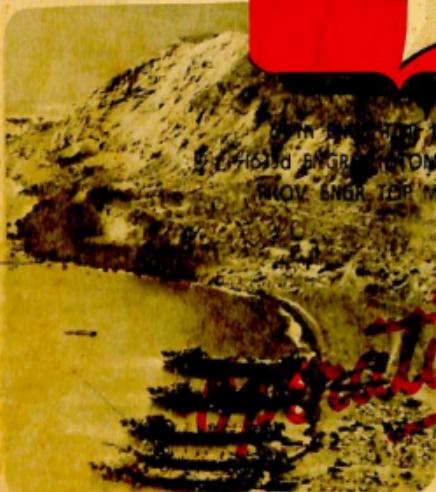




4th



2D BN 4TH BATTALION
DIVISION SURVEY & MAPPING PLAT.
NOV SNOOK TEP MAPPING DET.

Annual Report

DECLASSIFIED
Authority AWD 883078

No. 43

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Authority AUD 883D78

HEADQUARTERS
64th Engineer Topographic Battalion
APO 246

2 September 1945

SUBJECT: Operational Report 2 July 42 to 2 Sept 45.

TO : The Engineer, Office of the Engineer, USAFMIDFAC, APO 958.

1. The following report covers the operational work performed by the 64th Engineer Topographic Battalion, the 64th Engineer Topographic Company Corps, the 1633rd Engineer Photomapping Platoon, and the Provisional Engineer Mapping Detachment, for the period 2 July 1942 through 2 September 1945.

2. During this period, maps and or other Intelligence Data were furnished wholly or in part for every major land and air campaign in the Pacific, with the exception of the Western New Guinea Area. An average daily production of 1.045 maps or 3.98 color separation drawings was maintained over this 38 month period.

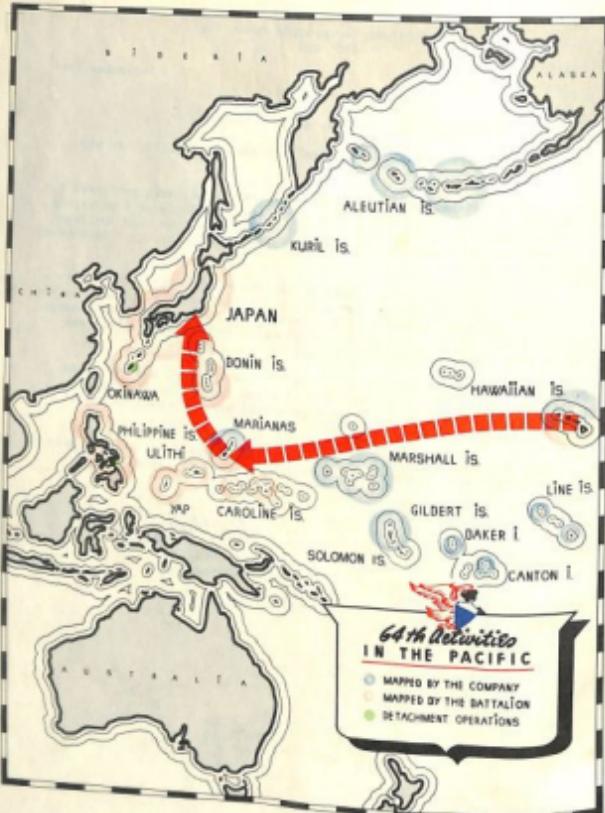
3. In addition to work performed for Army, Navy, and Air Corps units through ICPOA and JICPOA, reproduction facilities were used to assist OWI and drafting and survey personnel were detached to assist the U.S.E.D., Hawaiian Department.

4. Numerous non-operational drawings and reproductions were made during this period comprising training aids, posters, forms, etc.

M. C. Shetler
M. C. SHETLER
Lt Col, CE
Commanding.

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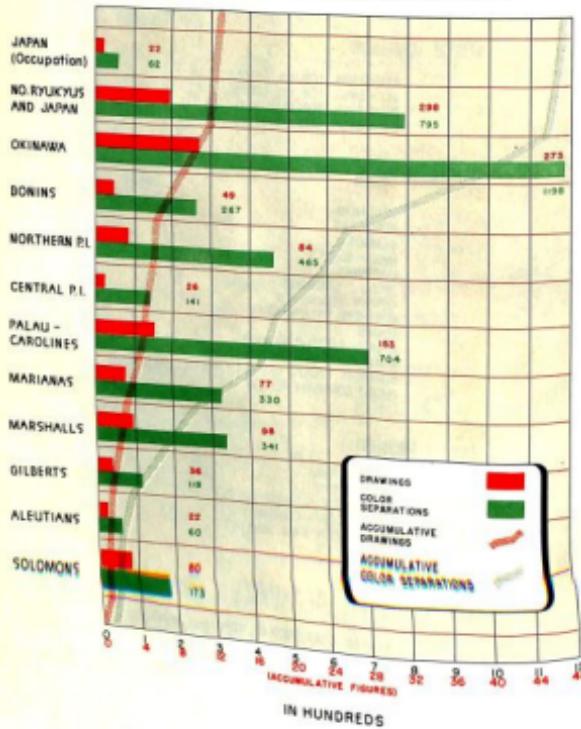
Annex II: (UNDER SEPARATE COVER)

(DETAILED DESCRIPTION OF DRAWINGS PREPARED)

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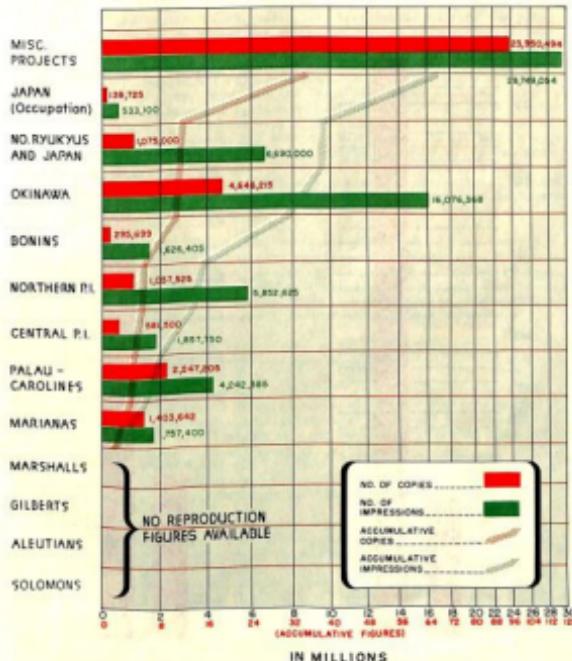
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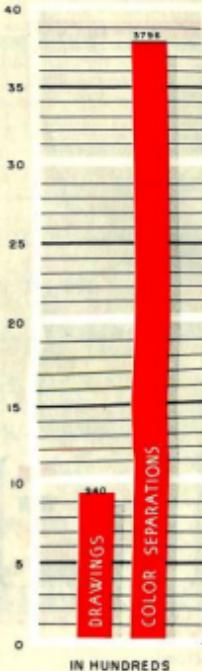
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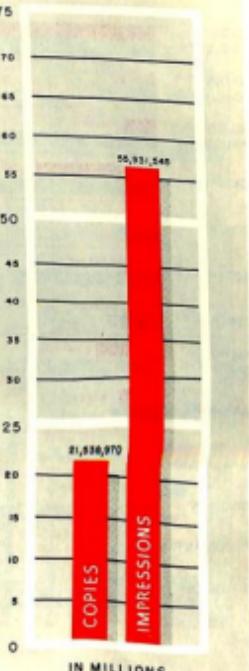


Battalion PRODUCTION

PHOTOMAPPING



REPRODUCTION



64th ENGR. TOP. BATTALION

1. HISTORY: The 64th Engineer Topographic Battalion was activated at Schofield Barracks, Oahu, T.N., per Section I of General Order No. 87, USAF CFA, dated 5 April 44. The 64th Engr Top Co, and the 651st Engr Top Bn were inactivated, redesignated, and amalgamated to form the 64th Engr Top Bn. Operational work was performed for the following agencies: Engr FOA, G-2 FOA, XXIV Army Corps, Tenths Army, and JICPOA. On 11 Mar 45 the battalion embarked for Guam, debarking 1 Apr 45, with the TECHNICAL MISSION OF: To compile and reproduce operational intelligence data and maps in support of Army, Navy, and Air Corps operations as directed by CinCPac-CinCPac; to maintain liaison with the Twentieth Air Force for the purpose of processing Army-Navy mapping photography to meet the needs of CinCPac, MidPac, and the Army Map Service, Washington, D. C.; and to prosecute special mapping and intelligence reports assigned by CinCPac Advance Headquarters. At Guam the unit performed operational work until 12 Aug 45, at which time operational work ceased and occupational map and chart work commenced. NOTE: At this date, 2 Sept 45, the 64th Engineers maintain a specific mission which will be reported on at a later date.

2. PHOTOMAPPING: Operational work was performed by this company during the entire period of its duty overseas up to 2 Sept 45. Work consisted of all types of maps and charts needed by the operational forces of Army, Navy, Air Corps and Marines, including processing and distribution reports on all photography, for mapping qualities, coverage needed, and suitability flown over Japan by the various Air Arms of the combined services.

Number of drawings made 932
Number of color separations made 3,762

3. REPRODUCTION: Consisted mainly of operational projects. The production company performed work for all agencies and commands under CinCPac-CinCPac. Jobs were accomplished under an almost continuous pressure of exacting deadlines through the cessation of hostilities and preliminary occupation maps and chart projects.

Number of copies printed 35,397,006
Number of impressions made 68,386,087

4. SURVEY: Except for the survey work accomplished by the Provisional Engineer Topographic Detachment detached to the XXIV Corps, all survey personnel were trained for and worked on other technical work throughout the Battalion.

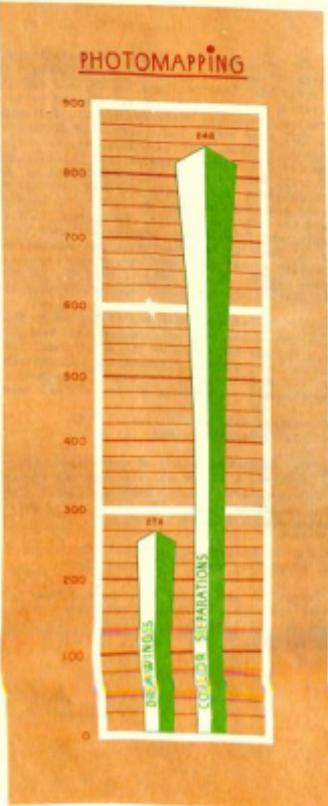
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Company PRODUCTION



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64th ENGR. TOP. COMPANY

HISTORY

The 64th Engr Top Co, Corps was activated 2 Feb 40, at Fort Benning, Georgia. The unit arrived in the Pacific Ocean Area, 2 July 42, and was stationed at Schofield Barracks, Oahu, T.H. At the time of its arrival overseas the organizational strength consisted of 121 enlisted men, and 5 officers. From the period of July, 1942 until Nov, 1942 no primary mission was assigned. Work consisted of surveys for defense of the islands and training, as the Hawaiian Islands were in the forward combat zone at this period of the war. Operational work started in Nov, 1942 and continued until 5 Apr 44. At that time the Company was absorbed into the 64th Engr Top Bn. Work was performed by the Company for the following agencies: The Engr FGA, G-2 Hawaiian Dept, Dept Reserve Oahu, ICPGA, JICPOA, and 7th Air Force. The mission of the 64th Engr Top Co was successfully completed.

PHOTOMAPPING

During the period of July, 1942 to Feb, 1943, a critical shortage of experienced draftsmen existed in the various departments of the USED on Oahu, T.H. The photomapping platoon was used, in part, to supply the experienced manpower needed. The period of July, 1942 through Oct, 1942 was the remaining time of the platoon utilized as construction draftsmen for survey. From Nov, 1942 until Apr, 1945 this platoon was used to its fullest extent on operational work.

Number of drawings made 278
Number of color separations made 848

REPRODUCTION

Generally work was performed for Engr FGA, Dept Reserve, 7th Air Force, Air Transport Command, ICPGA, and JICPOA. Records of production are on file with the Office of the Engineer, USAFMHMAC, AFO 958. No comprehensive listing or description of the reproduction platoon work can be made at this time.

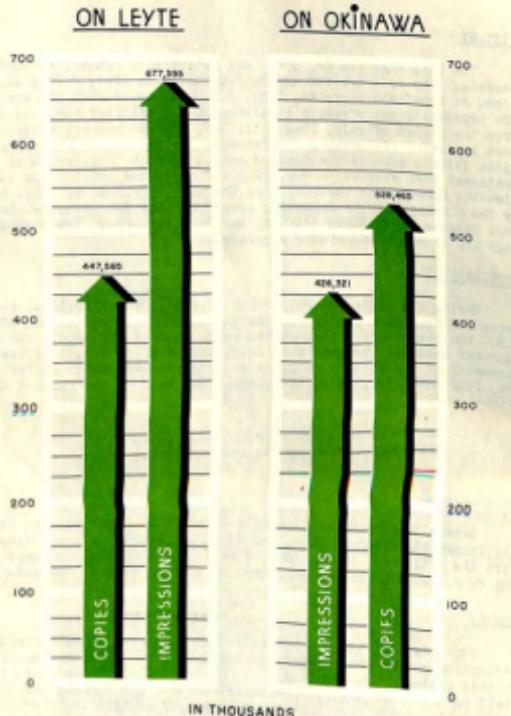
SURVEY

This section was used primarily for all types of construction work necessitating survey for military improvements and defensive measures. Portions of this platoon were assigned to USED, Oahu, T.H. to assist in field surveys. Field parties were sent to Christies, Canton, and Fanning Islands. All records are on file at the Office of the Engineer, USAFMHMAC, AFO 958.

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PROV. ENGR. TOP. DET.

Detachment PRODUCTION



HISTORY

The Provisional Engineer Topographic Detachment was activated at Schofield Barracks, Oahu, 5 Aug 44, under a Special TOE calling for three officers and fifty-nine enlisted men, with special equipment. Personnel and the bulk of the equipment was assigned to the unit from the 64th Engr Top Bn, and attached to the XXIV Army Corps in lieu of a topographic company.

Sailing from Pearl Harbor, Oahu, 15 Sept 44, just forty days after its activation, it headed for Yap Island in the Carolines. While at sea the target was changed, and the organization put in at the Admiralty Islands to stage for a new assignment. Leaving the Admiralty Islands, 14 Oct 44, the unit headed for Leyte Island in the Philippines, where they arrived 20 Oct 44. Ashore A Day plus 2, 3 and 4, the unit was in operation 24 Oct 44 and served the XXIV Army Corps throughout the Leyte campaign.

The unit left Leyte, 25 Mar 45, for Ulithi Island in the Carolines, where they arrived 30 Mar 45, to prepare for their second operation. Leaving Ulithi, 7 Apr 45, the unit landed at Okinawa, the second objective, on 13, 14 and 15 Apr 45. In operation 20 Apr 45, it again served the XXIV Army Corps--receiving several commendations from the Commanding General for its work.

With its mission completed the unit sailed from Okinawa, 31 July 45, for Guam, where it arrived 13 Aug 45 to rejoin the 64th Engr Top Bn.

REPRODUCTION

	Leyte	Okinawa
Total number of copies run	447,585	426,321
Total number of impressions made	670,395	528,465

SURVEY

Leyte Operation:

Men of this section served a three-fold purpose; surveyors, draftsmen, and truck drivers. The following is the type of work done:

- Road and bridge reconnaissance.
- 84.7 miles of horizontal and vertical control.
- 12.0 miles of hydrographic survey.
- 13.4 miles of road cross section.
- Layout of new town sites.
- Material reconnaissance.
- Planetable mapping.
- Odograph mapping.

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Okinawa Operation:

On 20 Apr 45 this section was assigned the job of mapping by plan-table, the roads used by the XXIV Army Corps. This assignment lasted two and one-half months, and on completion of the project, this section, in conjunction with the USS Bowditch, USCGC, established two baselines and a triangulation net. The following is the type of work done:

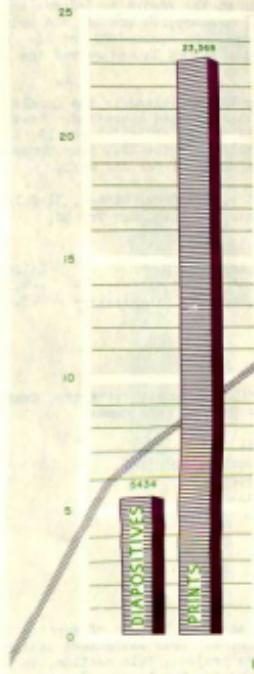
- Established 36 triangulation stations.
- 270 miles of road planetable traverse.
- Established 2 baselines.
- Planetable mapping.

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Authority NAD 85 2878

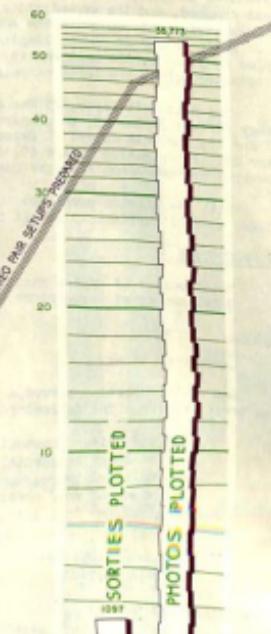
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Authority NAD 53-3078

Platoon PRODUCTION

PHOTO LAB



PCR's



HISTORY

The 1633d Engineer Photomapping Platoon was activated on 5 Nov 43, by authority contained in War Department Letter AG 332, dated 26 Oct 43. The activation strength, 79 enlisted men and 2 officers, was drawn from Company B of the 29th Engr Base Top Bn stationed in Portland, Oregon.

On 13 Aug 44, the platoon left Seattle, Washington for overseas service, arriving at Schofield Barracks, Oahu, T.H. on 21 Aug 44, and became attached to the 64th Engr Top Bn. The primary mission was to supply multiplex manuscripts and drafting personnel to the 64th Engr Top Bn.

On 11 Mar 45, the platoon, with the 64th Engr Top Bn left Oahu, and on 1 Apr 45 arrived at Guam, and was attached to CinCPac Adv Hq Det.

MULTIPLEX

Operations consisted of the preparation of multiplex manuscripts for operational mapping and for special site and terrain studies. Ground control in most cases was lacking, so horizontal control was taken from the best available map sources and vertical control was extended from sea level. A total of 500 setups (stereo models), were used.

The multiplex section was also used to supplement the 64th Engr Top Bn drafting section in order to meet the stringent deadlines. In June, 1945, it was assigned the primary mission of the battalion, preparing all photography flown by Army and Navy, for the Photo Coverage Reports.

PHOTO-LAB

Photo-Lab operations consisted mainly of the preparation of prints and dia-positive for distribution and for organizational use. Camera reductions and enlargements of contact prints and film positives were prepared for the parent organization.

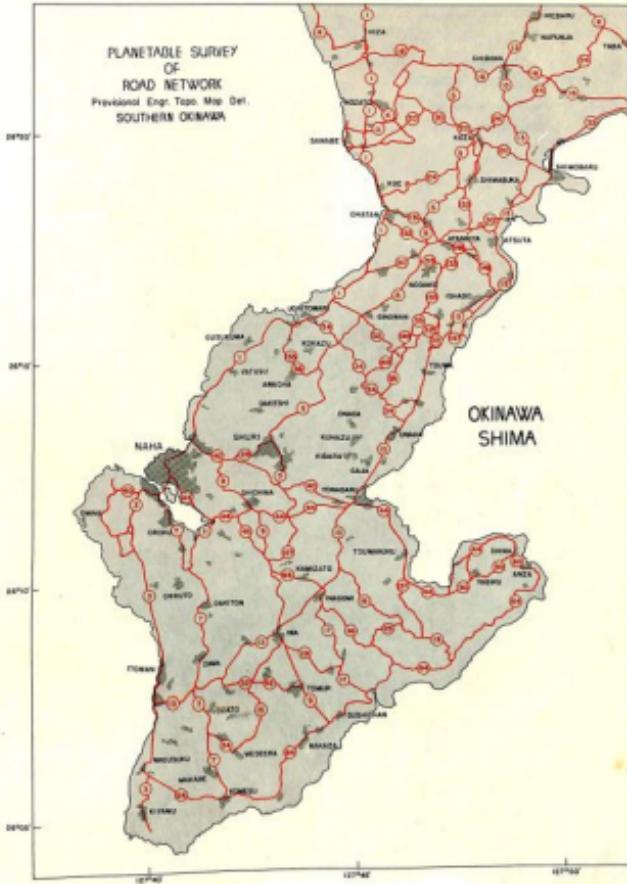
Number of prints made 23,368
Number of diapositives made 5,434

PHOTO COVERAGE REPORT

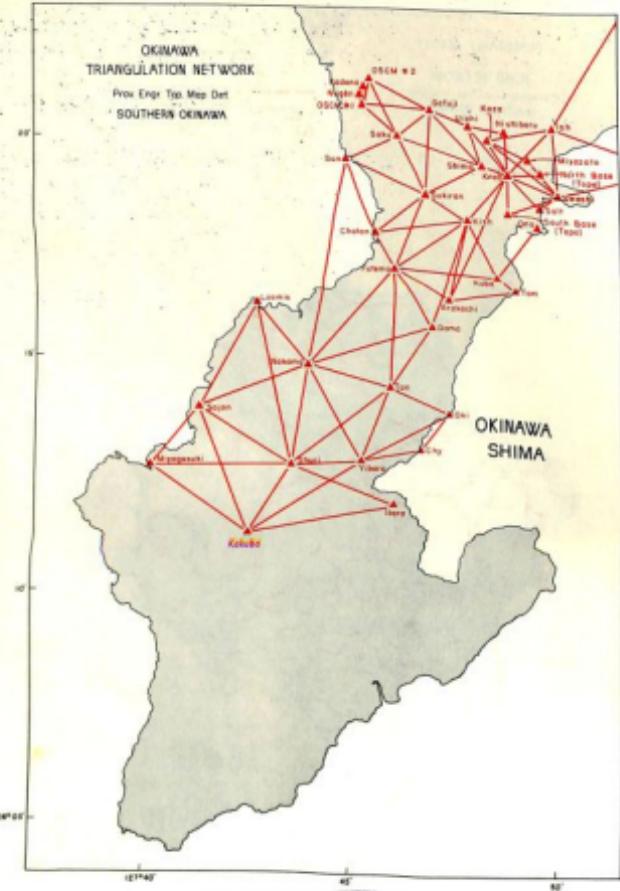
In June, 1945, the Platoon completed the multiplex mapping projects assigned to the organization and an operational plan was set up for plotting and evaluating all sorties flown over Japan from May, 1945 to 4 Sept, 1945, by the Army and Navy Air Wings in the Pacific Ocean Areas. These photos were evaluated as to suitability for mapping and then plotted on a base map (AMS 1:250,000 series). Disposition was made to the parent organization for presentation in the form of a Weekly Photo Coverage Report.

Number of sorties plotted 1,097
Number of photographs plotted 55,773

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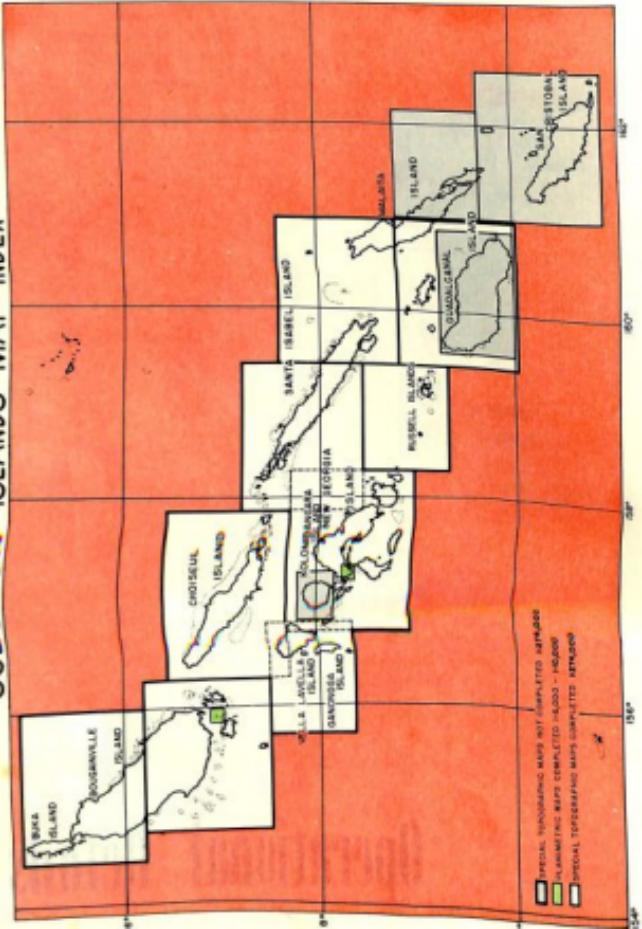


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Operational Details

SOLOMON ISLANDS MAP INDEX



SOLOMON ISLANDS
October 1942 - February 1943

Work performed during this operation by the 64th Engr Top Co was for ICPGA. Source material for mapping purposes was varied and scarce in quantity. H.C. Charts, both British, Dutch and American were referred to, but detail was lacking on all, since much of the island shorelines and interior were unsurveyed and merely indicated by dashed lines on the map or left completely blank. Some shorelines were mapped for the first time by this organization. Vertical and oblique Naval and Marine photography was used to its fullest extent, though this material was limited in quantity. Plantation plats were made available by the Government Offices in Sidney, Australia. Other sources of material used were: The captured diary of a Japanese Officer, from which the locations of several native villages were obtained; the letters of several missionaries; and the actual proofing of the New Georgia Group sheet by a missionary from these islands, resulting in the plotting of two previously unknown native trails. Close liaison maintained through ICPGA; the fighting units in the field; and the 64th Engr Top Co. Officers and men returning from combat were interviewed and data was obtained on types of vegetation, terrain features, and locations of hidden jungle rivers, streams and trails impossible to find on aerial photographs. Although all sources were fully utilized the accuracy of these maps can only be listed as "fair".

PHOTOMAPPING SUMMARY

Operational Projects:

Type	Number of Drawings	No. of Color Separations	Disposition of Originals
Planimetric Maps	8	19	30th Engr Base Top Bn Army Map Sv, Dash, DC
Special Topographic Maps	9	36	30th Engr Base Top Bn
Air Target Maps and Folders	21	66	30th Engr Base Top Bn
Special JAN Grid Charts	5	15	30th Engr Base Top Bn
Photomaps	37	37	30th Engr Base Top Bn

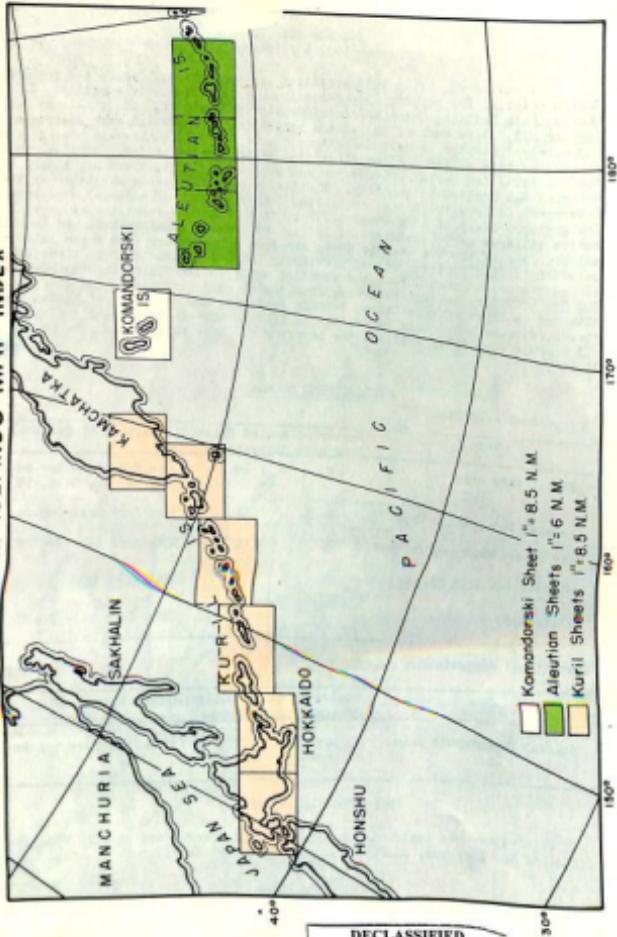
Operational Projects Not Completed:

Type	Number of Drawings	No. of Color Separations	Disposition of Originals
Special Topographic Maps	4	16	30th Engr Base Top Bn

REPRODUCTION SUMMARY

Figures are not available at this writing; records are on file with the Office of the Engineer, USAFIDPAC, AFM 958, S.F., Calif.

ALEUTIAN ISLANDS MAP INDEX



ALEUTIAN ISLANDS
February 1943-August 1943

Work completed on the Aleutian Operations was entirely relegated to Air and Sea Navigational Charts. Due to extremely poor weather conditions, normal map projections used in construction of navigational charts, have considerable distortions which are inescapable at latitudes so far distant from the equator. Through ICPGA, the 6th Engr Top Co, prepared maps on a new projection giving true distance, at the same time preserving true shape, relative size and position of the many small islands in this area. Straight lines drawn between any two points on this projection closely approximate a great circle, thus distances can be read with assurance. Recomputed isogonic lines, allow bearings to be read with a greater degree of accuracy. Thus dead-reckoning navigation for the Aleutian Area, for both air and sea, could be conducted with greater degree of certainty. All land areas previously mapped had to be geographically restituted to eliminate the distortion introduced by their original projections for these latitudes. Translation of Japanese maps for the Kuril Islands series was greatly facilitated by the assignment of a Japanese-American interpreter to the unit. Where possible, additions and corrections were made to existing maps from the limited quantity of serial photography available. Computations for the new projection were completed by the USED, Hawaiian Department. Source material was furnished by ICPGA. No name was ever designated for this new projection. Accuracy of this map series: "Very Good".

PHOTOMAPPING SUMMARY

Operational Projects:

Type	Number of Drawings	No. of Color Separations	Disposition of Originals
Air Navigation Charts	13	39	Army Map Sv, Wash, DC 30th Engr Base Top Bn
Air Target Maps	4	8	30th Engr Base Top Bn
Special JAN Grid Charts	3	9	30th Engr Base Top Bn
Index Map	1	3	30th Engr Base Top Bn
Mosaic	1	1	All data sent to Air Corps

Operational Projects Not Completed:

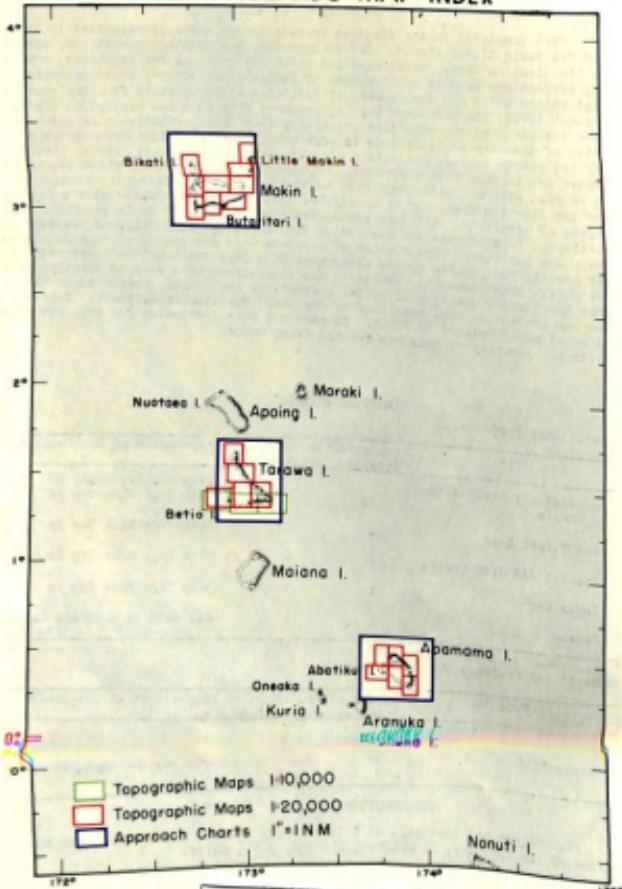
Type	Number of Drawings	No. of Color Separations	Disposition of Originals
Planimetric	10	1	Army Map Sv, Wash, DC

REPRODUCTION SUMMARY

Figures are not available at this writing; records are on file with the Office of the Engineer, USAFMIDPAC, AFQ 958, S.F., Calif.

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GILBERT ISLANDS MAP INDEX



GILBERT ISLANDS August 1943 - November 1943

Source materials for these islands were practically non-existent. British Admiralty Charts and American H.O. Charts were of so small a scale that detail could not be shown. Maps and charts that were available on these islands were based on surveys prior to 1940. These first charts were used for preliminary control. Notes of additional information were added to these charts from reports by Plantation owners and Carlson's Raiders. Photography by the Army and Navy was used to lay uncontrolled mosaics, keeping flight azimuth. Overall averages of measurements were taken from the above charts and served to control the mosaic scales. Mosaics were then interpreted, intensified, bleached, and detail traced to make 1" = 1 NM, navigational charts. Perspective restitution of oblique photography was used to fill in gaps where vertical photography was missing. These navigation charts were turned over to the Navy, through ICPAC and a submarine reconnaissance was made for orientation as to true north and magnetic north. Need for such reconnaissance was a matter of necessity arising from reports as to the accuracy of original Admiralty and H.O. Charts in these areas. A report by one submarine commander stated bluntly, "These charts positively defy navigation!" Consultations were held with native and British pilot navigators of the Gilbert Islands. Combining their report with submarine reconnaissance reports, new geographic orientation for the island groups was established. Final compilation of maps and charts were based on these reports. The M square grid developed from the JAN Grid was used for this operation. Accuracy of this map and chart series: "Good".

PHOTOMAPPING SUMMARY

Operational Projects:

Type	Number of Drawings	No. of Color Separations	Disposition of Originals
Special Maps	25	101	30th Engr Base Top Bn
Special Approach Charts	3	6	Army Map Sv, Wash, DC 30th Engr Base Top Bn
War Plans	5	5	Destroyed
Special Photomap	3	6	30th Engr Base Top Bn

Operational Projects Not Completed:

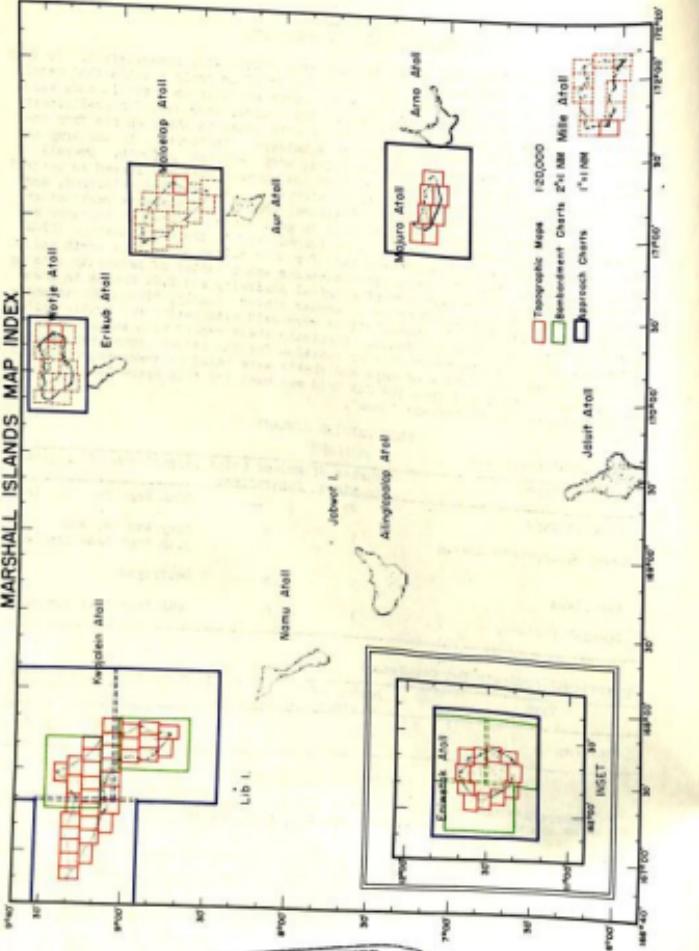
Type	Number of Drawings	No. of Color Separations	Disposition of Originals
Photomap	8	—	Army Map Sv, Wash, DC

REPRODUCTION SUMMARY

Figures are not available at this writing; records are on file with the Office of the Engineer, USAFMIDPAC, APO 958, S.F., Calif.

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MARSHALL ISLANDS MAP INDEX



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MARSHALL ISLANDS
November 1943 - February 1944

A new rectangular projection was developed by the Corps Company based upon the fact that a minute of latitude or longitude, within 12° north or south latitude of the equator, closely approximates 2,000 yards. The percent of error was found to be so small as not to materially affect the plotting accuracy of charts made within the above designated limits. Purpose of the new projection was to develop a grid which would serve simultaneously as a geographic grid for navigation and a distance grid in yards for bombardment and fire control. It was designated as "Special Projection" and "Special Grid", later becoming more familiarly known as the "Flintlock Grid". A new method of controlling large scale, long focal length photography was also developed and used in part. An agreement was reached with the 7th Air Force to furnish photography with a focal length of 6", along with photography of a focal length of 24". The 6" focal length photography was laid as a semi-controlled mosaic to the existing H.O. Charts; average scale determined by these charts. Orientation for north was checked by the Navy. The 24" focal length photography was controlled to this mosaic and final sheet compilation made. Due to change in target date in December, original projects were dropped. Maps of original project were not completed. Maps of final target, Kwajalein, were rushed to completion in 15 days. Throughout the time of compilation, G-2's of the Fifth Amphibious Force and of the 7th Infantry Division worked in conjunction with the Corps Company to formulate all phases of the operation for assault forces taking part in the Marshall invasion. Accuracy of these maps and charts: "Excellent".

PHOTOCALIPPING SUMMARY

Operational Projects:

Type	Number of Drawings	No. of Separations	Disposition of Originals
Special Maps	45	180	30th Engr Base Top Rm
Special Map Revisions	25	102	Originals Destroyed
Bombardment Charts	5	10	30th Engr Base Top Rm
Approach Charts	7	14	30th Engr Base Top Rm
Special Grid Charts	2	4	Originals Destroyed
Special Photomap	1	2	30th Engr Base Top Rm
Special Planimetric Map	4	12	30th Engr Base Top Rm
Special Terrain Map	1	4	30th Engr Base Top Rm
Aeroflage Reports	7	7	30th Engr Base Top Rm
War Plans	1	6	Originals Destroyed

----- _____ Not Completed:

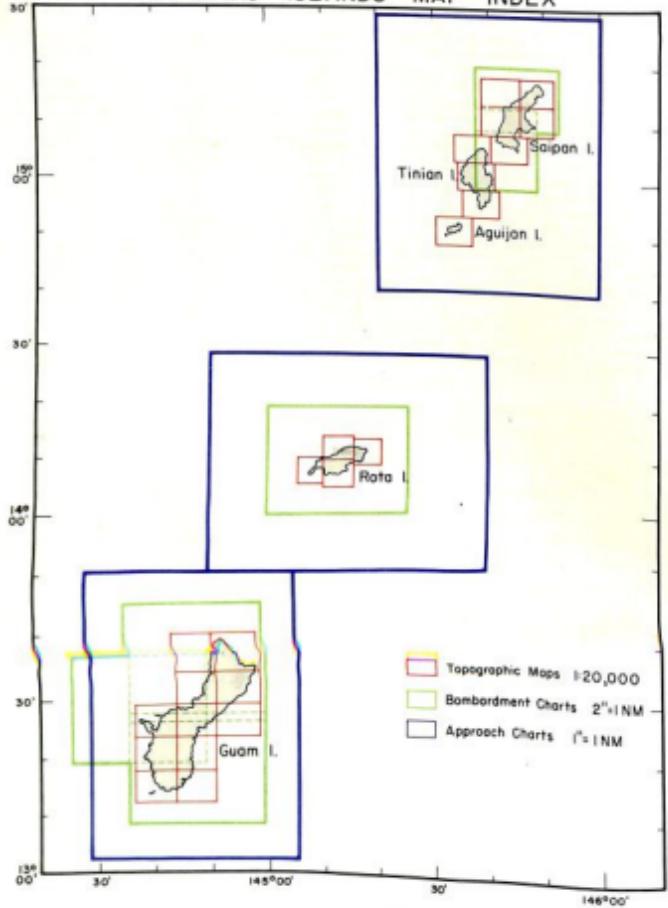
Type	Number of Drawings	No. of Color Separations	Description of Originals
Special Maps	21	80	30th Engr Base Top Bn
Bombardment Charts	1	1	30th Engr Base Top Bn
Approach Charts	2	3	30th Engr Base Top Bn

INTRODUCTION SUMMARY

REFRECTION SUMMARY
Figures are not available at this writing; records are on file with the Office of the Engineer, USAFEMDPAC, APO 958, S.F., Calif.

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MARIANAS ISLANDS MAP INDEX



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MARIANAS ISLANDS
March 1944 - June 1944

The special grid was superimposed on a polyconic projection for this area. The area falling north of 120° north latitude caused the discarding of the Special Projection. The origin of the polyconic projection being used as the construction origin of the grid gave a point of tie and allowed the extension of the numbering system used for the Special Grid during previous operations. At this time the Special Air and Gunnery Target Map method of designation was developed. The methods used previously did not allow ready designations of small target areas other than numerical coordinates of a point. This new system was based upon the breakdown of the 1,000 yard grid square into 200 yard grid squares, by letters. Photography furnished by the Army and Navy for initial compilation was incomplete and distorted. Perspective restitution of oblique photography had to be relied on for much of the area detail on Saipan and Tinian. Twelve different scales of photography were reduced to lay a partial mosaic of the area. Partial coverage was supplied by the 29th Engr Base Top Bn for contours and form lines to be used on final compilation. On the Island of Guam and the existing USMC 1:20,000 maps were revised from aerial photography. The photography furnished for this operation was generally poor and badly distorted. New coverage was flown but arrived too late to be used for compilation, and still meet the operational deadline. Accuracy of this map series: "Good".

PHOTOMAPPING SUMMARY

Operational Projects:

Type	Number of Drawings	No. of Color Separations	Disposition of Originals
Special Maps	26	152	30th Engr Base Top Bn
Special Map Revisions	11	77	30th Engr Base Top Bn
Bombardment Charts	6	30	30th Engr Base Top Bn
Approach Charts	3	11	30th Engr Base Top Bn
Photocaps	18	36	30th Engr Base Top Bn
Fighter Strip Map	1	6	64th Engr Top Bn
Special Grid Maps	5	10	30th Engr Base Top Bn
Revisions			
Special Planning Map	1	2	30th Engr Base Top Bn
Terrain Study	6	6	30th Engr Base Top Bn

Operational Projects Not Completed:

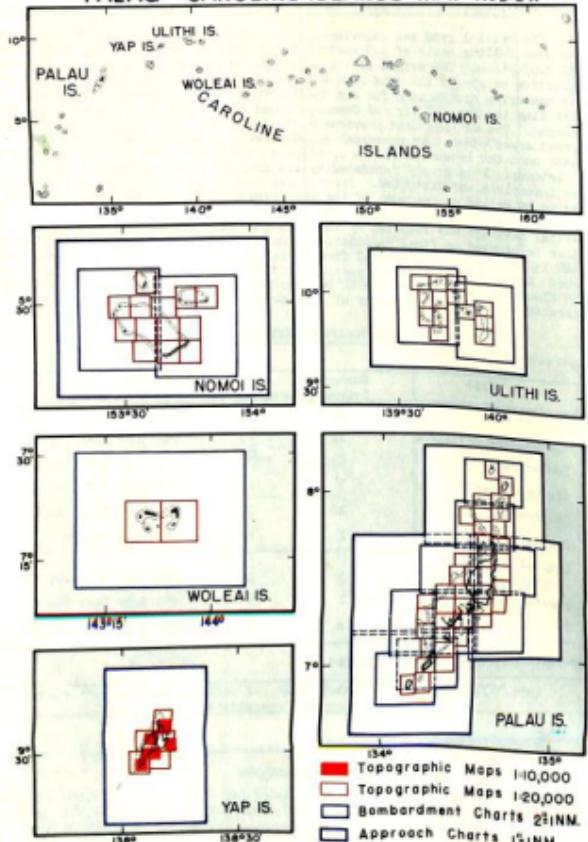
Type	Number of Drawings	No. of Color Separations	Disposition of Originals
None			

REPRODUCTION SUMMARY

Operational work	1,453,642 copies ... 1,757,400 impressions
Miscellaneous work	3,466,823 copies ... 6,897,775 impressions

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PALAU - CAROLINE ISLANDS MAP INDEX



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PALAU - CAROLINE ISLANDS

June 1944 - September 1944

Control for this mapping project was established from E.O. Charts and captured Japanese Imperial Land Survey maps. Vertical photography being limited in coverage, necessitated the use of obliques, restituted by graphic resection and perspective method to complete coverage over vital areas. Due to the early completion of higher priority sheets, these sheets did not include the 10.4 second longitudinal correction that was found to exist on the captured Japanese Imperial Land Survey Maps. Terrain studies were made to determine suitability of numerous sites for airfield construction. Profiles, grades, and cubages of cut and fill were estimated for approximate evaluation of these locations. Due to the large volume of work, all phases of the work could not have been completed without the assistance of naval personnel detached to the 64th Engr Top Bn from the Navy, and supervised by Company A Operations. A total of 5845 man hours were spent by men of the 64th Engr Top Bn in construction of map models at JICPOA, P.H., during this period. Intelligence data was furnished through JICPOA. Accuracy of these maps and charts: "Fair".

PHOTOMAPPING SUMMARY

Operational Projects:

Type	Number of No. of Color Drawings	Disposition of Originals Separations
Special Maps	67	346 30th Engr Base Top Bn
Special Map Revisions	5	35 30th Engr Base Top Bn
Bombardment Charts	15	76 30th Engr Base Top Bn
Bomb. Chart Revisions	3	9 30th Engr Base Top Bn
Approach Charts	7	29 30th Engr Base Top Bn
Approach Charts Revisions	2	8 30th Engr Base Top Bn
Air Target Maps	16	77 30th Engr Base Top Bn
Fighter Strip Maps	3	13 30th Engr Base Top Bn
Air Operations Charts	1	3 30th Engr Base Top Bn
Air-Sea Rescue Chart	1	2 30th Engr Base Top Bn
Special JAM Grid Maps	8	28 30th Engr Base Top Bn
Photocopies	14	28 30th Engr Base Top Bn
War Plans	7	42 Originals Destroyed
Road Net	1	1
Artillery	1	4
Planning Map	2	3 30th Engr Base Top Bn
* Special Maps	18	68 30th Engr Base Top Bn
* Bombardment Charts	1	5 30th Engr Base Top Bn
* Approach Charts	1	4 30th Engr Base Top Bn

* Operational Projects Not Completed

REPRODUCTION SUMMARY

Operational Work	2,247,205 copies	4,242,385 impressions
Miscellaneous Work	2,485,340 copies	6,774,610 impressions

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CENTRAL PHILIPPINE ISLANDS
September 1944 - October 1944

The polyconic projection with Philippine polyconic grid was used in this area. Revisions were made on 1:25,000 AHS Series S831, from Navy sorties dated September, 1944. Gaps in vertical photography were filled in with oblique coverage and USC&GS 1:200,000, Sheet No. 14, dated 1933. Defensive installations were shown. Bombardment charts were compiled from 1:50,000 - 1:25,000 AHS Series S831, S751 and USC&GS 1:200,000, Sheet No. 14, revised with aerial photography, utilizing multiplex aero-projectors. Defensive installations were shown. Due to change in target, time allotted for compilation and reproduction of these maps and charts was dive days. Reliability: "Fair".

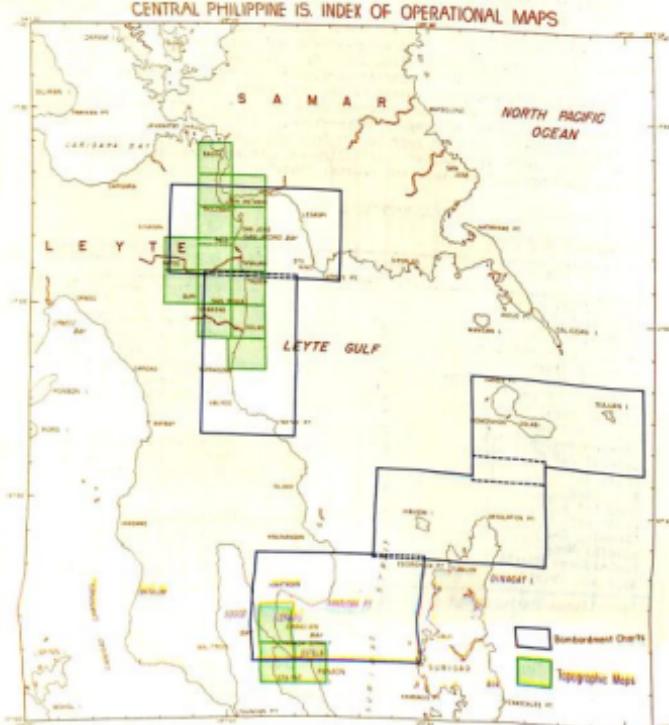
PHOTOMAPPING SUMMARY

Operational Projects:

Type	Number of Drawings	No. of Color Separations	Disposition of Originals
Topographic	17	102	30th Engr Base Top Bn
Bombardment Chart	5	30	30th Engr Base Top Bn
Photomap	3	6	30th Engr Base Top Bn
Index Map	1	3	30th Engr Base Top Bn

REPRODUCTION SUMMARY

Operational Work 581,500 copies ... 1,857,750 impressions
Miscellaneous Work 1,294,862 copies ... 2,315,174 impressions

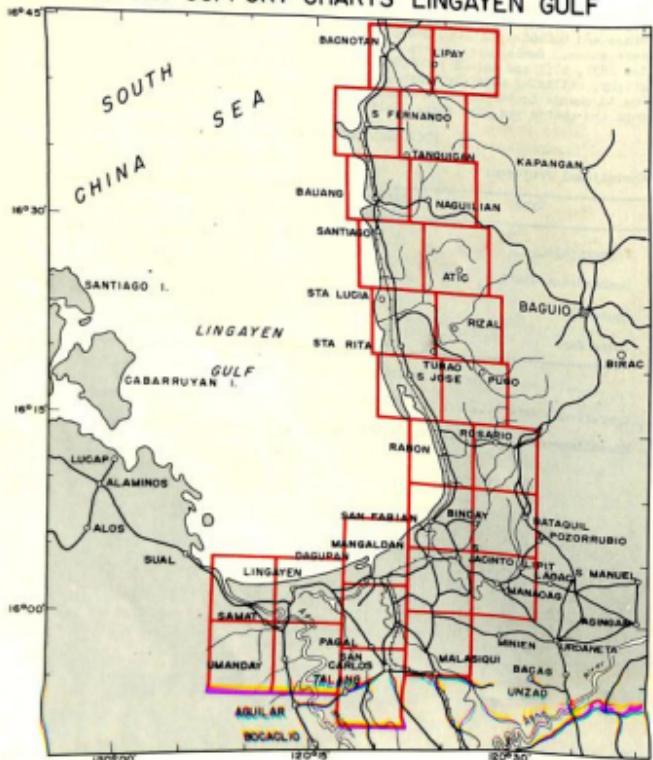


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Authority AHD 533028

DECLASSIFIED
Authority INAD 363678

NORTHERN PHILIPPINES
October 1944 - December 1944

INDEX MAP
OF AIR SUPPORT CHARTS LINGAYEN GULF



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Authority AID-S33078

The polyconic projection with the Philippine polyconic grid was used in this area. Bombardment charts were compiled using AHS Series 5512 maps as control, and adding detail from AHS Series 5717 and 5711; also H.O. Charts 4209, 4246, 4238, 4239, 4210, and AHS Town Plans Series 5511. Air Support charts were compiled from AHS Series 5717. No photography was used for mapping in this area. Reliability: "Good".

PHOTOMAPPING SUMMARY

Operational Projects:

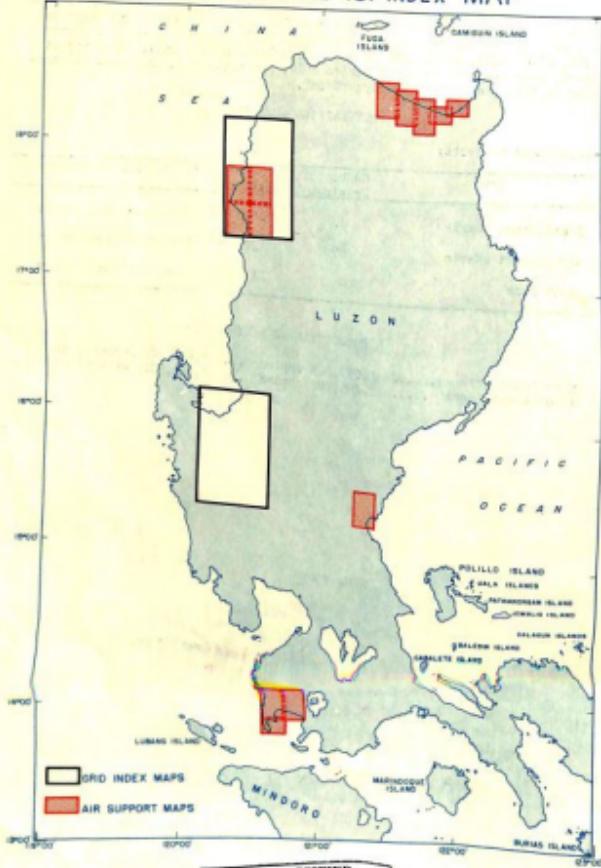
Type	Number of Drawings	No. of Color Separations	Disposition of Originals
Bombardment Charts	41	232	30th Engr Base Top En
Air Support Charts	39	222	30th Engr Base Top En
Index Maps	4	11	30th Engr Base Top En

REPRODUCTION SUMMARY

Operational Work 1,057,525 copies ... 5,852,625 impressions
Miscellaneous Work 3,499,089 copies ... 5,046,241 impressions

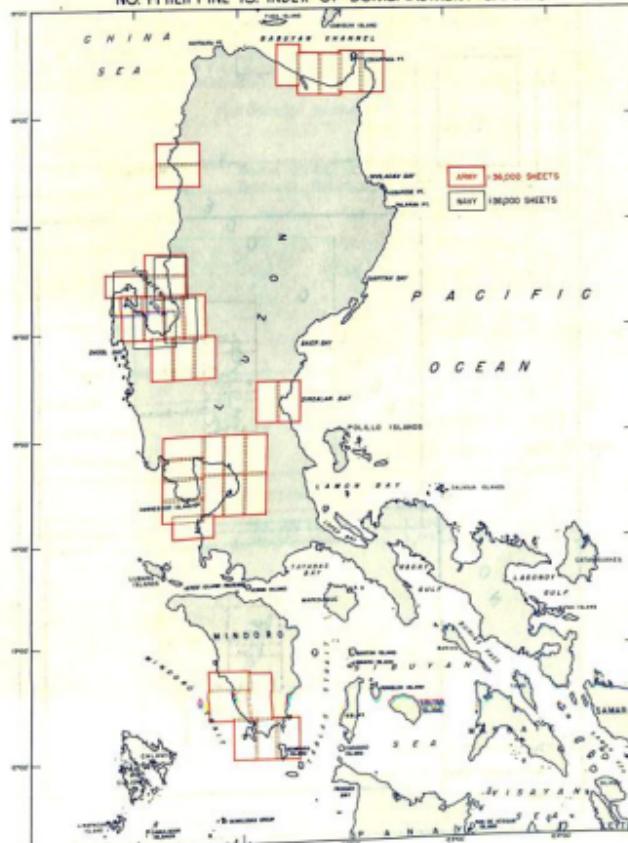
DECLASSIFIED
Authority NAVFIC 3678

NORTH PHILIPPINE IS. INDEX MAP



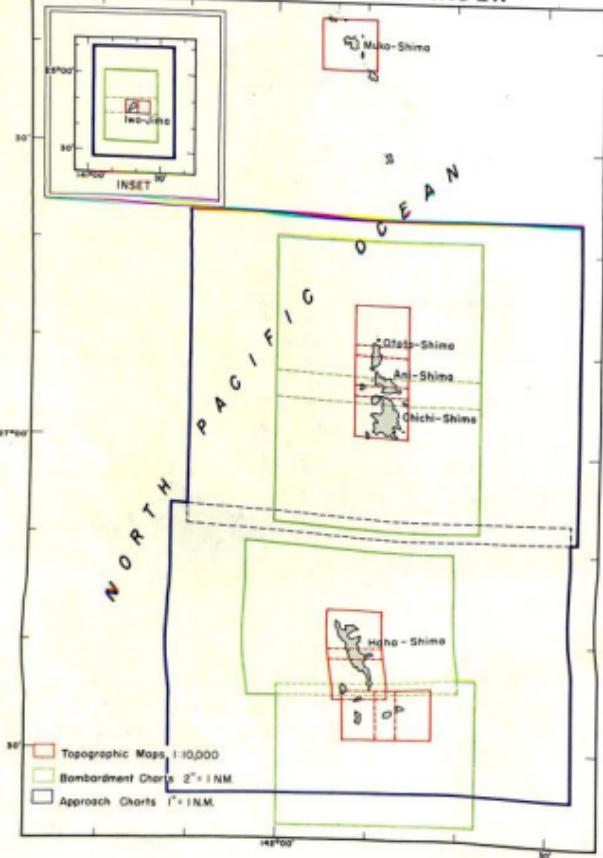
DECLASSIFIED
Authority AAD 583078

NO. PHILIPPINE IS. INDEX OF BOMBARDMENT CHARTS



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Authority NAD 883878

BONIN ISLANDS MAP INDEX



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Authority AAFID 533078

BONIN
September 1944 - January 1944

The polyconic projection with an arbitrary 1,000 yard grid originating at the origin of the polyconic projection plus the air gunnery target grid was used in this area. Scale and orientation taken from AAF Series L771 and H.O. Chart 6107. Photography from Navy sorties and multiplex aero-projectors, utilized for contours and horizontal control of detail. Reliability: "Very Good".

PHOTOMAPPING SUMMARY

Operational Projects:

Type	Number of Drawings	No. of Separations	Disposition of Originals
Special Maps	20	138	64th Engr Top Bn
Special Map Revisions	6	36	64th Engr Top Bn
Bombardment Charts	8	38	64th Engr Top Bn 30th Engr Base Top Bn
Approach Charts	4	19	64th Engr Top Bn 30th Engr Base Top Bn
Air Support Charts	1	6	64th Engr Top Bn
Photomaps	5	9	64th Engr Top Bn
Air Strip Maps	4	17	30th Engr Base Top Bn
Base Development Plan	1	4	The Engineer, USAFMIDPAC

REPRODUCTION SUMMARY

Operational Work	295,699 copies	... 1,626,405 impressions
Miscellaneous Work	1,285,500 copies	... 1,299,280 impressions

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Ryūkyū RETTO - INDEX TO SHEETS



RYUKYU RETTO (OKINAWA)
December 1944 - February 1944

The polyconic projection with world polyconic grid was used in this area. Revisions on 1:25,000 A.M.S. Series L891 were made from vertical and oblique photography dated October, 1944, utilizing twin-tipped aero-projectors. Defensive installations and beaches were added from Tenth Army report. Compilation of other topographic maps in this area was based on 1:25,000 A.M.S. Series L891. The multi-bardiment chart was compiled from N.O. Chart Miscellaneous 1557-B and multiplex terrain studies. Special site and terrain studies were compiled by 163rd Engr Photocapping Plat for Base Development Planning Section. Accuracy of these maps: "Good".

PHOTOMAPPING SUMMARY

Operational Projects:

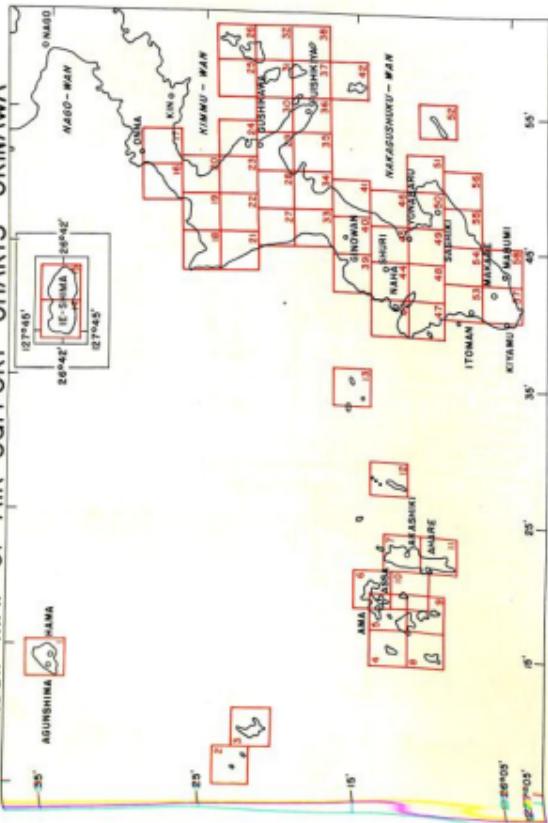
Type	Number of Drawings	No. of Color Separations	Disposition of Originals
Topographic Maps	12	62	64th Engr Top Bn
Topographic Map Revisions	56	280	64th Engr Top Bn
Bombardment Chart Revisions	14	70	30th Engr Base Top Bn
Approach Chart Revisions	6	30	30th Engr Base Top Bn
Photomap Revisions	49	49	64th Engr Top Bn
Air Support Charts	60	358	64th Engr Top Bn
Index Maps	2	6	64th Engr Top Bn
Air Target Maps	27	216	64th Engr Top Bn
Overall Grid Charts	4	12	64th Engr Top Bn
Area Charts	2	8	64th Engr Top Bn
Planning Maps	5	16	64th Engr Top Bn
Terrain Studies	23	23	64th Engr Top Bn
Fighter Strip Maps	12	53	64th Engr Top Bn

REPRODUCTION SUMMARY

Operational Work	4,646,215 copies	... 16,076,368 impressions
Miscellaneous Work	469,782 copies	... 1,685,532 impressions
Serials	1,132 copies	

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Authority NAVF 33-3078

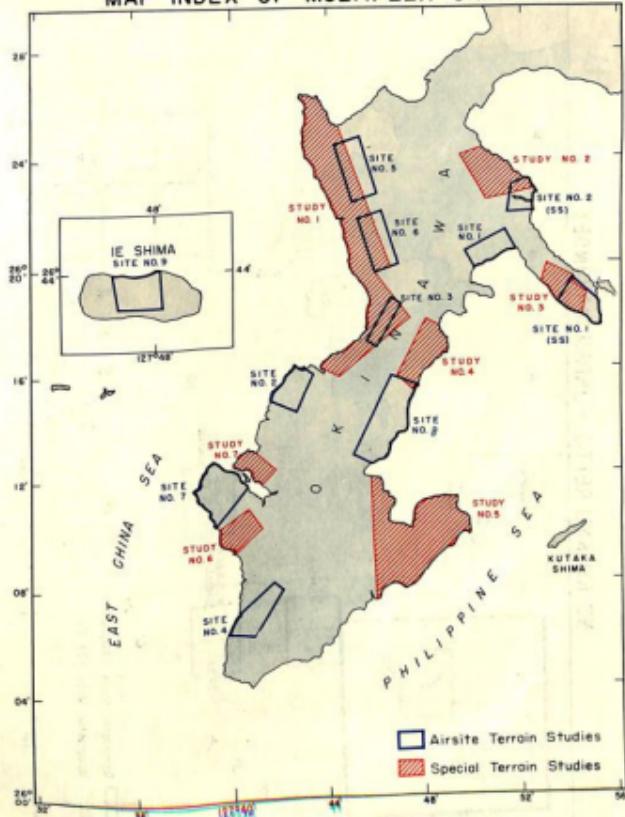
INDEX MAP OF AIR SUPPORT CHARTS - OKINAWA



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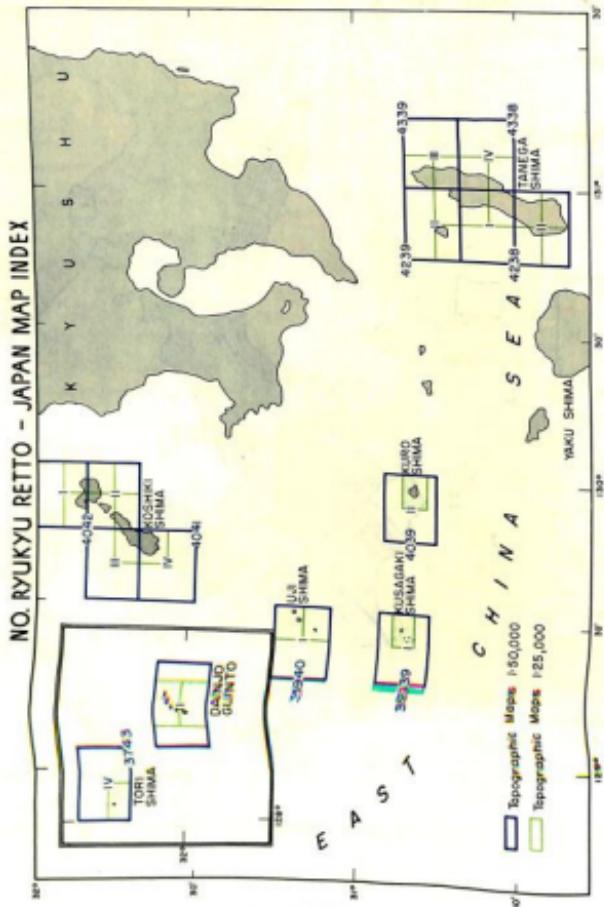
Authority AWD-883D7X

RYŪKYŪ RETTO (OKINAWA)
MAP INDEX OF MULTIPLEX SHEETS



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Authority NND 883078



NORTHERN HOKKAIDO AND JAPAN
April 1945 - August 1945

The polyconic projection with world polyconic grid was used in this area. Topographic maps were compiled utilizing multiplex aero-projectors and stereocomparagraph from CW12, WD5 and WD9 sorties, dated April, May and July 1945. AHS Series 1772 and 1791 were used for horizontal control, while off shore hydrography was from H.O. U.S. Navy, 1945 and H.O. Miscellaneous Chart No. 10,010-66. Topographic map revisions were based on AHS Series 1791 from a captured Japanese Army-Navy Publication, dated 1944. Accuracy: "Very Good". Map maps were compiled using AHS Series 1772, 1774 and 1775, revised with photography dated December, 1944, and January, February and March, 1945. Defensive installations shown by Fleet Interpretation Squadron Two. Accuracy: "Good". The bombardment and approach charts were compiled using AHS Series 1774 and 1874. Off-shore hydrography from H.O. Chart No. 2734, and captured Japanese H.O. Charts. Target designations and defensive installations by Fleet Interpretation Squadron Two. Accuracy: "Good".

PHOTOGRAPHING SURVEY

Operational Projects:

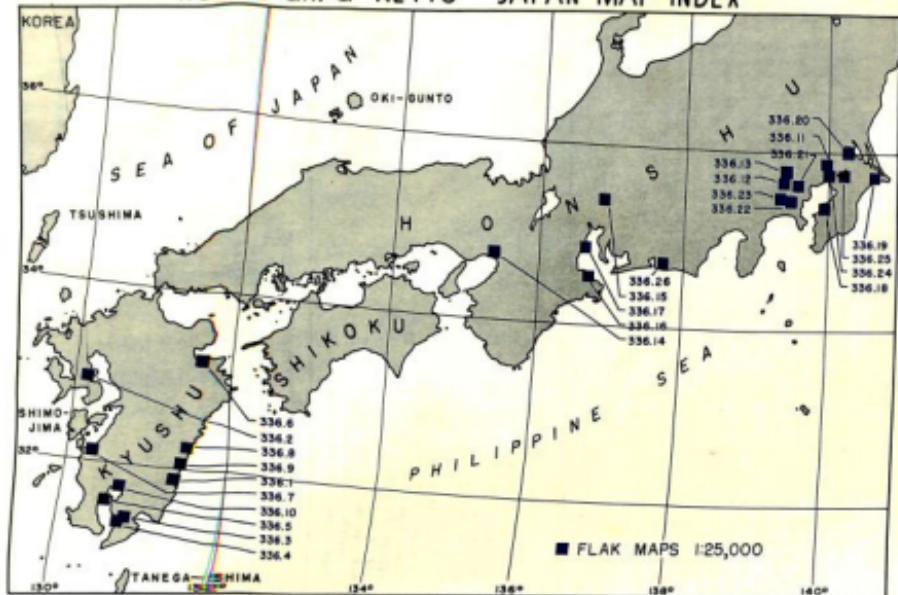
Type	Number of Drawings	No. of Color Separations	Disposition of Originals
Topographic Maps	33	165	
Topo Map Revisions	22	110	
Photomaps	28	28	
Flak & Target Maps	23	69	
Flak Maps	12	48	
Fighter Strip Maps	16	73	
Fighter Strip Map Revisions	2	7	
Bombardment Charts	21	70	
Approach Charts	5	10	
Air Navigation Charts	7	24	
Air Sea Rescue and Air	5	13	
Search Sector Charts			
Operational Miscellaneous	124	176	

Performance Summary

Operational Work 1,075,000 copies ... 6,690,000 impressions
 Miscellaneous Work 10,850,396 copies ... 4,409,292 impressions

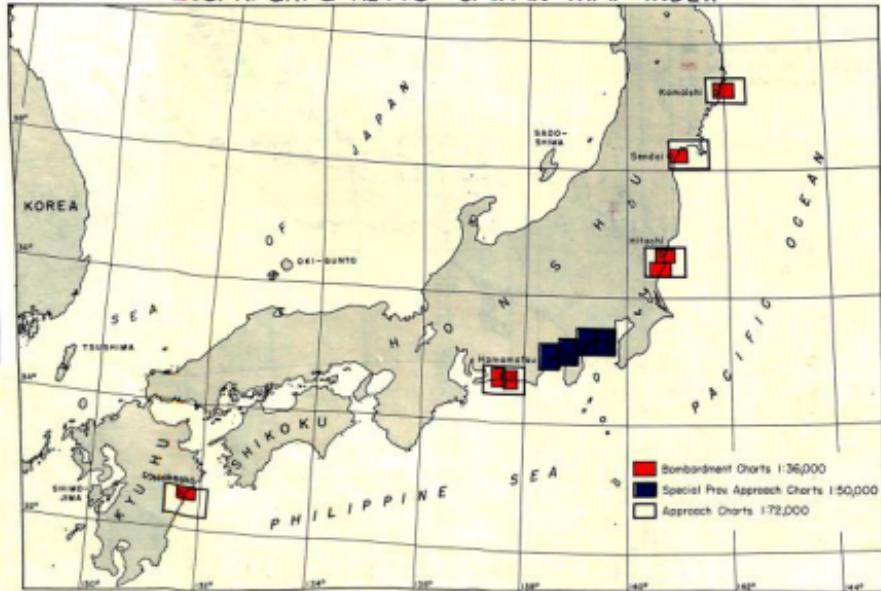
DECLASSIFIED

NO. RYŪKYŪ RETTO - JAPAN MAP INDEX

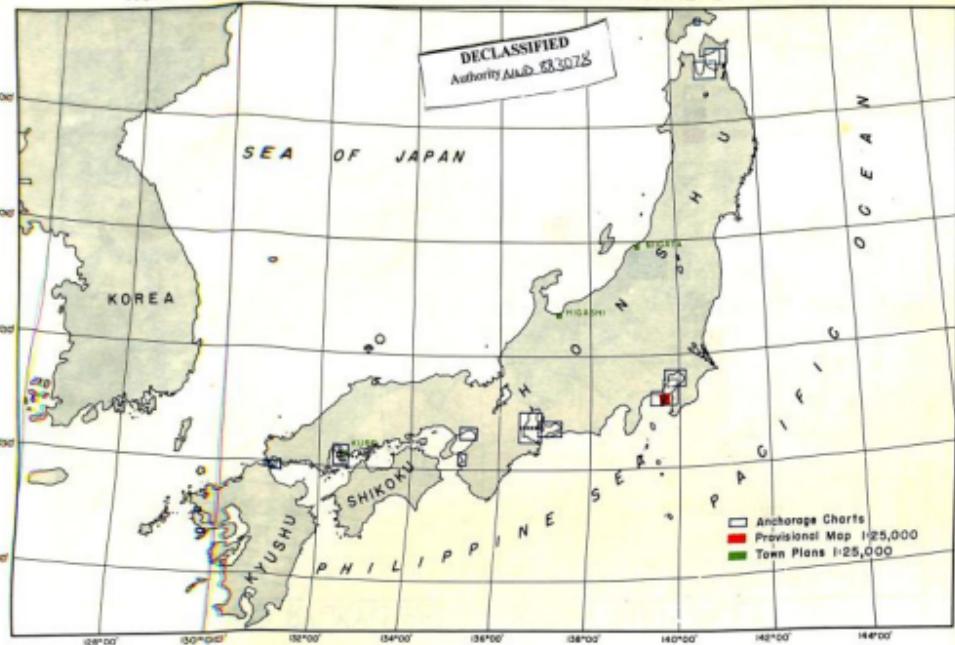


NO. RYŪKYŪ RETTO - JAPAN MAP INDEX

Authority AND SS 2028
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NORTHERN RYŪKŪ RETTO-JAPAN OCCUPATIONAL CHART INDEX



JAPAN OCCUPATIONAL

August 1945 *

The berth and anchorage charts in this area were based on a surveyor projection. H.O. Charts were used as a base with the berths and anchorages added. Topographic map of Sagami, Japan was compiled from S.I.C. Charts, 30th ZONE. Multiple compilation sheet and IGS Series 1571, utilizing 20th Air Force nautical charts. Accuracy of these maps: "Good".

PHOTOGRAPHING SUMMARY

Operational Projects:

Type	Number of No. of Color Reproduction of Originals	Divisions Submitted
Berths and Anchorage Charts	17	37
City Plans	3	18
Fighter Strip Maps	1	3
Topographic Maps	1	4

REPRODUCTION SUMMARY

Operational Work ***** 179,725 copies ... 533,100 impressions
Miscellaneous Work ***** 298,700 copies ... 721,150 impressions

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PHOTO PROCESSING
PHOTO COVERAGE REPORTS

This organization was assigned the mission of evaluating, plotting and distributing all Army and Navy vertical aerial mapping photography of Japan and island possessions. Two reports were prepared weekly, one for six inch focal length photography and one for longer than six inch focal length photography. These reports were closed as of 2400 each Saturday and contained plots of all photography received during that week. The plots were reproduced as a black overprint on specially prepared 1:250,000 scale AMG base sheets.

The base sheets were reproduced in quantity for stock file in advance of the weekly publication. Culture and names were in brown, hydrography in blue and bodies of water in blue tint. Appropriate marginal data only appeared, that originally on the map considered superfluous being stripped off. On the reverse side appeared all pertinent data on the sorties, in a columnized form, itemizing sortie number, date of flight, focal length, flight altitude, print evaluation and disposition of original and duplicate sortie film.

STATISTICS 13 MAY TO 2 SEPTEMBER 1945

DISTRIBUTION

	TOTALS
Original Film	313
Duplicate Film	273
Prints	45,192
Multiplex Diapositives	2,420

RECEIVED & EVALUATED

Sorties	1,004
Prints	59,465

PLOTTED

Sorties	1,097
Prints	55,773

COMPILED

PCR Overlay Sheets	947
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Annex I (Supplies)

EXPENDED PHOTOMAPPING SUPPLIES

Item	Unit	Total
Acid, salicylic, USP, crystal	1/8 can	1
Alcohol	Pt	111
Ammonia	Pt	625
Bands, rubber	1/86 box	17
Bands, rubber, assorted	1/96 box	1
Bensol	Qts	97
Blades, shop, knife	Each	241
Board, bristol, smooth, type II, 3 ply, 20"x30"	Sheet	3191
Brush, artists, camel or squirrel hair, No. 0	Each	28
Brush, artists, camel or squirrel hair, No. 1	Each	28
Brush, artists, camel or squirrel hair, No. 2	Each	28
Brush, artists, camel or squirrel hair, No. 3	Each	28
Brush, artists, camel or squirrel hair, No. 4	Each	58
Brush, artists, camel or squirrel hair, No. 5	Each	30
Brush, artists, camel or squirrel hair, No. 6	Each	39
Brush, artists, camel or squirrel hair, No. 7	Each	30
Brush, spotting, 1/8"	Each	2
Carbon tetrachloride	Pts	826
Cement, rubber	Gallon	51
Cloth, muslin, white, 36"	Yds	2528
Cloth, tracing, Phoenix, white, pencil and ink, 30"x20yd	Rolls	3
Cloth, tracing, Phoenix, white, pencil and ink, 36"x20yd	Rolls	36
Cloth, tracing, Phoenix, white, pencil and ink, 42"x20yd	Rolls	152
Color, photographic, retouching cards	Book	15
Enamel, quick-drying, white	Qts	72
Erasers, art gum	Each	562
Erasers, oblong, ink	Each	467
Envelopes, manila, 12"x15"	Each	1212
Fluid, cleaning, lens	Each	841
Fluid, ditto blackout, white	Pt	393
Gum, arabic, lump form	1/8 Pt btl	6
Ink, drawing, casein foil, Weber	1/8 btl	8
Ink, drawing, waterproof, black	Can	13
Ink, drawing, waterproof, blue	1/8 oz btl	97
Ink, drawing, waterproof, brown	3/4 oz btl	215
Ink, drawing, waterproof, carmine	3/4 oz btl	267
Ink, drawing, waterproof, orange	3/4 oz btl	196
Ink, drawing, waterproof, white	3/4 oz btl	167
Ink, drawing, waterproof, green	3/4 oz btl	43
Lamp, fluorescent, tube T-8, med. 15W, 18"	Each	50
Lamp, projector, 500W, 120V, 1-20	Each	60
Needles, etching, round, No. 1	Each	38
Needles, etching, square, No. 2.	Each	32
Needles, etching, scraping, No. 3	Each	26
Needles, etching, scraping, No. 6	Each	41
Needles, sewing, No. 10	25 to pkg	25
Oil, watch	1 oz btl	42
		132
		27

Item	Unit	Total
Opaque, water, black, graphite, liquid	2 oz btl	6
Opaque, water, black, graphite, liquid	4 oz btl	10
Pad, memo, white, plain, 6"x9"	Each	469
Pad, writing, 5"x10"	Each	891
Paper, blotting, 17"x22"	Sheets	326
Paper, carbon, 8 1/2"x11"	Sheets	1061
Paper, cross section, 10th line, 8 1/2"x11"	25 sh Pads	29
Paper, drawing, mounted; double, Whitman type 4, 18"x24"	Sheets	217
Paper, drawing, white, smooth surface, 8 1/2"x11"	Sheets	400
Paper, Laminated, Nbk "70, green, 42"x20yd	Roll	30
Paper, lens tissue, 4"x6"	50 sh bks	148
Paper, map litho, sulphite, white, 19"x20"	Gross	5
Paper, map litho, sulphite, white, 20"x22"	Sheets	2
Paper, map litho, sulphite, white, 22"x20"	Gross	11
Paper, printing, ammonia process, 36"x50yd	Sheets	1000
Paper, printing, ammonia process, 36"x50yd	Rolls	19
Paper, printing, ammonia process, 42"x50yd	Rolls	414
Paper, tracing, 19"x20"	Cheats	5950
Paper, tracing, 22"x30"	Sheets	597
Paper, tracing, white, type 3, class 1, 42"x50yd	Roll	83
Paper, tracing, white, type 3, class 1, 36"x50yd	Roll	20
Paper, wrapping, Kraft No. 2 and grade E, 40"	50' roll	7
Paste, mounting, Sphinx	Gallon	6
Pen cleaning fluid	1 oz btl	174
Pens, crowquill, No. 61	Gross	28
Pens, crowquill, No. 62	Gross	1
Pens, crowquill, No. 102 w/holder	12 on card	49
Pens, crowquill, No. 102	Gross	70
Pens, crowquill, No. 107	Box	124
Pens, drafting, 22B, 96, 99, 100, 103	Gross	4
Pens, drafting, Esterbrook, assorted	Gross	10
Pens, etching, scratch knife, #31	Each	8
Pens, LeRoy, well and pin, No. 0	Each	460
Pens, LeRoy, well and pin, No. 0	Each	237
Pens, LeRoy, well and pin, No. 1	Each	90
Pens, LeRoy, well and pin, No. 2	Each	38
Pens, LeRoy, well and pin, No. 3	Each	12
Pens, LeRoy, well and pin, No. 4	Each	29
Pens, LeRoy, well and pin, No. 5	Each	9
Pens, LeRoy, well and pin, No. 6	Each	18
Pens, LeRoy, well and pin, No. 7	Each	3
Pens, LeRoy, well and pin, No. 8	Each	3
Pens, LeRoy, well and pin, No. 9	Dot	2
Pens, lettering, speedball, No. E-0	Dos	15
Pens, lettering, speedball, No. E-1	Dos	8
Pens, lettering, speedball, No. E-2	Dos	17
Pens, lettering, speedball, No. E-3	Dos	10
Pens, lettering, speedball, No. E-4	Dos	20
Pens, lettering, speedball, No. E-5	Dos	46
Pens, lettering, speedball, No. E-6	Dos	2
Pens, lettering, speedball, assorted	Gross	18
Pens, #5555	Dos	92
Penholder	Each	

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Authority NAVFRC 3878

Item	Unit	Total
Pencils, colored lead, black	Each	104
Pencils, colored lead, blue	Each	553
Pencils, colored lead, brown	Each	363
Pencils, colored lead, green	Each	262
Pencils, colored lead, red	Each	701
Pencils, colored lead, white	Each	65
Pencils, colored lead, yellow	Each	72
Pencils, drawing HB	Each	697
Pencils, drawing H	Each	704
Pencils, drawing JH	Each	834
Pencils, drawing, 4H	Each	114
Pencils, drawing, 5H	Each	791
Pencils, drawing, 6H	Each	111
Pencils, drawing, 7H	Each	445
Pencils, duplicating, blue	Each	39
Pencils, duplicating, green	Each	15
Pencils, duplicating, purple	Each	32
Pencils, duplicating, red	Each	23
Pencils, marking, china, black	Each	59
Pencils, marking, china, blue	Each	199
Pencils, marking, china, red	Each	270
Pencils, marking, china, white	Each	13
Pencil, writing, w/eraser, No. 2	Each	574
Pencil, writing, w/eraser, No. 3	Each	471
Pins, office, brass, type 1, class B, No. 3	Pk of 100	37
Plastic, acetate, .005"x100"	Rolls	8
Plastic, acetate, .20"x50"	Sheets	94
Plastic, Eastman safety	Sheets	77
Pointer, sandpaper pad	Each	426
Powder, tracing cloth, 30Z shaker, top	Boxes	89
Shield, erasing, steel	Each	24
Skins, chamois, 8"x10"	Box	10
Soap, liquid, aniline, stain remover	Pt btl	11
Staples, paper fastening, 5000 per box	Box	38
Sticks, scapetone	Each	12
Tacks, thumb, steel, type 2, 1/4", 100 to box	Box	59
Tape, cellulose, 1/2"x72yd	Roll	38
Tape, cellulose, 3/4"x36yd	Roll	202
Tape, cellulose, 1"x72yd	Roll	486
Tape, Scotch, drafting, 1"x72yd	Roll	355
Transparentizer solution	Pint	1
Turpentine, gum spirits of	Pint	17
Twine, hemp #18, 4 oz ball	Roll	61
Zip-a-tone, 8"x11", #C-8	Sheets	31
Zip-a-tone, 8"x11", #E	Sheets	71
Zip-a-tone, 8"x11", #E-2	Sheets	317
Zip-a-tone, 8"x11", #E-8	Sheets	41
Zip-a-tone, 8"x11", #00	Sheets	72
Zip-a-tone, 8"x11", #0	Sheets	17
Zip-a-tone, 8"x11", #2	Sheets	204
Zip-a-tone, 8"x11", #2-B	Sheets	11
Zip-a-tone, 8"x11", #07	Sheets	17

Item	Unit	Total
Zip-a-tone, 8"x11", #7	Sheets	29
Zip-a-tone, 8"x11", #10-A	Sheets	235
Zip-a-tone, 8"x11", #12	Sheets	159
Zip-a-tone, 8"x11", #14	Sheets	143
Zip-a-tone, 8"x11", #16	Sheets	135
Zip-a-tone, 8"x11", #20-R	Sheets	17
Zip-a-tone, 8"x11", #34	Sheets	616
Zip-a-tone, 8"x11", #37	Sheets	46
Zip-a-tone, 8"x11", #43	Sheets	208
Zip-a-tone, 8"x11", #54	Sheets	262
Zip-a-tone, 8"x11", #56	Sheets	83
Zip-a-tone, 8"x11", #63	Sheets	244
Zip-a-tone, 8"x11", #64	Sheets	90
Zip-a-tone, 8"x11", #70	Sheets	17
Zip-a-tone, 8"x11", #77	Sheets	70
Zip-a-tone, 8"x11", #83-A	Sheets	71
Zip-a-tone, 8"x11", #90	Sheets	37
Zip-a-tone, 8"x11", #99	Sheets	405
Zip-a-tone, 8"x11", #154	Sheets	62
Zip-a-tone, 8"x11", #B-2	Sheets	3
Zip-a-tone, 8"x11", assorted	Pack	467
Binder, loose leaf, 8"x11", 3 ring	Pack	3
Color, shirt card tempera, white	4 oz jar	8
Developer, photostat	10 oz btu	130
Enamel, black, inside, quick drying	Cts	2
Fasteners, metal, paper, 2-3/4", 50 to box	Pack	4
Folder, pressboard, 12"x15"	Sheets	155
Powder, acid fixing, 104 oz cans	Cans	150
Paper, photocopying, 14"x350ft	Rolls	50
Paper, flint, assorted grade	Sheet	150
Paper, drawing, cream, type 2, 42"x50yd	Rolls	5
Paper, dura-seal, 24"x10yd	Rolls	1
Paper, drawing, mounted, medium, white, 62"x10yd	Rolls	2
Paper, profile, printed, orange, 20"x50yd	Rolls	1
Paper, map lith., sulphite, white, 20"x22"	Sheets	150
Starters, lamp, fluorescent	Pack	12

REPRODUCTION COMPANY EXPENDED SUPPLIES

Item	Unit	Total
Carbon arc light	Box	40
Lamp, incandescent, ruby, 30 W bulb	Each	28
Lamp, incandescent, clear, 60 W bulb	Each	224
Film, commercial, orthochromatic, 20"x24"	Dos	246
Film, kodalith, orthochromatic, 20"x24"	Dos	1568
Cheesecloth, 36" wide	Yds	2150
Cloth, wiping	Lbs	3600
Thread, linen, No. 8, 2 ounce balls	Balls	10
Brush, artists	Each	74
Needle, sailmakers, No. 14#	Each	85
Slip, snake	Dos	41
Sponge, natural	Each	193
Stone, sharpening	Each	13
Acid, acetic glacial	Gal	69
Acid, phosphoric	Lbs	52
Acid, boric	Lbs	197
Acid, tannic	Lbs	16
Acid, acetic	Gal	6
Altunson, egg flake	Lbs	248
Amonia water	Gal	14
Amonnic dichromate	Lbs	63
Amonnium phosphate	Lbs	15
Amonnium nitrate	Lbs	13
Blanket, repair, Kwik	Gal	8
Developer, D72	Lbs	1855
Developer, EM, 60A	Gal	328
Dryer, lithographic ink, paste	Lbs	34
Dryer, lithographic ink, cobalt	Gal	779
Fixer, photographic, 5 gal containers	Gal	1360
Gasoline, cleaning	Lbs	985
Gum arabic	Lbs	225
Powder, scouring	Lbs	16150
Sand, litho graining, aluminum Oxide, #220	Lbs	94
Sodium, carbonate	Lbs	188
Sodium, hydroxide	Lbs	882
Sodium, sulphite	Lbs	135
Sodium, thiosulphate	Lbs	208
Trisodium phosphate	Gal	55
Asphaltum	Gal	11
Cement, rubber liquid	Jars	107
Opaque, water, black, 2 ounce jars	Gal	275
Turpentine	Qts	65
Varnish, litho, #00	Qts	27
Varnish, litho, #8	Qts	9
Wasbust solution, litho	Dos	54
Crayon, lumber, black	Pts	144
Ink, developing, litho	Etls	56
Ink, drawing, calcephane, 3/4 ounce bottles	Lbs	1308
Ink, litho offset, black	Lbs	415
Ink, litho offset, blue	Lbs	160

Item	Unit	Total
Ink, litho offset, green	Lbs	261
Ink, litho offset, red	Lbs	213
Ink, litho offset, yellow	Lbs	214
Ink, litho offset, purple	Lbs	131
Ink, white reducing	Lbs	702
Paper, masking, coated both sides, 80# sub., 25"x38" ..	Sheets	8000
Paper, wrapping, Kraft, 36" wide, 80# sub ..	Rolls	157
Paper, wrapping, Kraft, 36", waterproof ..	Rolls	104
Paper, wrapping, Kraft, heavy weight ..	Rolls	99
Pencil, chine marking	Dos	7
Pencil, lead, colored	Dos	42
Pencil, lead, drawing, H ..	Dos	15
Pencil, lead, drawing, 3H ..	Dos	42
Pencil, lead, drawing, 6H ..	Dos	13
Pencil, lead, general writing, No. 3 ..	Dos	93
Tape, scotch, cellulose, 3/4"x2yd, red ..	Rolls	67
Tape, scotch, transparent, 3/4"x2yd ..	Rolls	79
Tape, scotch, transparent, 3/4"x2yd ..	Rolls	85
Cotton, absorbent, unsterilized, 1 lb roll ..	Boxes	304
Paper, filter	Pts	5
Carbon tetrachloride, technical, 1 pt bottle ..	Dos	94
Film photographic, photomechanical, thin base, 20"x24" ..	Lbs	255
Hydroquinone	Lbs	590
Paraformaldehyde	Lbs	261
Potassium alum	Lbs	61
Potassium metabisulfite	Lbs	65
Potassium bromide	Lbs	56
Blankets, rubber, Multilith model 2066 ..	Each	83
Blankets, Harris, 20"x24", model 17B ..	Each	69
Carborundum Grit, #180	Lbs	900
Carborundum Grit, #220	Lbs	1625
Chromium sulphate	Lbs	3
Calcium chloride	Lbs	4
Imperial fountain solution concentrate	Qts	35
Cover, roller, litho offset, rider for Multilith	Each	81
Cover, roller, litho offset, ductor for Multilith	Each	46
Cover, roller, litho offset, Multilith, model 2066 ..	Each	72
Cover, roller, litho offset, aquastop # or equal, sets of 2 dampener and 1 doctor covers, sleeve type, Harris model L72, 20"x24"	Each	105
Cover, roller, litho offset, liner, single, sleeve type, fountain, Harris model L72, 20"x24"	Each	94
Plates, zinc, Harris model L72	Reams	1359
Paper, sulphite	Reams	4982
Paper, coated	Reams	603
Paper, wet strength	Reams	12623
Paper, manifold	Reams	18

Note: The expendables used for reproduction work at Honolulu Lithographic Company, Ltd., were purchased under government contract and are not listed in this report.

At various times different organizations have furnished their own paper stocks for work run by this unit. Ex: G.I. propaganda leaflets. There are no available figures on reproduction supplies for the 64th Regt Co, Corps, from July, 1942 to March, 1944.

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1633D ENGINEER PHOTOMAPPING PLATOON EXPENDED SUPPLIES

Item	Unit	Total
Benzol, benzine	Pt	14
Blade, hacksaw	Each	24
Carbon tetrachloride	Pint	8
Cement, rubber	Gallon	1
Cleaning liquid, Leroy pen	Btl	10
Cleaning, liquid, lens	Btl	4
Cap, attachment, 2-wire, Allied Elect Co., #1 cord hole	Each	5
Cap, attachment, single	Each	4
Cheesecloth, unbleached, 36"	Yard	100
Cloth, wiping, cotton	Pound	50
Cord, extra flexible, 2-conductor, cotton covered, #18	Feet	35
Cord, lamp, 2-conductor, parallel, rubber jacketed, rubber insulated, #18	Feet	40
Cotton, absorbent, 1 lb roll	Roll	6
Dissipative plates, contrast, multiplex, glass, w/anti-reflection backing, wide angle projection, .05 inch thick, 4x45 mm	Dosen	760
Developer, powder, D-76	Cans	90
Developer, powder, D-72	Cans	75
Eraser, ink, rubber, oblong	Each	50
Eraser, pencil, rubber, oblong	Each	100
Eraser, rubber, art gun	Each	30
Filter, air, multiplex, cooling unit, zig-zig, 20"x22"	Each	27
Fixer, photographic, powder, 5 gal. solution	Can	65
Filter, safelight, Wratten, No. 0	Each	3
Filter, safelight, Wratten, No. 00	Each	3
Filter, safelight, Wratten, No. 1	Each	3
Filter, safelight, Wratten, No. 2	Each	1
Filter, safelight, Wratten, No. 3	Each	3
Flux, soldering, paste, non-corrosive	Can	2
Fuses, general use, glass tube type, 25-volts, 10 amp	Box of 5	5
Fuses, 25-volt, 6 amp, box of 5	Box	20
Glue, photoengravers, quart bottle	Btl	2
Graduate, glass, 16 oz	Each	3
Ink, drawing, cellophane, 3/4 oz bottle	Btl	7
Ink, drawing, waterproof, 3/4 oz bottle, orange	Btl	3
Ink, drawing, waterproof, 3/4 oz bottle, brown	Btl	15
Ink, drawing, waterproof, 3/4 oz bottle, green	Btl	30
Ink, drawing, waterproof, 3/4 oz bottle, carmine	Btl	35
Ink, drawing, waterproof, 3/4 oz bottle, black	Btl	50
Ink, drawing, waterproof, 3/4 oz bottle, blue	Btl	25
Lamp, incandescent, tungsten filament, miniature, battery service, frosted, 0.25 amps, 6.2 volts, miniature screw base	Each	60
Lamp, incandescent, tungsten filament, large, 30 watts, 120 volts, ruby red bulb, medium screw base	Each	5
Lamp, incandescent, tungsten filament, large, 100 watt, 20 volt, T-8 clear bulb, B-C, D-G base	Each	700
Lead, artists, refills, #H, 6 to a box	Box	15
Lead, artists, refills, #H, 6 to a box	Box	25
Oil, lubricating, clock, 5 oz bottle	Btl	15
Paddle, photographic print, hard rubber, 12"	Each	4

Item	Unit	Total
Paper, drawing, unmounted, medium, white, type I, smooth surface, in sheets, 8½"x11"	Dosen	40
Paper, blotting, photographic, lintless, white, 24"x24"	Dosen	10
Paper, lens, tissue, 4"x6", 50 sheets to pack	Pkg	45
Paper, photographic, type I, chloride, single weight, contrast, glossy, 10"x10"	Gross	10
Paper, photographic, type I, chloride, single weight, contrast, glossy, 10"x10", Contrast II	Gross	35
Paper, photographic, type I, chloride, single weight, contrast, glossy, 10"x10", Contrast III	Gross	82
Paper, photographic, type I, chloride, single weight, contrast, glossy, 10"x10", Contrast IV	Gross	35
Paper, profile, drawing, 20"x50yd	Roll	1
Paper, cross-section, 8"x11" pads, 24 sheets to pad	Pad	12
Paper, tracing, vellum, 36"x50yd	Roll	35
Paper, cream, drawing, 42"x50yd	Roll	4
Paste, office, semi-liquid, type II, 6 oz bottle	Btl	4
Pebholders, crowquill	Each	12
Pencils, drawing, hard, colored, yellow	Each	10
Pencils, drawing, hard, colored, brown	Each	10
Pencils, drawing, hard, colored, blue	Each	30
Pencils, drawing, hard, colored, red	Each	50
Pencils, drawing, hard, colored, green	Each	20
Pencil, lead, drawing, wood cased, HB	Each	35
Pencil, lead, drawing, wood cased, H	Each	15
Pencil, lead, drawing, wood cased, 2H	Each	20
Pencil, lead, drawing, wood cased, 3H	Each	15
Pencil, lead, drawing, wood cased, 4H	Each	55
Pencil, lead, drawing, wood cased, 7H	Each	240
Pencil, lead, drawing, wood cased, 2	Each	10
Pencil, paper cased, wax, china marking, red	Each	10
Pencil, paper cased, wax, china marking, blue	Each	25
Pencil, paper cased, wax, china marking, black	Each	25
Pens, drawing, speedball, B-6	Each	20
Pens, drawing, speedball, B-5	Each	20
Pens, drawing, speedball, B-4	Each	12
Pens, drawing, speedball, D-00	Each	12
Pens, drawing, speedball, A-0	Each	5
Pens, Leroy, No. 6	Each	5
Pens, Leroy, No. 5	Each	5
Pens, Leroy, No. 4	Each	12
Pens, Leroy, No. 3	Each	5
Pens, Leroy, No. 2	Each	5
Pens, Leroy, No. 0	Each	10
Pens, Leroy, No. 00	Each	20
Points, pen, crowquill, No. 61	Gross	2
Points, pen, crowquill, No. 56	Gross	1
Points, pen, crowquill, No. 104	Gross	5
Pebholders, regular	Each	20
Painter, pencil, sandpaper, w/handle, 14"x1"	Each	60
Rods, stirring, photographic, 10"	Each	5
Skin, chamois, 8"x10"	Each	20
Solder, tin lead, wire, resin core, 1/8", 1-lb spool	Spool	5
Sponge, viscose, fine texture, 14"x3"x2"	Each	10

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Item	Unit	Total
Staple, paper fastening, box of 5,000	Box	4
Tacks, thumb, steel head, $\frac{1}{8}$ ", 100 to box	Box	20
Tape, scotch, cellulose, $\frac{3}{4}$ "x72yd	Roll	15
Tape, scotch, drafting, Manila, 1"x72yd	Roll	40
Wire, copper, single conductor, rubber covered	Feet	20

Item	Unit	Total
Binder, loose, leaf, side opening, 2 ring, $3\frac{1}{2}$ "x5"	Each	15
w/filler and index		
Binder, loose leaf, side opening, 2 ring, $8\frac{1}{2}$ "x11"	Each	15
w/filler		
Book, note, USC&GS No. 250, observations of horizontal directions	Each	50
Book, note, USC&GS No. 252, observations of double zenith distances	Each	20
Book, note USC&GS No. 9, 903A level	Each	50
Chalk, carpenter's blue, 1 oz half ball	Each	10
Cloth, tracing, ink, type 1, class B, $30\frac{1}{2}$ "x24yd	Roll	50
Cloth, tracing, ink, type 1, class E, $42\frac{1}{2}$ "x24yd	Roll	30
Crayon, lumber, black	Dz	2
Crayon, lumber, blue	Dz	30
Crayon, lumber, red	Dz	25
Envelope, manila, $8\frac{1}{2}$ "x11"	Each	50
Envelope, manila, 12"x15"	Each	50
Eraser, rubber, art gum	Each	200
Eraser, ruby red, for machine, erasing, elec, operated, 110-V AC	Each	100
Eraser, rubber ink, type B, oblong, beveled	Each	100
Eraser, rubber, pencil, type A, oblong, beveled	Each	500
Eraser, steel, knife, blade, type 1	Each	10
Filler, binder, 2 ring, ruled side opening, package, $3\frac{1}{2}$ "x5"	Pkg	30
Holder, ink bottle, bronze and iron, 3 oz	Each	2
Holder, ink bottle, draftsman, w/opening lever	Each	10
Ink, drawing, cellophane, black, $3\frac{1}{2}$ oz bottle	PtL	200
Pad, memorandum for ink writing, type 11, white, plain, $6\frac{1}{2}$ "x8"	Each	200
Ink, drawing, cellophane, blue, $3\frac{1}{4}$ oz bottle	PtL	5
Ink, drawing, cellophane, brown, $3\frac{1}{4}$ oz bottle	PtL	5
Ink, drawing, cellophane, green, $3\frac{1}{4}$ oz bottle	PtL	5
Ink, drawing, cellophane, red, $3\frac{1}{4}$ oz bottle	PtL	5
Ink, drawing, waterproof, black $3\frac{1}{4}$ oz bottle	PtL	5
Ink, drawing, waterproof, blue, $3\frac{1}{4}$ oz bottle	PtL	5
Paper, cross section printed, class B, drawing, type 1, tenth line heavy, engraved blue, in pads $8\frac{1}{2}$ "x11", 24 sheets to pad, 10x10 sections to inch.	Pad	20
Paper, cross section printed, class B, drawing, type 1, tenth line heavy, engraved green, in rolls 20° width, 50 yd length, 10x10 sections to inch..	Rolls	20
Paper, drawing, mounted, single, medium white, type 1, slightly grained surfaced, class B, in roll?, $30\frac{1}{2}$ "x50yd	Rolls	25
Paperweight, lead, leather covered, 3-lb	Each	2
Paste, mounting and general pasting, sphinx or equal, 1 gal	Gal	1
Paste, office, semi-liquid, type 11, 6 oz jar	Jar	9
Pen, crowquill, Esterbrook, insets, 12 pens and 1 holder on a card, No. 62-13	Set	13
Pen, crowquill, Esterbrook, single, No. 61	Gross	10
Pen, crowquill, Hunt, #102	Gross	10

64TH ENGR TOF COMPANY SURVEY SUPPLIES EXPENDED

Item	Unit	Initial
Oil, lard, FS C-0-376, 1 pt can	Pt	1
Oil, lard, FS C-0-376, 1 gal can	Gal	2
Oil, lubricating, engine, all purpose, OS-2-104, automotive and diesel engine, grade SAE 30, 1 gal can ..	Gal	4
Tape, friction, general use, grade A, wide, 1 lb roll ..	Roll	10
Pins, adjusting, instrument, steel, small, Keuffel and Esser Co., No. 5167 14 B or equal	Each	10
Tack, stake cup type, galv, box of 100	Box	100
Thermometer, pocket, mercurial alloy, minus 60 to plus 160 degrees FAH, 6-1/2" long, w/case	Each	25
Web, spider, 40 lengths on frame in box	Each	2
Cord, plumb bob, braided silk	Yards	2
Lime, chalk, 100 ft ball	Each	5
Rope, manila, 3 strand, medium laid coils, 1/2"	Feet	1
Cheesecloth, bleached, type II, for filtering, w/o sizing finished or non-fibrous materials, 36" wide, class F	Yard	1
Cloth, muslin, type II, turkey red, 36" wide	Yard	3000
Cloth, muslin, type II, white, 36" wide	Yard	3000
Form, computation, Corps of Engrs, survey form, No. 471, altitude and azimuth, logarithmic, 100 sheets to pad	Pad	500
Form computation, Corps of Engrs, survey form No. 78, altitude and azimuth, sinesos, 100 sheets to pad	Pad	200
Form, computation, Corps of Engrs survey form No. 78L, altitude and azimuth, sinesos, logarithmic, 100 sheets to pad	Pad	300
Form, computation, Corps of Engrs, survey form No. 2, grid traverse, 100 sheets to pad	Pad	1000
Form, computation, Corps of Engrs, No. 3 area computation, D.M.B. Method, 100 sheets to pad	Pad	100
Form, computation, Corps of Engrs, No. 4, description of station, 100 sheets to package	Pkg	100
Form, computation, Corps of Engrs, survey form No. 5, reduction to center, 100 sheets to pad	Pad	100
Form, computation, Corps of Engrs, No. 6, transcript of results, 100 sheets to pad	Pad	100
Form, computation, Corps of Engrs, No. 7L, quadrilateral adjustment, logarithmic, 100 sheets to pad	Pad	500
Form, computation, Corps of Engrs, survey form No. 8, triangle computation, 100 sheets to pad	Pad	1000
Form, computation, position first order, triangulation, No. 3L	Pad	300
Form, computation, Corps of Engrs, No. 9L, position computation, logarithmic, 100 sheets to pad	Pad	1000
Form, computation, Corps of Engrs, No. 10, geographic azimuth to grid azimuth conversion, 100 sheets to pad	Pad	1000
Form, computation, Corps of Engrs, No. 11, grid azimuth and coordinates, 100 sheets to pad	Pad	1000
Form, computation, Corps of Engrs, survey form No. 12, trigonometric elevations, 100 sheets to pad	Pad	200

Item Unit Total

Form, computation, Corps of Engrs, No. 14, grid coordinates from azimuth and distance, 100 sheets to pad	Pad	300
Form, computation, Corps of Engrs, No. 16L, inverse solution logarithmic	Pad	400
Form, computation, Corps of Engrs, No. 17, temporary to standard grid coordinates, 100 sheets to pad	Pad	100
Form, computation, Corps of Engrs, No. 20L, grid coordinate computation of three point problem, logarithmic 100 sheets to pad	Pad	300
Form, computation, Corps of Engrs, No. 22L, azimuth by altitude method, logarithmic, 100 sheets to pad	Pad	300
Form, computation, Corps of Engrs, No. 25, azimuth by polaris at any hour angle, 100 sheets to pad	Pad	200
Form, computation, Corps of Engrs, survey form No. 26, geographic coordinates to military coordinates, 100 sheets to pad	Pad	300
Form, computation, Corps of Engrs, No. 27, military grid coordinates to geographic coordinates, 100 sheets to pad	Pad	100
Form, computation, Corps of Engrs, No. 28, geographic to grid coordinates by interpolation	Pad	300
Form, computation, Corps of Engrs, survey form No. 50, geographic traverse distance, 100 sheets to pad	Pad	2000
Form, computation, Corps of Engrs, survey form No. 51, geographic traverse azimuth sheets, 100 sheets to pad	Pad	2000
Form, computation, US Coast and Geodetic Survey, No. 26, position computation, first order triangulation logarithmic, 50 sheets to pad	Pad	200
Form, computation, USC&GS No. 470, abstract of horizontal directions	Pad	500
Form, computation, USC&GS No. 655, computation of three point problem	Sheets	300
Brush, artist, round, camel hair - squirrel hair, No. 0	Each	25
Brush, artist, round, camel hair - squirrel hair, No. 1	Each	10
Brush, artist, round, camel hair - squirrel hair, No. 4	Each	10
Brush, scrubbing, floor, hand, palmetto fiber	Each	40
Blade, hacksaw, hand type E, flexible, 10", 24 teeth ..	Each	10
Blade, hacksaw, hand, type B, flexible, 12", 14 teeth ..	Each	20
Handle, axe, single bit, 36"	Each	5
Handle, chisel, socket, firmer, large	Each	3
Handle, file, and tool, large	Each	2
Handle, file and tool, small	Each	2
Handle, hammer, carpenter, claw 14"	Each	5
Handle, hammer, machinist, 18"	Each	15
Handle, hatchet, half, 14"	Each	25
Handle, pick, drifting, 36"	Each	6
Handle, shovel, "M" handle	Each	4
Handle, sledges, 36"	Each	8
Nail, wire, steel, common, class 11-4, bright, 6d	lb	30
Nail, wire, steel, common, class 11-4, bright, 8d	lb	30
Nail, wire, steel, common, class 11-4, bright, 10d	lb	15
Oil, linseed, boiled, 1-gal can	Gal	20
Varnish, spar, water-resisting, 1-gal can	Gal	3

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PROV ENGR TOP MAP SET SUPPLIES EXPENDED

Item	Unit	Total
Pen, etching, Esterbrook, scratch knife, No. 331	Each	1
Pen, lettering, single, Leroy #3223-1	Each	5
Pen, lettering, single, Leroy #3223-2	Each	5
Pen, lettering, single, Leroy #3223-3	Each	5
Pen, lettering, single, Leroy #3223-4	Each	5
Pen, lettering, single, Leroy #3223-5	Each	5
Pen, lettering, single, Leroy #3223-6	Each	5
Pen, lettering, single, Leroy, No. 00	Each	30
Pen, lettering, single, Leroy, No. 0	Each	30
Pen, lettering, speedball, single, No. B-1	Dozen	1
Pen, lettering, speedball, single, No. B-2	Dozen	1
Pen, lettering, speedball, single, No. B-3	Dozen	1
Pen, lettering, speedball, single, No. B-4	Dozen	1
Pen, lettering, speedball, single, No. B-5	Dozen	1
Pen, lettering, speedball, single, No. B-6	Dozen	1
Pencil, China, marking, black	Each	10
Pencil, paper cased, spiral wound, wax, china marking, blue	Each	30
Pencil, paper cased, spiral wound, wax, china marking, red	Each	50
Pencil, wood cased, lead, carpenters, type 1	Each	5
Pencil, wood cased, lead, drawing, HB	Each	100
Pencil, wood cased, lead, drawing, H	Each	200
Pencil, wood cased, lead, drawing, 3H	Each	500
Pencil, wood cased, lead, drawing, 5H	Each	500
Pencil, wood cased, lead, drawing, 7H	Each	300
Penholder, draftsman	Each	10
Penholder, writing, ordinary	Each	5
Pointer, pencil, sandpaper, w/handle, 1 $\frac{1}{2}$ "x1"	Each	500
Shield, erasing, steel	Each	10
Staple, paper fastening, light duty machine, Boston Model B and B-12 box of 5000	Box	15
Tack, thumb, steel head, type 11, $\frac{1}{4}$ ", 100 to box	Box	15
Tape, paper, gummed, kraft, 3 $\frac{1}{2}$ "x200 yd	Roll	10
Tape, scotch, cellulose, transparent, $\frac{1}{2}$ "x72yd	Roll	10
Tape, scotch, cellulose transparent, 3/4"x72yd	Roll	5
Wax, sealing, stick type 1, red, 4-lb	Each	10

Item	Unit	Total
Oil, lard	Pints	2
Oil, watch lubricating	Fl. Oz.	4
Tallow, refined	Gan	1
Batteries, 1 $\frac{1}{2}$ V, dia 1 $\frac{1}{2}$, lgth 2 $\frac{1}{2}$	Each	36
Batteries, 1 $\frac{1}{2}$ V, dia 2-5/8, lgth 6-5/8	Each	12
Tacks, stake cup type, galv	Box	6
Thermometers, pocket, mercurial alloy, 60 to 160°	Each	6
Web, spider, 40 lengths on frame	Box	2
Cod, plum bob, braided silk	Fard	100
Wire, steel, carbon, annealed zinc coated, #16	Lbs	150
Wire, steel, carbon, annealed zinc coated, #10	Lbs	100
Cloth, muslin, turkey red, 36" wide	Yds	250
Cloth, muslin, white, 36" wide	Yds	400
Brush, artist, flat red sable, $\frac{1}{2}$ "	Each	6
Brush, paint, metal bound flat, 1" wide	Each	3
Brush, paint, metal bound flat, 3" wide	Each	3
Needles, sewing, #10	Pkg	2
Point, plumb bob, bordered steel, 16 oz	Each	6
Stone, sharpening, combination 1 side coarse, other fine, 1 $\frac{1}{2}$ "x2 $\frac{1}{2}$ "x6"	Each	1
Alcohol, grain, denatured	Pts	3
Beeswax, technical, 2 oz ball	Pall	1
Cement, rubber, liquid	Qts	3
Enamel, clecresinous, quick drying, black	Qts	2
Enamel, clecresinous, quick drying, red	Qts	2
Enamel, clecresinous, quick drying, white	Qts	2
Enamel, clecresinous, quick drying, yellow	Qts	1
Pock, note, topo, 5 $\frac{1}{2}$ "	Each	12
Book, note, USGS #250, Horizontal angles	Each	50
Book, note, USGS #634, leveling	Each	25
Crayon, lumber, blue	Dozen	3
Crayon, lumber, red	Dozen	3
Eraser, rubber, pencil, oblong, beveled	Each	12
Folder, file, fiber-wallet type, 12"x18"	Each	12
Paper, cross section, 20"x20", 10x10 sections	Rolls	3
Paper, drawing, double mounted, 18"x24"	Sheets	50
Cloth, tracing, ink, 42"x24yd	Roll	1
Paper, lens tissue	Pkg	20
Paper, tracing, white, transparentized, medium, AF 450yd	Roll	1
Pencil, china, wax, marking, blue	Each	6
Pencil, china, wax, marking, red	Each	6
Pencil, lead, colored drawing, red	Each	12
Pencil, lead, colored drawing, blue	Each	12
Pencil, lead, drawing, H	Each	24
Pencil, lead, drawing, 3H	Each	60
Pencil, lead, drawing, 5H	Each	24
Pencil, lead, drawing, 7/2	Each	60
Pencil, lead, drawing, #3	Each	36
Pin, office, brass, #2	Each	3
Pointer, pencil, sandpaper, w/handle 1 $\frac{1}{2}$ "x1"	Each	60
Tape, scotch, cellulose, transparent, 3/4"x25ft	Rolls	5
Wax, sealing, stick type 1, red	Each	2

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