PAVN ARTILLERY (ROCKET UNITS) - 1967
TABLE OF CONTENTS

I. INTRODUCTION ............................................. 1

II. DISCUSSION ................................................. 1
    A. Organization and Disposition of Artillery Units .......... 1
    B. Organization of Rocket Artillery Units ............... 3
    C. Capabilities and Limitations of Rocket Artillery Units . 9
    D. Logistical Considerations ............................. 14
    E. Capabilities and Targets ............................... 16

ANNEX A: Chronological Listing of Incidents

ANNEX B: Model 122mm Rocket Artillery Regiment
BRIEF

THIS STUDY CONCERNS NVA ROCKET ARTILLERY UNITS. DURING THE PAST SIX MONTHS ROCKETS HAVE BECOME THE PRIME WEAPON OF VC/NVA ARTILLERY UNITS. IT IS PROBABLE THAT INCREASED USE WILL BE MADE OF THIS WEAPON IN THE MONTHS TO COME.

THIS STUDY FOLLOWS THE KNOWN UNITS FROM THEIR ORGANIZATION THROUGH INFILTRATION TO THEIR PRESENT OPERATING AREAS. IT COVERS TACTICS AND TECHNIQUES OF EMPLOYMENT, INCLUDING THE CHARACTERISTICS OF THE WEAPONS. THE STUDY STATES THE PRESENT CAPABILITIES AND PROVIDES A BRIEF LIST OF PROBABLE TARGETS. ALL INFORMATION PRESENTLY AVAILABLE ON NVA ROCKET ARTILLERY UNITS HAS BEEN INCORPORATED INTO THE STUDY.
SUBJECT: NVA Rocket Artillery Units

TO: SEE DISTRIBUTION

1. Forwarded for your information is CICV Study ST 67-080, NVA Rocket Artillery Units.

2. This study discusses the organization, capabilities, logistics, and employment of rocket artillery units deployed in South Vietnam. The information contained in this study is the most current available, and it is based upon detailed analyses of interrogation reports, captured documents, and captured equipment.

3. To achieve the maximum in timeliness, accuracy, and completeness in the production of intelligence, comments and additional information pertaining to this study should be sent to J2, ATTN: MACJ28.

PHILLIP B. DAVIDSON, JR.
Brigadier General, USA
Assistant Chief of Staff, J2

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NVA Rocket Artillery Units

1 September 1967

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GROUP 4
DOWNGRADED AT 2 YEAR INTERVAL. CLASSIFIED AFTER 12 YEARS
NVA ROCKET ARTILLERY UNITS

I. INTRODUCTION.

A. Since the first reported use of rockets by enemy forces in South Vietnam -- the 140mm rocket attack on Da Nang Airbase, 27 February 1967 -- VC/NVA forces have placed increasing emphasis on the use of rockets. The current deployment of 122mm and 140mm rocket units in I, II, and III CTZs increases the enemy's capability to attack key friendly installations.

B. Extensive data has been compiled and published by the Combined Intelligence Center, Vietnam pertaining to rocket employment techniques, characteristics, incidents, and probable launch areas since that first attack on Da Nang Airbase. Some of these studies contain information on organization, training, and disposition of the units employing the 122mm and 140mm rockets. This information was incorporated into the studies to support the logical development of the tactics and techniques of employment. This study attempts to analyze the threat posed by rockets through an evaluation of the organization, disposition, control, and logistical considerations of rocket artillery units. The 102mm rocket has only been employed on three occasions, and each target was immediately south of the DMZ. Because of the limited use of this weapon and the fact that the 122mm and 140mm rockets are far superior systems, the 102mm rocket is not considered a significant threat and will not be discussed in this study.

II. DISCUSSION.

A. Organization and Disposition of Artillery Units.

1. South Vietnam. There is little relationship between what are termed "artillery" units in South Vietnam and rocket artillery units. The conventional VC/NVA artillery units in South Vietnam are equipped with mortars, recoilless rifles, and 12.7 AA machineguns. Very few of these units are armed with the 75mm pack howitzer and the 70mm howitzer, since these weapons are seldom employed and have limited effectiveness. No parallels can be drawn to compare training, organization, disposition, and employment techniques between these artillery units and the rocket artillery units. The information available, primarily on the 122mm rocket units, reveals that the rocket artillery units more closely resemble North Vietnamese field artillery units in training, organization, and the tactics and techniques of employment. This aspect will be covered in depth in subsequent paragraphs. The following chart lists the designation, subordination, location, and infiltration date of accepted VC/NVA artillery units currently operating in South Vietnam:

1
Accepted VC/NVA Artillery Units

<table>
<thead>
<tr>
<th>Unit Description</th>
<th>Subordination</th>
<th>Location</th>
<th>Date Infil Into SVN</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Corps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GK31 NVA AD Bn</td>
<td>Nong Truong 2 Div</td>
<td>BT 2207</td>
<td>Oct 65</td>
</tr>
<tr>
<td>GK32 NVA RR Bn (75mm)</td>
<td>Nong Truong 2 Div</td>
<td>BT 2207</td>
<td>Oct 65</td>
</tr>
<tr>
<td>GK33 NVA Mort Bn (120mm)</td>
<td>Nong Truong 2 Div</td>
<td>BT 2207</td>
<td>Oct 65</td>
</tr>
<tr>
<td>12th NVA AT Bn (82mm RG)</td>
<td>324B NVA Div</td>
<td>YD 0272</td>
<td>Jun 66</td>
</tr>
<tr>
<td>13th NVA Arty Bn (120mm Mort)</td>
<td>324B NVA Div</td>
<td>YD 0272</td>
<td>Jun 66</td>
</tr>
<tr>
<td>14th NVA AD Bn (12.7mm)</td>
<td>324B NVA Div</td>
<td>YD 0272</td>
<td>Jun 66</td>
</tr>
<tr>
<td>*368B NVA Arty Regt HQ</td>
<td>MR-5</td>
<td>ZC 0568</td>
<td>May 67</td>
</tr>
<tr>
<td>*D-1 NVA 140mm Rkt Bn</td>
<td>368B NVA Arty Regt</td>
<td>Unloc</td>
<td>Sep 66</td>
</tr>
<tr>
<td>*2nd NVA 122mm Rkt Bn</td>
<td>368B NVA Arty Regt</td>
<td>YC 9669</td>
<td>May 67</td>
</tr>
<tr>
<td>*3rd NVA 122mm Rkt Bn</td>
<td>368B NVA Arty Regt</td>
<td>ZC 0456</td>
<td>May 67</td>
</tr>
<tr>
<td>II Corps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H-13 NVA AD Bn</td>
<td>Nong Truong 1 Div</td>
<td>Unloc</td>
<td>Jan 66</td>
</tr>
<tr>
<td>200th VC Arty Bn</td>
<td>Nong Truong 1 Div</td>
<td>YB 9536</td>
<td>N/A</td>
</tr>
<tr>
<td>200th NVA AD Bn</td>
<td>Nong Truong 3 Div</td>
<td>BS 7316</td>
<td>Oct 65</td>
</tr>
<tr>
<td>300th NVA Arty Bn</td>
<td>Nong Truong 3 Div</td>
<td>BS 5309</td>
<td>Sep 65</td>
</tr>
<tr>
<td>95th NVA Arty Bn</td>
<td>Nong Truong 5 Div</td>
<td>Unloc</td>
<td>May 66</td>
</tr>
<tr>
<td>145th VC Arty Bn</td>
<td>Nong Truong 5 Div</td>
<td>ZT 0385</td>
<td>N/A</td>
</tr>
<tr>
<td>III Corps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24th NVA AD Bn</td>
<td>Cong Truong 5 Div</td>
<td>YS 6084</td>
<td>Jul 66</td>
</tr>
<tr>
<td>69th VC Arty Regt HQ</td>
<td>COSVN LA</td>
<td>XT 4383</td>
<td>N/A</td>
</tr>
<tr>
<td>52nd VC Arty Bn</td>
<td>69th VC Arty Regt</td>
<td>XT 0772</td>
<td>N/A</td>
</tr>
<tr>
<td>56th VC AD Bn</td>
<td>69th VC Arty Regt</td>
<td>Unloc</td>
<td>Jan 66</td>
</tr>
<tr>
<td>58th VC Arty Bn</td>
<td>69th VC Arty Regt</td>
<td>Unloc</td>
<td>Jul 66</td>
</tr>
<tr>
<td>84A NVA Arty Regt HQ</td>
<td>COSVN LA</td>
<td>War Zone D</td>
<td>Aug 66</td>
</tr>
<tr>
<td>1st NVA Rkt Bn</td>
<td>84A NVA Arty Regt</td>
<td>War Zone D</td>
<td>Aug 66</td>
</tr>
<tr>
<td>2nd NVA Rkt Bn</td>
<td>84A NVA Arty Regt</td>
<td>War Zone D</td>
<td>Aug 66</td>
</tr>
<tr>
<td>3rd NVA Rkt Bn</td>
<td>84A NVA Arty Regt</td>
<td>War Zone D</td>
<td>Aug 66</td>
</tr>
<tr>
<td>8th VC Arty Bn</td>
<td>VC MR 4</td>
<td>XT 5734</td>
<td>N/A</td>
</tr>
<tr>
<td>IV Corps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>207th VC AD Bn</td>
<td>VC MR 3</td>
<td>Unloc</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Being considered for acceptance by MACV OB.

Two rocket artillery regiments are listed, the 368B Artillery Regiment in I Corps and the 84A Artillery Regiment in III Corps.

   a. There is a wide variety of field artillery employed in North Vietnam. The following artillery weapons have been identified or reported to be in use by the NVA in North Vietnam: 75mm gun, 85mm gun, 100mm field gun, 105mm howitzer, 122mm gun, 122mm howitzer, 130mm field gun, 152mm gun-howitzer, and the 155mm howitzer.

   b. The basic artillery unit in the NVA (as in the Soviet and ChiCom Armies) is the battalion. Each battalion is equipped with artillery pieces. Various battalions may be grouped together as a composite artillery group to fit the terrain or specific needs of its assigned mission; however, a regimental organization of three artillery battalions is normal. The regiment may have a mixture of artillery pieces, but the battalion will be equipped with only one type and caliber of artillery piece.

   c. The composition of the infantry division artillery regiment and the separate artillery regiment is basically the same, except for differences in types of artillery pieces. The division artillery regiment is equipped with the 105mm howitzer, 75/76mm gun, 85/100mm gun, and 120mm mortar. The separate artillery regiment is equipped with the 105/122mm howitzers, 122mm guns, 130mm field guns, 155mm howitzers, and possibly the 152mm gun-howitzers.

   d. The disposition of NVA field artillery units in North Vietnam has little influence on the rocket artillery units discussed in this study. The 84A Artillery Regiment and the 368B Artillery Regiment were subordinate to the 351st Artillery Command (located at Son Tay) during their organization and training phases prior to infiltration. The 351st, formerly an artillery division, furnished regimental cadre for these units. Many other key personnel came from field artillery units. The 351st NVA Artillery Command is responsible for training and deployment of field and rocket artillery in North Vietnam. The TOE of the 122mm rocket artillery units is similar to a conventional field artillery unit and will be discussed in detail in subsequent paragraphs.

3. Command and Control. As previously indicated, nearly all of the accepted artillery battalions in South Vietnam are subordinate to line divisions. Two of the battalions and the 368B Regiment are subordinate to military regions. The subordination and interrelationship of the 69th Artillery Regiment (aka 69th Artillery Command) and the 84A Artillery Regiment will be discussed in detail in the following paragraphs.

B. Organization of Rocket Artillery Units.

   1. Evolution.

   a. Rocket artillery is employed by the Soviet ground for
on a larger scale than by any other army. Multiple rocket launchers sacrifice range and accuracy but deliver a much heavier explosive, in proportion to weight and caliber of the firing weapon, than conventional artillery. Rocket launchers, using area fire, are used by the Soviets primarily in field roles as weapons of opportunity to break up concentrations of troops and materiel. Rocket launcher battalions, equipped with mobile truck-mounted launchers, are used with mechanized and armored divisions in the Soviet forces. As Soviet support of the North Vietnamese forces increased after the deployment of US forces to South Vietnam, the North Vietnamese Army was supplied with 140mm multi-round rocket launchers either mounted on trucks, such as the GAZ-63, or on a split trail artillery-type carriage.

b. As US participation in South Vietnam increased, mortar and recoilless rifle attacks on large air bases and logistical complexes became a common VC/NVA tactic. Because all VC/NVA weapons systems must be foot mobile, they offered only limited destructive capability. As base and installation security expanded to control the area within medium mortar range, attacks became less frequent and enemy capability lessened.

c. Experimentation with rocket artillery by NVA forces as an unconventional air defense weapon was reported by pilots over North Vietnam in the summer of 1966, when pilots first reported seeing rockets fired in volleys. Prior to this time, NVA ordnance and artillery commands had undoubtedly experimented with selected Soviet-supplied weapons to determine the feasibility of deploying them to South Vietnam.

d. The 122mm 40-round rocket launcher mounted on the URAL 375 truck is the newest addition to the Soviet rocket artillery family. The need for an accurate, effective, and long-range support weapon for NVA forces operating in South Vietnam had long been apparent. The 122mm rocket, adapted to fire from a portable launching system, was the ideal weapon to meet this requirement. Experiments with the 140mm launching system had undoubtedly indicated that a more sophisticated launching platform was feasible.


a. Incidents of employment of the 122mm rockets have occurred in I, II, and III CTZs. The 140mm rocket has only been employed in I Corps. A number of the units involved in these attacks have been identified from prisoner interrogations, captured documents, and known employment data.

b. The first rocket attack in South Vietnam was launched against Da Nang Airbase with 140mm rockets on 27 February 1967. The D-99 NVA Battalion was the unit reported to be responsible for this attack. Since that date, there have been a number of attacks with 122mm and 140mm rockets against installations in I Corps. A majority of these attacks
have been launched against Marine tactical base camps in the vicinity of the DMZ. The identification of the unit(s) involved in the attacks near the DMZ is unknown. The 15 July 1967, 122mm rocket attack against Da Nang Airbase was conducted by the 2nd and 3rd Battalions of the 368B Rocket Artillery Regiment.

c. The 122mm rocket has been employed twice in II Corps. The first attack was conducted against the Tan Canh Special Forces Camp with four rounds on 17 June 1967. Also used in the attack were 120mm mortars, probably from a unit of the 200th Artillery Battalion. According to SGT Le Viet Dung, captured on 26 June 1967, who was in a unit supporting the attack on 17 June, the "Bien Hoa" DMZ-B Battalion was the 122mm rocket unit involved. The second attack occurred on 23 August 1967, and was directed against the 1st Brigade, 4th Infantry Division near the Duc Co Special Forces Camp. No numerical designations are available for these units.

d. The 122mm rocket has been employed against installations in III Corps on three occasions. The first instance was the attack against Bien Hoa Airbase on 12 May 1967. 1st Infantry Division Base Camps at Phuoc Vinh and Phu Loi were struck on 27 July and 29 July 1967, respectively. It is believed that all three of these attacks were conducted by elements of the 84A Rocket Artillery Regiment. Each attack employed one rocket battalion with 18 launchers.

e. A chronological listing of rocket incidents appears in Annex A.

3. Organization and TOE.

a. VC Units. There is no reliable information indicating that VC units are equipped with rocket artillery. Agent reports mention VC units having a few launchers and rockets. Some 140mm rocket attacks in I CTZ have involved launching only five rounds, but no actual documents or prisoners of a VC rocket unit have been captured.

b. NVA Units. There are two rocket artillery regiments known to be in South Vietnam; the 368B Rocket Artillery Regiment in I CTZ and the 84A Rocket Artillery Regiment in III CTZ. In addition there is reported to be a 122mm rocket battalion, probably located in II CTZ.

(1) The 368B Rocket Artillery Regiment was initially organized in January 1966, with three rocket battalions, each being equipped with eighteen 122mm rocket launchers. In September 1966, the 1st Battalion received orders separating it from the regiment and dispatching it to South Vietnam. The location of this battalion is unknown. In March 1967, after
reaching operational strength, the regimental headquarters, the C.14 Signal and Reconnaissance Company, and the 2nd and the 3rd Battalions began infiltration as the 575th Infiltration Group. The movement to Quang Nam Province was completed in May 1967, at which time the regiment absorbed the D-99 Battalion which had previously infiltrated the area. There are also medical and transportation units organic to the regiment. Since infiltrating, the 368B Regiment has received no personnel replacements. It is reported that only NVA personnel will be used to augment the regiment; VC troops are not to be accepted. The following is a listing of the units in the 368B Rocket Artillery Regiment and their current strengths:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regimental Headquarters</td>
<td>75</td>
</tr>
<tr>
<td>C.14 Signal and Reconnaissance Company</td>
<td>65</td>
</tr>
<tr>
<td>D-1 Battalion (aka D-99)</td>
<td>400</td>
</tr>
<tr>
<td>2nd Battalion</td>
<td>400</td>
</tr>
<tr>
<td>3rd Battalion</td>
<td>400</td>
</tr>
<tr>
<td>Transportation Unit</td>
<td>30</td>
</tr>
<tr>
<td>Medical Unit</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>1400</td>
</tr>
</tbody>
</table>

(2) The D-99 140mm Rocket Artillery Battalion trained in Vinh Xuong Village, Thanh Oai District, Ha Dong Province, North Vietnam. On 22 March 1966, the battalion was ordered to infiltrate into South Vietnam. The battalion went by train to Thanh Hoa and from there continued by foot moving primarily at night. It moved into Laos and infiltrated into South Vietnam by moving along the edges of pine forests and trails. The battalion arrived in A Shau Valley about August 1966 and reached its operating area in September. The battalion was called a "separate battalion" when first established. It was later annexed to the 368B Rocket Artillery Regiment and was redesignated the D-1 Battalion, or the 1st Battalion. The D-1 Battalion is equipped with 100 140mm rocket launchers. Detailed TOE of this battalion is unknown.

(3) No information is available on the organization of the 122mm rocket unit operating in II CTZ. It is possible that this unit is the battalion which was separated from the 368B Regiment in January 1966.

(4) The 84A NVA Artillery Regiment was activated in early 1966 in Kien Boi District, Hoa Binh Province, North Vietnam, and was subordinate to the 351st NVA Artillery Division. On 15 March 1966, the personnel received additional equipment and commenced preparation for infiltration to South Vietnam. In late March 1966, the regiment was redesignated...
Group 724, with its subordinate elements receiving the designations 724A, 724B, and 724C. The regiment began infiltration in March 1966. Group 724A was the first group to start infiltration and was composed of the 1st Battalion and a reconnaissance element of the C.10 Signal and Reconnaissance Company. On 27 March 1966, Group 724B began infiltration and was composed of the 2nd Battalion, the regimental headquarters, and the remainder of the C.10 Signal and Reconnaissance Company. Group 724C was the last to start infiltrating to South Vietnam and was composed of the 3rd Battalion, 84A NVA Artillery Regiment. The groups started their infiltration at five-day intervals. They traveled by train from Hanoi to Do Len in Thanh Hoa Province. From there they followed trails running through villages in Thanh Hoa, Nghe An, and Ha Tinh Provinces. The groups continued through Laos and Kontum Province and arrived in Darlac in August 1966. As stated in captured documents, the strength of the regiment was 1,450 before infiltration, but in late July 1966, only 1,200 personnel were left. These losses were mainly due to malaria and other sicknesses suffered during infiltration. On 23 July 1966, the 2nd Battalion, 84A Artillery Regiment, was hit by an air strike while on the infiltration route to the Cambodian-Vietnamese border. The unit suffered 25 KIA and an unknown number of wounded. The battalion was hit by an air strike again on 5 August 1966, 80 kilometers northwest of Darlac Province resulting in a number of men killed and wounded. The regiment was hit by an air strike on 10 August 1966, in Darlac Province at YV 840480, with unknown results; however, a number of documents were captured on 11 August 1966 by a friendly unit in the same area, which confirmed the existence of the 84A NVA Artillery Regiment. A Chieu Hoi returnee defected to GVN control in late April 1967 and stated that Group 724 was located in a large base complex in Cambodia just north of Phuoc Long Province. The source stated that Group 724 had left this complex in September 1966 and was traveling to an unknown destination. On 10 August 1966, a returnee in Darlac Province revealed he had been assigned to the 724th Infiltration Group which was moving to "Hai Yen (War Zone D) to reinforce the battlefield." Documents captured during Operation Junction City II at coordinates XT 185864 indicate that the 84A Artillery Regiment was present in the area at an undetermined date. A captured document, dated 31 January 1967, from Group 81 Rear Services, which operates in War Zone D, states that the group provides logistical support to the 84A Artillery Regiment. Thus, the 84A probably traveled from Darlac Province through Cambodia and Tay Ninh Province to War Zone D, possibly arriving there in January 1967. Following is a listing of the units in the 84A Regiment and their strength prior to infiltration:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regiment Command Committee</td>
<td>37</td>
</tr>
<tr>
<td>C.10 Signal and Recon Company</td>
<td>73</td>
</tr>
<tr>
<td>1st Battalion (aka 724A)</td>
<td>445</td>
</tr>
<tr>
<td>2nd Battalion (aka 724B)</td>
<td>448</td>
</tr>
<tr>
<td>3rd Battalion (aka 724C)</td>
<td>447</td>
</tr>
<tr>
<td>Total</td>
<td>1450</td>
</tr>
</tbody>
</table>
Annex B shows TOE charts of a model 122mm rocket artillery regiment.


a. The 368B Rocket Artillery Regiment is subordinate to MR 5. There is no information at this time identifying other units which may assist the regiment during operational employment.

b. Control of the 122mm rocket unit in II Corps is probably exercised through the B-3 Front, since this unit seems to be operating with the 200th Artillery Battalion (120mm mortars) and elements of the 24th NVA Regiment.

c. Liberation Army Headquarters, through the 69th Artillery Command (aka 69th Regiment), is employing the 84A Regiment in conjunction with units of the 9th VC Division in the III Corps area. The rocket attack against Bien Hoa by the 84A Regiment on 12 May 1967 was supported with 82mm mortars, 75mm recoilless rifles, and 12.7mm heavy machineguns. Elements of the 273rd Regiment, 9th VC Division were used in this attack. The rocket attack on the 1st Brigade, 1st Infantry Division base camp at Chuoc Vinh on 27 July 1967 was also in conjunction with 82mm mortars. The supporting unit in this attack was the 271st Regiment, 9th VC Division.

d. Division Control. Documents captured in the vicinity of Con Thien and Quang Tri Provinces indicate that a division is operating in coordination with a 122mm rocket unit through observation posts and command posts of one of its regiments. Other captured documents indicate the deployment in the DMZ area of an 84th Artillery Regiment operating with the 324B Division, but under the command of the 351st NVA Artillery Division (aka NVA Artillery Command). The similar designations may indicate its TOE is similar to that of the 84A Regiment in III Corps. Command and control of the rocket artillery units does not seem to extend to division level as with division artillery, except in coordinated operations as assigned by a higher headquarters.

5. Disposition and Deployment of Rocket Artillery Units.

a. 368B Rocket Artillery Regiment - I CTZ. The 368B Regiment is currently located in Quang Nam Province (vicinity ZC 0568). Upon arrival in South Vietnam in May 1967, the unit was released from control of the 351st Division and subordinated to MR 5.

b. Unidentified Rocket Unit - II CTZ. The size of this unit has not been determined. As stated before, it could be the battalion which began infiltration in January 1967 after separating from the 368B Regiment. This unit is probably deployed in support of B-3 Front activities.
c. The 84A Rocket Artillery Regiment - III CTZ. This unit is currently unlocated in War Zone D. It is assumed that the 84A Regiment conducted the attacks on Bien Hoa in May and Phuoc Vinh and Phu Loi in late July. Upon arrival in III Corps, the regiment became subordinate to the 69th Artillery Command.

C. Capabilities and Limitations of Rocket Artillery Units.


a. 122mm Soviet Rocket.

(1) The 122mm 40-round rocket launcher mounted on a URAL-375 truck is the latest development in the Soviet rocket artillery arsenal. This launching system lends itself to modification as a single tube, foot mobile, highly accurate weapon, which can be broken down into pack loads. It is evident that Soviet technical assistance has been exerted to produce the effective fabrication of existing hardware now designated by the North Vietnamese as the DKZ-B rocket artillery launcher.

(2) The 122mm rocket system incorporates a feature not seen before in rocket artillery launchers. A spiraled U-shaped channel runs 120 degrees clockwise around the inside of the tube for its entire length. This gives spin to the rocket during flight. The channel is welded to the tube's interior rather than machined, thus reducing the weight of the tube considerably. The rocket itself has a spin lug, affixed near the base of the rocket motor, which rides in this channel. The channel is flared at the breech, facilitating breech loading and the engagement of the rocket spin lug. Once loaded, the rocket is secured in place by a latch installed near the base of the tube. The latch is released automatically when the rocket is fired. The spin from the rocket lug and the launcher tube channel helps to stabilize the rocket in flight. Further stability is provided by four tail fins, which fold around the body motor prior to launch, extending as the rocket clears the tube (information based on analysis of Moscow Parade photography in 1964 and 1965).

(3) The accuracy achieved with the 122mm rocket system is due primarily to the sophisticated instruments used to initially survey the site. A type of theodolite or transit, mounted on a tripod, is used to determine the correct firing data. This survey, in conjunction with the spin/fin guidance system, the improved sighting system, and the tripod mount provides the weapon with a high degree of accuracy.

(4) The exact construction of the tripod base is unknown; however, it is believed to be made from a light weight metal with legs approximately eight feet long. The tripod is broken down into two parts for mobility. The rocket itself disassembles into three sections -- fuze, warhead, and motor -- which can be transported by two porters.
(a) Launcher and Mount.

Caliber - 122mm
Length - 2.5 meters (8.1 feet)
Height (at maximum elevation) - 2.5 meters (8.1 feet)
Weight - 55 kg (121 pounds) emplaced
  Tube - 25 kg (55 pounds)
  Mount - 26 kg (57.2 pounds)
  Remote firing device - 4 kg (8.8 pounds)
Emplacement time - 2.5 min
Displacement time - 2 min

(b) Rocket, Fin/Spin Stabilized.

Length - 1.93 meters (6.2 feet)
Weight w/fuze - 46 kg (102 pounds)
Range - 11,000 meters (VC/NVA documents)

(c) Fuze, Point Detonating, Model DKZ-B.

Type of action - instantaneous, short delay, long delay
Weight - .9 kg (2 pounds)

(d) Technical Data.

Minimum elevation - plus 10°
Maximum elevation - plus 42°
Deflection - 7° from center; 14° total

(e) Sighting Device.

Type - optical panoramic and mechanical open
Visual angle - 9°
Magnification - 2 x 5 power

(f) Warhead.

Weight w/o fuze - 18.6 kg (41 pounds)
Filler weight - 6.6 kg (14.5 pounds)
Filler type - 86% TNT; 14% AL
Length - 61 cm (24 in)

(b) 140mm Soviet Rocket. The 140mm spin-stabilized rocket is the system used in the Soviet 16-round rocket launcher (BM-14) mounted on the GAZ-63 truck. Individual tubes have been dismantled from the multi-round launcher, with one or two tubes mounted on flat, wooden planks. Through the use of the firing tables for the original truck mounted launcher,
it was determined that 30 degrees was the desired firing angle for a range of 9,000 meters. No further modification was necessary.

(1) Launcher Tube and Wooden Plank (Mounting Board).

Length, overall - 114.3 cm (45 in)
Weight, single tube - 10 kg (22 pounds)
Weight, double tube - 20 kg (45 pounds)

(2) Rocket, Spin Stabilized.

Length, overall w/fuze - 108.4 cm (42.35 in)
Length, overall w/o fuze - 101.6 cm (40.0 in)
Weight, w/fuze - 40 kg (88 pounds)
Range - 10,000 meters (est)

(3) Fuze, Point Detonating, Model V-25.

Type of action - instantaneous, short delay, long delay
Weight - .63 kg (1.4 pounds)

(4) Warhead.

Weight, w/o fuze - 18.6 kg (41 pounds)
Filler weight - 1.2 kg (2.6 pounds)
Filler type - TWA
Length - 39.4 cm (15.5 in)

2. Training of Personnel. Information on the training of rocket artillery unit personnel is based on analysis of captured documents and prisoner interrogations pertaining to the 368R and 84A Regiments.

a. 122mm Rocket Training.

(1) In January 1966, orders were given the 351st Artillery Command to select personnel from artillery units and small numbers of men from infantry units and send them to Tuc Nam District for activation of a rocket regiment. Most of the cadre were extracted from the 368th Regiment or from selected artillery units of that command. The rest of the cadre were artillery officers who had graduated from Artillery School 400 in Son Tay Province. The regiment was not formed until 28 March 1966 because of personnel shortages and the unavailability of key cadre. The regiment then conducted training in the mountains of Luc Nam District. The regiment marched to the Son Tay Artillery School in April 1966 to practice firing live rockets. Only one round per launcher was fired. The unit then moved to the area of Sen Hamlet, Bo Truc District, Quang Binh Province, and arrived there in June 1966. Training was continued at the new location until the unit began infiltration.
(2) The training of the 84A 122mm Rocket Artillery Regiment began in January 1966, in the Hanoi area. The unit cadre were trained field artillery personnel drawn from existing units. The regiment was activated and trained under control of the NVA Artillery Command (aka 351st Artillery Division). Filler personnel, draftees who joined the unit in training as late as February 1966, were trained as ammunition handlers and to construct field fortifications. Signal and reconnaissance company members were trained and artillery oriented when assigned to the regiment. The unit fired one round per launcher at the Son Tay Artillery School during their training. The regiment began infiltration from Hanoi in March 1966, upon completion of training.

(3) The duration of training for these units is estimated to be eight weeks. During this period they trained in the basic characteristics, mechanical functions, and firing techniques of rockets. Primary emphasis was placed on correct procedures in laying and sighting the launcher.

(4) A document captured during Operation Junction City outlined three lessons used to train VC/NVA personnel. This document described the 122mm rocket as having the capability to:

(a) Destroy and harass enemy personnel, troop concentrations, and weapons.

(b) Destroy enemy artillery pieces and mechanized units.

(c) Destroy enemy aircraft, equipment, and storage facilities.

b. Training information on 140mm rocket units is limited. Trained artillery cadre and filler personnel are involved, but since employment of the 140mm is rather rudimentary, training would not have to be as extensive.

3. Techniques and Tactics of Employment.

a. The 122mm rocket is the newest and most sophisticated rocket artillery piece in the Soviet arsenal. The system provides the VC/NVA with a lightweight weapon which has firepower equal to the Soviet 122mm gun-howitzers. In the past, the enemy has been limited in artillery because of weight restrictions and maneuverability. The 140mm and the 122mm rockets can be employed in hastily constructed positions and can be fired from areas inaccessible to artillery pieces larger than the 75mm pack howitzer. Through the use of this type of system, the enemy can place a maximum amount of fire into an area in a minimum amount of time and withdraw from the launching area before the arrival of reaction forces.
b. Past attacks have indicated that the 140mm rocket will be fired from distances of 8,000 to 10,000 meters. The 122mm rocket units will probably emplace their launch system in a site 9,000 to 11,000 meters from the target. The positions for both systems have always been in open terrain with a minimum of masking to their front.

c. The 140mm attacks have shown no consistency in the number of launchers which they have employed against any given target. There have been as many as 134 launchers (27 February 1967, Da Nang attack) employed in one position. In many cases there will be as few as two or three launchers emplaced and fired.

d. The 122mm rocket attacks have all exhibited a consistent employment pattern. Either one battalion (18 launchers) or two battalions (36 launchers) have been utilized in these attacks. A battalion has three companies, each company having six launchers. The six launchers of a company will all be deployed on line with 15 meters distance between launchers. The distance between the three companies varies from 150 to 800 meters. The battalion is normally not deployed with all three companies on line; they are usually staggered. Normally, 12.7mm heavy machineguns will be placed on the flanks of an employed battalion. The 15 July 1967 attack on Da Nang was the only instance in which two 122mm rocket artillery battalions have been employed simultaneously. In this one case, the two battalions were located 2,000 meters apart.

e. There is no site preparation, except for surveying in the launch positions, prior to the night of the attack. Equipment and personnel are moved into the site under cover of darkness. Preparations can be completed and the rockets fired within a maximum of two to three hours. In some instances it is possible that the rockets are cached near the launch site some time prior to the night of the attack. This technique would reduce the number of personnel infiltrating to the launch site on the night of the attack.

f. Simple tools for preparing the firing sites consist of scoops or shovels and perhaps picks. In the case of 140mm rockets, past procedures have been to survey the area in advance and to lay out the positions with stakes placed one behind the other, six feet apart. A rope is tied between the two stakes to facilitate the tube emplacement at night. In order to emplace the tripod mounts for the 122mm rockets, holes six inches in diameter must be dug. Some of the 122mm positions have extensive networks of trenches and control pits. Consideration must also be given to electrical wiring used for ignition.

g. The 140mm rockets are launched in one volley, and the launcher is not reloaded. The crews will evacuate the launch area minutes after firing the rockets. There are at least two, and as many as five,
122mm rockets fired from each launcher during an attack. It requires from three to five minutes to reload the launcher. Attacks using the 122mm rocket last from 10 to 15 minutes. This is an adequate time to place effective counter-battery fire on the launch positions, provided the sites can be accurately and quickly located.

D. Logistical Considerations.

1. Unit Mobility. A rocket artillery unit is limited in mobility by the same factors which limit any foot mobile unit. Since the launchers and the rockets are foot mobile, they can be transported to any practical launching position the VC/NVA desire. The use of waterways, oxcarts, bicycles, or trucks to convey the weapons system increases the mobility and decreases porter requirements, thereby adding to the effectiveness of the weapon.

2. LOCs.

   a. Routes. All rocket units that are known to be in-country have infiltrated with their rocket launchers. The 368B Rocket Artillery Regiment also used the infiltrating personnel to transport rockets into South Vietnam. Infiltration Group 575 picked up five rounds of 122mm rockets per launcher at a location in Laos, close to the South Vietnam border and thus infiltrated with 36 launchers and 180 rockets. The D-99 Battalion (aka D-1 Battalion) infiltrated through Laos and picked up 300 rounds of rockets. Additional porters were probably used since there was not a sufficient number of battalion personnel to transport 300 rockets and 100 launchers. To resupply the 368B Rocket Artillery Regiment, rockets are probably being brought through Laos and into the A Shau Valley. The 84A Rocket Artillery Regiment is probably being supplied with rockets infiltrated through Laos and Cambodia, then into MR 10 or Tay Ninh Province, and further into War Zone D. Those unidentified units operating in or just north of the DMZ receive their rockets through the DMZ.

   b. Size and Location of Stockpiles. It is known that 480 rockets have been infiltrated into I CTZ, of which at least 180 were 122mm rockets and the remainder, probably 140mm rockets. In the two attacks on Phuoc Vinh and Phu Loi, inventory numbers found on rocket canvas-carrying cases at the launch sites indicate that probably a minimum of 600 122mm rockets have been supplied to enemy units in South Vietnam. These carrying cases have also been captured in I CTZ, with inventory numbers being in the 300 series. If the rocket units in I and III CTZs were supplied with an equal number of rockets, approximately 400 rockets would have been available to the battalions in III CTZ. Four hundred rockets available, less the 150 rounds fired in the above three attacks, would leave 250 remaining in the stockpile for future attacks against installations in III CTZ. Information on the enemy's capability to replenish the stockpile is not available. The
rocket stockpile in III CTZ is probably located somewhere in War Zone D, with the stockpile in I CTZ located in or near the A Shau Valley. The supply of launchers is probably limited to the organic equipment of the two battalions. The number of rockets in II CTZ cannot be estimated; it is assumed that they are stored within the D-3 Front area of operations. The enemy has never left a 122mm launcher at a firing position, indicating that 122mm launchers are not available in the quantity that 140mm launchers are.

   a. 122mm Rocket. In most of the 122mm rocket attacks, approximately 50 rockets were fired, or about three rounds per launcher, during an attack. Three to five minutes are required to reload and relay the launcher, with the total attack taking between 10 and 15 minutes. Because of the danger from friendly artillery fire, the enemy will usually not stay in position longer than 15 minutes; thus, the sustained rate of fire will normally be 54 rounds per battalion for 15 minutes. The basic load per battalion is 54 rounds of 122mm rockets, or three rockets per launcher.
   b. 140mm Rocket. Normally only one, or at most two, 140mm rockets are fired per launcher during an attack. This would indicate a basic load of one rocket per launcher.

4. Labor Requirements.
   a. Information pertaining to the number of personnel required to transport the rockets and to launch a specific attack is not known in detail. Based on the weight of the 140mm rocket and launcher, a minimum of three men is required to transport the launcher and one rocket. Additional personnel would be required to prepare the site, wire the electrical firing system, and provide site security. If only one rocket per launcher is fired, it is estimated that five personnel per launcher would not be excessive.
   b. The number of personnel required to transport and fire the 122mm rockets would be considerably greater. A minimum of two rockets has been fired from each launcher in past 122mm rocket attacks. In most instances three have been fired. A minimum of nine personnel is required to transport one launcher system with three rounds to the firing position. Two men are required for each rocket round, one man for the launch tube, one man for the tripod, and one man for the fire control system. Each firing site has been protected by infantry personnel and heavy machineguns. These personnel, along with those required for command and control, would total at least 12 men per rocket launch position, and this estimate is believed to be conservative. For a one-battalion deployment, a minimum
of 216 men would be required. Captured documents list an average of 350 men for a 122mm rocket battalion; however, the specific mission of each individual is not known. The actual number of men on position during the attack is probably closer to 350 than 216.

E. Capabilities and Targets.

1. Current Capability. The enemy has proved he can attack with rockets almost any installation he desires; however, it is believed he will limit himself to those provinces listed below, primarily because of logistical considerations. Currently the most probable targets are those installations within a reasonably accessible distance from the probable locations of known artillery units.

a. I CTZ. All major installations and tactical base camps in Quang Tri, Thua Thien, and Quang Nam Provinces should be considered probable targets for either the 122mm or 140mm rockets.

b. II CTZ. The presence of 122mm rockets in II CTZ was confirmed with the four round attack on the Tan Canh Special Forces Camp on 17 June 1967. Lack of any information on the unit conducting this attack and the subsequent one on 23 August 1967 makes it difficult to predict intended targets. It is assumed that probable targets would include installations and tactical base camps in Kontum and Pleiku Provinces.

c. III CTZ. The units conducting the 122mm rocket attacks against installations in III CTZ have selected their targets with more discrimination. Only major installations and brigade-sized base camps have been attacked. These facilities should be considered probable targets in Gia Dinh, Bien Hoa, Binh Duong, Long Khanh, Hau Nghia, and Long An Provinces.

2. Present Capabilities. The enemy has the capability to launch 122mm and 140mm rocket attacks against targets in I CTZ. He currently does not have 140mm rockets deployed in II or III CTZs. He has the capability to attack targets in II and III CTZs with 122mm rockets.

3. Future Capabilities. The enemy can be expected to increase the use of both types of rockets during the next 12-month period. This prediction of increased employment of the rockets is based on the demonstrated success he has achieved to date. The VC/NVA forces have been able to conduct these attacks with relative impunity. A decrease in the frequency of attacks might be anticipated if substantial punishment could be inflicted on the attacking units. This has not occurred. Recent interrogations of a prisoner assigned to the 368B Regiment reveal that a 368A Rocket Artillery Regiment is currently deployed in the jungle of Luc Nam.
District, Ha Bac Province, North Vietnam. There is no information that this unit will infiltrate, but such a possibility must be considered. The regiment has four battalions, each equipped with eighteen 122mm launchers.

a. It is not anticipated that the 140mm rocket will be deployed in any substantial quantities except in I CTZ during the next 12 months. The 140mm rocket will probably be used with increased frequency against the type of target currently being attacked. The weapon will probably be employed against targets throughout I CTZ by the end of the time frame.

b. The 122mm rocket will also be employed with increasing frequency throughout the above listed provinces within the next 12 months, as stockpiles of rockets are built up. Considering the effectiveness and success the enemy has had with this weapon, it is anticipated that he will endeavor to train and infiltrate additional 122mm rocket artillery units into I, II, and III CTZs during the next 12 months.

c. While it is not considered probable that NVA rocket artillery units would be infiltrated to hit targets in IV CTZ, the possibility of such cannot be disregarded.
ANNEX A: Chronological Listing of Incidents

1. On 27 February 1967 at 0315 hours, the D-1 Rocket Artillery battalion fired 140mm spin-stabilized rockets on the Da Nang Airbase. This was the first time that rockets had been used in South Vietnam by the VC/NVA forces. The following information has been extracted from CICV Study ST 67-046, VC/NVA Employment of 140mm Rockets in the Attack on the Da Nang Airbase, 27 February 1967:

a. The firing sites were located approximately 6,000 meters southwest of the airbase, at the intersection of the Song Tuy Loan and Song Yen. The two firing positions were previously surveyed and laid out at grid coordinates AT 9669.

b. The gun crews and personnel from the VC R-20 Local Force Battalion transported the rockets from a cache area east of the Na ha Mountain area at coordinates AT 8867 to the Song Yen. From this point the rockets and the tubes were transported downstream to the firing site.

c. The positions were surveyed prior to the attack by a skilled, well-trained survey team. Stakes were driven into the ground six feet apart to indicate the front and rear of each firing pit. A rope was tied between the stakes to facilitate the tube emplacement at night. A notched peg was placed at each position to indicate the preset elevation of 30°.

d. The crews began final preparation of the site at 2300 hours. The rockets were brought to the site, and one round was placed behind each launcher. Once all tubes were in position, the rockets were loaded, and electrical connections were made. Fire control pits were dug, each controlling 10 to 12 launchers.

e. At 0315 hours, the rockets were fired. Although 134 pits were prepared, only 66 of the launchers fired. Thirty-five rockets misfired due to a malfunction in the electrical system. Four of these rockets were left in the launchers at the firing site while others were dumped into the river. Six rockets were left in one of the fire control pits, two of which had been inverted on "mousetrap" pressure release detonators. EOD personnel removed the rounds.

f. Although the most significant military damage was in the area of the 37th Signal Battalion, it is apparent that the parked aircraft were the intended targets. The rounds had been fused at the super-quick setting, which provided the maximum shrapnel effect and the greatest damage to aircraft.

2. On 7 March 1967, the Soviet 122mm fin-stabilized rocket was fired on Camp Carrol in Quang Tri Province. This was the first time the 122mm rocket had been used in South Vietnam. The procedures used by the attacking force are not known.
ANNEX A: Chronological Listing of Incidents (Cont)

3. On 15 March 1967, at 0200 hours, the Da Nang Airbase was again attacked with 140mm rockets. Fifteen rounds were fired from a position some 1,000 meters south of the firing positions used in the 27 February attack. It is noted that the VC/NVA had apparently overfired the intended target in the original attack by approximately 1,000 meters; thus the firing unit was correcting range in this second attack by moving the positions rather than by changing elevation. It is interesting to note that in the two attacks on Da Nang, the enemy used a natural barrier (the river) between his position and the target area.

4. On 20 March 1967, elements of the 3rd Marine Division captured 102mm rockets and launchers in Quang Tri Province.

5. On 28 April 1967, the 9th Marine perimeter at Dong Ha received an estimated 50 rounds of 140mm rocket fire during a 45-minute attack. Friendly units swept the area of the suspected enemy firing position and found 30 rocket firing positions in the vicinity of YD 258582. Fifty-four rockets were captured.

6. On 28 April 1967, the 11th ARVN Regiment at Dong Ha received an estimated 120 rounds of 140mm rocket fire.

7. On 5 May 1967, twenty-five 140mm rocket rounds impacted in the Dong Ha area.

8. On 9 May 1967, an unknown number of 140mm rockets were fired on the Marine Camp at Con Thien (YD 17701).

9. On 12 May 1967, at 0100 hours, an NVA artillery unit fired Soviet 122mm rockets on the Bien Hoa Airbase in an attack which was launched in conjunction with the use of 82mm mortars and 75mm recoilless rifles. More than 175 rounds of the mixed fire impacted into the base area. Forty-seven rockets are known to have been fired from positions approximately 10,000 meters north-northeast of the base at grid coordinates YT 034217. The firing positions were just north of the Song Dong Nai. The mortar positions were 3,000 meters due east of the center of the air strip at coordinates YT 020136.

a. The rockets were placed in preselected positions and aimed at predetermined target areas, either through the use of aiming stakes or simply by the use of compasses and maps of the area. The firing pits were approximately 15 meters apart. A type of tripod was used to secure the tubes in place. This is necessary to withstand the torquing action of the fin-stabilized 122mm rocket. The tripods were set up with two legs placed six to eight feet apart while the third varied from three to five feet in the front. A shallow pit, not more than 1½ inches was dug behind each tripod. This pit was dug to provide space to insert the
rocket when the launcher was in the elevated position. The back-blast left scars from this point approximately eight feet to the rear. A lean-to approximately five feet square was set up behind every third firing position. It is believed that these shelters covered the rockets since it is evident that more than one round was fired from each tube. Defensive positions were prepared between each of the firing positions.

b. It is apparent that two different fuze settings were used on the 122mm rockets. The rockets intended for the area of the parked aircraft were fuzed with super-quick settings while those aimed at the troop areas were adjusted for time delay.

c. The attack on Bien Hoa marked the first rocket attack in which the firing unit was prepared to defend the launch sites. Sweeps through the area are conducted daily by ARVN forces. Thus, the defensive positions were probably prepared in the event the sites were detected.

d. As in the attack on Da Nang, it is interesting to note that again the enemy used a natural barrier (the river) between his rocket position and the target area.

10. On 16 May 1967, 10 rounds of 140mm rockets were fired against the 11th Marines at coordinates AT 921759.

11. On 17 May 1967, the 3rd Marine Division at Dong Ha received 150 rounds of mixed 140mm and 122mm rockets and artillery fire.

12. On 17 May 1967, the 122mm rockets were again used when 150 rounds of mixed 140mm and 122mm rockets and artillery were fired against Dong Ha.

13. On 17 May 1967, four rounds of 140mm rockets hit the Quang Da Special Zone Headquarters.

14. On 18 May 1967, 40 rounds of 140mm rockets were fired at Cam Lo on the 9th Marines.

15. On 20 May 1967, 50 rounds of 140mm rockets were fired on Tung Luong Town.

16. On 21 May 1967, 20 rounds of 140mm rockets were fired at the 2nd Battalion, 12th Marines, at coordinates YD 113695 in Quang Tri Province.

17. On 24 May 1967, six rounds of 140mm rockets were fired at the Composite Artillery Battalion at coordinates YD 205745.

ANNEX A: Chronological Listing of Incidents (Cont)


20. On 28 May 1967, 16 rounds of 140mm rockets hit the 12th Marines at coordinates YD 114694.

21. On 28 May 1967, six rounds of 140mm rockets hit the 26th Marines at coordinates YD 088686.

22. On 28 May 1967, the 4th Regiment was hit by nine rounds of 122mm rockets at coordinates YD 073688.

23. On 6 June 1967, the 26th Marines were hit with 25 rounds of 102mm rockets at coordinates XD 847417.

24. On 12 June 1967, 48 rounds of 140mm rockets were used against the 1st AMTRAC Battalion at coordinates YD 349694.

25. On 17 June 1967, the Tan Canh Special Forces Camp was hit with four rounds of 122mm rockets at coordinates ZB 053217.

26. On 20 June 1967, 60 rounds of 140mm rockets were fired against the Gio Linh base.

27. On 27 June 1967, the 26th Marines at Khe Sanh were hit with 50 rounds of 102mm rockets.

28. On 27 June 1967, 50 rounds of 102mm rockets were fired at elements of Operation Crockett at coordinates XD 842408.

29. On 28 June 1967, Khe Sanh was hit with 25 rounds of 102mm rockets at coordinates XD 849416.

30. On 29 June 1967, 20 rounds of 140mm rockets were fired at Con Thien at coordinates YD 214740.

31. On 1 July 1967, Con Thien received 20 rounds of 140mm rockets at coordinates YD 117701.

32. On 3 July 1967, 120 rounds of 140mm rockets hit Dong Ha.

33. On 3 July 1967, the 3rd Marine Regiment received 40 rounds of 140mm rockets at coordinates YD 142720.

34. On 4 July 1967, 12 rounds of unidentified rockets were fired against the 9th Marine Regiment at coordinates YD 137108.

35. On 4 July 1967, 40 rounds of 140mm rockets were used against the 3rd Regiment at coordinates YD 152700.
ANNEX A: Chronological Listing of Incidents (Cont)

36. On 4 July 1967, the 3rd Marine Regiment again received 40 rounds of 140mm rockets in a second attack.

37. On 5 July 1967, seven rounds of 140mm rockets were fired at Dong Ha.


39. On 5 July 1967, Dong Ha Base was hit with seven rounds of 140mm rockets.

40. On 5 July 1967, Cua Viet was hit with 50 rounds of 140mm rockets at coordinates YD 344698.

41. On 6 July 1967, 30 rounds of 140mm rockets were fired against the 9th Marines at coordinates YD 137108.

42. On 8 July 1967, Dong Ha town was fired upon with six rounds of 140mm rockets.

43. On 15 July 1967, from 0015 to 0030 hours, Da Nang Airbase received between 54 and 80 rounds of 122mm rockets. Of these, 31 to 57 impacted into the southern revetment area of the base causing much damage and secondary explosions from munition stores located in the ready area. Eleven rounds landed in the center of the airstrip and 12 rounds hit Marine aircraft on the northern end of the runway. Each grouping was in a tight pattern on the intended targets.

a. The rockets were fired from six sites of six 122mm rocket positions, i.e., 36 launcher systems. These six sites were located at the following coordinates: AT 924710, AT 924708, AT 927685, AT 928689, and AT 929688. The first three sites were grouped together on the north bank of the Song Tuy Loan River with the latter three sites centered 2,000 meters south of the first.

b. The 2nd and 3rd Battalions of the 368B Rocket Artillery Regiment, were the units conducting the attack. Members of the D-1 Battalion were utilized as porters.

c. Both firing positions were accurately located by Marine outposts in the vicinity of the launch sites, three minutes after the attack commenced, with counter-battery fire on the southern sets of positions two minutes later. Clearance could not be obtained to fire into the northern positions. Ground forces were lifted into the northern and southern positions later that day and on 16 July 1967. One KIA and numerous blood trails were found in the southern positions.

d. Marine observation posts in the vicinity of the launching positions reported seeing a maximum of nine ripples of six rockets each from
ANNEX A: Chronological Listing of Incidents (Cont)

the two positions: total of 54 rockets. The reported figure of 80 rounds came from Air Force assessment personnel counting the impact points on the airfield. There are indications that some of the rounds with delay fuze setting, landing on the southern end of the airbase, skipped upon initial impact to explode a short distance away. This condition may have resulted in double counting of a number of the rounds.

e. Elements of the 11th Marine Regiment (Artillery) surveyed the southern positions on 15 July 1967. They found tree tops forward of the firing positions cut off to provide necessary clearance to fire the rockets. Using this information, the elevation of the launchers was computed to be between 30° and 40°.

f. The launch crews were able to exfiltrate the area with all their equipment except for four 122mm rockets left in the northern position.

g. Casualties and battle damage at the airbase included 8 KIA, 159 WIA, 18 aircraft destroyed, 23 aircraft damaged, 5 structures destroyed, and many structures and vehicles damaged. Runways were damaged to an extent making them inoperative for one day. Rockets impacting into bomb storage areas in the center and southern sections of the runway resulted in many secondary explosions, causing much of the damage.

h. The infiltration and exfiltration routes leading into and out of the launch positions have not been determined.

44. On 18 July 1967, the 1st AMTRAC Battalion was hit with 10 rounds of 140mm rockets at coordinates YD 343698.

45. On 26 July 1967, the 1st AMTRAC Battalion was hit with 20 rounds of 140mm rockets at coordinates YD 349694.

46. On 27 July 1967, from 0030 to 0050 hours, the 1st Brigade, 1st Infantry Division Base Camp at Phuoc Vinh, vicinity XT 975500, came under attack by VC/NVA units using 122mm rockets and 82mm mortars. Eighty rounds of 122mm rockets and 72 rounds of 82mm mortars impacted on the base. The launch positions were in the vicinity of XT 888540, XT 888546, and XT 891543. In this attack, 18 launcher positions were used in groups of six. This was a 122mm rocket artillery battalion, probably of the 84A Artillery Regiment, which is unlocated in War Zone D and known to be equipped with 122mm rockets.

a. Reaction fire by friendly artillery began at 0032 hours, or two minutes after the attack commenced. Artillery and air attack by AC-47 and light helicopter fire teams continued through the night. An infantry reaction team was placed on the site at 1015 hours and discovered four KIA. Later in the day, two prisoners were captured.

A-6
b. Casualties and battle damage at the base camp included 12 KIA, 68 WIA, and minimal aircraft and helicopter damage. Two helicopters had to be evacuated to a higher echelon repair facility. Structure damage included six buildings completely destroyed and many with light damage. Sporadic 82mm mortar fire continued after the main attack, probably to cover the retreat of the rocket unit.

c. Like the attack on Bien Hoa on 12 May 1967, the site was protected by heavy AA machine guns at two positions (XT 887558 and XT 885539). Light small arms fire was received on the base perimeter, but was silenced by automatic weapons and M79 fire.

d. Again no information was obtained on the infiltration and exfiltration routes leading into and out of the launch positions.

47. On 29 July from 0035 to 0115 hours, a 1st Infantry Division base camp at Phu Loi was attacked by VC/NVA units using 122mm rockets and 82mm mortars. Forty-nine rounds of 122mm rockets and 89 rounds of 82mm mortar impacted into the base. The rockets landed in a concentrated pattern on the southeastern portion of the airstrip. There were three launch positions of six launchers each, centered at coordinates XT 858249: a total of 18 launchers or the equivalent of one battalion.

a. It is possible, but not likely, that the firing unit was the same one launching the attack on Phuoc Vinh on 27 July 1967. The firing positions for the Phu Loi attack were 30 kilometers south of those for the Phuoc Vinh attack. Reorganization after the Phuoc Vinh attack and displacement south over that distance would have been difficult. The firing units were probably separate battalions of the 84A Artillery Regiment.

b. Reaction fire by friendly artillery began at 0038 hours, or three minutes after the attack was launched. The positions were never accurately located; consequently, the artillery fire was largely ineffective. There were 2744 artillery rounds expended. A FAC observed the rockets firing during the attack, but because of the volume of artillery fire into the area, he was unable to pinpoint the positions or adjust fire. The counter-battery radar was not effective. An infantry scout patrol was on the site the next morning and discovered one KIA and one WIA (badly wounded). Only one artillery round landed in the positions.

c. Casualties and battle damage at the base camp included 3 KIA, 31 WIA, 3 helicopters destroyed, 3 helicopters damaged, and light damage to vehicles and structures.

d. Again the rocket launch positions were protected by heavy AA machine guns (probably 12.7mm) at two positions north of the firing launch site.
ANNEX A: Chronological Listing of Incidents (Cont)

e. The FAC reported seeing three trucks near Highway 1A at the launch site. It is possible that these trucks were used to transport personnel and equipment into the launch positions from the north.

48. On 29 July 1967, the Composite Artillery Battalion was hit with 15 rounds of 140mm rockets at YD 214739.

49. On 23 August 1967, the forward Command Post of the 1st Brigade, 4th Infantry Division, was hit with 60 rounds of 122mm rockets at coordinates YA 896313.

50. On 28 August 1967, the Marble Mountain Complex was hit with 10 rounds of 140mm rockets at coordinates BT 063738.
NOTE: The information on this chart was extracted from a captured TOE of the 84A Artillery Regiment.
ANNEX F: Model 122mm Rocket Artillery Regiment (Cont)

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<th>2nd Bn</th>
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