

**RUSSIAN MILITARY MAPPING: A GUIDE TO USING THE MOST COMPREHENSIVE SOURCE OF GLOBAL GEOSPATIAL INTELLIGENCE**

**Translated by Paul Gallagher, East View Cartographic, Minneapolis, 2005, 188p, \$295 (hbk), ISBN 0-9742973-1-3**

That the Russians have been mapping the world to exceptionally high standards for over sixty years is now becoming generally known in the West. However, very little has been published in English describing the scope or scale of the endeavour or discussing the maps themselves.

This book is therefore a welcome addition to the sparse information so far available. The book's strapline is 'A guide to using the most comprehensive source of global geospatial intelligence'. This is indeed a guide to the use of the maps, rather than an account of their compilation or history. The book is, in fact, a direct translation of the current edition of the basic manual used in the Russian armed forces to introduce officers to topographic and various special maps. But whether modern Russian mapping really is global (as was certainly the case in Soviet times) or confined to the Russian sphere of influence is not clear. The opening sentences of Chapter 2 suggests not : Russian topographic maps are national. They are used both to solve economic problems and for the nation's defence needs.

The original manual was an open publication with a print run of about 30,000 and the translation by Paul Gallagher and the production are of praiseworthy high quality. The error in the caption of figure 5, suggesting that clocks are retarded by one year every October is a rare aberration.

Russian map makers have created over the years an impressively comprehensive symbology and system of annotation, whereby every possible type of terrain, building, settlement, vegetation, land or water feature or line of communication is identified, described and annotated with dimensions, carrying capacity, construction material and so on. As the maps carry no legend (thus the sheets are a manageable size), the specification of symbols section of the book is essential for anyone trying to derive the full meaning from a topographic map. Although earlier versions of this have previously been published (the 1958 edition was published as a US Army Technical Manual, now available on-line<sup>1</sup> and the 1983 edition was translated by East View in 1997) the present updated version is invaluable. Without it, few would guess that the annotation 30-1600/6-1.5 on a reservoir indicates a volume of 30km<sup>3</sup> and surface area of 1600km<sup>2</sup> with an emptying time of 6 days with all gates open and 1.5 days with failed dam. Or that 5043/IV-X against a road or track indicates the maximum altitude and the months of the year when passable.

Plates show examples of the current topographic maps at scales between 1:25 000 and 1:1 million, of city plans and many special maps such as aeronautical chart, marine chart, terrain variation map, geodetic data map, river segment map, mountain pass map and water source map as well as various photographic and photomontage maps and plans. The accompanying texts and tables describe the primary purpose and accuracy of each map type and indicate which maps are most suitable for various military purposes from 'general terrain evaluation' through 'operational' to 'tactical'. There are instructions for marking up working maps ('requires the use of a set of properly sharpened coloured pencils of various hardnesses') to indicate progress of battle, areas of devastation and locations of friendly and enemy troops (in black and blue respectively).

Guidance in the interpretation of topographic maps includes a series of terrain photographs paired with map extracts; diagrams showing how to establish steepness of ground, how to determine whether a line of sight exists between two points, how to determine the rectangular (grid) or geographic (latitude and longitude) coordinates of a location; and instructions for the use of azimuths and magnetic compass for cross-country navigation.

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<sup>1</sup> downloadable at <http://www.lib.berkeley.edu/EART/pdf/soviet.pdf>

Parts of the book have almost an innocent 'Scouting for Boys' flavour with tables indicating the distance at which various light sources are visible by the naked eye at night (lit cigarette 0.5-0.8km, burning match 1.5km), the distance at which various objects or targets are visible (airplane on ground 1.2km, buttons and threads 100m) and the audibility of sounds in calm sunless weather on level terrain (crack of twig breaking 80m, oars in water 1,000m). Then there are the rules, possibly outmoded in this GPS age, for finding one's bearings : mosses and lichens are found on the north side of trees, snow around buildings melts faster on the south, snow in ravines melts faster on the north, altars in Orthodox Christian churches face east and their bell towers face west, the lower end of the oblique crossbar of an Orthodox cross on a dome points south and the higher end points north, the doors of synagogues and mosques face south, and so on.

Such information sits rather incongruously with instruction on how to mark on your map the epicentre of a nuclear explosion (500-H/7.00-5.5 indicates 500 kilotons H-bomb exploded at 0700 on 5<sup>th</sup> May) and how to mark up destroyed places, emptied reservoirs, failed dams, flooded lands and zones of radioactive contamination, distinguishing severity on a scale of four from moderate to extremely hazardous.

Some of the most generally useful information is found in the introductory chapter in which is described and explained in a straightforward and accessible manner such global concepts as : the earth's atmosphere, weather and climate, time (classified as solar, universal, local, zone, decree, Moscow, ship's, flight and operational) and tables of daylight and twilight at various latitudes and dates. Elsewhere, the appendix has copious tables of valuable operational data, such as the length of the snow season at various altitudes on the north slope of Caucasus Major; the effect of mountain terrain on troops; vehicular passability of swamps and frozen streams and lakes; types of slopes and their passability and the maximum fording depth for various vehicle types.

It may be that Russian officers are required to learn all this information by heart, but for those who don't have to, this is a fascinating reference source and an invaluable guide to Russian mapping. What is needed now is more information on the scope and history of the whole global cartographic project.

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