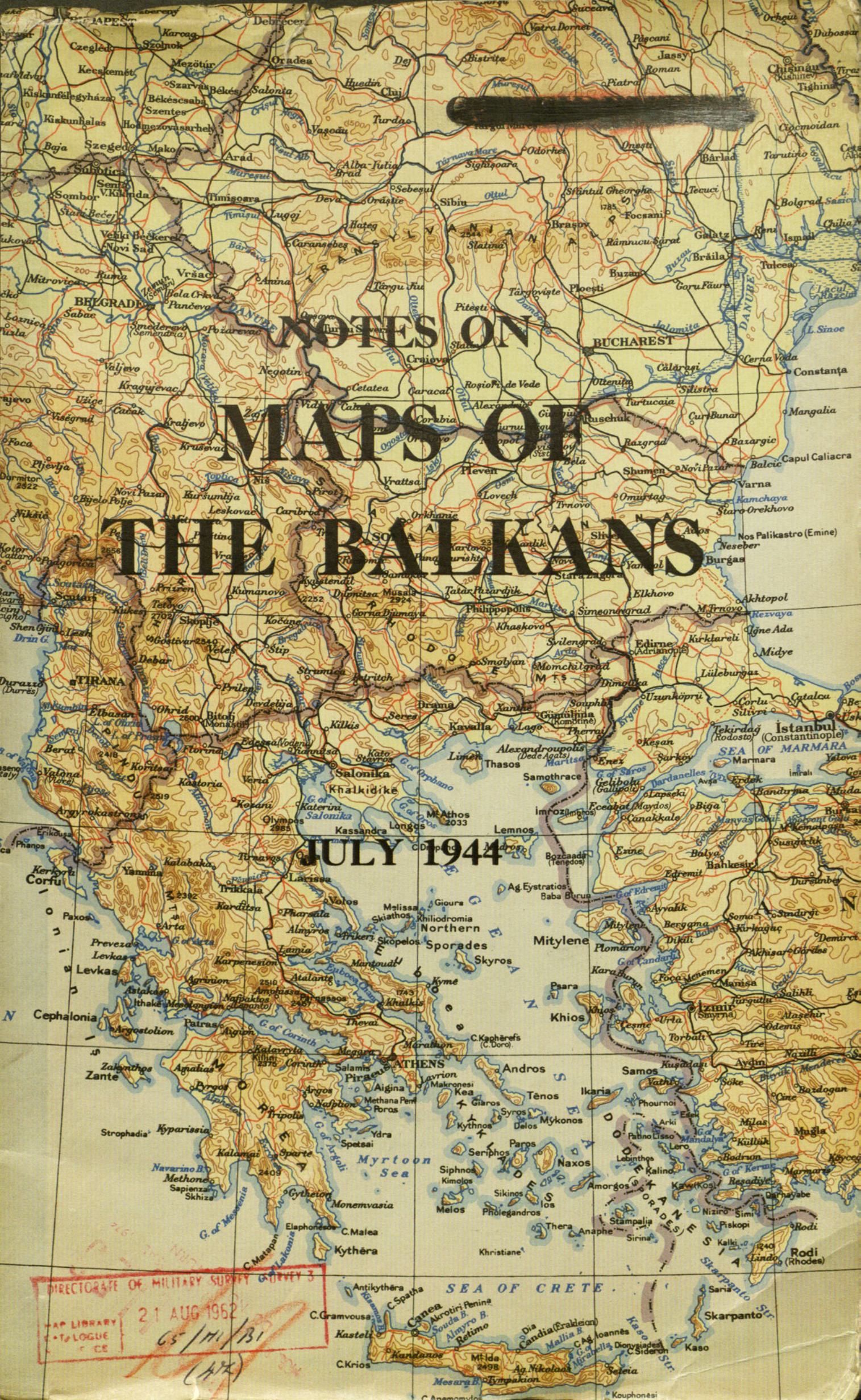


NOTES ON MAPS OF THE BALKANS

JULY 1944

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NOTES ON MAPS OF THE BALKANS

THE area covered by this book consists of Greece (including Crete and the Islands of the Ægean), Albania, European Turkey, Bulgaria, Romania, Yugoslavia, and Hungary. All the G.S.G.S. map series covering these countries are described in detail, together with all map series published by Survey Directorates in Middle East and in A.F.H.Q.

This book largely supersedes a similar volume dated 1st February, 1944, of which a limited number of copies were published and distributed by Survey Directorate, Middle East.

The object of these notes is to show what maps are available (or will shortly be so) for this area, and to describe the material used for their preparation. It must, however, be emphasized that much of the information given is accurate only at the date to which it applies (July, 1944), and also that M.E. or A.F.H.Q. may have produced other maps (or other sheets) than are mentioned here. In general, however, the maps mentioned will be those issued for operational requirements in this area.

Volumes similar to this one have been prepared for Italy (1st May, 1943), for France, Belgium, and Holland (December, 1943), and for Germany, Denmark, and Central Europe (March, 1944). These previous volumes have included, as appendices, glossaries and gazetteers, which have been omitted from the present volume (except in the form of a reference bibliography) in order to speed-up production.

Most of the map series described have been reproduced identically in this country, in A.F.H.Q., and in M.E., irrespective of where the series was initially prepared; this is made possible by the distribution by air of films for each colour plate of each map sheet concerned. In this country map series are differentiated by "G.S.G.S." numbers; in Middle East by "M.D.R." numbers. Throughout these notes both M.D.R. and G.S.G.S. numbers of map series have been quoted together wherever appropriate, M.D.R. numbers being in italic, and G.S.G.S. numbers in roman type (e.g., *M.D.R. 621*/G.S.G.S. 4396). "Med." numbers of A.F.H.Q. series are shown in round brackets, and "A.M.S." numbers of series published by the Army Map Service, Washington are shown in square brackets.

Only the main series are listed below; less important series are described in the text.

DIRECTORATE OF MILITARY SURVEY,
WAR OFFICE,
LONDON.
July, 1944.

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EUROPE 1 : 1,000,000



EUROPE, 1 : 1,000,000, M.D.R. 1/G.S.G.S. 2758 (See sample opposite)

The primary use of this series is for topographical form-at-a-glance. It is also of value as an air map; hence sheets are now being printed with purple layer tints, instead of with the green and brown tints of previous editions. On some of the sheets now available the smaller names and detail are "thick", and are difficult to read. The more northerly sheets shown on the index have not yet all been published in the new style (with purple layers) and (in the U.K.) their publication in this style is being combined with a general "comb-over" of the whole of this series to ensure up to date information on main roads and railways, consistent name spelling throughout (a point on which the existing Balkans sheets are at present very weak), and correspondence of detail along common sheet-edges. Reproduction material of these revised sheets will be sent to Middle East, along with stocks.

The index above shows that Middle East productions (M.D.R. 1) of sheets of this series are on slightly different sheet-lines from those of G.S.G.S. 2758. The sheet lines shown for G.S.G.S. 2758 in this area are now being adopted by Middle East as and when they receive material for corrected sheets.

RUSSIA, 1 : 1,000,000, G.S.G.S. 4257, is a layered series similar to G.S.G.S. 2758; as the index shows, the south-west sheets of it cover Rumania and eastern Hungary. Sheets have been reproduced from a recently published Russian map, names being transliterated, and layer tints (in purple and brown) added. No revision of this series is contemplated at present. This series has not been published in Middle East, but, though small stocks of it are available, material for reproducing it is not held either there or at A.F.H.Q.



Extract from M.D.R./
G.S.G.S. 2758, Sheet "Egean"

EUROPE 1 : 500,000



EUROPE (AIR), 1 : 500,000, M.D.R. 595/G.S.G.S. 4072 (See upper sample opposite)

This series was primarily designed to meet R.A.F. requirements. The generalized style of the series limits its value for military use, nor is it infallible for communications; in addition, name spellings are not always reliable. Certain sheets are now being revised in Middle East particularly as regards communications and names.

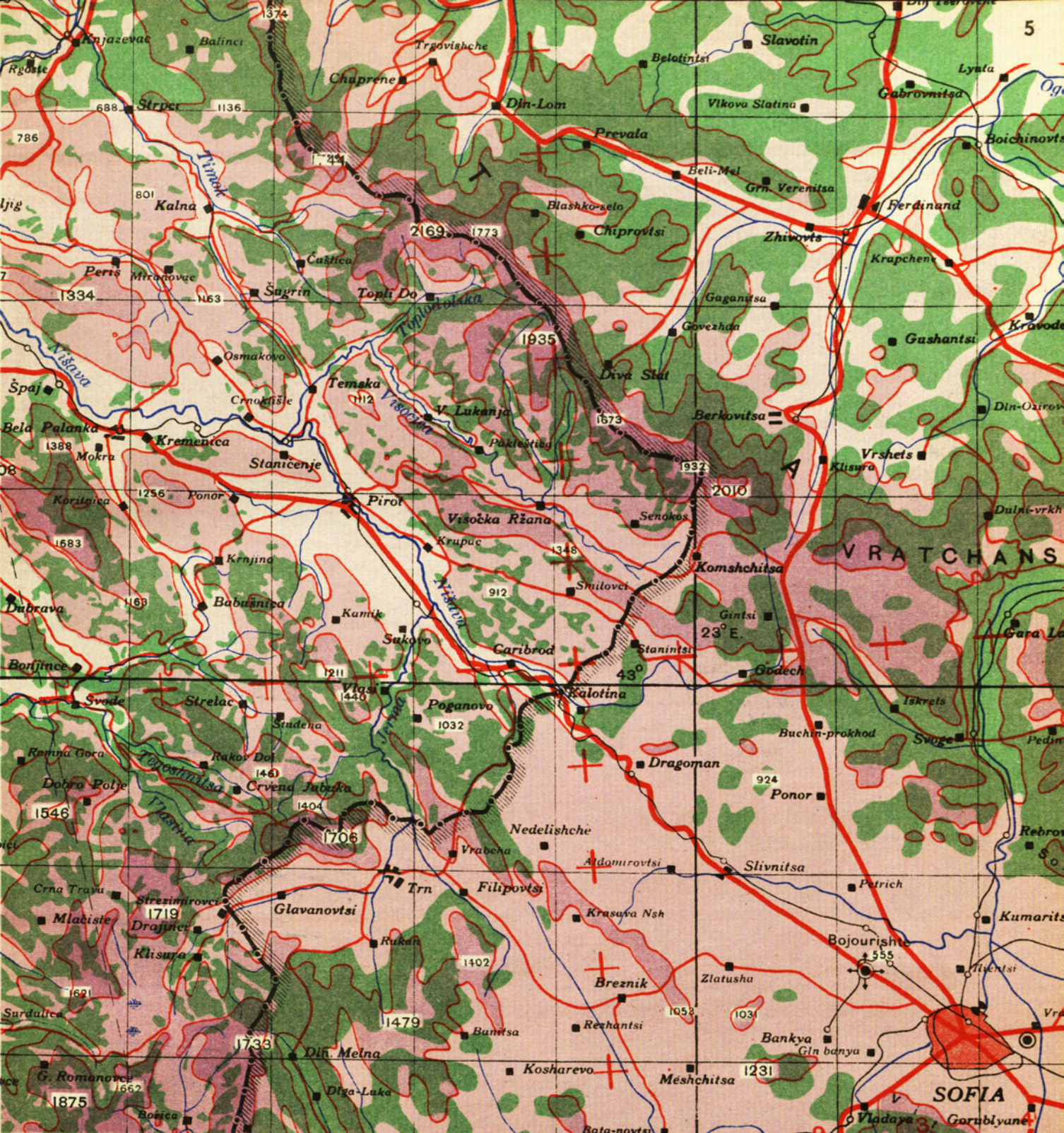
It should be noted that the military grid is indicated by ticks and crosses (in red on the sample). Each sheet overlaps by 20 minutes (about two inches) those to north, south, east, and west: these overlaps have not been shown on the index. Special air information is carried on these sheets (e.g. airfields), details of which will be found on page 37.

One of the chief merits of the map is that it is the only homogeneous series which covers the entire Balkan area (and, in fact, nearly the whole of Europe) at a scale between 1 : 1,000,000 and 1 : 250,000.

MIDDLE EAST, 1 : 500,000, M.D.R. 580 (See lower sample opposite)

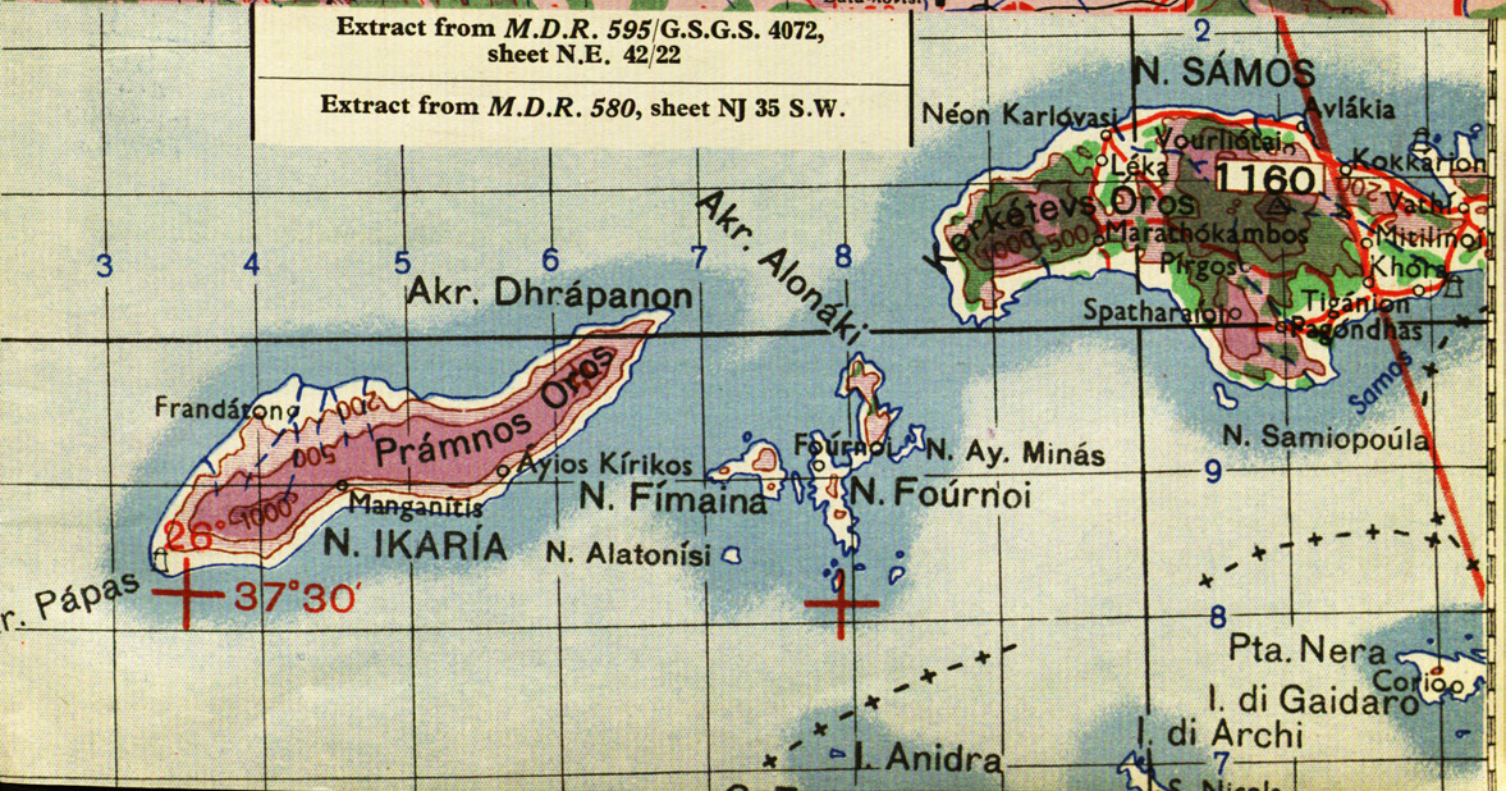
This series (which has not been published as a G.S.G.S. series) has been prepared by a direct reproduction of original drawings for the 1 : 1,000,000 sheets of M.D.R. 1: woods and the grid have been added to these drawings and tracks have been omitted. Sheets carry the 1 : 1,000,000 numbering system, with the addition of N.E., S.W., etc., to distinguish the relevant quarter of the 1 : 1,000,000 sheet; e.g. J. 34 S.E.

For some time this series has been issued in Middle East as an alternative air map to M.D.R. 595/G.S.G.S. 4072 for areas where both exist (since sheets of M.D.R. 580 are generally more up to date). It is now being superseded by M.D.R. 595/G.S.G.S. 4072, except for those sheets which are marked on the index with a star.

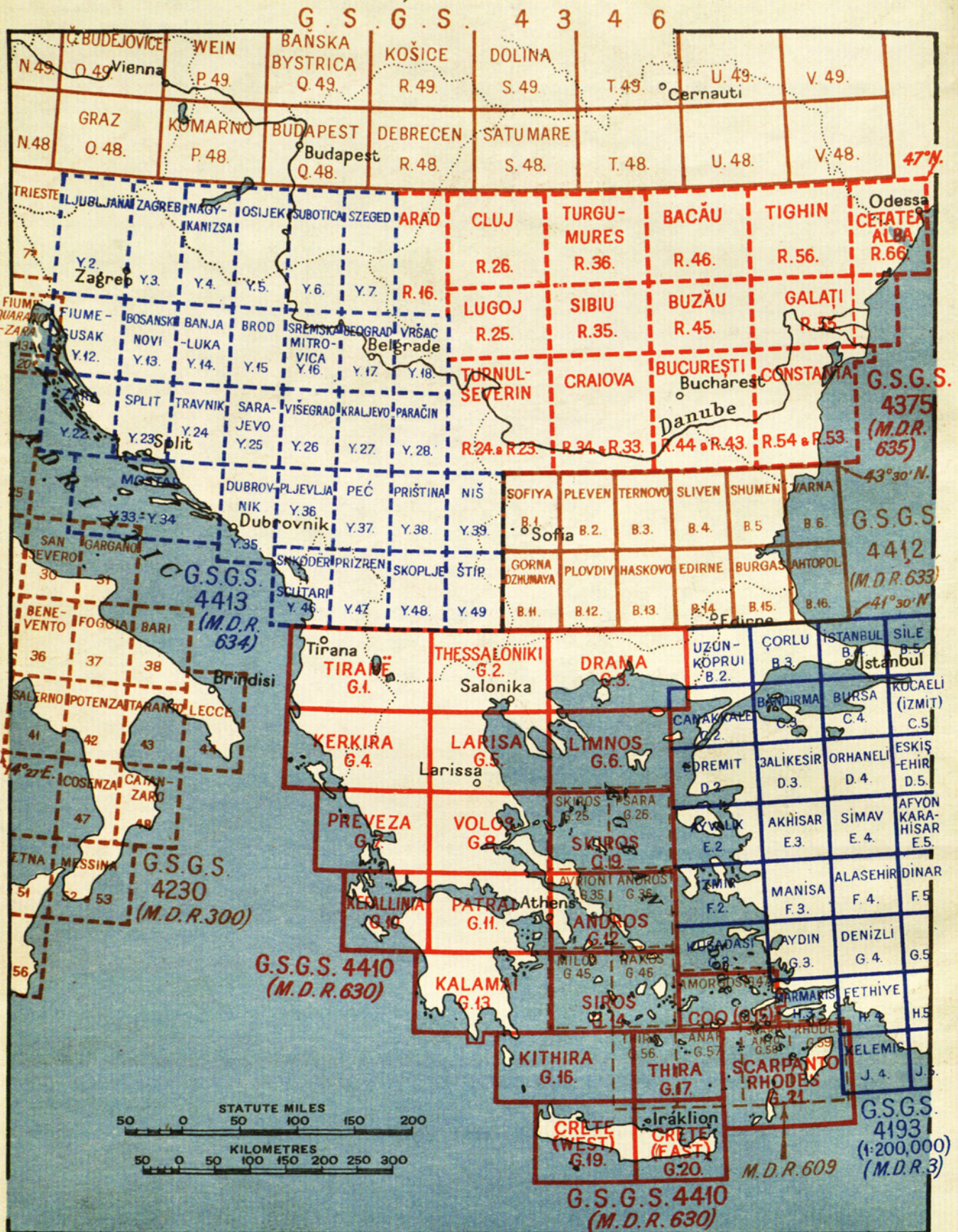


Extract from *M.D.R. 595/G.S.G.S. 4072*,
sheet N.E. 42/22

Extract from *M.D.R. 580*, sheet NJ 35 S.W.



1 : 250,000 SERIES



GENERAL

The index above shows that the Balkans are covered at this scale by five principal series (while Turkey is covered by a series at 1 : 200,000). Appendix I at the back of this book shows the layout of these series in greater detail, and should be used when reading the text. All these series have been designed to fit up exactly with each other, and so to provide continuous map coverage of the whole area at this scale. Moreover, the four main series concerned (Greek, Bulgarian, Romanian, and Yugoslav) have all been (or are being) reproduced in identical style; this style is illustrated by the sample opposite, which is an extract from *M.D.R. 635/G.S.G.S. 4375*, sheet R.23/24. In addition, the sheet lines of each series are closely related to the sheet lines of the larger-scale basic map material of each of the countries concerned; this is of obvious value when using these sheets in conjunction with such larger-scale maps.

These uniform map series extend north to the 47° N. parallel of latitude, where, like the 1 : 100,000 series of the area, they join on to the block of Central European 1 : 250,000 map series. Thus, as the index shows, the north of Hungary and of Romania are covered by sheets of G.S.G.S. 4346. This series is generally similar in detail shown to the main block of 1 : 250,000 Balkan series, but, whereas the latter have all been recompiled and redrawn "ab initio", the Central European series has been based on local (*i.e.* Hungarian and Romanian) 1 : 200,000 maps which have been colour-separated. Thus, certain differences in the style of 1 : 250,000 scale maps are found on either side of the 47° N. parallel.



All 1 : 250,000 series in the area (both north and south of 47° N.) are published as "Army/Air" maps. This means (among other points) that relief is accentuated by purple "layer" tints, that railways are drawn in heavy lines, and that roads are printed in a special red-brown colour, all of which assist map-reading in an aircraft under cramped conditions, and with the amber cockpit lighting available at night (see "Air Maps," page 36). On the other hand, from the military point of view, the maximum detail possible for this scale has been shown on the maps. Thus, these 1 : 250,000 series can be used both in the air and on the ground.

Each sheet of these 1 : 250,000 series carries a "Compilation diagram" and a list of "Authorities"; together these explain the source of all information shown on the sheet.

Except in the case of the Greek 1 : 250,000 series, air photographs (or intelligence resulting from the interpretation of air photographs) have not been available for revision of detail. It is expected that thorough inspection of these series from air photographs (which, at the moment, are not available, except for small areas) would show considerable alterations to roads and railways, as well as to the outlines of woods, which are often difficult to define with any accuracy or meaning in this area, particularly on maps of this scale. In the preparation of all these series, a thorough attempt has been made to sort out complications of name-spellings, with which mapping of the Balkans abounds: the principle which has been followed is that of giving the local official names to all towns, villages, etc., and of giving names of topographical features also in their local forms. In the cases of Greece, Bulgaria, and Southern Yugoslavia (Serbia and Montenegro) this has, of course, involved transliteration from the local maps. Short glossaries of local topographical terms are provided in the margins of all sheets of these series; in addition, rather fuller glossaries have been published for all the languages concerned. (A bibliography of relevant glossaries is provided on page 50.) Gazetteers are being prepared to Bulgaria, to Romania, and to Hungary on the basis of the 1 : 250,000 series concerned (see bibliography of relevant gazetteers on page 50).

All sheets of these series have been gridded with the relevant British grids.

As is made clear in the detailed notes on each of the series, the initial compilation and the preparation of the Bulgarian, Romanian, and Yugoslav series (as well as of the Central European series), have been done in U.K.; reproduction material of each sheet, as it is completed, is sent by air to Middle East, to A.F.H.Q., and to Washington, and responsibility for maintenance of all three of these series (e.g. production of further editions incorporating revision from new information) thereafter lies with Middle East, to whom it has been delegated by A.F.H.Q.

GREECE, 1 : 250,000, M.D.R. 630/G.S.G.S. 4410 (See centre sample opposite; also general index on page 6 and detailed index at Appendix I.)

Sheets of this new series have been (and are being) compiled from Greek 1 : 50,000 material for Crete, from various large-scale maps for the Dodecanese and the Aegean Islands, from Greek 1 : 100,000 sheets for the whole mainland of Greece (the principal area concerned), from Italian large-scale maps for the southern half of Albania, and from Yugoslav 1 : 100,000 sheets for that small part of Yugoslavia which lies to the south of 41° 30' N. and is included within this series. The standard sheet covers the area of eight Greek 1 : 100,000 sheets (two east-to-west rows of 4 sheets each); sheet-lines are therefore complementary with those of the 1 : 100,000 series.

With the exception of sheets G.19 and G.20, the two sheets covering Crete (which were compiled in 1943 by the War Office), the whole series is being prepared in Middle East. (Sheets G.19 and G.20, as well, are now being revised in M.E., to incorporate new information resulting from the revision of the Crete 1 : 50,000 series from air photographs; see page 23.) G.14, G.15, G.16, G.17, and G.18 are the only sheets so far published in finalised form.

Owing to the time involved in the production of the whole of this series in redrawn style, the preparation of provisional editions of certain sheets has been necessary. Sheets G.9, G.12, and G.14 to G.18 were prepared in a hurried provisional form, and published (in both layered and unlayered styles) as sheets *M.D.R. 609* "The Aegean, 1 : 250,000" (see top sample opposite); these *M.D.R. 609* sheets carry different sheet numbers from those of the main series (as is shown on the index on page 6). The finalised editions of *M.D.R. 630*, sheets G.12 and G.14 to G.18 that have now been published supersede the *M.D.R. 609* sheets in this area.

The rest of the mainland of Greece was previously covered by *M.D.R. 182/G.S.G.S. 4088*, a 1 : 250,000 series published in 1940-41 by the War Office. This (G.S.G.S. 4088) series was used to some extent during the Greek campaign of 1941, but was not satisfactory, principally because spellings were based on an unsatisfactory system of transliteration (later discarded), because, after the series was published, more recent Greek 1 : 100,000 sheets were acquired, which involved alteration to detail, and because the classification of roads on sheets was found to be rather misleading. The recent urgent demand for 1 : 250,000 maps of Greece has had to be met by the production of this series, furnished-up and converted to the future sheet-lines of the new projected series. This provisional step has now been taken, and sheets include considerable revision, such as the correction of all Greek place-names to their (now) accepted forms, the complete revision and redrawing of the roads plate, the correction of railways, and the addition of purple (Army/Air style) altitude layer tints. The resulting sheets (sheets G.1 to G.8, G.10, G.11, and G.13) are similar to the final editions in style. Certain displacements in position will be found along the parallel of latitude 41° 30' N. between the north edges of sheets G.1 to G.3 of these provisional editions, and the south edges of the Yugoslav and Bulgarian 1 : 250,000 series to the north (e.g. detail on sheets on either side of this line does not always join up exactly).

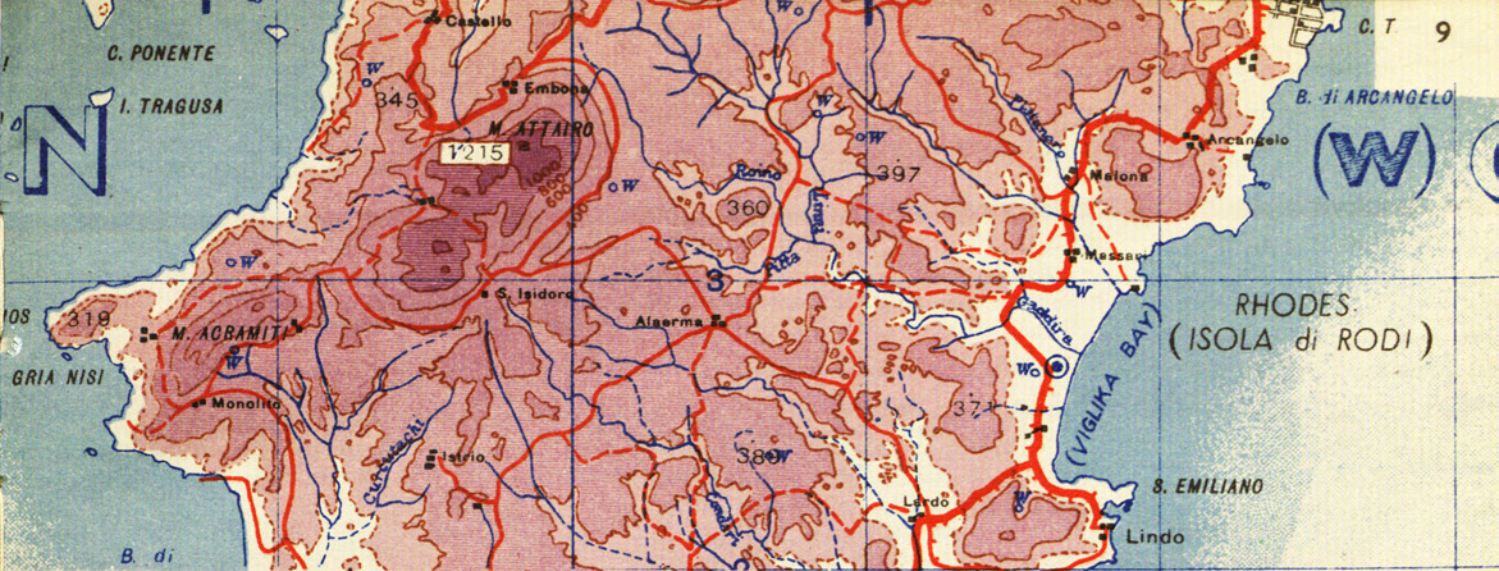
The production of the finalised versions of the main block of sheets is now in hand, and involves not only the complete redrawing of all sheets, but their complete recompilation from basic larger-scale material (shown by a "Reliability diagram" on each sheet), principally from the Greek 1 : 100,000 sheets, which are themselves being produced as *M.D.R. 610* with revision from available air photographs (see page 15).

Reproduction material of sheets is distributed as sheets are published. Publication of sheets of this series (as G.S.G.S. 4410), for planning and for general interest purposes, is now in hand in the U.K.

ALBANIA, 1 : 200,000, M.D.R. 636/G.S.G.S. 4418 (See bottom sample opposite)

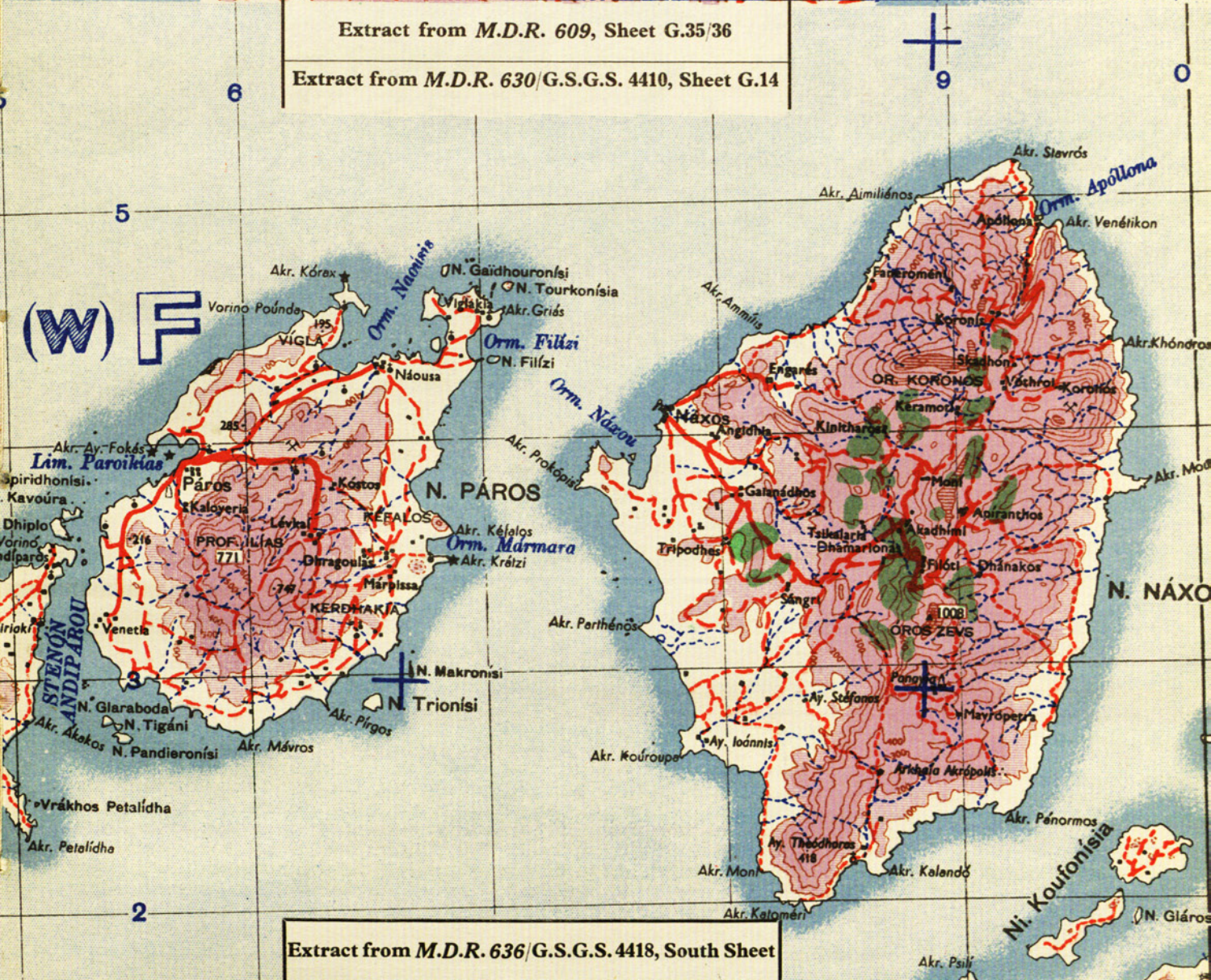
This two-sheet map was published in 1943 by the War Office to meet a demand for a map of this scale covering the whole of Albania. It was originally compiled (in 1927), mostly from Austrian 1 : 75,000 work by an Austrian (Dr. Louis), who had carried out certain original survey work in Albania. The original map had the merit of being the only one of Albania on which any attempt had been made to spell place-names in their Albanian form (as opposed to Austrian, Greek, Yugoslav, or Italian forms); even so it was inconsistent. In producing the two sheets, many of these inconsistencies in name spelling were removed, the sheets were gridded, and communications were revised from the information then available. It was never intended as more than a provisional production, and as such it was of considerable value: it remains the only map covering Albania in two sheets at this or at a similar scale. The sheets still carry inconsistencies in name spelling, and recent information (e.g. air photographs) show that various inaccuracies exist, particularly as regards roads. The map was originally produced in the U.K., and has been reprinted by Middle East; no further editions of it are contemplated. (A German edition of the map carries road revision up to 1939.)

The southern half of Albania is, at the moment, covered at 1 : 250,000 by provisional edition sheets of *M.D.R. 630/G.S.G.S. 4410*, and the northern half by first edition sheets of *M.D.R. 634/G.S.G.S. 4413* (see index on page 6 and at Appendix I). Both these series carry certain name and communication corrections in Albania that are not incorporated on G.S.G.S. 4418; neither of them, however, carries the finally accepted versions of Albanian name spellings, which have just been produced by Middle East, nor the latest revision (e.g. resulting from Italian 1 : 50,000 material, and from air photographs). These new names and this latest revision will appear on first edition sheets of the Greek and on second edition sheets of the Yugoslav 1 : 250,000 series which are now in hand in Middle East.



Extract from *M.D.R. 609*, Sheet G.35/36

Extract from *M.D.R. 630*/G.S.G.S. 4410, Sheet G.14



Extract from *M.D.R. 636*/G.S.G.S. 4418, South Sheet



TURKEY, 1 : 200,000, M.D.R. 3/G.S.G.S. 4193 (See sample below : also general index on page 6, and detailed index at Appendix I.)

Only the sheets of this series falling in European Turkey are discussed here.

This series has been reproduced (originally by Middle East) direct from the Turkish 1 : 200,000 originals. No revision has been incorporated, and the only alteration to sheets is the addition of the British grid. The Turkish originals in this area are mostly dated 1937. It is believed that some revision to communications is necessary, though evidence is rather scanty.

The Turkish sheets are, for the most part, said to be based on ground survey ; it is unusual to find ground survey being incorporated directly on a map at so small a scale as this. Three patches of old 1 : 25,000 material exist in Turkey (see page 28) : one covers an area stretching west from the Istanbul Peninsula ; the other covers the Dardanelles area ; and the third covers the Edirne (Adrianople) area ; this larger-scale material has been incorporated into the Turkish 1 : 200,000 originals.

Sheets carry the modern romanised Turkish name-forms which, in this area, have been adopted by the Turks ; in this respect, the map should be fairly reliable.

Sheets of this series have been published for the whole of European Turkey, and some sheets extend into Bulgaria and Greece : outside Turkey the information on sheets cannot be considered as reliable. In view of the production of the Greek and Bulgarian 1 : 250,000 series, the sheets of the Turkish series are now being cut so as to join up with these two adjoining series, as shown on the index.

It will be seen that this is the only main series in this scale group which is not produced in Army/Air style.

The whole of the area of European Turkey is covered by published sheets, but the cutting back of these sheets to join with the two adjoining 1 : 250,000 series has not as yet been completed. Sheets are prepared and published initially in Middle East, and reproduced also in the U.K. from reproduction material.



Extract from M.D.R. 3/G.S.G.S. 4193, Sheet B.4

BULGARIA, 1 : 250,000, M.D.R. 633/G.S.G.S. 4412 (See sample opposite : also general index on page 6 and detailed index at Appendix I.)

This series has been compiled in U.K., principally from local 1 : 40,000 and 1 : 126,000 map series. Both these series are old (about 1912) ; in addition, the 1 : 126,000 series is not considered to be very accurate, but it is, however, the only available material for the northern half of Bulgaria. This material was supplemented for small areas by isolated patches of more reliable maps, such as the block of six modern 1 : 50,000 sheets covering the south of the country ; general revision from smaller-scale communications maps, etc. has, of course, also been included, and information from Middle East Intelligence reports has been incorporated as available. (The northern six sheets of this series were published some months before the southern six sheets ; thus, the latter include information from Intelligence reports which was not available for the northern row of sheets.) On the whole, it is considered that these 1 : 250,000 sheets should be sound, accurate, and useful ; the only other maps of comparable scale previously available for this area were sheets of the old Austrian General Staff 1 : 200,000 series, and, while in many areas these give more detail than sheets of this new series, in other areas they are extremely sketchy and of doubtful reliability. The plotting of the Black Sea coast-line on eastern sheets of this series was typical of the problems involved in this compilation : considerable discrepancies had to be sorted out between Russian and British charts, and between the Bulgarian maps, and further differences were introduced by Turkish material where it extended into this area. It should be noted that reliable information for plotting woods was not available for sheets B.15 and B.16, from which, therefore, woods have been omitted ; (this does not imply any guarantee of the accuracy of the woods outlines shown on other sheets). Each sheet carries a diagram showing basic material used, and also an "Authorities" note detailing all material consulted : in these "Authorities" notes the dates given for the Bulgarian 1 : 40,000 and 1 : 126,000 sheets are printing dates and not revision dates.

Spelling of names has been based on the transliteration of names on the 1 : 40,000 and 1 : 126,000 series. In the south row of sheets certain modifications to this direct transliteration have been made, on the authority of an Official List of Name Changes, published in Sofia in 1935, which purports to give the latest local official name forms ; this gazetteer was not available when the northern six sheets (B1—B6) were being compiled, but no alteration to names in these sheets is intended. Name forms in Bulgaria are anyhow rather problematic, since nearly every place has at least a Turkish as well as a Bulgarian form of name, and also since, as in so many Balkan countries, name forms are liable to alteration on purely political accounts.

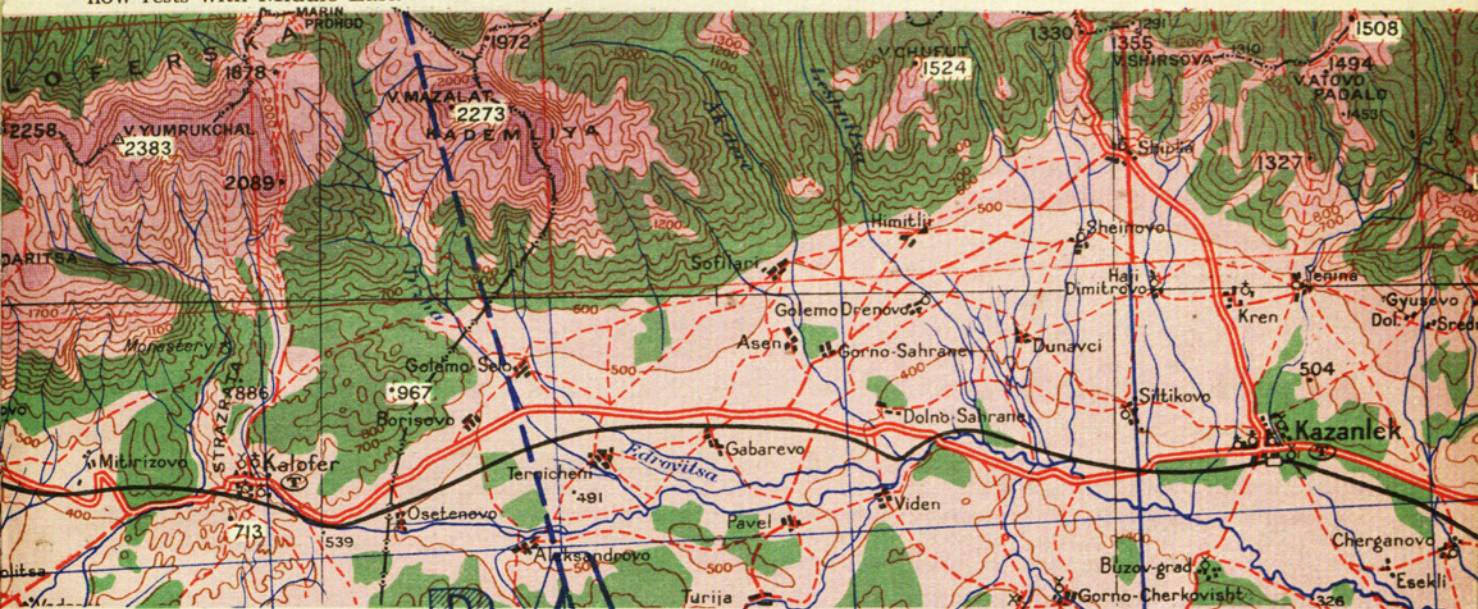
Roads have been classified on the width/surface basis laid down for this country by M.I. 10 (c), the War Office section concerned. This classification is not based on reconnaissance, and does not attempt to be more than a general guide to the grading of Bulgarian roads.

In the Turkish area to the south-east, Turkish 1 : 200,000 sheets have been used as basic material, so that the junction between these sheets and the Turkish 1 : 200,000 series (M.D.R. 3/G.S.G.S. 4193) to the south presents no complications. In addition, the block of Turkish 1 : 25,000 sheets in the Edirne area was also consulted during compilation : certain embellishments of detail were also obtained from sheets of the old 1 : 126,000 series, which provide greater topographical detail than the Turkish maps, and which cover the whole of European Turkey.

The sheet-line system of this new 1 : 250,000 series corresponds almost exactly with that of the 1 : 40,000 series, and each 1 : 250,000 sheet covers roughly the area of twenty-four 1 : 40,000 sheets. The 1 : 40,000 series and the

1 : 126,000 series are on complementary sheet-lines, so that there is, in addition, a relationship between the sheet-lines of the 1 : 126,000 series and those of this series. It will be seen that each sheet of *M.D.R. 633/G.S.G.S. 4412* in the south row carries a number ten greater than the sheet immediately north of it, e.g. Sheet B.3 lies immediately north of B.13.

All sheets of this series have been published in the U.K. ; reproduction material of all has been circulated to A.F.H.Q. and to Middle East, and stocks of sheets are also being despatched. The future maintenance of this series now rests with Middle East.



Extract from *M.D.R. 633/G.S.G.S. 4412*, Sheet B.3

ROMANIA, 1 : 250,000, *M.D.R. 635/G.S.G.S. 4375* (See sample below : also general index on page 6, and detailed index at Appendix I.)

The index shows that this series does not cover the whole of Romania ; the area of the country lying north of 47° N. is covered by sheets of G.S.G.S. 4346, Central Europe, 1 : 250,000, which are described on page 13.

The basic material for the compilation of this series has been the Romanian 1 : 100,000 sheets, which are mostly dated about 1939. The southern row of sheets covers the northern part of Bulgaria, and Bulgarian material as described above has been used in that area. In addition, the western sheets cover areas of Yugoslavia, and have been prepared from Yugoslav 1 : 100,000 material. Certain small-scale maps have provided some general revision or verification of doubtful points, but on the southern two rows of the series, little use has been made of Intelligence reports, which did not become available until after these sheets had been compiled ; it is probable that considerable revision in respect of communications may be necessary. Roads on this series have been classified on national width/surface systems as laid down by M.I. 10 (c), the War Office section concerned.

The unreliability of the Romanian 1 : 100,000 sheets (which were used as basic material) is illustrated by an attempt which was made to plot a geographical graticule on to all 1 : 100,000 sheets : the plotting of these lines produced an alarming series of twists and turns between and across sheets. Certain of these geographical displacements will, of course, have been generalized away on the 1 : 250,000 scale maps ; and anyhow, since there is no other basic large-scale material for Romania, the acceptance of the Romanian 1 : 100,000 series is unavoidable.

As in Bulgaria, the question of place-names in Romania is complicated by political changes, not only in actual ownership of the country, but also by the machinations of unstable Romanian politics. In the case of sheets of this series, the names appearing in the Romanian 1 : 100,000 originals have everywhere been accepted.

The sheet lines of this series are based on, and are complementary to, those of the Romanian 1 : 100,000 series ; they also agree with those of a Romanian 1 : 200,000 series, for which an index is available, but of which only one sheet has so far been acquired (dated 1934). Sheet numbering is connected with that of this Romanian 1 : 200,000 series, and also bears a rather indirect relationship to the sheet numbering of the Romanian 1 : 100,000 series.

The southern two rows of sheets of this series have been published in this country ; preparation of the northern row of sheets is in hand, and these six outstanding sheets should be published in this country during the next month or so (and reproduction material will then be available for the publication of all the sheets in Middle East, etc.).

Extract from *M.D.R. 635/G.S.G.S. 4375*, Sheet 43/44



YUGOSLAVIA, 1 : 250,000, M.D.R. 634/G.S.G.S. 4413 (See sample opposite : also general index on page 6 and detailed index at Appendix I.)

This series has been compiled from Yugoslav 1 : 100,000 sheets for the whole area of Yugoslavia concerned. Most of these Yugoslav 1 : 100,000 originals are dated post 1930, and, apart from being out of date in respect of such features as woods shapes and communications, they are accurate (at any rate in comparison with Bulgarian or Romanian material). Thus, in view of the accuracy of the basic material, and in view of the fact that it covers the whole country, the complications that were involved in the preparation of 1 : 250,000 sheets for Bulgaria and Romania have not recurred for Yugoslavia. The southern sheets of the series cover the northern half of Albania ; the material used here was principally the Yugoslav 1 : 100,000 sheets (which had been prepared from old Austrian 1 : 75,000 sheets) ; communications in Albania were corrected from Intelligence reports ; in addition, many of the name inconsistencies on the "Louis" 1 : 200,000 map of Albania have been removed, though first edition sheets are still believed to carry certain names which will probably not be accepted by the final "Albanianization" of names, which is at the moment being worked-out in Middle East, and which will be incorporated by them on to second editions of these sheets. The southern two rows of sheets (Y. 33/34 to Y. 49) were prepared considerably before the rest of the series ; they have, therefore, not incorporated the latest Intelligence information which has been available for more northerly sheets. These two rows of sheets cover most of the area of Serbia in which the Yugoslav 1 : 100,000 originals provide cyrillic, as opposed to roman lettering for all names. The transliteration of cyrillic names on this series presents certain differences from the transliteration of these names now adopted by Middle East ; the latter is being incorporated on second editions both of this series and of the reproduction of the Yugoslav 1 : 100,000 series (*M.D.R. 621/G.S.G.S. 4396*) ; most of these differences occur in the names of small villages or of mountain features. Certain other mis-spellings of names are believed to have occurred on sheets ; these are primarily due to the difficulty of reading correctly the various styles of lettering on the Yugoslav 1 : 100,000 originals.

In the north, the series covers the southern half of Hungary (south of 47° N.) ; in this area sheets have been compiled from Hungarian 1 : 200,000 and 1 : 75,000 originals (mostly dated about 1930). Hungarian official orthography has recently altered the place names which were spelled with the letters "CZ" to the letter "C" only, thus "Czegléd" will become "Cegléd" ; this alteration was not discovered in time to carry it out on the sheets of this series, which have therefore been uniformly produced with the "CZ" form.

Roads on this series have been classified on a width/surface system, worked out separately for each country. In the case of Hungary, the width values stated in the references are now thought to be a little optimistic. These systems of road classification are based on generalized information about Yugoslav, etc. road-conditions, together with certain particular factual evidence ; while they certainly contain many errors of detail, they are, on the other hand, of general value for the grading of roads. Middle East Intelligence reports have been used for checking railway information on this series, and railway time-tables have frequently supplied the names of stations and halts not otherwise available. In this connection, the existence of a large number of narrow gauge mineral lines throughout Yugoslavia is noteworthy : many of these lines may have served only temporary needs, and may not be in operation at the moment ; most of them are, however, shown on the Yugoslav 1 : 100,000 originals, and since some of them, at least, are known to be regular service lines, it is often difficult to know whether a certain line is, or is not, worth showing on 1 : 250,000 maps.

Both the grid and the graticule lines on this series are drawn in black. There is, therefore, liable to be some little confusion where grid and graticule lines run parallel ; users should be careful to see that they are giving grid references from complete grid squares.

Differences between the Bulgarian and Romanian 1 : 250,000 series on the one hand, and this Yugoslav series on the other, are found in the treatment of groups of outlying buildings. On many of the Yugoslav sheets the face of the map is dotted with large numbers of small isolated buildings, whereas on Bulgarian and Romanian sheets, towns and villages appear larger and there is little sign of settlement in the intervening countryside. This difference is derived from the different styles of original material used, and may or may not represent an actual difference in the distribution of settlement in the areas concerned.

The sheets of this series are on complementary sheet lines to sheets of the Yugoslav 1 : 100,000 series, and each normal sheet, which is 1° by 1° in size, covers the same area as a block of four 1 : 100,000 sheets. Yugoslav indices imply the existence of a local 1 : 200,000 series on exactly these sheet lines, but, in fact, only one such sheet is available in this country. The system of sheet numbering, like that of the Bulgarian series, allots a group of ten figures to each west-east row of sheets, and thus sheet Y-27 lies immediately to the north of sheet Y-37 ; this simplified system of numbering is of value in the quick identification of adjoining sheets.

Sheets carry round their borders glossaries of topographical terms of the language involved ; they also carry a full "Authorities" note stating each item of material consulted, and a diagram showing the layout of the basic material used.

The extreme south of Yugoslavia (south of 41° 30' N.) is covered by *M.D.R. 630/G.S.G.S. 4410*, the Greek 1 : 250,000 series described above.

All sheets of this series have now been published in this country ; reproduction material has been sent to Middle East and to A.F.H.Q., and will be followed by stocks of sheets. The responsibility for the maintenance of this series now lies with Middle East, who will probably produce new editions of any sheets that are either seriously in error or are urgently required for operations.

HUNGARY

It has been noted above that the southern half of Hungary is covered by *M.D.R. 634/G.S.G.S. 4413* ; the northern half of the country is covered by *G.S.G.S. 4346*, Central Europe 1 : 250,000 ; these two series join along the 47° N. parallel. While the sheets (of the Yugoslav series) covering southern Hungary are now available, those of the Central European series have not yet reached production stage, though they are well in hand and should be published during the course of the next month or so.

A gazetteer of Hungary, based on the two 1 : 250,000 map series, is being prepared by the War Office, and should be available shortly.



Extract from M.D.R. 634/G.S.G.S. 4413, Sheet Y.35

CENTRAL EUROPE, 1 : 250,000, G.S.G.S. 4346 (See sample below : also general index on page 6, and detailed index at Appendix I.)

This series includes the northern half of Hungary and the northern third of Romania. It is being produced by the colour-separation of Hungarian and Romanian 1 : 200,000 originals, and in consequence is less clear, though possibly more detailed, than the re-drawn series to the south. In Hungary, the 1 : 200,000 originals are dated about 1930, and thus the series is basically modern. The originals used in Romania are relics of the old Austrian 1 : 200,000 series, but revised by the Romanians since 1930.

The differences in style of maps, accounted for by different methods used on either side of this 47° N. parallel, have been modified by the addition of purple layer tints to sheets of this series. Roads have been classified both in Hungary and in Romania on the same width/surface systems which have been employed on the redrawn series south of 47° N. Railways also have been brought up to date from the same material as was used further south. The method of reproduction has not allowed of modification to name spellings, and in the Romanian sheets the originals (which have been colour-separated) have not always consistently supplied the most recent name-forms. Both in Hungary and in Romania full use should be made of the available glossaries as a guide to the local topographical terms appearing on the sheets.

Production of all these G.S.G.S. 4346 sheets is in hand in U.K., though, as yet, none of the sheets covering this area is available.

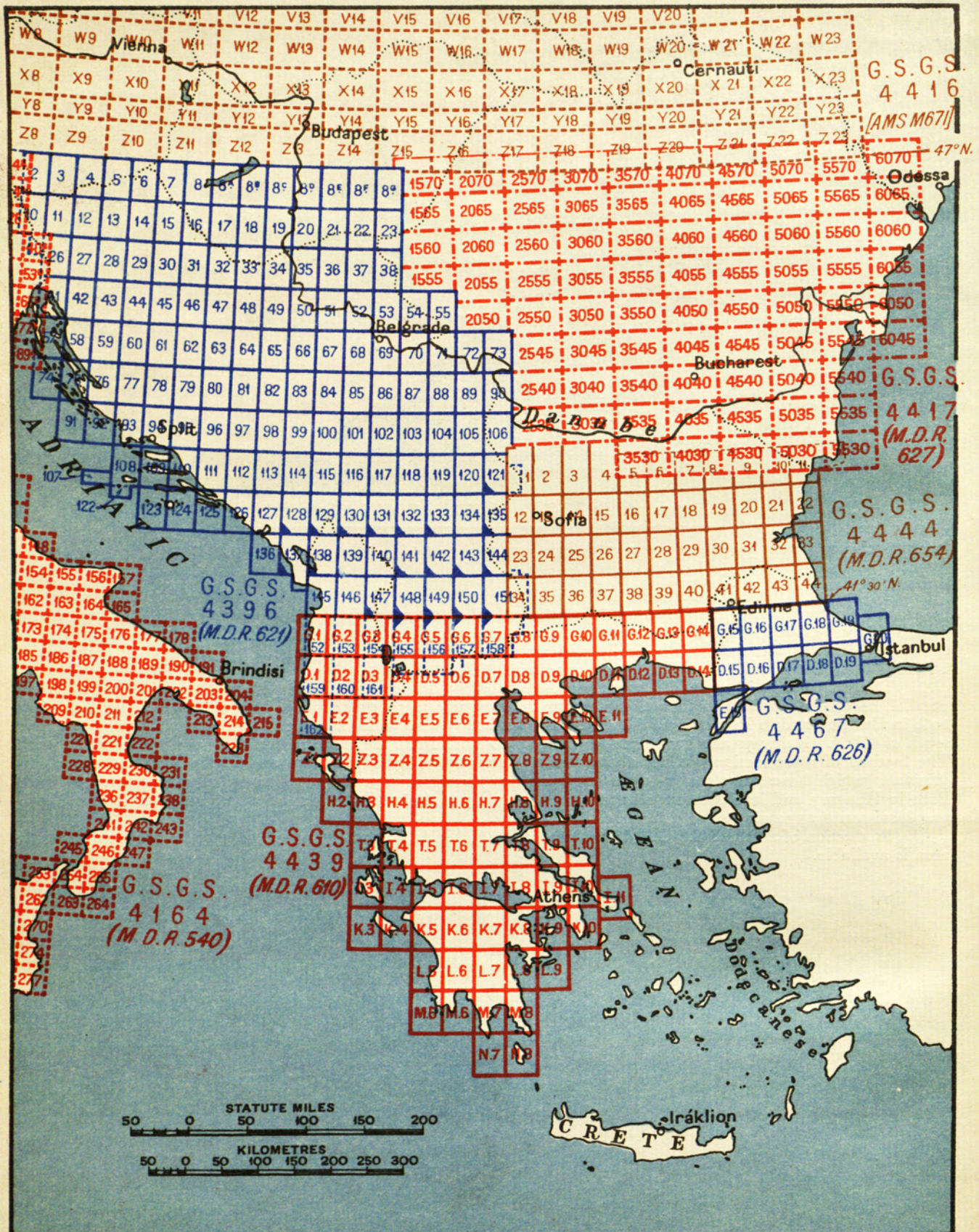


Extract from G.S.G.S. 4346, Sheet P.48

ITALY, 1 : 250,000, M.D.R. 300/G.S.G.S. 4230

This series has been fully described in "Notes on G.S.G.S. Maps of Italy, 1st May, 1943". Sheets have been reproduced from Italian 1 : 250,000 originals, and purple layer tints have been added, so that in style they are similar Army/Air type maps to all the other series described above. Sheet 7B of this series covers the extreme north-western tip of Yugoslavia; on this sheet the system of road classification used for the rest of Yugoslavia has been adopted. On the other hand, detail and even classification of roads may not join up exactly across the common edge between sheet 7B and sheet Y.2 of the Yugoslav series, since the latter was redrawn with later Intelligence and communication information. It should also be noted that woods have been omitted from Yugoslav areas of these Italian 1 : 250,000 sheets, on account of the discrepancies between woods shapes on Italian originals (which were reproduced direct) and those on other material.

1 : 100,000 SERIES

**GENERAL**

The index above shows that the entire mainland area of the Balkans is covered by four principal 1 : 100,000 series, the Greek, the Yugoslav, the Bulgarian, and the Romanian series. This index provides only a general picture of the layout of sheets, and reference should be made to the index at Appendix II for further details of the positions of particular sheets and of the areas which they cover.

The policy in regard to the production of 1 : 100,000 series has been to reproduce (by colour-separation methods) direct copies of local original map series in order to supply provisional map series covering the area at this scale. As soon as this immediate requirement is met, the intention then is to revise these direct reproductions of local 1 : 100,000 series as required. No original Bulgarian series at this scale exists, and thus the Bulgarian series is, of necessity, being compiled from such other material as has been available. To the north of 47° N., Hungary and Romania are covered by the Central European 1 : 100,000 series which is being compiled by the Army Map Service, Washington.

Crete and the Islands of the Aegean are covered by large-scale maps, mostly not at 1 : 100,000 ; these series are described, together with various other large-scale series, in another section of this book (page 22).

Since these 1 : 100,000 series are direct reproductions from local originals (except in the case of Bulgaria) there is only the barest similarity in style between them ; nor have any of them been prepared in the Army/Air style of the 1 : 250,000 series (with purple layers, etc.), except for the Central European 1 : 100,000 series, which is published both with and without purple layers.

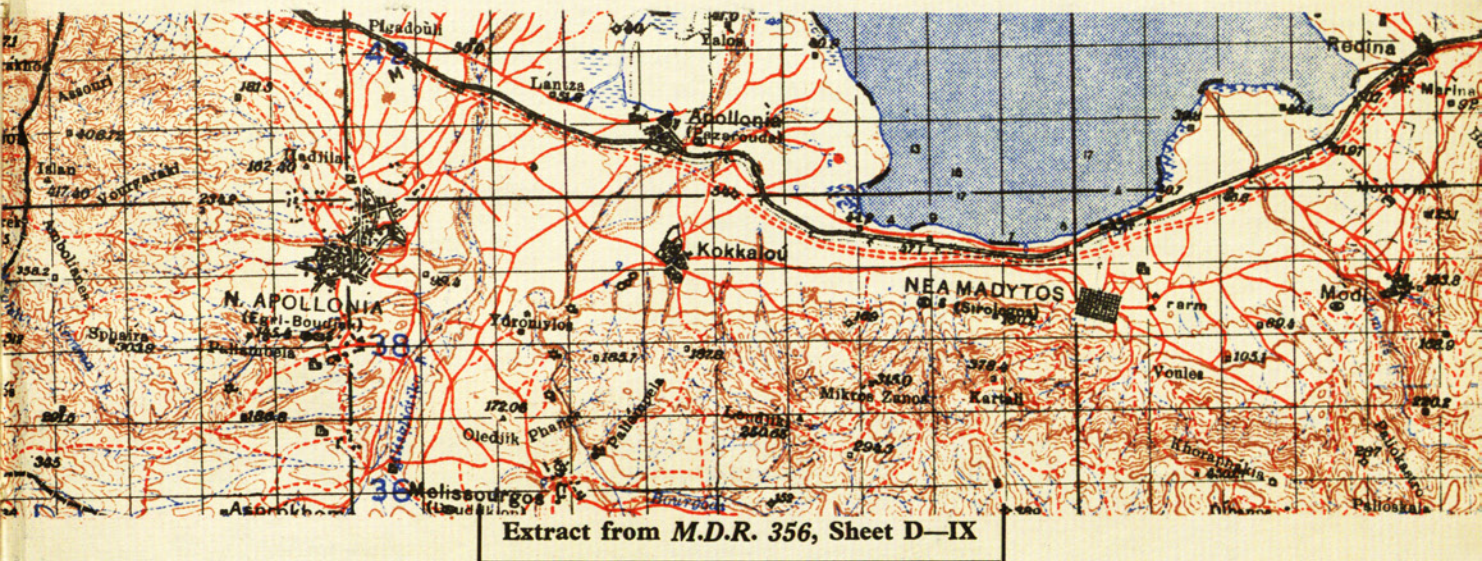
Across the lines of junction between the various series (*i.e.* along the 47° N. parallel and along the 41° 30' N. parallel), differences in positioning, and hence in continuity of detail, will be found; thus the series do not fit up with each other, as the 1 : 250,000 series do.

GREECE, 1 : 100,000, M.D.R. 356 and 610/G.S.G.S. 4439 (See samples below : also general index opposite and detailed index at Appendix II.)

The reproduction of 1 : 100,000 maps of Greece has been carried out in two stages. The first stage was the direct reproduction of the Greek originals as they stood, with the transliteration of all place-names; the resulting series was produced as *M.D.R. 356*. The revision and improvement (involving complete redrawing) of this 1 : 100,000 series which is still in hand is resulting in the production of the new Greek 1 : 100,000 series, *M.D.R. 610*. Both of these two series are on exactly the same sheet lines, and sheets of both series carry the same sheet numbers. Both these series completely supersede G.S.G.S. 4087, a 1 : 100,000 series of Northern Greece prepared by the War Office in 1940-41 before the acquisition of the most recent Greek 1 : 100,000 original maps.

M.D.R. 356

It has already been emphasized that this series was produced, in the quickest possible way, from the Greek original maps (which ranged in dates between 1932 and 1941) : the only two improvements which were essential, and which were effected, were the transliteration of all Greek names, and the addition of the British grid. As the sample below shows, the maps present an extremely crude appearance, and are difficult to read; in addition, it is too often uncertain to what feature the names refer. The whole of the series, as shown on the index, has been published in this style. All sheets have been printed in Middle East, and stocks of them distributed to A.F.H.Q. and to this country. Reproduction material for all sheets is held in this country though no sheets of this *M.D.R. 356* series have so far been reproduced here.



Sheets are on graticule sheet lines, each sheet covering half a degree of latitude by half a degree of longitude (with longitude based on the meridian of Athens, which is 23° 42' 58.5" East of Greenwich); they are on complementary sheet lines to the 1 : 250,000 Greek series. Sheets are numbered on a letter and number system, letters applying to west-east rows and numbers of sheets applying to north-south rows.

M.D.R. 610

Sheets of this series are equivalent to new editions of *M.D.R. 356*. All sheets have been completely redrawn, and the sample below shows the greater legibility achieved. The sheets incorporate revision from such air cover as has been available. The air cover (which is mostly available in coastal districts) frequently reveals considerable discrepancies between features on the ground and the representation of them on the Greek 1 : 100,000 originals; for example, many slight but important variations in coast-line have been found. This series incorporates a consistent system of transliteration from the Greek originals, and corrects the large number of name inconsistencies which appear on sheets of *M.D.R. 356* : in addition, the siting of names has generally been improved, and there is now little ambiguity as to the feature to which a name refers. Some revision of roads and railways has been included on the evidence of Intelligence reports.

In the southern half of Albania (South of 41° 30' N.) which will eventually be covered by sheets of this series, Italian 1 : 50,000 sheets which have recently been acquired form the basic material for compilation. In

Extract from *M.D.R. 610/G.S.G.S. 4439*, Sheet I-VII



addition, the entire question of Albanian name spellings has been thoroughly investigated in Middle East, and a consistent system is now available ; this will be used on *M.D.R. 610* sheets in this area.

In the north, the series covers small areas of Southern Yugoslavia and Southern Bulgaria (South of 41° 30' N.). In Yugoslavia, sheets will be based on Yugoslav 1 : 100,000 originals. In Bulgaria parts of sheets G.11, G.12, and G.13 will be based on the new Bulgarian 1 : 50,000 material, but for other areas of Bulgaria the skeleton information appearing on the Greek 1 : 100,000 originals is taken from the only available material, and is being accepted for the new sheets. The series is extended east over European Turkey as *M.D.R. 626/G.S.G.S. 4467*, which is described below.

Nearly all sheets south of 40° 30' N. (south of, and including the "E" row) have been published, and publication of sheets in the two northerly rows is now in hand. The whole series should be completed in the next month or so. Reproduction of sheets of this series is being carried out in this country from reproduction material supplied by the Middle East. Still further editions of certain sheets may be prepared from new air cover.

GREECE, 1 : 50,000 and 1 : 25,000

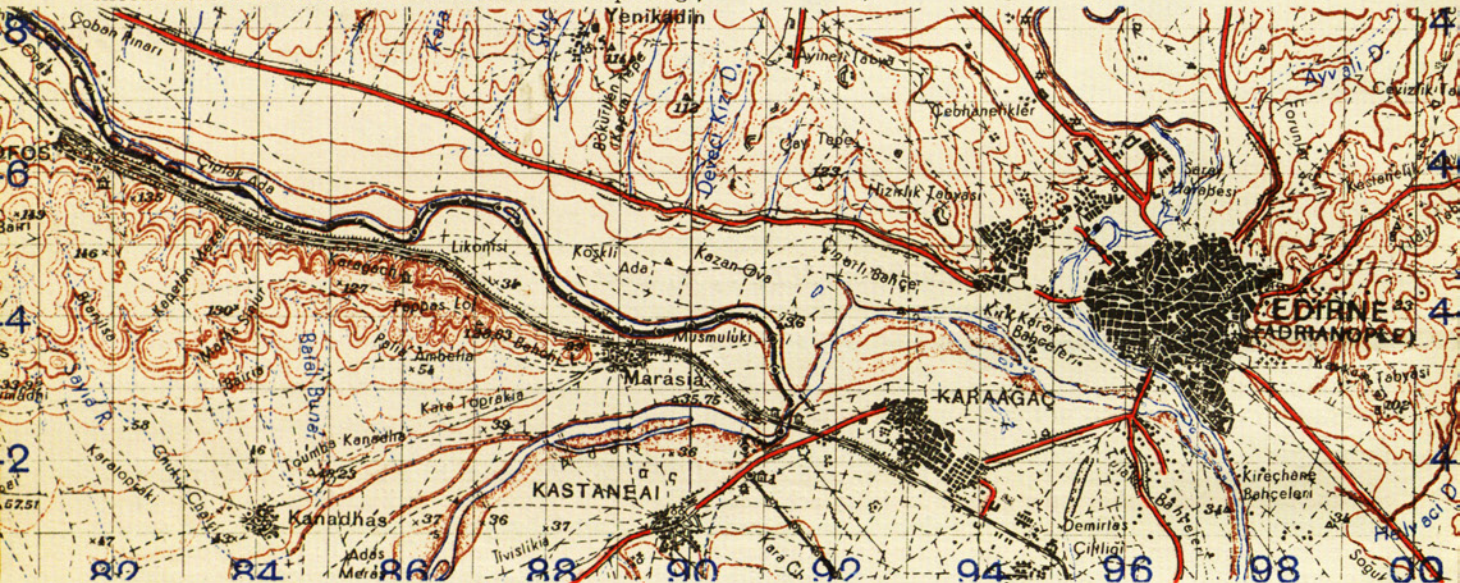
A number of Greek 1 : 50,000 originals have been acquired. Three of these sheets, along the south Albanian-Greek frontier, have been reproduced in a style similar to that of *M.D.R. 356* (sheets E-VI, N.E. and S.E., and D-VI, N.E.). Sheets of this series take Greek 1 : 100,000 sheet numbers and add N.E., S.E., etc., to indicate the quarter of the 1 : 100,000 sheet which they cover. No further reproduction of any of these sheets is, at the moment, contemplated. Further details of these originals are given in Part II under the heading of Greek Maps.

Certain isolated areas of northern Greece (between Salonika and Edessa) are covered by 1 : 25,000 series produced by Middle East in 1941 in preparation for the Greek campaign. The block of sixteen sheets published as *D.R. 381* was based on enlargements of Greek 1 : 50,000 sheets, with revision from air photographs. The other series *D.R. 373*, consists of fourteen "strip maps," prepared from air photographs in areas of specific military interest.

EUROPEAN TURKEY, 1 : 100,000, *M.D.R. 626/G.S.G.S. 4467* (See sample below : also general index on page 14 and detailed index at Appendix II.)

Sheets of this series are being produced as extensions of the Greek 1 : 100,000 series, and the Greek 1 : 100,000 sheet-numbering system has also been extended to apply to these sheets. As the index shows, this series joins up along 41° 30' N. with the Bulgarian 1 : 100,000 series (*M.D.R. 654/G.S.G.S. 4444*), as well as with the Greek 1 : 100,000 sheets to the west.

The basic material used for the preparation of this series has been the old Russian-Bulgarian 1 : 126,000 map. The values of various trig. points in European Turkey are known, and have been plotted ; the Bulgarian 1 : 126,000 sheets have been tied on these values with surprisingly little difficulty, considering the apparent inadequacy (if not



Extract from *M.D.R. 626/G.S.G.S. 4467*

inaccuracy) of this series. This basic material has been supplemented by one block of Turkish 1 : 25,000 sheets covering the Dardanelles area, and by another covering the area west of Istanbul. Names on the series have been corrected from the Turkish 1 : 200,000 originals, and main communications have been revised from Intelligence reports. Except for sheet E.15, which has been reproduced from a Greek original, no sheets of this series have, as yet, been published, but the preparation of most sheets is nearing completion.

BULGARIA, 1 : 100,000, *M.D.R. 654/G.S.G.S. 4444* (See sample opposite : also general index on page 14 and detailed index at Appendix II.)

The only sheets of this series at the moment in preparation are sheets 33 to 44 ; these sheets are being compiled in the U.K. ; the compilation of the remaining sheets is about to be undertaken. No sheets are so far published.

The basic material for the series has, "faute de mieux", to be the Bulgarian 1 : 40,000 and 1 : 126,000 series. For a small area in the south of Bulgaria, the new 1 : 50,000 sheets are available ; in other small areas a few isolated pieces of valuable material have been incorporated in the compilation, such as the surveys by Dr. Louis at 1 : 100,000 and 1 : 25,000 in the Pirin Planina. Full details of the material used for compilation is provided in the "Authorities" notes and from the compilation diagrams on sheets. The sheet lines of this series are based on those of the 1 : 50,000 series (the whole of southern Bulgaria is known to be covered by this 1 : 50,000 series, though few originals have so far been acquired). For certain areas, e.g., in the south-east of the country, even the 1 : 126,000 series does not exist, and the compilation is therefore of the sketchiest nature, and based principally on small-scale diagrams, which are probably more the result of travellers' tales than of any form of survey.

In view of the age of the 1 : 40,000 and 1 : 126,000 maps (few sheets are post 1910), woods have not been plotted on this series outside the small area covered by 1 : 50,000 sheets. This produces a curious effect on certain sheets (sheets 36-39), on which woods are shown on the southern, but not on the northern halves (as illustrated by the sample).

The information from Intelligence reports which has been incorporated on sheets of the 1 : 250,000 series has also been consulted for sheets of this series ; for instance, bridges have been shown on sheets of this series only where they are mentioned in Middle East Intelligence reports.

Place names on this series conform to those on the 1 : 250,000 series, and additional names have been added by the transliteration of the 1 : 40,000, 1 : 50,000, and 1 : 126,000 originals. The road classification has also been taken from *M.D.R. 633/G.S.G.S. 4412*, and is on the standard Bulgarian width/surface system. The Bulgarian short glossary, which is published in the G.S.G.S. series of Short Glossaries, is of value in sorting out abbreviations and topographical terms ; in addition, sheets carry brief glossaries of the main Bulgarian topographical terms involved.

The series extends into European Turkey at its south-east corner, and is there based on the old 1 : 126,000 material, with names and certain new detail taken from the Turkish 1 : 200,000 originals ; this basic material is supplemented for a considerable area of sheets 41 and 42 by the old Turkish 1 : 25,000 series in the Edirne (Adrianople) area. It has been noted above that the Middle East compilation of sheets of European Turkey 1 : 100,000 (*M.D.R. 626/G.S.G.S. 4467*) has been based primarily on the 1 : 126,000 series, and thus there is little difficulty in the join-up of the two series across the 41° 30' N. parallel.

Production of the southern sheets (Sheets 33-44) is well in hand, and these sheets should be published shortly ; the production of the remaining sheets of this series will probably take about two months.

The index on page 14 shows that sheets 1 to 4 of this series fit exactly on to sheets 2535 to 3035 of *M.D.R. 627/G.S.G.S. 4417*, the Romania 1 : 100,000 series, and that sheets 5 to 11 have their northern edge along 43° 30' N., and hence overlap the Romanian 1 : 100,000 sheets 3530 to 5530 ; the extension of the Bulgarian sheets 5 to 11 northwards to join exactly to the Romanian sheets 3535 to 5535 is being considered ; if this extension of the Bulgarian sheets is made, the southern five Romanian sheets will become obsolete ; since these Romanian sheets are almost entirely in Bulgaria and are certainly unreliable in the matter of name spellings, this extension of the redrawn Bulgarian sheets would be of value. Along the south edge of the series sheets will join exactly with the Greek 1 : 100,000 (*M.D.R. 610/G.S.G.S. 4439*) sheets. In the west, sheets will join up with the Yugoslav 1 : 100,000 series, and sheets 1 and 34 of the Bulgarian series will include the most easterly portions of Yugoslavia.



Extract from *M.D.R. 654/G.S.G.S. 4444*,
Sheet 37

Sheets of this series have been reproduced by direct colour-separation of Romanian 1 : 100,000 originals mostly dated 1939. They carry no revision at all, and the only additions that have been made are the plotting of the graticule (which was not carried by the originals) and the British grid. The original sheets carry the Romanian grid, which has been removed during reproduction. The plotting of the graticule with any degree of accuracy on the original sheets was extremely difficult, and could only be done by comparison of the relative positions of certain known features on the 1 : 100,000 originals, and on smaller-scale maps whose accuracy could be tested against material of known reliability in other areas. All attempts to plot the graticule by discovering the origin of the Romanian grid proved fruitless, and proved moreover that the Romanians in computing their own grid had involved themselves in several serious mistakes. The graticules which have been indicated along sheet edges cannot, therefore, be considered to have any very great accuracy.

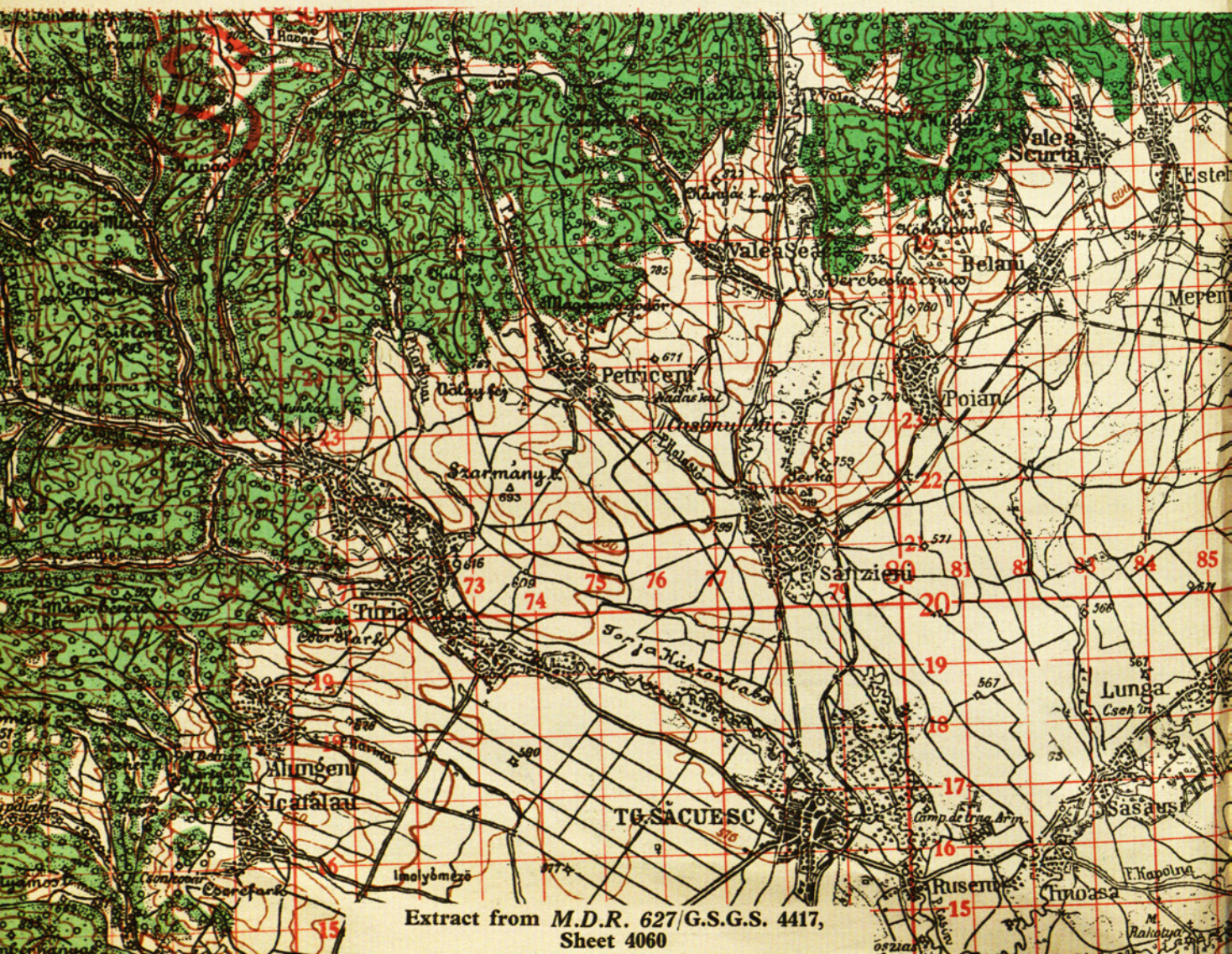
The quality of the Romanian originals varies considerably, and these variations are naturally magnified in reproduction. Some of the originals are taken (generally with revision) from the old Austro-Hungarian 1 : 75,000 series, which extended over Transylvania ; others from old Russian survey in Bessarabia ; yet other sheets are based on Romanian survey. In all cases the Romanians have quoted the actual production date of the sheet itself, which may, or may not, have a relationship to the information which the map shows. It seems that the Romanians vie with the Bulgarians for the distinction of being the worst cartographers in Europe, and the inaccuracy of this 1 : 100,000 series, which is the only large-scale map of the country, would appear to give the Romanians pride of place. The complication of alternative names in Romania has already been mentioned ; the Romanian sheets which have been reproduced give the standard names in Romanian place-names (at the date of the original) ; though at the moment, for instance, in Transylvania the Romanian versions of names will have been entirely superseded by Hungarian versions which are liable to be unrecognisably different.

Southern sheets of this series extend into Bulgaria, where they may overlap with the northern row of sheets of M.D.R. 654/G.S.G.S. 4444 ; the possibility of extending the north row of Bulgarian sheets so as to supersede the southern five Romanian sheets has been discussed above. In the Bulgarian area, the Romanian reproductions have little authority, particularly as regards name spellings or communications ; basically, however, they originate from the old 1 : 126,000 material. It must be emphasized that the production of maps of this area of Bulgaria in a Romanian series does not imply the existence of a Romanian survey there.

In the south-west of Romania this series overlaps with the Yugoslav 1 : 100,000 series, which has taken the Romanian originals as basic material for the area outside Yugoslavia.

In the north the series extends just north of 47° N. parallel, and the northern third of Romania will be covered by sheets of the Central Europe 1 : 100,000 series, which are discussed below.

A block of about fourteen sheets in the north have so far been published and production of the remainder is in hand ; both reproduction material, and stocks of those sheets which are published, have been circulated. In addition, a monochrome edition of this Romanian 1 : 100,000 series was produced by Middle East, with the number M.D.R. 627 ; all sheets of this Middle East monochrome edition have been published.

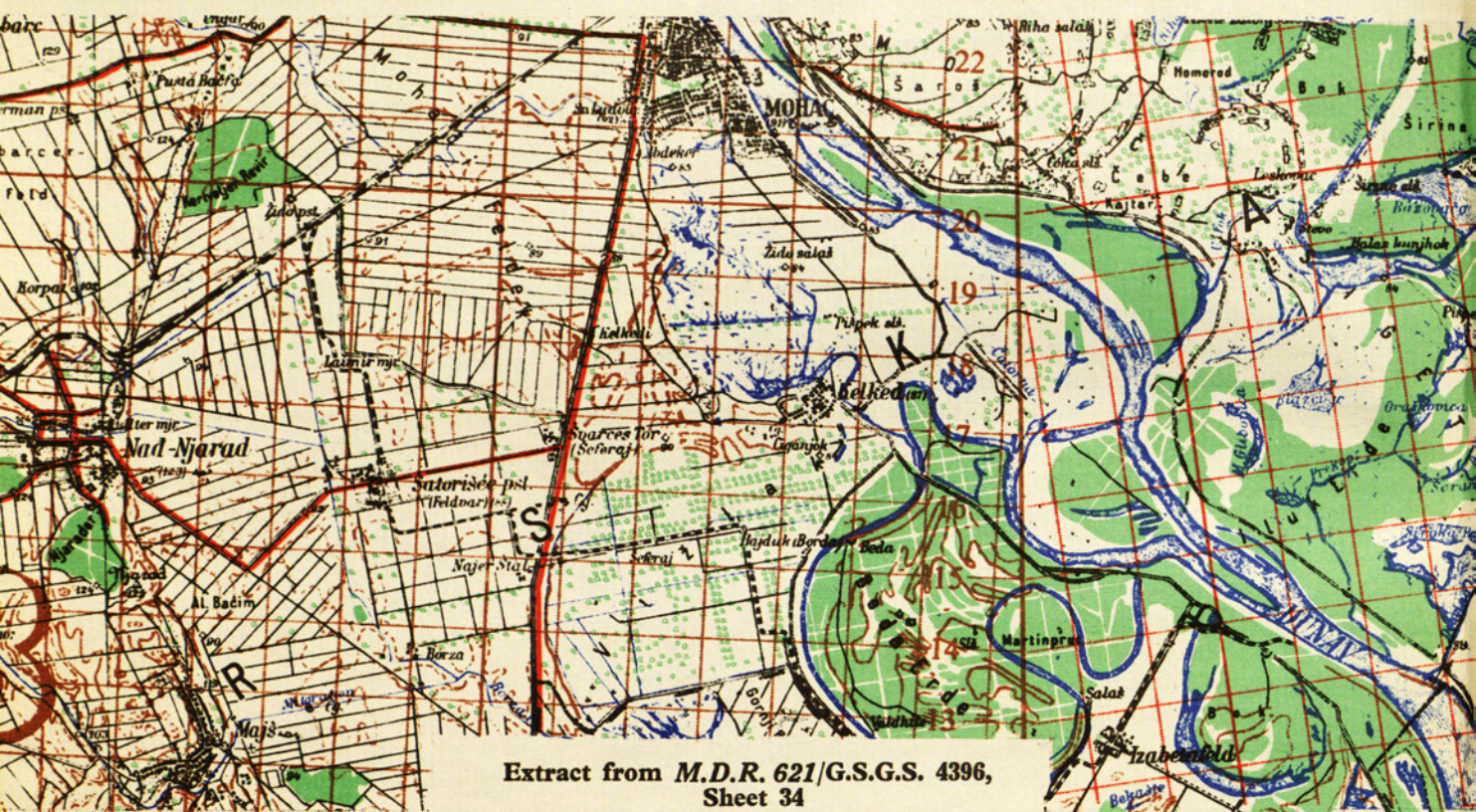


YUGOSLAVIA, 1 : 100,000, M.D.R. 621/G.S.G.S. 4396 (See samples below and on page 20 : also general index on page 14 and detailed index at Appendix II.)

This series has been initially reproduced in this country by the direct colour-separation of Yugoslav 1 : 100,000 originals ranging in date between 1925 and 1940. These Yugoslav originals were for the most part redrawn from the Austrian 1 : 75,000 sheets (pre-1918), and have been revised up to the date of their local publication, which is shown at the bottom right corner of each sheet. In Serbia (the south of Yugoslavia) sheets were re-surveyed at 1 : 50,000, and reproduced at 1 : 100,000 in identical style with the rest of the series. The sheets covering Serbia were reproduced by the Yugoslavs in cyrillic lettering ; these sheets have been marked with a diagonal in the bottom left corner on the index on page 14. In the initial reproduction in this country a red overprint was added, transliterating the names of principal interest on each sheet, and also supplying a conversion table from cyrillic to roman lettering, so that map users could work out for themselves the roman form of any place name. Outside Yugoslavia the series becomes far less reliable ; local name spellings have been rendered phonetically into Serb or Croat forms, or sometimes completely altered ; in particular, in the considerable area of Hungary which this series covers, a large number of village names and names of topographical features have been seriously garbled. In addition, the Yugoslavs do not appear to have used the most recent material for the areas of adjoining countries, and though sheets have been published by them quite recently, they may carry information outside Yugoslavia which is as much as twenty years older than the date of publication, and than the date of the information inside Yugoslavia. Thus, first edition sheets of this series are highly suspect outside the Yugoslav frontiers in respect of name spellings, and in respect of detail (such as communications) which is liable to fall out of date quickly. Within Yugoslavia the date of the original quoted gives an indication of the accuracy of the sheet.

The original series is on graticule sheet lines based on the meridian of Paris ; this sheet line system has not been altered, and the Greenwich values are shown in the north and south borders of sheets. The grid on the greater part of this series is based on the Greek survey datum, which is the basis adopted for British mapping throughout the Balkans. Certain Yugoslav originals which formed part of their series were not reproduced along with the rest, since they covered areas of Italy. In addition, the sheet numbers of the originals in Albania were subsidiary to their normal system, but these were altered in the reproduction to numerical order, thus the original numbered 145A is given the number 146 on the M.D.R. 621/G.S.G.S. 4396 sheet. In the north of Albania the series has been prepared entirely from the Austrian work which was available ; this work did not cover the whole of Albania, and certain sheets show gaps where detail is either non-existent or only in skeleton form. During initial reproduction no attempt to revise the series was made, except in the case of a block of nineteen sheets (along the Dalmatian coast between Zara and Kotor) for which more modern Italian versions of sheets were received, and from which certain alterations to roads were made. The series shows a red "filling" to what it calls "first-class roads" ; since most roads in Yugoslavia are of exceptionally poor quality, and since this filling embraces some extremely poor roads (many of which are thought to be little better than tracks), little attention should be paid to these road fillings. (M.D.R. 634/G.S.G.S. 4413 shows such details of road classification as have been available.) During the reproduction of these maps in this country certain place names have become garbled, e.g., the accidental deletion on the negative of the top of a "d" has sometimes converted it to an "a", and thus altered both the spelling and pronunciation of the place name.





Extract from *M.D.R. 621/G.S.G.S. 4396*,
Sheet 34

Such investigation of sheets from air photographs as has been made shows considerable differences in the outlines of woods ; in addition, the type of scrub liable to be found, especially along the Dalmatian coast, is extremely patchy, and very difficult to plot with much meaning on a map. On many sheets detail is extremely close ; contours particularly have run together during reproduction, and relief is shown more by the density of brown than by the actual height values of particular lines. Coastal sheets show considerable marine detail ; this detail should not be accepted without comparison with charts, since it is liable to be inaccurate. It is worth noting that the series is covered by five different grid zones (see grid diagram on page 48), and consequently confusion in grid-references is liable to arise along these junctions unless care is taken. The original series, as has already been noted, is the principal authority for sheets of the 1 : 250,000 series *M.D.R. 634/G.S.G.S. 4413*, and both series are on complementary sheet lines, four 1 : 100,000 sheets covering the same area as one 1 : 250,000 sheet. In the north the series joins up with G.S.G.S. 4416 [A.M.S. M 671], Central Europe, 1 : 100,000.

The entire series as shown on the index has been reproduced, and is available ; the responsibility for maintenance of this series has been delegated to Middle East. Sheets of this series south of $41^{\circ} 30' N.$ (sheets 152 to 162 inclusive) will be superseded by the Greek 1 : 100,000 sheets (*M.D.R. 670/G.S.G.S. 4439*), which will join up with the Yugoslav sheets along $41^{\circ} 30' N.$ In addition, those sheets (sheets 121 and 151) which at the moment overlap *M.D.R. 654/G.S.G.S. 4444*, will eventually be cut back to join exactly with these Bulgarian sheets.

At the moment sheets lettered in cyrillic (see index on page 14) are being converted in the Middle East to roman lettering on the acknowledged Serbo-Croat transliteration system ; such revision to these sheets as is necessary (e.g. to communications) will be incorporated at this stage. In addition, Middle East are undertaking the filling of those sheets which either show detail in skeleton form or are blank, such as sheet 147, which has a large blank patch along the west side of the Albanian-Yugoslav frontier but can be filled from a French reproduction of this sheet which carried full detail for that area. Other sheets of the series are being compared with available air cover, with a view to selecting those sheets which are most in need of revision, either on account of their inaccuracies or because of their strategic importance. It is certainly known (from the authority of Intelligence reports) that considerable revision to roads and railways on nearly all sheets is necessary. It is possible that such second edition sheets as are printed will be produced with the minimum of marginal information, so that the sheets can be kept down to a size at which they can be printed by Survey units in the field.

The 1 : 50,000 and 1 : 25,000 series of Yugoslavia should also be noted ; they are described on page 30. Both 1 : 50,000 and 1 : 25,000 sheets are straightforward divisions into quarters, and into sixteenths, of Yugoslav 1 : 100,000 sheets. It is probable that the production of finalised editions of the 1 : 100,000 series will be closely connected with the production of the new 1 : 50,000 series.

HUNGARY is partly covered by *M.D.R. 621/G.S.G.S. 4396* (the Yugoslav 1 : 100,000 series), and partly by G.S.G.S. 4416 [A.M.S. M. 671] (Central Europe, 1 : 100,000 series). As in the case of the 1 : 250,000 series, this junction occurs along $47^{\circ} N.$ It has been emphasized above that names, detail, and, in particular, communications on the Yugoslav 1 : 100,000 series are suspect, and that the latest information and the correct forms of names are given on the 1 : 250,000 sheets for this southern half of Hungary. The Central Europe 1 : 100,000 series covering the north of Hungary has used the latest Hungarian material, but shows considerably less detail than the series *M.D.R. 621/G.S.G.S. 4396*.

CENTRAL EUROPE, 1 : 100,000, G.S.G.S. 4416 [A.M.S. M. 671] (See sample below : also general index on page 14 and detailed index at Appendix II.)

This series has been compiled by the Army Map Service, Washington, and in this area is based on the latest Hungarian 1 : 75,000 and Romanian 1 : 100,000 material. It does not show all detail available from these two series, for example, trees along roads and hedges shown on the original material do not appear on this new map. In addition to this basic material, this series has incorporated some revision from smaller-scale maps, and shows the detailed road classification systems as used on 1 : 250,000 series described above. The junction of this series with the Yugoslav and Romanian 1 : 100,000 series along the 47° N. parallel will remain inexact until these two latter series have been revised and modified to agree with the new American compilation.

Since sheets of this series covering northern Romania and Hungary are not yet available, the Hungarian 1 : 75,000 and Romanian 1 : 75,000 (north of 47° N.) have been reproduced as a stop-gap (see page 31). Since these 1 : 75,000 scale maps show a lot of detail which will not be carried on the new 1 : 100,000 series, they will form a useful supplement to this series, and will not be entirely superseded even when it is produced.

Most of the Hungarian sheets of this series are available ; the Romanian sheets should be produced in the next month or so.

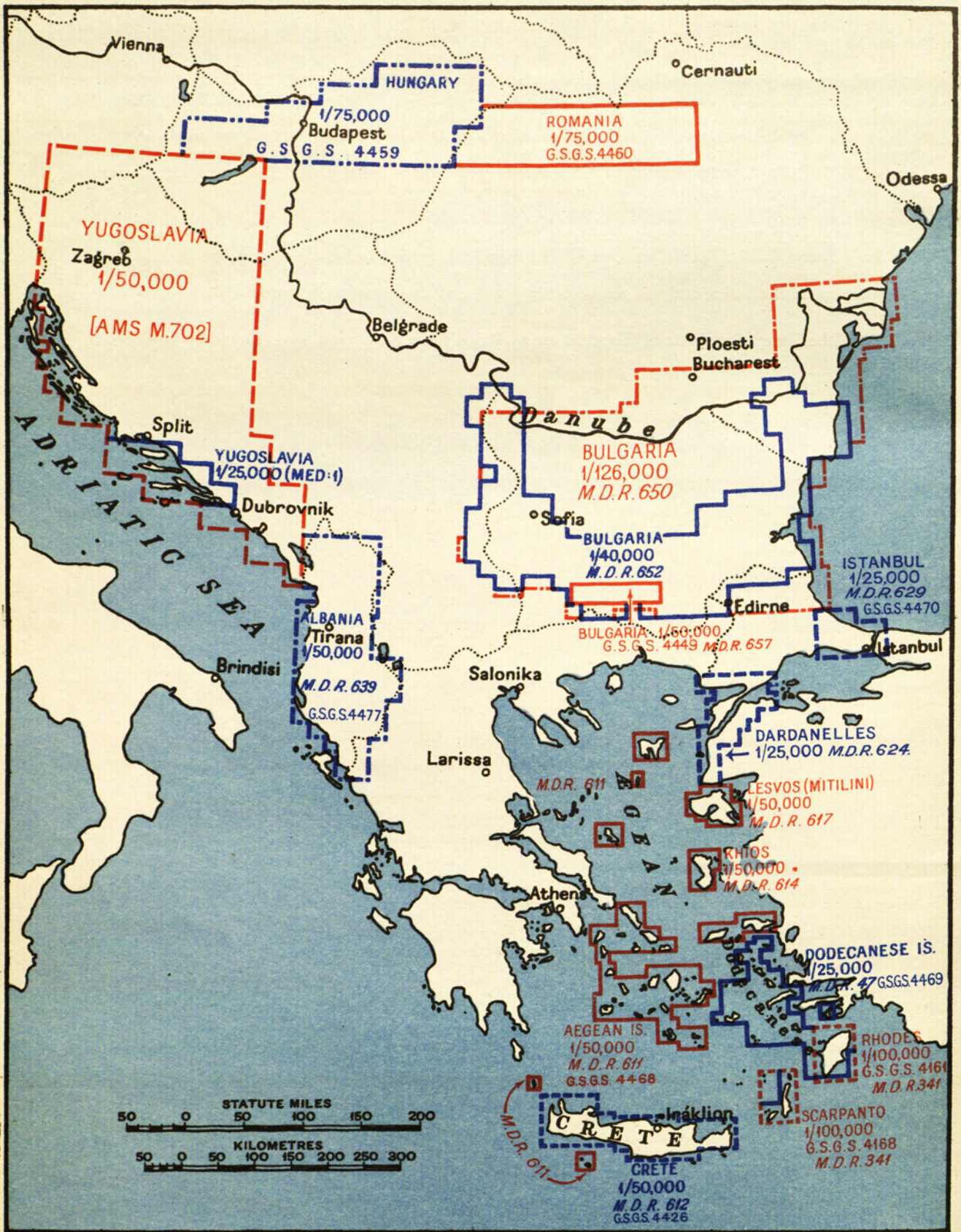


Extract from G.S.G.S. 4416 [A.M.S. M. 671], Sheet X-14

ITALY, 1 : 100,000, M.D.R. 540/G.S.G.S. 4164

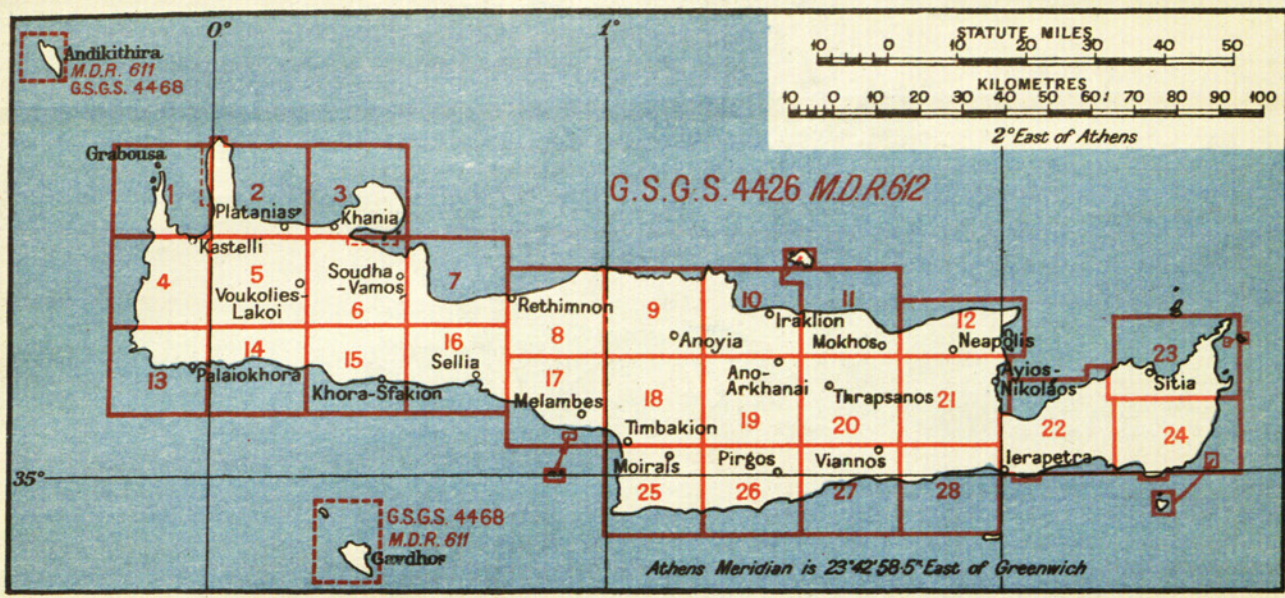
This series is described in detail in "Notes on G.S.G.S. Maps of Italy, 1st May, 1943". It is relevant to this area, since it covers the north-western tip of Yugoslavia, a similar area to that covered by M.D.R. 300/G.S.G.S. 4230 (the 1 : 250,000 series). Sheets have been reproduced direct from the Italian originals, and in Yugoslavia, as in Italy, roads have been revised and classified on local width systems, and railway revision has also been incorporated. Sheets in this area are similar in detail shown to sheets of the Yugoslav 1 : 100,000 series, but names have suffered from an Italianising influence. All sheets of this series have been published.

OTHER LARGE SCALE SERIES



The uniform homogeneous map coverage of this area at 1 : 250,000 scale has been described above ; the heterogeneous map coverage of the area at 1 : 100,000 has also been described. Series at these two scales are the principal maps produced for this area. This section deals with the remaining topographical maps covering the area ; some of these have been produced as supplementary series to the 1 : 100,000 series, others, purely in order to fill gaps until such time as all sheets of the 1 : 100,000 series are available ; yet other series described here, at a scale of 1 : 50,000, have been copied from original local maps of that scale where no original map at 1 : 100,000 scale was available, e.g., Crete.

The index above shows the areas covered by the series concerned. The series are described in sequence from south to north, and not in order of scale. For each series an index is provided which supplies greater detail of the particular area concerned than the general index above ; in addition, Appendix II at the end of the book sets out the sheet lines of certain of these series.



CRETE, 1 : 50,000, M.D.R. 612/G.S.G.S. 4426 (See sample below)

This series was originally produced from Greek 1 : 50,000 maps (dated about 1940), which covered all but the extreme east of this island. The initial reproduction carried no revision, though names were transliterated and the grid added. This provisional series, which was not very legible, was comparable with the production of *M.D.R. 356*, Greece 1 : 100,000 (see page 15). A new edition of this series has since been produced, which carries revision from air photographs where available, and also includes the correction of such name-spelling inconsistencies as appeared in the initial edition. Names, roads, and rivers on this edition are shown in black, and contours and woods are shown on a brown plate, which is a relic from the Greek originals (see sample). Each sheet carries a diagram showing the extent of revision from air photographs, and also gives the date of the Greek 1 : 50,000 original on which the sheet is based, and which still remains the only authority for the map in areas not covered by air photographs.

The three most easterly sheets, 22, 23, and 24, were not included in the original Greek series. They have been compiled from a German 1 : 100,000 sheet "Sitia" (itself compiled from a variety of material) and from comparator controlled 6" air cover. Thus these three sheets are far less reliable basically than sheets covering the rest of the island, and in addition names are slightly suspect in view of the German origin of the map.

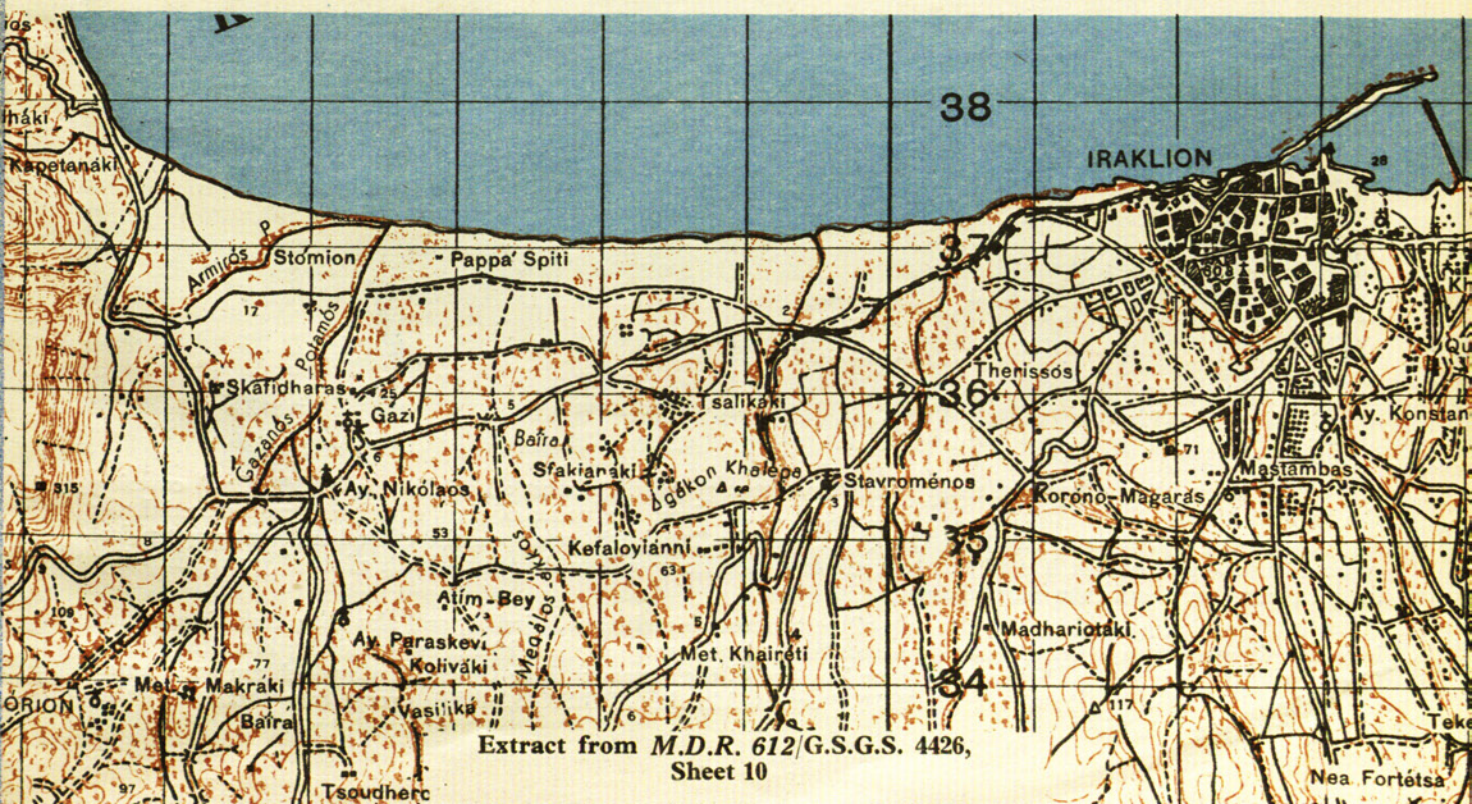
Complete revision of all sheets of this series from air photographs (which are now available for nearly the whole of Crete) has been undertaken. The results of this revision will be published in a new edition of this map, but the style of the new edition will remain the same. All the sheets of this new edition are in hand in Middle East, though no sheets have yet been published.

It should be noted that the islands of Gavdhos and Andikithira are covered by 1 : 50,000 maps of the series *M.D.R. 611/G.S.G.S. 4468*; they are not included in this Crete series.

The difficulty of defining wooded areas in Crete is extreme, since air photographs show that quite substantial woods gradually merge off through belts of scrub to open country.

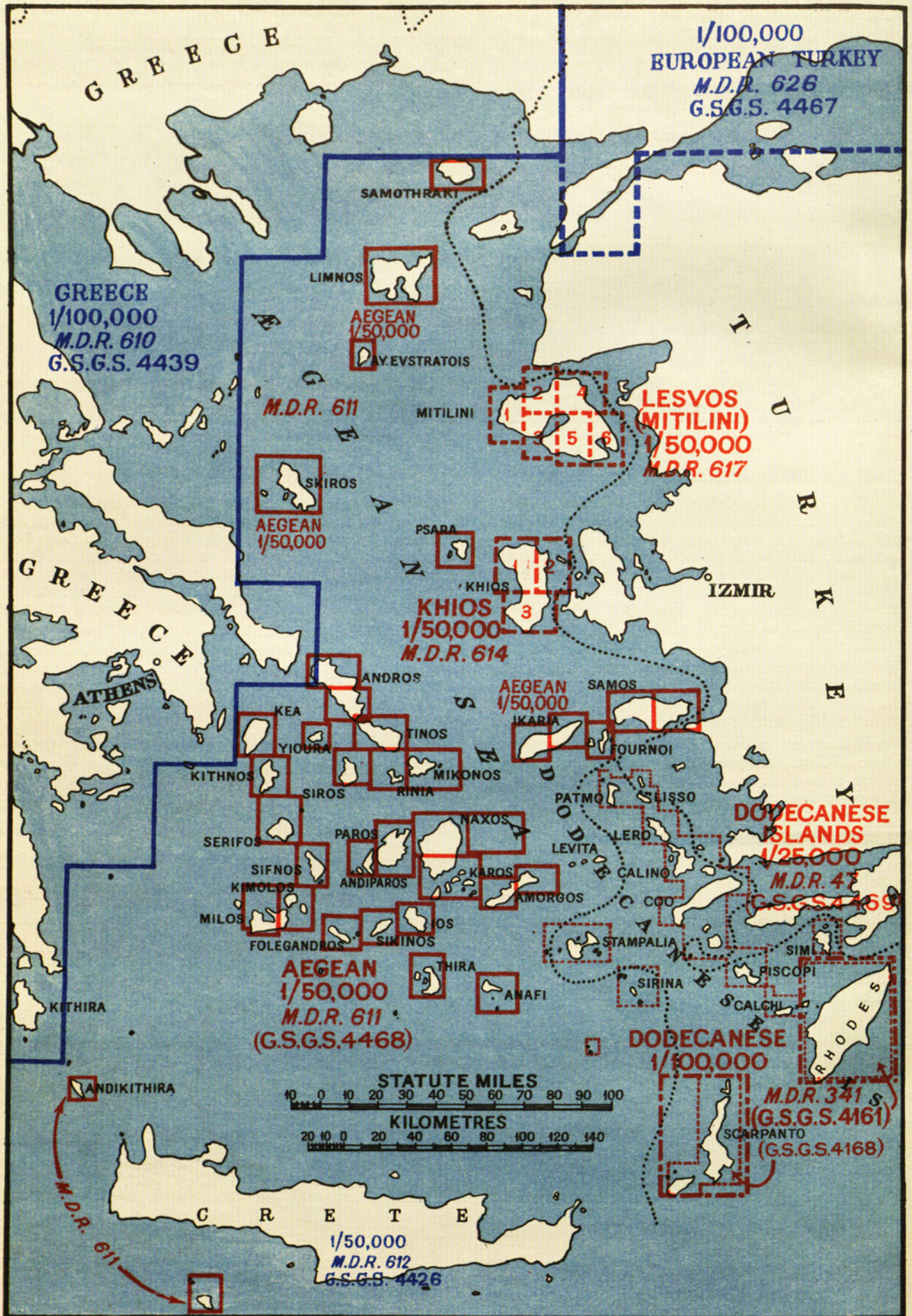
A gazetteer to Crete has been prepared in Middle East on the basis of sheets of this series. This series naturally includes a considerable number of Greek topographical terms (which are not anglicised); thus reference to the short glossary of Greek is of value for reading the maps.

This series has so far been produced only in Middle East, but limited stocks of sheets have been sent to A.F.H.Q. and to this country, and reproduction material for all sheets is held both by Survey Directorate A.F.H.Q. and by the War Office.



Extract from *M.D.R. 612/G.S.G.S. 4426*, Sheet 10

ISLANDS OF THE ÆGEAN



The index above shows the maps which have been prepared (almost all of them in Middle East) covering the various islands of the Ægean. Politically, and hence from the point of view of original map material, the Dodecanese are a separate group from the Greek and the Turkish islands; on the other hand, on geographical or even on strategic grounds, it is difficult to separate the Dodecanese from the other islands of the Ægean; thus they are all treated together in the index above.

Notes and samples show that the style of these various island maps is similar, and also show that air cover has been used in most cases to bring the maps up to date. All the maps of these islands are gridded. Practically every Greek and Italian island in this area is covered by one of these maps: those Greek islands which are not covered are included on sheets of the Greek 1 : 100,000 series (M.D.R. 610/G.S.G.S. 4439), except Samothraki, of which a 1 : 50,000 map is in hand.

DODECANESE, 1 : 25,000, M.D.R. 47/G.S.G.S. 4469 (See sample below)

Sheets of this series, which covers all the Dodecanese, have been reproduced from Italian 1 : 25,000 originals. Revision from air photographs has been included, and the British grid has been added. Roads on sheets are classified on a width basis, and are shown by continuous or "pecked" red fillings. All sheets have been published.

The island of Castelrosso differs from the other islands in that no Italian original was available, and the map has been compiled almost entirely from air photographs. This map carries the number *M.D.R. 613/G.S.G.S. 4448*.

The following is an alphabetical list of all sheets :—

Anidra	Lisso
Archi	Nera
Calchi	Nisiro
Calino	Ofidusa and Ponticusa
Calolino	Patmo
Candeliusa	Piscopi
Caso	Pserimo
Castelrosso (<i>M.D.R. 613/G.S.G.S. 4448</i>)	Rodi (21 sheets)
Coo (5 sheets)	Scarpanto (6 sheets, including Stacchida)
Farmaco	Simi
Gaidaro	Sirina
Lero (North and South sheets)	Stampalia
Levita	

RHODES, 1 : 100,000, M.D.R. 341/G.S.G.S. 4161, & SCARPANTO, 1 : 100,000, M.D.R. 341/G.S.G.S. 4168

These two maps have been compiled from the basis of the 1 : 25,000 sheets covering these islands, and also include revision from air photographs. Both sheets are gridded, and have been produced in Middle East with brown layer tints. Both sheets have been reproduced in this country from reproduction material supplied by Middle East, (with purple, instead of brown, layer tints) ; in addition, sheets carry a red overprint providing details of road classification as formulated by I.S.T.D. and included for the illustration of one of their reports. A third edition of the sheet covering Rhodes has been published in Middle East.

In view of the Italian origin of all maps of this group of islands, all name spellings are in Italian form ; Greek and/or Turkish forms of names, which are believed to be current (at any rate in speech) on many of the islands, have not been shown on these maps. (It should be noted that smaller-scale series have provided both Greek and Italian names for most of these islands, e.g., Coo, *Italian*, and Kos, *Greek*.)



Extract from *M.D.R. 47/G.S.G.S. 4469*,
Sheet "Lero South"

ÆGEAN ISLANDS, 1 : 50,000, M.D.R. 611/G.S.G.S. 4468 (See sample below)

This series covers nearly all the Greek islands of the Ægean ; those which are not covered by this series are covered by sheets of the 1 : 100,000 series of Greece *M.D.R. 610/G.S.G.S. 4439*.

In nearly every case the islands have previously been only poorly mapped, either in rough diagrammatic form or by charts which paid little attention to inland features or to topography. Most of the sheets in this series have been completely remapped from air photographs, and all the islands which have been so remapped are contoured in detail and carry a red overprint classifying roads (where roads, as opposed to tracks, do exist). For islands for which air cover is not so far available, the maps have been prepared from local charts, etc., and are probably as inaccurate as they look. Naturally, such provisional editions will be superseded by finalised editions as soon as air cover is available. Islands covered by sheets which have not so far been published in finalised form are shown with an asterisk in the list below.

It will be noted from the index on page 24 that none of the Turkish islands of the Ægean are covered by this series (nor by any other series on a scale larger than 1 : 200,000).

Maps of all the islands have been published either in finalised editions (revised from air photographs) or in provisional editions, and stocks of all sheets are held in Middle East. Reproduction material for all sheets has been distributed and this series is now being printed in this country.

The following is a list of the islands included in this series :—

Anafi	*Limnos (West and East sheets)
Andros (North and South sheets)	Mikonos
Andikithira	Milos
Andiparos	Naxos
Amorgos (West and East sheets)	Paros
*Ay. Evstratios	*Psara
Dhenoussa	Rinia
Gavdhos	Samos (West and East sheets)
Fimaina 1 : 25,000 (<i>M.D.R. 47/G.S.G.S. 4447</i>)	*Samothraki
Folegandros	Serifos
Fournoi	Sifnos
Ikaria (West and East sheets)	Sikinos
Ios	Siros
Karos	*Skiros
Kea	Thira
Kimolos	Tinos
Kithnos	*Yioura

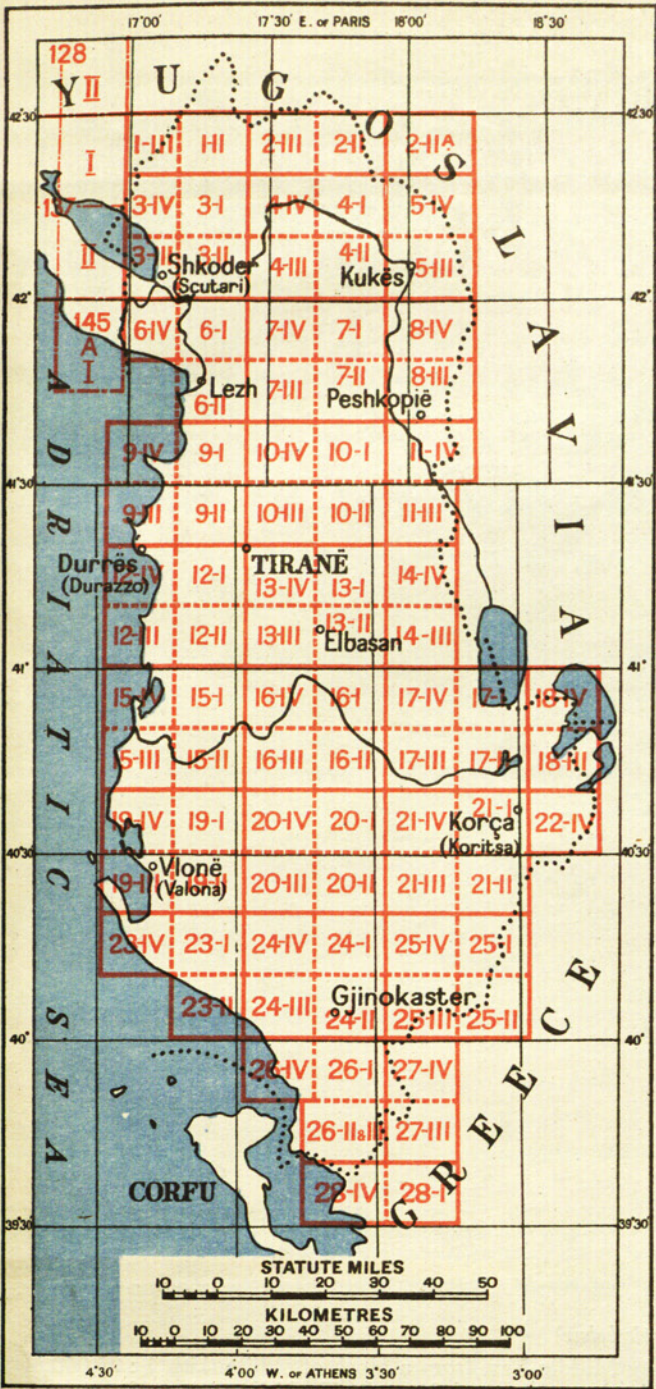
Khios.—This island is covered by three sheets which are exactly similar in style to other sheets of *M.D.R. 611*, but which are published with the number *M.D.R. 614/G.S.G.S. 4468*.

Lesvos (Mitilini).—This island is covered by six sheets produced in a slightly different and more detailed style than that of the maps of the rest of the islands, and published as *M.D.R. 617/G.S.G.S. 4468*.

* Sheets **not** yet published in finalised form.



Extract from *M.D.R. 611/G.S.G.S. 4468*,
Sheet "Folegandros"



ALBANIA, 1 : 50,000,
M.D.R. 639/G.S.G.S. 4477 (See sample below)

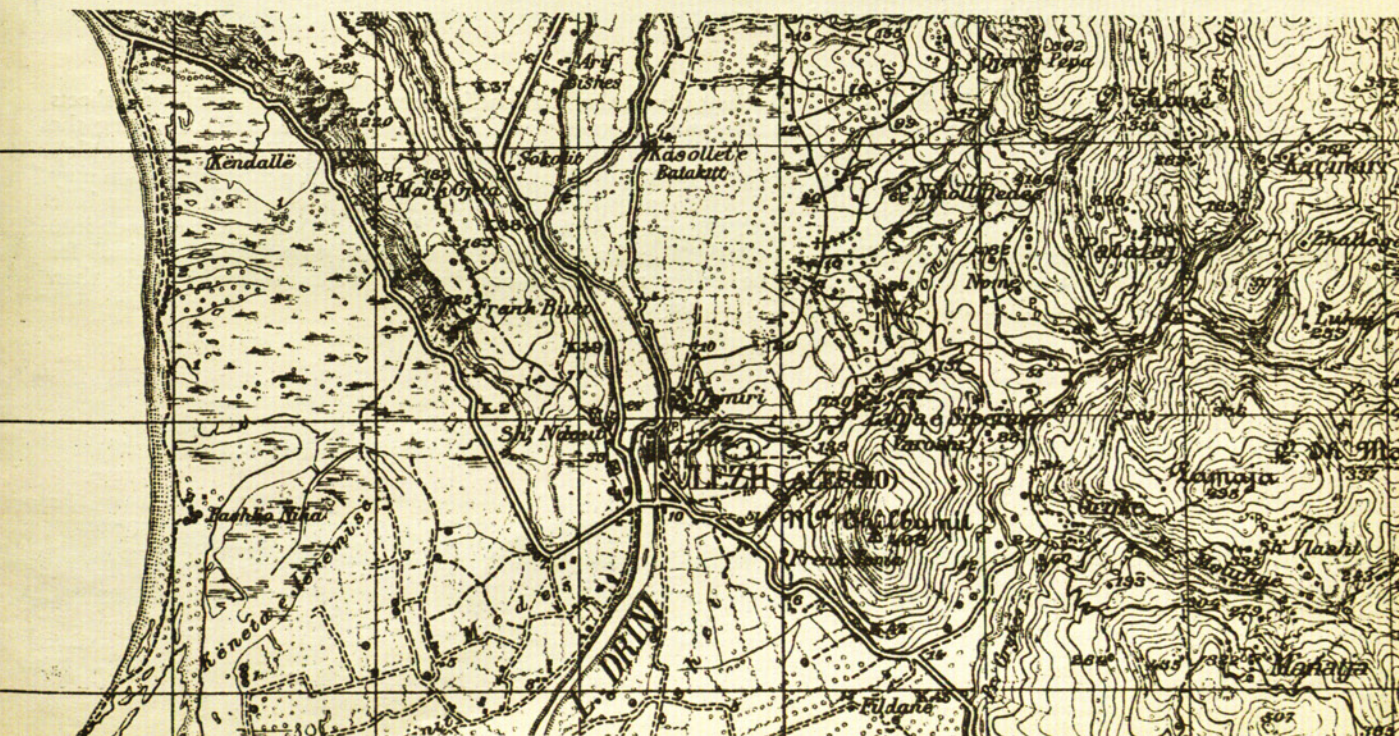
This series is (for its initial publication) a direct copy of Italian 1 : 50,000 originals which have recently been acquired and which cover the whole of Albania. These Italian maps are for the most part the result of a new Italian survey carried out since 1928, but certain sheets have been based on Austrian survey (at 1 : 25,000) carried out during the last war for the preparation of the Austrian 1 : 75,000 series in this area. Other small areas have been based on French work at 1 : 20,000 and 1 : 50,000, also carried out during the last war. Both the Austrian and the French work have been tied on to the new Italian work, and certain revision to communications, etc., has been incorporated. Presumably the Italians intended eventually to continue new survey over the whole country, and used the Austrian and French work as a stop-gap until they had time to extend their own work over these areas. The Italian originals are mostly in four-colour style, and carry a graticule based on Tiranë (which is 19° 46' 45" east of Greenwich); this graticule has been retained on the provisional Middle East production of the series. The Italians have altered the spellings of many place names, particularly those of towns and of large villages, from their local Albanian form, and have "Italianised" certain topographical terms in producing this series; in the Middle East production of this map no attempt has been made to alter these Italian forms to the now accepted Albanian forms which are being used on new editions of 1 : 100,000 and 1 : 250,000 series in this area.

It is possible that complete revision of this series will be put in hand from air cover, which is now available for almost the whole of Albania; such revision would be combined with the addition of the British grid. The production of the series in coloured form (base in brown, water in blue, and roads in red, as used on the Aegean 1 : 50,000 series M.D.R. 611/G.S.G.S. 4468 is a development that might later be adopted.

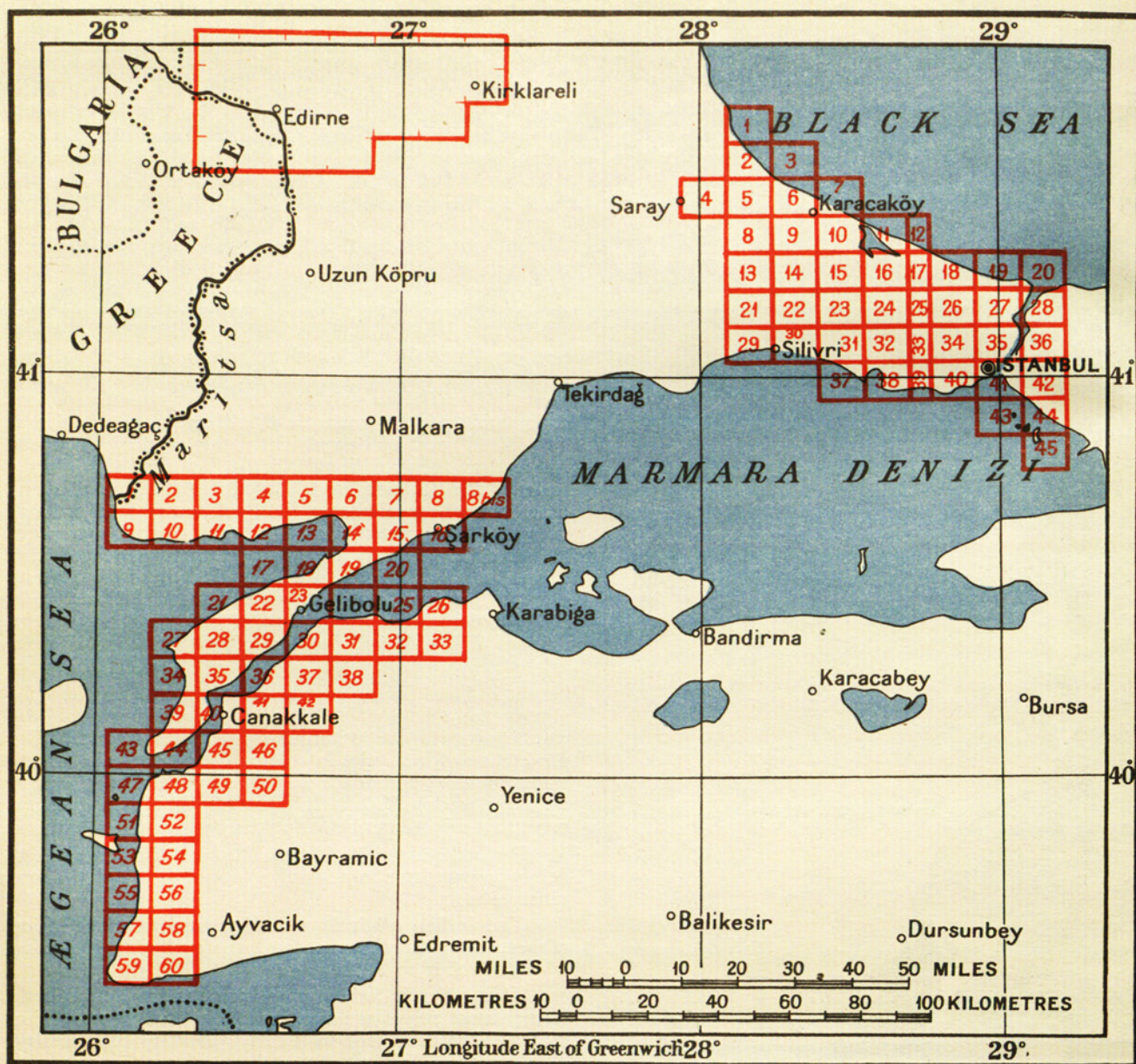
Revised and gridded (monochrome) editions are now being prepared for some twelve (out of the total of about ninety) sheets.

The Italian originals are being used for the revision of sheets of the Greek and of the Yugoslav 1 : 100,000 series, which together cover Albania.

This series is being reproduced entirely in Middle East; most sheets are now available, and reproduction material has been sent to A.F.H.Q. and to this country. The series will join exactly at its north-west corner with sheets of Yugoslavia 1 : 50,000 series [A.M.S. M.702], as is shown on the index. Sheets are sub-division of an Italian 1 : 100,000 series, and the sheet-numbering system used is similar to that used for Italy; details of this are shown on the index. (The base of the index carries a graticule: north of 41° 30' N. the meridians on this graticule are from Paris, south of this line they are from Athens; thus the graticule shows the Yugoslav and Greek 1 : 100,000 sheets which cover Albania.)



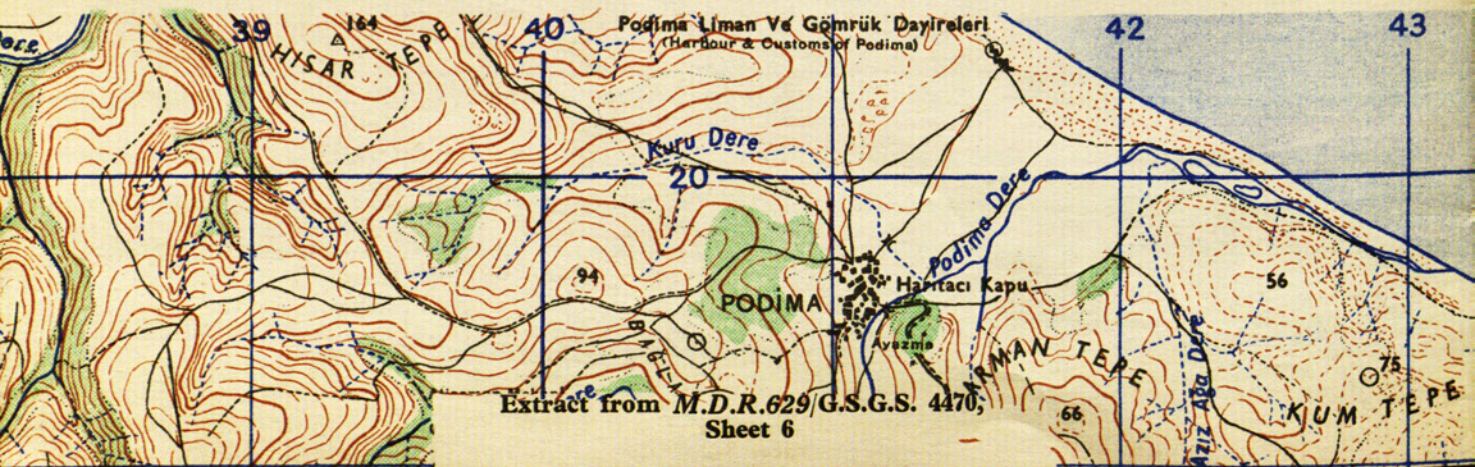
Extract from M.D.R. 639/G.S.G.S. 4477,
 Sheet 6-II



ISTANBUL, 1 : 25,000, M.D.R. 629/G.S.G.S. 4470 (See sample below)

This series, comprising 45 sheets, has been reproduced by Middle East from a block of old Turkish 1 : 25,000 maps, which covers the Istanbul Peninsula. Sheets have been colour-separated from the Turkish maps, and names (which were in Turkish arabic script on the originals) have been transliterated to modern Turkish forms. In addition, certain general revision to sheets has been incorporated from Intelligence reports and from the Turkish 1 : 200,000 sheets (which are dated about 1937 in this area). The lack of air cover prevents any final revision to this series. Sheets 1 to 9, 11 to 14, 19, 21, 22, 25, 29 to 31, 33 and 39 have so far been published, and all other sheets are in hand. Stocks of all published sheets are held in Middle East, and small stocks as well as reproduction material are being sent to A.F.H.Q. and to this country.

A second block of similar Turkish 1 : 25,000 sheets covers the Dardanelles area ; reproduction of these sheets may be undertaken by the Middle East as *M.D.R. 624*, and the series would be similar in style to that covering the Istanbul Peninsula. There is also a third block of sheets which covers the neighbourhood of Edirne (Adrianople). This block of sheets is not at the moment being reproduced by Middle East, nor by the War Office ; (reproduction may be undertaken later). These original Turkish 1 : 25,000 maps (which are dated 1913-14) have been used as base material in the compilation of the Bulgarian 1 : 100,000 series (*M.D.R. 654/G.S.G.S. 4444*) where it extends into European Turkey, and for the European Turkey 1 : 100,000 series (*M.D.R. 626/G.S.G.S. 4476*). The originals for these three areas are mostly old, but there is no other map produced by the Turks of larger scale than 1 : 200,000 (reproduced as *M.D.R. 3/G.S.G.S. 4193* ; see page 10).



BULGARIA, 1 : 126,000, M.D.R. 650 (See left-hand sample below)

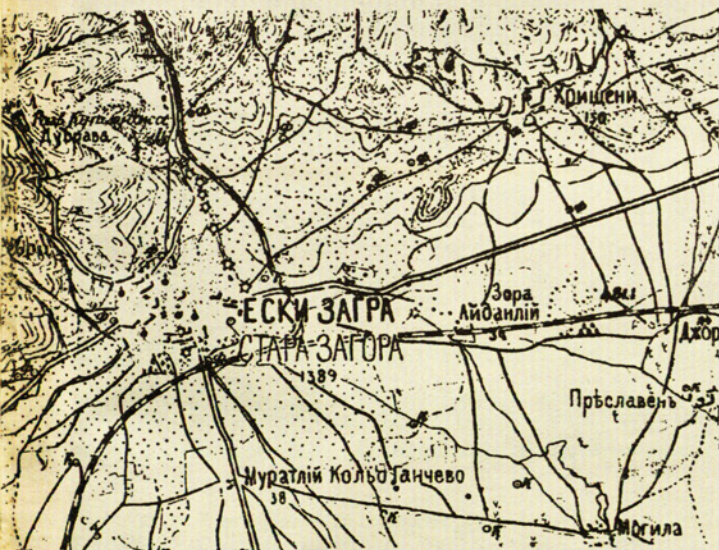
This series has been produced as a stop-gap until such time as sheets of the Bulgaria 1 : 100,000 series, *M.D.R.654/G.S.G.S. 4444*, are available. Almost its only merit is that it covers the whole of Bulgaria at a reasonably large scale. It is the result of old Russian survey dating from the end of last century, and carries no revision since that date (see Part II).

The sheets reproduced have not been gridded, nor have names on them been transliterated. Heights on the original map are in sachsens, and a note at the foot of each sheet supplies a conversion table between sachsens and feet. Reproduction is being carried out entirely by Middle East, and all sheets are now available. This series is not being printed in this country, though limited stocks will be supplied by Middle East.

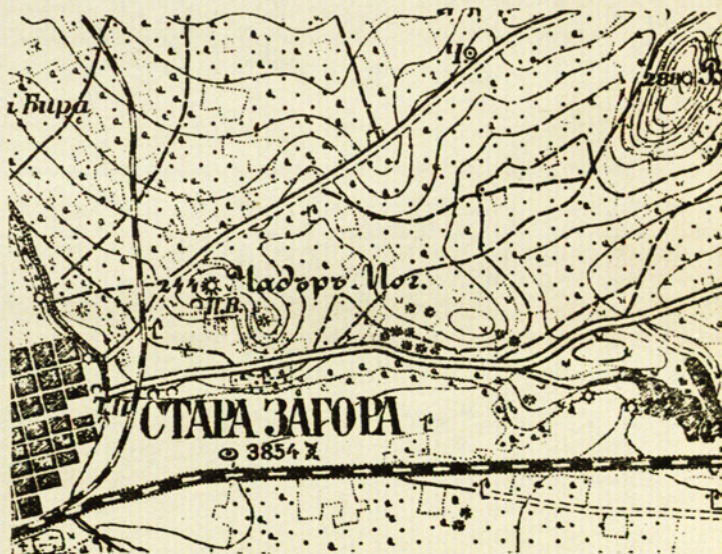
BULGARIA, 1 : 40,000, M.D.R. 652 (See right-hand sample below)

This series is also being reproduced by Middle East, direct from the Bulgarian originals, as a supplement to the 1 : 126,000 series, and also as a stop-gap until the 1 : 100,000 series *M.D.R. 654/G.S.G.S. 4444*, is available. As on the 1 : 126,000 series, names are left in their untransliterated Bulgarian form, and sheets carry no grid ; heights in this series, however, are in metres. Many of the sheets carry printing dates as recent as 1930 ; these sheets are, however, identical with pre-1912 editions, and hence badly out of date, particularly as regards communications. This series is a far more reliable map than the 1 : 126,000 series, but makes a poor showing when compared with the new 1 : 50,000 series. Certain 1 : 40,000 sheets (in the south-west of the country) were produced in coloured form by the Bulgarians at a scale of 1 : 50,000 ; these sheets, however, carry no different information from the single-colour originals (see Part II). The sheets of the 1 : 250,000 series, *M.D.R. 633/G.S.G.S. 4412*, are based on the sheet-line system of this 1 : 40,000 series.

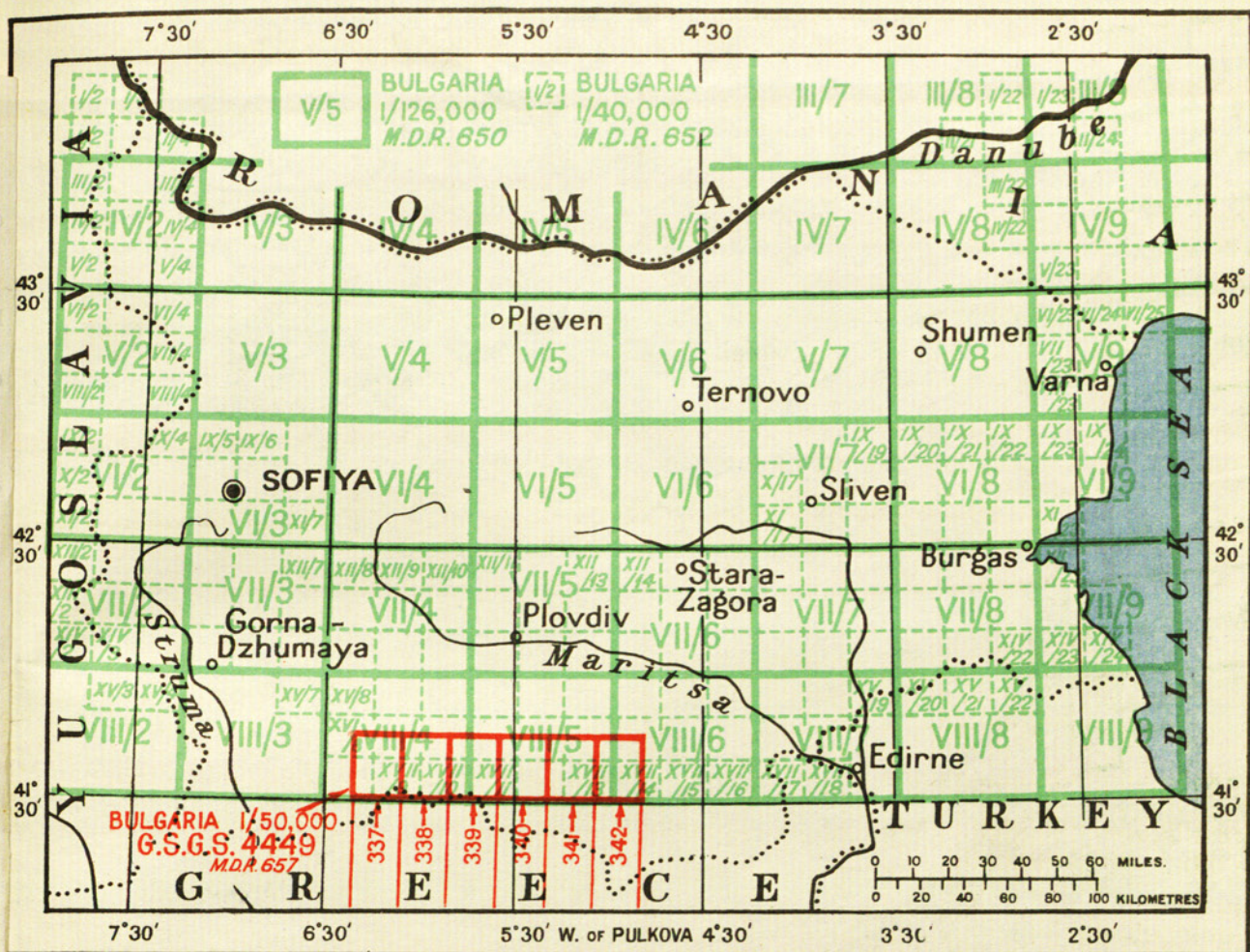
The index above shows a 1° by 1° graticule mesh with meridian based on Pulkova : thus it represents (between 41° 30' and 43° 30' N.) the sheet lines of the 1 : 250,000 series.



Extract from *M.D.R. 650*, Sheet VII-6.



Extract from *M.D.R. 652*, Sheet XII-15.



BULGARIA, 1 : 50,000, M.D.R. 657/G.S.G.S. 4449 (See sample below)

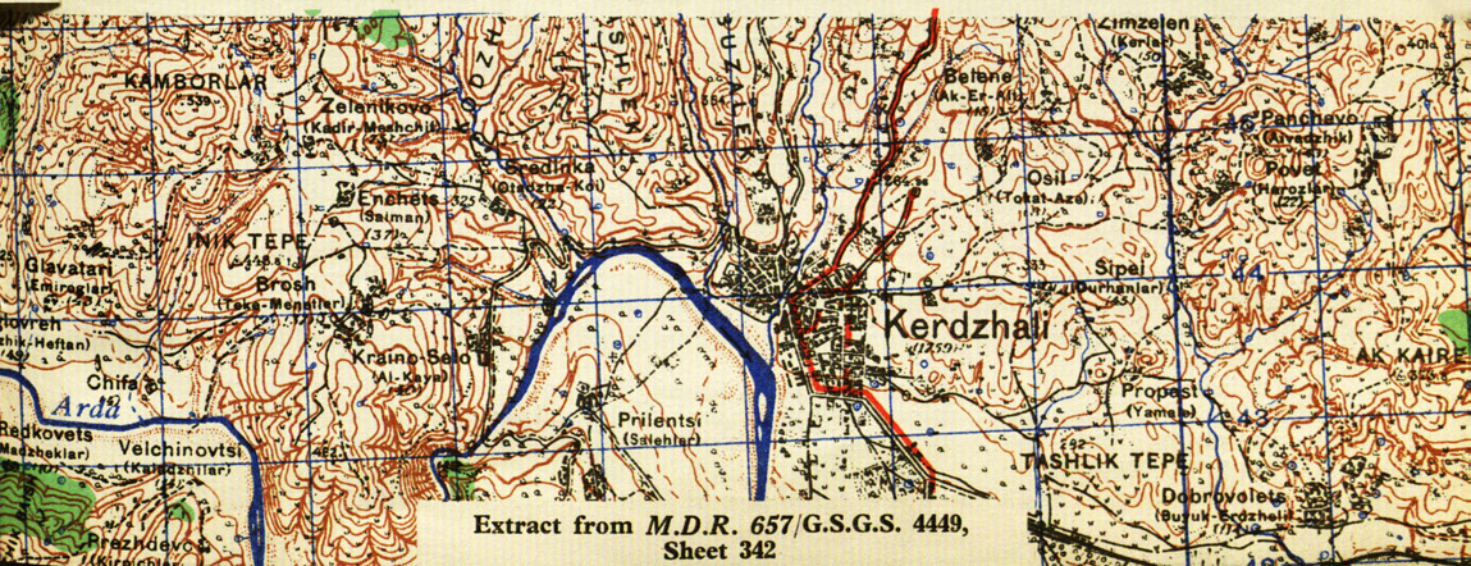
This series has been reproduced (by the War Office) by colour-separation from the new Bulgarian 1 : 50,000 series, and names have been transliterated ; in addition, the British grid has been added. This Bulgarian 1 : 50,000 is the only modern and seemingly accurate map so far acquired of Bulgaria (see description of original Bulgarian maps in Part II). Most of the sheets are dated about 1938. The only sheets available are shown on the index ; the six northerly sheets are being reproduced as G.S.G.S. 4449 ; the sheets to the south of these (south of 41° 30' N.) are being used by Middle East in the compilation of the Bulgarian part of their 1 : 100,000 series of Greece (M.D.R. 610/G.S.G.S. 4439). These Bulgarian 1 : 50,000 sheets south of 41° 30' N. may be reproduced here later. Captured German map catalogues show that sheets of this series (along with sheets of a 1 : 25,000 series on complementary sheet lines) cover large areas of Southern Bulgaria (see Part II). Areas of Greece are shown on the Bulgarian originals by crude enlargements of the Greek 1 : 100,000 series.

Sheets of this Bulgarian 1 : 50,000 series show a considerable amount of detail, and, by comparison, the 1 : 40,000 and 1 : 126,000 maps (which are the only other basic map material in Bulgaria) are very generalised, and show considerable differences in detail.

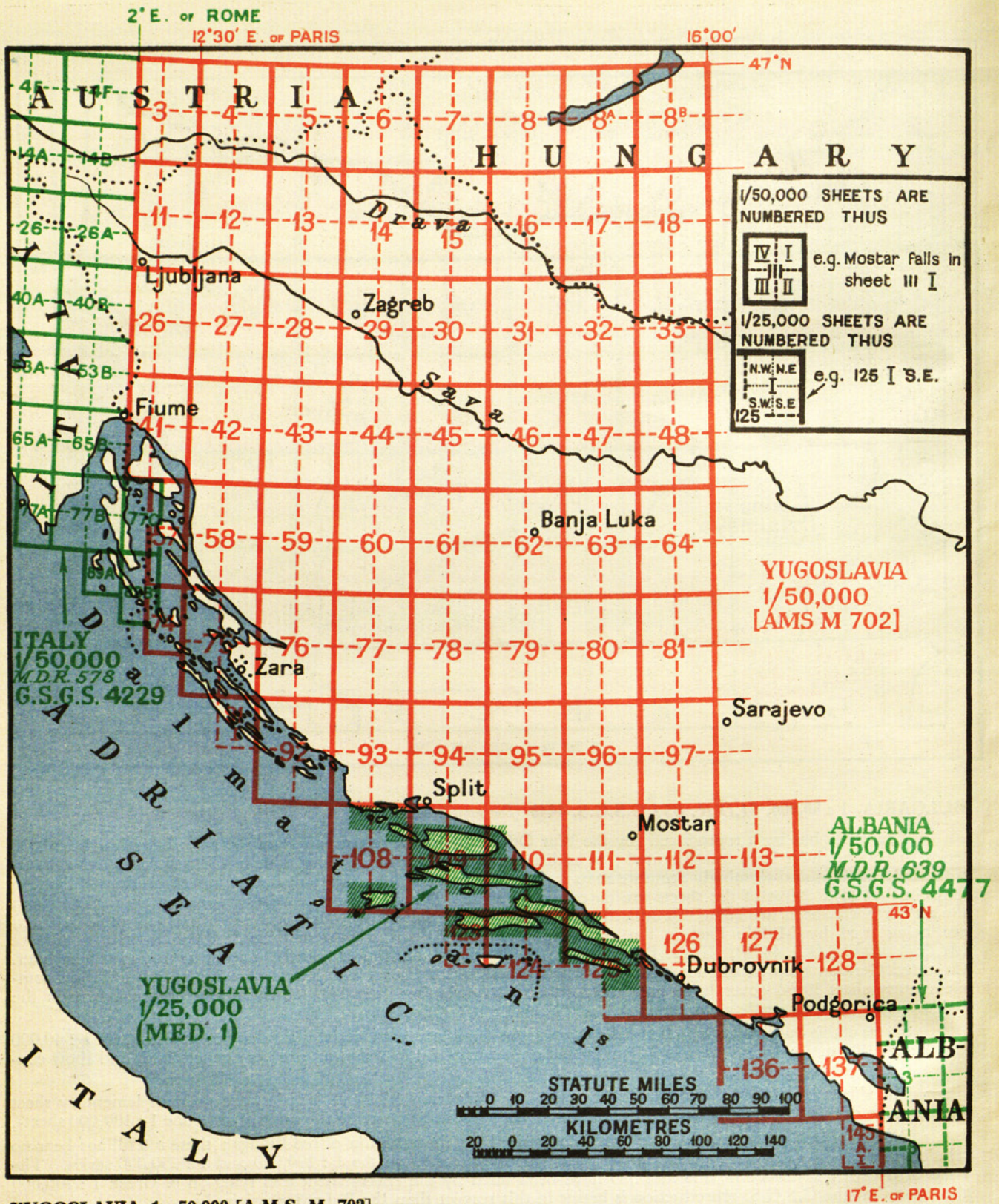
The sheet lines of M.D.R. 654/G.S.G.S. 4444, the Bulgarian 1 : 100,000 series, are on complementary sheet lines to those of this 1 : 50,000 series (a block of four 1 : 50,000 sheets covering the same area as one 1 : 100,000 sheet).

During reproduction, roads have been emphasized by the addition of red fillings ; these red fillings bear no relation to the width/surface road categories which have been used on the 1 : 100,000 and 1 : 250,000 series. The areas of Greece on sheets 337, 338 and 339 have been filled by the enlargement and tying-on of Greek 1 : 100,000 sheets, so that the G.S.G.S. reproduction is better in this respect than the Bulgarian original.

None of the six sheets has so far been published, though all of them are at proof stage and will be available shortly ; reproduction material for each sheet will be sent out to Middle East, who will then be able to print the series themselves.



Extract from M.D.R. 657/G.S.G.S. 4449,
Sheet 342



YUGOSLAVIA, 1 : 50,000 [A.M.S. M. 702]

The preparation of this series is in hand with the Army Map Service, Washington, at the moment; so far, no sheets of it are available. Sheets are being redrawn and based primarily on "Multiplex" control, with detail filled in by stereo methods. In addition to photogrammetric methods, enlarged Yugoslav 1 : 100,000 originals have been used; these originals, for most of this area, have been based on Austrian 1 : 25,000 survey, and hence the enlargement to 1 : 50,000 does not of itself produce considerable inaccuracies. In addition to air photographs, and to the basic Yugoslav 1 : 100,000 sheets, German 1 : 25,000 and old Austrian 1 : 25,000 sheets, which are available for small areas, have been used in the compilation. Each sheet will show a compilation note at its bottom left corner and a "Photo Coverage" diagram in the right-hand border. The sheets are on the same sheet lines as the Yugoslav 1 : 100,000 originals, and four sheets of this 1 : 50,000 series cover the same area as one 1 : 100,000 sheet; sheets take the 1 : 100,000 sheet number followed by a roman I for the north-east quarter, II for the south-east quarter, III for the south-west quarter, and IV for the north-west quarter (in the same way as the Italian 1 : 50,000 sheets for Italy and for Albania). No samples of this series have so far been seen, but it is understood that sheets are being prepared with contours in brown, with rivers and water features in blue, and with woods in green (a distinction being made where possible between woods, brushwood, and orchards). In addition to standard-gauge railways, three types of narrow-gauge railways will be distinguished. Symbols are being introduced to show "Areas of numerous small stone walls," and "Areas of numerous sinkholes (Karst)", which are important features of the country. Sheets will, of course, be gridded. The revision of the 1 : 100,000 series will probably follow on the completion of blocks of sheets of this 1 : 50,000 series.

The index shows that on the north-west the 1 : 50,000 series joins up with sheets of the Italian 1 : 50,000 series, M.D.R. 578/G.S.G.S. 4229. The line of junction between the Yugoslav and the Italian 1 : 50,000 series is also the line of junction between Greek survey datum (which is the basis adopted for British mapping throughout the Balkans), and Italian survey datum.

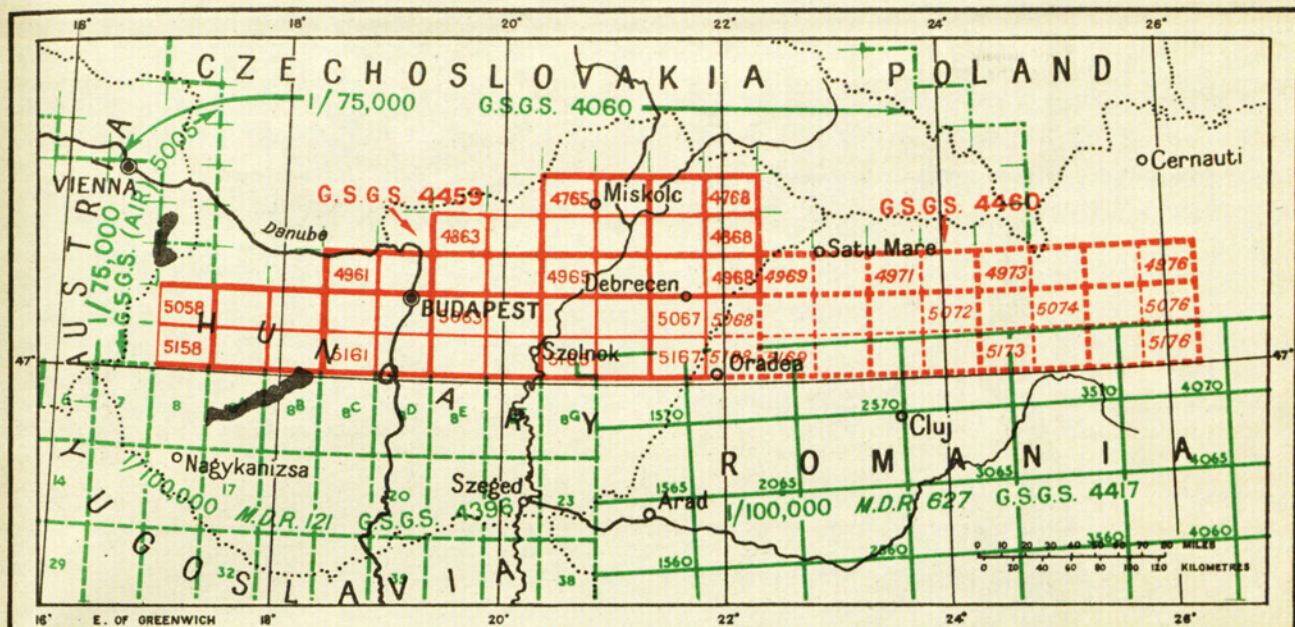
Certain isolated 1 : 50,000 sheets have been prepared by the direct enlargement of the 1 : 100,000 sheets: such sheets have been published by Middle East as M.D.R. 638.

YUGOSLAVIA, 1 : 25,000 (Med. I)

The nineteen sheets of this series which cover the block of Central Dalmatian Islands have been prepared in A.F.H.Q. Sheets have been based on the Yugoslav 1 : 100,000 originals, which have been enlarged to this scale, extensively revised from air photographs, and completely redrawn. In addition, sheets carry certain information acquired from Intelligence Reports on this area. Sheets are numbered by the same method as the Italian 1 : 25,000 series : they take the 1 : 100,000 sheet number, add the roman figure indicating the quarter of the area concerned (as for Yugoslavia 1 : 50,000, *see above*), and then add N.E., S.W., etc., to indicate the area of the 1 : 25,000 sheet (*e.g.*, 125—IV—N.W.). All the sheets of this series have been published in A.F.H.Q., and reproduction material of them will be circulated in due course, though it is unlikely that sheets will be printed outside A.F.H.Q. Since certain air cover arrived too late, second editions of some sheets may be published.

NORTH ROMANIA, 1 : 75,000, G.S.G.S. 4460 (See sample below, on right)

NORTH HUNGARY, 1 : 75,000, G.S.G.S. 4459 (See sample below, on left)



G.S.G.S. 4460. This series has been reproduced direct from the old Austro-Hungarian 1 : 75,000 sheets which were prepared for this area during the early part of this century (but which have not been revised by the Romanians). The series has been produced only for the area of Romania north of 47° N., so as to provide initial map coverage in this area until such time as sheets are available of G.S.G.S. 4416 [A.M.S. M.671], the Central Europe 1 : 100,000 series. Sheets of M.D.R. 627/G.S.G.S. 4417 cover the southern half of Romania, and overlap with the southern row of sheets of this series. The original survey of this map, like that of all the other Austro-Hungarian 1 : 75,000 maps, was carried out at 1 : 25,000 ; it is probable that the sheets of the Central European 1 : 100,000 series in this area will show less detail than these old 1 : 75,000 originals. On the other hand, communications on the 1 : 75,000 originals are badly out of date, and many place-names now have different forms. Relief is shown by hachuring on these sheets, but contours are also used, though they are not easy to distinguish from the hachuring. Sheets have been reproduced direct from the originals ; they do not carry a reference, nor are they gridded. All sheets shown on the index above have been published in this country ; small stocks have been sent to A.F.H.Q. and to Middle East.

G.S.G.S. 4459. Like the Romanian 1 : 75,000 series, this Hungarian 1 : 75,000 series has been reproduced direct from the Hungarian originals, in order to produce some map coverage for that area of Hungary north of 47° N. (which will eventually be covered by sheets of the Central European 1 : 100,000 series). Most of the Hungarian originals in this area are dated about 1925-6 ; in addition, these Hungarian originals show considerably more detail than will appear on sheets of the new 1 : 100,000 series, and thus they will retain a certain value as a supplement to sheets of the 1 : 100,000 series when the latter are available. In the north, these sheets join up with the 1 : 75,000 series of Austria, of Czechoslovakia, and of Romania, since all these series are based on the sheet lines of the old Austro-Hungarian 1 : 75,000 series ; thus the extreme north of Hungary is covered by Austrian and by Czechoslovak sheets. The series has not been gridded, nor do sheets carry a reference. All sheets shown on the index are available, and small stocks of them have been sent to Middle East and to A.F.H.Q.

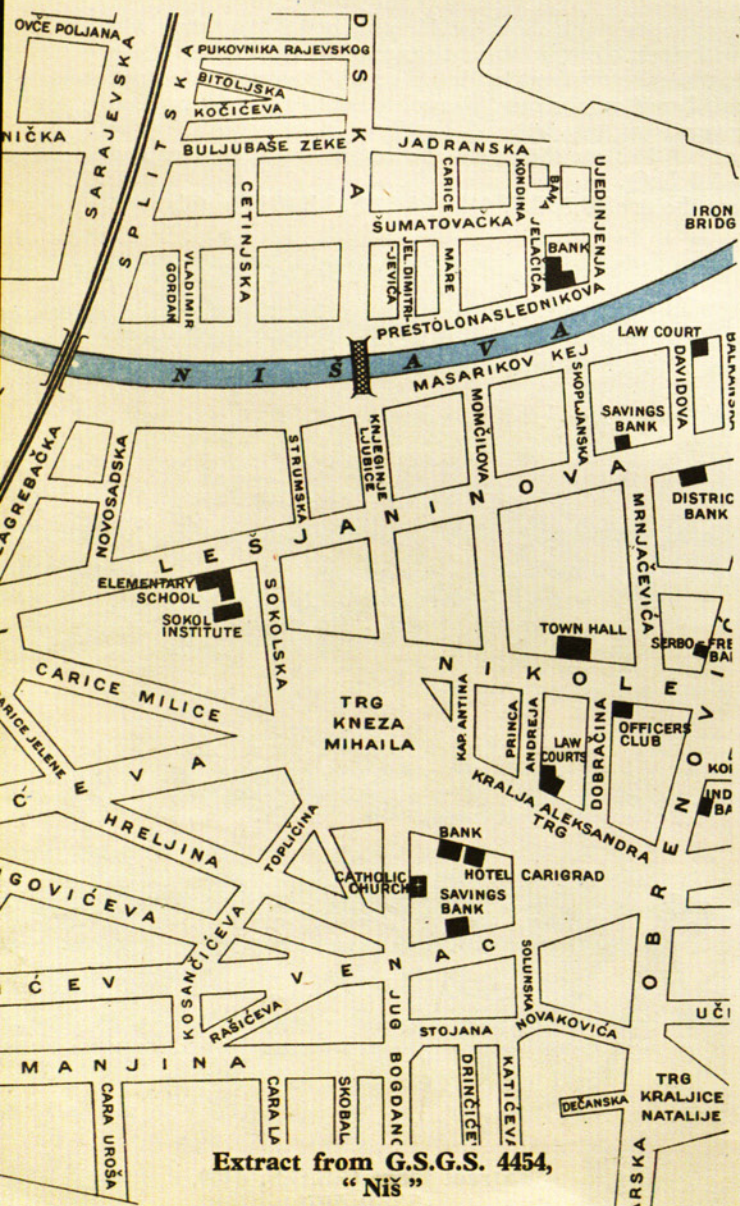
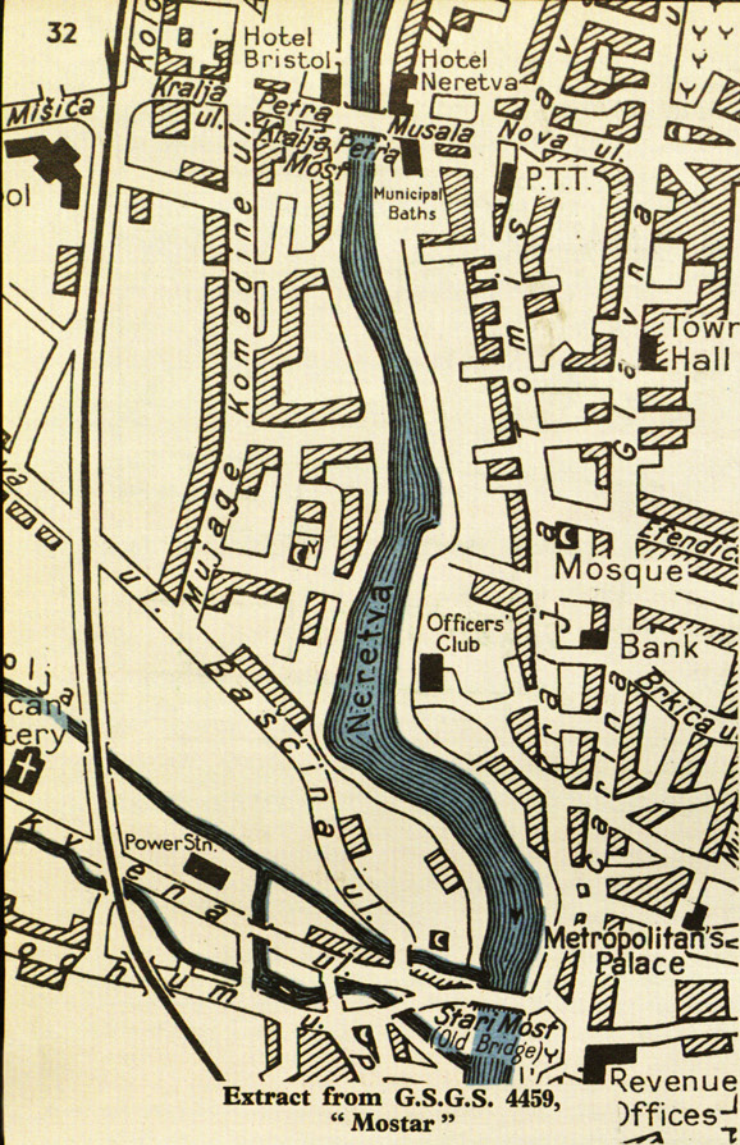
Thickened 1 : 75,000 sheet lines on the index above show sheets of G.S.G.S. 4416 [A.M.S. M. 671] in this area.



Extract from G.S.G.S. 4459, Sheet 5165



Extract from G.S.G.S. 4460, Sheet 5071



TOWN PLANS

The lists below show the plans which either have been published by Middle East or by the War Office, or are now in hand. In all probability, however, many additional plans will be prepared as well as new editions of existing plans; these lists of plans should therefore be kept constantly up to date in the spaces left below.

The samples opposite illustrate the wide variety of style (and accuracy) of town plans in this area. The top left sample is a direct copy of a guide-book plan of Mostar on which certain buildings of importance have been annotated; this type of plan has some value for indicating street names; it is purely diagrammatic, and should always be regarded as such. The bottom left sample is taken from the town plan of Niš, which has been redrawn from an old Yugoslav street plan; at the time when this plan was prepared, no air cover was available for this area, and thus the plan is extremely diagrammatic and its detail is out of drawing in various places; as a diagram, however, this type of plan is both clear and useful, and, since it indicates nearly all the street names, it should be of value for many purposes. The top right sample is from a plan of Korinthos prepared by Middle East on a basis of existing Greek plans; detail has been extensively revised from air photographs, and various locations have been added from Intelligence Reports and from existing plans. The bottom right sample, from the plan of Split, is typical of the style of finalised plan produced in this country; this type of plan is drawn largely from air photographs, and is annotated in detail with information about industrial and municipal buildings, based on research (by I.S.T.D.); this type of plan can be considered accurate and reliable from both town and port aspects.

In addition to the plans published in Middle East and in this country (which are listed below), original town plans are held for many other towns in the area, especially for Bulgaria, Romania, Yugoslavia and Hungary; photographic copies of such original plans can generally be supplied in limited quantity by local Survey Directorates. Certain plans have also been prepared by the American "Office of Strategic Services" (O.S.S.) to illustrate handbooks on Albania, Bulgaria and Yugoslavia. The "Through-way Town Plans" of Yugoslavia and of Hungary (see page 34) also have some value as normal town plans where no other plan is available.

CRETE, M.D.R. 640/G.S.G.S. 4456

Iraklion

Rethimnon

Khania

(Soudha)

DODECANESE, M.D.R. 539/G.S.G.S. 4450

Coo

Rhodes

GREECE, M.D.R. 641/G.S.G.S. 4457

(Amfipolis)

(Athens)

Korinthos

(Kalarnai)

(Kalkhis)

(Katakolon)

(Kavalla)

(Kerkira)

Thessaloniki

(Khios)

(Mitilini)

(Navplion)

Patrai

(Volos)

Piraeus

(Preveza)

(Samos)

(Siros)

ALBANIA, G.S.G.S. 4415

*Durrës

(Elbasan)

(Shkodër)

Tiranë

Vlonë

EUROPEAN TURKEY, M.D.R. 642

Istanbul

BULGARIA

ROMANIA

YUGOSLAVIA, G.S.G.S. 4454

*Dubrovnik and Gruz

Mostar

Skoplje

Tivat

*Kotor

Niš

Split

Zara (Italy—G.S.G.S. 4380)

HUNGARY, G.S.G.S. 4484

Budapest

Note. Brackets mean plan is still in hand. Names of plans in Italics denote production by M.E.

*Port or berthing plans have been prepared for:

Durrës G.S.G.S. (Misc.) No. 84

Dubrovnik G.S.G.S. (Misc.) No. 85

Kotor G.S.G.S. (Misc.) No. 86

Gjenovic G.S.G.S. (Misc.) No. 90

COMMUNICATIONS MAPS

THROUGH-WAY TOWN PLANS

This type of plan is intended to assist drivers to find their way quickly and directly through a town; it thus requires to be simple in style and small in size. This "movement" requirement for town plans is generally not met by the normal type of plan, which is often too detailed and too unwieldy. The principal difficulty in producing this type of plan for Yugoslavia has been that of acquiring sufficient material, *e.g.*, air photographs. Most of the Yugoslav and Albanian plans have been based on the 1 : 100,000 Yugoslav sheets, with added information from air photographs, and, in some cases, from through-way plans prepared by Freytag and Berndt. For Hungary, plans have been reproduced direct from a book of through-routes "Magyarország Autótérképe" published in 1932 by the "Királyi Magyar Automobil Club" of Budapest; on a few of these plans some revision to through-routes has been made from air photographs.

No similar volumes of through-way plans have been prepared for other countries in this area, though pamphlets are available covering Italy and Austria.

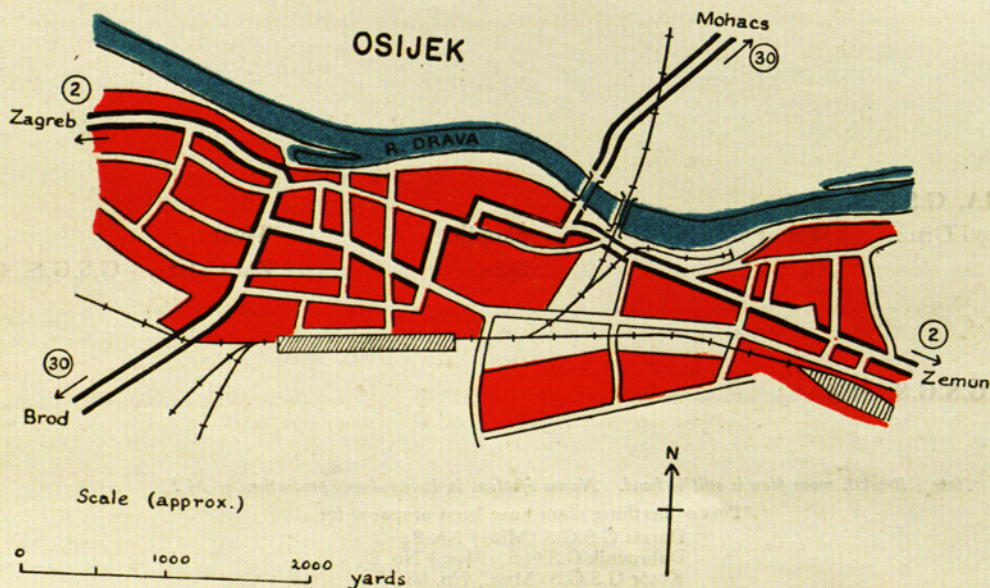
The lists below supply the names of all towns covered in the Yugoslav volume and in the Hungarian volume. Both of these volumes are being produced in this country, and should be available very shortly; stocks of both are being supplied to A.F.H.Q. and Middle East.

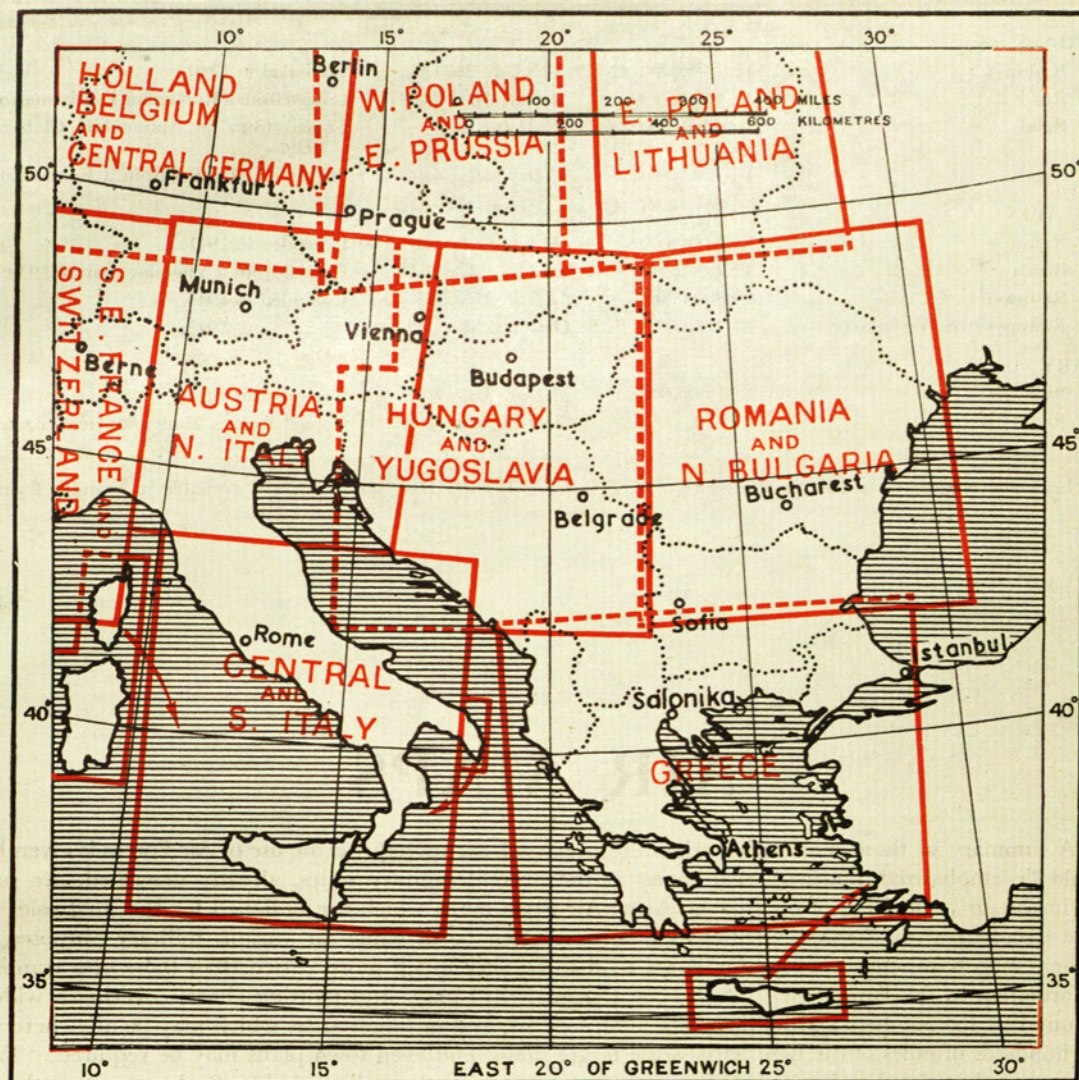
THROUGH-WAY PLANS OF YUGOSLAVIA AND ALBANIA, G.S.G.S. (MISC.) No. 131

Banja Luka	Mostar	Split
Belgrade (<i>Beograd</i>)	Nikšić	Subotica
Bihác	Niš	Sušak (with Fiume)
Bijelina	Novi Sad	Trebinje
Bitolj	Osijek	Varaždin
Brod	Pančevo	Veles
Celje	Peó	Zagreb
Cetinje	Petrovgrad	Zara
Dubrovnik	Podgorica	Zemun
Karlovac	Prilep	
Kumanovo	Priština	ALBANIA
Kragujevac	Prizren	Durrës
Kraljevo	Sarajevo	Elbasan
Kruševac	Šibenik	Korçë
Ljubljana	Sisak	Shkodër
Maribor	Skoplje	Tiranë
Mitrovica, Kos.	Sombor	Vlonë

THROUGH-WAY PLANS OF HUNGARY, G.S.G.S. (MISC.) No. 96

Baja	Kolocsa	Pécs
Balassagyarmat	Kaposvár	Pesterzsébet
Békéscsaba	Karcag	Rákospalota
Budafok	Kecskemét	Salgótarján
Budapest	Kiskunfélegyháza	Sátoraljaúhely
Cegléd	Kiskunhalas	Sopron
Csongrád	Kispest	Szeged
Debrecen	Kistújszállás	Székesfehérvár
Eger	Komárom	Szekeszárd
Esztergom	Kőszeg	Szentendre
Gyöngyös	Magyaróvár	Szentes
Győr	Makó	Szentgotthárd
Gyula	Mezőtúr	Szolnok
Hajduböszörmény	Miskolc	Szombathely
Hajdúhadház	Mohács	Túrkeve
Hajdunánás	Nagykanizsa	Újpest
Hajduszoboszló	Nagykőrös	Vác
Hódmezővásárhely	Nyíregyháza	Veszprém
Jászberény	Pápa	Zalaegerszeg





The three sheets of this series covering this area are in hand with the War Office at the moment. The series is prepared with a base map in brown, with roads in red, with railways in black, and with navigable waterways in dark blue. Sheets are published showing roads, railways and waterways together, and also showing each separately. Roads are shown according to the various national systems of width/surface classification. Railways have been brought up to date by the War Office Transportation section concerned; all stations are plotted and the main layout of junctions and of multiple tracking is shown, exaggerated in scale. Waterways are classified according to the draught of vessel that can use them.

When sheets are available, this should be the principal communications map for the whole area, and, indeed, the whole of Europe.

The following list shows other communications maps that have been published by the War Office or by Middle East for the different countries in the area.

<i>Title</i>	<i>Scale</i>	<i>Reference number</i>	<i>Notes</i>
GREECE			
(i) Railway Map	1 : 1,000,000	G.S.G.S. 3884A	Compiled in 1941.
(ii) Communication-Roads	1 : 500,000	M.D.R. 601	Prepared from a map dated 1941.
(iii) Roads (to accompany report)	1 : 500,000	M.D.R. Misc. 7048	Compiled in 1943.
(iv) Routes to the Turkish frontier	1 : 250,000	M.D.R. Misc. 7411	" " 1943.
ALBANIA			
(i) Albanian Routes	1 : 500,000	M.D.R. Misc. 790	Compiled in 1942.
(ii) Sketch map of Roads	1 : 400,000	M.D.R. Misc. 6564 & 6565	" " 1943.
TURKEY			
(i) Wheel Routes	1 : 2,000,000	M.D.R. 529/G.S.G.S. 4236	Compiled in 1941.
(ii) Routes	1 : 1,000,000	P.D.R. Misc. 1785A	" " 1943.
(iii) Railways	1 : 1,000,000	G.S.G.S. 3873A	" " 1940.
BULGARIA.			
(i) Railways	1 : 1,000,000	G.S.G.S. 3873A	Compiled in 1940.
(ii) Routes	1 : 1,000,000	M.D.R. Misc. 6512	" " 1943.
(iii) Railways	1 : 400,000	M.D.R. Misc. 6647	" " 1942.

continued on page 36

<i>Title</i>	<i>Scale</i>	<i>Reference number</i>	<i>Notes</i>
ROMANIA			
(i) Railways	1 : 1,000,000	G.S.G.S. 3874A	Compiled in 1940.
(ii) Roads	1 : 1,000,000	<i>M.D.R. Misc. 7554</i>	Copied from a Romanian Tourist map of 1939.
(iii) Roads	1 : 1,000,000	<i>M.D.R. 601</i>	Copied from an Automobile Club map of 1939.
(iv) Roads	1 : 750,000	<i>M.D.R. Misc. 6597</i>	(46 sheets) Copied from a Romanian series.
YUGOSLAVIA			
(i) Railways	1 : 1,000,000	G.S.G.S. 3886B	Compiled in 1941.
(ii) Roads	1 : 1,000,000	G.S.G.S. Misc. 127	Copied from a Yugoslav map of 1939.
(iii) Railways	1 : 800,000	<i>M.D.R. Misc. 6533</i>	Compiled in 1943.
(iv) Railways in S. Yugoslavia	1 : 728,000	G.S.G.S. Misc. 83	„ „ 1943.
HUNGARY			
(i) Railways	1 : 1,000,000	<i>M.D.R. Misc. 8021</i>	Compiled in 1944.
(ii) Roads	1 : 800,000	G.S.G.S. Misc. 121	Copied from a Hungarian map dated 1941.

Certain items above prepared in Middle East (shown by *P.D.R.* or *M.D.R. Misc.* numbers), are available in bromide form only.

AIR MAPS

A summary of those map series originally prepared exclusively for the use of Air Forces is given below. It should be emphasized, however, that many of the normal military series, already described, are suitable for use in the air (especially, of course, the Army/Air Style maps which are designed for the dual role) : also that the essentially "air" maps mentioned here may often be of value for various military purposes. The operational map requirements of an Air Force tend to be very much more varied than those of a comparable Army formation in the same area. Small-scale topographical maps and plotting charts covering a wide area are required by the bombers and by their day-fighter escort, and in target areas which may be anywhere within several hundreds of miles of the base, large-scale target maps, and even town plans may be required. Tactical Air Forces, on the other hand, require large-scale maps, carrying the military grid, of a large area to the rear of the enemy's front line. Some of these requirements are met by the special air maps, others by the standard military maps.

Europe (Air), 1 : 500,000 (Code AF), *M.D.R. 595/G.S.G.S. 4072.*

Middle East, 1 : 500,000, *M.D.R. 580.*

These maps are described on page 4. The special air information on this series (see symbols opposite) will not be found on any other series covering the Balkans.

Since 1940 the airfield information shown on sheets published in U.K. has been stabilized ; such sheets are marked "S" in the bottom right-hand corner. A review of this airfield information is now taking place, and, in future, only the main permanent airfields will be shown on those sheets north of 44° N. (see index on page 4). Such sheets (none of which is yet published for this area) will be distinguished by the letters "S.M." Airfield information on sheets south of 44° N. will be shown—as it is already shown on many sheets printed by Middle East—from data provided by Air H.Q., Middle East : this information will be brought up to date from time to time.

Air Lights and Radio-Electric stations are at present indicated, but owing to the incompleteness of the information, and to the large numbers of Radio stations, it is not intended to show these in future.

Europe (Air), 1 : 250,000 (Code AB), G.S.G.S. 3982.

This series only covers small areas of Yugoslavia, Hungary and Albania. It is a clear map, but though generalised, it is basically sound ; it has been fully described in previous volumes of Notes on G.S.G.S. Maps.

G.S.G.S. 3982 is not being extended further in the Balkans, and the normal "Army/Air" 1 : 250,000 series (already described : see page 8) complete the air-map coverage of this area at this scale, or will do so when all sheets are published : until all sheets are published, the 1 : 500,000 Air series mentioned above should be used. The main features of "Army/Air" style, from the airman's point of view are : (a) relief shown by purple layer-tinting, which is equally legible in amber- or in day-light, (b) main spot-heights "boxed" for clarity, (c) inland water and sea verge printed in deep blue for emphasis, (d) railways accentuated, (e) isogonals, (f) metres-feet conversion table, and (g) time-figures.

Navigational Plotting Charts.

M.D.R. 647/G.S.G.S. 5012, Small Scale Plotting Series (Code PC), Sheet "Oran-Sofia" is a plotting chart at 1 : 2,000,000 covering the S.W. of the Balkans. *M.D.R. 474/G.S.G.S. 4080*, Plotting Series 1 : 1,000,000 (Code AG), is a red and white outline series on Mercator's projection, and is available for the whole area. Sheets "Greece" and "Anatolia" have recently been revised by Middle East, but bulk stocks are not yet available in England. All sheets of this plotting series for this area are now suitable for use with "Y" apparatus.

Charts for use with Navigational Aids.

G.S.G.S. 4473, Radar Base Maps, are single-colour outline sheets, on the same sheet-lines and projection as *M.D.R. 1/G.S.G.S. 2758*, Europe 1 : 1,000,000, and show only main waterways, hill features, spot heights and town shapes. Sheets "Trieste-Budapest", "Roma-Sarajevo", and "Sofia-Istanbul" are available overprinted with lattice curves for the GEE (Italy) chain, and will shortly be available with S.S. LORAN overprints.

Zone Plans, 1 : 25,000, G.S.G.S. 4399.

A few cities in the area are covered by plans in this series, which show by various colours built-up areas of different densities, industrial areas, public buildings, railway yards, public utility plants, etc.



Target Maps (see sample opposite).

Many of the principal targets within the area are covered by night-bombing target maps, and/or by daylight target maps. Most of these target maps are published at a scale of 1 inch to 1 mile, and, during their preparation, are checked with all available air photographs.

AIR INFORMATION SYMBOLS

Airfield	30	⊙	} P.A. = Position Approximate.
(Height in metres)			
Landing ground	30	○	}
(Height in metres)			
Water Airfield		⊙	}
(Centre of circle)			
Seaplane mooring area or anchorage		⊕	}
(Centre of stock)			
Obstruction over 60 metres (200 feet) above ground. (Centre of symbol)		⬇	
Marine light	Lighthouse or light buoy	☆	}
Light vessel	⚓	}	
Overhead high tension cable		~~~~~	
Landmark ; description added		⚓	
(Centre of circle)			

In addition to the above M.E., also use the following :

Airfield, local position or existence not confirmed	⊙
Landing Ground, not regularly visited, or existence not confirmed	○
Airfield Abandoned	⊙
Landing Ground Abandoned	⊗

NOTE.—Names of towns are underlined where the airfield, etc., has the same name. Otherwise names of airfields, etc., are shown thus Loutsa

GEOLOGICAL MAPS

The geological maps described here have been prepared by the War Office direct from original maps, mostly loaned for this purpose by the Geological Survey in London. The maps are direct copies of the originals, and no attempt has been made to modify either the base map or the geological information: the maps carry the explanatory legends shown on the originals, and no translation or development of the legend has been included (e.g., showing rocks suitable for road construction, etc.).

The reproduction of these geological maps—some of them involving as many as twenty different colours—is a lengthy and costly affair: only very limited stocks of them are, therefore, available, and issues have to be restricted as far as possible to the comparatively small number of technical users who really require this specialised information.

The maps have been printed in this country, and stocks of them have been sent to A.F.H.Q. and to Middle East.

ALBANIA, GEOLOGICAL MAP, G.S.G.S. 4418A

The base of this map is the reproduction of the "Louis" 1:200,000 two-sheet map of Albania (described on page 8). This base is printed in light colouring that shows off the many-coloured geological information. The map was originally prepared in 1928, by Dr. Ernst Nowac. An accompanying text "Erläuterungen zur Geologischen Karte 1:200,000" exists, from which a note was prepared by I.S.T.D., and is printed on the reverse of copies of the map issued with their report B.R. 876Y.

CENTRAL BALKANS, GEOLOGICAL MAP, G.S.G.S. 4433

This map, which is at a scale of 1:800,000, covers the whole of Bulgaria, all European Turkey, N. Greece (to just south of Salonika), E. Yugoslavia (east of a line south of Belgrade), and most of the Dobruja area of S.E. Romania (i.e., S.E. of the Danube). The map which was published in 1936, was originally prepared by a Professor Bončev, partly from his own work and partly by compilation from other sources. The legend of the map is in German and Bulgarian: place-names on the map are in romanised form but Bulgarian versions of names and of spelling are used (e.g., Istanbul is shown as Carigrad and Salonika as Solun). The map has two principal disadvantages; one is that it is stratigraphical rather than lithological, and hence does not show rock types: the other is that no explanatory text appears to be available.

The preparation of a simplified geological map of Bulgaria at 1:1,000,000 is in hand in this country at the moment, with I.S.T.D.: this simplified version is to show rock types. It has been compiled from geological maps of the country by Hochspetter and by de Launay. This simplified map should be available shortly.

ROMANIA, GEOLOGICAL MAP, G.S.G.S. 4432

This map covers the whole of Romania at a scale of 1:1,500,000. The original was prepared by the "Institutul Geologic al României" and was published in 1926 in the "Atlas Fiziografic și Statistic al României" (printed in Berlin). This map also shows stratigraphic divisions: its legend is in Romanian only.

YUGOSLAVIA, GEOLOGICAL MAP, G.S.G.S. 4428

This map covers the whole of Yugoslavia (geological information is not shown for areas outside the Yugoslav frontiers). The map is at a scale of 1:1,000,000 and was prepared in 1930-31 by Dr. Petković from information in the Geological Institute of the University of Belgrade and in the Geological Institute of Zagreb. The legend is in Yugoslav (Croat) and in French.

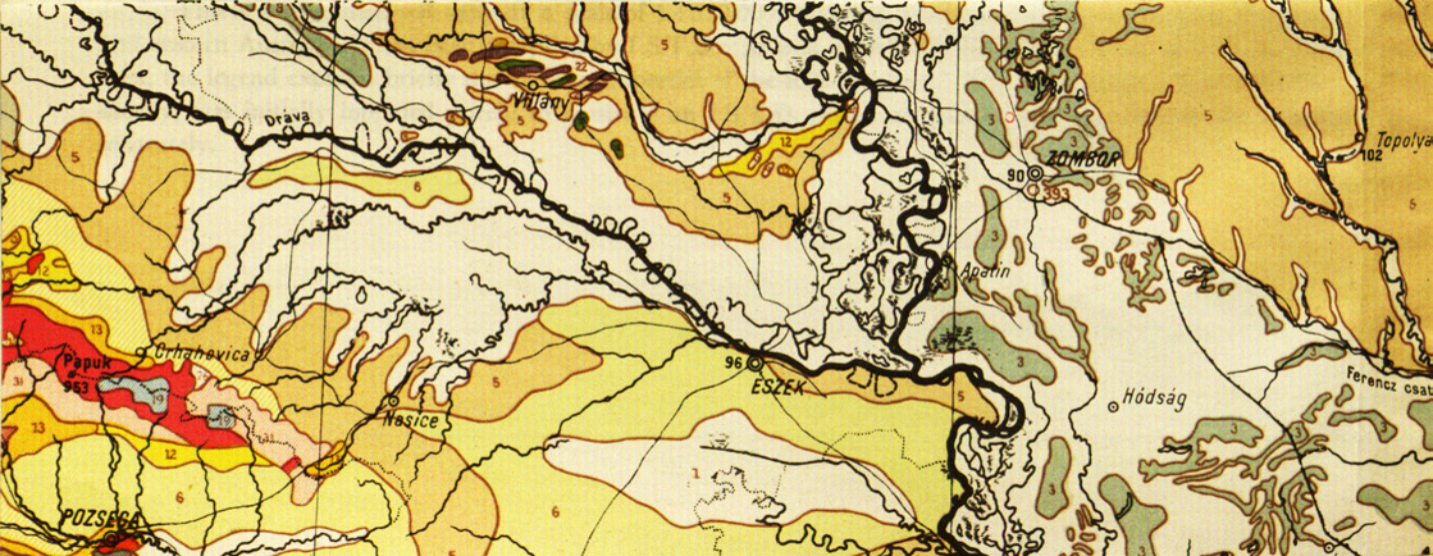
HUNGARY, GEOLOGICAL MAP, G.S.G.S. 4431 (*See sample below*)

This map covers the whole of Hungary and Transylvania: it is published at a scale of 1:900,000. All references and explanatory notes on the map are in Hungarian, but a separate sheet has been prepared by I.S.T.D. and gives a translation of the reference and adds certain additional information. These reference sheets are being issued separately (as G.S.G.S. 4431 Key).

The original map was prepared by Dr. Idösb, Dr. Teleki and Dr. Papp, and was published in Budapest in 1922.

MIDDLE DANUBE AREA, SOIL MAP, G.S.G.S. (Misc.) No. 146

This is a simplified soil map at a scale of 1:550,000, covering northern Yugoslavia, western Hungary and eastern Austria. It has been compiled by I.S.T.D.: as well as defining the various types of soils in this area, the legend explains briefly the various properties of the soils involved. The map, which will be available shortly, was initially intended purely to illustrate an I.S.T.D. report on soils in this area, but is also issued separately.



OTHER MAPS of Interest in the Area

The following summary of other map series in the area does not attempt to be exhaustive.

Europe, 1 : 2,000,000, G.S.G.S. 4464. This is an excellent general map of the whole of Europe, published in nine sheets: relief is shown by brown layer tints. Sheets include general revision to communications.

Crete, 1 : 400,000, M.D.R. 534/G.S.G.S. 4160, covers the whole island in one sheet. The map was originally prepared by the War Office in 1940, but has been revised since and republished in Middle East. It is not entirely reliable for communications, nor are all place names in their now accepted forms.

Collation Maps of Crete (various scales), M.D.R. 533. *See note on Middle East Collation maps below.*

"Going" Map of Rhodes, 1 : 25,000, M.D.R. 47. This map is a reproduction of all except two of the sheets of the standard 1 : 25,000 map of Rhodes with overprints showing, by various colours, the probable "Going" across country. This is the only "Going" map so far published for this Balkans area.

Greece, 1 : 400,000, D.R. 234, is a reproduction by Middle East of sheets of the Greek 1 : 400,000 general map. The map is layered (in green and brown) and the lettering is in roman script: sheets carry the British grid. Only five sheets in northern Greece (north of 40° 30' N.) are published. The originals reproduced are dated between 1932 and 1938: no attempt to revise them was made.

Greece, 1 : 400,000 Aeronautical Map, D.R. 222. This series is the direct reproduction of sheets of the Greek 1 : 400,000 aeronautical map. Sheets were published in Middle East, and cover most of the mainland of Greece and also Crete. The series is not gridded, and, except for the names of principal towns, all lettering is in Greek script. Sheets are in coloured form with brown layer tints.

Collation Maps of Greece (various scales) M.D.R. 533. *(See below.)*

Albania and Southern Yugoslavia, 1 : 500,000, G.S.G.S. (Misc.) 57, is a general outline map of this area prepared by I.S.T.D. to illustrate a report. The map carries the three British grids involved in this area. G.S.G.S. (Misc.) 119, also prepared by I.S.T.D., is an overprinted version of the normal map, showing suitability of terrain for the rapid construction of airfields.

Turkey, 1 : 800,000, M.D.R. 529/G.S.G.S. 4235. This map has been reproduced by Middle East direct from sheets of the Turkish original series at this scale, dated 1936. Sheet 1 covers all European Turkey (Istanbul falls in the centre of it). Place names are in modern Turkish (roman script) form. It forms an extremely useful general map for the whole of Turkey.

Yugoslavia, 1 : 50,000, M.D.R. 638. This series consists of certain isolated sheets or blocks of sheets which have been produced by Middle East by direct enlargement of the Yugoslav 1 : 100,000 sheets (*M.D.R. 621/G.S.G.S. 4396*). No attempt has been made to improve on the crude style necessarily resulting from such a direct (monochrome) enlargement of a coloured map. Sheets are gridded: they have primarily been used as bases for overprinting information (e.g., collation maps). As a series, it will be superseded by sheets of [A.M.S. M. 702].

Collation Maps of Yugoslavia (mostly at 1 : 50,000), M.D.R. 533. *(See below.)*

Middle Danube Area, 1 : 500,000, G.S.G.S. 4475. This one-sheet map was produced primarily to illustrate I.S.T.D. reports on this area of N. Yugoslavia, W. Hungary and E. Austria. It was prepared by combining and revising parts of some six sheets of *M.D.R. 595/G.S.G.S. 4072*. It carries the three British grids involved in the area, but is not layered.

Middle East Collation Maps are prepared, in conjunction with Naval and Military Intelligence organisations, to illustrate all available intelligence about particular areas. Most of these maps consist of a base map printed in grey, with the information to be illustrated shown in a variety of colours. The maps vary from town plans to quite small scales depending on the area concerned and the information available. The type of information on the overprints varies with the particular requirement for each map; among other features often shown are, enemy defences, particular selected routes, supplementary notes on the topography, such as "Poljes are narrow and covered with Olive trees."

PART II

FOREIGN MAPS

This section is concerned with the original surveys, of the area, and with the resulting large-scale maps prepared by the local governments, and with the maps of the area that the Germans have prepared from such material. It is important to maintain a clear distinction between those original maps which have been reproduced more or less directly as British or Allied map series, and other maps of value known to have been produced by the countries concerned but not available to us (though in most cases they have been reproduced by the Germans).

The notes given have been compiled from information in the G.S.G.S. Map Library, from the "Compilation diagrams" or "Authorities" notes provided on sheets of certain large-scale original foreign maps, and from two captured German documents, a map catalogue ("Planheft Südosteuropa, südlicher Teil") of July 1943 (covering Greece, the islands of the Ægean, Albania, European Turkey, Bulgaria, and Yugoslavia) and a "Vade Mecum Ost" of 1940 (giving notes on German maps for artillery use, and covering Greece, Bulgaria, Romania, Yugoslavia, and Hungary).

The appreciation of the foreign maps of this area calls first for a note about their historical background. Before the 1914-18 war the initial surveys of much of the area had been carried out by the Austro-Hungarian Empire and by Russia; the Austrian work had been embodied into the Austrian 1 : 75,000 map (from 1 : 25,000 ground surveys), and the Russian work into various Russian maps at scales of 1 : 42,000, 1 : 82,000, and 1 : 126,000. The diagram opposite illustrates the extent of Austro-Hungarian and of Russian survey in this area. The

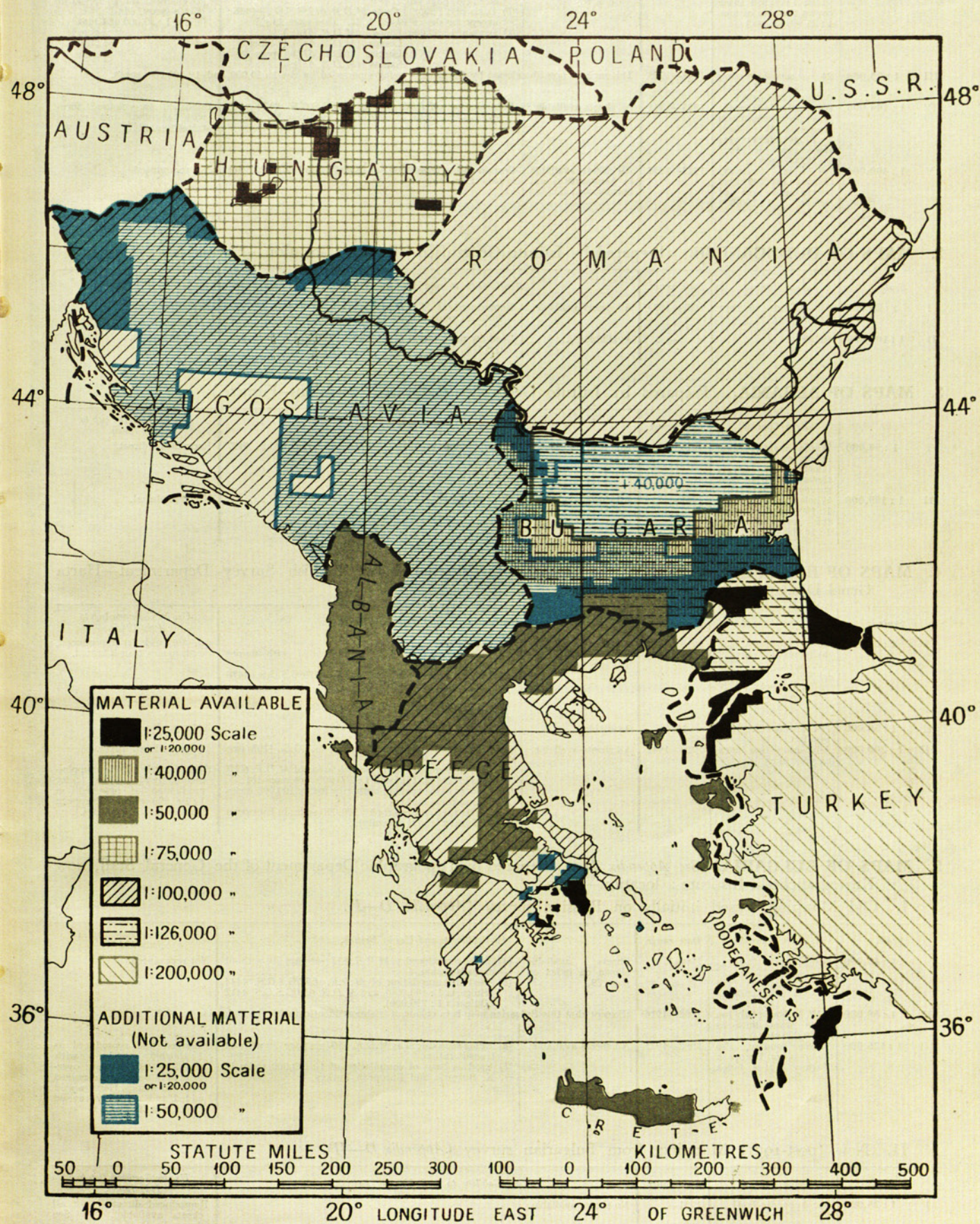
maps of 1938-Hungary, of most of Yugoslavia, of small parts of northern and western Albania, and of north-western Romania (Transylvania), are based on the old Austrian 1 : 75,000 map. The fact that the Austrian 1 : 75,000 map was prepared almost entirely from field sheets at a scale of 1 : 25,000 is important in so far as it made possible the production of 1 : 25,000 (or similar) scale maps for the whole area covered by the 1 : 75,000 series (by the direct reproduction of the original field survey sheets). The maps of north-eastern Romania (Bessarabia) and of Bulgaria are based on the old Russian work. Neither Austrian nor Russian surveys extended over Greece, over the greater part of Albania, over Serbia, or over the Romanian provinces of Wallachia and Moldavia. (Russian mapping in the Dobruja and in European Turkey was not used by Romanians or by Turks in their later maps of these areas.)

Greek maps are, in general, unaffected by either Austrian or Russian work. (In the Peloponnese, the Greek 1 : 100,000 series was based on French survey of 1854.) Except for a few isolated patches, and except for the area of the Austrian work, most of Albania was not surveyed until the Italian occupation, which produced the new 1 : 50,000 series of Albania (the Albanians had invited the Italians to start this work about 10 years before the Italian annexation of 1939). European Turkey was covered by Russian survey, though the current Turkish maps have made no use of this work (on the other hand, the new Turkish 1 : 100,000 series, as well as a new Bulgarian 1 : 100,000 series, covering this area has accepted the Russian 1 : 126,000 maps in preference to the new Turkish 1 : 200,000 maps). In Bulgaria, the Russian surveys did not cover a small area of S.W. Bulgaria and a narrow strip south of the River Arda to the present Bulgarian-Greek frontier (this area remained unsurveyed until the recent Bulgarian 1 : 25,000 series was produced). In modern Romania, the original Wallachia and Moldavia were mapped by the Romanians (under Austrian sponsorship); when they acquired the Dobruja in 1878 they did not accept the Russian 1 : 126,000 maps of that area but prepared their own series; in Transylvania and in Bessarabia, however, the Romanians did accept the Austrian and the Russian work respectively. The northern (pre-1912) half of Serbia was mapped by the Serbs at 1 : 50,000, and this work was incorporated by the Austrians into their 1 : 75,000 series; the southern half of Serbia was mapped at 1 : 50,000 after the 1914-18 war, and this work was incorporated into the modern Yugoslav 1 : 100,000 series. Outside Serbia, the Yugoslav 1 : 100,000 series was based on the Austrian 1 : 75,000 (with revision). The modern 1 : 75,000 series of Hungary is a direct development from the old Austro-Hungarian 1 : 75,000 series.

The present position of mapping of the countries which comprise the area is set out in tabular form below; this is illustrated by Appendix A, a diagram for the whole area showing (in black and grey), the largest-scale basic map material available for the preparation of British and Allied maps, and (in blue) the areas covered by such additional maps of value as are known to exist, and have mostly been available for German, but not (so far) for British or Allied use. This tabulated information and the general diagram are supplemented by separate appendices for each country, showing in detail the sheet-lines or areas covered by certain local and German map series, and providing detailed notes about the maps concerned. These appendices cover all the countries concerned in this area, except Albania and the Dodecanese, since for these two areas the Italian 1 : 50,000 and 1 : 25,000 series have been reproduced direct both by the British (see Part I where they are fully described) and by the Germans. Appendix H shows the sheet lines of the standard German Südosteuropa 1 : 200,000 map of the area (an extension of the Austrian 1 : 200,000 map), and the sheet lines of the Austro-Hungarian 1 : 75,000 sheets. Appendix J shows the Italian 1 : 100,000 series prepared for the area.



APPENDIX A



Appendices B to J will be found in the pocket at the back of the book.

1. MAPS OF GREECE and Greek Islands. See Appendix B. (Prepared by the Greek Topographic Service, now Geographical Service of the Greek Army : location—Athens.)

Scale.	Area Covered.	Date range.	Availability to and Use by British.		Use by Germans (up to July 1943).
I 1:20,000	See Appendix B	1925—1935	Athens area only ...	Not reproduced	Used for 1:25,000 of Crete.
II 1:50,000	See Appendix B (Each 1:50,000 sheet covers the area of four 1:25,000 sheets.)	1934—1941	All sheets available (in M.E.)	(a) Sheets E—VI, NE, & SE and D—VI, NE published in M.E. (see page 16). (b) Basis of 1:50,000 Crete <i>M.D.R. 612/G.S.G.S. 4426</i> : except for sheets 19, 20 & 21. (See page 23). (c) Basis of 1:50,000 Khios (<i>M.D.R. 614</i>) Lesvos (<i>M.D.R. 617</i>) Limnos (<i>M.D.R. 617</i>) Samos (<i>M.D.R. 611</i>) } (See page 26)	Only used— (a) enlarged for 1:25,000 of Crete (prov. edn.). (b) for 1:50,000 of Khios, Lesvos, Limnos, Samos.
III 1:75,000	24 sheets covering Thessalonika, Larissa, Athens, and Corfu.	1908—1925	This series is now abandoned by the Greeks, being superseded by the 1:50,000 and 1:100,000 series.		
IV 1:100,000	All mainland of Greece. Sheet lines indicated on Appendix B. (Each 1:100,000 sheet covers the area of four 1:50,000 sheets.)	1925—1941	All sheets available	Published as <i>M.D.R. 356 & 610/G.S.G.S. 4439</i> with revision and names transliterated (see page 15).	Published in coloured form with revision and names transliterated.
V 1:400,000	All Greek territory. (Each 1:400,000 sheet covers the area of sixteen 1:100,000 sheets.)	1923—1938	All sheets available in Aeronautical and normal edition.	Certain sheets reproduced as <i>D.R. 234</i> and <i>D.R. 222</i> (see page 39).	Not reproduced.

2. MAPS OF DODECANESE. (Prepared by Istituto Geografico Militare : location—Firenze.)

Scale.	Area Covered.	Date range.	Availability to and Use by British		Use by Germans (up to July 1943)
I 1:25,000	All islands (except Castelrosso).	1927—1933	All sheets available	Reproduced as <i>M.D.R. 47/G.S.G.S. 4469</i> with revision from air photographs and in coloured form (see page 25).	Reproduced direct.
II 1:100,000	Rhodes	—	Available	Used for preparation of Rhodes 1:100,000 <i>M.D.R. 341/G.S.G.S. 4161</i> .	Not reproduced.

3. MAPS OF ALBANIA. (Prepared by Istituto Geografico Militare : location—Firenze.)

Scale.	Area Covered.	Date range.	Availability to and Use by British		Use by Germans (up to July 1943)
I 1:50,000	Whole country (see index on page 27). (Mostly new survey, though Austrian war survey used in parts.)	1928—1939	All but 4 sheets available.	Being reproduced direct as <i>M.D.R. 639/G.S.G.S. 4477</i> (see page 27).	Reproduced direct.
II 1:100,000	Whole country. (Each 1:100,000 sheet covers the area of four 1:50,000 sheets.)	1941—	All sheets available	Not reproduced	Not reproduced.

4. MAPS OF EUROPEAN TURKEY. See Appendix C. (Prepared by Turkish Survey Department—Harta Genel Direktörlüğü : location—Ankara.)

Scale.	Area Covered.	Date range.	Availability to and Use by British.		Use by Germans (up to July 1943).
I 1:25,000	(a) Dardanelles (b) Istanbul area (c) Edirne (Adrianople) area } (See index on page 28)	1913—1914	All sheets available	See page 28 : (a) Being reproduced as <i>M.D.R. 624</i> with names transliterated. (b) Being reproduced as <i>M.D.R. 629/G.S.G.S. 4470</i> with names transliterated. (c) Not being reproduced. Used also in preparation of 1:100,000 and 1:250,000 series of this area.	(a), (b) and (c) reproduced, with names transliterated.
II 1:50,000	Dardanelles—See Appendix C.	1909	Available	—	Not reproduced.
III 1:200,000	All Turkey (see index on page 6).	1910—1941	All sheets available	(a) Reproduced direct as <i>M.D.R. 3/G.S.G.S. 4193</i> (see page 10). (b) Used in compilation of Turkish areas of <i>M.D.R. 633/G.S.G.S. 4412</i> , Bulgaria 1:250,000 (see page 10). (c) Used as name-spelling authority for 1:100,000 series in European Turkey. N.B.—Not used as basis for 1:100,000 series in European Turkey (cf. (b) opposite).	(a) Reproduced direct. (b) Enlarged (and supplemented by i (a), (b) and (c) for production of new edition 1:100,000 series of European Turkey (see Appendix C).

5. MAPS OF BULGARIA. See Appendix D. (Prepared by Topographic Department of the General Staff, now Kartograficheski Institute : location—Sofia.)

I. Old Mapping, based initially on Russian survey (*Appendix D—I*).

Scale.	Area Covered.	Date range.	Availability to and Use by British.		Use by Germans (up to July 1943).
I 1:40,000	See Appendix D—I ...	1905—	Sheets available shown on index on page 29.	(a) Being reproduced as <i>M.D.R. 652</i> (see page 29) without transliteration. (b) Used in compilation of <i>M.D.R. 654/G.S.G.S. 4444</i> (Bulgaria 1:100,000), and <i>M.D.R. 633/G.S.G.S. 4412</i> (Bulgaria 1:250,000).	Not reproduced.
II 1:50,000	S.W. Bulgaria only (on same sheet lines as 1:40,000 series).	1902—1916	(Except that this Bulgarian map is in colour, it is almost identical with the Bulgarian 1:40,000 series).	—	
III 1:126,000	Whole country, also Dobruja and European Turkey. (See index on page 29.)	1902—1925	All sheets available	(a) Being reproduced as <i>M.D.R. 650</i> (see page 29) without transliteration. (b) Used as basis of compilation of 1:100,000 series in N. Bulgaria and European Turkey.	Enlarged and reproduced as 1:100,000 series, with transliterated names over-printed in red, roads classified with red fillings, German grid added, and generally revised (see Appendix D—I).

II. New (post-1931) Mapping, from Bulgarian survey (*Appendix D—II*).

Scale.	Area Covered.	Date range.	Availability to and Use by British.		Use by Germans (up to July 1943).
I 1:25,000	See Appendix D—II ...	1931—	No sheets available	—	Reproduced direct (? not all sheets available). See Appendix D—II.
II 1:50,000	See Appendix D—II. (Each 1:50,000 sheet covers the area of four 1:25,000 sheets.)	1931—	Sheets 337 to 342 359 to 364 375 to 380 available.	(a) Sheets 337 to 342 reproduced as <i>M.D.R. 657/G.S.G.S. 4449</i> with names transliterated and areas of Greece (in skeleton form on Bulgarian originals) revised from Greek 1:100,000 sheets. (See page 29.) (N.B.—This series is on exactly the same sheet-lines as <i>M.D.R. 654/G.S.G.S. 4444</i> , Bulgaria 1:100,000.)	Reproduced direct as for 1:25,000 (of which this series is a direct reduction). See Appendix D—II.
III 1:100,000	See Appendix D—II. (Each 1:100,000 sheet covers the area of four 1:50,000 sheets.)	1943—	No sheets available	—	Not reproduced.
IV 1:200,000	All Bulgaria. (Each 1:200,000 sheet covers the area of four 1:100,000 sheets.)	Unknown (post 1931)	No sheets available	—	Not reproduced.

6. MAPS OF ROMANIA. See Appendix E. (Prepared by Geographical Section of Romanian War Department (Servical Geogr. al Armatei), now Institut Geographic Militar : location—Bucuresti).

Scale.	Area Covered.	Date range.	Availability to and Use by British.		Use by Germans (up to July 1943).
I 1 : 20,000	All (pre-1938) Romania except for a few areas in Central Romania.	1927—	6 sheets available ...	—	Extract from 'Vaše Mecum Ost' of 1940: "A map is now being prepared—from the 1 : 20,000 sheets—on the 1 : 25,000 scale covering a zone along the frontier. It should be completed by the beginning of 1941. The Romanian Lambert Grid is being retained."
II 1 : 20,000	Unknown	1935 (?)	1 sheet available ...	—	
III 1 : 50,000	Moldavia and Wallachia.	1892—1911	223 sheets available	—	Not reproduced.
IV 1 : 50,000	Unknown	1934 (?)	1 sheet available ...	—	Not reproduced.
V 1 : 75,000 (Austro-Hungarian)	Transylvania. (See diagram at top of page 40.)	1904—1917	Available	Certain sheets north of 47° N. published as G.S.G.S. 4460. (See page 31.)	Not reproduced.
VI 1 : 100,000	See Appendix E. (Each 1 : 100,000 sheet covers the area of twenty-five 1 : 20,000 sheets—II above.)	1917—1940	Available	(a) Reproduced as M.D.R. 627/G.S.G.S. 4417. (See page 18.) (b) Used as basis of compilation of M.D.R. 635/G.S.G.S. 4375. (See page 11.)	Whole series reproduced direct in dark brown with contours in light brown and woods in green.
VII 1 : 200,000 (based on Austro-Hungarian map; and revised)	Whole country See Appendix H.	1910—1940	Available	North of 47° N. Used as basis of Romanian sheets of G.S.G.S. 4346. (See page 13.)	Reproduced as sheets of standard 1 : 200,000 "Südosteuropa" series. (See Appendix H.)
VIII 1 : 200,000	See Appendix E. (Each 1 : 200,000 sheet covers the area of four 1 : 100,000 sheets.)	1934 (?)	1 sheet available	—	No information about reproduction.

7. MAPS OF YUGOSLAVIA. See Appendix F. (Prepared by Geografski Institut Kraljevine Jugoslavije : location—Beograd).

Scale.	Area Covered.	Date range.	Availability to and Use by British.		Use by Germans (up to July 1943)
I 1 : 25,000	See Appendix F. ...	1934—35 (?)	5 sheets available ...	—	Reproduced direct where available.
II 1 : 50,000	See Appendix F. (Each 1 : 50,000 sheet covers the area of four 1 : 25,000 sheets.)	—	No sheets available	—	(a) Reproduced direct where available. (b) Enlarged to form extension to 1 : 25,000 series.
III 1 : 75,000 (Austro-Hungarian)	Northern three-quarters of country (see diagram at top of page 40.)	1884—1918	Available	—	Not reproduced.
IV 1 : 100,000	See Appendix F. Covers whole country. (Each 1 : 100,000 sheet covers the area of four 1 : 50,000 sheets.)	1925—1940	Available	(a) Reproduced direct as M.D.R. 621/G.S.G.S. 4396. (See page 19.) (b) Used as basis of compilation of M.D.R. 634/G.S.G.S. 4413. (See page 12.)	Reproduced direct (?) using Yugoslav plates).
V 1 : 200,000	Whole country. (Each 1 : 200,000 sheet covers the area of four 1 : 100,000 sheets.)	1928 (?)—	Only 1 sheet available	—	Not reproduced.

8. MAPS OF HUNGARY. See Appendix G. (Prepared by M. Kir Allami Terkepeszet : location—Budapest).

Scale.	Area Covered.	Date range.	Availability to and Use by British.		Use by Germans (up to July 1943)
I 1 : 25,000 (New survey)	See Appendix G. Does not cover whole country (extent unknown).	1925—?	Sheets available shown in black on Appendix A.	Used in preparation of G.S.G.S. 4416 [A.M.S.M. 671] ...	Reproduced direct where available.
II 1 : 25,000 (Old Austro-Hungarian series)	Whole country ...	Pre-1918	Not available ...	—	Not reproduced.
III 1 : 75,000	See Appendix G ...	1925—	Available	(a) Certain sheets north of 47° N. published as G.S.G.S. 4459. (See page 31.) (b) Used in preparation of G.S.G.S. 4416 [A.M.S.M. 671]. (See page 21.) (c) Used as basis of compilation of M.D.R. 634/G.S.G.S. 4413 in S. Hungary. (See page 12.)	(a) Reproduced direct. (b) Enlarged to form extension to 1 : 25,000 series.
IV 1 : 200,000 (Old Austro-Hungarian series revised)	See Appendix G ...	1914—1943	All sheets available	(a) North of 47° N. used as basis of Hungarian sheets of G.S.G.S. 4346. (See page 13.)	Reproduced as sheets of standard 1 : 200,000 "Südosteuropa" series. (See Appendix H.)

9. AUSTRO-HUNGARIAN MAPS. See Appendix H.

Scale.	Area Covered.	Date range.	Availability to and Use by British.		Use by Germans (up to July 1943)
I 1 : 75,000 (ex survey sheets at 1 : 25,000)	See Appendix H ...	1901—1935	All sheets available	(a) Reproduced for small areas of N. Romania and N. Hungary as G.S.G.S. 4460 and G.S.G.S. 4459. (See page 31.) (b) Used in preparation of G.S.G.S. 4416 [A.M.S.M. 671] in Hungary (see page 21); also basis of Yugoslav 1 : 100,000 sheets in Hungary (see page 20), and of Romania 1 : 100,000 sheets in Transylvania.	Reproduced direct.
II 1 : 200,000	See Appendix H ...	1886—	All sheets available	(a) Consulted in compilation of 1 : 250,000 series of Bulgaria, Romania and Yugoslavia. (b) Basis of G.S.G.S. 4346 sheets of Hungary and of Romania north of 47° N. (See page 13.)	Reproduced as "Südosteuropa" 1 : 200,000.

AIR PHOTOGRAPH COVERAGE

References to the revision of maps from air photographs make it necessary to show the approximate extent of the area for which air photographs are available. This is done by the shaded areas on the diagram below. It must, however, be emphasized that the shaded areas only give a very general picture of the area covered.

Most of the air photographs of this area are taken by aircraft based on Middle East, on North Africa or on Italy, and some time elapses before air photographs from sorties flown from these overseas bases are available in this country. This diagram, therefore, probably omits certain areas of coverage, for which photographs have not yet been received here.



The diagram has been compiled from the photographs available in the library of the Allied Central Interpretation Unit (A.C.I.U.) of the R.A.F. and American Air Force (in U.K.). Certain isolated areas of cover in Bulgaria and Romania have been added, on the evidence of mosaics accompanying reports from Middle East and from A.F.H.Q.

The comparatively small extent of the area covered by photographs should be noted; moreover, in some of the areas concerned, many photographs are unsuitable for map-making or map-revision owing to tilt or to obliteration of detail by clouds.

The lists opposite show those large-scale map series for which air photographs have been (or are being) used for revision: (generally speaking, smaller-scale series are prepared after large-scale series, and hence incorporate the air photograph revision embodied in the latter).

Series	Revised from air photographs	Notes
(i) Greece, 1 : 100,000— <i>M.D.R. 670/G.S.G.S. 4439</i>	Revision where cover was available	Second editions of certain sheets may be undertaken from further air cover.
(ii) European Turkey, 1 : 100,000— <i>M.D.R. 626/G.S.G.S. 4467</i>	Not revised	—
(iii) Bulgaria, 1 : 100,000— <i>M.D.R. 654/G.S.G.S. 4444</i>	Not revised	—
(iv) Romania, 1 : 100,000— <i>M.D.R. 627/G.S.G.S. 4417</i>	Not revised	—
(v) Yugoslavia, 1 : 100,000— <i>M.D.R. 621/G.S.G.S. 4396</i>	Current editions of sheets not revised	New editions of certain sheets will incorporate air photo. revision (or the results of such work from (xiv) below).
(vi) Central Europe, 1 : 100,000—[A.M.S. M. 671] G.S.G.S. 4416	Not revised	—
(vii) Crete, 1 : 50,000— <i>M.D.R. 612/G.S.G.S. 4426</i>	Revision where cover was available	New editions (now in hand) of sheets will be almost completely revised.
(viii) Dodecanese, 1 : 25,000— <i>M.D.R. 47/G.S.G.S. 4469</i>	Completely revised	—
(ix) Aegean Islands, 1 : 50,000— <i>M.D.R. 611/G.S.G.S. 4468</i>	Most sheets completely revised	(See page 26.)
(x) Albania, 1 : 50,000— <i>M.D.R. 639/G.S.G.S. 4477</i>	Not revised	Revision in hand for second editions of certain sheets.
(xi) Istanbul, 1 : 25,000— <i>M.D.R. 629/G.S.G.S. 4470</i> }	Not revised	—
(xii) Dardanelles, 1 : 25,000— <i>M.D.R. 624</i> }	Not revised	—
(xiii) Bulgaria, 1 : 50,000— <i>M.D.R. 657/G.S.G.S. 4449</i>	Not revised	—
(xiv) Yugoslavia, 1 : 50,000—[A.M.S. M. 702]	Being revised	(Series in hand.)
(xv) Yugoslavia, 1 : 25,000—(Med. 1)	Revised	Largely prepared from air photos.
(xvi) Town Plans : see page 33. The following plans have been (or are being) revised :—		
(a) Crete—Iraklion, Rethimnon, Khania, Soudha.		
(b) Dodecanese.—Coo, Rhodes.		
(c) Greece—Amfipolis, Athens, Korinthos, Kalamai, Kalkhis, Katakolon, Kavalla, Kerkira, Khios, Mitilini, Navplion, Patrai, Piraievs, Preveza, Samos, Siros, Thessaloniki, Volos.		
(d) Albania—Durrës, Elbasan, Shkodër, Tiranë, Vlonë.		
(e) Yugoslavia—Dubrovnik, Kotor, Skoplje, Split, Tivat, Zara.		

ROAD CLASSIFICATIONS

A definite requirement on 1 : 250,000 scale maps, and to a rather lesser extent on larger-scale maps, is the classification of roads into width and surface categories. Details of the categories into which roads have been classed, and of the signs by which the different categories are shown, are given in the tables below. It has been found both convenient and suitable to base road classifications on national areas.

Most of the systems of width and surface classification which have been applied in the area are generalisations only, and are based on localised information or experience which, when extended, is bound to include particular errors. The system used for Hungary, for example, was based on intelligence reports about the widths of particular roads and the existence of new roads, personal experience of other individual roads, ground photographs of yet other roads, articles in technical journals, etc. All this information has to be collated into terms of the local system of classification appearing on original maps of the country concerned, and, as a result, width and surface values can be allotted to the various classes of roads on a selected map.

It is obvious that the general classification given on G.S.G.S., M.D.R. and A.M.S. maps must, wherever possible, be checked by reconnaissance, and should never be regarded as more than a general guide to road widths or surfaces.

Most of the road classification systems on series prepared in this country have been formulated by M.I.10(c), the War Office section concerned : the Greek and Turkish systems have been formulated by M.I. (Top.), in Middle East. It will, of course, be appreciated that, where information (*e.g.*, in the form of an intelligence report) about a particular road has become available, it has been incorporated into map sheets in so far as the state of their production permits.

Where reliable information concerning new roads is available only in non-graphic form, or only at a scale smaller than that of the map concerned, such roads are shown diagrammatically (*e.g.*, by straight lines) with a note, such as "Alignment unknown" alongside them.

The tables below are taken from the "References" on the borders of the various 1 : 250,000 and 1 : 100,000 series which cover each of the countries concerned ; they show the road categories and symbols appearing on each series.

1. Crete

(a) 1 : 250,000, *M.D.R.630/G.S.G.S.4410.*

Metalled Road over 5½ metres wide	
Metalled Road under 5½ metres wide	
Unmetalled Road and Cart Track	
Mule Path	

(b) 1 : 50,000, *M.D.R.612/G.S.G.S.4426.*

Road suitable for wheeled traffic	
Road suitable for 2-wheeled traffic, Metalled	
Mule track (easy going)	
Mule track (rough going)	
Path	
Road under construction ; Disused road.	

2. Greece(a) **1 : 250,000**: *M.D.R.630* (Provisional edition).

Motor Road	
Road fit for wheeled traffic	
Track or Path	
Motor Road under construction	

(b) **1 : 250,000**, *M.D.R.630/G.S.G.S.4410*.

Metalled Road over 5½ metres wide	
Metalled Road under 5½ metres wide	
Unmetalled Road and Cart Track	
Mule Path	
Road under construction	

(c) **1 : 100,000**, *M.D.R.670/G.S.G.S.4439*.

Metalled Road	
Unmetalled Road or Cart Track	
Mule Path	

3. Albania(a) **1 : 250,000**, Sheets Y-46 and Y-47 of *M.D.R.634/G.S.G.S. 4413* (see also 2a and b).

Main Road, Metalled—Generally about 5-6 metres (16-20 feet) wide or over	
Secondary Road, sometimes Metalled. Generally about 4-5 metres (13-16 feet) wide	
Other Road. Generally less than 4 metres (13 feet) wide	
Cart Track	
Mule Track and Path	
Road under construction (with date of information)	

(b) **1 : 100,000**—See 2c and 7b.**4. Turkey**(a) **1 : 200,000**, *M.D.R.3/G.S.G.S. 4193* (see also 5a).

Asphalt Road	
Road (reputed metalled : classification doubtful)	
Concrete or paved Road	
Village Road	
Cart Track	
Bridle Track	
Path	
Road under construction	

(b) **1 : 100,000**, *M.D.R.626/G.S.G.S.4467* (see also 5b).

Metalled Road	
Unmetalled Road or Cart Track	
Bridle Path	

5. Bulgaria(a) **1 : 250,000**, *M.D.R.633/G.S.G.S.4412*.

Main Road, Metalled. Generally about 6 metres (20 feet) wide or over	
Other Main Road, Metalled. Generally about 5 metres (16 feet) wide	
Secondary Road. Generally about 4 metres (13 feet) wide	
Other Road and Cart Track	
Track or Path	
Road under construction (with date of information)	




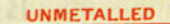





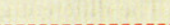

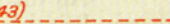
Roads shown have first-class modern surface.
Other metalled roads are macadamised.


(b) **1 : 100,000**, *M.D.R.654/G.S.G.S.4444*

Main Road, Metalled. Generally about 6 metres (20 feet) wide or over	
Other Main Road, Metalled. Generally about 5 metres (16 feet) wide	
Secondary Road. Generally about 4 metres (13 feet) wide	
Other Road and Cart Track	
Track or Path	
Road under construction (with date of information)	


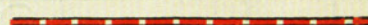

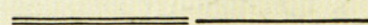

6. Romania

(a) **1 : 250,000**, *M.D.R.635/G.S.G.S.4375* (South of 47° N.).

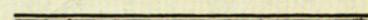
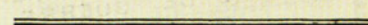
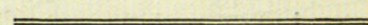
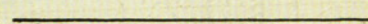
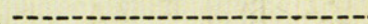
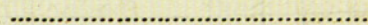
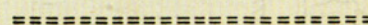
Main (National) Road ("Sosea Natională"). Generally about 6 m. (20 ft.) wide or over		
Other main Road ("Sosea Județeană"). Generally about 4-5 metres (15 feet) wide		
Secondary Road ("Sosea Comunală"). Generally about 3 metres (10 feet) wide		
Other Road or Cart Track		
Track or Path		
Road under construction (with date of information)		

Roads shown  have first-class modern surface. Other metalled roads are macadamised.

(b) **1 : 250,000**, *G.S.G.S. 4346* (North of 47° N.).



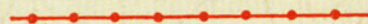
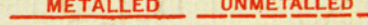
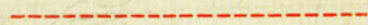

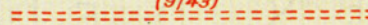
Main National Road ("Sosea Natională"). Generally about 6 m. (20 ft.) wide or over	
Other main Road ("Sosea Județeană"). Generally about 4-5 metres (15 feet) wide	
Secondary Road ("Sosea Comunală"). Generally about 3 metres (10 feet) wide	
Other Road or Cart Track	
Track or Path	


(c) **1 : 100,000**, *M.D.R.627/G.S.G.S.4417*.

Main National Road	
Secondary or Provincial Road	
Other Road (Parish Road)	
Earth Road	
Track	
Footpath	
Road under construction	


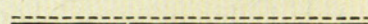
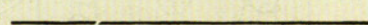
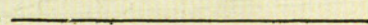
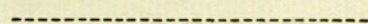
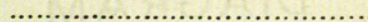
7. Yugoslavia

(a) **1 : 250,000**, *M.D.R.634/G.S.G.S.4413*.

Main Road Metalled. Generally about 6 metres (20 feet) wide	
Other Main Road, Metalled. Generally about 5 metres (16 feet) wide	
Secondary Road, Metalled. Generally about 4 metres (13 feet) wide	
Other Road. Generally about 3 metres (10 feet) wide	
Cart Track	
Path	
Road under construction (with date of information)	




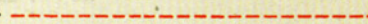
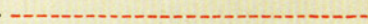

Roads shown  have first-class modern surface. Other metalled roads are macadamised

(b) **1 : 100,000**, *M.D.R.621/G.S.G.S.4396*.

Principal Road	
Minor Road	
Cart Road	
Cart Track	
Bridle Path	
Foot Path	






8. Hungary

(a) **1 : 250,000**, *M.D.R.634/G.S.G.S.4413* (South of 47° N.).






Main Road, Metalled. Generally about 6 metres (20 feet) wide	
Other Main Road, Metalled. Generally 5-6 metres (16-20 feet) wide	
Secondary Road. Generally 3-5 metres (10-16 feet) wide	
Cart Track	
Path	
Road under construction (with date of information)	

NOTE.—Width of metalling on Hungarian roads is generally slightly less than widths given above.

(b) **1 : 250,000**, *G.S.G.S. 4346* (North of 47° N.).

Main Road, Metalled. Generally about 6 metres (20 feet) wide	
Other Main Road, Metalled. Generally 5-6 metres (16-20 feet) wide	
Secondary Road. Generally 3-5 metres (10-16 feet) wide	
Cart Track	
Path	

(c) **1 : 100,000**, *G.S.G.S. 4416 [A.M.S. M.671]* (North of 47° N.).

Main Road, Metalled. Generally about 6 metres (20 feet) wide	
Other Main Road, generally Metalled. Generally 5-6 metres (16-20 feet) wide	
Secondary Road, sometimes Metalled. Generally 3-5 metres (10-16 feet) wide	
Cart Track	
Path	

(d) **1 : 100,000**, *M.D.R.621/G.S.G.S.4396* (South of 47° North) (see 7b).

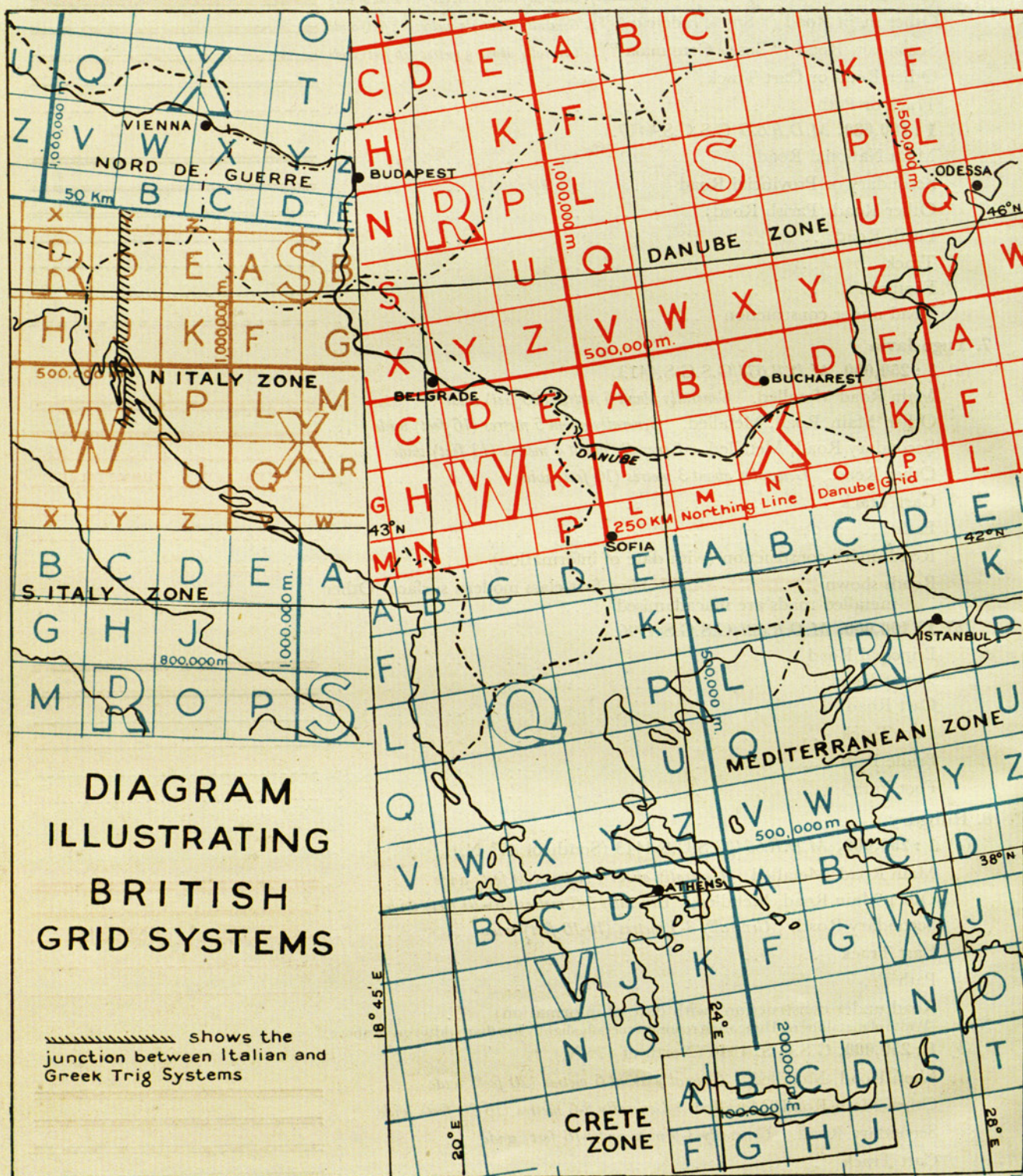
GRIDS

BRITISH GRID ZONES AND BOUNDARIES

Technical descriptions of the different British military grids on G.S.G.S. map series of the area are outside the scope of these notes. The diagram below, however, shows the areas covered by the grid zones concerned, and in doing so, serves as a warning for areas where more than one grid may be involved on any one map. The different grids have in each case been shown on the diagram in their appropriate colours.

All the principal maps of this area at scales of 1 : 500,000 and larger—including many Town Plans—carry British grids (though certain provisional series which are direct copies of foreign originals are not gridded). In certain areas too, the Hydrographic Department has produced charts carrying the military grid and which are thus in sympathy with the grids on maps.

All maps carrying British grids provide an explanatory note of how grid references should be given, as well as diagrams showing the "convergence" (between "grid north" and "true north") and the magnetic variation on the sheet.



FOREIGN GRIDS

The following notes on grids liable to be found on foreign maps are included to assist in interpreting grids and grid references on captured maps.

GENERAL

The grids of primary interest are those actually being used by the Germans. Modern German practice generally seems to be to adopt the grid of the country which originally produced the map, although in some cases they overprint a system of their own. Where two national systems adjoin, they stop both grids short at the frontier, providing ticks in the margin of the map so that they can be extended if necessary. On all German maps, romers (planzeigers) are provided in the margins to assist in giving references.

The Germans have published a 1 : 200,000 map of the entire Balkan peninsula including Crete, which carries the same type of grid, in strips approximately 3° wide, as they use in Germany.

These grids are referred to by the Germans as the "Gauss-Krüger Gitternetz" or the "Deutsche Heeresgitter". Grid lines are numbered in the map margin in kilometres; the figures denoting thousands and hundreds, which only appear at the grid lines nearest to the sheet corners, are printed in smaller type than the remainder, which alone are used in giving "short" references. Eastings (Rechts) are given first and then Northings (Hoch), as in the British system. The central meridians of the belts are multiples of 3°E. of Greenwich (6°, 9°, 12°, etc.) and the belts are numbered according to these multiples, so that the belt whose centre is 6° East is No. 2, and so on. In the full figures denoting Eastings, the first, known as the Kennziffer, denotes the number of the belt, although it appears to indicate thousands of kilometres. For example, the number 4560 lies in belt No. 4, whose central meridian is 12° East.

The sizes of grid squares on German maps vary; for example the 1 : 200,000 series has 10 km. squares, and the 1 : 25,000 has 1 km. squares (like the British maps), but the 1 : 100,000 has 5 km. squares, and the 1 : 50,000 has 2 km. squares. If romers are not available, care must be taken when referencing the non-decimal squares, to break them down into the proper divisions. Thus, in order to give references to the nearest 100 metres, the squares on the 1 : 100,000 map must be broken down to fifths and fiftieths, and on the 1 : 50,000 map to halves and twentieths.

GREECE

Greece is covered by a 1 : 100,000 series carrying a continuation of the Bulgarian Gauss-Krüger grids, and also possibly a grid based on a conical projection used by the Greeks. Crete is covered by a 1 : 50,000 map carrying only a grid based on this projection, and the same may apply to the 1 : 50,000 of the northern part of the mainland. The interval between the grid lines, and the method of giving references on the Crete map, conform to the usual German practice. The 1 : 50,000 maps of Lesbos, Khios, Samos and Limnos, carry a German Gauss-Krüger grid.

The Germans are using three zones based on the Greek conical projection (griechischen Kegelprojektion), with origins on the meridian of Athens, at 35°N., 38°N., and 41°N. The origins are given values of 500 km. in Easting and 1,500 km., 2,500 km., and 3,500 km. respectively in Northing, the figures 1, 2 and 3 being "Kennziffer" similar to those used in the Eastings of the German Gauss-Krüger grids. We have an example of a 1 : 100,000 map of Crete dated 1941, which carries values of 100 km. in Northing and Easting for the origin of the southern zone. These values correspond to the Greek coordinate lists for Crete, but were later abandoned by the Germans in favour of the higher ones given above.

For the Dodecanese, reproductions of Italian maps carrying a graticule reference system like that mentioned under Albania may be in use.

ALBANIA

There is some evidence that the Germans have published a 1 : 50,000 map carrying the same Gauss-Krüger grid as the 1 : 200,000. Italian 1 : 50,000 and 1 : 100,000 maps carry a reference system consisting of a one- or two-minute graticule mesh, based on the meridian of Tirane, each rectangle being designated by two pairs of letters.

EUROPEAN TURKEY

The Germans have produced a 1 : 200,000 series carrying their own Gauss-Krüger grid, in addition to a Turkish grid based on Bonne's projection. The same applies to their reproduction of the Turkish 1 : 25,000 maps of the Istanbul, Dardanelles, and Edirne areas. It is probable that references will be given on the German grid.

BULGARIA

The grid system (on the modern Bulgarian maps) resembles the German system very closely, and is indistinguishable from it on any map at a scale of 1 : 100,000 or smaller, but on larger-scale maps the grid lines will differ slightly in position. Formerly (up to about the end of 1941) the systems could easily be distinguished because the Bulgarians used northing figures which were 4,540 km. smaller than those used by the Germans. We have specimens of a German 1 : 100,000 series showing the Bulgarian numbers in italics in the margin, and there is some evidence that the same applies to the sheets of the 1 : 200,000 which fall in Bulgaria and northern Greece.

ROMANIA

The Germans have copied the Romanian 1 : 100,000 map with its grid, which they call the "rumanische Lambert-Gitternetz." The squares are 5 km., but each km. is marked and numbered in the margin. In addition, each 1 km. square can be referred to by two letters printed in the margins of the map. The exact method of giving references is uncertain.

The same grid is shown on the 1 : 20,000 native map which the Germans have reproduced for certain areas at 1 : 25,000.

YUGOSLAVIA

The Germans use the Gauss-Krüger grid, as on the 1 : 200,000 map, for all purposes. We have specimens of 1 : 25,000 maps near the Italian frontier carrying a black Yugoslav grid, similar in character, but different in position to the German grid: on this map the Germans have overprinted in purple the grid which they use in Italy.

The Italians produced 1 : 100,000 and 1 : 50,000 maps of Yugoslavia, with a graticule mesh like that mentioned under Albania, but with the longitudes based on Paris.

HUNGARY

According to a captured German Handbook on maps and survey, published in 1940, two grids were in use in Hungary, the normal German system of 3° belts, and also the Hungarian stereographic grid. On 1 : 75,000 maps produced by the Hungarian Survey Dept., the stereographic grid is shown by ticks in the margin at 1 km. intervals. The lines are numbered from the true origin, and negative co-ordinates may therefore occur. This means that references are estimated from the corner of a square nearest the origin, which is not always the S.W. corner. It is unlikely that this system is in use for military purposes, since we have one example of a German 1 : 75,000 map of Hungary showing this grid, on which arbitrary values of 500 km. E. and 500 km. N. have been given to the origin so that all co-ordinates are positive. The grid is shown at 3 km. intervals, and references are read from the S.W. corner of a square in the usual way.

A more recent German map (1940) shows the ordinary Gauss-Krüger grid, as used in Germany, on the face of the map, with marginal ticks showing the stereographic grid with the German numbering.

It is most probable that the Gauss-Krüger grid is still in use, but in view of the recent tendency of the Germans to use native grids in some areas, the possibility of a reversion to the stereographic must be borne in mind.

GLOSSARIES

The principle of retaining local name-forms on maps has been accepted for the preparation of all British or American produced maps. This has, among other advantages, the merit of making for consistent treatment as between maps redrawn *ab initio*, and maps reproduced by direct photographic methods from foreign or captured originals. On the other hand, large numbers of foreign topographical terms are included on maps: the average map reader is unlikely to be familiar with such terms and hence, if they are not explained to him, he will not be able to derive the maximum value from his map. In addition the problem is complicated by the frequent use of abbreviated versions of foreign topographical terms which are often of as much significance as conventional signs.

Many map series provide a brief glossary to abbreviations and topographical terms in the margin of each sheet; such glossaries have, of necessity, to be very limited in size and can obviously only supply translations for the most commonly occurring terms.

The list below sets out the fuller glossaries which have been prepared for the languages involved on maps in this area.

<i>Area</i>	<i>Title</i>	<i>Date</i>	<i>Publisher</i>	<i>Availability</i>	<i>Notes</i>
1. Greece and Greek Islands	(a) Glossary of Modern GREEK	1942	P.C.G.N. ..	Limited stocks available.	—
	(b) G.S.G.S. short glossary of GREEK	May, 1943	P.C.G.N. and War Office	Generally available	Shortened version of (a)
2. Dodecanese ..	G.S.G.S. short glossary of ITALIAN	May, 1943	" "	" "	—
3. Albania	(a) Glossary of ALBANIAN ..	1943	P.C.G.N. ..	Limited stocks available	—
	(b) G.S.G.S. short glossary of ALBANIAN	May, 1943	P.C.G.N. and War Office	Generally available	Shortened version of (a)
4. Turkey	(a) Glossary of Modern TURKISH	—	P.C.G.N. ..	Limited stocks will be available.	In hand with printer (includes Arabic as well as modern Turkish script)
	(b) G.S.G.S. short glossary of TURKISH	July, 1943	P.C.G.N. and War Office	Generally available	Shortened version of (a) excluding Arabic script.
5. Bulgaria ..	G.S.G.S. short glossary of BULGARIAN	May, 1943	" "	Provisional edition generally available	New edition in hand (for publication by August)
6. Romania ..	(a) Glossary of ROMANIAN ..	1944	P.C.G.N. ..	Limited stocks available	—
	(b) G.S.G.S. short glossary of ROMANIAN	May, 1943	P.C.G.N. and War Office	Generally available	Shortened version of (a)
7. Yugoslavia ..	(a) Glossary of SERBO-CROAT and SLOVENE	1943	P.C.G.N. ..	Limited stocks available	—
	(b) G.S.G.S. short glossary of of SERB and CROAT	May, 1943	P.C.G.N. and War Office	Generally available	Shortened version of (a)
8. Hungary ..	G.S.G.S. short glossary of HUNGARIAN	July, 1943	" "	" "	—

GAZETTEERS

The following list shows the gazetteers which are either published or in preparation for this area. In all the gazetteers, references are to the grid square on the relevant map sheet, in which the name is to be found: the only exception to this treatment occurs in the gazetteers of Greece and of Albania, prepared by the Permanent Committee on Geographical Names (P.C.G.N.), where references are (generally) to geographical co-ordinates.

<i>Area</i>	<i>Title or Basic Map Series (and Scale)</i>	<i>Publisher</i>	<i>Date</i>
1. Crete	(a) Crete, 1 : 50,000, <i>M.D.R. 612/G.S.G.S. 4426</i>	Survey Directorate, M.E.	1944
	(b) Gazetteer of Greece (see 4 (a)).		
2. Aegean Islands .. (Greek Islands only) " "	(a) Aegean Islands, Admiralty charts 2836 a and b, and corresponding names on certain maps.	Survey Directorate, M.E.	1942
	(b) Greece, 1 : 250,000 map series (see 4 (b))		
	(c) Gazetteer of Greece, to various maps (see 4 (a)).		
3. Dodecanese ..	Dodecanese, 1 : 25,000, <i>M.D.R. 47/G.S.G.S. 4469</i>	Survey Directorate, M.E.	1944
4. Greece	(a) Gazetteer of Greece, to maps (and charts) of various scales	P.C.G.N.	1942
	(b) Greece, 1 : 250,000 map series		
	(c) Greece, 1 : 100,000, <i>M.D.R. 610/G.S.G.S. 4439</i>		
5. Albania	Gazetteer of Albania to maps of various scales.. ..	P.C.G.N.	(1944)
6. European Turkey	Turkey, 1 : 800,000, <i>M.D.R. 529/G.S.G.S. 4235</i>	Survey Directorate, M.E.	1942
7. Bulgaria	Bulgaria, 1 : 250,000, <i>M.D.R. 633/G.S.G.S. 4412</i>	" "	(1944)
8. Romania(S. of 47°N.)	Romania, 1 : 250,000, <i>M.D.R. 635/G.S.G.S. 4375</i>	" "	(1944)
9. Yugoslavia ..	(a) Southern Yugoslavia, 1 : 250,000, <i>M.D. R.634/G.S.G.S. 4413</i>	" "	(1944)
	(b) Yugoslavia, 1 : 100,000, <i>M.D.R. 621/G.S.G.S. 4396</i> (in seven volumes)		
10. Hungary	Hungary, 1 : 250,000 map series	War Office	(1944)

Note : date in brackets means gazetteer is still in preparation.

