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TENTATIVE
TECHNICAL MANUAL

USE *of* FOREIGN MAPS

Nov. 5, 1942

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WAR DEPARTMENT
WASHINGTON, D. C.

TENTATIVE

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SECTION I

SCOPE AND PURPOSE

1. Maps which will be issued for initial operations in many theaters will have been prepared by the United States or allied base plants by copying maps originally prepared by some foreign nation. This circular is designed for instruction in the use of such maps. Intelligent use of maps requires not only the ability to interpret conventional signs and to perform the mechanical operations involved in the determination of scale, distance, direction, and elevation, but also, the ability to evaluate map information in terms of the accuracy with which it represents the terrain as it now appears.

2. It must be impressed upon all ranks that maps may be considered fully reliable only as of the date the information was obtained by actual examination of the terrain; and that their use of maps must be tempered by an estimate of probable changes in terrain features since the date of the original survey.

3. The application of all forces, and in particular, photographic and topographic troops, for the acquisition of terrain intelligence in a theater is a responsibility of command. The flow of information of the terrain, as well as information of hostile dispositions, is from front to rear. All ranks must be impressed with the importance of reporting map errors and omissions, in order that new editions, published in support of operations, may incorporate those corrections. Commanders and their staffs will analyze and evaluate the quality of terrain information and apply effective measures toward its improvement.

4. The basic principles of map reading as set forth in Field Manuals 21-25 and 21-26 apply to all maps, foreign and domestic. If the soldier is capable of applying those principles intelligently to maps of American design he will require no special or intensive instruction to enable him to read maps from other sources. Section II of this circular contains typical examples of the basic principles of map reading as applied to maps of foreign origin.

5. The remainder of the circular is devoted to an explanation of the source material which forms the basis of

British and American maps of foreign areas, which have not been physically mapped by our own forces. No attempt is made to include all map series which are now used, nor to cover new mapping which may have been accomplished in the field incident to a particular operation. The purpose of this portion of the circular is to provide sufficient background for the map user to make his own appraisal of map value.

SECTION II

MAP READING

6. Before using British maps, or American reproductions of British and other foreign maps, examine the marginal information carefully. Note the graphic scale, whether it appears in the metric or English system, or both; the grid diagram; the contour interval; the declination diagram; the index of sheet arrangement; and finally the source of publication data from which the map was prepared. The source will be indicated by some such expression as: "Published by the Ordnance Survey Office, Southampton, 1926, with periodically corrected reprints." "Compiled from a French map dated 1932." "Compiled and drawn by O. S. 1937, revised 1942." "Compiled from a Dutch map dated 1929. Photolithographed at O. S. (Ordnance Survey) 1942." Note whether the map is marked "first edition", or some subsequent edition. If it is a first edition and the legend does not indicate any revisions, it will be assumed that the map represents the terrain as it was at the time the original map was prepared. In other words, the first British (or American) edition of a French map dated 1932 may be accepted as representing the terrain as it was in 1932, regardless of the fact that the publication is dated 1942.

7. Conventional signs. As a rule the margin of maps copied from foreign sources will contain a description of special symbols which differ from those with which the map reader is familiar. In some cases the legend has been copied directly, with or without translation from the legend appearing on the original map; in other cases, it has been necessary for the map maker to compile the legend and insert it in the margin.

8. In making maps from original surveys or by compilation, the maker is free to choose his own system of conventional signs and styles of lettering. No single map making agency has ever been consistent in these matters. Changes in personnel and policies, improvement of methods, introduction of new type faces, map construction for special purposes, and like causes introduce wide variation in expression. Within a single country there may be a large number of map manufacturers, each following his own type of expression. Add to these the variations introduced by map makers of foreign nations, and the possibilities of confusion and misinterpretation become enormous. Some map makers vary the type of expression from sheet to sheet within the same series, particularly when the period of construction has extended over a number of years. Others deliberately introduce changes in conventional signs to meet the peculiar characteristics of the terrain and the extent of cultural development from place to place.

9. The experienced map reader will have little difficulty in interpretation providing that special or unusual symbols are explained in the legend. The most serious cause of misinterpretation is the absence of universal systems for road classification and road symbols. In the adoption of conventional signs, map makers hold reasonably closely to symbols which at least remotely resemble the original article. Bridges, school houses, churches, cemeteries, orchards, light houses, settlements, docks, dams, dwellings, and other important landmarks are seldom misinterpreted if common sense and logic are applied. On medium and large scale maps, railroads, if not named or identified by the usual cross-tie sign, can be distinguished from roads by reason of their long tangents and easy curves. Little difficulty is experienced in determining from comparative road symbols, the relative importance of the communications shown, but in the absence of road information from other sources or exact details appearing in the legend, the interpreter can gain little information as to passability, lanes of traffic, load capacity, or seasonal use. The motor minded American, through long use of special road maps, has come to look upon a heavy red or blue road symbol as a guarantee of capacity for high speed and heavy, uninterrupted traffic. Maps of many foreign areas employ similar symbols for roads of very low order, meaning only that the road so marked is better than its neighboring traffic lanes. Likewise, maps prepared for a single purpose rather than for general use frequently over emphasize road information, giving the impression of excellent communications, when in fact they do not exist. This practice is noticeable in the manufacture of aeronautical charts, on which roads may be made to stand out

boldly as aids to the pilot or navigator regardless of their actual capacity for ground traffic.

10. The map maker, with adequate information, will correct and standardize symbols if he has time and means to redraft the map and translate its meaning into a language to which his using public is accustomed. If he must resort to straight copying of existing manuscript, the best he can do is to explain unusual features by a clear and complete legend.

11. Measurement of distance. (Review Sec. III, FM 21-25). The scales, 1/20,000, 1/62,500 and 1/125,000, commonly found in the United States, will seldom be found among foreign maps. The usual corresponding scales are 1/25,000, 1/50,000 and 1/100,000. Bear in mind that the representative fraction is the direct ratio between map distance and ground distance. Measurement of distance will proceed in exactly the same manner regardless of scale, namely:

a. By appliance of the graphic scale which appears in the legend of the map. Mark off the distance to be measured along the edge of a strip of paper, and apply the measured distance to the graphic scale. With very few exceptions, foreign maps reproduced by the British or by our own forces, will include graphic scales of miles and yards. If this information does not appear, and it is desired to reduce the distance to the usual English units, proceed as follows:

(1) Multiply the distance in kilometers by 5/8 to reduce to miles for a rough approximation, or, for a more exact measurement, multiply the distance in kilometers by 0.62.

Example 1. (Map No. 1, scale 1/250,000). Assume that the scale of miles is not shown, and it is desired to determine the distance in miles from Beaumont (U9277) to Montauban (Q2192). Mark off the distance on the map on a scale or on a paper strip, and apply it to the kilometer scale in the lower margin. The measurement is 35.0 kilometers. 35.0 x 5/8 equals 21.3 miles (rough approximation), or, more exactly 35.0 x 0.62 equals 21.8 miles.

(2) Multiply the distance in meters by 1.1 for a rough approximation of yards, or by 1.094 for a more exact determination.

Example 2. (Map No. 3 scale 1/50,000). Determine the distance in yards from kilometer post 208 (vE107408) to bench mark 220 (vE099385). Application of the kilometer scale shows this distance to be 2,250 meters. Reducing to yards 2420 x 1.1 equals 2,660 yards, or more exactly 2420 x 1.094 equals 2,650 yards (to the nearest ten yards in each case).

12. Location by coordinates. The British Grid System.

a. Description. The British Grid system has a basic property which requires that it be broken down into comparatively small areas. This property is the adaptability for accurate surveying without making various grid corrections which are common for large grid areas such as those used in the United States Military grid system. In addition to the areas being rather small they must also be relatively long and slender, with the long axis of the area being either in the direction of a meridian or a parallel. The general shape of a country, continent or other large area to be gridded usually lends itself to a subdivision in one direction or the other. For example, Netherlands East Indies is easily divided into long slender areas running east and west, while East China is more readily divided into areas running north and south.

Each area is named as a zone or belt, e.g., Netherlands East Indies Zone of Australia Belt #5. All British Grids are printed in a fixed color throughout any certain zone, the colors for a series of zones being selected so that no two adjacent zones will be in the same color.

A grid zone is ordinarily divided into squares of 500,000 meters on a side. This basic square is assigned a letter, the letters being alphabetical and reading from left to right and down within a zone. Each 500,000 meter square is further divided into 100,000 meter squares each of which is also designated by a letter. Thus a 100,000 meter square of a zone may be identified by two letters. However, some zones are so long that there will be more than one 500,000 meter square assigned the same letter, while in a few zones no letters are used.

On maps of scales of 1/250,000 to 1/500,000 the letter identifying the 500,000 meter square and the 100,000 meter square letter are both shown on the face of the map. Ordinarily on maps of scales of 250,000 and larger only the 100,000 meter square letters are shown, although the letter identifying the 500,000 meter square may be indicated by a grid index diagram in the margin.

The frequency of the grid lines is controlled by the scale of the map in question. On maps of scales from 1/20,000 to 1/100,000 the grids are 1,000 meters apart and on smaller scales they are fixed on a 10,000 meter spacing. However, grids on the 1/100,000 scale maps are sometimes on a 10,000 meter spacing.

b. Use. Point identification by grid reference indicates, in order, first; the 500,000 meter square, the 100,000 meter square, the abbreviated east-west coordinate, and the abbreviated north-south coordinate. The procedure is as follows:

(1) Indicate the letter identifying the 500,000 meter square, as shown directly on the face of the map or as indicated by the grid index diagram.

(2) Indicate the 100,000 meter square as shown on the face of the map, normally by a large open block letter printed in the same color as the grid lines.

(3) Write the east-west coordinate in the same manner as is done in the use of the United States Military grid, omitting the small figure or figures which precede the actual grid number. The grid value will be carried out by estimation or measurement to the minimum value desired. The hyphen or dash between x and y coordinates, always used in the United States Military Grid references, is omitted in British grid references.

(4) Write the north-south value in the same manner. The small numbers which precede the large figure at the end of the grid lines represent the total distance from the false origin of the grid coordinates, and are always omitted in point designation.

British maps and American reproductions of British maps employing the British grid systems, invariably contain at some place in the margin, full instructions for the expression of grid references. In a few British grid zones, the yard is used as a unit instead of the meter. The entire procedure in grid reference, however, is identical in either case.

The attached maps, samples #1,2,4and 5, contain in the margins full instructions for indicating grid coordinates. Note in particular that map #1 includes portions of grid squares P, L, U, and Q. Obviously in making grid references on the map it is absolutely necessary to indicate the grid square, since the marginal figures are repeated. For example, reference is made to grid coordinate (7263). It is not clear whether this point is the town Graulhet, or the town, Maravat. If the letter Q precedes the coordinate, it is clear that reference is made to Graulhet. If the letter U precedes the coordinate, Maravat is definitely designated.

Map number 3 does not contain instructions for making grid references, nor do maps 2 and 4 show within the neat lines of the map the grid letters to be applied. This information is shown in the diagram in the lower left margin. Note that all of map sheet no. 42/XLI-D lies in grid square E, a part of the larger square (v). For references confined strictly to the sheet in question, the grid letters (v) E might be omitted. To avoid any possibility of confusion with references on the adjacent sheet, No. 42/XLI-C, the grid letter should always be indicated.

Example 3. Coordinates of Karangdjaha. From the diagram, note the grid letters (v) and E designating the 500,000 and 100,000 meter squares, respectively. Read the numerical grid values from the lower left corner of the sheet. The first north-south grid line to the left of the Karangdjaha is 07, and the town lies approximately 6/10 of the distance between lines 07 and 08. Therefore the full x-reading is 076. Likewise the full y-reading is 396. The complete grid reference is (v)E076396.

13. Direction and Azimuth. (Review Section IV, FM 21-25) Care must be exercised to avoid confusing true, grid and magnetic north, which, on maps copied from some sources, are not indicated by the symbols used on American maps. The direction of grid north is always apparent on a gridded map. The angle between grid north and true north, if not shown by a diagram or explained in the legend, can be determined by comparing the direction of north and south grid lines with the meridian lines. If the meridians are not shown in full lines, they may be drawn on the face of a map by connecting north and south marginal ticks.

The relation between magnetic north and true north, or between magnetic north and grid north, is usually shown by a declination diagram or stated in the margin. If not, it may be determined only by an actual field check.

Example No. 4. (Map No. 5, scale 1/50,000). Find the true, magnetic and grid azimuths of the line joining the house at (604204) and the house at (625216).

Draw a line between the two houses and with a protractor measure the angle clockwise between grid north and the line. It is 77°45', hence the grid azimuth is 77°45'. Note from the box in the margin that grid north is 1°55' west of true north. Since azimuths are always measured in a clockwise direction, and the true north line points 1°55' east of the grid north line, the true azimuth will be 77°45' minus 1°55', or 75°50'.

According to the legend, in 1941 the magnetic north was 25°48' west of grid north, and changed to the east at the rate of 13' per year. Hence, in 1942 the angle is 25°58'

minus 13', or 25°35'. The grid azimuth was measured to be 77°45'. The magnetic azimuth, therefore, is 77°45' plus 25°35', or 103°20'.

Assume that the magnetic declination is not shown on the map, and that, for the purpose of pursuing a compass course, this information is essential. The magnetic declination may be determined within the accuracy of compass reading in the following manner;

Standing at the house at (604204) read the compass azimuth (magnetic) to the house at (658216). It will read approximately 103°. Determine the true azimuth by protractor measurement as shown above. The difference between the magnetic azimuth (103°) and the true azimuth (76°) is the approximate magnetic declination (27°W). If the true azimuth is greater than the magnetic azimuth the declination is east instead of west.

To guard against local magnetic attraction, the determination should be made at a number of different places. Once established, the magnetic declination may be used, in the general area covered by the map. This method of determination is suitable only for establishment of compass courses within the accuracy required for cross-country movements.

14. Elevation and Relief. (Review Section VI, FM 21-25).

British maps of the British Isles and of most of the British possessions employed English units for expressing elevations. On British and American copies of other foreign maps elevations are normally expressed in meters. For a hasty estimate of elevation differences in the units to which we are accustomed, it will suffice to convert meters to feet by multiplying by three. The actual elevation of a point above the elevation datum plane (usually sea level) will be determined by interpolation between contours. On American and British maps, which have been compiled and drafted in accordance with standard practice, contour numbers will appear at frequent intervals, and every fifth contour will be emphasized by a heavy line. On American and British copies of foreign maps, it is much more difficult to read elevations, since contour numbers are frequently omitted entirely (note sample maps Nos. 2 and 5). To determine elevations from maps of this character proceed as follows:

Example No. 5. (Map No. 5, scale 1/50,000). Determine the approximate elevation on the ground at stream junction (566244). The nearest spot height is 550 meters, a point about 900 meters upstream at (557246). Since contours are spaced at 20 meters (see legend note) the contour immediately below the 550 meter point is 540, the next 520, and the next 500. The stream junction lies approximately 1/3 of the distance between the 500 and 520 meter contours (following the stream). Hence its elevation, by interpolation, is about 507 meters.

15. Slopes, profiles, and visibility. (Review Section VI, FM 21-25 and Section VI, FM 21-26). Once the system of elevation expression is understood, there is no difficulty in working slope, profile, and visibility problems by application of the methods described in detail in Section VI, FM 21-25. When elevations and distances are expressed in the metric system, there is no need for translating to the usual American units for preparing profiles or visibility diagrams.

16. Map Samples. The following samples illustrate maps prepared by each of the three methods described in Section III of this circular. Illustration 1 is a portion of an Ordnance Survey Map prepared for original surveys under the British Geographical Section, General Staff No. 2738, and reprinted by the Army Map Service from color separation pulls furnished by the British. Illustration 2 is a portion of a map of the Java and Madura 1:50,000 series published by the Army Map Service as an extension of GSGS No. 4202. All information within the neat line (excepting the British Grid) is a direct reprint of a Dutch Map reproduced by continuous tone color separation, while the entire border has been redesigned by the Army Map Service and superimposed in place of the original border. The British grid has been added according to British standards as practised by the Army Map Service. Illustration 3 is a facsimile reproduction of the Dutch map used as a base in illustrations 2 and 4 showing the border as prepared on the original map and without the addition of the British grid. Illustration 4 is a portion the same map shown in illustration 3 with the border revised and the British grid added by the British and published under GSGS No. 4202. Illustration 5 is a portion of a Danish map of Iceland with the border revised and the British grid added by the British. This map was published under the GSGS No. 4138.

Illustration 1

Geographical Section, G
Published by the War

Railways (double) with stati
" (single) " "
" narrow gauge or TP
Roads main
" secondary
" minor
Rivers
Canals navigable
" irrigation
Heights in metres
Woods are shown in green

8° 11' W. 1941

Magnetic North

Grid North

Annual change 8' E.
Grid North is 0°39' W. of True North in centre of sheet

Copied from a French Map dated 1913-35.
Drawn and heliographed by O.S. 1941.

ARMY MAP SERVICE, U. S. ARMY, WASHINGTON, D. C., 106091
1942

Illustration 1

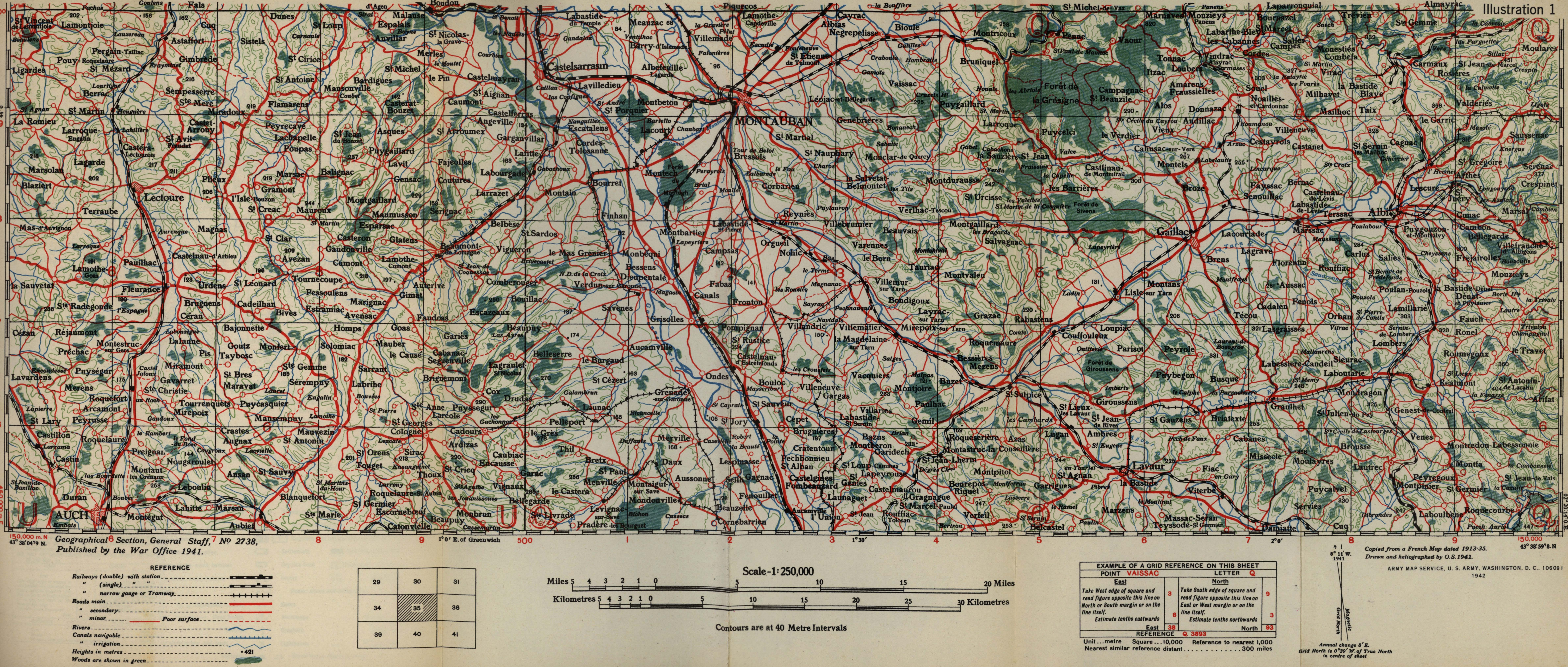
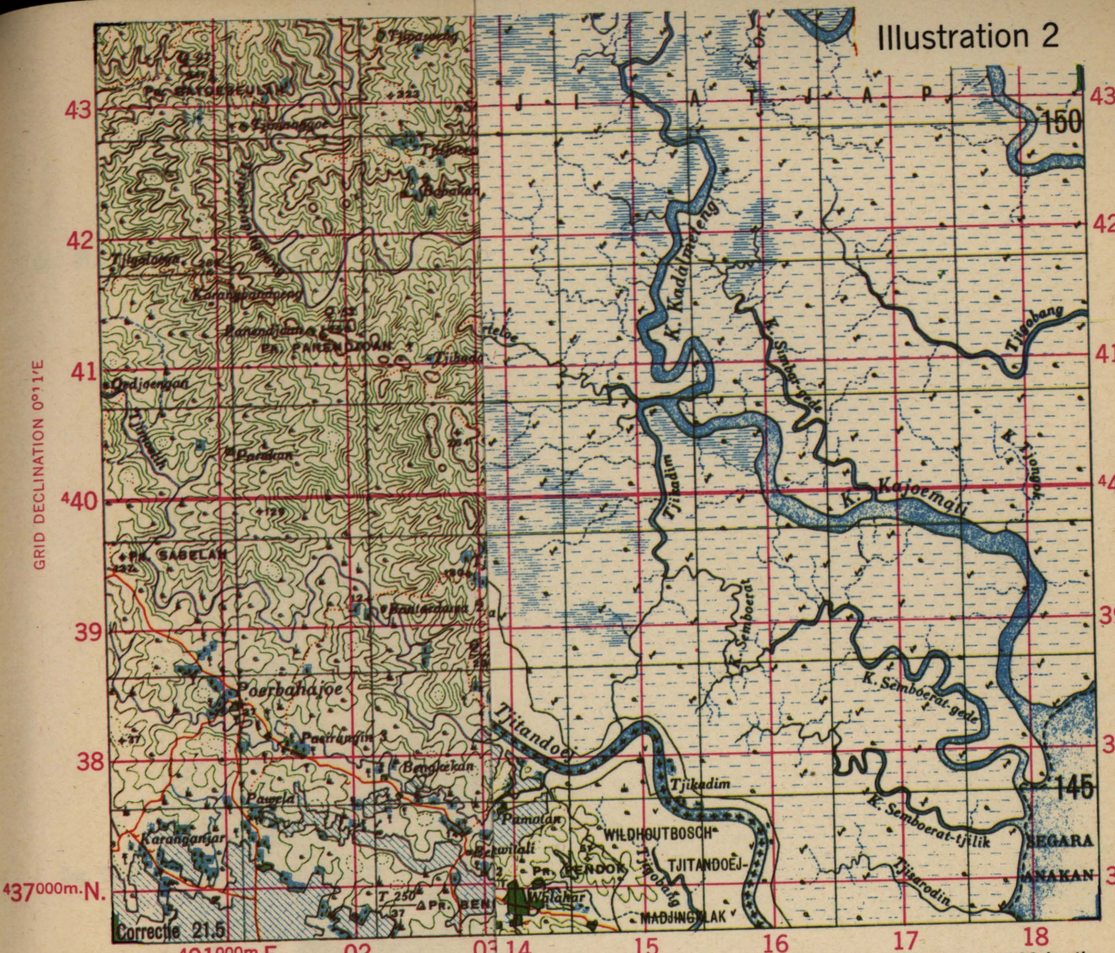


Illustration 2



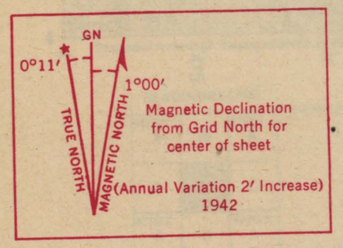
A. M. S. Extension of Geographic Section, [illegible]tolithographed and reprinted from a Dutch map dated 1929 by the [illegible]y Map Service, U. S. Army, Washington, D. C., 1942.

Dutch East Indies, Southern Zone Grid

Projection:	Lambert Conical Orthomorphic
Spheroid:	Bessel
Origin:	8° South, 110° East
False Co-ordinates of Origin	550,000 meters East 400,000 meters North

The Black Grid shown on this sheet is to be ignored.

S730-E10838/10 (Greenwich)



IN[illegible]
1°40'

(which

TO GIVE A GRID REFERENCE ON THIS SHEET

LETTER. Must be used for this sheet. Obtain from face of map or from dia[illegible]

FIGURES. IGNORE the SMALLER figures printed near the sheet corners. Thes[illegible] for finding the full co-ordinates, viz. 401000

USE ONLY THE LARGER FIGURES PRINTED IN THE MARGIN OR ON THE [illegible] OF THE MAP. Viz. 401000

POINT WALAGER LETTERS E

East		North
Take West edge of square in which point lies, and read the figure printed opposite this line on North or South margin or on the line itself on the face of the map. *Estimate tenths Eastwards*	08 9	Take South edge of square in which point lies, and read the figure printed opposite this line on East or West margin or on the line itself on the face of the map. *Estimate tenths Northwards*
East 089		North [illegible]

REFERENCE E089412 To nearest 100 metres

Unit	Metre
Square	1,000 Metres
Nearest similar reference with one letter distant	500 Kms.

[illegible]ous types)

: rubber, tea, coffee

[illegible]ron, stone, wood, bamboo

s: stone, wood, bamboo

[illegible]ed

[illegible]ge

g alang grass, and reeds

Christian cemetery

[illegible]nese and Native

Chinese temple

Wayside stopping point

Depression contour

Dead hedge

Swamp

Footpath

Stone wall

Barbed wire fence

Stone boundary markers or posts

Triangulation points

Monuments

Astronomical station

Regularly laid out gardens and fields

Settlement

Sparsely settled area

Dry rice field

Temporary settlement

Forest

Underbrush

Rocks: above and below water

Bores

Anchorage

Wharf or quay

Breakers

Coffer-dam

Lighthouse

Air-cable route

Barrel-buoys (black or white)

Illustration 2

A. M. S. Extension of Geographic Section, General Staff No. 4202

Scale 1:50,000

1 0 1 2 3 Miles

1 0 1 2 3 4 5 Kilometers

1000 0 1000 2000 3000 4000 5000 Yards

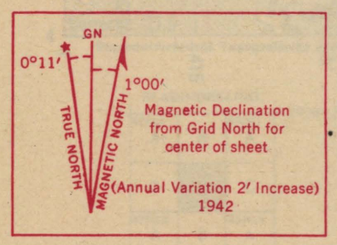
Photolithographed and reprinted from a Dutch map dated 1929 by the Army Map Service, U. S. Army, Washington, D. C., 1942.

Dutch East Indies, Southern Zone Grid

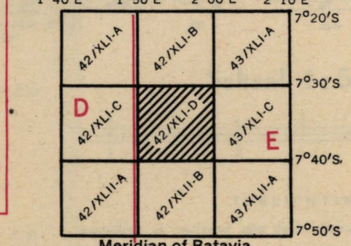
Projection:	Lambert Conical Orthomorphic
Spheroid:	Bessel
Origin:	8° South, 110° East
False Co-ordinates of Origin	550,000 meters East 400,000 meters North

The Black Grid shown on this sheet is to be ignored.

S730-E10838/10 (Greenwich)



INCIDENCE OF GRID LETTERS and INDEX TO ADJOINING SHEETS



Meridian of Batavia
(which is 106°48'27.79"E. of Greenwich)

TO GIVE A GRID REFERENCE ON THIS SHEET

LETTER. Must be used for this sheet. Obtain from face of map or from diagram.
FIGURES. IGNORE the SMALLER figures printed near the sheet corners. These are for finding the full co-ordinates, viz. 401000
USE ONLY THE LARGER FIGURES PRINTED IN THE MARGIN OR ON THE FACE OF THE MAP. Viz. 401000

POINT WALAGER LETTERS E

East		North	
Take West edge of square in which point lies, and read the figure printed opposite this line on North or South margin or on the line itself on the face of the map. *Estimate tenths Eastwards*	08 9	Take South edge of square in which point lies, and read the figure printed opposite this line on East or West margin or on the line itself on the face of the map. *Estimate tenths Northwards*	41 2
East	089	North	412
REFERENCE	E089412	To nearest 100 metres	

Unit	Metre
Square	1,000 Metres
Nearest similar reference with one letter distant	500 Kms.

400000m.E.

Main surfaced roads; (a) - more than 4 meters wide; (b) - 2-4 meters wide

Surfaced roads, less suitable for auto traffic

Unsurfaced roads, suitable for field artillery at all times

Unsurfaced roads, suitable for field artillery in dry season

(a) - stone mileage post; (b) - iron bridge; (c) - stone bridge, (d) - stone culvert

(a) - wooden bridge; (b) - bamboo bridge; (c) - stone sluice; (d) - gradient; (e) - bamboo or wood culvert

River; (a) - sandbank; (b) - sandy shore; (c) - island; (d) - artificially raised bank or shore line

(a) - stone sluice; (b) - passable; (c) - bridgeway across; (d) - ford

Contours - Interval 25 meters with every 10th contour heavy; (a) - elevation figures; (b) - auxiliary contour lines (c) - spring; (d) - slight elevation; (e) - uneven ground

LEGEND

Raised portion of road

Road under construction

Tunnel

Dike

Plantation road

Residency boundary

Department boundary

State boundary

Subdivision boundary

District boundary

Railroad - (a) - culvert under roadbed

Streetcar

Small rivers or streams

UNSURVEYED

Lake

Fishpond

Christian church

Christian cemetery

Graves: Chinese and Native

Mosque

Chinese temple

Wayside stopping point

Ruins

Trees (various types)

Plantations: rubber, tea, coffee

Buildings: iron, stone, wood, bamboo

Warehouses: stone, wood, bamboo

Tobacco shed

Mud springs

Depression contour

Living hedge

Dead hedge

Marsh

Swamp

Grass, alang alang grass, and reeds

Horsepath

Footpath

Stone wall

Barbed wire fence

Stone boundary markers or posts

Triangulation points

Monuments

Astronomical station

Regularly laid out gardens and fields

Settlement

Sparsely settled area

Dry rice field

Temporary settlement

Forest

Underbrush

Rocks: above and below water

Bores

Anchorage

Wharf or quay

Breakers

Coffer-dam

Lighthouse

Air-cable route

Barrel-buoys (black or white)

Illustration 3

BLADINDEELING.

42/XLI A	B	43/XLI A
C	D	C
42/XLII A	B	43/XLII A

7°20′ Z.B. — 7°50′ Z.B.
1°40′ — 2°10′ O. v. Bat.

Schaal 1 : 50 000.

2 3 4 5 6 7 8 9 10 cm
1 2 3 4 5 km

TOELICHTINGEN.

oorstelling is ontleend aan de landrente-minuutplanbladen en voor wat betreft de Priangan aangevuld met behulp van de opneming in de Bonne-projectie schaal het jaar 1919. De coördinaten der gebezigde driehoekspunten in West-Java komen register berustende bij de Herzieningsbrigade van West-Java te Bandoeng. Een loopt langs den weg: Karanghondje — Padaherang — Toenggilis—Kalipoetjang— -zuidwaarts.

heeft de navolgende aanvullingen en verbeteringen ondergaan:

nistratieve indeeling is gewijzigd volgens Reg. Almanak 1939.

nstelsel is verbeterd en aangevuld volgens den toestand van begin 1939.

n en grenzen van de erfpachtsperceelen en die van de wildhoutbosschen, het vloed- het natuurmonument zijn ontleend aan de gegevens van het Kadaster resp. van st van het Boschwezen in 1939, terwijl de namen zijn geschreven volgens de n de voornaamste aardrijkskundige namen in den Nederlandsch-Indischen Archipel".

ails en namen zijn gewijzigd naar de landrente minuutplans, herziening 1934.

oonlijn is toegevoegd langs den weg: Kedoengredja—noordoostwaarts.

AFKORTINGEN.

B. *Rawa.* K. *Kali.* Bab. *Babakan.* St. *Station.* H. *Halte.* S. *Stopplaats.* *riek.* R. v. E. *Recht van Erfpacht.*

Illustration 3

Cor. 21.6

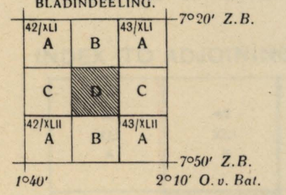
Cor. 21.5

Correctie 21.5

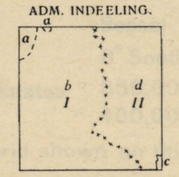
Reproductiebedrijf Topografische dienst, Batavia 1929.

Blad 42/XLII B.

BLADINDEELING.



ADM. INDEELING.



I	Provincie	West-Java.
	Res. (Afd.)	Priangan.
	Regentschap	Tjiamis.
a	District	Bandjar.
b	,,	Pangandaran.
II	Provincie	Midden-Java.
	Res. (Afd.)	Banjoemas.
	Regentschap	Tjilatjap.
c	District	Tjilatjap.
d	,,	Sidaredja.

LEGENDA.

Kampoeng. Schaars bewoonde streken. Sawah. Bouwland (tegal). Rubber. Bosch. Arentuin. Klapperboomen. Djatibosch. Kreupelhout. Bamboebosch. Alangalang. Gelagah. Gras. Moeraspalmen. Drasland. Moeras. Verharde weg, waarvan de verharding 2–4 m breed is. Niet verharde weg, in den droogen moesson geschikt voor veldartillerie, van 2–4 m breed. a Paardenpad. a duiker of vonder van hout of bamboe..... Voetpad. a b c Tramweg. a doorlaat of duiker in de baan, b met dubbelspoor, c tunnel. a b c d e f a steenen kilometerpaal, b ijzeren, c steenen, d houten brug, e duiker of doorlaat van steen, f van hout of bamboe. a b c d e g h Rivier, a gemeten, b niet gemeten, c waterleiding, d eiland, e zandbank altijd droog, f zandige oever g overvaart met pont (slechts geschikt voor voetgangers), h bevaarbaarheid. IJzeren, steenen, houten en bamboe gebouwen of huizen. Bamboe pasarloods. Mesigit. Inlandsche graven. Provinciegrens. Districtsgrens. Landb. ond. grens. Grens Boschwezen. Herkenbare boom. T. Tertuair driehoekspunt. Q. Driehoekspunt der 4e orde.

Alle hoogten zijn uitgedrukt in meters. De gewone hoogtelijnen hebben een onderling hoogteverschil van 25 m, de dikke van 250 m; a hoogtepunt en hoogtecijfer, b hulphoogtelijn van 12½ m, c grens tusschen immer nat en droog terrein.

Schaal 1 : 50 000.

0 1 2 3 4 5 6 7 8 9 10 cm

0 ½ 1 2 3 4 5 km

TOELICHTINGEN.

De terreinvoorstelling is ontleend aan de landrente-minuutplanbladen en voor wat betreft de res. (afd.) Priangan aangevuld met behulp van de opneming in de Bonne-projectie schaal 1 : 50 000 in het jaar 1919. De coördinaten der gebezigde driehoekspunten in West-Java komen voor in een register berustende bij de Herzieningsbrigade van West-Java te Bandoeng. Een telefoonlijn loopt langs den weg: Karanghondje — Padaherang — Toenggilis — Kalipoetjang — Tjidjoelang — zuidwaarts.

De herdruk heeft de navolgende aanvullingen en verbeteringen ondergaan:

a De administratieve indeeling is gewijzigd volgens Reg. Almanak 1939.

b Het wegenstelsel is verbeterd en aangevuld volgens den toestand van begin 1939.

c De namen en grenzen van de erfpachtsperceelen en die van de wildhoutbosschen, het vloedbosch en het natuurmonument zijn ontleend aan de gegevens van het Kadaster resp. van den Dienst van het Boschwezen in 1939, terwijl de namen zijn geschreven volgens de „Lijst van de voornaamste aardrijkskundige namen in den Nederlandsch-Indischen Archipel".

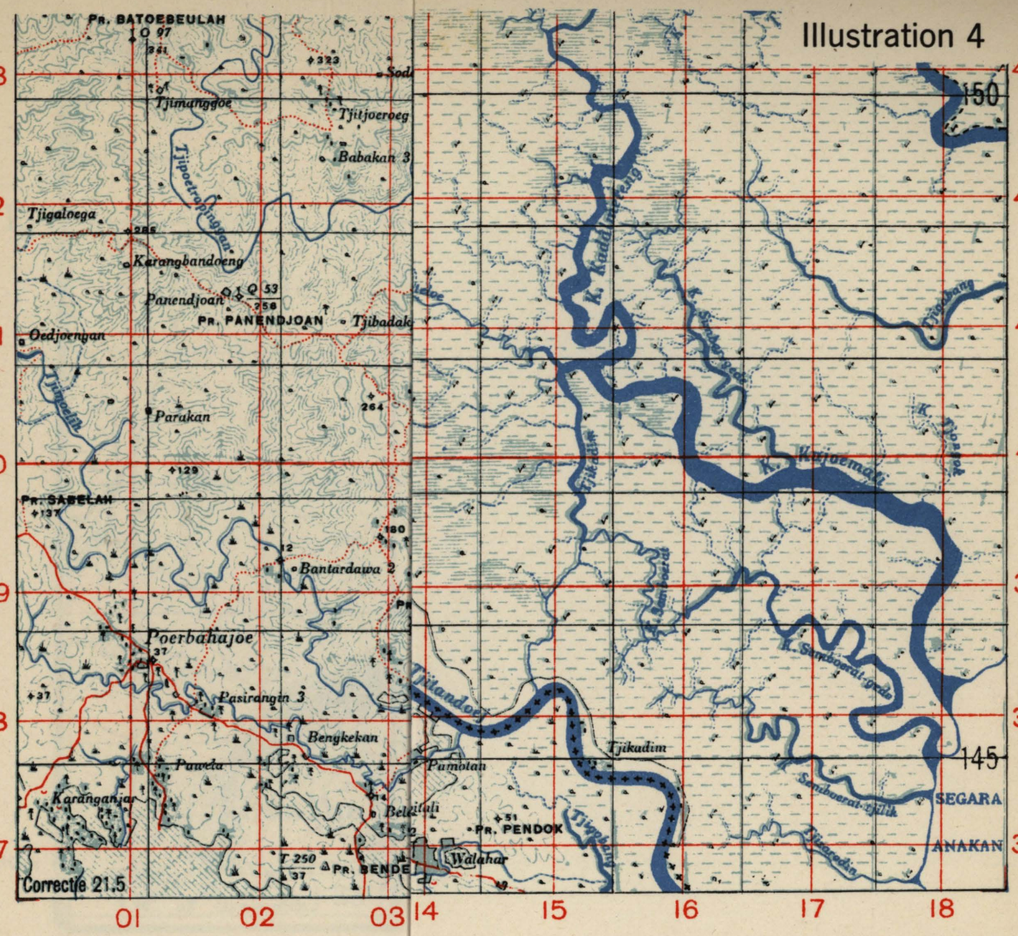
d Vele details en namen zijn gewijzigd naar de landrente minuutplans, herziening 1934.

e Een telefoonlijn is toegevoegd langs den weg: Kedoengredja — noordoostwaarts.

AFKORTINGEN.

Pr. *Pasir.* R. *Rawa.* K. *Kali.* Bab. *Babakan.* St. *Station.* H. *Halte.* S. *Stopplaats.* Id. *Indigofabriek.* R. v. E. *Recht van Erfpacht.*

Illustration 4



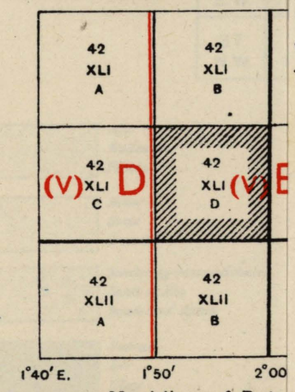
Geographical Section, General Staff, N
War Office 1942.

1000/2/42. L.R.

Copied from a Dutch map dated 1929.
Photolithographed at O.S. 1942.

INCIDENCE OF GRID

INDEX TO ADJOINING



Meridian of Bata
(which is 106°48' 27·79" E. of G

400,000

UTCH EAST INDIES, SOUTHERN ZONE GRID (RED)

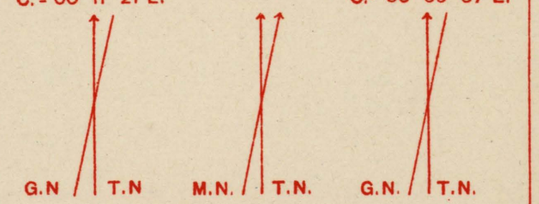
Projection	Lambert Conical Orthomorphic
Spheroid	Bessel
Origin	8° South, 110° East
False Co-ordinates of Origin	550,000 metres East 400,000 metres North

The Black Grid shown on this Sheet is to be ignored

Convergence is given for centres of W. & E. sheet lines

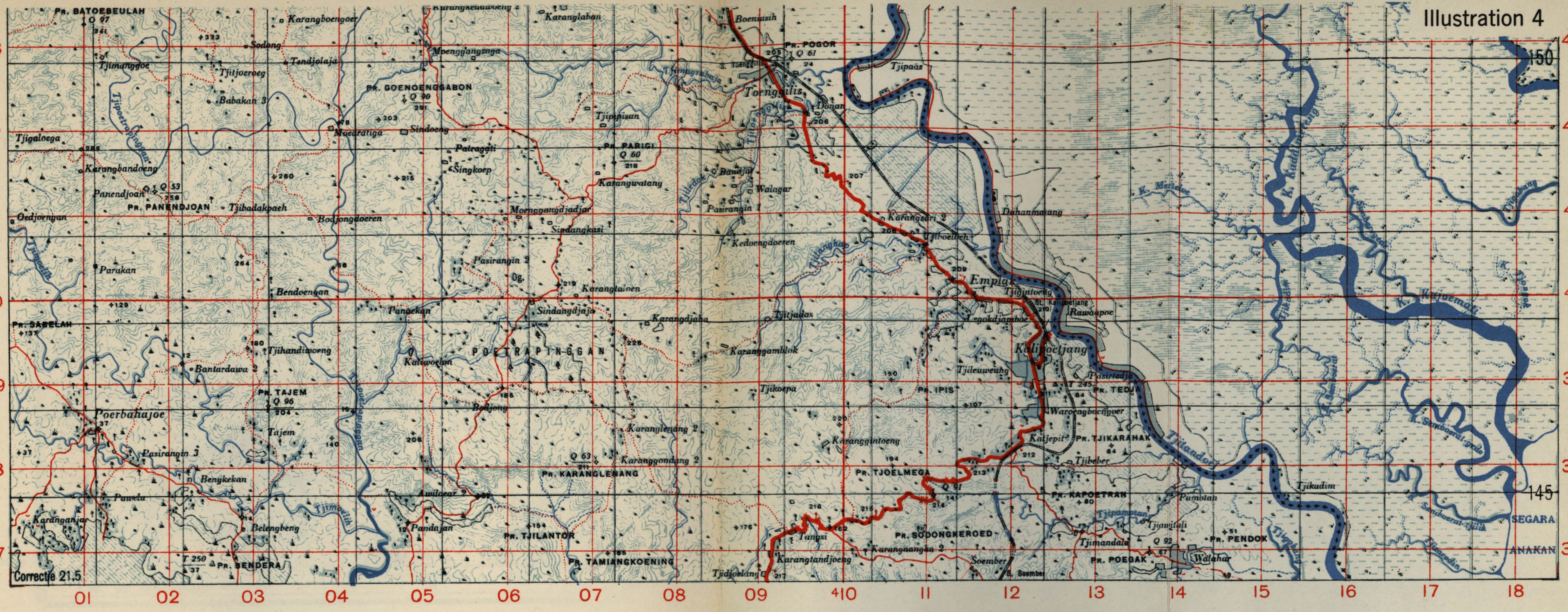
C. = 00° 11' 21" E.

C. = 00° 09' 57" E.



Magnetic Declination from True North
for centre of sheet is 01° 23' E. Jan. 1942.
(Annual Variation = 04' E.)

Illustration 4



Geographical Section, General Staff, No. 4202.
War Office 1942.

1000/2/42. L.R.

Scale 1 50 000

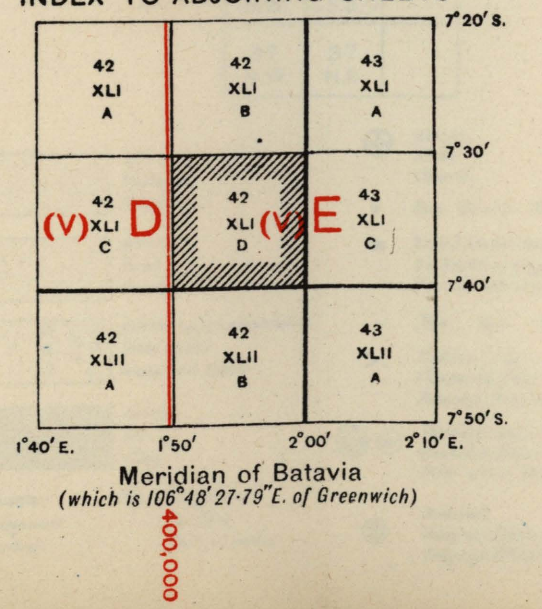
Yards 1000 500 0 1 2 3 4 Miles

Metres 1000 500 0 1 2 3 4 5 6 Kilometres

Copied from a Dutch map dated 1929.
Photolithographed at O.S. 1942.

INCIDENCE OF GRID LETTERS

INDEX TO ADJOINING SHEETS



Meridian of Batavia
(which is 106°48′ 27·79″E. of Greenwich)

REFERENCE

- Railway, Double and Single Track
- Tramway, Steam and Electric
- Roads, metalled and all weather, over 4 metres wide, with kilometre posts
- .. all weather, from 2 to 4 metres wide
- .. dry season only, from 2 to 4 metres wide
- Bridle Paths, with plank bridge or bamboo culvert
- Footpaths
- Boundaries, Residency
- .. Division, Sub-division
- .. District
- .. Plantation
- Buildings
- Native villages and Scattered dwellings
- Church, Mosque Chinese temple
- Christian Cemetery
- Chinese and Native graves
- Harbour and Anchorage
- Lighthouse
- Dry and Floating Dock
- Buoy, Beacon
- Radio Station
- Aerodrome or Landing Ground
- Rivers, surveyed, unsurveyed
- Lakes
- Fishponds
- Ditches
- Dykes
- Swamps, Marshland
- Rice Fields
- Plantations, Rubber, Market Garden
- .. Tea, Coffee
- Trees (various)
- Forest and Bush
- Contours at 25 metres interval
- Auxiliary contours
- Trig. Points { Reference No. / Height in metres } $\frac{S132}{50}$ $\frac{Q35}{36}$
- Bench Marks with heights in metres ◇53

DUTCH EAST INDIES, SOUTHERN ZONE GRID (RED)

Projection	Lambert Conical Orthomorphic
Spheroid	Bessel
Origin	8° South, 110° East
False Co-ordinates of Origin	550,000 metres East 400,000 metres North

The Black Grid shown on this Sheet is to be ignored

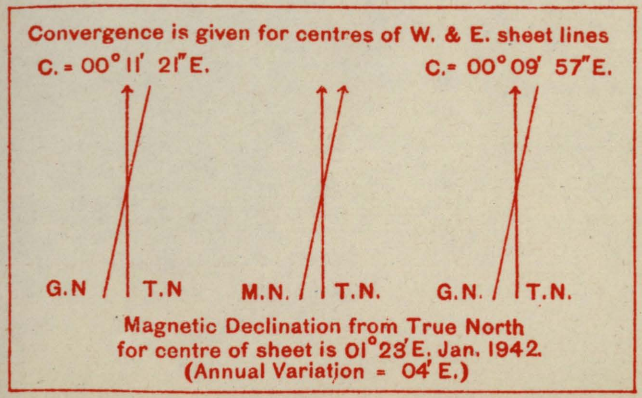
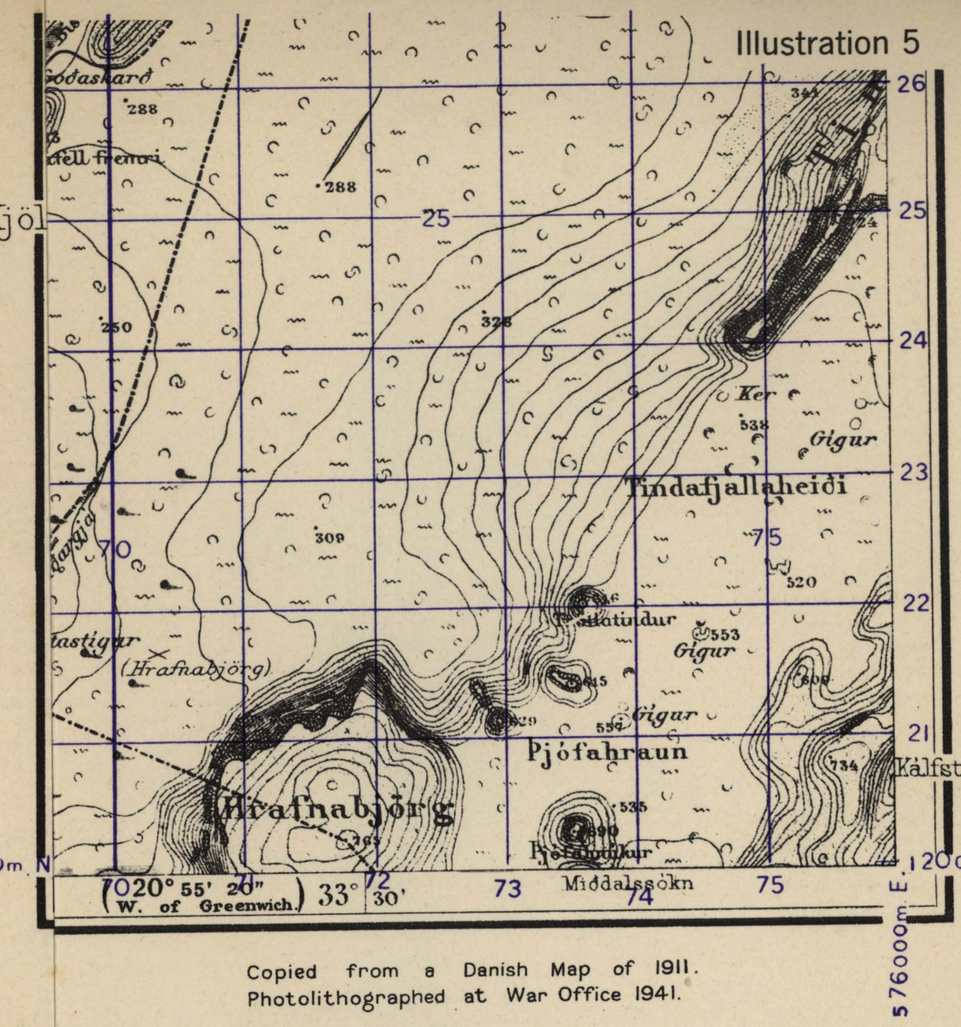


Illustration 5



Copied from a Danish Map of 1911.
Photolithographed at War Office 1941.

INDEX TO ADJOINING SHEETS

36 N.W.	36 N.E.	
36 S.W.	36 S.E.	
37 N.W.	37 N.E.	

Möl
Rullesten
Pebbles

Melar
Grus
Gravel

Sandur og roksandshólar
Sand og Klit
Sand and dunes

Leirur
Ler
Clay

Prestssetur
Præstegaard
Parsonage

Þst - Þingstadur
Tingsted
Place of assize

Kirkja
Kirke
Church

Bær. Gaard. Farm

2 eda 3 áfastir bæir
2 á. 3 sammenbyggede Gaarde
2 or 3 farmhouses

Hús. Hus. House

Eydibær, rust
Ödegaard, Ruin
Deserted farm, rain

Póstafgreidsla, Bréfhirding
Postekspedition. Brevsamlingst
Post-office, Receiving-office

Símastöd
Telegraf (Telefon) Station
Telegraph (Telephone) office

Rétt
Faaresfold
Sheepfold

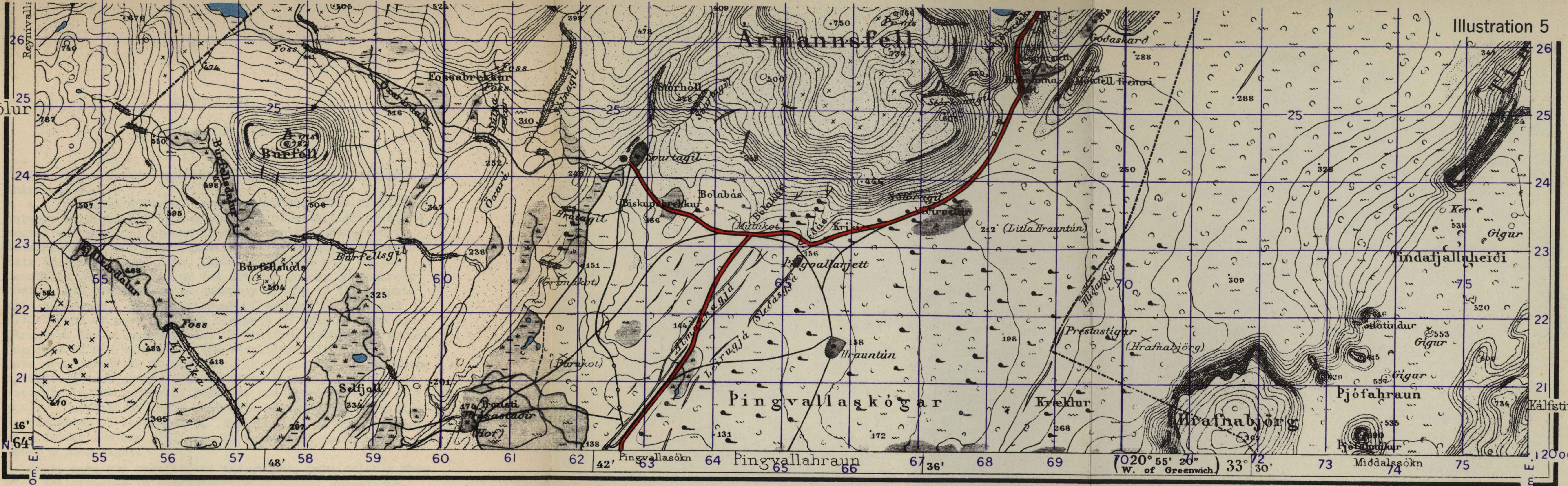
Klettar, hamrar
Klippeskrænt
Rocky slope

Rönd
Morene
Moraine

Boði
Undervandsskær
Submerged reef

Þrihyrningar-mælistaðir
Trigonometrisk Station
Trigonometric point
I og II
I eg II
I and II

Illustration 5



Geographical Section General Staff Nº 4138.
Published by the War Office 1941.
3/42/G.S.G.S.

Copied from a Danish Map of 1911.
Photolithographed at War Office 1941.

INDEX TO ADJOINING SHEETS

36 N.W.	36 N.E.	
36 S.W.	36 S.E.	
37 N.W.	37 N.E.	

MAGNETIC INFORMATION 1941.
SHEET Nº 36 (CENTRE) S.E.
MAGNETIC NORTH 25° 48' W. of GRID NORTH
GRID NORTH 1° 55' W. of TRUE NORTH
Annual change in Magnetic North. 13' E.

SCALE 1:50,000

Yards 1000 0 1 2 3 Miles

Metres 1000 0 1 2 3 4 5 Kilometres

Contour interval 20 metres

Akvegur med km. steinum
Körevej med Kilometersten
Road with kilometer-stones

Vegur, gata
Ridesti
Bridle path

Auðkendur vegur
Afmærket Sti
Path marked by cairns

Óviss gata
Sti med usikkert Spor
Indistinct path

Landssími
Telegraf- eller Telefonlinie
Telegraph- or telephone-line

Sýslumót
Sysselgrænse
County boundary

Hreppamót
Kommunegrænse
Municipal boundary

Prestakallamót
Pastoratsgrænse
Parish boundary

Hreppa- og prestakallamót
Kommune- og Pastoratsgrænse
Municipal and parish boundary

Á
Vandlöb
River

Tún
Dyrket Jord
Cultivated ground

Engi
Eng
Meadow

Mýri
Mose
Bog

Hagi
Græsklædt Areal
Pasture

Skógur og kjarr
Krat og Buskads
Wood and coppice

Lyng
Lyng
Heather

Votlendi
Sid Bund
Swampy ground

Mosi
Lav og Mos
Lichen and moss

Hájökull
Højjökel
Snow-field

TO GIVE A GRID REFERENCE ON THIS SHEET

Pay no attention to the smaller coordinate figures at the corners and in margins. They are for finding full coordinates. viz. 56581216

PAY ATTENTION TO LARGER MARGINAL FIGURES AND TO THOSE PRINTED ON THE FACE OF THE MAP VIZ. 110

POINT	HRAUNTÚN	LETTER	
East *Take west edge of square in which point lies and read the figures printed on this line.*	65	**North** *Take south edge of square in which point lies and read the figures printed on this line.*	21
Estimate tenths eastwards	8	*Estimate tenths northwards*	6
East	658	North	216
REFERENCE	658216		

Unit .... metre
Square 1,000
Reference to nearest 100
Nearest similar reference distant 60 miles

Klettar, klappir
Klippegrund
Rocky ground

Apalhraun
Bloklava
Block lava

Helluhraun
Pladelava
Stratified lava

Steinar og stórgrýti
Store Sten
Boulders

Skriðjökull
Skridjökel
Glacier

Prs - Prestssetur
Præstegaard
Parsonage

Möl
Rullesten
Pebbles

Melar
Grus
Gravel

Sandur og roksandshólar
Sand og Klit
Sand and dunes

Leirur
Ler
Clay

Þst - Þingstaður
Tingsted
Place of assize

Kirkja
Kirke
Church

Bær. Gaard. Farm

2 eða 3 áfastir bæir
2 à 3 sammenbyggede Gaarde
2 or 3 farmhouses

Hús. Hus. House

Eyðibær, rust
Ödegaard, Ruin
Deserted farm, ruin

Póstafgreiðsla, Bréfhirðing
Postekspedition Brevsamlingst
Post-office, Receiving-office

Símastöð
Telegraf (Telefon) Station.
Telegraph (Telephone) office

Rétt
Faarefold
Sheepfold

Klettar, hamrar
Klippeskrænt
Rocky slope

Rönd
Moræne
Moraine

Boði
Undervandsskær
Submerged reef

Þrms Þríhyrninga-mælistaðar I og II
Trigonometrisk Station I og II
Trigonometric point I and II

SECTION III

MAP MANUFACTURE

17. Three general systems of map making are employed universally.

a. Original surveys. Map construction from original surveys involves all of the elements of establishing horisontal and vertical ground control, aerial photography, interpretation and identification of features, assembly of data in conventional form, field and office edit of the assembled map, drafting of the several colors on separate boards, and publication in quantity by one of the graphic arts processes. In the interest of economy of time and effort, one or more of these elements of original map construction may be subordinated or omitted, with a corresponding loss of map veracity. The resulting deficiency may be loss of accuracy as to position, or of clarity or representation. A weak ground control frame work will result invariably in inaccuracy of position and approximations of scale. Omission of field edit will be reflected by misinterpretation of information. Reproduction in single color will render the map difficult to interpret, particularly under a poor light.

Short cuts and substitutes are common, particularly when maps are prepared in conjunction with actual operations. Inaccessibility of the terrain to survey personnel by reason of hostile occupation; inadequate photography; and lack of time or competent personnel are among the many factors which may necessitate the adoption of expediencies. As a rule, only those maps prepared in time of peace or in the long range planning phase of a major military operation will contain all of the desired elements of cartographic accuracy, expression, and clarity.

b. Compilation. With few exceptions, maps of scale smaller than 1/250,000 are manufactured by the assembly of data from various sources which may or may not include original surveys. This method of manufacture is frequently applied to medium and large scale mapping in order to produce from a variety of material, a map series of generally uniform character. Frequently the selected scale for compilation will be a compromise between that justified by the accuracy of the material, and that desired for a special purpose. For example;

a given area may be covered in part by existing maps at scale 1/25,000, in part at 1/40,000; and in part at 1/150,000. To provide a uniform series, the map maker may prepare from this diverse material, a series at 1/100,000 for convenience in tactical use, recognizing that a part of the information is too meager to justify the selected scale.

The steps involved in map compilation are selection and appraisal of material, preparation of specifications, translation and/or transliteration, plotting of ground control, assembly of data, drafting of individual colors, editing, proving, and reproduction in quantity. As in mapping from original surveys, some of these elements of map compilation and reproduction may be omitted in the interest of speed.

c Copying. A common method followed in the publication of maps is by copying existing maps, following identical scale and sheet lines, with or without translation or revision. The basic data will normally be the latest available published maps, with additional information as to cultural changes, either in the form of aerial photographs or reconnaissance reports. The problem is one of quantity production with the minimum expenditure of time and effort. That problem will be attacked in a wide variety of ways governed by the character of the original copy, its legibility, the language in which published; and especially, the degree to which legibility can be compromised in the interest of time and manpower. It is common practice to prepare and issue initial and subsequent editions with increasing improvement. First editions may be single color copies with translated legends. Later editions will be published in color and will include revisions and the addition of grids and other features. If the original copy is a clear reproduction of a line drawing in strong photo-sensitive colors, a direct single color reproduction may be entirely satisfactory. When the original includes flat colors or layer tints, hachures, closely spaced contours, or flat overprints coinciding with colors which are photographically similar, special treatment is required. For single color reproduction, these conditions may be partially corrected by use of half-tonescreens and filters. Time and facilities permitting, however, maps of this character will be reproduced in color by partial redrafting or by photographic color separation.

The reproduction of foreign maps involves translations when the originals are published in a language employing the Roman alphabet. That translation may include only the legend and marginal information, or it may extend to the names of geographic features. Proper names will normally remain in original language. When the original has been published in a language employing one of the non-Roman alphabets, it is necessary to transliterate legends, marginal data, and common and proper names appearing within the neat lines of the map. Frequently, transliteration of Japanese and Chinese characters will be accomplished by an overprint of Romanized equivalents without elimination of the original characters.

18. Combinations of the general methods described above are employed, particularly when revision data are to be incorporated into new editions. Direct photographic color separation, with limited translation, is a most expeditious and practical method of reproducing in color from colored originals.

SECTION IV

MAP APPRAISAL.

19. An accurate estimate of the reliability of any map or map series involves the analysis of many factors, some of which can be examined only by careful and thorough research, consequently where information is limited to that appearing on the face of the map, the user is greatly handicapped in his appraisal. Thorough map analysis demands a step by step examination along the general lines indicated below:

a. Authority under which the map has been prepared. Established governmental agencies, which are known to have been in the business of map making, may be accepted as competent and reliable. Maps made for general use ordinarily possess the same degree of reliability with reference to all features shown. On the other hand, maps prepared for a special purpose may be quite unreliable except for the information relating to that particular purpose. For example, a map published by a railway company may be reliable for railway information, but not for road information.

b. The date of original surveys. This date, which ordinarily appears in some part of the map legend, is one of the most important indices to its accuracy. Land forms change very little within those time periods with which we deal in considering maps for military use, except along shore lines and meandering rivers. As a rule, therefore, general land forms as depicted by contours, hachures, form lines, or layer tints

may be accepted as being reasonably accurate regardless of the date of survey. It may be assumed, however, that prior to the extensive application of aerial photography to mapping, serious displacements of horizontal and vertical position may be encountered in extremely rugged or heavily wooded country, since in the normal course of ground survey methods such areas are extremely difficult to delineate accurately. Changes in cultural features over a period of years may be very minor or very extensive, depending upon the rapidity of development of the region. In highly industrialized areas, extensive changes may render maps obsolete within a very short period after publication, whereas in sparsely settled regions, maps from thirty to forty years old may represent the cultural features accurately. The date of survey, therefore, is not necessarily an exact guide to accuracy, but must be considered in the light of normal expectancy as to cultural change.

c. The edition number and date. Subsequent to the date of the original survey, the map may have gone through one or more revisions. The knowledge of later revisions is of great importance, especially as to details such as roads, for which the most recent information is essential. If the date of the edition is not given it may be approximated by comparing with another map of known date to determine, for example, if a railway or road under construction has been completed. The style of the map may give a general indication as to its date; also the magnetic declination, which undergoes a regular change of known magnitude, may help define the date. It should be noted that a map dated 1942 may have been based on one prepared from another dated 1900. As stated above, if the original basis was sound, the physical detail will not have changed greatly, and while the populations of cities may have altered vastly, their general positions and shapes will remain unchanged. The communications will be the chief features that have altered, hence a note to the effect that communications have been revised to 1940 greatly increases the reliability of the map.

d. Scale. The scale at which a map has been published is generally, though not invariably, an indication of the accuracy of the original survey or compilation. It is customary in mapping practice to prepare original surveys or compilations at a scale somewhat larger than the final scale of reproduction. When reproduction is by photo-lithography or photo-engraving, the color separation drawings may be at some scale intermediate between the survey scale and the scale or reproduction. In any case, however, the published scale reflects the accuracy of position obtained in the original surveys and is indicative of the quantity of detail included or omitted. The expected error of point and detail plotting from survey notes or observations is usually estimated at about .02". If there is added to this figure the displacement of position introduced by exaggerated conventional signs, the actual position error at the plotting scale may be expected to reach .04". Consequently, if the map has been plotted at 1/12,000 (1" = 1,000 feet) the probable maximum error of detail may be expected to be about .04" x 1,000 feet, or 40 feet. Neglecting paper distortions, which may cause serious relative dislocations of map detail, that expected error remains constant regardless of the scale of reproduction.

e. Consecutive series. Note whether the area has been covered by several series at different scales, and note also the order in which the maps were originally prepared. If the first series published was of large scale and the later series at medium scale, it may be assumed that the medium scale map was prepared from the detailed surveys employed in the manufacture of the first series. Accordingly, it may be expected that the medium scale map will reflect the same general degree of accuracy in position location. Usually, however, to avoid undue congestion, it will have omitted many cultural details appearing on the earlier large scale map. It will be observed also that earlier maps, particularly those of areas of increasing industrial importance, such as our own New England States, are of medium or smaller scale; and that they have been subsequently replaced or augmented by larger scale maps made necessary by the increased amount of cultural data and the growing importance of more exact relief expression.

f. Enlargements. One notable exception to the scale/accuracy rule appears in the case of "Blow-ups" or enlargements which are made occasionally for the improvement of the legibility of badly crowded maps. On some occasions this practice is followed in the mistaken belief that it improves accuracy. Maps prepared by enlargement may be readily recognized by the bold character of the conventional signs, thickness of lines, and abnormal size of lettering. The map maker, however, may attempt a deliberate deception by enlarging the basic data and redrafting before publication, reducing conventional signs and lettering to normal size. This deception may be depicted by noting that the amount of detail is not consistent with the amount of paper on which it appears.

This practice is not to be confused with a current and sound practice of preparing maps of different scales from the same basic data. It is not unusual, particularly in the use of photogrammetrical apparatus to prepare the basic assembly at a fairly large scale, say 1/10,000 to 1/16,000, and to publish a large series including all of the plotted data and a second series at small scale with some of the detail omitted in the color separation drafting stage.

SECTION V

BRITISH MAPPING POLICY

20. The most important available world map coverage outside of the Western Hemisphere is that of the Geographical Section, General Staff, British War Office, and the Survey Directorates of the Commonwealth and Colonial Governments. No attempt is made here to describe all of the map series published by the Geographical Section, General Staff. It is intended rather to indicate the British Mapping policy with respect to the present war and to describe certain series as illustrative of that policy.

21. From what has been stated heretofore, it will be clear that in the preparation of maps of foreign areas every nation is dependent largely upon the work which has been performed by the foreign nation concerned. Except in those rare cases where nations are closely allied in the common cause, basic map data obtained by one nation is not available to another, consequently, materials are limited to published maps which have become public property.

22. If no revision material is available well in advance of the time maps must be ready for use, the publishing agency is entirely helpless to improve the accuracy of the information at hand. The most expeditious and practical method of using that information is by direct copy.

23. Since 1940, the British have consistently followed the policy of direct utilization of existing maps of foreign areas without change of sheet lines or general characteristics. First editions will be direct copies, frequently in continuous tone or halftone with no change from original manuscript other than legend translation and the addition of a grid. Later editions will include such revisions as data will permit, and may include standardization of road classification, and such changes as can be made in improvement of legibility.

SECTION VI

TYPICAL BRITISH PUBLICATIONS.

24. The following list of publications by the Geographical Section, General Staff, British War Office, illustrates the British procedure in preparing maps from foreign originals by direct copy and by compilation. Only a few of the most important series are shown. It will be borne in mind that the preparation of these maps is a continuing process and that the status of each series is constantly changing. The published edition number shown in the tabulation is approximately correct at this time. Only through examination of the map will individual users be able to ascertain whether it is a first or a subsequent edition.

AFRICA

GSGS NO.	SCALE	AREA	ORIGINAL PUBLICATION					GSGS PUBLICATION			
			AUTHORITY*	TYPE	DATES OF LATEST EDITION	NO. OF SHEETS	COLORS	DATE	COLORS	GRID	EDITION
4149	1/200,000	French West Africa	SGA	Contoured	1924-1939	126	4	1941	3	10,000M	1st & 2nd
4173	1/200,000	Morocco	SGM	Contoured	1918-1941	118	3	1941	3	10,000M	1st & 2nd
4175	1/500,000	French North Africa	SGA	contoured	1922-1939	28	4	1941	5	10,000M	1st
4180	1/200,000	Algeria	SGA	contoured	1910-1938	89	4	1941	4 & 2	10,000M	1st
4225	1/50,000	Tunisia	SGA	contoured	1922-1938	100	5	1941	4	1,000 M	1st
4226	1/100,000	Tunisia	SGA	contoured	1921-1935	94	5	1941	2	1,000 M	1st
4227	1/200,000	Tunisia	SGA	contoured	1927-1934	45	4	1941	2	10,000M	1st
4232	1/50,000	Algeria(Coastal Belt)	SGA	contoured	1901-1936	167	6	1941	4 & 2	1,000 M	1st & 2nd
4233	1/50,000	Morocco	SGA	contoured	1924-1936	57	5	1941	3	1,000 M	1st
4239	1/50,000	Spanish Morocco	DGG	contoured	1927-1936	82	4	1941	4	1,000 M	1st
4243	1/500,000	Madagascar	SGMr	shaded	1923-1936	24	5-	1941	5	10,000M	1st,2nd,3rd

* SGA - Service Geographique de l'Armee (France)
SGM - Service Geographique Maroc (French Colonial)
DGG - Deposito Geographico, Gen. Staff (Spain)
SGMr - Service Geographique Madagascar

NOTES

4149: 1st Edition colored and uncolored. 2nd Edition (1941) colored. Guinea, Niger and Senegal Grids.

4173: 1st Edition colored. Some maps illegible in parts. Information fairly reliable, except road classification. Revision under way from aerial photos used on larger scale maps, and reclassification of roads using Michelin Guide and intelligence reports. N.W. Africa and N. Sahara Grids. Overprint revisions under way. 2nd Edition - a grid correction.

4175: 1st Edition colored. Slight revision made in communications on southern sheets in 1st Edition. Bilingual notes. N. W. Africa Grid.

4180: Eight coastal sheets in color (unrevised). Remaining sheets unrevised halftones. Work started on 2nd Edition. Revision on some sheets from aerial photos. Edition to be colored. N. W. Africa Grid.

4225: Halftone 1st Edition. N. W. Africa, N. Sahara and Libyan Grids.

4226: Halftone 1st Edition. N. W. Africa, N. Sahara and Libyan Grids.

4227: Halftone reproductions. Work in progress on 2nd Edition, colored. Bilingual notes. Overprint revisions ready for 1st Edition, data from aerial photos. N. W. Africa, N. Sahara and Libyan Grids.

4232: 1st Edition in color. Revision under way for 2nd Edition, using aerial photos and intelligence report. Some of 1st Edition halftones. Overlay revision made on 1st Edition. N. W. Africa, N. Sahara and Libyan Grids.

4233: Colored 1st Edition. Reliable map. Communications not up to date. Base of most of 1st Edition halftone. Revision contemplated. N. W. Africa Grid.

4239: 1st Edition colored. Maps illegible in parts. Blank over Tangier International Zone. 2nd Edition in progress. Revision from aerial photos and existing maps. N. W. Africa Grid.

4243: 1 sheet in 2nd Edition, 1942. 11 sheets in 3rd Edition, 1942. 2nd Edition consisted of grid correction. Rest of sheets in 1st Edition. 3rd Edition consists of further grid corrections. Original edition copies from French map with road revision from 1939 map of Madagascar, 1/1,000,000. Madagascar Grid.

ASIA

GSGS NO.	SCALE	AREA	ORIGINAL PUBLICATION					GSGS PUBLICATION			
			AUTHORITY*	TYPE	DATES OF LATEST EDITION	NO. OF SHEETS	COLORS	DATE	COLORS	GRID	EDITION
3772	1/25,000	Singapore & Johore	R.E.	contoured	1939	21	4	1939	4	1000 yd	2nd
3919	1/253,440	Iran, Afganistan, Iraq, & Turkey	S.I.	form lines	1916		2	1932-1942	2	10,000M	1st,2nd,3rd
4195	1/200,000	Palestine, Trans-Jordan, & Syria	Fr.	contoured	1937			1941	4	10,000M	1st & June, 1941
4203	1/63,360	Federated Malay States and Straits Settlements	F.M.S. & S.S.S.	contoured	1925-1940	100+	5	1942	5	1000 yd	1st
4213	1/210,000	Caucasia	Russia	form lines & hachures				1942	5	10,000M	2nd & 3rd
4218	1/253,440	Burma, Indo-China & Thailand	S.I.	contoured form lines hachures	1942		2	1942	2	10,000yd	1st
4222	1/500,000	China(East Central Asia)	China	-	1929			1941	6	None	1st

* R.E. - Royal Engineers
S.I. - Survey of India
Fr. - French Map
F.M.S. & S.S.S. - Federated Malay States & Straits Settlements Survey

NOTES

3772: 2nd Edition based on field revision by R. E., 1937. Good quality line work.

3919: 4 sheets 2nd Edition, 2 sheets 3rd Edition, most with red overprint. Good quality line reproduction except 32 halftone sheets. Accuracy, especially of stream flow, not guaranteed. Only 75 sheets gridded.

4195: 15 sheets 1st Edition, 4 sheets Edition of June, 1941. Some sheets straight copy, some redrafted from French 1/40,000 map and earlier surveys. Grids: Syria, Palestine, Caucasus, Iraq.

4203: Good quality line reproduction. Surveys up to 1933, revisions in 1938. Gridded.

4213: 3rd Edition in progress. Some sheets redrafted, some copies. Line work. Grids: Danube, Caspian, Caucasus. Three sheets not gridded. Some features (oil pipe line, etc.) only roughly indicated.

4218: 19 sheets line work, 6 sheets halftone prints of poor quality. Grids: Malayan N. (Cassini), Lambert IV B; two sheets not gridded. Reliability doubtful on most sheets.

4222: Redrafted from local map. Good line reproduction, but little detail. Latest revision August, 1941. Not gridded. Reliability not indicated.

EUROPEAN

GSGS NO.	SCALE	AREA	ORIGINAL PUBLICATION					GSGS PUBLICATION			
			AUTHORITY*	TYPE	DATES OF LATEST EDITION	NO. OF SHEETS	COLORS	DATE	COLORS	GRID	EDITION
4040	1/50,000	N.E.France & Belgium	GSGS	contoured	1935-38	124	4	1935-1938	4	1,000 M	2nd & 3rd
4042	1/250,000	N.E. France & Belgium	GSGS	contoured	1937-40	11	4	1937-40	4	10,000M	1st
4083	1/50,000	Netherlands	T.D.	contoured	1911-36	62	5	1940	4	1,000 M	3rd
4088	1/50,000	The Balkans	R.E.	contoured	1940-41	30	5	1940-41	5	10,000M	1st
4090	1/100,000	Norway	NGS	contoured	1901-37	252	3	1941	4	1,000 M	1,2,3,& 4th
4093	1/200,000	Finland	FLS	contoured	1935	30	5	1940-41	2	None	1st & 2nd
4148	1/250,000	Spain & Portugal	GSGS	contoured	1941	77	4	1941	4	10,000M	1st
4164	1/100,000	Italy	MGI	contoured	1927-37	293	3	1941	3	1,000 M	1st
4172	1/300,000	Poland (Central)	PGI	contoured	1928-37	40	6	1941	4	None	1st
4177	1/100,000	Poland	PGI	contoured	1927-38	49	4	1941	4	1,000 M	1st
4228	1/25,000	Italy	IGS	contoured	1897-36	1200	1	1941	2	1,000 M	1st
4229	1/50,000	Italy	IGS	contoured	1863-25	340	1	1941	2	1,000 M	1st
4230	1/250,000	Italy	ITC	hachured	1930	62	5	1941	2	10,000M	1st

* GSGS - Geographical Section, General Staff (British)
T.D. - Topografische Dienst (Netherlands)
R.E. - Royal Engineers (British)
NGS - Norwegian Geographic Survey
FLS - Finnish Land Survey

* MGI - Military Geographic Institute (Italian)
PGI - Polish Geographic Institute
IGS - Italian General Staff
ITC - Italian Touring Club

NOTES

4040: 2nd Edition on hand. 3rd Edition in production. Extensive corrections from aerial photos. Nord de Guerre Grid.

4042: Revision under way, from aerial photos. 2nd Edition to be layered.

4083: 3rd Edition in 1941.

4088: 1st Edition in 1941. Overlay revision, 1942.

4090: 4th Edition 1941. Revision of communications, some revision by aerial photos. Some sheets enlarged from Norway 1/200,000 (1914-1936).

4093: 1st Edition 1940. Overlay corrections 1941. Black and white maps. No grids. Enlarged from 1/400,000 Finnish series. 2nd Edition in progress.

4148: 1st Edition 1941.

4164: 1st Edition 1941. No corrections to date. Revision from aerial photos contemplated.

4172: 1st Edition 1941. No grid.

4177: 1st Edition 1941.

4288: 1st Edition 1941. Old maps illegible in parts. Data on most maps not reliable.

4229: 1st Edition 1941. Data on most maps compiled before 1900 and not reliable. Old maps illegible in parts.

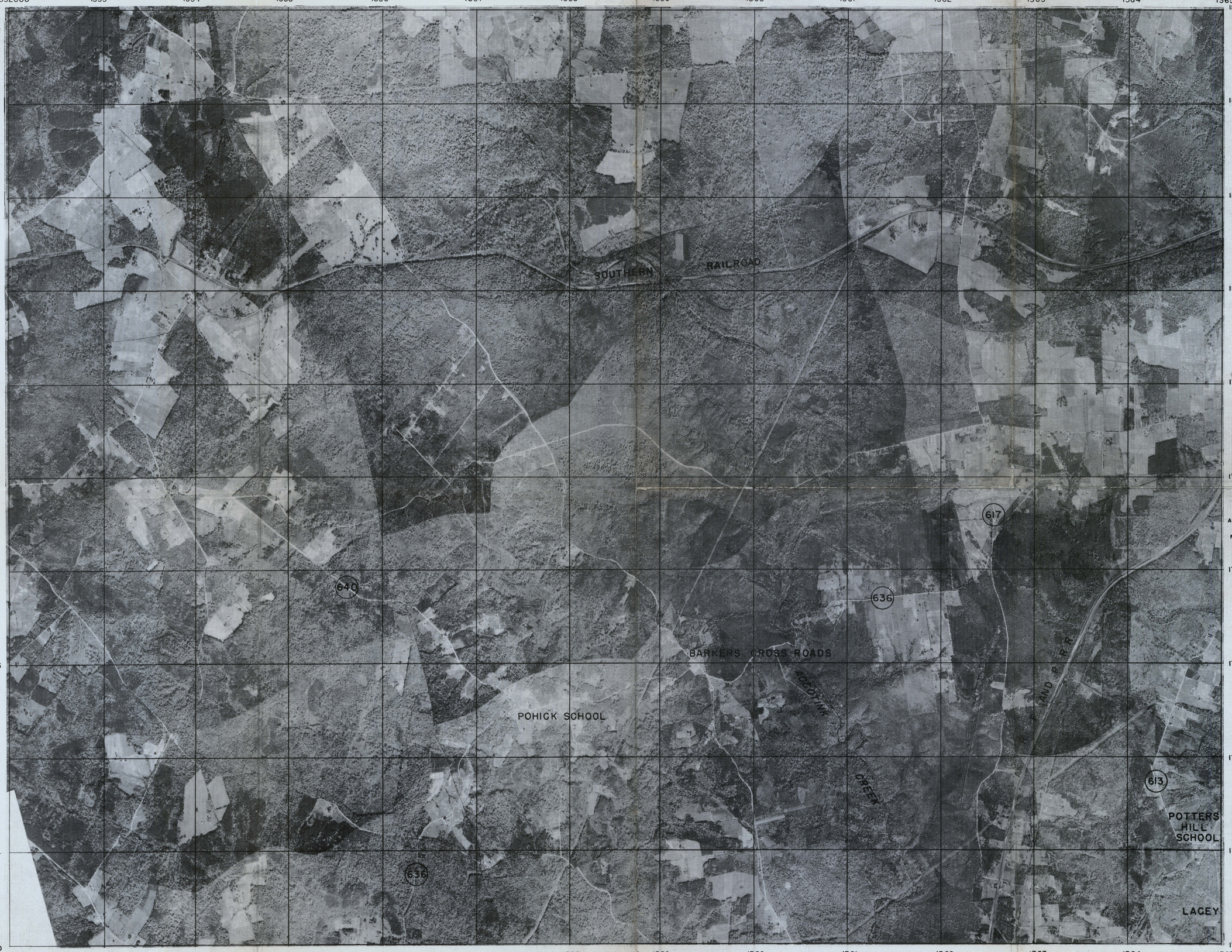
4230: 1st Edition 1941. No corrections to date. Halftone base. Very clear.

WAR DEPARTMENT
CORPS OF ENGINEERS, U.S. ARMY

PHOTO MAP

FORT BELVOIR AND VICINITY

GRID ZONE "B"
SHEET 1 OF 4 SHEETS



Y
9°
TRUE NORTH
6°41'
MAG NORTH
2°25'

APPROXIMATE MEAN DECLINATION
1938
NO ANNUAL MAGNETIC CHANGE

Prepared under direction of The Commandant,
The Engineer School.
Controlled Mosaic by Drafting Course,
Enlisted Men's School.
Aerial Photographs by U.S. Army Air Corps.

1	2
3	4

INDEX

Scale 1/20000

1 0 1 2 MILES

1000 0 1000 2000 3000 4000 YARDS

2-ESBP

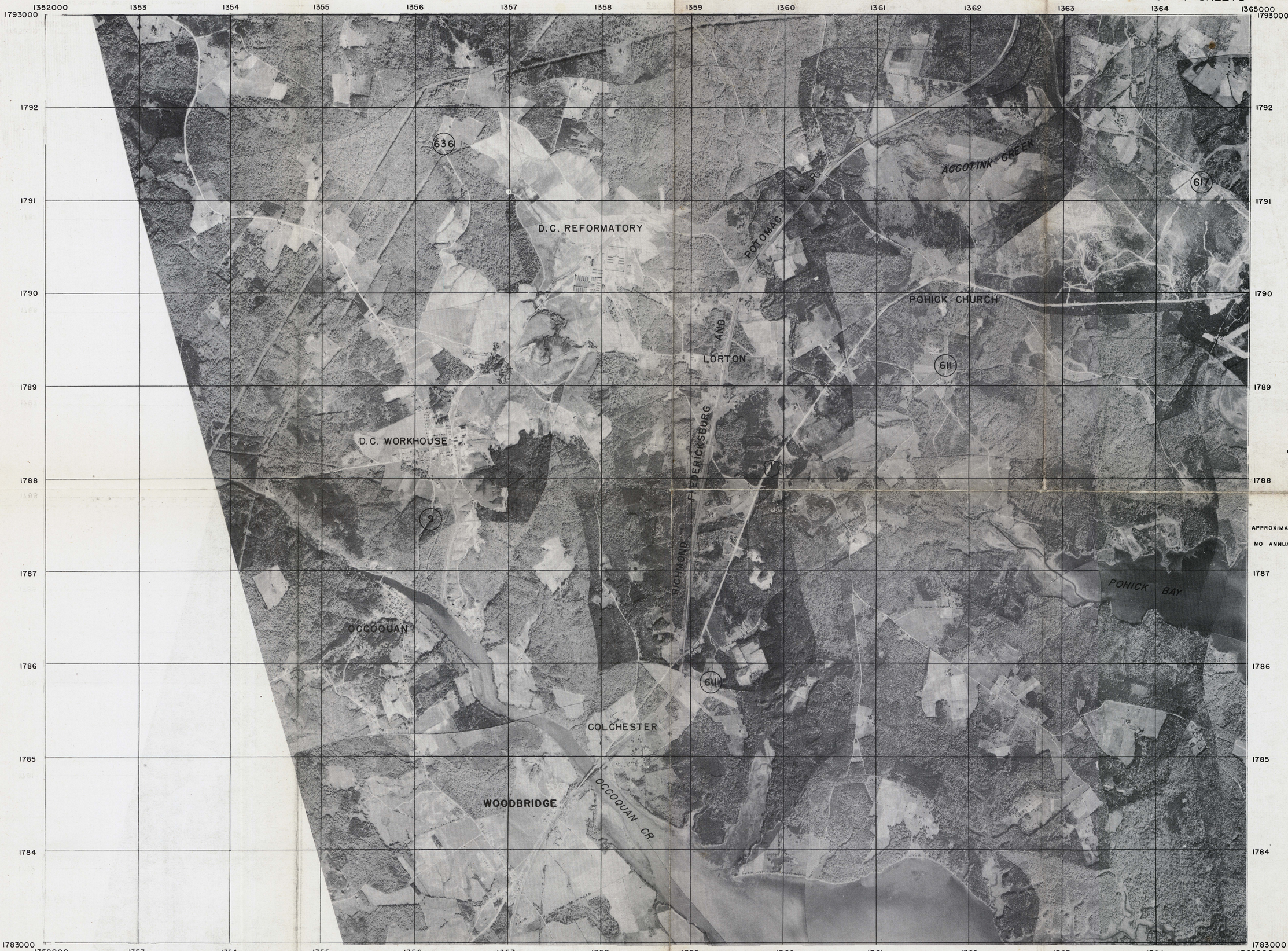
FORT BELVOIR
AND VICINITY

WAR DEPARTMENT
CORPS OF ENGINEERS, U.S. ARMY

PHOTO MAP

FORT BELVOIR AND VICINITY

GRID ZONE "B"
SHEET 3 OF 4 SHEETS



9°
TRUE NORTH
6°41' MAG. NORTH 2°25'

APPROXIMATE MEAN DECLINATION
1938
NO ANNUAL MAGNETIC CHANGE

Prepared under direction of The Commandant,
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1	2
3	4

INDEX

Scale 1/20000

0 1 2 MILES

1000 0 1000 2000 3000 4000 YARDS

2-ESBP

FORT BELVOIR
AND VICINITY

WAR DEPARTMENT
CORPS OF ENGINEERS, U.S. ARMY

PHOTO MAP

RESTRICTED

FORT BELVOIR AND VICINITY

GRID ZONE "B"
SHEET 4 OF 4 SHEETS

1365000 1366 1367 1368 1369 1370 1371 1372 1373 1374 1375 1376 1377 1378000

1793000 1792 1791 1790 1789 1788 1787 1786 1785 1784 1783000

WOODLAWN MANSION
613
235
E. P. T. C.
WOODLAWN CHURCH
ACCOTINK
FORT BELVOIR
DOGUE CREEK
M T. VERNON
FORT HUNT
FORT WASHINGTON
RIVER
POTOMAC
ACCOTINK BAY
GUNSTON COVE

Y
9°
TRUE NORTH
MAG. NORTH
6°41
2°25'

APPROXIMATE MEAN DECLINATION
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1	2
3	4

INDEX

Scale 1/20000

1 0 1 2 MILES

1000 0 1000 2000 3000 4000 YARDS

2-ESBP

FORT BELVOIR
AND VICINITY

For use by
War and Navy Department Agencies only
Not for sale or distribution

FRANCE AND BELGIUM 1:50,000

BOULOGNE

THIRD EDITION

SHEET 49

BOULOGNE-SUR-MER
le Portel
Cap d'Alprech
Wimereux
Beacon Light
Beacon Lights
CHANNEL
ENGLISH
MONT LAMBERT
MONT DE THUNE
MONT CORNET
MT DE BOURSIN
MONT DES BOUCARDS
FORET DE BOULOGNE
FORET D'HARDELOT
MT DU CHERNY
MT DE TERRE
MONT ST FRIEUX
MONT VIOLETTE
DESVRES
MT PLÉ
MT COCHEREU
GAMER
Hardelot
Neufchatel
Outreau
Wimereux R.P.
Halt
Station
Tower
Low Water Mark
High Water Mark
Compiled and Drawn by O.S. 1937. Revised 1942.

G.S.G.S. Nº 4040. W.O. 1938.
Third Edition, 1942.

The road classification is not based on reconnaissance: its reliability is uncertain.

Over 8 Metres Main Road. (Route Nationale Chemin de Grande Communication)
6-8 Metres wide, metalled or pavé
3-6 " " " " "
Secondary Road. (Chemin Departmental. Chemin d'Interet Commun)
Other Roads and cart tracks
Foot-Path
Power Cable, Aerial Railway

Railway, Double line
" Under Construction
" Single line
Tramway or Narrow Gauge line } off road, on roadside
Boundary, International
" Department (Province in Belgium)
" Arrondissement
" Canton, Commune

INCIDENCE OF GRID LETTERS AND INDEX TO ADJOINING SHEETS

38 CALAIS	39 ARDRES	
49 BOULOGNE	50 ST. OMER	
60 MONTREUIL	61 FRUGES	

RELIABILITY DIAGRAM
Revised from Air Photos

Scale 1:50,000 or 1 Inch to 0·79 Miles
Metres 1,000 500 0 1 2 3 4 5 Kms.
Yards 1,000 0 1,000 2,000 3,000 4,000 5,000 Yards
Mile 1 ¾ ½ ¼ 0 2 3 Miles
Contour interval 10 metres

The Grid on this map is Nord de Guerre Zone (Blue). Origin- the intersection of the parallel 55 Grades North with the longitude 6 Grades East of Paris Observatory. Longitude of Paris is 2°20'14" East of Greenwich.

Convergence is given for centres of W.& E. sheet lines:
C.- 4°45' W. C.- 4°25' W.
Magnetic declination from True North for centre of sheet is 9°05' W. Jan. 1942.
Annual change about 11' E.
T.N. G.N. T.N. G.N.

Windmill, Windpump, Watermill
Tower, Chimney, Monument
Trig. Point
Fort, Wireless Station
Spot Height, Population (in Thousands)
Church, Belfry, Chapel
Calvary, Cross, Cemetery
Woods, Brushwood, Orchards
Vineyards, Hop Gardens

Navigable Canal, River Canalised
Non-Navigable Canal, Aqueduct, Drainage Channel
Well, Spring, Reservoir
Marsh, Sand Dunes
Ford; Vehicular, Foot
Ferry
Aerodrome, Landing Ground

ARMY MAP SERVICE, U. S. ARMY, WASHINGTON, D. C., 106113
1942
REPRINT 12-42