and the B-52 has accounted for a major share of these, according to senior officers here.

The B-52 has been saved from obsolescence by a tactical assignment for which it was not designed. It was built in the early nineteen-fifties as a strategic bomber, to fly at high altitudes over enemy air defense systems that were then primitive, and it was to be used as a nuclear bomber.

First used in South Vietnam in the tactical nonnuclear role on June 18, 1965, and in North Vietnam on April 12, 1966, the B-52’s have been used as heavy-saturation bombing weapons in tactical as well as strategic roles. None has ever been reported shot down by North Vietnamese antiaircraft defenses, although at least two have been damaged by fragments from exploding surface-to-air missiles in the last month.

Between noon yesterday and noon today, according to the United States command, the Air Force flew 24 B-52 missions in South Vietnam, on all three major fronts and against enemy positions in Chuongthien Province in the Mekong Delta. This means that there were 50 to 75 of the eight-engine bombers flying in South Vietnam—a mission normally includes three planes, sometimes two and less frequently one. Each of the planes now carries 24 tons of bombs, conventional high-explosive 500-pounders and 750-pounders.

Smaller fighter bombers use those bombs, too, but each of the smaller planes can carry only six or eight bombs, and usually drops one at a time.

ALL BOMBS DROPPED AT ONCE

The B-52 drops them all at once, in a rectangle-shaped pattern about half a mile long. When the B-52’s fly in groups of three, a typical rectangle is said to be about one and a quarter miles long and six-tenths of a mile wide.

The air crews and officers on the ground call these patterns “boxes,” because when a ground commander requests a B-52 raid he plots it on his tactical map as a box, in roughly the same shape in which the bombs fall. The B-52 raid is carried out a day or so after it is requested.

Though the missions are flown at the request of Vietnamese ground commanders and their American advisers, all the B-52’s flying to Southeast Asia are under the control of the Air Force’s Strategic Air Command, not under that of Gen. Creighton W. Abrams or his subordinates here. No B-52’s are based in South Vietnam: About 60 are based in Thailand. Others come from Guam.

Since the B-52’s are large, slow-flying and unmaneuverable, they were never used over the most heavily defended parts of North Vietnam at the height of the sustained bombing campaign—called Rolling Thunder—in 1967 and 1968.

Since then, and especially this year, the North Vietnamese have dramatically increased the size and extent of their air defense system, particularly with the Soviet-built surface-to-air missiles. Thus it came as a surprise to many observers here when, on April 16, the United States Command announced that B-52’s were among the planes that bombed Haiphong harbor that day.

How could they get through?

“We got to the point where we felt that the defensive system that we could provide for the B-52’s would negate the threat of the SAM’s,” a senior American officer said.

The B-52’s use a complicated system involving radar guidance to bring themselves in on their targets. In the South, where they are being used every day, the on-board navigational equipment is augmented by land stations that are used as cross references to make the bomb patterns precise. In the North, that is not possible.

“The probability of error up there is a little higher, than using them down here,” a senior commander conceded, in discussing the bombing of the North.

“But the photography from the strikes shows they did very well.”

He described the targets in Haiphong as “all logistical in nature—oil storage areas, some transshipment points, railroad marshaling yards, all large targets and far away from populated areas.”

The blast pressure from the B-52 raids, however, is enough to blow down flimsy houses hundreds of yards away from the B-52 targets.

FIGTER-BOMBERS COMPARED

“There are some targets that B-52’s will do better with than tactical air,” the officer continued, referring to fighter-bombers. “It would take a tremendous
amount of tactical air to get the same results, and at greater risk to planes and pilots.”

A senior officer said a few days ago, “You haven’t seen the last of those raids up there.”

But in the last few weeks, the B-52’s have been more heavily used in the South. “We’re, using the B-52’s now to prevent massing of troops,” another senior officer said. “We try to break up the enemy’s attacks before they can get started.”

To be effective, of course, the B-52 strikes, however heavy, have to hit something.

[From the New York Times, Aug. 11, 1972]

RENEWED BOMBING ADDS $1.1 BILLION TO WAR’S COST

WASHINGTON, Aug. 10—The extra cost of the Vietnam war, resulting from the renewal of heavy bombing and other United States air and naval activity since the North Vietnamese offensive, will be $1.1 billion in the current fiscal year, the Defense Department disclosed today. This is less than the Nixon Administration previously estimated.

The disclosure came in a table in a long Pentagon document entitled “The Economics of Defense Spending.” It was the first time that the Administration had disclosed in detail the costs of the war.

The basic document sought to explode what it described as widely held “myths” about defense spending—its impact on the economy, its share of the budget, its role in inflation and its rise or fall in recent years.

Indirectly, the document challenged the plan of Senator George McGovern to reduce defense spending by $30 billion.

Secretary of Defense Melvin Laird also attacked the Democratic Presidential nominee—although not by name—today. Mr. Laird said in releasing the report that, “when it comes to national security, the American people do not want mythology.”

He said the report was “an attempt to explode a lot of myths that have developed.” In July before Mr. McGovern was nominated, Mr. Laird released a 71-page, Pentagon commentary on Mr. McGovern’s proposed $30-billion cut in defense spending which he characterized as being “tantamount to a white flag of surrender.”

The table on the cost of the war estimated the “incremental” cost in the current fiscal year at $5.8 billion. This is $1.1-billion higher than the $4.7-billion cost estimated last January, before the North Vietnamese offensive and the United States response. The incremental cost excludes expenses of ships and aircraft that would have to be paid even if there were no fighting. The total cost of the war was put $7.1-billion in the current fiscal year, also up $1.1-billion from the January estimate.

In announcing a proposed supplemental appropriation to cover the extra post-offensive costs of the war, Mr. Laird had left the impression that it could be as much as $5-billion. Later, when the supplemental request was sent to Congress, the Office of Management and Budget used a figure much closer to the one mentioned today—an estimated $1.2-billion.

The table in the Pentagon document put the peak incremental cost of the war at $21.5-billion in the fiscal year 1969. As troop withdrawals began, it dropped to $17.4-billion in fiscal 1970, $11.5-billion in fiscal 1971, and $7.3-billion in fiscal 1972, just ended.

The renewed bombing and other activity raised the 1972 cost by $200-million from the January estimate of $7.1-billion.

The long document on defense spending and the economy seemed to be directed not only at Senator McGovern but also at widely held beliefs among members of Congress, academics, economists and the public. Its points included the following:

After removing the effects of inflation, particularly on military pay, defense spending is now the lowest it has been since 1961, and its recent trend has been steadily downward.

Defense now accounts for 20 per cent of all government spending—Federal, state and local—and about 90 per cent of Federal spending.

Weapons procurement is $300-million more today in current dollars than eight years ago, before the Vietnam war, and is a little more than a quarter of the total defense budget.
Defense now occupies a smaller portion of the nation's manpower—counting military personnel, civilian Defense Department personnel and industrial workers producing defense equipment—than at any time since 1953.

To contend that the nation is on a war footing, or that defense spending supports the economy, is "torturing the English language."

Even if $20-billion to $30-billion could be saved on defense, it would not make a major difference in a total governmental spending on nondefense programs—Federal, state and local—which is expected to exceed $400-billion five years from now.

"It is rather difficult to maintain," the Pentagon document said, "that we could achieve wonders with, say, $500-billion to spend on social and economic programs—wonders which would somehow escape us if we had 'only' $480-billion to spend."

The attack on Senator McGovern's defense proposals came earlier in statements by Secretary Laird and other officials that concerned force levels, naval strength and the like.

[From the New York Times, July 7, 1972]

**WAR IN AIR DECENTRALIZED BY NIXON, BUT THE CONTROLS ARE TERMED STRICT**

(By Nell Sheehan)

WASHINGTON, July 6—President Nixon is waging the air war against North Vietnam with a decentralized system of command and control that differs significantly from the highly centralized system employed by his predecessor, Lyndon B. Johnson, during the 1965-68 air campaign. In the view of a number of civilian and military officials with experience in Indochina, the decentralization does not imply the unraveling of civilian control over the military or the loosening of the chain of military command.

In effect they reject suggestions of such a deterioration made in the wake of the acknowledgement by Gen. John D. Lavelle that forces under his command made at least 28 unauthorized air raids on the North between last Nov. 8 and March 8. He was dismissed as commander of the Seventh Air Force in Saigon after a secret inquiry that was completed there March 23.

In the 1965-68 air war, lists of proposed targets were forwarded from the war zone through subordinate commands to the Joint Chiefs of Staff in Washington, who modified or approved them and sent them to the White House.

At Tuesday luncheon meetings, President Johnson and his senior Vietnam policy aides decided that certain targets could be attacked by a given date. If the attacks were not carried out by then, the authorization lapsed.

Robert S. McNamara, who favored this highly centralized system when he was Secretary of Defense because he felt that it resulted in calculated doses of force carefully applied, informed the Joint Chiefs, who in turn informed the subordinate commands what targets could be attacked by what dates.

**LIST OF AUTHORIZED TARGETS**

Under the Nixon Administration's system, according to the officials, who were interviewed by The New York Times, a list of authorized targets in the North was transmitted to the subordinate commands by the White House and the Joint Chiefs in the latter part of April.

Targets are then selected by the field commands from those on the authorized list. The field commands tell the Joint Chiefs in advance what they intend to strike and by what date, thus giving the White House prior notice.

Mr. Nixon resumed full-scale air attacks on the southern panhandle of North Vietnam in the first part of April after the North Vietnamese had launched their offensive across the demilitarized zone. The new air war moved into high gear in the latter half of the month, with raids throughout the North.

The civilian and military officials, explaining their view that decentralization has not weakened command and control, say, first, that the President still decides how military force will be applied and to what extent he will delegate authority to apply it.

Second, they asserted, the decentralized system, in the light of the failure of the Johnson Administration's policy to bring the war to a halt, is a better method of applying air power in a coordinated campaign aimed at depriving
North Vietnam of imports, both economic and military, through mining and bombing. If air power is to be effective, the officials added, the commander on the scene must be free to select his targets and to time his attacks.

In the end, regardless of what guidance is issued by the civilian leadership and the Joint Chiefs, the sources asserted, Washington and the various intermediate headquarters have to rely on what they are told by the field commands.

"SLAVE OF REPORTING SYSTEM"

"On the way back you are the slave of the reporting system," an official said. "It would be very difficult to tell whether the report was falsified if it met the required format, especially when you are handling dozens of messages a day. It is highly improbable that you would smell a rat unless somebody tipped you off."

The deciding factor in the system, the officials maintained, is the honesty and discipline of the commanders close enough to the scene to know what is actually happening. They noted that there were no checks—sometimes referred to as failsafe devices—that would automatically prevent the kind of insubordination and falsification that General Lavelle, acknowledged in testimony before the House June 12.

The officials interviewed contended that there was no way to build checks into the structure to automatically forestall insubordination and falsification without so thoroughly eroding the responsibility and initiative of subordinate commanders as to make the cure worse than even the possibility of the disease.

In the view of the officials interviewed, a case similar to the Lavelle affair could have occurred—although there is no evidence that it did—under the highly centralized system used by the Johnson Administration. They also believe that it could occur under the present system.

CONFORMING TO THE FORMAT

It was pointed out that General Lavelle met the format of the reporting system by describing the unauthorized strikes as "protective reaction." Similarly, when Air Force jets accidentally strafed a Soviet freighter in the North Vietnamese port of Campha in 1967 while Mr. McNamara's highly centralized system was in force, the pilots and the acting wing commander, in an unsuccessful attempt to cover up the mistake, filed a false report and burned the gun-camera film that had recorded the incident.

In the case of the Mylai massacre in 1968, again while the Johnson Administration was in power, the original report forwarded to headquarters in Saigon said that 128 Vietcong had been killed and three weapons captured. Because the guerrillas are often able to recover most of the weapons from their dead and because dozens of similar reports were received all the time, the senior officer who saw this one ordered, the routine message of congratulations from Gen. William C. Westmoreland, then American military commander, sent to the unit that had committed the massacre. General Westmoreland may not even have read the report.

The circumstances of the famous Green Beret murder case the following year indicate that Col. Robert B. Rheault, Special Forces commander in Vietnam at the time, may have inadvertently misled Gen. Creighton W. Abrams, General Westmoreland's successor, about the killing of a Vietnamese agent suspected of spying for the other side because the colonel had in turn been misled by his subordinates.

SUBTERFUGE PROPOSED

Before President Nixon's decision to launch ground attacks on Communist bases in Cambodia in the spring of 1970, Generals Westmoreland and Abrams were repeatedly frustrated in their pleas for permission to assault those sanctuaries. Staff officers, it is now known, proposed using the so-called rules of engagement—in the way General Lavelle used the rules of "protective reaction"—as a subterfuge to get around the prohibition. The rules of engagement permitted American troops to return fire across the border or to conduct hot pursuit into Cambodia in the midst of battle.

"People suggested getting lost, or saying we were getting shot at and shooting back, but Westmoreland and Abrams refused to chisel," an officer related.

Some officials say that, specific cases aside, actions by recent Administrations in the conduct of foreign policy and war-making have encouraged an atmosphere of deception. They assert, for example, that when the civilian leadership subverts
the Congressional prohibition against employing a third country's troops in Laos by having the Central Intelligence Agency secretly hire Thai mercenaries, this has an impact on the willingness of subordinate officials to abide by restrictive orders that they dislike.

THE POSSIBILITY OF ERROR

It is also noted that even the most carefully devised system of civilian control can prove ineffective because of human error.

Mr. McNamara's rigidly centralized target selection did not prevent the bombing of schools, churches, hospitals and homes in North Vietnam because individual pilots mistook them for designated military targets or dropped their bombs prematurely.

On the other hand, according to the officials, the Nixon Administration's air war against the North, despite the decentralized targeting process, could result in less civilian damage because the pilots now have bombs of far greater accuracy than those used before.

Some officials conclude that neither technology nor the most comprehensive guidance from higher authority can fully control military force once a decision has been made to lose it. As an experienced officer said: "There are no mechanical decisions. There are mechanical tools for helping decisions, but the decisions are in the judgment area."

[From the New York Times, Jan. 2, 1972]

WHY THE BOMBERS THUNDERED

(By Fred Branfman)

WASHINGTON—The Nixon Administration's decision to reactivate the air campaign against North Vietnam could well be the most serious escalation since the Gulf of Tonkin in May, 1964.

The 350 planes that flew 24-hour, multiple sorties conducted raids as heavy as any ever launched against the North. Unless checked by public opinion, the Administration may well be prepared to level Hanoi and Haiphong, mine Haiphong Harbor, and possibly even bomb North Vietnam's system of dikes.

An exaggerated prediction? Consider these facts:

(1) The Administration made unprecedented attempts in the last month to prepare the public for massive strikes against the North. It previously bombed North Vietnam eight times in raids, involving several hundred planes, which lasted several days. Targets said to have been struck during these occasions included troop concentrations, fuel and petroleum dumps and airfields. All of these raids were carried out with minimum publicity. However, the large fanfare accompanying last week's raid suggests that the Administration has more in mind than in the past.

(2) The Administration has gone out of its way to provoke North Vietnam in recent months. North Vietnam has been officially bombed 186 times between Nixon's accession to office and Nov. 1, 1971. Thus there were an average of under six raids monthly during Nixon's first 54 months in office. In November, however, raids shot up to fourteen a month. In December there were over 26. It thus appears that the Administration was hoping to provoke a response from the North that could be used as justification for increased strikes, as with the 1964 Gulf of Tonkin incident.

(3) Officer claims that the present raids are in response to North Vietnamese escalation cannot be taken seriously. Unsubstantiated press reports of North Vietnamese MiG's heavy artillery and tanks in Laos were not used by Secretary Laird to justify the raids. No correspondents saw the fighting for the Plain des Jarres. Newsmen are not allowed on bombing raids over Laos. The official report that four jets were shot down Dec. 17-19 over Laos was later admitted to be false; that at least two had been shot down over North Vietnam, one east of Hanoi. It is, perhaps, for this reason that Secretary Laird did not use such reports to justify the present raids.

(4) Mr. Laird's statement that the 1068 bombing halt agreement was no longer in force prepares the way for full-scale bombing of the North.

The thesis that the Administration will go as far as public opinion allows it is fueled by the fact, documented in the Pentagon Papers, that all official analyses deemed the 1965-68 bombing of the North a failure. A study prepared by the top-
level Jason Division of the Institute for Defense Analysis, for example, stated that "as of October, 1967, the U.S. bombing of North Vietnam has had no measurable effect on Hanoi's ability to mount and support military operations in South Vietnam." This conclusion was shared by the C.I.A., International Security Agency of the Department of Defense, and former Defense Secretary McNamara.

If it is planning on observing previous limitations on the bombing, why did the Administration renew strikes against the North that were shown to be ineffective? And, in particular, why did it do so now at a time when it is making every effort elsewhere to show that the war is "winding down"? Could it be that it is prepared to bomb Hanoi, Haiphong, the dikes, if it feels public opinion will permit it?

Only time will tell. One thing is clear, however: the present bombing is serious, dangerous, and is causing heavy civilian casualties in North Vietnam, while not providing security in the south.

Secretary Laird has already threatened to bomb the "MIG airfields." Since those at Quanlang, Vinh, and Donghoi are quite small and have been bombed already, he apparently means two airfields near Hanoi, and another near Haiphong. When this happens, casualties will rise.

Our interviews with pilots who bombed the North indicate that the majority of ordnance dropped back in 1968 were antipersonnel bombs. These are bombs that cannot destroy a truck, bridge or even a tiny shelter erected in the forest; they are only designed for human beings. They include the pineapple bombs, which send 250,000 steel pellets per sortie spewing over an area the size of four football fields; flechettes, which consist of tiny barbed pellets that enlarge the wound as they enter the body; and guava bombs, which explode in the air and send their pellets down diagonally to enter holes where their targets may be hiding.

[From the New York Times, Aug. 19, 1972]

A QUESTION OF INTENT

(By Anthony Lewis)

If a man keeps dangerous animals running wild on his estate, and one mauls a guest's child, he cannot escape responsibility by saying that he had no intention of letting children be hurt. That is generally the law now, and common sense. Subjective intent does not have to be proved, because keeping wild animals where people go makes it so likely that someone will be hurt.

The same common-sense view cuts through the argument about whether the United States is "deliberately" bombing dikes and other civilian targets in North Vietnam. When the greatest power on earth pours bombs on a small, backward country, it is a necessary consequence that people and things of an innocent character will be destroyed. In the legal phrase, the great power will not be heard to argue that it meant no harm.

Of course there would be a different degree of moral culpability in any calculated attempt to destroy dikes or houses or hospitals in North Vietnam. The generals and the politicians in this and previous Administrations have concealed so many horrors—massacres and forest fires and crop destruction and the like—that we cannot exclude the possibility of more.

But it is bad enough to deny responsibility for the human costs of a policy of mass destruction. And that is what the United States Government is doing: putting on a show of amazement at the notion that American bombs actually kill people. The piety of the performance drips like treacle.

Consider, for example, an episode well before the present phase of continuous all-out bombing. Last December, when four American Phantoms were shot down in Laos, the U.S. retaliated by 1,000 bombing sorties against North Vietnam in five days. Most of the time the weather was so bad that the pilots could not even see the ground. Yet the official claim remained that only military targets were being hit. President Nixon called the raids "very successful."

Since last May, Mr. Nixon has removed some of the restrictions on American bombing of North Vietnam. The command is now free to hit economic as well as military targets, and to carry on a planned bombing campaign without regular reference back to Washington.

Half the planes in the Strategic Air Command—200 B-52's—are now being used against Vietnam, North and South. Those are our strategio planes, designed
for use against aggressive targets in an ultimate conflict with another great power. And the United States is using them against a peasant country.

The propaganda from Washington and Saigon makes it sound as though every American raid is hitting the Ruhr or some mighty military installation. There is talk of destroying "industries" and "naval bases."

Naval bases! For what— sampans? As for industries, there is hardly a factory in North Vietnam that an American businessman would have looked at twice in 1890. When the Joint Chiefs of Staff first tried to pick bombing targets in North Vietnam, they found only eight industrial sites worth listing.

It is on this backward country, with its mud villages and primitive technology, that the United States is dropping thousands of tons of bombs every month. (The total figure for Indochina is running over 100,000 tons a month, but the Pentagon does not give the total separately for the four target countries.)

Necessarily, then, inevitably, bombs in that volume destroy things not remotely related to the North Vietnames war effort. In Haiphong last May I saw acres of housing smashed flat, a school destroyed, a hospital damaged. More recently Joseph Kraft wrote from Hanoi: "I have seen with my own eyes the damage done by American bombs to homes, schools, stores and many innocent people."

First-hand reports of civilian bomb damage have in fact been available for years, but American officials continued to react to them with an injured innocence, an imperturbable cynicism. It is in the light of this experience that one should now read the denials of any "deliberate" bombing of the dikes.

The explanation given by Washington for the bomb craters that have been seen in the dikes is that the damage was incidental to attacks on nearby military targets such as "road and river transport lines." But in the waterlogged Red River Delta, laced by more than 2,000 miles of dikes, the dikes are often the only place to build an all-weather road. If you bomb roads and "river transport lines" in North Vietnam, you will hit dikes.

The United States has now dropped on Indochina three times the tonnage of bombs that it used in all theaters of World War II. Those bombs have hit, among other things, dikes and hospitals and schools and peasant villages. Washington knows about that destruction; it has the pictures. In those circumstances a judge in the Common Law tradition would not allow the American Government to wash its hands of responsibility for the civilian damage. Or the American people.

[From the New York Times, May 12, 1972]

HOSPITAL IN HANOI BEARS MARKS OF THE AIR WAR

(By Joel Henri)

HANOI, North Vietnam, May 11—The Soviet-Vietnamese Friendship Hospital and its grounds had a surrealistic appearance today, with roofs, masonry, trees and vehicles twisted and riddled with shrapnel.

During American air raids on the Hanoi area yesterday, six Shrike missiles and a 500-pound bomb reportedly fell on the hospital site, which extends over several acres in the city center. When the bomb landed, most staff members and patients were in a shelter below, the chief doctor said today as he took foreign newsmen around the establishment.

The only people working, he said, were surgeons and their aides.

A patient being operated on was reported seriously injured in the blast. Mrs. Mau Don, an anesthetist, said a surgeon was struck on the head and "a colleague took over for him."

All the windows in the operating theater were blown out. Cupboards were lying on the floor, and blood was splattered on the walls.

A Shrike fragmentation missile was said to have pierced a wall and exploded in a pharmaceutical room.

Outside, several parked ambulances were riddled with holes. The blast reportedly tossed a jeep on top of them.

United States planes raided the Hanoi area again today, but the attack, which began at 2:30 P.M., appeared to be less intense than yesterday's.

Phantom jets in formations of three wheeled in the clear blue sky over an area apparently stretching about 20 miles around the capital. Surface-to-air missiles could be seen leaving the launch sites and chasing the aircraft, which made steep dives on targets around the city.
I witnessed the attack, which lasted about an hour, with a group of newsmen while on the way to Hatay Province southwest of Hanoi, an area attacked four days ago. We could see antiaircraft missiles fired a few hundred yards away from where we halted by the roadside. One of the bombs dropped in the raid fell about 500 yards away behind a clump of trees.

[From the Baltimore Sun, July 9, 1972]

REPORTERS SEE BATTERED TOWN IN NORTH

(By Jean Thoraval)

HANOI, North Vietnam, July 8—This correspondent and a group of other foreign newsmen were taken at dawn today to the town of Hungyen, 36 miles east of Hanoi, which was said to have been struck by American bombs yesterday.

Casualties in the town, which has a population of about 20,000, were put by officials at 17 killed and 25 injured. Fifty-six families reportedly lost their homes.

Hungyen is a town of workers and peasant farmers, with long, wide streets. nowhere in the part of the town we visited could we see a barracks or a fuel dump, or even a warehouse that could be used for storing war supplies.

The most badly damaged thoroughfare was Law Street, inhabited mainly by craftsmen and farm workers. There, the meanest dwellings, straw huts for the most part, had been blasted and burned. Even more solid buildings were often reduced to rubble.

PICKS THROUGH RUBBLE

One 72-year-old man, Nguyen Van Lam, stood amid the ruins of his house, the rubble still glowing with heat, picking out scraps of clothing that had belonged to his wife, his son and two grandchildren.

"All that is left to me is my daughter-in-law," he said. "When the raid began she had already left for her work in the rice field."

None of his belongings had survived the fire that destroyed his home: the cheap wooden furniture was reduced to charred rubble, and not even a rice bowl remained.

One young woman, Vu Trinh Trung, 24, limped as she searched the wreckage of her home.

Miss Trung was the eldest of a family of seven. Three of them were said to have been killed by the bombs and the four other injured. Above her torn blouse, she wore a white handkerchief as a sign of mourning.

Further on, in front of the half-ruined building that had housed the local bookshop, we were warned that there were several unexploded bombs. There was also a still-intact bomb detonator bearing the words: "US Navyair Syscom. Lot 010. Date 0711."

At one point there was a scrawled sign saying: "Road Closed. Time Bomb."

Close by, a straw that lay in the mud.

The newsmen were taken later to the local hospital where the injured were being cared for.

[From the New York Times, May 23, 1972]

HANOI SURGICAL CHIEF IS BUSY AND HOPEFUL

HANOI, North Vietnam, May 22—A Soviet stewardess who North Vietnamese sources say was badly wounded when her ship was bombed at Haiphong May 9 left on an Aeroflot commercial flight for Moscow today. The stewardess, Galina Fedorovna Kamneva, had her left leg amputated below the knee. Doctors here said she was saved from more serious harm or death.

The 27-year-old Miss Kamneva is a slightly built woman with red hair. She was glimpsed briefly today before she left the hospital for the airport.

Her case was described by Dr. Ton That Thong, an internationally known Vietnamese surgeon. He said it was medically significant because it showed the damage that could be done by the tiniest bomb fragments.
Miss Kamneva as a stewardess aboard the Soviet ship Pevek. One of the vessel's sailors was reported killed and others were reported wounded in the bombing.

**HOSPITAL FOR SURGERY**

Miss Kamneva was treated at the Vietnam-German Friendship Hospital in Hanoi. It has 400 beds and is connected with Hanoi University Medical School. It is for surgery only, with wings for children, orthopedic cases, heart and liver surgery and so on.

Dr. Tung, who is 60, is its director as well as a medical school professor. He has published numerous articles in foreign medical journals and received a diploma from the Academy of Surgery in Paris in January.

Framed on the wall of Dr. Tung's office was a picture of and a letter from Dr. John H. Gibbon Jr. of Media, Pa., who Dr. Tung said invented the heart-lung machine. During the discussion, Dr. Tung spoke freely and perhaps less politically than most Vietnamese that foreigners meet here. He wore a white turtleneck sweater and often rose in enthusiasm to make some scientific point.

He spoke in Vietnamese using French and English phrases occasionally.

Asked what North Vietnam's chief public health problems were, Dr. Tung first mentioned gastric ulcers. He said his hospital performed 500 to 700 gastric and intestinal operations yearly.

"Some say ulcers are related to diet," he said, "But I think the high incidence is due to tension—the stress of the war."

"Even before this long war began," he said, "life was hard under the French—there was plenty of tension. And there has been a war of one kind or another here since 1880. Allied planes from China bombed this hospital in 1942 when the Japanese were here."

The hospital has received aid from East Germany—hence the name. But groups in France, Britain and the United States as well as China and the Soviet bloc have also donated equipment and supplies. An American pump for use with the heart-lung machine was seen today.

By American standards, the hospital building is badly outdated. Its windows are taped in case of bombing. There are emergency operating rooms in catacomb-like shelters below ground.

Dr. Tung said with emphasis that he hoped for American aid after the war. He noted that North Vietnam now had good relations with France a former enemy, and said it should be the same with the United States.

"All wars must end," he said, "The important thing is what happens afterward. We think the American people should see their duty to help. I have found so many fine things in Americans."

"American help is necessary. And those who have destroyed should help to rebuild. If the United States refuses to help, it will be the American soul that is lost."

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**NORTH VIETNAM REFUGEES A PROBLEM**

(By Stanley Karnow)

North Vietnam is facing a growing refugee problem as a result of intensified American bombings of its major population centers.

Official Hanoi reports of this problem appear to confirm claims by the Nixon administration that the U.S. air war is creating serious social and economic difficulties for the Communists.

An indication of the extent to which the bombings are dislocating North Vietnamese society is reflected in an increasing number of authoritative Hanoi newspaper articles calling for a more efficient evacuation of urban residents to safer rural areas.

Several recent North Vietnamese press and radio statements have also been emphasizing the need for tighter discipline and greater sacrifices to meet the U.S. threat. These statements are monitored by official U.S. services and made available here.

A measure of the intensification of the U.S. bombings is contained in official statistics showing that the tonnage of American bombs dropped in Southeast Asia nearly doubled between January and May.
The tonnage rose in May, the most recent month for which statistics exist, to 105,725 tons. A total of 58,700 tons of bombs were dropped in January. The increase is primarily due to a larger focus on North Vietnam.

In the view of U.S. government analysts here, however, there is little evidence to suggest that the Communists are being compelled by their difficulties to seek a negotiated settlement of the Vietnam conflict.

On the contrary, these analysts point out, Hanoi’s admissions of its problems are being paralleled in the Communist media by appeals to the North Vietnamese population to prepare itself for a protracted war.

An insight into the impact being made on North Vietnam by the U.S. bombing was contained last week in an article in Hanoi’s official newspaper, Nhan Dan, urging Communist cadres to “accelerate evacuation” of the cities in order to “defend the lives and property of the people.”

The article disclosed that cadres are not only helping families to leave populated areas but are also assisting them to resettle in rural villages. It stressed that “competent cadres” should be sent to refugee centers “to discuss and solve all problems arising from evacuation in order to help the evacuees quickly settle in new places, normalize their livelihood and continue to participate in production and other tasks.”

The Hanoi newspaper called on food and other bureaus to “improve their work and selling methods” thereby hinting that the population transfer is causing problems in the distribution of supplies. It also emphasized the need for providing education and public hygiene services, particularly for refugee children.

Another problem apparently confronting the Hanoi leadership is the resettlement of urban refugees in peasant villages unprepared to handle city dwellers. Underlining this problem, the Nhan Dan article exhorted refugees from cities to “respect the customs and habits... in the evacuation areas,” urging them as well to “enthusiastically participate in production and in other tasks” in the countryside.

More than half of the populations of Hanoi and Haiphong reportedly were evacuated from those cities in early May, but afterward began to drift back, presumably because they preferred urban to rural life despite the dangers involved.

The present evacuation campaign appears to be designed to reverse that movement. This suggests that the North Vietnamese leaders anticipate a further intensification of the U.S. air war.

([From the New York Times, Sept. 11, 1972]

THE FOOD WEAPON
(By Anthony Lewis)

An Associated Press dispatch from Saigon Sept. 8 included this passage:

“The Seventh Fleet disclosed that one of its vessels had intercepted and seized two and a half tons of rice that it said the Chinese had tried to float ashore from a freighter [off North Vietnam] in waterproof plastic and burlap sacks.”

The sentence was well down in a roundup of military action in Vietnam that day. The United States Navy’s seizure of rice being shipped to North Vietnam was evidently regarded as routine. But for some readers it raised significant questions.

When the United States began its blockade of North Vietnam last May, President Nixon spoke of “guns, artillery and other advanced offensive weapons supplied to Hanoi by the Soviet Union and other Communist nations.” He said the “one way to stop the killing” was to “keep the weapons of war out of the hands of the international outlaws of North Vietnam.”

The announced seizure of those bags of rice raises the question whether the American blockade is in fact limited to military supplies.

The question was put to a Pentagon expert. In reply he first pointed out that this particular seizure of rice took place near Honia Island, off the southern panhandle of North Vietnam 75 miles above the demilitarized zone. He called it a “conduit area,” where food “has to be for troops or for those working the supply system.” But this point turned out to be of no significance.

After checking with higher authority, the Pentagon officer stated that the U.S. Navy was under orders to stop food and anything else discovered anywhere off North Vietnam. He said:

[From the New York Times, Sept. 11, 1972]
"The policy is to interdict all supplies going into North Vietnam by sea."

In short, the United States is carrying out a total naval blockade of North Vietnam, not one limited to military supplies. What makes that highly important is the fact, not widely understood, that only a tiny proportion of North Vietnam's imports by sea is of a military character.

An analysis of North Vietnamese imports was made in the opening weeks of the Nixon Administration. It appears in National Security Study Memorandum No. 1, known as NSSM-1.

About 85 per cent of the aid from her Communist allies reached North Vietnam by sea, NSSM-1 said. And that was almost entirely food and other "economic" aid rather than military. "The military equipment provided by the Soviets and Chinese" came mainly by rail through China, it said.

During the first nine months of 1968, NSSM-1 estimated, the seaborne cargo broke down as follows: "Foodstuffs [chiefly rice and wheat] 38 per cent of total volume, general cargo 33, petroleum 20, fertilizer 8, timber 1." The memorandum added:

"The importance of food imports can hardly be overstated; even with them, North Vietnam has been forced to strictly ration foodstuffs."

There is no reason to think that the import proportions have changed drastically since the NSSM-1 analysis. The hawkish Economist of London estimated recently that in 1971 only about a quarter of North Vietnam's imports were "military-related, much of the rest being raw materials and food."

From all this two things are unarguably clear:
North Vietnam is dependent on imported food to a significant degree to feed her population.
The American blockade, to the extent that it is effective, must have one of its principal impacts on the food supply. And those who made the policy well understood that when they instituted the blockade.

There is of course the view, expressed by a number of military figures, that no distinction should be drawn between Vietnamese military and civilian activity or personnel: They are all helping the war effort, after all, and if they called that off they would have no trouble importing the food they need.

But our moral system does not allow such obliteration of the military-civilian distinction. We all recognize that it is one thing to bar, say, missiles from Cuba and another to cut off food and everything else. One of the Nazis condemned to death at Nuremberg was the wartime governor of Holland who caused a civilian famine by ordering the dikes destroyed.

Considerations of this kind are not likely to move Richard Nixon, Henry Kissinger or the other men who believe that American honor requires bombing, mining and shelling Indochina indefinitely to keep Nguyen Van Thieu in office. But the rest of us might have a feeling in the pit of our stomach the next time Mr. Nixon tells the heart-rending story of little Tanya, the 12-year-old Russian girl who saw her family die one by one in the famine during the German siege of Leningrad.
APPENDIX VII

EXCERPTS FROM THE "KISSINGER MEMORANDUM" ON U.S. BOMBING OF NORTH VIETNAM, 1965-1969

[Note.—The following excerpts are taken from National Security Memorandum Number 1, undertaken at the direction of Dr. Henry Kissinger for the National Security Council by the Departments of State and Defense, the Central Intelligence Agency and the Defense Intelligence Agency. Printed here are the answers to question number 28, "With regard to the bombing of North Vietnam, the answers from the Departments were assembled by the National Security Council into its first Memorandum, the text of which was printed in the Congressional Record of May 10 and 11, 1972.]

[From the Congressional Record, May 10-11, 1972, pp. E4999-5001; E5010-5012; E5022; and E5063-5066]

**Question 28:** With regard to the bombing of North Viet-Nam:

a. What evidence was there on the significance of the principal strains imposed on the DRV (e.g., in economic disruption, extra manpower demands, transportation blockages, population morale)?

There was a good deal more evidence on the nature of the strain produced by the bombing than on their significance. U.S. intelligence indications, including later also the observations of travelers to North Viet-Nam, the opinions of the Hanoi diplomatic community (notably the Canadians and British), North Vietnamese public radio broadcasts, aerial photography, and the testimony of NVA POW's in South Viet-Nam, of fishermen captured off the coast of North Viet-Nam, and of the Spanish repatriates—all underscored the fact that the U.S. bombing was a matter of concern to the North. This evidence indicated that it was clearly having an impact and was generating strains throughout North Viet-Nam. As shown in the attached chart (at end of paper), the bombing is estimated to have caused North Viet-Nam economic and military losses totaling just under $500 million. In addition, there were many additional losses that could not, in the intelligence community's opinion, be assigned any meaningful values.

Unfortunately, the available intelligence indicators were relatively silent about the significance of these strains, i.e., about their cumulative ability to deter Hanoi from political and military policies unacceptable to the U.S. In theory, there was an upper limit to North Viet-Nam's capacity simultaneously to continue the defense of the North and the big-unit war in the South. The bombing undoubtedly pushed Hanoi closer to that limit, but it was not possible to determine precisely (1) where the limit lay, and (2) how far from it Hanoi was at any given time. Hanoi's decisions to change from protracted war to the Tet offensive and then to negotiations may be seen as indications it was approaching that limit, but it obviously still had considerable reserve capacity at that time.

What did become clear during the course of the bombing was that the North Vietnamese had not been paralyzed. Hanoi found a variety of ways to minimize and adapt to the strains of the bombing. Foreign aid was perhaps the most important single element in this adaptation, but the striking tenacity of the North Vietnamese leadership and the disciplined, if fatalistic response of the North Vietnamese people were of nearly equal importance. Despite increasingly heavy bombing, the North continued to function. A high level of imports continued to be received and distributed, permitting North Viet Nam to serve as "the great rear" for "the great frontline" in the South. The infiltration of men and supplies continued to increase from 1965 to the present.

Nevertheless, in retrospect it appears that by late 1967 and early 1968, the strains caused by the bombing were having a cumulative effect. The Spanish
repatriates (a group of 14 Spaniards and their dependents who were repatriated to Spain in late 1967 after living for 13 to 19 years in North Vietnam) reported that the bombing had made life in the countryside very difficult and had been extremely demoralizing to the population. Some of the Spaniards believed that the North Vietnamese could not hold out longer than another year or two, because after that time the privations, misery, and bomb damage would be too great. One repatriate talked in Hanoi with an NVA Lieutenant colonel from the DRV Ministry of Interior, who said in December 1967 that it would be very difficult to continue the fighting because of widespread demoralization and bomb damage.

Other evidence of growing difficulties in North Vietnam can be found in a decree on "the punishment of counterrevolutionary crimes," published by Hanoi in March 1968, which covered a wide range of activities harmful to state security and to the war effort and prescribed a variety of punishments ranging from several years' imprisonment to death. This decree was originally adopted by the DRV National Assembly in October 1967 and promulgated by President Ho the following month; the four-month delay between promulgation and publication has not been explained, but may have been related to Hanoi's expectations of intensified bombing. However, the very need for such a decree, as well as its passage, points to the leadership's concern with internal conditions and morale in the North in late 1967 and early 1968.

In addition, the bombing was having a cumulative impact on the North Vietnamese economy, resulting in the appearance of widespread black market activities which eventually came to involve many low-level DRV officials and cadres, as well as the man in the street. During 1967, the price of black market rice rose to ten times the price of rationed rice; some foods, like meat, could be procured virtually only on the black market. By the end of February 1968, economic damage caused by the bombing was estimated at $250 million, more than twice the estimated $135 million in military damage. A large number of reports from observers in Hanoi pointed to growing shortages in consumer goods and foodstuffs, persistent agricultural shortfalls, and increasingly strict rationing. The progressive dilution of the rice ration (by increasing the percentage of substitutes such as wheat, millet, and mandoc at the expense of the percentage of rice) was one of the most striking indications of economic difficulties. By June 1968 the rice ration had been reduced to 50 percent rice substitutes, and subsequently it was reduced even further. (It is now about 60 percent rice substitutes.)

These facts, coupled with personal observations, led the Indonesian ambassador to Hanoi, Nugroho, to conclude in June 1968 that the main reason which impelled the DRV to agree to talk with the US was the need for a breather as a result of a deteriorating economic situation. In his opinion, peace negotiations were essential to Hanoi, at least for a "pause of calm," if not a permanent peace settlement.

Manpower shortages presented yet another intractable problem. Despite one school of thought, which held that Hanoi had more than enough manpower to keep the North intact and to fight a big unit war in the South, we came to believe by February 1968 that some of the key theoretical and statistical assumptions upon which these views were based had overlooked both Hanoi's own demographic data as well as the nearly unanimous opinions of on-the-spot observers, who pointed to severe and increasing labor and manpower shortages. Before the March 31 bombing limitation, an estimated 300,000 to 500,000 civilians were engaged in part-time bomb damage repair work, and an additional 100,000 military personnel were assigned full-time to air defense. These manpower drains were intensified by high levels of infiltration into South Viet-Nam, and, in our judgment, by labor shortages which predated the bombing. The over-all result, therefore, was that the manpower situation began to weigh more and more heavily on Hanoi, until eased considerably by the March 31 bombing limitation. It should be noted, however, that there is no evidence that manpower shortages in themselves were becoming acute enough to prevent Hanoi from continuing its policies.

Bottlenecks caused by intensive bombing of the bridges and roads near Hai-phong were yet another problem for the Hanoi leadership. These strikes increased through the summer and fall of 1967, and while their impact cannot be quantified, it was clear from observers' reports that imports were piling up in the port due to interdiction of the lines of communication. Increasing use by the US of Mark 36 Destructors in the latter part of 1967 undoubtedly contributed to transportation problems on inland waterways and some road areas. Throughout North Viet Nam as a whole, transportation routes were heavily interdicted; by the time of the
March 31 bombing limitation, possibly 400 bridges had been damaged or destroyed throughout the country. The turn-around time for vessels calling at Haiphong increased from an average of 13 days in 1966 through 18 in 1967 and 25 in 1968, but there were variations within each year which could not be directly attributed to the bombing.

**Question 28:** With regard to the bombing of North Viet-Nam:

c. To what extent did Chinese and Soviet aid relieve pressure on Hanoi?

The degree of relief provided by Soviet and Chinese aid cannot be quantified, but its importance is suggested by the fact that, whereas the bombing destroyed capital stock, military facilities, and current production in North Viet-Nam worth nearly $500 million, Soviet and Chinese aid during this period was nearly $2.9 billion, nearly 6 times as much. This high rate of foreign aid, coupled with the relatively low requirements of North Viet-Nam itself and of NVA/VO forces in the South, goes a long way toward explaining Hanoi's ability to withstand the bombing.

Despite occasional Soviet complaints of Chinese interference with rail shipment, and despite such transportation difficulties as may have been caused in China by the Cultural Revolution or by deliberate Chinese Government policy, the Communist aid moved in sufficient quantities to take care of North Vietnamese needs and enable the regime to continue the war effort.

The trend of Soviet and Chinese aid has been as follows:

<table>
<thead>
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<th>[In million U.S. dollars at Soviet foreign trade prices]</th>
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<td></td>
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<tr>
<td>China</td>
</tr>
<tr>
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</tr>
<tr>
<td>1965</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>85</td>
</tr>
<tr>
<td>50</td>
</tr>
<tr>
<td>135</td>
</tr>
<tr>
<td><strong>Military:</strong></td>
</tr>
<tr>
<td>U.S.S.R.</td>
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<tr>
<td>China</td>
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<tr>
<td>Total</td>
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<tr>
<td>1965</td>
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<td>------</td>
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<tr>
<td>210</td>
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<tr>
<td>69</td>
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<td>379</td>
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</table>

All in all, the Soviets and the Chinese have supplied North Viet-Nam with a total of nearly $2.9 billion in economic and military aid since the bombing began.

It would be difficult to overstate the importance of this aid to Hanoi. More than any other single factor, it has enabled the North Vietnamese to withstand the bombing and to continue the war in the South. In 1968, for example, the Soviets provided economic aid in the form of petroleum, industrial and agricultural equipment, trucks and other vehicles, and construction materials and equipment, as well as such consumer goods as cotton and silk textiles, and vitally needed bulk foodstuffs. Much of the Soviet economic aid served military purposes, either by releasing North Vietnamese production and manpower capacity for war purposes, or because it was used in support of the military effort (e.g., trucks). In the pure military field the Soviets sent surface-to-air missile systems, aircraft, radar, armor, artillery, infantry weapons, and ammunition. The military aid, while higher in value than the economic aid, is much less in volume.

The Chinese, for their part, provided construction materials, trucks, spare parts, pharmaceuticals, and other machinery and equipment, as well as substantial deliveries of rice, grain, and other foodstuffs. Chinese military aid has consisted primarily of light artillery rockets, and small arms and ammunition used by the Viet Cong, although most of the DRV's naval vessels and some large shipments of aircraft and armor have also been supplied by the Chinese in the past. In addition, the Chinese have had between 80,000 and 50,000 support troops (the number is declining) in North Viet-Nam. These troops have engaged in construction, repair, and air defense.

On a volume basis, about 85 percent of Communist aid to the DRV arrives by sea; rail deliveries from China account for the remaining 15 percent, including the military equipment provided by the Soviets and Chinese. During the first nine months of 1968, the composition of seaborne deliveries consisted of bulk foodstuffs (chiefly rice and wheat, 38 percent of total volume), general cargo (38
percent), petroleum (20 percent), fertilizer (8 percent), and timber (1). This was similar to the first nine months of 1967, except that in 1968 shipments of bulk food replaced general cargo as the single largest category of imports. This point to Hanoi's growing dependence on foreign sources for supplies for rice and wheat, reflects continuing shortfalls in domestic agricultural production.

**Question 28:** With regard to the bombing of North Viet-Nam:

d. What are the current views on the proportion of war-essential imports that could come into NVN over the rail or road lines from China, even if all imports by sea were denied and a strong effort even made to interdict ground transport? What is the evidence?

The crux of this question is the definition of “war-essential imports.” There is room for considerable disagreement on this subject, but in our judgment, the category of war-essential imports should include most of the economic aid provided by the Soviets and Chinese, as well as nearly all of their purely military aid. The reason for this is that economic aid is equally if not more important than military aid in keeping North Viet-Nam a going concern. (During 1968, economic aid totaled some $340 million and military aid about $540 million). In fact, it can probably be assumed that all North Vietnamese imports in the past few years have been directly related to the war effort. The regime would not have used its substantial portion of this aid...

Food imports constitute a growing percentage of total imports, in 1968 replacing general cargo as the single largest category of imports. This reflects the steady decline in crop acreages and yields that began in 1965 and has continued through the present. The importance of food imports can hardly be overstated; even with them, North Viet-Nam has been forced to divide its ration foodstuffs on the official market and progressively to reduce the composition of the rice ration so that at present it consists 60 percent of rice substitutes such as domestic corn and imported wheat. In addition, a thriving black market has grown up...

Economic aid has been essential in keeping North Viet-Nam afloat; under present conditions it is extremely doubtful that Hanoi could dispense with any substantial portion of this aid.

The question becomes, therefore, “Could North Viet-Nam continue to receive and distribute most of the economic aid and nearly all of the military aid it is now obtaining from foreign suppliers if Haiphong and other key ports were closed and if the road and rail lines from China were heavily bombed?” A second question is: “What would happen if it could not?” To begin with, it must be noted that in practical terms it would be impossible to deny all imports by sea. Even if the one principal port (Haiphong) and the two secondary ports (Cam Pha and Hon Gai) were closed, there would still be twelve minor ports as well as numerous coastal transshipment points suitable for over-the-beach off-loading. Lightering operations would permit an indeterminate amount of supplies to enter North Viet-Nam from the sea. It is nearly certain, however, that these minor ports and transshipment points could not handle anything like the present volume of imports going into Haiphong. (It is estimated that 55 percent of the total aid to Hanoi arrives by sea, i.e., through Haiphong. Almost all of this is economic aid, since military supplies are generally believed to come overland via China.

We do not believe that the capacity of the DRV-CPR road and rail network is great enough to permit an adequate flow of supplies in the face of an intense and night bombing campaign. In our view, earlier analyses which have claimed a virtually unlimited capacity for this network were based primarily on theoretical considerations of transport capacities and did not give adequate weight to the very real difficulties the North Vietnamese have experienced in handling imports even when Haiphong was relatively untouched. It is true that these difficulties were overcome, but to our knowledge there is no evidence that Hanoi would be able to deal as successfully with the closing of Haiphong and heavy attacks on lines of communication from China. We therefore believe that interdiction of Haiphong and heavy attacks on the rail lines from China would over time prevent North Viet-Nam from receiving sufficient economic and military aid to continue the war effort. But it would be difficult to quantify this, since it depends on the type and intensity of interdiction.

On the other hand, one important point should be kept in mind. The North Vietnamese surprised many observers, and confounded many predictions, by...
holding the North together and simultaneously sending ever-increasing amounts of supplies and personnel into the South during 3½ years of bombing. It is clear that the bombing campaign, as conducted, did not live up to the expectations of many of its proponents. With this experience in mind, there is little reason to believe that new bombing will accomplish what previous bombings failed to do, unless it is conducted with much greater intensity and readiness to defy criticism and risk of escalation.

This brings us to the second part of the question. "What would happen if Hanoi could not obtain sufficient war-essential imports, as defined earlier?" Here again, there does not seem to be any quantifiable answer; we are reduced to educated estimates, if we arbitrarily assume that nearly all military aid reached North Vietnam (because it is relatively compact and could be transported by a small number of freight cars or a larger number of trucks, and because it has a high priority) but that only half of the economic aid did, we think that by strenuous exertions and considerable belt-tightening the North Vietnamese could continue on their present course for perhaps at most two years more. Beyond that time, barring a cease-fire or protracted lull in the fighting in South Vietnam (either of which would greatly ease Hanoi's burdens), we would estimate that Hanoi would be forced (1) to make concessions to the U.S. in order to get Haiphong reopened, or (2) at least to reduce the scale of the war in the South to manageable proportions, perhaps by reverting to political struggle backed by terrorism and selected guerrilla operations which did not require Northern aid and personnel. Of course, other factors such as manpower shortages would figure in the same timeframe.

It should be noted, in conclusion, that this paper does not address the advisability of closing Haiphong, nor the question of the Soviet and Chinese responses. These matters, clearly the most central problems, lie outside the terms of reference of Question 28 (d).

Question 28: With regard to the bombing of North Viet-Nam:

-e. What action has the DRV taken to reduce the vulnerability and importance of Hanoi as a population and economic center (e.g., through population evacuation and economic dispersal)?

Three chief trends were evident during the bombing: (1) civil defense measures, (2) population evacuation, and (3) economic dispersal.

Civil Defense Measures. Even before the bombing began, the DRV leadership was warming the population of trying days ahead. In January 1965 the National Defense Council directed that citizens should "strengthen further defense and security work and get ready to fight," "actively push forward antiaircraft works," "make all out efforts to build a powerful people's armed force," and "actively build and consolidate North Viet-Nam in all fields." After February 7, 1965 (the beginning of the bombing) intensified civil defense measures were undertaken. On February 9, AFP reported that trenches were being dug, air raid shelters constructed, and vehicles and important installations camouflaged in Hanoi. Thus, beginning in early 1965, an extensive civil defense program was devised, which included providing some form of bomb shelter for virtually the entire North Vietnamese population. Shelter programs were begun earliest in Hanoi and other heavily populated urban areas, where large public semi-underground shelters were built in downtown sections. This was supplemented in less densely populated parts of the country by an extensive system of tunnels and by individual shelters—covered cement cylinders buried in the ground. Almost all industrial plants came to have a network of earthwork/tunnels leading away from the buildings to provide protection for workers on the job, and even agricultural workers reportedly built trenches near their rice fields.

At the same time, other forms of air defense were improved or were introduced. The SA-2 surface-to-air missile system was introduced in 1966. The DRV air force, air fields, and early-warming radar system were rapidly improved, and antiaircraft artillery weapons and units were dispersed throughout the country to protect major cities, industrial and defense areas, and lines of communication. Roughly half of the total AAA guns were located in the northeast quadrant of the country, which includes the Red River delta and, of course, Hanoi.

Population Evacuation. This program got off to a slower start than the civil defense effort. In September 1965, however, a US traveler said that 50,000 persons had already been evacuated from Hanoi. It appears that, initially, the DRV Government gave little or no financial assistance to evacuees, but by early 1966, allowances for them were being made available. In June and July of the same year, the government conducted a ward census in Hanoi and cut off the ration
cards of those deemed superfluous to the functioning of the city; these people were thus forced to evacuate. In July 1966 AFP reported that 10,000 people a day were leaving the city, and at the end of 1966 both Harrison Salisbury and a TASS reported said that one-third of the capital’s population had been evacuated. People reportedly drifted back into Hanoi in early 1967, but evacuation increased sharply in April and May after US strikes on Hanoi. At that time a Swedish reporter was told that the DRV had plans to evacuate the whole city. In the summer of 1967, however, school children were reportedly entering Hanoi again, and this trend continued to the point where in early 1968 the Hanoi city council passed a decree instructing people not to return to the city. But after the March 31 bombing limitation, people began to return in considerable numbers, a trend which intensified after the November 1 bombing halt. It appears at this writing that the full population of Hanoi has not yet returned, but that a good portion of the inhabitants have indeed come back. The DRV Government, however, has not yet officially reversed its evacuation policy.

Economic Dispersal. Beginning in 1965, the expansion of centrally controlled, large-scale industry was deemphasized and local small-scale production received official encouragement with a goal of regional self-sufficiency. Long-term five-year economic planning was shelved in favor of a two-year planning period.

Economic activity in the Hanoi area consisted of electric power, machine building, chemicals, jarge building, textiles, light industry, and phosphate processing. Some of these enterprises, such as textiles, were relocated and dispersed, but others, such as electric power plants, performed to remain in place. Accurate figures on the production of the relocated plants are not available, but we assume that even limited the pre-1965 output must have fallen considerably under the impact of the bombing and of dispersal.

Present Vulnerability and Importance of Hanoi. Hanoi’s vulnerability and importance have probably both increased since the bombing halt. The population is returning to its pre-evacuation levels, and the defenses of Hanoi are reportedly being discreetly but substantially reduced. It appears that the DRV leadership has decided to continue indefinitely the policy of economic decentralization begun in 1965, probably to hedge against the bombing being resumed and to avoid the production losses which would occur if industry were recentralized. Some permanent rebuilding has begun, but full scale reconstruction throughout the country will probably await an end to the war in the South. In Hanoi itself, the Dien Bien bridge has been rebuilt, though it needs additional repairs, and the Hanoi thermal power plant is being rebuilt. Primary and secondary schools and universities in Hanoi have not been officially relocated back to the capital, but the kindergarten and nursery schools may reopen soon. However, hospitals and most government agencies remain evacuated. No large-scale construction of urban housing has been reported.

Question VII: To what relative extent do the US/RVNAF and the NVA/VC share in the control and the rate of VO/NVA attrition; i.e., to what extent, in terms of our tactical experience, can heavy losses persistently be imposed on VO/NVA forces, despite their possible intention to limit casualties by avoiding contact?

The Communists have a surprisingly large amount of flexibility in controlling their rate of casualties in South Vietnam. This flexibility is reflected in 1968 killed-in-action statistics—during February, at the height of the Tet offensive, VO/NVA KIA totaled nearly 40,000, but only five months later during July, the Communists were able to hold their monthly combat deaths to less than 7,000. During the last three months of 1968, average VC/NVA monthly killed-in-action was substantially below 10,000 per month.

The Communists have been able to control their attrition rate by varying both tactics and strategy. Given any current strategic deployment and short term goals, both offensive and defensive tactics may be more or less aggressive. In turn, strategic deployment and degree of offensive or defensive posture will greatly determine loss rates. These variations are obviously not mutually exclusive and tactical aggressiveness largely depends on short and intermediate term strategic goals.

Data on Allied military operations reflect the difficulty of making contact with VC/NVA forces. These data do not indicate which side is able to initiate contact, only that Allied units were on offensive operations.

Question VIII: What controversies persist on the estimate of VO Order of Battle, in particular, on the various categories of guerrilla forces and infrastructure? On VC recruiting, and manpower pool? What is the evidence for different estimates, and what is the overall adequacy of evidence?
Estimates of VC/NVA Order of Battle as well as estimates of various categories of guerrillas, irregular forces, and infrastructure have been under thorough review and discussion by members of the intelligence community and CINCPAC/MACV since the summer of 1967. An apparent agreement reached at a conference in Saigon in September 1967 proved to be short-lived. Therefore, the Director of Central Intelligence convened a second conference in Washington in April 1968. This conference included representation from all concerned USIB agencies, CINCPAC, and MACV, and observers from the military services. The Washington conference failed to reach agreement on any of the elements included in the estimates of enemy strength.

Since April 1968, at the direction of the Director of Central Intelligence and the Chairman, Joint Chiefs of Staff, a CIA/DIA Working Group has worked to reach agreement in Washington and with CINCPAC/MACV. This CIA/DIA group has reached Washington working-level agreement on the strength of those elements composing the military threat (Main and Local Forces, Administrative Services, and Guerrillas) as of the end of August 1968 and for 31 December 1968. In addition, the working group has reached agreement on end-of-the-year estimates for such irregular organizations as Self Defense Forces and Assault Youth, and for the Political Infrastructure.

The agreed CIA/DIA estimates for 31 December 1968 are as follows:

**Military threat in thousands**

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<td>VC MF/LF</td>
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<tr>
<td><strong>Subtotal</strong></td>
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<td><strong>Administrative services</strong>:</td>
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<td>NVA</td>
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</tbody>
</table>

*An estimated 20,000-25,000 of these NVA troops are serving in VC units. This estimate excludes an estimated 25,000 NVA troops deployed north of the DMZ which include but are not limited to the 304th NVA Div., 320th NVA Div., 38th NVA Regt. of the 308th NVA Div., and 102nd NVA Regt. of the 308th NVA Div. We believe that the military threat represented by the Guerrilla forces is not on a parity with that of the Main and Local Forces because probably only about one-third of the Guerrillas are well armed, trained, and organized.*

Question XXVIII: With regard to the bombing of North Vietnam:

a. What evidence was there on the significance of the principal strains imposed on the DRV (e.g., in economic disruption, extra manpower demands, transportation blockages, population morale)?

The major effects of the bombing of North Vietnam were extensive damage to the transport network, widespread economic disruption, greatly increased manpower requirements, and the problems of maintaining the morale of the people in the face of personal hardships and deprivation. Hanoi was able to cope effectively with each of these strains, so that the air war did not seriously affect the flow of men and supplies to Communist forces in Laos and South Vietnam. Nor did it significantly erode North Vietnam's military defense capability or Hanoi's determination to persist in the war. Material losses resulting from the bombing were, for the most part, offset by increased imports from Communist countries. Damage and destruction by the bombing of military and economic facilities and equipment, together with measurable losses of output, were valued at about $500 million. Economic and military aid during 1965-68 is estimated at over $8 billion.

Despite heavy damage to the transport network throughout the bombing, effective countermeasures kept the system operable. In the northern part of the
country, transport into Hanoi and the port of Haiphong was disrupted by the destruction of a number of key bridges. The Hanoi Railroad/Highway (Doumer) Bridge over the Red River remained out of service between December 1967 and July 1968; the Haiphong Railroad/Highway Bridge was out much of the time between September 1967 and April 1968. Rail traffic on the Lao Cai line to China was restricted by the destruction of the bridge at Viet Tri that remained unserviceable from mid-1966 to December 1968. In each of these, as in countless other interdictions, pontoon bridges, ferries, or temporary bridges provided bypasses to the original structures and permitted continued logistic movements. Other measures to counter bomb damage included the prepositioning of materials and the training of local teams to effect repairs quickly; developing of transport schedules to make maximum use of the cover of darkness and of bomb free sanctuary areas; and pressing into service all types of equipment including bicycles and carts.

The bulk of the bombing throughout the air war was carried on in the Panhandle of North Vietnam. Even under the heavy bombing during the time that air attacks were restricted to the area below the 19th Parallel, however, logistic flows into Laos were maintained, as evidenced by the reports of road watch teams and by photography. (See question 28b.) Throughout the bombing campaign, construction of new rail lines and new highways, along with the dual gauging of the Hanoi-Dou Dang line, was continued so that the transport network now has a greater capacity than at any previous time.

Economic disruption, besides that to the transport system, met with varying degrees of response by the Hanoi regime. Repair of damaged electric powerplants was carried out when major reconstruction was not required, and an estimated 20 percent of the country's prebombing capacity was kept operational at the height of the bombing in mid-1967. A large number of diesel electric generators were imported to provide independent power to essential users. Blast walls were constructed around the principal electric powerplants, beginning in early 1968. For the most part, damage to manufacturing facilities was left unrepaired and the reduced domestic output of such items as cement, chemicals, and clothing was replaced either in whole or in part by imported goods. Efforts to restore the output of important export products that were casualties of the bombing—pig iron, coal, apatite, and cement—were not observed until after the bombing north of the 10th Parallel had been halted. The machine building industry was relatively undamaged by the bombing and appears to have been expanded through substantial imports of machinery and equipment over the past three years.

Disruption of agricultural output by the indirect effects of the bombing on distribution and on the management and productivity of labor was offset by greatly increased imports of foodstuffs with little adverse effect on the availability of food. Rice rations, however, were decreased proportionately with less productive land transformed into wheat flour, corn, or domestic subsidiary crops.

Extra manpower demands induced by the bombing brought about some tightening of over-all manpower availabilities, but never reached proportions significant enough to limit Hanoi's support of the war: Additional demands for laborers to repair bomb damage, to move goods, and to help in civil defense, were estimated to total between 475,000 and 600,000. Of these, less than 200,000 were occupied full time in war-related activities; the remainder were used as conditions warranted. The bombing required an additional 100,000 military personnel within North Vietnam to man the air defenses.

These extraordinary demands were satisfied primarily from the underemployed in agriculture and the services sectors, and by the increased use of women. The agricultural labor force could be reduced substantially without a proportionate decline in output because of the low marginal productivity of each farmer. Similarly, workers in handicraft industries could be diverted with only slight adverse effects on the economy. Military manpower requirements, that increased each year during the bombing, were satisfied by broadening the draft regulations. The draft age was increased, former servicemen were recalled to service, and physical standards were lowered. As a result, an estimated 600,000 males were added by 1967 to the 800,000 males eligible for military service in 1968.

The bombing imposed severe hardships on the people by the constant threat to life, by the disruption of personal routines, and by the dispersal of industry and evacuation from urban areas. There were some indications in late 1967 and in 1968 that morale was waning, but not to a degree that influenced the regime's policies on the war. The regime was quite successful, however, in using
the bombing threat as an instrument to mobilize people behind the Communist war effort. There is substantial evidence, for instance, that the general populace found the hardships of the war more tolerable when it faced daily dangers from the bombing than when this threat was removed and many of the same hardships persisted. Concern about maintaining popular morale, and, in particular, discipline and unwavering support for the needs of the war appears to have grown markedly in the past year when most of the country was no longer subjected to bombing. Since the 1 November bombing halt over the entire country, Hanoi has put great stress on countering the widespread tendency of the people to relax their efforts. Concern of this kind is reflected almost daily in North Vietnamese publications and broadcasts as the regime has used exhortation, criticism, and the threat of coercion to sustain support for the needs of the war in South Vietnam.

b. What was the level of logistical throughput through the southern provinces of NVN just to the November bombing halt? To what extent did this level reflect the results of the US bombing campaign?

An average of about 1,000 short tons per day moved south of Thanh Hoa into the southern provinces of North Vietnam during the period April Through October 1968. About one third of the total flow was economic goods; the remainder, military and war-related goods such as petroleum. About 75 percent of the supplies moved into the Panhandle of North Vietnam, were used locally (AAA ammunition comprised a major portion of the total), 15 percent were moved into the Panhandle of Laos for use there or in South Vietnam, 5 percent moved to the DMZ, and 5 percent moved into northern Laos.

The North Vietnamese have continually increased the volume of supplies moving into the southern provinces. The total daily volume moved south during the seven-month period before the bombing halt in October was 15 percent higher than that moved in 1967. The volume moved southward in 1967 was more than double that of 1965. The throughput tonnage to southern Laos increased substantially in 1968 compared with 1967 as shown below:

<table>
<thead>
<tr>
<th>Average number per day</th>
<th>April through October</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons delivered to southern Laos</td>
<td>95</td>
</tr>
</tbody>
</table>

The increase in the volume of supplies moved into the Panhandle of North Vietnam and Laos in 1968 consisted almost exclusively of military and war-related goods. It resulted from the step-up in personnel infiltration, the higher levels of combat in South Vietnam, and the increased supplies and equipment needed to maintain through logistic movements in the face of increased air interdiction against lines of communication (LOCs).

During April –October 1968 an average of about 95 tons per day were destroyed as a consequence of air attacks, or roughly 10 percent of the total flow into the southern provinces. In addition to direct losses the bombing complicated the flow of supplies to Laos and South Vietnam. We are convinced, however, that the bombing did not put a relevant ceiling on the volume of supplies that the enemy could move South. The enemy was able to take effective countermeasures that resulted in the maintenance and even an increase in the flow of traffic. During the final months of the air war, traffic movements in the Panhandle of North Vietnam were influenced as much by the weather and logistic needs as they were by the intensity of the air strikes.

One reason why the air interdiction campaign was not more successful is the fact that the capacity of the transportation routes remained well above the requirements for their use. Another reason is that even though large amounts of transportation equipment were destroyed and damaged by air attacks, the North Vietnamese were able to repair and replace motor trucks, watercraft and railroad rolling stock so that no shortages developed.

The estimates of traffic flows into the southern provinces of North Vietnam are based on both indirect and direct evidence, supported by a limited amount of documentary evidence. The estimate for 1965 was based, in part, on a sample of actual traffic and has been increased over time by such indicators of activity, as changes in the military order of battle, pilot sightings, aerial photography, the level of imports, and roadwatch reporting. The data, therefore, are subject
to a margin of error, but are of the proper order of magnitude and could have as great a downward bias as an upward one.

The estimate on supplies lost through air strikes contains an unknown amount of redundancy, and is probably too high. It is based on reports by pilots of the number of fires and secondary explosions, and of the amount of transport equipment destroyed and damaged.

The most authoritative part of the throughput estimate is the amount of supplies delivered to southern Laos which is based on reports from roadwatch teams, particularly those on Route 15/12 to the Mu Gia Pass. The tonnage moved to southern Laos via this route is an estimate based on these reports and is considered to be a minimum estimate. Roadwatch reports for Route 15 also serve as a basis for estimating traffic on the other principal access road (Route 137/912) which has not had adequate coverage by roadwatch teams. Other intelligence confirms that our estimates of the traffic moving on Route 137/912 were essentially accurate. We believe that the data compiled through careful research and analysis over many years are adequate to support our estimates and that objective alternative interpretations of the data would be difficult.

a. To what extent did Chinese and Soviet aid relieve pressure on Hanoi?

Communist military and economic aid to North Vietnam to a large extent offset the physical destruction and the disruptive effects of the US bombing and were instrumental in maintaining the morale of the people. Communist countries provided all of the weapons; enough food, consumer goods and materials to compensate for lost domestic output; and most of the equipment and materials to maintain the transport system. Without Communist aid, most of it from the Soviet Union and China—particularly given the pressures generated by the bombing—the Vietnamese Communists would have been unable to sustain the war in both South and North Vietnam on anything like the levels actually engaged in during the past three years.

The amount of Communist economic aid delivered annually has grown from a yearly average of less than $100 million through 1964, to $150 million in 1965, $275 million in 1966, $370 million in 1967, and $480 million in 1968. The value of Communist military aid increased from an average of less than $15 million a year during 1954-64, to $270 million in 1965, $455 million in 1966, and $650 million in 1967. With the restricted bombing of the heavily defended northern part of the country in 1968, military aid deliveries were reduced. At least 75 percent of total military aid since 1965 has been for air defense.

North Vietnam's air defenses significantly reduced the effectiveness of the US bombing, resulting directly or indirectly in the loss of almost 1,100 US aircraft, and provided a psychological boost to morale. Before 1965, the Soviet Union had provided North Vietnam with only ground forces equipment, transport and trainer aircraft, and small naval patrol craft, while China had provided MiG-15/17 jet fighters, motor gunboats, and ground forces equipment. Since early 1965, the USSR has provided North Vietnam with most of its air defense systems including surface-to-air missiles, jet fighters, a radar network, and antiaircraft artillery. Chinese military aid since 1965, much smaller than that from the USSR, has been important primarily in building up North Vietnam's ground forces, including re-equipping Communist ground forces in South Vietnam with the AK-47 assault rifle, the 107-mm rocket, and other new weapons.

The bombing had been indirectly responsible for part of North Vietnam's reduced agricultural output since 1965 because of diversions of labor and disruptions to the distribution system. Greatly increased imports of foodstuffs in 1967 and 1968 have prevented any serious widespread food shortages. The food supplied by Communist countries during 1968 probably provided at least a sixth of the total calories consumed by the North Vietnamese. A comparison of estimated shortfalls in rice production and of imports of foodstuffs is shown below:

<table>
<thead>
<tr>
<th>(Thousand metric tons)</th>
<th>1965</th>
<th>1966</th>
<th>1967</th>
<th>1968</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shortfalls (in rice equivalents)</td>
<td>0</td>
<td>200</td>
<td>450</td>
<td>500</td>
</tr>
<tr>
<td>Imports</td>
<td>120</td>
<td>80</td>
<td>460</td>
<td>790</td>
</tr>
</tbody>
</table>

Estimates of the shortfalls are tenuous and the extent of the increase in output of subsidiary foods cannot be measured. Moreover, the annual population increment adds almost 70,000 tons to the country's annual food requirements.
Without Communist assistance in maintaining the logistics network, North Vietnam's capacity to move supplies southward in support of the war in South Vietnam would have been seriously restricted. To offset the considerable damage to the transport system, the Soviet Union and China provided large quantities of construction machinery and materials, trucks, railroad rolling stock, and watercraft. At no time during the bombing was there close to a critical shortage of transport equipment in North Vietnam. In addition, China supplied North Vietnam with about 60,000 engineering and support troops to build, repair, and defend transport facilities in the northern part of the country.

North Vietnam's small modern industry was destroyed or rendered largely inoperative as a result of bomb damage. All the major Communist countries, however, especially the Soviet Union, have supplied North Vietnam with a vast array of industrial machinery, metal products, vehicles, and chemicals that in total value are several times greater than the value of lost domestic industrial output.

d. What are current views on proportion of war-essential imports that could come into NVN over the rail or road lines from China, even if all imports by sea were denied and a strong effort even made to interdict ground transport? What is the evidence?

All of the war-essential imports could be brought into North Vietnam over rail lines or roads from China in the event that imports by sea were successfully denied. The disruption to imports, if seaborne imports were cut off, would be widespread but temporary. Within two or three months North Vietnam and its allies would be able to implement alternative procedures for maintaining the flow of essential economic and military imports. The uninterrupted capacities of the railroad, highway, and river connections with China are about 25,000 tons per day, more than two and a half times the 6,300 tons per day that rail and road imports overland and by sea in 1968, when the volume reached an all-time high. Experience in North Vietnam has shown that an intensive effort to interdict ground transport routes by air attack alone can be successful for only brief periods because of the redundancy of transport routes, elaborate and effective countermeasures, and unfavorable flying weather.

Almost four years of air war in North Vietnam have shown—as did the Korean War—that, although air strikes will destroy transport facilities, equipment, and supplies, they cannot successfully interdict the flow of supplies because much of the damage can frequently be repaired within hours. Two principal railroad lines connect Hanoi with Communist China, with a combined capacity of over 9,000 tons a day. Eight primary highway routes cross the China border, having a combined capacity of about 5,000 tons per day. In addition, the Red River flows out of China and has a capacity averaging 1,500 tons per day.

An intensive and sustained air interdiction program could have a good chance of reducing the northern rail capacity by at least half. However, roads are less vulnerable to interdiction and waterways even less so. In the June–August 1967 air attacks on a previous high point of U.S. interdiction efforts against targets in the northern part of North Vietnam—the transport system was able to function effectively. Strikes in August 1967 against the Hanoi-Dong Dang rail line were effective in stopping through service for a total of only ten days. Strikes during this period against the highways that parallel the Dong Dang line showed no significant or sustained reduction of capacity. The Hanoi-Lao Cai rail line capacity, after destruction of the Viet Tri bridge, was maintained at 700 tons per day by use of a rail ferry. If more capacity had been required, however, there is every reason to believe that additional facilities would have been installed at this location to restore the through capacity of the line.

In addition to the overland capacity, an airlift from Chinese airfields could potentially provide a means for importing a large volume of high-priority goods. Moreover, total interdiction of seaborne imports would be difficult because shallow-draft lighters could be used to unload cargo from ocean-going ships anchored in waters outside the mined major harbor area. Large numbers of small coastal ships and junks could move cargoes from ships diverted to southern Chinese ports of Fort Bayard, Canton, or Pethal, and could unload imports over the beaches, or move into North Vietnam's network of inland waterways.

3 Interdiction of the lines of communication between Hanoi and the China border could not be sustained at the level that was achieved in the southern Panhandle of North Vietnam during August through October 1968 for a number of reasons. The multiplicity of modes and transport routes in the North would make it necessary to sustain interdiction at a larger number of points than in the Panhandle. Air defenses in the North—interceptors, antiaircraft, and antishipping—make air attacks less accurate and also more costly in terms of U.S. air losses. We believe it is unlikely that either B-52s or Sea Dragon forces could be brought to bear in an interdiction campaign in the north.
The volume of imports that would be essential to maintain the war cannot be closely estimated. Out of total imports in 1968, less than five percent were military material and ammunition. Other imports essential to the war would include petroleum, food, clothing, transport equipment, and construction materials to maintain the lines of communication. In 1968, the volume of all overland and seaborne imports included the following:

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,300</td>
</tr>
<tr>
<td>Military材料</td>
<td></td>
</tr>
<tr>
<td>Foodstuffs</td>
<td>100</td>
</tr>
<tr>
<td>Petroleum</td>
<td>790</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>155</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>860</td>
</tr>
</tbody>
</table>

Within the miscellaneous category was an undetermined amount of goods to maintain the economy, to build facilties, and to satisfy, at least in part, civilian needs. Moreover, the level of import of some goods was believed to be more than current consumption, permitting a buildup of reserves. It is possible, therefore, that war-essential imports might be as much as one fourth less than the total, or 4,700 tons per day. Whether war-essential imports are estimated to be 4,700 or 6,300 tons per day, however, the overland import capacity would be from two to three times the required import level, and it is unlikely that air interdiction could reduce transport capacities enough over an extended period to significantly constrict import levels.

What action has the DRV taken to reduce vulnerability and importance of Hanoi as a population and economic center (e.g., through population evacuation and dispersal)?

Evacuation of the population from Hanoi reportedly involved 300,000 people, more than one half the population of the city proper, of which 170,000 were students and children. Although few specific details are available, the second-largest group evacuated probably was handicraft workers, followed by non-essential and old people, government workers, and the labor force of a few factories. Most of these people are believed to have been moved to the rural areas, just a few miles outside the city, still largely within the boundaries of the Hanoi metropolitan area. Their proximity to the city is attested to by frequent reports of a large influx of people on weekends. Even though the evacuation produced some hardships—crowded living conditions, separation of families, longer commuting distances—the welfare of the population generally was adequately served. Currently, a growing number of evacuated people are reported to be returning to Hanoi, but the regime has warned that conditions are still not safe. Although primary and secondary schools and universities have not been officially relocated to urban areas, some outdoor classes were observed in late 1968 in Hanoi. There were reports in December that some kindergarten and nursery schools would be reopening soon in the Hanoi area. Hospitals and most government agencies officially continued to operate in dispersed sites.

Industrial dispersal primarily involved small enterprises and short-distance relocation within the Hanoi metropolitan area. It apparently has been accomplished without long-term effects on Hanoi's economy. Dispersal of large industrial installations was limited to a few factories that could be broken up into small producing units. For example, parts of the 5th March Textile Plant and the Hanoi Machine Building Plant were dispersed, but certain shops at the original plants remained active throughout the bombing. On the other hand, in the handicraft sector, which supplied about half the total industrial output in Hanoi prior to the bombing, it appears that hundreds of handicraft shops were relocated, probably to the suburbs surrounding the city. Little disruption of output would result from dispersal of these small-scale, labor-intensive enterprises, compared to the inefficiency inherent in dispersing large installations. Furthermore, as handicrafts typically employ more than 65 percent of the industrial labor force...
in North Vietnam, the dispersal would be an effective means of evacuating a substantial segment of the population from the city with minimal disruption to the economy.

Hanoi is the land transportation hub to the southern part of the country. Rail connections with the port of Haiphong and with Communist China, as well as the most important highways, converge on Hanoi. Therefore, most of the imports destined for the south pass through Hanoi. When the main bridges into Hanoi were destroyed under the Rolling Thunder campaign, the North Vietnamese built railroad and highway bypasses around the city. The original bridges now have been repaired but the ferry or pontoon bypasses are being kept in readiness for emergencies.

Hanoi continued to bolster its defense against air attacks even after the 31 March 1968 bombing limitation. Some 34 million individual shelters have been constructed throughout the country, and the Hanoi area claims an average availability of 3 shelters per person that can be reached in seconds after a warning is sounded. A number of bunker-type shelters were observed under construction in the spring of 1968, and limited construction of these was continuing as recently as December. The population is experienced in first-aid, techniques of designing home shelters, and regularly cleaning and repairing older shelters. The air defense capability probably has been upgraded by the installation of 10 modified Fan Song radars in the surface-to-air missile network around Hanoi in 1968. Efforts continue to protect a small number of critical installations have been observed, and massive blast walls were erected around the Hanoi Thermal Powerplant and the Hanoi Post, Telephone and Telegraph building to protect against all but direct hits.

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**U.S. OBJECTIVES**

**Question 25-2:** With regard to the bombing of North Viet-Nam:

A. What evidence was there on the significance of the principal strains imposed on the DRV (e.g., in economic disruption, extra manpower demands, transportation blockages, population morale)?

**Answer:**

1. The bombing of NVN created considerable strains in agriculture, but many of the effects were indirect, and because of imports NVN was never faced with starvation. The normal seasonal shortages of manpower were aggravated and many of the male managerial cadres were drafted and replaced by inexperienced females. As a result, the 1967 rice crop was at least 500,000 metric tons less than normal, and NVN imported about 450,000 metric tons of food during the year. This situation continued, perhaps worsened, during 1968, and NVN was forced to import around 700,000 metric tons of food. With the aid of imported food, primarily wheat flour, and the raising of rice substitutes, NVN was able to meet its food demands.

2. North Vietnamese industry was damaged severely by the bombing. Up to 80 percent of its electric power capacity was knocked out, reducing not only the production of electricity but also production at plants dependent on the power-plants. The country's cement plant and iron and steel plant also were damaged heavily; this entirely eliminated domestically produced cement and pig iron, both traditional export items. Other plants extensively damaged included textile, paper, chemical, fertilizer, and coal processing.

3. NVN, however, took countermeasures to minimize the effects of the bombing. Industrial plants were dispersed to more secure areas, diesel generators were imported to replace to some extent the reduced electric power production, and manufactured goods for both industrial and consumer use were imported, primarily from other Communist countries. Thus, the bombing postponed NVN's program for economic development. Nonetheless, the use of imported industrial goods provided an adequate standard of living for the people and allowed construction of a sizable number of small industrial shops to satisfy local needs.

4. The lines of communication (LOC's) were damaged continuously by the bombing; roads were interdicted, boat traffic disrupted, and bridges knocked out. The latter probably caused the greatest disruption. All of the major bridges were damaged; in particular, the bombing of the bridges along the LOC's from China to NVN was significant. The Viet Tri Bridge was damaged early, thus severing the Lao Cai-Hanoi rail line, and other bridges leading into Hanoi were struck, impeding the flow of goods on the Dong Dang rail line from China to Hanoi. Finally, the destruction of the bridges near Haiphong slowed the movement of goods from the port to other parts of NVN.
5. Several measures were taken to counteract the effects of the bombing on the LOC's. Thousands of full- and part-time workers were employed to repair roads and rail lines, often in a matter of days. Rail lines were made dual gauge to facilitate the flow of goods from China. Bridge substitutes were devised, including truck and rail ferries, and pontoon and cable bridges. By such expedients, goods continued to flow from China and to move from Haiphong to other parts of NVU. Of course, they moved more slowly and some were destroyed during the bombing raids, causing some temporary distribution problems and shortages, but there was never any evidence of serious disruption to the flow.

6. The bombing, viewed in Hanoi as an escalation of the war, increased NVN's manpower requirements for the armed forces and for repairing the LOC's. While the bombing diverted manpower from agriculture and industry into the military and war-related activities, NVN never appeared to be suffering from a shortage of manpower in general, only of manpower in particular stills. With an estimated 120,000 physically fit males coming of age each year, and by drafting older men and recalling officers, the necessary manpower for the armed forces was available. To satisfy the demand for managerial cadres, women were used. To insure the rapid repair of the LOC's, agriculture workers supplemented the full-time construction workers. As further testimony to the absence of critical manpower shortages, NVN continued to send thousands of students and technicians abroad for education and training throughout the period of the bombing.

7. There is little evidence that the bombing adversely affected the morale of the people of NVN. An indirect effect of the bombing was to create a lower standard of living, through a change in the composition of the rice ration, a general inability to fulfill the meat ration, and a reduction in the cloth ration. In addition, the programs to disperse industry and evacuate urban population were poorly organized, resulting in temporary unemployment, lack of housing and often inadequate rations. Moreover, both programs resulted in the separation of families, a possible morale-depressant. As the bombing continued, however, these programs were improved and the standard of living always was maintained, at least at subsistence level.

Question 29a: What evidence was there on the significance of the principal strains imposed on the Democratic Republic of Vietnam (e.g., in economic disruption, extra manpower demands, transportation blockages, population morale)?

**ECONOMY**

By the time offensive air operations against NVN were stopped on 1 November 1968, most of the heavy industry and more than half of the electrical power generating capacity had been destroyed. Dispersion of industry and redistribution of labor resulted in serious inefficiencies, which were aggravated primarily by the constant disruption of lines of communication. As domestic economic requirements became more difficult to satisfy, NVN became more dependent on external assistance. What NVN was unable to produce itself (guns, missiles, ammunition, trucks, food, etc.) or was destroyed by US air raids (cement, POL, steel, etc.) was imported from abroad. Seaborne imports during 1968 totaled nearly 2 million metric tons, up from 1.4 million metric tons during 1967. Food imports nearly doubled during 1968, and accounted for about one-third of all imports. Likewise, imports of fertilizer and petroleum products increased.

The economic (monetary) impact of the bombing is shown in the following table:

<table>
<thead>
<tr>
<th>Costs and benefits to NVN (1965–68)</th>
<th>[In millions of dollars]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs:</td>
<td></td>
</tr>
<tr>
<td>Destroyed capital stock</td>
<td>215</td>
</tr>
<tr>
<td>Lost current production</td>
<td>1,400</td>
</tr>
<tr>
<td>Destroyed facilities</td>
<td>153</td>
</tr>
<tr>
<td>Total cost</td>
<td>768</td>
</tr>
<tr>
<td>Benefits:</td>
<td></td>
</tr>
<tr>
<td>Foreign economic aid</td>
<td>1,210</td>
</tr>
<tr>
<td>Foreign military aid</td>
<td>1,845</td>
</tr>
<tr>
<td>Total benefit</td>
<td>3,055</td>
</tr>
</tbody>
</table>

* Estimate based on growth rates prior to 1968.
While air strikes destroyed about $770 million worth of capital stock, military facilities; and current production, NVN received about $3,000 million worth of foreign economic and military aid from Communist Bloc countries. Thus, in terms of total economic and military resources available to support the war, NVN is better off today than it was in 1965.

It is generally agreed that the bombing did not significantly raise the cost of the war to NVN. This was because production facilities outside of NVN were not targetable and ample external aid was available from the Communist Bloc nations. The Soviet Union, Communist China, and Eastern European nations provided the bulk of the combat equipment and materiel used by enemy units in South Vietnam. The cost of this support to North Vietnam was negligible.

Another major impact of the bombing of North Vietnam was a shift within the labor force. Workers moved from food production to the repair of bomb-damaged facilities. The resulting food shortage created further disruption at the ports by adding food imports to an already overburdened military goods traffic. The economy of the country was further upset by the relocation of industry and by the move of over 30,000 of their most highly trained workers from the Hanoi area. In addition, it was estimated that over 400,000 people fled from Hanoi and Haiphong during the height of the bombing.

**EXTRA MANPOWER DEMANDS**

Manpower dislocations were apparent at the height of the air war. Women were assuming a greater proportion of the workload, and 40,000 Chinese Communist construction troops and antiaircraft artillery units were moved into the country. Extra manpower was required for air defense, road and rail repair, logistical movement, industrial relocating, and rebuilding. A labor force of between 475,000 and 600,000 including women and children, was required in these areas to offset the effects of the airstrikes. About 110,000 military personnel were assigned to air defense duties. This drain, plus the increasing number of combat losses, necessitated a lowering of military induction standards with a like effect on the standards within their Armed Forces. Evidence from interrogation of North Vietnamese fishermen along the coast and from recent prisoners of war reflects the enormity of the manpower drain. Fifteen year-old villagers were conscripted for military duty in South Vietnam. Many received no more than a few days training. The apprentice, technical, high school, and college entry classes were reduced sharply.

In spite of these extra demands, it appears that NVN has enough manpower to continue the war at the high casualty rates sustained in 1968. Most of the additional labor requirements have been met through normal population growth and through the use of their large pool of unemployed and underemployed citizens.

**TRANSPORTATION**

The interdiction of major lines of communication made the flow of material throughout the country more costly and time consuming. The degree to which interdiction was effective in reducing support of military forces in the south is difficult to measure. The difficulties brought on by the bombing were evident, however, in that the North Vietnamese were forced to build over 1,200 miles of alternate highways and bypasses, employ alternate and less efficient modes of transport, restrict movement to nighttime, and import large quantities of trucks and locomotives.

While the transportation blockage heavily taxed the capability of North Vietnam to support the troops in South Vietnam, the flow of supplies continued. The rail transit time from Hanoi to Vinh more than tripled, and rail traffic became almost non-existent from Vinh southward. As a result, truck travel from Hanoi to Laos and the demilitarized zone areas increased 100 percent. But these effects simply increased the time necessary to move supplies; they did not deny supplies to the VC/NVA in South Vietnam.

**MORALE**

The bombing undoubtedly had adverse effects on the people of NVN. Individual citizens suffered many hardships. While the total supply of goods in NVN

1 The bombing may have killed up to 5% of the 285,000 infiltrating troops (about 14,200 men in 1968). Although there are considerable uncertainties about this estimate, these losses would represent less than 2% of the 700,000 regular and militia troops remaining in North Vietnam and are relatively small compared to the 180,000 VC/NVA reportedly killed in South Vietnam in 1968. Infiltration losses of this magnitude would not appreciably limit VC/NVA force levels or activity rates in SVN.
Increased, individual standards of living declined. Food was rationed and consumer goods were scarce; and air raid warnings disrupted the lives of the populace and forced many to leave their homes. Moreover, it has been estimated that approximately 52,000 civilians were killed in NVN by U.S. air strikes.

Still, there is no evidence to suggest that these hardships reduced to a critical level NVN’s willingness or resolve to continue the conflict. On the contrary, the bombing actually may have hardened the attitude of the people and rallied them behind the Government’s programs. Firm population controls and a steady flow of propaganda from Hanoi have been credited with helping to maintain popular support for the regime. There is some evidence, however, indicating that morale and support for the war in NVN has declined significantly since the bombing halt. Whatever their feelings about the war, the people of NVN have lacked either the will or the means to make any dissatisfaction evident.

The bombing also impacted heavily on the morale of the North Vietnam soldiers moving to South Vietnam. Bombing made the journey difficult and hazardous, a fact reported by many prisoners after capture.

Question 29b: What was the level of logistical throughput through the southern province of North Vietnam just prior to the November bombing halt? To what extent did this level reflect the results of the U.S. bombing campaign?

Estimates of the flow of supplies from the southern province of NVN to Laos vary widely. This is because we have no reliable means of measuring this flow. The Joint Chiefs of Staff estimate that an average of 65 short tons per day flowed into Laos during the three months prior to the bombing halt. The Seventh Air Force estimated that the flow decreased from 340 tons per day in mid-July to 35 tons per day immediately prior to the bombing halt. The CIA and DIA estimate that an average of 165 short tons per day flowed into Laos during 1968. Some of this variation can be explained by the seasonal variation in truck traffic as indicated by the following table of truck sightings in Route Packages 1, 2, and 3 in NVN.

<table>
<thead>
<tr>
<th>Month</th>
<th>1967</th>
<th>1968</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>383</td>
<td>2,968</td>
</tr>
<tr>
<td>February</td>
<td>664</td>
<td>1,037</td>
</tr>
<tr>
<td>March</td>
<td>770</td>
<td>2,142</td>
</tr>
<tr>
<td>April</td>
<td>1,721</td>
<td>3,346</td>
</tr>
<tr>
<td>May</td>
<td>2,919</td>
<td>5,140</td>
</tr>
<tr>
<td>June</td>
<td>3,388</td>
<td>3,723</td>
</tr>
<tr>
<td>July</td>
<td>4,254</td>
<td>4,086</td>
</tr>
<tr>
<td>August</td>
<td>5,717</td>
<td>3,937</td>
</tr>
<tr>
<td>September</td>
<td>2,340</td>
<td>1,988</td>
</tr>
<tr>
<td>October</td>
<td>1,692</td>
<td>1,488</td>
</tr>
<tr>
<td>November</td>
<td>1,090</td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>1,754</td>
<td></td>
</tr>
</tbody>
</table>

Source: DIA.

In 1967, truck sightings dropped by a factor of 5.5 from the peak in August to the low in October as bad weather set in over NVN. The supply flow followed this trend. Thus, one cannot attribute the entire decrease in supply flow that occurred in the months before the bombing halt to bombing effectiveness.

Whether the “Summer-1968 Interdiction Campaign” had a special effect is difficult to assess. The following table compares truck attrition in Route Packages 1, 2, and 3 in NVN for June-October in 1967 and 1968.

<table>
<thead>
<tr>
<th>Month</th>
<th>1967</th>
<th>1968</th>
</tr>
</thead>
<tbody>
<tr>
<td>June</td>
<td>402</td>
<td>565</td>
</tr>
<tr>
<td>July</td>
<td>577</td>
<td>775</td>
</tr>
<tr>
<td>August</td>
<td>739</td>
<td>622</td>
</tr>
<tr>
<td>September</td>
<td>2,159</td>
<td>2,142</td>
</tr>
<tr>
<td>October</td>
<td>77</td>
<td>242</td>
</tr>
<tr>
<td>Total</td>
<td>2,079</td>
<td>2,499</td>
</tr>
</tbody>
</table>

Source: DIA.
These results show a 20 percent increase in truck attrition in the period June-October 1968 over the same period in 1967.

Rather than look at monthly estimates of truck sightings and attrition and supply flows, a better perspective on the overall effect of the bombing in NVN on the supply flow into Laos is obtained by comparing estimates averaged over a whole year. The table below suggests that, despite our intensive 1968 bombing campaign, NVN was able to infiltrate supplies and equipment into Laos than it required to support military operations in SVN. The excess material was probably stockpiled in Laos and SVN to support future operations.

**INFILTRATION OF SUPPLIES INTO LAOS**

<table>
<thead>
<tr>
<th></th>
<th>Delivered to Laos</th>
<th>Consumed and destroyed</th>
<th>Available for SVN</th>
<th>Required in SVN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967</td>
<td>98</td>
<td>57</td>
<td>36</td>
<td>15-20</td>
</tr>
<tr>
<td>1968</td>
<td>163</td>
<td>99</td>
<td>66</td>
<td>30-50</td>
</tr>
</tbody>
</table>

While the exact magnitude of these supplies flows and requirements are all subject to uncertainty, the basic conclusion seems clear. The bombing failed to reduce support below required levels, even at the increased activity rates of 1968. The external needs of the VC/NVA forces were so small relative to enemy capacity that it is doubtful any interdiction campaign could have constrained their combat operations. Estimates of the NVA daily requirements for ammunition and weapons range from 30 to 50 short tons, the equivalent of about 10 to 15 trucks per day.

In addition to the destruction of supplies and lines of communication, the bombing campaign in NVN forced the enemy to provide additional materiel to compensate for the interdiction losses, this in order to maintain support for his forces in SVN at acceptable levels. Moreover, NVN was denied use of the more efficient means of transportation (i.e., rail and coastal shipping). Use of these modes since the halt has enabled the enemy to move large amounts of materiel into the southern Panhandle. Movement south to Vinh by rail is estimated at 400 short tons per day; by coastal watercraft, nearly 1,500 short tons per day. Truck activity now occurs throughout the day, whereas it was confined to the hours of darkness prior to the bombing halt. Further repairs and improvement of land lines of communication, coupled with continued southward extension of north-south petroleum, oils, and lubricants pipeline (1,100 metric tons daily capacity) will further increase the enemy's logistic capability.

**Question 290: To what extent did Chinese and Soviet aid relieve pressure on Hanoi?**

Soviet and Chinese aid to NVN has provided nearly all of the materiel required to carry on the war against SVN; NVN's contribution has been chiefly the over-all direction of the war and the input of troops to do the fighting. The bulk of this military and economic aid comes from the Soviet Union. Its assistance generally has consisted of a sophisticated air defense system and training for associated personnel, artillery, petroleum products, transportation equipment, and food. Chinese aid has consisted primarily of small arms and ammunition. Without such aid, NVN long since would have been forced to reduce the scope of fighting in SVN to the guerrilla-warfare level.

One consequence of aid from outside countries was a lessening of economic pressures on Hanoi in the conduct of its war effort. On the other hand, dependence on outside countries for economic support may have resulted in an increase in the political leverage which could be exerted on Hanoi's war policies by other Communist states.

Another consequence of foreign aid directly affected the bombing campaign. The provision of a complete air defense system—including MIG aircraft, surface-to-air missile systems, and antiaircraft guns—enabled NVN to mount a vigorous defense against U.S. air attacks. This air defense environment had significant effects on our bombing performance and tactics.

Seaborne imports to North Vietnam during 1968 increased by almost 40 percent over 1967. The increase was caused mostly by a 40 percent rise in food and a 68 percent rise in petroleum shipments over the previous year from both the
USSR and China. Large amounts of flour and rice were delivered last year to supplement the below-average harvests in North Vietnam. The delivery of such items permitted the movement of men and supplies to SVN and the maintenance of a subsistence-level diet in NVN.

Question 29d: What are current views on the proportion of war-essential imports that could come into North Vietnam over the rail or road lines from China, even if all imports by sea were denied and a strong effort were made to interdict ground transport? What is the evidence?

LAND IMPORT CAPACITY

In 1968, NVN imported an average of 6,800 STPD (short tons per day); 6,000 STPD by sea, and 800 STPD by land. Imports by land were higher in 1967, amounting to about 1,100 STPD. However, the land lines of communication from China were not used to capacity. It is estimated that the two rail lines from China have a theoretical uninterdicted capacity of about 8,000 STPD and the road network could provide an additional 7,000 STPD during the dry season (normally June-September) and about 2,000 STPD during the poor weather months. The combined capacity of the land routes (6,000-16,000 STPD) is more than enough to transport North Vietnam's import requirements of about 7,000 STPD. If all seaborne imports were to come through China, considerable logistic problems would have to be solved by the Chinese regime.

INTERDICTION OF IMPORTS FROM CHINA

If seaborne imports can be denied to NVN, her ability to successfully pursue the war in SVN would be dependent on land imports from China.

A strong effort to interdict road and rail transport from Communist China through North Vietnam would require a concerted and coordinated air interdiction campaign against all transportation: military support; petroleum oil, and lubricants; power; industrial; air defense; and communications target systems. The interrelationship of the effects of destruction of targets in one category to the effectiveness of others is such that a cumulative impact is achieved. The air campaign would be conducted in such a manner as to be free of the militarily confining constraints which have characterized the conduct of the war in the north in the past. The concept would preclude attacks on population as a target but would accept high risks of civilian casualties in order to achieve destruction of war-supporting targets.

An interdiction campaign as described above, when employed in conjunction with denial of sea imports, would, in large part, isolate Hanoi and Haiphong from each other and from the rest of the country. Isolation of Hanoi, the focal point of the road and rail system, would be highly effective in reducing North Vietnam's capability to reinforce aggression in South Vietnam. Importation of war-supporting material would be seriously reduced. Road capacities would be reduced by a factor well in excess of the estimated 50 percent believed to have been accomplished during the summer months of 1966 and 1967. Over time, North Vietnam's capability to cope with the cumulative effects of such an air campaign would be significantly curtailed.

The Joint Chiefs of Staff believe that resumption of an interdiction campaign similar to that carried out in Route Package I between July and 1 November 1968 would assure almost total interdiction of truck and waterborne movement of supplies into the demilitarized zone and Laos. Naval blockade offshore and interdiction of Regional Package II to Thanh Hoa would further enhance this effort.

Commitment of B-52 forces following heavy and unrestricted suppression of defenses by fighters, could reduce the amount of time to accomplish the above. Although the North Vietnamese have established a significant by-pass capability, the transportation nets remain vulnerable at many key points. The locomotive population could be attrited quickly if all buffer restrictions were removed near the Chinese border.

There is not sufficient data available at this time on either the cost or the effectiveness of an air campaign against these land lines to reach a firm conclusion as to the chances of isolating NVN from her neighbors. Past attempts to cut rail, road, and water networks in NVN have met with considerable difficulties. It has been estimated that a minimum of 6,000 attack sorties per month would be required against the two rail lines from China. Even at this level of
effort, the North Vietnamese could continue to use the rail lines to shuttle supplies if they were willing to devote sufficient manpower to repair and transhipment operations. Interdiction of the road system would be still more difficult. Since the bombing halt north of 19° in April 1968, North Vietnam has repaired all major road and railway bridges, constructed additional bypasses and alternative routes and expanded the railroad capacity by converting large segments from meter to dual gauge truck. These improvements would make even more difficult prolonged interdiction of the overland lines of communication.

We currently fly approximately 7,000 sorties per month against two primary roads in Laos without preventing throughput truck traffic; the road network from China has 7-10 principal arteries and numerous bypasses. Finally, the monsoonal weather in NVN would make it difficult to sustain interdiction on the land lines of communication. Poor visibility would prevent air strikes during 25-30% of the time during good weather months and 50-65% of the time during poor weather months. Thus, it is not possible to give a definitive amount to the question of how much war-essential imports could come into NVN if sea imports are denied and a strong air campaign is initiated.

Attention would also have to be given to interdiction of supplies coming into SVN from Cambodia. Over the past 2 years, the enemy’s use of Cambodia as a supply base and a place of refuge has become more pronounced. During the period October 1967 to September 1968, 10,000 tons of munitions transited Sihanoukville and are suspected of having been delivered to enemy forces in the Cambodian-Republic of Vietnam border regions. This amount represents more than enough ordnance to satisfy the arms and ammunition requirements for all enemy forces in South Vietnam during the same period. Thus, the act of sealing off the enemy’s Cambodian supply lines must be considered as an integral part of any plan to prevent supplies from reaching enemy forces in the Republic of Vietnam.

Question 29c: What action has the Democratic Republic of Vietnam taken to reduce the vulnerability and importance of Hanoi as a population and economic center (e.g., through population evacuation and economic dispersal)?

North Vietnam has attempted to reduce the vulnerability of Hanoi and Haiphong to U.S. air strikes. A large segment of the civilian population (estimates range from 40-70% of the total) was evacuated from those two populated areas while U.S. bombing operations were being conducted in the north. Some evacuees have drifted back into the city since the bombing halt, and a few schools reportedly have been reopened; however, the evacuation order has not been rescinded. In addition to personnel evacuation, the North Vietnamese dispersed most small industry, schools, hospitals, and government administration in Hanoi and Haiphong. There is no indication that these facilities have returned. Finally, North Vietnam has constructed an effective and extensive system of air raid shelters for Hanoi residents, and blast walls are under construction around important facilities such as the thermal power plant. Hanoi and its environs are also protected by a well-integrated air-defense system.

Although the North Vietnamese have attempted to reduce the importance and vulnerability of Hanoi and Haiphong, these two cities still remain essential to their war effort. Approximately 80% of the North Vietnamese imports enter through the port of Haiphong, and Hanoi is the logistic center for all rail, road, and water lines of communication from China. Both cities are important storage areas for war-supporting supplies and materiel. It has been reported that some fuel and industrial equipment are being sent directly to new regional sites and rural areas away from Hanoi where new factories will be set up.

The buildup of a major logistics support/transferment complex in the Thanh Hoa and Vinh area since April 1968 has shifted this important war-support function from the Hanoi area. The buildup of Quang Khe and Dong Hoi since the bombing halt has further reduced dependence on Hanoi. However, the success of this dispersal is dependent in large measures upon unrestricted ship movements south from Haiphong. Hanoi continues to be a bottleneck for all land traffic from China.