<table>
<thead>
<tr>
<th>CLASSIFICATION CHANGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TO:</td>
</tr>
<tr>
<td>UNCLASSIFIED</td>
</tr>
<tr>
<td>FROM:</td>
</tr>
<tr>
<td>CONFIDENTIAL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIMITATION CHANGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>TO:</td>
</tr>
<tr>
<td>Approved for public release; distribution is unlimited.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FROM:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution authorized to U.S. Gov't. agencies and their contractors; Administrative/Operational Use; 14 MAY 1969. Other requests shall be referred to Office of the Adjutant General (Army), Washington, DC 20310.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AUTHORITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGO ltr 29 Apr 1980 ; AGO ltr 29 Apr 1980</td>
</tr>
</tbody>
</table>

THIS PAGE IS UNCLASSIFIED
SECURITY MARKING

The classified or limited status of this report applies to each page, unless otherwise marked. Separate page printouts MUST be marked accordingly.

THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE LAWS, TITLE 18, U.S.C., SECTIONS 793 AND 794. THE TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW.

NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U.S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.
SUBJECT: Operational Report: Lessons Learned, Headquarters, Americal Division Artillery

SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation in accordance with paragraph 5b, AR 525-15. Evaluations and corrective actions should be reported to ACSFOR OT UT, Operational Reports Branch, within 90 days of receipt of covering letter.

2. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

ROBERT E. LYNCH
Colonel, AG
Acting The Adjutant General

DISTRIBUTION:
Commanding Generals
US Continental Army Command
US Army Combat Developments Command
Commandants
US Army War College
US Army Command and General Staff College
US Army Air Defense School
US Army Armor School
US Army Aviation School
US Army Chemical School
US Army Combat Surveillance School
US Army Engineer School
US Army Field Artillery School
US Army Infantry School
US Army Intelligence School
US Army Missile and Munitions School
US Army Ordnance School
US Army Quartermaster School

Regraded unclassified when separated from classified inclosure.

CONFIDENTIAL
1. **Section 1, Operations: Significant Activities.**

   a. **(U) Command:**

   Colonel Leslie B. Hardy assumed command of Americal Division Artillery on 16 March replacing Colonel Lawrence M. Jones Jr, who departed the command on 16 March 1969.

   b. **(U) The following units were assigned, attached, or OPCON to Americal Division artillery:**

      (1) 6th Battalion, 11th Artillery was assigned on 15 February 1969. LTC James H. Sloan Jr assumed command on 3 February 1969, replacing LTC Talbott Barnard, who assumed the duties of the Division Artillery S3.

      (2) 1st Battalion, 14th Artillery was assigned on 15 February 1969. LTC James J. Durbin assumed command on 18 March 1969, replacing LTC Edward A. Kelley Jr, who assumed the duties of Executive Officer, 193rd Infantry Brigade.

      (3) 3d Battalion, 82d Artillery was assigned on 15 February 1969. LTC Edouard A. Felquin commanded during the period of this report.

      (4) 1st Battalion, 82d Artillery remained assigned. LTC John J. Luxemburger Jr commanded during the period of this report.

      (5) 3d Battalion, 16th Artillery remained attached. LTC Jack R. Pilk commanded during the period of this report.

      (6) 3d Battalion, 18th Artillery remained attached. LTC James R. Pruitt commanded during the period of this report.
CONFIDENTIAL

AVDF-ATO

SUBJECT: Operational Report for Period Ending 30 April 1969, NCS CSFOR-65 (RCL) (U)

(7) 6th Battalion, 56th Artillery (HAWK) remained assigned with OPCON 7th Air Force. LTC J.A. Richard Guertin assumed command on 4 February replacing LTC William A. Warren, who departed the command on 4 February.

(8) Battery G, 55th Artillery (RI) remained attached. CPT T.J. Stevens commanded during the period of this report.

(9) 3d Platoon, Battery G, 29th Artillery (Searchlight) assigned to 108th FA Group, OPCON to Americal Division Artillery.

(10) 251st Field Artillery Detachment (Countermortar Radar) remained attached. CW2 Valentine Royal commanded the detachment until 23 February 1969 when he was evacuated due to wounds received in a sapper and ground attack. CW2 Thomas W. Koper was the interim commander until 12 March when SPC Joe E. Boyett assumed command.

(11) 252d Field Artillery Detachment (Countermortar Radar) remained attached. CW2 Thomas W. Koper assumed command on 20 January 1969 replacing CW4 David L. Patchell, who was assigned to the Target Acquisition Platoon, Headquarters, Division Artillery, Headquarters and Headquarters Battery.

(3) Operations.

(1) Three named operations were being conducted at the start of the period and were terminated on 282400 February to realign the internal boundaries of the Americal and 2d AVMN Divisions. The Post TET offensive delayed the completion of the realignment.

(2) Artillery Support.

(a) 6th Battalion, 11th Artillery was an organic element of the 11th Infantry Brigade until reorganization of the Americal Division on 15 February 1969. The battalion remained in direct support of the 11th Infantry brigade after the reorganization and supported operations of the brigade in Operation Vernon Lake II, in the Duc Pho Area of Operations, and the Iron Mountain Operational Zone.

1. A/6-11 supported the operations in the Duc Pho AO from LZ Dragon (BS 730 528) from 1 February to 15 March. On 10 February, two platoons (four howitzers) were moved to Nghia Hanh (BS 616 640) to support the 1-20th Infantry and moved by air to LZ Cedar Mountain (BS 582 660) on 12 February. On 14 February, two platoons moved by air to LZ San Juan (BS 634 380), then to LZ Thunder (BS 869 319) on 25 February. The remaining platoon moved from LZ Dragon to LZ Brecon (BS 816 376) on 15 March and was assigned to C/6-11.
2. B/6-11 initially supported Operation Vernon Lake II from LZ Cork (BS 449 612), moving to Ha Thanh Special Forces Camp (BS 382 705) on 7 February to support a short operation north west of the camp, then returned to LZ Cork on 11 February. On 22 March, the battery moved to LZ Pepper (BS 496 715) to support an operation designed to relieve the enemy pressure on the province capital of Huong Ngai, returning to LZ Cork on 31 March. The battery moved by air to San Juan Hill (BS 634 380) on 13 April to support operations in the southern Song Ve Valley.

3. C/6-11 supported the operations in the southern Chu Lai TAOR from LZ Buff (BS 539 824) and became OPCOM to 1-14th Art'y on 12 February. On 27 February, the battery moved by air to LZ Mammases (BS 552 666) to support the operations in the Song Ve Valley until 8 March, when it moved to LZ Bronco (BS 811 390) to provide additional support to Duc Pho in the counterbattery, counterrocket program. Four weapons were moved by air to Minh Long Special Forces Camp on 10 April to support operations in the Song Ve Valley; moved to LZ Dragon (BS 730 525) on 18 April and to a new fire base, LZ Juff (BS 689 323), on 22 April to support operations in the southern Song Ve Valley.

4. D/6-11 remained on LZ Amy (BS 473 526) throughout the period, supporting Operation Vernon Lake II, providing support for the artillery battery at Minh Long Special Forces Camp, and supporting operations to the west of the fire base.

5. 1st Battalion, 14th Artillery was an organic element of the 198th Infantry Brigade until reorganization of the Americal Division on 15 February 1969. The battalion remained in direct support of the 198th Infantry Brigade after reorganization and supported operations of the brigade in Operation Russell Beach, in the Chu Lai TAOR, in the Oregon AO, and in the Geneva Park Operational Zone.

1. A/1-14 supported Operation Russell Beach from LZ South (BS 701 829) until 8 February, when the battery returned to LZ Gator (BS 371 963). On 30 March, one platoon moved by road to LZ Dottie in preparation for air movement to Hill 26 (BS 771 816) and return to Operation Russell Beach on 31 March. On 6 April, the platoon returned to LZ Gator for retraining and conversion to M102 howitzers. Battery became operational with M102 howitzers on 16 April.

2. B/1-14 supported Operation Russell Beach from LZ South (BS 702 829) until 4 February, when they moved by air to LZ Dottie, then by road to LZ Fat City (BS 439 075) on 6 February. On 19 February, one platoon moved by air to LZ Bovles (BS 247 168) for a short operation in Dragon Valley, returning to LZ Fat City on 22 February. One platoon moved
to LZ Dottie on 10 April to support operations north and east of LZ Dottie, returning to LZ Fat City on 22 April.

3. C/1-14 supported operations in the southern portion of the Oregon AO from LZ Professional (UT 173 076). On 11 February, one platoon moved by air to LZ Bowles (UT 247 168) to support a short operation in Dragon Valley, returning to LZ Professional on 15 February. On 9 March, the battery became organic to 3-82d Arty in conjunction with the change of boundaries to realign the Americal Division and 2d ARVN Division area of operations. This battery became operational with M102 howitzers on 15 April.

4. D/1-14 supported operations in the Chu Lai TAOR, primarily in a counterrocket mission from LZ Fat City (UT 439 075), with one platoon at LZ Gator (UT 571 963). On 6 February, the battery, minus one platoon, moved by road to LZ Dottie to support Operation Russell Beach, with the platoon joining the battery on 8 February. On 27 February, the battery moved by air to LZ sufr (UT 539 825) to support operations in the southern portion of the Chu Lai TAOR. This battery became operational with M102 howitzers on 7 April.

(c) 3d Battalion, 82d Artillery was an organic element of the 196th Infantry brigade until reorganization of the Americal Division on 15 February 1969. The battalion remained in direct support of the 196th Infantry brigade after reorganization and supported the brigade's operations in Operation Fayette Canyon, in the Oregon AO, and in the Frederick Hill Operational Zone.

1. A/3-82 supported operations from LZ Ross (UT 028 348) until 16 March, when the ARVN Artillery supporting the 5th ARVN Regiment moved to LZ Ross. Battery A then moved to LZ Baldy (UT 139 446). On 7 April, one platoon moved by air to LZ Cacti (UT 060 473) to support operations in Antenna Valley, relocating to LZ 1Ke (UT 945 405) on 11 April, and returning to LZ Baldy on 18 April. This battery became operational with M102 howitzers on 19 April.

2. B/3-82 supported operations from LZ Center (UT 051 249) until 25 February, when one platoon moved to LZ East (UT 129 202) to support operations in the vicinity of Tien Phuoc Special Forces Camp, which came under heavy attack during the Post Tet offensive. The remainder of the battery moved to LZ East on 27 February. At the completion of the operations in the vicinity of Tien Phuoc on 6 April, the battery moved to LZ Center. This battery became operational with M102 howitzers on 12 April.

2. C/3-82 supported operations in the Oregon AO with three howitzers on LZ Karen (AT 914 238) and two howitzers on LZ West (AT 990 250). On 11 March, LZ Karen was released to ARVN control as a base camp for the
CONFIDENTIAL

SUBJECT: Operational Report for Period Ending 30 April 1969, HCS CSFOR-65 (u) (u)

1. Hiup Duc District and the three howitzers moved by air to a newly opened fire base, LZ Siberia (AT 903 232). The platoon moved to LZ West on 19 April and the battery became operational with M102 howitzers on that date.

4. D/3-82 supported Operation Fayette Canyon and operations in the Oregon AO from LZ Baldy (AT 133 653) until 21 March, when the battery moved by air to LZ Young (BT 188 137) to support the operations in the vicinity of Tien Phuoc Special Forces Camp. On 8 April, the battery moved by air to LZ Ryder (AT 945 343) to support operations in the Antenna Valley, relocated to LZ Siberia upon completion of the operations on 20 April, and converted to M102 howitzers on that date.

(d) 1st Battalion, 82d Artillery provided medium artillery support for Operation Russell Beach, Operation Vernon Lake II, Duc Pho AO, and Chu Lai TAOR.

1. A/1-82 supported operations in the Chu Lai TAOR with the battery (minus one platoon) stationed at LZ Fat City. Primary mission was counterrocket fires into the rocket belt west of Chu Lai Base. One platoon remained attached to C/1-82 while located at LZ Cork (US 448 612), supporting operations in Operation Vernon Lake II and the Iron Mountain Operational Zone. The platoon moved to LZ Gator on 22 April, when operations ceased in the Vernon Lake II area.

2. B/1-82 supported Operation Russell Beach with one platoon at LZ South (US 699 828) and one platoon at LZ Dottie (US 631 855). The battery headquarters and the remaining platoon provided support to the Chu Lai TAOR from LZ Gator (US 573 965). On 5 February, the platoon from LZ South rejoined the battery at LZ Gator. On 11 February, the battery, minus one platoon at LZ Dottie, moved by road to LZ Snoopy (US 705 610) to support operations in the Song Vo Valley, the Duc Pho AO, and the Iron Mountain Operational Zone.

3. C/1-82, attached to 6-11th Arty, supported Operation Vernon Lake II with one platoon at LZ Amy (US 471 524), and operations in the Duc Pho AO with one platoon at LZ Liz (US 753 432) and one platoon at LZ Thunder (US 869 318). On 7 February, the platoon at LZ Amy moved by air to LZ Liz.

4. D/1-82 supported Operation Russell Beach and the southern portion of the Chu Lai TAOR with one platoon at LZ Dottie (US 630 853), while the other platoon supported operations in defense of Chu Lai Base from LZ Fat City (US 438 073). On 12 March, the platoon from LZ Fat City moved by road to LZ Liz to provide additional supporting fires in defense of Duc Pho. On 31 March, the platoon moved by road to LZ Dottie, rejoining the battery.


CONFIDENTIAL

AVDP-ATCO

SUBJECT: Operational Report for Period Ending 30 April 1969, RCS CSFOR-65 (K) (U)

(v) 17th Artillery supported Operation Fayette Canyon, Operation Mundin Valley, and operations in the Oregon AO and the Frederick Hill Operational Zone.

1. A/3-16 was in direct support of the 1st Squadron, 1st Cavalry stationed at Hawk Hill (AT 224 311). On 11 February, one platoon moved by road to LZ Gator and became OIC to 1-62d Arty, providing support to the Chu Lai TAOC. On 10 March, this platoon was released from OIC and moved by road to LZ Baldy (AT 130 449), providing direct support to an element of the 1-1 Cav operating in the northern portion of the Oregon AO. The platoon returned to Hawk Hill on 13 March. On 10 April, a platoon moved by road to LZ Baldy to support operations on Barrier Island, returning to Hawk Hill on 16 April at the conclusion of the operation.

2. B/3-16 provided support to Operation Fayette Canyon with the battery, minus one platoon, stationed at LZ饮 (AT 946 343). The platoon supported operations in the northern portion of the Oregon AO from LZ Ross (AT 027 351). On termination of Operation Fayette Canyon, the battery was repositioned with three howitzers at LZ Ross and three howitzers at LZ West (AT 988 249).

3. C/3-16 provided support to Operation Fayette Canyon with the battery, minus one platoon, stationed at LZ Riverine (AT 946 343). The platoon supported operations in the northern portion of the Oregon AO from LZ Ross (AT 027 351). On termination of Operation Fayette Canyon, the battery was repositioned with three howitzers at LZ Ross and three howitzers at LZ West (AT 988 249).

(f) 3d Battalion, 18th Artillery provided general support to the division and fired in support of all AO's and Operational Zones, Operation Fayette Canyon and Vernon Lake II.

1. A/3-18 remained in position at LZ Cindy (BS 342 883) in the Tra Bong Special Forces Camp, firing primarily in support of the 198th Infantry Brigade and the Tra Bong and Ha Thanh Special Forces Camps' operations.

2. B/3-18 remained in position at LZ Ross (BT 028 341), firing primarily in support of the 196th Infantry Brigade. The 8" platoon moved to a firing position in the vicinity of Tam Ky (BT 301 183) on 12 March and supported operations of the 196th Infantry Brigade in the vicinity of the Tien Phuoc Special Forces Camp during the Post Têt offensive. At the conclusion of the operations in the vicinity of Tien Phuoc, 7 April, the platoon returned to LZ Ross.

CONFIDENTIAL
CONFIDENTIAL

AVDF-ATCÜ

14 May 1969

SUBJECT: Operational Report for Period Ending 30 April 1969, ACS CSFOR-65 (AU) (U)

2. C/3-18 remained in position at LZ Crunch (BS 534 515) in the Minh Long Special Forces Camp, firing in support of Operation Vernon Lake II, Luc Phu AO, Iron Mountain Operational Zone, and Minh Long and Ha To Special Forces Camps' operations.

d. (C) Ammunition expenditures by caliber for the period 1 February to 30 April 1969:

<table>
<thead>
<tr>
<th>Caliber</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>105mm</td>
<td>155,080</td>
</tr>
<tr>
<td>155mm</td>
<td>74,515</td>
</tr>
<tr>
<td>8&quot;</td>
<td>13,758</td>
</tr>
<tr>
<td>175mm</td>
<td>8,883</td>
</tr>
</tbody>
</table>

e. (C) Countermortar Radar Detachments.

(1) 251st FA Detachment (Kadar) (CM) was positioned at LZ Cork (BS 456 609) until 29 March, when it was moved to OP-1 (BS 518 778) in an attempt to locate the source of mortars and rockets fired against the province capital and 2d ARVN Division Headquarters in Quang Ngai. This radar is also being used to conduct registrations with neighboring artillery units.

(2) 252d FA Detachment (Kadar) (CM) is positioned at Artillery Hill (AT 515 039) with primary sector to the northwest into the rocket belt around Chu Loi Base. This detachment is also performing radar registrations for neighboring artillery units.

f. (C) Battery G, 55th Artillery (MG) has been deployed throughout the Americal Division AO. Its primary mission is to support the ground defensive plans of the Division fire bases. The unit provides fire base, installation, convoy and road clearing operations security. The guns have also proved effective when firing ground suppressive fires.

g. (C) 3d Platoon, Battery G, 29th Artillery (SLT) has been deployed throughout the Division AO. It is used extensively to provide battlefield illumination and navigational assistance to the supported units. When possible, searchlights are collocated with multiple caliber 50 machine gun mounts to provide target acquisition and immediate engagement in either the visible light or infrared mode.

h. (C) Division Artillery emplaced its AN/TPS-25A ground surveillance radar set at OP-1 (BS 516 778) on 14 February. The primary sector of scan is to the west over the Song Tra Khuc River. The radar has proved very effective in detecting enemy movement in this area. Artillery fires have been called in on all of the more lucrative targets detected by the radar.

i. (C) Aviation.
AVDF-ATCO

SUBJECT: Operational Report for Period Ending 30 April 1969

14 May 1969

US CSFOR-65 (U) (U)

(1) Disposition of aircraft during the reporting period.

(a) Observation Type:

<table>
<thead>
<tr>
<th>Period</th>
<th>Authorized</th>
<th>On Hand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb - 28 Feb</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Mar - 31 Mar</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Apr - 30 Apr</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

(b) Utility Type:

<table>
<thead>
<tr>
<th>Period</th>
<th>Authorized</th>
<th>On Hand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb - 28 Feb</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Mar - 31 Mar</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Apr - 30 Apr</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

(2) Aircraft Damaged.

(a) An OH-6A helicopter was blown into a revetment by the rotor-wash from a UH-1B.

(b) An OH-6A helicopter tail boom was severed during a test flight. During autorotation the aircraft experienced severe vibrations which forced it to land, thereby severing the tail boom.

(3) Personnel.

(a) One officer is currently qualified as an Instructor Pilot for the OH-6A.

(b) Four officers completed the training necessary to accomplish transition to the OH-6A helicopter during the month of February.

(c) Personnel status at the end of the reporting period:

1. Officer Status:

   AUTHORIZED
   7 officers
   7 warrant officers

   ASSIGNED
   9 officers
   4 warrant officers

2. Enlisted Status:

   AUTHORIZED
   20

   ASSIGNED
   18
CONFIDENTIAL

SUBJECT: Operational Report for Period Ending 30 April 1969, RCS CSFOR-65 (RI) (U)

14 May 1969

(d) During this reporting period, four enlisted men successfully completed the OH-6A Army Aviation Refresher Training School (AAHTS), Vung Tau, RVN.

(4) Operations. With the ROAD reorganization, Division Artillery aviation assumed the responsibility for supporting the three direct support battalions. As a result, requirements for aviation support have increased significantly. Due to daily requirements, Division Artillery aviation utilizes one UH-1 C&C, two UH-1 resupply, and two CH-47 helicopters from the division aviation assets. These helicopters are in use an average of eighteen hours each day. Division Artillery aviation provides each battalion with an OH-6A helicopter for four hours per day with one battalion receiving an OH-6A helicopter all day. Battery G, 55th Artillery and 3d Platoon, Battery G, 29th Artillery receive an OH-6A helicopter for four hours per week. The Division Artillery staff is supported on a mission type basis.

(5) Summary of Aircraft Utilizations:

(a) HOURS PASSENGERS CARGO SORTIES

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FEB</td>
<td>832</td>
<td>294.1</td>
<td>1</td>
</tr>
<tr>
<td>MAR</td>
<td>824</td>
<td>3220</td>
<td>15</td>
</tr>
<tr>
<td>APR</td>
<td>743</td>
<td>2499</td>
<td>12</td>
</tr>
</tbody>
</table>

(b) Since the issue of the OH-6A helicopters, Division Artillery has had an increased availability rate. At present, Division Artillery has nine assigned OH-6A helicopters, all are on a mission ready status. During the month of February, a shortage of repair parts resulted in a decreased availability rate. This problem has recently been corrected.

(6) Summary of Aircraft Maintenance:

(a) The maintenance program during this reporting period has been difficult as most of the crew chiefs were not qualified on the OH-6A helicopter. With four crew chiefs attending the OH-6A Army Aviation Refresher Training School (AAHTS), the maintenance program has improved considerably.

<table>
<thead>
<tr>
<th>% AVAILABILITY</th>
<th>% FDP</th>
<th>% MAINTENANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEB 66</td>
<td>10</td>
<td>24</td>
</tr>
<tr>
<td>MAR 60</td>
<td>9</td>
<td>31</td>
</tr>
<tr>
<td>APR 81</td>
<td>4</td>
<td>15</td>
</tr>
</tbody>
</table>
AVDF-ATCO  
SUBJECT: Operational report for period ending 30 April 1969, RCS CSFOR-65 (nl) (U)  

14 May 1969

(b) It is expected that the availability rate for the next reporting period will show considerable improvement due to increased availability of parts in the I Corps area.

j. (C) Signal.

During the reporting period, Division Artillery relied on the following communication media: VHF and wire, secure and non-secure FM radio teletype, and messenger.

(1) Division Artillery does not have organic VHF systems, however, extensive use of this system is provided by the Infantry Brigades, Division Signal Battalion, and 1st Signal Brigade. Circuit utilization is as follows:

(a) Twelve sole user circuits from FSE to adjacent or higher headquarters.

*(b) Ten sole user circuits from FSE to battalions.

(c) Twenty-seven sole user circuits from battalion to battery or liaison officer levels.

(d) Twenty-three sole user circuits from battalion to battery level.

Sole user circuits are utilized between battalion FDC's and battery FDC's or between battalion and battery FDC's and liaison officers. These circuits are used for transmitting fire direction data and military and/or political clearances.

(2) FM radio provides the primary communication between battalion and battery levels. Issue of secure equipment, TSOC KY-38's and AH/FDC-77's has provided secure capability down to battery when located within range (8 of 25 current locations).

(3) Radio teletype assets were relocated to provide secure page copy communication between each battalion, FSE, and Headquarters Division Artillery. RTT has been established as the primary means of forwarding scheduled fires and OZ extensions with this increased capability.

(4) Messenger service exists between Headquarters Division Artillery and all artillery battalions twice daily with the exception of 6-11th Artillery and 3-82d Artillery. Due to the location of these two battalions, messenger service is limited to air service on a once a day basis.
CONFIDENTIAL

AVDF-ATCO

SUBJECT: Operational Report for Period Ending 30 April 1969, ARS CSFOR-65 (HI) (V)

k. (C) Training.

(1) The Division Artillery continued scheduled training as required by American Regulation 350-1. Increased emphasis has been placed upon gunnery and fire direction procedures.

(2) Schools:

(a) Twenty-six students attended the Division Artillery Fire Direction School. This course is directed towards advanced gunnery and is programmed for a five day duration.

(b) Twenty-nine company grade officers attended the Division Artillery Forward Observer and Liaison Officer Orientation and Training course. Attendance of this course is mandatory for all newly assigned field artillery company grade officers. The program of instruction includes: fourteen hours of classroom instruction and practical exercises; four hours of organizational briefings and conducted tours of battalion and battery fire direction centers, fire bases, and an infantry battalion Tactical Operational Center; and eight hours of artillery service practice.

(3) During this reporting period, twenty-one gunnery safety checklist inspections were conducted by Division Artillery. These inspections are directed towards compliance with the current Division Artillery Field SOP, as well as, all Division Artillery Gunnery and Fire Direction Directives. Each battalion FDC, battery FDC, battalion Liaison section, and battery howitzer section is inspected on a quarterly basis by Division Artillery. Battalions inspect subordinate elements on a monthly basis using the Division Artillery checklist.

l. (C) Civil Affairs.

(1) In response to the realignment of civic action areas of responsibility by the American Division G5, all projects in Ky Ha (V) were turned over to Naval Support Activity Detachment, Chu Lai. Division Artillery has since moved into its new areas of operation which are Ky Hoa (V) and Minh Nghia (V).

(2) As a result of incidents along the perimeter of Chu Lai Base, several solatium payments were made.

(3) The construction of the hamlet headquarters of A...n Trung (H), Ky Ha (V) was completed.

(4) During this period, 1555 Vietnamese were treated as a result of MEDCAP II activities.
M101 - M102 Howitzer Conversion.

(1) This headquarters was notified in November 1968 that the M102 howitzer would be issued to replace the M101 howitzer. The initial issue was scheduled for February 1969, with the issue order of priority to 3d Battalion, 82d Artillery, 1st Battalion, 14th Artillery, and 6th Battalion, 11th Artillery.

(2) In December, a recommended battery prescribed load list (PLL) was received from USAWAR. This PLL was forwarded to the three 105mm howitzer battalions with directions to requisition the repair parts. At this time, all 105mm howitzer battalions were assigned to the three separate infantry brigades, thus all parts were to be requisitioned through the support battalion with each brigade.

(3) With the division reorganization on 15 February, the majority of all unfilled requisitions were cancelled. All parts were rerequisitioned. Upon the arrival of the initial issue of M102 howitzers in March, a low percentage of PLL fill was on hand.

(4) Upon receipt of the initial issue of M102 howitzers for each of the three battalions, maintenance classes were scheduled with the 723d Maintenance Battalion. Classes were programmed for selected key battery personnel with emphasis on organizational maintenance. Each class was scheduled for a duration of four days. Upon completion of each course of instruction, each firing battery received one M102 howitzer for the purpose of conducting section training.

(5) As of the end of this reporting period, the conversion program for the 3d Battalion, 82d Artillery is complete and seventy-two percent complete for the 1st Battalion, 14th Artillery. Latest available information indicates the M102 howitzer conversion program will be completed during the next reporting period.
2. **Section 2, Lessons Learned: Commander's Observations, Evaluations, and Recommendations.**

   a. **(U) Personnel.**

      (1) Excess number of Project 100,000 personnel assigned to the battalions.

         (a) **Observation:** Each battalion within Division Artillery has approximately nine percent of its assigned personnel who were drafted under the provisions of this program.

         (b) **Evaluation:** These personnel have performed adequately when supervised by mature professional NCO's. Units have, on occasion, been faced with excessive discipline problems with these soldiers. Article 15 rate of Project 100,000 varies from 8 - 25% per battalion.

         (c) **Recommendation:** That the number of Project 100,000 be restricted to no more than 5% of the unit assigned strength.

   (2) Shortage of required stockade facilities within USARV.

      (a) **Observation:** At the present time, the stockade population is such that confinement is not normally approved by the Staff Judge Advocate for a period in excess of one month.

      (b) **Evaluation:** Convictions which would normally result in sentences of more than one month confinement are currently suspended by commanders to one month to insure the Staff Judge Advocate's approval.

      (c) **Recommendation:** That a confinement facility be built in the I Corps area to insure that convening authorities are able to administer proper sentence without considering stockade population.

   b. **(C) Operations.**

      (1) **Secure FM Radio Limitations.**

         (a) **Observation:** The maximum range of the AN/PRC-77 is not adequate to support medium and heavy artillery battalion and battery communications in the Americal AO.

         (b) **Discussion:** The 25 kilometer range of the AN/PRC-77 radio is inadequate due to extended distances between medium and heavy artillery
firing batteries. The use of AN/VRC-46 radio is required to obtain the range necessary, however, the current authorization of TSEC/KY-8's is inadequate. Proper power and temperature regulation facilities are not normally available at the battery level. The use of the TSEC/KY-38 with the AN/VRC-46 radio facilitates secure voice communications, meets range requirements and eliminates the power requirement and high temperature problems inherent with the use of the TSEC/KY-8.

(c) RECOMMENDATION: An X-mode cable be designed and supplied with all TSEC/KY-38's to make them compatible with the AN/VRC-46 radio.

(2) Computation of GFT Settings.

(a) OBSERVATION: When a light or medium artillery unit has a significant number of GFT settings to compute, it becomes necessary to analyze the met data to determine which factors are significant. A battalion FDC may have to compute more than 30 GFT settings every six hours, and the time required to accomplish these computations must be reduced to a minimum.

(b) EVALUATION: After conducting a registration, it is necessary to compute a concurrent met to determine VE and deflection correction. Subsequent metro messages can be used in an abbreviated form as will be discussed below. This method assumes the use of wind cards with each mission. With respect to deflection, there are no computations to be made with a subsequent metro message. The use of wind cards and a position deflection correction obtained from the registration eliminates this computation. In addition, the rotation deflection correction can be disregarded since it will always average less than two mils at any latitude. In determining met range corrections, there are five factors involved: range wind, projectile weight, rotation correction, temperature, and density. Wind cards eliminate range wind. The variable of projectile weight is eliminated when weight is standard. The rotation correction can be disregarded for the following reasons: considering the range probable error, the method of conducting registrations by splitting a fifty meter bracket, and the lack of any surveyed registration points, the rotation correction becomes an insignificant variable. Since temperature and density corrections are significantly larger that the rotation corrections, it becomes even less important. Therefore, when computing a GFT setting, it is necessary to consider only temperature, density, and delta V range corrections. This lends itself to the use of an abbreviated met form, an example of which is attached, as inclosure 1. On the top of the form are shown delta T and delta D for both the Duc Pho and Chu Lai met stations. Below them are shown the chart ranges for the registration points. The temperature, density, and delta V unit correction factors are shown for each charge for which a GFT setting will
be computed. These are obtained at the entry ranges. Since delta V may be either positive or negative, both unit correction factors are included in the form. However, in this climate, temperature and density will always be an increase and decrease, respectively, from standard. Therefore, only the appropriate correction factors are included. At the bottom of the form is a place to apply the propellant temperature correction to the VVs. For the sample problem, the following information is given:

- Chg 7: -9.2 m/s, Powder temperature 77°
- Chg 6: +1.1 m/s
- Chg 5: -1.0 m/s
- Chg 4: -8.2 m/s

Use line 03 for charge 7 and line 02 for all other charges.

Station A - Due the metro message:

LN 02 30 17 054 943
LN 03 29 20 057 943

First delta T and delta D are applied to the variations from standard and this information entered on the form in the temperature and density blocks. Then the corrections for propellant temperature are applied to the VE's and this entered in the delta V blocks. Continuing the problem, the multiplications are performed. The total range corrections are determined by algebraically adding the temperature, density, and delta V range corrections. This data is then applied to the chart ranges to determine the elevations at which to set off the "without wind" GFT settings. Computation of the subsequent met message is now complete. It is significant to note that manual data used in computation of fire missions utilizing the above method reveals the fact that the quadrant and deflection obtained will check with FADAC within acceptable tolerances.

(c) RECOMMENDATION: If time is a significant factor when computing GFT settings, units may wish to consider the temperature-density method which improves the speed and ease of computations, while no loss in accuracy is incurred.

(3) Direct Fire for Fire Support Bases Located on Mountainous Terrain.

(a) OBSERVATION: Fire bases situated on mountainous terrain provide poor HE 105mm direct fire against targets in defilade and on steep inclines approaching a battery position.

(b) EVALUATION: Such targets can be fired upon using improved conventional munitions (ICM) in the direct fire role.
AVDF-ATC

SUBJECT: Operational Report for Period Ending 30 April 1969, HCS CSFOR-65 (HI) (U)

(c) RECOMMENDATION: When direct fire with H&G cannot be employed against approaching targets, ICs should be used in the direct fire role.

(4) Suppressive Fires for Isolated Fire Support Bases.

(a) OBSERVATION: When friendly helicopter type aircraft land on a remote fire base, the enemy often fires from two to six mortar rounds. The noise and distraction of CH-47 helicopters, in particular, make it virtually impossible to hear or spot the mortar's position.

(b) EVALUATION: Preplanned suppressive fires can be fired on suspect enemy mortar locations to disrupt enemy fire. All available fire power should be employed to include 105mm howitzers, 4.2mm mortars, 106mm Rk, quad 50 caliber MG, and M-60 MG. Artillery liaison officers can control the fire in coordination with the air controller and infantry commander located on the fire base.

(c) RECOMMENDATION: When friendly aircraft are fired on when approaching fire bases, the artillery representative at the fire base should coordinate a suppressive fire plan using all available fire power to disrupt enemy fires.

(5) AN/APN-4A Radar Antenna Masking.

(a) OBSERVATION: When the enemy is attempting to mortar or rocket a friendly location, experience has shown that fires commenced when the AN/APN-4A radar is observed oriented in a direction other than where the fire originates.

(b) EVALUATION: In order to prevent the enemy from observing the direction to which the radar is oriented, a canvas mask can be erected around the radar antenna.

(c) RECOMMENDATION: To prevent the enemy from observing the direction that the AN/APN-4A radar is oriented, a stable canvas mask should be erected around the antenna.

(7) Countermortar/Counterrocket Flash Ranging Plotting Board.

(a) OBSERVATION: The prescribed Artillery Sound Ranging and Flash Ranging Board as prescribed in FM 6-122 is not practical for battalion size operations for the following reasons:

1. Limited space normally associated with a Battalion Operations Center.

2. Limited number of personnel normally available to operate the complex plotting board.
CONFIDENTIAL

AVDF-ATCO

SUBJECT: Operational Report for Period Ending 30 April 1969, ACS CSFOR-65 (M) (U)

(b) EVALUATION: To meet operational requirements for battalion size organizations tasked with operating a Countermortar or Counterrocket Information Center, a field expedient plotting board has been fabricated, using locally procured materials. Inclosure 2, with Tabs A thru E, is an explanation of the operation of the plotting board with illustrations.

(c) RECOMMENDATION:

1. That the fabricated board be used by units which are not authorized the prescribed plotting tables by TOE.

2. That consideration be given to place a plotting board of this type in supply channels.

c. (C) Logistics.

1) Rupturing of Fuel Tank on 8" SP Howitzer, M110.

(a) OBSERVATION: Shock transmitted to the hull fuel tank during firing, coupled with the tank at times being only partially filled, appear to cause cracks in the hull fuel tank.

(b) EVALUATION: Three of the four M110 SP howitzers in a Division Artillery unit have experienced ruptured/cracked fuel tanks since arriving in country nine months ago. Firing platforms, 30 by 30 feet, have been constructed to reduce the shock waves generated during firing and to keep the firing platform as level and stable as possible. Fuel tanks are also now kept as full as possible.

(c) ACTION TAKEN: An EIR (DA Form 2407) has been submitted recommending a rubber liner be made available to insert inside the fuel tank, thereby further reducing the shock waves discussed above.

(d) RECOMMENDATION: Pending approval of the submitted EIR, that the procedure, as per paragraph (b) above, be implemented as an interim measure to reduce ruptured/cracked fuel tanks on the M110 howitzer.

2) Expedient Timing of the Rammer Chain of the 8" SP Howitzer, M110.

(a) OBSERVATION: Normal wear of the chain components (links, bushings, and pins) cause the chain to buckle under hydraulic pressure before the hydraulic relief valve opens. TM 9-2300-216-10, dated Sep 68, describes a method of timing the M110 rammer chain which appears to be unsatisfactory.

(b) EVALUATION: The basis for the method described in the
CONFIDENTIAL

AVDP-ATCO

14 May 1969

SUBJECT: Operational Report for Period Ending 30 April 1969, HCS CSFB-65 (R1) (U)

(c) RECOMMENDATION: When direct fire with H2 cannot be employed against approaching targets, LCMs should be used in the direct fire role.

(4) Suppressive Fires for Isolated Fire Support Bases.

(a) OBSERVATION: When friendly helicopter type aircraft land on a remote fire base, the enemy often fires from two to six mortar rounds. The noise and distraction of CH-47 helicopters, in particular, make it virtually impossible to hear or spot the mortar's position.

(b) EVALUATION: Preplanned suppressive fires can be fired on suspect enemy mortar locations to disrupt enemy fire. All available fire power should be employed to include 105mm howitzers, 4.2mm mortars, 106mm Hk, quad 50 caliber MG, and M-60 MG. Artillery liaison officers can control the fire in coordination with the air controller and infantry commander located on the fire base.

(c) RECOMMENDATION: When friendly aircraft are fired on when approaching fire bases, the artillery representative at the fire base should coordinate a suppressive fire plan using all available fire power to disrupt enemy fires.

(5) AN/MP-4A radar Antenna Masking.

(a) OBSERVATION: When the enemy is attempting to mortar or rocket a friendly location, experience has shown that fires commenced when the AN/MP-4A radar is observed oriented in a direction other than where the fire originates.

(b) EVALUATION: In order to prevent the enemy from observing the direction to which the radar is oriented, a canvas mask can be erected around the radar antenna.

(c) RECOMMENDATION: To prevent the enemy from observing the direction that the AN/MP-4A radar is oriented, a stable canvas mask should be erected around the antenna.

(7) Countermortar/Counterrocket Flash Ranging Plotting Board.

(a) OBSERVATION: The prescribed Artillery Sound Ranging and Flash Ranging Board as prescribed in FM 6-122 is not practical for battalion size operations for the following reasons:

1. Limited space normally associated with a Battalion Operations Center.

2. Limited number of personnel normally available to operate the complex plotting board.

CONFIDENTIAL
(4) **Air Transportable 8 inch/175mm Tube Changing Device.**

(a) **Observation:** In order to accomplish required tube changes in a heavy artillery battery, two lift devices (M578 or 5-ton wreckers) or one M88 is normally required. Due to the limited availability of the aforementioned lifting devices in isolated areas, an air transportable tube changing device has been fabricated and tested, Inclosure 5.

(b) **Evaluation:** With the air transportable tube changing device, the requirement for two lift devices has been eliminated in each firing battery. Using two fixed, five ton hoists, mounted on an I-beam, a tube change is accomplished in three hours on the M107 gun, or M110 howitzer. This device requires a minimum amount of maintenance and is easily transported by a CH-54 helicopter.

(c) **Recommendation:**

1. That the air transportable tube changing device be used by heavy artillery batteries located at isolated fire bases in lieu of present heavy lift devices.

2. That consideration be given to prefabricating an all steel tube changing device which is air transportable for use in heavy artillery battalions.

(5) **Trunnion Shear Pin, Quad 50 Mount, M55 System.**

(a) **Observation:** It has been discovered that in the Quad 50 mount, M55 system, the trunnion shear pin (FSN: 5315-188-0171) frequently shears while the system is being fired or negotiating rough terrain.

(b) **Evaluation:** It is a safety hazard to fire the 50 caliber machine gun once the pin is broken, in that the trunnion pin itself holds the M55 mount stationary in elevation while firing. An equipment improvement report was submitted on 19 February 1969 requesting the shear pin be improved.

(c) **Recommendation:** It is recommended that the trunnion shear pin be checked before and after firing and periodically during convoy operations.

(6) **Repair Parts for the AN/TPS-25 Radar.**

(a) **Observation:** There is a critical shortage of repair parts for the AN/TPS-25 radar.
(b) EVALUATION: Americal Division Artillery received its AN/TPS-25 radar in February 1969. This set was rebuilt at Sacramento Army Depot and received at Chu Lai minus power generators and running spares. Initial emplacement of this radar generated a requirement for repair parts. At this time, the direct support unit had not established an ASL. Telephones with direct support and general support units throughout the Republic of Vietnam indicated an in-country shortage of repair parts. This is further complicated by the fact that approximately six hundred line items in the parts manual are not military standard parts. The contractor for this radar was the Hazeltine Corporation.

(c) RECOMMENDATION: General support maintenance be established to include a sufficient ASL to provide support for the AN/TPS-25 radar in the Republic of Vietnam. This support should also provide direct exchange for the major sub-assemblies of the radar. Direct support units in remote areas such as I Corps will have to maintain a high percentage of ASL fill on non-military standard repair parts.
AVDF-OEOD (14 May 69) 1st Ind  
SUBJECT: Operational Report - Lessons Learned (Americal Division Artillery) (U)  

DA, Headquarters, Americal Division, APO 96374  

TO: Commanding General, United States Army Vietnam, APO 96375  

1. (U) Forwad herewith is the subject report of the Americal Division Artillery for the period 1 Feb 69-30 Apr 69.  

2. (U) This Headquarters concurs with the observations and recommendations contained in the basic communication, and is preparing a DA Form 2028 requesting that techniques and procedures to utilize "piggyback" slingloads be included in TM 55-450-11, as recommended in paragraph 2c(3)(c), page 18.  

FOR THE COMMANDER:  

KENNETH W. TAYLOR  
LIT, AGC  
Asst AG
AVHGC-UST (14 May 1969) 2d Ind
SUBJECT: Operational Report for Period Ending 30 April 1969, HCS CSPOR-65
(II) (U)

HEADQUARTERS, UNITED STATES ARMY, VIETNAM, APO San Francisco 96375
28 JUL 1969

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,
AiO 96598

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 30 April 1969 from Headquarters, Americal Division Artillery.

2. Comments follow:

   a. Reference item concerning "Excess number of Project 100,000 personnel assigned to the battalions," section II, page 13, paragraph 2a(1); nonconcur. It is the policy of Department of the Army to make no distinction between individuals who were inducted under the Project 100,000 Program and other inductees. All replacements for USAHV are allocated to this command and assigned to subordinate commands based on grade, MOS, and unit requirements.

   b. Reference item concerning "Shortage of required stockade facilities within USAHV," section II, page 13, paragraph 2a(2); nonconcur.

      (1) The USAHV Installation Stockade prisoner population is not considered large enough to require additional facilities at this time. The operational capacity of the USAHV Installation Stockade located at Long Binh, is 502 prisoners. The emergency capacity is 630 prisoners. The average daily prisoner population from 1 January 1969 to 1 June 1969 was 448 prisoners.

      (2) A first offender's special court-martial sentence to confinement will not be ordered executed without prior approval of the general court-martial convening authority or his designated representative and then only for serious offenses. This requirement is contained in paragraph 11a, USARV Regulation 27-1. It is believed that first offenders are more amenable to rehabilitation in the unit than in confinement.

      (3) Convening authorities may order the execution of confinement adjudged by special court-martial for second offenders without approval of the general court-martial convening authority under USAHV regulation 27-1. If the individual's sentence exceeds thirty days, he is transferred (PCS) to the US Army Correctional Holding Detachment, USAHV, under change 1, AR 190-2. Once transferred to this organization he is processed for discharge under AR 635-212 or reassigned to another major command for rehabilitation.

   c. Reference item concerning "Secure FM Radio Limitations," section II, pages 13-14, paragraph 2b(1); concur. This matter has been previously
AVHCC-DST (14 May 1969) 2d Ind

SUBJECT: Operational Report for Period Ending 30 April 1969, RCS CSFOR-65 (RL) (U)

recognized and acted upon by Headquarters, USARV. A number of compatible adapter cables were locally fabricated, tested and distributed. USAKOM is currently fabricating 300 additional cables for USARV. The basis of issue is currently being staffed with a tentative allocation of approximately 25 cables per division.

d. Reference item concerning "Computation of GPT Settings," section II, page 14-15, paragraph 2b(2); nonconcur. This is a field expedient which may be necessary under emergency conditions. It has the potential of introducing errors into the computations and subsequent firing data. Before this method can be adopted and disseminated to field artillery commands the procedures must be further tested, evaluated, and approved by the Field Artillery School at Fort Sill, Oklahoma.

e. Reference item concerning "Counter mortar/Counter rocket Flash Hanging Plotting Board," section II, page 16, paragraph 2b(7); concur. This method of plotting enemy mortar and rocket firings is an acceptable field expedient for crowded and undermanned battalion operations centers.

f. Reference item concerning "Air Transportable 8 inch/175mm Tube Changing Device," section II, 19, paragraph 2c(4). Concur with the requirement for a simple, rugged, and air transportable tube changing device. It is recommended that the US Army Materiel Command consider the early development of a portable tube changing device.

g. Reference item concerning "Repair Parts for the AN/TPS-25 Radar," section II, pages 19-20, paragraph 2c(6); concur. Stockages of repair parts for the AN/TPS-25 radar sets on PLL and ASL are demand supported in accordance with AR 735-35 and AR 711-16. The majority of repair parts for the AN/TPS-25 are common electronic repair parts in the supply system. In addition, all major components of the AN/TPS-25 are on the repair and return program to Sacramento Army Depot.

FOR THE COMMANDER:

[Signature]

C. D. Wilson
MCC
Assistant Adjutant General

Cy furrn:
Americal Div Arty
Americal Div

23
GPOP-DT (14 May 69) 3d Ind (U)
SUBJECT: Operational Report of HQ, Americal Division Artillery for Period Ending 30 April 1969, RCS CSFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 28 AUG 69

TO: Assistant Chief of Staff for Force Development, Department of the Army, Washington, D.C. 20310

This headquarters has evaluated subject report and forwarding indorsements and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:

[Signature]
C. L. SHORII
CPT, AGC
Ass't AG
### CONFIDENTIAL

#### SECTION A

<table>
<thead>
<tr>
<th>TEMP</th>
<th>DENSITY</th>
<th>DELTA V</th>
<th>GFT SETTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>-23.8</td>
<td>-27.2</td>
<td>+16.9 -16.7</td>
</tr>
<tr>
<td></td>
<td>x 5.7</td>
<td>x 5.8</td>
<td>x 8.2 x 139</td>
</tr>
<tr>
<td></td>
<td>-136</td>
<td>-158</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>-23.2</td>
<td>-11.9</td>
<td>+14.7 -14.3</td>
</tr>
<tr>
<td></td>
<td>x 5.4</td>
<td>x 5.8</td>
<td>x 2.1 x 30</td>
</tr>
<tr>
<td></td>
<td>-125</td>
<td>-69</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>-2.0</td>
<td>-7.4</td>
<td>+30.1 -26.3</td>
</tr>
<tr>
<td></td>
<td>x 5.4</td>
<td>x 5.8</td>
<td>x 10.4 x 313</td>
</tr>
<tr>
<td></td>
<td>-11</td>
<td>-43</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>+0.4</td>
<td>-4.9</td>
<td>+30.2 -27.1</td>
</tr>
<tr>
<td></td>
<td>x 5.4</td>
<td>x 5.8</td>
<td>x 7.8 +236</td>
</tr>
<tr>
<td></td>
<td>+2</td>
<td>-28</td>
<td></td>
</tr>
</tbody>
</table>

#### SECTION B

<table>
<thead>
<tr>
<th>TEMP</th>
<th>DENSITY</th>
<th>DELTA V</th>
<th>GFT SETTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>8910</td>
<td>-23.8</td>
<td>-27.2</td>
<td>+16.9 -16.7</td>
</tr>
<tr>
<td></td>
<td>x 5.7</td>
<td>x 5.8</td>
<td>x 8.2 x 139</td>
</tr>
<tr>
<td></td>
<td>-136</td>
<td>-158</td>
<td></td>
</tr>
<tr>
<td>6180</td>
<td>-23.2</td>
<td>-11.9</td>
<td>+14.7 -14.3</td>
</tr>
<tr>
<td></td>
<td>x 5.4</td>
<td>x 5.8</td>
<td>x 2.1 x 30</td>
</tr>
<tr>
<td></td>
<td>-125</td>
<td>-69</td>
<td></td>
</tr>
<tr>
<td>5290</td>
<td>-2.0</td>
<td>-7.4</td>
<td>+30.1 -26.3</td>
</tr>
<tr>
<td></td>
<td>x 5.4</td>
<td>x 5.8</td>
<td>x 10.4 x 313</td>
</tr>
<tr>
<td></td>
<td>-11</td>
<td>-43</td>
<td></td>
</tr>
<tr>
<td>4200</td>
<td>+0.4</td>
<td>-4.9</td>
<td>+30.2 -27.1</td>
</tr>
<tr>
<td></td>
<td>x 5.4</td>
<td>x 5.8</td>
<td>x 7.8 +236</td>
</tr>
<tr>
<td></td>
<td>+2</td>
<td>-28</td>
<td></td>
</tr>
</tbody>
</table>

### CORRECTION TO MUZZLE VELOCITY FOR PROP TEMP

<table>
<thead>
<tr>
<th>TEMP</th>
<th>CORRECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>-9.2</td>
<td>+1.1</td>
</tr>
<tr>
<td>+1.0</td>
<td>+1.0</td>
</tr>
<tr>
<td>-8.2</td>
<td>+2.1</td>
</tr>
</tbody>
</table>

Inclusion 1

DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS.
Inclosure 2 (Verticle Flash Ranging Plotting Board)

1. The vertical flash ranging plotting board (Tab A) can be readily constructed out of plywood and other available materials. The rotating disc is bolted through the center square board. A grid sheet or appropriate map can be used for the surface of the disc.

2. An index arrow is placed at the bottom of the board and is used for the orientation of the direction reported by the flash base (Item #1, Tab A).

3. The rotating disc mounted on the square piece of plywood slides in a groove at the bottom of the board (Item #2, Tab A).

4. A vertical straight edge is permanently mounted on the wall in front of the sliding board. A range deflection protractor ideally serves this purpose because of the manufactured range scale which can be used for polar plot directions.

5. The operation of the board requires only one individual. Operating procedures are as follows:

   a. When an azimuth is received from a flash observation post, this direction is placed on the rotating disc and aligned with the index arrow (Item #1, Tab A).

   b. The entire board is then moved horizontally until the reporting flash OP is aligned under the straight edge (Item #3, Tab A).

   c. A ray is then drawn along the direction reported by the flash OP (Tab B).

   d. When two or more rays intersect or form a polygon, an accurate grid of the rocket/mortar flash is determined (Tab C).

6. Illustrative example (Tab D & Tab E). A complete sample problem composed of seven pictures illustrates the operation of the vertical flash ranging plotting board.

   a. Figure 1. A flash was observed on 1 April 1969 by three of the battalion's flash OP's. All three OP's sent their azimuths to the battalion FDC. The A after each reading denotes that each OP was looking in the immediate direction of the flash when the rocket/mortar was fired.

   b. Figure 2. The azimuth (4875) is placed on the rotating disc and oriented on the index arrow (Item #1).

   c. Figure 3. The complete plotting board is moved horizontally to the left and centered over OP 3.
Inclosure 2 (Verticle Flash Hanging Plotting Board) continued

d. Figure 4. Using the range deflection protractor, a ray is then
drawn from the OP in the direction of the flash. In this figure the rays
from OP's 3 and 4 have been completed and the plotting board operator is
drawing the ray from OP 8 (Azimuth 2299).

e. Figure 5. Once the rays have been drawn, either an intersection
or a polygon is formed. In this case, a polygon is formed and a dot is
placed in the center to denote the enemy rocket/mortar site.

f. Figure 6. A coordinate square is used to determine the grid to
the nearest 10 meters.

g. Figure 7. The grid (4795 0519) is recorded and transmitted to
Division Artillery F3E.
**Operational Report - Lessons Learned, Hq, Americal Division Artillery**

Experiences of unit engaged in counterinsurgency operations, 1 Feb 69 - 30 Apr 69.

**CO, Americal Division Artillery**

**Report Date**
14 May 1969

**Contract or Grant No.**
N/A

**Originator's Report Number(s)**
692102

**Other Report Nos. (Any other numbers that may be assigned this report)**

**Distribution Statement**

**Sponsoring Military Activity**
OACSFOR, DA, Washington, D.C. 20310

**Abstract**
N/A
THIS REPORT HAS BEEN DELIMITED
AND CLEARED FOR PUBLIC RELEASE
UNDER DOD DIRECTIVE 5200.20 AND
NO RESTRICTIONS ARE IMPOSED UPON
ITS USE AND DISCLOSURE.

DISTRIBUTION STATEMENT A

APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION UNLIMITED.