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25 April 1966

**Subject: Bomb Damage Assessment of the B-52 Mission Against Mu Gia Pass,  
11 April 1966**

1. The B-52 air strike on 11 April 1966 against a segment of Mu Gia Pass between the Laos border and Don Bai Dinh, North Vietnam did not result in the interdiction of route 15 for a significantly greater period of time than that attained from previous air strikes on the pass by fighter bombers. Analysis

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of post strike photography of 12 April revealed 5 separate road cuts on a 2500 foot section of route 15, and about 189 new bomb craters in the target area.\* In addition, there is a possible landslide adjacent to the northernmost road cut. The poor quality of the photography precluded more detailed readout. Preliminary analysis of photography obtained on 14 and 17 April showed route 15 to be serviceable north of the target area and some evidence of vehicular traffic.

2. The only effective interdiction resulted from 5 separate road cuts, which could be and apparently were repaired in a short period of time. Although an estimated 25,000 cubic yards \*\* of earth were displaced by the total number of bomb craters (189) in the target area, probably no more than 10 percent of this amount of displacement resulted from the 5 road cuts. Out of 1,389 bombs dropped (about 600 tons), only 30 bombs were fused for 36-hour delay.

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Assuming some delay before the start of repair work because of the delayed-action bombs, it is estimated that a crew of 250 laborers using hand tools could have the 5 road cuts repaired in 8 to 10 hours. It is common practice for Communist truck traffic to begin driving on strategic routes before they are fully repaired. Earlier photography of route 7 and Mu Gia Pass in Laos has shown trucks winding through the cratered sections of these roads while they were being repaired.

- \* This film was not received [redacted] until 21 April 1966.
- \*\* Assuming an average of 130 cubic yards of earth was displaced in each bomb crater.

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Intelligence Memorandum

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Evaluation of Recent Air Strikes Against Mu Gia Pass

Summary

Post-strike photography of the second B-52 mission against Mu Gia Pass, carried out on 27 April, revealed that military traffic was flowing again within 24 hours. Although the precise extent of denial of the Pass from the earlier B-52 strike on 11 April is not known, it did not result in an appreciably longer interdiction time. In the days between the two B-52 missions repeated armed reconnaissance strikes created additional temporary cuts. Nevertheless, the route has remained trafficable. The average movement of trucks through Mu Gia is 25 per day, which requires a total transit time of about one hour. The rapidity of repair and the ability of the North Vietnamese to compensate for temporary delays to maintain the flow of logistic supplies to the VC/PAVN shows the relative ineffectiveness of current interdiction efforts, using standard HE weapons.

Finally, we note that the North Vietnamese have taken a number of measures to shorten recuperation times at Mu Gia, and are building an alternative route which will substantially augment existing road capacity to Laos.

The 27 April Attack

1. The 27 April attack was concentrated on a target area covering 2 miles of route 15 one and a half miles north of the B-52 strike of

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(See map.)

11 April. The ordnance expended on the target totalled 315 tons (360-750 pound bombs and 360 - 1,000 pound bombs). Many bombs had delayed fuzes, half of them set for 36 hours and the remainder for 144 hours. Post strike photography of this mission obtained 3 hours after the attack, showed 11 separate road cuts on route 15, a total of 170 bomb craters in the target area, and 67 bomb craters outside. Only 32 of the bomb craters were on the road itself (See photo). Photography obtained at 0930 hours the following morning, 28 April, showed that the road was open and vehicle tracks indicated that traffic had already moved through the pass.

2. The operations needed to restore the road to useable condition consisted of filling the bomb craters to original grade by using stockpiled materials and debris from the craters adjacent to the road. The roadway in the target area is single lane, 9 feet wide with shoulders ranging from 0-3 feet. The surface is of natural earth, which makes it a relatively simple matter to restore the road to prestrike condition by the use of materials from the craters. The 11 road cuts displaced no more than 3,000 cubic yards of earth. The time table of Communist countermeasures to the B-52 strike probably was as follows:

0700 - Air strike

0730 - 1900 Road closed, no repair work actually in progress.

Men and trucks moved to the damaged areas. Detonation of delayed action bombs already in progress. Preparations underway to begin repairs to the road bed after nightfall.

1900 - 0700 Detonation of delayed action bombs completed. Laborers, with the aid of trucks to move fill material, engage in repairing the road by backfilling and compacting the 32 bomb craters. Night photography taken at 0100 hours showed the road blocked but many trucks in the area indicating repair work in progress. Estimated time of completion - 0700 hours, 26 April.

#### The 11 April B-52 Strike

3. The B-52 strike on 11 April against Mu Gia Pass did not result in the interdiction of route 15 for a significantly greater period of time than the strike on 27 April. Although the exact time traffic started moving is not known, photography showed that Route 15 in the target area was trafficable within 3 days after the 11 April strike. The road throughout Mu Gia Pass had been continually struck between 11 and 26 April by Rolling Thunder and Steel Tiger armed reconnaissance missions creating additional temporary road cuts, delaying repairs and destroying truck traffic, but the road remained trafficable.

#### Communist Countermeasures at Mu Gia

4. Communist advance planning to minimize the effects of air strikes has included the development of procedures to repair road cuts rapidly. Engineering troops and conscripted local workers are stationed in semi-permanent camps in and adjacent to the pass. They can be assembled and moved to the damaged sections within 1-3 hours after the strike. In addition, stockpiles of materials such as crushed stone and lumber are distributed throughout the Pass area at strategic points. Great priority

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is placed upon maintenance of through traffic at vulnerable points such as Ma Gia Pass. Contingency planning by the North Vietnamese undoubtedly includes the practice of prematurely exploding delayed action bombs by using dynamite charges or by firing antiaircraft or mortar shells into the bombs. If the delayed action bombs fall in the same apparent pattern on the 27 April strike as the total ordnance dropped, only about 5 delayed action bombs would have to be so detonated, a relatively fast operation.

5. Beginning with the December 1965 pause in the bombing of North Vietnam, additional workers and construction equipment have been assigned to the Ma Gia Pass area. Reports indicate the possible presence of engineer elements of 2 PAVN regiments and local workers conscripted for road maintenance and bridge repair. We estimate that there are 3,000 engineer troops and another 3,000 civilian personnel stationed within a ten mile radius of the target. We estimate that these forces have approximately six medium sized bulldozers, and at least 25 three-ton trucks available for use in the repair and maintenance of Ma Gia Pass.

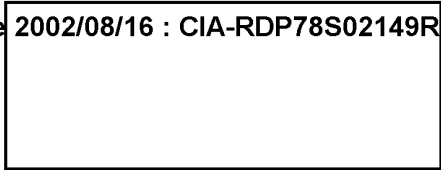
6. An average of nearly 25 trucks per day, each carrying about 3 tons of supplies, is estimated to have moved south through Ma Gia Pass during the present dry season from 1 December through 9 April. The level of traffic has varied from month to month from a high of about 36 trucks per day in December and January to about 17 in March and the first part of April. After the first B-52 strike of Ma Gia Pass,

traffic during a 4-day period was reported to have averaged 25 south bound trucks per day. A convoy of 25 trucks traveling at 10 miles per hour and spaced about 240 feet apart, could transit the Pass area in slightly more than one hour. Hence, if the pass is open about one hour a day, the present level of traffic can be accommodated.

7. Although neither of the two B-52 attacks against Mu Gia Pass stopped traffic for appreciable lengths of time the North Vietnamese are taking additional measures. There are strong indications that SAM's are planned as additional protection for the pass.

#### New Route Construction

8. The Communists, as part of an overall program of developing alternate routes to offset potential interdiction of the present infiltration routes in Laos, are in the late stages of construction of another border crossing road that will act as an alternate to the route through Mu Gia Pass. The new road, which is 60 miles long, connects route 101 in North Vietnam with route 911 in Laos south of Mu Gia Pass. The segment has been numbered route 912 in Laos and route 137 in North Vietnam. It has been under construction, over mountainous terrain, since early January and is probably useable for limited through traffic now. (See attached map.) Parts of the route have been extensively camouflaged, undoubtedly to ensure continued movement of traffic from the vicinity of the Quang Khe ferry in North Vietnam to the Laotian infiltration network. In addition to bypassing the heavily bombed areas of route 15 and 12, the road goes around route 23 and the northern part of route 911 which in some areas is relatively



impassable during the rainy season. The new border crossing route will double the capability of maintaining at least the present level of traffic into Laos.

