

The Role of Soviet Specialists in the Development of Economic, Scientific-Technical, Educational and Humanitarian Spheres of the PRC (1949-1960)

Alla v ERCh En k O

The timely assistance of the U.S.S.R. and Soviet specialists who worked practically in all fields of the PRC economy during the 1950s helped China make a great leap forward in modernization. In the conditions of the postwar ruin and international isolation, the country was able to create a system of managing its economy, lay the foundations of modern industry and train skilled national personnel.

key words: Soviet-Chinese relations, Soviet specialists, Soviet assistance, national economy of the PRC, modernization of industry

After the proclamation of the PRC, the country was faced with the task of restoring the national economy, which was in critical condition. It was impossible to improve the situation without outside help. Prior to liberation China played host to specialists from Britain, the United States, France and Japan. Their technical assistance cost a pretty penny, which the country couldn't afford in the situation, which took shape by 1949. It was decided to turn to the socialist camp, whose countries, primarily the Soviet Union, offered China assistance, which included the sending of skilled specialists on acceptable terms. J. Stalin considered favorably China's requests of this kind.

Before the proclamation of the PRC about 600 Soviet specialists were sent to Manchuria at the request of the Communist party of China.¹ They helped overcome economic dislocation. Some ten Chinese would gather around each Soviet specialist who showed them how to perform the simplest operations.² In June-July 1948, a group of Soviet engineers and technicians repeatedly travelled to the

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frontline of military hostilities to expedite the restoration of a railroad line, while the Chinese leadership prepared for the Liaoshen operation (September 12-November 12, 1948).³ Undoubtedly, Soviet assistance in restoring the infrastructure of Manchuria played an important role in several successful operations carried out by the People's Liberation Army of China in 1948-1949.

In 1947-1949, Soviet doctors helped arrest the epidemic of plague, thus saving the lives of tens of thousands of people in North-East provinces and then in Chahar Province.⁴ China lacked medical specialists and vaccine for the purpose.

I. Kovalyov* remembered that at a banquet in Moscow in 1950 given by the Chinese side it was announced that the Soviet government had decided to grant China an interest-free loan of two billion dollars and to send Soviet specialists to restore its economy.⁵

In 1949-1960, according to Soviet estimates, from nine to fifteen thousand Soviet specialists and advisers worked in China. Some Chinese experts believe that, taking into account military advisers, the number of Soviet specialists could exceed 20,000.⁶

Advisers worked as consultants at ministries and departments and at the Academy of Sciences and helped in everyday work. In the latter half of 1958, the post of "adviser" was abolished.

The work of Soviet specialists was supervised by I. Arkhipov for eight years, who was sent to China as the adviser on economic matters at the State Council of the PRC and the head of a group of Soviet specialists. His personal contacts with Zhou Enlai, Li Fuchong, Chen Yun, Yao Yilin, Bo Yibo, Li Xiannian, and other Chinese leaders contributed to successful work and helped solve various practical problems.

Economic, scientific-technical and humanitarian cooperation proceeded on the basis of the Treaty of Friendship, Alliance and Mutual Assistance signed on February 14, 1954, and the principles of the Council of Mutual Economic Assistance (known in the West as Comecon). Although China was not its member, it enjoyed all the privileges envisaged for the Council member-states. The Soviet Union provided the PRC with technical documents, information materials and literature for libraries free of charge. During 10-odd years, about 24,000 sets of design and technical documents were given over to the Chinese side.⁷ The Chinese historian Chen Xi described it as "the biggest and most comprehensive transfer of technologies, which had no analogues in modern history."⁸

The number of Soviet specialists was especially great in the years of the first five-year plan period (1953-1957). At first they worked as consultants and then they helped build, reconstruct and commission 156 enterprises built with Soviet assistance. In all, more than 300 civil and military objects were built and reconstructed with Soviet assistance in those years. Soviet specialists gave recom-

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mentations for the distribution of production capacities built not only in the old maritime industrial zones, but also in inner China. At first, when China suffered from the acute shortage of technical personnel, Soviet specialists helped compile lists of the necessary commodities for the restoration of the country's economy.⁹

In the 1950s, there was hardly any branch of China's economy without Soviet specialists working in it. They were active, above all, in the ferrous and non-ferrous metallurgy, the coal industry, power production, and the chemical, oil, machine-building and electrical engineering industries, in other words, the first priority spheres. The number of specialists varied depending on the requirements of the Chinese side.

Finding themselves in an alien environment and in specific Chinese conditions, Soviet specialists sometimes came across unforeseen problems and difficulties of a socio-cultural, professional and daily-life character. It sometimes happened that Chinese requests for specialists remained unanswered or wrongly complied with. There were cases when specialists did not come in time or were unfamiliar with the character of the work they had to do in China. The problem of translating and interpreting was also quite real, especially during arguments on production problems. Nevertheless, the interaction at the working level was quite effective, irrespective of party-and-government relations. The work of Soviet specialists in China was highly assessed right up to the summer of 1960, when all of them were recalled.

Soviet specialists helped their Chinese counterparts master modern production methods and management, manufacture commodities of a new type, and improve the performance of old enterprises. In the period between 1949 and 1952, more than 1,000 Soviet specialists worked on the Changchun railroad, which was constructed and handed over to China free of charge on December 31, 1952. They trained about 20,000 skilled workers and leading personnel for railroad transport and greatly improved the work of the railroad. In 1953, the ratio of the use of blast and open-hearth furnaces at the Anshan metallurgical plant increased considerably. Coal extraction also rose. Having studied the possibilities of the use of iron ore and coal in the Anshan district, Soviet engineers substantiated the possibility and expediency of restoring the metallurgical plant, which had been destroyed almost completely during the Japanese occupation and the civil war. They helped build new shops and prolonged the term of work of a number of coal mines by 20 to 40 years.

When building new enterprises Soviet specialists helped choose the location for them, prepared basic design materials, took part in designing project, construction, assembly and commissioning. Simultaneously, they trained Chinese personnel – from chief engineer and shop superintendents to skilled workers.¹⁰

During the first five-year plan period the Soviet Union helped build and reconstruct seven iron-and-steel plants and eleven non-ferrous plants in Wuhan and Baotou, which increased the output of steel and rolled metal by more than tenfold.

Soviet specialists successfully tackled complex tasks connected with such eternal evil as floods.

The suggestions of the Soviet expert Bukov laid the foundation of the project evolved by the Chinese Committee on the construction of hydro-installations on the Huaihe River: grooved piles were replaced by ferro-concrete plates for a dam in Runheji (the main installation necessary for damming the river). This saved much time and material. Chinese construction workers called it the “Bukov dam.” Workers at one of the enterprises in Tianjin even wrote a play about a Soviet engineer and amateur actors staged it. The use of Soviet construction methods in building the Jingjiang dam on the Yangzi River made it possible to complete the work, which would have taken several years, in only 75 days.

Soviet specialists took part in the construction of 19 and reconstruction of six hydro- and thermal power plants. The Fuxin Thermal Electric Power Plant was built in just one year. Soviet specialists prepared design documents and used progressive methods of assembling, welding, etc., reducing the time by half, and introduced 89 innovation proposals.¹¹

The Fengman Hydropower Plant on the Sungari River, which had been founded by the Japanese in 1937, could not work properly due to errors in the design, and its dam was in constant danger of being breached. After the reconstruction of the project carried out under the supervision of Soviet specialists, the plant began to work at full capacity, supplying electric energy to many industrial enterprises of the North-East of the country. It also played a major role in irrigating plough lands and regulating the flow of water during inundations.¹² Incidentally, the chief engineer of the Fengman Hydropower Plant was Li Peng who had graduated *cum laude* from the Moscow Power Institute.

Soviet specialists helped build and enlarge engineering and instruments plants (24 projects) and establish a number of industries which China did not have previously: automobile and tractor-building industry, production of bearings, melting furnaces, rolling-mills, electric engines, etc. In 1954, the PRC tested its first airplane and started the production of tractors. The Changchun Automobile Plant began manufacturing Chinese trucks Jiefang. The construction, commissioning and personnel training of that plant were largely helped by Soviet specialists, including people from the Likhachev Automobile Plant in Moscow.

Soviet specialists helped quickly restore the Beijing–Hankou and Guangzhou–Hankou railroads and build new railroad branches: Chengdu–Chongqing, Tianshui–Chengdu, Tianshui–Lanzhou, and others. New technologies of bridge construction and tunnel digging in mountain districts offered by Soviet specialists were widely used. The laying out of the Chongqing–Lanzhou railroad in a record time made it possible to connect the South-West and North-West provinces of China with central ones. In order to expedite the construction of railroads, Soviet specialists suggested that a plant manufacturing ferro-concrete structures be built nearby, which made it possible to avoid delivering beam and pipes from far-off districts.

Proceeding from local conditions, Soviet engineers proposed and implemented the most rational methods and solutions and introduced units which enabled the builders to combine Chinese equipment with the Soviet one, without bringing in additional equipment from the Soviet Union, and curtail expenses by using the simplest and cheapest materials.

The Soviet engineer K. Silin suggested that all small bridges on the Chengdu–Chongqin railroad line be built of stone instead of metal, which was expensive and in short supply. When the project of a bridge across the Yangzi near Wuhan was discussed in 1953, he suggested a new method for its construction. As a result, a two-deck 1,670 meter-long bridge was built in a much shorter time and at a lower cost. A picture of the Big Wuhan Bridge decorates his tomb at the Kalitnikovskoye cemetery in Moscow.

The bridge over the Huanghe River on the Beijing–Hankou railroad built in the early 20th century had to be dismantled. This would have interrupted traffic on one of the most important railroads of China for quite a long time. However, thanks to the Soviet engineer Zingorenko's design, the bridge was restored in three years' time. Its train-handling capacity became ten times greater and the speed of passing trains increased from 15 to 60 km/h.

By the end of the first five-year plan period, 150 projects were completed and commissioned, which became the backbone of China's modern industry.¹³ Apart from them, 43 military-industry projects were built anew or reconstructed with Soviet assistance.¹⁴

Soviet specialists also worked in the financial sphere, trade and cooperatives, in the system of planning and statistics, in agriculture and forestry. They helped improve land cultivation, which made it possible to raise crop yields by 50 to 100 percent (cotton, for example).

Thanks to books and study aids received from the Soviet Union, and also from the reports of Chinese delegations visiting our country, the Chinese side became better acquainted with the state of Soviet science and technology and began to invite leading Soviet scientists and experts to help personally in compiling manuals, standards, instructions, etc. for the ministries of communications and railroads, and others.¹⁵

A great amount of work was done by people from the U.S.S.R. Academy of Sciences. Well-known Soviet scientists worked at the Academy of Sciences of China.¹⁶ Twenty advisers and consultants were attached to it from 1954.¹⁷ There were 786 outstanding scientists from the Soviet Union who helped set up more than 40 scientific centers in China in the period between 1951 and 1959.

Authoritative Soviet scientists stayed in China for a short time and for long periods, helping organize research and draw up scientific plans, they took part in joint research work, expeditions to tap natural resources, studies of Chinese flora and fauna, compilation of maps, geological prospecting, investigation of sea and river life, etc. The assistance rendered by Soviet geologists was especially valuable, inasmuch as Chinese practically did not do any geological prospecting prior

to 1949. This work yielded positive results: a great many deposits of valuable minerals (oil, coal, rare metals) were discovered. A joint expedition studied the problem of soil erosion in the middle reaches of the Huanghe River, in the provinces of Shanxi, Henan, Shenxi, Gansu and Inner Mongolia. Leading scientists from the Institute of Geography, the Botanical and Soil institutes and the Botanical Gardens of the U.S.S.R. Academy of Sciences took part in the joint Xinjiang expedition.¹⁸ Another joint Soviet-Chinese expedition had been organized to study the Amur River. Soviet specialists shared experience in field work with their Chinese colleagues and taught them to work with Soviet scientific instruments and equipment. They also helped them set up experimental stations.

Soviet scientists helped the Chinese side to elaborate a 12-year plan of scientific development (1956-1967). About 600 scientists from 500 research centers in the U.S.S.R. worked on the plan, and a group of specialists specially went to China for the purpose.

A delegation of leading Soviet scientists headed by Academician I. Bardin visited China in 1955. During the two months of their stay in China they visited ten cities, looked around plants and factories, power plants, research institutions, universities and other educational establishments, museums, etc. They delivered lectures, conducted seminars and symposiums and gave consultations on timely problems. For example, Academician I. Bardin told his Chinese colleagues about the use of oxygen in ferrous metallurgy and oxygen blast in converter steel smelting.¹⁹

Tangible assistance was rendered in nuclear physics investigations and the use of nuclear energy in the economy, and also in training necessary specialists and building a nuclear reactor and cyclotron.

Guo Moruo, President of the Chinese Academy of Sciences, said in 1955: "If we rely exclusively on our own forces, we shall not only lose much time, so precious for us, but, moreover, we shall continue to lag behind the world level. The U.S.S.R. is helping China reach the level of world science."²⁰

During the first decade of the PRC existence, Soviet assistance in the humanitarian sphere was quite considerable. Four hundred and twenty-six medical doctors were sent to China.²¹ Among them were well-known scientists and experts in the organization of health service: a deputy health minister, epidemiologists, biologists, cardiologists, and others. In the early 1950s, the outstanding Soviet medical scientist V. Vasilenko was invited to China to treat Mao Zedong. After that, he was given presents from the Chinese leader, including a unique ivory chess set.²²

Soviet specialists helped organize a modern health protection system, including medical research centers and educational institutions, build medical and pharmaceutical industries, compile an atlas of medicinal herbs, set up labor protection system, etc. Soviet specialists took part in training GPs as well as specialists in specific spheres. While offering Soviet experience and knowhow, they showed great respect for the national medical traditions. On their initiative, a

department was opened at the PRC Health Ministry which was in charge of upgrading specialists in traditional medicine.

Sixty Soviet doctors and nurses worked at the Soviet Red Cross hospital organized on the basis of Soviet financing in Beijing in 1952, which was turned over to the PRC government in 1957. The board supervising the hospital's work was headed by the Soviet specialist D. Prokhorov.²³

During 1949 and 1960, the Soviet Union sent 1,269 specialists of school and higher education, who worked at the Chinese Ministry of Education and 60 educational institutions.²⁴ The first group of specialists arrived in August 1949. The educational system of China was rather backward at the time, study aids and textbooks were few, there was no continuity between the stages of education, no connection between education and practical work, and the country suffered from considerable shortage of skilled specialists in education. Soviet specialists put forward proposals for and actively participated in working out uniform curricula for primary and secondary schools and also for secondary technical educational establishments. After the adoption of the decree concerning the reform of the educational system on October 1, 1951, the reorganization of the higher educational system began with the active participation of Soviet specialists.²⁵ A list of specialties was worked out, curricula, textbooks and teaching methods were revised at the institutes of higher learning, including Beijing University, People's University, the Qinghua and Harbin polytechnical institutes, etc. New disciplines and practical production work courses were introduced. Up to half of all subjects were taught on the basis of Soviet curricula. Soviet specialists helped train local teachers and instructors, conducted seminars, read lectures and taught the Russian language.

When Chinese doctors began to master neurosurgery in 1955, the Chinese authorities invited one of the leading Soviet specialists in this field, Professor A. Arutyunov, D.Sc., the director of the Kiev Institute of Neurosurgery. Together with his Chinese colleagues he compiled a three-year development plan of this field of medicine, read lectures and performed several model operations.²⁶

For a period of ten years about 100 Soviet workers in culture and the arts rendered assistance in choreography, stagecraft, film-making, music and fine art.²⁷ They brought the best achievements of world and Soviet art to the Chinese intelligentsia. For the first time in China's history the choreographic schools were opened in Beijing and Shanghai in 1954, and in 1959, an experimental ballet troupe at the Beijing choreographic school was organized to train ballet masters and teachers of European classical choreography. The experience of the Moscow Young Spectator's Theatre was used for organizing a children's theatre in China. Soviet specialists helped organize a symphony orchestra at Beijing Radio, trained musicians and singers, who later won prizes at international competitions, as well as Chinese teachers of piano, violin and singing. The Russian artist K. Maximov, a professor at the Surikov Fine Art Institute in Moscow, worked for quite some time as a consultant at the Central Fine Art Academy in

China. He, along with other Soviet artists, helped introduce and develop the practice concerning the oil painting, which was not present in the Chinese tradition. Recently, an album of works by K. Maximov and his Chinese pupils, who acquired fame as artists, has been published in China. The well-known Soviet film cameraman V. Yakovlev helped shoot a film in China about the creative work of the outstanding Chinese actor at the Beijing Opera, Mei Lanfang.

About 60 Soviet specialists in publishing business worked in China during 1949 and 1960.²⁸ They took part in translating the classic works of Marxism-Leninism into Chinese, information materials about the situation in China, party and government documents of the PRC, and its leaders' statements into Russian, and edited such publications in Russian as *People's China*, *China, Friendship*, and the Xinhua information bulletin. They also helped set up the first TV center in Beijing and several radio stations.

The activities of Soviet specialists were truly boundless. They devoted much energy helping their Chinese friends and displayed profound respect for the national features and traditions of the people of China. They acquainted Chinese people with Soviet culture and the treasures of world civilization and, in turn, became enriched with the ancient Oriental spiritual values, thus contributing to the broadening of the Soviet-Chinese ties and the progress of the entire world culture.

The projects built with the help of Soviet specialists have for many years formed the backbone of Chinese industry, and the Chinese specialists trained by them have remained at leading posts in the government and economic bodies for a long time.

NOTES:

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