
**U.S. AIR GROUND OPERATIONS AGAINST THE
HO CHI MINH TRAIL, 1966–1972**

THE STRATEGIC SETTING

During the mid-1960s, as the United States embarked on a major ground war in Southeast Asia, President Lyndon Johnson and his senior national security advisors confronted a major challenge. Since 1959, the military forces of the Democratic Republic of Vietnam (DRV) had been employing the Truong Son Route—better known as the Ho Chi Minh Trail—to infiltrate men and materiel through Laos and into the U.S.-backed Republic of Vietnam (RVN). For the communist leadership in Hanoi, the trail was a lifeline that was essential to its military operations in South Vietnam. However, the network of paths, trails, and roads that made up the trail served as more than just a supply line for communist forces. The trail also functioned as a basing area and as a sanctuary in Laos from which communist forces could attack South Vietnamese targets.

Indeed, the trail, with its ability to function both as a logistical pipeline and as a staging area, played a crucial role in enabling Hanoi to escalate the war below the 17th parallel dividing North and South Vietnam. By 1965, the trail's importance had grown even more, after the South Vietnamese navy succeeded in closing off the sea route from Haiphong that had supplied some 70 percent of the materiel to the communist forces operating in the south.¹ As the United States

¹BDM Corporation: *A Study of Strategic Lessons Learned in Vietnam*, Volume 1, *The Enemy*, McLean, VA, November 30, 1979, p. 5-14.

escalated its commitment to the defense of South Vietnam, interdicting the flow of men and materiel along the trail became a paramount mission. During the first three months of 1965, some 5000 People's Army of Vietnam (PAVN) troops had moved through the trail, a 50 percent increase over the 1964 levels.² In the words of William Colby, the former director of central intelligence who had served as chief of the CIA's Saigon station, "it was important to our strategy . . . that the North Vietnamese not be allowed to work their will in Laos the way they wanted to."³

The 1962 Geneva Accords, however, had ostensibly neutralized Laos. Under the terms of that agreement, neither the United States nor North Vietnam, nor their allies, were permitted to conduct ground operations within Laos. Although Hanoi ignored this provision, the United States ruled out the commitment of ground troops, and as a result, Washington would over a six-year period employ air power, advanced new technology, and small teams of special operations forces to staunch the movement of PAVN men and materiel along North Vietnam's Ho Chi Minh Trail lifeline.

HO CHI MINH TRAIL CHARACTERISTICS

The Ho Chi Minh Trail grew out of a network of footpaths, trails, and secondary roads that had been employed by Viet Minh guerrillas during their 1946–1954 struggle against French colonial rule.⁴ As early as 1958, the DRV, anticipating the resumption of overt armed conflict in South Vietnam, began laying the foundations for a logistical pipeline by training personnel to establish way stations and guide systems in Laos.⁵ During the 1959–1964 period, Hanoi created the trail's key logistical infrastructure, including truck parks, repair depots, vehicle shelters, and food storage and distribution facilities.⁶

²Kenneth Conboy, with James Morrison, *Shadow War: The CIA's Secret War in Laos*, Paladin Press, Boulder, CO, 1995, p. 142.

³William E. Colby, interview by Ted Gittinger, Interview I, June 2, 1981, transcript, Lyndon Banes Johnson Library, Austin, TX.

⁴William J. Duiker, *Ho Chi Minh*, Hyperion, New York, 2000, p. 517.

⁵BDM Corporation, *Strategic Lessons Learned*, pp. 5-14, 5-16.

⁶M. G. Weiner, J. R. Brom, and R. E. Koon, *Infiltration of Personnel from North Vietnam: 1959–1967*, RAND, Santa Monica, CA, RM-5760-PR, October 1968, p. 37.

Initially a crude series of jungle tracks, the trail was by the mid-1960s a sophisticated network of truck and foot routes stretching from mountain passes along the North Vietnam-Laos border down the eastern “panhandle” of Laos to communist sanctuaries in southeastern Laos near the border of South Vietnam. As noted by a former Laotian military commander, the trail passed through some of Southeast Asia’s most inhospitable terrain:

The trail runs through tropical, dense forests . . . The jungles along these trails are almost impenetrable primeval forests; the mountains are steep and rocky. During the French colonial regime, as well as after Laos independence, this part of the country was so remote, isolated and undeveloped that no effort was made to control it.⁷

The triple-canopy jungle enveloping the trail made the route extremely difficult to follow from the air. In a first-hand account written in 1965, William Sullivan, then U.S. Ambassador to Laos, observed

impenetrable tree canopy which high-speed, high-flying jets literally can not see through. . . . [N]owhere on this road, except for two limited areas, was it open to the sky. Even flying over it slowly with a helicopter, road was not discernible from above. It seems clear to me . . . that significant quantities of logistics can still be moving over routes which . . . our strike aircraft are unable to discern.⁸

Expert deception techniques employed by the 559th Transportation Group—the PAVN unit responsible for trail construction, maintenance, and security—further reduced the trail’s visibility from the air. Where the trail was exposed, the North Vietnamese wove together treetops to create obscuring trellises. Great care was taken not to disturb foliage, and if trees or other plants were cut down during

⁷Brigadier General Soutchay Vongsavanh, *RLG* [Royal Laotian Government] *Military Operations and Activities in the Laotian Panhandle*, Indochina Monographs, U.S. Army Center of Military History, Washington, DC, 1981, p. 4.

⁸U.S. Department of State [DOS], telegram from Sullivan to DOS, 21 June 1965, *Foreign Relations of the United States* [FRUS], 1964–1968, Volume 27, *Laos*, accessed at www.state.gov/www/about_state/history/vol_xxviii.

construction or operations, PAVN personnel would often transplant flora to maintain coverage of the trail. By the end of the war, according to the North Vietnamese, the 559th Group had camouflaged nearly 2000 miles⁹ of the 12,000-mile trail.¹⁰ The PAVN's use of underwater bridges not detectable from the air, and the employment of deception tactics such as strewing gasoline-soaked rags along the trail, to trick pilots into believing they had struck real targets, served to make the trail even more elusive to U.S. air power.¹¹

Given its importance, it is not surprising that Hanoi would commit tremendous resources to constructing, maintaining, and defending the trail. At any given time, approximately 100,000 people were employed along the trail as drivers, mechanics, engineers, and porters and in ground security and anti-aircraft units.¹² Anti-aircraft artillery appeared in 1965,¹³ and by 1970, the entire trail was protected by anti-aircraft guns, some equipped with radar.¹⁴ The PAVN's employment of "hunter-killer" teams and tribal scouts also protected the trail against enemy incursions.

EARLY OPERATIONS AGAINST THE TRAIL

American operations against the trail began as early as 1961. The CIA, in an effort to develop a more complete understanding of Hanoi's use of the trail, trained Lao tribesman in road-watching techniques. Using nothing more sophisticated than cameras, the tribal detachments gathered information on the flow of PAVN men and materiel. Although the CIA case officers responsible for overseeing the program were skeptical about its effectiveness—

⁹Edgar C. Doleman et al., *The Vietnam Experience: Tools of War*, Boston Publishing Company, Boston, MA, 1985, p. 151.

¹⁰Estimates of the trail's length vary. The one used here is from John Prados, *The Blood Road: The Ho Chi Minh Trail and the Vietnam War*, John Wiley & Sons, Inc., New York, 1999, p. 374. The trail and its immediate surroundings covered an area of some 1700 square miles.

¹¹Michael E. Haas, *Apollo's Warriors: U.S. Air Force Special Operations During the Cold War*, Air University Press, Maxwell Air Force Base, AL, 1997, p. 193.

¹²Gregory T. Banner, "The War for the Ho Chi Minh Trail," Master's thesis, U.S. Army Command and General Staff College, 1993, p. 12 (DTIC, AD-A272 827).

¹³BDM Corporation, *Strategic Lessons Learned*, p. 5-19.

¹⁴Soutchay Vongsavanh, *RLG Military Operations*, p. 17.

noting, for example, that the trail watchers often lost their cameras—U.S. Secretary of Defense Robert S. McNamara believed that the reconnaissance teams were beneficial and urged their greater use.¹⁵ By 1964, as Hanoi's reliance on the trail expanded, senior Johnson administration officials approved more aggressive covert operations in Laos. In May 1964, the U.S. Military Assistance Command Vietnam (MACV) began training five eight-man teams of South Vietnamese Montagnard tribesmen led by South Vietnamese Special Forces personnel. Known as LEAPING LENA, this project involved the creation of forces that would conduct reconnaissance operations across the border in Laos. U.S. personnel, while helping to organize, train, and equip the South Vietnamese force, would have no direct role in the operations of the units. During late June and early July, the teams parachuted into Laos. They were poorly motivated and poorly led—"you had to damn near force them on the plane at the point of a gun," recalled one U.S. special forces advisor—and nearly all of the LEAPING LENA personnel were located by the enemy and captured or killed.¹⁶ The few survivors who managed to straggle back across the border to South Vietnam brought low-level intelligence of little military utility. However, while LEAPING LENA clearly failed to achieve its objectives, it did have two noteworthy consequences for unconventional American military operations in Southeast Asia.

First, LEAPING LENA served as the nucleus for a far more successful successor effort, known as Project DELTA, which fielded combined American and South Vietnamese special forces units for long-range reconnaissance missions inside South Vietnam.¹⁷ These units located enemy forces, collected intelligence, called in air strikes, and conducted BDA. One of the most innovative aspects of Project DELTA was its use of U.S. Air Force (USAF) forward air controllers (FACs). First assigned to Special Forces units in December 1965,

¹⁵Conboy, *Shadow War*, p. 119.

¹⁶As quoted in Terrence Maitland and the editors of the Boston Publishing Company, *The Vietnam Experience: Raising the Stakes*, Boston Publishing Company, Boston, MA, 1982, p. 142.

¹⁷Francis J. Kelly, *U.S. Army Special Forces, 1961–1971*, Vietnam Studies, Department of the Army, Washington, DC, 1973, pp. 53–54; Shelby L. Stanton, *Green Berets at War: U.S. Army Special Forces in Southeast Asia, 1956–1975*, Presidio Press, Novato, CA, 1985, pp. 194–203.

overhead FACs directed air strikes, helped exfiltrate teams in trouble, and provided radio relay. The new tactics and procedures developed by USAF and Special Forces personnel resulted in “one of the most significant and more productive applications of airpower in Vietnam” and represented “a high payoff for a small investment of resources,” according to a 1969 Air Force study.¹⁸

Second, LEAPING LENA’s failure provided a negative example for U.S. military officials, who were now convinced that successful covert, cross-border operations required direct U.S. military participation. The LEAPING LENA debacle was to lead directly to the U.S. decision to send U.S.-led teams into Laos to help disrupt Hanoi’s use of the Ho Chi Minh Trail.

During the mid-1960s, the United States began air interdiction operations against the Ho Chi Minh Trail. Operation BARREL ROLL in northern Laos and Operation STEEL TIGER in the southern part of the country were designed to reduce the ability of the DRV to move men and materiel down the trail. The intention of these and subsequent interdiction campaigns, according to General William W. Momyer, the 7th Air Force commander during this period, was not to halt the flow of traffic along the trail. Rather, the U.S. objective was to reduce the traffic “to such an extent that the enemy couldn’t get enough supplies for sustained operations.”¹⁹ U.S. aircraft struck truck convoys as well as trail infrastructure such as bridges. Attack aircraft also cut roads in the hope of creating chokepoints that would create traffic jams of trucks that could be attacked readily from the air. Yet the combination of dense jungle, poor weather, and PAVN deception techniques made it extremely difficult for strike pilots to find targets along the trail. The nature of the military technology employed in aerial interdiction missions also made it difficult to attack and destroy trail targets. U.S. pilots in fast-moving aircraft, such as the F-105 Thunderchief, had only a few seconds to acquire their targets and unload their ordnance.²⁰

¹⁸U.S. Air Force, “USAF Support of Special Forces in SEA,” HQ PACAF, Directorate, Tactical Evaluation, CHECO Division, 10 March 1969, p. 75.

¹⁹General William M. Momyer, *Airpower in Three Wars*, U.S. Government Printing Office, Washington, D.C., 1978, pp. 188–189.

²⁰Haas, *Apollo’s Warriors*, p. 215.

IGLOO WHITE AND THE “ELECTRONIC BATTLEFIELD”

The critical but elusive nature of targets along the Ho Chi Minh Trail prompted U.S. Department of Defense (DoD) officials to explore the application of new technology to the interdiction problem. The IGLOO WHITE program, a network of sensors and remote surveillance systems, emerged from an earlier DoD effort to create an electronic anti-infiltration system across the width of the demilitarized zone in South Vietnam and into Laos.²¹ During the lifetime of the program, which ran from 1966 to 1971, the United States spent approximately \$1.7 billion to create a network of 20,000 battery-powered sensors along the trail in Laos.²² The IGLOO WHITE system was vast. In the words of one Air Force officer, “[w]e wire[d] the Ho Chi Minh trail like a drugstore pinball machine and we plug[ged] it in every night.”²³ The most commonly employed sensors included

- *Acoubuoy*, a sonar-like acoustic sensor dropped by parachute into the jungle canopy, had a transmission range of up to 30 miles and could detect vehicles at distances of more than 1000 yards and personnel as far away as 438 yards.²⁴ Its camouflage was intended to give it the appearance of vegetation.
- *Air-Delivered Seismic Intrusion Detector (ADSID)* resembled a lawn dart. It was reportedly the most durable and reliable of the IGLOO WHITE sensors. It was equipped with a self-destruct mechanism to prevent tampering or spoofing by the enemy.

²¹Popularly known as the “McNamara Line,” the proposed anti-infiltration system consisted of a manned fence, minefields, and thousands of acoustic and other sensors. Johnson administration officials hoped that the system would allow the United States to de-escalate the politically costly air war against North Vietnam. Christopher P. Twomey, “The Vietnam War and the End to Civilian-Scientist Advisors in Defense Policy,” *Breakthrough*, MIT Security Studies Program, Spring 2000, accessed at <http://ebird.dtic.mil/May2000/s20000502end.htm>.

²²Banner, “The War for the Ho Chi Minh Trail,” p. 58. Estimates of the cost of the program vary. According to another study, IGLOO WHITE cost roughly \$1 billion per year during the 1969–1972 period. Paul Dickson, *The Electronic Battlefield*, Indiana University Press, Bloomington, Indiana and London, 1976, p. 83.

²³George Weiss, “Battle for Control of Ho Chi Minh Trail,” *Armed Forces Journal*, 15 February 1971, p. 17.

²⁴Eric D. Haider, “Unattended Ground Sensors and Precision Engagement,” Master's thesis, Naval Postgraduate School, Monterey, CA, December 1998, pp. 44–45 (DTIC ADA359912).

While the ADSID had a much shorter range than the Acoubuoy (109 yards for vehicles, 33 yards for personnel), improvements in its lithium battery gave it a longer useful life. Although usually delivered by air, the 25-lb sensor could also be hand emplaced.²⁵ As with the other sensors placed along the trail, great care was given to the device's camouflage. For example, its antenna, the only part of the device that was visible after it drilled into the ground, was made to resemble the stalks of weeds.

- *Mini-Seismic Intrusion Detector (MINISID)*, unlike other sensors employed along the trail, was specifically designed to be delivered and implanted by hand. The MINISID, as well as its smaller version, the MICROSID, was a personnel detection device that was often used in combination with the magnetic intrusion detector (MAGID). Combining sensors in this way improved the ability of individual sensors to detect different types of targets in a variety of ways, and reduced the number of false alarms.²⁶

Tactical aircraft and Navy OP-2E antisubmarine aircraft dropped strings of sensors along roads and trails. As vehicles or soldiers moved past the sensors, the devices would record "hits." The data would then be transmitted to EC-121R aircraft, and, later in the life of the program, to unmanned QU-22B Pave Eagle planes continuously circling overhead. These aircraft, in turn, relayed the data to the Infiltration Surveillance Center (ISC) at the U.S. Air Force Base at Nakhon Phanom, Thailand. Inside the 200,000-sq-ft ISC building, IBM 360-65 computers—at the time, the world's most powerful—recorded, stored and processed the information received from the

²⁵The batteries initially lasted two weeks. Since it was impossible to replace the batteries by hand, new sensors had to be delivered when the batteries wore down. Given that the sensors initially cost \$2145 each, it became critical to develop a longer-lasting battery. Three years later, in 1970, the ADSID had a better battery, its unit cost had dropped to \$975, and the U.S. military had become more efficient in placing them. As a result, the cost-per-sensor-per-day had dropped from \$100 to less than \$15. Dickson, *Electronic Battlefield*, p. 84.

²⁶Haider, "Unattended Ground Sensors," pp. 51–52. Another device, nicknamed TURDSID, was made to resemble dog excrement. However, after it was discovered that there were no dogs along the Ho Chi Minh Trail, the sensor was refashioned to resemble a piece of wood. Haider, p. 50. A variety of other sensors detected such characteristics as body heat and the scent of human urine.

sensors.²⁷ Intelligence analysts searched for patterns in the processed data, and sought to determine the speed, location, and direction in which the trucks or enemy personnel were moving.²⁸ Once this was achieved, FACs in Laos conveyed the target information they received to attack aircraft pilots. According to one estimate, the time between target acquisition and the delivery of ordnance was on average a mere five minutes, and in some cases, as short as two minutes.²⁹ This targeting information, however, was not precise. As General William G. Evans, an Air Force officer with responsibility for the so-called “electronic battlefield” in Southeast Asia, explained in 1971.

We are not bombing a precise point on the ground with a point target bomb—we can’t determine each truck’s location that accurately with ground sensors, which are listening—not viewing—devices. Since we never actually “see” the trucks as point targets, we use area-type ordnance to cover the zone we know the trucks to be in.³⁰

The Air Force claimed that IGLOO WHITE had achieved great success in helping to interdict North Vietnamese truck convoys, the primary focus of the program. According to the Air Force, U.S. aircraft during the 1966–1967 period—before IGLOO WHITE became fully operational—found 49,371 trucks along the Ho Chi Minh Trail and damaged or destroyed 10,472 of them. As the IGLOO WHITE system matured, the rate of destruction increased dramatically, according to the USAF. For the October 1970–May 1971 period, the service was claiming to have destroyed 25,000 trucks and damaged many more.³¹ These estimates, however, were highly controversial,

²⁷At the time, the ISC was reportedly the largest building in Southeast Asia. The massive size was a function of the relatively bulky nature of the computers and the need to house vast amounts of data collected on the trail. Edgar C. Doleman, Jr., *The Vietnam Experience: Tools of War*, Boston Publishing Company, Boston, MA, 1985, p. 144.

²⁸Editors of Boston Publishing Company, *The Vietnam Experience: War in the Shadows*, Boston Publishing Company, Boston, MA, 1988, p. 133.

²⁹Dickson, *Electronic Battlefield*, p. 86.

³⁰As quoted in Dickson, p. 87.

³¹James William Gibson, *The Perfect War: Technowar in Vietnam*, The Atlantic Monthly Press, Boston and New York, 1986, p. 398. According to General Momyer, the

even within the Air Force. For example, according to a 1971 congressional study, service personnel in Laos believed that the truck kill figures should have been discounted by a factor of 30 percent.³² Regardless of the sophistication and speed of the IGLOO WHITE system, poor weather and rugged terrain made it difficult for pilots to hit the targets the sensors and computers had identified.³³ Finally, despite DoD's attempts to create tamper- and spoof-resistant sensors, it appears that the North Vietnamese were frequently able to destroy the devices (e.g., by shooting them out of trees), deactivate them by removing their batteries, or deceive them with tape-recorded truck noises and bags of urine.³⁴

THE CREATION OF MACV SPECIAL OPERATIONS GROUP (MACVSOG)

In January 1964, Lyndon Johnson approved a plan to employ covert means to put pressure on Hanoi and reduce the North's ability to prosecute the war in South Vietnam. Known as OPLAN 34A, the program included unconventional warfare operations such as the creation of indigenous resistance forces north of the 17th parallel; psychological operations designed to foment division within the DRV leadership and population; and direct-action missions involving raids on economic targets throughout the North. To create the clandestine military architecture for carrying out OPLAN 34A, Johnson signed General Order 6, which created a new classified organization within MACV.³⁵ Given the deliberately bland and deceptive name of

rate of destruction for the AC-130 gunship, an advanced system equipped with infrared sensors, low-light television, and radar, was 9.72 trucks per sortie. Momyer, *Airpower*, p. 212.

³²U.S. Congress, Senate, Committee on Foreign Relations, Subcommittee on United States Security and Commitments Abroad, *Laos: April 1971*, U.S. Government Printing Office, Washington, DC, 1971, as cited in Gibson, p. 39.

³³Banner, "The War for the Ho Chi Minh Trail," p. 61.

³⁴John M. Van Dyke, *North Vietnam's Strategy for Survival*, Pacific Books, Palo Alto, CA, 1972, p. 40; Paul N. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America*, MIT Press, Cambridge, MA and London, 1996, p. 4, accessed at www.si.umich.edu/~pne.

³⁵Richard H. Shultz, Jr., *The Secret War Against Hanoi: Kennedy's and Johnson's Use of Spies, Saboteurs, and Covert Warriors in North Vietnam*, HarperCollins Publishers, Inc., New York, 1999, pp. 37–40.

“Studies and Observation Group” (SOG), the organization was a joint service, unconventional warfare task force composed of five sections:

- Covert naval operations (OP 37);
- Air support (OP 32 and OP 35, the “Air Studies Branch” and the “Air Studies Group”);
- Psychological operations (OP 39);
- Airborne operations (OP 34, responsible for inserting agent teams into North Vietnam); and
- “Ground Studies Group” (OP 35, responsible for reconnaissance missions in Laos and eventually Cambodia).

OP 35 was created to deal with a variety of strategic and operational problems associated with interdicting the Ho Chi Minh Trail. U.S. military commanders had concluded that ground observers were necessary to improve the ability of American aircraft to hit targets along the trail’s difficult terrain. One possible option was to rely more heavily on the CIA’s tribal road-watch teams, which continued to gather intelligence and targeting information along the trail. Their performance, however, was judged to be poor, and the reliability of their intelligence information questionable. In addition, poor communications between the road watchers and U.S. military personnel prevented real-time target acquisition, a requirement that senior U.S. officials had identified as critical.³⁶ Although new equipment, such as the Hark ground-to-air communications sets, allowed the tribal teams to communicate directly with U.S. FACs, bilingual personnel were required onboard the aircraft to translate the reports from the ground.³⁷ These communications difficulties, combined with the LEAPING LENA disaster, convinced senior military commanders that any cross-border operations had to be led by U.S. military personnel. Cloaked in secrecy, OP 35 would also meet another critical U.S. need. Given the *de jure* neutrality of Laos and the refusal

³⁶Telegram from Commander in Chief, Pacific (McCain) to Chairman of the Joint Chiefs of Staff (Wheeler), December 11, 1968, *FRUS, 1964–1968*, Vol. 27, *Laos*.

³⁷Jacob Van Staaveren, *Interdiction in Southern Laos, 1960–1968*, The United States Air Force in Southeast Asia, Center for Air Force History, Washington, DC, 1993, pp. 110–111.

of the Royal Laotian government to approve U.S. ground operations inside the country, any reconnaissance operations would have to be carried out covertly.³⁸ In sum, OP 35, like all strategic special operations units, offered policymakers the prospect of a high political return with relatively low cost, operational flexibility, and plausible deniability.³⁹

Although established in 1964, OP 35 did not conduct its first missions until 1966. Two factors explain the delay. First, Johnson had been reluctant to widen the war into Laos. However, the continued infiltration of communist manpower and other resources convinced him that the trail could no longer be kept off limits. Second, senior military leaders, while eager to take the war into Laos, were acutely aware of the recent LEAPING LENA disaster and had to be convinced that MACVSOG would not produce similar results.⁴⁰ By 1966 this official reluctance had been overcome. As the strategic importance of the trail grew, and U.S. policymakers demanded more operations to interdict the flow of men and materiel, OP 35 expanded dramatically to become MACVSOG's largest operational section.⁴¹

During the next six years, small teams of OP 35 personnel would conduct hundreds of classified missions along the Ho Chi Minh Trail in Laos. OP 35's primary mission was identifying targets and calling in air strikes. Targets included truck park areas, portering points, troop concentrations, and road bypasses. U.S. military leaders in Saigon and Washington also discovered that the highly trained and motivated OP 35 personnel could carry out a variety of other activities while they were on missions in Laos. These included direct-action missions (such as attacking PAVN storage facilities and other

³⁸Memorandum from the Deputy Assistant Secretary of State for Far Eastern Affairs (Unger) to the Assistant Secretary of State for Public Affairs (Donnelly), October 3, 1966, *FRUS, 1964-1968*, Vol. 27, *Laos*. Despite its shortfalls, the CIA's tribal road-watch program would continue into 1968 as a parallel effort to MACVSOG's cross-border operations. Conboy, *Shadow War*, p. 148.

³⁹Colin S. Gray, "Handfuls of Heroes on Desperate Ventures: When Do Special Operations Succeed?" *Parameters*, Spring 1999, accessed at <http://carlislewww.army.mil/usawc/Parameters/99spring/gray.htm>.

⁴⁰Maitland et al., *Raising the Stakes*, p. 145.

⁴¹Shultz, *Secret War*, p. 68. At its height, according to one estimate, MACVSOG totaled roughly 2500 Americans and 7000 Vietnamese personnel. Maitland et al., *Raising the Stakes*, p. 145.

targets), capturing prisoners, emplanting mines, and conducting BDA. Reconnaissance teams also emplanted IGLOO WHITE sensors.⁴² Although most of these sensors were delivered by air, particularly sensitive devices, such as the MINISID, had to be placed near the trail by hand. Given the devices' weight and bulk, it is hardly surprising that reconnaissance team members did not relish the task. As one former SOG member recalled, the 25-lb sensors his team was sometimes compelled to carry were considered “bulky ‘albatross[es].’”⁴³

“OVER THE FENCE” IN LAOS

MACVSOG's cross-border operations typically were carried out by reconnaissance teams made up of U.S. noncommissioned officers (NCOs)—usually recruited from U.S. Army Special Forces—and nine indigenous personnel. Special Forces, with their history of conducting high-risk, unconventional operations against high-value targets behind enemy lines, were a natural reservoir of military talent from which to draw. The indigenous members of the reconnaissance teams, who typically were Nung, a Sino-Vietnamese ethnic group who had often served as mercenaries in previous conflicts,⁴⁴ provided a set of primitive but often effective jungle warfare skills that complemented American technological sophistication. In addition to their operational utility, the tribesman served another purpose, albeit an unstated one. According to John Plaster, a former MACVSOG member, “[s]ince most members of SOG recon teams were indigenous, U.S. casualties, proportionally, would be reduced.”⁴⁵

⁴²Charles F. Reske, *MAC-V-SOG Command History Annex B, 1971–1972*, Vol. 1, Alpha Publications, Sharon Center, Ohio, 1990, p. 43. This volume is a reprint of the SOG annex of MACV's command history.

⁴³Harve Saal, *SOG: MACV Studies and Observations Group*, Vol. 3, *Legends*, Jones Techno-Comm., Milwaukee, WI, 1990, p. 294. Team members also collected twigs, seed pods, and vegetation to serve as models for IGLOO WHITE sensor camouflage. John K. Singlaub, with Malcolm McConnell, *Hazardous Duty: An American Soldier in the Twentieth Century*, Summit Books, New York, 1991, p. 312.

⁴⁴Jeffrey J. Clarke, *Advice and Support: The Final Years, 1965–1973*, United States Army in Vietnam, U.S. Army Center of Military History, Washington, DC, 1988, p. 205.

⁴⁵John L. Plaster, *SOG: The Secret Wars of America's Commandos in Vietnam*, Onyx, New York, 1998, p. 31.

To maintain plausible deniability in the event they were captured, OP 35 team members operating “over the fence” in Laos wore Asian-made uniforms with no insignia or other identifying marks, and carried so-called “sterile” weapons and other equipment that could not be traced back to the United States.⁴⁶ OP 35 missions (initially labeled SHINING BRASS) were launched from forward operating bases in South Vietnam close to the Laotian border.⁴⁷ OP 35 areas of operation are depicted in Figure 2.1.

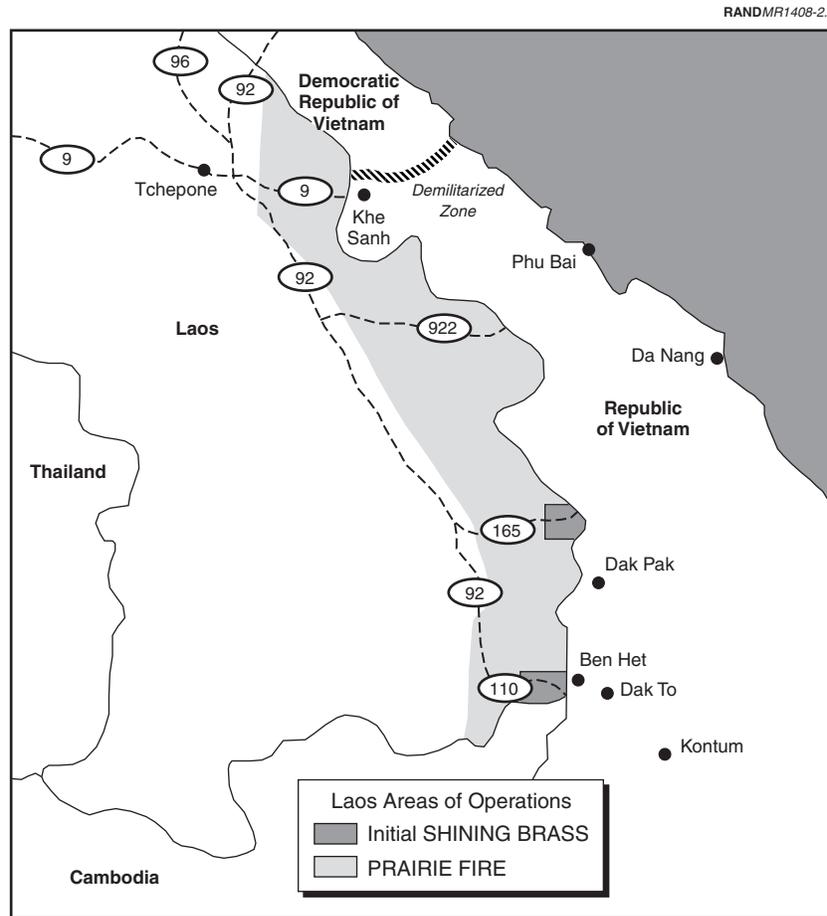
To reduce the chance of alerting PAVN trackers and other reaction forces, unmarked USAF helicopters inserted the teams at dusk.⁴⁸ U.S. Army helicopters (e.g., the UH-1 or Huey), armed with miniguns and rockets, served as escorts. Major General John K. Singlaub, USA (ret.), a former MACVSOG commander, has described the typical pattern insertion and extraction process. After a dusk landing at an isolated clearing,

the men quickly dispersed from the LZ [landing zone] and set up a night ambush position to hit any [PAVN] that might have been attracted by the chopper. It was impossible to move silently in the jungle at night, so the teams could hear any approaching enemy patrols. Missions could last between one and two days all the way up to several weeks, depending on the assignment and the team’s success in evading enemy patrols. When it was time to extract the

⁴⁶Plaster, pp. 33–34.

⁴⁷Initially, a command and control cell in Danang oversaw SHINING BRASS operations. As these operations expanded, MACVSOG established Command and Control South (CCS) and Command and Control Central (CCC) to supplement the work of the Danang cell, which was rechristened Command and Control North (CCN).

⁴⁸Infiltration and exfiltration of ground teams was carried out using “Pony Express” CH-3 helicopters from the 20th (and later, the 21st) Special Operations Squadron. Air Force special operators also delivered sensors along the trail and infiltrated and extracted tribal road-watch teams. Philip D. Chinnery, *Air Commando: Fifty Years of the USAF Air Commando and Special Operations Forces, 1944–1994*, St. Martin’s Paperbacks, New York, 1997, pp. 128–129.



SOURCE: Shultz, *The Secret War Against Hanoi*, p. 211. Map reproduced by John Plaster.

Figure 2.1—Ho Chi Minh Trail and SHINING BRASS/PRAIRIE FIRE Areas of Operations

team, we often used so-called McGuire rigs, slings attached to a long line dangled through the rain forest canopy from the hovering chopper. After some trial and error, this system was modified to include the STABO harness, which was easier to use and allowed

team members to fire their weapons as they were lifted from the forest floor.⁴⁹

Moving through and searching the jungle surrounding the trail, teams would conduct area reconnaissance in the hopes of discovering lucrative targets such as truck parks, weapons depots, and storage facilities. Teams would also select observation points from which they could conduct point surveillance of a stretch of the trail, taking care to ensure that they neither got too close nor stayed too long.⁵⁰ Using PRC-77 and KY-38 radios, the SHINING BRASS forces, unlike the tribal road watchers, could communicate directly with the FACs in English.⁵¹ FACs, who typically flew slow-moving, propeller-driven OH-1 Bird Dog observation aircraft, circled above the teams, ready to communicate targeting information to USAF F-4 Phantoms and other strike aircraft.⁵² The average time lapse between a SHINING BRASS request and an air strike was 30–40 minutes, according to one Air Force estimate.⁵³

To improve the ability of the FACs to communicate this targeting information, MACVSOG came to an agreement with the 7th Air Force to allow former reconnaissance team leaders to fly on the observation aircraft. Known as “Covey Riders,” these MACVSOG personnel helped find targets, choose landing zones, plan insertions and extractions, and stay in radio communication with the ground teams.⁵⁴ In addition to improving the ability of aircraft to hit ground targets, the Covey Riders also provided a psychological boost to the

⁴⁹Singlaub, *Hazardous Duty*, p. 298.

⁵⁰LTC Charles W. Churchill, “Interview with Lieutenant Colonel Kenneth R. Bowra,” Senior Officer Oral History Program, U.S. Army War College, Carlisle Barracks, PA, March 31, 1989, p. 13. Bowra was an OP 35 team leader assigned to CCN.

⁵¹McCain to Wheeler, *FRUS, 1964–1968*, Vol. 27, *Laos*.

⁵²MACVSOG teams and IGLOO WHITE, according to one estimate, were capable of providing six-digit grid coordinates for targets such as truck stops. Six-digit coordinates provide a target location within a 100-square-meter area. Banner, “The War for the Ho Chi Minh Trail,” p. 60.

⁵³Van Staaveren, *Interdiction in Southern Laos*, p. 121. Beginning in 1967, AC-130 Spectre gunships were also employed along the trail. Equipped with electronic sensors, a night observation device, a forward-looking infrared radar, and a devastating arsenal of miniguns and 20-millimeter canon, the Spectre proved to be the Air Force’s most effective truck killer. Hass, *Apollo’s Warriors*, pp. 276–280.

⁵⁴Plaster, *SOG*, p. 41.

frequently beleaguered friendly forces on the ground. In the words of one former reconnaissance team leader, “I know that when I was down there, just to hear a voice gave me such a degree of comfort that I don’t even have the words to explain it.”⁵⁵

The nature of the Ho Chi Minh Trail environment, and the North Vietnamese efforts to defend their logistical lifeline, combined with the need to maintain strict secrecy, helped to make OP 35’s cross-border operations among the most demanding, stressful, and dangerous of the Vietnam War. The jungle that shrouded the trail was a formidable obstacle for the SHINING BRASS teams. Forward movement was often extremely difficult and sometimes impossible. Knives and machetes became useless against the thick vegetation, and teams often were forced to crawl on their hands and knees to get through the tangled vines that choked much of the trail’s environs.⁵⁶ Adding to the challenge was the need to maintain absolute silence, since PAVN “Route Protection Battalions” and “Rear Security Units” constantly patrolled the trail looking for American and South Vietnamese interlopers.⁵⁷ As a result, the reconnaissance teams could cover relatively small amounts of ground. According to one estimate, the MACVSOG personnel during a typical mission could move a maximum of only two kilometers from the point of insertion; more typically, they were able to go only 1500 meters.⁵⁸

The number of SHINING BRASS operations (renamed PRAIRIE FIRE for operational security reasons in March 1967) increased steadily between 1966 and 1970. In 1966, OP 35 averaged 11 patrols per month.⁵⁹ By 1968, the monthly average had reached 25, and by 1969, MACVSOG’s peak year for reconnaissance missions in Laos, the monthly average was more than 37.⁶⁰ The 7th Air Force’s inter-

⁵⁵Plaster, p. 41.

⁵⁶Saal, *SOG*, pp. 256–259.

⁵⁷Plaster, *SOG*, p. 86.

⁵⁸Author’s telephone interview with John L. Plaster, June 19, 2000.

⁵⁹Prados, *Blood Road*, p. 153.

⁶⁰These figures do not include missions conducted by OP 35’s Hatchet forces. These far-larger platoon- and company-size “exploitation forces” were a separate component of PRAIRIE FIRE responsible for harassing the PAVN along the trail and, in Singlaub’s words, depriving the adversary of “a sense of sanctuary.” Singlaub, *Hazardous Duty*, p. 299.

diction campaign in Laos was a major impetus for this increase in missions during the 1967–1969 period. As the PAVN deployed increasingly sophisticated and robust countermeasures designed to frustrate air attacks, General Momyer demanded more and more OP 35 missions to help the Air Force hit elusive trail targets.⁶¹

When compared with the tens of billions of dollars per year the United States was spending to wage war in Southeast Asia, the direct financial costs of these missions was relatively modest—\$15.6 million for the 1967–1969 period, according to one estimate.⁶² The human cost, however, was more substantial. As the tempo of operations increased, the PAVN threw more resources into increasingly effective countermeasures. Both sides recognized the Ho Chi Minh Trail’s strategic importance, and both sides were engaged in a protracted and bloody conflict in defense of vital national interests. North Vietnamese forces, like their American adversaries, were compelled to innovate. The PAVN, for example, employed local tribesmen to serve as an early warning and signaling system. When the tribesmen detected Americans or South Vietnamese along the trail, they would strike pots, gongs, and drums like a tocsin to warn the North Vietnamese.⁶³ The PAVN also offered substantial rewards for anyone who killed or captured an American, and they deployed mobile tracker teams to patrol aggressively near suspected insertion areas. On occasion, the PAVN used Radio Direction Finding (RDF) equipment, which allowed them to locate OP 35 teams within 200 yards.⁶⁴ Finally, Hanoi devoted tremendous human intelligence resources to penetrating MACVSOG operations. Communist agents served as drivers at MACVSOG headquarters, and as bartenders and waitresses at MACVSOG compounds, where they

⁶¹Prados, *Blood Road*, p. 274. Yearly totals for SHINING BRASS/PRAIRIE FIRE missions are illustrated in the appendix.

⁶²Prados, p. 273.

⁶³Major Charles Norton, interview by Richard H. Shultz, Jr., “MACVSOG Oral History Interviews with Officers Who Served in MACVSOG OP 35 (Clandestine Operations in Laos and Cambodia against the Ho Chi Minh Trail),” International Security Studies Program, Fletcher School of Law and Diplomacy, Tufts University, January 1997, p. 50, abbreviated hereafter as “MACVSOG Oral History Interviews.”

⁶⁴Plaster, *SOG*, p. 85.

were able to gather useful and highly sensitive information about personnel, operations, and tactics.⁶⁵

As Hanoi increased its counter-infiltration measures, PRAIRIE FIRE teams lost the element of surprise and were forced to cut back the amount of time they could spend on the ground. In the early days of the MACVSOG missions, teams typically could expect to spend up to six days deployed on a reconnaissance mission. But the PAVN quickly learned OP 35's methods of operation. As a former OP 35 commander recalled,

[the North Vietnamese] knew the helicopter routine. They knew the air support that was provided to it. They figured out what the FAC did when he over flew the operational area Then it became much more difficult for us. As time went on . . . the losses mounted or us, because we really only had so many options to go into Laos and the NVA [North Vietnamese Army] knew that.⁶⁶

By 1969, PRAIRIE FIRE teams were spending on average two days on the ground, and in some cases, as little as six hours. While their time along the trail was shorter, their casualty rate was increasing, from 39 percent per mission in 1967 to 44 percent in 1968 to a staggering 50 percent in 1969, the peak year of OP 35 activity.⁶⁷ By 1972, PAVN countermeasures had become devastatingly effective. In the words of Richard Shultz, reconnaissance teams “found themselves fighting for their lives. They felt like hunted animals.”⁶⁸ On April 30, 1972, MACVSOG, as part of the Nixon administration's “Vietnamization” policy, was closed down and its personnel transferred to a short-lived South Vietnamese covert warfare task force.⁶⁹

⁶⁵Shultz, *Secret War*, pp. 244–246.

⁶⁶Norton interview, “MACVSOG Oral History Interviews,” p. 40.

⁶⁷Shultz, *Secret War*, p. 250. However, by 1970, improved extraction techniques led to a drop in friendly casualties, despite the high tempo of OP 35 operations.

⁶⁸Shultz, p. 262.

⁶⁹Editors of the Boston Publishing Company, *War in the Shadows*, pp. 88–92.

ASSESSING OP 35's EFFECTIVENESS

During the late 1960s, MACVSOG's operations against the Ho Chi Minh Trail enjoyed sustained support among the senior U.S. military leadership. In the judgment of a July 1970 MACV report, for example, PRAIRIE FIRE, in successfully harassing the PAVN, had compelled the North Vietnamese to shift infiltration routes, thereby increasing transit time and offering more opportunity for tactical air exploitation.⁷⁰ In 1969, the peak year of OP 35 activity, MACVSOG reconnaissance teams called in 1016 air strikes and, through direct action, destroyed 161 structures and killed an estimated 718 PAVN troops.⁷¹ OP 35 had also forced the enemy to expend significant resources to defend the trail, including the deployment of 25,000 men to provide security along key segments.

There were opportunity costs associated with North Vietnam's expenditure of resources to protect its strategic lifeline in Laos. According to MACV, the cross-border operations forced the PAVN to divert resources that could have otherwise been used in offensive operations against South Vietnam.⁷² A number of North Vietnamese shared the U.S. military's view of OP 35's effectiveness. In the view of Nguyen Tuong Lai, a former PAVN officer who had operated along the trail, the MACVSOG teams "effectively attacked and captured our soldiers and disrupted our supply lines. This weakened our forces and hurt our morale."⁷³ MACVSOG's effectiveness may have reached its apogee during a weeklong mission in 1971, when OP 35 teams, working with AC-130 gunships, destroyed hundreds of trucks and temporarily halted all traffic along the Ho Chi Minh Trail. In the judgment of the Joint Chiefs of Staff (JCS), the MACVSOG–Air Force personnel who participated in this mission were as effective as two battalions of regular U.S. infantry.⁷⁴

⁷⁰Joint Chiefs of Staff, MACVSOG Documentation Study, July 1970, Appendix D, "Cross-Border Operations in Laos," p. 39, as quoted in Shultz, *Secret War*, p. 238.

⁷¹MACVSOG *Command History, 1969*, Annex F, p. F-111-4-A-1, Tab A, as quoted in Saal, *SOG*, p. 428.

⁷²Charles F. Reske, *MAC-V-SOG Command History, Annex B, 1971–1972*, Vol. 2 Alpha Publications, Sharon Center, Ohio, 1990, p. 368.

⁷³As quoted in Singlaub, *Hazardous Duty*, p. 299.

⁷⁴Editors of the Boston Publishing Company, *War in the Shadows*, p. 88.

MACVSOG operations succeeded in harassing the PAVN and in forcing Hanoi to divert resources to defend the Ho Chi Minh Trail. It seems clear, however, that the cross-border operations never achieved the strategic effect of seriously impeding the movement of North Vietnamese men and materiel. Official U.S. concerns about the utility of the cross-border missions emerged as early as December 1966, when U.S. State Department officials concluded that these operations had failed to produce “any significant interruption of the [North Vietnamese] infiltration efforts.”⁷⁵ Interestingly, this skepticism about the U.S. operations in Laos was shared by several former OP 35 personnel who have argued that MACVSOG never achieved strategic results against Hanoi’s war-waging capabilities. According to Major John Crerar, who served as executive officer to OP 35 commanders during 1966 and 1967, the Ho Chi Minh Trail was a formidable and ultimately indestructible target:

You could prick it. You could cause the kind of damage that required them to put out people with security roles and things like that. You could put a security requirement on the enemy by having him worry that there are people who are going to tear things up, take prisoners, direct air strikes, and so on but that’s the most you could do with what you had then I don’t think SOG ever had the ability of stopping the trail flow.⁷⁶

A number of factors beyond the control of MACVSOG or the 7th Air Force impinged on the U.S. operations in Laos. Operations against the Ho Chi Minh Trail were severely limited by U.S. officials who were eager to preserve the covert nature of the campaign and thus the perception that the United States was adhering to the Geneva Accords. All operations had to be authorized in advance, a complex bureaucratic process that involved approval by the secretary of state, the secretary of defense, and senior White House officials.⁷⁷ MACVSOG missions deemed particularly sensitive were approved by

⁷⁵Memorandum from the Deputy Assistant Secretary of State for Far Eastern Affairs (Unger) to the Under Secretary of State (Katzenbach), December 2, 1966, *FRUS, 1964–1968, Vol. 27, Laos*.

⁷⁶Major John Crerar, interview, “MACVSOG Oral History Interviews,” p. 74.

⁷⁷General William C. Westmoreland, *A Soldier Reports*, Doubleday & Company, Garden City, NY, 1976, p. 107.

the President himself.⁷⁸ In Vientiane, the U.S. ambassador, William Sullivan, exercised in a vigorous fashion what he termed “policy supervision and control” over all significant American military activities in Laos, including those involving the Ho Chi Minh Trail.⁷⁹ Sullivan, in effect, held veto power over any proposed operations. Indeed, Sullivan’s forceful and imperious style and his eagerness to exercise control over military operations earned him the sobriquet “field marshal.”⁸⁰ Although Sullivan did not select targets for attack, his prior authorization was required for every preplanned air strike against Laotian targets. In his memoirs, Sullivan describes the intensity of his involvement in all aspects of the war in Laos

Many a night I was wakened from a sound sleep by a telephone call, and sitting on the edge of the bed, had to decide whether to order the evacuation of an outpost under attack, to hold on, to reinforce, to call for air support, or to mount a diversionary action to relieve pressure on the front.⁸¹

Another factor that limited American effectiveness was the way North Vietnam waged war. With few economic resources relative to those of the United States, the DRV was compelled to wage a protracted, low-technology conflict that used Hanoi’s comparative advantages in manpower and time to offset its relative disadvantages. Vast numbers of people could be mobilized to repair or bypass damaged roads, construct elaborate camouflage, and conduct security

⁷⁸Kenneth Conboy and Dale Andradé, *Spies and Commandos: How America Lost the Secret War in North Vietnam*, University Press of Kansas, Lawrence, 2000, p. 95.

⁷⁹U.S. Senate, Committee on Foreign Relations, *United States Security Agreements and Commitments Abroad: Kingdom of Laos*, hearings before the Subcommittee on United States Security Agreements and Commitments Abroad, 91st Congress, 1st Session, Pt. 2, 1969, p. 487.

⁸⁰Timothy N. Castle, *At War in the Shadow of Vietnam: U.S. Military Aid to the Royal Lao Government, 1955–1975*, Columbia University Press, New York, 1993, p. 79. Sullivan derived his authority from two sources. The first was a May 1961 letter from President Kennedy that gave U.S. ambassadors presidential authority to direct the activities of all U.S. government agencies present in any given mission. The second was Sullivan’s successful argument that since there was no “organic” U.S. military command on Laotian soil, the ambassador had the authority to direct the activity of the American armed forces operating there. U.S. Congress, *Laos Hearings*, pp. 517–518.

⁸¹William H. Sullivan, *Obbligato: 1939–1979, Notes on a Foreign Service Career*, W.W. Norton & Company, New York and London, 1984, p. 213.

patrols. The low-tech nature of Hanoi's strategy and operations also meant that the PAVN's logistical requirements were relatively limited.

Those limited requirements proved to be a significant advantage that had major consequences for U.S. military operations in the region. In 1968, at the height of the U.S. military commitment in Vietnam, an estimated 13,700 tons of supplies per day were needed to keep Army troops in the field.⁸² The PAVN, in contrast, required only a small fraction of what U.S. forces needed. Estimates of North Vietnamese requirements range widely, from a low of 15 tons per day⁸³ to a high of 60 tons.⁸⁴ As few as 15 trucks per day, according to one estimate, were all that was required to supply Hanoi's forces in South Vietnam.⁸⁵ No matter how many ground reconnaissance teams were sent into Laos, and no matter how intensive the air interdiction along the Ho Chi Minh Trail—which after October 1968 reached 450 sorties per day⁸⁶—it was almost certain that at least 15 trucks would escape the air strikes.

⁸²Prados *Blood Road*, p. 374.

⁸³Van Dyke, *North Vietnam's Strategy*, p. 36. This figure, which is taken from an estimate made by Defense Secretary Robert S. McNamara in August 1967, is for nonfood supplies only. Other estimates cited in the literature are less specific in terms of dates and the nature of the requirements. For example, requirements were likely to be far higher for the PAVN in its final, more conventional military phase during the 1973–1975 period.

⁸⁴Walter J. Boyne, "The Plain of Jars," *Air Force Magazine*, Vol. 82, No. 6, June 1999, accessed at <http://afa.org/magazine/0699plain.html>.

⁸⁵Herman L. Gilster, review of *The Blood Road: The Ho Chi Minh Trail and the Vietnam War*, by John Prados, in *Armed Forces & Society*, Vol. 26, No. 2, Winter 2000, pp. 351–352.

⁸⁶Van Dyke, *North Vietnam's Strategy*, p. 40. Before the bombing halt, the sortie rate was 150 per day.