

## OUR HERITAGE

# The Ho Chi Minh Trail 1970: The Mission is the Mother of Invention

BY DR. GARY E. WEIR

**Was the sortie successful?** The United States' aerial effort in the 1970s to interdict the massive amounts of supplies rolling down the Ho Chi Minh Trail from North Vietnam needed regular and reliable evidence of success or failure. Did our mission succeed? That question needed a timely answer, daily.

Air Force and Navy reconnaissance aircraft routinely flew over the primary entry points into Vietnam from southern Laos at Tchepone and the Mu Gia and Ban Karai Passes. The road networks running north and south drew the camera's attention at least once a week. The reconnaissance aircraft focused twice as often on the transit points into Vietnam and Cambodia from Laos. In early daylight, these flights sought to confirm the pilots' visual estimate of the damage inflicted by night raids on North Vietnamese trucks running in near-dark conditions through Laos, down the trail to logistics staging areas and to truck parks serving as rest stops for continuing journeys. This reconnaissance effort sought to define both mission effectiveness and possible targets for the next day's work.

In spite of these assets, in 1970 the needed assessments did not come easily. In one case, the crew of an RF-4C reconnaissance aircraft flying early morning missions during the 1969-1970 dry season could confirm only seven of 103 trucks reported destroyed during the first six weeks after the intense rain ceased. Given the proven effectiveness of the AC-130 gunships and repeated pilot reports of success, the inability to verify the damage inflicted became a critical problem. Did the missions fail? Were the pilots mistaken? Did the North Vietnamese road crews clear the debris away and repair the bomb craters quickly enough to cover up any sign of the attack?

Upon careful consideration, it seemed that the answer rested with the standard charts then in use by planners. In 1970, detailed and accurate charts of Laos proved hard to find. Photointerpreters gradually discovered that the maps and charts of Laos used for the Ho Chi Minh Trail interdiction missions, as well as other efforts, regularly demonstrated errors of a few thousand meters. If the



Photo from *The War Against Trucks*, an official U.S. Air Force publication.

*A truck park along the Ho Chi Minh Trail photographed by aircraft reconnaissance, c. 1968.*

RF-4C reconnaissance and assessment teams had been flying to flawed coordinates to monitor the effect of night missions accomplished just a few hours earlier, that would explain a great deal.

To address this problem, the Air Force introduced the long-range navigation (loran) system into the equation. Loran defines the location of any strike site by determining its distance from a known location via the elapsed time of a dedicated radio signal between two or more points—providing much greater precision. The promise of using loran led the Air Force and the Aeronautical Chart and Information Center (ACIC) in St. Louis, Mo., an NGA predecessor, to take this possible solution a step further. The cartographers at ACIC took high-altitude photographs of Laos, Cambodia and Vietnam and broke them into sections, 10 miles square. Loran-directed RF-4Cs photographed each block, and the cartographers transferred the loran data to a series of photo maps, combining the high altitude work with the need to have accurate maps and charts.

The loran control points on the photomaps then went into a growing database along with other significant mission locations identified by the Air Force using those very same points. By 1971, the database became available for use at the 12th Reconnaissance Intelligence Technical



Photo from *The War Against Trucks*, an official U.S. Air Force publication.

Aircraft reconnaissance captured this image of an open storage supply dump along the Ho Chi Minh Trail, c. 1968.

Squadron at Tan Son Nhut airbase near Saigon. With accurate fixed points both on the photomaps and retrievable from the computer, the reconnaissance squadron could within 45 minutes accurately confirm the location of any strike point along the trail with a radio fix that related that location to the nearest known loran control point.

With this available combination of talent and technology, the photointerpreters began working with forward air controllers to address the immediate needs of any mission in progress with the new loran-driven tools. The controllers would have the photomaps in hand, with a special grid superimposed. They provided the location of a target or a successful strike as portrayed on their photomap to the technical squadron at Tan Son Nhut, along with the information supplied by the grid. The technical squadron could then supply the pilot with his loran position, both for his purpose and to revisit the point of attack later for evaluation and lessons learned.

Necessity truly is the mother of invention. In this case, a powerful innovation emerged from a creative combination of tradecraft skill and technology. Over the jungles of Laos and Vietnam nearly four decades ago, advanced communications came together with the imagery skills of the photointerpreter and the deliberate precision of the cartographer to fulfill the critical mission needs of the moment. Therefore, for NGA today as well as for its predecessors, I say that the *mission* is the mother of invention. P

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