

**PROBLEMS OF OUTPUT OF MAPS AND ATLASES AND  
CARTOGRAPHIC PRODUCTION IN RUSSIA**

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**Abstract**

Main difficulties faced by the Federal Service of Geodesy and Cartography of Russia are analysed. Measures taken to overcome the present difficulties are outlined.

Map producing factories in the USSR operated retaining their particular features as all the industrial plants of the country.

Adjusted during many years mechanism of reciprocal actions of surveying and mapping organizations, operating system of financing and material supply, qualified personnel provided necessary conditions for quite successful solution of task to meet the national economy demands in maps and atlases of the necessary quantity and variety. To support this it should be noted that to meet the demands of planning and management of national economy, science, education, tourism, more than 900 items of general geographic and thematic maps and atlases were produced in the end of 1980s annually in the USSR. During 15 years (1970-1985) number of published cartographic products increased more than 2.5 times, and map compilation and publishing capacities increased at the same time 1.6 times.

But side by side with this doubtless successes there were unsolved problems of map production including low quality polygraphic reproduction of map originals and atlases, narrow specialization of cartographic factories, old-fashioned technology at many productive stages of map originals making and map printing. There was a considerable lag in automatization of main productive stages as compared with a number of foreign countries map production agencies, and also full dependance of maps and atlases printing from imported offset printing machines and other polygraphic equipment.

All these problems aggravated even more when instead of single and powerful country new independent states were formed. Until 1992 the demands of Russian Federation for cartographic products were met 60 % by map printing

factories located at the former USSR Republics. It was there that modern map printing facilities were built and equipped (in Vinnitza - Ukrain, Tashkent - Uzbekistan, Tbilisi - Gorgia). In Russia by the time of USSR collapse there were only three map printing factories, all of them far from being the best. Their productive capacity, made up 23,7 % of the total potential of all map production of the former USSR. Besides that, cartographic factories equipped with special facilities for all types of maps and atlases production, turned out to be outside Russia. The Russian factories do not have such facilities, and they can not produce atlases in hard binding, globes, plastic relief maps and some other cartographic products.

At the same time more than 600 various maps and atlases including those for general education should be revised because of alterations which took place at the former USSR territory and in Eastern Europe, as well as renaming subjects of the Russian Federation and many settlements.

All this brings us to the need to transfer the production of all types of educational and other cartographic products from map printing facilities of the former USSR Republics to Russia. There will be a need to build new cartographic factories and to reequip the old ones.

Another complicated problem appeared in 1992-1995. It is permanent underloading of production facilities of map printing factories with originals (positives) of maps and atlases. There are many reasons for that. One of them is that large number of formerly made originals (positives) were left at cartographic factories outside Russia (in Minsk, Riga, Vinnitza and so on). In spite of agreements many originals of maps and atlases had not been returned to Russia for revision (correction), and to make them a new will take many efforts and expenditures.

Another reason of long delays with transfer of publishing originals to cartographic factories in 1991-1993 is connected with constitutional reforms in our country. There were many delays with approval of legislation on statute of subjects of the Russian Federation, their boundaries and state boundary of Russian Federation and other features of maps and atlases content. Numerous renamings of geographical features both within and outside Russia, approval of

legislation altering transcription of geographical names in Russian in the former USSR Republics - all these were negative factors influencing timely map publications.

According to proposals of the Federal Service of Geodesy and Cartography in the new Constitution naming of geographical features is referred to the authority of Russian Federation and at present a Federal Law on Geographical Names is being prepared.

It should also be noted that the used system of placing orders and payment for delivered products ceased to provide stable functioning of cartographic production. The factories had to print anything which is well and timely paid. As a result in 1993 the output of cartographic products (not counting topographic maps) decreased from 300 items to 50.

The situation at cartographic enterprises of surveying and mapping branch considerably aggravated in the second half of 1993 and in 1994, when financing from the state budget started to be irregular. The map printing factories and "Cartographia" Association turned out to be in the most difficult financial position. They could not afford to buy the necessary materials, pay for municipal services and so on. Therefore the setting up of marketing service is very urgent; the order of payment for printed cartographic products must be revised; new forms of selling cartographic products should be actively searched for, system of financing of map publishing must be changed.

The Federal Service of Geodesy and Cartography of Russia and cartographic enterprises take necessary measures to stabilize the situation.

They helped to withstand under difficult conditions of the economic reforms and to solve problems of making cartographic products of social value, though in smaller quantities. New administrative maps of the Russian Federation of 1:4 000 000 and 1:8 000 000 scales were published, as well as Revised Political Map of the World; practically all the educational atlases have been revised and printed. The production of outline educational maps is being returned to normal; formerly they were printed at cartographic factories of the former USSR Republics. Political Administrative Atlas of the Russian Federation had been published, as well as Atlas of the Railway Roads and a number of school

local-lore atlases. Ecological Map of Russia of 1:4 000 000 scale is being prepared for publication.

The problem of quality of cartographic products which had existed should not be ignored. At present under conditions of transition to market economy quality of home-made cartographic paper, paints for offset printing had decreased considerably. The output of plastic films for pasting maps had practically ceased. Quality of offset plates and other materials which to a large extent influence the quality of published cartographic products is decreasing. Therefore under present conditions it is very difficult to improve considerably the quality of maps and atlases.

It is also very important to improve the content of general geographic, educational, thematic, reference and other maps and atlases. We can not agree with the opinion that home cartographic products are inferior to foreign ones only in low quality of paper and printing.

Ungrounded abolition of map originals control, decrease in level of professional training of cartographers, unproper editing of maps and atlases influence negatively the production quality. It is necessary to put in order and decrease the variety of maps of all types, and first those compiled on topographic base.

The Federal Service of Geodesy and Cartography tries to put in order production of maps for open distribution taking into account present difficulties of home map production. Specifications of new general geographic map series, based on topographical maps, were elaborated. The first maps of this series have been published. In

1994 the enterprises started to publish new folded map series of 1:200 000 - 1:1 000 000 scales. In 1995 a new map series "Towns of Russia" will be prepared, and in 1996 there will be administrative maps of the Russian Federation.

Ecological maps are comparatively new products of home cartography. The main purpose of ecological mapping is to provide cartographic materials for national and regional programs of natural resources inventory, monitoring, examination and forecast within framework of Ecological Safety of Russia Program. Scientists and professionals of many organizations and departments will participate in ecological mapping programs. The

Ecological Atlas of Russia will be the core of these programs.

The most important science-technical and productive problem is inculcation of modern computers' technology. Wide use of digital data processing and computer automated systems will bring automated compilation and revision of small scale maps, and it will be the key task for the nearest future.

Finally it should be pointed out that in spite of all the difficulties map production in Russia is preserved and cartographic products are still being made. According to task program "Cartographic Products for Educational Establishments and Population of Russia in 1993-1995 and for the period till 200" maps and atlases of various purpose are being prepared for publication. In 1994 the main efforts of cartographers will be aimed at preparation and publication of new map series of Russia, Based on topographic maps, as well as at revision of already published maps, and in first turn educational ones. The work of preparation of different atlases of Russia will be continued. The work aimed at preparation of the third edition of Geographical Atlas of the World will be completed. The work on automobile atlas and other popular and science-reference atlases is going on.

The above Program includes preparation of multi-volume National Atlas of Russia. A task program will be worked out for coordination of step by step preparation of the Atlas. It will be submitted to the Government of Russian Federation for approval. A new fundamental cartographic product - "Russia and the Neighbouring States" map of 1:2 500 000 scale is being prepared together with Belorussian and Ukrainian organizations.

To improve the tools and methods for map compilation and publication the corresponding science-research work will be done, especially for ecological mapping and National Atlas of Russia preparation.

Realization of "Program on Cartographic Products for Educational Establishments and Population of Russia" and other measures on development of cartographic production will allow to meet the demands of the Russian Federation in cartographic products by 2000.