Sewart Air Force Base to Japan to work in Korea under MAC control. To restore airlift capability in Vietnam, CINCPAC on February 2 requested more planes. As a result, two more TAC squadrons for use by the 315th Air Division arrived at Tachikawa, Japan, February 7-9.²¹

Sixteen C-130Es and twenty-five crews from Tachikawa moved to Cam Ranh Bay the second week in February. General McLaughlin briefed the new crewmen, stressing the need for mission safety despite the importance of every operational delivery. The TAC crewmen began in-country missions on February 11. Although many had recently completed full tours in the Far East, all flew initially with instructors from the assigned Pacific wings. Especially welcome in Vietnam were the fresh aircraft—clean and free of the many malfunctions common among veteran aircraft in Vietnam. The newer TAC ships were intermingled with the 314th E-models at Cam Ranh, and were flown by either TAC or 314th Wing crews. Aircraft were rotated from Tachikawa, with sixteen kept at Cam Ranh at all times; crews cycled for fifteen-day tours in Vietnam. The Sewart-Forbes squadron moved to Clark Air Base on February 15 and now flew under 315th Air Division Control. Ten days later, an eight-plane detachment, primarily from Langley, began flying from Nha Trang as the 315th Air Division's Task Force Bravo. This raised the total C-130 airlift fleet in Vietnam to ninety-six.²²

C-123 missions increased from thirty-eight daily to forty-nine, each mission averaging seven planes. This increase was made possible by a decision to convert UC-123 spray aircraft of the 12th Air Commando Squadron to full-time transport work. Removal of spray equipment from all sixteen of the Ranch Hand aircraft began February 8 and required roughly fourteen man-hours per plane. Following the conversion, flights from Bien Hoa were for airlift exclusively. The shift to airlift usage presented no special problem, except for the temporary need for loadmasters from other units. The 12th Squadron returned to spray duties on March 20, having averaged over seventy sorties daily during its airlift stint.²³

Several expedients were devised to ease problems of airfield saturation. The enlarged C-130 capability was used as much as possible at night to minimize daytime traffic. Aerial ports also received additional handling equipment and more than two hundred airmen were assigned temporarily to aerial ports during the month. Even so, the Seventh Air Force warned that more were needed to avoid "airlift system degradation." To minimize

TACTICAL AIRLIFT

abuses of the priorities system, the MACV combat operations center and the traffic management agency were frequently asked to sort out "Combat Essential" requests and assign priorities within priorities. The glut of priority requests persisted, however, and was finally overcome only by tighter MACV review and a decision to stick to some scheduled itineraries regardless of priority requests. This gave shippers some assurance of delivery when using routine priority.²⁴

The Common Service Airlift System transport fleet survived the Tet offensive with modest losses. During February, eighty-four transports were hit by ground fire (forty-two C-130, thirty-three C-123, nine C-7A), more than double the total for the previous month. But the communists shot down only one ship, a C-130 hit during takeoff from Song Be on February 28. Crew and passengers escaped the burning wreckage ahead of the explosion. Shellings damaged eighteen C-130s and C-123s on the ground at Bien Hoa and Tan Son Nhut. The single most destructive shelling at Tan Son Nhut on the eighteenth damaged nine transports and destroyed one C-130. At month's end, even with fifteen transports out of service for repairs of battle damage, and despite the loss of three C-130s (including the accidental loss at Hue), replacement C-130s maintained airlift strength.²⁵

The speedy recovery and expansion of the airlift system enabled it to move impressive tonnage. Compared to 3,740 tons-per-day in January, airlift transports hauled 3,880 in February, and 4,470 in March. But overall efficiency declined, reflecting the dislocations of the period, bad weather in the north, and overuse of facilities. One indication of the effects of maintenance, aerial port, and traffic delays was the number of sorties flown per C-130. This declined from 5.75 in January to 4.93 in February and 4.77 in March. Tonnage lifted per C-130 Hercules dropped thirteen percent in February. Addition of a fifth airlift C-123 squadron enabled the airlift system to increase overall lift capacity, but efficiency during early spring suffered.²⁶

The airlift system recovered from the initial Tet attacks much sooner than did land and water transport, and was crucial to the early allied countrywide recovery. Air transport was most indispensable in I Corps, sustaining the fighting at Hue and Quang Tri (as well as Khe Sanh) while ground movements were at a standstill. Petroleum deliveries from Tan Son Nhut to helicopter refueling points were especially vital due to disruption of commercial truck delivery. The airlifters also moved over thirty-four hundred refugees during the recovery period. General Westmoreland in April complimented the airlifters for their service during Tet. He specifically cited air movement of combat units, and the ability of air transport to function when surface lines of communication were disrupted. Summarizing airlift professionalism, he stated: "The classical role of tactical airlift has been admirably performed in its truest sense."²⁷



Courtesy: U.S. Army

(1)



(2)

Courtesy: U.S. Army

Tan Son Nhut Air Base endured a mortar and rocket attack on February 18, 1968. Among the ruins were (1) a C-45 aircraft and (2) a warehouse at the 8th Aerial Port. At right (below) a second aerial port building suffered slight damage. Left, firemen battle the blaze of a Vietnamese C-47 aircraft.



Courtesy: U.S. Army



Courtesy: U.S. Army

The A Shau Valley lies along the Laotian border slightly below the latitude of Hue. Heavily forested slopes rise two thousand feet on either side of the four-mile-wide floor. Tall grass and light forest cover the low ground, and a loose surface road traverses the twenty-mile length, passing close to the old airfields at A Luoi, Ta Bat, and A Shau. For the communists, the A Shau Valley represented an avenue into South Vietnam from Laos, affording twenty miles of easy going toward Hue and Da Nang. Since the fall of the old A Shau camp in 1966, communist use of the valley had been almost unchallenged. In early 1968 the allies detected fresh road construction, troop activity at the old airfield sites, and a camouflaged network of 37-mm antiaircraft weapons. One officer called the A Shau, "the enemy's Cam Ranh Bay."²⁸

At Westmoreland's direction, planners at III Marine Amphibious Force and MACV during 1967 studied concepts for returning to the valley. These studies at year's end resulted in OPlan York II, a proposed four-brigade air invasion primarily using the 1st Cavalry Division. A critical planning concern was the ability of combat engineers quickly to prepare C-130 airfields at A Luoi and A Shau to avoid the exclusive reliance on helicopter and airdrop resupply of 1,175 tons daily. Although canceled in favor of Pegasus, OPlan York II was the predecessor of Delaware.²⁹

In late March 1968, Westmoreland realized that rapid success of Pegasus would permit a venture into A Shau. April seemed a suitable month since it was a period of transition between the low visibilities of the winter monsoon and the heavy rainfall of summer. Under the Delaware plan developed by the Army, two cavalry brigades would land by helicopter in the valley. They would be supported by a brigade of the 101st Division attacking westward from Hue and by South Vietnamese units operating both in and to the east of the valley.

All movements and resupply into the valley were to be by air. The possibility of opening a road from Hue was overruled, since major units would not remain after the initial operation. The estimated daily resupply requirement for the troops scheduled to enter the valley was 462 tons, of which 293 tons would be ammunition. Part of this total was to be provided by U.S. Army and Marine helicopters operating from Camp Evans. The 1st Brigade, scheduled to land by helicopter at A Luoi, was to receive 220 tons daily to be supplied by Air Force C-130 airdrops starting the second day of the operation. An engineer battalion and heavy construction equipment were to be lifted by helicopter to A Luoi on the second day, to begin airstrip rehabilitation. The A Luoi strip was to be ready for Caribou land-

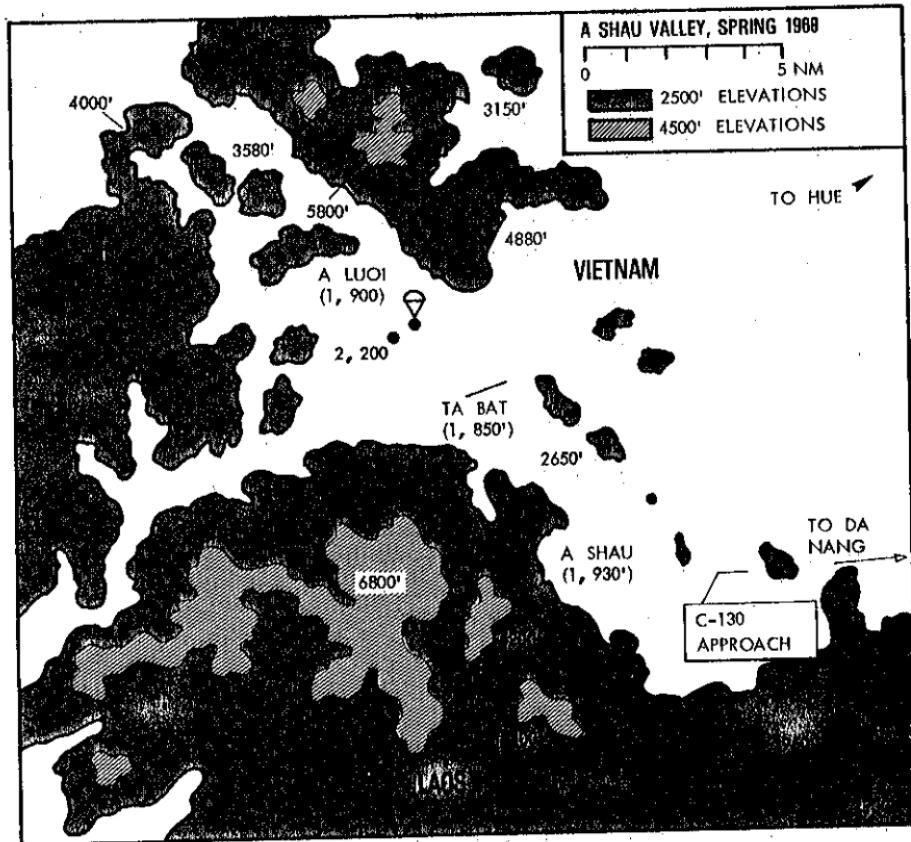
ings after two-day's work, and for C-123s after three. A daily capability to receive 140 tons was prescribed. There was apparently no intention to further improve the strip for C-130s.³⁰

The 834th Air Division seemed in excellent shape to undertake a fresh major airdrop. Recent drops at Khe Sanh and Camp Evans had made C-130 crews expert in contending with the difficult conditions in the northern provinces. Also well practiced were the riggers of the 109th Company at Cam Ranh, Da Nang, and Biên Hòa. Col. William T. Phillips, director of the airlift control center, on April 17 alerted the 315th Air Division that C-130 drops would probably begin on April 20 and would last two or three weeks. Already present in Vietnam were sufficient C-130s and aircrewmen trained in container delivery of cargo. An additional loadmaster, however, was needed for each of the fourteen designated drop crews.³¹

Cavalry helicopters reconnoitered the valley daily during mid-April, while airstrikes hit known positions. Heavy antiaircraft fire near A Luoi ruled out opening the campaign in that sector. Instead, on D-day, April 19, the 3d Brigade of the 1st Cavalry Division launched an attack at the northwest end of the valley. Severe ground fire destroyed eleven helicopters that day and damaged twelve others. Solid overcast down to three hundred feet made tactical air operations hazardous. For four days the weather and enemy fire slowed the attack and not until April 23 were the desired fire bases in place to support the assault at A Luoi. Favored by temporarily improved weather, the first landings of the 1st Brigade near A Luoi were executed without difficulty on April 24. The following day the brigade landed at and seized the old airstrip.³²

An Air Force combat control team, led by Maj. Donald R. Strobaugh of the 2d Aerial Port Group and Lt. Col. Richard F. Button, C-130 mission commander, landed at A Luoi by UH-1 helicopter in early morning, April 26. Also on board was Capt. Robert F. Mullen, tactical airlift officer with the 1st Cavalry Division. A CH-47 Chinook arrived soon afterward with the team's vital radio jeep. The Air Force party had attempted to reach A Luoi the previous afternoon, but their CH-47 had been forced by heavy weather to turn back to Camp Evans. The Army had made the Chinooks available reluctantly, since every available chopper was needed urgently for ammunition resupply. And unfortunately two Chinooks were lost to enemy fire in the valley on the twenty-sixth. Ground control equipment to enable C-130 drops in bad weather was left behind in favor of urgent resupply loads. As a substitute, Major Strobaugh and his

TACTICAL AIRLIFT



assistants quickly set up ground panels for visual drops about three hundred yards from the old dirt runway. Another possible drop-zone site had been ruled out the previous evening because of man-high elephant grass.³³

Twelve C-130s, three A-models and five E-models from Cam Ranh, and four B-models loading at Bien Hoa, were scheduled to make drops on the morning of the twenty-sixth. The eight crews arrived at the line expecting a day of routine itineraries. Briefings were given to groups of two or three crews. Navigators received photographs of the old A Luoi airstrip with a diagram of the designated drop zone overprinted. The planes were to orbit west of the Hue tactical air navigation station, awaiting clearance for single-ship runs. The planes were to approach from the northwest, fly down the center of the valley, and depart with a climbing right-hand turn. Ground navigation aids would not be available except for the light-weight radar beacon usually operated by combat control teams. F-4s were to establish fire-suppression corridors and silence the heavy-caliber fire expected from the ridges. Takeoff times were spaced between 0630 and 0830 to assure arrival at appropriate intervals. The Cam Ranh ships were to drop first. All crews loaded and departed on schedule, navi-

gating independently up the coast. Upon arrival at the orbit point, they made radio contact with the combat control team on the ground at A Luoi.⁸⁴

The first, an E-model from Cam Ranh, reported in to the combat control team at about 0830. To the aircrew above it appeared that the cloud cover was solid from eight thousand feet down. Cleared by the control team to attempt a drop, the crew entered the soup on instruments and descended into the valley. Navigation was entirely without outside assistance. Descending cautiously, the crew broke out under the clouds only five hundred feet above the valley floor; the drop-zone panels quickly came into view less than two miles ahead. Captain Mullen watched as the ship approached and intermittently vanished into the clouds. Over the drop zone the ship made the usual container delivery pullup and reentered the clouds. A few seconds later a rain of chutes began spilling out of the overcast, a "fantastic" sight to Mullen. Soon afterward he heard the pilot advising the second crew, then orbiting aloft, that things had been "kind of sticky but you can press right on through."⁸⁵

The operation soon fell into pattern. Each plane upon arriving at Hue entered the holding stack at a specified altitude above the clouds. As soon as one ship completed its drop and reported clear of the area, the control team cleared the next to enter the valley. The third and fourth C-130s in were E-models, commanded by Maj. Billy R. Gibson and Lt. Col. Nelson W. Kimmey. Both encountered rainshowers and ragged low ceilings, and both depended for guidance wholly on their navigators, Capt. Richard W. Jones and Capt. Ronald L. Selberg. Neither crew had difficulty spotting the drop zone after breaking through the clouds since the target was well marked with panels and smoke. The first plane broke out of the overcast too late to drop and circled at treetop level back up the valley for a second run. The second plane emerged on course for a successful drop on the first pass. During the run-in, Gibson's crew could hear hostile fire exploding overhead and shrapnel hitting the ship. Kimmey's crew was unaware of fire, but counted ten bullet holes in the plane after landing. The orbiting crews listened carefully for reports of ground fire, and commented with rancor on the absence of strike aircraft which had been prevented by the overcast from giving promised fire suppression. The crews, however, gave little thought to aborting the drops, appreciating the urgency of the mission and realizing that the weather afforded some protection from enemy fire.⁸⁶

Shortly after noon, each of the twelve transports had completed a drop. Two had already made their second drops and several had landed at Da Nang for refueling and reloading. During the next two hours, six more missions were completed, four by aircraft reloading at Da Nang, one by a fresh A-model crew, and one by Major Gibson's crew, the first to recycle through Cam Ranh. Weather conditions in the valley during Gibson's sec-

ond sortie were even worse than during the morning flight. The crew released from only three hundred feet, accurately and without apparent damage to loads. Thus, in twenty drop sorties, over 270 tons (mostly munitions) had been delivered. Seven planes had been hit by ground fire. One C-130B, flown by Lt. Col. William Coleman, was heavily damaged with multiple hits through the wing fuel tanks. On the ground at A Luoi, Army officers were profuse in their appreciation. The supply situation was getting tight with some 105-mm firing positions out of ammunition. The heavy weather stopped helicopter deliveries at midmorning, but the C-130s continued to get in. The combat control team relayed an Army request for an unplanned rations drop and the requested items were dropped in the afternoon missions.³⁷

Disaster intervened on the twenty-first drop of the day. At about three in the afternoon, Strobaugh and Mullen watched from the ground as a C-130B approached. The run-in path appeared identical to that of the earlier ships, except that the ship broke through the overcast farther south than most. Fighter support was still absent. The Hercules began taking 37-mm and .50-caliber fire, and its radio transmissions were silenced. As it approached the drop zone the crew attempted unsuccessfully to jettison the load. As the plane crossed the drop zone, struggling to hold altitude, holes could be seen in both wings. One engine streamed smoke or fuel while smoke trailed from the fuselage, apparently from fire in the ammunition-laden cargo compartment. Maj. Lilburn R. Stow, an experienced and highly regarded pilot, guided the stricken aircraft into a descending turn, attempting an emergency landing at the A Luoi strip. The craft smashed into trees, the resulting explosions killing the six crewmembers and the two airman photographers on board. The day's drops ended with the crash, and several transports already airborne were directed to return home with their loads. It had been, in the words of one navigator, "a bad day for the C-130s."³⁸

The abysmal weather in the valley continued on April 27, the second day of the drops. It prevented helicopter resupply as well as the installation of ground control approach equipment, and thwarted fire-suppression air strikes. Drops resumed at nine in the morning. Major Gibson reported weather similar to that of the previous day with ragged ceilings well under 1,000 feet. The drop zone was moved almost beside the end of the runway, and by day's end seventeen more drops had been completed. Weather improved slightly the third day, allowing resumption of helicopter traffic and progress toward ground control installation. Fifteen C-130 drops were completed during the day. Procedures by now had become standard. Each crew began a steep descent from about 6,000 feet ten miles out, leveled off at drop altitude (usually 500 feet) about four miles out, and made a normal visual release at slow (130 knots) airspeed. Errors for the



Capt. Ross E. Kramer, an aircraft commander who managed to fly his battered C-130 to Da Nang Air Base on 29 April 1968.

fifty-two drops averaged under one hundred yards, remarkable in view of the dismal weather and enemy fire.³⁹

Flying an aircraft blind into a valley lined by high terrain required considerable confidence in the navigator and his radar and doppler equipment. Near the drop zone, elevations higher than flight altitude lay within a mile of the run-in path. Upon starting the descent the doppler computer was checked against information from the Hue tactical air navigation center, but navigation during the run-in depended mainly on the navigator's APN-59 radar, which could clearly show the hills on either side of the

valley floor. By steering the aircraft a proper distance from the right-hand side of the valley the navigator could guarantee a safe and moderately accurate run-in path. The doppler confirmed the heading and gave distance-to-go. Crews kept radio altimeters operating as a check on terrain clearance. Navigators made little effort to pick up radar beacon signals, preferring to concentrate on keeping the mountains in view on the scope. After visual release of the cargo the navigator immediately resumed radar navigation for the departure.⁴⁰

During the morning of April 29, the fourth day of the drops, vicious enemy fire nearly claimed a second victim, a C-130E flown by a TAC crew commanded by Capt. Ross E. Kramer. This was the crew's fourth mission into the valley. Warned to expect antiaircraft fire, the crew noticed as they approached the drop zone that cloud cover was incomplete and that ridge lines previously obscured were now visible from the air. Fighter escort aircraft were present but remained inactive well above the transport. Six miles from drop the crew saw a hail of tracers and began evasive maneuvers, but continued the run-in. Five miles from the drop zone they were hit by 37-mm shells, at four miles by .50-caliber fire, and at three miles by a projectile that exploded beneath the crew compartment. At two miles one engine was hit and was immediately feathered. Then a second engine lost oil pressure requiring shutdown. Captain Kramer decided to jettison the load. The crew managed to restart one of the lost engines and began a laborious climb, spiraling upward above A Luoi. At a safe altitude the crew steered for Da Nang. Safely on the ground, the crew discovered that seven feet of horizontal stabilizer were missing. The crew returned to Cam Ranh as passengers that afternoon and reported that the ride in the stricken C-130 had been "real terrifying." The battered aircraft remained at Da Nang for repair, serving for several months as a sightseeing attraction. Kramer's load landed well short of the drop zone and the cargo was recovered by a South Vietnamese unit.⁴¹

The drops resumed at A Luoi soon after this near disaster. To avoid the communist guns, pilots now spiraled down from almost directly overhead, exploiting breaks in the cloud cover or, when necessary, descending blind. The navigator's radar was of limited help during such maneuvers since it blanked during extended turns, so the doppler computer became all-important. Several crews broke out well off centerline during the day. This made it necessary to maneuver the heavily loaded planes at low level to get into position to drop, while the control team on the ground tried to give steering instructions and to help the crews line up. By day's end the crews had completed a total of twenty-two successful drops.⁴²

Also on the twenty-ninth, helicopters succeeded in completing several delayed lifts into A Luoi, hauling in the cavalry division's command post and the division's 8th Engineer Battalion. CH-54 Flying Cranes, operating with limited fuel in order to clear high terrain along the route from

Camp Evans, delivered heavy construction equipment needed for airstrip restoration at A Luoi. The ground control approach equipment was installed, but awaited flight check under visual conditions.

Army personnel labored to retrieve the containers at the drop zone. Some were lifted by hand into Russian-built trucks captured in the valley, and moved to a collection point. Distribution to field units and artillery positions was by helicopter. Sometimes the helicopters picked up loads immediately at the spot of parachute landing. Except for occasional shelling of A Luoi, the enemy did not interfere with drop-zone activity. More dangerous were the descending containers. One crushed the combat control team's bunker, but fortunately nobody was inside. Another landed next to the control team's jeep, the parachute breaking off the jeep's radio antenna. The control team warned construction engineers when ships were arriving so they could avoid falling containers. The only attempted fuel drop resulted in a spectacular explosion on impact.⁴³

The C-130s completed twenty-seven drops on April 30, the highest single-day drop effort. Drops averaged sixteen daily the next four days. Techniques changed only slightly. Fighter escort was provided whenever weather permitted, the fighters sharing radio frequencies with the transports. The ground control unit assisted the plane crews in lining up but, as before, all releases were made visually. A single C-7 Caribou landed successfully at A Luoi shortly before noon on May 2. Several other C-7s and C-123s arrived in the early afternoon prepared to land. Simultaneously, a thunderstorm rolled into the valley from the west, closing the strip and creating confusion as the smaller aircraft became mixed with the C-130s in the orbit pattern. Finally all planes left the area without delivering their loads, a fiasco according to one of the pilots present. The final drops were made on May 4, the date on which the first C-130 landed at A Luoi.⁴⁴

The A Shau drops were more demanding than those at Khe Sanh, more dangerous for the aircrews, and required greater navigation skills. In nine days the C-130s in 165 drops released twenty-three hundred tons of cargo, including rations and two thousand tons of munitions. Deliveries were thus well above the forecast 220-ton requirement. The 380 tons dropped on April 30 exceeded the single-day airdrop maximum at Khe Sanh of 225 tons on March 18. All but one percent of the tonnage dropped was recovered with negligible damage. Except for seven loads dropped using modular heavy-equipment platforms, all drops were by container delivery system. Ground proximity extraction system equipment at one time planned for A Luoi was not used. The delays in ground control approach equipment installation were unfortunate, precluding use of blind-drop methods and increasing exposure to ground fire. In addition to the C-130B destroyed April 26, four aircraft received major battle damage during the drops.⁴⁵

ICAL AIRLIFT

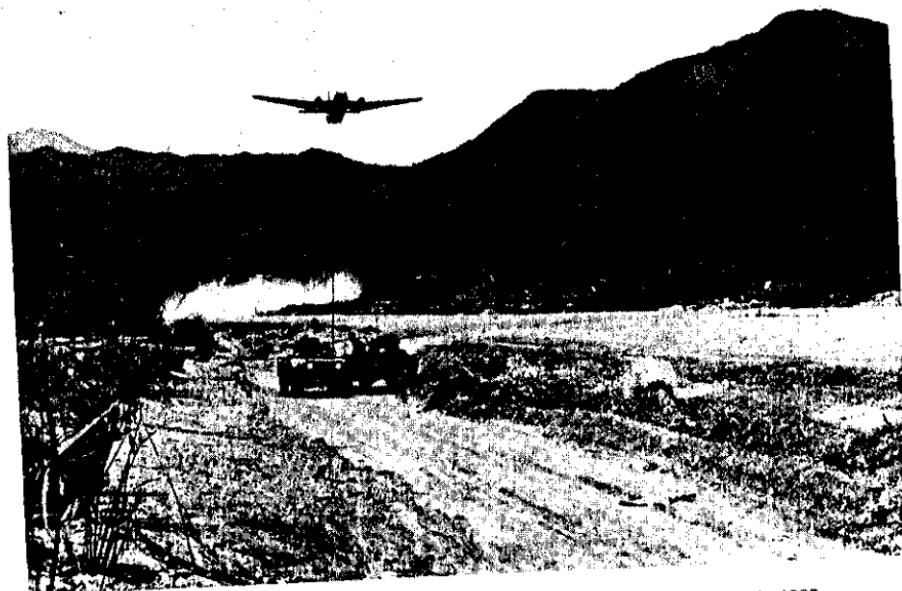
Among those witnessing the drops of the first days was Maj. Gen. J. Tolson III, commanding general of the 1st Cavalry Division. Gen. Tolson later expressed thanks and admiration to the C-130 crews behalf of the division, for "one of the most magnificent displays of courage and airmanship that I have ever seen." But his suggestion that individual crewmen receive suitable awards for valor was not systematically pursued and later recommendations that some of the men be awarded Silver Star were not approved. The A Luoi airdrops, however, confirmed not only the versatility of the C-130 force but also the extraordinary devotion to duty among its aircrewmen.⁴⁶

The around-the-clock work of filling bomb craters and reconstructing A Luoi strip began on April 29. A 1,500-foot segment was inspected and pronounced ready for Caribou landings at noon May 1 and for C-123s later in the day. Work continued to lengthen the segment to accommodate C-130s and on May 4 six C-123Ks, two Caribous, and two C-130 Hercules landed on the completed 2,900-foot strip. They lifted in 15 tons to supplement 165 tons airdropped by fourteen C-130s.⁴⁷

The first C-130 landed at midday bringing in a ten-ton forklift and several passengers. The crew had tried to get in earlier in the day, but adverse weather delays necessitated a return to Da Nang for refueling. After the second takeoff from Da Nang the pilot, Maj. Robert L. Deal, landed without delay. The A Luoi strip, Deal reported, was the softest he had ever seen, very dusty and still marred by chuckholes, apparently having been used by the communists as a roadway.⁴⁸

Nineteen C-123s landed on May 5 and eighteen C-130s on the sixth, the latter delivering over 250 tons of cargo. The irregular high terrain complicated landings and approaches, especially to the north where elevations rose two thousand feet above field level only two miles from the airstrip. Enemy fire became a decreasing consideration since cavalry units had bombed the region well. (Major Strobaugh noted that the cavalry brigade was determined to beat the tally of other units in the valley in capturing 37-mm weapons.) None of the transports landing at A Luoi was hit, but rainstorms turned the red dust of A Luoi into mud, closing the airstrip from midday on May 7 until the morning of the ninth.⁴⁹

Offloading at A Luoi was done by an Air Force aerial port team under 1st Lt. William J. Endres. The team arrived with the first C-130s, bringing in two adverse-terrain forklifts of a type introduced into Vietnam only a few months earlier. The work was hard and the life dusty with only a nearby pond for cleaning off dirt and sweat. The diet was C-rations



An Air Force Caribou takes off from A Luoi after delivering supplies, May 4, 1968.

supplemented by an occasional hot meal brought in by cavalry helicopters.⁵⁰

Withdrawal began on May 10 when a Vietnamese battalion moved out by C-130 to Quang Tri. American logistics elements began leaving the following day. A total of twenty-eight C-130s had landed at A Luoi before rains in the afternoon of May 11 again closed the strip. And although fixed-wing landings were scheduled for the next few days, all further withdrawals were by helicopter. The aerial port team itself left by helicopter. Lieutenant Endres was told to destroy the forklifts, but instead he arranged for Army help in dismantling them into parcels suitable for CH-54 lift. The only piece of equipment left behind was the combat control team's radio jeep which had been totally destroyed.⁵¹

In all, airlift transports made 113 landings at A Luoi during Delaware, including 57 by C-130 and 26 by C-123. The C-130s delivered an average of 13 tons per sortie, the C-123s 4 tons, and the Caribous 2. Fixed-wing transports landed a total of 650 tons and flew out slightly more than two hundred tons.⁵²

Allied officers judged Delaware a tactical and strategic success. They claimed 850 enemy killed and considerable weaponry captured including twenty-five hundred individual and ninety-three crew-served weapons of which twelve were 37-mm. The most notable weapons caches were found in the immediate vicinity of A Luoi. Costs to the cavalry division included the loss of twenty helicopters, damaged beyond recovery, and the loss of sixty-three lives. However, sightings of truck activity in the valley less than

a week after allied withdrawal confirmed that the interdiction would not be lasting. During Delaware, aircrews struggled with difficult weather using procedures for radar traffic control and instrument flight still in infancy. This led two pilots to conclude that the campaign showed the need for an "instrument-flight combat capability," including self-contained radar and doppler systems.⁵³

The Air Force transport achievements at A Luoi reflected the evolution, since the early sixties, in utilizing fixed-wing aircraft in airmobile warfare. The success of fixed-wing transport in Delaware suggested that the capabilities of tactical airlift were understood by both air and ground officers and that neither conceptual nor organizational barriers now hindered its full exploitation. Moreover, the use of the American airhead at A Luoi, not only for resupply of the cavalry brigade but also for support of a Vietnamese regiment operating to the south, led the senior U.S. advisor on



Ammunition is loaded aboard a USAF C-7A Caribou for support of Operation Delaware in the A Shau Valley, 4 May 1968.

the scene to conclude that the Vietnamese were capable of mobile offensive operations deep in enemy territory "if they are provided the necessary aerial lift and resupply support." Delaware, however, revealed problems in transporting the combat control team with its equipment, the ground controlled approach unit, and aerial port equipment. These difficulties underlined the need for better planning and encouraged the view that the Common Service Airlift System needed its own helicopters for these purposes. Also important was the realization that low- and slow-flying transports were vulnerable at airdrop altitudes. And finally, the indispensable contributions made by the airlift system to the campaign, especially the spectacular performance of the airdrop C-130s, restored the occasionally tarnished reputation of airlifters among ground force personnel.⁵⁴

Ten miles from the Laotian border, the camp at Kham Duc served as a base for allied reconnaissance teams and a training site for Vietnamese Civilian Irregular Defense Group troops. This border region southeast of Da Nang was among the most rugged in Vietnam and was nearly uninhabited except for the Vietnamese military dependents living in the Kham Duc village. The camp, village, and airstrip were situated in a mile-wide bowl, enclosed by hills rising abruptly to heights of two thousand feet. One Air Force airlifter described the setting as "a beautiful spot, absolutely lovely." C-130 crews had for years landed at the six thousand-foot asphalt strip. The C-130s began frequent landings in April 1968, bringing in American engineers and construction materials to improve the airstrip for sustained and heavy C-130 use. Hercules pilots detested the difficult landings at Kham Duc made dangerous by both weather and terrain, stacks of equipment beside the runway, and considerable enemy fire from the nearby high ground. Nevertheless, the C-130s lifted in some four hundred tons of cargo in the four weeks to May 8, and C-124 Globemasters delivered two twenty-ton bulldozers, too large for the Hercules.⁵⁵

To counter obvious communist preparations for attack and to compensate for the loss of an important position several miles to the south, C-130s on May 10 hauled American infantry and artillery reinforcements to Kham Duc. Communist shells harassed the eleven C-130 landings, injuring several crewmen. C-130s, C-123s, and Caribous continued the buildup the next day, and by the evening of the eleventh, nearly fifteen hundred troops were landed including nine hundred Americans. General Westmoreland, however, reviewed the situation that evening and determined that the camp lacked the importance and the defensibility of Khe Sanh. So shortly after midnight he decided to pull out. The ensuing air

evacuation in the presence of a strong enemy was without plan and without precedent in American experience.⁵⁶

Intense communist fire early on May 12 drove away the Chinooks and dashed expectations of uneventful withdrawal. General McLaughlin at 0820 was ordered by Seventh Air Force to start an all-out effort to evacuate Kham Duc. The 834th Air Division immediately dispatched two C-130s to the camp and flew others to Da Nang to await developments. Several 130s were rigged for container delivery, and crews were briefed for possible drops at Kham Duc. Meanwhile, the communists captured all hill posts and now ringed the entire Kham Duc camp with close-in firepower. American airstrikes, however, broke the backs of several infantry assaults.⁵⁷

Army and Marine helicopters managed a few pickups during the morning but a downed Chinook blocked the runway for fixed-wing landings until dragged away at 1000. A C-130 flown by Lt. Col. Daryl D. Cole landed immediately and civilians, streaming from ditches alongside the runway, quickly filled the aircraft. As Cole began the takeoff down the cratered and shrapnel-littered strip, mortars burst on all sides flattening a tire. The crew aborted the takeoff, offloaded the passengers, and began stripping away the ruined tire. After two hours on the ground, and with fuel now streaming from holes in the wings, Cole finally managed a successful takeoff. The only passengers now were three members of an Air Force combat control team, whose radio equipment had been destroyed. Cole landed on a foamed runway at Cam Ranh. This exploit earned him the Mackay Trophy for 1968.⁵⁸

At about 1100, while Colonel Cole was still on the ground, Maj. Ray D. Shelton brought in his C-123. The crew took aboard seventy persons including forty-four American engineers. Despite automatic-weapons fire and a dozen mortar detonations near the ship, Shelton got off safely. Meanwhile, three C-130 crews arrived over Kham Duc but were told by the airlift control center not to try landings. At 1230 another Hercules gave up a landing attempt because of the hostile fire. By 1520, with the communists now inside the camp's wire perimeter, only 145 persons had been lifted out by the one C-123 and fifteen helicopter sorties. But orbiting nearby were more than a dozen transports, a control C-130, and a C-130 carrying General McLaughlin.⁵⁹

Hercules landings resumed about 1525. Maj. Bernard L. Bucher made a steep approach from the south and landed despite numerous hits. More than one hundred disorganized and panicky persons, mostly civilian dependents, crowded aboard. Either unaware of or disregarding the concentration of enemy forces to the north, Bucher made his takeoff in that direction. Tracer fire intercepted the plane crossing the north boundary. The stricken craft turned slightly and tumbled into a ravine where it crashed and burned. No one survived. Crewmen on later aircraft reported

that the troops were shattered, indeed hysterical, after watching their families die.⁶⁰

Landing behind Bucher was a C-130E flown by Lt. Col. William Boyd, Jr. Enemy troops were firing small arms so Boyd made an initial go-around just before touchdown. He loaded some hundred persons aboard, took off to the south, and banked after lift-off so the plane would be masked by the rolling terrain. The plane landed safely at Chu Lai despite dense interior smoke and numerous bullet holes. For this flight Boyd received the Air Force Cross.⁶¹

Next in was a C-130A commanded by Lt. Col. John R. Delmore, spiraling down from directly overhead. The flight mechanic, TSgt. John K. McCall, watched the scene of smoke, detonations, and aircraft. Bullets hitting the ship sounded like sledgehammers. Smoke curled through the cockpit floor, and bullet holes appeared overhead, "like a can opener." With all hydraulics gone, and almost out of control, the ship smashed into the runway. The wreckage came to rest beside the strip, the nose pressed into the earth. The five-man crew scrambled out unhurt but helpless. American soldiers guided the five to shelter and soon afterwards placed them aboard a Marine helicopter.⁶²

Destruction of two 130s within minutes did nothing to inspire confidence in the orbiting transport crews. But they persisted and, for a short period after 1600, three C-130s managed to get in and out with full loads: an A-model flown by Lt. Col. Franklin B. Montgomery, a B-model piloted by Maj. Norman K. Jensen, and an E-model commanded by Lt. Col. James L. Wallace. Colonel Wallace described his experience in detail. During his approach he was aware of tracers but tried to disregard them and concentrate on landing procedures. He crossed the field at right angles, making a 270-degree turn at maximum rate of descent with power off and gear and flaps down. Touching down, he made a maximum-effort stop. More than a hundred Vietnamese scrambled aboard in such a near-panic that the loadmaster had to rescue a woman and baby trampled in the rush. A dozen or so Americans also appeared and were taken aboard. Shelling and enemy fire persisted so Wallace, like Montgomery and Jensen, took off southward. Although the controllers overhead did not realize it, these three C-130s had withdrawn the last defenders.⁶³

The final evacuation was made possible by close-in air strikes. Fighters flew beside each approaching transport laying down a barrage during the run-in and providing a barrier of fire on both sides of the runway while the transports loaded. Helicopters timed their pickups to take advantage of the fire laid down for the C-130s. A downed air controller pilot, Capt. Phillip B. Smotherman, stayed on the radio on the ground until leaving on one of the last 130s. He and several airborne air controllers linked the C-130 control ship and an Army control helicopter with the helicopters, fighters, and transports.⁶⁴

Then, just when things seemed to be going well, a near tragedy occurred. A C-130, flown by a TAC crew commanded by Lt. Col. Jay Van Cleeff, prepared to land at Kham Duc to pick up evacuees. Aboard was a three-man combat control team which already had been airlifted out of Kham Duc once earlier in the evacuation. But now the airlift control center inexplicably ordered that the team be relanded and left at the camp. Van Cleeff protested that the camp was almost completely evacuated, but the control center insisted that the control team be returned and left.

Obediently Van Cleeff landed his aircraft, and the three controllers scurried from the ship toward the burning and exploding camp. Van Cleeff waited patiently for two minutes for passengers waiting to be evacuated, and when none appeared he slammed the throttles open and took off. He dutifully notified the control ship that they had taken off empty, and was shocked to hear the control ship then report to General McLaughlin that evacuation of Kham Duc was complete. His crew immediately and vehemently disabused the commander. Kham Duc, they insisted, was not evacuated because they had, as ordered, just deposited a combat control team in the camp. There was a moment of stunned radio silence as the reality sunk in: Kham Duc was now in enemy hands—except for three American combat controllers.⁶⁵

Meanwhile, Maj. John W. Gallagher, Jr., and the other two controllers ran through the camp and took shelter in a culvert next to the runway. They could see communist troops moving about so they began firing at them with their M-16 rifles. A C-123 approached from the south and touched down under fire from all directions. But not sighting the stranded men, the pilot, Lt. Col. Alfred J. Jeannotte, Jr., took off. Once airborne, he spotted the control team but dared not land because of low fuel. Jeannotte received the Air Force Cross for his actions.⁶⁶

Next to land was another C-123, piloted by Lt. Col. Joe M. Jackson and Maj. Jesse W. Campbell. Their approach into the inferno was from eight thousand feet, sideslipping for maximum descent, with power back, landing gear and flaps full down, dropping "like a rock." Seconds after touchdown, the pilots braked the ship to a halt, took aboard the marooned controllers, and were rolling again. Communist troops fired savagely from the wrecked C-130 beside the runway with tracer and mortar fire that never abated. As the aircraft regained the air one of the rescued men recalled: "We were dead, and all of a sudden we were alive." General McLaughlin, who had witnessed the event from overhead, approved nominations for the Medal of Honor for both pilots. Colonel Jackson received the decoration in a White House ceremony in January 1969, the only airlifter so honored in the Southeast Asia war. Major Campbell received the Air Force Cross, and the rest of the crew were awarded Silver Stars.⁶⁷

The dramatic rescue did not quite end the drama of Kham Duc. Another fiasco was in the making when the airlift control center, apparently

unable to learn from past mistakes, ordered yet another plane to land another combat control party to search the camp for survivors. The plane's crew had witnessed Colonel Jackson's exploit but nevertheless was preparing to obey. However, the order was rescinded just before the aircraft landed.

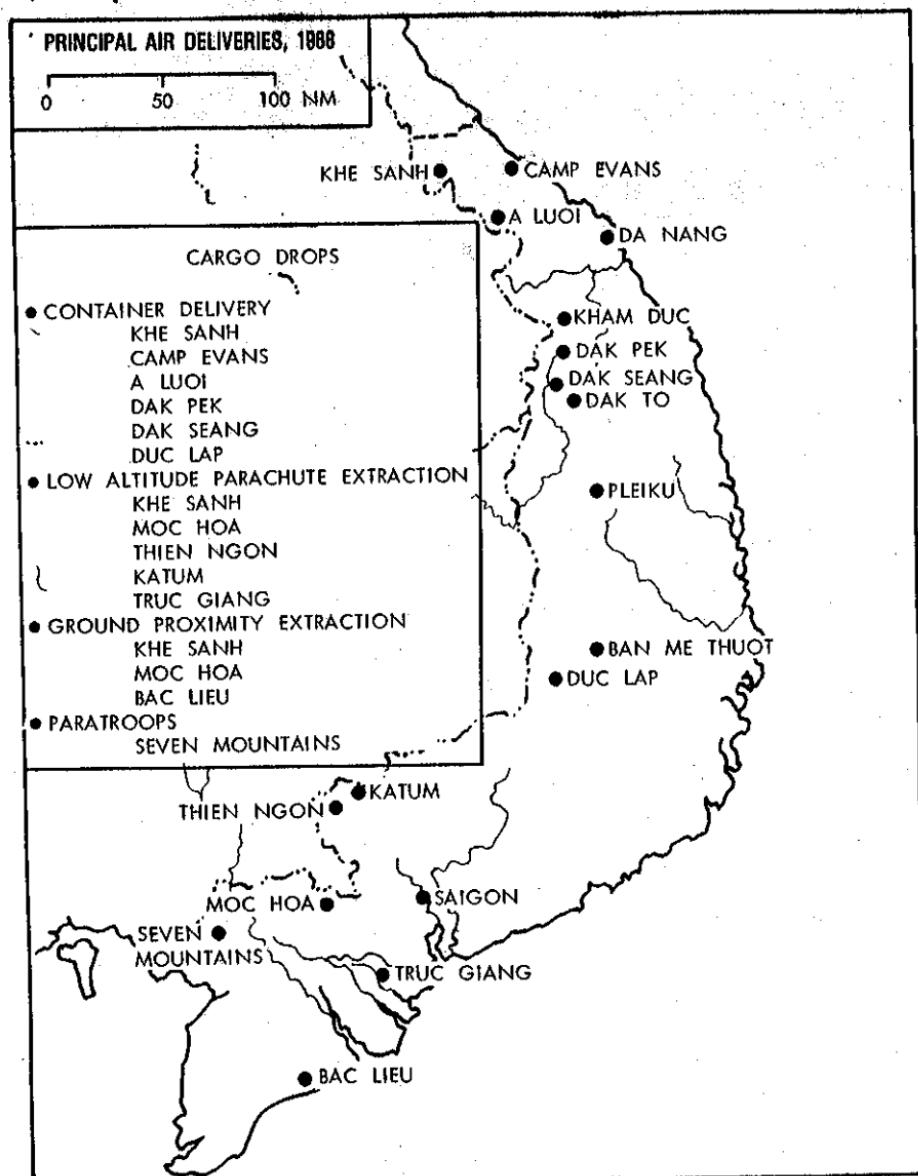
Following the evacuation, air strikes demolished the remains of the camp, and helicopters picked up a few survivors from the hill posts over the next week. Although the evacuation of Kham Duc involved some eighteen hundred military and civilians, only 259 were lost and more than half of these were victims of the crash of Major Bucher's C-130. The U.S. Army lost twenty-five men. Two Chinooks, two Marine CH-46s, and two C-130s were destroyed. But Air Force transports brought out over five hundred persons, nearly all in the final minutes when speed was essential and only the indispensable C-130s could do the job.⁶⁸

The events of May 12 tested morale and discipline and motivated many acts of individual valor and selfless cooperation among men of different services and nationalities. The ability of the Seventh Air Force to mass transport and strike aircraft in an emergency was proven, but the blunders with the combat control teams demonstrated that command and control during battle was not perfect. Aircrew dedication and persistence despite early disasters, however, assured Kham Duc of an honorable place in the history and tradition of the U.S. troop carrier arm.

As the convulsions of Tet subsided, America's leaders reconsidered the nation's strategy and goals. With the curtailment of bombing in North Vietnam came reappraisals of the American role in the South. Under Gen. Creighton W. Abrams, Jr., USA, who replaced General Westmoreland in early summer, MACV planners deemphasized major search-and-destroy activities, relying instead on smaller unit operations. On the question of keeping American troops in the highlands, the Air Force took the position that, despite the losses at Khe Sanh, A Luoi, and Kham Duc, the Air Force stood ready to provide airlift forces wherever needed.⁶⁹

Airlift remained an important asset for the allies although missions now seldom had the urgency of those earlier in the year. In the northern provinces road and water transport recovered their former capacities, although airlifters still regularly supplied Dong Ha, Quang Tri, and Camp Evans. C-130s hauled a mechanized brigade from Da Nang to Quang Tri in July and many a soldier boarded a mud-spattered C-130 only a few steps from the silver C-141 that had carried him from Colorado. In the highlands of II Corps, C-130s flew 150 sorties to lift an airborne

TACTICAL AIRLIFT



brigade to Dak To in May. The aircraft also made drops at the Dak Pek and Dak Seang camps for several weeks in June and delivered supplies to Ban Me Thuot during fighting at Duc Lap in August. The airlifters helped to cope with extensive communist attacks in May and a "third offensive" in August. The May attacks again necessitated moving the 123s and 130s away from Tan Son Nhut. A highlight of August was the airlift resupply of Katum, the camp developed in Operation Junction City. Activity increased in the delta, reflecting the increased number of American troops in that

region, necessitating nearly a hundred air deliveries at five separate delta locations. The year's principal parachute assault took place on November 17 in the Seven Mountains area of southwestern Vietnam. Eight C-130s took the Vietnamese jumpers aboard at Nha Trang, and the expertly conducted venture again demonstrated the Common Service Airlift System's readiness for paratroop assault operation.⁷⁰

Perhaps the most impressive unit movement of the war was Operation Liberty Canyon. In 437 lifts over two weeks beginning October 28, C-130s hauled eleven thousand five hundred men of 1st Cavalry Division and thirty-four hundred tons of cargo from the northern provinces to Song Be, Quan Loi, and Tay Ninh, new base camps northwest of Saigon. Eight extra C-130s, accompanied by extra maintenance men, were flown to Vietnam for the operation. Detachments for C-130 maintenance, airlift control, and aerial port activities were based temporarily at Camp Evans, a principal loading point. Cavalry helicopters were flown to the new bases, refueling at two or three points en route. Much heavy materiel went by water as far as Saigon for transshipment by air or road. The move placed the cavalry in the region promising the season's best weather. In leapfrogging the cavalry division more than three hundred miles, the C-130s showed their ability to expand the reach of the Army's air mobile forces.⁷¹

Studies for possible future operations into the Laos Panhandle also included concepts for the combined employment of airlift and airmobile forces. OPlan Full Cry, initially developed in 1966, envisioned seizure of an airhead in the Bolovens Plateau. Then C-130s would make some sixty resupply landings daily to sustain operations of the 1st Cavalry Division. The 1968 concepts for Operation El Paso entailed American and South Vietnamese overland penetrations westward from Khe Sanh. One option, however, prescribed a brigade paratroop assault as a means of conserving helicopter strength. Engineer troops would complete a C-130 airstrip inside Laos by the fourth day, and a second airfield would be readied to receive C-123s. Both airfields would have a fire support area with five-day stockage, and both would receive more than half their resupply by fixed-wing transport. The MACV feasibility study for El Paso was completed in June and reflected Westmoreland's conviction that such a venture was feasible and could be effective. Late-year diplomatic and political decisions, however, pointed toward American withdrawal and made such planning for the moment academic.⁷²

Expectations of peace talks forecast the decline of the airlift system as well as the overall military effort in Vietnam. The monthly airlift workload

TACTICAL AIRLIFT

reached a peak of 138,000 tons in March 1968 and then declined by five percent by year's end. C-130 sorties in Vietnam reached a maximum of 14,300 in March while C-123 sorties peaked at 9,500 in October. Until closure of the Nha Trang task force in April, the number of C-130s actually in Vietnam held at the February peak of ninety-six ships. One of the three C-130 squadrons temporarily assigned in Vietnam returned to TAC during the spring, and a second followed in August. Remaining were twelve permanently assigned offshore squadrons plus a single rotational squadron now manned from the 516th Wing at Dyess Air Force Base, Texas. The controversial issue of basing C-130s in Vietnam finally died out, reflecting the expectation that the U.S. war role would now diminish. At year's end only seventy-two C-130s were still in Vietnam.⁷³

Despite the decline in activity, General McLaughlin and the 834th Air Division staff continued to work for managerial efficiency. Improving communications was a constant goal, and new facilities included teletype and telephone nets linking the airlift control center with control elements through UHF, VHF, and HF radio equipment in each control element. The airlift control center building at Tan Son Nhut was occupied just five days before Tet, providing additional communications equipment and a badly needed larger command post. The airlift control element network expanded to sixteen fixed detachments, and a mobile control element package of collapsible buildings was tested at forward sites. McLaughlin also directed that a preliminary mission schedule be published daily at midday, permitting aerial port detachments to recommend final changes based on the latest load information. McLaughlin's program for efficiency improved tonnage delivered per flying hour. In December 1968, tonnage delivered was fifteen percent above tonnage at the start of the year, and preliminary installations of automated scheduling and information flow promised further improvements in the future.⁷⁴

At odds with this encouraging picture were the convictions of one C-130 crewman, apparently an officer, who wrote to a member of the U.S. House of Representatives charging the Combined Service Airlift System with mismanagement and serious inefficiency. The writer asserted that many missions were flown unnecessarily, that particular loads were repeatedly transshipped simply to raise tonnage totals, and that insufficient time was allowed for proper aircraft maintenance. The strongest criticism was directed toward the use of flying hour totals as basic managerial yardsticks in airlift squadrons and wings. This, he maintained, encouraged unnecessary flying. The writer's contentions reflected less extreme feelings often voiced by other crewmen, resentful whenever their efforts seemed wastefully employed. The 834th Air Division replied in an October message to PACAF denying the allegations and pointing out that crewmembers often failed to understand the importance of loads, such as construction materials, to

ground units. The incident passed, but the fallibility of the flying hour yardstick and the danger that it could become an end in itself had been exposed. It also suggested that higher commanders needed to see for themselves conditions at the basic operating level. In this case, one individual felt it necessary to choose an irregular channel to expose shortcomings, hardly indicative of reform or of a climate of openness and self-examination within the Air Force.⁷⁵

Eleven C-130 and five C-123 transports were destroyed during the Tet offensive and its aftermath. Ten of these were lost to enemy action, six in landing accidents. The total was equivalent to more than ten percent of the overall airlift capacity in Vietnam. Losses declined markedly in the second half of the year; two C-123s were lost in accidents, and a C-130 went down near Bao Loc, apparently the victim of enemy fire. Communist attacks on parked aircraft at Tan Son Nhut on March 21 and at Tuy Hoa on July 29 damaged nine airlift C-130s. All told, through June 1968, thirty-eight C-130s and an equal number of C-123s had been destroyed in airlift work in South Vietnam and Thailand. A total of 134 C-130 and C-123 crewmen had been killed or listed as missing. However, since few individuals flew more than a thousand sorties, and since aircraft losses averaged only one per thirteen thousand sorties, a man's chances of surviving a year's flying were good.⁷⁶

But communist introduction of heavier antiaircraft weaponry in early 1968 held serious implications for the future. Now added to the 12.7-mm heavy machinegun was a Soviet 14.5-mm weapon, mounted on a two-wheeled carriage and served by a crew of five. Allied troops also captured 23-mm weapons near Hue in spring 1968. These were mounted like the 14.5-mm and fired projectiles designed to detonate and fragment on contact with aircraft. The 37-mm guns at Khe Sanh, in the A Shau Valley, and apparently near Kontum, raised the altitude of effective ground fire to above eight thousand feet. The communists had not yet used portable surface-to-air missiles (SAMs), but their potential effect on transport and helicopter operations was ominous. The U.S. Army decided against sending its own Redeye missiles to Southeast Asia lest the communists use captured or copied weapons against allied aircraft.⁷⁷

For air and ground crews the stresses of 1968 intensified the strain of airlift duty. In the months after Tet, nearly all C-130 crewmen scheduled to return to the United States were held in their units well beyond normal departure dates. Undermanning, and therefore overwork, nevertheless persisted. At year's end, for example, the 463d Wing had only 175 qualified crews against an authorization of 256. Unsatisfactory living conditions also faced the C-123 detachments at Da Nang and Bien Hoa while the poor facilities for rest at Cam Ranh, coupled with considerable C-130 night flying, jeopardized operational safety. Morale nevertheless remained high, buoyed by the knowledge that, despite much "trashhauling," the overall job

TACTICAL AIRLIFT

was one worth doing. One relaxation was the inevitable off-duty gathering, at which were bawled lines such as these to tune of "Wabash Cannonball":

Our planes aren't supersonic, in fact they hardly fly
With jets and props and great big wings they're grappling for the sky
With pilots and their grandsons, sitting side by side
You can bet your sweet petunia, this will be a ride.
Listen to the rattle, the rumble, and the roar
As she rolls down the AM-2, they didn't close the door
The crew is falling out the back and rolling on the ground
But what the hell bartender, set up another round.⁷⁸

For their role in the first five months of 1968, the men of the 834th Air Division and its assigned units earned the Air Force Presidential Unit Citation.⁷⁹ The airlifts at Khe Sanh, into the A Shau Valley, Kham Duc, and the countrywide effort during Tet, together were a culmination of decades of preparation in TAC and the development of the Combined Services Airlift System since 1961. In meeting these challenges, while maintaining countrywide air logistics service, the airlift system vindicated the Air Force's concepts of theater airlift operations under centralized management and control. Occasional mistakes were painful as in the case of the senseless marooning of the combat control team in Kham Duc and the absence of ground controlled approach equipment at A Luoi. But the valor of the airlifters in overcoming such mistakes confirmed the real measure of the men.

Chapter XII

The Khe Sanh Campaign

1. Rprt, 3rd Marine Div, Command Chronology for Jan 68; msg 16008, MACV J-2 to CJCS, 040737Z Jun 68; memo, Col George J. Keegan, DCS/Intelligence, 7th AF, to TACD, subj: Anticipated Enemy Action Against Khe Sanh, Dec 19, 1967; Capt Moyers S. Shore, USMC, *The Battle for Khe Sanh*, Hq USMC, G-3 (Hist Br), 1969, pp 29-30; draft ms, Bernard C. Nalty, *Air Power and the Fight for Khe Sanh*, Off/AF History, 1973, pp 17-20.
2. Study, MACV J-5, Strategic/Tactical Study, Dien Bien Phu-Khe Sanh, Mar 68; Maj Gen Burl W. McLaughlin, "Khe Sanh: Keeping an Outpost Alive," *Air University Review*, XX (Nov-Dec 68), p 59.
3. Memo, Maj Gen W. E. Dupuy, Off/SACSA, for Dir/Joint Staff, subj: Comparison of the Khe Sanh Campaign with Dien Bien Phu, Jan 31, 1968; paper, MACV J-5 Working Gp, Preliminary Conclusion, Dien Bien Phu/Khe Sanh, Feb 3, 1968; briefing, MACV Working Gp, Khe Sanh/Dien Bien Phu, Feb 69; Jacob Van Staaveren, *The Air Force in SEA: Efforts to Deescalate the War*, (Off/AF Hist, Jun 70); intvw, Corona Harvest, with Maj Gen Robert N. Pittsburgh, CH intvw no 481, Jun 3, 1971; Westmoreland, *A Soldier Reports*, p 338.
4. Memo, MACV J-4 to C/S MACV, subj: Khe Sanh Airlift, Jan 20, 1968; ALOREP data extract, for Jan 16-20, 1968, Shore, *Battle for Khe Sanh*, pp 31-32.
5. Memo, MACV J-4 to C/S MACV, subj: Khe Sanh Airlift, Jan 20, 1968; Lt Col Robert P. Guay, USMC, "The Khe Sanh Airlift—A VTOL Lesson," *Astronautics and Aeronautics*, Dec 69, p 47; rprt, Force Logistic Support Gp Alpha, FMFP, Cd Chronology, 1-31 Jan 68; rprt, III MAF, Cd Chronology, Jan 68.
6. Intvw, author with Lt Col Emmett A. Niblack, May 3, 1972 (Niblack was chief evaluation pilot with 311th Squadron, operating C-123s from Phan Rang and Da Nang during the Khe Sanh siege); McLaughlin, "Khe Sanh," *Air University Review*, Nov-Dec 68, p 59; unpubl ms, Lt Col Ray L. Bowers, SEA Journal, 1967-68, (AF/CHO, 1969).
7. Rprt, 3rd Marine Div, Command Chronology for Jan 68; hist, 374th TAWg, Jul-Oct 68, pp 69-73; rprt, III MAF, Jan 68; msg 02502, MACV to AIG 7051, 230615Z Jan 68; rprt, 1st Bn, 13th Marines, Comb Ops AAR, Opn Scotland, Apr 1, 1968; McLaughlin, "Khe Sanh," *Air University Review*, Nov-Dec 68, p 58; Shore, *Battle for Khe Sanh*, pp 42-47; Guay, "The Khe Sanh Airlift," *Astronautics and Aeronautics*, Dec 69, p 46.
8. Ltr, Maj John W. MacDonald, Ret, to author, May 6, 1972; rptrs, HMM-364, HMM-262, HMM-164, Command Chronologies for Jan 68; msgs, MAG 36 to 1st MAWg, 211740Z and 231834Z Jan 68; rptrs, HMM-463, SITREPS for 19-23 Jan 68; rprt, Marine Aerial Refueling Transpt Sq 152, Command Chronology for 1-31 Jan 68; Guay, "The Khe Sanh Airlift," p 46-47; McLaughlin, "Khe Sanh," pp 58-59; ALOREP data extract, for Jan 68; *The Phan Rang Weekly*, Apr 17, 1968; daily airlift summary, Jan 21-Apr 8, 1968, Atch to Memo Maj Kenneth D. Stahl, 834th AD to DOC, subj: Tactical Airlift Support for Khe Sanh, 21 Jan-8 Apr 68, Apr 15, 1968. (Hereafter cited as Khe Sanh Daily Airlift Summary.)
9. Rprt, 3rd Marine Div, Command Chronology for Jan 68; rprt, 26th Marine Regiment, Command Chronology, Jan 1-31, 1968; ALOREP data extract, for Jan 24-31, 1968; Khe Sanh Daily Airlift Summary; TSgt Bruce W. Pollica and TSgt Joe R. Rickey, 834 AD *Tactical Airlift Support for Khe Sanh*, 21 Jan-8 Apr 1968 (834th AD Hist Off, 1969), p 20. (Hereafter cited as Pollica-Rickey, *Khe Sanh*.)
10. Intvw, author with TSgt John K. McCall, Apr 7, 1972 (McCall was a C-130 crewman with the 374th Wing which operated out of Cam Ranh Bay, and flew five sorties into Khe Sanh in late January and early February 1968); hist, 374th TAWg, Jul-Oct 68, p 70; Bowers, SEA Journal.

TACTICAL AIRLIFT

11. Bernard C. Nalty, *Air Power and the Fight for Khe Sanh* (Off/AF Hist, 1973), pp 43-44; msg, 7th AF DIS to 13th AF, subj: Khe Sanh Threat and Friendly OB, Mar 5, 1968; Probst intvw, May 8, 1972 (Probst was C-130B pilot, earning DFC for landing at Khe Sanh on Jan 24, 1968); Guay, "The Khe Sanh Airlift," p 46.
12. Memo, Col Ellis J. Wheless, Dir-ALCC, to DOCT and DOCC, subj: Aerial Resupply I Corps Area, Feb 4, 1968; msg, Dir/ALCC to Hq USAF Cd Post, 260730Z Feb 68; Ginsburgh intvw, Jun 3, 1971; Nalty, *Fight for Khe Sanh*, pp 16-17.
13. Warren A. Trest, *Khe Sanh (Operation Niagara)*, 22 Jan-31 Mar 68, (PACAF, Proj CHECO, Sep 13, 1968); p 74; ALOREP data extract, for dates in Feb 68; msgs, III MAF COC to MACV, 100703Z and 110735Z Feb 68; rprt, Lt Col William R. Smith, Mission Cdr Rprt, Feb 21, 1968; rprt, 26th Marine Regt, Cd Chronology, 1-29 Feb 68; msg, Dir/ALCC, to III MAF, subj: Resupply Khe Sanh, Feb 11, 1968; Shore, *Battle for Khe Sanh*, pp 66-71.
14. Hist, 314th TAWg, Jan-Mar 68, pp 28-30; hist, 315th AD, Jan-Jun 68, pp 56-57; *Air Force Times*, Apr 3, 1968; information sheet, Sec AF/Off Information, subj: The Air Force Cross, Background Information, Mar 70; Ted R. Sturm, "Countdown to Eternity," *Airman*, May 70, pp 60-64.
15. Amodt intvw, Mar 27, 1973; hist, 314th TAWg, Jan-Mar 68, p 22; Capt Ken Kashiwahara, "Lifeline to Khe Sanh," *Airman*, Jul 68, p 7; Pollica-Rickey, *Khe Sanh*, pp 12-13.
16. Rprt, MARTSq 152, Cd Chronology, 1-29, Feb 68; rprt, 3rd Marine Div, Cd Chronology for Feb 68, Apr 7, 1968; daily situation rprt, USARV G-4, Feb 11, 1968; Shore, *Battle for Khe Sanh*, p 76.
17. Msg 02663, MACV J-3 to CG USARV, *et al*, 240858Z Jan 68; msg, Dir/ALCC, to III MAF, subj: Resupply Khe Sanh, Feb 11, 1968; 366th TFWg OPLAN 701-68, Aerial Drop and Resupply Support, Feb 10, 1968; msg 02561, MACV J-4 to USARV, 231241Z Jan 68.
18. Msg, 834th AD to 315th ACWg, 040906Z Feb 68; msg, Dir/ALCC to III MAF, 041206Z Feb 68; msg DOR, 834th AD to 315th AD, 240325Z Jan 68; intvw, author with Lt Col Myles A. Rohrlick, Jan 11, 1973; Kashiwahara, "Lifeline to Khe Sanh," p 6.
19. Pollica-Rickey, *Khe Sanh*, pp 22-24; staff summary sheet, Col William T. Phillips, ALCC, subj: Khe Sanh Resupply, Feb 18, 1968; Khe Sanh Daily Airlift Summary; msg, Dir/ALCC to III MAF, subj: Resupply Khe Sanh, Feb 11, 1968; msg, CG III MAF to 26th Marine Regt, 111258Z Feb 68; msg, CG III MAF to 7th AF, 161436Z Feb 68.
20. Staff summary sheet, Dir/Opns, 834th AD subj: IFR GCA/Doppler Aerial Delivery, Feb 15, 1968; hist, 314th TAWg, Jan-Mar 68, pp 25-29; Khe Sanh Daily Airlift Summary, McLaughlin, "Khe Sanh," p 60-61.
21. Staff summary sheet, Dir/ALCC, subj: Khe Sanh Resupply, Feb 18, 1968; intvw, author with Capt John D. Howder, Apr 14, 1972; msg, 7th AF to PACAF, 181020Z Feb 68; hist, 315th AD, Jan-Jun 68, I, 71; rprt, 7th AF, Khe Sanh Analysis: Air Logistic Support, Feb 21, 1968.
22. Ltrs, Maj Wayne K. Shanahan, Mission Coordinator, Da Nang, to Lt Col Kasarda, ALCC, subj: Khe Sanh Airland and Airdrop Opns Summary (Da Nang), Feb 19, 20, and 21, 1968; fact sheets, 7th AF, Khe Sanh Airlift Summary for Gen William Momoyer, Feb 20 and 21, 1968; msg, 7th AF to CG III MAF, 090701Z Mar 68; study, Capt Anderson E. Hatfield, Opns Off, CCT, 8th Aerial Port Sq, subj: CCT Operations, Dec 68, pp 13-14; McLaughlin, "Khe Sanh," pp 61-63.
23. Ltr, Lt Col Paul W. Amodt to author, Apr 72; Guay, "The Khe Sanh Airlift," p 47; Khe Sanh Daily Airlift Summary; rprt, MARTSq 152, Cd Chronology, 1-29 Feb 68; msgs, Dir/ALCC to PACAF, 231315Z, 240915Z, 271113Z, 281157Z Feb 68, and 020315Z Mar 68; intvw, author with Lt Col Billy R. Gibson, Apr 21, 1972; Amodt intvw, Mar 27, 1973; rprt, Lt Col John F. Masters, Mission Cdr Report, 22 Feb-3 Mar 68; rprt, Lt Col Lewis H. Dunagan, Mission Cdr Khe Sanh Rprt, 2-17 Mar 68.
24. Rprt, Lt Col John F. Masters, Mission Cdr Rprt, Khe Sanh, 22 Feb-3 Mar 68; msgs, III MAF COC, to MACV J-4, 240247Z, 280611Z, 290233Z, 260555Z, 270217Z Feb 68, and 010207Z Mar 68; Shore, *Battle for Khe Sanh*, p 118; Guay, "The Khe Sanh Airlift," p 46.

25. Rprt, 26th Marine Regt, Cd Chronology, 1-29 Feb 68; rprt, FMFP, Ops of US Marine Forces in Vietnam, Feb 68.
26. Rprt, Lt Col Lewis H. Dunagan, Mission Cdr Rprt, Khe Sanh, 2-17 Mar 68; rprt, Lt Col Donald M. Davis, Mission Cdr Rprt, Khe Sanh, 16-31 Mar 68; rprt, Lt Col William R. Smith, Mission Cdr Rprt, Khe Sanh, Feb 21, 1968; *Newsweek*, Mar 18, 1968, pp 18-22.
27. Rprt, Lt Col William R. Smith, Mission Cdr Rprt, Khe Sanh, Feb 21, 1968; rprt, Lt Col John F. Masters, Mission Cdr Rprt, Khe Sanh, 22 Feb-3 Mar 68; rprt, Lt Col Lewis H. Dunagan, Mission Cdr Rprt, Khe Sanh, 2-17 Mar 68; rprt, Lt Col Donald M. Davis, Mission Cdr Rprt, Khe Sanh, 16-31 Mar 68; rprt, Lt Col Donald E. Girton, Mission Cdr Rprt, Khe Sanh, 31 Mar-12 Apr 68; rprt, Lt Col Paul W. Barker, Mission Cdr Rprt, Khe Sanh, 7 Apr-6 May 68.
28. Rprt, Maj Gen Burl W. McLaughlin, Cdr, 834th AD, EOTR, Nov 67-Jun 69, pp 1-23 to 1-24; McLaughlin, "Khe Sanh," p 65; rprt, Lt Col William R. Smith, Mission Cdr Rprt, Khe Sanh, Feb 21, 1968; rprt, Lt Col Lewis H. Dunagan, Mission Cdr Rprt, Khe Sanh, 2-17 Mar 68; rprt, Lt Col John F. Masters, Mission Cdr Rprt, Khe Sanh, 22 Feb-3 Mar 68; rprt, Lt Col Donald M. Davis, Mission Cdr Rprt, Khe Sanh, 16-31 Mar 68.
29. Pollica-Rickey, *Khe Sanh*, pp 44-45; McLaughlin, "Khe Sanh," pp 65-67; Capt Herbert M. Hamako, "Tactical Aeromedical Evacuation in Vietnam," *USAF Medical Service Digest*, XX (Nov 69), p 4.
30. Pollica-Rickey, *Khe Sanh*, pp 43-45; rprt, Lt Col William R. Smith, Mission Cdr Rprt, Khe Sanh, Feb 21, 1968; rprt, Lt Col Donald M. Davis, Mission Cdr Rprt, Khe Sanh, 16-31 Mar 68; hist, 2nd Aerial Port Gp, Apr-Jun 68; hist, 8th Aerial Port Sq, Jan-Mar 68; rprt, McLaughlin, EOTR, Jun 69, pp 6-16; McLaughlin, "Khe Sanh," p 65; Kashiwahara, "Lifeline to Khe Sanh," p 8; rprt, TAC, Activity Input to Proj Corona Harvest on Tactical Airlift in SEA, 1965-68, Dec 69, vol III, pp III-139 to III-140.
31. Ltrs, Maj Wayne K. Shanahan, Mission Coordinator, Da Nang, to Lt Col Kasarda, ALCC, subj: Khe Sanh Airland/Airdrop Ops, Da Nang, Feb 24 through Mar 15, 1968; rprt, Lt Col William R. Smith, Mission Cdr Rprt, Khe Sanh, Feb 21, 1968; msg 00163, 7th AF Liaison Off, MACV Fwd, to 7th AF, 030205Z Feb 68; msg, 26th Marine Regt to 3rd Marine Div, 151426Z Feb 68; msg, Dir/ALCC to III MAF, subj: Resupply of Khe Sanh, Feb 19, 1968; msg, Dir/ALCC to Hq USAF, 260730Z Feb 68; msg, Cdr, 7th AF to III MAF, 090701Z Mar 68; msg, Cdr III MAF to MACV, 101354Z Mar 68; intvw, Corona Harvest intvw no 95 with Col Milton N. Crawford, 834th AD, Feb 15, 1969.
32. Crawford intvw, Feb 15, 1969, pp 5-6; msg, 1st Log Cd to USARV, 060209Z Mar 68; msg, CG III MAF to MACV, 101354Z Mar 68; msg 07876, MACV J-4 to CINCPAC, 200443Z Mar 68; rprt, 3rd Marine Div, Cd Chronology for Mar 68.
33. Davis intvw, Apr 24, 1972; rptrs, Maj Wayne K. Shanahan, Mission Coordinator, Da Nang, Mar 12 and 18, 1968; rptrs, Maj Norman K. Jenson, Mission Coordinator, Apr 2 and 6, 1968; 366th TFW OPLAN 701-68, Aerial Drop and Resupply Support, Feb 10, 1968.
34. Msgs, Dir/ALCC, 7th AF to PACAF, 020946Z and 080730Z Mar 68; ltr, Lt Gen Bruce Palmer, Dep CG, to Lt Gen Arthur S. Collins, ACS/Force Devel Dept/Army, Apr 4, 1968; Shore, *Battle for Khe Sanh*, p 125; McLaughlin, "Khe Sanh," pp 64-65; *The Phan Rang Weekly*, Apr 17, 1968; rprt, Col Noble F. Greenhill, Cdr 315th TAWg, EOTR, Apr 30, 1971.
35. Rprt, Lt Col John F. Masters, Mission Cdr Report, Khe Sanh, 22 Feb-3 Mar 68; ltr, Maj Wayne K. Shanahan, Mission Coordinator, Da Nang, to Lt Col Kasarda, ALCC, subj: Khe Sanh Airland and Airdrop Ops, Da Nang, Mar 7, 1968; msg TACD, 7th AF TAC to 834th AD, units, 061245Z Mar 68; msg, Dir/ALCC to PACAF, et al, 071032Z Mar 68; ltr, Capt Anderson E. Hatfield, OIC, CCT 1, to Maj Barinowski, Ch, CCT Ops, 2nd Aer Port Gp, subj: Khe Sanh Suggestions and Observations, Mar 10, 1968.
36. Msg AVCA-GO-03-019, 1st Log Cd to III MAF, subj: Return of LAPES Electrical System Cables from Khe Sanh, Mar 6, 1968; msg, Dir/ALCC, 7th AF, to PACAF, 080730Z Mar 68; msg, III MAF to 834th AD, 091258Z

TACTICAL AIRLIFT

Mar 68; msg, 834th AD to 315th AD, subj: ARC LAPES Load Rigging Equipment, Mar 13, 1968; msg, 315th AD to 834th AD, 150625Z Mar 68.

37. Rprt, Capt Anderson E. Hatfield, Opns Off, CCT, 8th Aerial Port Sq, subj: CCT Operations, Dec 68; ltr, Maj Wayne K. Shanahan to Lt Col Kasarda, ALCC, subj: Khe Sanh Airland/Airdrop Opns, Da Nang, Mar 9, 1968; ltr, Maj Wayne K. Shanahan, Miss Coordinator, To Whom It May Concern, subj: Accident Statement Concerning the 57 Mission on 21 Feb 68; rprt, Lt Col William R. Smith, Mission Cdr Rprt, Khe Sanh, Feb 21, 1968; rprt, Lt Col Donald M. Davis, Mission Cdr Rprt, Khe Sanh, 16-30 Mar 68; rprt, Lt Col Lewis H. Dunagan, Mission Cdr Rprt, Khe Sanh, 2-17 Mar 68; hist, 374th TAWg, Jan-Mar 68, p 28; rptrs, 26th Marine Regt, Cd Chronologies, Feb and Mar 68.

38. Rprt, Lt Col Donald E. Girton, Mission Cdr Rprt, Khe Sanh, 31 Mar-12 Apr 68; Phillips intvw, Nov 1, 1968; msg, Dir/Opns, 834th AD to PACAF, 052340Z Mar 68; msg DOALS, Dir/Airt, TAC, to 315th AD, 152158Z Mar 68; rprt, Capt Anderson E. Hatfield, Opns Off, CCT, 8th Aerial Port Sq, subj: CCT Operations, Dec 68, p 15; hist, 374th TAWg, Jul-Oct 68, p 71; rprt, FMFP, Opns of US Marine Forces Vietnam, Mar 68; McLaughlin, "Khe Sanh," p 64.

39. Rprt, Lt Col Lewis H. Dunagan, Mission Cdr Rprt, Khe Sanh, 2-17 Mar 68; rprt, Lt Col Donald M. Davis, Mission Cdr Rprt, Khe Sanh, 16-30 Mar 68; ltr, Maj Wayne K. Shanahan, Mission Cdr, Da Nang, to Lt Col Kasarda, ALCC, subj: Mission Cdr Rprt, Mar 18, 1968; ltrs, Maj Wayne K. Shanahan, Mission Coordinator, Da Nang, to Lt Col Kasarda, ALCC, subj: Khe Sanh Airland/Airdrop Opns, Da Nang, Feb 29, Mar 7, Mar 8, Mar 12, and Mar 13, 1968.

40. McLaughlin, "Khe Sanh," pp 62, 67; msg, CG III MAF to MACV, 101354Z Mar 68; ltr, Maj Wayne K. Shanahan, Mission Cdr, Da Nang, to Lt Col Kasarda, ALCC, subj: Khe Sanh Airland and Airdrop Opns (Da Nang), Feb 28, 1968; Cd Chronology, 26th Marine Regt, 1-29 Feb 68; msg DOC, 834th AD to Dets 1 and 2, 090740Z Mar 68; Davis intvw, Apr 24, 1972 (Davis was C-130A pilot making Khe Sanh drops).

41. Warren A. Trest, *Khe Sanh (Opn Niagara)* 22 Jan-31 Mar 68 (Hq PACAF, Proj CHECO, Sep 13, 1968), pp 77-78; ltr, Maj Wayne K. Shanahan to Lt Col Kasarda, ALCC, subj: Khe Sanh Airland and Airdrop Opns (DN), Mar 1, 1968; ltr, Maj Paul E. Dahle, Ret, to author, Nov 25, 1972 (Dahle was C-130B navigator with missions into Khe Sanh); msg, III MAF to Cdr 7th AF, 310334Z Mar 68; ltrs, Maj Robert G. Archer, Mission Coord, Da Nang, to Lt Col Kasarda, ALCC, subj: Khe Sanh Airland and Airdrop Opns, Da Nang, Mar 27, Mar 28, 1968; ltr, Maj Norman K. Jensen, Mission Coord, Da Nang, to Lt Col Kasarda, ALCC, subj: Khe Sanh Airland and Airdrop Opns (DN), Apr 2, 1968.

42. Msg, CG III MAF to FMFP, 230619Z Mar 68; msgs, III MAF to MACV J-4, 020527Z, 090615Z, 150047Z, 290011Z Mar 68; rprt, 3rd Marine Div, Cd Chronology for Mar 68, p 22; rprt, FMFP, Opns of US Marine Forces Vietnam, p 82; Khe Sanh Daily Airlift Summary. Note: Data from MAG-36 (CH-46's) and HMH-463 (CH-53's) suggest that the stated helicopter tonnage figure is low. HMH-463 claimed delivery of 903 tons in support of Scotland during March, while daily STREPs by the Sky Knight Group appear to indicate lifts of roughly 900 additional tons. These may include retrograde lifts, movements to nearby destinations such as Ca Lu, or lifts from the main base to the hill posts.

43. Rprt, MACV J-2, PERINTREP 3-68, 1-31 Mar 68; Shore, *Battle for Khe Sanh*, p 126; rprt, 3rd Marine Div, Cd Chronology for Mar 68, p 18; rprt, MACV, More Indications Air Strikes and Artillery Preempted Khe Sanh Attack, Apr 16, 1968; Westmoreland, *A Soldier Reports*, p 347.

44. Study 3-68, 31st Mil Hist Det, Operation Pegasus, May 68, p 12; Lt Gen John J. Tolson III, "Pegasus," *Army*, Dec 71, pp 10-19; msg, CG Provis CV, to CG III MAF, 310315Z Mar 68; rprt, MACV J-4, LOGSUM 4-68 for Mar 68, Apr 19, 1968.

45. Msg DOC, 834th AD to 315th AD, subj: Airdrop Qualified Crew Requirements, Mar 30, 1968; msg, III MAF to MACV, 011244Z Apr 68; msg, CG III MAF to COMUSMACV, 280600Z Mar 68; intvw, author with Maj Robert F. Mullen, Sep 20, 1973.

46. Mullen intvw, Sep 20, 1973 (Mul-

len was TALO with 1st Cavalry Division, at Stud during Pegasus); hist, 483rd TAWg, Mar-Jun 68; study 3-68, 31st Mil Hist Det, Opn Pegasus, May 68; hist, 315th ACWg, Apr-Jun 68, pp vii, 11-12, 20; rpt, FMFP, Ops of Marine Forces, Vietnam, Apr 68, pp 7-12, 64-65; Lt Gen John J. Tolson III, "Pegasus," Army, Dec 71, pp 10-19.

47. Rprt, Lt Col Zane G. Brewer, Mission Cdr Rprt; Khe Sanh, 12-26 Apr 68; Nalty, *Air Power and the Fight for Khe Sanh*, pp 100-102; rprt, Lt Col Donald E. Girton, Mission Cdr Rprt, Apr 14, 1968.

48. Memo, Dir/Construction MACV to Ch, Hist Br, SJS, subj: Qtrly Hist Summ, Jul 24, 1968; rprt, MACV J-4, LOGSUM 5-68 for Apr 68, May 20, 1968; Westmoreland, *A Soldier Reports*, pp 347-348; msgs, CG III MAF to

COMUSMACV, 230403Z May 68 and 110156Z Jun 68; rprt, FMFP, Ops of US Marine Forces, Vietnam, Jun 68.

49. Nalty, *Air Power and the Fight for Khe Sanh*, pp 103; study, JGS, Study of VC Documents: VC Forces at B5 Front and Encircling Khe Sanh Base, Apr 27, 1968.

50. Khe Sanh Daily Airlift Summary.

51. Amotd intvw, Mar 27, 1973.

52. Amotd intvw, Mar 27, 1973; rprt, AFRDQ/AFSC/ANSER, Hq USAF, CFP/TDP for LIT, Aug 69; Guay, "The Khe Sanh Airlift," Dec 69.

53. Rprt, DCS/Plans and Ops, Hq USAF, Trends, Indicators, and Analyses, Jun 68; rprt, MACV, Qtrly Evaluation, Apr-Jun 68, p 11; fact sheet, MACV, subj: Khe Sanh Resupply Rprt, Apr 68; rprt, DIA, Defense Intelligence Digest, Sep 68; Khe Sanh Daily Airlift Summary.

Chapter XIII

Tet and the Battles of 1968

1. Study, Harold N. Sowers, WSEG Study 144, VC/NVA Ops and Activities in SVN for the First Six Months of 1968, Nov 68; rprt, MACV J-2, Intell Bulletin no 1-68 (Jan), Jan 1, 1968; msg, DODPEO to CINCPAC, 250636Z Feb 67; Don Oberdorfer, *Tet!* (Avon Book, New York, 1971), pp 59-93, 155-156; Westmoreland, *A Soldier Reports*, pp 310-334.

2. Oberdorfer, *Tet!*, pp 139-149; Gibson intvw, Apr 21, 1972; briefing text, Maj Angelo Theofanous, USA, G-2 Advisor, II CTZ, Briefing to Gen Hollas and Gen Smith, Apr 68; daily journals, US Advis Det, II CTZ, dates in Jan and Feb 68; draft rprt, US Advis Det, II CTZ, Tet Offensive, 1968; talking paper, Advisors II CTZ, subj: Tet Offensive AAR, Mar 21, 1968; unpubl ms, Bowers, SEA Journal.

3. Probst intvw, May 8, 1972; ltr, Maj Paul E. Dahle, Ret, to author, Nov 25, 1972; rprt, Col Joel C. Stevenson, Cdr, Det 1, 834th AD, [ca Jan 1969]; rprt, Lt Gen Fred C. Weyand, Cdr II FFV, Tet Offensive AAR, 31 Jan-18 Feb

68; rprt, Maj Gen Burl McLaughlin, EOTR, Jun 69; ALOREP data extract for 31 Jan-2 Feb 68; Maj A. W. Thompson and C. William Thorndale, *Air Response to the Tet Offensive*, 30 Jan-29 Feb 68, (PACAF, Proj CHECO, Aug 12, 1968), p 48; hist, 463rd TAWg, Jan-Mar 68, pp 11-12; hist, 315th AD, Jan-Jun 68, vol 1, pp xiv, 77; hist, 315th ACWg, Jan-Mar 68, p 15; hist, 310th ACSq, Jan-Mar 68.

4. Daily journals, G-2/G-3 TOC, I FFV, Jan-Feb 68; Gibson intvw, Apr 21, 1972; unpubl ms, Bowers, SEA Journal, 1969.

5. Daily journals, G-2/G-3 TOC, I FFV, Feb 68; ALOREP data extract, Jan 31 and Feb 1, 1968; hist, 315th ACWg, Jan-Mar 68, pp 15-16; hist, 309th ACSq, Jan-Mar 68, p 2; hist, 310th ACSq, Jan-Mar 68; Acuff intvw, Jan 23, 1969; ltr, Gen William W. Momyer, Cdr, 7th AF, to 834th AD, subj: Ltr of Commendation, Feb 3, 1968.

6. Msg 03405, Cdr MACV to CG III MAF, *et al*, 010625Z Feb 68.

7. Ltr, Col Raymond O. Roush, Dir/

TACTICAL AIRLIFT

Materiel, 834th AD, to MA/DOO, 834th AD, subj: Feb TAPA Impacts, Mar 14, 1968; hist, 315th ACWg, Jan-Mar 68, p 26; unpubl ms, Bowers, SEA Journal, 1969: Thompson and Thorndale, *Air Response to the Tet Offensive* (PACAF, Proj CHECO, Aug 12, 1968), p 48.

8. Memo, Ch, P&O Div, USARV G-4, to USARV G-4, subj: Logistical Status as of 1 Feb 68 (as of 1100 hours), Feb 1, 1968; daily situation rpt, USARV G-4, Feb 2, 1968; memo, Dir/Transp, 1st Log Cd to ACS/SP&O, subj: Logistical Summary Rprt, Mar 4, 1968; msg 40419, CG USARV to COMUSMACV, subj: Logistics Summary 2-68, Mar 14, 1968; draft ms, MACV, Lessons Learned —VC/NVA Tet Offensive, 1968.

9. Rprt, USARV G-4, Daily Situation Rprt, Feb 2, 1968; duty officer log, USARV G-4, Feb 2, 1968; daily journals, G-2/G-3 TOC, I FFV, 30 Jan-1 Feb 68; hist, 315th ACWg, Jan-Mar 68, p 16; hist, 319th ACSq, Jan-Mar 68, p 3; hist, 310th ACSq, Jan-Mar 68, p 3; David R. Mets, *Tactical Airlift Operations*, (PACAF, Proj CHECO, Jun 20, 1969), pp 26-27.

10. Rptrs, USARV G-4, Daily Situation Rptrs, Feb 1-20, 1968; memo, Dir/Petroleum, 1st Log Cd, to SP&O, 1st Log Cd, subj: Log Summary Rprt, Mar 4, 1968; ALOREP data extract, 1-15 Feb 68, hist, MACV, 1968; pp 890-893; intvw, author with Lt Col Billy R. Gibson, Feb 22, 173.

11. Rptrs, USARV G-4, Daily Situation Rptrs, Feb 2-10, 1968; ALOREP data extract, 1-4 Feb 68; Thompson and Thorndale, *Air Response to the Tet Offensive*, (PACAF, Proj CHECO, Aug 12, 1968), p 50; rprt, MACV, Assessment of RVNAF as of 29 Feb 68, Mar 21, 1968; daily staff journals, G-4 II FFV, dates in Jan and Feb 68.

12. Rprt, Hq US Army Advisory Gp, IV CTZ, Historical Summary of the Viet Cong Tet Offensive IV CTZ, Apr 8, 1968; rptrs, USARV G-4, Daily Situation Rptrs, Feb 1 and 2, 1968; daily journals, S-4, 5th SFGp, Feb 1-4, 1968; ALOREP data extract; msg 36525, CG USARV to COMUSMACV, subj: Log Summ 1-68, Feb 14, 1968; msg WTOB, WTOB to WTO, 090915Z Apr 68; msg 200093, CG USARV to MACV, 020500Z Feb 68; hist, 18th ACSq, Jan-Mar 68, p 6; hist, 309th ACSq, Jan-Mar 68, p 3; hist, 310th ACSq, Jan-Mar 68.

13. Ltr, MACV J-4 to Dep CG USARV, subj: Allocation of Dedicated Airlift, Feb 20, 1968; ltr, Maj Delbert R. Brooks, USA, 9th Inf Div Advis Det, to Sr Advis, 9th Inf Div, subj: EOTR, Jun 17, 1968; rprt, USARV G-4, Daily Situation Rprt, Feb 3, 1968; msg 30168, Cdr MACV to Units, 041045Z Feb 68; msg 200093, CG USARV to MACV, 020500Z Feb 68; memo, Col R. H. Goodell, USA, Cdr TMA, to Brig Gen Henry A. Rasmussen, subj: Transportation Concept for Movement of Army Acft Repair Parts, Feb 11, 1968; rprt, MACV, Qtrly Eval, Jan-Mar 68, May 9, 1968; hist, MACV, 1968, II, 623; Thompson and Thorndale, *Air Response to the Tet Offensive*, (PACAF, Proj CHECO, Aug 12, 1968), pp 42-50; rprt, Proj CHECO SEA Digest, special issue, subj: Air Response to VC Tet Offensive, Feb 68, pp 17-20.

14. Ltr, Lt Col Paul W. Amodt to author, Apr 72; rprt, FMFP, Ops of US Marine Forces Vietnam, Feb 68, pp 78-103; rprt, MACV, Qtrly Eval, Jan-Mar 68, May 9, 1968.

15. Rptrs, USARV G-4, Daily Situation Rptrs, Feb 4-5, 1968; draft ms, Lt Gen John J. Tolson, "Airmobility in Vietnam: The Origin and Development of the US Army's Airmobile Concept in SEA," Oct 30, 1971, pp 284-286; Gibson intvw, Apr 21, 1972 and Feb 22, 1973; ALOREP data extract, 4-8 Feb 68.

16. Rptrs, USARV G-4, Daily and Weekly Situation Rptrs, dates in Feb 68; daily staff journals, Engr Sect, I FFV, Jan 30 and 31, 1968; ltr, Capt William A. Barry to author, subj: Tactical Airlift Missions in Vietnam, May 72; hist, 374th TAWg, Jan-Mar 68, pp 29-30; rprt, FMFP, Ops of US Marine Forces Vietnam, pp 41-42; ALOREP data extract, Feb 68; msg, III MAF to MACV, 181530Z Feb 68.

17. Study 2-68, 31st Mil Hist Det, Operation Hue City, Aug 68; rprt, USARV G-4, Daily Situation Rprt, Feb 3, 1968; ALOREP data extract, Feb 68; msg 04593, MACV COC to 7th AF, et al, 132312Z Feb 68; rprt, MACV, Qtrly Eval, Jan-Mar 68, May 9, 1968; daily staff journals, G-2/G-3 Sections, 101st Abn Div, dates in Feb 68; Cox intvw, Mar 1, 1968; daily journal source files, 101st Abn Div, dates in Feb 68.

18. Rprt, FMFP, Ops of US Marine Forces Vietnam, Feb 68; msg DM,

PACAF to 7th AF, Dir/Materiel, 140500Z Feb 68; *Pentagon Papers*, GPO ed, vol V, pt IV-C-6(c), pp 2-9, vol VI, pt IV-C-7(b), p 149; JCS paper, JCS, subj: Emergency Reinforcement of COMUSMACV, Feb 11, 1968; ALOREP data extract, Feb 22-24, 1968.

19. Phillips intvw, Nov 1, 1968; rpt, Maj Gen Burl McLaughlin, EOTR, Jun 69; ltr, Lt Col Paul W. Amodt to author, Apr 72; hist, 14th Aer Port Sq, Jan-Mar 68; staff summary sheet, Dir/Opns, 834th AD, subj: Support of Airlift Forces in I CTZ, Mar 2, 1968.

20. Rpt, 7th AF, Dir/Tactical Analysis, Airlift Effort by Corps Area in SVN, DOA Note 68-4, 1968; rpt, FMFP, Opns of US Marine Forces Vietnam, Feb 68; hist, MACV, 1968, II, 619-620; article, "The Hai Van Pass," *Army*, Jun 69, pp 45-47.

21. Msg 9143, JCS to CINCSTRIKE, 040026Z Feb 68; msg 03614, Cdr MACV to CINCPAC, 040624Z Feb 68; ltr, Capt William A. Barry to author, subj: Vietnam Airlift, Jun 17, 1972; Howder intvw, Apr 14, 1972; hist, CINCPAC, 1968, IV, 123-131.

22. Howder intvw, Apr 14, 1972; msg, WTOB to Ch, WTO, 260945Z Feb 68; hist, TAC, Jan-Jun 68, pp 448-454; hist, 315th AD, Jan-Jun 68, p 62; unpubl ms, Bowers, *SEA Journal*, 1969.

23. Hist, 12th ACSq, Jan-Mar 68, pp 7-10; hist, 315th ACWg, Jan-Mar 68, p 14; rpt, Maj Gen Burl W. McLaughlin, Cdr 834th AD, EOTR, Jun 69.

24. Phillips intvw, Nov 1, 1968; msg, Dir/Opns, 7th AF, to CINCPACAF, 091130Z Feb 68; msg, 7th AF to PACAF, 211040Z Feb 68; Crawford intvw, Feb 15, 1969; Maj David R. Mets, *Tactical Airlift Operations*, p 28; Thompson and Thorndale, *Air Response to the Tet Offensive*, pp 52-53.

25. Staff summary sheet, Dir/Opns, 834th AD, subj: Support of Airlift Forces in I CTZ, Mar 2, 1968; rpt, PACAF Dir/Tact Eval, Summary Air Opns, SEA, Feb 68, pp 3-1 to 3-6, 5A-8; rpt, Management Analysis Off, 834th AD, Tactical Airlift Performance Analysis, Dec 68; memo, 7th AF, TACC for Gen Momoyer, Feb 28, 1968; rpt, Col Joel C. Stevenson, Cdr, Det 1, 834th AD, EOTR, Jan 69; hist, 315th AD, Jan-Jun 68, vol I, p xvi; hist, 19th ACSq, Jan-Mar 68.

26. Study, Opns Analysis Off, Hq

USAF, Transport Acft Utilization in VN, Jan 68, Jun 68; rpt, Management Analysis Off, 834th AD, Tactical Airlift Performance Analysis, Dec 68; rpt, Maj Gen Burl W. McLaughlin, Cdr 834th AD, EOTR, Jun 69.

27. Rpts, MACV J-4, LOGSUM 2-68 for Jan 68 and 3-68 for Feb 68, Feb 20 and Mar 20, 1968; hist, 7th AF, Jul-Dec 68, p 311; ltrs, Gen William C. Westmoreland, Cdr MACV, to Cdr 7th AF, subj: Commendation, Apr 4 and Apr 25, 1968.

28. Msg 07708, MACV J-2 to 5th SFGp, 181124Z Mar 68; msg 1142, MACV Combined Intell Sect, to AIG 7809, 200450Z Apr 68; rpt, FMFP, Opns of US Marine Forces Vietnam, Mar 68 and Apr 68; Lt Gen John J. Tolson, *Airmobility, 1961-1971* (Vietnam Studies, Dept/Army, 1973), p 192.

29. Msg, CG III MAF to COMUSMACV, 280906Z Jul 67; msg 41883, MACV COC to USARV, 171045Z Dec 67; msg, CG III MAF to COMUSMACV, 060758Z Feb 68; msg 06910, MACV COC to CG III MAF, 092005Z Mar 68.

30. PCV OPLAN 2-68, Apr 12, 1968; PCV OPLAN 3-68, Apr 16, 1968; 1st Cav Div OPLAN 5-68 (Delaware), Apr 16, 1968; study, 31st Mil Hist Det, Operation Delaware, Feb 69, pp 1-9; C. William Thorndale, Operation Delaware, (PACAF, Proj CHECO, Sep 2, 1968), pp 35-38; press memo, PCV, subj: Lt Gen Rosson's Press Brief Given at PCV on Morning of 17 May 68.

31. Msg, Col William Phillips, 834th AD to Col Pauley, 315th AD, Apr 18, 1968; msg DPMC, 315th AD to 314th TAWg, 180800Z Apr 68; hist, 315th AD, Jan-Jun 68, I, 33-34.

32. Daily staff journals, Fwd CP, 1st Cav Div, Apr 19 through 21, 1968; intvw, Capt J. A. Whitehorne with Maj Gen John J. Tolson, Cdr 1st Cav Div, May 27, 1968; intvw, Proj CHECO with Sgt Raymond Mills, USA, May 24, 1968; study 4-68, 31st Mil Hist Det, Operation Delaware, Feb 69, pp 16-19; C. William Thorndale, Operation Delaware, Feb 69, pp 1-29.

33. Intvw, Proj CHECO, with Capt Robert F. Mullen, TALO, 1st Cav Div, May 24, 1968; Mullen intvw, Sep 20, 1973; msg, PCV Tact Ops Center, to COMUSMACV, 260411Z Apr 68; hist, 2nd Aerial Port Gp, Apr-Jun 68; paper, Capt Anderson E. Hatfield, Opns Off,

TACTICAL AIRLIFT

CCT, 8th Aerial Port Sq, CCT Operations, Dec 68, pp 20-21; intvw, author with Col Donald R. Strobaugh, Mar 12, 1974.

34. Gibson intvw, Apr 21, 1972; intvw, author with Lt Col Nelson W. Kimmey, Mar 9, 1973.

35. Mullen intvw, May 24, 1968; Mullen intvw, Sep 20, 1973.

36. Gibson intvw, Apr 21, 1972; Kimmey intvw, Mar 9, 1973.

37. Gibson intvw, Apr 21, 1972; Mullen intvw, May 24, 1968; Mullen intvw, Sep 20, 1973; Probst intvw, May 8, 1972; intvw, author with Maj Alan L. Gropman, Apr 13, 1972; msg, CG 1st Air Cav Div to PCV COC, 260506Z Apr 68; ALOREP data extract.

38. Gropman intvw, Apr 13, 1972; Mullen intvw, Sep 20, 1973; Mullen intvw, May 24, 1968; hist, 463rd TAWg, Apr-Jun 68, pp 16-18; Strobaugh intvw, Mar 12, 1974.

39. Msg, PCV TOC to COMUSMACV, 280350Z Apr 68; Gibson intvw, Apr 21, 1972; rprt, 1st Cav Div, SITREP no 118, 270001-272400 Apr 68; study 4-68, 31st Mil Hist Det, Operation Delaware, Feb 69; Mullen intvw, May 24, 1968; hist, 374th TAWg, Jul-Oct 68, pp 75-77; Gropman intvw, Apr 13, 1972; ALOREP data extract.

40. Gropman intvw, Apr 13, 1972; Gibson intvw, Apr 21, 1972; intvw, author with Lt Col Paul W. Arcari, Mar 14, 1973; intvw, author with Maj Stanley D. Berry, Mar 14, 1973.

41. Intvw, author with Capt Phillip A. Dibb, Mar 30, 1973; mission resume, C-130 Aircrew, atchd to 834th AD Memo for Gen William W. Momoyer, May 3, 1968.

42. Intvw, author with Lt Col Ray F. Butts, Feb 9, 1973; Gropman intvw, Apr 13, 1972; Gibson intvw, Apr 13, 1972; ALOREP data extract.

43. Ltr, Capt William J. Endres to author, Mar 21, 1973; Mullen intvw, Sep 20, 1973; rprt, 1st Cav Div, SITREP no 120, 290001 to 292400 Apr 68; study 4-68, 31st Mil Hist Det, Operation Delaware, Feb 69; msg, PCV TOC to COMUSMACV, 290315Z Apr 68; Strobaugh intvw, Mar 12, 1974.

44. Gropman intvw, Apr 13, 1972; ltr, Capt William A. Barry to author, subj: Tactical Airlift Missions in Vietnam, May 72; ltr, Capt William A. Barry to author, subj: Vietnam Airlift, Jun 17, 1972; msg

TFS, 315th AD TFA to 315th AD, 010836Z May 68; ALOREP data extract; study 4-68, 31st Mil Hist Det, Operation Delaware, Feb 69; rprt, CCT (8th Aer Port Sq), CCT Mission Rprt, A. Luoi, Apr 20-May 5, 1968.

45. Fact sheet, 7th AF, Summary of Major Emergency Aerial Resupply, Jan 10, 1969; staff summary sheet, Col Heath Bottomly, Dir/Plans, 7th AF, subj: Proposed Ltrs to Gen Ryan Recommending Changes to JCS Pub 2, Jul 14, 1968; memos, MACV J-4 to Mil Hist Br, subj: Logistical Historical Activities, May 21 and Jun 19, 1968; ALOREP data extract; Mullen intvw, Sep 20, 1973; McLaughlin intvw, Apr 20, 1970.

46. Ltr, Gen William W. Momoyer, Cdr 7th AF, to 834th AD, subj: Commendation of C-130 Acrews, May 9, 1968; hist, 345th TASq, Oct-Dec 68; hist, 314th TAWg, Jul-Sep 68, p 26.

47. Tolson intvw, May 27, 1968; memo, Dir/Construction, MACV, to Ch, Hist Br, subj: Qtrly Historical Summary, Jul 24, 1968; ALOREP data extract; study 4-68, 31st Mil Hist Det, Operation Delaware, Feb 69; Strobaugh intvw, Mar 12, 1974.

48. Hist, 374th TAWg, Jul-Oct 68, pp 75-77; intvw, author with Lt Col Robert L. Deal, Mar 23, 1973; ltr, Capt William J. Endres to author, Mar 21, 1973.

49. Msgs, CG 1st Air Cav Div to PCV COC, 240537Z and 270448Z Apr 68, 011730Z and 060641Z May 68; hist, 315th ACWg, Apr-Jun 68; hist, 309th ACSq, Apr-Jun 68, p 3; ALOREP data extract.

50. Ltr, Capt William J. Endres to author, Mar 21, 1973.

51. Msgs, PCV TOC to COMUSMACV, 110400Z and 160230Z May 68; msg, PCV TOC to CG III MAF, 130255Z May 68; study 4-68, 31st Mil Hist Det, Operation Delaware, Feb 69; hist, 2nd Aerial Port Gp, Apr-Jun 68, p 16; ltr, Capt William J. Endres, to author, Mar 21, 1968; Mullen intvw, Sep 20, 1973.

52. ALOREP data extract; study 4-68, 31st Mil Hist Det, Operation Delaware, Feb 69.

53. Rptrs, 1st Cav Div, SITREPs nos 134-138, for successive dates, May 13 through May 17, 1968; rprt, FMFP, Operations of US Marine Forces, Vietnam, May 68; C. William Thorndale, Operation Delaware, Feb 69, pp 40-42;

Tolson intvw, May 27, 1968; rpt, 7th AF Dir/Intel, Weekly Air Intel Summary 68-22, Jun 1, 1968, pp 3-6; rpt, MACV J-2, PERINTREP, May 68; press memo, Hq PCV, subj: Lt Gen Rosson's Brief Given at Hq PCV on AM May 17, 1968; hist, MACV, 1968, I, 380.

54. Rprt, Maj Gen Burl W. McLaughlin, Cdr 834th AD, EOTR, Jun 69; rpt, Advisory Team 3, 3rd ARVN Regt, Combat AAR, Lam Son 216, May 31, 1968.

55. Gropman intvw, Apr 13, 1972 (Gropman was navigator with 463rd Wing, visiting Kham Duc on Apr 23, 1968); rpt, 26th Mil Hist Det, AAR, Upgrading Kham Duc Airfield, Jul 24, 1968; rpt, Co C, 5th SFGp, AAR, Battle of Kham Duc, May 31, 1968; memo, Dir/Constr, MACV to Ch, Hist Br, SJS, subj: Qtrly Hist Summ, Apr 20, 1968; rpt, Col R. H. Goodell, USA, Cdr TMA, Debriefing Report (EOTR), Jul 1, 1968, pp 5, 13.

56. Kenneth Sams and Maj A. W. Thompson, *Kham Duc* (PACAF, Proj CHECO, Jul 8, 1968), pp 8-9; Westmoreland, *A Soldier Reports*, p 360; ltr, Maj Paul E. Dahle, Ret, to author, Nov 25, 1972 (Dahle belonged to the C-130 squadron crew operating into Kham Duc, May 9-10, 1968); ALOREP data extract; rpt, MSF Co C, 5th SFGp, AAR Ngok Tavak FOB, May 16, 1968; press intvw, Lt Col Robert B. Nelson, Cdr 2/1, Americal Div, May, 1968.

57. Intvws, Proj CHECO with Lt Col Dave C. Hearell, Lt Col Charles Herrington, and Maj Ernest M. Wood, USA, May 17 and 28, 1968; rpt, Maj Gen Burl W. McLaughlin, Cdr 834th AD, EOTR, Jun 69; rpt, Co C, 5th SFGp, AAR, Battle of Kham Duc, May 31, 1968; press intvw, Brig Gen J. E. Glick, III MAF G-3, May, 1968.

58. Rprt, 8th Aerial Port Sq to 2nd Aerial Port Gp, CCT Mission Rprt, Kham Duc, May 68; hist, 374th TAWg, Jul-Oct 68, pp 77-81; intvw, 26th Mil Hist Det, with Capt Daniel Waldo, USA, 70th Engr Bn, May, 1968; intvw, Proj CHECO with Maj John W. Gallagher, Ch, CCT, May 17, 1968.

59. Ltr, Cdr 834th AD, ALCE, Da Nang, to ALCC, subj: Evacuation of Kham Duc, May 13, 1968; msg, CG III MAF to MACV, 131304Z May 68; ltr, Capt Robert M. Gatewood, 7th ACCS, to Cdr 834th AD, subj: Events of 12 May, May 15, 1968; Sams and Thompson, *Kham Duc*, pp 13-14.

60. Intvw, author with Lt Col James L. Wallace, Apr 3, 1972; Davis intvw, Apr 24, 1972; Gropman intvw, Apr 13, 1972; ltr, Cdr 834th AD, ALCE, Da Nang, to ALCC, subj: Evacuation of Kham Duc, May 13, 1968; rpt, Capt Robert Henderson, USA, Account of Kham Duc Battle, May 68; fact sheet, Sec AF/Off Info, subj: The Air Force Cross, Background Information (Bucher), Mar 70; hist, 463rd TAWg, Apr-Jun 68, pp 21-23.

61. Fact sheet, Sec AF/Off Info, subj: The Air Force Cross, Background Information (Boyd), Mar 70; Ted R. Sturm, "The Lucky Duc," *Airman*, Oct 70.

62. McCall intvw, Apr 7, 1972; hist, 21st TASq, Apr-Jun 68.

63. Wallace intvw, Apr 3, 1972; hist, 463rd TAWg, Apr-Jun 68, pp 22-23; hist, 374th TAWg, Apr-Jun 68, pp 19-21.

64. Intvws, Proj CHECO with Capt Phillip B. Smotherman, FAC, Americal Div, May 29, 1968, Lt Col Richard P. Schuman, ALO, Americal Div, May 28, 1968, Col James M. Fogle, Dep Dir I Corps DASC, and Maj James M. Mead, USMC Liaison Off, May 16, 1968; Wallace intvw, Apr 3, 1972; rpt, Proj CHECO, Debrief of Aircrews from Kham Duc (V-45), May 68; Sams and Thompson, *Kham Duc*, pp 21-32.

65. Gallagher intvw, May 17, 1968; ltr, Maj Edward Carr to author, Sep 4, 1970; statement, TSgt Morton J. Freedman, CCT member, May 68.

66. Ltr, Capt Robert M. Gatewood, 7th ACCS, to Cdr 834th AD, subj: Events of 12 May, May 15, 1968; statements, SSgt J. Lundie and TSgt M. K. Freedman, May 68; Ted R. Sturm, "Flight Check to Glory," *Airman*, Sep 69, pp 52-54; Bob Cutts, "On a Wing and a Prayer," *Pacific Stars and Stripes*, Aug 11, 1968; rpt, CCT, 8th APSq, Mission Report, Kham Duc, May 10-12, 1968.

67. Memo, Col John W. Pauly, Cdr 315th Spl Ops Wg, subj: Recommendation for Award of Medal of Honor, 1968; memo, Col William K. Bailey, Cdr 311th Spl Ops Sq, subj: Recommendation for Decoration, 1968; ltr, Capt Robert M. Gatewood, 7th ACCS, to Cdr

TACTICAL AIRLIFT

834th AD, subj: Events of 12 May, May 15, 1968; statement, TSgt Morton J. Freedman, CCT member, May 68; Flint Dupre, "Rescue at a Place Called Kham Duc," *Air Force*, Mar 69; Niblack intvw, May 3, 1972; Butts intvw, Feb 9, 1973; intvw, Proj CHECO with Lt Col Joe M. Jackson, ACSq Det Cdr, Da Nang, May 18, 1968; *Congressional Record*, Jan 16, 1969, pp S456-457.

68. Ltr, Maj Paul E. Dahle, to author, Nov 25, 1972; rpt, Co C, 5th SFGp, AAR, Battle of Kham Duc, May 31, 1968; msg, CG Americal Div, to Dep Dir DASC, Da Nang, 141227Z May 68; msg, Cdr 834th AD to units, 131100Z May 68; Sams and Thompson, *Kham Duc*, pp 1-2, 27-35; ltr, Lt Col Robert B. Nelson, Cdr 2/1st Infantry, Americal Div, to Cdr 834th AD, subj: Ltr of Appreciation, May 25, 1968; ltr, Brig Gen Burl W. McLaughlin, Cdr 834th AD, to Dets 1 and 2, 834th AD, and 315th ACWg, subj: Kham Duc Commendations, May 19, 1968.

69. Hist, MACV, 1968, I, 2, 26-30, 371; *DOD Pentagon Papers*, vol V, pt IV-C-6, pp 12-14, 26-27, 38-43.

70. Ohlinger intvw, Dec 5, 1968; paper, Capt Anderson E. Hatfield, CCT Ops Off, 8th Aer Port Sq, subj: CCT Operations, Dec 68; Gropman intvw, Apr 13, 1972; rpts, 3rd Marine Div, Cd Chronologies for May thru Dec 68; hist, 463rd TAWg, Jul-Oct 68, pp 15-16; ltr, Maj Paul E. Dahle, to author, Nov 25, 1972; hist, MACV, 1968, I, 132-133, 393, 387, 401.

71. Hist, 315th AD, Jul 68-Apr 69, pp 98-99; monograph, "The 1st Air Cav Div: Operation Liberty Canyon 1-69," 14th Mil Hist Det, 1st Air Cav Div, Jan 30, 1969.

72. Msg 48649, MACV J-5 to CINC-PAC, 070855Z Nov 66; Oplan Full Cry, COMUSMACV, Jan 24, 1967; planning directive no 1-68, MACV, Project El Paso, Jan 29, 1968; study, MACV, Feasibility Study Supporting Oplan El Paso,

Jun 7, 1968; *Westmoreland, A Soldier Reports*, pp 271-272.

73. Rprt, 834th AD Off/Management Analysis, Tactical Airlift Performance Analysis, Jun 68 and Dec 68; hist, TAC, Jan-Jun 68, pp 448-463; hist, 834th AD, Jul 67-Jun 68, pp 90-91; staff summary sheet, DCS/Plans, 7th AF, subj: C-130, Aug 9, 1968; hist, 315th AD, Jan-Jun 68, pp 48-52, Jul 68-Apr 69, pp xiv-xx.

74. Phillips intvw, Nov 1, 1968; rprt, Maj Gen Burl W. McLaughlin, Cdr 834th AD, EOTR, Jun 69, pp 2-2 to 2-13, 6-7 to 6-11, 6-23 to 6-25; McLaughlin intvw, Apr 20, 1970.

75. Msg, AFXOTZ, Hq USAF, to PACAF, subj: Congressional Investigation, 151536Z Oct 68; msg, 834th AD to PACAF, 170430Z Oct 68.

76. Rprt, Dir/Management Analysis, Hq USAF, USAF Management Summary: Southeast Asia, Jan 3, 1969.

77. Rptrs, 7th AF Dir/Intell, Weekly Intellig Summaries, 68-17 and 68-37, Apr 2 and Sep 14, 1968; rprt, Management Analysis Off, 834th AD, Tactical Airlift Performance Analysis, Dec 68; brief, Dir/Opns, Hq USAF, subj: Red Eye Teams to Laos, Feb 19, 1968; PACAF Tactics/Techniques Bulletin 34, Evasive Tactics for Transport Aircraft, n.d.; rprt, MACV J-2, PERINTREP 3-68; 1-31 Mar 68; DIA, *Defense Intelligence Digest*, Sep 68, pp 26-27; Jac Weller, "The New and the Old in the Vietnamese War," *National Guardsman*, Sep 69, pp 2-7.

78. Davis intvw, Apr 24, 1972 (Davis was C-130A pilot based at Tachikawa, 1966-68); hist, 311th Sp Ops Sq, Oct-Dec 68; Ohlinger intvw, Dec 5, 1968 (Ohlinger was C-130 pilot and Mission Commander, 1966-68); Crawford intvw, Feb 15, 1969 (Crawford was Dep Dir/Opns, 834th AD in 1968); hist, 463rd TAWg, Nov-Dec 68, pp 7-8.

79. AFP 900-2, May 71; *The Vietnam Airlifter* (newspaper), 834th AD, Jan 70.