
Antiaircraft Artillery Operations
SIXTH
ARMY

CONTENTS

FOREWORD

ANTIAIRCRAFT ARTILLERY OPERATIONS WITH SIXTH ARMY was prepared under the supervision of the Antiaircraft Officer, Sixth Army, during the early phase of the occupation of Japan. This document was prepared not only to provide the Antiaircraft Officer, AFPAC, with a resume of antiaircraft artillery participation in Sixth Army campaigns, but also to compile a history of the organization and activities of the Antiaircraft Section.

In some chapters this study is not as complete in tactical and technical details as might be desired, but every effort has been made to present the operations as accurately and completely as possible from available data.

In order to present a more complete picture of the antiaircraft artillery operations, chapters on individual operations include the missions of the Army and subordinate units in addition to the missions of the antiaircraft artillery units. With the exception that geographical names have been substituted for code names, missions have been extracted verbatim from Sixth Army field orders. To avoid confusion, attention is invited to the fact that the headquarters of the Alamo and the New Britain Forces were comprised of personnel from Headquarters Sixth Army. Task Forces in early operations were comprised of units assigned and attached to a corps, division, or regiment, depending upon the scope of the operation.

SECTION I

COMBAT PERFORMANCE OF ANTIAIRCRAFT ARTILLERY IN THE KIRIWINA - WOODLARK OPERATION (30 June 1943 - 5 August 1943)

1. MISSIONS
   - A. ARMY
   - B. SUBORDINATE UNITS
   - C. ANTIAIRCRAFT
2. ANTIAIRCRAFT PLANNING
3. ANTIAIRCRAFT STAGING
4. ANTIAIRCRAFT OPERATIONS

1. MISSIONS

A. New Britain Force Mission:

(1) New Britain Force will occupy KIRIWINA and WOODLARK concurrently by overwater movement, and establish air force elements thereon.

(2) D-Day will be the date of the initial landing in KIRIWINA and WOODLARK and for planning purposes may be assumed to be 30 June 1943.

B. (1) KIRIWINA Task Force Mission:

(a) The KIRIWINA Task Force will:

1. Occupy by overwater operations and defend KIRIWINA.

2. Construct airdrome, air warning, and radio navigational facilities on KIRIWINA.

3. Construct adequate port and base facilities on KIRIWINA to meet administrative, service and protective requirements.

(b) Major Combat Elements (less AAA):

158th Infantry (less 2d Battalion)

(2) WOODLARK Task Force Mission:

(a) The WOODLARK Task Force will:

1. Occupy by overwater operations and defend WOODLARK.

2. Construct airdrome and air warning facilities on WOODLARK.

3. Construct adequate port and base facilities on WOODLARK to meet administrative, service and protective requirements.

(b) Major Combat Elements (less AAA):

112th Cavalry Regiment

C. Antiaircraft Missions (New Britain Force):

(1) Passive Defense Directive.

(a) All units will employ passive antiaircraft defense measures as follows:

1. Foxholes and slit trenches will be dug at the earliest opportunity after debarkation of troops and equipment.

2. No lights will be used after sundown which can be seen from the air or seaward until Aircraft Warning Service has been established.

3. Natural concealment will be utilized to the maximum to provide cover for personnel and materiel. Camouflage will be employed where natural concealment is insufficient.

4. Troops and equipment will be dispersed to the maximum extent possible.

5. Activities of natives will be supervised to the extent necessary to conform to blackout regulations. Instructions will be given natives in the use of slit trenches and meaning of warning signals.

6. Air guard for local warning of the approach of hostile aircraft will be posted.

(2) Antiaircraft Artillery Annex:

(a) All types of aerial attack may be expected from the enemy who is prepared to accept heavy losses to inflict damage. Strafing usually follows bombing.

(b) The Allied Air Force will protect the overwater movement of troops and equipment, and furnish close support for the occupation and consolidation of KIRIWINA.

(c) For specific instructions covering the following, refer to Section I, Antiaircraft Artillery SOP, Annex 6a (to be issued).

1. Responsibilities of Fighter Commander.

2. Responsibilities of Antiaircraft Commander.

3. State of Readiness of AA Units.

4. Employment of AA Artillery.

5. Employment of Fighter Aircraft.

(d) Antiaircraft Warning Service will be furnished by the Fighter Command at KIRIWINA.

(e) Missions.

1. Primary Mission.

a. Initial Phase.

Protect troops and vessels enroute to the landings and during the critical phases of debarkation and movement of personnel, equipment and supplies ashore.

b. Occupation and Consolidation Phase.

Protect troop concentrations, artillery, shore establishments and landing beaches.

c. Final Phase.

In addition to the above, protect service elements engaged in construction, airdrome facilities and friendly air operations.

2. Contingent Mission.

When mechanized threat appears greater than aerial, when our own forces have local control of the air, or when for any other reason, his mission would be better served, the force commander will relieve antiaircraft of its primary mission and engage waterborne or mechanized targets, or employ it as assault artillery against prepared fortified positions.

(f) Troops (AA).

KIRIWINA

Hq and Hq Battery, 743d CA Bn (AA)
Battery B, 743d CA (AA)
Battery C, 743d CA (AA)
Battery A, 209th CA (AA)

Battery B, 209th CA (AA)
Battery D, 209th CA (AA)
1st Platoon, Battery A, 236th AAA SL Bn

WOODLARK

12th Marine Defense Bn (less 155mm Guns)
Hq and Service Battery
90mm Group (3 Batteries)
Special Weapons Group (one each - 40mm, 20mm, and MG Battery)

(3) Seacoast Artillery Annex.

(a) Mission:

1. Primary Mission.

Provide defense by denying to the enemy the seaward approach to the defended areas and in conjunction with the Navy, control shipping in defended harbors.

2. Contingent Mission.

Support fires of the field artillery with prearranged fires on land targets when directed by the Commander, KIRIWINA Task Force.

(b) Troops (Seacoast Artillery).

1st Special 155mm Gun Btry (CA) (4 - 155mm CA Guns)

(c) Command.

1. The Battery Commander of the 1st Special 155mm Gun Battery is charged with the tactical control, disposition, and employment of seacoast artillery units. He will furnish appropriate personnel to jointly man the Harbor Entrance Control Post with the Navy who will call upon him for gun fire to implement control of shipping.

2. Responsibility for recognition and identification rests with the:

NAVY - for small boats and minor war vessels.
ARMY - for major war vessels.

3. Organic searchlights will be employed against seaborne

targets only after clearance through the Antiaircraft Officer who may call for assistance by employing them as "Carry" searchlights or furnish additional illumination with AA lights.

4. Antiaircraft weapons will operate under control of the AA Officer, Task Force.

(d) Positions.

1. The Battery Commander, 1st Special 155mm Gun Battery, is responsible for accomplishing the following missions in order given:

a. An advance party of one officer and four enlisted men to proceed with the fourth echelon of the Task Force movement charged with selection of positions and computation of orientation data.

b. Reconnoiter and determine route of movement of gun and equipment from LOSUIA into positions and recommend to Task Force Commander improvements necessary for route to support 155mm guns.

c. To prepare positions, including alternate and dummy positions, establishment of fire control, interval communications installations, and camouflage and concealment.

d. Movement of guns to position.

(e) Ammunition Available.

1. Three units of fire will accompany the Task Force. A minimum of one unit of fire to be transported with each gun.

a. 75% HE MK III A1, unfuzed (with equal amount of Fuze PD M51 with booster, M21).

b. 25% AP M112, with Fuze BD M60.

2. 125% Primers, percussion, 21-grain, MK II A1.

3. Charges, propelling:

110% - if in sealed fiber containers.
100% - if in sealed metal containers.

(f) Communications (other than fire control).

1. Wire circuits installed by Commanding Officer, 1st Special 155mm Battery:

a. Each Platoon CP to:

Battery CP
AAAIS Operations Center
Task Force Commander
Adjacent FA Battery
Field Artillery Battalion CP

b. KABULUM POINT Platoon to HECP.

2. Supplement wire with radio where possible.

2. ANTIAIRCRAFT PLANNING

Preliminary plans for antiaircraft requirements in the Kiriwina and Woodlark operations began when the initial operations plan was first presented to the Antiaircraft Section for staff study. Limited by the amount of antiaircraft artillery that could be made available for the operation by GHQ, SWPA, plans were developed for the amount of antiaircraft artillery to be attached to each Task Force. This was determined after a careful terrain study and a review of installations contemplated in the objective areas. The recommendation for attachments was submitted to G-3 and approved.

Other recommendations submitted to the General Staff included priority for employment of antiaircraft units, ammunition requirements in quantity and type, and a complete logistic tabulation for every major item of antiaircraft equipment.

After publication of the antiaircraft artillery annex to the Kiriwina and Woodlark Field Orders, the Antiaircraft Officer, New Britain Force, held a conference with antiaircraft commanders from both Task Forces and reviewed the plans for the operation in detail. Final plans provided for an advance party to precede the D-Day troops and make a ground reconnaissance of gun positions tentatively selected from a map study.

3. ANTIAIRCRAFT STAGING

Antiaircraft artillery units scheduled to land on Kiriwina Island were

staged in widely separated areas. Headquarters and Headquarters Battery and Batteries B and C, 743d AAA Gun Battalion, were staged at Townesville, Australia. The 209th AAA Automatic Weapons Battalion was staged at Goodenough Island and the 1st Platoon, Battery A, 236th AAA Searchlight Battalion was staged at Townesville, Australia.

No information is available on the staging of the 12th Marine Defense Battalion.

4. ANTIAIRCRAFT OPERATIONS

On 23 June the Antiaircraft Officer, New Britain Force, proceeded to Kiriwina with an advance party from the Task Force. Gun positions chosen from a map reconnaissance were checked on the ground. With the exception of seacoast guns, previously selected positions were tenable and were tactically sound. A crew of fifty natives was obtained and gun positions were cleared to the minimum required for observation and fire control. To preserve natural concealment, the natives cut only those trees which interfered with visibility.

On arrival of the first echelon, all antiaircraft officers were assembled for a conference. A brief resume of the preparatory work accomplished by the advance party was given, and the best routes of approach to individual positions were plotted. As soon as the equipment was unloaded, the troops were fed and dispatched to selected gun positions. Antiaircraft artillery was emplaced to defend the airstrip and unloading areas. Unloading was covered by machine gun protection along the beach. As the beach was cleared, the machine guns were moved to protect the landing piers at Losuia and Oyabia.

Positions chosen for the seacoast guns were unsatisfactory. There were no landward approaches to the east shore ridge which commanded Muiau Bay. An alternate position was selected on the high ground east of Omarakana. Although this position restricted the engagement of waterborne targets to Case III firing, it had the advantage of being able to fire against land targets in the support of field artillery. To protect the harbor entrance and the landings at Sia beach, one platoon of seacoast artillery was emplaced on the northeast point of Kaileuna Island.

The landing operations of the 12th Marine Defense Battalion on Woodlark Island are not included, since no records from the Marine Corps are available and no army antiaircraft artillery landed in that operation.

KIRIWINA ISLAND

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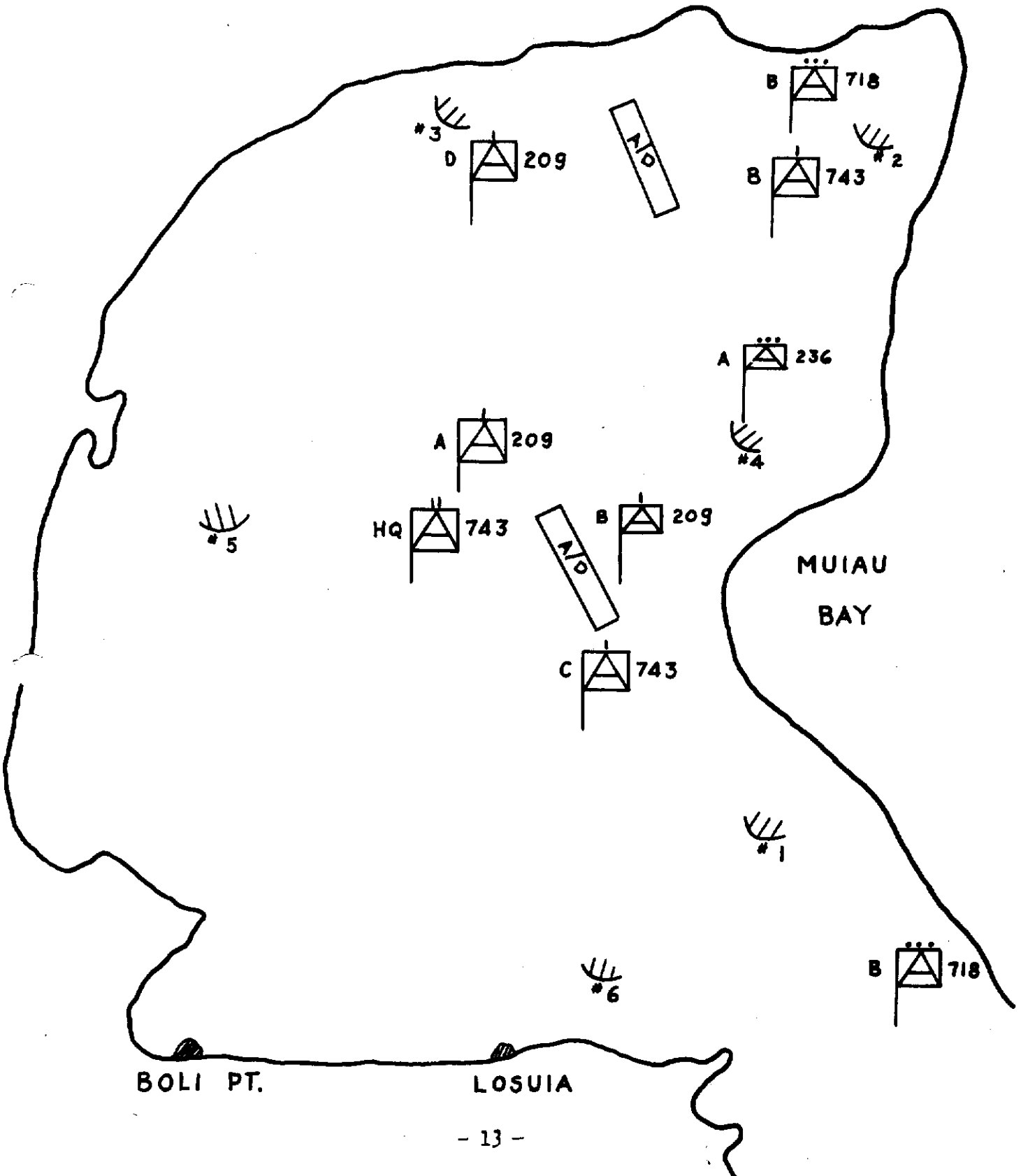
AUG. 1943



SECTION II

COMBAT PERFORMANCE OF ANTIAIRCRAFT ARTILLERY IN THE ARAWE OPERATION (15 December 1943 — 10 February 1944) CAPE GLOUCESTER OPERATION (26 December 1943 — 10 February 1944) SAIDOR OPERATION (2 January 1944 — 10 February 1944)

1. MISSIONS
   - A. NEW BRITAIN FORCE
   - B. SUBORDINATE UNITS
   - C. ANTIAIRCRAFT
2. ANTIAIRCRAFT PLANNING
3. ANTIAIRCRAFT STAGING
4. ANTIAIRCRAFT OPERATIONS

1. MISSIONS

A. NEW BRITAIN FORCE MISSION:

(1) Will, supported by Allied Air Force and Allied Naval Forces, seize successively ARAWE, CAPE GLOUCESTER, and SAIDOR and will establish military facilities thereat to support future operations.

(2) (a) ARAWE:

Z-Day 15 December 1943

(b) CAPE GLOUCESTER:

D-Day 26 December 1943

(c) SAIDOR:

D-Day 2 January 1944

B. SUBORDINATE UNIT MISSIONS:

ARAWE TASK FORCE MISSION:

(1) Will, by overwater operations, land assault elements in the ARAWE area on Z-Day and will seize, occupy, and defend that area. Security toward the PULIE RIVER and along the trail toward REIN BAY is important.

(2) Will, after consolidation of the ARAWE area, push reconnaissance westward to the mouth of the ITNI RIVER and up that river to GILNIT (exclusive) with a view to determining the feasibility of developing a supply line to and establishing contact with the CAPE GLOUCESTER TASK FORCE and occupy and consolidate areas so reconnoitered as may be essential.

(3) Will assist the Commander, Allied Naval Forces, in the establishment of light naval facilities in the ARAWE area.

(4) Will arrange overwater transportation for air warning units to the ARAWE area as requested by the Commander, Allied Air Force, and will assist the Commander, Allied Air Force, in the establishment of radar stations in that area.

(5) Major combat elements (less AAA):

(a) 112th Cavalry Regiment, reinforced.

CAPE GLOUCESTER TASK FORCE MISSION:

(1) Will move Combat Team "B" to the LAE-FINSCHHAFEN area; movement to be completed prior to D-Day in accordance with schedule furnished by Commander, Allied Naval Force.

(2) Will, by overwater operations, land assault elements in the CAPE GLOUCESTER area on D-Day and will attack and capture the CAPE GLOUCESTER airdrome and defenses.

(3) Will establish airdrome facilities in the CAPE GLOUCESTER area to accomodate two groups of fighters and two groups of medium bombers; facilities to accomodate one group of fighters (intercept) will be established with the least practicable delay. Coincident therewith will rapidly extend control over the western tip of NEW BRITAIN to include the general line ITNI RIVER - DORGEN BAY, and will defend the area so occupied.

(4) Will arrange overwater transportation for fighter sector and air warning units to the CAPE GLOUCESTER area and will assist the Commander, Allied Air Force, in the establishment of air warning and radio navigation facilities in areas occupied by the CAPE GLOUCESTER TASK FORCE.

(5) Will move Combat Team "A" from MILNE BAY to ORO BAY on D-Day in accordance with schedule provided by Commander, Allied Naval Forces. Upon arrival at ORO BAY Combat Team "A" will transship on amphibious transportation and move to FINSCHHAFEN where it will be at the disposal of the Commanding General, New Britain Task Force.

(6) Major combat elements (less AAA);

(a) 1st Marine Division

SAIDOR TASK FORCE MISSION:

(1) Will, by overwater operations, land assault elements in the SAIDOR area on D-Day and will seize, occupy, and defend that area.

(2) Will establish control over such areas adjacent to SAIDOR as may be required to insure uninterrupted operations of our air and light naval forces in that area; and coincident therewith will initiate and expedite the establishment of airdrome facilities in the SAIDOR area to accomodate one group of fighters, with first priority given to the completion of air transport landing strip.

(3) Will assist in the establishment of air elements in the SAIDOR area as requested by the Commander, Allied Air Force.

(4) Will assist in the establishment of light naval facilities in the SAIDOR area as requested by the Commander, Allied Naval Forces.

(5) Will construct in the SAIDOR area:

(a) Minimum port and base facilities.

(b) Bulk aviation petroleum storage and distribution facilities.

(6) Major combat elements (less AAA);

(a) 126th Regimental Combat Team

(b) 121st FA Battalion

C. ANTIAIRCRAFT MISSION:

(1) Enroute and during landing:

(a) Place automatic weapons on all suitable craft for antiaircraft defense enroute and during debarkation and to augment this fire power by use of small arms where possible and practicable.

(b) Provide adequate and positive air warning facilities to include air observers qualified in recognition of aircraft, charged with specific sectors of observation.

(c) Maintain radio contact with designated Fighter Sector installation for aircraft warning broadcast.

(2) After landing of forces:

(a) Establish and maintain air warning facilities until relieved by units of Allied Air Force.

(b) Conduct fire direction and searchlight control in accordance with standard doctrine.

(c) The Antiaircraft Commander will control and coordinate the fire of organic automatic weapons of all units when employed in an antiaircraft role.

(d) Coordination of Army and Naval antiaircraft fires will be effected.

(e) Seacoast searchlights will be placed under operational control of the Antiaircraft Officer for clearance when going into action, or when used in an antiaircraft role.

(3) Troops (AA):

ARAWE TASK FORCE

1 Platoon, Battery B, 236th AAA Searchlight Battalion
Batteries C and D, 470th AAA AW Battalion
Hq and Hq Battery, 236th AAA Searchlight Battalion

CAPE GLOUCESTER TASK FORCE

12th Marine Defense Battalion
469th AAA AW Battalion

SAIDOR TASK FORCE

743d CA Battalion (Gun) (AA) (less Batteries B & C)
Batteries B & D, 209th CA Battalion (AW) (AA)
Battery A, 236th AAA Searchlight Battalion (less 1 Platoon)

2. ANTIAIRCRAFT PLANNING

ARAWE TASK FORCE:

The Arawe Task Force was organized on 25 October 1943, with the 112th Cavalry Regiment as the combat force. The antiaircraft units were selected from those staging for the Gasmata operation which had been cancelled. The previous selection of these units for an operation facilitated preparation for the Arawe operation. The general plan provided for eight .50 caliber machine guns and fifty men each from Batteries C and D of the 470th AAA AW Battalion to land with the assault troops to protect unloading in the objective area. The remainder of the antiaircraft troops were scheduled to load on LCT's at Cape Cretin and to land in the objective area on D + 1. Inasmuch as the antiaircraft troops for this operation had been equipped and had completed plans for the cancelled Gasmata operation, the planning for the Arawe operation consisted mainly of substitution and adaptation of previous plans to the new operations.

CAPE GLOUCESTER TASK FORCE:

The antiaircraft planning for the Cape Gloucester operation provided for one Marine defense battalion and one automatic weapons battalion.

These were scheduled to land as follows:

D-Day	Detachment, Special Weapons Group, 12th Defense Bn, USMC
D + 1	12th Defense Bn, USMC (less D-Day Troops)
D + 12	469th AAA AW Bn

The Commander, 12th Defense Battalion, USMC, was appointed Antiaircraft Officer for the Cape Gloucester Task Force. He, upon arrival at the staging area on 9 December 1943, conferred with the force antiaircraft commander to coordinate plans.

A favorable factor in the planning phase was that while the 12th Defense Battalion was still in tactical position on Woodlark Island they had been furnished terrain studies and maps of the Cape Gloucester area. This enabled the battalion staff to have a complete picture of the operation before reaching the staging area.

Contact was made with the Air Force Chief Controller, and tentative command post sites and radar positions were selected and coordinated. The cooperation with antiaircraft shown by the Signal Corps Air Warning Companies was excellent.

The AA units were required to start loading on 23 December 1943 so a minimum of time was available for detailed planning and coordination.

SAIDOR TASK FORCE:

Plans called for antiaircraft units to land as follows:

D-Day	Hq & Hq Battery, 743d CA Battalion (AA) (Gun)
	Batteries B & D, 209th CA Battalion (AA) (AW)
D + 1	Batteries A & D, 743d CA Battalion (AA) (Gun)
D + 4	Battery A, 236th AAA Battalion (SL) (less 1 platoon)

The Commanding Officer, 743d CA Battalion (AA) (Gun), was appointed Antiaircraft Officer for the Saidor operation and arrived at the Task Force Headquarters at Goodenough staging area on 23 December 1943. In the original planning the antiaircraft commander was charged with the antiaircraft defense, the establishment of a AAAIS, and coordination with the Air Warning Service.

The date for completion of planning was set as 2 January; however, it soon became apparent that the movement was to take place at an earlier date. Planning of the operation was consequently hurried and incomplete. The task force field order was delivered at 2000 hours on 30 December, when the assault troops were already loading. Consequently, the antiaircraft

units had no time to prepare field orders and annexes. All instructions were verbal and given in conferences of staff officers and battery commanders. This method proved to be entirely satisfactory.

The greatest difficulty encountered during planning was poor communications between Task Force Headquarters and the antiaircraft staging area, a distance of 20 miles. Messenger service was the only reliable means of contact as telephone communications were not dependable.

3. ANTIAIRCRAFT STAGING

ARAWE

The antiaircraft assault troops were staged at Goodenough Island from which all assault troops were to be carried direct to Arawe. The remainder were to be moved to Cape Cretin to transship for Arawe. The areas selected for staging were suitable but the amount of space allotted was inadequate.

After unloading and establishing a camp there was little time left for training, but several practice loadings and unloadings were conducted. The troops who were to accompany the assault waves had moved aboard by this time and were not available for any of the training.

All of the antiaircraft units were well supplied, having just undergone a reequipment program for the Gasmata operation.

CAPE GLOUCESTER

The 12th Marine Defense Battalion was staged in the vicinity of Cape Sudest, arriving there from Woodlark on 9 December 1943. Personnel of this organization were used for unloading other task force units until 15 December, leaving only eight days free prior to loading for the operation. This situation handicapped the battalion considerably in their planning with other task force units and in getting equipped. The area for staging had been previously selected and necessary facilities provided.

Loading of units began on 23 December and was completed without difficulty by 25 December. The convoy departed for Arawe at 1500 hours on 25 December.

SAIDOR

The antiaircraft artillery troops for the Saidor operation were staged at Goodenough Island, arriving there on 27 December 1943. No time was

available for reequipping or training as the units were to load on 30 December. The 209th AAA AW Battalion was in the best shape, having stripped other units at Kiriwina to equip their two batteries for the operation. Even so, spare power plants were lacking. Preparation for the loading was hurried. Orders were given verbally which, however, proved entirely satisfactory. Loading was completed on 30 December and the convoy departed for Saidor on 31 December 1943.

4. ANTIAIRCRAFT OPERATIONS

ARAWE

The naval shelling of Arawe began at 0610 on the morning of 15 December 1943 and lasted for twenty minutes, after which the air force bombed the peninsula for a half hour. The assault wave, landing in "alligators" and "buffaloes" encountered sporadic opposition, but were wholly successful in securing the beachhead according to plan. The landing beach accomodations were very unsatisfactory. Study of aerial photos did not disclose the actual beach conditions and where unloading plans had contemplated at least three to five LCTs to be unloaded at one time, it was found that only one could be accomodated easily and two with difficulty. As a result the unloading proceeded very slowly and landing plans were completely dislocated.

The machine gun sections totaling one hundred men and sixteen .50 caliber machine guns from "C" and "D" Batteries, 470th AAA AW Battalion, had been loaded in "alligators" and "buffaloes" and landed with the assault wave. Upon arrival on land they immediately proceeded to the general localities assigned them and set up for firing.

In the confusion of unloading at the beach, the 40mm guns were not ready to fire until much later than planned. Due to the grounding of two LCTs of the original wave, and the subsequent sailing from Arawe without completely unloading on others, three Bofors guns did not arrive until D + 3 and two not until D + 5.

During the unloading of the LCTs an air attack was made by Zekes and Vals. The planes were engaged by the LCTs and AA machine guns on the beach. One plane was downed by fire from a LCT.

There was no bombing the first night, but an enemy plane circled the peninsula out of range for three hours evidently attempting to draw fire by turning on his navigation lights.

The AAAIS and AAOR were set up D-Day afternoon and for a week provided air warning information based upon reports from visual observation posts manned by men of the operations section of the 236th AAA Searchlight Battalion. Coordination between the Fighter Sector and antiaircraft was excellent. The Allied Intelligence Bureau, operated by Australians, with a radar on Pilelo Island augmented the information furnished by the antiaircraft observation posts and often gave warnings far in advance of raids.

The disposition of antiaircraft artillery after all echelons had arrived was two 40mm guns on Pilelo Island, two near the Mir River, three on the southeast bluffs, three along the upper part of the road from the beach to task force headquarters, and six on the western part of the peninsula. The antiaircraft guns were used both for local defense and to bolster the AA defense.

During the period of 15 December to 7 January there were 40 bombing raids during which approximately 500 bombs were dropped. In the engagements, credit for downing eight enemy planes was given to the two antiaircraft batteries. Antiaircraft troops suffered many casualties during this period and one director and two power plants were damaged.

There is no record in this headquarters of the air activity during the period 7 January 1944 to the close of the campaign on 10 February 1944.

CAPE GLOUCESTER

A detachment of the Special Weapons Group, 12th Defense Battalion furnished antiaircraft protection for LSTs landing on D-Day. On debarkation, these weapons took positions as planned covering Yellow Beach. One reconnaissance officer, along with the Chief Controller, landed on D-Day.

The remainder of the battalion, less a rear echelon detachment and six 155mm guns, landed at approximately 0830 hours D + 1. Maximum use of automatic weapons was made for antiaircraft defense of LSTs enroute.

LSTs had been so loaded that antiaircraft weapons could be moved from each landing beach to initial positions without having to cross the other beach. However, LSTs did not land at beaches as planned, and confusion resulted from vehicular cross traffic on the beaches.

The clearing immediately behind Yellow Beach which had been picked for the initial location of one 90mm battery was found to be inaccessible. Only two gun batteries, therefore, could be emplaced, one on the beach at Silimati Point, and one in a very small clearing 500 yards north of Yellow Beach. The field of fire of the former was restricted to seaward only,

and of the latter to immediately overhead. In addition to the two 90mm batteries, by 1800 D ≠ 1 all automatic weapons were in position along the beaches, two 155mm guns and two searchlights were emplaced covering seaward approaches, and two searchlights covering seaward approaches were ready for action.

By 1800 D ≠ 1 the joint AA-Fighter Sector operations room was functioning, with ground observer teams reporting in, and one radar SCR 602 operating on the island north of landing beaches. Integrated air warning was thus available from D ≠ 1 until D ≠ 4.

About 1700 D ≠ 4 the Chief Controller ordered the Fighter Sector establishment to move at once to the east end of strip No. 2. No previous notice had been given to the antiaircraft personnel, who could not move that night and still retain control of antiaircraft units. From D ≠ 4 until the night of D ≠ 7, Fighter Sector and Air Warning Service was of little value to either the antiaircraft force or the Task Force because of spotty communications. It is believed that this situation could have been avoided had the Chief Controller been more cooperative in planning his move with the Task Force Antiaircraft Officer and in selecting a position from which communications could be maintained. It is imperative to keep these two agencies together for the protection and alerting of the entire area.

On the night of D ≠ 4 occurred the first air raid since the daylight attacks on D-Day. No warning of enemy approach was available from Fighter Sector. The course of the bombers was from west to east, and only one of the two 90mm batteries then in position could fire because of terrain limitations.

On D ≠ 5, Headquarters 12th Defense Battalion moved to a position south of the airstrip. Six 40mm guns, four dual 20mm guns and two .50 caliber machine guns were sited along the beach north of the airdrome area. The third 90mm finally located and moved to a position south of the airstrip. Enemy planes again appeared at night, dropping bombs in the vicinity of Yellow Beach. Limited antiaircraft fire was ineffective. Again, no advance warning was received from air warning units because of communication failure between Fighter Sector and the SCR 602 radar and ground observer teams.

By D ≠ 6 the radar SCR 270 (12th Defense Battalion) was in operation. This radar set proved to be invaluable. Fighter Sector and the AAOR again were working side by side by this time.

Enemy planes returned again on D ≠ 7. Prior warning of their approach was received from the Marine SCR 270 radar. Although searchlights flicked targets instantly, broken clouds necessitated firing by radar. Only one of

the gun battery radars was functioning, and fire was ineffective. Some confusion was caused by the use of one single engine plane as a decoy, followed later by three flights of bombers approaching from different directions.

By D + 8, infantry advances west of the airdrome area permitted the 90mm battery sited on Silimati Point to move to its final position west of strip number 1. Guns were in position with hasty field fortifications by 1800. Searchlights again picked up an enemy plane that night, and 40mm guns engaged. Plane was surrounded by tracer streams but it was able to obtain concealment in a cloud. In another run at higher altitude, planes were engaged by 90mm batteries, which reported possible use of radar jamming.

Six additional 155mm guns and the 469th AAA AW Battalion arrived D + 12. By D + 13 one 155mm battery was in position on Cape A, two guns sited to fire to the north and two to the east covering Borgen Bay. The other 155mm battery went into position in a clearing to the rear of Yellow Beach and prepared for fire against Jap installations in vicinity of Alaido on the east side of Borgen Bay.

Movement of the 469th AAA AW Battalion to the airdrome area was delayed by a breakdown in roads. However, the movement was much slower than necessary and failure to take advantage of tides in fording river mouths resulted in a loss of two additional days in moving into firing position.

Two Zekes, erroneously reported by ground observers as P-47s circled over the landing beach area on the afternoon of D + 13, dove down on a bearing of about 45 degrees, dropped bombs, and escaped to seaward.

On D + 15 and D + 16, a 155mm gun battery opened fire on Japanese installations in vicinity of Alaido, at a range of 15-17000 yards. Four buildings were destroyed, two barges sunk, two large fires started, and an estimated 50-100 enemy were killed. Spotting and adjustment was made from the field artillery observation post on Target Hill. Fire was excellent, and plans were made for further employment of this long range artillery against ground targets.

As the campaign progressed the antiaircraft defense was broadened. The automatic weapons at the western end of the airport were moved further out. When Yellow Beach was replaced by Blue Beach as the LST unloading point, the automatic weapons of the 12th Defense Battalion moved to the airdrome area, the Blue Beach area being defended by organic automatic weapons of the 1st Marine Division.

No records of antiaircraft activity are available for the period from 17 January 1944 until the campaign closed on 10 February 1944.

SAIDOR .

At dawn 2 January the invasion force was assembled off Saidor. The destroyers shelled the beach for 20 minutes before the combat team landed. No organized resistance was encountered by our landing forces and they drove rapidly inland, securing the beachhead and airstrip.

The antiaircraft assault troops beached at H ≠ 60 and both automatic weapons batteries were in position within two hours. Battery officers had little time to make reconnaissance but were able to post guides to good advantage. All except two guns were able to move into positions selected previously on maps. Eight guns were emplaced along the beach and eight in the field area behind the beach. Their spacing was close, averaging about 400 yards, but the small area occupied the first day required close spacing. In each case, Bofors guns remained on the LSTs until the mobile loads were off the ships.

Headquarters and Headquarters Battery of the 743d CA Battalion (AA) (Gun) landed with the automatic weapons battery and immediately established their operations room near the fighter sector. Liaison was quickly established with fighter sector for air warning service and wire lines were laid to both automatic weapons batteries. Every effort was made to identify all planes approaching the area.

At 1630 an enemy air flight of eight Helens and eight Zekes came over. 40mm guns opened fire, but due to the excessive range, no damage was inflicted. In their one pass along the beach, bombs were dropped causing only minor damage to military installations and personnel.

During the night three enemy planes were over the area, apparently attempting to draw fire and observe positions. They were not seen and the automatic weapons could not engage them. Several small bombs were dropped without causing damage.

Just before dawn on D ≠ 1, 37mm AT and 40mm guns on the beach opened fire at LSTs approaching the beach as they had orders to fire at any craft approaching the beach before daylight. The LSTs were trying to be beached by 0700 but were unable to find their proper place and had come in from the north. A 40mm director tracker finally identified the ships and stopped the 40mm firing, sending word to the 37mm AT guns. One man was killed and four were wounded aboard one LST through this lack of communication between ships and shore defense installations.

On D ≠ 1 the two gun batteries landed and immediately went into position behind the beach, about one-half mile apart. By nightfall all guns and instruments were completely dug in.

During the night of D ≠ 2, three to six enemy planes attacked the airstrip in four attacks, flying at 4000 to 6000 feet. The first plane came over with lights on so that height finders and directors were able to track it. Every antiaircraft gun in the area opened up and the plane was confirmed as shot down. Three flights were engaged with two planes counted as probably destroyed.

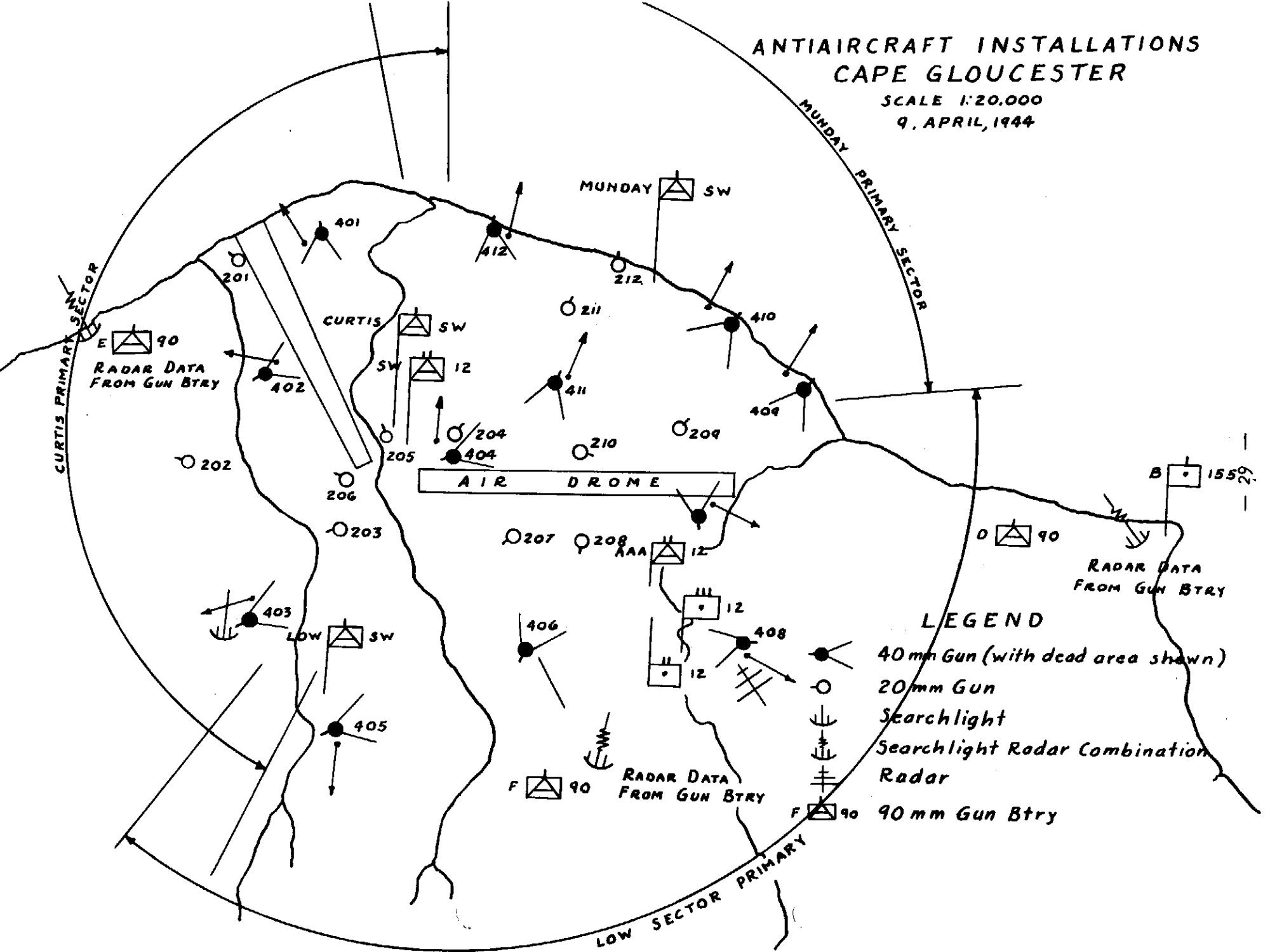
During the night of D ≠ 3, two enemy planes were engaged by the 90mm guns with no results. The raiding planes did not drop bombs.

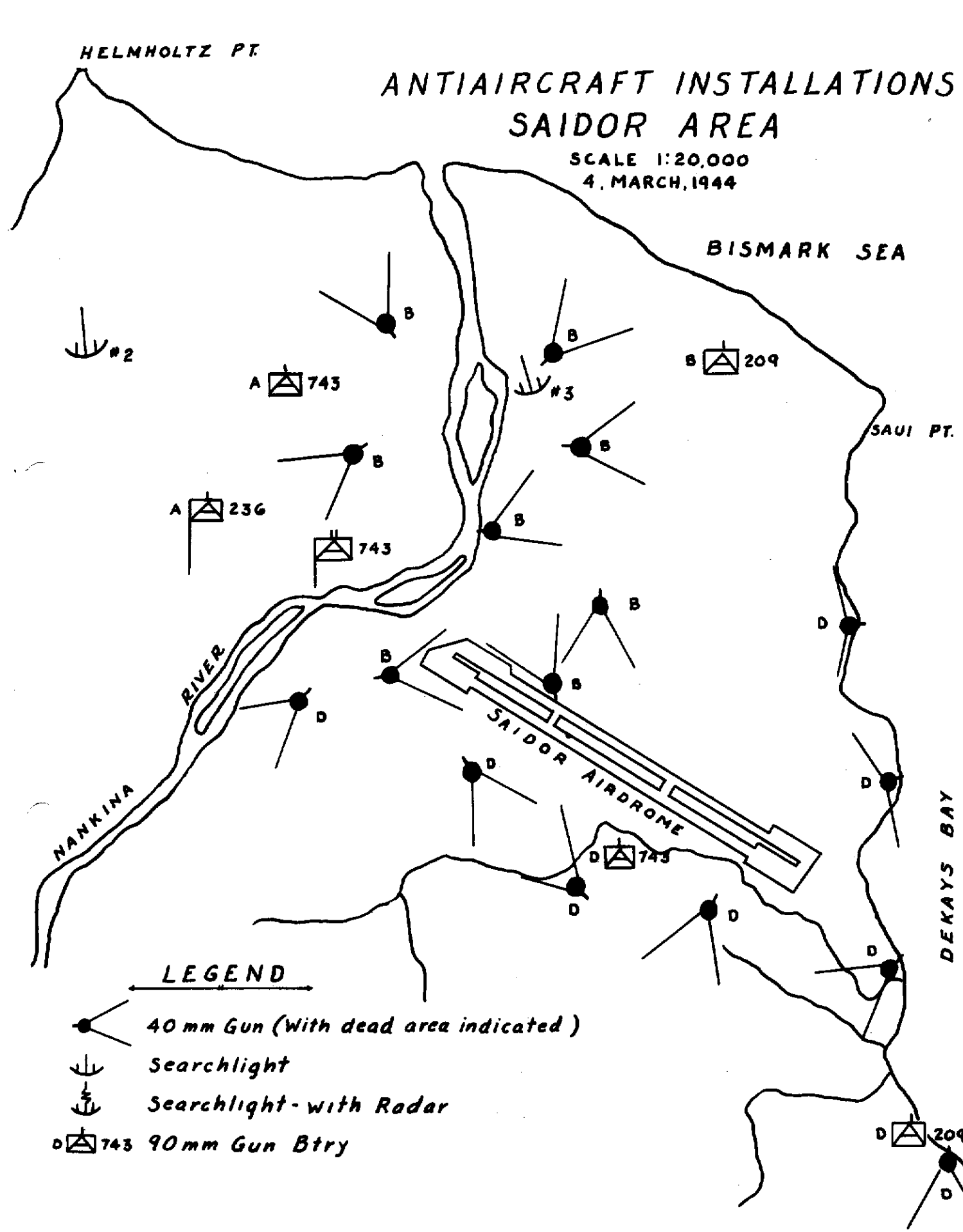
Three searchlights arrived on D ≠ 6, instead of D ≠ 4 as planned. They were put into position close to the beach as the roads were impassable because of mud.

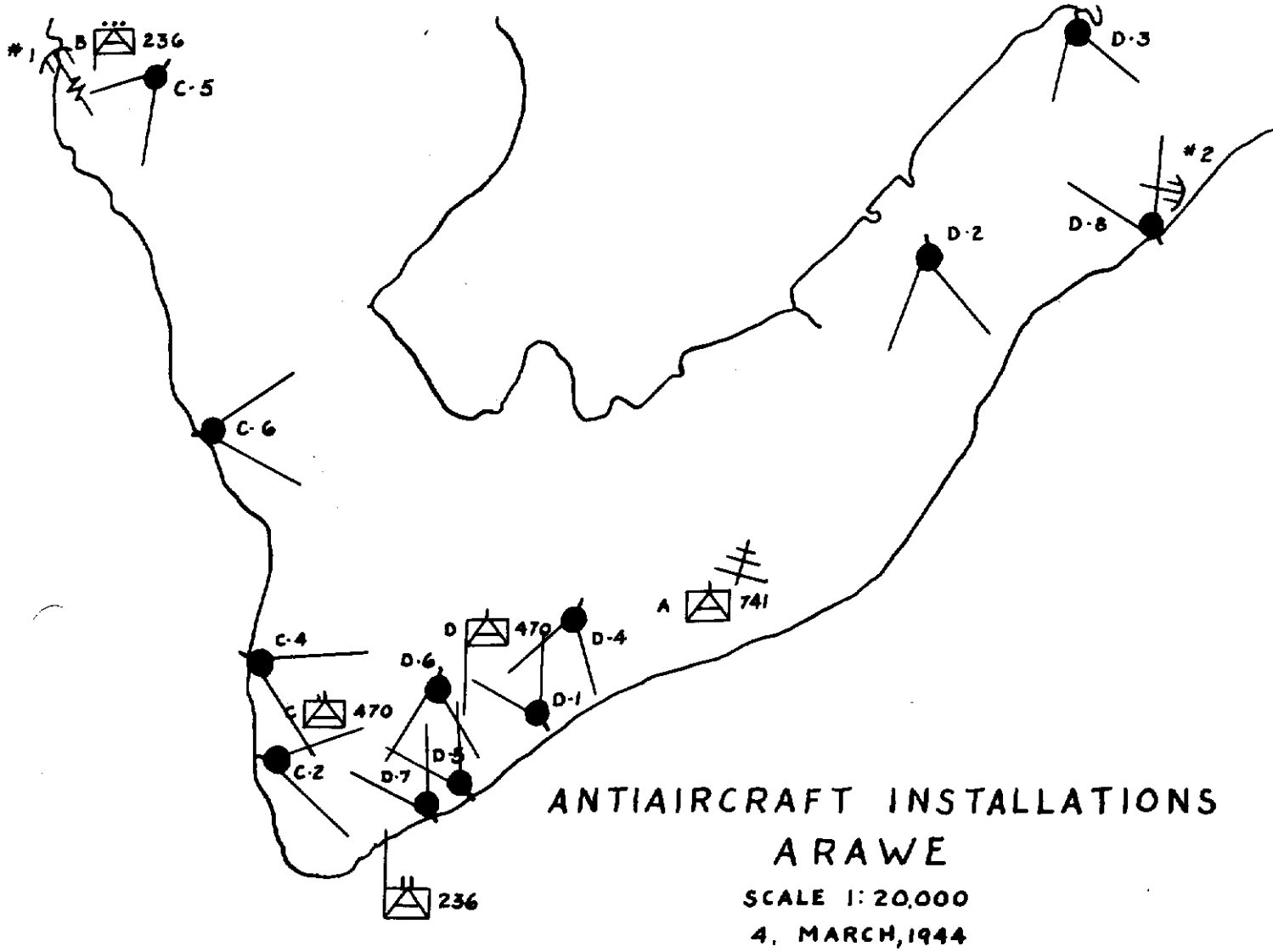
On D ≠ 8 and D ≠ 10 the gun batteries moved into permanent positions. The sites were almost perfect radar sites in natural horseshoes which eliminated practically all fixed echoes.

The remaining searchlight sections did not arrive until 27 January.

Only one other raid occurred prior to the close of the campaign on 10 February. This was by one bomber which was engaged with unobserved results.


ANTIAIRCRAFT INSTALLATIONS
CAPE GLOUCESTER
SCALE 1:20,000
9 APRIL, 1944
MUNDAY PRIMARY SECTOR
CURTIS PRIMARY SECTOR
LOW SECTOR PRIMARY
MUNDAY SW
CURTIS SW
SW 12
LOW SW
AAA 12
12
12
E 90
RADAR DATA FROM GUN BTRY
F 90
RADAR DATA FROM GUN BTRY
D 90
RADAR DATA FROM GUN BTRY
B 1559
AIR DROME
401
402
403
404
405
406
408
409
410
411
412
201
202
203
204
205
206
207
208
209
210
211
212
LEGEND
40 mm Gun (with dead area shown)
20 mm Gun
Searchlight
Searchlight Radar Combination
Radar
F 90 90 mm Gun Btry


HELMHOLTZ PT.
ANTIAIRCRAFT INSTALLATIONS
SAIDOR AREA
SCALE 1:20,000
4, MARCH, 1944
BISMARK SEA
SAUI PT.
#2
#3
A 743
B 209
A 236
743
RIVER
NANKINA
SAIDOR AIRDROME
DEKAYS BAY
LEGEND
40 mm Gun (With dead area indicated)
Searchlight
Searchlight - with Radar
D 743 90mm Gun Btry

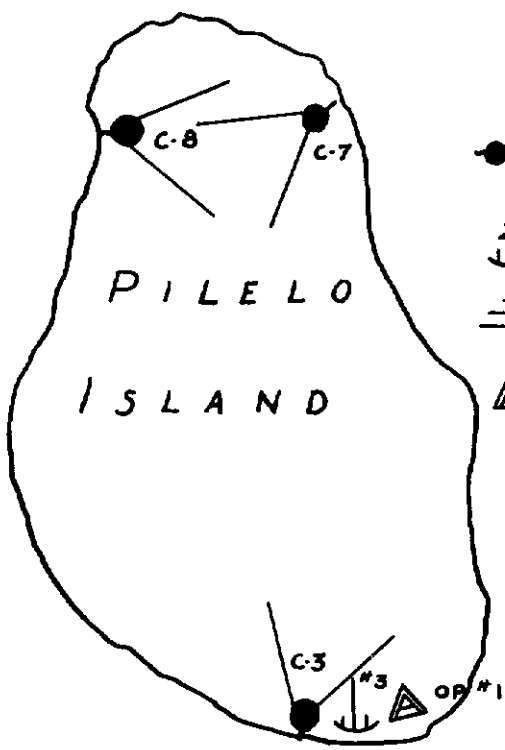


ANTIAIRCRAFT INSTALLATIONS
ARAWE

SCALE 1: 20,000

4. MARCH, 1944

PACIFIC OCEAN



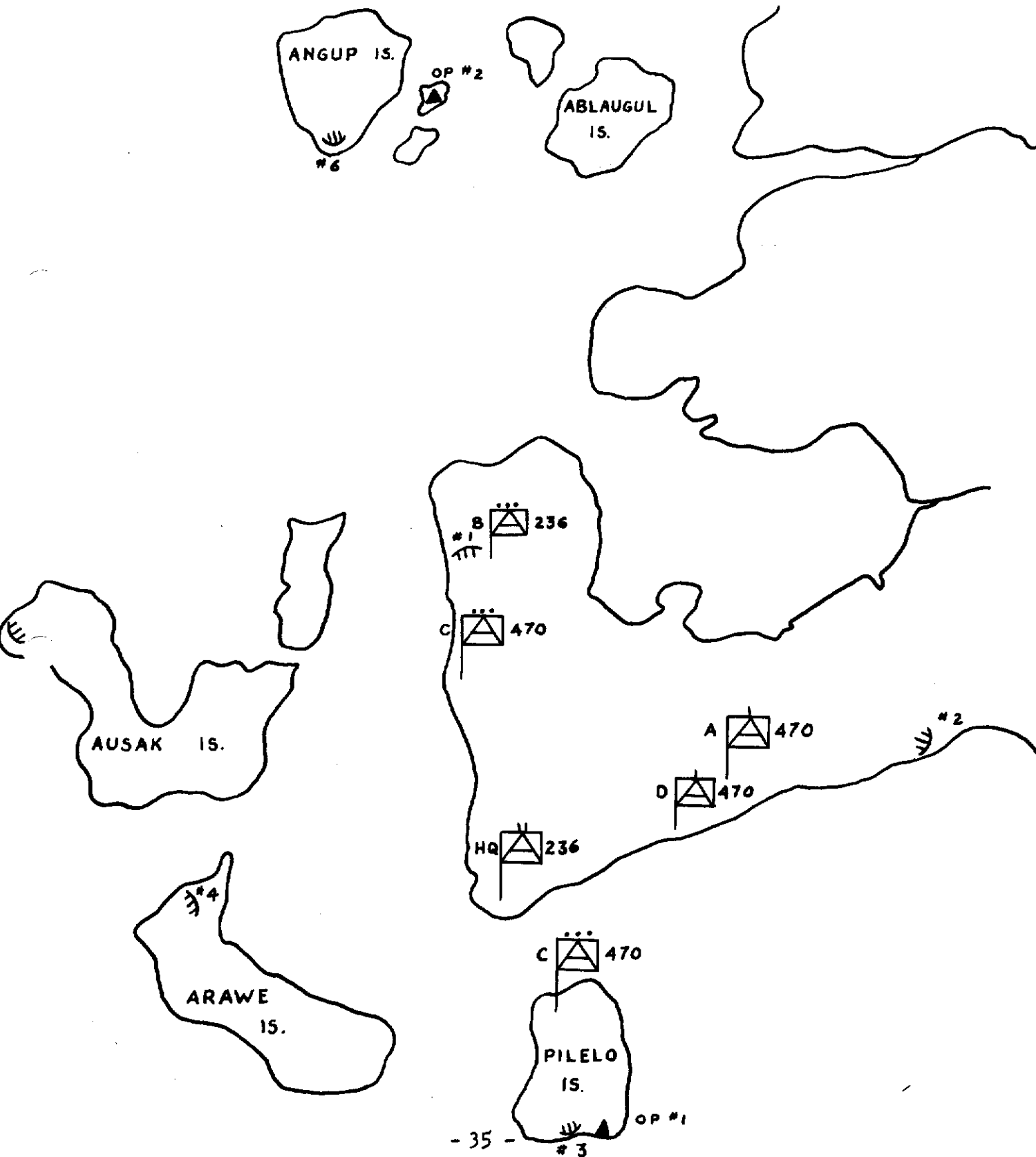
LEGEND

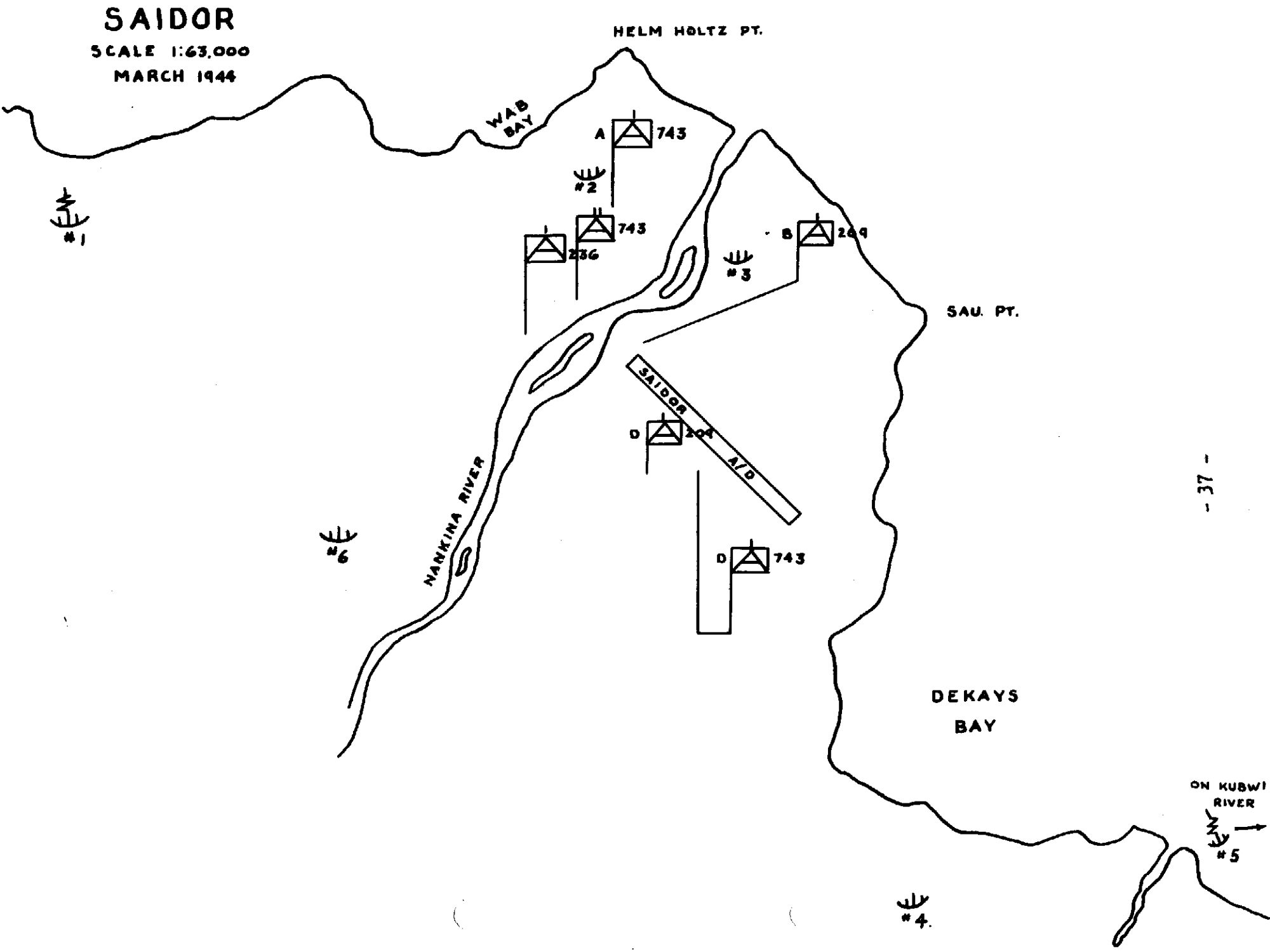
- 40 mm Gun (With dead area indicated)
- Radar with searchlight
- Radar
- Observation Post

ARAWE DEFENSE

SCALE 1:80,000

DECEMBER 1944




SAIDOR
SCALE 1:63,000
MARCH 1944
HELM HOLTZ PT.
WAB BAY
A 743
#2
743
236
#1
#3
B 249
SAU. PT.
SAIDOR A/D
D 204
NANKINA RIVER
#6
D 743
DEKAYS BAY
ON KUBWI RIVER
#5
#4.
- 37 -

SECTION III

COMBAT PERFORMANCE

OF

ANTIAIRCRAFT ARTILLERY

IN THE

ADMIRALTY ISLANDS OPERATION

(29 February 1944 - 18 May 1944)

1. MISSIONS
   - A. ARMY
   - B. SUBORDINATE UNITS
   - C. ANTIAIRCRAFT
2. ANTIAIRCRAFT PLANNING
3. ANTIAIRCRAFT STAGING
4. ANTIAIRCRAFT OPERATIONS

1. MISSIONS

A. New Britain Force Mission:

(1) Initial Mission:

(a) Will conduct a reconnaissance in force on LOS NEGROS ISLAND and will be prepared to occupy the island and construct air facilities thereat.

(b) D-Day - 29 February 1944

H-Hour - 0815K

(2) Subsequent Mission:

(a) Will seize the SEADLER HARBOR area of MANUS ISLAND, extend control over ADMIRALTY ISLANDS, and construct naval and air facilities thereat.

B. Admiralty Island Task Force Mission:

(1) Will, employing the following forces:

1 Squadron Cavalry
1 Antiaircraft Battery - Airborne
1 Field Artillery Battery, 75mm, Pack
1 Pioneer Detachment
1 Communications Detachment
1 Service Detachment
1 Radar Detachment
1 Angau Detachment
2 Air Force Supervisors

land on Los Negros Island in the vicinity of MOMOTE airdrome and make an immediate reconnaissance in force to determine the enemy strength and disposition on Los Negros Island.

(2) Will embark the supporting units listed below and will assemble these units at CAPE CRITT prepared, by D-Day, for immediate movement to the objective area upon call of the Commander of the reconnaissance force:

1 Regiment, Cavalry (less 1 squadron)
1 Battalion Field Artillery, 75mm Pack (less 1 Battery)
1 Engineer Troop (less det)
1 Medical Troop
1 Signal Detachment
Service detachments
1 CB Battalion
2 Batteries 168th AAA Battalion (Gun)
2 Batteries 211th CA Battalion (AW)
1 Air Liaison Party.

(3) Will, in the event that LOS NEGROS is virtually unoccupied:

(a) Remain in occupation and reinforce the reconnaissance elements with the supporting units listed in (2) above.

(b) Prepare MOMOTE airdrome initially for transport and subsequently for fighter operation.

(c) Defend LOS NEGROS ISLAND.

(4) Will, if strong opposition is encountered, withdraw the reconnaissance force after reconnaissance and return to Oro Bay.

(5) Subsequent Mission:

(a) Will reinforce the reconnaissance elements of the Admiralty Task Force now on MANUS ISLAND in accordance with shipping schedule; will aggressively exploit success attained by the reconnaissance in force; will seize SEEADLER HARBOR; and will extend control over ADMIRALTY ISLAND.

(b) Will establish light naval facilities at ADMIRALTY ISLAND.

(c) Will complete, at the earliest practicable date, at MOMOTE, airdrome facilities for one group fighters, and assist the Commander, Allied Air Force, in the establishment of air warning and radio navigational facilities as agreed between the Commander, Allied Air Force, and Commander, Admiralty Island Task Force.

(d) Will construct additional airdrome facilities, port and base facilities, bulk petroleum storage and distributin system, and hospitalization as later directed by New Britain Force Headquarters.

(e) Will allocate space in objective areas for Army, Navy and Air facilities.

(f) Will coordinate base operations.

C. Antiaircraft Artillery Mission:

(1) Augment antiaircraft defenses of vessels during overwater movement to objective by emplacing maximum number of automatic weapons on weather decks.

(2) Provide automatic weapons protection during unloading of vessels.

(3) Provide maximum antiaircraft protection of air strips, dumps, bivouacs and other ground installations after landing as directed by the Task Force Commander.

(4) Be prepared to augment field artillery and seacoast artillery fire with antiaircraft weapons.

(5) Antiaircraft Artillery Troops:

Hq and Hq Battery, 15th AAA Group
Battery C, 237th AAA SL Bn
211th CA Bn (AA) (AW)
168th AAA Gun Bn
2d Bn, 50 CA Regiment (155mm Gun)

2. ANTIAIRCRAFT PLANNING PHASE

The 673d AAA Machine Gun Battery, Battery A, 211th CA Battalion (AA) (AW), and Battery C, 168th AAA Gun Battalion were designated as the antiaircraft units to accompany the assault echelon. The 673d AAA Machine Gun Battery was included to protect front line troops from low-flying planes and to augment the terrestrial firepower of the cavalry troops. Plans for the automatic weapons and gun batteries were to protect landing beaches and dumps in the landing phase and later with the two additional batteries, also furnish the defense of the air strip.

D-Day was advanced from 1 April 1944 to 29 February 1944, and, as a result, most of the plans for the employment of antiaircraft in the assault and support echelons on D-Day and D + 2 respectively were made while enroute to the objective area.

3. ANTIAIRCRAFT STAGING PHASE

As in planning, the limitation of time required hasty preparation in staging. Fortunately all assault echelon units were located in the Oro Bay area at the time the target date was advanced. The principal difficulties encountered were in obtaining complete T/E materiels at Oro Bay. Battery C, 168th AAA Gun Battalion procured complete T/E equipment by borrowing from other antiaircraft artillery units in the Oro Bay Area. This battery drew two TD-9 tractors in lieu of M5 tractors. Battery A, 211th Coast Artillery Battalion (AA)(AW) borrowed sixteen 2½-ton cargo trucks to use as prime movers for its primary weapons. Some of these trucks were drawn from base ordnance but others were furnished from the battalion motor pool.

4. ANTIAIRCRAFT OPERATIONS

On D-Day the 673d AAA Machine Gun Battery landed in the second wave of LCV's in the assault on the beach. The landing was effected on the southwest shore of Hyane Harbor, Los Negros Island, without causualties to the antiaircraft artillery unit. The battery was initially emplaced along the landing beach to furnish antiaircraft protection against low-flying planes. Later in the day the battery moved to the east side of the Momote strip to furnish antiaircraft and ground fire in the defense of the beachhead. This battery took an

active part in the perimeter defense, particularly at night.

All other antiaircraft units in the assault echelon landed on D + 2. On that day one Tony made a short strafing run along the north end of the strip and was engaged by automatic weapons fire from LSTs. The perimeter at the time of the landing on this day was still very small. It extended from the northeast corner of Momote strip, south along the east side of the mid-point, thence west to the coast. By 1400 hours the equipment of the 90mm antiaircraft battery was in position and the battery was ready to fire on visual data.

Battery A, 211th Coast Artillery Battalion (AA) (AW) set up 40mm gun positions around the south shore and within the beachhead area where room permitted. Two sections were placed with M-51 multiple machine gun mounts in a line along the east side of the strip. By nightfall seven sections were in temporary positions ready to fire with forward area sights. M5 directors were not set up because of the limited fields of fire and the congestion. Also, because of the congestion, some of the multiple machine gun mounts were temporarily employed independent of the 40mm guns.

The 673d Machine Gun Battery was withdrawn from the perimeter defense around the strip and placed across the peninsula north of the 90mm battery as a defense against enemy attack across the harbor mouth from Labertutu Point.

Company C, 583d Air Warning Battalion had one radar SCR 602 and one visual spotter team operating by 1600 hours on D + 2. The Task Force Commander, however, ordered their radar and the antiaircraft radar SCR 268 to remain out of operation during the night as a safeguard against the infiltrating enemy from detecting them through the noise of their generators.

On D + 3 the perimeter was advanced to the western dispersal loop of the strip. 40mm gun defenses were readjusted and guns placed more uniformly to cover the area. Two more were moved to position along the strip. Bulldozer emplacements around the 90mm battery were refined and completed, using sand bags.

At 1550 hours one enemy Dinah on reconnaissance was picked up by visual observation from the 90mm battery. The battery fired 45 rounds on a receding course at about 5000 yards altitude. The plane took extreme evasive action after the first burst. No hits were observed. During the afternoon one platoon of the 673d Machine Gun Battery was attached to the 5th Cavalry to be used to augment ground automatic weapons in the defense against the expected enemy attack.

At 1700 hours enemy barges, vehicles, and personnel were observed along the north shore of Hyane Harbor. Antiaircraft 40mm Bofors on

the south shore opened fire and strafed along the opposite shore line for over an hour. The most effective means of firing the 40mm Bofors was to fire single shots, observing each shot through a teloscope and adjusting accordingly. Four enemy vehicles at about 2000 yards range were apparently destroyed in this manner. The field of fire of the 90mm battery was not sufficiently cleared for them to take part in this action.

At about 2300 hours two unidentified planes flew over the area at about 1000 feet and dropped bombs which landed just outside the perimeter. Automatic weapons did not fire as the antiaircraft officer had ordered automatic weapons fire to be held unless the target was clearly visible. The planes were noticed to blink their landing lights several times. The hold fire order was relaxed next day and gunners were ordered to fire if they thought they had any possible chance of hitting.

At about 0100 hours on D + 4 the 90mm battery commander observed heavy firing into our lines from automatic weapons in positions north of the skidway. Using one 90mm gun which could fire horizontally in that direction he brought fire to bear against the enemy positions. Lacking PD fuzes; shells T9, M71 with M43A2 fuzes were used. The fuze setting was taken from land firing tables using map range of about 1800 yards. Direct fire sights were used and fire adjusted to secure aerial bursts over the heads of the Japanese. By varying the fuze settings a hit was obtained and the enemy guns silenced.

On D + 4 two Bofors were put out of action by mortar fire. There were four casualties in addition. Three days later one gun was repaired by interchanging parts.

Antiaircraft units were still occupying initial positions as late as D + 5. To supplement the telephone communications between the Fighter sub-sector and the two antiaircraft battery headquarters, the Signal Air Warning Company furnished an SCR 284 in the plotting room of Fighter Sub-Sector which communicated with SCR 543's at the battery headquarters.

There was no antiaircraft action on D + 6 but on D + 7 at 2130 hours a yellow alert was called on the basis of a distant ground observers report that two enemy planes were approaching the area. The reported range was 75 miles. All clear was given at 2215 hours after the air warning radar and the support destroyer had reported no plots. A yellow alert was again called at 2227 hours when the destroyer reported enemy planes approaching at ten miles, (a red alert should have been called). Two twin-engine bombers made two bombing and strafing runs over the 90mm battery at 400 feet altitude. The first at 2230 hours was made with landing lights and the second without. They were engaged by heavy automatic weapons fire. The targets were difficult for the gunners to see and because of the great number of tracers in the sky they could not follow their own tracer streams. The enemy planes strafed on receding as well as approaching legs by firing from blisters and

tail turrets. Approximately 8 bombs were dropped. No antiaircraft casualties resulted.

The raid indicated the 90mm battery was a primary target, with its position positively known to the enemy, so permission was requested and received to move the battery to an alternate position at Southeast Point. The move was completed in about five hours and the battery was ready to fire by dark of D + 8. The new position was outside the previous perimeter so cavalry troops moved forward to furnish ground protection. The Signal Air Warning Company radar was also moved to this area, it proving to be a more suitable location for radar reception.

At 2055 hours one twin-engine bomber came over the beachhead at 500 to 1000 feet altitude after excellent warning and plotting by the air warning company and the destroyer support. Due to rainy weather and poor visibility there was no antiaircraft fire.

Headquarters 15th Antiaircraft Artillery Group, Headquarters 168th AAA Gun Battalion, Battery B, 168th AAA Gun Battalion and Battery B, 211th Coast Artillery Battalion (AA)(AT), arrived on 9 March, (D + 9). The landing was made on the Scoadler side of Salami plantation. Due to poor road conditions only three guns reached the initial battery position 1200 yards north of the landing point by dark. The SCR 268 and the fourth gun had to be left on the beach until the road was cleared next day. Six 40mm gun sections were in suitable positions along the shore by late afternoon.

On D + 10, all four guns and the SCR 268 of Battery B, 168th Gun Battalion were ready for action by 2030 hours. Radio communication was established between the fighter sub-sector and the Antiaircraft Headquarters at Salami Plantation. All batteries joined in the net and monitored on the air warning frequency.

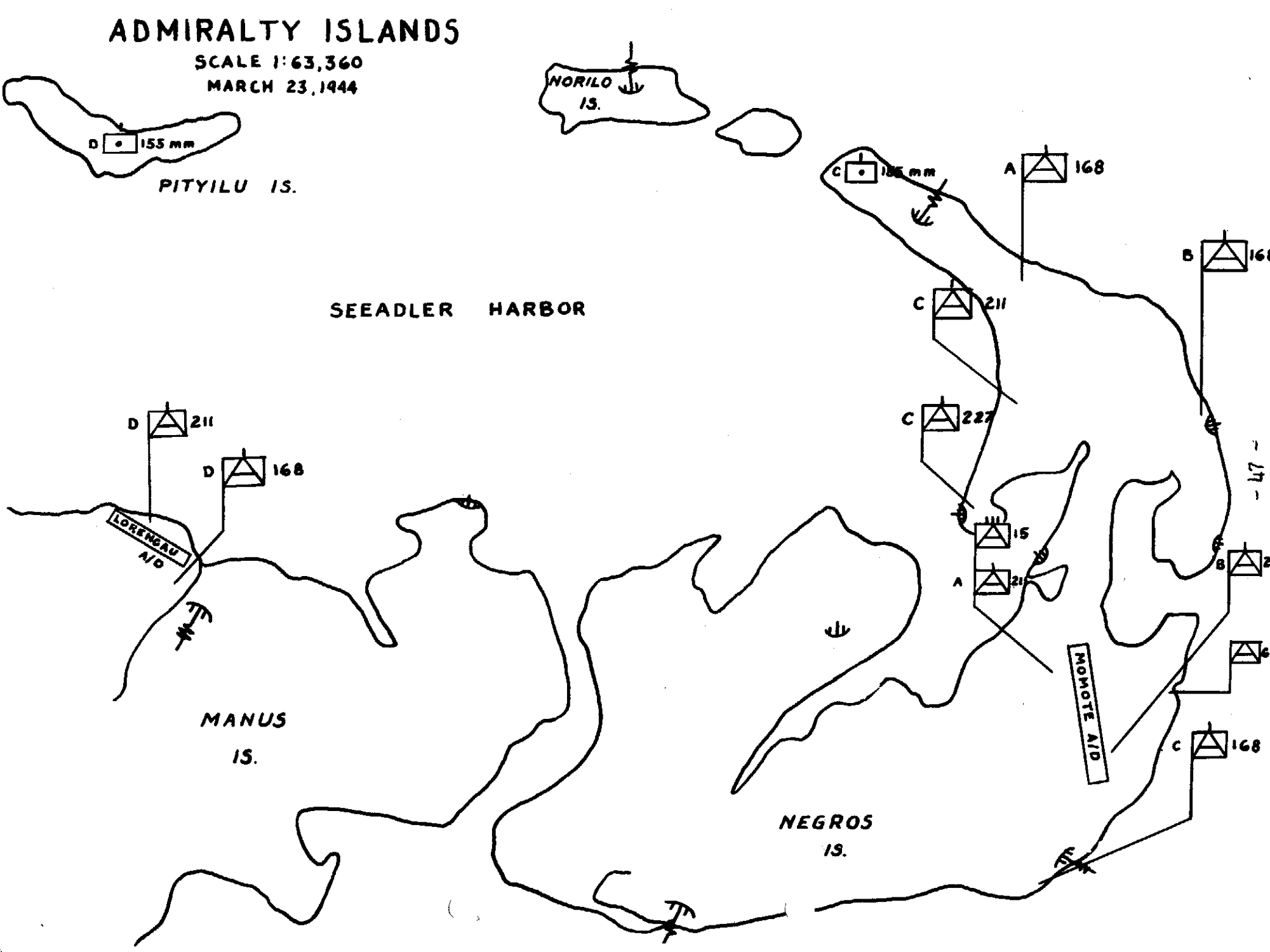
To provide a better defense, Battery C, 168th Gun Battalion moved its position a second time. The new position was 500 yards due north of Southeast Point between Ihon and Chi-Ei Lagoons.

The next day Battery B, 211th Coast Artillery Battalion (AA)(AT) adjusted its positions to include two more of its sections along Salami Beach. The defense extended approximately 1500 yards either side of the landing point.

There was a red alert at 2334 hours. Six enemy aircraft were tracked over the Lorengan vicinity, but never came within antiaircraft range.

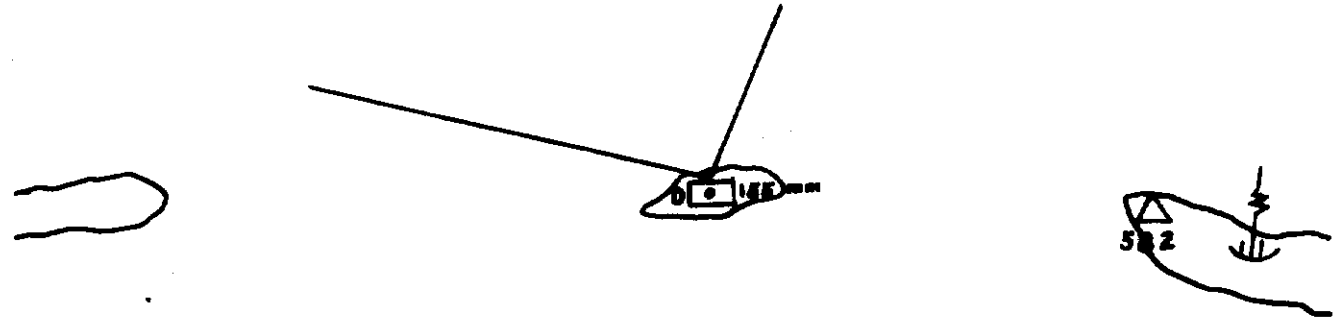
By D + 12 the situation had become static on Los Negros Island as far as antiaircraft units were concerned. Battery C, 168th Gun Battalion was in position 500 yards north of Southeast Point covering the Momote airdrome and vicinity. Battery B, 168th Gun Battalion was

in position 1200 yards north of Salami landing point providing heavy gun protection for the Salami-Hokerang area and the western end of the Seeadler anchorage. The two gun batteries were mutually supporting for any targets between the two. Battery A, 211th and the 673d Machine Gun Battery were in position to cover the entire Momote dispersal area and the southern half of Hyane Harbor with Automatic Weapons fire. Battery B, 211th was disposed in a line along Salami Beach providing automatic weapons protection for the beachhead. No further antiaircraft action was experienced and the operation was closed on 18 May 1944 when organized enemy ground resistance ceased.


ADMIRALTY ISLANDS
SCALE 1:63,360
MARCH 23, 1944
D 155 mm
PITYILU IS.
NORILO IS.
C 155 mm
A 168
B 16
C 211
SEEADLER HARBOR
C 227
D 211
D 168
LORENGAU A/D
15
A 21
B 2
6
C 168
MOMOTE A/D
MANUS IS.
NEGROS IS.
- 47 -

ANTIAIRCRAFT INSTALLATIONS
ADMIRALTY ISLDS.
LOS NEGROS IS.

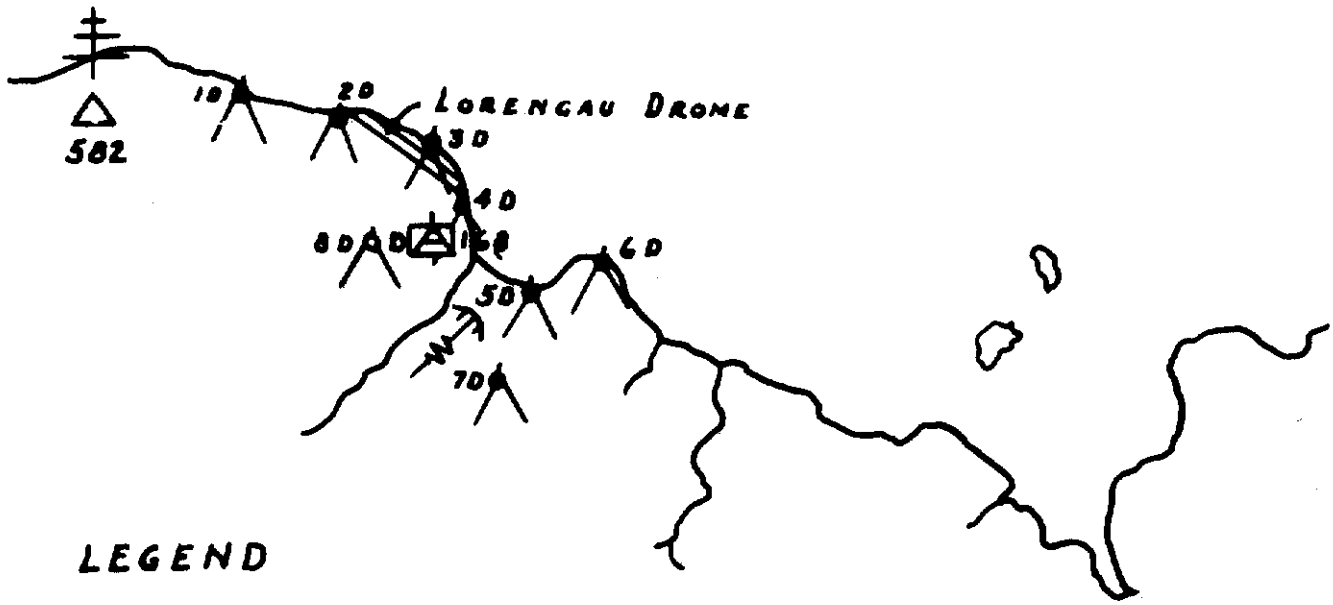
SCALE 1:63,360
23 MARCH, 1944



ANTIAIRCRAFT INSTALLATIONS
ADMIRALTY ISLDS.
MANUS IS.

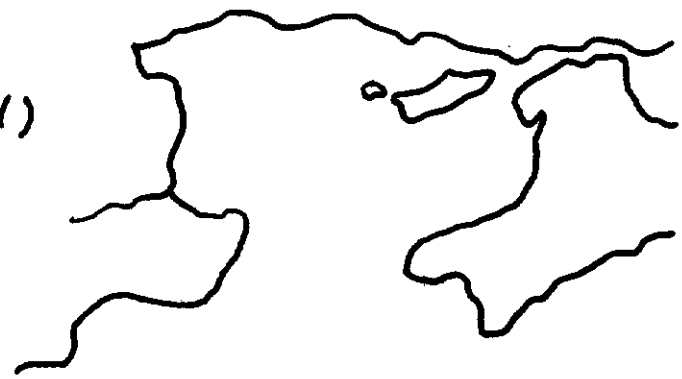
SCALE 1: 63,360
23 MARCH 1944

SEEADLER HARBOR



LEGEND

- 90mm Gun Btry
- 155 mm Gun Btry
- Harbor Surveillance Unit
- 40mm Gun (with dead area indicated)
- Searchlight Unit
- Radar Unit
- Radar & Searchlight Combination



SECTION IV

COMBAT PERFORMANCE

OF

ANTIAIRCRAFT ARTILLERY

IN THE

HOLLANDIA - AITAPE OPERATION

(22 April 1944 - 25 August 1944)

1. MISSIONS
   - A. ARMY
   - B. SUBORDINATE UNITS
   - C. ANTIAIRCRAFT
2. ANTIAIRCRAFT PLANNING
3. ANTIAIRCRAFT STAGING
4. ANTIAIRCRAFT OPERATIONS

1. MISSIONS

A. New Britain Force Mission:

(1) Supported by Allied Air Force, Allied Naval Forces and the Fifth Fleet, will seize, by simultaneous operations, the AITAPE and HUMBOLDT BAY-TANAHMERAH BAY areas; establish air facilities in the HOLLANDIA and AITAPE areas and major supply and minor naval facilities in the HUMBOLDT BAY area.

(2) (a) D-Day 22 April 1944 (Target Date)

(b) H-Hour

1. Hollandia Task Force 0700K

2. Aitape Task Force 0645K

B. Subordinate Units Missions:

Hollandia Task Force Mission:

(1) Will, employing the 41st Infantry Division (less 163d Regimental Combat Team), reinforced, land at H-Hour on D-Day within HUMBOLDT BAY; will seize and occupy the HOLLANDIA area; and will rapidly establish control over the HUMBOLDT BAY area.

(2) Will, employing the 24th Infantry Division, reinforced, land at H-Hour on D-Day within TANAHMERAH BAY; and will rapidly establish control over the TANAHMERAH BAY area.

(3) Will vigorously and promptly exploit the success of both landings by seizing and occupying the HOLLANDIA airdromes and such adjacent areas as necessary to prevent interference by enemy ground forces with construction activities in the airdrome areas and to permit uninterrupted operation of aircraft from those airdromes.

(4) Will prepare, at the earliest practicable date, installations to accomodate three groups fighters and one squadron night fighters; will assist the Commander, Allied Air Force, in the establishment of necessary air warning and radio navigational facilities; and will establish such additional airdrome facilities in the area as may subsequently be directed by this headquarters.

(5) Will arrange overwater transportation to the objective areas for the movement of air force elements accompanying assault forces.

(6) Will allocate areas for army, naval and air facilities in the objective areas and will establish such naval, port and base facilities in the objective areas as may be directed by this headquarters.

(7) Will consolidate and defend occupied areas.

Aitape Task Force Mission:

(1) Will land at H-Hour on D-Day in the AITAPE-TADJI area and will rapidly seize and occupy the TADJI airdromes and such adjacent areas as necessary to prevent interference by enemy ground forces with construction activities and to permit uninterrupted operation of aircraft from those airdromes.

(2) Will prepare the TADJI airdromes quickly to accomodate one fighter group.

(3) Will arrange overwater transportation to the objective areas for the movement of air force elements accompanying assault forces and will assist the Commander, Allied Air Force, in the establishment of the necessary air warning and navigational facilities.

(4) Will allocate areas for army, naval and air facilities in the objective areas; will establish such naval facilities and such additional air facilities in the objective areas as may be directed by this headquarters.

(5) Will consolidate and defend occupied areas.

C. Antiaircraft Artillery Missions:

Hollandia Task Force:

(1) Assist in antiaircraft defense of elements of task forces while afloat; provide antiaircraft defenses for landings of forces; and provide antiaircraft defenses of beaches, docks, airdromes and other vital areas.

(2) Special Instructions:

(a) Augment antiaircraft defense of vessels during overwater movement to objectives, emplacing maximum number of automatic weapons on weather decks of vessels.

(b) Provide automatic weapons protection during unloading of vessels.

(c) Employ all available antiaircraft to provide maximum protection of airstrips, dumps, bivouacs, and other ground installations as directed by task force commander.

(d) Be prepared to augment field artillery fire with antiaircraft weapons against ground and waterborne targets.

(e) Where practicable site antiaircraft artillery searchlights to provide illumination for seacoast artillery.

(f) Coordinate AAAIS with Signal Air Warning and Fighter Sector units.

(3) Troops (Antiaircraft):

PROVISIONAL AA GROUPMENT

TANSHMERAH BAY LANDING FORCE:	HOLLANDIA LANDING FORCE:
Hq & Hq Btry, 94th AAA Group	Hq & Hq Btry, 116th AAA Group
163d AAA Gun Battalion	165th AAA Gun Battalion
104th CA Battalion (AA)(MT)	469th AAA AW Battalion
227th AAA Searchlight Bn (less Batteries B and C)	Battery B, 227th AAA Searchlight Battalion

Aitape Task Force:

(1) Assist in antiaircraft defense of elements of task forces while afloat; provide antiaircraft defenses for landings of forces; and provide antiaircraft defenses of beaches, docks, airdromes and other vital areas.

(2) Special Instructions:

(a) Augment antiaircraft defense of vessels during overwater movement to objectives, emplacing maximum number of automatic weapons on weather decks of vessels.

(b) Provide automatic weapon protection during unloading of vessels.

(c) Employ all available antiaircraft to provide maximum protection of airstrip, dumps, bivouacs, and the ground installations as directed by task force commander.

(d) Be prepared to augment field artillery fire with antiaircraft weapons against ground and waterborne targets.

(e) Where practicable site AAA searchlights to privide illumination for seacoast artillery.

(f) Coordinate AAAIS with Signal Air Warning and Fighter Sector units.

(3) Troops (Antiaircraft):

383d AA Automatic Weapons Battalion
Batteries B and C, 743d CA Battalion (Gun)
1st Platoon, Battery C, 227th AAA Searchlight Battalion

2. ANTIAIRCRAFT PLANNING

Initial plans for the Hollandia-Aitape operation were studied and the Antiaircraft Officer, New Britain Force, submitted the following initial requirements to G-3 for approval:

1 Provisional AAA Groupment

Humboldt Bay Area

1 AAA Group
1 AAA Gun Battalion
1 AAA AW Battalion
1 AAA SL Battery

Tanahmerah Bay Area

1 AAA Group
1 AAA Gun Battalion
1 AAA AW Battalion
1 AAA SL Battery

Aitape Area

2 AAA Gun Batteries
1 AAA AW Battalion
1 AAA SL Platoon
1 Radar Team

In order to coordinate all antiaircraft artillery in the two defended areas, a provisional antiaircraft artillery groupment was formed. The groupment was charged with establishing and operating the AAOR and the AAAIS, and was responsible for the dissemination of warnings of air attack. It was to operate in conjunction with the 31st Fighter Sub Sector and Detachment G, Fighter Wing (Special) (Fighter Control).

After the Tanahmerah Bay and Humboldt Bay forces joined and secured the Hollandia airdrome area, the responsibilities of the provisional antiaircraft groupment were turned over to the 94th AAA Group

Since antiaircraft units were not assigned Sixth Army, the plan and request for troops was submitted to GHQ. Final approval from GHQ reduced antiaircraft troops for the Aitape landing to one AAA AW battalion, two AAA gun batteries, one AAA searchlight platoon and ordered their attachment to Sixth Army for the pending operation.

Inspections of antiaircraft units were conducted by an antiaircraft team from Headquarters, Sixth Army. The 166th AAA Gun Battalion was found unsatisfactory in combat efficiency and a request was made of GHQ for its replacement by the 165th AAA Gun Battalion. This was granted and assignment made for immediate staging of the new battalion.

3. ANTIAIRCRAFT STAGING

All units for the Hollandia-Aitape operation were staged at Finschhafen or Goodenough Island. This eliminated the usual problems of a dispersal of antiaircraft units, but because of the late arrival of some equipment, pre-embarkation training and preparation was not as complete as desired. Generally, however, the staging was conducted in a very satisfactory manner.

A. Humboldt Bay Task Force Units (Staging at Finschhafen).

The 116th Antiaircraft Artillery Group Headquarters was located in close proximity to Task Force Headquarters resulting in excellent liaison and cooperation. Frequent conferences were held between members of the group staff and general staff sections of the 41st Division. Subordinate antiaircraft commanders were frequently called in for instructions and conferences.

The 469th AAA AW Battalion arrived at Finschhafen about 10 April 1944 with equipment practically complete. This unit staged about two miles from the loading jetties and carried out their preparation with a minimum of difficulty.

The 165th AAA Gun Battalion arrived at Finschhafen from the United States early in March 1944 and was attached to Sixth Army 8 April 1944. They arrived completely equipped with the exception of a few minor items. Their equipment, including one radar set SCR 584 per gun battery, appeared in excellent combat condition. Prior to staging preparation, this unit was located 26 miles from the loading jetties. In order to avoid a tremendous waste of time, staging areas within one mile of the loading jetties were utilized.

Battery B, 227th AAA Searchlight Battalion arrived at Finschhafen on 4 April 1944. Since this organization was not equipped with spread beam searchlights, attachments were obtained from another unit and installed on all lights. The SCR 268's did not arrive with the battery, but were shipped from Brisbane arriving a few days prior to the embarkation of the 1st Platoon. Although only four of the six radars were equipped with IFF, this was considered adequate. No training in the use of searchlights had been conducted for several months prior to the commitment of the battery.

B. Tanahmerah Bay Task Force (Staging at Goodenough Island).

On 9 March verbal orders were received by the 94th AAA Group that they would be involved on an operation and on 13 March a conference was held with the Commanding General, I Corps, who outlined the plans for the operation. Units involved were attached to I Corps by Sixth Army on 22 March 1944.and plans were made for their staging.

The 163d AAA Gun Battalion arrived at Goodenough Island on 15 March followed on 5 April by Headquarters and Headquarters Battery and Battery A, 227th AAA Searchlight Battalion. Training was conducted stressing movement over rough terrain, terrestrial fire, combat loading and ground defenses. It was possible to secure some missions (day and night) for the training of radar operators as well as range sections and searchlight operators. Shortly before debarking, practice loadings and a rehearsal landing were conducted during which valuable lessons were learned. All units were completely and satisfactorily equipped for combat.

C. Aitape Task Force (Staging at Finschhafen).

The 383d AAA AW Battalion staged at Townesville, Australia, until 8 March 1944, arriving at Finschhafen on 21 March. The equipment did not accompany the unit, and on 10 April, guns arrived from Townesville in very poor condition. The Battalion was greatly handicapped in their training at the staging area, being limited to minimum test firing of weapons.

The 383d AAA Automatic Weapons Battalion and 1st Platoon, Battery C, 227th AAA Searchlight Battalion were staged about 35 miles from the main supply depots and loading jetties. This resulted in a great waste of time during preparations phase and loading. All AAA units participated in landing problems with other elements of the Task Force.

4. ANTIAIRCRAFT OPERATIONS

Humboldt Bay

D-Day.

Batteries A and D, 469th Antiaircraft Artillery Automatic Weapons Battalion landed at White Beach #1. Four gun sections of Battery A moved to the right and four to the left, providing antiaircraft artillery automatic weapons protection to White Beaches #1 and #2. Due to the congestion on the beach, difficulty was experienced in locating suitable positions for the guns. The field of fire was satisfactory only to seaward, the landward side being masked by cocoanut palms and mangroves. The last gun section of this battery was ready for action at H plus 12 hours.

Four gun sections of Battery D moved to the right, going into position on Pancake Hill about one half mile north of White Beach #1. The other four sections were held in reserve on White Beach #1 with the mission of later providing protection for proposed supply dumps to the southwest of Pancake Hill. The first four sections were in position ready for action by H plus 12 hours. The great length of time required for these units to go into position was due to congestion on the beach.

The advance echelon of the 116th Antiaircraft Artillery Group debarked and immediately established headquarters on the south side of Pancake Hill. Advance reconnaissance parties of Batteries B and C, 165th Antiaircraft Artillery Gun Battalion debarked with the group headquarters and immediately reconnoitered for positions.

Two sections, Battery B, 227th Antiaircraft Artillery Searchlight Battalion went into positions, one at the south end of White Beach #2 and one on Pancake Hill.

Communications on D-Day were primarily by radio. Wire lines were promptly laid to gun sections by the automatic weapons batteries, but they were frequently broken by heavy traffic.

D / 1.

The 1st Platoon, Battery B, 469th Antiaircraft Artillery Automatic Weapons Battalion, the 165th Antiaircraft Artillery Gun Battalion (less Batteries A and D), the 1st Platoon, Battery B, 227th Antiaircraft Artillery Searchlight Battalion and the communications section, 116th Antiaircraft Artillery Group, arrived at White Beach #1. The 1st Platoon, Battery B, 469th Antiaircraft Artillery Automatic Weapons Battalion took up positions along White Beach #1 to augment the automatic weapons defense. Two searchlight sections, one with radar, moved south to White Beach #2. Two searchlight sections moved to Pancake Hill, one going into position with radar; the other parked its radar near Pancake Hill, bringing it up and placing it in operation several days later.

The proposed supply dumps to the southwest of Pancake Hill were not established, releasing the four gun sections of Battery D, 469th Antiaircraft Artillery Automatic Weapons Battalion. These four sections moved from White Beach #1 to positions in the vicinity of Pancake Hill and the north end of White Beach #1.

Battery B, 165th Antiaircraft Artillery Gun Battalion moved off White Beach #1 and went into position on Pancake Hill. All guns were towed by D-7 and D-8 bulldozers and experienced no difficulty in reaching their position. Hasty fortifications were prepared initially using bulldozers and final fortifications were completed on D / 2. This battery was ready for action at 2030.

Due to lack of transportation from White Beach #1 to #3, Battery C, 165th Antiaircraft Artillery Gun Battalion, was temporarily emplaced at the south end of White Beach #1. The battery was ready for action at 1900 hours, except that the SCR 584 was inoperative because of electrical difficulties and was not repaired for several days due to shortage of spare parts.

The orders of the group commander from D-Day to D+28 were to illuminate and open automatic weapons fire on any low-flying aerial target during hours of darkness since Air and Naval Controllers disseminated information that no friendly aircraft would be over the area at that time.

At approximately 2000 hours, an enemy bomber flying at an estimated altitude of 500 to 1000 feet, dropped three bombs on White Beach #1. The Fighter Sub-Sector air warning system was in operation at the time, but did not get a plot on the plane. The commanding officer of the automatic weapons battalion heard the plane and called a red alert by ordering one of the 40mm guns to fire three rounds as a warning. Due to a misunderstanding of previously published orders the searchlight sections and automatic weapons sections awaited orders from the AAOR to go into action instead of acting on their own initiatives in accordance with prearranged plans. In consequence, the target was neither illuminated nor fired upon. After bombing the dumps on White Beach #1, the plane strafed the vicinity of the 41st Infantry Division command post near Pim without inflicting any damage.

One of the bombs dropped on White Beach #1 was a direct hit on a Japanese bomb dump. Large Japanese dumps were situated on the beach interspersed by our dumps, containing bulk supplies from the D-Day and D + 1 LSTs. After the bombing, tremendous explosions occurred in the Japanese bomb dump, followed by explosions of diminishing intensity for six days. Large quantities of the task force stores and ammunition on White Beach #1 were destroyed.

The 469th Antiaircraft Artillery Automatic Weapons Battalion suffered one 40mm gun destroyed and two M-51 machine guns partially destroyed. No searchlight material was damaged. The bombing disrupted communications to the south of White Beach #1 and it was impossible to replace the lines for over a week. Radio communication was relied upon and proved satisfactory.

Several casualties occurred among antiaircraft personnel as a result of this bombing.

D + 2.

Due to the explosions and fires on White Beach #1, it was impossible to land the D + 2 LSTs at that point and they were re-routed to White Beach #3. This included Headquarters and Headquarters Battery, 116th

Antiaircraft Artillery Group, Battery, (less 1st Platoon), and Battery C, 469th Antiaircraft Artillery Automatic Weapons Battalion and Batteries A and D, 165th Antiaircraft Artillery Gun Battalion. These units took up temporary positions along White Beach #3.

Several LSTs diverted from Tanahmerah Bay Landing Force also unloaded at White Beach #3. Among these units were Battery C of the 104th Antiaircraft Artillery Automatic Weapons Battalion, Battery D, 163d Antiaircraft Artillery Gun Battalion and 1 platoon of Battery A, 227th Antiaircraft Artillery Searchlight Battalion.

At 2100 hours, a red alert was called. An enemy plane dropped flares and bombs at sea in an attack on our shipping without causing damage. This plane did not come within range of land based antiaircraft guns.

D / 3.

At 0200 hours, a red alert was called, but the plane did not approach within gun range.

No further information on antiaircraft activities is available for the period from D /3 until the campaign closed on 25 August 1944

Tanahmerah Bay

The beach at Tanahmerah Bay proved to be extremely difficult for the movement of troops inland to their scheduled objectives or assembly areas. In addition to the heavy sand, a sage swamp extended behind its entire length, necessitating construction of roads along the beach to both flanks then inland. Although bulldozers were in the front of each LST, other equipment, landed from ships beached earlier, blocked the way to such an extent that much of the road building equipment could not be promptly unloaded.

Due to the extreme congestion on the beach, traffic was directed to the right or left flank as the roads were developed, resulting in units being divided and unable to reach their preselected areas for several days. As the adverse conditions on the beach prevented the occupation of positions according to plan, the antiaircraft units went into temporary positions that would enable them to best accomplish their missions of protecting the beachhead.

D-Day.

Battery B, 104th Antiaircraft Artillery Automatic Weapons Battalion, was able to get seven gun sections into position along the beach. Battery A was able to get only one section into position. Battery D, with all its

weapons in position on weather decks for the protection of the convoy, was unable to land any of its sections.

Battery B, 163d Antiaircraft Artillery Gun Battalion, was able to unload two 90mm guns and a radar but these could not be made ready for firing due to lack of other essential equipment.

The equipment of the searchlight battery was widely scattered on the beach. However, by evening, two sections were able to move into temporary positions, one each at the north and south ends of the beach. From these positions both aerial and sea coverage was provided.

A position on a hill to the right flank of Red Beach #2 had been selected for the Fighter Control Center and AMOR, but all equipment had been re-routed because of the beach conditions. A temporary position was chosen and both the Fighter Control Center and the AMOR were able to furnish air warning service by late afternoon.

D + 1.

As the traffic situation cleared on the beach, automatic weapons sections unloaded and went into temporary positions.

Enough equipment was unloaded by Battery B, 163d Antiaircraft Artillery Gun Battalion, to enable two guns to be in firing position by 1900 hours. A major factor in this battery's tardiness in getting into firing position was that one gun and its prime mover had been ordered off the road by a general officer to let jeeps pass. This had mired both the gun and prime mover. Battery A landed complete but as there was no road to its selected position, it was moved to the south end of the beach.

Three searchlight sections, due to land on D + 2 on Red Beach #2 landed on White Beach #3 and were put into temporary positions.

D -/ 2.

Additional automatic weapons sections landed and took up temporary postions.

The remaining equipment for Battery B, 163d Antiaircraft Artillery Gun Battalion unloaded and the complete battery, with the exception of the radar, was ready to fire at 1400 hours. Battery A, which had moved to the south end of the beach, was ready to fire, without radar, at 1500 hours. This battery had been delayed in getting into position because the area selected was being used as a motor park. Battery D, scheduled to land at Red Beach #2, landed at White Beach #3 instead and went into position there.

D + 3.

The last of the automatic weapons sections landed and took up positions.

The first of the searchlight radars went into position and was placed in action. Road priority could not be secured to move any of the others to their positions.

D + 4.

One platoon of automatic weapons was emplaced on Red Beach #1 to protect the supply dumps on that beach.

By D + 5, all radars for gun and searchlight batteries were ready for action.

Difficulties in road construction between Red Beach #1 and Red Beach #2 and between Red Beach #1 and the airdrome area led to abandonment of the original plan of movement which was from Red Beach #2 to Red Beach #1, thence to the airstrip.

On D + 6 a reconnaissance party, led by the Group S-3 was sent to the airdrome area via White Beach to select possible movement routes.

On D + 8 instructions were received to leave one automatic weapons battery and three searchlights with radar for the defense of Red Beaches and to prepare all other for movement by water to White Beach and thence by road to the airdrome area.

On D + 10 orders were received which established a priority of movement as follows:

Hq & Hq Battery, 94th AAA Group
Hq & Hq Battery, 104th CA (AW) Battalion
Battery B, 104th CA (AW) Battalion
Battery D, 104th CA (AW) Battalion
Hq & Hq Battery, 163d AAA Gun Battalion
Battery B, 163d AAA Gun Battalion
Battery A, 227th AAA Searchlight Battalion
Battery C, 163d AAA Gun Bn to White Beach #2
Battery A, 163d AAA Gun Battalion to Tami

For this movement 16 LCMs and 6 LCVs were reported as available. Provisions were made to establish a detachment from the AAA Group at White Beach #3 to arrange for the receipt and forwarding of the various elements as they arrived from Red Beach.

On 3 May the Fighter Sector, AAOR and Headquarters and Headquarters Battery, 94th Antiaircraft Artillery Group, Headquarters and Headquarters Battery, 104th Coast Artillery Battalion, a detachment from Battery A, 227th Antiaircraft Artillery Searchlight Battalion, and one platoon from Battery B, 104th Coast Artillery Battalion sailed from Red Beach to White Beach. These units were landed at Pim and proceeded toward the airdrome. All units bivouacked about three miles inland.

On 4 May Headquarters, 104th Coast Artillery Battalion and two guns from Battery B, 104th Coast Artillery Battalion reached the airdrome area. All others remained in bivouac as the road had become impassable.

On 5 May other units moved toward the airdrome, but were unable to get through because of road conditions. The movement of the 94th Antiaircraft Artillery Group and subordinate units to the airdrome area was completed on 19 May. Immediately upon arrival the batteries or elements thereof were directed to their positions. Emplacement of equipment was made a matter of urgency because of the delayed arrival.

Aitape

The actual landing of the LSTs carrying antiaircraft artillery units 800 yards east of Blue Beach aided the units in that the majority of the positions were in that area. The beaching of antiaircraft equipment was according to plan. The drawbars on the M-51 mounts and SCR-268-D power trailers not being flexible enough caused some delay in unloading as well as damage to the equipment. The loose sand on the beaches also made movement extremely difficult and in some instances the heavy equipment had to be towed.

On D-Day, the first 40mm gun sections landed at H ≠ 3, and by H ≠ 11, the antiaircraft weapons ashore and in position were fourteen 40mm guns, fourteen M-51s, three searchlight sections including one radar, and one 90mm gun battery. Some positions, picked by map and photo reconnaissance, proved unsuitable; however, ground reconnaissance was made early enough to prevent delay in getting guns into positions.

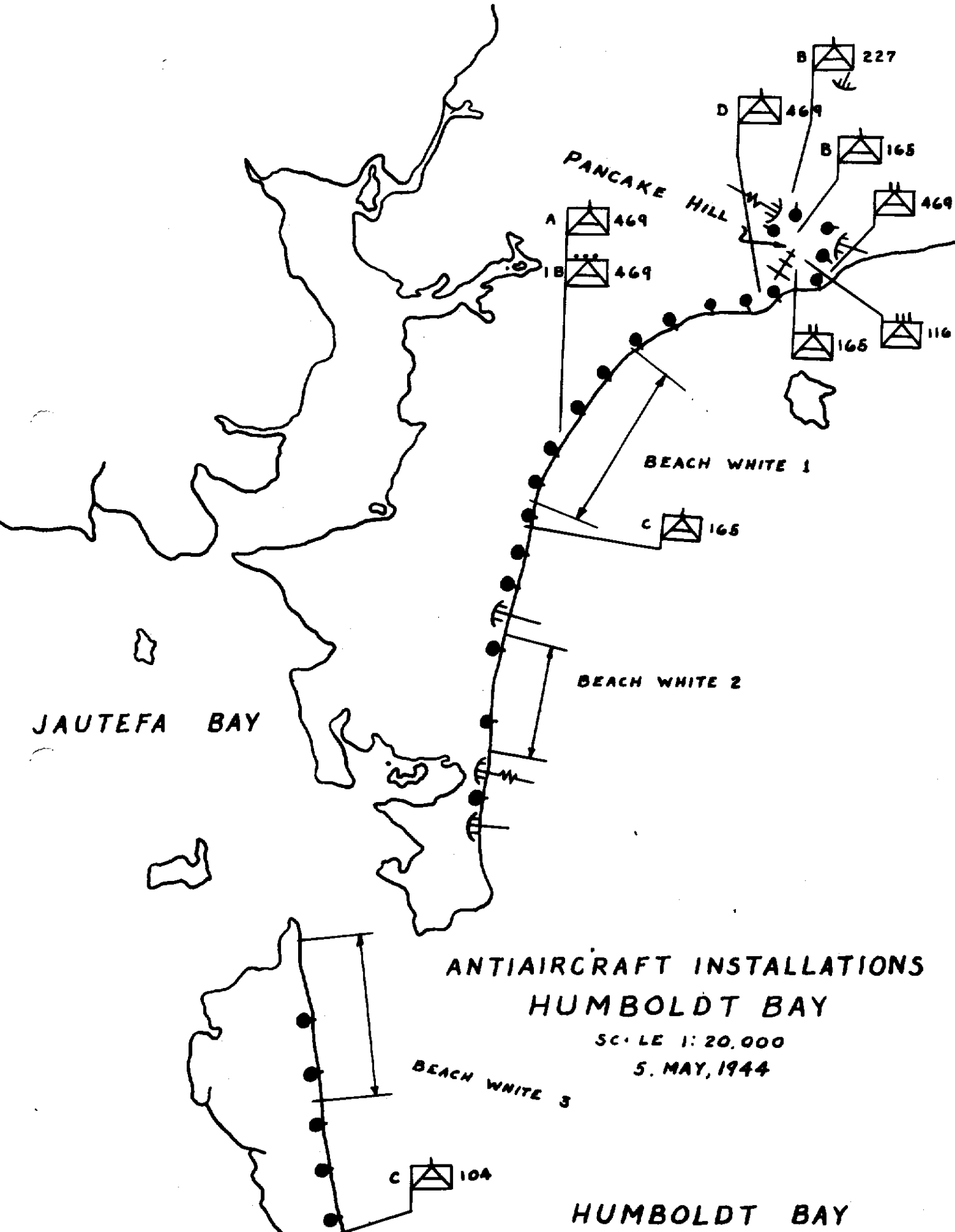
Fighter Sector became operational at H ≠ 3 hours with the Signal Corps Air Warning Unit ready at H ≠ 5 hours. The air warning service was supplemented by the gun battery radar at H ≠ 11 hours.

On D ≠ 1 eight additional automatic weapons sections were landed. In addition, the searchlight radar became operational, further supplementing the air warning service.

Wire communications were difficult to keep in service due to road construction and heavy vehicular traffic in the beach area. The communications section did an excellent job of repairing lines as service was

never interrupted for over an hour on any line. On the whole, radio communication was satisfactory although some difficulty was experienced with the SCR 593 receivers. All units observed radio discipline and a monitoring station reported no violations of frequency or secrecy on the part of antiaircraft units.

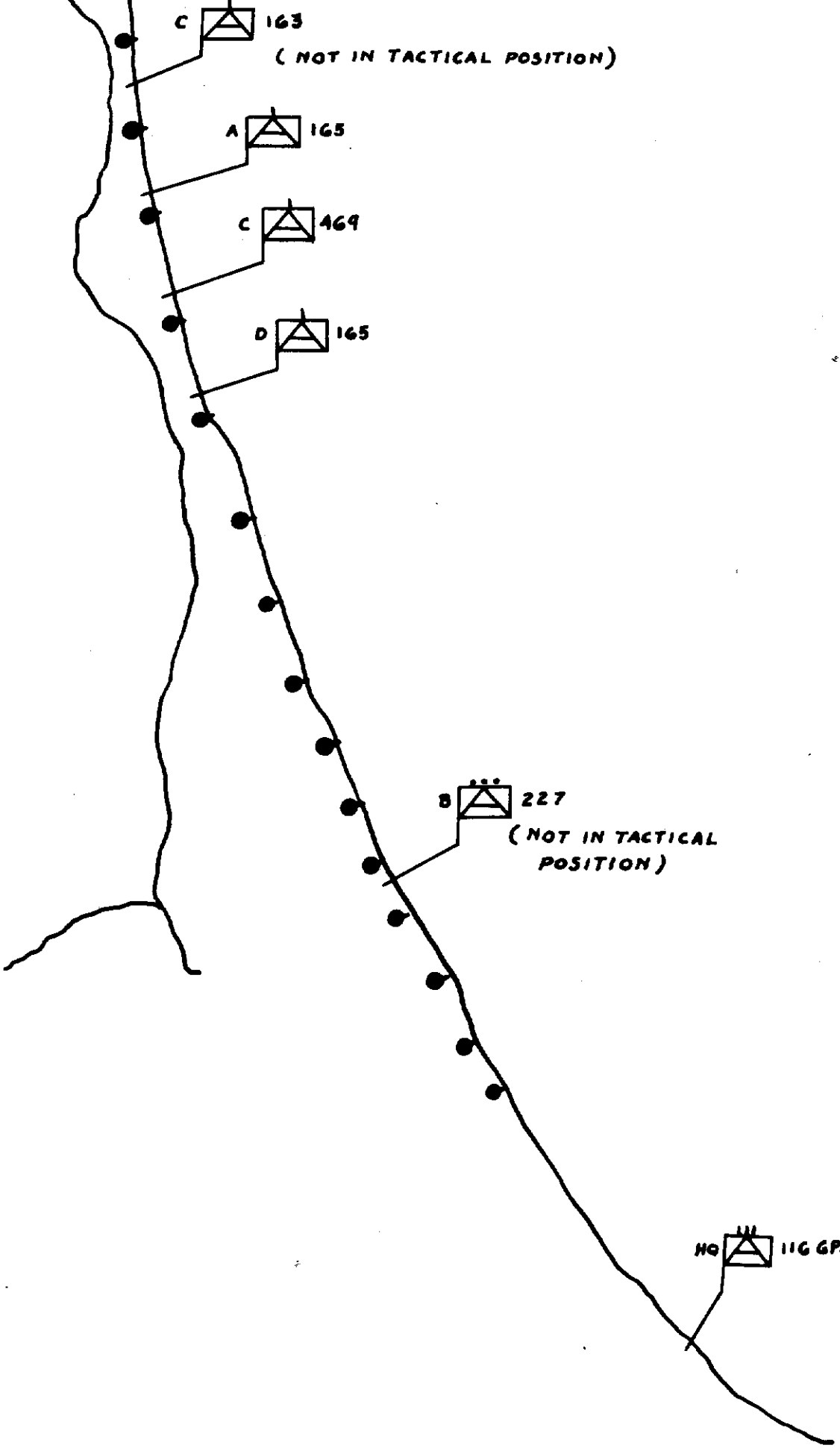
No enemy air action was encountered in the Aitape area, the only firing conducted by antiaircraft artillery being test and trial fire. Enemy resistance ended on 25 August and the campaign was closed.

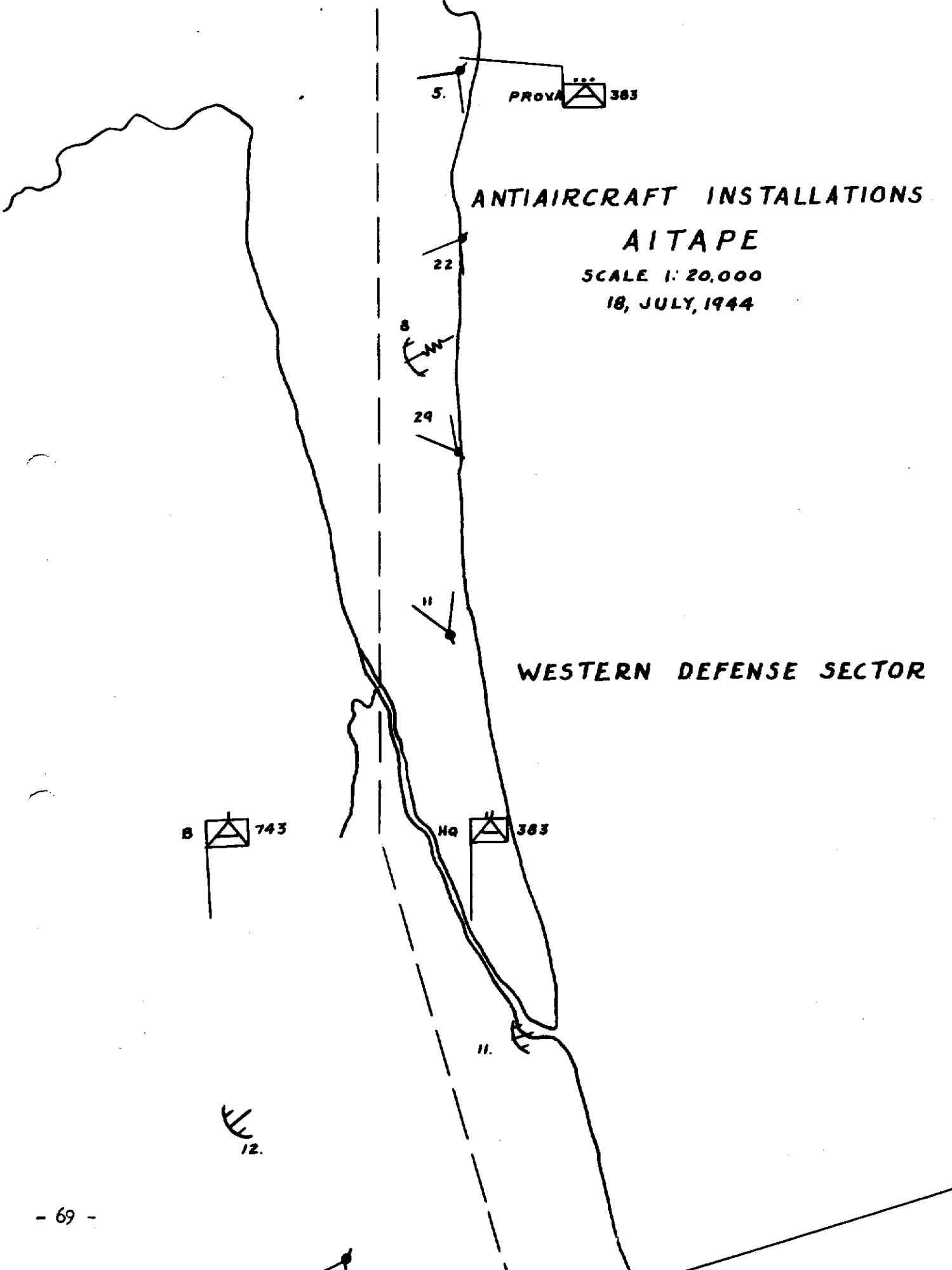


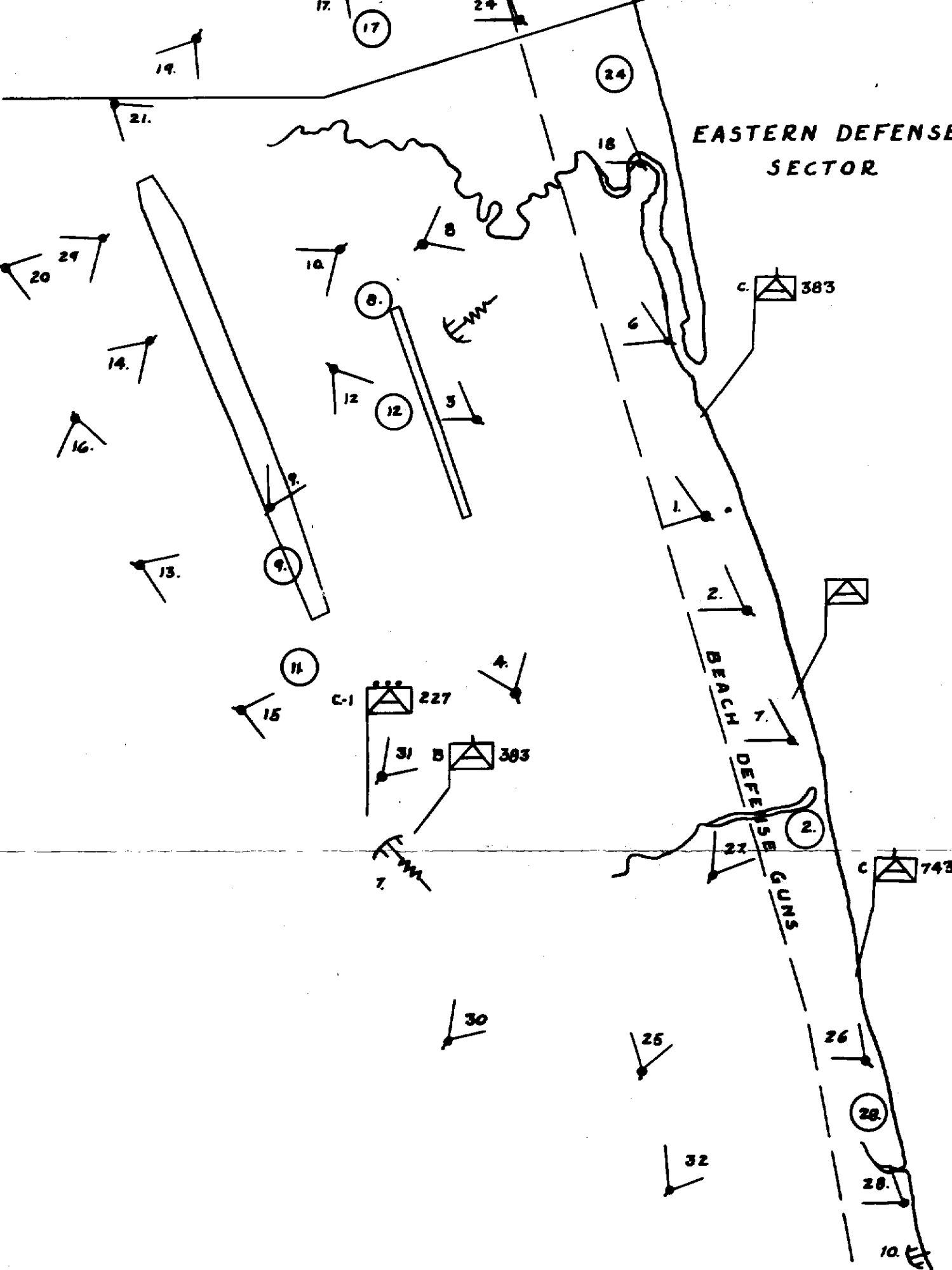
ANTIAIRCRAFT INSTALLATIONS
HUMBOLDT BAY

SCALE 1:20,000

5 MAY, 1944


C 163
(NOT IN TACTICAL POSITION)
A 165
C 469
D 165
B 227
(NOT IN TACTICAL POSITION)
HQ 116 GP


ANTIAIRCRAFT INSTALLATIONS
AITAPE
SCALE 1: 20,000
18, JULY, 1944
WESTERN DEFENSE SECTOR
5.
PROVA
383
22
8
29
11
B
743
HQ
383
11.
12.


EASTERN DEFENSE SECTOR
BEACH DEFENSE GUNS
C. 383
C-1 227
B 383
C 743
17.
24
19.
21.
18
8
20
29
10.
8.
6
14.
12
12
3
16.
9.
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11
4.
15
7.
31
27
2.
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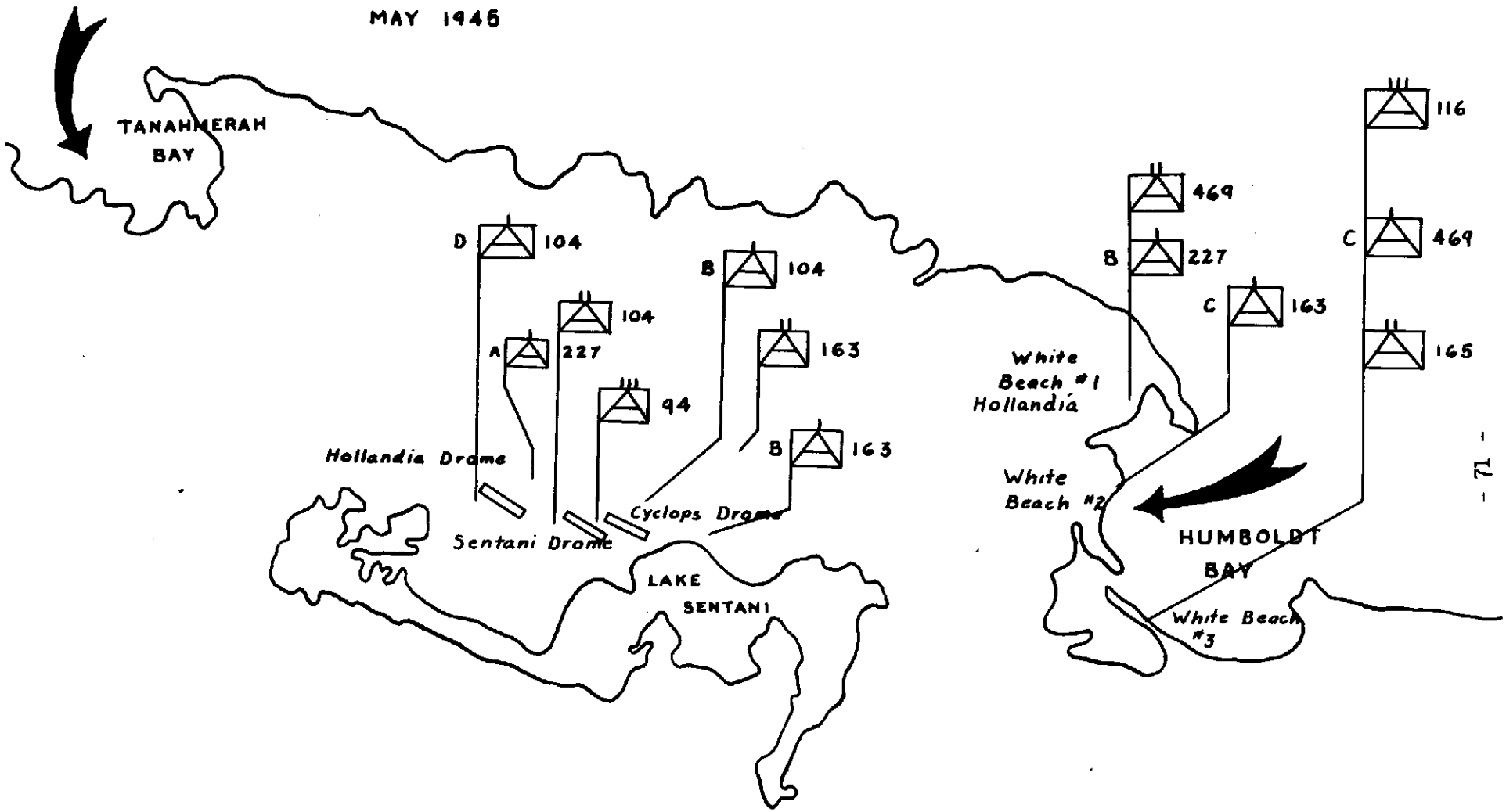
25
26
28.
32
28.
10.

HOLLANDIA - TANAHMERAH BAY

SCALE 1: 250,000

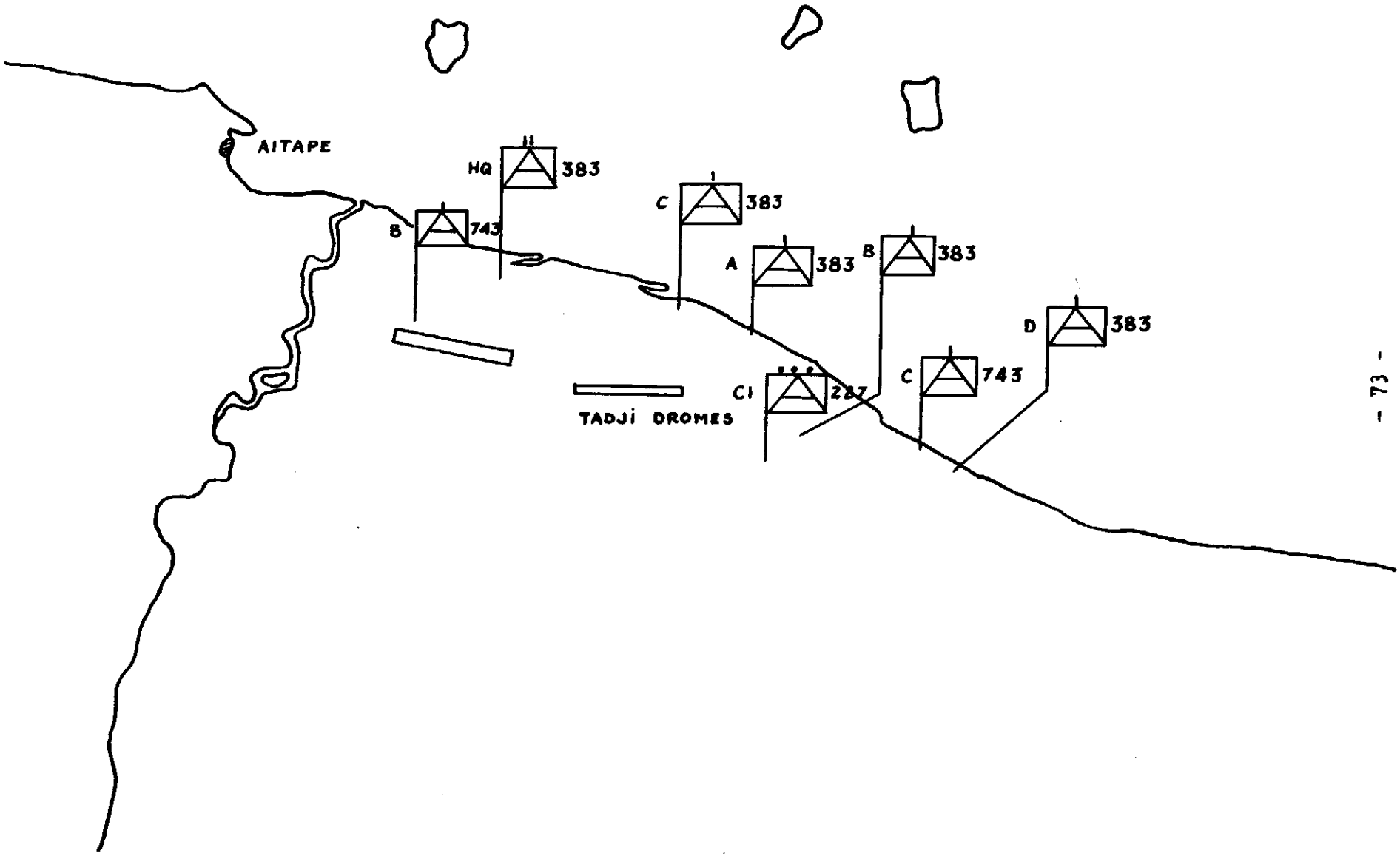
MAY 1945



AITAPE

SCALE 1:60,000

MAY 1944



SECTION V

COMBAT PERFORMANCE OF ANTIAIRCRAFT ARTILLERY IN THE WAKDE OPERATION (17 May 1944 — 22 September 1944) and BIAK OPERATION (27 May 1944 - 20 August 1944)

1. MISSIONS
   - A. NEW BRITAIN FORCE
   - B. SUBORDINATE UNITS
   - C. ANTIAIRCRAFT
2. ANTIAIRCRAFT PLANNING
3. ANTIAIRCRAFT STAGING
4. ANTIAIRCRAFT OPERATIONS

1. MISSIONS

A. New Britain Force Mission:

(1) Will supported by Allied Air Force and Allied Naval Forces, seize successivley WAKDE and BLAK and will establish air facilities and minor naval facilities thereat.

(2) (a) WAKDE:

D-Day	17 May 1944 (Target Date)
H-Hour	0715

(b) BLAK:

Z-Day	D ∠ 10 (Target Date)
H-Hour	0745

B. Subordinate Unit Missions:

Wakde Task Force Mission:

(1) Will land at H-Hour on D-Day in the vicinity of Toem; will seize a beachhead in the landing area and, supported by artillery emplaced in the beachhead, capture WAKDE on D ∠ 1 by shore to shore operations.

(2) Will prepare at WAKDE with the utmost speed, facilities to accommodate one group fighters; and as soon as practicable thereafter in the same locality facilities for one additional group fighters, one flight night fighters, and one reconnaissance squadron (long range).

(3) Will on D ∠ 2, by shore to shore operations, seize and occupy LIKI and HIROEMAR ISLANDS; and will assist the Allied Air Force in the establishment of air warning facilities thereon.

(4) Will rapidly seize and occupy such adjacent localities within the objective areas as are necessary to prevent interference by enemy ground forces with construction activities, and to permit uninterrupted operation of aircraft from airdromes; and will defend occupied areas.

(5) Will establish minor naval facilities in the objective area as arranged by New Britain Task Force Headquarters with Commander, Allied Naval Forces.

(6) Will assist the Allied Air Force in the establishment of necessary air warning and radio navigational facilities.

(7) Major combat elements (less AAA):

(a) 163d RCT, Reinf
41st Infantry Division

Biak Task Force Mission:

(1) Will land at H-Hour on Z-Day in the vicinity of BOSNEK; will seize a beachhead in the landing area; and will rapidly seize and occupy the MOKMER-BOROKOE-SORIDC airdromes.

(2) Will prepare quickly facilities in the airdrome area for one group fighters; and as soon as practicable thereafter, one additional group fighters, one night fighter squadron, one reconnaissance group, one photo reconnaissance squadron, and one heavy bomber group on BIAK. Eventual air facilities will be as later directed by New Britain Task Force Headquarters.

(3) Will rapidly seize and occupy such adjacent localities within the objective area as are necessary to prevent interference by enemy ground forces with construction activities, and to permit uninterrupted operation of aircraft from airdromes; and will defend occupied areas.

(4) Will establish minor naval facilities in the objective area as arranged by New Britain Task Force Headquarters with the Commander, Allied Naval Forces.

(5) Will assist the Allied Air Force in the establishment of necessary air warning and radio navigational facilities.

(6) Major combat elements (less AAA):

(a) 41st Infantry Division (less 163d RCT)

C. Antiaircraft Mission:

Wakde Task Force:

(1) Assist in antiaircraft defense of elements of Task Forces while afloat; provide antiaircraft defense for landings of forces; and provide antiaircraft defense of beaches, docks, airdromes and other vital areas.

(2) Special Instructions:

(a) Augment antiaircraft defense of vessels during movement by emplacing maximum number of automatic weapons on weather decks.

(b) Provide continuous automatic weapons protection on vessels and beachheads during unloading.

(c) Provide maximum antiaircraft protection of installations according to priorities established by the Task Force Commander.

(d) Establish liaison with local field artillery commanders and be prepared to augment field artillery fire.

(e) Coordinate the employment of all antiaircraft weapons.

(f) Coordinate employment of harbor surveillance radar to provide early warning of low flying aircraft.

(3) Troops (AA):

166th AA Gun Bn (less Batteries A and B)
202d AA AW Bn
Battery B (less 1 platoon), 236th AA SL Bn

Biak Task Force:

(1) Assist in antiaircraft defense of elements of Task Forces while afloat; provide antiaircraft defense for landings of forces; and provide antiaircraft defense of beaches, docks, airdromes and other vital areas.

(2) Special Instructions:

(a) Augment antiaircraft defense of elements of Task Forces while emplacing maximum number of automatic weapons on weather decks.

(b) Provide continuous automatic weapons protection on vessels and beachheads during unloading.

(c) Provide maximum antiaircraft protection of installations according to priorities established by the Task Force Commander.

(d) Establish liaison with local field artillery commanders and be prepared to augment field artillery fire.

(e) Establish in the Biak area, liaison with seacoast artillery and be prepared to augment seacoast artillery on order.

(f) Provide at least two antiaircraft searchlights sited for secondary mission of beach and seaward illumination for each Task Force. Provide, in the Biak area, illumination for seacoast artillery on call of the Seacoast Artillery Commander.

(g) Coordinate the employment of all antiaircraft weapons.

(h) Coordinate employment of harbor surveillance radar to provide early warning of low flying aircraft.

(3) Troops (AA and CA):

Hq and Hq Battery, 208th AA Group
166th AA Gun Bn
476th AA AW Bn
Battery C, 236th AA SL Bn
674th AA MG Battery
675th AA MG Battery
718th CA Battery (155mm)
720th CA Battery (155mm)
Provisional CA Harbor Surveillance Det.

2. ANTIAIRCRAFT PLANNING

WAKDE OPERATION:

The Commanding Officer, 166th AA Gun Battalion, was designated as the Task Force Antiaircraft Officer.

The antiaircraft plan for the Wakde operation provided for one gun battalion (less two batteries), one automatic weapons battalion, and one searchlight battery (less one platoon). Antiaircraft units were scheduled to arrive in the objective area as follows:

D-Day - Hq and Btry D, 166th AA Gun Bn
Hq and Btries C and D, 202d AA AW Bn

D+5 - Battery B, 236th AA SL Bn (less one platoon)
Battery A, 166th AA Gun Bn
Batteries A and D, 202d AA AW Bn

Among the considerations governing the initial plans for the disposition of antiaircraft artillery were:

(1) After the initial assault at Arare, infantry forces will secure the Toem-Sarmi area for the establishment of dumps and base installations.

(2) Infantry forces will rapidly neutralize the Sarmi aerdrome area.

(3) On D + 1, infantry forces will seize Wakde Island in a shore to shore operation to permit rapid construction of airbase facilities thereon.

(4) Antiaircraft artillery will be prepared to provide fire support to advancing ground forces as requested.

Based upon the above considerations, the following plan for disposition of AA troops was evolved:

Toem - Tor River Area

1 Gun Battery
1½ AW Batteries
4 SL sections

Wakde Island

1 Gun Battery
2 AW Batteries
2 SL sections

To protect vital points in advance to Sarmi

1 AW platoon

The force antiaircraft officer conferred with the commanding officer of the Fighter Detachment, the fighter controller, and Navy Officers concerned with air warning. Plans were coordinated to establish the fighter control center and antiaircraft artillery operations room at the same location. The AAIS was to augment the air force SCR 602 air warning radars to be located at Toem, the Unnamed River, on an LCT off shore, and on Insoemanai Island.

BIAK OPERATION:

The plan for the landing on Biak, Schouten Islands, initially provided for the following antiaircraft and coast artillery units:

208th AA Group
476th AA Automatic Weapons Battalion
165th AA Gun Battalion
674th AA Machine Gun Battery
675th AA Machine Gun Battery
Battery C, 236th AA Searchlight Battalion
718th Coast Artillery Battery (155mm)
720th Coast Artillery Battery (155mm)
Provisional Harbor Surveillance Detachment

Since only ten days elapsed from the assignment of the mission to the antiaircraft group and the date on which the units embarked, a minimum of time was available for planning. Antiaircraft artillery was to assist in protection for the convoy enroute to the objective area, establish antiaircraft defense for the beachhead, and later for the airdrome area and installations, and be prepared to provide ground support fire as requested by force headquarters. The seacoast artillery batteries and provisional harbor surveillance detachment were to establish defenses against enemy waterborne forces.

Antiaircraft and seacoast units were scheduled to arrive in the objective area as follows:

Z-Day

208th AAA Group
Headquarters and Battery B, 165th AAA Gun Bn
Headquarters and Batteries A and B, 476th AAA AW Bn
Battery B, 236th AAA SL Bn (less 10 sections)
674th A A MG Battery
675th AAA MG Battery

Z + 1

Battery A, 165th AAA Gun Bn
Battery C, 476th AAA AW Bn

Z + 3

Batteries C and D, 165th AAA Gun Bn
1st platoon, Btry D, 476th AAA AW Bn (less 40mm guns)

Z + 6

Battery D, 476th AAA AW Bn (less 1 platoon machine guns)
Ten sections, Btry C, 236th AAA SL Bn
Provisional Harbor Surveillance Detachement

The 718th and 720th Coast Artillery Batteries (155mm) were to be moved forward to the objective area on the first available shipping or as requested by the force commander.

During the planning phase the antiaircraft group commander coordinated plans for air warning and location of antiaircraft artillery operations room near the fighter control center with Detachment I, 33d Fighter Sector. Plans for the use of antiaircraft artillery for terrestrial fire in support of ground forces were coordinated with the force artillery officer.

3. ANTIAIRCRAFT STAGING

WAKDE OPERATION:

The staging of units for this operation was difficult because units and equipment could not be mounted from a single staging area due to lack of time and shipping facilities.

Headquarters and Batteries A and D, 166th AA Gun Battalion and Batteries B and C, 202d AA Automatic Weapons Battalion arrived at the staging area at Aitape, New Guinea, from Finschhafen on 12 May. Combat loading of these units was begun on 13 May, and was completed on 14 May. Consequently, insufficient time was allowed for adequate checking of equipment.

Headquarters Battery and Batteries A and D, 202d AA Automatic Weapons Battalion and Battery B, 236th AA Searchlight Battalion (less 1 platoon and 3 sections) were staged at Hollandia. Headquarters and Batteries A and D, 202d AA Automatic Weapons Battalion, loaded on 15 May 1944. Battery B, 236th AA Searchlight Battalion (less 1 platoon) was scheduled to stage at Hollandia; however, three sections did not arrive from Finschhafen before the battery departed for the objective area.

BIAK OPERATION:

Antiaircraft artillery units for the Biak operation and the Provisional Harbor Surveillance Detachment were staged at Hollandia. The 718th Coast Artillery Battery (155mm) was staged at Finschhafen, and the 720th Coast Artillery Battery was staged at Milne Bay. No antiaircraft units experienced difficulties during the staging at Hollandia with the exception of the 476th AA Automatic Weapons Battalion. Only half of the equipment of this battalion accompanied the unit on the move from Finschhafen to the staging area at Hollandia. Since this equipment did not arrive prior to departure for the objective area, later echelon units were stripped of certain items to equip Headquarters and Batteries A and B for the initial landing. Antiaircraft units completed loading on 25 May 1944.

4. ANTIAIRCRAFT OPERATIONS

WAKDE OPERATION:

The landing was made at Arare at 0715 hours after preliminary shelling by cruisers and destroyers. Infantry forces landed unopposed and immediately advanced to the Tementoo Creek and the Tor River.

The LSTs carrying antiaircraft artillery beached at 0815. Three hours elapsed before unloading could progress because dirt jetties had to be pushed out to the LST ramps. Automatic weapons remained in firing position on the top deck until unloading was completed. All automatic weapons positions were reconnoitered prior to unloading, and sections were directed to selected positions. The gun Battery's guns, power plants, and SCR 584 radar were unloaded from the ship, parked in a nearby area, and later shuttled to position 600 yards east of the Unnamed River by the Battery's one 7½-ton prime mover. After a native garden area was cleared, construction of the gun positions was begun. Engineer tractors and bulldozers were used to pull 40mm guns and M-51 machine gun mounts into position and prepare hasty fortifications. The unloading of the eight LSTs landing antiaircraft artillery was completed by 1900 on D-Day. All sections of Batteries B and C, 202d AAA Automatic Weapons Battalion, were in position along the beach from Toem to the Unnamed River before 1900. Battery D, 166th AAA Gun Battalion was ready to fire by visual tracking by 1800; the SCR 584 being out of action because of electrical difficulties.

Fighter Sector Headquarters and Headquarters, 166th AAA Gun Battalion went into adjacent positions between Arare and the Unnamed River on D-Day. The Fighter Control Center and the Antiaircraft Operations Room were in operation by 1930 hours. One radar, SCR 602, was in operation at Toem, another was located at the Unnamed River, and an LCT mounting the third SCR 602 was in operation off shore. Radio communication was immediately established with the naval vessels off shore and early warning was excellent.

On 18 May (D + 1) infantry forces attacked Wakde Island. The island was secured by the evening of 19 May. On 20 May the Fighter Control Center and Antiaircraft Operations Room began operations on Insomanai Island adjacent to Wakde Island. On 22 May Battery A, 166th AAA Gun Battalion arrived and went into position at Toem. Battery B, 236th AAA Searchlight Battalion (less 1 platoon and 3 sections) also arrived and went into position in the Toem area. On 24 May Battery C, 202d AAA Automatic Weapons Battalion, and two searchlight sections went into position on Wakde Island to establish the initial antiaircraft defense of the airstrip. On 26 May one platoon of Battery D, 202d AAA Automatic Weapons Battalion moved to Wakde Island.

The first enemy air raid occurred on Wakde Island at 2000, 26 May. One enemy fighter strafed ineffectively from 2000 feet altitude, and was followed by one bomber at 4500 feet altitude. No bombs were dropped. Three searchlights illuminated the bomber during its entire flight over the island. Automatic weapons on the island engaged both targets but no hits were observed. Battery D, 166th AAA Gun Battalion engaged both targets. Battery A, 166th AAA Gun Battalion did not engage because the director went out of action. All radars later reported that the target disappeared in the scope. It is possible that this plane was destroyed but further definite confirmation was not possible.

On 27 May a red alert was called at 2000 hours and was followed shortly thereafter by an all clear from the Fighter Control Center. Immediately after the all clear signal an enemy plane was recognized by antiaircraft observers who sounded an alert at the moment six bombs were dropped near the jetty on Wakde Island. Antiaircraft guns in the Toem area and automatic weapons on the island engaged the plane without results.

The antiaircraft commander's plan for the defense of Wakde Island was not put into effect as soon as the weapons were available because the air force commander desired that all space on the small island be utilized for air force installations. In particular, the air force commander desired that 90mm guns not be put on Wakde Island. After the raid on 27 May the Task Force Commander ordered a 90mm gun battery emplaced on the island. On 28 May Battery D, 166th AAA Gun Battalion moved to Wakde Island.

In the area between Toem and the Unnamed River the enemy made repeated attempts to infiltrate into antiaircraft positions. On 30 May the first concerted attack was made by enemy troops against antiaircraft automatic weapons positions near the perimeter between Arare and the Unnamed River. An undetermined number of enemy troops attacked four sections under cover of darkness using hand grenade and "molotov cocktails". The attack was repulsed and twenty enemy troops were killed. Two 40mm guns, one M-51 machine gun, and two power plants were put out of action by grenades. Subsequent infiltration attacks were attempted, but no large concerted attack was again experienced.

On 1 June Battery A, 166th AAA Gun Battalion registered fire on the Mount Hakko and Maffin drome areas. Between 1 June and the close of the operation on 22 September this battery fired 1500 rounds as requested by task force headquarters against enemy troops and installations in the Tor River and Maffin drome area and against fortifications encountered by our infantry in the Mount Hakko area.

On 22 September 1944 the operation was closed after organized resistance ceased.

BLIK OPERATION:

The landing of antiaircraft artillery on Z-Day proceeded without incident and the planned defense of the beachhead was established by nighfall.

The 674th AAA Machine Gun Battery (Airborne) and the 675th AAA Machine Gun Battery (Airborne) were the first antiaircraft artillery troops ashore. These batteries landed at H-hour plus 20 minutes and set up a machine gun defense of the beachhead at the jetty area. Battery B, 165th AAA Gun Battalion went into position on Bosnek

beach on Z-Day and was ready to fire at 1330 hours without radar; hasty fortifications were completed and the SCR 584 was in operation at 1600 hours. Batteries A and B, 476th AA AW Battalion went into position on Bosnek beach to provide the automatic weapons defense of the unloading area. Both batteries were emplaced with hasty fortifications and ready to fire by director control at 1600 hours on Z-Day. Two searchlight sections, one with radar, of Battery C, 236th AAA Searchlight Battalion, went into position on Bosnek beach on Z-Day. On Z + 1 Battery A, 165th AAA Gun Battalion, was set up on Bosnek beach to augment the gun defense and Battery C, 476th AA AW Battalion was emplaced to augment the automatic weapons defenses. Batteries C and D, 165th AAA Gun Battalion, arrived on Z + 3 but, because of the crowded conditions on the beachhead, were not emplaced in firing position until the following day. Four M-51 mounts of Battery D, 476th AA AW Battalion also arrived on Z + 3 and were emplaced on Bosnek beach to replace several fire units that had moved forward with infantry forces advancing on Volmer airdrome. The remaining sections of Battery D, 476th AA AW Battalion, arrived on Z + 6 and were emplaced on Bosnek beach. Ten searchlights and five radars of Battery C, 236th AAA Searchlight Battalion, arrived on Z + 6. Since the tactical situation required only one of the sections on Bosnek beach, the remainder were placed in concealed bivouac and emplaced in position as the beachhead expanded. The Provisional Harbor Surveillance Detachment arrived on Z + 6 and went into concealed bivouac. The tactical situation did not permit its immediate employment.

Upon request of the division artillery on 29 May, Battery B, 165th AAA Gun Battalion fired at enemy artillery emplacements on a ridge overlooking Volmer airdrome. A total of 197 rounds was fired at 14000 yards range resulting in the destruction of the targets.

Between 27 May and 3 June, inclusive, the enemy made ten air attacks against the crowded beachhead at Bosnek. The first attack occurred at 1650 hours on Z-Day when the five attacking planes were destroyed by antiaircraft artillery automatic weapons fire. During this period two low altitude attacks were made by single planes during the hours of darkness. The enemy dropped flares that were extinguished by antiaircraft automatic weapons fire. In each raid the attacking plane was destroyed. The most determined enemy attack occurred at 1640 hours on 2 June when fifteen enemy planes bombed and strafed the beachhead without result. Of these planes ten were destroyed and three were damaged by antiaircraft artillery. At 1100 hours 3 June the enemy made the last low altitude attack against Bosnek beach. During this period the antiaircraft automatic weapons are credited with destroying sixteen, probably destroying one, and damaging seven enemy planes. Although most of the raids were low altitude attacks, the 90mm AAA guns are credited with two enemy planes destroyed and two damaged. From 3 June to the close of the operation on 20 August the enemy

made 26 air attacks. The apparent objectives of the attacks were the beachhead at Bosnek and the Owi Island and Mokmer airdromes. Damage to our supplies and equipment and casualties caused by enemy air action were negligible.

Initially early air warning was poor because the beachhead was not expanded sufficiently to provide advantageous sites for observers and radars, and the attacking planes approached the beachhead at low altitude over a high ridge behind Bosnek. After Z + 10, however, the enemy resorted to high altitude attacks and early warning was adequate.

On 13 July the 674th and 675th AA Machine Gun Batteries moved to a staging area on Biak Island to prepare for the Cape Sansapor operation. The 718th and 720th Coast Artillery Batteries (155mm) were not moved to Biak Island since the tactical situation did not require their employment.

After the Mokmer airdrome area was secured and the airstrip on Owi Island was in operation, all task force installations were moved from Bosnek beach. Antiaircraft artillery was moved to provide a permanent defense of these areas as follows:

Mokmer Area

Hq and Batteries A, B, and C, 165th AA Gun Battalion
Batteries B and C, 476th AA AW Battalion
Battery C, 236th AA Searchlight Battalion (less two sections)

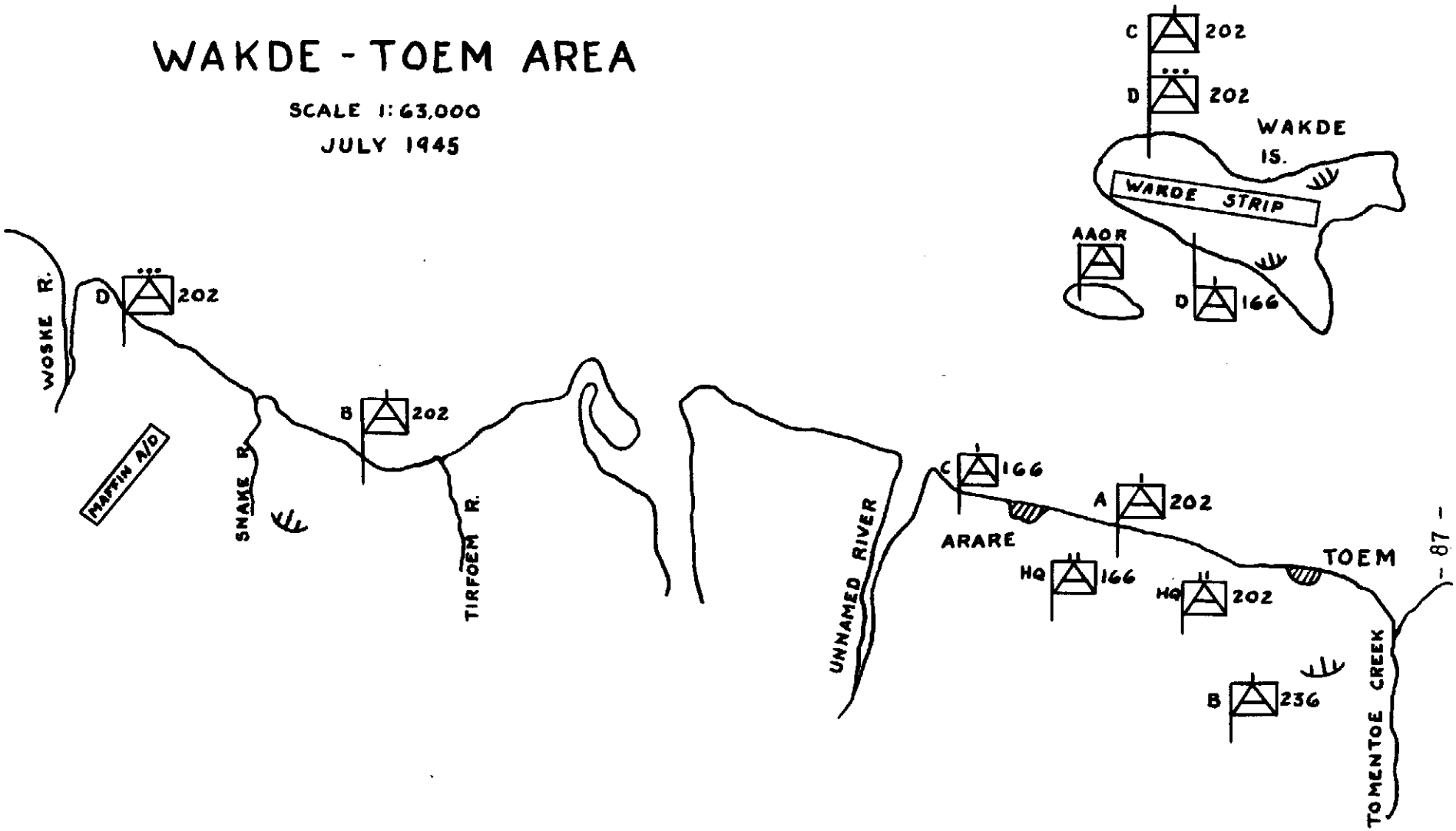
Owi Island

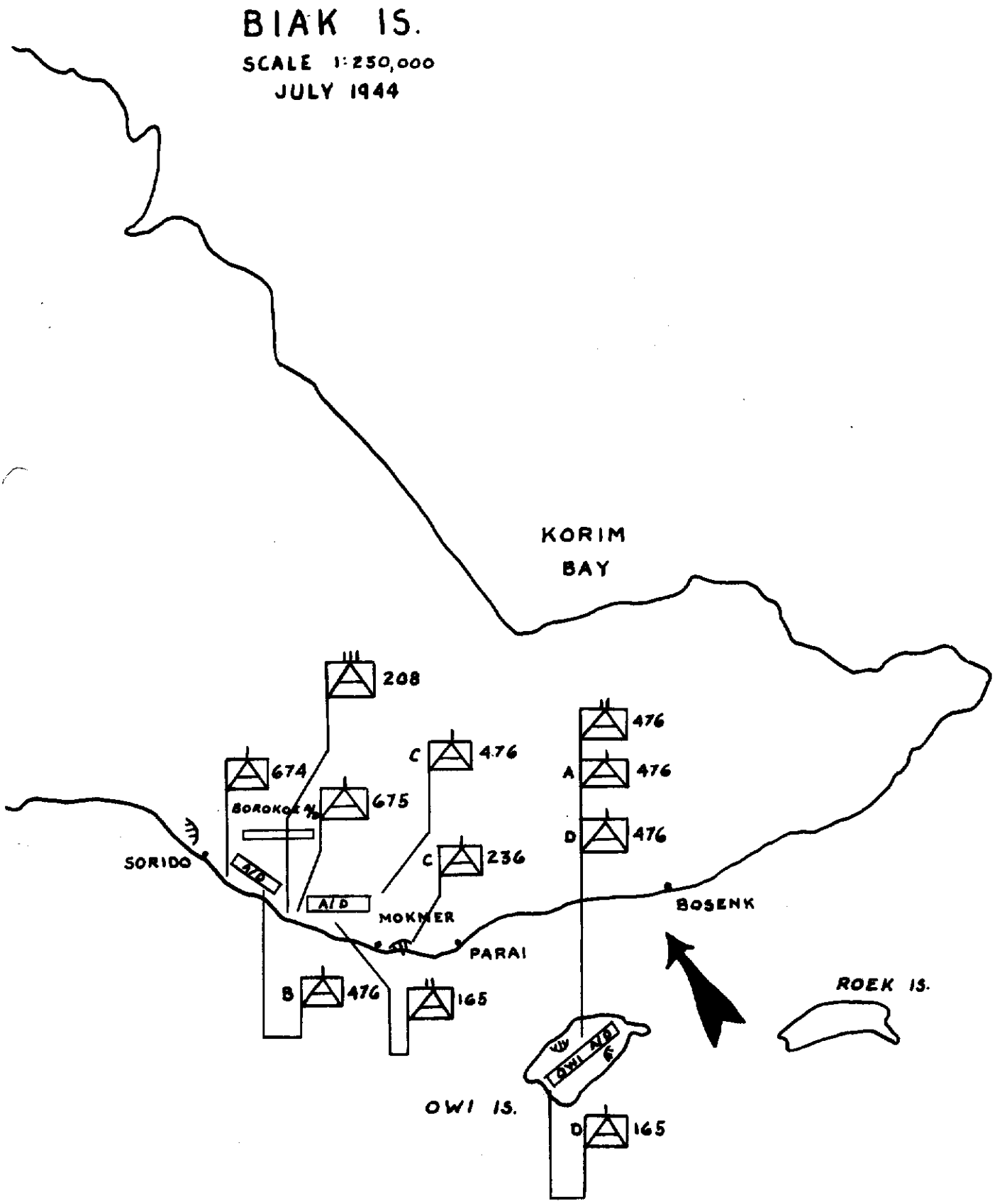
Hq and Batteries A and D, 476th AA AW Battalion
Battery D, 165th AA Gun Battalion
2 sections, Battery C, 236th AA Searchlight Battalion

WAKDE - TOEM AREA

SCALE 1:63,000

JULY 1945




BIAK IS.
SCALE 1:250,000
JULY 1944
KORIM
BAY
208
674
675
C 476
C 236
A 476
D 476
476
BOROKOE
SORIDO
A/D
A/D
MOKMER
PARAI
BOSENK
B 476
165
ROEK IS.
OWI A/D
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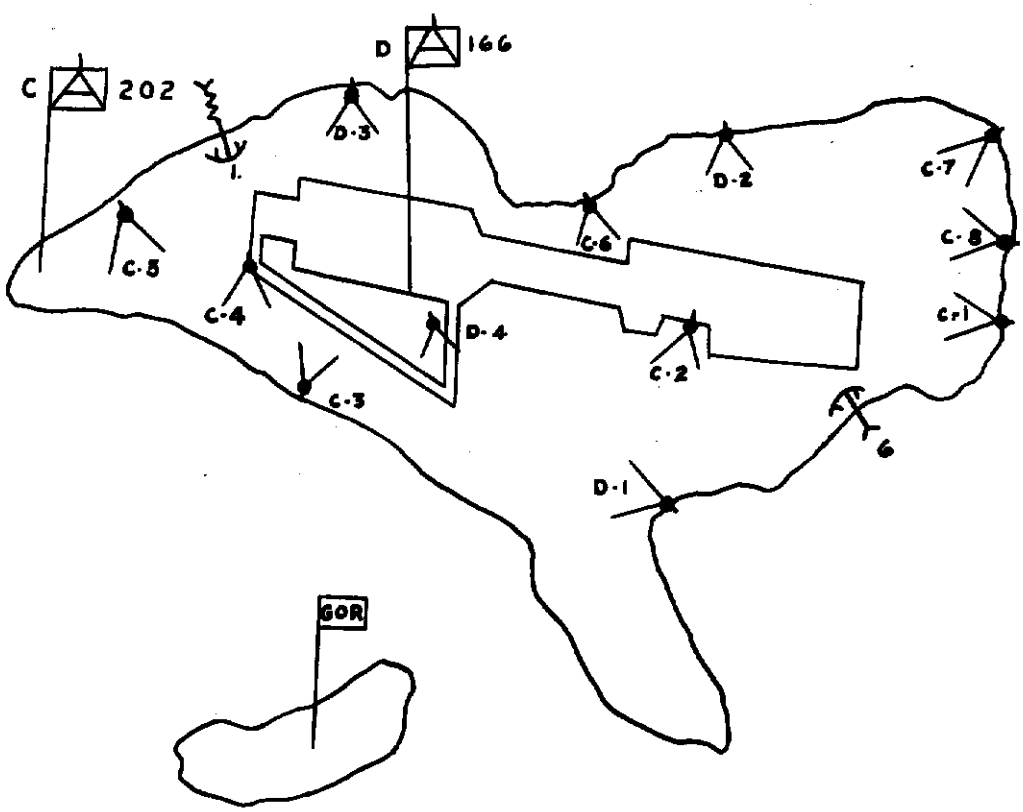
D 165

ANTIAIRCRAFT INSTALLATIONS
WAKDE IS.

SCALE 1: 25,000

30 JUNE 1944



SECTION VI

COMBAT PERFORMANCE OF ANTIAIRCRAFT ARTILLERY IN THE NOEMFOOR OPERATION (2 July 1944 - 31 August 1944)

1. MISSIONS
   A. ARMY
   B. SUBORDINATE UNITS
   C. ANTIAIRCRAFT
2. ANTIAIRCRAFT PLANNING
3. ANTIAIRCRAFT STAGING
4. ANTIAIRCRAFT OPERATIONS

1. MISSIONS

A. New Britain Forces:

(1) Will, supported by Allied Air and Naval Forces, while continuing present missions, seize by overwater operations, occupy and defend NOEMFOOR ISLAND and will establish airdrome, and minor naval facilities thereat.

(2) Target date for D-Day 2 July 1944

H-Hour 0800K

B. Noemfoor Task Force:

(1) Will land at H-Hour on D-Day in the vicinity of KAMIRI DROME; will rapidly seize and occupy the KAMIRI DROME area and subsequently occupy and defend NOEMFOOR ISLAND.

(2) Will, by employing maximum effort, quickly provide at NOEMFOOR facilities for two groups fighters, one-half squadron night fighters and subsequently for one additional group fighters, two squadrons medium bombers and two squadrons light bombers. Eventual air facilities will be as later directed by New Britain Force Headquarters.

(3) Will assist the Allied Air Force in the establishment of necessary air warning and radio navigational facilities.

(4) Will establish port and base facilities necessary to accomodate the influx of prescribed supplies and equipment.

(5) Will establish minor naval facilities as arranged by Headquarters New Britain Force with the Commander, Allied Naval Forces.

C. Antiaircraft Artillery:

(1) Assist in antiaircraft defense of convoys enroute to objective area; provide antiaircraft defense during landing; and provide antiaircraft defense on beaches, docks, airdromes, and other ground installations as designated by the Task Force Commander.

(2) Special Instructions:

(a) Establish liaison with field artillery commander and be prepared to augment field artillery fire against both water-borne and terrestrial targets.

(b) Site AA searchlights where possible to provide illumination of the vital beach areas.

(c) Coordinate employment of all AAA weapons.

(d) Establish liaison with local fighter control squadron to provide a coordinated AAAIS at earliest practicable hour.

(e) When the Fighter Section is established on shore, control of AAA fire is vested in the Fighter Sector Controller in accordance with the provisions of Sixth Army Antiaircraft Artillery SOP, 8 June 1943.

(3) Antiaircraft Artillery Troops:

116th AAA Group
487th AAA AW Bn
745th AAA Gun Bn
Btry A, 222d AAA SL Bn
707th AAA MG Btry (AB)
708th AAA MG Btry (AB)

2. ANTIAIRCRAFT PLANNING PHASE

After a complete study of the tactical plan and intelligence data for the Noemfoor operation, the antiaircraft section submitted the following recommendations to the Sixth Army, G-3:

1 AAA Group
1 AAA AW Bn
1 AAA Gun Bn
1 AAA SL Btry
2 AAA Machine Gun Btries (Airborne)

The recommendation was approved and units assigned to 14th Antiaircraft Command were attached to Sixth Army by orders from GHQ, SWPA.

Based upon the consideration that a regimental combat team was to seize Noemfoor Island, it was planned that the following antiaircraft units would land on D-Day with the remaining units to land subsequent to D-Day as the situation permitted:

Hq & Hq Btry, 116th AAA Group
487th AAA AW Bn (less Btries B & D and 5 sections Btry A)
745th AAA Gun Bn (less Btries A & C)
2 sections, Btry A, 222d AAA SL Bn
707th AAA MG Btry
708th AAA MG Btry

Antiaircraft automatic weapons were deck loaded on LST's to assist in the defense of the convoy enroute and during the landing.

3. ANTIAIRCRAFT STAGING

Antiaircraft units were alerted for combat and moved from widely separated areas to Toem, New Guinea, to stage for the Noemfoor operation. The 116th AAA Group, the 707th AAA Machine Gun Battery, and the 708th AAA Machine Gun Battery were alerted at Hollandia, New Guinea. The 487th AAA Automatic Weapons Battalion, and Battery A, 222d Searchlight Battalion were alerted at Finschhafen, New Guinea. The 745th AAA Gun Battalion was alerted at Oro Bay, New Guinea.

During the staging period units reconditioned equipment and conducted practice amphibious landings from LCTs.

4. ANTIAIRCRAFT OPERATION

D-Day.

The 707th and 708th AAA Machine Gun Batteries (Airborne) went ashore with the assault waves at H + 15 and immediately went into position at the end of the Kamiri airstrip.

The LCT carrying Batteries B and D, 745th AAA Gun Battalion arrived at the off-shore reef at H + 75 and commenced unloading. In spite of the difficulties imposed by the reef and the in-shore lagoon, the guns were unloaded without incident. Both gun batteries were ashore by 1100 and were in position and had fired their settling rounds by 1900.

The automatic weapons sections of the 487th AAA Automatic Weapons Battalion scheduled for D-Day had been deck-loaded on LSTs and had to be transferred to LCTs for transportation to the reef. Unloading commenced at 1000 but the difficult problem of transferring the weapons and trucks to the LCTs took considerable time and the first sections did not reach the beach until 1130. Seven sections were in position along both sides of the west end of the Kamiri airdrome and ready for action by nightfall.

Two searchlight sections of Battery A, 222d AAA Searchlight Battalion, without radar, came ashore with the automatic weapon sections and were in position, one on each end of the Kamiri strip, by nightfall.

The 116th Antiaircraft Artillery Group came ashore and immediately established their command post and the antiaircraft artillery operations room. No enemy air activity occurred on the night of D - D + 1.

D + 1.

The remaining 25 gun sections of the 487th AAA Automatic Weapons Battalion were landed and emplaced around Kamiri airstrip and dump areas.

In the afternoon Batteries B and D, 745th AAA Gun Battalion engaged in terrestrial fire on request of task force headquarters. A total of 195 rounds of 90mm ammunition was expended against enemy installations in the Nambor, Andei, and Sjariboe areas with excellent results. During the night a red alert was called for one and a half hours until the radar plots were identified as friendly surface vessels.

D + 2.

Battery A, 745th Antiaircraft Artillery Gun Battalion was unloaded and moved into a temporary position at the east end of the Kamiri drome. A site for this battery was selected at Piefoeri, and initial clearing work was started. At 2142 a raider flew in without warning and dropped three bombs west of the Kamiri strip. No antiaircraft fire of any type was brought to bear on the raider due to the surprise of the attack. At 2230 a target, identified as enemy, was picked up by a SCR 584 gun radar and Battery B, 745th AAA Gun Battalion opened fire. The plane was never seen, but observation of the line of bursts indicated that it was turned away from the strip.

D + 3.

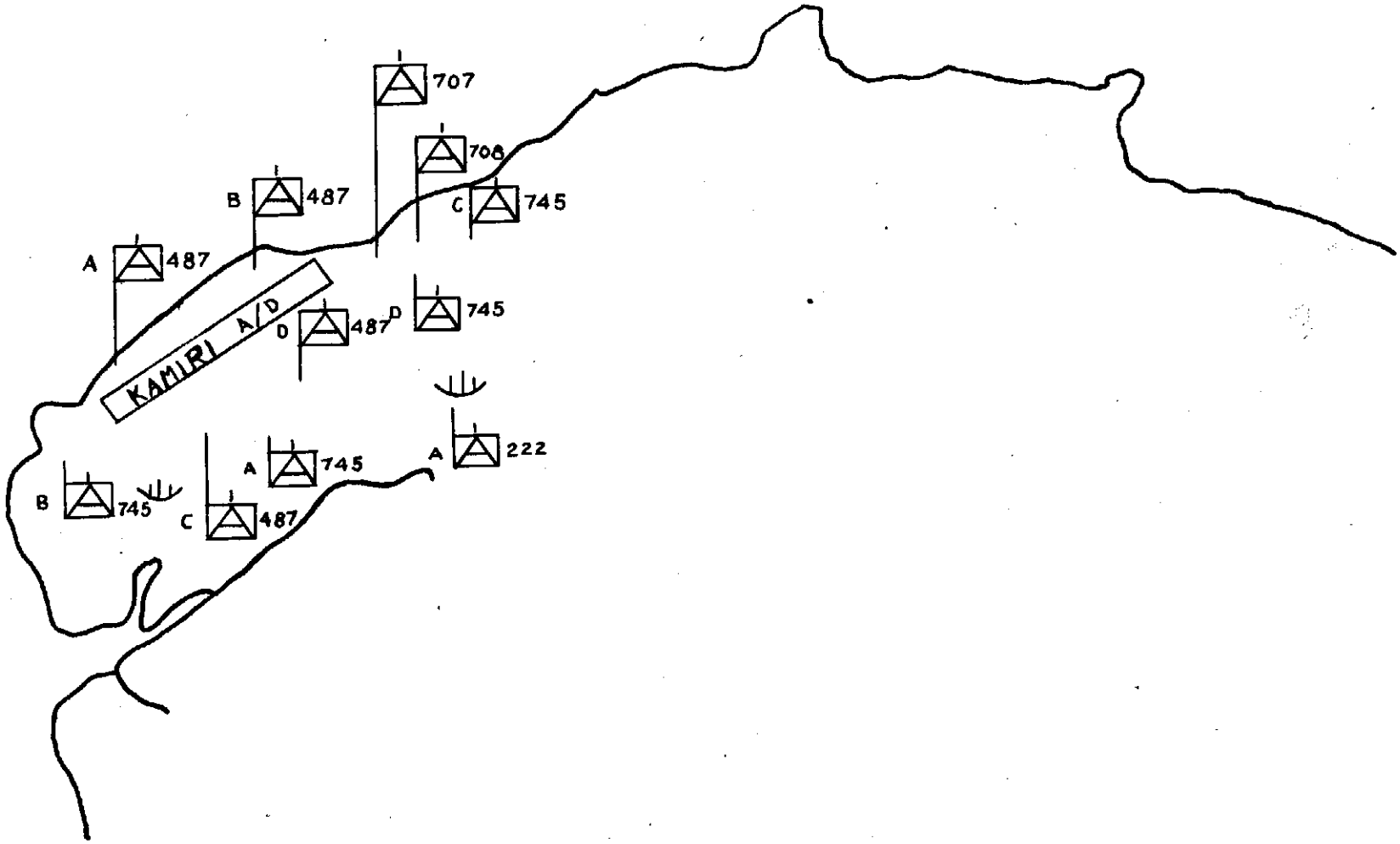
Battery C, 745th AAA Gun Battalion went into position.

Between 4 July and 31 August thirteen sporadic enemy air attacks were made with the apparent objective being the Kamiri airdrome area. Antiaircraft fire effectively disconcerted their attacks and damage to Task Force installations and equipment was slight.

Organized ground resistance ceasing, the campaign was officially closed on 31 August. Although there were no further air attacks, antiaircraft artillery continued to provide defense for the airstrips for some time.

NOEMFOOR ISLAND

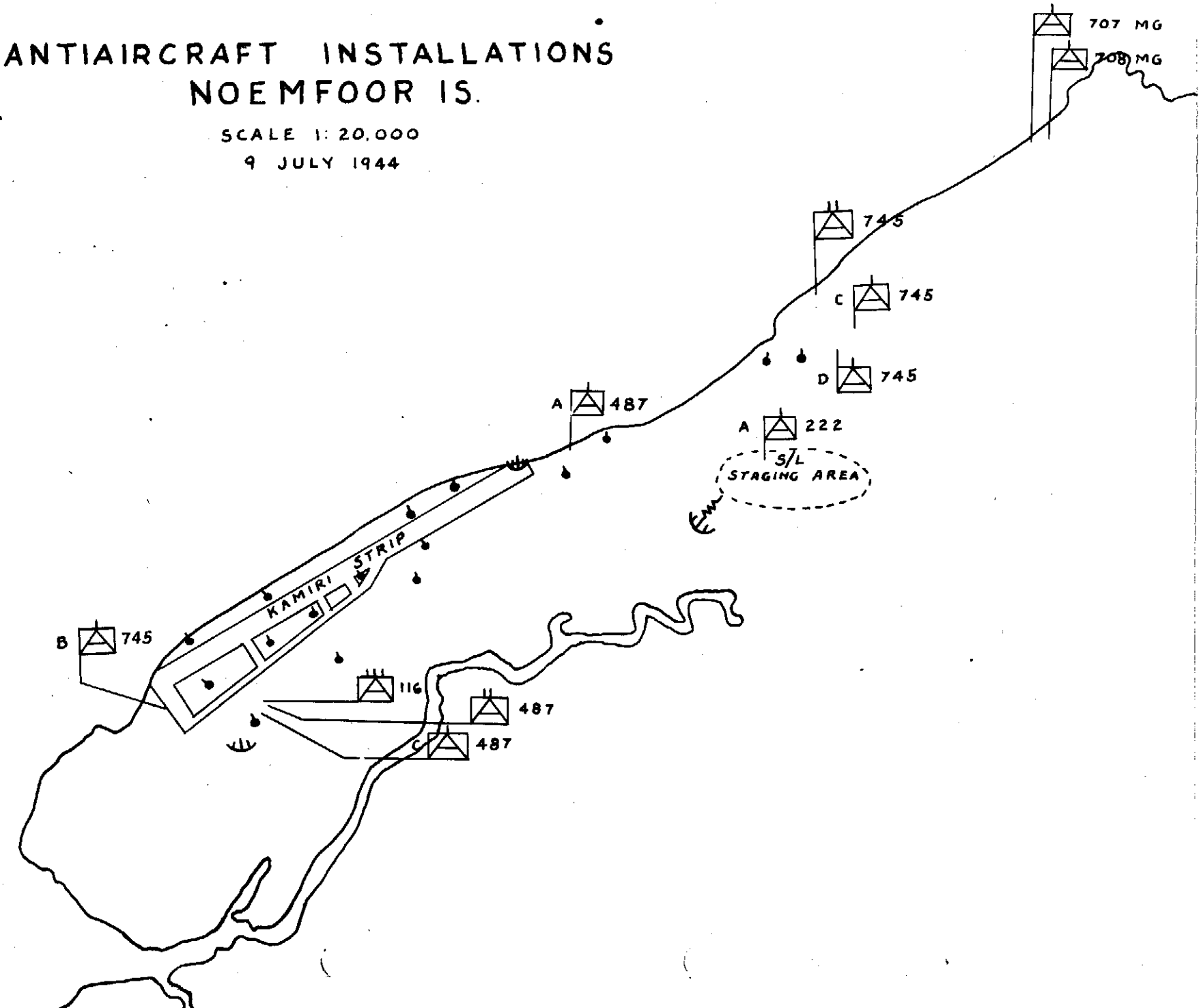
SCALE 1:50,000
JULY 1944



ANTIAIRCRAFT INSTALLATIONS
NOEMFOOR IS.

SCALE 1: 20,000

9 JULY 1944

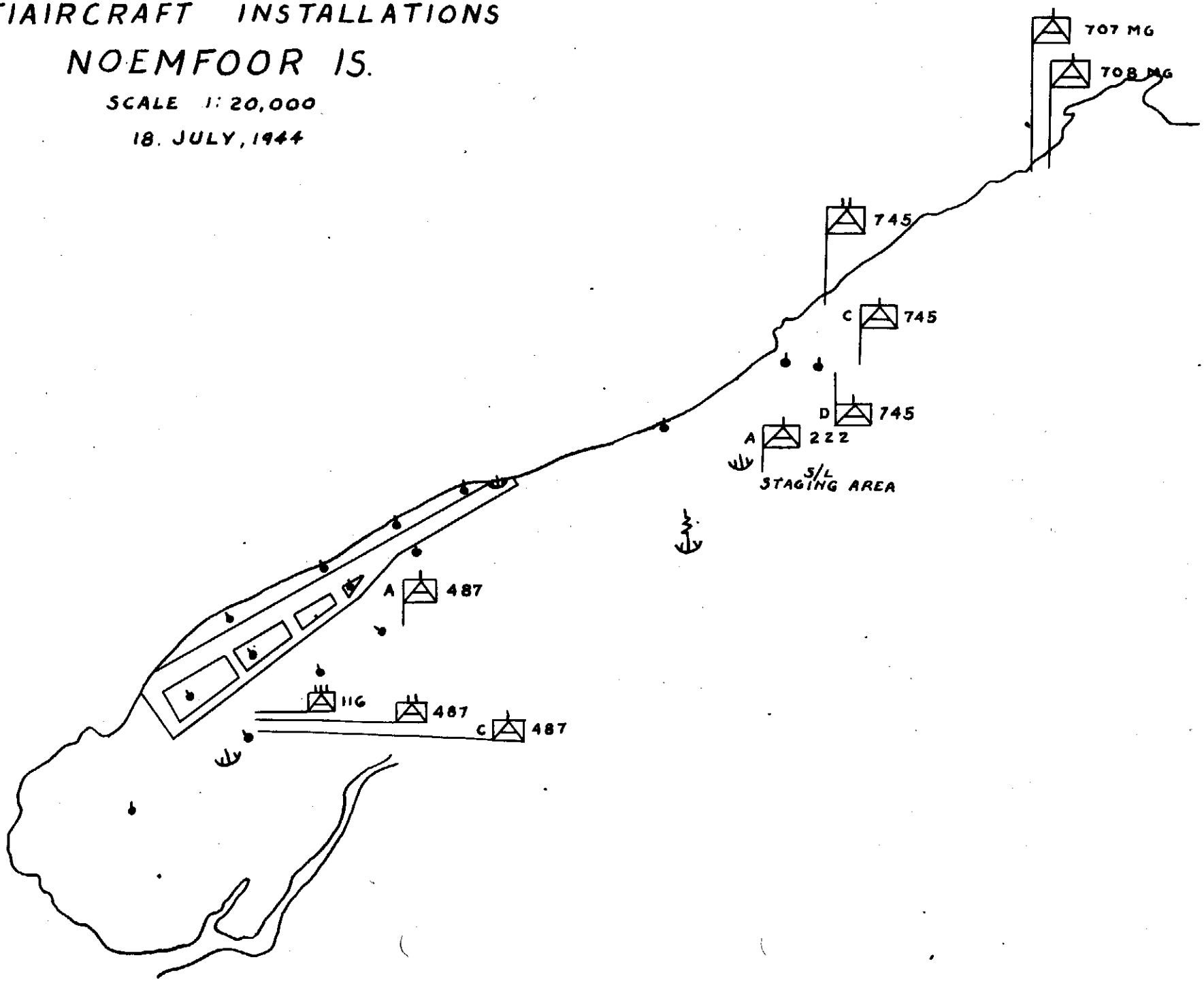


ANTIAIRCRAFT INSTALLATIONS

NOEMFOOR IS.

SCALE 1: 20,000

18. JULY, 1944



SECTION VII

COMBAT PERFORMANCE

OF

ANTI-AIRCRAFT ARTILLERY

IN THE

SANSAPOR OPERATION

(30 July 1944 - 31 August 1944)

1. MISSIONS
   - A. NET BRITAIN FORCE
   - B. SANSAPOR TASK FORCE
   - C. ANTI-AIRCRAFT ARTILLERY
2. ANTIAIRCRAFT PLANNING
3. ANTIAIRCRAFT STAGING
4. ANTIAIRCRAFT OPERATIONS

1. MISSIONS

A. New Britain Forces:

(1) Will, supported by Allied Air and Naval Forces, while continuing present missions, seize by overwater operations, occupy and defend the CAPE SANSAPOR - CAPE OPMAR.I area and will establish air and minor naval facilities thereat.

(2) Target Date for D-Day - 30 July 1944
H-Hour - 0700

B. Sansapor Task Force:

(1) Will land at H-Hour on D-Day in the vicinity of CAPE OP MAR.I; will seize a beachhead in the landing area; and will rapidly seize and occupy such additional areas as are necessary for the construction of air facilities.

(2) Will, prior to D + 2, by shore to shore operations, seize and occupy CAPE SANSAPOR and will assist Allied Air and Naval Forces in the establishment of air warning and light naval facilities thereat.

(3) Will establish control over such adjacent areas, to include MIDDLEBURG ISLAND and AMSTERDAM ISLAND, as will assure uninterrupted construction activities and air and naval operations in occupied areas.

(4) Will, employing maximum effort, quickly provide in the CAPE OPMAR.I area facilities for one group fighters and one-half squadron night fighters and subsequently for one additional group fighters and five squadrons medium bombers. Eventual air facilities will be as later directed by Headquarters New Britain Force.

(5) Will assist the Allied Air Force in the establishment of necessary air warning and radio navigational facilities.

(6) Will establish port and base facilities to accomodate the influx of prescribed supplies and equipment.

(7) Will establish minor naval facilities as arranged by Headquarters, New Britain Force, with the Commander, Allied Naval Forces.

C. Antiaircraft Artillery:

(1) Assist in antiaircraft defense of convoys enroute to objective area; provide antiaircraft defense during landing; and provide antiaircraft defense of beaches, docks, airdromes, and other ground installations as designated by the Task Force Commander.

(2) Special Instructions:

(a) Establish liaison with field artillery commander and be prepared to augment field artillery fire against both water-borne and terrestrial targets.

(b) Site AA searchlights where possible to provide illumination of vital beach areas.

(c) Coordinate employment of all AA weapons and passive AA defense measures for the entire task force.

(d) Establish liaison with local fighter control squadron to provide a coordinated AAIS at earliest practicable hour.

(e) When Fighter Sector is established on shore, control of AA fire is vested in the Fighter Sector Controller in accordance with provisions of Sixth Army Antiaircraft Artillery SOP, 8 June 1943.

(3) Antiaircraft Artillery Troops:

Hq and Hq Battery, 33d AA Group
496th AA Gun Battalion
198th AA AW Battalion
Battery B, 222d AA SL Battalion
674th AA HG Battery
675th AA HG Battery

2. ANTIAIRCRAFT PLANNING

Initial studies of the tactical plan for the Sansapor operation were made by the Antiaircraft Section, New Britain Force, and the following initial requirements were submitted to New Britain Force G-3 for approval:

1 AA Group
1 AA Gun Battalion
1 AA Automatic Weapons Battalion
1 AA Searchlight Battery
2 AA Machine Gun Batteries

The plan was approved as recommended, and the required antiaircraft units were assigned to the Sansapor Task Force. Headquarters, New Britain Force, directed the Commanding General, 32d AAA Brigade, to conduct a thorough inspection of the status of training and supply of the units. Results of the inspection indicated that all of the units were in excellent readiness for combat.

On 11 July 1944 the Commanding Officer of the 33d AAA Group was notified that the group was attached to Sixth Army for the Sansapor operation. Conferences were subsequently held in which the Antiaircraft Officer, Sixth Army, briefed the group commander in the antiaircraft mission, problems that could be foreseen, and channels of administration and supply. The group commander attended conferences with staff officers of the Task Force in which the general tactical plan was outlined. The group commander recommended to the Task Force G-3 that two gun batteries, two automatic weapons batteries, and two machine gun batteries land on D-Day. Logistics for the antiaircraft units were prepared by the group commander and submitted to the Task Force Commander. One AAA gun battery and one AAA automatic weapons battery were deleted from the D-Day echelon because of the shipping limitations. On 19 July 1944 a joint conference with Task Force Unit Commanders resulted in the approval of the following antiaircraft landing schedule:

D-Day:

Group Headquarters
1 Gun Battery
1 Automatic Weapons Battery
2 Machine Gun Batteries
2 Searchlight Sections

D + 2:

1 Gun Battery
1 Automatic Weapons Battery
2 Searchlight Sections

D + 4:

1 Gun Battery
2 Searchlight Sections

D + 8:

Remainder of Automatic Weapons Battalion (2 Batteries plus rear echelon)

D + 10:

Remainder of Gun Battalion (1 Battery plus rear echelon)
Remainder of Searchlight Battery (1 Platoon plus rear echelon)

3. ANTIAIRCRAFT STAGING

It was impossible to assemble all antiaircraft units for coordinated training because of the shortage of time between the receipt of warning orders and the operation. The 33d AAA Group, 469th AAA Gun Battalion, 198th AAA Automatic Weapons Battalion, and Battery D, 222d AAA Searchlight Battalion departed from Finschhafen on 19 July 1944 for the staging area at Maffin Bay. Embarkation at Finschhafen was hindered due to the late arrival of Liberty ships. Shortage of time prevented loading much housekeeping equipment and numerous vehicles.

At Maffin Bay it was necessary to reload antiaircraft troops into LSTs. The Liberty ships carrying antiaircraft units arrived on 24 July 1944. The deadline for the completion of loading for the task force operation was scheduled as 27 July 1944; therefore only three days were available for the checking of materiel, combat loading of vehicles, and reloading of LSTs. Because of shipping limitations the 674th and 675th AAA Machine Gun Batteries, stationed at Biak, did not join the remaining antiaircraft units until their arrival at Maffin Bay on 24 July 1944.

Final conferences were held with all antiaircraft unit commanders and staff members at Maffin Bay and details of the coming operation were thoroughly discussed and reviewed. Maximum security was obtained by revealing only to commanders of subordinate units the actual landing place and target day and hour. In all other discussions code names were used. Men were briefed on the topography of the objective area after the departure of LSTs for the operation.

4. ANTIAIRCRAFT OPERATIONS

The landing schedule as approved during the planning phase was followed except for the addition of three automatic weapons sections to the D-Day force from the D plus 8 echelon. Occupation of positions was accomplished as previously planned within a reasonable time after debarkation. Some difficulty was experienced in unloading because of the soft sand. This necessitated the use of two and sometimes three tractors in tandem to pull 90mm guns and radar vans into position. All automatic weapons units were ready to fire on D-Day by 1520 hours. The 90mm guns fired settling rounds at 1700, and searchlights were ready for action by 1800. The AAOR was established adjacent to the Fighter Control Center and was in operation on D-Day.

Only four raids by enemy planes were experienced from D-Day until the close of the campaign on 31 August 1944. The first enemy raid developed on 25 August, nearly a month following the landing of troops. This raid

was a low level attack at night. Although searchlights did not illuminate, automatic weapons engaged the plane by firing at exhaust flashes with unknown results. The second raid on the night of 27 August consisted of three planes. Two of the planes made low, level, medium altitude approaches. The targets were illuminated throughout gun range and were fired on by all gun batteries with unknown results. The third plane approached at a very low altitude, but was not engaged by automatic weapons because darkness prevented observation. The third raid on the night of 28 August was a high and low level attack by an estimated three to six enemy planes. Two were illuminated and engaged by 90mm guns while approaching. Bombs were dropped hurriedly and inaccurately, and the planes took evasive action by sharply turning away. The low altitude attacks did not come into range of automatic weapons. Later, the same night, a single unidentified plane approached the defended area and, although not illuminated, was engaged by the 90mm gun batteries. The plane turned away quickly without releasing any bombs. On the night of 31 August one plane, making a low level attack on the beachhead, was neither illuminated nor engaged. Another plane, simultaneously making a low level attack on Middleburg Island, was not engaged by automatic weapons because darkness prevented detection. Approximately one minute warning was furnished before these attacks. Later a third plane, a two-engine bomber, made a medium altitude approach, was illuminated, fired on by 90mm gun batteries, and was destroyed before releasing any bombs. Total casualties to anti-aircraft personnel from bombings on this evening were two killed and twelve wounded.

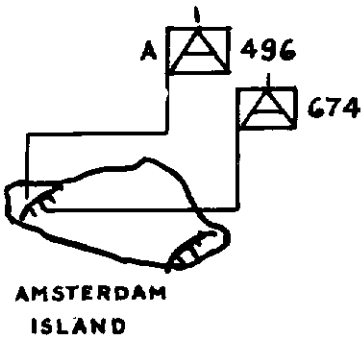
Between 30 July and the close of the operation on 31 August the enemy made six air attacks, all of which were at night, against the airdrome installations. Although great difficulty was experienced, since automatic weapons could not engage many targets hidden by darkness, antiaircraft artillery successfully interfered with bombing attempts when targets were engaged.

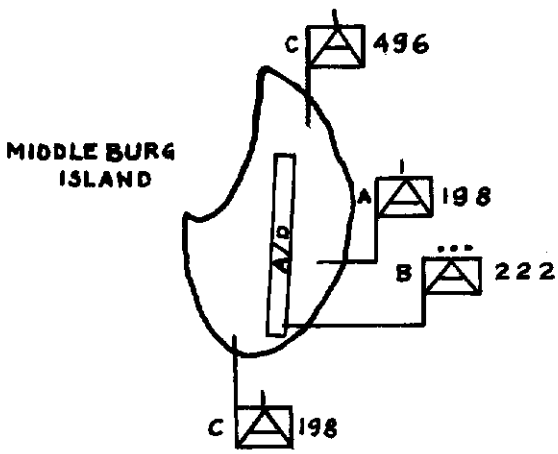
Although the campaign was officially closed on 31 August, sporadic air raids continued until 2 October 1944.

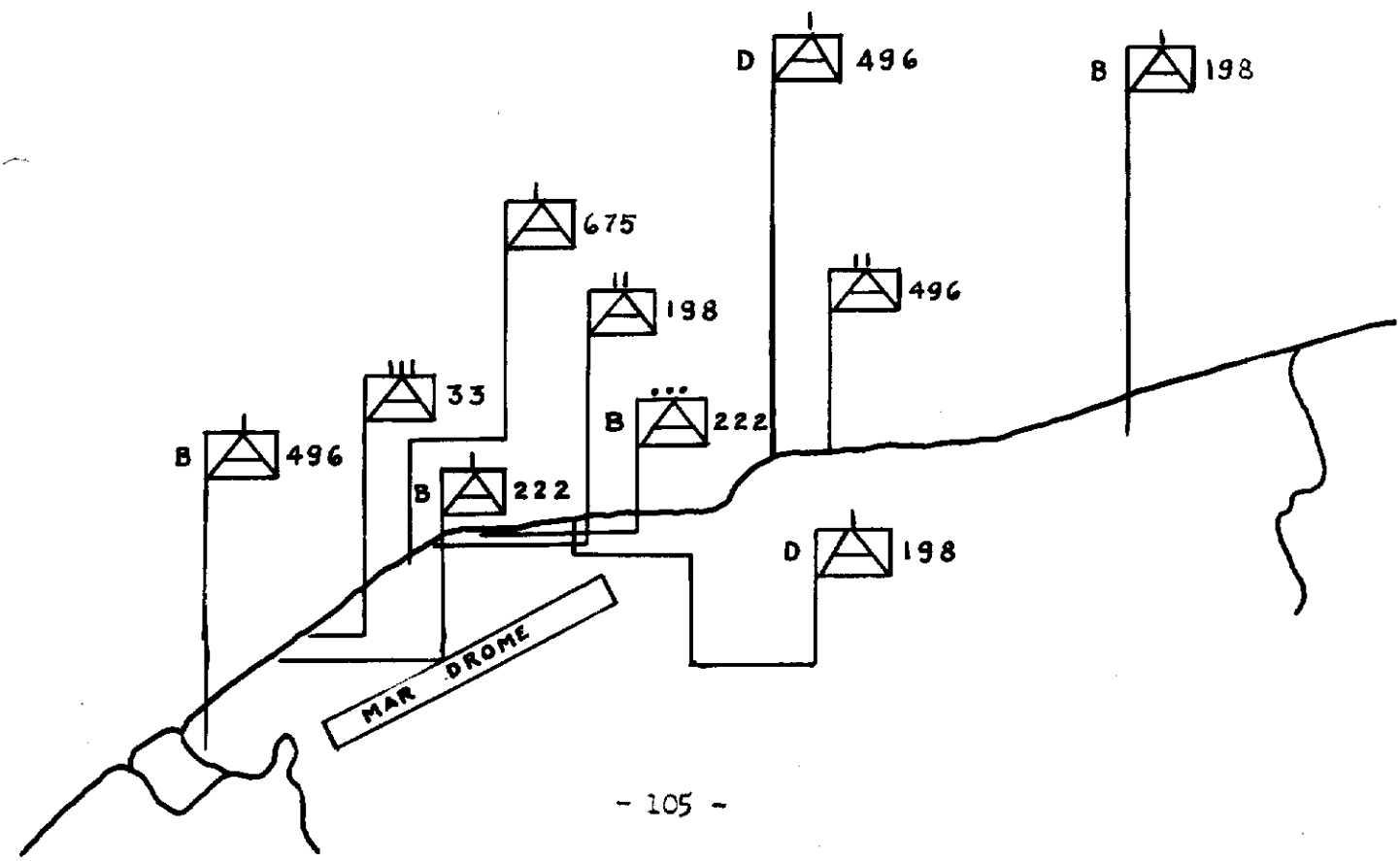
SANSAPOR

SCALE 1: 50,000

AUG. 1944







SECTION VIII

COMBAT PERFORMANCE OF ANTIAIRCRAFT ARTILLERY IN THE NOROTAI OPERATION

(15 September 1944 - 4 October 1944)

1. MISSIONS
   A. SIXTH ARMY
   B. XI CORPS AND SEPARATE UNITS
   C. ANTIAIRCRAFT ARTILLERY
2. ANTIAIRCRAFT PLANNING
3. ANTIAIRCRAFT STAGING
4. ANTIAIRCRAFT OPERATIONS

1. MISSIONS

A. New Britain Task Force Mission:

(1) Will, supported by allied air and naval forces, while continuing present missions, seize by overwater operations, occupy, and defend southern NOROTAI and will establish air and minor naval facilities thereat.

(2) Target Date for D-Day - 15 September 1944
H-Hour - 0730

B. Troadwind Task Force Mission:

(1) Will effect two concurrent landings at H-Hour on D-Day south of DOROKEA, southern NOROTAI, and will seize and hold a defensive perimeter to permit the uninterrupted construction of air, light naval, and base facilities therein.

(2) Will subsequently establish control over such adjacent areas as will insure uninterrupted air and naval operations.

(3) Will establish air facilities in the DOROKEA area with objectives as follows:

(a) Immediately following the assault for:

2 short range fighter squadrons.

(b) By D + 25 for a total of:

2 fighter groups and 2 fighter squadrons
1 night fighter squadron
1 medium bomb group
1 tactical reconnaissance squadron - B-25s
1 search squadron - PBYs
1 tactical reconnaissance squadron - P-39s
1 reconnaissance squadron - Ventura

(c) By D + 45 for a total of:

2 fighter groups and 2 fighter squadrons
1 night fighter squadron
1 tactical reconnaissance squadron - B-25s
1 search squadron - PBYs
1 meduim bomb group
2 heavy bomb groups

1 photo squadron
1 tactical reconnaissance squadron - P-39s
1 reconnaissance squadron - Ventura

(d) Eventual garrison:

As later directed by Headquarters, New Britain Task Force.

(4) Will assist the Allied Air Force in the establishment of necessary air warning and radio navigational facilities.

(5) Will establish port and base facilities to accomodate the influx of prescribed supplies and equipment.

(6) Will establish minor naval facilities as arranged by Headquarters, New Britain Forces, with the Commander Allied Naval Forces.

(7) Major Combat Elements (less AAA):

(a) Hq & Hq Company, XI Corps
(b) 31st Infantry Division
(c) 126th RCT, 32d Infantry Division
(d) 534th EBSR (less Boat Bn)
(e) 544th EBSR (less 1 Boat Comapny)

C. Antiaircraft Artillery Mission:

(1) Assist in antiaircraft defense of convoys enroute to objective area as required; provide antiaircraft artillery defense during landing, and provide antiaircraft artillery defense of ground installations and anchorages as designated by the Task Force Commander.

(2) Special Instructions:

(a) Establish liaison with Task Force Artillery Officer and be prepared to augment field artillery fire against both waterborne and terrestrial targets.

(b) Site AAA searchlights where possible to provide illumination of vital beach areas and seaward approaches thereto.

(c) Control of AAA fire, when the Fighter Sector is established ashore, is vested in the Fighter Sector Controller in accordance with the provisions of Sixth Army Antiaircraft Artillery SOP, 8 June 1943.

(d) Notify the Fighter Sector Commander of the limits of the gun defended area and assist in establishing recognition procedure and routes of approach thereto for friendly planes.

(e) Insure that all antiaircraft personnel are briefed on the types of friendly aircraft, especially naval, which will support this operation.

(f) No unit other than AAA will initiate the attack on airborne targets unless the units are beyond the support of AAA weapons and then only if attacked.

(g) Coast Artillery surface warning radars will provide early warning of the approach of surface craft as well as of low flying aircraft.

(h) Provide yellow and red alert warnings to surface craft at anchorages within the gun defended area.

2. ANTIAIRCRAFT PLANNING PHASE

The antiaircraft estimate, prepared by the Antiaircraft Section after a complete staff study of the objective area and proposed construction projects, was approved by Sixth Army G-3 and submitted to General Headquarters, Southwest Pacific Area, for approval. Enemy aerial capabilities, proximity of the objective area to hostile airfields, and the distance from friendly land based planes justified the attachment of the largest antiaircraft force to date to a task force in the Southwest Pacific Theatre. The number of units requested was approved. The following units were attached to Sixth Army and were further attached to the XI Corps:

214th AAA Group
528th AAA Gun Battalion
744th AAA Gun Battalion
383d AAA Automatic Weapons Battalion
389th AAA Automatic Weapons Battalion
785th AAA Automatic Weapons Battalion
229th AAA Searchlight Battalion (less Battery B)
2d and 4th Platoons, 58th CA Surface Warning Battery

Liaison between the Sixth Army and the 214th AAA Group was excellent, the Group Commander attending several planning conferences at Army Headquarters. Officers from the Antiaircraft Section inspected units prior to the operation to determine the status of training and supply.

The following plan for landing was dictated by limited shipping available:

D-Day:

214th AAA Group (Det)
2d and 4th Platoons, 58th CA Surface Warning Battery
383d AAA Automatic Weapons Battalion
744th AAA Gun Battalion (less Batteries A and C)
1 Platoon, 229th AAA Searchlight Battalion

D + 1 Day:

214th AAA Group (less Det)
389th AAA Automatic Weapons Battalion
Det Hq, Batteries A and C, 744th AAA Gun Battalion

D + 4 Day:

785th AAA Automatic Weapons Battalion (less 2 Batteries)
Hq (-Det), Six Sections, 229th AAA Searchlight Battalion

D + 8 Day:

528th AAA Gun Battalion

D + 12 Day:

One Battery, 785th AAA Automatic Weapons Battalion

D + 16 Day:

One Battery, 785th AAA Automatic Weapons Battalion
229th AAA Searchlight Battalion (-Battery B) Rear Echelon

3. ANTIAIRCRAFT STAGING

Centralized staging of units selected for the operation was impossible. Elements of the antiaircraft force were separated by great distances which made group supervision of staging and loading most difficult. The 214th AAA Group, the 389th, 528th and 785th AAA Battalions, and the 2d and 4th Platoons, 58th CA Surface Warning Battery were staged at Finschhafen. The 383d Battalion was in tactical position at Aitape. The 744th AAA Gun Battalion was aboard two Liberty ships in Hollandia harbor. The 229th AAA Searchlight Battalion was staged at Milne Bay.

Convoys for the operation were scheduled to leave from Aitape, Hollandia, and Maffin Bay. This necessitated movement of the 214th AAA Group, 229th AAA Searchlight Battalion, 785th AAA Gun Battalion, and the 2d and 4th Surface Warning Platoons from Finschhafen to Maffin Bay. The 744th AAA Battalion was unloaded at Hollandia, and reloaded for the operation.

Prior to departure for the objective area, test amphibious landings were made by the Aitape and Maffin Bay elements of the task force. By arrangement with the task force Commander, and on orders of the Group Commander, no antiaircraft equipment was enloaded through water because of potential damage by moisture to the electrical circuits.

4. ANTIAIRCRAFT OPERATIONS

The convoy departed from Maffin Bay on 10 September 1944. Preparatory for an attack at sea, as many 40mm guns and .50 calibre machine guns as possible were set up in firing position on deck. However, during the five day trip enroute to the objective area there was no enemy action. Only one general quarters alert was sounded, the target proving later to be friendly planes not showing IFF.

The convoy arrived off shore in the objective area at dawn on 15 September. The LSDs and APAs launched their light craft and the initial waves landed as scheduled.

A coral reef paralleling the beach about seventy five yards off shore made a dry landing impossible. Troops waded ashore in water up to their waists. The soft muddy ocean bottom on Red (North) Beach slowed operations in this area considerably. Several trucks and tractors bogged down and had to be winched ashore. White (South) Beach was an excellent landing boach and a dry landing was possible.

The Group Commander, key staff personnel and sixteen assault machine gun sections were the first antiaircrat personnel and materiel ashore-all landed prior to H plus 1½. With few exceptions, which did not hamper tactical efficiency, the antiaircraft landing schedule was executed as planned. One exception, however, was that, to avoid a wet landing, the searchlights scheduled to land at Red Beach on D-Day did not land until D + 1. Although the Surafce Warning Platoons landed in early waves, the equipment was soaked and was initially inoperative. After flushing the equipment with fresh water and drying with carbon tetrachloride spray, both platoons were on the air within three days.

An early ground reconnaissance verified the feasibility of setting up tactical positions as selected from a prior map reconnaissance. With the

exception of one gun battery position, inaccessible because of surrounding marshes, all weapons were emplaced as previously planned.

Prior to dusk on D-Day, despite lack of roads, limited transportation, and the necessity of clearing individual fields of fire, one 90mm battery, thirty two automatic weapons sections, one searchlight section, and the AAOR were operative. Clearing adequate fields of fire with machetes and axes was tedious work and consumed much time. For this reason,, initially,, the fields of fire of many sections were distinctly limited. This limited any advance visual warning of low flying planes and opportunity to engage targets was fleeting at best. Radar coverage was likewise adversely affected in that there were few high spots in the area. Most elevations were gradual and not as high as the surrounding vegetation.

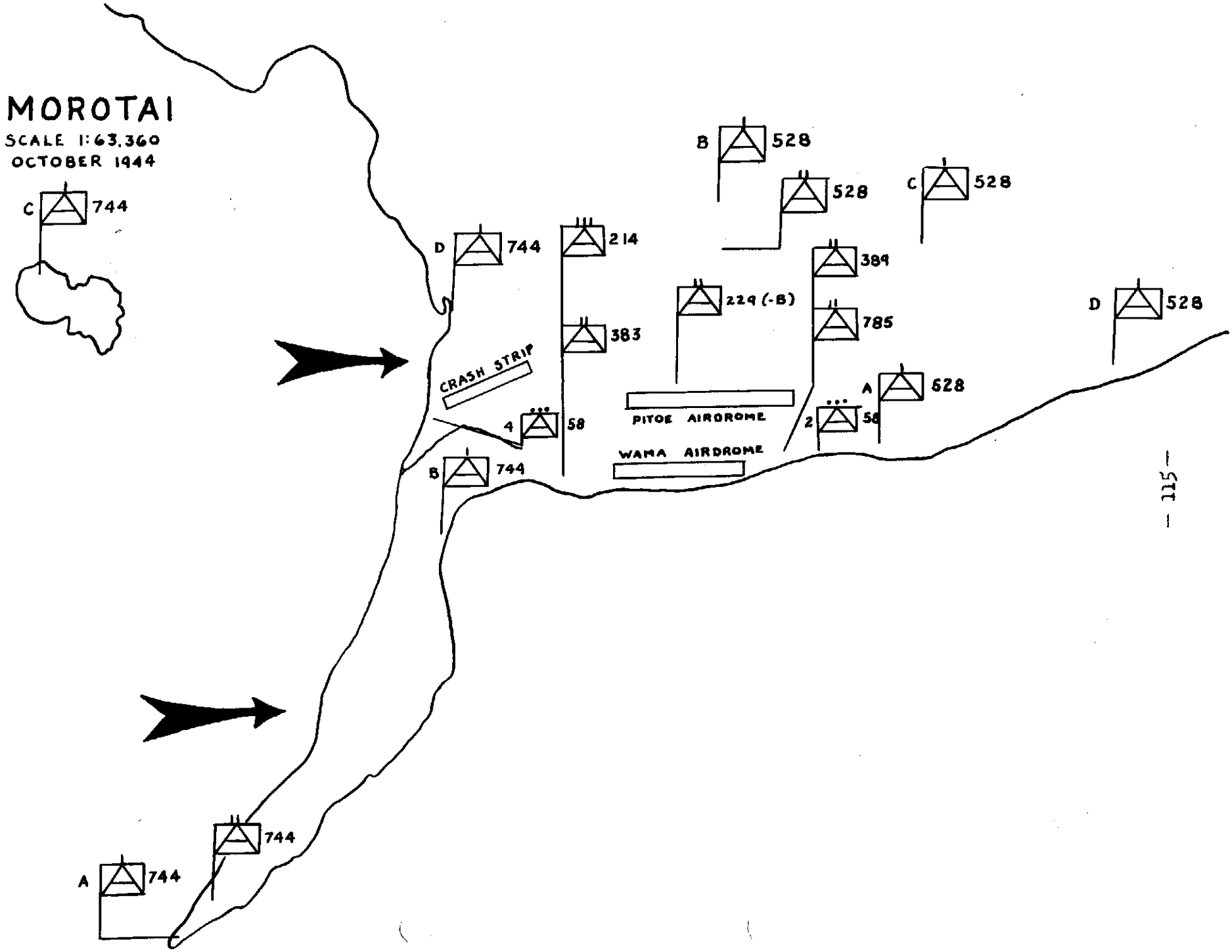
There were no enemy aerial attacks on D-Day and patrolling Navy planes found no enemy planes in the surrounding area. The first enemy plane, a lone Nell, approached the area undetected at dawn on D + 1. The plane dropped two bombs ineffectively. Thereafter enemy raids appeared at irregular intervals, approached at all altitudes, and followed no definite tactical or evasive action patterns.

One enemy ruse is worthy of note. The Japanese exhibited a faculty of coming in for low attacks when friendly planes approaching the area had been cleared for landing. This indicated that the enemy monitored and took advantage of friendly aircraft control channels. On such occasions the planes invariable approached with landing lights on, circled the strip, and made a low landing run before dropping the bombs. As considerable difficulty was experienced in failure of friendly planes to show IFF, AAA troops were overly cautious. On several occasions this enabled the enemy to drop his bombs and get away without being engaged.

Close cooperation between the antiaircraft and air corps contributed largely to the successful completion of the antiaircraft mission. Throughout the operation, the AAOR and FCC were adjacent and rapid interchange of AWS and AAAIS information was possible. Antiaircraft defense at night was primarily an antiaircraft artillery responsibility and fighter activity was supplemental.

A feature of the defense of Morotai was the decentralization of control of fire action. In general, control was delegated to the battalion commanders. The group commander offers the following reasons for this decision: (1) enables uninterrupted control of action if the AAOR is put out of action, (2) results in more rapid dissemination of information if all agencies using data are considered, (3) reduces detail work, personnel, noise, and confusion in the AAOR, (4) increases morale and efficiency of battalion headquarters to have a more definite and active responsibility, (5) the AAOO receives filtered information thus enabling him to disseminate the status of fire control more rapidly.

Sporadic and ineffective air attacks against the airstrip ares continued throughout September and October. On 4 October the operation was closed and GHQ orders passed responsibility for the area from the Sixth Army to the Eighth Army.


MOROTAI
SCALE 1:63,360
OCTOBER 1944
C 744
D 744
214
383
CRASH STRIP
4 58
B 744
B 528
528
C 528
384
229 (-B)
785
D 528
PITOE AIRDROME
2 58
A 628
WAMA AIRDROME
744
A 744

SECTION IX

COMBAT PERFORMANCE OF ANTIAIRCRAFT ARTILLERY IN THE LEYTE OPERATION

(20 October 1944 - 25 December 1944)

1. MISSIONS
   - A. SIXTH ARMY MISSION
   - B. CORPS AND SEPARATE UNIT MISSIONS
   - C. ANTIAIRCRAFT MISSIONS
2. ANTIAIRCRAFT PLANNING PHASE
3. ANTIAIRCRAFT STAGING PHASE
4. ANTIAIRCRAFT OPERATIONS

1. MISSIONS

A. Sixth Army Mission:

(1) Sixth Army, supported by Allied Air and Naval Forces:

(a) Will seize objectives in the TACLOBAN and DULAG areas in LEYTE and such adjacent areas as are required to initiate and insure uninterrupted air and naval operations therefrom.

(b) Will establish control over SAN JUANICO and PANAON STRAITS to permit access of light naval forces into SAMAR SEA and CAMOTES SEA respectively.

(c) Will seize and occupy the remainder of LEYTE; establish control over western and southern SAMAR to include the WRIGHT-TAFT highway; and open SURIGAO STRAIT to our light naval forces and other shipping.

(d) Will prepare to initiate operations to complete the consolidation of SAMAR and to destroy or contain hostile garrisons in the VISAYAS.

(e) Will assume control of and direct the operations of Filipino Forces of the 9th Military District (LEYTE - SAMAR).

(2) Phases of the Operation:

(a) Phase I.

Preliminary amphibious operations to secure entrances to LEYTE GULF.

(b) Phase II.

A major amphibious assault to attach and destroy hostile forces in the costal strip TACLOBAN - DULAG, inclusive, and to seize and secure airdromes and base sites therein; a rapid advance through LEYTE VALLEY to seize and occupy the CAPOOCAN - CARIGARA - BARUGO area; open SAN JUANICO and PANAON STRAITS; initiate construction missions.

(c) Phase III.

Overland and shore-to-shore operations to destroy hostile forces remaining in LEYTE; seize and occupy the western portion of southern SAMAR to include the WRIGHT-TAFT highway;

open SURIGAO STRAIT; continue construction missions.

(d) Phase IV.

Overland and amphibious operations as may be directed to occupy northern SAMAR and to destroy or contain hostile garrisons in the VISAYAS; complete construction missions.

(e) A-Day - 20 October 1944 (Target Date)
H-Hour - 1000

(f) Major Combat Elements (less AAA):

1. X Corps
   1st Cavalry Division
   24th Infantry Division
   32d Infantry Division

2. XXIV Corps
   7th Infantry Division
   96th Infantry Division

3. 11th Airborne Division

B. Missions of Corps and Separate Units:

(1) X Corps, reinforced:

(a) Will, on A-Day at H-Hour:

1. Land in the MARASBARAS area; advance rapidly and vigorously to the north, capture TACLOBAN and TACLOBAN airdrome and destroy hostile forces encountered.

2. Land in the PALO - PAYING area; seize, occupy and defend PALO; advance rapidly and vigorously to the northwest, seize and occupy the CAPOOCAN - CARIGARA - BARUGO area and destroy hostile forces in the LEYTE VALLEY.

(b) Will protect the right (north) flank of Sixth Army.

(c) Will secure the PALO - TANUAN highway within the X Corps zone of advance and will establish and maintain contact with XXIV Corps along the BINAHAAN RIVER.

(d) Will, by overland and shore-to-shore operations, advance northward of TACLOBAN and establish control over SAN JUANICO STRAIT.

(e) Will, when directed, seize WRIGHT by shore-to-shore and overland operations, and establish control over western and southern SAMAR to include the WRIGHT-TAFT highway.

(f) Will be prepared for such subsequent operations as may be directed.

(g) Will defend occupied areas.

(2) XXIV Corps, reinforced:

(a) Will, on A-Day at H-Hour, land in the DULAG - LABIRANAN area with the 7th and 96th Divisions abreast, seize the DULAG - BURAUEN - DAGAMI - TANUAN area and destroy hostile forces therein.

(b) Will establish and maintain contact with the X Corps along the BINAHAAN RIVER.

(c) Will protect the left (south) flank of Sixth Army.

(d) Will, when directed:

1. Seize ABUYOG, advance westward to BAYBAY, and destroy hostile forces along the west coast of LEYTE.

2. Relieve the 21st Infantry Regiment and 6th Ranger Infantry Battalion in their objective areas and continue overland and shore-to-shore operations to clear all hostile forces from southern and western LEYTE and from DINAGAT ISLAND.

(e) Will defend occupied areas.

(3) 21st Infantry Regiment, reinforced, (less Cannon Company):

(a) Will, on A-Day at H-Hour, land in the vicinity of PANAON STRAIT and secure control of that entrance to SOGOD BAY.

(b) Will, when relieved by elements of the XXIV Corps, be prepared to rejoin the 24th Division in the CAPOOCAN - CARIGARA - BARUGO area.

(4) 6th Ranger Infantry Battalion:

(a) Will, on A-2, at a time to be announced, employing the 6th Ranger Infantry Battalion (less one company), land on DINAGAT ISLAND and seize and occupy the northern tip thereof to assist in clearing entrances to LEYTE GULF.

(b) Will, on A-2, at a time to be announced, employing one company, 6th Ranger Infantry Battalion, land on HOMONHON ISLAND and seize and occupy that island to assist in clearing entrances to LEYTE GULF.

(c) Will be prepared to move to the PALO area in Sixth Army Reserve when directed.

C. Antiaircraft Artillery Mission:

(1) Mission:

(a) Assist in AAA defense of elements while afloat; provide AAA defense for landings; and provide AAA defense of beaches, ports, airdromes, and other vital areas.

(2) Responsibility:

(a) Corps and separate unit commanders will be responsible for AAA defense within their respective zones of action until relieved.

(b) The Commanding General, 32d AAA Brigade, will assume command of the AAA defenses as directed.

(3) Control of AAA Fire:

(a) The Commanding General, 32d AAA Brigade, will establish Brigade AACR in the Fighter Control Center and will transmit air warning and fire direction orders from the Fighter Controller to AAA units when communications are established.

(b) Units not in communications with the 32d AAA Brigade AAOR will fire only at aircraft identified as hostile or committing a hostile act.

(4) Secondary AA Roles:

(a) AAA units will be prepared to fire against ground or waterborne targets and will, where possible, emplace searchlights to provide illumination of beaches and the seaward approaches thereto.

(b) AAA Commanders will establish liaison with appropriate Field Artillery Commanders for fire direction.

(5) General:

(a) Corps Commanders will insure that AAA units are kept informed of air support missions.

(b) Coordination of emplacements of AAA along Corps boundaries will be as mutually agreed between Corps Commanders.

(c) Standing Operating Procedure Instructions No. 7, GHQ, 26 June 1943, will govern Air-Antiaircraft Cooperation.

(d) All troops will be briefed on recognition of friendly land and carrier-based aircraft which will be used in combat.

(e) No units other than AAA units will initiate antiaircraft fire against enemy aircraft unless directly attacked.

(6) Antiaircraft Artillery Troops:

Attached X Corps

Hq & Hq Btry, 25th AAA Group
168th AAA Gun Bn
211th AAA AW Bn
Btry C, 237th AAA SL Bn
210th AAA AW Bn
(less 4 MG Sections, Btry C)
469th AAA AW Bn

Attached XXIV Corps

Hq & Hq Btry, 97th AAA Group
502d AAA Gun Bn
504th AAA Gun Bn
485th AAA AW Bn
866th AAA AW Bn
861st AAA AW Bn
Btry A, 230th AAA SL Bn
Hq & Hq Det. Med., 230th AAA SL Bn

Attached 21st Inf Regiment

1st Plat., Btry C, 210th AAA AW Bn
(less 40mm guns)

Attached Sixth Army

Hq & Hq Btry, 32d AAA Brigade
146th AAA Opns Det

2. ANTIAIRCRAFT PLANNING

Based on initial studies of the tactical plan for the King-Two Operation, the Antiaircraft Section, Sixth Army, submitted the following initial requirements to Sixth Army G-3 for approval:

1 AAA Brigade
1 Operations Detachment
2 AAA Groups
3 AAA Gun Battalions (Semimobile)

5 AAA Automatic Weapons Battalions (Semimobile)
2 AAA Searchlight Batteries (Semimobile)

In addition to antiaircraft units initially required, plans provided for two AAA Automatic Weapons Battalions (Air Transportable), one of which was organic, to arrive with an airborne division and one AAA Automatic Weapons Battalion (Semimobile) was to arrive with an infantry division in the later phases of the operation. Two considerations dictated these requirements: sufficient antiaircraft artillery to protect beachheads, airfields and supply dumps, and adequate antiaircraft artillery to accompany the corps in the advance inland with each corps initially comprised of two divisions. The plan was approved.

In that antiaircraft units are not assigned to Sixth Army, the antiaircraft plan and request for troops was further submitted to GHQ, SWPA. After approval by GHQ, the required antiaircraft units assigned to 14th AA Command were attached to Sixth Army for the operation.

Immediately upon attachment of these units to Sixth Army, the Sixth Army Antiaircraft Officer made a final inspection of the status of supply and training of the units. The purpose of this inspection was to insure that all units were mounted from the staging area with no critical shortages or deficiencies of personnel and equipment.

Two early conferences were held. Officers from the Sixth Army, Navy and Air Corps conferred to coordinate the air warning plans for their respective forces. On GHQ orders the Antiaircraft Brigade Commanding General was named Coordinator of Antiaircraft Defenses for the Leyte area. Later, the Antiaircraft Artillery Officer, Sixth Army, called a conference between the brigade commander and the group commanders for the purpose of assigning missions, reviewing Sixth Army standing operating procedure, and coordinating air warning and air defense facilities for all elements of antiaircraft artillery. Plans provided for an antiaircraft artillery group, and the attached battalions, to be attached to each Corps until the control of air defense was transferred from the Navy Aircraft Controller afloat to the Air Corps Fighter Controller ashore. At this time both groups would then be attached to the brigade, and the brigade commander would assume control of all antiaircraft artillery units.

3. ANTIAIRCRAFT STAGING

Time and shipping limitations precluded grouping and staging antiaircraft artillery units in a centralized area. Antiaircraft units selected for this operation were staged in areas separated by as much as 1500 miles from their group headquarters or brigade headquarters. The staging of units in widely separated areas is a common antiaircraft artillery problem in this theater.

Headquarters and Headquarters Battery, 32d AAA Brigade, was staged at Hollandia. The 146th AAA Operations Detachment, attached to the brigade, was alerted at Bougainville and staged at Finschhafen.

Headquarters and Headquarters Battery, 25th AAA Group, was alerted while at Finschhafen and staged in the Admiralty Islands where the attached 168th AAA Gun Battalion, the 211th AAA Automatic Weapons Battalion, and Battery C, 237th AAA Searchlight Battalion were located. Other units attached to this group, the 469th AAA Automatic Weapons Battalion and the 210th AAA Automatic Weapons Battalion, were alerted and staged at Hollandia. This group was initially attached to the X Corps.

Headquarters and Headquarters Battery, 97th AAA Group, with the attached 502d AAA Gun Battalion, 504th AAA Gun Battalion, 485th AAA Automatic Weapons Battalion, 866th AAA Automatic Weapons Battalion, and the 230th AAA Searchlight Battalion (less Batteries B and C), was attached to the XXIV Corps which was staged and loaded in the Hawaiian Islands for the contemplated invasion of Yap Island. The Yap Island operation was canceled and the XXIV Corps was attached to Sixth Army for the Leyte operation. The change was announced too late to allow any substantial change in the loading plan because most of the Corps units were already afloat.

4. ANTIAIRCRAFT OPERATIONS

A Day to A ≠ 9

The AAA units were combat loaded with the maximum number of weapons placed above deck to afford protection to the convoy while enroute to Leyte. The only air action experienced, however, was an unsuccessful attack on a destroyer escort by a single enemy plane early on the morning of A Day. Upon landing, the occupation of initial tactical positions by antiaircraft units proceeded with no undue delay as is shown below:

Attached to	Organization	In position and ready for action				
			Firing Batteries			
		Hq & Hq Btry	1st	2d	3d	4th
Sixth Army	32d AAA Brigade	A				
32d AAA Brigade	146th AAA Ops Det	A ≠ 18				
X Corps	25th AAA Group	A				
	469th AAA AW Bn	A	A ≠ 1	A ≠ 1	A ≠ 1	A ≠ 1
	211th AAA AW Bn	A	A	A	A	A ≠ 1
	210th AAA AW Bn	A ≠ 4	A ≠ 4	A ≠ 11	A ≠ 11	A ≠ 11
	168th AAA Gun Bn	A ≠ 1	A ≠ 1	A ≠ 1	A ≠ 1	A ≠ 1
	C-237th AAA SL Bn		A ≠ 4			

Attached to	Organization	In position and ready for action				
			Firing Batteries			
		Hq & Hq Btry	1st	2d	3d	4th
XXIV Corps	97th AAA Group	A ≠ 1				
7th Inf Div	502d AAA Gun Bn	A	A ≠ 1	A ≠ 1	A ≠ 2	A ≠ 2
	866th AAA AW Bn	A ≠ 1	A ≠ 1	A ≠ 1	A ≠ 3	A ≠ 3
96th Inf Div	504th AAA Gun Bn	A ≠ 1	A ≠ 1	A ≠ 1	A ≠ 2	A ≠ 2
	485th AAA AW Bn	A ≠ 1	A	A ≠ 1	A ≠ 1	A ≠ 1
	230th AAA Slt Bn (-B and C)	A ≠ 1	A ≠ 3 (less radars)			

The first air attack against the beachhead by enemy fighters came early on the morning of A ≠ 1. Following this initial attack the enemy made daily attacks against shipping, airfields and beachheads. During the Seventh Fleet's naval engagement off Leyte Gulf, the naval air cover for the island was withdrawn to support the fleet. For this reason enemy aerial activity increased sharply. In eighty-five enemy attacks during this period targets ranged from flights of medium bombers to individual dive bombers and fighters. Of these targets antiaircraft 90mm guns destroyed 21 aircraft, probably destroyed 14 aircraft and damaged 6 aircraft. Automatic weapons destroyed 40 aircraft, probably destroyed 29 aircraft, and damaged 28 aircraft.

Prior to embarkation, plans were completed for AAA guns to be used in the role of field artillery under the control of the Field Artillery Fire Direction Center. While no AAA terrestrial fire was required in X Corps, the 502d AAA Gun Battalion in the XXIV Corps area reinforced fire of the 7th Infantry Division during the period of A ≠ 1 to A ≠ 5. A total of 1782 rounds of 90mm ammunition was fired effectively on enemy troop concentrations and bivouacs at ranges of 12,000 to 14,000 yards.

A machine gun detachment consisting of four M-51 machine guns from the 210th AAA Automatic Weapons Battalion was attached to the 21st Infantry Regiment at Panaon Straits to furnish antiaircraft defense and defense against hostile ground or waterborne forces. While no enemy ground or waterborne action was encountered, enemy aircraft were constantly active over this area. The location of this detachment proved excellent in that the enemy did not appear to expect antiaircraft fire from this area when his planes from Cebu and Mindanao used Panaon Strait as a guide to approach our installations on Leyte, forty miles to the north. Between 20 October and 18 December 1944 this machine gun detachment destroyed eleven, probably destroyed seven, and damaged twelve enemy aircraft.

A / 9 to A / 66

The Commanding General, 32d AAA Brigade, assumed control of antiaircraft defense on Leyte on A / 9, 29 October 1944. At this time the brigade AAOR and the Fighter Control Center assumed full responsibility for the operation of air warning facilities. The defense of Tacloban and Dulag airstrips were consolidated and elements of the 210th AAA Automatic Weapons Battalion and 469th AAA Automatic Weapons Battalion were designated to continue support of the Corps in the upper Leyte Valley. Two batteries of the 469th AAA Automatic Weapons Battalion protected bridges on the west coast following the 7th Division drive across southern Leyte to Baybay. In the northern sector (X Corps) the 210th AAA Automatic Weapons Battalion protected bridges and dumps in the Carigara area after the completion of the advance to the northern Ormoc Valley. In the amphibious assault on Ormoc and the approaches to the southern Ormoc Valley on 7 December, the 7th AAA Automatic Weapons Battalion protected beachheads and bridges for the 77th Division. This battalion destroyed nine aircraft during attacks on the convoy enroute and on the initial beachhead.

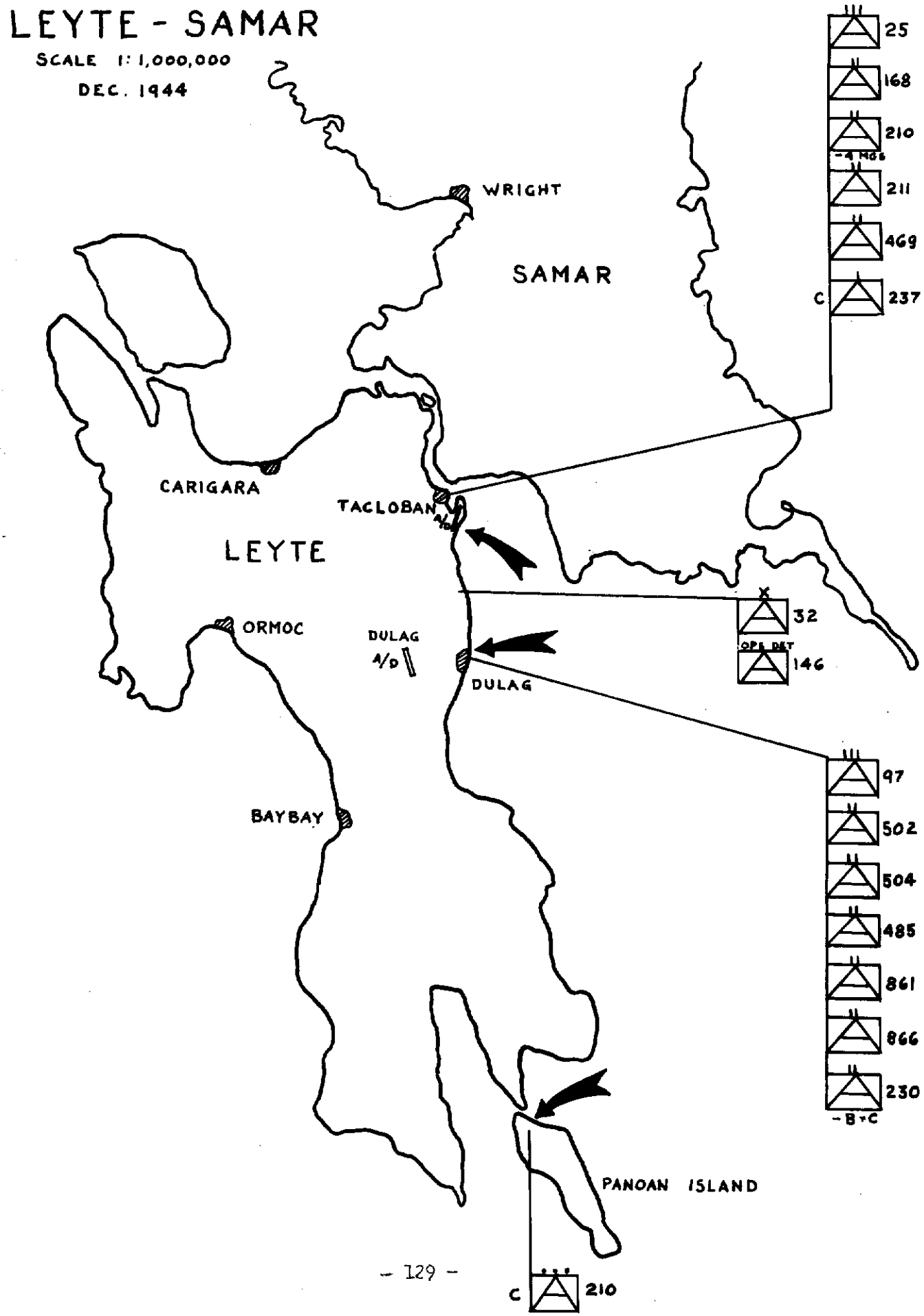
Between 16 November and 25 November antiaircraft units for the Mindoro Operation arrived for staging on Leyte. The 202d AAA Automatic Weapons Battalion and two batteries of the 166th AAA Gun Battalion occupied temporary tactical positions providing defense between the Corps beachheads. These units engaged several targets in air attacks and thus received much valuable training prior to embarking with the western Visayan Task Force.

Enemy air attacks decreased in magnitude and intensity in November. Generally, throughout this period, the enemy approached in small flights launching single-plane attacks from various altitudes. In desperation the Japanese resorted to single-plane suicide crash dives on shipping in Leyte harbor. In comparison to the resulting damage to our forces, this new and ineffective method of aerial attack proved costly to the enemy.

The enemy attempted a well-planned, coordinated paratroop attack on the Dulag-Burauen-San Pablo Airfield area on the evening of 6 December 1944. The attack was made by three flights from the south and southeast. The first flight, at high altitude, was composed of bombers which dropped smoke and anti-personnel bombs. This was followed by two low-level flights of bombers and transports carrying paratroopers. Automatic weapons engaging one of the low level flights destroyed 12, probably destroyed 7, and damaged 11 enemy aircraft. The antiaircraft units in the San Pablo area, on hold fire from the fighter controller, did not engage the first flight until bombs had been dropped, but did fire on succeeding flights, destroying 33, probably destroying 4 and damaging 3 planes. At the time of the paratroop attack on the Dulag area, two planes carrying demolition squads were shot down over Tacloban airstrip, two planes

were destroyed in the vicinity of Ormoc, and one plane damaged at Baybay. An estimated 200 paratroopers were landed on the Burauen strip and the Burauen-Dagami road. These troops joined several hundred enemy ground troops who had approached the area from the mountains to the west. Several automatic weapons sections, isolated by the attack, were forced to withdraw from their positions. However, all AAA weapons were rendered inoperative before the enemy overran the positions. Antiaircraft units in ground action inflicted an estimated 175 casualties on the enemy during this attack.

The attack of 6 December marked the end of concerted enemy air action. Between A / 9 and A / 66, 409 enemy air attacks were made on Leyte exclusive of the paratroop attack on 6 December. The Leyte operation was closed by the Commander-in-Chief, SWPA, on 25 December 1944 at which time the control passed to the Commanding General, Eighth Army.


LEYTE - SAMAR
SCALE 1: 1,000,000
DEC. 1944
WRIGHT
SAMAR
CARIGARA
TACLOBAN
A/D
LEYTE
ORMOC
DULAG
A/D
DULAG
BAYBAY
PANOAN ISLAND
25
168
210
- 4 M&S
211
469
C
237
32
OPS DET
146
97
502
504
485
861
866
230
- B + C
C
210

SECTION X

COMBAT PERFORMANCE OF ANTIAIRCRAFT ARTILLERY IN THE MINDORO OPERATION (15 December 1944 - 1 January 1945)

1. MISSIONS
   - A. SIXTH ARMY
   - B. SUBORDINATE UNITS
   - C. ANTIAIRCRAFT ARTILLERY
2. ANTIAIRCRAFT PLANNING
3. ANTIAIRCRAFT STAGING
4. ANTIAIRCRAFT OPERATIONS

1. MISSIONS

A. Sixth Army:

(1) Will, by overwater operations, seize the SAN JOSE area in southwestern MINDORO and establish air and naval facilities therein.

(2) Will seize and occupy a locality on MARINDUQUE ISLAND and objectives in eastern and northeastern MINDORO, to include the CALAPAN area, to assist in initiating the illusions that our next major offensive will be launched against the BICOL-BATANGAS area.

(3) Will assume control of and direct the operations of the PHILIPPINE Forces in MINDORO.

(4) U-Day - 15 December 1944 (Target Date)
H-Hour - 0730 hours

B. Subordinate Units:

Western Visayan Task Force:

(1) Will land at H-Hour on U-Day in the vicinity of SAN AUGUSTINE in southwestern MINDORO, destroy enemy forces in that area and secure a beachhead.

(2) Will rapidly capture and secure the SAN JOSE airfield, and will vigorously clear all enemy forces from the SAN AUGUSTINE-SAN JOSE area and from such adjacent areas as will insure uninterrupted naval and air operations therefrom.

(3) Will, employing maximum effort, establish air facilities in the MINDORO area in the following priority:

By U ∕ 5 — 1 fighter group
1 night-fighter flight

By U ∕ 15 — Additional:

1 fighter group
1 light bombardment group
1 tactical reconnaissance squadron (P-39)
1 patrol bomb squadron (air-sea rescue)
2 fighter squadrons, commando (P-51, 25 each)

By U ∕ 30 — Additional:

1 combat cargo group (C-46, 100 aircraft)

(4) Will seize sites for radar and air warning installations as arranged by this headquarters with the respective Commanders, Allied Naval Forces and Allied Air Forces.

(5) Will establish naval facilities in the objective area as arranged by this headquarters with the Commander, Allied Naval Forces.

(6) Will defend occupied areas.

(7) Will reconnoiter MARINDUQUE ISLAND and the CALAPAN area of northeastern MINDORO and be prepared, on or about U + 14 when directed, to seize and occupy localities in these areas to assist in initiating the illusion that our next major offensive will be launched against the BICOL-BATANGAS area.

(8) Will be prepared to pass to the control of Eighth Army on or about U + 10.

(9) Major Combat Elements (less AAA):

(a) One RCT, 24th Infantry Division
(b) 503d Pcht Infantry RCT
(c) 532d EBSR (less Boat Bn)

C. Antiaircraft Artillery:

(1) Mission:

(a) Assist in the antiaircraft defense while afloat; establish antiaircraft defense for landing beaches, airdromes, supply installations, harbor facilities, and other vital objectives.

(2) Responsibility:

(a) The Task Force Commander is responsible for the antiaircraft artillery defense of the area.

(b) The Commanding Officer, 94th AAA Group, will be responsible for coordinating the tactical disposition of antiaircraft artillery units and for advising the Commander, Western Visayan Task Force, on matters pertaining to the antiaircraft defense.

(3) Control of AAA Fire:

(a) The Commander, Western Visayan Task Force, will insure that units under his command do not fire on friendly aircraft.

(b) Until communications with the AAOR are established, antiaircraft artillery units will receive air warning from the support aircraft controller over the local air warning net and will be prepared to transpose polar coordinates to the air defense grid.

(c) The Commanding Officer, 94th AAA Group, will establish initially a mobile AAOR in or near the fighter control center as soon as the tactical situation permits. This agency will transmit air warning and fire control orders from the fighter controller to antiaircraft artillery units when communications are established.

(d) Antiaircraft artillery units not in communication with either the support aircraft controller or the group AAOR will fire only at aircraft identified or recognized as hostile or committing a hostile act.

(4) General:

(a) Secondary AAA Roles:

1. Antiaircraft artillery units will be prepared to fire against ground or waterborne targets and to provide illumination of beaches and the seaward approaches thereto.

2. Antiaircraft Artillery Commander will establish liaison with appropriate field artillery commander for terrestrial fire direction.

(b) Standing Operating Procedure Instructions No. 1, Headquarters Sixth Army, 8 November 1944, will govern.

(c) All troops will be briefed on recognition of current operational aircraft.

(5) Antiaircraft Artillery Troops:

94th AAA Group

202d AAA AW Battalion

166th AAA Gun Battalion

203d Sig Radar Maint Team (Type C)

Btry B, 237th AAA SL Battalion

194th Sig Radar Maint Team (Type A)

2. ANTIAIRCRAFT PLANNING

Planning for this operation was initiated about 25 September 1944. After a complete staff study of the objective area, the basic plan, and proposed construction projects, the antiaircraft estimate was prepared by the Antiaircraft Section, approved by Sixth Army G-3, and submitted to General Headquarters, Southwest Pacific Area for approval. This recommendation of one AAA Group, one AAA Gun Battalion, one AAA Automatic Weapons Battalion, and one AAA Searchlight Battery was approved, and Sixth Army was directed to provide the units from those AAA troops on, or scheduled to arrive at Leyte. On 30 October these units were designated by the Antiaircraft Officer of Sixth Army as follows:

94th AAA Group
166th AAA Gun Battalion
202d AAA Automatic Weapons Battalion
Battery "B", 237th AAA Searchlight Battalion

These units were notified to prepare for an operation, and the Commanding Officer of the 94th AAA Group was given such data as was available at the time. He was further directed to work directly with the staff of the task force to which he would be attached for the operation.

Detailed planning was carried out during the staging phase on Leyte. The final plan of landing was as follows:

U-Day

Blue Beach

166th AAA Gun Battalion (less Batteries A, B, and D)
Battery C, 202d AAA AW Battalion
2 sections, Battery B, 237th AAA Searchlight Battalion

White Beach

Batteries A and B, 166th AAA Gun Battalion
202d AAA AW Battalion (less Batteries B and C)
2 sections, Battery B, 237th AAA Searchlight Battalion

U + 1

Blue Beach

Battery D, 166th AAA Gun Battalion

U + 6

Battery B, 202d AAA AW Battalion
2 sections, Battery B, 237th AAA Searchlight Battalion

U + 14

Remainder of Battery B, 237th AAA Searchlight Battalion

3. ANTIAIRCRAFT STAGING

Since the force involved was small, centralized staging at Leyte was possible for this operation. Units were shipped to Leyte, unloaded, and allowed two to three weeks to make final preparations. The units were then reloaded, beginning about 5 December 1944. While staging on Leyte detailed planning was conducted by the Group Commander with the Task Force G-3 and with the attached antiaircraft units. This period also provided an opportunity for the Sixth Army Antiaircraft Section to inspect the antiaircraft units for combat readiness.

4. ANTIAIRCRAFT OPERATIONS

The convoy assembled in Leyte Gulf and departed on the evening of 12 December 1944. Preparatory for air attacks at sea, a maximum number of 40mm guns and .50 caliber machine guns were set up in firing position on the decks. As expected, there were several suicide attacks (Kamikaze) by enemy planes on the convoy on the 13th and 14th of December.

The convoy arrived off Mindoro about 0600 hours, 15 December 1944, the first infantry units landing at 0730 hours. No ground opposition being encountered, LSTs began landing at 0750 hours. At 0740 hours the first enemy aerial attacks occurred, all being directed at shipping. Excellent landing beaches enabled the LSTs to make dry landings, and unloading was accomplished expeditiously. Because of good beaches and the lack of enemy ground opposition, all LSTs, including those scheduled to unload on U + 1, unloaded on U-Day. Soft ground behind White Beach caused difficulty in moving equipment in that area. This difficulty was not encountered on Blue Beach.

The 166th AAA Gun Battalion (less Batteries A, B, and D) landed on Blue Beach on U-Day and commenced unloading at 1300 hours. Batteries A, B, and D of the 166th AAA Gun Battalion commenced unloading at White Beach at 1100 hours. By 1830 hours the last of these batteries was in position and ready to fire to defend the beachhead. Battery D, scheduled

to land on U ∕ 1 at Blue Beach, was, due to the attempt to rapidly unload all vessels, unloaded on U-Day on White Beach. On U ∕ 1 this battery was shifted by water transportation to Blue Beach where it moved inland and set up to defend the construction of the San Jose airstrip. On the morning of U ∕ 2, Battery C, leaving one gun on the beach for defense against waterborne targets, was moved inland to augment the defense of the San Jose airstrip. Later the same day Battery D was shifted to obtain a better defense of the airstrip. By this time Blue Beach was practically clear of dumps and shipping. On U ∕ 3, as White Beach was rapidly cleared, Battery A was moved to cover the Hill airstrip, and on U ∕ 4 Battery B was moved from White Beach to augment this defense. These positions constituted the final 90mm gun defense.

The 202d AAA Automatic Weapons Battalion (less Batteries B and C) landed on White Beach on U-Day and commenced unloading at 0750 hours. These batteries went into position on or near the beach to protect unloading operations and dumps on the beachhead. Battery C landed on Blue Beach and commenced unloading at 0800 hours. This battery set up in tactical position to defend unloading activities in that area. All units of the 202d AAA Automatic Weapons Battalion were in position and ready to fire by director control by 1345 hours. On U ∕ 1, as Blue Beach became clear of dumps, one platoon of Battery C was moved from Blue Beach to defend the San Jose airstrip. The Group Commander was informed on the afternoon of U ∕ 1 that the San Jose strip would be operational before the Hill strip. On U ∕ 2, one platoon from Battery D was moved to the San Jose strip, and the other platoon of Battery D was moved to the Hill strip. On U ∕ 4 it became apparent that the Hill airstrip would be operational by U ∕ 5. A platoon of Battery A and two fire units of Battery D were moved to augment the defense of that area.

Battery B, 237th AAA Searchlight Battalion (less Battery Headquarters and eight sections) landed two searchlights and one radar on each beach on U-Day. These units commenced unloading at 1300 hours and, except for the two radars, were prepared for action on the beaches by 1600 hours. It was not until 1000 hours on U ∕ 1 that both SCR 268 radars were in operation. On U ∕ 3 one searchlight was moved inland from each beach to give more effective coverage of the area.

Enemy air attacks directed against the airfields and against shipping increased in intensity after U-Day. The U ∕ 6 convoy carrying a battery of automatic weapons, two searchlight sections, and a resupply of two units of fire for all antiaircraft weapons was heavily attacked near Mindoro. One platoon of automatic weapons, the two searchlights, and most of the ammunition was lost. The loss of this ammunition and the increasing intensity of air attacks made the need for 90mm ammunition and additional automatic weapons fire units critical. To alleviate this situation, 1600 rounds of 90mm ammunition were shipped by air from Leyte on 29 December,

and the 673d AA Machine Gun Battery (Separate) and Batteries B and C, 102d AA Automatic Weapons Battalion were added to the U ∕ 14 convoy. The additional antiaircraft artillery was used to strengthen the airfield defenses and to set up a defense for the naval PT boat base at Caminawit Point. The PT base had been the objective of many attacks, but sufficient antiaircraft artillery had not previously been available to provide an adequate defense of this area.

The Air Corps FCC and the AMOR were set up side by side and operated under Navy control commencing at 1400 hours on U-Day. At 1800 hours on U ∕ 1, the air corps assumed responsibility for air warning. The operation of the AWS, AAAIS, and AMOR was superior. Not a single enemy plane approached the area undetected prior to U ∕ 7. Cooperation between the air corps and antiaircraft was excellent. In general, after the airstrips opened on U ∕ 5, all day defense was left to the air corps and night defense to the antiaircraft artillery.

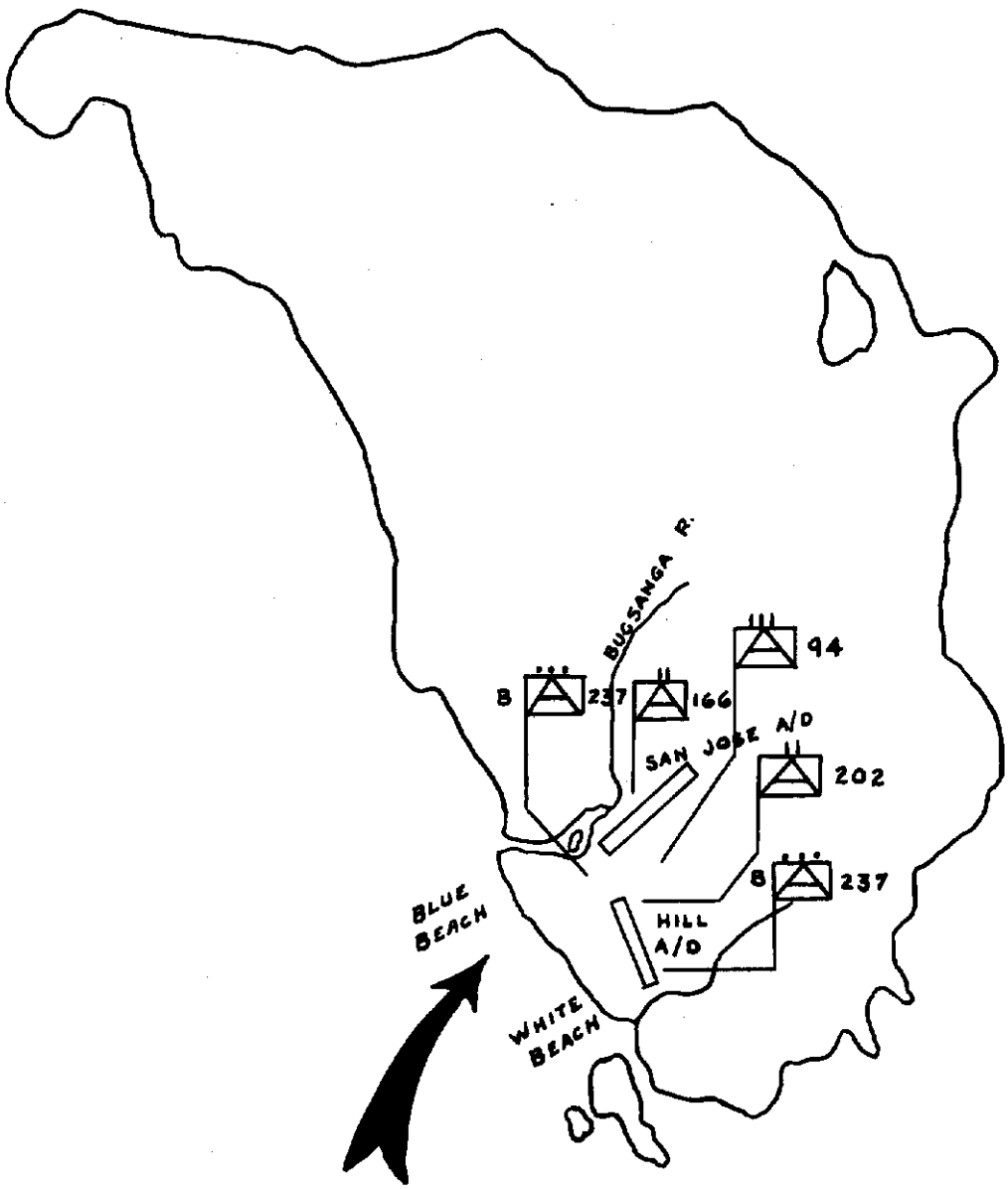
Although adequate plans had been made for firing antiaircraft artillery in support of the ground troops, no terrestrial missions were requested. A Japanese naval task force of destroyers and cruisers bombarded the airstrip area on the night of 27 December. Although these targets were within range of the 90mm guns, the Commander of the Task Force issued orders that fire was not to be returned. The responsibility for the Mindoro area passed to Commanding General, Eighth Army, on 1 January 1945.

Intense air raids continued until 4 January 1945. At this time enemy action practically ceased because of pre-invasion air attacks by our naval air forces on the Luzon air fields. The last enemy air attack was made on 22 January 1945.

MINDORO

SCALE 1: 1,000,000

DECEMBER 1944



SECTION XI

COMBAT PERFORMANCE OF ANTIAIRCRAFT ARTILLERY IN THE LUZON OPERATION

(9 January 1945 — 30 June 1945)

1. MISSIONS
   - A. SIXTH ARMY
   - B. CORPS AND SEPARATE UNITS
   - C. ANTIAIRCRAFT
2. ANTIAIRCRAFT PLANNING
3. ANTIAIRCRAFT STAGING
4. ANTIAIRCRAFT OPERATIONS

1. MISSIONS

A. SIXTH ARMY MISSION

(1) Sixth Army, supported by Allied Naval and Air Forces:

(a) Will, by overwater operations, seize and occupy beachheads in the LINGAYEN-DAMORTIS-SAN FERNANDO (LA UNION) areas as are required to initiate and insure uninterrupted naval and air operations in support of the continued offensive to seize the CENTRAL PLAINS-MANILA area.

(b) Will seize the CENTRAL PLAINS-MANILA area by overland operations to the southward.

(c) Will prepare to conduct such operations as may be required to complete the destruction of hostile forces and the occupation of LUZON.

(d) Will occupy and defend sites for radar and air warning installations as arranged with the Commanders, Allied Naval and Air Forces.

(e) Will assume control of and direct the operations of FILIPINO FORCES in LUZON.

(f) Will establish facilities for minor naval operations at the earliest possible date in the LINGAYEN area, LUZON, as arranged with the Commander, Allied Naval Forces; and be prepared to initiate the establishment of naval, air, and logistic bases as required to support subsequent operations to complete the destruction of Japanese forces in the PHILIPPINES and to support future operations to the north and east of the PHILIPPINE ARCHIPELAGO.

(g) Major combat elements (less AAA):

1. XIV Corps
   37th Inf Div
   40th Inf Div

2. I Corps
   6th Inf Div
   43d Inf Div

3. 158th RCT
   25th Inf Div
   13th Armored Group

(2) Phases of the Operation:

(a) Phase I.

An amphibious assault to seize and consolidate beachheads in the LINGAYEN-DAMORTIS area of LINGAYEN GULF, and to initiate the establishment of air and base facilities therein.

(b) Phase II.

An attack to destroy all hostile forces north of the AGNO RIVER, and to seize and secure crossings of the AGNO RIVER.

(c) Phase III.

The destruction of hostile forces in the CENTRAL PLAINS area, the continuation of the attack to capture MANILA.

(3) S-Day 9 January 1945 (Target Date)
H-Hour 0930

B. MISSIONS OF CORPS:

(1) I Corps, reinforced:

(a) Will on S-Day at H-Hour, land in the DAGUPAN-MABILAO area with divisions abreast, will attack vigorously to destroy hostile forces encountered, and will seize and secure the Army beachhead within the I Corps zone of action.

(b) Will seize and hold the DAGUPAN bridge until relieved by elements of the XIV Corps.

(c) Will be prepared to seize and secure crossings of the AGNO RIVER within the I Corps zone of action.

(d) Will establish and maintain contact with the 158th RCT and with the XIV Corps.

(e) Will protect the left flank of Sixth Army.

(2) XIV Corps, reinforced:

(a) Will, on S-Day at H-Hour, land in the LINGAYEN area with divisions abreast, will attack vigorously to destroy hostile forces encountered, and will seize and secure the Army beachhead within the XIV Corps zone of action.

(b) Will be prepared to seize and secure crossings of the AGNO RIVER within the XIV Corps zone of action south of the Army beachhead.

(c) Will establish and maintain contact with I Corps.

(d) Will protect the right flank of Sixth Army.

(3) 158th RCT, reinforced:

(a) Will, on S + 2 at a time to be announced, land north of MABILAO within the zone of action of I Corps, will pass through the north flank of the I Corps beachhead, attack north, and capture RABON.

(b) Will block the advance of hostile forces from the direction of SAN FERNANDO.

(c) Will establish and maintain contact with I Corps.

C. ANTIAIRCRAFT ARTILLERY MISSION:

(1) Mission:

(a) Assist in the antiaircraft defense while afloat, establish antiaircraft defense for landing beaches, ports, river crossings, bridges, defiles, airdromes, advanced landing strips, troop concentrations, supply installations, and other vital objectives.

(2) Responsibility:

(a) Commanding Generals, I Corps, XIV Corps, and 158th RCT will be responsible for the antiaircraft defense and an adequate air warning system within their respective zones of action until relieved.

(b) The Commanding General, 68th AAA Brigade, will assume command of the antiaircraft defenses as directed.

(3) Control of AAA Fire:

(a) Commanders of all units will insure that troops under their command do not fire at friendly aircraft.

(b) The Commanding General, 68th AAA Brigade, will establish a Brigade AAOR in or near the fighter control center at LINGAYEN. When directed by Sixth Army to assume command of the antiaircraft defense, the Brigade Commander will transmit air warning and fire direction orders to the group and separate unit AAOR's.

(c) Mobile group and separate unit AAOR's will land as soon as the tactical situation permits. Groups and separate unit commanders will establish communications with all subordinate AAA units and disseminate fire control orders received from the support aircraft controller on the local air warning net. Group and separate unit AAOR's will be prepared to transpose polar coordinates in degrees and nautical miles to the air defense grid.

(d) The Commanding General, 68th AAA Brigade, will inform the group and separate unit AAOR's the exact time at which the Brigade will begin transmitting air warnings and fire control orders. At this time group AAOR's will cease monitoring the local air warning net and will receive all warnings from the Brigade communications net.

(e) Units not in communication with either the support aircraft controller or the brigade AAOR will fire only at aircraft identified or recognized as hostile or committing a hostile act.

(4) General:

(a) Secondary AAA Roles:

1. AAA units will be prepared to fire against ground or waterborne targets and to provide illumination of beaches and the seaward approaches thereto.

2. AAA commanders will establish liaison with appropriate field artillery commanders for terrestrial fire direction.

(b) Antiaircraft Defense Standing Operating Procedure Instructions No. 1, Headquarters Sixth Army, 8 November 1944, will govern air-antiaircraft cooperation.

(c) All troops will be briefed on recognition of current operational aircraft.

(d) Antiaircraft Artillery Troops:

1. Attached Sixth Army

68th AAA Brigade
144th AAA Opns Det
14th AAA Group
471st AAA AW Bn
518th AAA Gun Bn
291st SRMU
737th AAA Gun Bn
292d SRMU
725th AAA SL Btry (Sep)
98th SRMU
469th AAA AW Bn

2. Attached XIV Corps

251st AAA Group
951st AAA AW Bn
209th AAA AW Bn (SP)
70th AAA Gun Bn
295th SRMU
373d AAA SL Bn
99th SRMU
100th SRMU
191st SRMU
1424th ESD (Mob SL Maint)
1425th ESD (Mob SL Maint)
1431st ESD (Mob SL Maint)

3. Attached I Corps

197th AAA Group
470th AAA AW Bn
198th AAA AW Bn
(less Btry A)
161st AAA Gun Bn
303d SRMU
222d AAA SL Bn
(less Btries A & B)
192d SRMU
1420th ESD (Mob SL Maint)

4. Attached 158th RCT

Btry A, 198th AAA AW Bn
707th AAA MG Btry (Sep)
708th AAA MG Btry (Sep)

2. ANTIAIRCRAFT PLANNING

The initial estimate of antiaircraft requirements for the landing in Lingayen Gulf on Luzon Island as submitted to GHQ for approval was as follows:

1 AAA brigade
1 AAA operations detachment
3 AAA groups
4 AAA gun battalions
4 AAA AW battalions (semimobile)
1 AAA AW battalion (self-propelled)
1 AAA searchlight battalion plus one battery
2 AAA machine gun batteries (separate)

These units were considered sufficient to provide antiaircraft protection of beachheads, Mangalden and Lingayen airstrips, and the Corps advance south to Clark Field. GHQ, SWPA, planned to move sufficient additional antiaircraft artillery to Luzon at later dates to establish antiaircraft defenses in the Manila and Clark Field areas.

Additional amphibious landings were to be made north of Subic Bay and at Nasugbu by forces that were to pass to the control of Sixth Army upon orders of GHQ. To be attached to the XI Corps for the landing north of Subic Bay were one AAA group, one AAA gun battalion, two AAA AW battalions, and one AAA searchlight battery; to the 11th Airborne Division for the landing at Nasugbu, one AAA AW battery (air transportable) in addition to the AAA automatic weapons battalion organic to the division.

At the request of Headquarters Sixth Army, GHQ designated the Commanding General, 68th AAA Brigade, as the coordinator of antiaircraft defenses for the Luzon area. Sixth Army plans provided for one antiaircraft group, and attached battalions, to be attached to each of the two corps, initially landing in Lingayen Gulf, and two separate AAA machine gun batteries and an automatic weapons battery to be attached to a regimental combat team landing separately. Each corps consisted of two divisions. Upon consolidation of the respective corps' beachheads and transfer of the control of air defense from the Naval Aircraft Controller afloat to the Air Force Controller ashore, all antiaircraft artillery was to be relieved from attachment to corps and divisions and attached to the 68th AAA Brigade, whose commander would assume control of all antiaircraft artillery defenses.

Sixth Army and subordinate unit plans provided for the arrival of AAA units in the Lingayen Gulf area as follows:

9 January 1945 (D-Day)

Army Antiaircraft Artillery:

68th AAA Brigade
144th AAA Opns Det

Attached to I Corps:

197th AAA Group
161st AAA Gun Bn
470th AAA AW Bn
222d AAA SL Bn (less Btries A and B)

Attached to XIV Corps:

251st AAA Group
70th AAA Gun Bn
951st AAA AW Bn
209th AAA AW Bn (SP)
373d AAA SL Bn

11 January 1945 (D + 2)

Attached to I Corps:

198th AAA AW Bn (less Btry A)

Attached to 158th RCT:

707th AAA MG Btry
708th AAA MG Btry
Btry A, 198th AAA AW Bn

14 January 1945

Attached to XIV Corps:

469th AAA AW Bn

23 January 1945

Army Antiaircraft Artillery:

14th AAA Group
518th AAA Gun Bn
471st AAA AW Bn

18 February 1945

Attached to Sixth Army:

737th AAA Gun Bn
725th AAA SL Btry (Separate)

For the landing north of Subic Bay on 29 January 1945 Eighth Army orders attached to the XI Corps the 120th AAA Group, 508th AAA Gun Battalion, 950th AAA Automatic Weapons Battalion, 210th AAA Automatic Weapons Battalion, and Battery C, 227th AAA Searchlight Battalion. For the landing at Nasugbu, Southern Luzon, on 31 January 1945, Battery A, 102d AAA Automatic Weapons Battalion (Air Transportable) was attached to the 11th Airborne Division.

3. ANTIAIRCRAFT STAGING

The staging of antiaircraft units for the Luzon campaign presented numerous difficulties in that units were staged in areas extending from Dutch New Guinea to Bougainville, Solomon Islands. Shipping limitations precluded assembling units for staging in accordance with the operational plan.

The 68th AAA Brigade was staged at Bougainville and the 144th AAA Operations Detachment, attached to the brigade, was staged at Finschhafen.

The 197th AAA Group, 161st AAA Gun Battalion, 222d AAA SL Battalion (less Batteries A and B), and the 470th AAA Automatic Weapons Battalion were staged at Aitape, New Guinea. The 198th AAA Automatic Weapons Battalion was staged at Cape Sansapor, Dutch New Guinea.

The 251st AAA Group and the attached 70th AAA Gun Battalion (less Batteries A and C), 957th AAA Automatic Weapons Battalion and the 373d AAA Searchlight Battalion (less 1st Platoon, Battery C) were staged at Bougainville, Solomon Islands. The 209th AAA Automatic Weapons Battalion (Self-propelled), Batteries A and C, 70th AAA Gun Battalion, and the 1st Platoon, Battery C, 373d AAA Searchlight Battalion were staged at Cape Gloucester, New Britain Island. The 707th and 708th AAA Machine Gun Batteries (Separate) were staged on Noemfoor Island, Dutch New Guinea.

The 469th AAA Automatic Weapons Battalion was staged on Leyte, Philippine Islands. The 14th AAA Group and the attached 518th AAA Gun Battalion and 471st AAA Automatic Weapons Battalion were staged at Emirau Island. The 737th AAA Gun Battalion and the 725th AAA Searchlight Battery (separate) were staged at Finschhafen, New Guinea.

4. ANTIAIRCRAFT OPERATIONS

A. ASSAULT.

Antiaircraft units were combat loaded with a maximum number of weapons deck-loaded to assist in the protection of the convoy enroute to Luzon. In several single plane raids on three separate convoys enroute to Lingayen Gulf, the 951st, 198th and 469th AAA Automatic Weapons Battalions each destroyed one enemy aircraft.

The landing on 9 January 1945 in Lingayen Gulf met with only light opposition. The greatest difficulties in landing antiaircraft artillery resulted from the heavy surf and unsuitable beaches. Most landing craft beached about 150 feet from the shore and debarking troops and equipment passed through approximately a five foot depth of water. The waterproofing of vehicles for six-foot immersion enabled antiaircraft equipment to beach under its own power with only negligible damage resulting to weapons and materiel in isolated instances. Antiaircraft defenses for the Lingayen airstrip in the XIV Corps zone and beach installations, dumps, and vital bridges in the I and XIV Corps areas was established immediately upon landing.

In six separate raids between 9 January 1945 and 19 January 1945 eleven enemy aircraft attacking the beach areas were engaged by antiaircraft artillery, resulting in one plane destroyed and two planes damaged.

Headquarters Sixth Army issued orders on 20 January 1945 relieving all antiaircraft artillery units from attachment to corps and placing the Commanding General, 68th AAA Brigade, in charge of all antiaircraft defenses on Luzon.

B. MOVEMENT SOUTH TO MANILA:

Upon assuming command of all antiaircraft artillery units on Luzon, the Commanding General, 68th AAA Brigade, designated the 951st AAA Automatic Weapons Battalion, with Battery D, 209th AAA Automatic Weapons Battalion (Self-propelled) attached, to provide antiaircraft protection in forward areas of the XIV Corps zone and the 470th AAA Automatic Weapons

Battalion, with Battery B, 209th AAA Automatic Weapons Battalion (Self-propelled) attached, to provide antiaircraft protection in forward areas of the I Corps zone. Headquarters Battery and Batteries A and C, 209th AAA Automatic Weapons Battalion (Self-propelled), were designated to provide protection for the 13th Armored Group.

During the rapid advance to the south by XIV Corps, a mobile AAOR (Antiaircraft Artillery Operations Room) was used to provide air warning to antiaircraft units and corps' units. As previously planned the 68th AAA Brigade maintained a forward echelon to operate the mobile AAOR and to maintain close liaison with forward XIV Corps elements. A mobile fighter control center was established by the air force to work in conjunction with the mobile AAOR.

The 951st AAA Automatic Weapons Battalion, with Battery D, 209th AAA Automatic Weapons Battalion (Self-propelled) attached, provided antiaircraft protection for highway and railroad bridges, corps and division dumps, and corps and division artillery during the rapid 125-mile advance to Manila. This was accomplished by covering only vital objectives in the corps' rear area, keeping the self-propelled battery and one semimobile battery moving forward with advance elements. Upon reaching the Manila area the 951st AAA Automatic Weapons Battalion with Battery D, 209th Automatic Weapons Battalion attached established initial antiaircraft defense for vital bridges and XIV Corps installations. Headquarters and Batteries A and C, 209th AAA Automatic Weapons Battalion, were relieved of previous attachment and moved to the Manila area to complete initial defenses of the Novaliches Dam, Balara Water Filters, ponton bridges across the Pasig River, and Nichols Field.

C. SUPPORTING AMPHIBIOUS OPERATIONS AT SUBIC BAY AND NASUGBU:

The 120th AAA Group, with the 508th AAA Gun Battalion, 950th AAA Automatic Weapons Battalion, and Battery C, 227th AAA Searchlight Battalion attached, landed on 29 January 1945 as part of the XI Corps in an unopposed landing near San Narciso, north of Subic Bay, under Eighth Army Control. Antiaircraft defense was immediately established for the San Marcelino airstrip and supply dumps. No enemy air activity was encountered in the Subic Bay area.

The 11th Airborne Division landed at Nasugbu, Southern Luzon, under Eighth Army control, on 31 January 1945, with the organic 152d AAA Automatic Weapons Battalion (Air Transportable) and the attached Battery A, 102d AAA Automatic Weapons Battalion. The battalion initially provided protection for the beachhead, dump areas, Nasugbu airstrip, and the attached battery provided protection for vital bridges in the advance to south Manila.

A detachment of the 120th AAA Group and Batteries A and C, 950th AAA Automatic Weapons Battalion, supported the 151st Infantry Regiment in the landing on 15 February 1945 at Mariveles Bay on the southern tip of Bataan Peninsula. Four days later Battery A moved from Mariveles to Corregidor Island to provide antiaircraft protection thereon. Antiaircraft weapons were emplaced to provide terrestrial fire support at Mariveles and Corregidor, but only one 40mm gun was used on Corregidor. This gun fired 70 rounds on enemy troops in a ravine.

D. REGROUPING OF ANTIAIRCRAFT DEFENSES ON LUZON.

GHQ planned to move additional AAA units to Luzon, since those attached to Sixth Army were not sufficient to provide complete antiaircraft defense of the Clark Field, Florida Blanca, and Manila areas after they were secured. Since the advance was more rapid than was anticipated, GHQ was requested to move the units included in plans for defense of the above areas to Luzon immediately. Upon arrival at Luzon these units were attached as indicated below:

UNIT	DATE OF ARRIVAL	ATTACHED
102d AAA Brigade	11 March	Sixth Army
156th AAA Operations Detachment	11 March	102d Brigade
6th AAA Group	14 March	102d Brigade
35th AAA Group	14 March	68th Brigade
119th AAA Group	14 March	68th Brigade
507th AAA Gun Battalion	14 March	102d Brigade
382d AAA AW Battalion	14 March	68th Brigade
101st AAA AW Battalion	14 March	102d Brigade
Hq Btry & Btry A, 227th AAA SL Bn	19 March	68th Brigade
163d AAA Gun Battalion	21 March	68th Brigade
*513th AAA Gun Bn (less Btries A, B and)	25 March	102d Brigade
472d AAA AW Battalion	27 March	102d Brigade
734th AAA Gun Battalion	1 April	102d Brigade

*This organization arrived on Luzon without equipment because of last minute changes in operational priorities on shipping. Although subsequent shipping was scheduled to move this equipment to Luzon, it did not arrive while this unit was under Sixth Army control.

The 737th AAA Gun Battalion and the 725th AAA Searchlight Battery (Separate), to be attached to Sixth Army upon arrival on Luzon on 18 February (S ≠ 40), arrived on 13 May (S ≠ 124) without equipment due to changes in available transportation. These organizations were not employed tactically while under Sixth Army control.

On 15 March 1945, Headquarters Sixth Army issued orders charging the Commanding General, 102d AAA Brigade, with responsibility for antiaircraft defenses of the Clark Field, Subic Bay, and Manila areas. The Commanding General, 68th AAA Brigade, was given responsibility for antiaircraft defenses in all other areas of Luzon and also for furnishing antiaircraft artillery to provide terrestrial fire support in the corps zones of action. On 19 March 1945, GHQ orders named the Commanding General, 102d AAA Brigade, as Coordinator of AA Defense on Luzon in place of the Commanding General, 68th AAA Brigade.

In accordance with Sixth Army orders on 23 March 1945 (S # 72) defining the respective areas of responsibility, the Commanding General, 68th AAA Brigade, and the Commanding General, 102d AAA Brigade, regrouped antiaircraft units on Luzon as shown below:

102d AAA Brigade
156th AAA Operations Detachment

Clark Field:

14th AAA Group
518th AAA Gun Bn
471st AAA AW Bn
472d AAA AW Bn (less Btries B&D)
Btry B, 373d AAA SL Bn

Florida Blanca - Porac airfields:

6th AAA Group
734th AAA Gun Bn
950th AAA AW Bn
Btries B & D, 472d AAA AW Bn
Btry A, 373d AAA SL Bn

Subic Bay:

120th AAA Group
508th AAA Gun Bn
210th AAA AW Bn
725th AAA SL Btry (Separate)
(Awaiting arrival of equipment when unit passed from Sixth Army control)

Manila Area:

251st AAA Group
507th AAA Gun Bn
951st AAA AW Bn
101st AAA AW Bn
373d AAA SL Bn (less A & B)

68th AAA Brigade
144th AAA Operations Detachment

Lingayen Gulf Area:

197th AAA Group
70th AAA Gun Bn
161st AAA Gun Bn
222d AAA SL Bn (less Btries A&B)
35th AAA Group
198th AAA AW Bn
*Btries C & D, 470th AAA AW Bn
469th AAA AW Bn

To provide supporting units for the Corps zones of action:

119th AAA Group
163d AAA Gun Bn
209th AAA AW Bn
382d AAA AW Bn
Hq & Btries A and C, 227th AAA SL Bn

707th AAA MG Btry (Separate)
708th AAA MG Btry (Separate)

*Hq and Btries A and B, 470th AAA AW Bn, relieved from attachment to Sixth Army and attached to Eighth Army on 14 March 1945 for the landing at Panay.

Upon request of the Commanding General, Fifth Air Force, Battery A, 102d AAA Automatic Weapons Battalion (Air Transportable), was moved by air to Laoag airstrip on 24 March 1945 to furnish antiaircraft protection for the airstrip and air force radar warning installations. This area in northern Luzon was secured by Philippine Guerrilla forces and the airstrip was used as an emergency airfield for fighter aircraft.

On 24 May 1945, GHQ, SWPA, issued orders passing the responsibility for antiaircraft defense of the Manila, Clark Field, Florida Blanca, Subic Bay, Lingayen Gulf, and Laoag areas from the Sixth Army to the Allied Air Forces. Antiaircraft artillery units to carry out the antiaircraft defense in the above areas passed to control of the Allied Air Forces. The following antiaircraft units remained attached to the Sixth Army to provide support to corps and divisions:

68th AAA Brigade
144th AAA Operations Detachment
35th AAA Group
119th AAA Group
161st AAA Gun Bn
163d AAA Gun Bn
198th AAA AW Bn
382d AAA AW Bn
209th AAA AW Bn (Self-propelled)
Batteries A and C, 227th AAA SL Bn

E. SUPPORT MISSIONS OF ANTIAIRCRAFT ARTILLERY:

General

Since enemy air action on Luzon was negligible, use was made of antiaircraft artillery guns, automatic weapons, and searchlights for terrestrial fire and battlefield illumination in support of the corps. As Sixth Army troops on Luzon encountered well-prepared enemy positions in difficult terrain, corps and division commanders frequently requested antiaircraft artillery weapons to support their advances because the high velocity and flat trajectory fire of these weapons proved highly effective.

Antiaircraft 90mm Guns

On 17 February 1945 the 518th AAA Gun Battalion was attached to the XIV Corps to assist the corps artillery in firing on terrestrial targets

in the Manila area and to support the 40th Infantry Division west of Fort Stotsenberg and Clark Field. In the Clark Field area Battery A, firing mostly direct fire, expended 2304 rounds on 131 missions against enemy caves, troop concentrations, and gun positions at ranges from 5000 to 9000 yards. In the Manila area, Batteries B, C and D fired 66 missions expending 2874 rounds on night harassing missions and on direct fire missions against enemy bridges and gun positions. The battalion completed the mission on 8 March 1945 and returned to the antiaircraft defense of Clark Field.

Upon request of the XI Corps, the 734th AAA Gun Battalion was attached to the corps artillery between 9 April and 17 April 1945 to provide supporting 90mm harassing and interdiction fire, and counter-battery fire in the corps zone of advance in the Laguna de Bay area. In this eight-day period these three batteries fired 2990 rounds of 90mm ammunition in support of infantry and at occasional enemy boats in Laguna de Bay. Upon completion of this mission the battalion established the antiaircraft gun defense of the Florida Blanca airfield.

After the XI Corps secured the eastern shores of Laguna de Bay, the enemy resorted to infiltration behind and around our lines by waterborne groups under cover of darkness. To oppose this action Batteries B and C, 161st AAA Gun Battalion, complete with SCR 584 radar equipment, were attached to the 43d Infantry Division between S / 97 and S / 103 (16-22 April 1945) and emplaced in positions commanding Laguna de Bay. Two searchlights were also emplaced to aid in detecting night traffic, but fog over the bay each night prevented their effective employment. Because of fog, visual observation was impossible, necessitating fire by radar-trolled guns at ranges of 4000 to 8000 yards. In the six day period 680 rounds of 90mm ammunition were expended on 40 missions using radar-controlled gun fire. Successful destruction of targets engaged was indicated when enemy waterborne traffic rapidly diminished until it ceased.

Between S / 103 (22 April 1945) and S / 164 (22 June 1945), Batteries B, C, and D, 161st AAA Gun Battalion, were attached to the XI Corps to provide 90mm fire in support of the 43d and 38th Infantry Divisions during the drive on the Ipo Dam, Tawa Dam, and Marikina River areas. The enemy had a well-planned defense of these areas consisting of numerous caves, supporting gun positions, and trench systems that provided excellent targets for the high-velocity direct fire of 90mm guns. These three 90mm gun batteries expended 17,266 rounds of ammunition in the destruction of caves and fortified gun positions and in interdiction and night harassing fire during this mission, after which they moved to the Sixth Army antiaircraft rehabilitation center. The Sixth Army antiaircraft rehabilitation center was established at Luna, La Union, Luzon.

On S / 86 (5 April 1945) a battery of 90mm antiaircraft guns was attached to I Corps to provide terrestrial fire against fortifications in Balete Pass in support of the 25th Infantry Division. The mountainous

approaches to Balete Pass were stubbornly defended from heavily fortified positions. It was considered that 90mm guns could assist materially in destroying the elaborate fortifications if they were emplaced on certain mountain tops, crests, and ledges giving advantageous positions for direct fire. Since it was not practicable to move a 90mm gun battery from the antiaircraft defenses at this time, a provisional battery, equipped for field artillery firing, was formed with personnel from the 161st AAA Gun Battalion and weapons and equipment from base stocks. This battery was emplaced after division engineers constructed temporary roads to reach positions on certain summits. Between S / 86 (5 April 1945) and completion of the mission on S / 131 (20 May 1945), at which time this provisional battery was disbanded, 5213 rounds of 90mm ammunition were expended in direct fire against caves, artillery positions and fortifications.

As the drive on Balete Pass advanced, an additional 90mm battery was needed to furnish long range indirect fire on enemy road intersections, troop concentrations, and fortified positions. Battery A, 161st AAA Gun Battalion, was attached to I Corps on S / 102 (21 April 1945). This battery expended 4861 rounds in support fire until S / 146 (4 June 1945), when it moved through Balete Pass into the Cagayen Valley. In the Cagayen Valley this battery supported the 37th Infantry Division and the 6th Infantry Division until 6 August 1945 although control of these divisions passed from Sixth Army to Eighth Army on 1 July 1945. This battery expended 3046 rounds in support fire between S / 146 and S / 172 (4-30 June 1945).

The 163d AAA Gun Battalion expended 4786 rounds between S / 95 (14 April 1945) and S / 167 (25 June 1945) in support of I Corps artillery and the 33d Infantry Division advancing on Baguio firing at ranges up to 19,000 yards on enemy dumps, road intersections, and troop concentrations. On 25 June the battalion moved to the antiaircraft rehabilitation center.

Between S / 99 and S / 106 (18-25 April 1945), Battery C, 507th AAA Gun Battalion, fired 637 rounds of ammunition on fortified positions on Mount Oro in support of the XI Corps. After completion of firing this battery was returned to the antiaircraft defense of Manila.

Antiaircraft Automatic Weapons

Antiaircraft artillery automatic weapons were frequently used in direct support of advancing infantry forces by direct 40mm fire on enemy pillboxes and strongpoints, and .50 caliber machine gun fire from M-16 self-propelled mounts on enemy troop concentrations. Because of the rapid advance of the ground forces, the semimobile automatic fire unit did not have the desired mobility over the rough terrain. Then the single battalion of self-propelled automatic weapons with the Sixth Army was not sufficient to provide the support missions requested by the corps and division commanders, sufficient mobile fire units were provided by using M-2 40mm AA guns of the 198th AAA Automatic Weapons Battalion towed by the

M-16 self-propelled .50 caliber machine gun halftracks of Batteries B, C, and D, 209th AAA Automatic Weapons Battalion (Self-propelled). These improvised mobile fire units were grouped into provisional batteries. Battery A, 209th AAA Automatic Weapons Battalion (Self-propelled), equipped with 40mm guns on halftrack motor carriage M-3, was employed intact. These batteries provided excellent support and these weapons were used extensively as indicated below:

Date	Unit	Location	Division Supported
26 April to 23 May	Btry C, 198th AW Bn	Baguio Area	37th Division
6 May to 18 June	1 Btry, AW Provisional	Ipo Dam Area	43d Division
29 April to 23 May	1 Btry, AW Provisional	Baguio Area	37th Division
5 May to 18 June	1 Btry, AW Provisional	Marikina River Area	38th Division
6 April to 28 May	Btry A, 209th AW Bn	Villa Verde Trail	32d Division

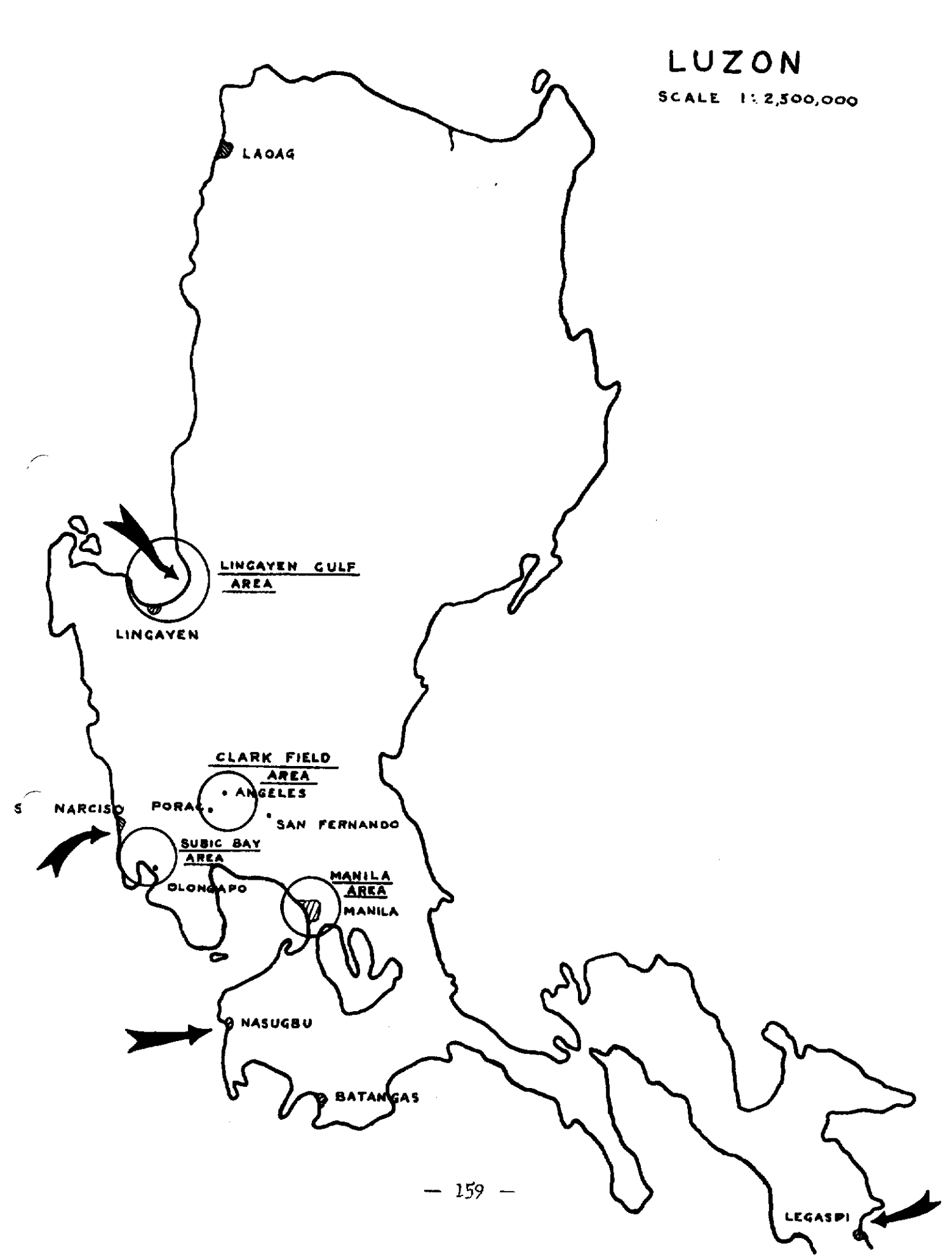
Upon completion of support missions the provisional batteries were dissolved and the weapons and personnel returned to the parent organization at the antiaircraft rehabilitation center.

Between 8 February 1945 and 16 February 1945 the 11th Airborne Division Artillery called upon the attached Battery A, 102d AAA Automatic Weapons Battalion (Air Transportable), to deliver 40mm fire on numerous enemy gun positions encountered during the division's advance into South Manila. Harassing fire was effectively placed on three enemy heavy caliber positions, and two troop barges were sunk while attempting to escape across Manila Bay. A total of 1883 rounds of 40mm ammunition was expended at ranges between 2000 and 5000 yards.

On 1 April 1945 the 158th Regimental Combat Team, with the attached Battery D, 210th AAA Automatic Weapons Battalion, landed at Legaspi. While no enemy air action was encountered, this battery engaged in continuous terrestrial 40mm fire support during the advance up the Bicol Peninsula. Targets varied from small groups of soldiers to enemy pillboxes and artillery emplacements at ranges of 400 yards to 4500 yards. From the landing until completion of the mission on 20 May 1945, this battery expended 3948 rounds of 40mm ammunition in direct support of infantry troops.

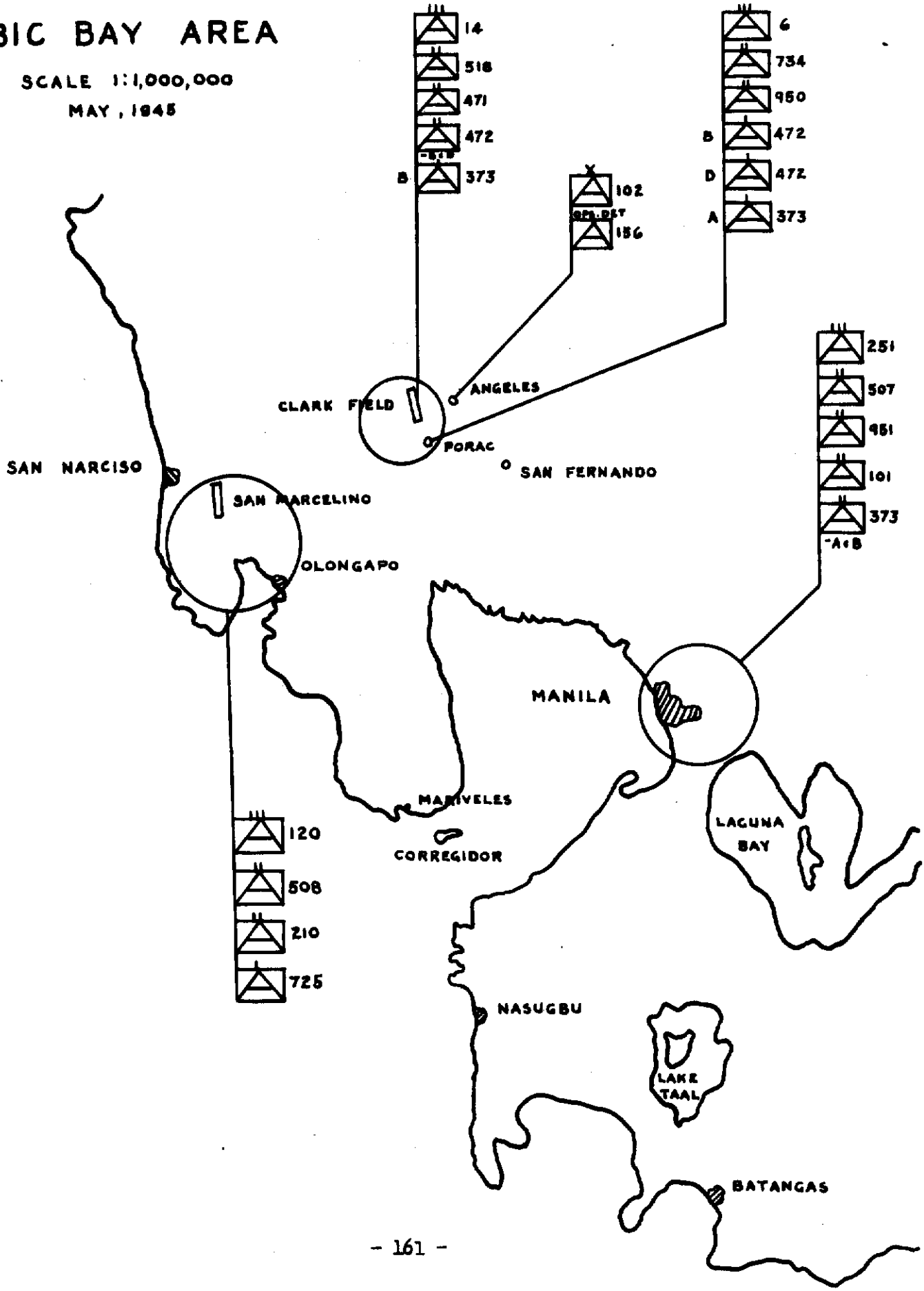
Antiaircraft Artillery Searchlights

The use of searchlights to provide battlefield illumination was initiated during the Luzon campaign. On 7 May 1945 the 43d Infantry Division was to attack over rough, mountainous terrain to secure the Ipo Dam, source of water for Manila, while the 38th Infantry Division was securing the stubbornly defended Marikina River area. Battery A, 227th AAA Searchlight Battalion, was attached to the XI Corps and employed in the 43d Division zone of action. These lights were emplaced in pairs from 1500 to 5000 yards behind leading infantry elements. By using a 4-degree spread beam and utilizing clouds and overcast, sufficient light was produced on the front lines to provide our troops increased vision and freedom of movement. Because the searchlights in the 43d Division zone of action proved to be of great aid to the front line troops, the Commanding General, XI Corps, requested additional searchlights. Battery C, 227th AAA Searchlight Battalion, was emplaced in the 38th Division zone of action on 24 May. Searchlights in the XI Corps zone of action provided nightly illumination for forward elements until 30 June 1945 when organized enemy resistance ended. After enemy artillery was neutralized, two searchlights were used for direct illumination of the Ipo Dam to aid our security forces in preventing enemy demolition squads from infiltrating to destroy the dam. Battlefield illumination proved very successful in providing better vision in forward areas, aiding infantry troops to detect enemy movement, aiding to orient infantry patrols in forward areas, assisting construction work in blackout zones, and aiding night evacuation of casualties from forward areas.


LUZON
SCALE 1: 2,500,000
LAOAG
LINGAYEN GULF AREA
LINGAYEN
CLARK FIELD AREA
ANGELES
PORAC
SAN FERNANDO
NARCISO
SUBIC BAY AREA
OLONGAPO
MANILA AREA
MANILA
NASUGBU
BATANGAS
LEGASPI

CLARK FIELD - MANILA - SUBIC BAY AREA

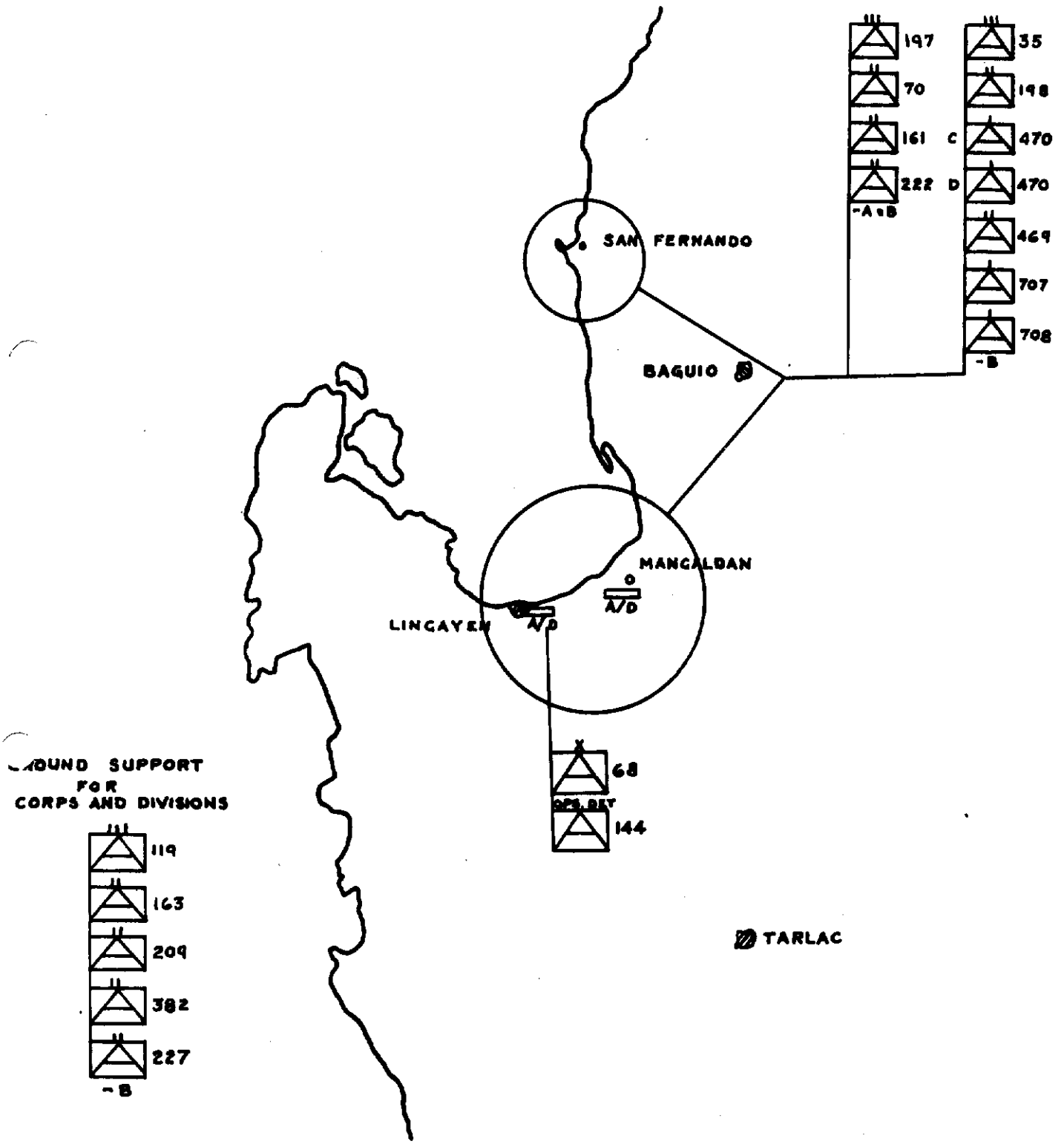
SCALE 1:1,000,000
MAY, 1945



LINGAYEN AREA

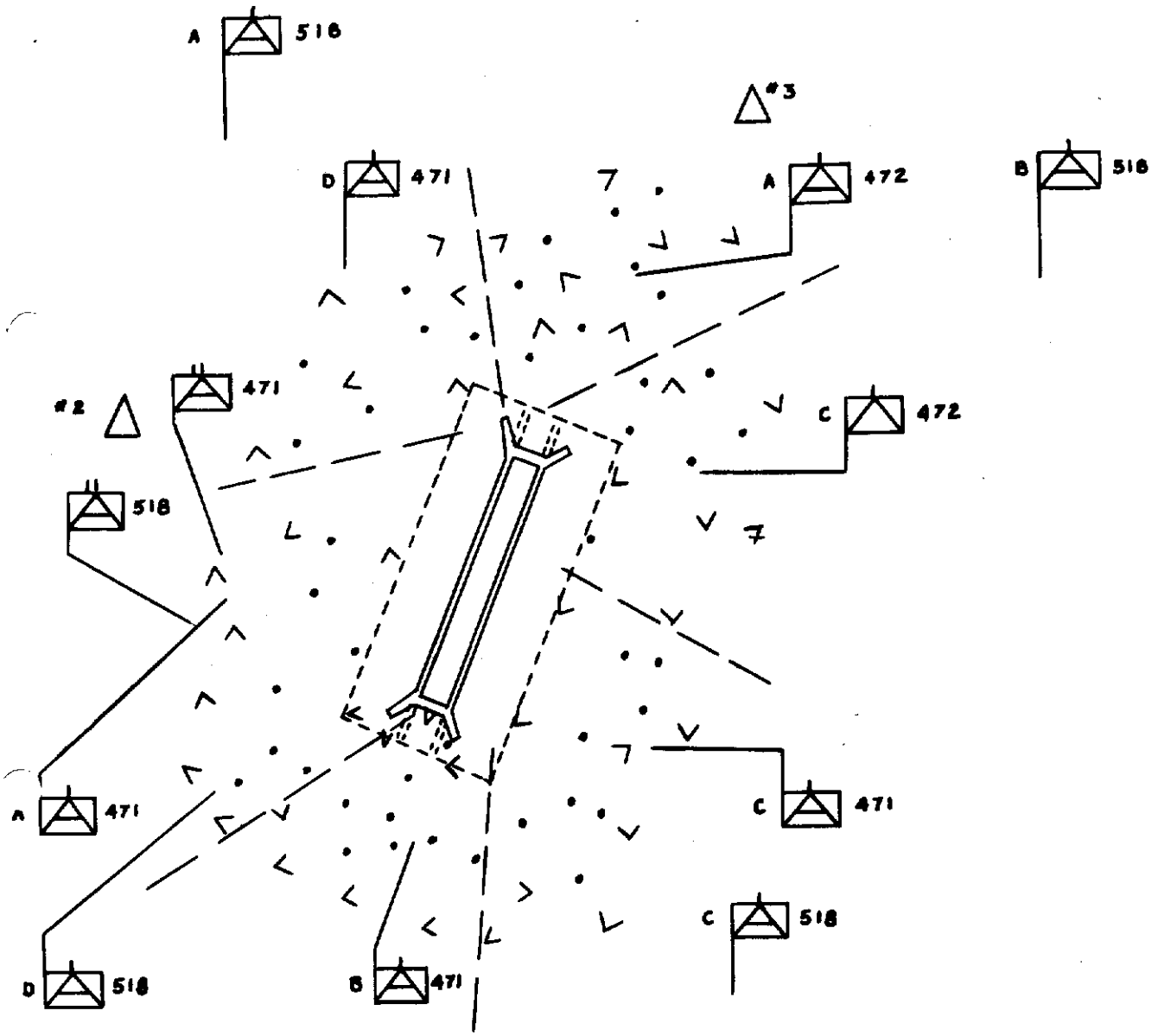
SCALE 1: 1,000,000

MAY, 1945



ANTIAIRCRAFT INSTALLATIONS
CLARK FIELD AREA

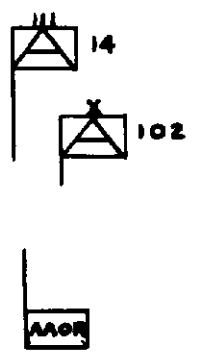
SCALE 1:50,000
20 APRIL, 1945



LEGEND

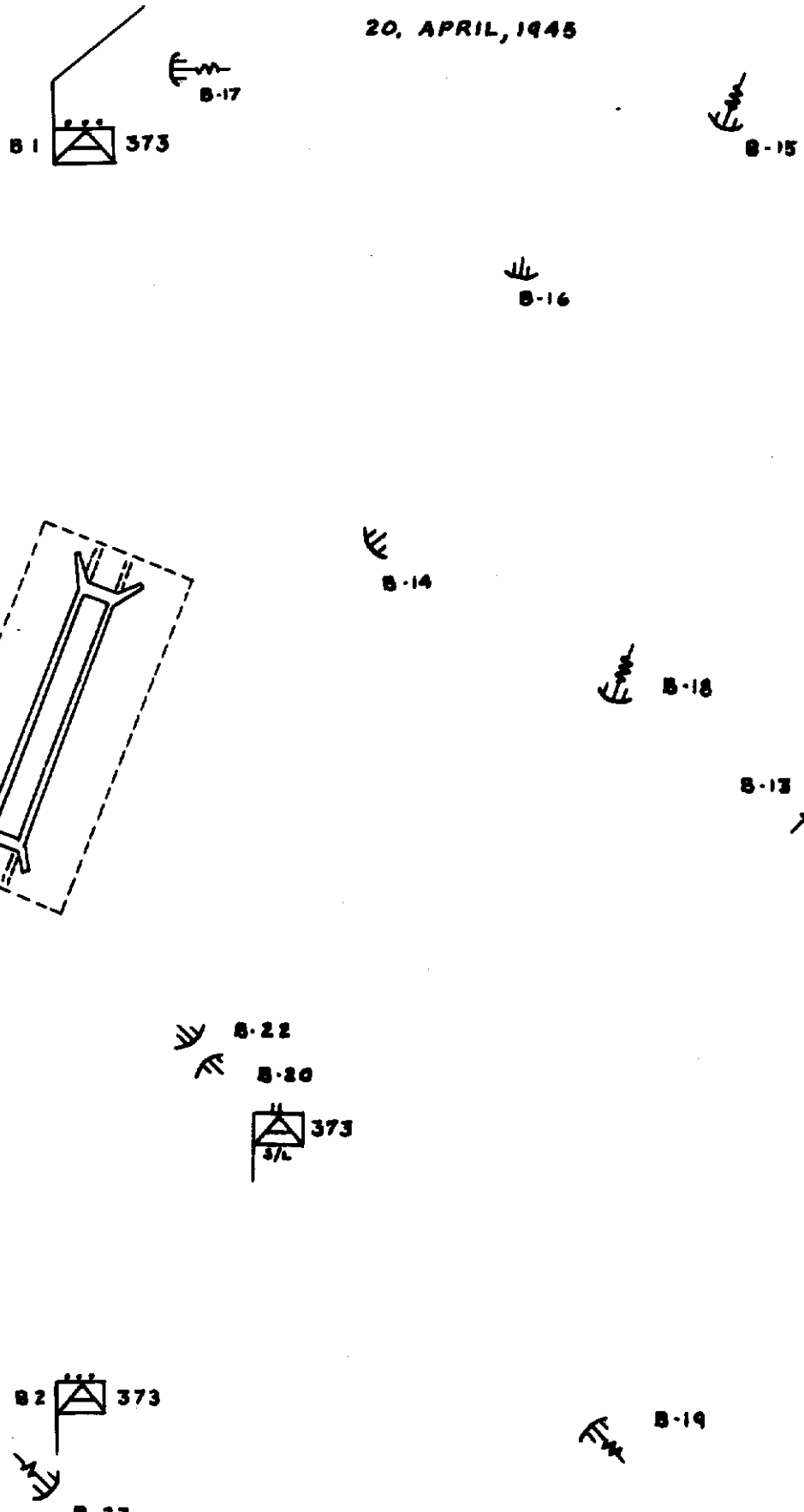
^ 40 mm Gun

• M-51. M.G.



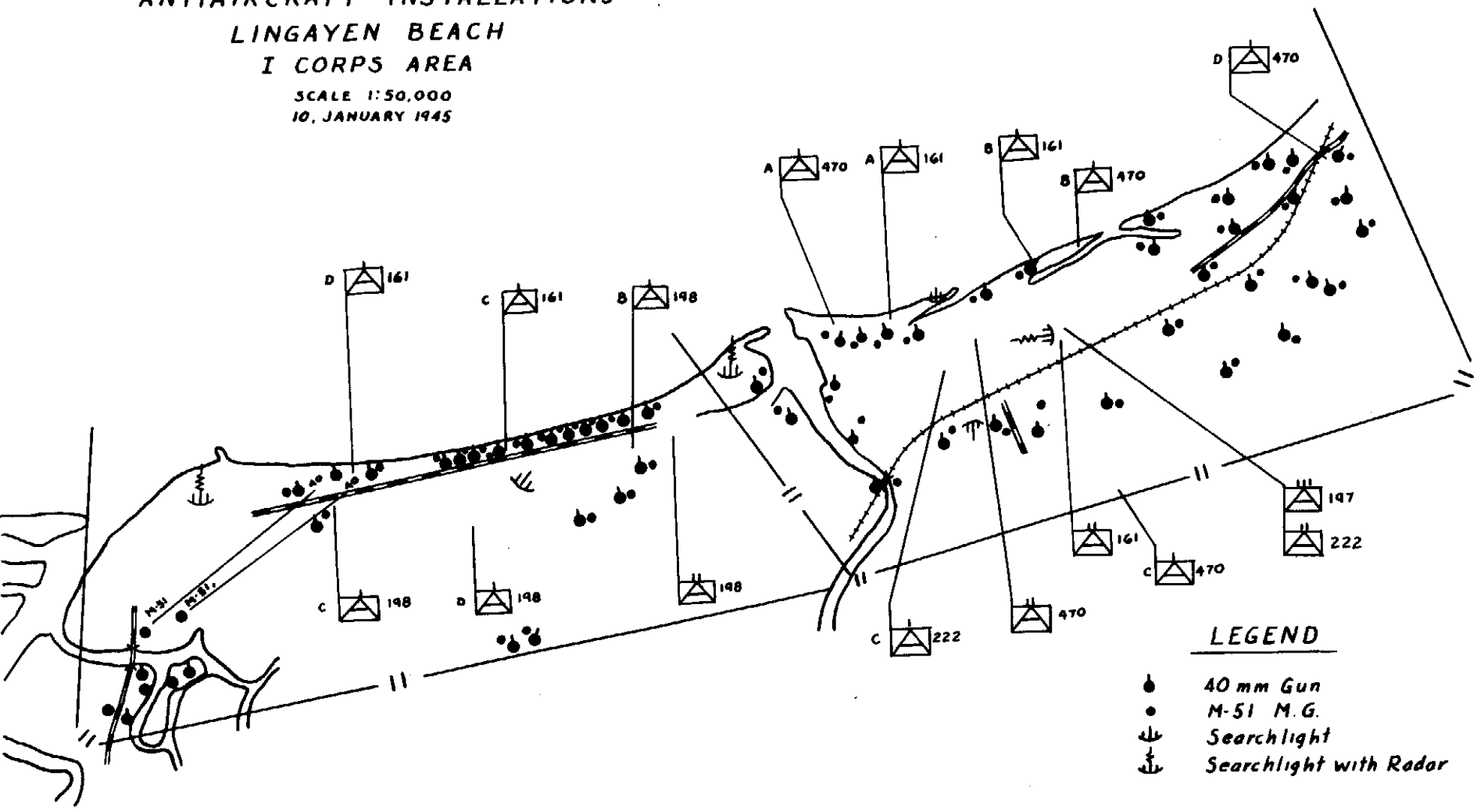
SEARCHLIGHT DEFENSE
CLARK FIELD AREA

20, APRIL, 1945



ANTIAIRCRAFT INSTALLATIONS
LINGAYEN BEACH
I CORPS AREA

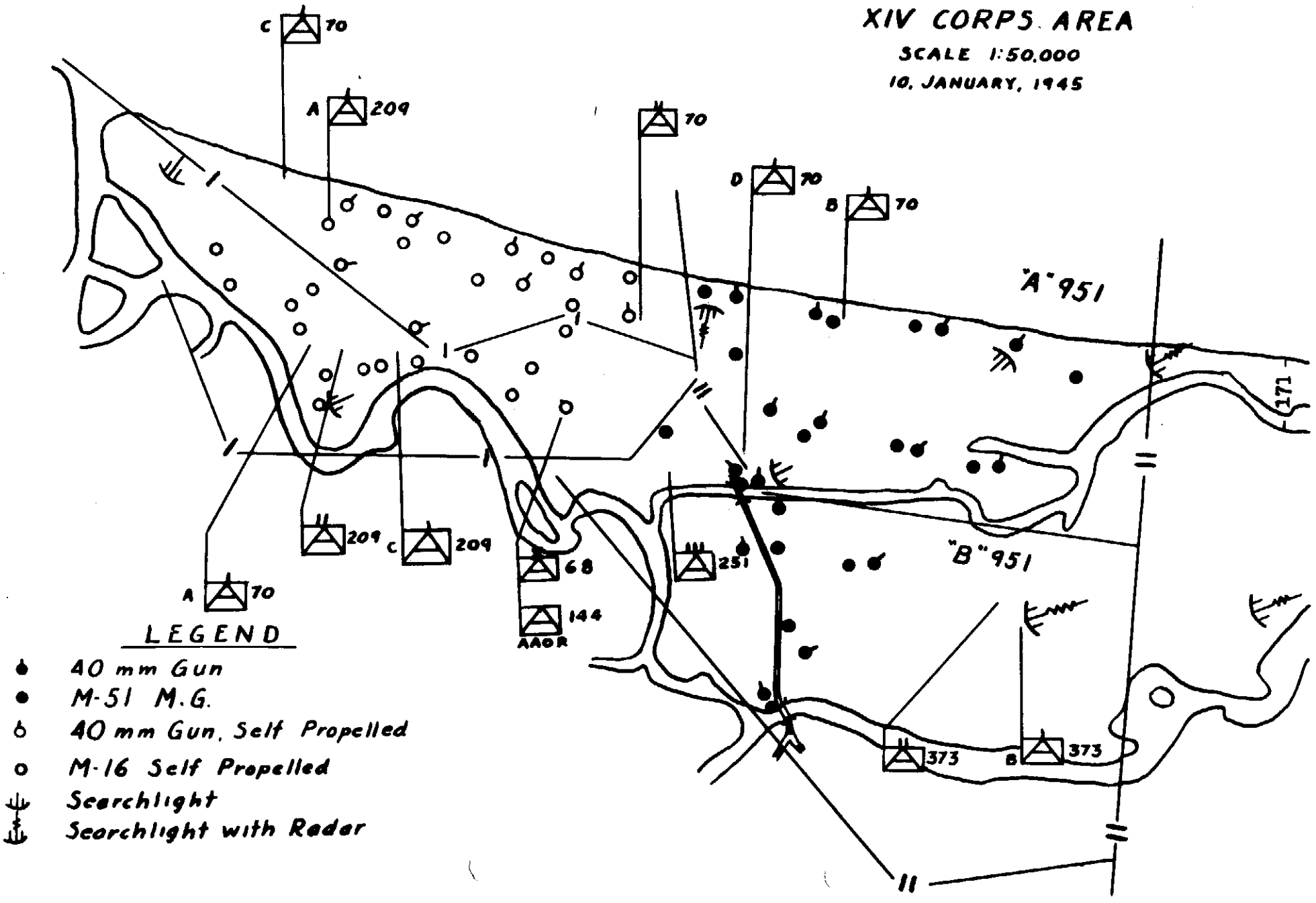
SCALE 1:50,000
10, JANUARY 1945



ANTIAIRCRAFT INSTALLATIONS
LINGAYEN BEACH
XIV CORPS AREA

SCALE 1:50,000

10, JANUARY, 1945



SECTION XII

STATISTICS

1. Foreword
2. Results of AA Fire
3. Percentage of Day and Night Raids
4. Raids by Time of Day
5. Altitude of Enemy Planes
6. Searchlight Engagements
7. Fire Control Methods, 40mm

1. Foreword

The statistics herein were computed from combat operations reports, ammunition reports, observers reports, and final campaign reports submitted by the various Antiaircraft Artillery Brigades and Groups.

During the early operations reports of action were not submitted or else were so meager in information that they were of little value. As a result, records prior to the Saidor operation are very incomplete. In all cases where a doubt exists, the policy of stating "unknown" has been pursued, rather than the policy of making a "guess" in order to make the records complete.

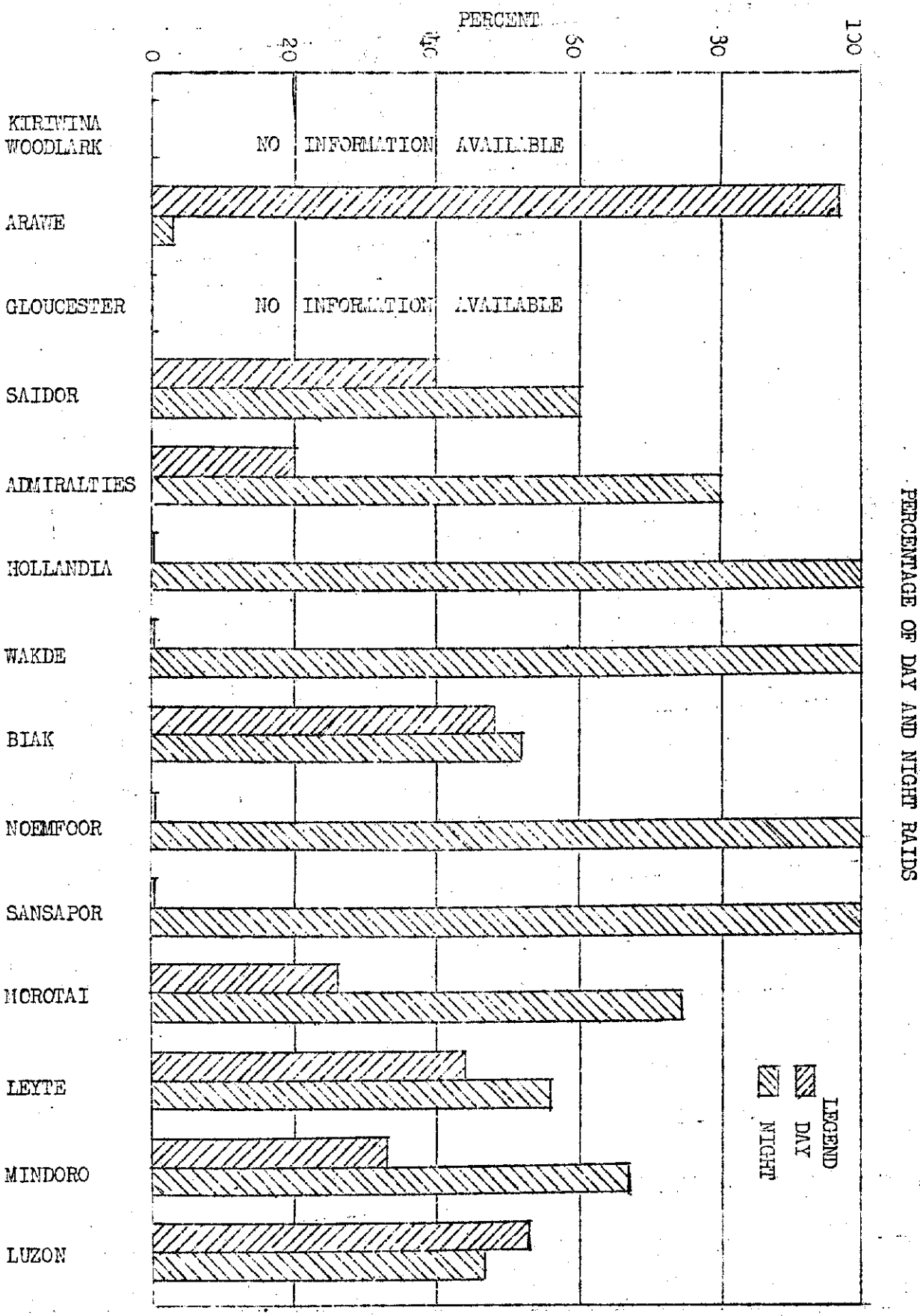
It will be noted that in some cases the closing dates for the statistics presented for operations do not coincide with the closing dates of the operations as stated in the narrative reports. Closing dates in the narrative reports are based on a cessation of organized enemy ground resistance. Closing dates for statistics, since air raids frequently occurred after the official close of the campaigns, are based on the date of relinquishment of command by Sixth Army.

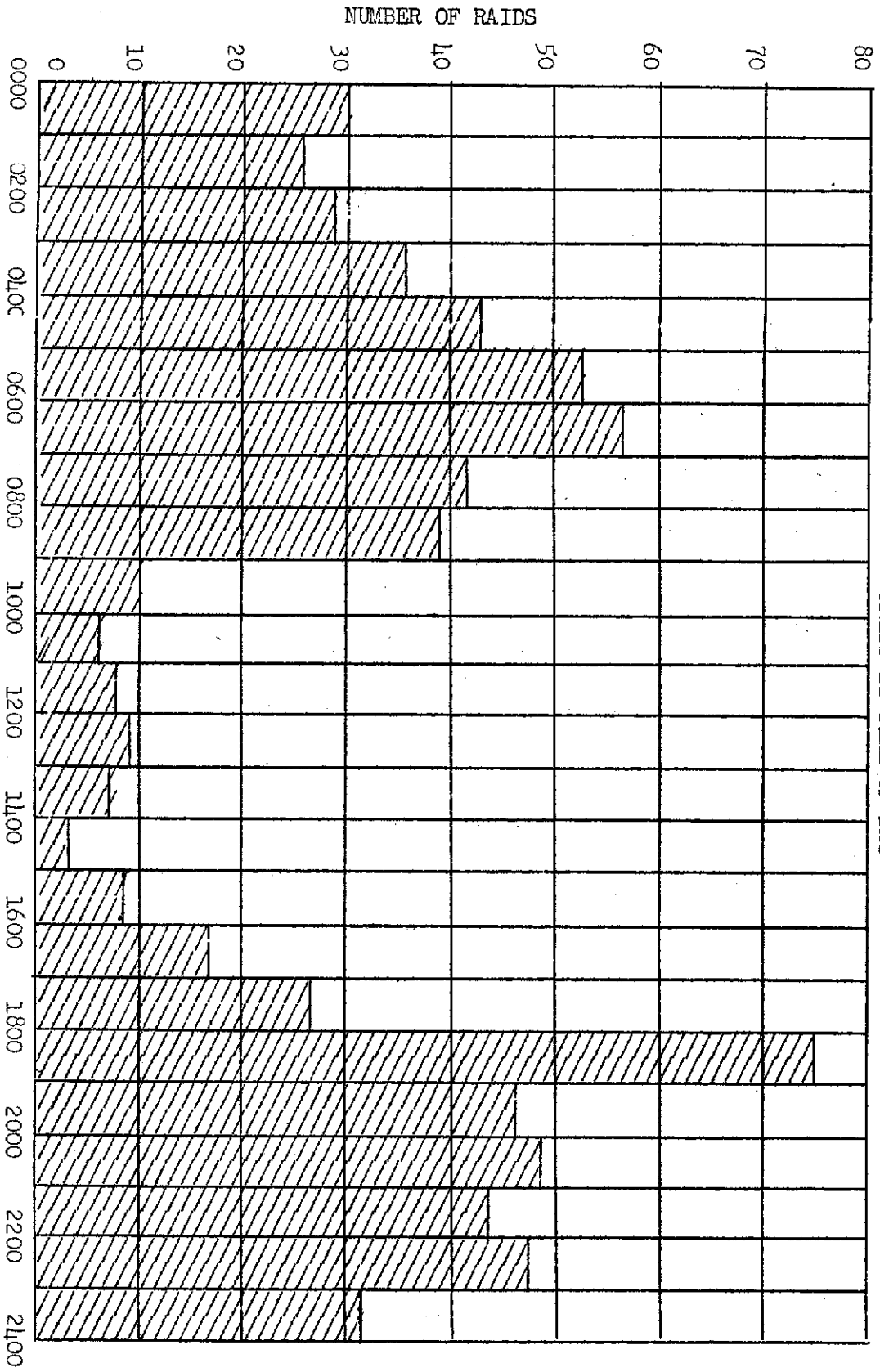
Every effort has been made in the compilation of these statistics to present as accurate and as complete an analysis of antiaircraft operations as possible.

RESULTS OF AA FIRE

OPERATION	TOTAL RAIDS	TOTAL SORTIES (PLANES)	TOTAL PLANES ENGAGED		RESULTS OF ENGAGEMENTS			ROUNDS FIRED			ROUNDS FIRED PER PLANE DESTROYED, PROB DEST, DAM			NO. DAYS IN AA PHASE OF OPN	AVERAGE ROUNDS FIRED PER DAY		
			DAY	NITE	DEST	PROB DEST	DAM	90 mm	40 mm	.50 cal.	90mm	40mm	.50		90	40	.50
Kiriwina-Woodlark*																	
Arawe	*	485	246	8	6	11	0	750	6406	77319	44	318	4548	66	11	97	1171
Gloucester*																	
Saidor	18	47	19	28	7	4	1	1279	1347	14599	106	112	1216	100	128	135	1460
Admiralties	5	5	1	4	1	1	1	0	3593	21700	0	1198	7233	80	0	45	271
Hollandia	2	4	0	4	1	0	0	487	452	11329	487	452	11324	46	16	9	246
Wakde	12	16	0	14	0	0	0	2670	4085	33305	0	0	0	129	20	32	258
Biak	39	110	45	51	25	9	3	5199	5622	294970	130	141	7374	110	47	51	2681
Noemfoor	13	13		13	0	0	0	487	458	12593	0	0	0	70	7	7	180
Sansapor	11	19		19	2	6	3	1688	1228	56460	153	111	5133	75	23	16	753
Morotai	22	40	10	28	7	3	2	1502	4850	72532	125	404	6048	25	60	194	2903
Leyte	495	908	400	508	249	111	129	27209	52427	561850	56	107	1149	67	406	783	8386
Mindoro	43	81	27	54	34	3	9	4867	2735	60764	106	59	1321	17	286	161	3574
Luzon	21	31	16	15	6	4	0	1779	1038	51358	178	104	5136	177	10	6	280
TOTAL	681	1759	764	746	338	152	148	47867	84241	1268829				962			
AVERAGE FOR ALL OPERATIONS											75	132	1989		50	88	1319

*Information not available.


PERCENT
0
20
40
60
80
100
KIRIWINA WOODLARK
NO INFORMATION AVAILABLE
ARAWE
GLOUCESTER
NO INFORMATION AVAILABLE
SAIDOR
ADMIRALTIES
HOLLANDIA
WAKDE
BIAK
NOEMFOOR
SANSAPOR
MOROTAI
LEYTE
MINDORO
LUZON
LEGEND
DAY
NIGHT
PERCENTAGE OF DAY AND NIGHT RAIDS


NUMBER OF RAIDS
0
10
20
30
40
50
60
70
80
0000
0100
0200
0300
0400
0500
0600
0700
0800
0900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
RAIDS BY TIME OF DAY

ALTITUDE OF ENEMY PLANES (in per cent)

OPERATION	0-3000'	3000'-10000'	10000'-20000'	20000'-30000'	Unknown
Kiriwina-Woodlark	No information				
Arawe	No information				
Cape Gloucester	No information				
Saidor	8%	64%	4%		24%
Admiralties	100%				
Hollandia		50%			50%
Wakde	19%	38%	12%	19%	12%
Biak	22%	39%	11%	3%	25%
Noemfoor	31%	23%	23%	23%	
Sansapor	26%	31%	16%	11%	16%
Morotai	33%	37%	3%	3%	24%
Leyte	39%	22%	18%	5%	16%
Mindoro	12%	21%	6%	1%	60%
Luzon	36%	26%	3%	3%	32%

SEARCHLIGHT ENGAGEMENTS

OPERATION	NUMBER OF COURSES ENGAGED BY SEARCHLIGHTS	NUMBER OF COURSES ILLUMINATED	PERCENTAGE OF ENGAGEMENTS ILLUMINATED
Kiriwina-Woodlark	No information available		
Arawe	No information available		
Gloucester	No information available		
Saidor	5	4	80
Admiralties	No searchlights employed on operation		
Hollandia-Aitape	1	1	100
Wakde	8	7	87
Biak	33	14	42
Noemfoor	3	1	33
Sansapor	17	11	65
Morotai	27	21	74
Leyte	151	125	83
Mindoro	14	13	93
Luzon	23	8	35

Note - Additional courses were engaged but do not appear in these statistics because clouds or overcast prevented determination of results.

FIRE CONTROL METHODS, 40MM

OPERATION	BATTERY ENGAGEMENTS			
	DIRECTOR CONTROL		ON CARRIAGE SIGHT OR TRACER CONTROL	
	NUMBER	PERCENT	NUMBER	PERCENT
Kiriwina-Woodlark	Information not available		Information not available	
Arawe	Information not available		Information not available	
Gloucester	Information not available		Information not available	
Saidor	1	11	8	89
Admiralties				
Hollandia	1	8	11	92
Wakde	1	7	13	93
Biak	5	7	65	93
Noemfoor	0		8	100
Sansapor	4	25	12	75
Morotai	23	33	46	67
Leyte	175	36	315	64
Mindoro	16	22	55	78
Luzon	6	18	28	82
TOTAL	232	29	561	71

SECTION XIII

LESSONS LEARNED

1. GUNS (90MM)
2. AUTOMATIC WEAPONS (40MM and .50 Cal.)
3. SEARCHLIGHTS
4. RADAR
5. MAINTENANCE
6. GENERAL COMMENTS

This chapter is based on a study of a number of observers reports, combat reports, and other documents relating to antiaircraft operations with Sixth Army. In general, technical comments on materiel have been held to a minimum since technical problems have been covered completely in reports submitted to the 14th Antiaircraft Command by gun, automatic weapon, and searchlight teams of that Headquarters. In some cases, documents studied have contained so much valuable material that they have been included in entirety as annexes to this chapter. In such cases it must be realized that the recommendations contained therein are not necessarily those of this headquarters.

1. GUNS (90MM)

a. Organization

There have been no adverse comments on the organization of gun batteries and battalions, save that many feel that a gun battalion, as soon as organized and equipped, should have a fully trained Signal Radar Maintenance Unit (type C) attached. It would be preferable to have this unit remain with the gun battalion during training, staging, operations, and until the gun battalion is disbanded or its type radars are changed.

b. Training

Training as conducted in the United States is believed to be basically sound. Most errors committed by units in this theater were due, not to having never been taught, but to neglect of past teachings. It was noted, however, that in many cases, long periods of time passed when units were not on operations, and when proper training facilities were not available. Such units suffered greatly in efficiency, particularly in the technique of gunnery. AAA training must be continuous when units are not engaged with the enemy.

c. Materiel

(1) Errors in leveling, orientation, and synchronization have been noticed to be very prevalent. In many cases this has been due to complacency on the part of the enlisted men and lack of supervision on the part of the officers. In many cases, attempts were made to correct the faults, but failure resulted because of a lack of knowledge of improved techniques. Some pertinent examples are as follows:

(a) In many instances level vials on the guns were found to be inaccurate due to maladjustment, or cracking and loosening of the plaster of paris in which they are set. This deficiency would have been quickly discovered had frequent checks been made with the gunner quadrant.

(b) Leveling of the gun is impossible unless the base plate has been firmly embedded in the ground. One method of obviating this difficulty is loosening of the earth beneath the base plate and the firing of settling rounds at high angles of elevation before the outriggers are extended, thus tending to seat the base plate firmly in the ground.

(c) When dirt is piled up level to the platform in an emplacement, the resultant pedestal depression forms a sump for drainage water which softens the ground, causing the base plate to settle. Some means must be provided for drainage.

(d) Data transmission cables continually exposed to dampness tend to fall rapidly below the accepted standard of resistance. It is recommended that cables be raised off the floor of the ditch in which they lie by some form of duckboards, or, if drainage of the ditches is impossible, placed on supports above the ground.

d. Tactics and Technique

(1) When firing registration fire while on field artillery missions it was noted that in heavy growth sensing of rounds of ordinary AA ammunition was practically impossible. It is recommended that the unit of fire for the 90mm gun always contain 2% T.P. ammunition, and that while on purely field artillery missions the amount be increased to 8% of the unit of fire.

(2) In one objective area (Arawe) 90mm units did not arrive until D + 45. During this time the area was subjected to numerous day and night attacks in which planes stayed just out of 40mm range. After receiving fire from the 90mm they came in on night attacks at high altitudes and took evasive action. It is recommended that, the tactical situation permitting, 90mm guns should be landed early enough in an operation so that batteries will be ready to fire by dark of D-Day. Enough batteries should be put ashore initially so that the entire beachhead is covered by the fire of at least one battery.

(3) In the Lingayen area on Luzon an enemy bomber was not fired upon by 90mm guns because, due to evasive action, data never settled down sufficiently to permit accurate fire. This plane bombed the Mangaldan airstrip with some success. As a result of this incident the following instructions were issued:

(a) If the tactical situation indicates that the primary objective of AA fire should be the destruction of enemy aircraft then commanders should withhold their fire until targets are within effective range and the fire control instruments indicate that accurate fire will be placed on the target. This is of particular importance when using T-74 fuzes.

(b) If the tactical situation is such that the primary objective is to prevent enemy aircraft from reaching the defended areas, then fire should be opened at maximum range in order to utilize the deterrent effect of this fire. It must be pointed out, however, that such fire offers only limited possibilities of destruction and may result in evasive action such that effective fire cannot be delivered at any time.

(c) In cases where multiple plane raids are prevalent, the decision to open fire at maximum range offers many advantages. Since formations of planes have limited maneuverability, evasive action becomes a less important factor. However, in cases where raids are conducted by single planes, or very small formations, it is considered that accurate and destructive fire is the primary requirement. Under this situation, the officer exercising fire direction should withhold fire until instruments indicate accurate data and the target is in effective range.

(d) Summation - AA fire should be brought to bear on aerial targets even though the course has not settled down, provided the battery commander believes the target will continue to maneuver in approaching the bomb release line. With non-maneuvering targets, unless in large formations, fire should be held until the data has smoothed out. In any event, no target maneuvering or otherwise, should be permitted to pass within range without being fired upon by AAA weapons--except where secrecy of position is paramount.

(4) It has been observed that, almost invariably, when gun batteries were equipped with the SCR-584—M-9 director combination, that to furnish M-9 data tracking heads were never used. Battery commanders preferred to rely on SCR-584 automatic tracking to furnish all data to the director, even in periods of good visibility.

2. AUTOMATIC WEAPONS (40MM and .50 Cal.)

a. Organization

(1) Comments.

(a) Many comments have been received advocating an ordnance section in the battalion headquarters. It has been

suggested that this section consist of a mobile repair shop and about three enlisted men, capable of performing third echelon work. It is felt, due to the large number of weapons (64), the large amount of fire control apparatus, and due to the distances frequently involved, that such a set-up would be economical of manpower and advantageous as far as tactical efficiency is concerned.

(b) Experience in employing separate machine gun batteries in the Luzon campaign has revealed that communications equipment was inadequate to tie properly the fire units and the batteries into the AAAIS, that transportation was inadequate save for semi-static roles, and that lack of an adequate supply echelon created difficult supply problems. The above factors, coupled with a definite lack of firepower, make it obvious that this type of unit has value only on missions of short duration which require movement by air. It is recommended that this type of unit be deleted from the tables of organization, since units of AW battalions (air-transportable) can take over the same missions with less attendant difficulties.

(c) The T/O ranks in the M-51 subsection of the 40mm fire unit are inadequate, especially since these two weapons, the 40mm and the M-51, are at times employed as independent units at some distance from each other. It is recommended that the rank of the M-51 personnel be upgraded to make them compatible with the importance of the job. It is believed that the M-51 Chief of Section should be a sergeant.

b. Training

(See paragraph 1b).

c. Materiel

(1) Comments.

(a) It has been found that M-45 quadruple MG mount transmissions overheat during prolonged power tracking to such an extent that the mount sometimes becomes "frozen." No solution short of redesign has been found.

(b) The M-7 trailer used as part of the M-51 is unsatisfactory for use in mud, deep sand, or passing over rough

terrain due to the small clearance of the carriage from the ground, and due to insufficient flotation of the tires. An entirely new type trailer is needed.

(c) The M-7 computing sight, although better than any other on-carriage sight, is not sufficiently accurate to justify deletion of directors from tables of equipment. (See 2d (2)). The ideal solution would be an on-carriage fire control system with an accuracy equal to that of the present off-carriage system (M-5 director).

(d) Comments made in 1c (1) are also generally applicable to automatic weapons.

d. Tactics and Technique

(1) Comments.

(a) Tactics and technique as taught at the antiaircraft artillery school are believed to be basically sound. The practice of at times using the 40mm gun and the M-51 as separate fire units is believed sound and advisable. Changes in T/O must be made, however, if this method of employment is to be standard. (See 2a(1)(c)).

(b) There is a tendency in many quarters to advocate deletion of directors (M-5 types) from tables of equipment. This is based on the following factors:

1. Scarcity of shipping space in amphibious moves.

2. Scarcity of motor transportation, save in mobile battalions.

3. The increased manpower to operate.

4. The increase in lack of mobility.

5. The frequent need for rapid movements.

6. The fact that in this theater it has been found that low-flying, fast moving targets frequently could not be tracked with the director. Targets were also usually maneuvering which made solution of the problem an impossibility for the director.

In spite of these disadvantages, however, it is felt that

until an on-carriage fire control system more accurate than the M-7 computing sight is developed, the M-5 type directors should be retained.

3. SEARCHLIGHTS

a. Organization

No comments.

b. Training

In general, the status of training of searchlight units in this theater may be said to have been only satisfactory. Especially in spread-beam illumination was this lack of training evident. (See paragraph 1b).

c. Materiel

(1) No comments are being made on the SCR-268 since it is obsolescent and already being replaced by the AN/TPL-1.

(2) The same comments apply to the searchlight trailer (M-7) as apply to the trailer (M-7) used to transport the M-45 quadruple machine gun mount. (See paragraph 2c (1) (b)).

d. Tactics

(1) Realizing the limitations of the SCR-268 as compared to the SCR-584, and having available a method of controlling searchlights from the SCR-584, tests were conducted to determine the proper employment of searchlights controlled by gun battery radars. A copy of such a study made by the 68th AAA Brigade is attached as appendix 1 to this section. It must be understood that this appendix is submitted, not as recommended doctrine, but merely to show some lines of thought in this theater. The advent of the AN/TPL-1 has nullified to a large extent the foundation for the thoughts expressed in the 68th AAA Brigade report.

(2) As a result of experience in this theater it is believed that searchlights should be eliminated for use with heavy guns, but should be retained for use with automatic weapons and for ground support missions. The SCR-584 and its high combat effectiveness has changed the problem of firing at night targets materially. Radar firing has proven to be of the same order of accuracy as visual firing with the aid of searchlights. By eliminating a portion of the searchlights

much shipping space, which can be used to advantage in loading more guns or automatic weapons, is made available. It is true that searchlights have a deterrent and glare effect, and that they have a definite use if the SCR-584 breaks down or is jammed. However, it is believed that the gain in shipping space more than offsets the disadvantages incurred by deletion of a portion of the lights.

4. RADAR

a. Comments

(1) Long operating hours of the SCR-584 in a AAAIS role entails increased maintenance and replacement of parts. Many of these parts have been difficult and, at time, impossible to obtain, especially in the early stages of an operation. Proper supply and early landing of signal radar maintenance teams will overcome this difficulty.

(2) Signal radar maintenance teams have not been able to completely fulfill their missions in this theater due to a lack of specialized test equipment and a lack of spare parts. These items were authorized but unavailable, such as volt-ohm-milliammeters and spare oscilloscopes. (See Maintenance).

(3) The full capabilities of radar equipment have rarely been attained, chiefly because of a lack of well qualified anti-aircraft personnel to operate the set and perform first and second echelon maintenance. Inspections have revealed level vials out of adjustment, with the chief operators unable to test for the deficiency or to correct it. One factor contributing to this situation was the natural reluctance of most unit commanders to accept well qualified men arriving from the States. These men were usually in the higher grades, and to accept them would have meant replacing men, who though inferior in technical skill, had been with the unit for months or even years. There was also the factor of not wanting to replace men of known ability, even though mediocre, with men of unproven ability. It is recommended that some standard of ability be set up by a central authority for highly technical personnel, and that no one be given the rank of such a position until that standard is achieved.

(4) Just as with other equipment, it was noted that insufficient attention was paid to leveling, orientation, and synchronization. This deficiency is attributable to lack of supervision. The work of the Chiefs of Section cannot be taken for granted.

Commissioned and non-commissioned personnel must be continuously indoctrinated with the idea that all orders must be followed up and spot checks continuously made.

(5) In the tropics much trouble was experienced with moisture accumulation in sets that were inoperative for long periods of time. In some operations, for example, waterproofing and loading of sets had to take place six weeks before contemplated use. Almost invariably these sets broke down electrically within a short time after operation began. These failures always occurred when the high voltage was switched on. It is recommended that after storage in moist climates, the initial warm-up period on low voltage should be increased in proportion to the length of storage.

(6) The AAA group and even brigade radar officers were normally conversant with only one type of radar, and frequently these officers had had no electronic (or even electrical) background on which to base their knowledge. It is recommended that training of a certain percentage of radar officers be on all types of AAA radar, and that, insofar as possible, these men not be selected for training without a background of electricity or electronics. It is further recommended that MOS numbers be allocated such that they will reflect the type, or types, of radar on which an officer is qualified.

5. MAINTENANCE OF ANTIAIRCRAFT ARTILLERY

a. Ordnance Maintenance

The maintenance of antiaircraft materiel by Sixth Army Ordnance personnel was handled differently, in some respects, than in any other theater. When it was apparent in the latter part of 1943 that, for some time, there would not be enough AAA materiel in any task force to warrant use of an entire AA maintenance company, a group of small AA maintenance teams was organized to be used in conjunction with other ordnance units of each landing force. Three such teams were formed for work at Kiriwina, Goodenough, and Woodlark Islands from personnel of the 253d and 267th Ordnance Maintenance Companies (AA). The teams were the sole means of maintaining AAA materiel in the landings at Arawe, Cape Gloucester, Saidor, the Admiralties, Aitape, Hollandia-Tanahmerah Bay, Wakde, Biak, and Noemfoor from December 1943 to August 1944. Usual procedure was to attach these teams, consisting of an officer and from three to seven enlisted men, to an ordnance company. The team, using the ordnance company's facilities, landed on D-Day and performed AA maintenance for the task force. Although handicapped by

lack of spare parts, maintenance tools and equipment, the teams furnished outstanding service and were able to perform exceedingly difficult repair jobs on guns, directors, and control systems for which no replacements were then available.

In July, 1944, four repair teams were activated into AA maintenance teams under T/O & E 9-500. The authorization of transportation, tools, and equipment listed in the T/O & E made these small units more nearly self sufficient. In addition to the four teams mentioned, four more were being trained as part of the 3073d Ordnance Service Composite Company in the USA.

A provisional detachment of the 307th Ordnance Maintenance Company (AA) was organized under the AA maintenance team T/O & E in early July and supported the Cape Sansapor landing in late July. Later, two of the regular 3073d teams furnished service for the five AAA battalions in the Morotai task force. By being attached to AAA troops initially, the two teams were able to have a shop set up and be ready for full operation on the evening of D-Day. The teams sent out repair parties based on reports of trouble sent in directly from AAA batteries. Later when better communications were ready, the teams reverted to ordnance control and set up at the force ordnance service center.

The need for skilled ordnance personnel to maintain AAA materiel was never more apparent than in the Leyte operation. Two 10 man detachments of the 267th Ordnance Maintenance Company (AA) landed on A + 2 in the X Corps area. They were able to do considerable repair work which was vitally necessary in view of the daily enemy air raids. Much the same situation existed at Dulag in the XXIV Corps area where a 10 man detachment of the Corps AA maintenance company arrived on A-Day with the 7th Division. All three detachments, however, lacked transportation, equipment, and spare parts. Only their expert improvisation kept all equipment ready to fire. In one instance a 90mm gun which was damaged by enemy action at Dulag was used to keep seven other guns in firing condition.

On Leyte, the advantages of having AA maintenance detachments in the field, often right with AAA troops, was conclusively proved.

Much trouble was encountered with 90mm remote control systems and generating units in Leyte. Burned out transformers in the remote control system amplifiers at one time deadlined 40% of the 90mm guns. After considerable experimentation, including the rewinding of the transformers, a field expedient to correct the trouble was devised by Army Ordnance and adopted for the Mindoro and Luzon operations. As a result, no more trouble of this type was encountered throughout the entire Luzon operation. Trouble

with M-7 generating unit throttle valves was cleared on Leyte and only minor cases of this malfunction occurred at Mindoro and Luzon. The major difficulty with generating units was lack of repair parts.

It is believed inadvisable to use AA maintenance companies by themselves in a large operation, since that type company as organized, is incapable of sending out the contact parties required to adequately service 5 - 7 AAA battalions and also carry on the service center work necessary to "back up" those 5 - 7 battalions. AA maintenance teams, had they been available on Leyte, would have been invaluable. At one time, approximately 65% of the AA maintenance personnel of the 267th AA Maintenance Company was on detached service lasting from seven days to three months. Neither the parent company nor its detachments was able to operate efficiently.

An AA maintenance team, organized from the 267th Ordnance Maintenance Company (AA) landed with AAA troops on Mindoro 15 December 1944, there still being no regularly organized teams available. This detachment performed outstanding work under trying conditions.

The assignment of both AA maintenance teams and ordnance AA maintenance companies to the Luzon force resulted in the best arrangement yet produced to properly care for the special needs of AAA materiel. Four teams of the 3073d Ordnance Maintenance Company landed on S-Day, 9 January 1945, attached to AAA troops of I and XIV Corps. They were ready to furnish service that evening and had contacted every AAA battalion. A detachment of the 253d Ordnance Maintenance Company (AA) landed soon after and furnished support in the Sixth Army Service Center. The entire 253d Ordnance Company was on land by S + 40 and proceeded to Manila to service a heavy AA concentration in the port and airfield area. AA teams, meanwhile, had covered I and XIV Corps advances and settled in the Clark Field, Subic Bay, and Batangas areas. In late February, the 307th Ordnance Maintenance Company (AA) arrived at Base "M" to service AAA concentrations in northern Luzon. With few changes, four AA maintenance teams and two ordnance AA maintenance companies maintained the 18 - 20 AAA battalions scattered from Batangas City to the upper Cagayan Valley with outstanding success from February to September 1945.

In July, when Sixth Army began planning for combat operations on the Japanese home islands, provisions were made to again use AA maintenance teams, eight this time, of the 3073d Ordnance Maintenance Company, followed by an Army AA maintenance company, for backing up those teams, and an ASCOMO AA maintenance company to handle work at the largest ASCOMO base.

Upon the Japanese capitulation plans for occupation were made. Since some AAA troops were to be included in the Troop List, seven AA maintenance teams were provided to garrison the widely scattered occupation points where AAA defenses were to be situated. Later, when AAA troops were almost completely eliminated, only two AA maintenance teams were included in the occupation force.

Problems encountered were no different in general than those reported from other theaters. One exception was the accumulation of moisture in multi-conductor cable plugs and receptacles. Considerable trouble with damage resulting from short circuits at cable connections was experienced at Saidor and Cape Gloucester, but by June 1944, all ordnance personnel concerned had instituted a thorough preventive maintenance program against moisture. As a result, moisture caused short circuits in cable plugs and receptacles dropped so sharply in the Philippine operations as to be negligible.

About 80% of the major difficulties in AA maintenance involved the lack of spare parts or special tools and testing equipment. Lists of spare parts for each task force were carefully prepared and submitted as requisitions for initial and resupply requirements. At no time until August, 1945, was the supply of parts more than 35-40% sufficient to meet actual needs during the New Guinea and Philippine campaigns. Receipts on re-equipment requisitions, however, in preparation for operations in Japan were far in excess of previous receipts and it appeared as though a sufficient stock would have been on hand for the Japanese landing.

The lack of special tools and testing equipment was critical from December, 1943, when complete special tool sets were ordered from USASOS, to September, 1945, when the same tool sets were again re-requisitioned on re-equipment requisitions. Less than 5% of the tool sets had been received in 21 months.

Lack of parts and equipment placed emphasis on improvisation. The following jobs were commonplace to the skilled personnel available in the Leyte and Luzon operations:

a. Rewinding of transformers and firing solenoids.

b. Rewinding of electric meter coils and overhaul of meter movements.

c. Manufacture of plug fingers and receptacles for power and data transmission cables and manufacture of insulating plates and separators for those cable plugs and

receptacles.

d. Overhaul and complete reclamation of non-standard testing sets and meters to make available substitute testing equipment suitable for AAA mechanics.

e. Adoption of Japanese manufactured meters and other equipment to be used in making testing apparatus, such as volt-ohm-milliameters and similar equipment.

The need for highly skilled personnel to repair the complicated electrical, mechanical, and hydraulic equipment peculiar to antiaircraft artillery had been recognized early in 1943 by the Army Ordnance Officer and he obtained qualified specialists. A continuous program of AAA maintenance training was set up and supervised by Army Ordnance. The skill exhibited by the mechanics of AAA maintenance teams 1-4, 3073d Ordnance Maintenance Company, and by the 253d, 267th and 307th Ordnance Maintenance Companies (AA), all of whom were used in New Guinea and Philippine operations, was a credit to the Ordnance Department.

b. Signal Radar Maintenance

(1) History.

For purposes of third echelon maintenance of radar sets, the War Department organized small teams charged with servicing radar equipment. Prior to 1 March 1944, ground radar was the responsibility of the Air Forces. Teams consisting of one officer and five enlisted men were made available to using units. The teams with little equipment, and no vehicles, were assigned to the various Signal Depot Companies (Avn). Upon request of Sixth Army, Air Service Command would attach a team to the searchlight or gun battalion requiring the service. In many cases one team was called upon to service more than one battalion; in this case the teams were attached to Army.

On 1 March 1944, ground radar maintenance and supply became the responsibility of USASOS. The radar teams were transferred into USASOS not as teams but as individuals. In preparation for the Hollandia-Aitape operation, Sixth Army requested a number of teams qualified on third echelon maintenance of SCR-268's. These teams were organized in USASOS from qualified radar repairmen and attached to Sixth Army as radar teams. One SCR-268 team serviced one searchlight battalion for that operation.

In May 1944, the signal radar maintenance units were organized and fully equipped by USASOS. There were the Type A units, qualified to service radar set SCR-268, the Type C unit for radar set SCR-584 and the Type D unit for radar set SCR-582. Authorized requirements were one Type A unit per searchlight battery, one Type C unit per gun battalion, and one Type D unit per two platoons of CA Surface Warning Battery. For subsequent operations Sixth Army requested a definite number of units by type on the above basis. These units, assigned to AFWESPAC, were attached to Sixth Army for further attachment to brigade and battalion.

For the planned OLYMPIC operation these units were assigned to Sixth Army and disposition was made by Sixth Army by assignment to battalions. It is suggested, if teams are available, that they be assigned to antiaircraft units prior to the unit being committed to an operation.

(2) SOP with AAA.

Most signal radar maintenance units (SRMU's) worked out an SOP for operating with AAA. An example of one such SOP is as follows:

(a) Battery radar maintenance personnel are responsible for first and second echelon maintenance.

(b) Signal radar maintenance units are responsible for third echelon maintenance and fourth echelon within the field limitations.

(c) Third echelon maintenance is to be interpreted as that maintenance which battery personnel cannot perform due to either lack of training or equipment.

(d) The SRMU will be physically located with all equipment at searchlight battery headquarters or gun battalion headquarters. The personnel of the SRMU will work out of the headquarters.

(e) The battalion radar officer will request the SRMU radar officer to service a unit radar set, giving the signal radar officer all the symptoms of the trouble. The battalion radar officer will call upon the SRMU after the battery personnel have gone as far as possible towards remedying the trouble.

(f) Third echelon spare parts will be stored by the SRMU and used whenever necessary.

(g) A weekly preventive maintenance inspection will be made by the SRMU on all radar sets under its responsibility. The preventive maintenance inspection report will be submitted to the battalion radar officer.

(h) The SRMU is responsible for the installation of all Theater or TD Modification Orders.

(i) The SRMU is responsible for the maintenance of all radar test equipment.

(j) The SRMU will replenish its third echelon spare parts by requisitions to base through BSO.

(k) No radar parts will be turned in to a signal depot as salvage until the SRMU has performed all work possible on these parts.

c. Engineer Searchlight Maintenance

At the beginning of the war with Japan there were no specially trained searchlight maintenance teams in the Southwest Pacific Area. The AA searchlight batteries that came to this theater in the early days of 1942 were dependent solely upon their own qualified technicians for maintaining their equipment. In those early days the supply of replacement parts, cleaning materials, and tools was critical because of priority to the European Theater of Operations, and organizations were often forced to purchase items from their personal funds to maintain their equipment.

To alleviate the condition that existed at the time the first forward step was taken in October of 1942 when six qualified searchlight technicians were assigned to the Engineer Supply Depot, Brisbane, Australia. These six men established the first engineer searchlight supply depot. They obtained substitute cleaning and preserving materials and supplies from Australian concerns who manufactured parts according to specifications. In February 1943, three trained engineer searchlight technicians arrived in the SWPA and were added to the organization at Brisbane.

The Engineer Supply Officer, USASOS, saw the need for a larger organization and on 15 July 1943, an officer with a searchlight equipment background was assigned to the Engineer Section, USASOS, with the mission of organizing a searchlight depot to handle

everything pertaining to AAA searchlights. As our forces were in New Guinea at that time, a depot was started at Milne Bay in August 1943 and completed in September.

Also in August of 1943, T/O & E 5-500 was received, authorizing the forming of engineer searchlight maintenance units, these units to consist of three enlisted men and a motorized shop truck. Four maintenance teams were authorized to be activated in the theater. Qualified AAA technicians were transferred to these teams but no motorized shop truck or supplies were available to equip the teams.

Supplies at that time were beginning to trickle in for the three searchlight battalions in the theater when, without any warning, nine searchlight battalions arrived with less than twenty percent of their authorized tools, supplies, and replacement parts. The new units had all requisitioned authorized supplies in the States, but had received back all requisitions with the notation of "all supplies are being shipped overseas, your requisitions will be filled upon arrival in the theater." There had never been sufficient supplies in the theater for three battalions, much less for the nine battalions that came to the theater in such poor shape, and, as a result, the Engineer Searchlight Depot had a very serious problem on their hands. Fortunately, by securing parts from the Ordnance, Signal Corps and Engineer Heavy Shop Companies, they were able to keep the equipment in working condition.

From October 1943 to December of 1943, one hundred and twenty complete searchlight sets, model 1942 with trailers, were received. Because of poor processing by the shippers in the States, every one of the 120 sets had to be almost completely rehabilitated.

In January 1944 authorization was granted to activate two more teams. Again the men were drawn from AAA units.

In April 1944, the teams were ready to be attached to AAA units going on operations. One team was attached to Battery "C", 236th AAA Searchlight Battalion, in the Biak campaign. Just prior to the operation these three men, in addition to the necessary maintenance work, were instructing the AAA searchlight units in the operation of the 1942 Amplidyne Searchlight with the SCR-268 radar.

Maintenance teams were assigned to all the task forces from the Biak campaign on.

Between June and October 1944 eight fully equipped teams arrived from the States, making a total of fourteen teams in the

theater, helping the maintenance problem considerably. However, resupply from the States remained inadequate.

In the Luzon campaign four teams came from SOUPAC with the AAA searchlight units. These teams did a commendable job in northern Luzon where enemy activity caused some damage to the AAA searchlights.

The resupply problem was still very far from being satisfactory. The engineer searchlight officer took three teams to Manila while the fighting was still going on and recovered a considerable quantity of searchlight equipment that had fallen into the hands of the Japanese when the Philippines fell in 1942.

Extensive use of searchlights in battlefield illumination in the Luzon campaign posed a constant maintenance problem, since lights and power plants were frequently used constantly from 1900 hours to 0600 hours for weeks at a stretch. The searchlights stood up very well, but the power plants tended to give trouble.

Initially, when teams were scarce, one team was attached to each searchlight battalion engaging in operations. As teams became more plentiful, one team was attached to each searchlight battery. Experience indicates that one team per battalion is sufficient where all units of the battalion are in the same area, and where the situation is static or semi-static. As the frequency of movements increases, and as distances between batteries of the battalion increase, it is believed advisable to employ one team with each battery.

The greatest source of trouble encountered by these teams was moisture and a lack of proper first and second echelon maintenance by the using units. Even moisture problems were largely solved by insistence upon, and training of, searchlight troops in proper maintenance.

Although an excellent job was done by these teams it is felt that inclusion of one officer in the T/O of each team would have materially added to their efficiency. This admittedly is wasteful of officer strength, and, as an even better solution, it is suggested that supply and maintenance of searchlights and related equipment be removed from the Engineers and transferred to the Ordnance. Searchlight maintenance personnel could then become part of the ordnance maintenance teams.

6. GENERAL COMMENTS

a. Fortification and Local Security Lessons

(1) Comments.

(a) Most AAA personnel and equipment lost as a result of action in the Leyte and Luzon operations have been due in whole or in part to faulty revetments or no revetments at all. As outstanding examples the following may be cited:

1. Headquarters and Headquarters Battery and Battery "D" of the ___ AAA Gun Battalion set up next to an ammunition dump. Revetting was poor. The dump was exploded by enemy action and loss in men and materiel was high. Choice of position was poor, but, even so revetments would have materially lessened the loss of men and equipment.

2. Battery "B", __ AAA Gun Battalion set up to defend an airfield. Revetments were poor. Within the same area were two automatic weapons positions which were well revetted. A C-47 taking off crashed on the position inflicting almost a complete loss to the 90mm materiel with no loss to the AW positions which were closer to the scene of crash than some of the gun materiel.

3. Headquarters and Headquarters Battery, ___ AAA Gun Battalion poorly revetted the SCR-584 and its power plant. The revetment consisted of bulldozed holes with parapets about one foot high reaching to the floor level of the SCR-584. A small party of infiltrating Japanese attacked and rapidly destroyed by burning the radar and power plant. Although lack of proper local defense was the main factor, lack of revetments was contributory, in that the radar crew, who were present in the van, could have defended from their position without retiring.

4. One battery of the ___ AAA AW Battalion set up to defend an extensive ammunition dump near Mabilao, Luzon. A lucky bomb hit exploded the dump, but no sections were damaged due to excellent revetments.

(b) Even the units some little distance behind the front had clashes with parties of Japanese. Where strong local

defenses were maintained, units suffered practically no losses and inflicted heavy casualties on the enemy. Where inadequate defenses existed our units suffered losses. The AA profited early in the operation by one such experience; after an enemy attack which resulted in destruction of an SCR-584, the establishment of a strong ground defense (not a token, but a working defense) became an SOP.

(c) The energy expended in digging fox holes around gun positions should be devoted to building substantial emplacements. Numerous air attacks, day and night, frequently indicate that men live and sleep in their emplacements.

b. Exercise of Command Lessons

(1) Inspections of positions frequently indicated unsatisfactory construction of emplacements and inadequate fields of fire. This condition could have been corrected if commanders and their staffs had made frequent inspections and insured that corrective action was taken.

(2) When two or more battalions are attached to a division the group commanding officer should send a representative with a small staff to assume the duties of division AA officer. The senior battalion commanding officer should not be given this job in addition to duties as battalion CO. All his efforts should be devoted to his own battalion.

(3) During the first few days of the Leyte and Mindoro operations there were continuous violations of army instructions prohibiting troops other than antiaircraft artillery from initiating fire on hostile aircraft unless troops in their immediate vicinity were being directly attacked by low strafing planes. Issuance of a memorandum by the task force commander to all troops, emphasizing the prohibitions on firing, quickly stops such firing.

c. Amphibious Operation Lessons

(1) Where group staffs fail to make early and frequent inspections, units tend to be lax in fortifications.

(2) In the Leyte operation one group suffered in efficiency from the fact that it had never trained with any of its battalions, and that two of its battalions were in one location, one battalion in a second, and the group in a third. Proper liaison was impossible.

(3) Excessive labor details for a task force (Morotai) furnished by elements of AAA left insufficient men to adequately prepare and maintain equipment during the final phases of staging. About 20% was the average unit strength employed on these details.

(4) AAA units staging and being transported with divisions other than those to which they are attached for an operation are apt to be mistreated in the matter of transportation and work details.

(5) There is frequently a failure to relieve AAA from tactical assignments and work details early enough so that reequipping, maintenance, and training for amphibious operations may be properly completed.

> Example: A battalion of a task force (Saidor) was moved to staging area eight days before it was to load for an operation. During these eight days large labor details were furnished to assist loading of other task force units. This situation handicapped the battalion in initial planning with other units, and particularly in coordination with fighter control and air warning units with which it had no prior experience. As a result, considerable time elapsed after the landing until proper coordination and smooth operation were accomplished. To insure efficient operation, fighter control, air warning and AAA should be given a reasonable opportunity to train together prior to an operation. They must be given adequate time to plan and work out joint communications and operational procedures in staging area.

(6) For Leyte, armament and operating personnel were loaded on different ships. The 485th AAA AW Battalion was unable to locate 18 .50 caliber machine guns until several days after the landing. It is recommended that a unit representative be placed on all ships carrying unit impedimenta which is not accompanied by the unit.

(7) At White Beach #3 in the Luzon operation LST's carrying the first scheduled 90mm battery and the first scheduled 40mm battery ashore could not beach due to beach conditions. The 90mm and 40mm loaded on AKA's were actually put ashore first and went into positions selected for LST units. It is recommended that in a situation where beaching conditions are uncertain, AAA equipment (90mm and 40mm) be loaded on both LST's and AKA's--not confined to one or the other.

(8) When equipment is ferried from ship to shore in lighterage, it is frequently unloaded wherever convenient on the beach and usually not at a central dump. This entails loss of time in locating such dumped loads. It is recommended that a reliable soldier accompany each load ashore.

(9) Unnecessary confusion and delay results where AAA troops and equipment are loaded separately. These constitute a tactical entity and must be loaded together.

(10) In the Leyte operation one AAA group was stripped of essential operational equipment when loading, the space being given to organic division units. A high priority of shipping space must be given AAA to insure efficient operation of an adequate air defense during the most crucial phase of an operation.

(11) A detachment of six officers and twenty seven enlisted men from a brigade headquarters landed at H ≠ 45 minutes. This operation (Leyte) has shown that landing a brigade headquarters on D-Day is undesirable. For all practical purposes a brigade is tactically inoperative until about D ≠ 5. However, the brigade commander and several staff officers should land on D-Day to familiarize themselves with the tactical situation prior to assuming control of the AAA defenses as directed by the Army commander.

(12) Some units were eating cold 10-in-1 rations as late as A ≠ 18 on Leyte. The minimum necessary kitchen equipment should be included in assault echelons so that hot meals can be provided.

(13) There were many problems which continually arose in loading for amphibious operations. These are adequately summed up in a report rendered by the 197th AAA Group. This report is attached as "appendix 2" to this chapter.

d. Relations with 14th Antiaircraft Artillery Command

All antiaircraft artillery units in the Southwest Pacific Theater were assigned to the 14th Antiaircraft Command. During the planning phase of an operation the Sixth Army request for the required antiaircraft artillery was sent to GHQ, SWPA. After approving the request GHQ issued orders attaching antiaircraft artillery units to the Sixth Army. These units remained attached to the Sixth Army as long as the area in which they were located or employed was in the Sixth Army zone of responsibility. Although units were attached to the Army, the 14th Antiaircraft Command controlled the allocation of controlled items of antiaircraft equipment and the rotation and replacement of personnel.

The 14th Antiaircraft Command conducted continuous training and research activities and disseminated information to all antiaircraft artillery units in the theater regardless of their attachment. In addition, the Command sent excellent instruction teams to units with combat forces to assist in the instruction and application of the most recent doctrines of maintenance, gunnery, and fire control, for guns, automatic weapons, and searchlights.

e. Miscellaneous

(1) A battalion headquarters and one battery of a gun battalion landed on D + 1 and went into position adjacent to an ammunition dump which was destroyed by a direct bomb hit. This caused about 40 AA casualties and the loss of much equipment including two radars. POL, gas, and ammunition dumps must be avoided if consistent with the mission.

(2) Operations reports and overlays (Combat Intelligence) have habitually arrived late or not at all in all operations up to and including the early phases of Leyte. Units persist in regarding such reports as an unnecessary evil. Units from individual gun sections through brigades must be indoctrinated, not only in the prompt submission of reports required by the next higher headquarters, but also in the submission of any fragmentary action or intelligence reports that will keep higher headquarters informed of the tactical situation.

HEADQUARTERS
68th AAA Brigade
APO 70

1 June 1945

1. TESTS CONDUCTED

Tests were conducted using the AAA defense equipment assigned to protect the airstrip at Lingayen, P. I. This defense consisted of the following units:

197th AAA Group
222d AAA Slt Bn (less 2 Batteries)
70th AAA Gun Bn
469th AAA AW Bn

One model 1942 Searchlight was attached to each of the four gun batteries in the defense for the experiment. Searchlights were sited to insure maximum coverage for low flying targets. Distances between SCR 584's and searchlights varied initially from fifteen (15) to thirty (30) yards.

A total of eight (8) searchlight missions were conducted during the period 3 May 1945 to 23 May 1945, the primary purpose of these missions being to develop and test proposed tactics for use of the SCR 584 - Searchlight combination. A variety of approaches, at altitudes ranging from 500 feet to 12000 feet, were used by the target planes. Multiple target missions were conducted with simultaneous approaches by two planes from different directions. Evasive action was taken by target planes before and after illumination.

Gun battery commanders released their lights for action after simulated bursts occurred when targets were suitable for gun fire (i.e., targets were flying a straight course, were not masked from the guns, and radar tracking and firing data were smooth). When the target was unsuitable for gun fire it was illuminated immediately if in range of the searchlight. After initial illumination of a target by gun battery searchlights, normal searchlight tactics were used against that target. All searchlights were released for normal action against targets unsuitable for gun fire, after such was determined by the gun battalion, and notification to that effect reached the AAOR. The importance of immediate action of carry lights on illuminated targets was stressed. This is necessary in order that gun battery searchlights be free to engage new targets if necessary, after initial illumination.

APPENDIX 1.

2. RESULTS

a. General: It was found by experiment that the distance between the SCR 584 and searchlight should not exceed fifty (50) feet to eliminate excessive parallax.

Accurate and frequent checks of orientation and synchronization were found to be necessary (par 5, Training Memorandum No. 1, 1 May 1945, Headquarters 68th AAA Brigade).

A thorough understanding by gun battery officers and attached searchlight personnel of the tactics for use of the SCR 584 - Searchlight combination is necessary to insure success in training and operation.

b. Medium Altitude Missions: Searchlights connected to SCR 584's made instantaneous pick-ups in all cases when equipment was properly oriented and synchronized.

c. Low Altitude Missions: Some targets entered the area undetected and were not illuminated. Terrain features were such that in these instances the target pip could not be seen due to fixed echos.

Attempts were made by gun battery searchlights to track low altitude targets with SCR 584 control. Trees and other masks frequently caused tracking to be very erratic. In several instances targets were lost in ground clutter. DEC proved more satisfactory for targets at very low angles of elevation.

Some low flying targets detected by the SCR 584 were partially masked and could not be visually observed when the searchlight was put in action. In these instances 584 control of the searchlight was necessary until the gun battery light was relieved of the target by a carry light.

When low flying targets flew very close to the battery positions, and rate of angular travel became excessive, the searchlight would lag considerably behind the target when SCR 584 control was used.

d. Evasive Tactics: Target planes took evasive action in all cases when illuminated. When maneuvering targets were illuminated with the searchlight automatically following the SCR 584 they could not get out of the beam at medium altitudes. Maneuvering targets, when illuminated with the searchlight automatically following the SCR 584 were sometimes lost at low altitudes due to erratic SCR 584 data. Tracking by DEC proved more successful in these instances.

Diving targets, in general, presented no problem. They were easily detected by the SCR 584 and easily followed with DEC. With SCR 584

control, some of these targets were lost at low altitudes as in the case of low flying targets.

3. CONCLUSIONS:

a. A revision of the old tactics for employment of searchlights is necessary in order to effect surprise gun fire with present equipment. The SCR 584 Searchlight combination will accomplish this result.

b. The use of the SCR 584 Searchlight combination provides the accurate pointing for the searchlight necessary to insure instantaneous pick-ups.

c. The probability of low level attacks at night being unilluminated will be materially reduced with the use of the SCR 584 Searchlight combination.

d. Intensive training, especially for low level attacks is necessary in order to gain proficiency in detecting and illuminating targets and to properly coordinate gun, searchlight, and automatic weapons battalions.

e. Control of initial use of searchlights on any target suitable for gun fire should be by the gun battery commander or commanders engaging the target.

f. After searchlights initially go into action against a target under control of gun battery commanders, normal searchlight tactics should apply for that target.

g. Tracking of targets unsuitable for gun fire should revert to DEC after initial pick-up in order to allow the SCR 584 to resume search for new targets.

h. Lights used in combination with the SCR 584 must be relieved of targets by other lights as soon after pick-up as possible so as to allow SCR 584 controlled searchlights freedom to engage new targets if necessary.

i. Searchlights should not be placed more than fifty (50) feet from the SCR 584 to minimize the effect of parallax.

j. In the event targets approach the area that cannot be engaged by gun fire, normal searchlight tactics should apply.

/s/ Charles A. French
/t/ CHARLES A. FRENCH
Brig. Gen., U.S. Army
Commanding

HEADQUARTERS
197TH ANTIAIRCRAFT ARTILLERY GROUP

APO 70
26 March 1945

SUBJECT: Problems encountered in Loading and Unloading during M-1 Operation.

TO : Commanding General, 68th AAA Brigade, APO 70.

In compliance with letter 24 March 1945, subject as above, the following report is submitted.

1. LOADING PLANNING

a. The discussion herein is confined to the loading at Aitape of the following units by the 43d Infantry Division.

Hq & Hq Btry, 197th AAA Group
470th AAA AW Bn
161st AAA Gun Bn
222d AAA Slt Bn (less Btries A & B)

b. The loading of the 198th AAA AW Bn was conducted at Sansapor by the 6th Infantry Division.

c. The units at Aitape constituted all the AA attached to units of the I Corps with the exception of the 198th AAA AW Bn.

d. The tactical plan called for the attachment as follows:

UNIT	ATTACHED TO	LANDING BEACH
Hq & Hq Btry, 197th AAA Group	I Corps	White 3
Hq & Hq Btry, 222d AAA Slt Bn	I Corps	White 3
Btries A & B / ½ Hq & Hq Btry 161st AAA Gun Bn	43d Inf. Division	White 3
Btries C & D / ½ Hq & Hq Btry 161st AAA Gun Bn	6th Inf. Division	Blue
470th AAA AW Bn	43d Inf. Division	White 1 & 3
Btry Hq & 1st Plat. Btry C, 222d AAA Slt Bn	43d Inf. Division	White 3
2d Plat. Btry C, 222d AAA Slt Bn	6th Inf. Division	Blue

APPENDIX 2.

e. Responsibility for loading all units at Aitape was given to the 43d Infantry Division regardless of attachment or destination.

f. Prior to 1 November 1944 all units had complied with requests of 8th Army, I Corps, and 43d Infantry Division for logistical data to assist in allotment of shipping. Submission of detailed small unit logistics were withheld until the receipt of the approved plan of employment of AAA on the far shore. By 25 November 1944 computations were complete.

g. It is the opinion of this headquarters that insufficient consideration was given in the planning and execution of loading of AA units of I Corps and 6th Infantry Division which were staging at Aitape.

h. Staff officers of the divisions were admittedly not familiar with AA tactics, organization, or equipment. Precautionary measures of handling loading and unloading equipment such as gun fire control equipment, radar, and searchlights were accordingly deemed unnecessary. The fact that AA equipment required specialized personnel, and that the separation of men and equipment might mean the inactivity of weapons was not fully appreciated. The opinion was expressed by responsible officers, that AA would not be important to the success of the operation because the air threat was negligible. Such was found to be the case, but if the opposite had been true, as could have been reasonably expected, the AA would have been seriously handicapped.

i. Changes to the plan were constant and of considerable magnitude. In practically all cases no definite information as to characteristics of various types of ships was available until the arrival of the shipping. An instance of this occurred in the arrival of LST's with pontoons at the rail. This directly affected the adopted plan of mounting AW on weather decks as AA protection. In practically all cases, the troop carrying capacity of vessels used in planning was greater than the actual capacity which was determined when the ships arrived.

j. The final loading plan adopted was approved with reluctance by this headquarters. The plan was believed workable, but in several respects it left too little margin of safety in the event that some minor detail was overlooked in the execution of the plan, or in the event of damaging enemy action.

2. LOADING

a. The policy followed by the 43d Infantry Division in general was that the unit having the bulk of the cargo on a ship furnished the ship TQM, and the senior officer aboard was the CO of troops. This proved somewhat difficult in the case of AA units as AA material and personnel from Aitape alone were loaded on 19 separate vessels.

b. The decentralization of loading authority to the TQMs of individual ships resulted in much lost time and effort. Surf conditions at Aitape beach were poor, and this combined with a shortage of lighterage, increased the need for direct loading control at the beach. The effect of the lack of such coordination and control was particularly felt by AA units because of the dispersion of small units throughout the shipping.

c. No criticism of individual officers is implied, but it is desired to point out that lack of coordination between troop COs and TQMs; lack of understanding of loading problems involving critical AA material; the making of loading decisions which directly involved the tactical employment of equipment without consultation; all contribut difficulties which it is believed were avoidat.

d. When the 20 day delay in sailing was announced on 6 December, considerable AA equipment was already loaded or in the loading slots awaiting loading. It is believed that the period of over one month had a deleterious effect on the material particularly radar.

e. In spite of difficulties described briefly above, the loading of material and equipment was completed in the time allotted.

f. As contrasted with the loading of equipment, the loading of troops was well organized and conducted.

3. UNLOADING

a. In the unloading phase, the most serious difficulty due to faulty loading was found in the loading of Hq units of the 197th AAA Group, 222d AAA Slt Bn, and 161st AAA Gun Bn. These units had been stripped to a bare minimum of men and equipment, all mobile loaded, to provide only that necessary for vital operations, AAAIS, and establishment of AAOR on S-Day. These elements had been assured of loading for high priority unloading by TQM at Division, however the ship TQM had <u>not</u> been so informed. Over the protests of the AA

officer present, these critical vehicles were used to fill in odd spaces in hatches between decks, and deck load. As a result of this, none of the important AAOR or communications equipment reached the beach until 1600 hours on S + 1.

4. COMMENT: LOADING AND UNLOADING

a. The loading of Btries C & D and ½ Hq & Hq Btry, 161st AAA Gun Bn, and the 2d Plat. 222d AAA Slt Bn on one ship for the 6th Infantry Division at Blue Beach. If this ship had been prevented from unloading, damaged or sunk by enemy action enroute, all of the 6th Infantry Division heavy AA and S-Day Slts would have been lost. This would have meant the loss of the following percentages of Corps AA.

SCR 584	- 40%
SCR 268	- 33 1/3%
90mm guns	- 50%
Slts	- 25%

b. 84% of the personnel of 2d Plat. Btry C, 222d AAA Slt Bn who were to land at Blue Beach with 6th Infantry Division were loaded on a transport unloading in the White Beach transport area instead of on the ship carrying the searchlight and radar equipment.

While offering every opportunity for a serious slip-up this difficulty was overcome by ferrying the men from one transport area to the other and loading them aboard the ship carrying the equipment. This was done on S-Day immediately after anchoring, and was accomplished satisfactorily.

c. Ammunition: 2 u/f were carried with each 90mm battery, approximately ½ of this was mobile loaded. 2 u/f were loaded by 43d Infantry Division to arrive in the objective area on S-Day, and 1 u/f to arrive in the objective area on S + 4. The 2 u/f loaded by the Division were all loaded for, and unloaded at, White 3, although 2 firing batteries were at Blue Beach. If lateral communications had been impossible, and enemy air reaction as strong as anticipated, ammunition resupply for the two batteries at Blue Beach would have been extremely difficult. However, ammunition resupply was not necessary.

d. The practice of requiring AA troops to remain aboard ship to unload bulk cargo other than their own, is seriously detrimental to the performance of AA missions. Two different

instances of this occurred in the I Corps area. Units affected were the Hq & Hq Battery, 161st AAA Gun Bn, and 1st Plat. Battery C, 222d AAA Slt Bn. One SCR 268 was delayed in setting up for operation approximately 48 hours because the personnel were used for unloading detail. Two officers, and approximately thirty enlisted men, Hq & Hq Battery, 161st AAA Gun Bn were held aboard as unloading detail after their equipment had been unloaded.

5. RECOMMENDATIONS

On the basis of experience, and observations made during the planning, loading and unloading phase of the M-1 Operation, the following recommendations are presented:

a. It is recommended that higher headquarters attach battalions to the Group with which they are to work by order. In this instance, on numerous occasions, the 43d Infantry Division dealt directly with battalions on matters which were of immediate concern to Group. As the composition of AAA Groups changes frequently, it is believed that such an order of attachment would clarify the proper command echelons to Corps and Division Commanders.

b. It is strongly recommended that the policy adopted by I Corps of attaching units of the Corps AA to Divisions without limitations be changed to attachment of AAA units to divisions for transportation only. The requirements of divisions for AA protection can be readily correlated by Corps AA Officer and a coordinated defense planned initially, whenever division beachheads are contiguous.

c. It is recommended that whenever a unit such as a Division is responsible for planning and execution of loading involving AA units that an officer of field grade, and an assistant, as representatives of the senior AA Commander be placed on temporary duty with the planning staff of the higher unit. Reasons for this recommendation as follows:

(1) The usual tactical requirement of loading AAA on many different ships.

(2) The peculiarities of AA equipment and the variety of sizes, shapes, and tonnage.

(3) The special precautions necessary in loading and unloading.

(4) To keep the senior AA Commander informed of all phases of planning and loading.

(5) To channelize requirements for logistical data to the AA units, and correlate and check data received from AA units. In general to serve as liaison between Division TQM and AAA units.

(6) To coordinate the activities and relations of officers of subordinate AAA units and ship loading officers during the loading.

d. It is recommended that greater effort be made to procure early and accurate information of ship characteristics, particularly troop carrying capacity.

e. It is recommended that the mission of assisting AAA units to unload and emplace equipment be given to specific engineer units.

f. It is recommended that in a situation where beaching conditions are uncertain, that AA equipment (90mm and 40mm) be loaded in both AKA and LST.

Note: This was demonstrated at White 3 when LSTs carrying the leading 90mm battery and the first scheduled AW battery could not beach, and the 90mm and 40mm equipment loaded on AKAs arrived first and went into positions selected for the LST units.

g. It is recommended that one ship's cargo be all designated for one beach. Note: Equipment of Hq & Hq Battery, 161st AAA Gun Bn was designated for White Beach but was loaded on a ship carrying Blue Beach cargo. Apparently due to confusion among lighterage crews, it was dispersed between White and Blue Beaches. Equipment essential for tactical operation was finally assembled at White Beach on S + 3.

h. It is recommended that AA troops be retained as unloading details only until AA equipment is unloaded. AA officers and men were unloading bulk cargo until S + 5.

i. It is recommended that the necessity for priority unloading of AA Hq units be impressed upon units to which AA is attached. Note: The impression seems to be current that higher Hq of other arms consider a battalion or Group Hq to be primarily an administrative unit and consequently unnecessary on S-Day.

6. REAR ECHELONS

a. The S ≠ 2 echelon was not unloaded and equipment available until S ≠ 6.

b. The S ≠ 12 echelon was unloaded by S ≠ 22.

c. The S ≠ 35 echelon was received S ≠ 59.

d. All rear echelons arrived in good condition except that received by units on or about S ≠ 59. Serious loss and damage to both personal and government property was found and is being made the subject of a separate report.

GORDON L. CARTER,
Colonel, CAC,
Commanding.

SECTION XIV

AAAIS and AAOR

1. GENERAL
2. AAAIS OPERATION
3. AAOR OPERATION
4. CONCLUSIONS

I. GENERAL

Experience in the Pacific has proven that the successful completion of the antiaircraft mission depends largely upon the efficiency of an air warning system. Long range warning furnished by the Air Corps and the Navy must be supplemented by short range warning furnished by the Antiaircraft Artillery Intelligence Service (AAAIS), for, in many instances, initial warning has been furnished by antiaircraft artillery radars. To insure the most complete coverage, and to minimize the chance of surprise attacks, the AAA Operations Room must initially be equipped to receive and disseminate fire control orders from the Support Aircraft Controller (Navy). The AACR and the Fighter Control Center (FCC) should be emplaced adjacent in order to expedite exchange of information and to insure coordination of fire control orders. The following extracts from observers and commanders reports should emphasize the necessity for close and constant liaison among the Army, Navy and Air Corps prior to and during an operation:

> "On D ≠ 4 in one area, fighter sector was ordered to move at once to a new position 5 miles away—no warning notice was given to AAA. From D ≠ 4 to D ≠ 7 fighter sector and air warning service were divorced from AAAIS and AAA. This could have been avoided had there been better liaison between the chief controller and the task force antiaircraft officer in planning the move. It is imperative that AWS and AAAIS supplement each other and be kept together for the protection and alerting of the entire task force." (Observers report on Saidor Operation).

> "Plots were received through fighter sector using an unknown reference point. The location of the reference point could not be determined from fighter sector, AA headquarters, or Corps. It soon became evident it was from the Navy, and that again poor liaison was the fault. Liaison with Navy must be conclusive in all respects prior to the operation." (Observers report on the Morotai Operation).

> "The greatest single difficulty arose from the practice of naval aircraft making continual flights over the defended area, sometimes at low altitudes. Several attempts were made before departure on the operation to arrange with naval authorities for air-ground cooperation, but no naval officer could be found who had any responsibility in this field. As soon as this practice was noted, it was brought to the attention of the Naval Liaison Officer in a conference with the task force chief of staff. The Naval Liaison Officer agreed to correct this difficulty. Instead of being corrected, this practice increased. As a direct result of this, there were two instances of firing on friendly planes during a red alert on 18 September.

"The practice of planes flying low over the defended area was a serious matter which endangered these aircraft, and, more important, interfered with the proper AAA defense.

"Recommend that in future operations there be a definite understanding between the task force commanders and the naval air forces supporting the operation to prevent unnecessary flying of friendly aircraft over AAA defended areas. It is considered that during early stages of an operation, friendly aircraft should not fly closer to a defended area than 20,000 yards. Exceptions would be only after notification of AAA through the fighter sector in ample time to enable all AAA units to be warned." (Commanders report on the Morotai Operation).

"Except that Navy Fighter Control determined whether AAA should be permitted to fire or not, there was no coordination between AA fire of the Army and the Navy. The poor fire discipline and poor control of small naval vessels interfered with the fire of our AAA units and often needlessly endangered ground troops and installations." (Commanders report on Leyte).

"The exact time when responsibility for fire control shifted from the Navy to the Army Air Corps was very indefinite in this operation. During this period the group AAOR received conflicting orders of fire control. AAOR's must be informed of the exact minute when control of fire passes from the Support Aircraft Controller (Navy) to the fighter controller (Army). At this instant the Group AAOR's should cease monitoring the local air warning net and should receive all warnings and fire control orders from the fighter controller through a Group liaison officer or the Brigade AAOR." (Observers report on the Leyte Operation).

2. AAAIS OPERATION

The function of the AAAIS in each operation, regardless of type of organization, was the same as is outlined in FM 44-8. The general AAAIS doctrine outlined in this field manual has proven sound in all operations. However, development of an AAAIS in amphibious operations presents a particular problem. The concentration and vulnerability of ships, men, and equipment during the unloading phase on a beachhead demands that the AAAIS function efficiently during this critical period. Because of normal deterrents, such as difficult access to radar positions, desirable observation posts being held by the enemy, and difficulty of maintaining wire communications, the establishment of a complete AAAIS sometimes requires several days. Amphibious operations require that the best warning system

possible be set up in a matter of hours—not days. To aid in establishing such a system a discussion of several problems involved in a typical amphibious operation and solutions learned from experience follow:

Prior to debarking for an operation the frequency for broadcasting warnings over the General Warning Net by the Navy is ascertained. Receivers must be tuned to this frequency prior to debarkation in that radio silence is imperative while enroute to the objective area.

In that loading the FCC and AAOR on the same landing craft is usually impossible, definite arrangements must be made for the exact location of the initial FCC-AAOR set up. Unless this is prearranged, contact on the far shore is very difficult.

Antiaircraft troops in the initial waves should include sufficient communications personnel to connect the assault machine guns by field wire #130. This wire must be carried on foot. Additional personnel should include observers equipped with light radios (SCR 300 is recommended). These men will advance behind the infantry and extend the visual observation laterally and in depth. Prior to the time that the mobile AAOR lands in the initial wave of LSTs, any information transmitted by the visual observers may be received at an initial intelligence station located at one machine gun position. This information is then relayed to other gun positions by field wire. The initial intelligence station should include one SCR 593 receiver tuned to receive warnings over the Local Warning Net (Navy) and one SCR 284 to transmit these warnings to SCR 593 receivers at each gun position. Each initial automatic weapons position should be equipped with an SCR 593 to receive warnings in the event that wire communications are disrupted.

As soon as the mobile AAOR opens station and establishes contact with the visual observers and subordinate units, the initial intelligence center ceases to function as a temporary AAOR. At this stage of development, further developing a normal AAAIS as outlined in FM 44-8 is merely a matter of time depending upon opposition encountered and circumstances limiting availability of equipment.

In all operations in this theater, enemy raid plots were relayed to individual gun emplacements in Air Defense Grid coordinates. This system is believed adequate for all elements of air defense except automatic weapons. Dissemination of information in a more practical form for individual gun sections is desirable. Conversion from Air Defense Grid to a polar coordinate system (in compass direction and miles) at the platoon headquarters should prove more efficient than conversion at the individual gun sections. The platoon headquarters should transmit the intelligence to individual fire units in a running verbal account. An example is:

"One Bogey ten miles away at 3000 feet closing from north. Bogey turned to east eight miles away. Bogey now approaching from northeast at 2000 feet. He is five miles out." This system eliminates flashing lights to follow the course on an Air Defense Grid at each section, and eliminates possibility of misreading coordinates by less experienced personnel. The platoon was chosen rather than the battery as a conversion point for two reasons: In a normal set-up, compass directions given in a running account of impending raids will be applicable to all guns in a relatively small area, and the chances of maintaining uninterrupted wire communications are increased. But, in any event, wire communications are supplemented by radio. Frequent routine wire checks eliminate the necessity for continually monitoring the SCR 593. Individual gun sections need monitor the SCR 593 only when wire communications are interrupted, and during an alert status.

A method of warning units of a command other than antiaircraft troops is required. The following means have been employed to alert ground troops in the Sixth Army zone of action:

(1) By relaying through switchboard operators, over regularly established command and administrative wire nets, the alerts to interested individuals and subordinate units.

(2) By units other than antiaircraft artillery silently monitoring a radio frequency allotted to the AAOR for disseminating air warning to interested elements of the Army.

(3) By alert shots being fired from designated 40mm or 90mm antiaircraft guns.

(4) By sounding unit sirens.

Three blasts of a siren and/or three shots from designated 40mm or 90mm guns is the normal method for indicating a FLASH RED. FLASH WHITE is indicated by one shot from designated 40mm or 90mm guns and/or one blast of a siren. FLASH BLUE is transmitted only to antiaircraft artillery units over the AAAIS net. Airborne and/or paratroop attack warning is broadcast over the Air Warning and AAAIS nets. Seven blasts of a siren and/or seven shots from designated alert guns are sounded throughout the command beginning with the units first observing the attack. Ample time must be allowed between FLASH RED and FLASH WHITE alerts to avoid confusion of signals. Five minutes allowed by the Fighter Controller has proven adequate. (See Section XV for explanation of alerts).

The frequency assigned to the AAOR to issue air warning to ground troops is disseminated throughout the entire command so that all units desiring air alert warning may silently monitor the band. Regularly established command and administrative wire nets are used to supplement

the radio net in warning ground units. Warnings are relayed through major switchboards to subordinate units. Normally Army, Air Forces, Corps and major service installations utilize this service.

Large areas are normally subdivided corresponding to Fighter Control Sectors, and each subdivision is assigned a code name. This enables certain areas to be alerted without alerting the entire command. Overlay maps showing area boundries and warning frequencies are disseminated to all elements of the command. All units may then monitor the warning frequency assigned to the immediate area. (See Inclosure 1).

3. AAOR OPERATION

The extent of installation and organization of AAOR's throughout the Pacific campaigns has been limited or governed by availability of Operations Detachments, size of antiaircraft artillery force involved, nature of operation—whether static or moving, and the availability of excess signal equipment. These limitations developed three general methods of organizing an AAOR. These methods differed mainly in control responsibility. They may be classified as composite headquarters control, battalion control, and group or brigade control.

Prior to the Leyte operation, Operations Detachments were not available in this theater. AAOR's were normally manned and equipped by a group headquarters and headquarters battery. Experience proved that the T/O and T/E of a group headquarters and headquarters battery are inadequate to continuously and efficiently operate an AAOR over an extended period of time during an operation.

Lessons learned and recommendations for additional personnel and equipment submitted by group commanders who have efficiently operated a group AAOR in actual combat may be summed up briefly as follows:

(1) Additional Equipment Required:

1 - SCR 188, Gun/AW net.
1 - SCR 188, SL net.
1 - SCR 188, standby for above nets.
1 - Generator, PE 95, reserve power supply.
2 - Switchboards, BD 72.
10 - Telephones, EE-8-A.
5 - Head and chest sets, HS 30.
1 - 2½ T 6x6 cargo truck, mobile transmitter.
1 - ¼ T 4x4 truck, communications section.
1 - Plotting board, 8x8 portable, (four 4' x 4' sections, one section to be used initially as a small scale assault board), w/target markers.

1 - Clock, Message Center, Ml.
Paint, enamel, assorted colors.
Brushes, paint, assorted sizes.
1 - Roll, cellulose acetate.

(2) Additional Personnel Required:

Operations:

4 - Duty officers.
4 - Officers

4 - NCO controller recorders; Sgts.
8 - Radio operators; T/5's.
4 - Switchboard operators; 1-T/5, 3-Pvts.
4 - Plotters; 1-T/5, 3-Pvts.
4 - Supernumeraries; Pvts.
24 - EM.

Communications:

1 - Communications sgt; S/Sgt.
1 - Radio technician; T/4.
4 - Linemen; 1-T/5, 3-Pvts.
1 - Chauffeur; T/5.
7 - EM.

The recommendations for additional personnel and equipment are based on the premise that a group will be the control headquarters for the defense of an objective area. These recommendations preclude the necessity of borrowing personnel and equipment from attached battalions.

From experience gained in the Pacific Theater, it is believed that additional personnel and equipment should be assigned to the group level instead of brigade level. In the defense of an objective by a brigade the "AAAIS section" from a group may be attached to the brigade. This plan eliminates the necessity for a separately organized Operations Detachment which is not self sufficient under the present T/O and T/E and which has to depend upon the group or brigade to which attached for supply and maintenance of materiel.

The following comments by the AAOR officer of a group have been extracted from the report of an operation and are believed to be sound:

"(1) Three factors contributed greatly to the efficiency of the defense: good communications, coordination of search and assignment of targets to the gun radars by the gun battalion headquarters during periods

of alert, and fire discipline.

(a) In the experience of this headquarters wire has never proven satisfactory as the primary, tactical channel of communication. In this operation radio has been used exclusively for AAOR tactical communication for the following reasons: the problem of overloaded telephone lines which are constantly being broken or shorted is eliminated, all stations on the net receive each other 4x4 to 5x5 at all times, intelligence is received simultaneously by all units, and the operation of the AAOR is simplified. Wire communication is held as a secondary tactical channel.

An Auxiliary Net Control Station is necessary in the event of a breakdown of AAOR communications caused by enemy action or equipment failure during an attack. A Gun Battalion Headquarters which was required to maintain a plotting board and operations section was appointed, thus providing for a coordinated AA defense at all times.

SCR 543's are unsatisfactory for use in Fighter Control Centers. The transmitter cannot be remoted and its transmissions block out FCC receivers. A SCR 188, which can be remoted, works very satisfactorily in its place, more so than the SCR 177. The SCR 188 uses a Generator, PE 75, which stands up under continuous operation where the SCR 177's PE 49 will not. The SCR 342 receiver of the SCR 188 operates from AC power eliminating the battery charger necessary with the SCR 177.

The SCR 188 proved very satisfactory on the S/L net in breaking through the radar interference experienced by the SCR 284 receivers at the radar S/L sections. The carrier wave of the SCR 284, however, is not strong enough to give adequate transmission results under such circumstances.

(b) Before coming on this operation the 166th AAA Gun Battalion trained extensively on coordinated searching and switching targets with the SCR 584's. Here, in the instance of multiple targets, the Gun Battalion Headquarters made, over the tactical net, the target assignments. As many as three different targets have been engaged at the same time.

(c) The fire discipline of the firing units was excellent. The AW sections were experienced and not "trigger happy." They were all thoroughly familiar with the provisions of "restricted" fire as set forth in GHQ and Sixth Army SOP's.

This inspired the confidence and cooperation of the Fighter Control Center and pilots operating at night from this area. For the landing and take off of night fighters, only the automatic weapons on the strip and approach lane were restricted. On several occasions enemy planes attempted to follow or intercept a night fighter during his landing. In every case the antiaircraft artillery either turned him or shot him down."

4. CONCLUSIONS

Sixth Army did not standardize a system for development of the AAAIS in each operation. Because of varying conditions requiring a different set-up in each operation, responsibility for establishment of the AAAIS in each operation rested with the senior antiaircraft commander. An account of the success or failure of the AAAIS in several typical operations have been gleaned from observers reports and final historical reports submitted by units and are reproduced herein for purpose of study.

Arawe (Observers Report).

"The antiaircraft units engaged in the Arawe operation consisted of two automatic weapons batteries and the headquarters and headquarters battery of a searchlight battalion. Immediately upon arrival on the beachhead on D-Day, a modified AAOR was established in conjunction with the Fighter Sub-Sector. An operations board was set up for the plotting of enemy raids. Since the AAOR and the FCC occupied the same tent, close coordination was maintained between antiaircraft units and the fighter controller.

"The AAOR was operated by the headquarters and headquarters battery of the searchlight battalion and was assigned the following mission:

(1) To give adequate air warning to all antiaircraft units of the task force.

(2) To furnish air raid warning to certain other task force units.

(3) To supplement the air force ground observation team in furnishing "close-in" intercept intelligence to the Fighter Sub-Sector.

(4) To provide a naval recognition station.

(5) To provide additional information on enemy ground and water movements to the S-2 of the task force.

(6) To provide a means of inter-island communication by blinker until wire lines are established.

"To accomplish this mission, three means of obtaining intelligence were established:

(1) Observation Posts. Four outposts were in operation on D-Day. Three of these observation posts were equipped with a radio set, SCR 248, and transmitted reports on enemy air activity. Telephone communication was established as soon as possible to augment radio transmission. The fourth observation post was equipped with an Aldis Lamp for the challenging of surface craft and for inter-island communication.

(2) Allied Intelligence Bureau. This organization began functioning on D-Day and obtained reports from outlaying stations on enemy air and naval activities. Information received from the AIB provided the major portion of the early warning and permitted the necessary fighter direction for intercept operations.

(3) Radar. No antiaircraft units equipped with radar were assigned to the task force. One SCR 268, manned by Australian personnel, was in operation on D + 4 and provided some information to the AAOR.

"All alerts and information of enemy air activity was disseminated to antiaircraft units over the air warning net. This net originated at the AAOR and consisted of both individual direct lines and a single hot leep down to each antiaircraft battery. Another separate air warning net was established for alerting additional task force units as directed by the task force commander."

Saidor (Observers Report).

"The antiaircraft units in the Saidor Task Force included one gun battalion less two batteries, two automatic weapons batteries and a searchlight platoon. The GOR of the gun battalion operated as the AAOR coordinated with the FCC and furnished the necessary information for antiaircraft units. Ground observers at automatic weapons sections and the radars of the gun batteries and searchlight sections provided warning and plots of approaching enemy attacks. The antiaircraft did not employ air observers other than those at each gun position. Close contact was maintained with Fighter Sector. During the first two weeks of the operation, early warning was not available due to the mechanical and electrical failures of the radio sets, SCR 602. Liaison with adjacent sectors was satisfactory."

Biak (Observers Report).

"Group Headquarters established an AAOR with Fighter Sector early in the evening on 27 May 1944. Radio communication was established with antiaircraft units in position but at 2400 contact was broken due to enemy infiltration upon Fighter Sector. At 0930 on 28 May 1944 a new location was obtained and radio communication was again established. A second move by the Fighter Sector and AAOR was necessary because of enemy action at 1700 on 28 May 1944. A one hour delay resulted until a new position could be occupied and in operation. Two enemy raids totaling six planes occurred during this period of movement. All planes, approaching without warning, were engaged by fire and destroyed.

"The first advanced warning furnished to antiaircraft units occurred on the morning of 29 May 1944. This information was sufficient to permit the use of directors by automatic weapons sections. Early warning continued to be furnished satisfactorily for the remainder of the campaign. Communication was maintained with the Navy Intelligence Center on board a vessel offshore and with the adjacent Fighter Sector.

"Data for the AAAIS was furnished by one SCR 584 gun radar. One SCR 268 and one SCR 584 were in position on 27 May and 28 May 1944 respectively, but were not operating properly during the first ten days. Two observation posts were established on 1 June 1944 at each of the extreme ends of the beach. The observation posts transmitted information to the AAOR over a hot loop line.

"The antiaircraft defense expanded throughout this period. Data for the AAAIS was furnished by all gun and searchlight radars totaling four SCR 584's and three SCR 268's. No observation posts were established except the personnel at each gun section. All antiaircraft units were alerted by wire and radio, and intelligence received by AAOR from antiaircraft radars was transmitted by both wire and radio. Target designations were made by grid coordinates.

"Coordination with the Air Force remained very satisfactory. Procedure stipulated that night fighters would break contact with the enemy at a distance of eight miles from the defended area. Except for planes conforming to the proper approach procedure, all unidentified planes within this radius of eight miles at night were considered enemy. No restriction was placed on antiaircraft fire."

Morotai (Historical Report by Unit).

"What is believed to be the closest cooperation between antiaircraft artillery and the Fighter Sector yet experienced in this theater has been

the rule here. Prior to embarkation a general plan for initial activities and subsequent developments was agreed on between the Group Commander and the Air Force officer in charge of setting up the Sector. The initial location near the beachhead was mutually selected and the temporary AAOR was adjacent to the temporary Sector building. When the permanent set-up was built inland the AAOR was moved into the same room. The AAA plotting board was erected in the "pit" beside the Sector board, and the AAA operations personnel were located on the balcony across the corner from the controllers. Each was always aware of what was being done by the other and consultation was immediate when necessary. It was also agreed early that antiaircraft defense at night was primarily an antiaircraft artillery responsibility and that such fighter activity as was utilized would be supplementary. With relatively few exceptions that agreement has been carried out. There have been just enough cases where failure to carry it out has brought damage to emphasize the fundamental soundness of the principle here.

"A feature of the defense at Morotai was the decentralization of control of fire action. Due to the amount of antiaircraft artillery in the defenses (i.e., 24 radars) in operation at one time, and the likelihood that heavy raids would upset wire, and possibly radio, communication, and in the belief that better over-all control and dissemination of intelligence would result, decentralization to battalion operations rooms was decided on prior to embarkation.

"Under the plan radar information was fed directly from the radars (or gun battery CP's) to the battalion operations rooms by hot loops. The Battalion Commanding Officer or Executive filtered the plots if necessary and almost instantaneously relayed the plot in air defense grid coordinates to the AAOR by a hot loop which tied all battalion operations rooms together. The information was thereby received by all battalions at the same time. As a result, while the AAOR is putting the plot on its board all the battalions are also plotting it and at the same time are relaying it to their units and giving such directions to their radars as may be appropriate. Tests have shown that only from 15 to 30 seconds are necessary to get a plot from gun radar to the AAOR board and at the same time to the batteries of all battalions.

"Similarly plots originating with the Air Warning Service appearing on the sector board are relayed by the AAOR over the hot loop to all battalions at once, and are almost simultaneously relayed to each battery and then to each smaller fire unit. As the same channels are used the speed of this transmission is evidenced by the firing of the alert guns.

"It is noticeable that plots from AAA radars appear on the AAA board from 30 to 90 seconds before a comparable plot thru AWS channels reaches the sector board, and the Controller relies on AAA plots from the area

covered by our radar. To speed up early warning, however, AAOR personnel monitor the phone line from the GCI station which is the best source of AWS plots.

"The system is made especially effective by the use on the hot loops of office type inter-communicating speakers which were specially purchased for this Group by USAFISPA. They give amplified transmission and reception and practically eliminate errors of reception by insuring that more than one person hears the message. Speed is also added to action because more than one person can act on the message (i.e., record it, plot it, repeat it over another loop, and give orders as a result of it) simultaneously without waiting for repetition to them.

"While specially built speakers are an advantage the benefits of the system can be secured by any organization by a simple connection of an SCR 593 receiver to the EE-8-A telephone on the hot loops. To do this connect one line post from phone to a ground on the receiver, and connect the other line post to the input side of the receiver rheostat. In addition the message can be received with the usual telephone receiver or head set. If a plug of the type used on the head and chest set is available it can be put on the lines from the SCR 593 and make the system easily detachable, or a toggle switch salvaged from a wrecked airplane can be cut into the input line to the receiver to cut out the telephone circuit when it is desired to use the SCR 593 as a radio receiver. As there seldom will be cases where the SCR 593 will be wanted as a receiver when the hot loop is functioning, this dual use of the radio receiver is not objectionable. The advantage of amplified reception on hot loops is obvious.

"The decentralized system of control has proven to have distinct advantages: (1) It insures trained control of action if the AAOR is put out of action by direct hit or destruction of communication facilities, or if all communication is out with any particular battalion. (2) It results in faster handling of plots of enemy aircraft and quicker action on them—this is particularly true if all users of the data are considered, not merely the AAOR. (3) It reduces the detail and consequent confusion in the AAOR which, if combined with Fighter Sector, is already a noisy place, and permits more intelligent action on the situation. (4) It increases the morale, and thereby efficiency of the battalion headquarters personnel by giving them a definite and active responsibility in the action of their battalion as well as its training and administration. This results in more active use of minds on pertinent problems. (5) The battalion AAOO has filtered information and a rapid communication system over which to put out his orders. No compensating disadvantages have been apparent here."

Leyte (Historical Report by Unit).

"The brigade AAOR was initially established on A + 1 adjacent to the temporary Fighter Control Center (FCC) at Red Beach. At this time, however, the alert status and fire control instructions were given by the Naval Controller on the Fighter Director Ship. The Army Fighter Controller ashore assisted in translating target position and polar vectors to air defense grid coordinates and disseminated all information to the AAA units through the AAA Operations Officer. Some Signal Air Warning radars were in position and would have provided valuable target information to the Fighter Director Ship through the Army Fighter Controller, but radio communications between individual radars and the FCC were extremely poor due to atmospheric conditions. The AAOR could not contact the 97th AAA Group by radio from this initial location and but few of the adjacent 25th AAA Group units received transmissions clearly enough to enable them to use the information received. As a result the FCC and brigade AAOR served no useful purpose initially because AAA units could get the same information with less time lag by monitoring the Fighter Director Ship general warning frequency.

"On A + 4 the FCC moved to a position south of Tacloban where radio transmitters were set up on a ridge in an attempt to improve communications. From this position radio reception was somewhat better to the 25th AAA Group but because of excessive fading during the period from midnight to just after dawn, considerable difficulty was still experienced in communicating with the 97th AAA Group. Voice transmission was abandoned and CW used. Some improvement was noted although there were still some short "skip" periods. On A + 7 when the Army fighters began operating from Tacloban strip the FCC took over direction of Army land based fighters and AAA units ashore, although the Fighter Director Ship still maintained control of carrier based fighters and Naval AAA. In spite of close liaison maintained between the FCC and Fighter Director Ship there were occasional conflicts in the alert status and fire control instructions received from these sources. On A + 5 wire communications were installed between the AAOR and units of the 25th AAA Group. Except when wire was broken by storms, these wire lines proved very satisfactory. On A + 18 the 146th AAA Operations Detachment arrived to operate the brigade AAOR.

"The permanent FCC and the AAOR were finally established at 1900 hours 7 December at Catmon Hill, the approximate one month delay arising from difficulties in building roads and installing telephone cables. Radio communications were considerably better than in previous locations. It was intended that all radars in the Dulag area would report directly to the brigade AAOR, while the 25th AAA Group AAOR would continue to plot radar data from the Tacloban area and transmit only filtered plots. However distances between subordinate units and the brigade AAOR precluded

the use of field wire. Cable lines previously contracted for were delayed and were not in operation when the campaign closed.so radio remained the primary means of communication rather than an emergency method as had been contemplated. CW transmission was used between the brigade and group AAOR's, and voice transmission between the group AAOR's and their fire units. Except for the lack of spare radios to replace occasional breakdowns and the fact that CW was too slow to send group AAOR's as many plots as desired, the radio communications system was satisfactory."

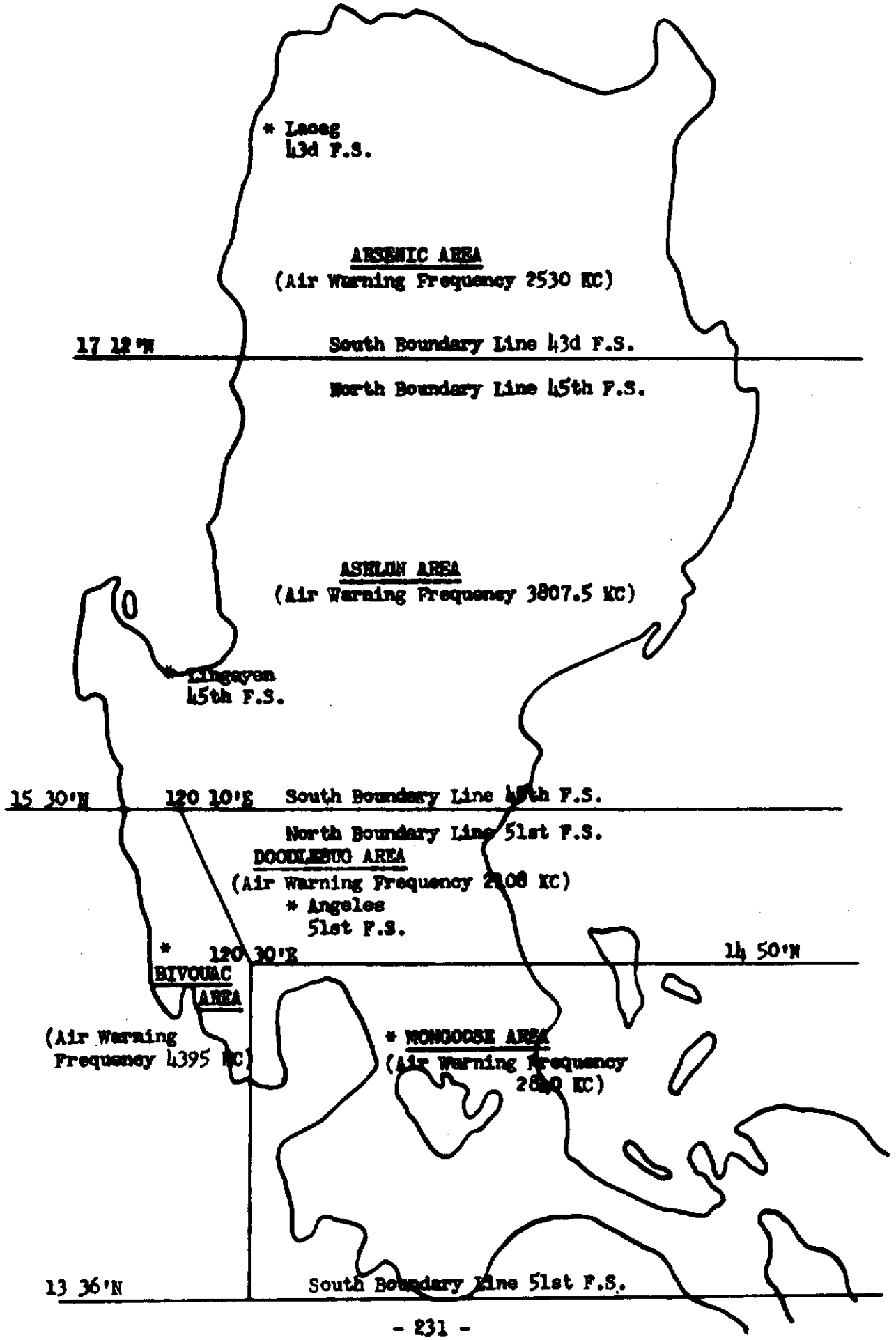
Luzon (Historical Report by Unit).

"Initially air warning was controlled by the Navy Controller Afloat, and all units monitored the Naval Air Warning Net. This system worked perfectly. It also enabled the Fighter Control Center to come ashore and be firmly established before assuming air warning responsibility. Prior to landing, every effort to determine where the Fighter Control Center would land, where it would set up, and when it would land, had failed. Upon landing, an immediate attempt to locate the FCC personnel was made and one move was made to the announced location to be occupied by the FCC. On S + 2 the FCC detachment came ashore and moved to Caloocan. The AAA Brigade AAOR was established in the FCC on S + 2.

"An Operations Detachment, attached to the Brigade for the purpose of operating the AAOR landed on S-Day without equipment. Brigade equipment was initially used by the Operations Detachment to establish the AAOR.

"On S + 8 the Fighter Control Center took over operations from the Navy. By this date preparations were complete. Air warning from the AAOR was furnished ground units over a designated net. The two groups under brigade operated their AAOR in their own locality, receiving information and direction orders from the Brigade AAOR and relaying warning to their attached units by radio supplemented by wire. Direct lines led from the Brigade AAOR to each Group AAOR, supplementing radio. The AAAIS in the FCC had direct wire lines to all searchlight radars. Gun radars, (SCR 584's) were tied directly in to the Brigade AAAIS for giving air warning only. Alert warning guns, both 90mm and 40mm, in strategic locations throughout the defended area were connected initially through subordinate units to the AAOR. This method proved unsatisfactory and at present alert guns are connected directly by wire and radio to the Brigade AAOR.

"Initially, wire communication was unsatisfactory. Wire was strung for long distances, often cut, or completely destroyed by other units, and repair was slow and undependable. Main reliance had to be placed on radio."


* Laoag
43d F.S.
ARSENIC AREA
(Air Warning Frequency 2530 KC)
17 12'N
South Boundary Line 43d F.S.
North Boundary Line 45th F.S.
ASHLUN AREA
(Air Warning Frequency 3807.5 KC)
* Lingayen
45th F.S.
15 30'N
120 10'E
South Boundary Line 45th F.S.
North Boundary Line 51st F.S.
DOODLEBUG AREA
(Air Warning Frequency 2106 KC)
* Angeles
51st F.S.
*
120 30'E
14 50'N
BIVOUAC
AREA
(Air Warning
Frequency 4395 KC)
* MONGOOSE AREA
(Air Warning Frequency
2850 KC)
13 36'N
South Boundary Line 51st F.S.

Inclosure #1

SECTION XV

ANTIAIRCRAFT ARTILLERY

STANDING OPERATING PROCEDURE

1. Purpose

2. Development

3. SOPI No. 7, Air-Antiaircraft Cooperation, General Headquarters, Southwest Pacific Area.

4. SOPI No. 2, Antiaircraft Defense, Headquarters Sixth Army.

5. SOP, Headquarters 68th AAA Brigade.

6. SOP, Antiaircraft Section, Headquarters Sixth Army.

1. Purpose. Standing operating procedure instructions were issued by all echelons of command in this theater. These instructions proved beneficial in simplifying combat orders, promoting understanding and teamwork between the commanders, staffs, and troops of the Army, Navy, and Air Corps, expediting operations, and minimizing errors. To retain flexibility necessary to cope with special cases, these standing instructions were general in nature, and the form in which subordinate units prepared standing operating instructions was not prescribed.

2. Development. The Antiaircraft Section, Sixth Army, issued the first standing operating procedure instructions for antiaircraft artillery units on 8 June 1943. Shortly thereafter, on 26 June 1943, General Headquarters, Southwest Pacific Area, issued Standing Operating Procedure Number 7, entitled Air-Antiaircraft Cooperation. This latter publication became the antiaircraft bible and remained as such until the cessation of hostilities. Increased tempo and scope of operations, and additional combat statistical data required by higher headquarters, rendered the first Sixth Army standing operating instructions inadequate. This need was corrected by publishing three letters (AAA Letter Number 1—Ammunition Report, AAA Letter Number 2—Claims of Enemy Aircraft Destruction by Antiaircraft Fire, and AAA Letter Number 3—Combat Operations Reports), Headquarters Sixth Army, 23 September 1944. These letters, together with the original operating instructions, were later revised and combined into one publication—Antiaircraft Defense Standing Operating Procedure Instructions Number 1, Headquarters Sixth Army, 8 November 1944. These instructions proved adequate for antiaircraft artillery units performing the primary antiaircraft mission throughout the Leyte Campaign. Absence of enemy aerial activity on Luzon and the subsequent utilization of antiaircraft units in the ground support role made a revision of reports previously required highly desirable. To accomplish this end, the Antiaircraft Section published a revised edition, Antiaircraft Defense Standing Operating Procedure Instructions Number 2, Headquarters Sixth Army, 1 July 1945. All deficiencies and lessons learned in previous operations were incoperated in the final edition with the belief that these instructions and reports would prove adequate for aerial and ground firing in the invasion of Japan. For the purpose of study, this chapter includes the standing operating procedure instructions from the three highest echelons of antiaircraft command in this theater. These instructions (Inclosures 1, 2, and 3) were in effect at the time of the unconditional surrender by Japan.

It was also found advisable to prepare an Antiaircraft Section Standing Operating Procedure for the purpose of orienting new personnel assigned to the section. This SOP was repeatedly revised, and, as recorded in inclosure 4, is a record of the organization and mode of operation of the Antiaircraft Section of Sixth Army.

3. Standing Operating Procedure Instructions Number 7.

GENERAL HEADQUARTERS
SOUTHWEST PACIFIC AREA

A.P.O. 500
26 June 1943

AIR--ANTIAIRCRAFT COOPERATION

1. Provisions herein will govern procedure for coordination of activities of Air Force and Antiaircraft Artillery units within this theater. When naval vessels are in port or within range of shore based antiaircraft artillery at an outlying anchorage they will be considered as coming under the category of "Antiaircraft Artillery" as applied herein.

2. Control of antiaircraft artillery except for combat operations against aerial targets is a function of the commander of the Force to which such organizations are assigned. Where assigned antiaircraft artillery units of more than one Force are operating in the same geographical area, coordination of the antiaircraft defenses will be accomplished by mutual agreement between the Commanders concerned. Under certain conditions, a coordinator of antiaircraft defenses may be designated in orders.

3. Coordination of antiaircraft artillery activities with the operations of Air Force elements to include Air Warning and Special Communications nets is a responsibility of the Commander, Allied Air Force.

4. Within its specified operational limits, Fighter Command is charged with control of the employment of all antiaircraft weapons against aerial targets. Fifth Fighter Command and RAAF are charged with this responsibility within the respective territorial areas prescribed in General Orders No. 13, Allied Air Forces, dated 15 April 1943.

5. Fighter Sector Headquarters' responsibilities include:

a. Coordinating operations of Fighter, Antiaircraft Artillery and Signal units.

b. Coordinating and supervising the identification systems of

agencies operating aircraft within their areas.

c. Coordinating the identification system of their own areas with those of other areas under general directives from Allied Air Force.

d. Regulating all air traffic to include grounding of non-combatant aircraft during alerts.

6. The Antiaircraft Commander is charged with:

a. Command and tactical disposition of antiaircraft artillery units under directives from the Force Commander to which his units are assigned.

b. Execution of operational control instructions issued by the Fighter Sector Commander.

c. Establishment of the AAAIS and coordination of this service with Fighter Sector activities.

7. Antiaircraft artillery weapons on naval vessels within the area of defense of land antiaircraft will be operated in coordination with Army antiaircraft units through established control centers. Information of available supporting naval antiaircraft armament will be supplied under direction of the senior naval officer present. Arrangements for the transmission of alerts and warnings to naval vessels and for adequate methods of communication between ships and shore will be made by the senior naval commander and the antiaircraft commander. Merchant marine vessels within the area are subject to naval supervision with respect to antiaircraft control.

8. General Features of Employment.

a. The state of readiness of antiaircraft units required at any time will depend upon:

(1) The nature and degree of enemy activity.

(2) Location of the defended area with respect to possible enemy activities.

(3) Extent and efficiency of the warning system.

(4) Weather conditions.

(5) Type of equipment.

b. The state of readiness will be prescribed by the authority charged with coordinating antiaircraft fire. In the absence of definite instructions from higher authority, responsibility for maintaining a condition of "alert", which will permit the accomplishment of the prescribed mission at all times, will be that of the unit commander. Unit commanders may increase the degree of alert at any time but not decrease a prescribed state of readiness.

c. Prescribed "Alerts" for this theater are indicated in Fighter Sector Battle Orders.

d. Control of antiaircraft fire against aerial targets will include the following:

(1) Antiaircraft fire will be employed against hostile aviation targets on the initiative of the unit commander under the following conditions:

(a) Identified and reported by Fighter Sector Headquarters as hostile where no restriction against opening fire has been announced.

(b) When not identified by Fighter Sector Headquarters, but definitely recognized as hostile by the antiaircraft unit concerned, when no restriction against opening fire has been imposed.

(c) Which commit hostile acts unless such targets are being engaged by friendly aircraft.

Hostile acts are:

1. Engaging in direct attack against ground, sea or air installations.

2. Dropping by airplane of any type of explosive in friendly territory except over a bombing range or obviously jettisoning bombs for cause.

3. Dropping of parachutists except from an airplane obviously out of control.

4. The approaching of ships by airplanes in a manner that would permit torpedo attack.

5. Flying over a restricted area except fighter aircraft engaging an enemy or when prior notification has been given from Fighter Sector Controller.

6. Dropping flares over land or sea, execpt for an obvious forced landing by an airplane in distress, or when prior notification has been given from Fighter Sector Controller.

7. Obviously engaged in mine planting activities.

8. Acts definitely recognized as hostile.

e. Normally, gunfire on targets within effective range should not be restricted by Fighter Sector controllers unless or until airborne friendly aircraft are known to be in the vicinity of the enemy airplanes.

(1) The following interpretations will apply:

(a) Aircraft announced as unidentified will be considered friendly until:

1. Recognized positively as hostile by markings or characteristics. For markings of friendly aircraft, see "General Recognition Procedure and Definition", issued by Headquarters Allied Air Forces.

2. Failing to conform to indicated "approach procedure" or to acknowledge recognition signals. In this connection, airplanes positively recognized by OP's as friendly will be so considered until committing a hostile act as indicated herein.

(2) Fire against unseen targets with 3.7 inch, 90mm or 3 inch guns will be opened under the following conditions:

(a) When incoming targets have been identified as hostile and so announced by Fighter Sector Controller, provided no restrictions against firing have been announced.

(b) When such fire is prescribed by Fighter Sector Controller.

(c) When direct ground—air control of gunfire is authorized by Fighter Sector and appropriate instructions have been received from commanders of air formations in flight.

(d) If Gun zones have been organized and target airplanes are within the gun area.

(e) Under approved procedure indicated by proper authority.

(3) Fire against unseen targets will not be engaged in under the following conditions:

(a) By automatic weapons to include 40mm guns, at any time unless especially prescribed by Fighter Sector.

(b) Within indicated restricted zones.

(c) During special operations announced by proper authority.

(4) Regardless of general rules or instructions—to include those from Fighter Sector—it is the responsibility of the antiaircraft unit commander to suspend fire against any target which is definitely recognized as friendly.

(5) Antiaircraft artillery fire may be suspended in any sector or sectors, withheld above specified altitude limits or withheld against specific targets or under specific circumstances on order of the Fighter Sector Controller. Antiaircraft fire may be released by the same authority. Each order suspending, withholding or releasing fire shall be complete within itself.

(6) The Fighter Sector Controller will prescribe the details of operational employment of barrage balloons.

(7) AAAIS facilities including RADAR may be incorporated in AWS operations when especially requested by Fighter Sector Headquarters.

(8) Special fires of antiaircraft artillery for purpose of signaling the location of hostile airplanes, indicating

the location of friendly airplanes in flight, indicating the location of landing fields and other special purposes may be arranged by Fighter Sector Controller.

f. Operation of antiaircraft searchlights will be subject to the following regulations:

(1) Normal employment of searchlights to illuminate incoming targets will be subject to the same general rules and restrictions as apply to gunfire.

(2) Under direction of Fighter Sector Controller, antiaircraft searchlights may be employed for measuring the altitude of cloud bases, indicating the position, course or altitude of friendly or hostile aviation, assisting in homing friendly airplanes, illuminating barrage balloons for their recognition by incoming friendly airplanes or for other special missions.

(3) Development of procedure for Night Fighter—Searchlight Operation and for Day Fighter—Searchlight Operation will be under supervision of Allied Air Forces.

(4) During "Alert" periods, searchlights will remain out of action until released by Fighter Sector.

(5) Employment of searchlights in the vicinity of airdromes should be controlled carefully in order to provide maximum aid to and minimum interference with friendly aircraft.

(6) Operation of searchlights on naval vessels in port or within defended areas is subject to the same control as indicated for antiaircraft gun and automatic weapons fire. Ships will not use searchlights for illumination during air attack unless specifically requested by proper operational authority.

9. Where antiaircraft artillery is employed for defense of large civil communities, coordination of action will be maintained by Local Defense Headquarters through the Fighter Sector Headquarters.

10. Antiaircraft units will be charged with the provision of local security for their own establishments. This should be coordinated with airdrome defense installations and the operations of troops of other arms in the vicinity.

11. When attack by hostile ground forces is imminent, the decision to employ antiaircraft artillery weapons for anti-mechanized, anti-boat,

beach defense, or any other than their primary mission, is a responsibility of the Land Force Commander. In each local sector, the commander charged with this responsibility should be indicated definitely in orders. This provision automatically terminates control of Fighter Sector Headquarters over antiaircraft fire during the period of contact with attacking land or marine forces. Control will be returned to Fighter Sector Headquarters as soon as practicable by order of the authority terminating such control. Antiaircraft batteries under direct attack by mechanized or marine forces are authorized to employ their weapons in their own defense.

12. Antiaircraft Artillery Operations Centers should be established where required. Complete coordination of the activities of these centers with Fighter Sector Control Centers should be emphasized to the point of locating the two establishments in direct proximity preferably in the same room. Where this is not possible, liaison officers will be employed. Organization of Antiaircraft Artillery Operations Centers will be as prescribed in Antiaircraft Artillery regulations, circulars and instructions.

13. Antiaircraft artillery commanders entering a combat area are charged with contacting Fighter Sector Command representatives forthwith in order to implement this directive. Decisions required by situations not covered herein will be arrived at in accordance with provisions of paragraph 122, Field Service Regulations, FM 100-5, U.S. Army, dated 22 May 1942, which reads as follows:

"The Commander's mission is contained in the orders he has received. Nevertheless, a commander of a subordinate unit cannot plead absence of orders or the nonreceipt of orders as an excuse for inactivity in a situation where action on his part is essential, or where a change in the situation upon which the issued orders were based renders such orders impracticable or impossible of execution. If the situation does not permit communication with the superior commander and the subordinate commander is familiar with the general plan of operations or the mission of the whole command, he should take appropriate action and report the situation as early as practicable."

By command of General MacARTHUR:

R. K. SUTHERLAND
Major General, U.S. Army
Chief of Staff

OFFICIAL:

/s/ B. M. Fitch
/t/ B. M. FITCH,
Colonel, A.G.D.
Adjutant General

4. Standing Operating Procedure Instructions No. 2.

HEADQUARTERS SIXTH ARMY
APO 442

1 July 1945

ANTIAIRCRAFT DEFENSE

I. GENERAL

1. Purpose.

a. Antiaircraft Defense Standing Operating Procedure Instructions No. 1, 8 November 1944, with annexes and changes are rescinded.

b. The purpose of these instructions is to furnish corps, division, and other commanders with procedures for establishing antiaircraft defenses, both active and passive, which are based on the policies of this and higher headquarters.

c. "The commander's mission is contained in the orders which he has received. Nevertheless, a commander of a subordinate unit cannot plead absence of orders as an excuse for inactivity. If the situation does not permit communication with the superior commander and the subordinate commander is familiar with the general plan of operations or the mission of the whole command, he should take appropriate action and report the situation as early as practicable." (Par 125, FM 100-5, Field Service Regulations).

II. RESPONSIBILITIES

2. Army.

a. The Army Commander is responsible for the antiaircraft defenses within the Army zone of action.

b. Corps, division, and separate task force commanders are responsible for antiaircraft defenses within their respective zones of action.

c. Commanders of separate antiaircraft artillery commands operating directly under the Army Commander are responsible for the antiaircraft defense of critical points and areas as directed.

d. Commanders listed in subparagraphs b and c above are specifically charged with:

(1) Restricting antiaircraft weapons fire on hostile aircraft as indicated in Section V.

(2) Promptly establishing communications with the nearest AAA or Air Force warning agency which can furnish information of friendly flights and warning of enemy aerial activity for dissemination to the command.

(3) Disseminating information of air support missions to the command, particularly antiaircraft artillery, to prevent firing on friendly aircraft.

(4) Deciding when antiaircraft artillery can be relieved of its primary mission and employed to accomplish a secondary mission.

(5) Requiring antiaircraft artillery units to submit reports promptly to this headquarters as directed in Annex 1 in addition to operations reports required by the commander.

(6) Requiring units other than antiaircraft artillery to submit immediately claims for enemy planes destroyed, probably destroyed or damaged, through appropriate channels to this headquarters.

e. Normally the senior antiaircraft artillery commander in each corps, division, or other command is charged with the supervision and coordination of the antiaircraft defenses within the zone of action of that command. He acts as the antiaircraft officer on the special staff of the commander.

3. Fighter Command.

The Fighter Commander is responsible for coordinating the various elements of air defense which, insofar as it affects the antiaircraft defense, includes the following:

a. Prescribing the alert status for all commands.

b. Coordination of the activities of the AAAIS with other air warning agencies including adjustment of radar frequencies to prevent mutual interference.

c. Displaying information at the Fighter Control Center showing the location of enemy, unidentified, and friendly plots of aircraft for utilization by the antiaircraft artillery commanders and other liaison personnel.

d. Establishment of recognition and identification procedures for friendly aircraft within the operational area.

e. Issuing hold fire and release fire instructions; hold fire is generally given for a definite period of time and for a specific sector or sectors.

f. Issuing instructions for the flying of barrage balloons.

g. Designation, where applicable, of Inner artillery zones and gun defended areas over which aircraft flights are restricted.

4. Antiaircraft Artillery.

Each antiaircraft artillery commander is responsible for:

a. Tactical disposition of the antiaircraft artillery units to protect priority areas, installations and vital points as designated by the appropriate higher commander.

b. Early establishment and efficient operation of the AAOR and AAAIS in or near the Fighter Control Center. Communications and uniform operating procedures will be established between the AAOR's of the senior AAA headquarters and its subordinate units.

c. Execution of instructions for hold fire and release fire as announced by the Fighter Controller.

d. Prescribing the state of readiness of antiaircraft artillery units.

e. Obtaining from the Fighter Controller recognition and identification procedures used in the area, and dissemination of same to elements of the antiaircraft defense.

f. Synchronizing time periodically with the Fighter Controller and disseminating same to subordinate AAA units.

g. Designation and coordination of radar search sectors to facilitate accurate fire control against multiple targets.

h. Coordination of fire of antiaircraft weapons of units of the command other than antiaircraft artillery as directed by the appropriate commander.

i. Establishing liaison with appropriate field artillery commanders for coordination of antiaircraft artillery fire when employed on a field artillery mission.

j. Coordination of local ground defense for all AAA units with adjacent installations.

k. Coordinating passive defense measures as directed.

l. Submitting promptly reports and information of the antiaircraft artillery situation and action as directed.

III. ALERTS

5. Alerts.

a. The Fighter Controller determines and announces alerts and fire orders as follows:

(1) Alerts:

FLASH RED - Air attack imminent
FLASH BLUE - Air attack probable
FLASH WHITE - All clear

(2) Antiaircraft Fire Orders:

CONTROL YELLOW - Antiaircraft weapons may fire
CONTROL GREEN - Antiaircraft weapons withhold fire against aircraft.

b. The Antiaircraft Artillery Operations Officer transmits the FLASH BLUE to antiaircraft artillery units, and to other units as directed. Normally the Fighter Controller announces the FLASH BLUE when unidentified or hostile aircraft have been detected in the vicinity. No alarm is sounded, nor are troops other than antiaircraft artillery alerted. The Antiaircraft Artillery Operations Officer transmits plots in air defense grid coordinates of enemy and unidentified aircraft to antiaircraft artillery fire units.

c. All elements of the command are alerted when the Fighter Controller announces the FLASH RED alert. The Antiaircraft Artillery Operations Officer transmits the FLASH RED alert to antiaircraft artillery units, to the headquarters of the command, and to such other units as directed. The FLASH RED is announced when enemy or unidentified aircraft are in the immediate vicinity or when an attack is imminent. Antiaircraft artillery units man all equipment for instant action upon receiving a FLASH RED alert. Three blasts of a siren and three shots from designated 40mm or 90mm guns is the normal method for sounding the alarm.

d. Direction and position of paratroop and/or airborne attack will be transmitted in the clear from the AAOR to units who normally receive the RED alert. The normal method of sounding this alarm is seven blasts of a siren and seven shots from designated 40mm or 90mm alert guns, initiated through AA command channels or by the unit first observing the attack. The Air Invasion Alert will be fired by all designated alert guns regardless of the existing alert status and location of attack.

e. The Fighter Controller announces FLASH WHITE when attacks are no longer imminent. The FLASH WHITE is normally sounded by one blast of the siren and one shot from designated 40mm or 90mm guns. During brief alerts ample time must be allowed between FLASH RED and FLASH WHITE alerts to avoid confusion of signals.

f. Units other than antiaircraft artillery receive alerts by the following means:

(1) Relaying from the AAOR through switchboard operators, over regularly established command and administrative wire nets, the alerts to interested individuals and subordinate units.

(2) Units silently monitoring a radio frequency allotted to the AAOR for disseminating air warning to all interested elements of the Army.

(3) Alert shots being fired from designated 40mm or 90mm antiaircraft guns.

(4) Sounding unit sirens.

This system provides ground forces with three independent channels for obtaining alerts announced by the Fighter Controller and furnishes a check to prevent false alerts.

g. In the event communications are interrupted during:

(1) A FLASH BLUE alert, each fire unit assumes the FLASH RED status.

(2) A FLASH RED alert, no change of status occurs except that each fire unit commander fires only on aircraft recognized or identified as hostile or one which commits a hostile act.

h. Antiaircraft artillery units monitor the Local Air Warning Net when it is impracticable to obtain alert warnings through normal channels. Plots of enemy or unidentified aircraft over this net are transmitted in polar coordinates from a predetermined reference point in true azimuth (degrees) and range to target (nautical miles).

IV. STATE OF READINESS

6. State of Readiness.

a. Antiaircraft artillery units will maintain the following minimum state of readiness:

(1) Local security guards against surprise attack by enemy airborne or ground action.

(2) Continuous air guard at each fire unit position, OP, and CP.

(3) Sufficient personnel at CP's, OP's and emplacements to insure adequate protection for and availability of equipment for immediate action when the FLASH BLUE alert is sounded.

(4) Sufficient personnel to man and check periodically command and intelligence communication nets, both wire and radio.

V. CONTROL OF FIRE

7. Restriction of fire of units other than Antiaircraft Artillery.

Units other than antiaircraft artillery (CIC) will not fire on unidentified or hostile aircraft except when the troops in the immediate vicinity are subject to a low strafing attack. They will not fire at unseen aerial targets under any circumstances. Unit commanders will take positive steps to prevent firing into ground installations and personnel, and will suspend or withhold fire which endangers friendly planes, troops or ground installations.

8. Fire Control of Antiaircraft Artillery Guns and Automatic Weapons.

a. Antiaircraft artillery fire units open fire on their own initiative on the following aircraft:

(1) Identified or recognized and announced by the Fighter Control Center as enemy, except when fire is restricted by the Fighter Controller.

(2) Unidentified or unrecognized by the Fighter Control Center but definitely recognized as enemy by antiaircraft units, except when fire is restricted by the Fighter Controller.

(3) Committing hostile acts unless such planes are engaged by friendly aircraft. The following are hostile acts:

(a) Engaging in direct attack against friendly ground, sea or air installations.

(b) Dropping any type of explosive in friendly territory except over a bombing range, or obviously jettisoning bombs for cause.

(c) Dropping parachutists except from an airplane obviously out of control.

(d) Approaching ships in a manner indicating an attack.

(e) Flying over a restricted area, except prearranged flights or fighter aircraft engaging an enemy.

(f) Dropping flares over land or sea, except for prearranged missions or an airplane making an obvious forced landing.

(g) Engaged in mine planting activities.

(h) Other acts definitely recognized as hostile.

b. Enemy parachute mines and flares are engaged only under specific orders of the Antiaircraft Artillery Commander when fire is not restricted by the Fighter Controller.

c. Suspension or withholding of fire:

(1) By the Fighter Controller.

(a) The Fighter Controller may suspend antiaircraft artillery fire in any sector or sectors, above a specific altitude, against specific targets, or as

circumstances require. Antiaircraft artillery fire is released by the same authority.

(2) By the Antiaircraft Artillery Fire Unit Commander.

(a) Commanders will take positive steps to prevent antiaircraft weapons from firing into ground installations and personnel and will suspend or withhold fire when friendly planes, troops, or ground installations become endangered.

(b) The Antiaircraft artillery fire unit commander will suspend fire against aircraft definitely recognized as friendly and not committing a hostile act regardless of general rules or instructions, including those from the Fire Controller.

d. Firing at unseen targets:

(1) Antiaircraft artillery guns fire on unseen aircraft under the following conditions:

(a) When planes are not identified as friendly, provided no restrictions against firing are in effect.

(b) When the Fighter Controller prescribes such fire.

(2) Automatic weapons will not fire on unseen targets except by approved barrage fire and then only as ordered by the Antiaircraft Artillery Commander.

9. Control of Searchlights:

a. Searchlight illumination is subject to the same general rules and restrictions as apply to gunfire.

b. In addition to enemy target illumination, antiaircraft searchlights may be employed for measuring altitude of cloud bases, indicating the position, course, or altitude of friendly planes, assisting in homing friendly planes, or for other special missions requested by the Fighter Controller.

c. The Allied Air Force announces the policies and procedures for Fighter - Searchlight Operations.

VI. AMPHIBIOUS OPERATIONS

10. Preliminary Planning.

a. Detailed preliminary planning is imperative. Accurate

logistics, adequate waterproofing and flexible loading plans must be prepared well in advance of embarkation.

b. Antiaircraft artillery commanders must coordinate loading plans with corps, division or separate force loading officers to insure that:

(1) Antiaircraft artillery weapons may augment the naval antiaircraft protection of the convoy enroute.

(2) Men and equipment are loaded together.

(3) Antiaircraft units are given a high priority on early echelons.

11. Initial Antiaircraft Defense on Landing Beaches.

a. The maximum amount of antiaircraft artillery will land and be placed in firing position on D-Day. The remainder will land as soon thereafter as unloading facilities permit.

b. Radio communications must be established with all subordinate units with the least possible delay. Radio communications will be supplemented by wire as soon as possible.

12. Control of Fire on Landing Beaches.

a. Initially, the Support Aircraft Controller, who commands all friendly fighter aircraft in the objective area, is responsible for dissemination of air warning and for the control of antiaircraft fire.

b. Unit AAORs will monitor the Local Air Warning Net. They will disseminate alerts, control status, and plots in air defense grid coordinates to individual fire units.

c. Control of antiaircraft artillery fire, as defined herein, passes from the Support Aircraft Controller to the Fighter Controller ashore at a time determined by the Naval Attack Force Commander.

BY COMMAND OF GENERAL KRUEGER:

/s/ Robert E. Quinn
/t/ ROBERT E. QUINN,
2d Lt., F. A.
Actg Asst Adj Gen

Annex
1 - Combat Reports.

HEADQUARTERS SIXTH ARMY
APO 442

ANNEX 1 to AAA SOPI #2 — 1 July 1945

ANTIAIRCRAFT OPERATIONS REPORTS

1. Immediate Action Radiogram.

a. A radio report of AAA action will be submitted daily to cover the period from 0001 to 2400 by the Force AAA Commander. Negative reports are not required. The radiogram will be addressed to the Commanding General, Sixth Army, with information copies to the Commanding General, 14th AA Command, and the Antiaircraft Officer, GHQ, APO 500. Radio will be classified as SECRET and will be sent as a priority message.

(1) The following information in sequence is desired for each raid during the period.

(a) Date and time of action.

(b) Raid number.

(c) Number and type of planes.

(d) Type AAA weapons in action. If enemy is not engaged when AAA fire is authorized state reason. If fire is withheld by Fighter Controller so state.

(e) Direction from which attack came and altitude (high, medium, low).

(f) Was warning sufficient? If not state reason.

(g) Effect of fire.

(h) AAA casualties.

(i) Damage to installations.

(j) Damage to friendly installations and other pertinent facts.

(2) The following is a sample radio report:

ABLE ONE THREE NAUGHT TWO NAUGHT NAUGHT KING BAKER FIVE

THREE CHARLIE THREE BOMBERS DOG GUNS DASH SEARCHLIGHTS

EASY WEST LOW FOX INSUFFICIENT DASH COMMUNICATION

FAILURE GEORGE ONE DEFINITE DASH ONE PROBABLY DASH

TWO DAMAGED HOW ONE KILLED TWO WOUNDED ITEM ONE BOFORS

DESTROYED JIG LARGE GAS DUMP DESTROYED BY STRAFING.

2. Daily Periodic Report.

The senior antiaircraft officer operating under Army, or under separate corps, divisions, or other commands will submit a modified operations report covering action from 0001 to 2400 daily. Report will include the following paragraphs and information as indicated herein:

a. Location of troops - to include coordinates of initial positions and any changes thereafter.

b. Weather and visibility.

c. Operations for Period - to include a brief description of the engagement of aircraft, ground and waterborne targets, and any additional missions assigned to antiaircraft artillery troops. This will include type missions, location of mission, rounds expended, and results obtained.

d. Results of operations to include a tabulation of (1) own, and enemy casualties during period, (2) damage or destruction to own and enemy materiel, and (3) a cumulative tally of casualties to date.

e. Miscellaneous - to include individual sniper and infiltration actions, and any other pertinent information not covered elsewhere. The original report will be submitted to the Commanding General, Sixth Army and a duplicate copy will be sent direct via Safehand Courier to the Anti-aircraft Officer, GHQ, APO 500.

3. Combat Operation Reports (CORs).

a. Preparation. These reports must be accurate and prepared with utmost care. To facilitate preparation and to insure uniformity the following explanations pertain.

(1) A course is the passing of a single plane or flight of planes within range of the AAA defense.

(2) Courses will be numbered serially within each raid. A raid consists of one or more courses during a continuous air attack.

(3) Although the Fighter Controller normally assigns raid numbers, the AACO will assign and disseminate to AAA units consecutive raid numbers throughout an operation. The first raid will be number one.

b. Submission. CORs (Incl 1) will be prepared in triplicate by Battery and Separate Platoon Commanders. Instructions on reverse side of form will govern. Two copies of these reports will be submitted to Battalions at the earliest time not to interfere with the tactical mission. Battalions will add, on wrapper indorsement, any remarks necessary to give a complete resume of the action, and will forward the reports in duplicate to Group. Groups, or separate battalions will compile from these reports a narrative resume of antiaircraft action for the day. The original copy of these reports (Incl 1) will be submitted through command channels to the Commanding General, Sixth Army; the duplicate copy will be submitted directly via Safehand Courier, to the Antiaircraft Officer, GHQ, APO 500.

4. Report of Claims for Destruction or Damage to Enemy Aircraft.

a. Battery or separate platoon commanders will submit through channels to Brigade or separate Group Commanders letters of claims for destruction or damage to enemy aircraft. Units not under a Brigade or separate Group will submit claims to this headquarters. Single copies of supporting evidence (Incl 3) will be attached to claims. Claims will not be submitted with combat operations report. The letter will make definite claim for destruction or damage with the hour, date, APO number, type of plane, and other pertinent facts pertaining to the action. When there are several raids in one day particular care will be taken to identify specific location of action. Unless the officer signing this letter states definitely that he was an eyewitness to the claim, this letter itself does not constitute supporting evidence.

b. Battalion Commanders will assess conflicting claims of batteries, Group Commanders will assess conflicting claims of battalions and Brigade Commanders will assess conflicting claims of Groups. Approved claims will be published in orders of Brigade or separate Group Headquarters. Where two units have equal claims, credit for one-half plane may be allowed each. When a searchlight section illuminates a target and thus materially aids in its destruction or damage it may be given credit for an 'assist'. Information copies of orders approving such claims will be forwarded to the Commanding General, Sixth Army, and to the Commanding General, 14th AA Command.

c. The following rules will govern claims of enemy aircraft:

(1) Claims for destruction of enemy aircraft will include the signed statement of at least one impartial eyewitness

in addition to those eyewitnesses within the fire unit making the claim. Other evidence to substantiate the claim such as a report from a pilot of wreckage of a Jap plane in the vicinity which was not claimed by the Air Force, or a report of wreckage of an enemy plane washed up on the beach on the morning after the night engagement, will be submitted in the form of signed statements from the persons making the reports.

(2) In case of aircraft claimed as probably destroyed or damaged, a statement of a single eyewitness is sufficient. However, in every instance where it is possible to procure statements from more than one eyewitness, especially one who is impartial, such statement will be included.

(a) Destroyed:

1. When seen to crash or land or fall into the sea.

2. When seen to fall abruptly toward the ground or sea so that it is obviously not under control.

3. When seen to disintegrate or be enveloped in flames.

4. When seen to descend on friendly territory and is captured.

5. When pilot and entire crew are seen to bail out.

6. When seen in the scopes of two or more radars to disintegrate or fall abruptly to the ground or sea. Reports will include information as to thunderheads, fixed echoes, and/or other interference.

(b) Probably destroyed:

1. When in flight and damaged so as to have less than an even chance of reaching its own territory.

2. When seen to lose parts while under AAA fire.

(c) Damaged:

1. When in flight it is so damaged as to require repair before beginning another mission, but having a better than even chance of reaching its own territory.

2. When AAA fire is seen to enter the enemy aircraft.

5. Report of Engagement of Waterborne Targets.

Units engaging waterborne targets will submit immediately after the action a letter narrative report, to include time of firing, number of registration or trial shots and shots for effect, type of shells and fuzes, type of target, range, results of fire, and other pertinent information. Reports will be submitted in triplicate through channels to the AA Commander who will forward the original to the Commanding General, Sixth Army, and one duplicate copy directly via Safehand Courier to the Antiaircraft Officer, GHQ, APO 500.

6. Final Report of Missions in Support of Infantry.

Missions in Support of Infantry and Field Artillery. In addition to the daily periodic report, a final narrative combat report will be rendered in triplicate to the AA Commander as soon as possible after a unit has been relieved of a ground support mission. Reports will include a description of movements, engagements, materiel capabilities and limitations, ammunition expenditures, comments, recommendations, and any other pertinent information. The AA Commander will forward the original copy to the Commanding General, Sixth Army, and one duplicate copy directly via Safehand Courier to the Antiaircraft Officer, GHQ, APO 500.

7. Engagement of Friendly Aircraft Report.

a. When the commander of any fire unit fires on a friendly aircraft, or has reason to believe that he may have done so, the occurrence will be reported immediately through command channels to this headquarters by the most rapid means. This report will contain a brief statement of the circumstances, to include the designation of the fire unit or units involved, and whether the aircraft was destroyed or damaged.

b. The Commander of the Group or separate unit commander to which the fire unit is attached will appoint an officer of field grade to investigate the occurrence immediately.

c. The investigating officer will forward to this headquarters

in triplicate, a report including the following information:

(1) Date and time of engagement.

(2) Type and number of aircraft involved.

(3) Position, altitude, and line of flight of the aircraft at time of engagement.

(4) Unit or units firing, and their location.

(5) Type and amount of fire.

(6) Amount and evaluation of damage.

(7) Alert and status of control of antiaircraft.

(8) Identification, if any, of aircraft made by the controller prior to the firing.

(9) Status of IFF (for gun batteries only).

(10) A narrative report from the chief of section or battery commander.

(11) Cause for action, if determined.

(12) Recommendations for avoidance of similar accidents in the future.

(13) Any other remarks.

8. Monthly Ammunition Report.

a. Antiaircraft Artillery units will submit a monthly status of ammunition report to this headquarters in duplicate on form provided. (Incl 3). Upon being relieved from attachment to this headquarters, units will submit a report covering the last partial monthly expenditure.

b. Complete instructions for filling out and submission of this report can be found on the reverse side of this form.

9. Historical Report.

Historical reports must be complete and accurate. They are the battle history of each unit and are forwarded to the War Department for future study. Reports will be submitted upon call of this headquarters

usually when units pass from attachment to Sixth Army, or upon completion of a campaign. A duplicate copy will be forwarded direct by Safehand Courier to Antiaircraft Officer, GHQ, APO 500. Letter, Subject: "Historical Reports", AG 314-7C, undated, Headquarters Sixth Army, will govern.

10. Classification.

All reports enumerated herein will be classified "SECRET".

4 Incls:
#1 - Combat Operations Report.
#2 - Status of Ammunition Report.
#3 - Observers Statement to Supplement Claim.

	SECRET
AUTH	
INIT	
DATE	

ORGANIZATION: _____ LOCATION _____

SUBJECT: Combat Operations Report (COR) No: _____ Date: _____

TO : Commanding General, Sixth Army, APO 442.
(Attention, Antiaircraft Officer)

				TOTAL
Raid Number (Assigned by AAOO)				
Course Number				
TIME:	Flash Blue			
	Flash Red			
	Target recognized or identified			
	Enemy engaged (or SL in Action)			
	Flash White			
Number and Type of Target				
Method of Pick-up: (Visual, Sound, Radar)				
Altitude at Target Pick-up (yds)				
Fuze at Commence Firing (for 90mm) or Slant Range (for AW & SL)				
Altitude at Commence Firing (yds)				
Fuze at Cease Firing (for 90mm) or Slant Range (for AW)				
Altitude at Cease Firing (yds)				
Altitude Target left area (yds)				
Fire Control (visual, radar, FAS, seen or unseen, etc.)				
Did S/L Pick-up (NB or SB) Slant Range at Pick-up				
No & Type of Planes Claimed	Destroyed			
	Prob. Destroyed			
	Damaged			
No. of guns Firing	120mm, 90mm, 40mm			
	.50 cal.			
Ammunition Expended (Alert Rounds excluded)	90mm (T74 fuzed)			
	120mm, 90mm, 40mm			
	.50 cal.			
No. rounds PD-T74E6 fired				
Lot No. of PD-T74E6 Ammunition				
% PD-T74E6 of Total rounds fired				
If 100% PD-T74E6 fired, report number of bursts	In general vicinity of target			
	Within 25 yards of target			
Number of Batteries engaged target				

MODEL OF FIRE CONTROL EQUIPMENT

DIRECTOR	HEIGHT FINDER	RADAR - SCR

Own Casualties (This report): Killed _____ Wounded _____

Total to Date: Killed _____ Wounded _____

Inclosure #1 to Annex 1.

NARRATIVE OF ACTION

Cover if applicable:

a. Enemy Tactics (AA) (T)

b. Location, Number, Type bombs dropped (AA)

c. Areas or Installations Strafed (AA)

d. Damage to Installations (AA) (T)

e. Radar Interference (AA)

f. Materiel Failures and reasons (AA) (T)

g. Fire Restrictions Details (AA) (T)

h. Weather Conditions (AA) (T)

i. Analysis of accuracy of fire (AA) (T)

j. Statement of observed effectiveness of fire (AA) (T)

k. Claim will or will not be submitted (AA) (T)

l. Remarks

INSTRUCTIONS TO BATTERY AND SEPARATE PLATOON COMMANDERS FOR MAKING OUT REPORT

1. Battery and Separate Platoon Commanders will submit COR's in duplicate to Battalion when enemy aircraft have been suitable targets for the weapons concerned, whether engaged or not, and will cover a 24-hour period beginning 0001 hours.

2. This report will not be used for ground and waterborne action.

3. The following abbreviations may be used in preparation of reports:

U - Unknown	NB - Normal beam	X - Not applicable
E - Estimated	SB - Spread beam	T - Terrestrial

4. This report will be submitted to Battalion with least possible delay.

2. Status of Training Ammunition:

15	16	17	18	19	20	21
Code Number A.I.C.	On Hand Last Report	Received Since Last Report	Expended Since Last Report			Balance on Hand
			AA Firing	Ground Firing	Seaward Firing	

Distribution:
Original, C.G., Sixth Army
Duplicate, C.G., 14th AA Command

_____

_____
Commanding

INSTRUCTIONS FOR PREPARATION AND SUBMISSION

1. Prepared by the following AAA units:
   Hq & Hq Batteries of Brigades and Groups.
   Battalions (include attached AAA units).
   Separate Battery.

2. Submitted for each calendar month.

3. To be mailed not later than the 5th day of the following month.

4. To be sent through senior AAA Commander who will be responsible for their submission.

5. Report includes small arms ammunition.

6. Column
   4 Equals total of columns 7 to 14 inclusive.
   12 Includes expenditures for all test firing and preparation of fire.
   13 Include in column 17. This ammunition is charged to yearly training allowances.

7. Any ammunition used in training for which the unit is not accountable, will be shown in columns 18, 19 and 20.

CONFIDENTIAL

HEADQUARTERS _____

APO _____

DATE _____

SUBJECT: Status of Ammunition Report for the month of _____

TO : Commanding General, Sixth Army, APO 442.
(Attention, Antiaircraft Officer)

1. Combat Ammunition.

a. Status of Combat Ammunition:

1	2	3	4	5
Code Number A.I.C.	On Hand Last Report	Rec'd Since Last Report	Expended Since Last Report	Balance On Hand

b. Expenditure Breakdown of Combat Ammunition:

6	7	8	9	10	11	12	13	14
Code Number A.I.C.	Type Firing						Reclassified as Trng	Destroyed Turned In
	Alert	Hostile Aircraft	Ground Firing	Seaward Firing	Flares & Paratroops	Test Trial		

CONFIDENTIAL

Inclosure #2 to Annex 1.

STATEMENT

Date _____
APO _____

On _____ at _____ I was at _____
(date) (time)

_____
(location)

when _____
(number and type)

Japanese planes came in at about _____ , flying in
(Altitude in Feet)

direction _____ , over _____
(as from East to West) Etc. (what locality)

_____. I saw _____
(120mm, 90mm, 40mm, or M51

_____ , of _____ open fire on these planes,
Machine Guns) (Unit)

causing following damage to target: _____
(Describe effect of fire on target)

_____

_____

When last seen, the plane was at _____
(Give location and definite statement as

_____
to final damage to plane)

_____

To the best of my knowledge, this plane was _____
(Destroyed, probably destroyed

_____ by fire of _____
or damaged) (Unit)

Signed: Name _____

Rank _____

Orgn _____

Inclosure #3 to Annex 1.

5. Standing Operating Procedure, Headquarters 68th AAA Brigade.

HEADQUARTERS
SIXTY EIGHTH AAA BRIGADE
APO 70

14 April 1945

STANDING OPERATING PROCEDURE

I N D E X

HEADQUARTERS
68th AAA BRIGADE
APO 70

14 April 1945

STANDING OPERATING PROCEDURE

SECTION I - GENERAL

1. Purpose. - The purpose of these instructions is to prescribe for all AAA units attached to this brigade standard procedures for AA defenses, based on the policies of this and higher headquarters. This SOP pertains particularly to the present campaign. SOP's of subordinate units will be made consistent with these instructions.

2. Rescission. - All previous instructions issued by this headquarters, in conflict with this SOP, are rescinded, including SOP, this headquarters, 30 October 1944.

SECTION II - ORGANIZATION

3. Brigade Organization. - AAA units of this brigade are organically assigned to the 14th AA Command, attached to the Sixth Army and reattached to this brigade.

SECTION III - FIGHTER CONTROL CENTER AND AAOR

4. Fighter Control Center. - The Fighter Command establishes a Fighter Control Center in each Fighter Sector. A Fighter Sector is a geographical division consisting of one or more defended areas, the defense of which may be controlled from one FCC plus necessary sub-FCC's in each defended area. Normally a Fighter Wing is assigned the mission of the installation of the FCC and is responsible to the Air Task Force Commander for its operation. Through the AA Commander, the Fighter Controller exercises operational control of AAA in the sector, prescribing alerts and issuing fire control instructions. Coordinating with the Senior AA Commander, he establishes Gun Defended Areas (GDA) over which aircraft flights are restricted. Limits of GDA's are determined by considering the range of a 90mm gun as 15000 yards and 40mm as 5000 yards.

5. Antiaircraft Operations Room (AAOR). - The AAOR is established and operated by the Senior AAA Commander in that AAA Defended Area. It functions as a tactical headquarters of the AAA defense, collecting,

evaluating, and disseminating intelligence, and transmits conditions of alert and control of fire from the Fighter Controller to subordinate AAA units. AAAIS information will be evaluated and made available to the Fighter Controller. All plots are transmitted in Air Defense Grid coordinates. For purposes of coordination and liaison, the AAOR with Searchlight AAAIS will be located in the same room as the Fighter Controller and the Sector Operations Board. (Refer to Annex No. 1).

SECTION IV - STATE OF READINESS, CONDITIONS OF ALERT, AND CONTROL OF FIRE

6. State of Readiness.

a. AAA units will maintain the following minimum state of readiness at all times:

(1) Adequate local security guards against enemy airborne or ground attack.

(2) Continuous air guard at each fire unit, OP, and separate CP.

(3) Sufficient personnel to man at least one tactical communications system to higher headquarters, to periodically check all command and intelligence communications nets, both wire and radio, and for local protection.

(4) In case of FLASH BLUE, sufficient personnel in the immediate area of a CP or fire unit position to prepare equipment for instant action. OP's will be manned under all conditions of alert for 24 hours each day.

(5) During the critical days of an operation, full gun crews will remain in the immediate vicinity of their guns, day and night.

b. Designation of States of Readiness - Three states of readiness are prescribed, to be designated as follows:

(1) One - All equipment, CP's, and OP's fully manned and ready to go into instant action.

(2) Two - Equipment, and CP's manned with the minimum personnel necessary to go into action in 30 seconds for Gun Batteries and 2 seconds for AW fire units. All OP's fully manned.

(3) Three, Normal Condition - Equipment manned as indicated in Paragraph 6a.

(4) The Brigade AACO will determine and order the state of readiness to be maintained. Orders will be given "Readiness One", "Readiness Two", or "Readiness Three".

c. Battalion SOP's will prescribe such matters as time or distance of personnel from their equipment; the number of men at each piece of equipment, who they are, and their duties; what radars are on the air; what power plants will be warming up; status of ammunition; and other pertinent factors.

d. Group SOP's will provide for a coordinated defense by, and between, battalions to include radar operating schedules and uniformity in battalion SOP's.

7. Conditions of Alert and Control Status. - The Fighter Controller determines and announces the condition of alerts and the control status. The Antiaircraft Operations Officer transmits the condition of alert and control orders to all antiaircraft artillery units, to the senior AA headquarters, and to all other ground units in the Fighter Sector.

a. The conditions of alert are as follows:

(1) FLASH RED

(a) Air attack is imminent. Enemy or unidentified aircraft are within ten minutes of the defended area. All elements will be alerted by the firing of three shots from designated 40mm and 90mm guns, and by three blasts from sirens or airhorns where available. Alert will also be transmitted by radio and telephone.

(2) FLASH BLUE

(a) Air attack is probable. Enemy or unidentified aircraft are 20 minutes from the defended area. Antiaircraft and other specially designated units only, are notified by wire or radio. No general alarm will be sounded.

(3) FLASH WHITE

(a) Air attack is not imminent or probable. This is normal condition (all clear).

(b) Flash White follows Flash Red or Flash Blue. Elements are released from Flash Red alert condition by firing one shot from designated 40mm and 90mm guns, and by one blast from siren or airhorns where available. Flash White will also be transmitted by radio and telephone.

(4) AIRBORNE ATTACK

(a) Attack by paratroops, glider, or transport-borne enemy troops is imminent or in progress.

(b) Units becoming aware of an airborne attack will sound the alert by firing seven (7) shots from 40mm or 90mm guns, or by sounding seven (7) blasts on a siren or airhorn, and will immediately inform the Fighter Controller. The alert will then be transmitted in normal manner and designated guns will fire the alert.

(c) Elements will be released as prescribed for Flash White.

b. Orders for Control of Fire are:

(1) CONTROL YELLOW. - AAA is released to fire at any aircraft within the GDA not positively identified or recognized as friendly. AAA is released to fire at aircraft outside the GDA, only when the aircraft is positively recognized as enemy or when the installations being protected or the AAA position is directly under attack.

(2) CONTROL GREEN. - AAA guns and AW's are restricted from firing at any aircraft except when the aircraft is positively recognized as enemy by markings on wings or fuselage or commits a hostile act, and is not being engaged by friendly planes. Restrictions for SL's are covered in paragraph 10. The following are hostile acts:

(a) Engaging in direct attack against friendly ground, sea or air installations.

(b) Dropping any type of explosive in friendly territory except on a bombing range.

(c) Dropping parachutists except from an airplane obviously out of control.

(d) Approaching ships in a manner indicating a torpedo attack.

(e) Flying over a restricted area, except prearranged flights or fighter aircraft engaging an enemy.

(f) Dropping flares over land or sea, except for prearranged missions or an airplane in distress making a forced landing.

(g) Engaged in mine planting activities.

(h) Other acts definitely recognized as hostile.

(3) Enemy parachute mines and flares are engaged only under specific orders of the Fighter Controller.

8. Suspension or Withholding of Fire.

a. By the Fighter Controller.

(1) The Controller may change the control of fire at any time he deems necessary.

(2) The Fighter Controller announces the control of fire each time the condition of alert is changed. He may change the control of fire, without necessarily changing the condition of alert.

b. By the AAA Fire Unit Commander. - Commanders will take positive steps to prevent antiaircraft weapons from firing into ground installations and personnel and will suspend or withhold fire when friendly planes, troops, or ground installations become endangered.

9. Firing at Unseen Targets. - Automatic weapons will not fire on unseen targets except approved barrage fire and then only as ordered by AAA Commander.

10. Control of Searchlights.

a. During the FLASH RED (Control Yellow or Control Green), FLASH BLUE (Control Yellow), and FLASH WHITE (Control Yellow) searchlights are released to illuminate any target not definitely identified or

recognized as friendly, unless specifically restricted by the Fighter Controller or the Brigade AAOO. The command for this restriction as transmitted by the AAOO, is "Hold Searchlights", and the command for release from the restriction is "Release Searchlights".

b. The Fighter Controller may request the employment of searchlights for measuring altitude of cloud bases, indicating the position, course, or altitude of friendly or hostile aviation, assisting in homing friendly airplanes, or for other special missions. Such requests will be complied with.

c. Fighter-Searchlight Operations may be employed where the local situation permits and when requested by the local Fighter Controller.

11. Communications Failure. - If communications between a fire unit and higher echelons are entirely disrupted, the following action will be taken by the fire unit commander:

a. During FLASH RED or BLUE the fire unit changes the alert condition only in accordance with the sound code as fired by 40 or 90mm guns.

b. During FLASH WHITE the fire unit goes on FLASH RED until communication has been reestablished.

c. If on Control Yellow, the unit assumes Control Green. If on Control Green, unit remains on that control.

12. Alternate Communications Systems. - If it is impracticable to obtain air warning information through normal channels, AAA units may monitor the following radio nets.

a. Local Air Warning Net over which condition of alert, control of fire, and aircraft plots (polar coordinates in true azimuth and nautical miles from a predetermined reference point) are transmitted. See SOI, 68th AAA Brigade.

b. Inter Fighter Director Net over which conditions of alert, control of fire, and aircraft plots (polar coordinates in true azimuth and nautical miles from a predetermined reference point) are transmitted. See SOI, 68th AAA Brigade.

SECTION V - INITIAL CONTROL ON AMPHIBIOUS LANDINGS

13. Naval Control. - The Support Aircraft Controller exercises control over all aircraft in the objective area, and assisted by the Fighter

Director and Fighter Controller directs fighter activities, and disseminates air warning information, conditions of alert, and the control of fire. The following information is disseminated:

a. Over Local Air Warning Net. - Polar coordinates in true azimuth and nautical miles from a predetermined reference point; alerts and control of fire as in Paragraph 7. This net is the basic source of information for AAA units until shore AAA control is established.

b. Over General Warning Net. - Special JAN Grid coordinates for aircraft position locations, and alerts and control of fire as in Paragraph 5. This net is the standby for AAA units.

14. Release from Naval Control. - When the Fighter Control Center (ashore) with the AAOR is ready for operation, and at a time determined by the Attack Force Commander, the control of Antiaircraft Artillery fire, as defined herein, passes from the Support Aircraft Controller (Navy) to the Air Task Force Commander (Army). The Air Task Force Commander establishes approach procedure, and Antiaircraft safety lanes for the protection of friendly aircraft entering the restricted area (GDA).

SECTION VI - MISSIONS OTHER THAN ANTIAIRCRAFT

15. Terrestrial Fire Support. - AAA units will be prepared to execute terrestrial fire missions in support of Field Artillery or Infantry Heavy Weapons. When so utilized units will be normally placed under the operational control of the commanding officers of the supported units.

16. Waterborne and Mechanized Targets. - AAA units that are suitably located, will be prepared to take under fire enemy waterborne targets or enemy mechanized targets, within range.

17. Local Security. - Each AAA fire unit, OP, and CP is responsible for establishing adequate local security against ground or airborne attack. Definite, effective plans will be worked out for each location, specific instructions disseminated to sentries and outposts, and complete coordination accomplished with adjacent units. Paratroop defense plans will be coordinated by Brigade Headquarters. (Refer to Annex No. 2).

SECTION VII - REPORTS

18. Administrative Reports. - Administrative reports will be prepared and submitted as directed by this and higher headquarters.

19. Combat Reports. - Combat reports will be prepared and submitted as prescribed in Annex 2 and 4 to AAA SOPI No. 1, Hq Sixth Army, dated

8 November 1944, and as directed from time to time by this and higher headquarters.

SECTION VIII - AMMUNITION

20. Level Maintained. - AAA units will maintain a minimum level of one (1) U/F for ground weapons and small arms; and two (2) U/F for AAA weapons. Three (3) additional U/F for AAA weapons will be maintained in base dumps.

21. Composition. - Percentages for a unit of fire of shell, HE fuzed with M-43, VT, PD M-48 and shell, APC will be as prescribed by Sixth Army.

BY COMMAND OF BRIGADIER GENERAL FRENCH:

PRESTON STEELE
Colonel, CAC
Executive

OFFICIAL:

/s/ Richard B. Robinson
/t/ RICHARD B. ROBINSON
Lt Col., CAC
S - 3

ANNEX NO. 1 - AAAIS and AAOR Procedure.
ANNEX NO. 2 - Anti-Paratroop Defense Procedure.

HEADQUARTERS
68th AAA BRIGADE
APO 70

14 April 1945

ANNEX NO. 1 to Standing Operating Procedure, this headquarters, dated 14 April 1945.

AAAIS AND AAOR PROCEDURE

SECTION I - GENERAL

1. Purpose. These instructions supplement but do not supersede the provisions of paragraph 5, Section III, Standing Operating Procedure, this headquarters, dated 14 April 1945.

SECTION II - ORGANIZATION AND RESPONSIBILITY

2. Brigade AAOR.

a. Organization.

(1) The Brigade AAOR is the Command Post for the tactical control of all attached units by the Brigade Commander. The Searchlight AAAIS will be established in the Brigade AAOR.

(2) The Brigade Commander will exercise tactical control over separated defended areas within the same Fighter Sector.

b. Responsibility. The AAA Operations Detachment attached to the Brigade will establish and operate the Brigade AAOR. The officer personnel of the Operations Detachment become the Antiaircraft Operations Officers (AAOO) described in FM 44-8, 10 August 1944.

3. Group AAOR.

a. AAA Groups exercising tactical control over guns, automatic weapons and searchlights in the immediate defended area of the Brigade AAOR, will establish group operations room in the Brigade AAOR.

b. AAA Groups not located within the immediate defended area of the Brigade AAOR, but in an area having a representative Fighter Control Center (FCC) are responsible for the establishment of an AAOR for the tactical control of attached units. This installation will be located in the respective F.C.C.

c. AAA Groups not located within the immediate defended area of the Brigade AAOR, and not having a representative F.C.C. will install an AAOR in a central location and will receive air warning information and tactical control orders from the Brigade AAOR.

4. Battalion G.O.R. Battalions will establish gun operations rooms to facilitate tactical control by the battalion commander. Air warning and AAAIS information will be received from the Brigade AAOR.

SECTION III - COMMUNICATIONS

5. Radio nets, frequencies, and call sign assignments are prescribed in Signal Operations Instructions (S.O.I.) Headquarters 68th AAA Brigade, dated 15 December 1944 with changes thereto.

6. Communication will be maintained by radio until required wire communications are established.

7. Wire nets will be established in accordance with the plan shown in Fig 1. All fire control and searchlight radars will have data lines connected directly to the plotting board in the senior AAOR in the defended area. Command and Intelligence (C&I) loops will be maintained between the appropriate operations officer in the Brigade AAOR and the headquarters of subordinate units.

8. Permanent radio nets are shown in Fig 2.

SECTION IV - OPERATIONS PROCEDURE

9. General.

a. Responsibilities of AAOO.

(1) Supervise the collection, evaluation, and dissemination of AAA Intelligence.

(2) Prescribe alert conditions and control of fire status as directed by the Fighter Controller.

(3) Make AAA intelligence available to the Fighter Controller.

(4) Take positive corrective measures to insure continuous, effective operation of the communications system.

(5) Receive and disseminate to interested units Radiosonde, Rawind, and other meteorological data.

10. Brigade AAOR with Group Operations Combined.

a. Plotting Board.

(1) The Antiaircraft Operations Plotting Board will be placed adjacent to the F.C.C. Operations Board to allow best possible visibility to all AA Operations Officers.

(2) Only AAAIS data will be displayed on the antiaircraft operations board.

b. Officers required for operation.

(1) Two (2) AAA Groups in Brigade defended area. One (1) Brigade Antiaircraft Operations Officer (AAOO), one (1) Gun Operations Officer (GOO), and one (1) Searchlight Operations Officer (SLOO).

(2) One (1) AAA Group in Brigade AAOR Defended area. One (1) AAOO, one (1) GOO, and one (1) SLOO.

(3) AAA Group in Separate Defended area. One (1) AAOO, and one (1) GOO, and one (1) SLOO, all furnished by the Group and its attached units.

c. SCR 584 AAAIS Plots will be furnished as prescribed by OI # 5, Headquarters 68th AAA Brigade, dated 26 January 1945, Subject: "SCR 584 AAAIS Plots".

d. SCR 268 AAAIS Plots will be furnished in a series of three on an unidentified target to determine direction of flight and provide for a possible identification from the Fighter Controller.

e. During periods of "Flash WHITE", OP's and surveillance radars will not report targets positively recognized or identified as friendly, unless so directed by the AAOO.

f. During periods of "Flash BLUE" or "Flash RED", all OP's and radars will report all plots with the following priorities of search for radars.

(1) Unidentified aircraft approaching, or in, the Defended Area.

(2) Friendly aircraft near, or in, the Defended Area - to facilitate the Fighter Controller in directing them out of the area.

(3) Unidentified aircraft at long range.

(4) As specifically requested by the AAOO or other appropriate operations officer.

g. The air guard at all searchlight positions will act as a visual OP. Flash messages from radar lights will be transmitted in accordance with form prescribed in Paragraph 4a OI # 11, Headquarters 68th AAA Brigade, dated 24 February, over radar data lines to AAOR. From carry lights, flash messages will be sent over the platoon hot loop, thence to the SLOO at the AAOR from the platoon.

h. OP's will operate in accordance with Paragraph 4, OI # 11, Headquarters 68th AAA Brigade, dated 24 February 1945.

i. All units operating within the immediate GDA of the Brigade AAOR or point defenses adjacent thereto, will monitor the Brigade Command and Intelligence Net in accordance with Paragraph 3, OI # 11, 68th AAA Brigade, dated 24 February 1945.

11. Separate Group or Battalion AAOR and AAAIS. If without a representative Fighter Control Center, and within the same Fighter Sector, all principles of Section II, 3c, above will be followed insofar as practicable. It becomes the responsibility of the Brigade AAOO that AWS plots, pertinent AAAIS plots, conditions of alert, control of fire, and general liaison be passed from the Brigade AAOR to the Group or Separate Battalion AAOR, and return of pertinent AAAIS and liaison.

BY COMMAND OF BRIGADIER GENERAL FRENCH:

PRESTON STEELE
Colonel, CAC
Executive

OFFICIAL:

/s/ Richard B. Robinson
/t/ RICHARD B. ROBINSON
Lt Col., CAC
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2 Incls:
Fig # 1 - Schematic Wire Net.
Fig # 2 - Schematic Radio Net.

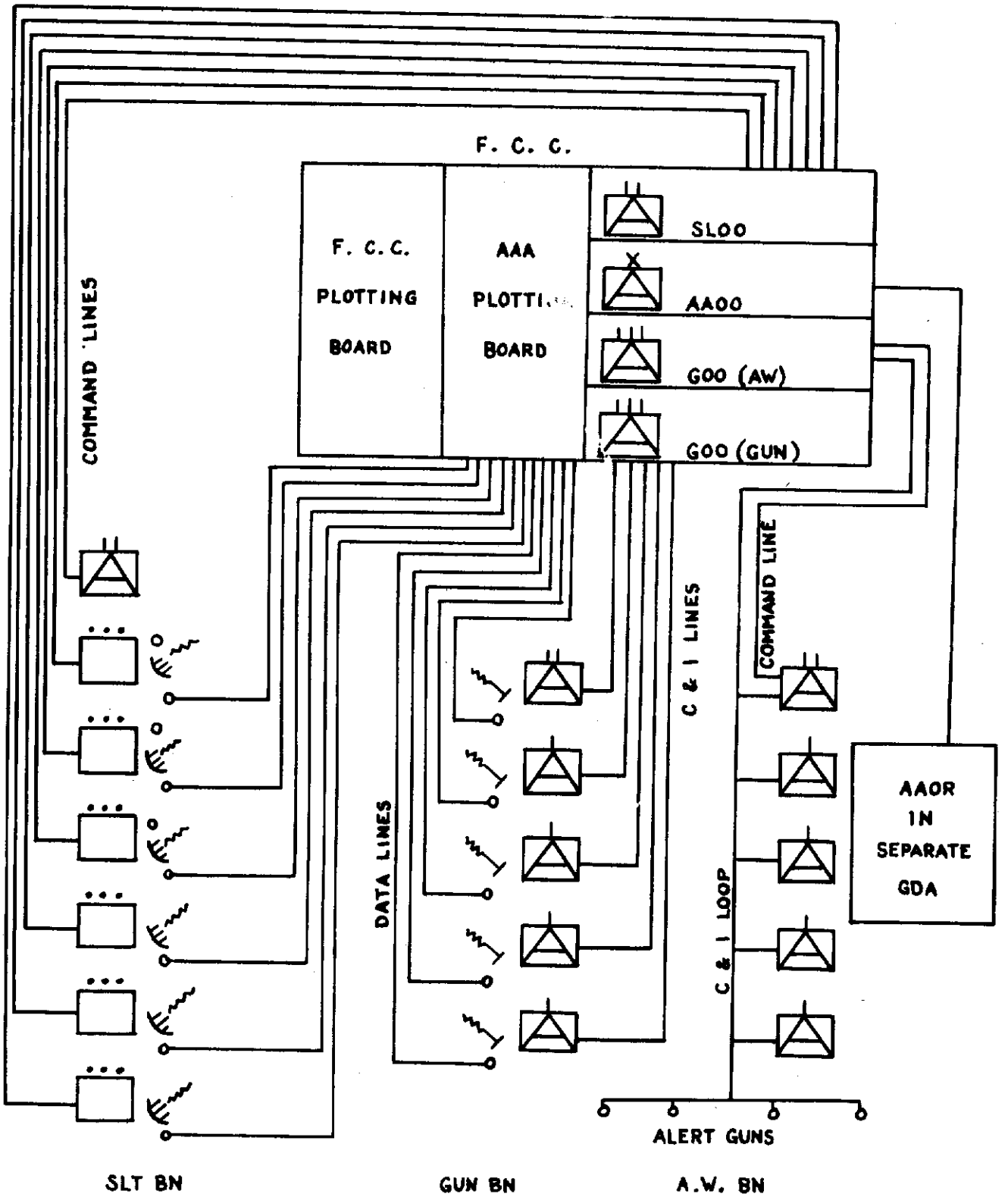

FIGURE # 1

SCHEMATIC WIRE NET

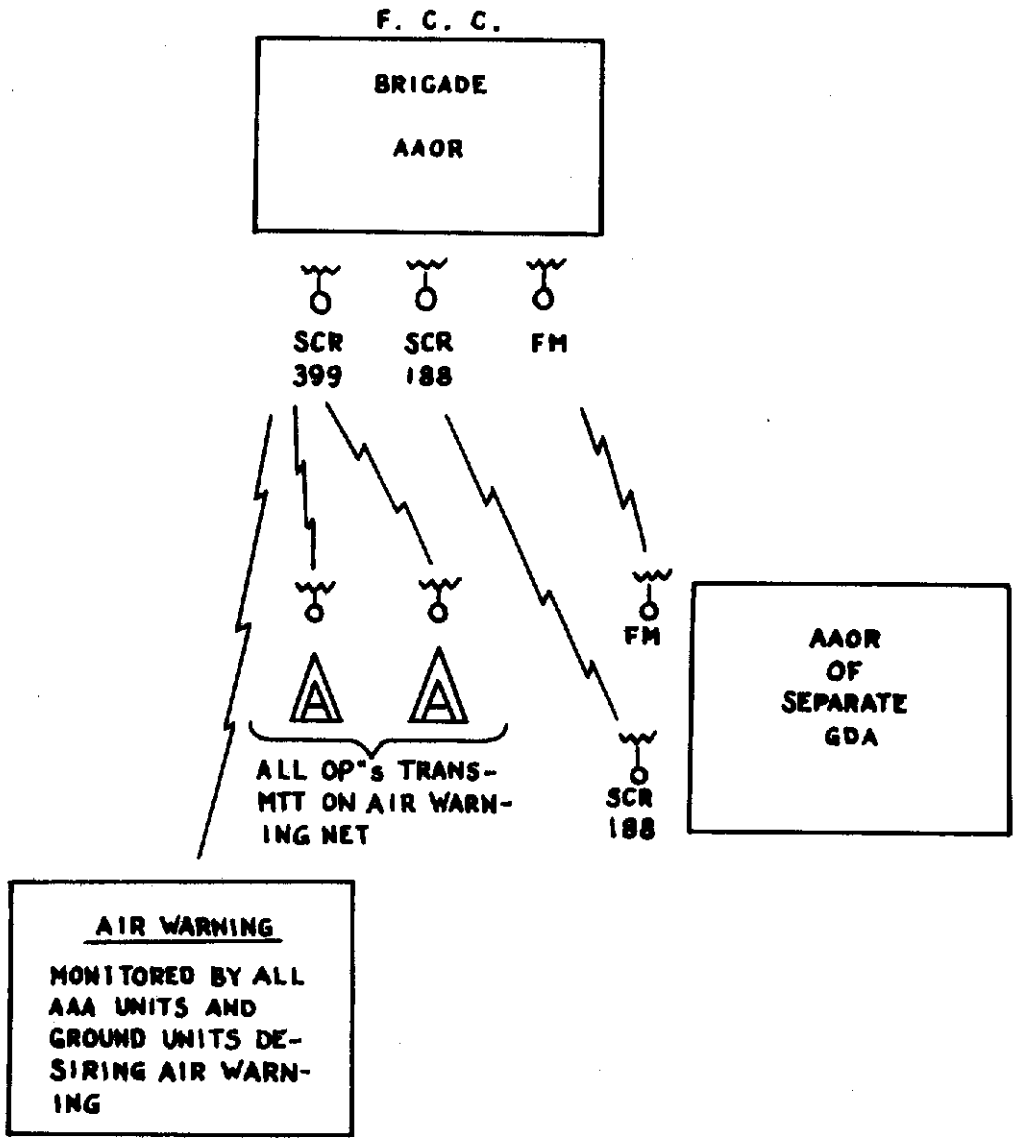

FIGURE # 2

SCHEMATIC RADIO NET

HEADQUARTERS
68TH AAA BRIGADE
APO 70

14 April 1945

ANNEX NO. 2 to Standing Operating Procedure, this headquarters, dated 14 April 1945.

ANTI-PARATROOP DEFENSE PROCEDURE

68TH AAA BRIGADE

1. Group and separate battalion commanders will forward to this headquarters an anti-paratroop defense plan for the units under their command (reference Par 17, SOP 68th AAA Brigade, 14 April 1945) with the least practicable delay after an AA defense of an area has been established. These plans will be considered in connection with the preparation of a brigade plan to cover general conditions. The group plan will include all details necessary to make it effective. Its general organization will include such matters as:

a. Methods of detecting the imminency of a paratroop attack (OP's, air guards, etc) and the prompt transmission of such information to the FCC.

b. Methods of warning local adjacent units that a paratroop attack is imminent. General warning to AA and other units will be thru the FCC.

c. Action of crews manning AA equipment, bearing in mind that automatic weapons are very effective against paratroops while descending and after landing.

d. The establishment of the necessary mobile reserves including method by which they will be formed and moved and designated assembly points. If movement is to be by motor vehicles, the necessary vehicles must always be on hand.

e. All other details of the defense organization.

2. Anti-paratroop plans of AA units must be coordinated with those of adjacent units. The operation of plans must not materially decrease the effectiveness of AA units for fire against aerial targets.

BY COMMAND OF BRIGADIER GENERAL FRENCH:

PRESTON STEELE
Colonel, CAC
Executive

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/s/ Richard B. Robinson
/t/ RICHARD B. ROBINSON
Lt Col., CAC
S - 3

6. Antiaircraft Section Standing Operating Procedure

HEADQUARTERS SIXTH ARMY
APO 442

Antiaircraft Section
15 March 1945

1. MISSION OF THE AA SECTION:

The mission of the AA Section is to advise and assist the Commanding General and his Staff in all matters pertaining to active and passive antiaircraft defense and to seacoast defense as follows:

a. Advise the Commanding General as to the tactical and technical requirements for AAA and CA for combat operations.

b. Recommend to the Commanding General the allocation of Army AAA and CA for subordinate commands.

c. Collaborate with other staff sections for the planning and execution of operations on all matters pertaining to antiaircraft and seacoast defenses.

d. Prepare plans for the use and coordination of AAA and of all other ground elements of AA defense, both active and passive, and for the use and coordination of elements of the CA defense.

e. Prepare the AA and CA sub-paragraphs and annexes for Field Orders.

f. Conduct such inspections of AAA and CA with the Army as are necessary to keep the Commanding General informed as to the morale, discipline, and combat efficiency of such units.

g. Prepare plans for relief of AAA and CA units and arrange for suitable rest areas.

h. Supervise the training of AAA and CA units and arrange suitable facilities for such training.

i. Disseminate technical and tactical information.

j. Arrange for the dissemination of AAA and CA Intelligence.

2. GENERAL:

a. A staff exists for the troops. Everything possible will be done by the staff to lighten the load of the troops.

b. Staff members are assigned to assist the Chief of Section in executing the details of his plans, policies, and orders. The Chief of Section must be kept informed of all incidents and work of his staff officers.

c. Staff members render technical advise and assistance to the Chief of Section. Do not hesitate to ask for advice when stymied.

d. Staff members must not lose sight of the fact that proper planning on their part, and the furnishing of sound advice to the Chief of Section results in the efficient accomplishment of the AA and CA missions with the minimum loss of man hours on the part of the lower units. On the other hand, an improper decision might cause impossible situations to arise among the lower units which results in loss of confidence in the higher commands, excessive drain on physical and mental resources of the officers and men, and the general lowering of morale.

e. Staff reports and staff studies must present the problem with the recommended solution in a clear and logical sequence.

f. Staff work must be thoroughly coordinated within the section and with staff members of other sections of this or other mutually interested headquarters, so that all concerned understand the problem and reach a working agreement. This may be accomplished by conferences, concurrences, telephone, and lastly by correspondence.

g. Staff work must be complete. By completed staff action is meant the study of a problem, the necessary coordination within this section, and with other interested staff sections to solve the problem, and presentation of the solution in such form that all that remains to be done on the part of the Chief of Section is to indicate his approval or disapproval of the complete action.

h. All messages, correspondence, and other written work must be concise, brief, complete, and clear with no possible ambiguity.

i. The publication of the Commanding General's decision in directives, orders, or memoranda, does not complete the transaction. Staff officers will follow up to insure that AAA and CA units comply with such instructions and that commanders understand exactly what they are to do.

j. Staff officers will attempt, in every way possible, to establish cordial relations with the lower unit commanders, and to impress upon them in an unobtrusive manner the fact that the AA Section will do everything possible to help them accomplish their mission.

k. Staff officers will never take it upon themselves to reprimand or argue with subordinate commanders.

l. All reports of discrepancies found on an inspection will be based on facts, and will not be influenced by personal prejudices.

m. Faults and discrepancies can always be found on an inspection. However, a staff officer who reports only on faults, and makes no mention of commendable things he has found, gives his Chief of Section an unbalanced view of the unit inspected, and is unfair to both the unit commander and the Chief of Section. Staff members will report verbally the findings of their inspections to the unit commander, so that corrective action may be initiated without delay. In so doing, however, they must commend him for good points as well as inform him of the discrepancies found. It is desirable for the inspector to praise good points on the spot. In this respect the chain of command need not be observed. For instance, the inspector can commend a soldier on the excellent condition of his rifle.

n. Staff officers will observe what effect, especially mental and physical, current orders, plans and policies, have upon AAA and CA troops. These observations will be reported to the Chief of Section together with recommendations for necessary changes, or for the formulation of new plans or policies.

o. Tactical and technical advice and recommendations are normally presented to the Commanding General or Chiefs of other Sections of this headquarters by the Chief of the AA Section or his appointed representative.

p. Staff members will refrain from divulging any part of plans under consideration by this section or headquarters until they are released officially, and then only to those individuals who must be informed.

q. Staff officers, as such, do not command. They make recommendations and lend all possible assistance to AAA and CA commanders, but can issue no orders unless instructed to do so by the Commanding General. A written report of orders issued, recommendations made, or action to assist commanders, together with the reasons therefor, will be submitted to the Chief of Section as soon as practicable. When transmitting oral or written orders to lower units, they must make it clearly understood that the orders are those of their Commanding General. In this respect, the chain of command will be scrupulously observed.

3. RESPONSIBILITIES:

a. General:

(1) Staff sub-sections will anticipate and prepare annexes, orders, reports, and plans, to be called for in the future by this headquarters or higher headquarters.

(2) Staff sub-sections must make such changes in their sub-section policies, procedures, check lists, and duties as are necessary due to changes directed by this or higher headquarters.

(3) Senior officer in each sub-section is in charge of the sub-section and is responsible for its organization, efficiency, and results.

(4) Maintain suspend file and follow up on any negligence on the part of subordinate units in failure to make reports required by this or higher headquarters.

(5) Assure that all reports, requests, and publications are reviewed by the officer of the sub-section qualified in that phase and that his comments or recommendations are prepared for the action of the Chief of Section.

(6) During the absence of the Chief of Section or sub-section, the senior officer present automatically assumes the responsibilities and duties of that section

and will carry out the assigned mission in keeping with established policies.

(7) Assign duties of an officer who is absent to another officer of the sub-section.

(8) Officer in charge of sub-section, before departing or before allowing an assistant to depart, will transfer all uncompleted work to another officer of the sub-section.

(9) Assure that at least two officers and two enlisted men are familiar with each duty in the sub-section.

b. Operations:

(1) Recommend the amount of AAA or CA required for any given situation to include reinforcing units as operations, installations, and facilities are expanded.

(2) Recommend missions, priorities, areas, or vital points to be defended.

(3) Prepare plans for use and coordination of AAA and all other ground elements of AA defense, both active and passive.

(4) Prepare AA and CA sub-paragraphs and annexes for the Army Field Order.

(5) Prepare logistics for AAA and CA units.

(6) Plan and conduct inspections to determine combat efficiency of attached AAA and CA units.

(7) Check carrying out of Army Field Orders.

(8) Observe effectiveness of AAA and CA and make recommendations as to tactical positions.

(9) Observe emplacements, ground defense, camouflage, dispersion, warning systems, etc, and make recommendations as to corrective action.

(10) Receive telephone and written reports of operations.

(11) Recommend relief and rotation of units.

(12) Receive and process monthly ammunition reports and recommend allocation of available ammunition.

(13) Prepare necessary letters, records, reports and recommendations pertaining to operations required by this headquarters or higher headquarters.

(14) Recommend allocation of available equipment and materiel to the supply sub-section.

(15) Upon request determine transportation (land, air, water) required for the movement of troops and supplies.

(16) Coordinate with G-3 and other Sections to insure correct attachments of AAA, CA, and allied maintenance units.

(17) Maintain a location list of AAA and CA units attached to the Army, together with pertinent service maintenance units.

(18) Prepare training directives and arrange for suitable facilities for training.

(19) Process SOP's, orders, directives, or memoranda concerning tactics, operations, and training, issued by subordinate units, checking to see that all requirements of this headquarters or higher headquarters are understood and fulfilled.

(20) Process all training literature, directives, orders or memoranda of this or higher headquarters, and where advisable, recommend such changes as are necessary.

(21) Prepare necessary letters, records, reports, and recommendations pertaining to training required by this headquarters or higher headquarters.

(22) Keep situation and operations maps up to date.

(23) Furnish overlays and terrain studies as required.

(24) Maintain current data on enemy intelligence. Keep units informed of: enemy air strength and unusual

tactics, enemy capabilities.

(25) Maintain current data on friendly intelligence of our air force and operations and number of enemy planes destroyed by AAA, Air Corps, and Navy.

(26) Upon request act as liaison between AA-Air Corps-Navy.

(27) Check AAOR and AAAIS intelligence procedures and methods of subordinate units.

(28) As required analyze incoming correspondence.

c. Administration and Supply:

(1) Supply:

(a) Maintain suitable charts and records to reflect current authorizations and status of equipment of AAA and CA units.

(b) Upon special request from AAA and CA units, arrange with proper staff section of this headquarters for the supply, repair, or replacement of any authorized equipment which has not been issued or is unserviceable due to damage or wear.

(c) Check correspondence to AAA and CA units initiated by supply sections, regarding:

1. Corrections of discrepancies in authorization.

2. Turning in of overage, and

3. Follow up of shortages. Errors in preparation will be noted and recommendations forwarded to sections concerned.

(d) Prepare necessary letters, records, reports, and recommendations pertaining to supply required by this headquarters or higher headquarters.

(e) Arrange transportation for supplies, and for units as requested by Opns Sub-Section, maintaining a follow-up on such requests.

(2) Administration:

(a) Maintain Message Center.

(b) Check all incoming papers and route same to interested section staff officers.

(c) Check all outgoing papers for neatness, completeness, form, and routing among Army staff sections.

(d) Prepare and distribute information copies of radiograms, messages, and letters to interested staff sections within the Army.

(e) Maintain AA Section Journal and files of various sub-section activities sheets.

(f) Maintain AA Section Files.

(g) Procure office supplies.

(h) Supervise work of enlisted personnel.

(i) Police Section Office area.

(j) Process, advise, and help newly assigned or visiting officers of the AA Section.

(k) Process promotion of attached officers.

(l) Maintain data file on AAA and CA field officers attached to the Army.

(m) Maintain liaison with AG and G-1 to ascertain that Army AAA and CA units are maintained at T/O strength.

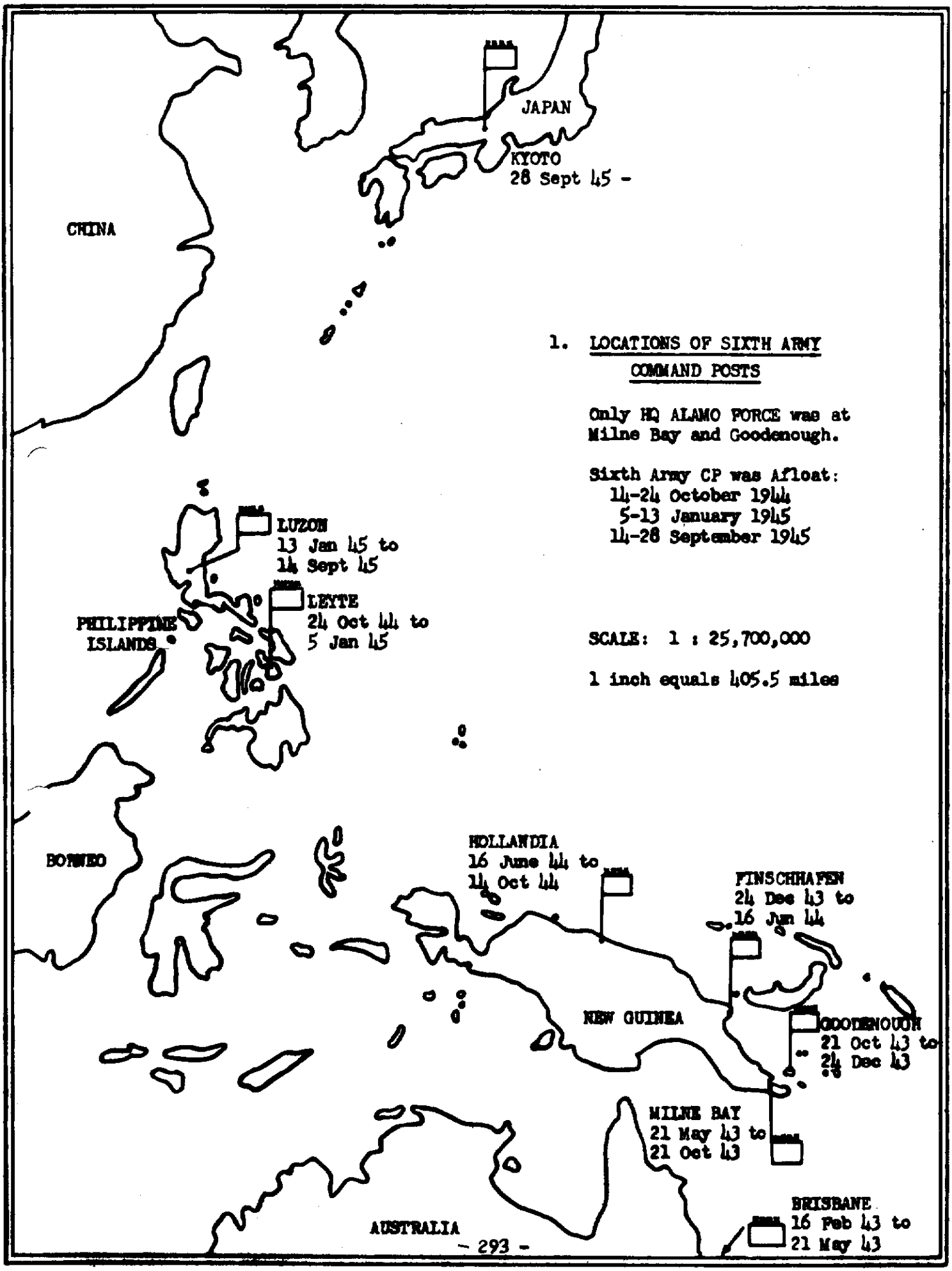
(n) Maintain and expedite inter-office circulation.

SECTION XVI

ANTIAIRCRAFT SECTION

HEADQUARTERS SIXTH ARMY

1. LOCATIONS OF SIXTH ARMY HEADQUARTERS
2. NARRATIVE ACCOUNT OF ACTIVITIES
3. CHART OF ORGANIZATION
4. PERSONNEL
5. AWARDS AND DECORATIONS
6. PROMOTIONS
7. OBSERVERS FROM SECTION ON OPERATIONS



1. LOCATIONS OF SIXTH ARMY COMMAND POSTS

Only HQ ALAMO FORCE was at Milne Bay and Goodenough.

Sixth Army CP was Afloat:
14-24 October 1944
5-13 January 1945
14-28 September 1945

SCALE: 1 : 25,700,000

1 inch equals 405.5 miles

2. NARRATIVE ACCOUNT OF ACTIVITIES

The Headquarters Sixth Army was activated at Fort Sam Houston, Texas, on 25 January 1943, per General Order #10, Headquarters Third Army, Fort Sam Houston, Texas. Personnel for the headquarters was selected from Third Army headquarters and subordinate units. The Antiaircraft Section, Sixth Army, was initially comprised of six officers, one warrant officer, and nineteen enlisted men as follows:

Colonel	George R. Burgess,	Antiaircraft Officer
Lt Col	William L. McNamee,	Executive Officer
Major	John C. Austin,	Operations Officer
Major	Arthur D. Miller,	Asst Operations Officer
Captain	George W. Felker III,	Asst Operations Officer
Captain	Edward S. Croft, Jr.,	Supply Officer
WO(JG)	Johnnie R. Davis,	Administrative Officer

M/Sgt	William C. Panek	Tec 5	Lewis R. Malm
M/Sgt	Harry W. Morris	Pfc	Charles Bartolomo
T/Sgt	Rolland D. Scott	Pfc	Max L. Wheeler
S/Sgt	Robert F. Butterfield	Pvt	Daniel Baars
S/Sgt	David H. Lichtenfeld	Pvt	George Barr
S/Sgt	Russell C. Todd	Pvt	William E. Boyce
Sgt	Thomas G. Bryant	Pvt	Joseph P. Hahn
Tec 4	James Hendrix	Pvt	George A. Kauffman
Tec 4	Robert C. Dahly	Pvt	Pehr Pearson
Cpl	Walter A. Christopherson		

After a number of weeks spent in administrative organization, the section entrained at Fort Sam Houston on 3 March, arriving at Camp Stoneman, California, three days later. During this movement Captain Croft and Captain Felker were assigned duties as troop supervisors over certain sections involved in the movement.

Upon arrival at the Camp Stoneman staging area a training schedule was initiated to acquaint the troops with emergencies that might arise while enroute overseas. Orders to embark were received on 29 March. The following day the antiaircraft section sailed for Australia, and arrived at Brisbane on 17 April after an uneventful voyage

Headquarters was established at Camp Columbia, near Brisbane, Australia, where planning was begun immediately on the Kiriwina-Woodlark operation. This entailed the study of operational plans, the preparation of an estimate of antiaircraft requirements, the compilation of logistical data on antiaircraft artillery units, the preparation of a tentative standing operating procedure for Fighter-Antiaircraft Team, and the preparation of antiaircraft artillery annexes to Field Orders #1 & 2.

Between 14-22 June Lieutenant Colonel McNamee, Major Miller, and Captain Croft inspected the 41st AAA Brigade and subordinate units at Townesville, Australia. Personnel selected for the Sixth Army echelon to move to Milne Bay were Colonel Burgess, Major Austin, WO(JG) Davis, Sergeants Panek, Butterfield and Lichtenfeld. On 10 June the above named personnel, with the exception of Colonel Burgess, departed by boat for Milne Bay, and arrived there ten days later. Colonel Burgess left by plane on 15 June and arrived at Milne Bay on the same day.

The rear echelon of the antiaircraft section moved to a new office area at Camp Columbia on 19 June, and practice marches for the enlisted men were begun under the supervision of Captain Croft.

Major Miller departed on 13 July for the forward echelon as acting Antiaircraft Officer since Colonel Burgess and Major Austin were leaving to observe antiaircraft artillery in the Kiriwina operation. On 21 July Colonel Burgess, Major Austin and WO(JG) Davis departed for Brisbane leaving Major Miller in charge of the forward echelon of the section. From 26 June until 4 August 1943 Lieutenant Colonel McNamee was on temporary duty at Headquarters Advance Echelon, Fifth Air Force, at Port Moresby, as the Sixth Army Liaison Officer for the Kiriwina-Woodlark operation.

Activities during the month of August were limited. Major Miller investigated the necessity for additional searchlights at Woodlark. Sgt Hendrix was placed on temporary duty with the Kiriwina Task Force. Major Austin left from Brisbane for temporary duty with the Amphibious Training Center at Port Stevens, N.S.W., Australia. Captain Harrington W. Cochran and Captain Elton R. Glover were assigned to the antiaircraft section at this time. During August Lieutenant Colonel McNamee, Captain Croft, Captain Cochran and Captain Glover inspected all antiaircraft artillery units in New Guinea and on Goodenough and Kiriwina Islands.

Major Austin returned to Brisbane from Port Stevens on 2 September. On 7 September Colonel Burgess, Major Austin and Captain Felker departed for the forward echelon. Upon arrival at Milne Bay Colonel Burgess immediately left for Port Moresby to attend a conference with Brigadier General Marquat, Commanding General, 14th Antiaircraft Command.

Captain Felker left Milne Bay on 3 October for temporary duty with USAFFE, Brisbane, Australia. Major Austin made an inspection of antiaircraft artillery units at Woodlark Island during the first week in October. Captain Croft was ordered to report to the rear echelon in Brisbane on 16 October. Tec 4 Malm and Tec 4 Pearson were placed on temporary duty with the 41st AAA Brigade on 18 October. Two days later Major Austin, Sergeants Panek, Lichtenfeld and Butterfield left by ship for the new headquarters on Goodenough Island. The headquarters at Milne Bay closed at 2400, 20 October 1943.

The new command post at Goodenough Island opened at 0001, 21 October 1943. Colonel Burgess, Major Miller and Captain Croft arrived there by plane from Milne Bay on that date. From the rear echelon in Brisbane Captain Cochran, WO(JG) Davis, and Sergeants Barr and Todd departed by boat for Goodenough and arrived there on 5 November. Lieutenant Colonel McNamee remained in charge of the antiaircraft section at Brisbane.

On 3 November Major Austin was attached to the 12th Marine Defense Battalion as an observer in the Cape Gloucester operation, and, on 8 November, Captain Croft departed headquarters to join the Arawe Task Force as an observer. Captain Glover landed with initial forces at Saidor, New Guinea, on 2 January 1944 to observe antiaircraft artillery units.

Tec 5 Baars was transferred to USASOS on 5 November. Colonel Burgess arrived at the rear echelon at Brisbane on 8 November. Tec 4 Malm and Tec 4 Pearson were relieved from temporary duty with 41st AAA Brigade and returned to the forward echelon on 24 November with Colonel Burgess who was returning from Brisbane by air. On the following day Colonel Burgess was transferred to the base force headquarters. Colonel McNamee, accompanied by Captain Croft, arrived at the forward echelon on 29 November to assume command of the antiaircraft section. Captain George W. Felker was transferred to Headquarters 14th Antiaircraft Command in Brisbane on 20 December 1943. Major Robert S. Ballagh was assigned to Headquarters Sixth Army on 30 December to replace Captain Felker.

On 24 January 1944 Colonel McNamee, Major Austin, Captain Croft, CWO Davis and Tec 4 Malm and Sergeant Wermerskirchen departed Goodenough Island by air for Finschhafen to establish the advance echelon of the antiaircraft section. After the Sixth Army rear echelon command post closed on 1 February in Brisbane, Major West, on temporary duty from the 94th AAA Group, and T/Sgt Lichtenfeld remained as a liaison group for the antiaircraft section. On 10 February Captain Glover returned from observing antiaircraft artillery in the Saidor operation. Captain Cochran departed on 29 February as antiaircraft liaison officer and observer in the Admiralty Island operation. Between 4-10 March Colonel McNamee inspected antiaircraft units in the Admiralty Islands, Cape Gloucester and Arawe.

Major Kenneth Glade was assigned to Headquarters Sixth Army in the antiaircraft section as operations officer on 7 April 1944.

Major Ballagh and Captain Glover departed Finschhafen on 20 April to inspect antiaircraft units in the Admiralty Islands. Major Glade was attached as an observer to antiaircraft units landing at Aitape, New Guinea, on 22 April 1944, and, the same day, Captain Cochran was attached to the antiaircraft groupment headquarters for the landing at Hollandia, Dutch New Guinea. On 6 May Major Miller was attached to the 208th AAA Group as an observer in the Biak operation. Captain Glover departed on

11 May as antiaircraft observer in the Wakde operation. Colonel McNamee travelled by air from Finschhafen to Hollandia on 22 May to inspect antiaircraft units in tactical position in the Hollandia area and units staging for the Wakde and Biak operations. Colonel McNamee accompanied assault units and observed the initial landing on Biak Island on 27 May, returning to Hollandia on 28 May. On 30 May Colonel McNamee returned to Biak in a seaplane to observe antiaircraft artillery operations during the period of heavy enemy air action. Colonel McNamee returned to Hollandia aboard a destroyer on 6 June and flew to headquarters at Finschhafen. Between 28-30 May Captain Croft and Captain Cochran inspected antiaircraft units at Lae and Milne Bay. Major Glover departed Finschhafen on 15 June to inspect units at Oro Bay. Major Glade flew to Nadzab on 16 June to inspect antiaircraft units. Lieutenant Colonel Austin, Captain Cochran, CWO Davis, M/Sgt Panek, T/Sgt Lichtenfeld, Tec 4 Kauffman, and Tec 5 Boyce left Finschhafen by plane for Hollandia and established the antiaircraft section on 26 June. The remainder of the section travelled by ship arriving at Hollandia on 30 June. Major Glade landed with initial antiaircraft forces as an observer on Noemfoor Island on 2 July.

During July Lieutenant Colonel Austin and Major Glade inspected antiaircraft units at Wakde, Biak and Noemfoor. On 25 July Major Croft departed as an observer with antiaircraft forces for the Cape Sansapor landing. Lieutenant Colonel Frank T. Ostenberg was assigned to the antiaircraft section as Executive Officer on 11 July to succeed Lieutenant Colonel Austin who was transferred to USASOS on 30 July. Major Miller was transferred on 11 July to assume command of the 476th AAA AW Battalion. Captain Cochran was transferred to the 166th AAA Gun Battalion on 26 July and Major Ballagh received rotation orders on 29 July.

Lieutenant Colonel Ostenberg, Major Glade and Major Glover departed Hollandia on 2 August to visit units at Finschhafen, Milne Bay and Wakde. Captain James H. Gary was assigned to the antiaircraft section on 8 August to succeed Captain Cochran. On 17 August Major John B. Manley, Jr. was assigned to Sixth Army Headquarters as assistant operations officer in the antiaircraft section. Major Croft flew to Aitape on 26 August to confer with antiaircraft unit commanders on supply problems, and, the same day, Captain Robert C. Rouzie arrived and was assigned as automatic weapons officer in the antiaircraft section. From 4-10 September Captain Gary and Captain Rouzie inspected antiaircraft units at Hollandia and Wakde that were scheduled for future operations. Major Manley accompanied antiaircraft forces as an observer in the landing on Moretai Island on 15 September. Major Paul A. Anson was assigned to the antiaircraft section as assistant operations officer on 17 September. Lieutenant Colonel Donald W. Shive was assigned as operations officer on 22 September to succeed Major Glade who was transferred to the 94th AAA Group on that date. On 25 September Captain Robert G. Tippett arrived at the antiaircraft section and was designated as searchlight officer,

while First Lieutenant Arthur E. Soli, Jr. was assigned to the section as administrative officer. On 29 September Major Croft and Captain Tippett departed Hollandia to inspect antiaircraft units at Finschhafen and the Admiralty Islands that were preparing for the Leyte operation.

To observe operations, and to coordinate and assist antiaircraft commanders in the solution of their problems, officers from the antiaircraft section were attached to the antiaircraft forces landing on A-Day on Leyte, Philippine Islands, as follows: Major Manley and Captain Tippett, 32d AAA Brigade; Lieutenant Colonel Ostenberg, 97th AAA Group; Major Anson, 25th AAA Group.

Colonel McNamee, Major Croft, Captain Rouzie, and six enlisted men arrived on Leyte on 22 October (A + 2) and established the forward echelon of the antiaircraft section. The rear echelon of the section, including Captain Gary, Lieutenant Soli, CWO Davis and nine enlisted men, arrived on Leyte on 5 November. Lieutenant Colonel Shive and Tec 5 Jewell remained at Hollandia with the Sixth Army Planning Group to plan for the invasion of Luzon.

On 7 December Lieutenant Colonel William H. Price, Jr. was assigned to Headquarters Sixth Army as assistant operations officer in the antiaircraft section and First Lieutenant Hartie E. Troutman was assigned as radar officer in the antiaircraft section. Lieutenant Colonel Price was attached as an observer to the antiaircraft force landing on Mindoro on 15 December.

Throughout the Leyte campaign officers of the antiaircraft section inspected units in tactical positions, coordinated antiaircraft operations during the period of heavy enemy air action, and solved numerous tactical, technical, and supply difficulties. In addition, during this period the plans and preparations for antiaircraft artillery for the Luzon campaign were completed. Lieutenant Colonel Price returned by air from Mindoro on 23 December.

For the landing in Lingayen Gulf, Luzon, observers from the antiaircraft section were attached to units and landed as follows: Lieutenant Colonel Price, First Lieutenant Troutman, M/Sgt Butterfield, I Corps Zone (S-Day); Colonel Ostenberg, Captain Tippett, Tec 4 Chetley, XIV Corps Zone (S-Day); Major Manley, Captain Rouzie, XIV Corps Zone (S + 5).

Colonel McNamee, CWO Davis, and Tec 5 Henderson established the antiaircraft section in advance Sixth Army Headquarters on 10 January. On 21 January the rear echelon including Major Anson, Major Croft, First Lieutenant Soli and nine enlisted men arrived on Luzon. Lieutenant Colonel Shive arrived by air from Leyte on 28 January. After inspecting the antiaircraft forces at Subic Bay on 3-4 February, Lieutenant Colonel Shive

received orders to proceed to the United States on rotation. Lieutenant Colonel Price succeeded Lieutenant Colonel Shive as operations officer.

During the Luzon campaign from 9 January 1945 to 1 July 1945 officers of the antiaircraft section supervised employment of antiaircraft artillery in the ground support role, effected liaison with other headquarters to coordinate supply and tactical employment, inspected all antiaircraft units on Luzon, frequently visited subordinate headquarters to insure efficient execution of plans and kept the Commanding General informed on the tactical situation and status of Sixth Army antiaircraft artillery.

Major Croft left for the United States on 12 March to attend the Command and General Staff School, Fort Leavenworth, Kansas.

In April the antiaircraft section began planning for future operations. Tactical, technical, and logistical requirements for antiaircraft artillery were outlined and coordinated with other staff sections concerned. Between 15 April and 15 August officers from the antiaircraft section inspected units scheduled for future operations, visiting staging areas on Leyte, Panay, Mindanao and Luzon. During this period Colonel McNamee held several conferences with Major General W. F. Marquat, Antiaircraft Officer, AFPAC, Brigadier General Charles A. French, Commanding General, 68th AAA Brigade, and Brigadier General Albert Colburn, Commanding General, 40th AAA Brigade, to coordinate antiaircraft activities and insure the highest state of training and the full preparation of units committed for the forthcoming operation.

On 7 June Captain Tippett departed for the United States on redeployment. Colonel Ostenberg was transferred to the 14th Antiaircraft Command on 14 July and was succeeded as Executive Officer on that date by Colonel John Alfrey. Captain Chester F. Purcell arrived on 18 July and succeeded Captain Gary who was transferred to the 14th Antiaircraft Command. Captain Chester R. Unruh reported as searchlight officer on 1 August 1945. First Lieutenant Soli was transferred to the Transportation Section, Headquarters Sixth Army, on 8 August 1945. On 3 September CWO Davis received orders to proceed to the United States on redeployment. WO(JG) Thomas A. Walker reported for duty as administrative officer on 13 September 1945.

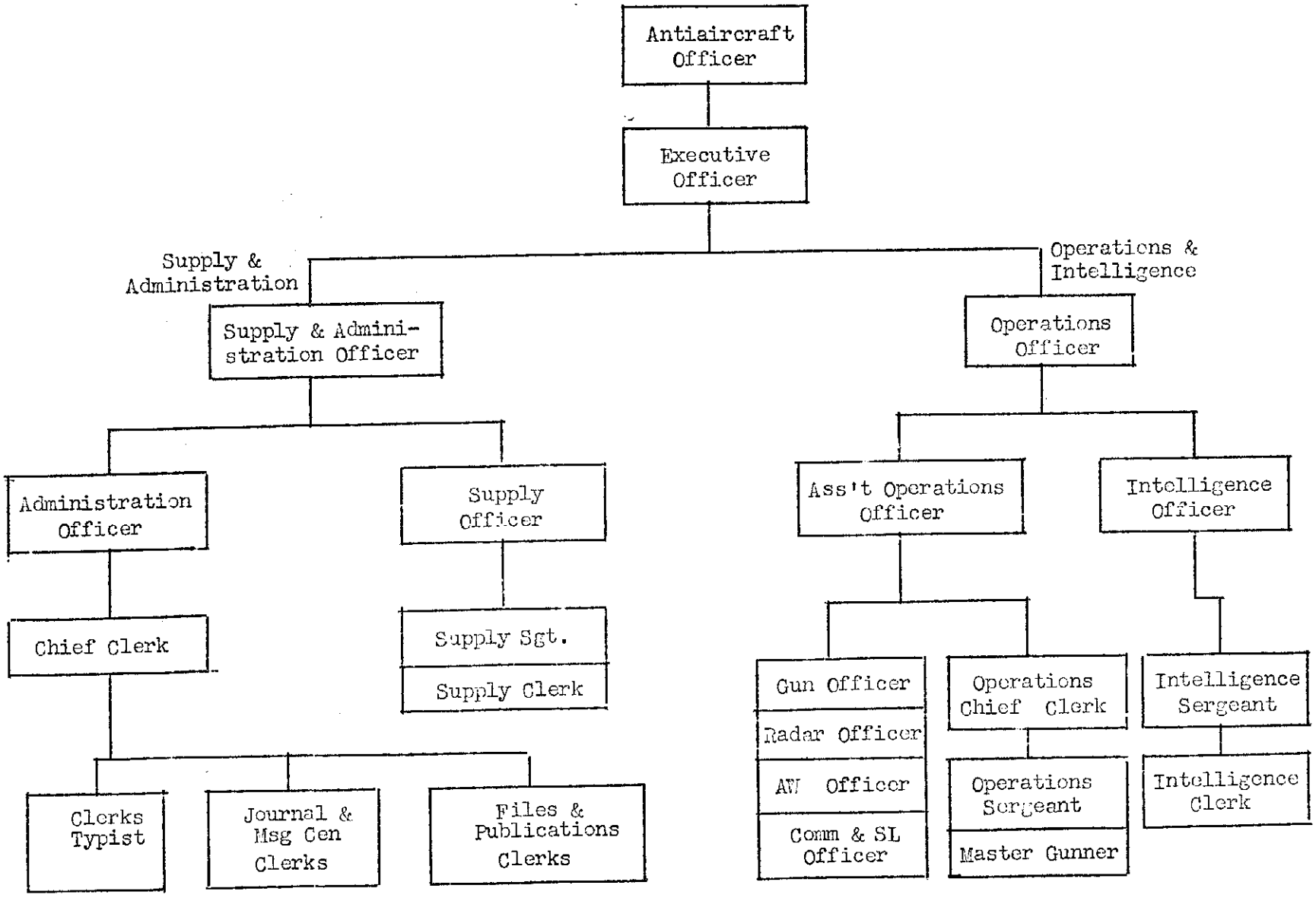
After the cessation of hostilities on 15 August 1945 the antiaircraft section prepared to move to Japan with the Sixth Army occupation forces. The forward echelon of the antiaircraft section, including Colonel McNamee, Lieutenant Colonel Price, Lieutenant Colonel Manley, Major Rouzie, Captain Unruh, and seven enlisted men, departed Luzon by ship on 16 September and arrived in Wakayama Harbor, Japan, on 23 September. The Sixth Army Headquarters opened at Kyoto, Japan, at 1200, 28 September 1945. The rear echelon of the section, Major Anson, Captain Purcell, Captain Troutman, WC(JG) Walker and three enlisted men, arrived in Japan on 28 October. On

30 October 1945 Colonel McNamee received orders and left to report to an assignment in the United States. Colonel Alfrey, who had left temporarily on 8 September 1945 to act as Sixth Army Staging Officer, rejoined the section in Japan on 19 November 1945.

The primary duties of the antiaircraft section while in Japan were to assist in a study of Japanese tactics, materiel, and installations, and to compile statistics and a historical report of antiaircraft artillery activities in the Pacific Theater.

3. CHART OF ORGANIZATION

ANTIAIRCRAFT SECTION
SIXTH ARMY



4. PERSONNEL OF ANTIAIRCRAFT SECTION

The following officers and enlisted men served on the staff of the Antiaircraft Section, Headquarters Sixth Army, for the periods indicated below:

OFFICERS

NAME	RANK	POSITION	PERIOD OF ASSIGNMENT TO ANTIAIRCRAFT SECTION	
			FROM	TO
George R. Burgess	Colonel	Antiaircraft Officer	25 Jan 43	25 Nov 43
William L. McNamee	Colonel	Antiaircraft Officer	25 Jan 43	
Frank T. Ostenberg	Colonel	Executive Officer	11 Jul 44	14 Jul 45
John Alfrey	Colonel	Executive Officer	14 Jul 45	
John C. Austin	Lt. Col.	Operations Officer	25 Jan 43	30 Jul 44
Donald W. Shive	Lt. Col.	Operations Officer	30 Aug 44	5 Feb 45
William H. Price, Jr.	Lt. Col.	Operations Officer	7 Dec 44	
John B. Manley, Jr.	Lt. Col.	Operations Officer	17 Aug 44	
Arthur D. Miller	Major	Operations Officer	25 Jan 43	11 Jul 44
Edward S. Croft, Jr.	Major	Supply Officer	25 Jan 43	12 Mar 45
Robert S. Ballagh	Major	Operations Officer	30 Dec 43	29 Jul 44
Elton R. Glover	Major	Operations Officer	10 Dec 43	25 Aug 44
Kenneth Glade	Major	Operations Officer	7 Apr 44	22 Sep 44
Paul A. Anson	Major	Supply Officer	17 Sep 44	
Robert C. Rouzie	Major	Auto Weapons Officer	26 Aug 44	
George W. Felker III	Captain	Operations Officer	25 Jan 43	20 Dec 43
Harrington T. Cochran	Captain	Searchlight Officer	10 Dec 43	26 Jul 44
James H. Gary	Captain	Gun Officer	8 Aug 44	18 Jul 45
Robert G. Tippett	Captain	Searchlight Officer	25 Sep 44	7 Jun 45
Hartie E. Troutman	Captain	Radar Officer	7 Dec 44	
Chester F. Purcell	Captain	Gun Officer	18 Jul 45	
Chester R. Unruh	Captain	Searchlight Officer	1 Aug 45	
Arthur E. Soli, Jr.	1st Lt.	Administrative Off.	25 Sep 44	8 Aug 45
Johnnie R. Davis	CWO	Administrative Off.	25 Jan 43	3 Sep 45
Thomas A. Walker	WO(JG)	Administrative Off.	13 Sep 45	

ENLISTED MEN

NAME	RANK	PERIOD OF ASSIGNMENT TO ANTIAIRCRAFT SECTION	
		FROM	TO
Daniel Baars	Tec 5	25 Jan 43	5 Nov 43
George Barr	Tec 3	25 Jan 43	16 Jul 45

NAME	RANK	PERIOD OF ASSIGNMENT TO ANTIAIRCRAFT SECTION	
		FROM	TO
Charles Bartolomo	Pfc	25 Jan 43	10 Jun 43
William E. Boyce	Sgt	25 Jan 43	16 Jul 45
Karl C. Blume	Tec 4	10 Aug 44	
Lawrence E. Brewer	Pfc	30 May 45	
Thomas G. Bryant	S Sgt	25 Jan 43	1 Sep 45
Robert F. Butterfield	M Sgt	25 Jan 43	31 Mar 45
Lloyd W. Chetley	Tec 3	4 Oct 44	5 Feb 45
Walter A. Christopherson	Cpl	25 Jan 43	10 Jun 43
John M. Cory	Tec 4	10 Sep 45	
Robert C. Dahly	Tec 4	25 Jan 43	17 Mar 44
Harold Deems	Tec 5	10 Aug 44	15 Aug 44
Joseph P. Hahn	Tec 4	25 Jan 43	9 Aug 45
Leon Henderson	S Sgt	7 Oct 44	
James Hendrix	S Sgt	25 Jan 43	1 Mar 44
Francis D. Jewell	Tec 4	18 Jul 44	
George A. Kauffman	Tec 4	25 Jan 43	12 Sep 44
Paul E. King	S Sgt	26 Jun 45	
Walter A. Kozoro	Tec 4	8 Oct 44	20 Aug 45
David H. Lichtenfeld	T Sgt	25 Jan 43	10 Mar 45
Lewis R. Malm	T Sgt	25 Jan 43	14 Apr 45
Harry W. Morris	M Sgt	25 Jan 43	14 Apr 45
William C. Panek	M Sgt	25 Jan 43	31 Mar 45
Edwin Pearson	Tec 5	18 Feb 44	14 Apr 45
Pehr Pearson	Tec 3	25 Jan 43	31 Mar 45
Fredrik H. Raedel, Jr.	S Sgt	18 Jul 44	
Charles L. Reynolds	S Sgt	18 Jul 45	
Rolland D. Scott	T Sgt	25 Jan 43	10 Jul 43
Russell C. Todd	T Sgt	25 Jan 43	14 Apr 45
Max L. Wheeler	Tec 3	25 Jan 43	9 Aug 45
Hubert R. Wermerskirchen	T Sgt	15 Jul 43	5 Oct 44
Charlie E. Williams	Tec 5	7 Jun 45	
Joseph York	Tec 5	10 Sep 45	

5. AWARDS AND DECORATIONS

The following officers and enlisted men received awards as indicated below for accomplishments while members of the Antiaircraft Section, Headquarters Sixth Army:

Colonel William L. McNamee	Legion of Merit	16 Jul 45
	Bronze Star Medal	4 Apr 45
Colonel Frank T. Ostenberg	Bronze Star Medal	2 Sep 44
Lt. Colonel Donald W. Shive	Oak Leaf Cluster to Bronze Star Medal	8 Aug 45
Lt. Colonel William H. Price, Jr.	Bronze Star Medal	22 Oct 45
Lt. Colonel John B. Manley, Jr.	Bronze Star Medal	19 Oct 45
Major Edward S. Croft, Jr.	Purple Heart	30 Jan 44
	Bronze Star Medal	3 Feb 45
Major Paul A. Anson	Bronze Star Medal	22 Oct 45
Major Harrington W. Cochran	Bronze Star Medal	4 Sep 45
Major Elton R. Glover	Bronze Star Medal	4 Sep 45
Major Robert C. Rouzie	Bronze Star Medal	9 Jul 45
Captain James H. Cary	Bronze Star Medal	3 Jul 45
Captain Robert G. Tippett	Bronze Star Medal	6 Jul 45
1st Lieutenant Arthur E. Soli, Jr.	Bronze Star Medal	26 Nov 45
CWO Johnnie R. Davis	Bronze Star Medal	4 Apr 45
M/Sgt Robert F. Butterfield	Good Conduct Medal	6 Apr 44
T/Sgt David H. Lichtenfeld	Good Conduct Medal	6 Mar 45
T/Sgt Lewis R. Malm	Bronze Star Medal	6 Jul 45
	Good Conduct Medal	6 Mar 45
T/Sgt Russell C. Todd	Good Conduct Medal	6 Apr 45

T/Sgt Hubert R. Wermerskirchen	Good Conduct Medal	24 Aug 44
S/Sgt Thomas G. Bryant	Good Conduct Medal	6 Apr 44
S/Sgt Leon Henderson	Bronze Star Medal Good Conduct Medal	13 Sep 45 20 Aug 45
S/Sgt James Hendrix	Good Conduct Medal	6 Apr 45
S/Sgt Fredrik H. Raedel, Jr.	Bronze Star Medal Good Conduct Medal	4 Sep 45 20 Aug 45
Tec 3 George Barr	Good Conduct Medal	19 Jul 44
Tec 3 Pehr Pearson	Good Conduct Medal	13 Aug 44
Tec 3 Max L. Wheeler	Good Conduct Medal	19 Jul 44
Sgt William E. Boyce	Good Conduct Medal	19 Jul 44
Tec 4 Joseph P. Hahn	Good Conduct Medal	13 Aug 44
Tec 4 Francis D. Jewell	Bronze Star Medal Good Conduct Medal	18 Nov 45 20 Aug 45
Tec 4 George A. Kauffman	Good Conduct Medal	13 Aug 44
Tec 5 Edwin Pearson	Good Conduct Medal	13 Aug 44
Tec 5 Charlie E. Williams	Good Conduct Medal	7 Nov 45
Pfc Lawrence E. Brewer	Good Conduct Medal	7 Nov 45

6. PROMOTIONS

The following officers and enlisted men were promoted as indicated below while members of the staff of the Antiaircraft Section, Headquarters Sixth Army:

OFFICERS

NAME	PROMOTED TO	DATE
William L. McNamee	Colonel	20 Nov 43
Frank T. Ostenberg	Colonel	21 Dec 44
John C. Austin	Lt Colonel	4 Jun 44
John B. Manley, Jr.	Lt Colonel	20 Jul 45
Elton R. Glover	Major	12 May 44
Edward S. Croft, Jr.	Major	24 Jun 44
Robert C. Rouzie	Major	20 Aug 45
Hartie E. Troutman	Captain	2 Apr 45
Johnnie R. Davis	CWO	23 May 43
	ENLISTED MEN	
David Baars	Pfc	15 Apr 43
	Tec 5	15 Sep 43
George Barr	Pfc	15 Apr 43
	Tec 5	1 Jun 43
	Tec 4	15 Jul 43
	Tec 3	1 Sep 44
William E. Boyce	Pfc	15 Apr 43
	Tec 5	15 Sep 43
	Sgt	15 Jul 44
Karl C. Blume	Tec 4	1 Apr 45
Lawrence E. Brewer	Pfc	1 Aug 45
Thomas G. Bryant	S/Sgt	15 Jul 43
Robert F. Butterfield	T/Sgt	15 Jan 44
	M/Sgt	1 Sep 44
Lloyd W. Chetley	Tec 3	15 Dec 44
John M. Cory	Tec 4	1 Nov 45
Joseph P. Hahn	Pfc	15 Apr 43
	Tec 5	15 Sep 43
	Tec 4	15 Nov 44

Leon Henderson	Tec 5	15 Nov 44
	Tec 4	15 Apr 45
	S/Sgt	1 Aug 45
James Hendrix	S/Sgt	15 Dec 43
Francis D. Jewell	Pfc	15 Aug 44
	Tec 5	1 Oct 44
	Tec 4	1 Aug 45
George A. Kauffman	Pfc	15 Apr 43
	Tec 5	15 Jul 43
	Tec 4	14 Dec 43
David H. Lichtenfeld	T/Sgt	15 Dec 43
Lewis R. Malm	Tec 4	15 Aug 43
	Tec 3	1 Sep 44
	T/Sgt	15 Dec 44
Edwin Pearson	Tec 5	1 Mar 44
Pehr Pearson	Pfc	15 Apr 43
	Tec 5	1 Jun 43
	Tec 4	15 Jul 43
	Tec 3	1 Oct 44
Fredrik H. Raedel, Jr.	Pfc	15 Aug 44
	Tec 5	15 Nov 44
	Tec 4	15 Apr 45
	S/Sgt	1 Aug 45
Charles L. Reynolds	Tec 4	1 Nov 45
	S/Sgt	30 Nov 45
Russell C. Todd	T/Sgt	15 Jan 44
Hubert R. Wermerskirchen	Sgt	15 Jul 43
	Tec 3	1 Sep 44
	T/Sgt	1 Oct 44
Max L. Wheeler	Tec 4	15 Dec 43
	Tec 3	1 Sep 44
Charlie E. Williams	Pfc	1 Aug 45
	Tec 5	11 Nov 45

7. OBSERVERS FROM ANTIAIRCRAFT SECTION ON OPERATIONS

OPERATION	OBSERVER	DATE OF LANDING
Kiriwina-Woodlark	Colonel George R. Burgess Major John C. Austin	30 June 43
Arawe	Captain Edward S. Croft, Jr.	15 December 43
Cape Gloucester	Major John C. Austin	26 December 43
Saidor	Captain Elton R. Glover	2 January 44
Admiralties	Captain Harrington W. Cochran	29 February 44
Aitape	Major Kenneth Glade	22 April 44
Hollandia	Captain Harrington W. Cochran	22 April 44
Wakde-Sarmi	Major Arthur D. Miller	17 May 44
Biak	Colonel William L. McNamee Major Arthur D. Miller	27 May 44
Noemfoor	Major Kenneth Glade	2 July 44
Sansapor	Major Edward S. Croft, Jr.	30 July 44
Morotai	Major John D. Manley, Jr.	15 September 44
Leyte	Lt. Col. Frank T. Ostenberg Major John D. Manley, Jr. Major Paul A. Anson Captain Robert G. Tippett	20 October 44
Mindoro	Lt. Col. William H. Price, Jr.	15 December 44
Luzon	Colonel Frank T. Ostenberg Lt. Col. William H. Price, Jr. Major John D. Manley, Jr. Captain Robert G. Tippett 1st Lt. Hartie E. Troutman	9 January 45