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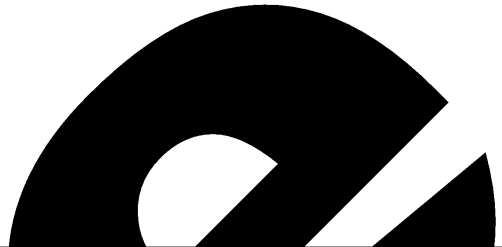

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DIRECTORATE OF
INTELLIGENCE

Intelligence Memorandum

Road Construction and Wet Weather Logistics in the Laotian Panhandle

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
June 1968

INTELLIGENCE MEMORANDUM

Road Construction and Wet Weather Logistics in the Laotian Panhandle

Summary

The North Vietnamese have made substantial improvements to the wet-season capacity of the road network in Laos used for truck transport of supplies from North Vietnam to South Vietnam in 1967-68. The estimated wet-season capacity for continuous truck movement as far south as the A Shau Valley has been increased from 50 to 100 short tons a day. An additional 50 tons of capacity is available for movements along routes leading into Quang Tin and Kontum Provinces.

The increased wet-season capacity of this road network, if fully used, could sustain traffic volumes amounting to 85 percent of the daily average -- 175 tons -- moved during the 1967-68 dry season (September 1967 - April 1968). The current requirement of Viet Cong and North Vietnamese forces in South Vietnam for logistic support from the north via Laos is only slightly more than 30 tons a day.

The improved capacity of the road network strengthens North Vietnam's capability to provide sustained logistic support to Communist forces in the South. It will also reduce the dependence of these troops on storage areas and porterage for logistic resupply.

Note: This memorandum was produced solely by CIA. It was prepared by the Office of Economic Research and was coordinated with the Director's Special Assistant for Vietnamese Affairs.

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Effects of the Road Improvement Program

1. The North Vietnamese have been improving the original Laotian road net and building new military roads since early 1965. Their construction methods and the general condition of these roads have steadily improved over time. By March 1967 the Communists had developed within the Laotian Panhandle a road network capable of moving supplies by truck all the way to the borders of South Vietnam. This network had an estimated capacity to move by truck either within the Panhandle or to the borders of South Vietnam about 550 short tons of supplies a day during the dry season. The 1967 wet-season capacity of this network was significantly less. Although the system had a wet-season capacity of moving an estimated 100 tons a day within southern Laos, only 50 tons a day could be moved all the way by truck to South Vietnam.

2. Beginning in the last quarter of 1967, at the end of the monsoon season, the Communist road construction and repair effort was noticeably intensified. This effort is still under way and seems to be concentrated on measures that will improve the wet-season capacity of the network. The new roads started in late 1967 have a limited all-weather capability. Many of the earlier routes have been upgraded during successive dry seasons by the construction of bypasses around chokepoints and trouble spots and, in a few cases, by the construction of alternate routes. The number of bypasses and alternate routes constructed is much greater than that observed during past dry seasons. Upgrading and improvement have also been achieved by the addition of gravel, where available, and the extensive use of corduroy.

3. The road net in the Laotian Panhandle is not all-weather in the sense that the roads are well drained and surfaced with gravel, asphalt, or concrete. By a variety of construction techniques, however, the North Vietnamese have improved the roads to such an extent that much of the system will be passable during most of the current rainy season. This "limited all-weather" capability is possible primarily because of

extensive bypass construction during the recent dry season (October-April). Bypasses were built in high terrain around low areas that flood and around areas with unsuitable soil conditions. Other road segments were strengthened or were surfaced with locally available gravel and corduroy. Some road sections were realigned and widened, while others were reconstructed with better grades and adequate drainage.

4. The maintenance of this limited all-weather capability is highly dependent on the use of large numbers of laborers and engineering battalions to keep the roads passable. Although the network is not elaborate and maintenance techniques are simple, the system works. During June, July, and August of the 1967 rainy season, truck traffic primarily moving northward was observed by roadwatch teams on Route 15 in the Mu Gia area and on Route 12. They also observed traffic on the other routes in Laos on which observers were located. Trucks were also seen on all of the routes covered by aerial observers in Laos during the period. Most of the trucks noted by aerial observers at this time were on Routes 922, 912, and 110. Very little traffic was reported by pilots on the other routes.

5. The repairs and improvements carried out during this dry season will increase the wet-season capabilities for the network in the Laotian Panhandle. The wet-season capacity for distribution of goods within the Panhandle as far south as the junction of Routes 911 and 912 has been increased from 100 to 150 short tons a day. Similarly, the wet-season capacity to move goods by truck into South Vietnam increased from 50 to 150 tons a day. If this increased capacity can be fully utilized during the present wet season, the North Vietnamese will be able to truck supplies into South Vietnam at a rate equal to 85 percent of the average daily tonnage -- 175 tons -- moved from North Vietnam to Laos during the past dry season. Of the 175 tons per day delivered into Laos, an estimated 47 tons per day were required in the Panhandle to support military operations and the infiltration network. In addition, as much as 20 percent of the deliveries (about 35 tons per day) were probably lost due to air attack, breakage, and spoilage. Thus, about 93 tons per day were available for immediate use in South Vietnam or for stockpiling in Laos or in South Vietnam for later use during the rainy season.

Significance of Road Improvements During 1967-68

6. The road improvements carried out during the past dry season should provide the North Vietnamese with an increased capability for sustained logistical support of their forces in South Vietnam and reduce the reliance of these troops on caches and porterage.

7. In past years, the number of trucks moving into southern Laos during the wet season has averaged less than one-third the daily average of the dry season, and there has been little truck traffic within the Laotian Panhandle. The logistical needs of enemy troops in South Vietnam were supplied principally from caches built up during the dry season. The limited resupply efforts carried on during previous rainy seasons consisted of some inland water movement in Laos and a considerable amount of short-haul portering within Laos and from Laos to South Vietnam.

8. As a result of the buildup of their forces and the increased intensity of fighting in South Vietnam, the Communists will probably be unable to be so dependent on caches and porterage as they have been previously. The destruction of supplies by air attacks in both Laos and South Vietnam as well as the increasing amounts of enemy supplies being captured by ground action in South Vietnam creates additional stress on the resupply system.

9. North Vietnamese logistics planning for the implementation of its present "fight-talk" strategy undoubtedly took into account the need for significantly improving the wet-season capability of the road network, and most of the construction effort in the past eight months was probably done with this in mind. It is estimated, therefore, that truck traffic during the 1968 monsoon season will be considerably higher than in previous years, even though the heavy resupply movements of the past dry season indicate that substantial stockpiles were built up in Laos and in South Vietnam. Information available thus far in the rainy season indicates that traffic is indeed being maintained and at levels considerably higher than that observed during previous rainy seasons. During 15 days of observation in June 1967, for example, an average of three trucks a day reportedly moved south through

Mu Gia Pass from North Vietnam toward Laos. During 19 days of observation in June 1968, the average number of trucks southbound over this same stretch of road was 20 per day, nearly seven times the daily average for the previous year. Moreover, there are other reports that indicate a high level of truck traffic is continuing in the early rainy season on Route 911 between Routes 912 and 9 and on Route 92, north of Route 9. This early trend tends to confirm the enemy's intentions (as stated in documents captured in the A Shau Valley in April 1968) to operate "at a level many times higher than that of the last year."

10. Although total enemy requirements for logistic support from North Vietnam via Laos have doubled since the summer of 1967, they remain relatively small -- slightly more than 30 short tons a day of weapons, equipment, and ammunition. The provision of this amount of supplies would involve utilization of one-fifth of the impending wet-season capacity of the road connections between Laos and South Vietnam.

Status of Individual Road Segments (See the Map)

Route 12

11. Route 12 is the Laotian extension of Route 15 which leads from North Vietnam to Mu Gia Pass. It has an estimated capacity of 350 short tons a day during the dry season and 100 tons a day during the wet season. Southbound trucks move over Route 12 and its bypasses, Routes 1201 and 1202, to the junction with the northern portion of Route 23. They then move over Route 23 to Route 911.* Route 911 can move an estimated 50 tons per day during the rainy season as far south as its junction with Route 912, the other truck access route to southern Laos. Thus with the 100-ton wet-season capacity

* *The remaining portions of Route 23 running south from its junction with Route 911 are excluded from this analysis because they play no significant role in logistical resupply efforts during the rainy season. They do, however, serve as an alternate approach to Route 9 during the dry season.*

on Route 912, a total of 150 tons a day can arrive at the junction of Routes 912 and 911. This tonnage can move to South Vietnam as described below.

Route 912

12. Since 1966, when the North Vietnamese built Route 137/912, which runs from Route 101 in North Vietnam to Route 911 in Laos, they have not had to rely exclusively on the roads directly south of Mu Gia Pass for truck movements to South Vietnam. Route 912 remained open throughout the 1967 rainy season and is expected to remain open during the current rainy season. It is well constructed and located in high terrain, and some sections near the North Vietnamese border are graveled. The estimated capacity of Route 912 is at least 100 short tons per day during the wet season.

Route 911 South of Its Junction with Route 912

13. The portion of Route 911 between the intersections with Routes 912 and 9 is narrow with sharp curves. It traverses high terrain which provides a good, sometimes stony, road surface. Many short bypasses permit movement around frequently interdicted sections. One major bypass, 29 miles long, was constructed during the past dry season and traverses high ground to reduce the threat of flooding. The completion of this bypass is the principal reason for increasing the estimated wet-season capacity of this portion of Route 911 from 50 short tons per day in 1967 to 150 tons in 1968.

Route 9

14. Route 9 leading to the Khe Sanh area from Laos is generally in good condition but is not covered by jungle and is thus subject to air interdiction. The surface is largely crushed and compacted stone and will therefore remain passable during the wet season. During the past dry season, moreover, the North Vietnamese built a new earth-surfaced road, as yet unnumbered, over high ground which parallels Route 9 to its junction with Route 92. Route 914 also acts as a bypass to Route 9 and shortens the distance for traffic moving south. The estimated capacity of Route 9 from the Tchepone area

to the South Vietnamese border during the wet season is 100 short tons per day. Route 914 and the unnumbered bypass combined could also carry 50 tons per day.

Route 92 North of Route 922

15. Route 92 remained open during the 1967 rainy season and probably will remain open during the current rainy season. It passes through stony hills which are covered with dense jungle. The route is graveled in sections and was heavily used in May of this year. The estimated capacity of Route 92 during rainy weather is 100 short tons per day.

Route 922 Leading to the A Shau Valley

16. The North Vietnamese have used Route 922 since March 1967 to move supplies into South Vietnam and have improved it considerably since the beginning of the dry season in the fall of 1967. They have built several short bypasses, realigned some sections, and laid out extensive truck parks and logistical complexes. Long stretches of the road near the South Vietnamese border have been corduroyed, some with pierced-steel planking from the abandoned Special Forces airfields in the A Shau Valley. In the border areas the road traverses higher terrain, providing better drainage and load-bearing soils. This route probably has a wet-season capacity of 100 short tons per day, about one-third of its dry-season capacity, and will be passable during the current wet season.

Route 92 South of Route 922 to Ban Bac

17. This section of the north-south truck route usually remains open for limited through traffic, although the cumulative effects of weather may occasionally halt through traffic for short periods during the last few weeks of the monsoon season. In this area the road passes through rugged terrain, dense jungle, and good load-bearing soils. Moreover, the southern portion of this road enters an area of large streams which become flooded by the rains and provide water routes. Nevertheless, the wet-season capacity of Route 92 to the Ban Bac area could be as high as an average 100 short tons per day.

Route 96 South of Ban Bac

18. Much of Route 96 will probably be flooded for short periods, but shuttling operations will continue during the entire rainy season. Long sections of this route are paralleled by rivers that offer the North Vietnamese use of waterborne craft during most of the year. Several new water-to-highway transshipment points are connected to Route 96 by short feeder roads that are usually kept open. As Route 96 approaches Route 110, the road generally avoids low-lying areas and should remain passable for all except short periods during the entire rainy season, although in the past the enemy has not maintained this section. It is estimated that a daily average of only 50 short tons could be moved from Ban Bac southward to Route 110 over Route 96 during the wet weather.

19. From the Chavane area, Route 165 was extended across the South Vietnamese border earlier this year and recently connected with South Vietnamese Route 14 just north of Kontum Province. Some of the supplies being moved south on Route 96 could be introduced into South Vietnam over this road, segments of which show evidence of good construction. The route as a whole could carry at least 50 short tons per day during the rainy season.

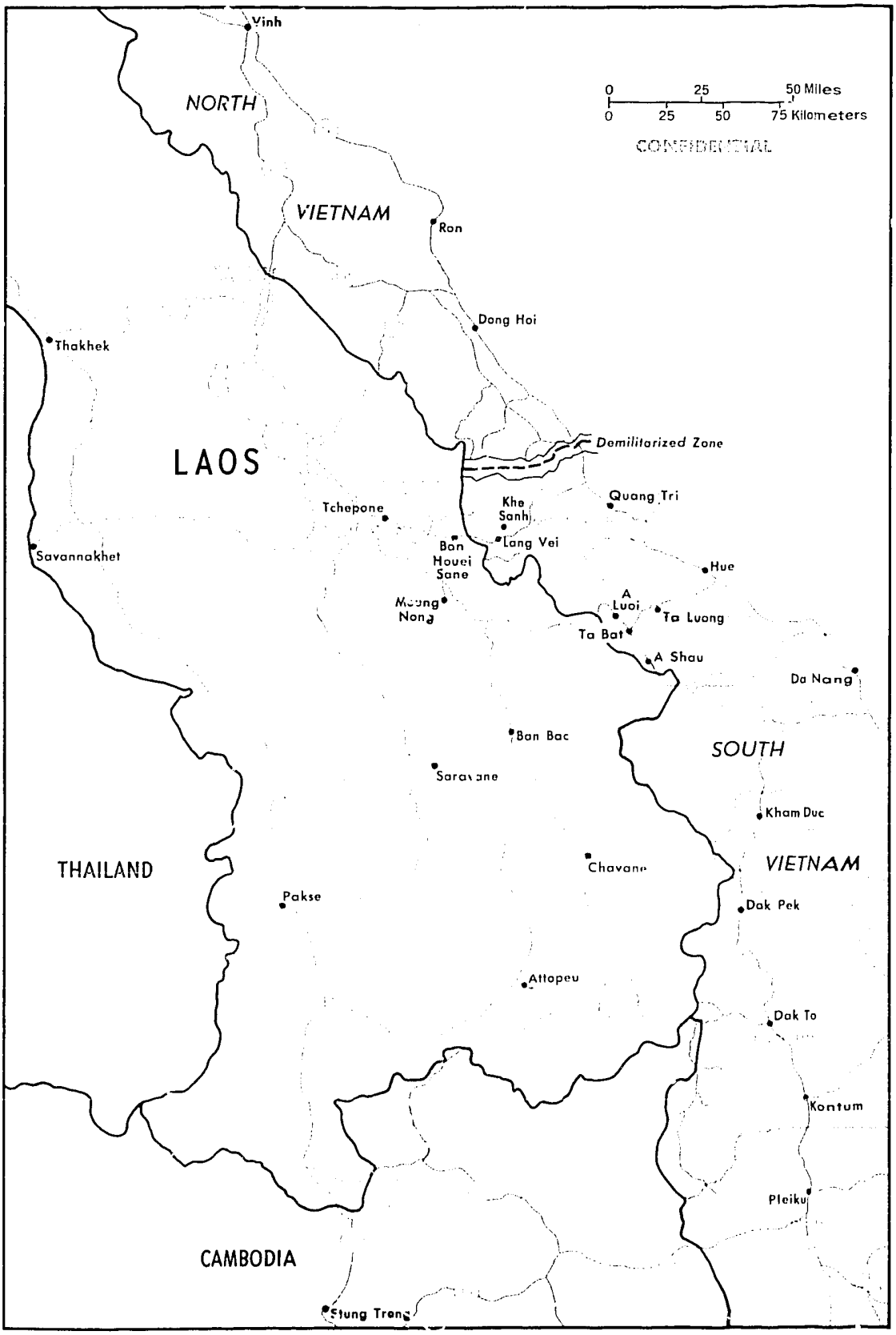
Route 110

20. The North Vietnamese have stockpiled considerable material and made extensive preparations to keep Route 110 in the tri-border area open throughout the rainy season. In the recent dry season, the road was constructed with good grades and drainage through an area with good load-bearing soils. Several bypasses have already been built, and potential trouble spots have been strengthened in anticipation of the rains. 25X1

25X1 [redacted] This segment of Route 110 should remain passable during the entire rainy season and should be able to transmit all tonnages fed to it by Route 96. Moreover, sections of Route 110 near and through the Cambodian salient could carry as much as 100 short tons per day.

Prospects

21. The North Vietnamese will be able to keep open the road net in the northern part of the Laotian Panhandle throughout the entire monsoon season as far south as Route 922 leading into the A Shau Valley. This will permit continual truck supply movements in support of the sizable forces committed in the I Corps area of South Vietnam, in particular those around Khe Sanh. Furthermore, the enemy could maintain some truck traffic as far south as Route 165 near Chavane in support of the forces recently introduced into this area of the central highlands. Late in the rainy season, however, the sections of the road between Chavane and the tri-border area may be closed to through truck traffic for short periods, although the possibility of moving supplies short distances over water routes would probably lessen the effects of the loss of truck traffic.



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