

The Soviet Atlas as a Source

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For the physical and economic geography of the USSR.

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Soviet atlases, world atlases as well as those devoted to the USSR itself, have attained a degree of cartographic excellence which ranks them among the best in the world. There are no American atlases comparable to them, nor are there likely soon to be, given the concept of American publishers that an atlas is "a collection of maps in a volume."¹ The contrasting Soviet concept has been summarized by the noted Soviet cartographer K. A. Salishchev: "An atlas is not just a grouping of various geographic maps nor their mechanical assemblage. It is an integral system of maps which are organically related and complement one another, a system that is governed by the purpose of the atlas and the peculiarities of its use."²

General Atlases of the USSR

The best national atlas of the Soviet Union is currently the *Atlas SSSR* published in 1962.³ It is a comprehensive cartographic study of the

country and contains an excellent series of general regional maps covering the Soviet Union at scales up to 1:3,000,000. It has a physical geography section comprising various geologic, climatic, vegetational, and faunal maps and an economic geography section covering such topics as industry, agriculture, and transportation. There are also maps of the former twenty economic regions showing the distribution of different types of economic activities within each.

The Soviets have also published a number of regional atlases covering particular political units.⁴ Both these and the *Atlas SSSR* contain a wealth of physical geographic information, both general and specific. The general maps do what is expected of them—show physical and cultural features and give place names, indicate relief by shades of green ascending from sea level to shades of brown for higher elevation, give the highest elevations in each region in meters, and indicate water depth by descending shades of blue. But these are backed up by a number of specific topical maps devoted to geology (the underlying strata, tectonics, and rock types), geomorphology (terrain), climate, vegetation, soils, forests, zoogeography (types and distribution of fauna), and mineral extraction (distribution of various mining activities).

Of the topical maps, those devoted to climate give the most comprehensive coverage. The *Atlas SSSR* has eleven of them showing climatic regions, solar radiation, prevailing wind directions, seasonal air temperatures, average daily air temperature, frost-free periods, snow cover, precipitation, radiation balance, and seasonal air pressure and giving considerable detailed information in each of these categories.

The economic section of Soviet atlases, either national or regional, is broken down essentially into four topics—industry, agriculture, population, and transportation. The industrial maps have such themes as fuel and electro-energy production, ferrous and non-ferrous metallurgy, machine building and metal fabrication, chemical and petroleum products, building materials, lumber and paper production, light products manufacturing, and food production. The agricultural maps show the location and specialization of state farms, the extent of ploughed or tilled land, and the type and distribution of grain, livestock, and various other agricultural products. The population maps usually cover ethnography along with distribution and density. The transportation topic normally comprises not only roads and railroads but navigable rivers, canals, and major air lanes.

Specialized Atlases

Of the Soviet atlases entirely devoted to special topics, the best and most useful are perhaps the agricultural atlas, the railroad atlas, and the automobile road atlas.⁵ The atlas of agriculture published in 1960, giving fuller coverage and more detailed information on Soviet agriculture than the national or regional atlases, is the most comprehensive and detailed one of its kind ever published. Its more than three hundred pages are broken down into nine sections under the following subject heads: introduction to Soviet agriculture, natural physical conditions, general agricultural characteristics, agricultural pattern including amount of arable land, livestock, agriculture in the Soviet republics, gross production of agricultural commodities, harvest yields for individual areas, and conclusions concerning Soviet agricultural production compared with the rest of the world's. Although its main value is to show the type and distribution of Soviet agricultural activities, it is excellent for determining the agricultural potential of any region of the Union.

The railroad atlas portrays the regional railway networks in the various parts of the country, including such information as the distribution of facilities, traffic flow, cities and towns served, and the railway's relationship with the physical environment. The automobile atlas gives corresponding information on roads. It distinguishes between primary and secondary roads but gives neither the kind of surfacing nor the number of lanes on a road.

The Information Yield

The administrative-political information found in Soviet atlases is confined largely to a simple breakdown into administrative units. Although this type of information is usually more readily available from other sources such as the Administrative-Territorial Handbook USSR (*SSSR Administrativno-Territoriarnoye Deleniye Soyuznych Respublik*), an administrative reorganization may often show up first in a newly

published atlas. If there is a boundary change a map is required, and an atlas may be the first source for one.

The economic information in the atlases consists of generalizations on the distribution of different types of commodity production. Production data are shown graphically, normally in comparison with past years, but only in averages for large regional areas. Accurate production data, either industrial or agricultural, for specific regions cannot be determined from the graphics. Moreover, official sources such as the national economic handbook *Narodnoye Khozyaystvo*, published yearly, provide more accurate information and greater detail on the subject. The principal use of the economic sections of the atlases is therefore to locate the different types of economic activities distributed throughout the Soviet Union.

Thus it is the physical geographic information in Soviet atlases that is most abundant and most useful. Although even here the prime sources for intelligence are usually maps such as the hypsometric series on scale 1:2,500,000, the atlas maps with scales up to 1:3,000,000 are sufficiently large to yield detailed information such as relief comparisons and magnitude or distance relationships. They frequently bridge intelligence gaps or verify information obtained from other geographic sources. Using them for deriving precise geographic coordinates would be somewhat precarious, but good approximations can be made; those with scales of 1:3,000,000 and 1:4,000,000 have 2-degree grids broken down into 20-minute intervals, and even those with scales of 1:8,000,000 and over have 4-degree grids broken down into 30-minute intervals.

Information on terrain characteristics can be obtained from the general maps section of an atlas, or better for specifics and detail, from the special geomorphology maps. The geomorphologic map in the *Atlas SSSR* shows relief morphology with twenty-nine distinct types of surface features such as plains, valleys, plateaus, tablelands, and mountains, morphologic elements such as ravines, gorges, river valleys, flood plains, sand dunes, and karst regions, and the immediate subsurface geological structure. The general physical maps, on the other hand, provide excellent information on general relief relationships over large land areas.

The value of the climatic information in Soviet atlases is particularly pointed up in the case of the arctic regions, on which Soviet scientific

publications indicate there is a paucity of data, especially on the area east of the Urals. The Soviet atlases give arctic climate data that would otherwise be difficult to obtain from overt sources and, although somewhat generalized, is sufficient for the reconstruction of conditions in the Soviet northeast. On all areas it is useful to have information on the separation of climatic zones, the number of frost-free days and days with snow cover in each, the maximum and minimum daily temperatures and amounts of precipitation, and the seasonal paths of cyclones and anticyclones.

Hydrographic information can be gleaned from several sections of an atlas. The general maps can be used for the size and configuration of lakes, rivers, swamps, and bogs, the location of canals and hydroelectric projects, and coastal water relationships. The transportation map will show navigable rivers, or navigable parts of them, and canals. Then the specialized hydrographic map will give the characteristics of the major rivers—perennial water level, velocity of flow, seasonal flood period and area flooded, and hydrochemical classification.

Information on Soviet soils is presented in soil maps in both the national and the regional atlases. The *Atlas SSSR* identifies sixty-five distinct soil types. The regional atlases have still more detail, giving for example soil profiles with associated graphics describing composition. Such information is of value in studies of the agricultural potential of particular areas.

The Intelligence End Product

All these kinds of information contribute to the basic encyclopedic store for the maintenance of which geographic intelligence is responsible. Some of it, however, can be put to more immediate use for special purposes. Evasion and survival studies need data on climatic and other characteristics of particular regions, their drainage pattern, the types of vegetation present, the ethnology of the inhabitants, food and water supplies available, and any peculiar environmental hazards, say the presence of wild animals. Atlases are at least a confirmatory and sometimes a unique source for such information.

Other specialized studies that may use atlas information include those seeking to locate possible ICBM sites or underground caves that might be used for nuclear testing. Geographic analysis of the suspected areas would center on the nature of the bedrock there and the overlying terrain, the type and composition of the soil, and the depth of the water table.

Sometimes clues to secrets are turned up in the process of comparing data in a newly published atlas with previous information in the same field. Say a town and associated road complex previously shown in eastern Siberia are now missing. The experienced analyst has learned that this is seldom a matter of cartographic carelessness. A search for reasons why the Soviets would want to delete it is begun. Perhaps it turns out that a number of nuclear scientists have recently been moved to the area, or there may be a report that uranite has been discovered there. Routine geographic authentication has started a fruitful intelligence process.

Finally, Soviet atlases serve U.S. intelligence in the very way they are intended to serve Soviet citizens—as ready reference works. No day goes by but someone wants to know where Marinovka is, what is the highest elevation on Sakhalin, how far it is from Volgograd to Lugansk, how many towns in Tula Oblast have chemical plants, or what areas in the Soviet Union grow rice. He can most easily get the answer from the Soviet atlas.

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2 Salishchev, K. A., *Osnovy Kartovedeniya*. (Moscow: Izdatel'stvo Geodezicheskoy Literatury, 1959.)

3 During World War II a predecessor of this atlas became a great treasure. Volume II of the Great Soviet Atlas, the volume covering the USSR, had been printed but not generally released. There were only two

advance, courtesy copies in the United States, and the only other up-to-date source available to the many government offices clamoring for information on Soviet geography was a set of maps Wendell Wilkie had brought home covering the route of his recent tour through the Soviet Union. OSS therefore borrowed the State Department's courtesy copy of the atlas to reproduce for its own and other agencies' use. Offset color printing would have been prohibitively expensive, however, several thousand dollars a page, and none of the commercial processes for color photography in those days could do the job; the black printing would always come out blurred. Luckily, OSS had hired for other photographic purposes the developer of an exclusive color process called Triak which was found to be satisfactory, and it was able to get out its American edition, with translated table of contents, on 1 February 1943. Soviet carelessness provided a bonus in this achievement. The main maps had been edited by censorship to eliminate information that might be useful to the hostile outside world, but the censors had forgotten the larger-scale inserts covering metropolitan and other areas of special interest. These often revealed things the Soviets would not intentionally have let us know.

4 As of this writing, the following regional atlases have been published: Ukrainian SSR, Belorussian SSR, Moldavian SSR, Georgian SSR, Armenian SSR, Azerbaydzhan SSR, Uzbek SSR, Tselinnyy Kray, Karelian ASSR, Kustanay Oblast, Irkutsk Oblast, Kalinin Oblast, Leningrad Oblast, Moscow Oblast, Murmansk Oblast, Smolensk Oblast, Vologda Oblast, and Yaroslavl Oblast.

5 Respectively Atlas Serskogo Khozyaystva SSSR, Zheleznyye Dorogi SSSR, and Atlas Aotomobirnykh Dorog SSSR (Moskva: GUGK, 1960, 1965, and 1961.)

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