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Handbook on USSR Military Forces, Chapter XII: Maps, Conventional Sign, and Symbols

War Department (USA)

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Technical Manual TM 30-430
Handbook on USSR Military Forces
Chapter XII
Maps, Conventional Sign, and Symbols

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Handbook on USSR Military Forces

Chapter XII
Maps, Conventional Sign, and Symbols

War Department
Washington, DC

Comments

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Abstract

TM 30-340, Handbook on USSR Military Forces, was “published in installments to expedite dissemination to the field.” TM30-430, Chapter XII, 15 October 1946, “Maps, Conventional Signs, and Symbols,” contains a brief description of the mapping system used in the Soviet Union and examples of symbols used on Soviet tactical maps and military topographic maps

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CHAPTER XII
MAPS, CONVENTIONAL SIGNS, AND SYMBOLS

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CHAPTER XII

MAPS, CONVENTIONAL SIGNS, AND SYMBOLS

Section I. MAP SYSTEMS

1. INTRODUCTION

Soviet tactical signs and symbols have undergone considerable change, particularly since 1942. These changes have consisted largely of the simplification of complex signs by more abundant use of abbreviations and by the introduction of new signs for recently introduced weapons, such as self-propelled guns.

Soviet usage is not always consistent, even in official manuals. Different arms and services frequently use signs which vary from those used by other arms and services. This is particularly applicable to the signs for fortifications used by the engineers and by the infantry.

Tactical symbols representing friendly troops are red. Those for enemy troops are blue, the converse of United States usage. On black and white maps or charts, friendly troops are represented by solid heavy lines and enemy troops are indicated by lighter, double lines.

Soviet military abbreviations and conversion tables of the old Russian and metric systems of weights and measures are published in TM 30-544.

2. COORDINATE SYSTEM

The U. S. S. R. is divided into 28 map sectors, each 6° wide. The map sectors are divided by parallels, 4° apart into rows of coordinate zones. Coordinate zones are numbered consecutively from 1 to 32, starting at Greenwich and continuing east. Numbers for coordinate zones are derived from the numbers of the map sectors in which they fall. The number of a coordinate zone is determined by subtracting 30 from the number of the map sector in which it falls or by adding 30 if the map sector number is less than 30 (fig. 1).

A rectangular grid system is superimposed on each coordinate zone. The center of coordinates is established at the intersection of the equator and the central, or base, meridian of zone, that is, at the third, ninth, fifteenth etc., meridians. At the origin of this coordinate system, the value of the “X” coordinate is zero, and the value of “Y” coordinate is 500 kilometers. In the Soviet system the “X” coordinate is vertical, and the “Y” coordinate is horizontal because a large positive value is assigned to the “Y” coordinate, a value larger than half the width of a coordinate zone at the equator. The “Y” coordinate never becomes a negative value. The “X” coordinate, however, becomes negative in the southern hemisphere.

The length of a side of each grid square is equal to an even number of centimeters and represents an even number of kilometers on the ground. For example, the side of the grid square of a 1: 25,000 map is 4 centimeters and represents 1 kilometer on the ground. The side of the grid square of a 1: 100,000 map is 2 centimeters, which represents 2 kilometers on the ground.

The full coordinate is written in the lower left corner of each sheet, the horizontal coordinate preceded by the number of the coordinate zone. The vertical or “X” coordinate indicates the distance in kilometers from the equator. The difference between the value of the horizontal or “Y” coordinate and 500 indicates the distance east of the base meridian of the coordinate zone if “Y” is greater than 500, and the distance in kilometers west of the base meridian if “Y” is less than 500. Thus, the numbers 5748 and 8690 locate the lower left corner of a map 5,748 kilometers north of the equator 190 kilometers east of the base meridian of the 8th zone. The full coordinate is printed only in the lower left corner of the map. Elsewhere only the last two numbers are given. In military communications, the “X” coordinate always is given first.

Although the decision to change from the old Russian system of weights and measures was made in the early 1920’s, military maps employing the old
system still are in use. The old style military maps use the geographic coordinate system. The distances between consecutive vertical and horizontal lines are measured in duims (inches), which represent an even number of verssts (0.663 miles) on the ground. For example, the size of a square on a 1:84,000 map is 1 duim, which represents 1 verst on the ground. Prior to the adoption of the new system of coordinates, a metric grid was superimposed on the geographical grid of the old style maps.

3. TYPES AND CLASSIFICATION OF MAPS

Military maps of the U. S. S. R. are classified according to scale as strategic, operational, and tactical maps.

Maps of small scale are intended for general planning and strategic studies. In the Red Army, metric system maps 1:500,000, 1:1,000,000, and 1:500,000,000 and old system maps 1:1,680,000 and 1:4,000,000 are utilized as strategic maps. These maps carry the usual geographic data.

Intermediate scale maps are intended for the planning of operations, for the scheduling of movements of large units and supplies, and for the selection of positions and communications systems. The operational maps generally include communications data classified according to the capacity and condition of roads, ridge lines, defiles, and other major terrain features and economic data. Operational maps of the new system include those of scales 1:200,000 to 1:1,050,000. The standard operational map of the Red Army is the new 1:200,000 map. The collection of data for this map was started in 1925. Relief is shown by tinting and by contour lines. In the compilation of data for this map, particular attention was centered on strict classification of railroad and road nets and on population and population statistical data. In sparsely populated areas, this map also is intended for tactical use.

Three old style operational maps exist. The 1:210,000 (1 duim equals 5 verssts) map covers the Caucasus and the Turkmen S. S. R. The data on this map are old, and it is being replaced by the new 1:200,000 map. The 1:420,000 (1 duim equals 10 verssts) map covers all the European S. S. R., neighboring western countries, Caucasus, Asia Minor, and parts of Siberia. The 1:1,050,000 (1 duim equals 25 verssts) map covers all of the European S. S. R. and extends westward to Berlin, Prague, and the Adriatic. It is one of the oldest Russian military maps.

Maps of scale 1:100,000 and larger are used as tactical maps. The new 1:50,000, supplemented by 1:25,000, is the basic tactical map. These maps include not only general topographic data, but also information regarding inhabitable localities, road nets, stream crossings and their condition, steep descents and ascents, classification of roads in terms of capacity, surface river system including speed of the current, and relief with emphasis on difficult terrain, orientation points, forests, and other vegetation by type.

On the 1:25,000, 1:50,000, and 1:100,000 maps, relief is indicated by 5-, 10-, and 20-meter contour lines respectively. Hachure marks are used where relief cannot be adequately represented by contour lines. Prominent heights and depressions are indicated by a number which represents the difference in altitude between the top and the base, heights indicated by a plus sign and depressions by a minus sign. Supplementary tactical maps, 1:10,000, are prepared as necessary during operations by the Military Topographic Service agencies in the field and by the Artillery Topographic Service.

In the old system the basic tactical map is 1:42,000. Relief is shown by contours. Originally these maps were in black only, but later four colors were added, contours in black, water in blue, forests in green, and other terrain features in brown. The 1:84,000 map of the western area also is used.

4. SPECIAL MAPS AND MAP SUBSTITUTES

Ground and air photomaps are used extensively to familiarize reconnaissance personnel with territory controlled by the enemy, to facilitate centralized fire control and target designation, to study defilades, and to facilitate coordination of infantry and artillery.

The Soviet photo-reconnaissance doctrines closely approximate standard United States practice. Air photographs, both oblique and vertical, are augmented by ground photo panoramas of critical sec-
tors. In preparing photomaps for the use of tank and mechanized forces, in addition to appropriate marginal notes and contour lines, steep slopes are indicated by an arrow whose direction and length represent the direction and length of the slope. A fraction is placed near such an arrow, its numerator indicating degree of slope and denominator indicating the length of the slope in meters.

Stereoscopes are used extensively to facilitate tactical and operational terrain map studies.

5. MAP INDEX SYSTEMS

Maps distributed by the Military Topographic Division of the General Staff of the Red Army are printed in sheets, the number of sheets for each map depending on the size of the area represented and the scale of the map. Index systems are necessary to catalog the sheets of each map. These systems consist of small schematic maps, which are divided by horizontal and vertical lines into rectangles or by meridians and parallels into trapezoids. Each rectangle or trapezoid represents a separate sheet of the map. Maps printed in the old measures are indexed in several systems. Maps printed in the metric system are all indexed in the same system.

a. Old Systems. There are two index systems for maps printed in the old measures. The first system used, if there are comparatively few sheets in a set, consists of numbering the sheets in sequence with Arabic or Roman numerals. With large-scale maps, this system becomes cumbersome. The second system consists of sheets arranged in horizontal rows, each row numbered with a Roman numeral. In each row, sheets are numbered in consecutive series of Arabic numerals, starting with “1.” Thus, all sheets in the same vertical column have the same Arabic number. Each sheet of the map is designated by the Roman number of its row, and its Arabic number within that row.

b. Metric System. There is one index for all metric system maps. The basic map is the 1:1,000,000, which is divided into sectors and horizontal rows. Each row is designated by a Roman capital letter, starting with “A” at the equator. The height of each row is 4° of latitude. Thus, each sheet of the 1:1,000,000 map is 6° of longitude wide and 4° of latitude high. Each sheet is designated by naming its sector and its horizontal row. For example, the index number of the sheet which contains Smolensk is N–36 (fig. 1).
Each sheet of the 1:1,000,000 map is divided for indexing larger-scale metric maps. A 1:1,000,000 sheet is divided into four 1:500,000 sheets, lettered A, E, B, T, (A, B, V, G). Thus, the sheet of the 1:500,000 map which contains Smolensk is designated by naming the sheet of the 1:1,000,000 map and by the appropriate letter, N-36-A (fig. 2).

Each 1:500,000 sheet is further divided into 18 1:200,000 sheets, each sheet designated by a Roman numeral, I through XVIII. The index number for the sheet of the 1:200,000 map which contains Smolensk is, for example, N-36-V (fig. 3).

Each 1:200,000 sheet is divided into four 1:50,000 sheets, lettered A, E, B, T (A, B, V, G). Thus, the index number of the sheet of the 1:50,000 map which contains Smolensk is N-36-41-V (fig. 5). Each sheet of the 1:50,000 map is divided into four 1:25,000 sheets, lettered a, E, b, r (a, b, v, g). The index number of the sheet of the 1:25,000 map which contains Smolensk is N-36-41-B-a (fig. 6). Each sheet of the 1:25,000 map is divided into four 1:10,000 sheets, each designated by an Arabic num-
ber 1, 2, 3, or 4. Thus, the index number of the sheet of the 1:10,000 map which contains Gorki is N-36-41-B-g-3 (fig. 6).

\[
N-36-41-B
\]

![Figure 6. Index system for 1:25,000 and 1:10,000 maps.](image)

### 6. SUPPLY OF MAPS

In peacetime, the Military Topographic Service of the General Staff of the Red Army is responsible for the distribution of regularly expendable maps for training and for general service purposes. Distribution is made on the basis of prescribed allotments.

The Military Topographic Service issues maps directly to the staffs of Military Districts, to independent armies, to the Main Administrations of the Peoples' Commissariat of Defense, to the Red Navy, and to the NKVD and the NKGB.

The Military Topographic Divisions of the staffs of military districts supply the other divisions of the staff and other organizations of the military district, including Red Army field units and formations, training installations, flotillas and training units of the Red Fleet, and NKVD and NKGB organizations.

The Chiefs of Staffs of military units and the Chiefs of Training Sections of military schools are responsible for initiation of requests for maps to Military Topographic Divisions of the staffs of military districts. They also are responsible for the distribution of maps within the units and the schools and for maintenance of topographic supply records.

The requisitions for maps by subordinate organizations are made on the basis of their allotments and on their programs for the year. These requisitions are consolidated annually by the military district and forwarded to the Military Topographic Division of the General Staff. Newly printed maps are distributed to the Peoples' Commissariat of Defense without formal requisition. Reproduction of maps without permission of the Military Topographical Service is prohibited.

The regularly expendable maps of peacetime must be replaced, corrected, or enlarged in time of war. Operational maps are drafted for use by the field army by the Topographic Service in accordance with the needs of constantly changing combat conditions. They are issued to designated units before or simultaneously with the preliminary orders of the Chief of Staff. New maps must be drafted as new terrain is encountered, and existing maps must be modified to meet requirements of varying types of combat.

Each unit maintains a supply of maps of the combat sector covering an area of 3 days' march forward and 2 days' march back from the current combat line.

The width of the sector covered by the map reserve of each unit encompasses its own front and those of its adjacent units. The quantity of each type of map issued for a given combat sector, as determined by army orders, usually is sufficient to supply each officer, each noncommissioned officer executing an independent mission, and each scout, sniper, and observer with a map.

Troops are supplied with maps from either stationary or mobile map depots by agencies of the Military Topographic Service of staffs of formations, or if such agencies are not included in the Tables of Organization, by the chiefs of the Operations Divisions of the staffs. Maps normally are supplied by the higher to the next lower echelon without special request. A regimental staff is supplied from the mobile division reserve. The division reserves are supplied by mobile corps reserves and the corps reserves are supplied by an army stationary map depot, or its mobile branch. Independent formations and units receive maps from the formation to which they are attached.
Section II. Soviet Tactical Symbols

1. SYMBOLS FOR HEADQUARTERS

- **Army group**
  (Western Army Group)

- **Army**
  (Second Army)

- **Corps**
  (II Rifle Corps)
  - CK — Rifle corps
  - TK — Tank corps or
  - KK — Cavalry corps

- **Cavalry corps (alternate)**
  (II Cavalry Corps)

- **Formation**
  (4th Rifle Division)
  - c А — Rifle division
  - cбп — Rifle brigade
  - тбп — Tank brigade
  - арб — Artillery brigade
  - тпб — Engineer-pioneer brigade
  - тпн — Heavy tank regiment
  - кд — Cavalry division

- **Cavalry division (alternate)**
  (5th Cavalry Division)

- **Unit**
  (10th Rifle Regiment)
  - сн — Rifle regiment
  - ап — Artillery regiment
  - аап — Ground-attack air regiment
  - тб — Tank battalion
  - тд — Heavy tank company

- **Cavalry regiment (alternate)**
  (15th Cavalry Regiment)

- **Element**
  (3d Battalion, 10th Rifle Regiment)
  - сб — Rifle battalion
  - ад — Artillery battalion
  - тп — Tank company
  - тт — Heavy tank platoon

- **Command post**
  (Second Army)
  (Flag, and characters designate unit)

2. SYMBOLS FOR OPERATIONS

- Infantry column (with staff)
- Infantry and tank column
- Infantry and artillery column
- Cavalry column
- Tank column
- Horse-drawn artillery column
- Motorized or tractor-drawn artillery column
- Motorized column
- Mechanized infantry column
- Column of other troops
  (5th Pioneer Battalion)
- Movement of troops by rail
- Infantry reconnaissance patrol
- Cavalry reconnaissance patrol
- Tank reconnaissance patrol
- Tank reconnaissance group
- Position area, infantry
  (10th Rifle Regiment)
- Position area, cavalry
  (15th Cavalry Regiment)
- Position area, tank troops
  (2d Tank Brigade)
Position area, artillery
(1st Artillery Regiment)

Position area, special troops
(6th Signal Battalion)

Position area to be occupied by infantry
(10th Rifle Regiment)

Position area to be occupied by cavalry
(15th Cavalry Regiment)

Position area to be occupied by tank
troops (2d Tank Brigade)

Combat sector occupied until a set time
limit

Planned combat sector

Disposition of troops in defense

Disposition of troops in offense

Direction of attack

Direction of main effort

Combat objectives

Actual offensive

Withdrawal of troops

Withdrawal of troops after unsuccessful
attack

Feint or dummy movement

Boundary between formations

Boundary between units

Boundary between elements

3. INFANTRY SYMBOLS

Company position area

Platoon position area

Antitank rifle company

Antitank rifle platoon

120-mm mortar battery

120-mm mortar platoon

82-mm mortar company

82-mm mortar platoon

50-mm mortar platoon

Four-piece machine gun battery

Rifle company in offense (same for
submachine gunners)

Machine gun platoon in offense

Submachine gun platoon in offense

Rifle platoon deployed in line

Rifle platoon in offense

Rifle squad in offense (same for submachine
gunners)

Rifle squad deployed in line (same for
submachine gunners)

Submachine gun squad in defense

Rifle squad in defense
Company commander
Heavy machine gun (7.62-mm)

Platoon commander
Heavy machine gun (12.7-mm)

Squad commander
Light machine gun (automatic rifle)

Observer
50-mm mortar

Signalman
82-mm mortar

Gun layer
120-mm mortar

Sniper
Small-caliber (45- or 57-mm) antitank gun

Submachine gunner
76-mm infantry howitzer

Rifleman

4. ARTILLERY SYMBOLS

Ammunition bearer
Battery in firing position (either 76-mm or unspecified)

Loader
Planned position for medium gun battery

Pioneer
Dummy battery

Chemical man
Artillery battalion position area
(group supporting 6th Rifle Regiment)

Horse driver
Artillery position area
(1st Battalion, 5th Artillery Regiment)

Rider
Meteorological post

Mortar on cart
Flash ranging or optical reconnaissance post

Machine gun squad on cart
Sound ranging post

Pack-loaded machine gun
Observation post (approximate location)

Pack horse
Observation post (surveyed location)

Antitank rifle

XII-9
Reserve observation post
Δ — Auxiliary observation post
Ε — Flank observation post
Π — Forward observation post

Rocket launcher

5. TANK TROOP SYMBOLS

Topographic reconnaissance battery computation post

Light tank (or unspecified type)

Survey base or check point

Medium tank

Battery base piece (approximate location)

Heavy tank

Battery base piece (surveyed location)

Self-propelled gun

Accurately located target

Mine-clearance tank

Base direction of fire

Full-track personnel carrier

Supplementary direction of fire

Light armored car

Concentration

Heavy armored car

Antipersonnel defensive barrage

Armored half-track

Fire for destruction

Tanks in combat formation

Antitank defensive barrage

Light or medium tank platoon in combat formation

Accompanying barrage

Light or medium tank company in combat formation

Heavy gun (152 to 203 mm)

Medium tank battalion in combat formation

Medium gun (100 to 122 mm)

Heavy tank company in combat formation

76-mm gun (or artillery in general)

Heavy tank regiment in combat formation

76-mm mountain gun

Assembly area

Medium or heavy howitzer (152 mm up)

K — Terminal

122-mm howitzer

3 — Reserve

Terrain barrier passable for tanks

Intermediate
15 Oct 46

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Axis of communication (for supply and replacement)

6. AIR FORCE SYMBOLS

- Fighter squadron
- Short range bomber squadron
- Long range bomber squadron
- Ground attack squadron
- Long range fighter squadron
- Short range reconnaissance squadron
- Army reconnaissance squadron
- Long range reconnaissance squadron
- Liaison squadron
- Medical evacuation squadron
- Dive bomber regiment
- Artillery spotter squadron
- Air transport squadron
- Fighter regiment
- Ground attack regiment
- Short range bomber regiment
- Long range bomber regiment
- Long range fighter regiment

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Air reconnaissance regiment
Air transport regiment
Heavy air regiment
Tactical reserve air regiment
Air control post
Permanent airdrome
Airfield
- Reserve
- Dummy
Landing field
Landing field for heavy aircraft
Landing field for fighters
Air photo reconnaissance
Air rendezvous (showing time and elevation)
Unit alerted for airborne flight
Patrol area
Ground-attack target (showing time)
Bomb target (showing time)
Landing site for airborne troops
Airborne landing
Parachuted air cargo
Air passage lanes (showing entrance and exit)
7. ANTI AIRCRAFT DEFENSE SYMBOLS

- Antiaircraft artillery battery
- Antiaircraft artillery battalion in firing position (showing effective zone)
- Antiaircraft artillery battery on the march
- Antiaircraft machine gun
- Antiaircraft machine gun (double or quadruple mount)
- Motorized antiaircraft machine gun
- Small-caliber antiaircraft gun
- Antiaircraft searchlight
- Barrage balloon
- Air observation and warning post
- Air liaison post (for air warning at a ground CP)

8. CHEMICAL DEFENSE SYMBOLS

- Contaminated area
- Gas shelter
- Meteorological station
- Motorized decontaminator
- Horse-drawn decontaminator

9. SIGNAL COMMUNICATIONS SYMBOLS

- Signal battalion, company, or platoon
  (Right-hand letter indicates type of unit)
- Radio battalion, company, or platoon
  (Left-hand letter indicates size of unit)
- Cavalry signal unit
  (Telegraph squadron)
- Radio direction finder company
- Telegraph operating company
- Telegraph construction company
- Telephone line company
- Telephone construction company
- Cable construction company
- Field post office
- Message center
- Telegraph
- Central telegraph station
- Sound-powered switchboard
- Six-line switchboard (number of dots indicates number of lines)
- Telephone testing station
- Telephone control point (parallel connection)
- Telephone control station (series connection)
- Telephone
10. ENGINEER SYMBOLS
   a. Tactical positions and fortifications

   Antitank strongpoint
   Fire plan

   b. Reinforced earth-and-timber machine gun emplacement
   Reinforced concrete machine gun emplacement

   Fort
Shelter (general)  
Light earthen shelter  
Light shelter  
Reinforced shelter  
Heavy shelter  
Reinforced concrete shelter  
Armored machine gun turret  
Communications trench  
Concealed communications trench  
Covered communications trench  
Subterranean communications trench  
Barbed wire (one row)  
Barbed wire (three rows)  
Barbed wire (ten rows)  
Low wire  
Concertina  
Inconspicuous obstacle  
Removable obstacle (knife rest, etc.)  
Electrified barbed wire fence  
Barbed wire fence (reinforced with stumps, bushes, etc.)  
Antitank ditch  
Antitank escarpment  
Artificial ramparts  
Rampart of snow  
Dragons' teeth  
Tank trap  
Barrier of fallen timber  
Cut-off timber  
Timber antitank barrier  
Antipersonnel minefield  
Antitank minefield  
Controlled demolitions  
Explosive charges  
Delayed-action mines  
Antipersonnel fragmentation mines  
Booby trap  
Unremovable mine  
Antitank barrier (general)  
Inundation
Earthen dam
Mined bridge
Flooding
Defended river bank
Defended river crossing
Booms

**c. Camouflage**

- Dummy trench and dummy communication trench
- Dummy gun
- Dummy antitank ditch
- Dummy bridge
- Screening hedge
- Road screens
- Horizontal screens

**d. Roads and bridges**

- **Dirt road (3 meters wide)**
- **Dirt road (8.5 meters wide, ditches at side)**
- **Surfaced road (gravel road 6 meters wide, right of way 10 meters wide)**
  - EM = Macadam
  - BШ = Concrete
  - ЧШ = Asphalt
- **Fill (1.5 meters high, 100 meters long)**
- **Wooden bridge (length, 10 meters; width, 5 meters; load capacity, 3 tons)**
- **Dirt road reinforced with corduroy (5 meters wide, 70 meters long)**
- **Swampy road reinforced with brushwood cover (6 meters wide, 80 meters long, cover 0.40 meter thick)**
- **Cross-country track**
- **Dirt road (two-way traffic)**
- **Dirt road (one-way traffic)**
- **Plank road**
- **Wooden pipe (triangular, 1.5 meters across)**
- **Wooden pipe (rectangular, 1.5 meters across)**
- **Concrete pipe (1 meter in diameter)**
- **Ford (0.7 meter deep, 40 meters wide)**
- **Surfaced road needing repair (width, 6 meters; length, 1 kilometer)**
### 11. SYMBOLS FOR REAR SERVICES

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
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<tbody>
<tr>
<td>🍃</td>
<td>Supply station</td>
</tr>
<tr>
<td>🏚️</td>
<td>Army supply depot (similarly, tank corps supply point)</td>
</tr>
<tr>
<td>🏥</td>
<td>Hospital for infectious diseases</td>
</tr>
<tr>
<td>🏥</td>
<td>Field mobile hospital</td>
</tr>
<tr>
<td>🛭</td>
<td>Railhead field evacuation point</td>
</tr>
<tr>
<td>🏥</td>
<td>Army field veterinary hospital</td>
</tr>
</tbody>
</table>

#### a. Divisional units

- 🏥 Divisional supply point (similarly, tank brigade supply point)
12. TRAFFIC SIGNS

Main traffic control post
Other traffic control posts
Auxiliary traffic control post
Warning sign
Road sign
Patrol
Section III. CONVENTIONAL SOVIET SIGNS
(For Military Topographic Maps,
Scale 1:50,000)

1. TOPOGRAPHIC SIGNS

Cities

City-type and suburban settlements

Farmhouse-type settlement
(more than 100 households)

Farmhouse-type settlement
(less than 100 households)

Separate farm households
(grouped under a single sign)

Resort

Barracks

State farm

National boundary

Union-Republic boundary

Krai, Oblast, and Autonomous Republic boundaries

Autonomous Oblast boundary
(and boundary of Oblast subordinate to Krai)

National and administrative district boundary

County (Rayon) boundary
2. ENGINEER SIGNS

Railroad overpass

Tunnel

Culvert

Passenger and freight station (first class, with water tower [A] and depot [B])

Passenger and freight station (second class)

Passenger and freight station (third class)

Loading platform and siding

Depot

Water tower

Single-track railroad

Single-track railroad (with stretches of double track)

Double-track railroad

Triple-track railroad

Electrified railroad

Horse-car railroad

Electric tramway

Narrow-gauge railroad

Aerial cable tramway

Railroad under construction

Dismantled railroad

Bridge (steel with triple track)

Bridge (with single track)

Small bridge

Bridge (with two-way traffic)

Paved highway (section difficult to negotiate)

Paved highway (under construction)

Road (improved, ditched)

Road (section of improved, ditched road, difficult to negotiate)

Improved, ditched road (under construction)

12.2 Paved highway (showing usable width)

Incline (10° or greater)

Stone wall (by unimproved road)

Wooden fence (by unimproved road)

Unimproved road without ditching (section difficult to negotiate)

Winter road

Corduroy road

Wooden road