c. Heliborne Operations.

Limited by equipment capabilities and morning fog conditions.

Helicopters limited by morning fog conditions. Morning fog conditions limit operations. None

d. Armor Operations.

Used light tanks; limited by flooding conditions.

Heavy tanks in use, slippery conditions when ground is wet.

Use of tanks; provided maneuverability of fire power. No flooding conditions at Khe Sanh.

e. Weather Conditions.

(1) Rainy season March to November.

(1) Rainy season May to November.

(1) Rainy season generally extends through same 6-8 month period.

None.

(2) Fog and low ceilings during dry season mostly during morning hours from December to March.

(2) Fog and Low ceilings during dry seasons; mostly during morning hours from November to April.

(2) Fog and low ceiling conditions during months of December to March.

s/ WESTMORELAND General

OFFICIAL:

s/ DAVIDSON

J2
APPENDIX 2 TO ANNEX B (Summary of Enemy Situation)

ORDER OF BATTLE AND ORGANIZATION (As of 29 Feb)

A. 304th Infantry Division

TOE Strength 12,500
(Est Strength 9,800)

9th Inf Regt 2,000 (Est)
57th Inf Regt 2,000 (Est)
66th Inf Regt 1,700 (Est)
68th Arty Regt 2,000 (Est)

1. The 304th Infantry Division is one of the oldest in the Army, but it has not had as much experience in conventional warfare. It was formed in interzone IV in early 1950 from the 66th Regt, the 9th Regt, and the 57th Regt.

2. After the armistice, an element of the 304th Division took part in the occupation of Hanoi. In late 1954, the division was located in the Ha Dong area with elements extending westward on National Route #6 toward Hoa Binh. In early 1957, the unit moved to Ninh Binh near its area of origin. It is estimated that the 304th deployed from its home base in November and arrived in the Khe Sanh area in late December.

B. 325th C Infantry Division

TOE Strength 12,500
(Est strength 7,500)

101D NVA Inf Regt 1,800 (Est)
95C NVA Inf Regt 1,700 (Est)
78th NVA Arty Regt 2,000 (Est)
(Not carried in OB)

1. The 325th Division first began forming in March 1951 as the "Binh Tri Thien" Division, with the 18th Inf Regiment as its nucleus. The 18th Regiment and the 888th Battalion were reequipped in June - August 1951, while the other elements engaged in guerrilla operations in the division's home area. Following the armistice, the 325th Division was concentrated in the Dong Ho area, just north of the 17th parallel demarcation line, where it engaged in security and garrison duties.

2. Elements of the infantry regiments began moving through Laos into South Vietnam in late 1964 - early 1965. Elements of the 325C Inf...
Division operated in the Khe Sanh area in April 1967 and probably moved back down to the Khe Sanh area from Dong Hoi in late December 1967. During February 1968, the 29th Regiment, with an estimated strength of 1,700, deployed from Khe Sanh to the Hue area. (The 325C Division is the third generation of regiments of the 325th Division).

s/ WESTMORELAND
General

OFFICIAL:

s/ DAVIDSON
J2
APPENDIX 3 TO ANNEX B (Summary of Enemy Situation)

DISPOSITION (U) (As of 29 February 1968)

Headquarters, 304th Division  (XD 8632)
9th Inf Regt, 304th Division  (XD 8327)
57th Inf Regt, 304th Division  (XD 8225)
66th Inf Regt, 304th Division  (XD 8538)
68th Arty Regt, 304th Division  (XD 8234)

Headquarters, 325C Division  (XD 7342)
95C Inf Regt, 325C Division  (XD 7950)
101D Inf Regt, 325C Division  (XD 7940)
78th Arty Regt, 325C Division  (Unlocated)

s/ WESTMORELAND
General

OFFICIAL:

s/ DAVIDSON
J2
### ENEMY FIRE POWER

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<thead>
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<th>MAX RANGE</th>
<th>NO. INF ARTY</th>
<th>TOTAL IN KHE SANH OB.</th>
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<td>122MM Howitzer</td>
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<tr>
<td>75MM Howitzer</td>
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<td>120MM Mortar</td>
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<td>82MM Mortar</td>
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<tr>
<td>60MM Mortar</td>
<td>1,675 yds</td>
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<td>75MM RR</td>
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<td>7.62 HMG</td>
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<td>122MM Rocket</td>
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<tr>
<td>102MM Rocket</td>
<td>5,500 yds</td>
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</tbody>
</table>

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s/ WESTMORELAND
General

OFFICIAL:

s/ DAVIDSON
J2
ENEMY LOGISTICS AND LINES OF COMMUNICATIONS

1. Logistical infiltration routes through the Lao Panhandle and across the DMZ are maintained to serve the Khe Sanh area. Extensive movement of supplies has been noted in the Lao Panhandle while the DMZ route is less active.

2. The increased build-up of supplies in Laos for use by units in the Khe Sanh area probably began in November 1967, following the southwest monsoon, when an increased volume of traffic was reported. From November through January a large volume of traffic was observed moving into the vicinity of Base Area 604 near Tchepone. During these months 2,021 vehicles were reported by ground and aerial observers moving south on Route 911 toward the base area. Traffic on Route 9 moving east from the base area to the South Vietnam border steadily increased from November through January. During November, 52 vehicles were reported on this route by aerial observers. In December, 62 vehicles were reported while 97 vehicles were reported in January. From 1 to 8 February, 100 vehicles were reported. Route 9 was one of the routes probably used to infiltrate supplies into the Khe Sanh area. Traffic was observed turning north from Route 9 to Route 92B and also into Route 92C. A new road has been constructed east from Route 92B at XD 530492. In January there were indications of traffic movement east along this road to the South Vietnam border. Also in January a new motorable road, leading east from Route 92C at XD 592244, appeared to be carrying heavy vehicular traffic. These two new roads, plus Route 9, probably carried the bulk of the supplies destined for enemy units in the Khe Sanh area.

3. Three transshipment points have been detected on the Xe Pon River at the Lao/SVN border. It is possible that the Xe Pon River, parallel to Route 9 and navigable the year around, is also used in the movement of supplies toward Khe Sanh. Supplies could also be provided by porter groups moving along the extensive trail network from the Lao/SVN border.

4. There are two possible storage areas in Laos, near the SVN border. One possible storage area is in the Ban But-Ban Na-Ta Tyarai area, in the vicinity of the new route east of Route 92B. This area is approximately 9 km square and is located 4 to 5 km from the Lao/SVN border. A second possible storage area is located approximately 6 km west of the border and 11 to 12 km east of route 92C in the vicinity of the new road leading east from
APPENDIX 5 to ANNEX B (Summary of Enemy Situation)

Route 92C. Both storage areas, in addition to Base Area 512, are possible supply points for units to the Khe Sanh area.

5. In late January, the 325C Division Rear Service supply dumps were reportedly located about 25 km northwest of the Khe Sanh in the vicinity of Sa Mua (XD 90573). Large amounts of ammunition reportedly were stored in one of the supply dumps.

6. There is little firm evidence indicating routes used to infiltrate supplies across the DMZ. One indicated route originates in NVN in the vicinity of Route 1A (YD 028999), and generally runs in a southwesterly direction across the central DMZ into South Vietnam. This route is not believed to be motorable south of the DMZ but is used for personnel infiltration and probably for supply infiltration. During December and January, there were extensive truck movements in the Bat Lake area (XE7503) in North Vietnam, about 35 km north of the Ben Hai River. Activity in this area indicated the enemy was stockpiling supplies. North Vietnam could have moved supplies from this area to the DMZ with relative ease through the use of Routes 103A, 103B, 1032, 102B, and 92A, and then by porter groups into South Vietnam.

7. While the enemy LOCs are vulnerable to air interdiction, he is able to use them in fulfilling his daily minimum logistical requirements within South Vietnam. An intensive air interdiction campaign is currently underway to deny the enemy the full use of the LOCs in the DMZ area and in the Lao Panhandle. This action can be expected to take a high toll of the supplies being moved into South Vietnam and may be a decisive factor in limiting the number of troops the enemy logistical system supports. However, the enemy apparently is willing to pay this high price and all indications are that he is currently meeting his minimum needs in South Vietnam. The following estimated logistical requirements for one month are based on a level of combat of one day in 30.

<table>
<thead>
<tr>
<th>325C NVA Division</th>
<th>304th NVA Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>313.50</td>
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<td>Class II &amp; IV</td>
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<td>Class I</td>
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<td>Class II &amp; IV</td>
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<td><strong>Class V</strong></td>
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<td>TOTAL</td>
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</table>

* Fair wear and tear on weapons and equipment.
** Requirements are based on the presence of an artillery regiment, with
APPENDIX 5 TO ANNEX B (Summary of Enemy Situation)

Expenditure equal to the average for the artillery regiments located in the DMZ during the period September through December 1967.

s/ WESTMORELAND
General

OFFICIAL:

s/ DAVIDSON
J2
REINFORCEMENT CAPABILITY

1. Elements of three enemy divisions whose combined strength totals an estimated 12,000 to 15,000 men are located in Military Region 4. The 324th Division (Garrison), located over 200 miles north of Khe Sanh in the An Son area of Nghe An Province, has an estimated strength of 2,000 and would require two to 12 days to close Khe' Sanh. The 325th Division (Garrison) with an estimated strength of 2,000 is unlocated in Military Region 4. The 341st Division (minus), with possibly two regiments and an estimated strength of about 9,000, is located in the Vinh area, about 175 miles north of Khe Sanh.

2. The provision of other units for the reinforcement of the Khe Sanh area would require the movement of troops from Military Region III in North Vietnam. As a further possibility, some reinforcement/replacement personnel could be drawn from the estimated 3,500 men now utilized in the Tchepone area in a logistical/security role. The deployment of these troops to the Khe Sanh area would be at the expense of the logistical support effort and infiltration route security.

s/ WESTMORELAND

OFFICIAL:

s/ DAVIDSON

J2
APPENDIX 7 to ANNEX B (Summary of Enemy Situation)

AIR DEFENSE

AIR DEFENSE UNITS IN QUANG TRI AND THUA THIEN PROVINCES, I CTZ

The confirmed air defense order of battle for the two northern provinces of I CTZ is listed below. One air defense battalion (12-12.7/14.5 or 37mm guns) is normally organic to the infantry division while each regiment has one air defense company. While not identified in the order of battle holdings in South Vietnam at the present time, the 14th AAA Battalion has been previously identified as a subordinate element of the 304th Infantry Division. The 14th AAA Battalion probably was deployed to the Khe Sanh area along with the other elements of the 304th Division.

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<td>325C Division</td>
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<td>YD 5119 Thua Thien</td>
<td>12.7mm HMG</td>
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</table>

s/ WESTMORELAND
General

OFFICIAL:

s/ DAVIDSON
J2
APPENDIX 8 to ANNEX B (Summary of Enemy Situation)

ARMOR CAPABILITY

1. The NVA has an Armor Command with two subordinate regiments: 202nd and 203rd. Optimum strengths are estimated at 1,000 men per regiment. Current estimates of the NVN armor inventory are 20 BA-64, 40-60 BTR-40, 24 SU 76, 190 T-34/54, and 70 PT-76. Since 6 Oct, there have been no confirmed indications of armored vehicles being shipped to NVN. Regarding equipment capability, the T-54, with a 100-mm gun, has a short range infrared capability for the driver only. The T-34 has an 85mm gun, and the PT-76 is equipped with a 76mm gun. Neither are known to be equipped with infrared, though it could be installed. There is no known flamethrower capability.

2. The attack against Lang Vei by PT-76 tanks was the first use of armor by NVA forces in SVN. However, seven armored vehicles were tentatively identified in the DMZ area as early as May 1967. These were suspected to be the SU-76. Photography of 8 Aug indicated possibly seven PT-76 tanks north of the Ben Hai in the eastern DMZ area. In the past three weeks, aerial observers and photo readout have indicated tank type vehicles in the Lao Panhandle adjacent to Lang Vei.

3. There has been increased truck traffic in NVN and visual sighting of possible tractor trailer type equipment moving south near Hanoi, indicating possible armor transport.

4. Terrain generally limits armor incursion into the DMZ area to approaches from the west near Khe Sanh. Such avenues are narrow and channel movement in many areas. In the eastern DMZ, the Ben Hai River forms an obstacle for the medium tank, though using snorkel techniques, the tanks can cross the river in a few locations north of Cam Lo and could ford the river from a position north of Camp Carroll to the west. The PT-76 can cross the Ben Hai at nearly any point. However, soil trafficability in the eastern DMZ limits armored movement to roads. The enemy would need considerable engineer support if he were to deploy armor in the eastern DMZ.

5. In summary, the NVA has deployed PT-76 tanks to the DMZ and possibly medium tanks. The enemy could use armor but he would be limited by his logistical capability and terrain. Figure 1 shows the area which is compatible for tank operations.

FIGURE: Fig 1: Trace of Tank Operation Area.

OFFICIAL:

s/WESTMORELAND
General

s/ DAVIDSON, J2

B-8-1
NOTE: Areas within crosshatching are compatible with tank operations.

SCALE
1:250,000
APPENDIX 9 to ANNEX B (Summary of Enemy Situation)

WEATHER

The following is the climatological estimate for Khe Sanh, RVN.

This estimate indicates that flying weather conditions are poor during the northeast monsoon and better during the southwest monsoon. Bad weather will probably preclude extensive friendly flight operations and hinder artillery target acquisition, observed fire, movement, and resupply through the middle of April when the dry season sets in.

Climatological estimate charts follow.

s/ WESTMORELAND
General

OFFICIAL:

s/ DAVIDSON
J2
# Khe Sanh Revised Climatological Estimate

## Number of Days Ceiling Less than 1,000 Feet and/or Visibility Less than 2 1/2 Miles

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## Number of Days Ceiling Less than 5,000 Feet and/or Visibility Less than 6 Miles

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## Number of Days Visibility Less than 1 1/4 Miles - Khe Sanh

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**NUMBER OF DAYS TOTAL CLOUD AMOUNT 0 TO 2/8 COVERAGE**

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**NUMBER OF DAYS TOTAL CLOUD AMOUNT 6/8 TO 8/8 COVERAGE**

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**KHE SANH REVISED CLIMATOLOGICAL ESTIMATE**

**NUMBER OF DAYS VISIBILITY LESS THAN 6 MILES - KHE SANH**

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**MEAN RAINFALL DATA**

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*Inches*
1. At the present time there are no known aircraft maintained by the North Vietnamese in Route Package One or jet capable airfields south of the Hanoi/Haiphong complex to which aircraft could be deployed. All of the combat capable jet aircraft in the inventory possess the capability of reaching the Khe Sanh area and engaging in combat operations under varying profiles. Provided the aircraft based in southern China stage through Hanoi, the North Vietnamese Air Force has the capability to attack in the Khe Sanh area with 120 jet fighters and 8 light jet bombers. To date, the North Vietnamese tactical jet aircraft have not been known to range any further south than Thanh Hoa. The enemy has the capability of launching hit and run raids in the Khe Sanh area and of providing some very limited air support to his ground forces there. With his present forces, however, he lacks the ability of sustaining his air presence in the Khe Sanh area or of gaining air superiority.

2. The current air order of battle for combat operational aircraft is as follows:

**FIGHTERS**

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<th>Type</th>
<th>Rate/DAY</th>
<th>No. of A/C</th>
<th>Sorties/DAY</th>
<th>Time on Station</th>
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<td>4</td>
<td>100</td>
<td>400</td>
<td>.7 hrs</td>
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<td>MIG-21</td>
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<tr>
<td>IL-28</td>
<td>3.2</td>
<td>8</td>
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<td>1.2 hrs</td>
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**LOCATION**

- 9 NVN
- 8 NVN
- 91 Nanning and Yunnani, China
- 12 Yunnani, China
- 8 Yunnani, China

3. The serviceability and operational rates of aircraft are as indicated below. These rates do not include rate reduction due to friendly action, possible sub-standard maintenance capability, and weather, any of which would lower the stated rates/total sorties per day.

4. The enemy air threat is indicated on the four attached charts. The charts consider that the enemy would launch and recover their aircraft in the Hanoi/Haiphong area.
Appendix 10 to ANNEX B (Summary of Enemy Situation)

5. The characteristics and performance capabilities of the aircraft are as follows:

a. MIG-15 (single seat, swept-wing, turbojet day interceptor)

- Maximum speed at sea level: 585 kts
- Maximum speed at 50,000 ft: 500 kts
- Combat ceiling (no external fuel): 51,100 ft

Armament:
- Guns: 2 x 23mm, 2 x 37mm
- Air-to-air rockets
- 2 x 250 lb bombs

Combat radius (various profiles):
- 1 x 550 lb bomb: 230 NM
- Guns (HI-LO-HI): 360 NM
- Guns (HI-HI-HI): 575 NM

b. MIG-17 (Model C, D, single seat, swept-wing, turbojet day interceptor)

- Maximum speed at sea level: 620 kts
- Maximum speed at 50,000 ft: 550 kts
- Combat ceiling: 54,400 ft

Armament:
- Guns: 1 x 37mm, 2 x 23mm
- Air-to-air rockets
- Air-to-air missiles (D Model only)
- 2 x 500 lb bombs: 80 NM

Combat radius (various profiles):
- Guns (HI-LO-HI): 320 NM
- Air-to-air missiles: 540 NM

c. MIG-21 (single place, delta wing, turbojet fighter)

- Maximum speed (kts)/altitude (ft): 1,150/40,000
- Maximum speed at 50,000 ft: 1,150 kts
- Combat ceiling: 60,500 ft

Armament:
- Guns: 2 x 30mm, 1 x 30mm
- Air-to-air rockets
- Air-to-air missiles (C, E - 2 Atoll; D - 2 Alkali or 2 Atoll)
- 2 x 550 lb bombs: 390 NM

Combat radius (various profiles):
- 2 x 550 lb bombs (HI-LO-HI): 390 NM
- Air-to-air missiles (HI-HI-HI): 470 NM
APPENDIX 10 to ANNEX B (Summary of Enemy Situation)

d. IL-28 (Twin-jet light bomber)

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<td>Maximum speed at optimum altitude</td>
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<td>Target speed at target altitude</td>
<td>410 kts/34,800 ft</td>
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<tr>
<td>Guns - 4 x 13mm</td>
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<tr>
<td>Bombs - 6,600 lbs.</td>
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<tr>
<td>Combat radius (various profiles)</td>
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<td>(LO-LO-LO)</td>
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<tr>
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<td>(LO-LO-HI)</td>
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<td>(HI-HI-HI)</td>
<td>550 NM</td>
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s/ WESTMORELAND
General

OFFICIAL:

s/ DAVIDSON
J2

Figures (4)
MIG 15 Profile
MIG 17 Profile
MIG 21 Profile
IL 28 Profile
FIGURE 1 MIG-15 Profile

- 1 - 550 lb bomb
  High-Low-High

- Guns only
  High-Low-High

- Hoch-High-High

- SAIGON

- PHU BAI

- DANANG

- MIA TRANG

Figure 1
FIGURE 3
MIG 21 Profile

DONG HOI

PHU BAI

DANANG

2 - 550 lb bombs
High-low-high

2 AAMS
High-High-High

NHA TRANG

SAIGON

Figure 3
FIGURE 4 - IL-28 Profile

DONG HOI

PHU BAI

DANANG

6,600 lb load
Low-Low-High

6,600 lb load
High-Low-High

NHA TRANG

SAIGON
1. **PROBLEM.** To make a comparison from the operational standpoint between the Battle of Dien Bien Phu (1954) and the situation at Khe Sanh (1967-1968).

2. **FACTS BEARING ON THE PROBLEM.**
   
a. There is presently one US reinforced regiment consisting of four infantry battalions located in the Khe Sanh area of operations (Task Organization Appendix I).
   
b. The Khe Sanh area of operations has eighteen 105mm howitzers, six 155mm howitzers, and six 4.2mm mortars.
   
c. The Khe Sanh area can be supported by sixteen 175mm guns from the Rock Pile and Camp Carroll.
   
d. Air support has an all weather capability.
   
e. The Khe Sanh area can be supported logistically with or without the runway. (Annex F)

3. **DISCUSSION:**

   a. In evaluation and comparing the conditions which existed at Dien Bien Phu and existing conditions at Khe Sanh there are four major differences.

   (1) **Air Support.** The French had very limited air support. In the present situation there are very sophisticated heavily armed aircraft with an all weather capability in support of the Khe Sanh area. Very significant are the attack bomber capability and the B-52's with a wide range of armament. Every facet of our air capability has increased many fold over the capabilities of the French in Dien Bien Phu.

   (2) **Artillery.** There is less artillery at Khe Sanh than at Dien Bien Phu; however, the force relationship between artillery and infantry is normal. There are 175mm guns located outside the Khe Sanh area which have the capability of interdiction of enemy reserves and providing counter battery fire. It should be noted that the 175mm guns are not in the Khe Sanh defense area and will provide supporting fires in the event that the artillery in the Khe Sanh is neutralized.

   (3) **Logistics**

   (a) The US capability of logistically supporting Khe Sanh has greatly increased over that of the French. This has been accomplished in part by the increased load capability of the C-123 and C-130 which have a low altitude delivery technique and improved air drop
techniques. Our helicopter resupply technique reduces the need for a runway.

(b) The air LOC to Dien Bien Phu was 190 miles as compared to 26 miles at Khe Sanh. We have the capability to establish a ground LOC providing a major force is used for clearing and securing route 9. The size force needed to secure route 9 will be based on the determination of the enemy to keep it closed. Prior to the enemy build-up in the Khe Sanh area, III MAF had plans to employ initially three battalions to open route 9 and one battalion to secure it.

(4) Counterattack and Additional Support. The US has the capability to employ tactical forces in an assault against the enemy anywhere in the Khe Sanh area using Air Mobile Forces. This force will include organic supporting artillery. At the present time, the 1st Air Cav Div has a "Be Prepared" mission to counterattack in the Khe Sanh area. Antipersonnel ammunition such as Bee Hive and improved fragmentation will be a deterrent against mass wave attacks.

b. There is presently a policy in the Khe Sanh area to limit patrolling to within 1,000 meters of friendly positions. The French at Dien Bien Phu failed to patrol forward of their positions during the last few months. The Viet Minh capitalized on this tactical error by infiltrating and massing his troops within 200 meters of the French positions. The Viet Minh actively patrolled and were able to reconnoiter French positions and sometimes cut his tactical wire.

c. There are certain disadvantages that faced the French that we have not overcome. The most significant are:

(1) Our inability to suppress antiaircraft (Annex D).

(2) Lack of a highly reliable target acquisition system (Annex D).

(3) Lack of patrolling the high ground.

4. CONCLUSIONS:

a. The forces are employed in the best defensive positions to defend the airfield against enemy attack (Disposition, Appendix).

b. The limited long range patrolling will allow the enemy to deploy his forces 1,000 meters from friendly positions. Patrolling within the 1,000 meters from friendly positions must be carefully planned and executed in an aggressive manner.

s/ WESTMORELAND
General

OFFICIAL:

s/ BROWNFIELD
J3

APPENDIX - I. Task Organization and Disposition
Appendix to Annex C - Friendly Operations

TASK ORGANIZATIONS AND DISPOSITIONS

The following constitute the best known positions of allied elements as of 20 February 1968:

Headquarters, 26th Marines (XD 850417)

1st Bn, 26th Marines (XD 850417)
   Co E, 1st Bn, 26th Marines (XD 803442)

2d Bn, 26th Marines (XD 820448)
   Co F, 2nd Bn, 26th Marines (XD 821431)
   Co G, 2nd Bn, 26th Marines (XD 815459)

3d Bn, 26th Marines (XD 850417)
   Co I, 3rd Bn, 26th Marines (XD 777438)

1st Bn, 9th Marines (XD 850417)
   Co C, 1st Bn, 9th Marines (XD 821417)

37th ARVN Ranger Bn (XD 850416)

1st Bn, 13th Arty (XD 840410)

   A Btry, 1st Bn, 13th Arty (XD 843417)
   B Btry, 1st Bn, 13th Arty (XD 845416)
   C Btry, 1st Bn, 13th Arty (XD 852415)
   C Btry (-), 1st Bn, 13th Arty (XD 777435)
   W Btry, 1st Bn, 13th Arty (XD 843417)

   W Btry (-), 1st Bn, 13th Arty (XD 803442 & XD 852415)

   Btry, 65th Arty (XD 845416)

   Btry (-), 65th Arty (XD 852415)

s/ WESTMORELAND
General

OFFICIAL:

s/BROWNFIELD
J3

C-3
ANNEX D to STRATEGIC/TACTICAL STUDY

FIREPOWER, ARTILLERY

1. PROBLEM. To determine the artillery environment at Khe Sanh and to compare it with that existing at Dien Bien Phu.

2. FACTS BEARING ON THE PROBLEM.

a. Relative artillery firepower. Relative Artillery strength (US and NVA) as of 8 February 1968 is as shown in Appendix.

   (1) Enemy capability. Enemy's strength is an estimate only based on TOE artillery strength of the two NVA divisions known to be located in the Khe Sanh area. In addition, the NVA has the capability of reinforcing his currently available firepower by moving 122 or 140 mm rockets and 152mm gun-howitzers into the Khe Sanh area.

   (2) Friendly capability. Additional firepower which can augment friendly artillery at Khe Sanh in direct fire missions include: 5 tanks with 90mm guns, 10 ONTOS with 6-106mm recoilless rifles each, 16 individual 106mm recoilless rifles, 2 self-propelled twin 40mm anti-aircraft automatic weapons, and 2 truck mounted quad .50 caliber anti-aircraft machine guns, with the anti-aircraft weapons capable of firing ground support as well as anti-aircraft missions.

b. Target Acquisition.

   (1) Enemy capability. Although current J2 estimates do not indicate whether or not the enemy controls Hills 1015, 843, 678, 527, 689, and 926, since friendly forces do not, it must be assumed that the enemy does. Possession of these hills gives him direct observation into the main base camp and onto the airstrip at Khe Sanh.

   (2) Friendly capability. There appear to be sufficient technical target acquisition means presently available on the ground at Khe Sanh to include: 1 counter-mortar radar (AN/MPQ-4), 10 antipersonnel radars (4 AN/PPS-5 and 6 AN/PPS-6), 10 night observation devices, 106 seismic intrusion detection devices, 120 acoustic intrusion detection devices, two search lights (AN/MSS-3), one AN/TPQ-10 radar to adjust tactical air strikes on target, and ground-based navigational aids. "DYE MARKER" sensors, photographic and aerial reconnaissance and "SLAR" are all airborne target acquisition means which have been used extensively and successfully at Khe Sanh. Although friendly patrolling is being conducted at Khe Sanh, it is limited to a range of 1000 meters from camp because of limited forces available with which to form a reaction force in case a patrol is ambushed.
c. Counterbattery/countermortar.

(1) Enemy capability:

(a) The enemy presently probably controls three dominant terrain features within heavy mortar range of the airfield: Hills 1015, 689 and 527. The enemy has an estimated 13 times as many heavy mortars at Khe Sanh as do we.

(b) He presently probably controls the above dominant terrain features plus three others (Hills 926, 843, and 678), all within light artillery range of the airfield.

(c) According to the latest aerial photos of the Khe Sanh defended area available to this committee, taken 28 December 1967, friendly artillery and mortar positions, at least in the main base camp area, were not covered. Reports reaching this committee indicate that these weapons still lack overhead cover.

(2) Friendly capability. This depends on the effectiveness of our target acquisition efforts and the ability of our own counter-battery/countermortar means to withstand bombardment. As far as ground observation into the enemy area is concerned, US forces at Khe Sanh are presently limited to Hills 881 N and S, 861 and 950, which afford some observation onto likely avenues of enemy approach.

d. Air defense.

(1) Enemy capability. As shown in Appendix, estimated enemy air defense capabilities at Khe Sanh consist of 54 12.7mm anti-aircraft machine guns. The enemy also has the capability of introducing larger caliber AA weapons, particularly 14.5mm machine guns and 37mm guns, and possibly SA-2 surface-to-air missiles.

(2) The ground-based friendly air defense capability consists of 2 twin 40mm M-42 "Dusters" and 2 truck mounted Quad .50 caliber machine guns. The HAWK units at Da Nang are too remote to be able to participate in any air battle over Khe Sanh, but the six F-102's stationed at Da Nang have a permanent air defense mission and could be used at Khe Sanh.

3. DISCUSSION.

a. Relative artillery firepower.
(1) Enemy capability. The NVA probably has about three times as many artillery and heavy mortar pieces, combined, at Khe Sanh as does the US. Currently intelligence estimates indicate no presence, however, of medium to heavy artillery, although 152mm rounds were reportedly fired (but not confirmed) at Khe Sanh on 21 December 1967 and on 7 February 1968. In addition, 122mm rockets have been fired on Khe Sanh on several occasions. The enemy also may have the capability of employing FROG self-propelled surface-to-surface rockets from bases in Laos.

(2) Friendly capability. The supported friendly force at Khe Sanh has its normal artillery strength plus supporting fires from the 175mm guns sited at Camp Carroll and the Rock Pile. Theoretically, then, the supported force should have ample supporting artillery. Also, the US possession of improved fragmentation artillery ammunition at Khe Sanh gives it a vastly increased anti-personnel fire power capability over conventional high explosive rounds.

b. Target acquisition

(1) Enemy capability. The enemy target acquisition capability at Khe Sanh should be adequate to his needs because:

(a) Our main defensive area is largely exposed.

(b) The enemy's probable control of several dominant terrain features as stated in para 2b(1) above.

(2) Friendly capability: In addition to the target acquisition means already in use at Khe Sanh, other means to I Corps area might also be utilized there. These include the following:

(a) A GR-8 counterbattery sound ranging system is now deployed along an 8 kilometer line between Con Thien and Gio Linh. Since the long dimension of the Khe Sanh defended area is about 8 kilometers, the GR-8 could conceivably be deployed at Khe Sanh. However, due to the need for an observer to be positioned in front of the microphone array in order to manually energize the microphone, redeployment to Khe Sanh may not be feasible.

(b) Four AN/TPS-25 moving target radars have been requested by III MAF, the requisition approved by CINCPAC on 18 January 1968, and are due in-country at any time, although no due date has yet been received by this headquarters. This radar has the capability of detecting a moving vehicle at 18 kilometers, and moving personnel at 4.5
kilometers. One or more of these radar could conceivably be utilized at Khe Sanh.

(c) One TNS-9 counterbattery sound-ranging set is now ready for shipment from CONUS to Vietnam and is to be shipped as soon as present emergency conditions abate. This set has been earmarked for testing at Dong Ha by the US Army 108th FA Group, assisted by technical personnel from CONUS. This device is an improvement over the GR-8, in that no observer is needed to manually energize the set. A computer, which can also be used with the TNS-9 system, is due in-country in March or April, and will permit the system to discriminate against decoy and false echoes. This will be a prototype only, however, and probably will need a considerable period of testing and evaluation prior to being deployed to a forward combat area such as Khe Sanh.

(d) One of two existing AN/UVS-1 (VATLS) systems is now being tested at Dong Ha. The test started on 23 December 1967 and is to run 180 days. The remaining system is due in-country in March or April 1968 and will have an IR capability, whereas the set now in-country does not. The AN/UVS-1, consists of a UH-IH helicopter carrying a laser-ranging device which measures range, azimuth, and dip angle from helicopter to target. This data is electronically transmitted from the helicopter to a ground-based Data Central. This central computes target azimuth, range and elevation and transmits this data electronically to a Fire Direction Center. Maximum system error is 35 meters at maximum system range of 35 kilometers. The whole system is highly portable. The entire ground-based Data Central can be transported by a 3/4 ton-ton truck and both the airborne and ground-based elements set up within one hour. This system too, however, is still in the prototype stage, and does not appear to be sufficiently tested at this time to deploy it at Khe Sanh.

c. Counterbattery/Countermortar.

(1) Enemy capability. In addition to the facts enumerated in para 2c(1) above, the possession of hill 1015 (3000 m. north of the air strip) permits the enemy to position direct fire weapons on the forward slope of the hill. Despite the difficult, rocky nature of the terrain on the forward slope, the enemy could conceivably dismantle artillery pieces, man-carry the component parts into position at night, and build covered, direct fire positions with the available rocks.

(2) Friendly capability. Although Hills 881 North and South, 861 and 950 provide observation over most of the likely avenues of enemy approach, they provide little or no observation onto the rear slopes of the dominant terrain features probably in enemy hands, where he would be most likely to deploy his heavy mortars and artillery. The AN-MPQ-4 counter-mortar radar at Khe Sanh should be of considerable help.
in pinpointing enemy mortar positions, however, and the other reconnaissance means described in paragraph 3b above, should help in locating mortar and artillery pieces. In addition, the tank guns, ONTOS, and individual 106mm recoilless rifles, if well-positioned and covered, could provide excellent counterbattery fire against enemy direct fire artillery.

d. Air Defense.

(1) Enemy capability. Enemy AA weapons present a significant threat to both cargo aircraft serving the Khe Sanh area and helicopters flying throughout the area. For example, one prescribed landing pattern for cargo aircraft at the Khe Sanh airstrip is to circle south of the strip at an altitude of about 1000 feet above ground level and approach from the NW. Cargo aircraft, while landing by this pattern, have been fired upon from the vicinity of Thong Van (XD 8538), and at least one aircraft was actually hit. At this altitude aircraft are well within effective range (1000m) of the enemy's 12.7mm antiaircraft machine guns if deployed directly or nearly directly below the flight pattern. In addition, GCA landing procedures dictate a very low approach along an azimuth of 284 degrees. Under GCA conditions, aircraft would come within range of these weapons at a point in excess of 14 nautical miles out from the airstrip, and would remain within range almost continuously all the way in to the airstrip. It must be assumed that the enemy is already aware of the GCA azimuth and, if so, will certainly position his AA weapons along it. It is imperative, therefore, that fire planning include suppressive fires in support of air LOC.

(2) Friendly Capability: Despite the meager friendly ground-based resources, if an enemy air threat did develop, a number of the available 1040 tactical fighter sorties could be redirected to air defense missions at Khe Sanh.

e. Fire support coordination:

(1) Enemy capability:

(a) Enemy fire support coordination at Khe Sanh is probably adequate for his offensive needs because of three factors:

1. Improved communications particularly as a result of captured US radios.

2. Good target acquisition, due to his habitually detailed, painstaking intelligence effort and to our rather exposed position at Khe Sanh.
3. The enemy penchant for long, detailed planning, including fire planning, prior to launching an attack.

(b) Enemy fire support coordination is probably less than adequate to cope with a vigorously executed surprise counter-attack by friendly forces because of:

1. The US capability for rapid action and reaction.

2. The enemy's tendency toward slow reaction to surprise situations.

(2) Friendly capability. Friendly fire coordination should be adequate in both defensive and counter-offensive situations because of our extensive and reliable communications systems and long years of experience in the fire coordination field.

4. CONCLUSIONS:

a. Comparison in firepower between Dien Bien Phu and Khe Sanh can best be shown by comparing the following factors individually:

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>DIEN BIEN PHU VM/FR</th>
<th>KHE SANH NVA/US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available artillery and heavy mortars:</td>
<td>Good/Poor</td>
<td>Good/Fair</td>
</tr>
<tr>
<td>Fire support coordination:</td>
<td>Fair/Poor</td>
<td>Fair/Good</td>
</tr>
<tr>
<td>Target acquisition:</td>
<td>Good/Poor</td>
<td>Good/ ?</td>
</tr>
<tr>
<td>Fire position hardening:</td>
<td>Good/Poor</td>
<td>Probably Good/Fai</td>
</tr>
<tr>
<td>Observation and firing positions for direct fire:</td>
<td>Good/Poor</td>
<td>Good/Fair</td>
</tr>
<tr>
<td>Counterbattery and countermortar capability:</td>
<td>Good/Poor</td>
<td>Good/ ?</td>
</tr>
<tr>
<td>Air defense capability:</td>
<td>Good/Poor</td>
<td>Fair/Good</td>
</tr>
</tbody>
</table>

b. The degree of effectiveness of friendly target acquisition and counterbattery/countermortar efforts at Khe Sanh is not known at this time. There appear to be several limitations in their effectiveness, as indicated by the recent destruction of C-130 acft at Khe Sanh, as follows:
ANNEX D to STRATEGIC/TACTICAL STUDY

(1) The generally excellent cover and concealment existing in the area immediately surrounding the Khe Sanh defended area.

(2) The enemy's inherent "foot mobility" as well as his talent and perseverance in making maximum use of even limited cover and concealment.

(3) The relatively untested and unevaluated state of the more exotic target acquisition devices described above.

c. Friendly Vulnerabilities. Firepower areas in which we are or might be, weak are the following:

(1) Target acquisition.

(2) Counterbattery/countermortar capability.

(3) Firing position hardening.

(4) Friendly aircraft vulnerability to enemy's ground-based air defense weapons.

s/ WESTMORELAND
General

OFFICIAL:

s/ BROWNFIELD
J3

Appendix
Firepower Artillery (U)
# APPENDIX to ANNEX D - FIREPOWER ARTILLERY

## RELATIVE ARTILLERY STRENGTH

### 1. FIELD ARTILLERY

<table>
<thead>
<tr>
<th>Heavy:</th>
<th>NVA</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-</td>
<td>16 (175mm)*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medium:</th>
<th>NVA</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-</td>
<td>6 (155mm)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Light:</th>
<th>NVA</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>48 (23x122mm/105mm)</td>
<td></td>
<td>18 (105mm)</td>
</tr>
<tr>
<td>(24x75mm)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2. HEAVY MORTARS

<table>
<thead>
<tr>
<th>NVA</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>78 (120mm)</td>
<td>6 (4.2 in.)</td>
</tr>
</tbody>
</table>

### 3. ROCKET LAUNCHERS

<table>
<thead>
<tr>
<th>NVA</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown quantity**</td>
<td></td>
</tr>
<tr>
<td>(105/122mm)</td>
<td></td>
</tr>
</tbody>
</table>

### 4. AIR DEFENSE ARTILLERY

<table>
<thead>
<tr>
<th>NVA</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>52 (12.7mm)</td>
<td>4 (2xtwin 40mm guns SP; 2xquad .50 cal. MG's)</td>
</tr>
</tbody>
</table>

---

* Reinforcing fires from "Rock Pile" and Camp Carroll.

** Although there are no organic rocket launchers in the standard NVA Infantry Division, both 105mm and 122mm rockets have been fired into the Khe Sanh defended area.

---

s/ WESTMORELAND
General

OFFICIAL:

s/ BROWNFIELD
J3
ANNEX E to STRATEGIC/TACTICAL STUDY (U)

AIR FIREPOWER (U)

1. **Tactical Fighter Support:**

   a. **Mission:** To provide the ground commander at Khe Sanh with responsive and effective fire support to destroy/neutralize enemy forces, base camps, stores, gun positions and LOC's.

   b. **Capabilities:**

      (1) **Current Support:**

         (a) In support of Operation Niagara during the period 23 January - 8 February, the following tactical fighter sorties were flown.

         | USAF     | USMC    | NAVY   | TOTAL  |
         |----------|---------|--------|--------|
         | 2945     | 1392    | 1230   | 5567   |

         (Approximately 60% of these radar directed)

         (b) Reported BDA from these sorties is as follows:

         | 7AF      | Navy/USMC | TOTAL |
         |----------|-----------|-------|
         | Secondary explosions 320 126 446 |
         | Secondary fires 358 122 580 |
         | Killed by air 223 102 325 |
         | Trucks destroyed/damaged 59/11 14/0 73/11 |
         | Guns destroyed/damaged 17/4 35/6 52/16 |
         | Bunkers destroyed/damaged 43/4 183/11 226/15 |
         | Structures destroyed/damaged 193/35 345/66 152/31 |
         | Tanks destroyed/damaged 3/0 1/3 4/3 |

      (2) **Capability for Expanded Support:**

         (a) Under visual delivery conditions, it is estimated that 1152 tactical fighter sorties could be flown by eight aircraft flight elements in the Khe Sanh area during a 24 hour period. This sortie rate is based largely on a one pass salvo and is not the most efficient delivery method. A more effective use of tactical fighters would be to employ two flights of aircraft within fifteen minute spacing between flights during daylight hours.
and twenty minute spacing during darkness. These sorties would be flown as targets develop, however there are some limitations on the number of sorties which can be flown due to problems of command and control of airspace over Khe Sanh. Under emergency conditions, an increased sortie rate could be directed into the area with expanded command and control resources. The amount of additional support required would be conditioned by the ground order of battle existing during a given situation. A predicted sortie rate within the present command and control structure would be 672 sorties every 24 hours, based upon the above spacing. This effort would have to be coordinated with the control agencies of other supporting arms that could be involved in the area. The total number of sorties would be reduced if artillery fire prevented strikes during significant periods of the day.

c. **Problem areas:** Command and control of aircraft becomes a greater problem as sorties increase. At the present sortie rate of approximately 377/day in the Khe Sanh area, the problem is alleviated by the establishment of ingress and egress corridors, holding stacks/orbits, proper briefings, and crew discipline. With an expanded number of sorties the same factors would apply to an even greater degree. Also, the boundaries of the air support area limit the number of air controllers that can be utilized safely and effectively. In addition, the tri-service command and control structure currently followed in SEA results in a division of the forces and air effort applied to common objectives. The fracturing of total resources becomes increasingly aggravated when air/ground fire throughout service component areas of responsibility are improperly coordinated, resulting in duplication of effort, confusion and loss of mission effectiveness.

d. **Conclusion:** Tactical fighter support will be influenced by command and control of aircraft operating in a restricted airspace which is further compounded by rugged mountainous terrain. These problems can be alleviated by preplanning and scheduling to accommodate varying weather conditions/restictions to maximize operational employment. A coordinated employment of fighters, gunships, cargo aircraft, reconnaissance aircraft, bombers, and artillery must be maintained.

2. **Arc Light Support:**

   a. Mission: To deliver heavy air ordnance against enemy troop concentrations, stores and LOCs in support of operations affecting Khe Sanh.
b. Capabilities: B-52 strikes can be sustained at 48 sorties per day averaging loads of 50,000 pounds per sortie and can be conducted within 3,000 meters of friendly forces. During the first 16 days of Operation Niagara, B-52’s flew 570 sorties. BDA, though not complete, revealed 409 secondary explosions and 69 secondary fires.

c. Conclusions: B-52’s are capable of delivering 1200 tons of bombs per day in the Khe Sanh area and BDA indicates that they have been successful in obtaining secondary explosions and fires. Weather is not a factor in the Arc Light Operations and the enemy usually has no warning of the impending strike.

3. Air Reconnaissance:

a. Missions: To support the Khe Sanh operation by continuous day and night photo/IR coverage of preplanned pinpoint and area targets and to provide a high reaction to ABCCC requirements for pre-strike surveillance with poststrike BDA.

b. Capabilities:

(1) Visual reconnaissance.

(2) Black and White photography.

(3) Camouflage detection/color photograph.

(4) Infrared.

(5) Radio direction-finding and intelligence monitoring which provide information on unit movements and order of battle (i.e. RVN Airborne monitors listen to company and battalion site unit transmissions to obtain OB and unit location).

(6) Side Looking Airborne Radar (SLAR) which is able to detect movements of 5 KM/hour or more.

(7) Air and ground sensors to detect personnel infiltration movements.

(8) BDA for post strikes.

Since the beginning of Operation Niagara (i.e. during the period 23 Jan to 8 Feb 68), USAF reconnaissance aircraft have flown 504 reconnaissance missions plus 187 ECM and ARDF missions in Khe Sanh area. The following sightings have resulted:
ANNEX E TO STRATEGIC/TACTICAL STUDY (Ü)

<table>
<thead>
<tr>
<th>Field positions</th>
<th>9</th>
<th>Probable base camps</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>37mm AA positions</td>
<td>9</td>
<td>Bunkers</td>
<td>250</td>
</tr>
<tr>
<td>AW positions</td>
<td>66</td>
<td>Fox Holes</td>
<td>636</td>
</tr>
<tr>
<td>Mortar positions</td>
<td>39</td>
<td>POL (Drums)</td>
<td>63</td>
</tr>
<tr>
<td>Bivouac areas</td>
<td>6</td>
<td>Personnel</td>
<td>32</td>
</tr>
<tr>
<td>Storage areas</td>
<td>7</td>
<td>Unidentified weapons</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>positions</td>
<td>2</td>
</tr>
<tr>
<td>Caves</td>
<td>28</td>
<td>Trucks</td>
<td>4</td>
</tr>
<tr>
<td>Personnel areas</td>
<td>2</td>
<td>Truck parks</td>
<td>1</td>
</tr>
</tbody>
</table>

4. Problem areas:

   a. Terrain cover and concealment allows the enemy to deploy troops and equipment undetected. As can be seen from the above sightings, in an area where other sources estimate the deployment of four regiments, only 32 sightings of personnel in small groups have been made. Camouflaged gun positions are less difficult to spot. Trees and brush must be cut to give fields of fire and dead foliage becomes readily apparent on camouflage detection film. Also, permanent camps and elaborate defenses are detectable by standard reconnaissance procedures.

   b. Bad weather has limited the use of aerial photography. Forecast weather (see weather study) calls for gradually improving conditions from late February until June. This should afford increased photographic effectiveness.

5. Conclusions: Aerial reconnaissance of the Khe Sanh area is the most concentrated surveillance effort in or out of country at the present time. Various forms of surveillance are producing valuable intelligence. Strikes are often conducted based on this intelligence within 6 to 12 hours after the initial raw intelligence is gathered. Although it is not possible to detect the enemy's complete order of battle and his build-up of forces under the protective tree canopies in the Khe Sanh area, the extended effort by current aerial reconnaissance is producing timely, accurate, and useful intelligence.

s/ WILLIAM W. MOMYER, General, USAF
   Commander

OFFICIAL:

s/ HARRY N. PARRIS, Colonel, USAR
   OCS Plans

E-4
ANNEX F to STRATEGIC/TACTICAL STUDY

LOGISTICS AND LINES OF COMMUNICATIONS

1. PROBLEM:

To analyze the strategy and tactics employed by the Viet Minh at Dien Bien Phu and compare them with current operations at Khe Sanh with a view of anticipating North Vietnamese actions and countering his tactics.

2. FACTS BEARING ON THE PROBLEM:

a. NVN does not have an air LOC.

b. NVN does have a land LOC.

c. FWF does not have a land LOC at this time.

3. DISCUSSION:

There is some similarity of conditions between Khe Sanh and DBP. At DBP the Viet Minh had an excellent land LOC but did not have an air LOC. The French did not have a land LOC, but did possess an air LOC. During the battle at DBP the air strips were cratered and the French had to air-drop their supplies. As the French camp became smaller and the weather worsened, it became more and more difficult to drop the supplies within the French camp. A large percentage of the air dropped supplies were falling into the hands of the Viet Minh, thereby adding to their store of supplies. In addition to the difficulty of air dropping supplies to DBP the French lost a high percentage of their cargo aircraft to Gen Giap's irregular force who blew up cargo aircraft at their home base. The DBP based fighter aircraft intended for use against the Viet Minh's LOC's were destroyed and the LOC's were relatively free from interdiction.

At Khe Sanh the NVN have been moving supplies over their land LOC. It has been difficult for them as their supply lines have been interdicted by FWF aircraft. But it is safe to assume that the present force of 22,000 men have sufficient supplies to carry out an attack on Khe Sanh.

The FWF do not have a land LOC into Khe Sanh. Route 9 is open as far west as Quan Thue. From Quan Thue to Khe Sanh there are fifteen bridges that have been destroyed. Of these fifteen bridges seven can be bypassed but the other eight would have to be repaired. It is estimated that it would take an Engineer Bn 14 days to open Route 9,
providing the route was secure. Tonnages required for intensive combat
(approximately 200 S/T a day) can easily be handled over a land LOC.

The FWF air LOC is much superior to the French (Appendix). At
the present time Khe Sanh has a varied level of supply on hand. The days
of supply for Class V averages about 20 days, while Class I averages
about 15 days and Class III about 5 days. Currently, about 185 S/T are
planned to be delivered each day to maintain and raise this level. A
backlog exists of approximately 1500 S/T which is being scheduled into
Khe Sanh. The capability exists to deliver supplies even if the runway
were destroyed. Supplies can be airdropped or delivered by helicopter.
If the troops strength is increased at Khe Sanh it is possible to air
deliver up to 600 S/T per day. This capability can be maintained for
14 days, without recovering the rigging equipment. If the rigging can
be recovered this support can be provided indefinitely utilizing replace­
ment air items for those lost or destroyed through normal attrition.
(This is the maximum in-country capability at this time). Backup supplies
are being stocked in Okinawa.

4. CONCLUSIONS: While the LOC's at Dien Bien Phu and Khe Sanh
are similar, the state of the art of air delivered supplies has improved
to a point where it will be possible to continue delivery of supplies to
Khe Sanh under the most adverse conditions. This is the most expensive
delivery means utilizing valuable aircraft, manpower, and air delivery
items. From a logistical point of view, the best method for resupply of
Khe Sanh is to secure and open Route 9 for route convoy operations.

s/ WESTMORELAND
General

OFFICIAL

s/ RASMUSSEN
J4

APPENDIX
Air Logistic Support

F-2
APPENDIX to ANNEX F, Logistics and Lines of Communication

AIR LOGISTIC SUPPORT

1. **Mission:** To provide timely airlift to fulfill daily logistical requirements at Khe Sanh. The estimated number of short tons per day required based on battalions deployed is as follows:

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<tr>
<th>BATTALIONS</th>
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<tr>
<td>3</td>
<td>160</td>
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<tr>
<td>4 (present strength)</td>
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<td>5</td>
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*The 160 tons per day requirement for three battalions is based on 85 tons per day for support of regimental headquarters, and supporting units. Each additional battalion requires 25 tons per day.

2. **Capabilities:**

   a. **Past/Present Operations:** When the entire (3897') runway is available for logistic support operations, weather conditions are above minimums, and ground fires do not impede operations, Khe Sanh is being supplied with the required tonnage by a combination of C-130, C-123, and C7A aircraft using normal landing/off-load delivery. However, ramp space at Khe Sanh is limited, and at any one time only three C-130s or 4 C-123s/C7As can be handled. During times when only 2000 feet of runway have been available, daily requirements have been supplied by making maximum use of the eight C-123s from Danang. Due to frequent mortar fires against landing aircraft, Khe Sanh is presently being supplied by C-130 airdrops at the rate of ten sorties per day. Helicopters have been used extensively within their load capability for emergency medical evacuations and resupply of critical items.

   b. **Expanded Operations:**

      (1) **Landing/Off-Load System:** Using this technique with twenty minute spacing between aircraft for off-loading, seven C-130s operating from Danang could deliver approximately 540 tons of cargo per twelve hour day. Using the same criteria for C-123s, ten aircraft could deliver 216 tons, while ten C7As could deliver 108 tons. If aircraft were spaced less than twenty minutes apart, more than one aircraft would have to be off-loaded at a time. This would require the positioning of additional ground crews and equipment at Khe Sanh.

      (2) **Air Drop System:** There are sufficient parachutes and prepackaged loads to airdrop 600 short tons per day for 14 days.
order to continue at this rate, however, parachutes must be retrieved daily or other parachutes must be provided for repacking. The drop zones must be cleared of equipment by ground crews after each drop to avoid cargo damage on successive air drops.

3. PROBLEM AREAS:

a. Runway Availability: A C-130 aircraft requires 3000' of runway, while a C-123 aircraft requires 2000'. The C7A requires a runway length of 1200'. At Dien Bien Phu one of General Giap's fire acts during the siege was to interdict the runway with artillery fire. A similar attempt to interdict the runway at Khe Sanh may be expected.

b. Ground Fires: Heavy fires directed either at Khe Sanh airfield or the air approaches to the field could present a serious problem. At Dien Bien Phu the placement of AAA and field artillery was an early and essential part of Giap's plan. Should a similar tactic be used at Khe Sanh, cargo aircraft may suffer high attrition. There are several possible means of countering the AAA threat.

(1) Provide rapid and accurate target acquisition followed with suppressive counterfire.

(a) Use napalm to burn through obscuring foliage, destroying the camouflage and easing the target acquisition problem.

(b) One effective fire suppression tactic is to strike AAA emplacements with CBU munitions.

(2) Escort or CAP cargo aircraft with gunships and/or fighters.

(3) Conduct medium altitude air drops (see paragraph 4).

(4) Conduct night low altitude drops.

(5) Conduct airdrops when low ceilings exist using clouds for aircraft concealment (see paragraph 4).

c. Navigation Aids: At present Khe Sanh has facilities which permit GCA, TACAN and radio beacon approaches. In addition, a portable ILS which can be battery powered and weighs only 35 pounds, has been requisitioned as a backup for the GCA. There is a TPQ-10 radar at Khe Sanh for aircraft vectors and a SSCT 181 radar beacon, which permits homing by C-130 aircraft.
APPENDIX to ANNEX F, Logistics and Lines of Communication

d. Command and Control: Positive control and coordination between ground and air activities will have to be maintained throughout the Khe Sanh battle area. Schedules and corridors will have to be established for use by cargo aircraft. Coordination with fighter strikes and artillery fires will be essential.

4. Alternate Air Drop Methods:

a. Medium Altitude Drop System: An "Interim IFE/Night Aerial Delivery System" has been designed and tested and has accomplished drops from 2000 - 8000 feet above the ground. The system employs a radar pick-up and positioning of the delivery aircraft over drop zones. A parachute is rigged with a mechanical timer device to permit free fall, which improves the accuracy of the system by reducing the effect of the wind during descent. Supplies are released at a precomputed air release point and fall trailing a reefed parachute which provides stability. After a free drop to 500 feet altitude the parachute opens thereby exposing the air drop to minimum drift. Testing of 46 loads weighing from 500 to 2000 pounds between 200 feet and 8000 feet altitude resulted in an average miss distance of 858 feet. By using a dummy load on the first drop and adjusting subsequent releases it is expected that the system accuracy could be substantially improved.

b. GCA/Doppler Drops: The system employs a normal GCA by C-130 aircraft to position the aircraft at a point over the end of the runway and at 600' above the ground. The doppler equipment may then be used to give accurate ground speed and to compensate for drift while the aircraft is flown approximately 2000 yards to a computed air release point over the drop zone. This system was tested at Khe Sanh on 16 and 17 February and the following results were obtained: CEA for 5 drops on 16 February with visual conditions and light ground fire, 72 years; CEA for 7 drops for 17 February, instrument conditions and no ground fire, 217 yds (which does not include an extraction parachute failure that caused the load to land 2 3/4 miles from the DZ).

c. Radar Beacon Drops: Although the system is not thoroughly developed, C-130s are capable of homing on the SSCT 181 hand held, battery-powered, radar beacon. The navigator, who must be well trained in this type operation, uses the AFN 59 airborne radar set in the beacon mode to determine distance and azimuth to beacon at the drop zone. The radar beacon is in place at Khe Sanh and could provide an alternate all weather delivery method.

5. Conclusions: Resupply requirements at Khe Sanh can be accomplished under most conditions by normal airlift procedures. Should the runway be interdicted by artillery or ground fires making landing
of cargo aircraft an unacceptable risk, standard air drop procedures can be employed. If this is not feasible, modification of standard procedures may prove effective (see paragraph 6 below).

6. **Possible Tactics:**

   a. The following assumptions describe the least favorable situations:

      (1) The NVA surround Khe Sanh airfield and its approaches with AAA Weapons.

      (2) Target acquisition and counterfire directed against the enemy prove ineffective.

      (3) Fires are so intense that landing of cargo aircraft and day low altitude airdrops present an unacceptable risk.

   b. The following tactics may be used to minimize losses and increase resupply effectiveness under the adverse conditions postulated above:

      (1) **Night Low Altitude Drops.** Blacked out cargo aircraft, equipped with flash-suppressors, can use the cover of darkness to reduce vulnerability to AAA fire. Coordination with ground and air units would be necessary to avoid use of flares during air drop passes.

      (2) **Fighter escort.** Cargo aircraft may require escort by fighters or helicopter gunships to bring immediate counterfires on AAA positions.

      (3) **Medium Altitude Drops.** Possibly the safest deliveries could be accomplished using medium altitude drops. The mechanical timing device needed for such an operation is not now in production, but has been tested and twenty timers are located in-country. Further, a request for seven thousand timer devices has been made. This would provide a capability for C-130 aircraft to drop 500 tons per day using one drop every 20 minutes for a 12 hour day on a continuous basis providing parachute and rig retrieval could be made. Little time would be required to fit the device to standard parachute loads currently in stock. This system provides reasonably accurate drop capability from an altitude of 8000 feet, which would be a sufficient altitude to avoid most AAA fires.

      (4) When low ceilings exist, the use of one of the systems for weather drop would provide concealment for aircraft and render sufficient
APPENDIX to ANNEX F, Logistics and Lines of Communication

accuracy to deliver most cargo within the drop zones. The lack of an all weather delivery system at Dien Bien Phu was a contributing factor to the French failure.

s/ WESTMORELAND
GEN.

OFFICIAL:

s/ DARROW
1. PROBLEM: To analyze the communications - electronics capabilities of the Viet Minh and French at Dien Bien Phu and compare them with current operations at Khe Sanh to determine adequacy of US/FW Forces capabilities and any necessary ensuing actions.

2. FACTS BEARING ON THE PROBLEM:
   a. The Viet Minh and French both used radio, wire and messenger for communications at Dien Bien Phu.
   
   b. The French had limited and ineffective means to coordinate both artillery/tactical air support.
   
   c. The NVA uses radio, wire and messenger for communications. The NVA also has radar capability for early warning and fire control.
   
   d. The US/FW Forces use radio, wire and messenger for communications. US/FW Forces also have a relatively sophisticated tactical air control system for air defense, early warning and direct air support.

3. DISCUSSION:
   a. Basically the same conditions exist at Khe Sanh that existed at Dien Bien Phu. The Viet Minh employed radio, field telephone and messengers at Dien Bien Phu. With the large scale military assistance provided by Communist Bloc Nations, it is almost a certainty that NVA is now much better equipped in the field of communications. This would necessarily add efficiency and coordination to the NVA operations. It would add flexibility to their forces and allow them to deploy additional effort quickly to exploit any advantage that might accrue to them. The French used radio, wire and messenger service at Dien Bien Phu. Wire lines, strung on top of the ground, were disrupted by artillery barrages, causing the French to rely primarily on messenger service and radio. However, the French were still in contact with Hanoi by radio at the time Dien Bien Phu fell. The French had problems in coordinating air support, caused primarily by language difficulties and lack of experience rather than lack of radio communications.

   b. The US, ARVN, and FW Forces are well equipped with communications electronics equipment and facilities in both quality and quantity. The French at Dien Bien Phu were limited to single channel, point to point radio communications. In comparison, the US and FW Forces at Khe Sanh have multichannel, diverse routed communications that provide rapid communications within all segments of command and operations.
c. Radar and high speed computers are used by US and FW forces to provide countermortar fire. The French at Dien Bien Phu did not have any capability of the nature.

d. Radar and navigation aids are in operation at Khe Sanh and at supporting locations. Khe Sanh has GCA, TACAN and LF Beacon for use in control of airspace. This capability will assist in air operations during adverse weather and hours of darkness.

e. The French at Dien Bien Phu were limited to daytime operations and bad weather greatly hampered their attempts to resupply Dien Bien Phu or evacuate wounded. The control of air operation was limited to visual control from a field control tower.

4. **CONCLUSION**: The capability to conduct air operations at the Khe Sanh airfield during the times of adverse weather and the hours of darkness will depend on the continued operation of GCA and other Navigation Facilities relevant to Khe Sanh. If these facilities are put out of operation that capability is reduced. Contingency communication equipment and the personnel required to restore damaged facilities are available in-country. Additional equipment can be brought into RVN depending on airlift availability and priority.

s/ WESTMORELAND
General

OFFICIAL:

s/ FRIZEN
J6
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1. PURPOSE: To expand on the Dien Bien Phu/Khe Sanh comparison study to provide an insight into probable enemy courses of action beyond Khe Sanh.

2. ASSUMPTIONS: NVA/VA military/political/psychological strategy encompasses the entire gamut of operations in South Vietnam and is a projection of the Viet Minh strategy used against the French.

3. FACTS BEARING ON THE PROBLEM:

a. Regarding Khe Sanh, enemy forces are in the area and have made attacks on the ground and by fire on the base camp.

b. The "Communist TET Attack" of the Lunar New Year has been undertaken with operations against 36 major South Vietnamese population centers, airfields, military headquarters, civilian governmental complexes and materiel and logistic centers.

c. The balance of credits/debits accruing to each side, as a result of operations associated with the "Communist TET attack," remains inconclusive pending the outcome of ongoing operations. (Preliminary conclusions are contained in paragraph 4b, below.)

4. DISCUSSION:

a. Within the scope of the analysis reported in Part I, Khe Sanh was cast in the image of Dien Bien Phu and essentially viewed from the perspective of a continuum of the 1954 Giap strategy. Annex to Part II discusses alternatives available to Giap in 1954 had he failed to defeat the French at Dien Bien Phu. Although some physical and political similarities exist between the Khe Sanh and Dien Bien Phu situations, the military effectiveness overshadows improvements made by the enemy in the interim since Dien Bien Phu. Additionally, Khe Sanh, being a part of a larger integrated pattern of Allied force dispositions, fails to qualify completely as an instrument for the "spectacular victory" thesis of Giap.
b. The negative results achieved by the enemy in his "TET" attacks, "during the first four weeks of the Lunar New Year, would appear to discourage his use of this type of "in-city" operation as a long term strategy. Well over 40,000 KIA's have accrued to the enemy; over 12,000 individual and crew served weapons were taken by the Allies. These numbers will continue to climb as clearing operations progress. In addition to being costly, the attacks failed to achieve a "general uprising" of the people or a large scale defection of RVNAF. It is becoming clear that the VC/NVA expectations were not fulfilled. In part, this may have been due to a failure of specific operations, but the principal factor is that the Communist misjudged the tempers of the people, the military forces and the GVN. While this offensive achieved some finite successes for the enemy (it demonstrated: strength, imaginative tactics and dynamic strategy; it undermined public confidence in GVN and dealt a serious blow to Pacification/Revolutionary Development; random rocket attacks continue to tie down Allied forces in clearing operations), Hanoi is now confronted with a quite different situation than it had anticipated. Hanoi's response to this new situation is not yet clear and may not as yet be determined pending further moves by the allies.

c. The enemy's evident preoccupation with Khe Sanh as a parallel to Dien Bien Phu, could be a tactical situation forces upon him as a somewhat natural reaction to our occupation of the position, and may not be his choice of location for a climatic battle. If this were to be true and Giap doubted the ability of his forces to achieve "spectacular victory" at Khe Sanh, he could well afford, logically, to perpetuate the threat, even improving his positions gradually at Khe Sanh, as a facade to shield his true immediate tactical objectives. Such an approach fits well with a phased attack plan, the "TET attacks" being Phase I.

(1) Had Phase I been only partially successful in defeating major US and Allied units, the need for a crucial battle at Khe Sanh would have been obviated.

(2) Had Phase I been only partially successful in securing broad popular support in some of the large cities and provincial capitals, Giap could have chosen to opt for negotiations from a position of political strength.

(3) However, in the military sense, the Phase I gamble was ultimately a debacle. (This is not to say that he failed totally in achieving peripheral benefits by reducing GVN control in the countryside and setting back the pacification program.)