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**INTELLIGENCE BRIEF**

EFFECTS OF THE BOMBING  
OF THE TRANSPORT SYSTEM  
ON THE NORTH VIETNAMESE ECONOMY AND LOGISTICS

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**DIRECTORATE OF INTELLIGENCE**

Office of Research and Reports

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EFFECTS OF THE BOMBING OF THE TRANSPORT SYSTEM  
ON THE NORTH VIETNAMESE ECONOMY AND LOGISTICS\*

Since 3 April, US and South Vietnamese aircraft have bombed the transport system in the southern part of North Vietnam extensively, destroying or damaging railroad and highway bridges, port facilities, airfields, and transport equipment. The bombing has increased the time required for traffic movements in the area, has reduced the capacity and the flexibility of the transport system, and has increased the requirements for motor transportation and coastal shipping. In addition, the air attacks have caused considerable loss of capital investment in the form of new rail and highway bridges, many of which had only recently been completed. They have brought to a standstill ambitious plans for the further improvement of the transport system in the south and possibly in the north as well. As the monsoon season progresses, \*\* the movement of traffic by ferries on Route 1A will become increasingly difficult and may halt on routes into Laos, where fords and newly constructed temporary bridges will be flooded. The transport problem per se, however, may have little influence during the next few months on Communist activities in Laos or South Vietnam, because supplies have been stockpiled in both areas. Moreover, the Communists have demonstrated the capability to infiltrate supplies needed in South Vietnam directly from the Haiphong area by sea. [REDACTED]

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As previously estimated, \*\*\* the effect of the air attacks on the overall economy of North Vietnam has been comparatively slight because the northern part of the country accounts for the major share of the

\* This publication contains information available to this Office as of 21 June 1965. For locations, see the table, below, and the map, Figure 1. For examples of ferry slips and bypasses, see the photographs, Figures 2 and 3.

\*\* The duration of the high water due to the monsoon season varies by localities. Along Route 7 toward the Laos border the season generally continues from mid-May through mid-October. Along the coast from the Thanh Hoa area south, the season extends from September through December. Rain along the Laos border, however, raises the water level in the rivers along the coast before the monsoon begins there.

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industrial and agricultural output and does not depend on the south for any major product. Nevertheless, the North Vietnamese have responded to the bombing with a sense of urgency in their efforts to keep the transport system in the south open to traffic, principally to insure the continued flow of military traffic. The North Vietnamese have kept traffic moving, largely at night, by constructing fords and ferries, by erecting pontoon bridges, and by repairing damaged bridges. To accomplish this task, thousands of skilled and unskilled workers from other areas in the country have been mobilized and transferred to the south with some attendant impact on normal economic activity.

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1. Transport Facilities and Equipment Destroyed by Bombing

From 3 April to 14 June, with a lull of about 1 week in May, the transport system south of the 20th Parallel in North Vietnam was bombed extensively, and since 14 June two bridges north of the 20th Parallel have been attacked. South of the 20th Parallel, at least 30 important bridges and numerous secondary bridges have been either destroyed\* or severely damaged; and approaches to bridges, ferries, and fords have been bombed and cratered. Most of the bridges were highway bridges, but four were railroad bridges and four were combination railroad and highway bridges. A majority of the bridges interdicted were on Route 1A, the major north-south highway between Hanoi and the Demarcation Line. Three highway bridges were on Route 7, two on Route 8, and six on Route 15.\*\* Routes 7 and 15 are major supply routes, and Route 8 is a minor supply route for trucks carrying supplies to Communist forces in Laos.

Transport equipment found south of the 20th Parallel, including railroad rolling stock, trucks, ships, ferries, barges, and sampans, also has been attacked. In addition, Ben Thuy, which is the port for Vinh, the only important economic center and the most important military base south of the 20th Parallel, was attacked several times in early June. Some of the main piers, the coal yard, warehouses, and the electric powerplant located nearby were damaged. The Vinh airfield, the airfield at Dong Hoi located further south, and associated facilities have been bombed. Also, various petroleum storage areas, the most important being the one near Ben Thuy, have been destroyed.

\* The term destroyed or interdicted in this publication means that one or more bridge spans were either dropped or rendered completely useless as a structural component of the bridge.

\*\* Formerly known as Route 12 or 15/12.

2. Effect on the Transport System

Various sources indicate that some traffic is moving to and in the southern part of North Vietnam in spite of repeated day and night aerial attacks on all forms of modern transportation in that area. Serious transport problems have resulted, however, in the southern part of the country, and less serious problems have been noted in the northern part, as well. Through-rail service from Ninh Binh, on the rail line about 115 kilometers south of Hanoi, to Vinh is no longer possible. Although there are indications that the North Vietnamese may still be trying to move some supplies over certain portions of the line between bombed bridges south of Ninh Binh, the North Vietnamese probably have been extremely cautious in using rail transportation since 4 May, when heavy damage was inflicted on trains caught on a section of the line between two bombed bridges. The movement of supplies from the northern part to the southern part of North Vietnam, therefore, must be much slower than before the bombing and must depend principally on highway and coastal water transportation. Trucks apparently have been shifted from the north to the south to meet the increased demands for motor transportation.

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[Redacted]

[Redacted]

Although transportation for economic purposes probably has been affected, there are indications that the transport system generally has been able to maintain a flow of supplies, probably sufficient to include the comparatively small quantity of military supplies needed by the Communist forces in the southern part of North Vietnam, Laos, and the northern part of South Vietnam. It is estimated that for the current comparatively low level of activity these forces need from 100 to 120 mt of supplies daily, an amount that probably could be carried from Ninh Binh to Vinh by about 150 trucks.

The bombing, however, has not seriously affected transportation for the North Vietnamese economy in general, because the major part of the transport network, almost all of the country's industry, and more than 80 percent of its cultivated land are north of the area bombed to date. The bombing has indirectly increased, although apparently not seriously, the demands on the transport system even in the north, where it already was performing at a near capacity level. [Redacted]

[Redacted]

[Redacted] Transportation of construction materials and relocation of work gangs to bombed areas also have required additional transportation in the north as well as in the south. Added requirements for trucks apparently have necessitated increased imports of trucks. \* [Redacted]

\* The civilian and military truck inventory is estimated to include at least 10,000 vehicles. Imports of trucks have increased considerably since the bombing began. The loss of trucks by aerial attack apparently has been more than replaced by these imports.

[Redacted]

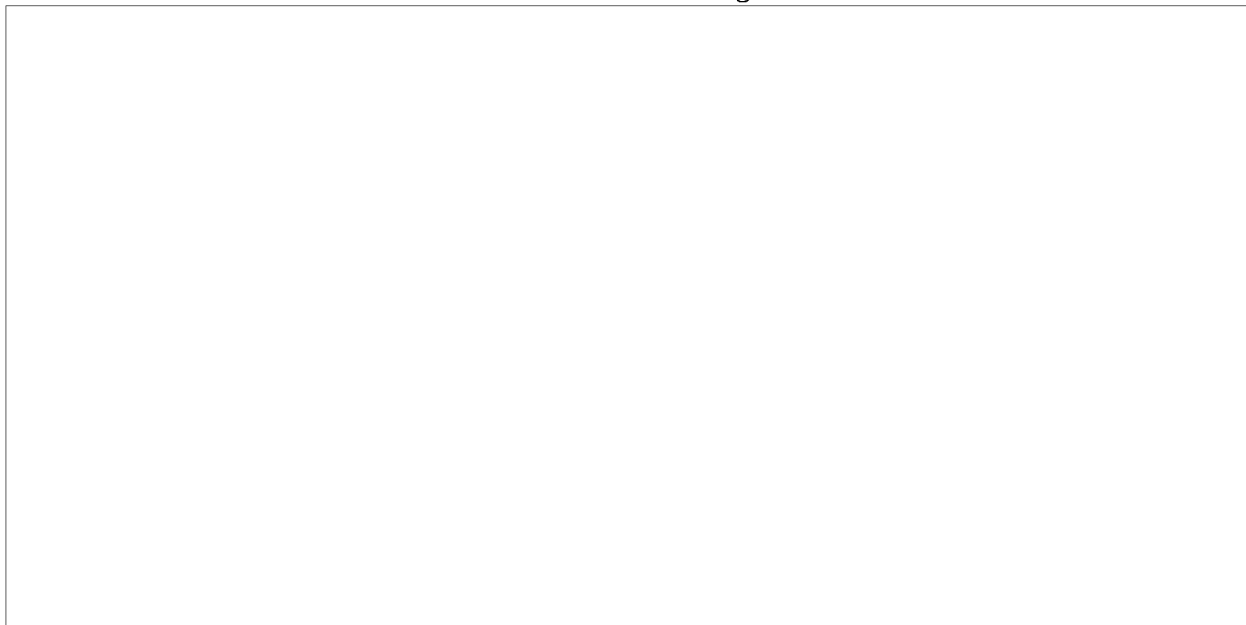
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3. Repair and Reconstruction

The North Vietnamese have attacked with urgency the problem of keeping the roads trafficable and have diverted considerable men and materials to the bombed area. They have attempted to repair a number of bridges by constructing temporary wooden spans or by constructing earth-filled causeways to bypass missing spans. The North Vietnamese have erected one or possibly two vehicular pontoon bridges to facilitate the movement of truck traffic. The initial response of the North Vietnamese, however, has usually been to revert to traditional methods of fords and ferries for crossing water barriers. Within a few days to a few weeks after bridges were destroyed, ferry crossings have been established on coastal routes where the rivers are comparatively wide and deep; and, in the mountainous areas where the streams are more narrow and shallow, the North Vietnamese are using fords to bypass damaged bridges. [REDACTED]

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To devise these temporary expedients, the North Vietnamese have been forced to abandon their long-range plan to improve the transport system in the southern part of the country. During the past few years the North Vietnamese have engaged in an unpublicized effort to construct permanent bridges on the important routes within North Vietnam that lead to central and southern Laos and through Laos to South Vietnam.



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[REDACTED] a large number of additional workers are possibly being used for road maintenance and repair in an attempt to keep high-ways open during the rainy season, or perhaps they are being stationed near important bridges, ferries, and choke-points to repair damage and

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[REDACTED]

fill craters as rapidly as possible -- a technique widely used by the Communists during both the Korean and French-Vietnamese Wars. [REDACTED]

Thus the harassment and casualties occasioned by the air attacks, the diversion of labor, and the allocation of materials for the construction of temporary expedients probably have had a small though not an inconsequential impact on normal economic activity throughout the country. [REDACTED]

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[REDACTED]

North Vietnam: Reaction of the North Vietnamese at Sites of Important Bridges Interdicted  
Through 18 June 1965 a/\*

Map Key	Name of Bridge	Route Number	Dates of Interdiction	Reaction Taken		
	1	Ninh Binh Railroad/Highway	1A	15 June	Unknown.	
	2	Dong Phong Thuong Railroad/ Highway	1A	3 April, 1 June	By [ ] a temporary deck span had been constructed and a new ferry crossing had been completed. A second strike on 1 June, however, dropped an additional span. Photography [ ] revealed that a vehicular pontoon bridge had been erected west of the damaged bridge.	25X1 25X1 25X1
25X1	3	Thanh Hoa Railroad/Highway	1A	4 April, 7 May, 16 June	[ ] the rail portion had been repaired to support heavy truck traffic and a ferry crossing had been reactivated south of the bridge. Vehicular pontoon sections were also observed near the bridge on [ ] photography.	25X1 25X1 25X1
	4	Qui Vinh Railroad	Near 1A	9 April	[ ] a new ferry crossing had been constructed.	
	5	Phuong Can Highway	1A	9 April	[ ] a temporary span had been constructed for foot traffic in preparation to rebuild the bridge to prestrike condition. A newly built ferry crossing also had been constructed.	25X1
	6	Ly Nhan Highway	1A	23 April	[ ] an existing ferry crossing had been reactivated.	25X1
	7	Dien Chau Railroad	Near 1A	16 April	[ ] no attempt had been made to repair the bridge or construct a ferry crossing.	25X1
	8	Tam Da Railroad/Highway	1A	9 April	[ ] an existing ferry crossing had been reactivated.	25X1

\* Footnotes follow on p.9.



North Vietnam: Reaction of the North Vietnamese at Sites of Important Bridges Interdicted  
Through 18 June 1965 a/  
(Continued)

Map Key	Name of Bridge	Route Number	Dates of Interdiction	Reaction Taken		
9	Tho Son Highway	1A	23 April	[redacted] a new ferry crossing had been constructed.	25X1	
10	Xom Gia Highway	1A	23 April	[redacted] a new ferry crossing had been constructed.	25X1	
11	San Dinh Highway	1A	23 April	[redacted] no attempt had been made to repair the bridge or construct a ferry crossing.	25X1	
25X1	12	Kinh Thuong Highway	1A	10 May	An alternate bypass in the vicinity is probably in use.	25X1
[redacted]	13	Ha Tinh Highway	1A	10 May	[redacted] a new ferry crossing had been constructed.	[redacted]
[redacted]	14	Tho Ngoa Highway	1A	10 May	[redacted] a new ferry crossing had been constructed.	25X1
[redacted]	15	Tu Dung Highway	1A	10 May	[redacted] a new ferry crossing had been constructed.	25X1
[redacted]	16	Thanh Yen Highway	1A	13 April	[redacted] an existing ferry crossing had been reactivated.	25X1
[redacted]	17	Xom Phuong (two bridges)	1A	23 April	[redacted] temporary repairs had been made to the bridge to the east, permitting traffic to pass.	25X1
[redacted]	18	Dong Hoi Highway	1A	4 April	[redacted] a new ferry crossing had been constructed.	25X1
[redacted]	19	Ban Ca Nan Highway	7	May or June	[redacted] a new ferry crossing had been constructed.	25X1

North Vietnam: Reaction of the North Vietnamese at Sites of Important Bridges Interdicted  
Through 18 June 1965 a/  
(Continued)

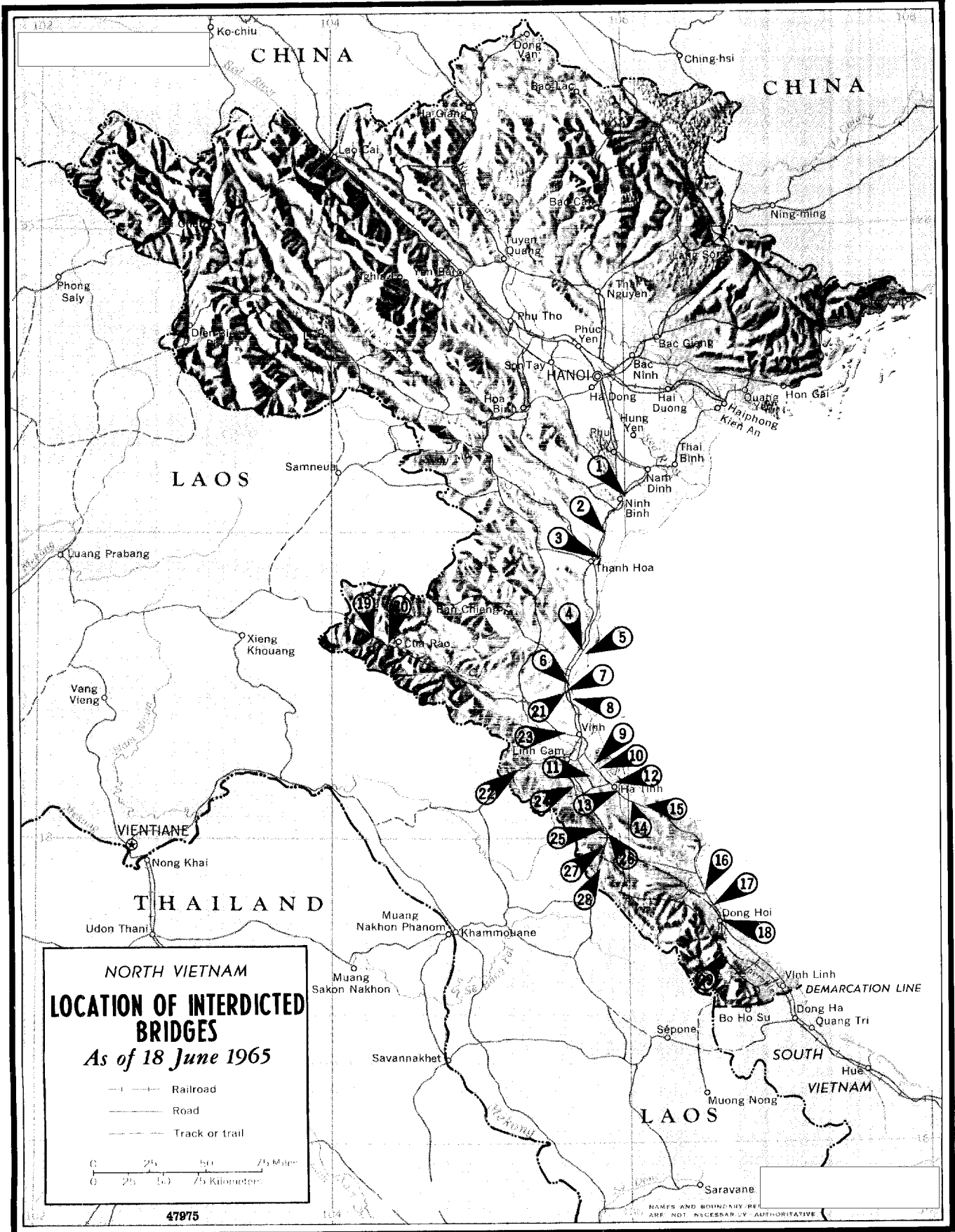
Map Key	Name of Bridge	Route Number	Dates of Interdiction	Reaction Taken
20	Khe Kien Highway	7	9 April	[ ] a temporary causeway and culvert had been constructed. 25X1 25X1
21	Phuc Thiem Highway	7	23 April	[ ] no attempt had been made to repair the bridge or construct a ferry crossing. 25X1
22	Kim Cuong (2 bridges)	8	10 April, 16 April	[ ] a new ford had been constructed. 25X1
23	Kom Thai Xa Highway	15 b/	23 April	Unknown.
24	Trai Hoi Railroad	Near 15	16 April	An existing ferry is probably in use.
25	Bai Duc Thon Highway	15	16 April, 18 June	[ ] temporary repairs were completed on the bridge, but on [ ] a second span was dropped. 25X1
26	La Khe Thon (two bridges -- one railroad and one highway)	15	26 April	Unknown. 25X1
27	Xom Ca Trang Highway (two bridges)	15	16 April	[ ] a new ford had been constructed and an existing ford had been reactivated.
28	Don Bai Dinh Highway	15	2 June	An existing ford probably has been reactivated. 25X1
29	My Duc Highway	101	22 April	[ ] no attempt had been made to repair the bridge or construct a ferry crossing.

a. Based on NPIC interoffice memorandum and photo intelligence briefing notes by DIA. Other than the Thanh Hoa bridge, which suffered extensive damage without a span's being dropped, the term interdicted, as used in this publication, means that one or more bridge spans were dropped by aerial bombing.

b. Formerly referred to as route 12 or 15/12.

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# PHUONG CAN HIGHWAY BRIDGE

19°14'N/105°42'E



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ROUTE 1A

TEMPORARY DECK SPAN  
FOR LIGHT TRAFFIC

NEW FERRY CROSSING

TRUSS UNDER CONSTRUCTION



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# XOM CA TRANG HIGHWAY BRIDGES

17°57'N/105°49'E



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FORD

DAMAGED BRIDGE

ROUTE 12

FORD

DAMAGED BRIDGE



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