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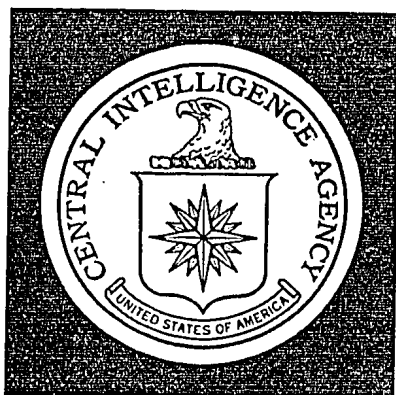
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DIRECTORATE OF
INTELLIGENCE

Intelligence Memorandum

*Petroleum in North Vietnam at the Outset of 1968:
A Review of Developments During 1967*

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Copy No. 63

ER IM 68-27
March 1968

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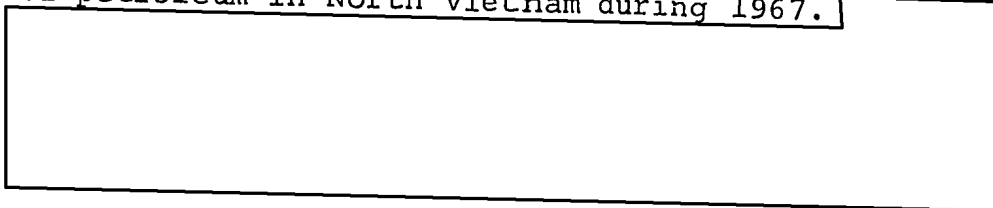
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Foreword

This memorandum makes estimates of the supply of petroleum in North Vietnam during 1967.



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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
March 1968

INTELLIGENCE MEMORANDUM

Petroleum in North Vietnam at the Outset of 1968:
A Review of Developments During 1967

Summary

North Vietnam appears to have overcome the effects of the intensified bombing of petroleum storage facilities that occurred in the last half of 1966. During 1967, petroleum imports, consumption, stocks, and storage capacity all increased, and there was no evidence of shortages.

North Vietnam imported an estimated 256,000 tons* of petroleum in 1967, a moderate increase over the previous peak level of 237,000 tons in 1966. About 90 percent of the imports were delivered by tanker, principally from the Soviet Far East, on a routine schedule. North Vietnam's sizable fleet of oil barges and other lighters makes it possible to discharge tankers while at anchor in Haiphong harbor without serious delays. North Vietnam is capable of handling petroleum imports at a considerably higher rate than the monthly average in 1967 of 21,000 tons. Imports were almost 37,000 tons in May 1967 and more than 34,000 tons in January 1968.

* *Metric tons are used throughout this memorandum.*

Note: This memorandum was produced by CIA. It was prepared by the Office of Economic Research.

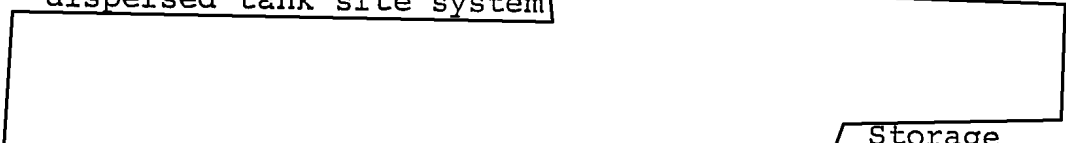
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Despite the loss through airstrikes of about 1,400 tons of storage capacity at the principal storage terminal at Do Son and another 3,000 tons at dispersed storage sites in 1967, there was a net increase in storage capacity of about 30,000 tons during the year. No effort was made to restore any of the principal terminals that were damaged, suggesting that the North Vietnamese no longer consider these vital to petroleum distribution. Instead, they have continued to expand and modify their dispersed tank site system

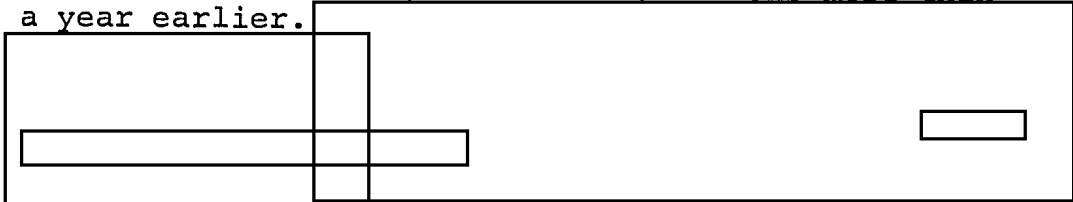
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Storage capacity also was increased by the addition of a sizable number of petroleum drums. North Vietnam now has storage capacity sufficient to maintain between 100 and 120 days of supply. There is, in addition, "floating" storage capacity represented by the oil barge fleet and the rail tank car and tank truck parks.

At the outset of 1968, North Vietnam probably had on hand about 65,000 tons of petroleum, equivalent to about 100 days of supply at the 1967 estimated rate of consumption and 13,000 tons more than a year earlier.

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may have been a precautionary move in the event of the closing of Haiphong, or may simply reflect anticipated increases in consumption. Petroleum consumption also increased by about 25 percent, to an average monthly rate of about 20,000 tons in 1967. This was the result of increased activity in truck transport, greater use of petroleum-driven electric power generators, and the higher level of logistic support to forces in Laos and South Vietnam.

SECRETPetroleum Supply and Demand

1. North Vietnam imported about 256,000 tons of petroleum in 1967, an increase of 8 percent over the 237,000 tons estimated for 1966. Imports in 1967, all in the form of refined products, had a value of about \$10 million.

[REDACTED]

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2. Consumption of petroleum in 1967 is estimated to have been about 20,000 tons per month, or 240,000 tons for the year.

[REDACTED]

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[REDACTED] Consumption was about 25 percent greater than in 1966, reflecting the increased activity in truck transport caused by the interruptions in rail transport, the greater use of petroleum-driven electric power generators caused by the loss of fixed powerplants, and the higher level of support to forces in Laos and South Vietnam. The total demand for petroleum, however, was only slightly higher than in 1966, as the estimated loss of petroleum through bombing in 1967 was only about 3,000 tons, compared with at least 41,000 tons the year before.

3. There was no evidence of any serious shortage of petroleum in North Vietnam in 1967 or of failure on the part of the suppliers to make adequate and timely deliveries of petroleum. North Vietnam's ability to import sufficient amounts of petroleum on a routine basis suggests that problems caused by the destruction of many of its principal storage terminals since mid-1966 have been overcome. The estimated supply on hand at the beginning of 1968 was about 65,000 tons, equivalent to about 100 days of supply at the 1967 rate of consumption. The supply of petroleum on hand at the outset of 1967 probably was 52,000 tons, and the levels of supply in North Vietnam during the year probably were never less than about 75 days. It is thus apparent that the bombing of petroleum targets did not seriously weaken the economy of North Vietnam, did not produce

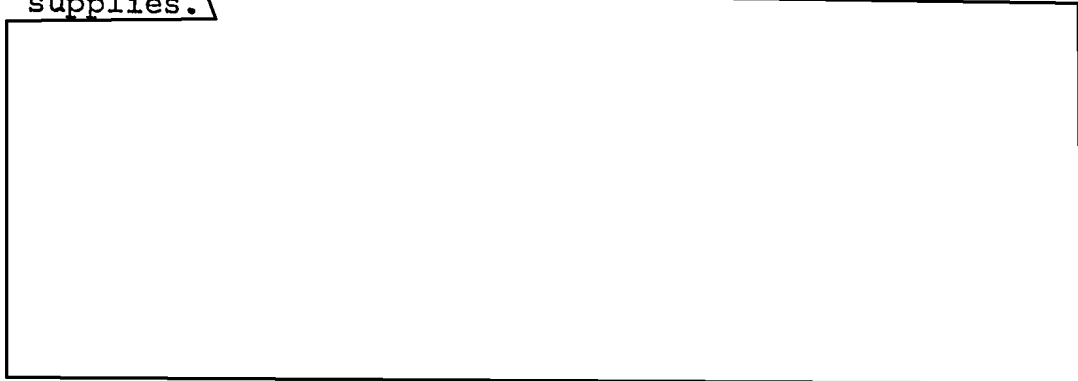
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shortages of petroleum, and did not diminish North Vietnam's capability to support military activities or the infiltration of men and supplies into the South. The petroleum supply and demand in North Vietnam in 1966 and 1967 is summarized in Table 2.

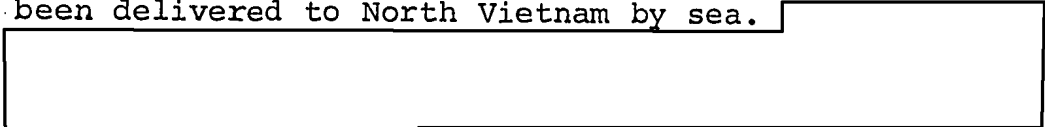
Petroleum Imports - Origin and Transport

4. As in earlier years, the USSR was the principal supplier of petroleum to North Vietnam in 1967. Rumania and Hungary again provided only token supplies.



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6. Historically, most petroleum imports have been delivered to North Vietnam by sea.



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The destruction in 1966 of the principal storage terminal at Haiphong, which had served as North Vietnam's only bulk petroleum import facility, has made it necessary for tankers to discharge their cargoes into barges while at anchor in the Haiphong harbor. This discharge procedure is now well developed and there were no serious delays to tankers making deliveries to North Vietnam in 1967.



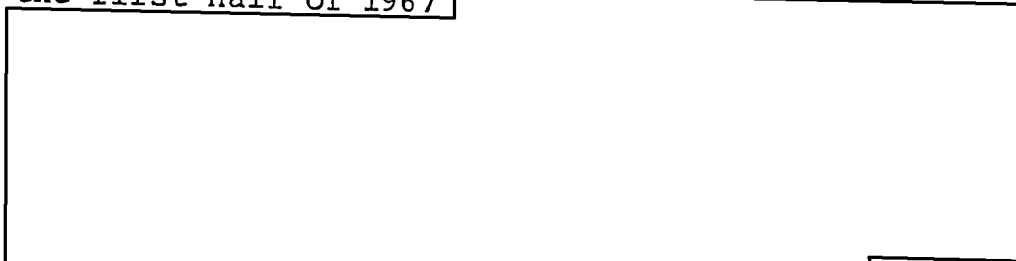
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7. The Black Sea was the principal area of loading for petroleum shipments to North Vietnam prior to October 1966. Since that time, however, most of the petroleum shipments have originated from Soviet ports in the Far East. Deliveries are made by small Soviet tankers on a routine schedule

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and, periodically, by larger Soviet tankers. Shipments from the Black Sea by tanker were made only in the first half of 1967



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The Suez Canal closure has had no apparent effect on the delivery of petroleum in bulk. The delivered cost of packaged petroleum in dry cargo ships around the Cape of Africa has increased, but only moderately.



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Storage

Principal Storage Terminals

9. At the beginning of 1966, there were nine principal storage terminals with a combined capacity of about 100,000 tons. By 1 January 1967, bombing had reduced the number of terminals to seven with a total capacity of less than 18,000 tons. With the



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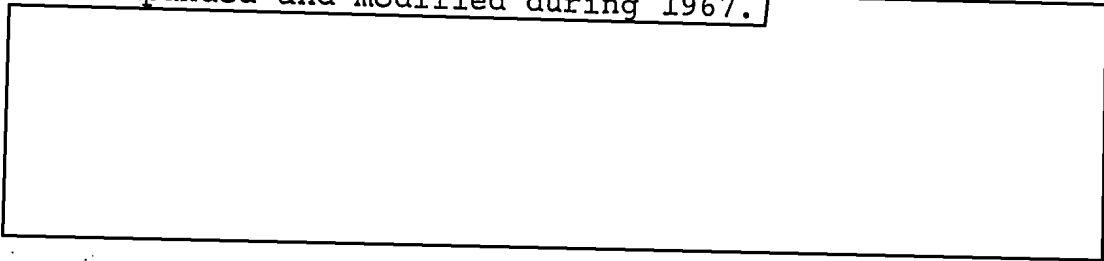
loss of the principal terminal at Do Son during the year, six terminals with a total capacity of 16,000 tons remained on 1 January 1968. Of these six, only four are considered to be operational; two had only nominal capacity. The North Vietnamese have made no effort to restore any of the damaged terminals, suggesting that this type of storage no longer is considered essential.



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Dispersed Storage Sites - Tanks

10. The dispersed storage tank system, far less vulnerable than the principal storage terminals to airstrikes, is the keystone to North Vietnam's petroleum import and distribution procedures. This system was expanded and modified during 1967.



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11. The dispersed tank sites, and the drum sites described below, were bombed during 1967. A complete assessment of damage is not possible, but the total storage capacity destroyed at dispersed tank and drum sites probably did not exceed 2,000 tons.

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Dispersed Storage Sites - Drums

12. Petroleum containers (of various sizes but expressed in terms of 55-gallon-drum equivalents) represent an increasingly important means of storing and distributing petroleum in North Vietnam. On the basis of the tonnage of petroleum imported on dry cargo ships and of estimated losses from bombing and from normal use in 1967, North Vietnam probably had an inventory of 300,000 drums at the outset of 1968. This is equivalent to storage for about 50,000 tons and is a net increase of about 130,000 drums, or 22,000 tons, above the inventory of 1 January 1967.

Other Storage Sites

13. An estimated 5,000 tons of bulk storage is available at industrial and military installations for the exclusive use of the installations they serve. The capacity at these sites probably did not change during 1967. There is also an unknown but important amount of "floating" storage capacity represented by barges, rail tank cars, and tank trucks in North Vietnam.

Summary of Storage Capacity

14. Petroleum storage capacity as of the beginning of 1967 and 1968 is summarized as follows:

	<u>Thousand Metric Tons</u>	
	<u>1967</u>	<u>1968</u>
Principal storage terminals (tanks)	18	16
Dispersed storage sites (tanks)	30 to 40	40 to 50
Dispersed storage sites (drums)	28	50
Military and industrial sites (tanks)	5	5
Total	<u>81 to 91</u>	<u>111 to 121</u>

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Table 2

North Vietnam: Petroleum Supply and Demand
1966-67

	<u>Thousand Metric Tons</u>	
<u>Supply</u>	<u>1966</u>	<u>1967</u>
Stocks on hand, 1 January	46	52
Imports	237	256
Total supply	<u>283</u>	<u>308</u>
<u>Less Demand</u>		
Consumption	190	240
Losses	41	3
Total demand	<u>231</u>	<u>243</u>
Stocks on hand, 31 December	<u>52</u>	<u>65</u>

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