

'Craters Are Small...

Following is the text of the report released by the State Department yesterday called "North Vietnam: The Dike Bombing Issue."

In recent weeks Hanoi has tried to convince the world that its elaborate dike system is a direct and deliberate target of U.S. attacks. This is not true. Photographic evidence shows conclusively that there has been no intentional bombing of the dikes. A few dikes have been hit by stray bombs directed at military-associated targets nearby. The damage is minor and no major dike has been breached. The damage can be easily repaired—in a matter of a few days—and has not been sufficient to cause any flooding. No damage has been observed in the Hanoi area or against the primary dike system protecting that city. Hanoi no doubt is genuinely concerned about the dike system. North Vietnam's rainy season will soon reach its peak and damage in the dikes caused by last year's very extensive flooding have not yet been fully repaired.

1. North Vietnam's elaborate network of dikes, dams, and locks controls the water of the heavily populated Red River Delta. The delta farmland depends on irrigation during the dry months and is endangered by flooding in the wet months. The coun-

try's major transportation waterways—the Red River, the Thai Binh River, and the connecting Canal des Rapides and Canal des Bambous—link the principal urban centers. Fertilizer, foodstuffs, petroleum, and other commodities are moved, in part, by these waterways, as is the coal mined in the Hongai and Campha areas. Southern North Vietnam also contains rivers necessitating a dike and lock system for water control and navigation, but the system is less important than that of the delta.

2. Dikes to control flooding and the course of the waterways are most fully developed along the Red River. The Red River system begins near Vietri, only 43 feet above sea level, although about 100 miles inland. The great amount of silt brought down from the mountains and deposited along the river beds in the delta has raised the waterways above the surrounding countryside in many places and requires a constant elevation of the restraining walls. In some areas—particularly around Hanoi—the height of the dikes reaches 40 feet. Some are as broad as 80 feet at the flood line and spread to 200 feet at the base. A secondary system between 4 and 22 feet high running parallel to the main dikes is designed to localize and minimize damage if the primary dikes are breached.

A tertiary system of smaller dikes divides the rice-growing plains into compartments, assists irrigation, and controls the level of small streams and local waterways. In addition, small natural or man-made dikes along the coast keep out brackish sea water.

3. Dams and locks play a lesser role. Only a few large dams are constructed of concrete with gates to permit passage of watercraft, and only one major waterway in the Red River Delta has navigation locks to control water levels and facilitate transport.

4. The rivers rise to a seasonal peak during July and August, when unusually heavy rains frequently cause breaches in the levees. Extensive floods and destruction to property and agricultural crops result. Although there have been only a few major breaches since the mid-1940s, minor breaks occur almost every year.

5. The floods of last August rank with the most serious ever recorded. Four major breaches occurred in the primary dikes along the Red River. An estimated 1.1 million acres of riceland—a quarter of the country's rice acreage—were seriously flooded and the entire crop in that area destroyed. Storms took out a half-mile section of a levee outside Hanoi and closed the railroad north to Dongdang.

No Flooding Has Occurred?

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The area of heavy flooding continued to expand through late September, probably because prolonged soaking and high water pressure had undermined the secondary dike systems.

6. Apart from immediate rice losses, the floods produced extensive longer term physical damage. The enormous force of water unleashed through breaches in the primary dikes caused widespread erosion far beyond obvious scouring effects near the breaks. Long stretches of irrigation canals were cut, and the press reported many washed-out pumping stations. Flood water everywhere deposited silt in drainage ditches. The prolonged inundation during the floods may have caused subtle undermining of the primary dike systems that will not show until late this summer. The possibility that the dike system has been weakened thus adds to this year's flooding threat.

7. North Vietnam's water control system includes a large number of widely dispersed individual components which could be substantially affected only by a large-scale, coordinated air offensive. Such attacks would be necessary against specific locks, dams, and dike areas, and bomb damage would have effect only during the relatively short periods of high water. Even then, the North Vietnamese,

long accustomed to battling against floods, could be expected to act promptly to mend breaches in the system.

8. Damage to the locks would have little effect on either North Vietnam's transport or its water control systems. Inland craft could be diverted to waterways not dependent on locks, and some cargoes could be sent by the many alternative land routes. Accidental bomb damage during the 1965-68 period made some locks inoperative, but had little effect on water transport or flooding in the area. Similarly, breaching of dams, even during periods of high water, would not cause significant disruption because most are small and easily repaired.

9. Dikes are particularly resistant to bomb damage. Those in the primary system could be breached only by a series of overlapping craters across the entire top of a dike, and the lips of the craters would have to be sufficiently lower than the river surface to initiate the flow and subsequent scouring action of water rushing through the breach. The dikes along the Red River near Hanoi are approximately 80 feet wide at the flood line.

10. North Vietnam's official press agencies and radio services have repeatedly described alleged U.S. bombing attacks on the dike sys-

tem. In April and May, the North Vietnamese made more than 40 specific allegations, and on 30 June the official press quoted the Deputy Minister of Hydraulics as saying that 20 bombing attacks had been made on dikes during that month. Foreign diplomats, newsmen, and, most recently, actress Jane Fonda have been escorted to dikes to view damage—most of it around Haiduong, southeast of Hanoi.

11. A detailed examination has been made of photography of mid-July of the North Vietnamese Red River Delta and bomb craters were detected at 12 locations. None of the damage has been in the Hanoi area, where destruction of the dikes would result in the greatest damage to North Vietnam's economy and logistics effort. Nearly all the damage has been scattered downstream from Hanoi, as well as downstream from the areas of major breaks resulting from the 1971 floods.

12. There are no signs of destruction of vital dike portions stretching to a length of several kilometers—as reported by Hanoi-based newsmen. In comparison to the dikes, the craters are small, and no flooding has occurred as a result of the damage. Although water levels are not yet at their highest, the absence of leakage through the craters indicates that damage was limited.

13. All identified points of dike damage are located within close range of specific targets of military value. Of the 12 locations where damage has occurred, 10 are close to identified individual targets such as petroleum storage facilities, and the other two are adjacent to road and river transport lines. Because a large number of North Vietnamese dikes serve as bases for roadways, the maze they create throughout the delta makes it almost inevitable that air attacks directed against transportation targets cause scattered damage to dikes.

14. The bomb craters verified by photography can be repaired easily with a minimum of local labor and equipment—a crew of less than 50 men with wheelbarrows and hand tools could repair in a day the largest crater observed. Repairs to all the dikes could be completed within a week, as the necessary equipment is available throughout the delta. Local labor historically mobilizes to strengthen and repair dikes to avoid serious flooding. An occasional bomb falling on a dike does not add significantly to the burden of annual repair work normally required. North Vietnam must, however, complete the repair of damage caused by the 1971 floods before next month when this year's rainy season will reach its peak.