Research Journal of Applied Sciences 11 (12): 1450-1453, 2016
ISSN: 1815-932X


# Technical Modernization at the Enterprises of Industrial Complex of the Soviet Far East (1965-1985): Conditions, Factors and Outcomes

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**Abstract:** The researcher reveals in historical retrospective one of the urgent problems on development of industrial complex of the Soviet Far East, related to technical modernization in leading industry sectors (fishery and timber industries as well as nonferrous metallurgy). Crisis developments became especially aggravated by the mid-1980s. Party, Soviet and economic bodies relied not on improvement of economic methods of management but on strengthening planning and labor discipline in production. The economic mechanism was becoming more and more money-losing and insusceptible to technical progress. The transition to a science and technology type manufacturing failed.

**Key words:** Industrial complex, technical modernization, ship repairing, timber industry, gold mining

## INTRODUCTION

The modern stage of the transformation of Russian state takes place in the context of world globalization, integration and development of post-industrial societies that requires an urgent technical and technological modernization of industrial property on the basis of innovation to ensure competitiveness of domestic products on internal and world markets. No exception is Russian Far East region which develops in the context of political and socio-economic changes taking place in the country though with a number of inherent specific landmarks which have not lost their importance so far. The urgency of the research's focus on the stated topic is due to the recently adopted federal target program "economic and social development of the Far East and the Baikal region until 2025" (Anonymous, 2015) where the basic point is to accelerate the pace of integrated development of leading industries and the social sphere. Driving condition for faster formation and mutual progressive development of the various infrastructures of the industry in the Far Eastern territories is the state subsidy of the contemporary geo-strategic projects as well as attraction of foreign investments and capital expenditures from Russian business.

**Literature review:** The issue specified by the research was covered previously in the national historiography. Suffice it to mention the names of such reputable historians as Mandrik and Tkachev (1979) who have made a significant contribution to the coverage of regional industry issues as well as social and demographic processes. Their works reveal the historical context of the Soviet Far East development from the new methodological standpoints and approaches.

In 1965-1985 the Central Committee of the Communist Party of the Soviet Union (CPSU) and the USSR Council of Ministers considered the need for large-scale development of natural resources, integrated development and building the industrial capacity of Soviet Siberia and the Far East as the principle condition for progressive dynamics of the economy. The party, Soviet and economic leaders of the territories and regions were challenged to ensure construction of new and reconstruction of existing industrial enterprises as well as provide mechanization of production processes. An acute need for technical modernization of the Far East industrial enterprises, providing them with specialized machinery and equipment as well as repair facility has become the key problem in the practical implementation of these transformations. First of all, this concerned the key branches of the industrial complex of the region.

The first successful results in the specified area were achieved by the fishing industry workers. Since, the second half of the 1960s, the situation in the industry began to change towards sustainable growth of fish production volumes (in 1960-3, in 1970-7.3 and in 1980-9.7 mln. tons) that was determined by a gradual transition to the oceanic fishery in the high seas and waters of the Pacific Ocean. This challenge was initiated by the Chief Directorate of "Dalryba". To intensify further the fishing industry, in 1966 the technical restructuring of the Far East marine fishing fleet was initiated that resulted in joining of several large fishing vessels which were in fact

the floating plants. Nevertheless, the efficiency of the fishing fleet was adversely affected by serious shortcomings associated with the problems of timely and quality ship repairing. The proportion of ship repairing facility in the region reached 75% that resulted in financial losses in the fishing industry where the major share (about 60-70 mln. rub. per year) was unscheduled vessel idleness and increased overhaul work scope.

Characterizing the Far East shipyards, it should be noted that most of these were universal with a diverse range of products, often unusual for their profile that led to low level of specialization on these plants (from 24-40% on average). This indicated the fact that the plants needed deep technical modernization. Therefore, with a substantial fleet replenishment with new heavy-tonnage vessels, the capacity of regional Ship-Repairing Yards (SRY) could not cope with the needs in ships repairing. At the same time, the available capacity of the ship-repairing yards was used very insufficiently. Many SRYs operated in one shift.

The problem could be solved through the creation of the own developed base of ship-repairing industry in the Far East. This viewpoint was supported by regional leaders at all level of governance, though the bureaucratic runaround, underfunding and the postponement of the commencement of industrial objects construction greatly hindered this process. For example, the construction of powerful plant intended for repair of large-capacity fleet in the Patrokl Bay of the Primorye Territory was delayed for several year (from 1962-1975). The timings of the marine fishery base reconstruction in Nakhodka and SRY in the Gaydamak Bay were constantly postponed. One of the reasons was unbalanced activity within the industrial complex of the Soviet Far East. Metal and parts from component industries were often supplied untimely. In addition, in the 1970-1980s the Far East areas experienced an acute shortage in electrical energy. Daily power cuts for 2 h on average stopped the entire production process. Besides, natural and climatic factors of the Far East were by no means unimportant. For example, sub-zero air temperatures of -40°C in the winter season made it extremely difficult to carry out external works on ships and sometimes resulted in their cessation.

## MATERIALS AND METHODS

At the same time a level of design and technologies largely did not meet advanced world standards. On most of the Far East ship-repairing enterprises the related works were mechanized just by 40-50%. The enhancement of many industrial processes was substituted by various kinds of slogans initiated from higher-level authorities through various "initiatives" that resulted in all hands jobs. A number of enterprise heads resorted to large-scale overtime work to cover the huge losses of working time.

Non-ferrous metallurgy was another component of the material production of the Soviet Far East. In particular, the special interest of the CPSU Central Committee and the USSR Council of Ministers was focused on the gold mining industry. Active development of alluvial gold deposits on the territory of Kolyma and Chukotka began since 1967. Here the prospects for further sectorial development were based on growth indicators of average annual gold production from 3.4% in 1966-1970 to 5.5% in 1971-1975. However, a serious problem for the industry development was associated with the exploitation of specialized equipment which was mainly designed for use in the midland of the USSR and was not adapted to natural climatic conditions of the North. Machinery quickly failed, not having worked until the end of the amortization period. Repair of machines was 3-5 times more expensive than in other regions of the country and resulted in annual significant financial losses.

Progress in technical modernization has been achieved just at a number of enterprises and associations. Thus, in the mines of "Amurzoloto" integrated plant in 1966-1970, engineers and workers independently mounted and put into operation 6 new large-volume dredges, checked and reconstructed the existing dredges and hydro-mechanical installations. During this period improvements were made to the several techniques of gold-bearing rocks exploration, mining and processing that allowed reducing the losses of gold extraction. Gold-mines of the integrated plant were the first in the Far East where the technology of hydraulic thawing of permafrost gold polygons was employed. Application of this method resulted in accelerated design and commissioning new gold reserves and resources. The Directorate of the "Severovostokzoloto" association mines has also conducted technical re-equipping: 220 import bulldozer units, powerful new excavators, drilling machines and washing plants were put into operation from 1971-1980, though by 1985 the efficiency of their use has decreased. In the face of increasing economic crisis, many leaders gradually strengthened the practice of buying foreign machinery and equipment which was better than produced domestically in terms of quality and performance.

The Far East timber industry was a complex of interrelated industries for timber procurement and processing. During the years from 1965-1985 its development was determined by the favorable economic location of the Soviet Far East in relation to potential consumers, i.e., the North-East regions of the country and the Asia-Pacific region. Therefore, the total exports of

wood increased each year and raised on average by 10.5 mln. $m^3$ over the 20 year. Logging which made up 87.3% of all the works, carried out by timber industry enterprises, plaid an important role in the region's forest industry. Production capacity of most logging enterprises ranged from 200-800 thousand $m^3$ of exported timber. For sustain positive indicators, 22 new timber industry enterprises were built and 8 enterprises were modernized in the Far East during 1960-1970s. By 1985, the total number of timber procurement enterprises exceeded 68. As a result, in 1980, logging of timber had reached 4.8 thousand $m^3$ per capita while the average indicator for the Russian Soviet Federated Socialist Republic was just 1.4 thousand $m^3$ (Zausaev, 1999).

The level of works mechanization was also one of the important conditions for the forest industry development. In the 1970s special attention was paid to the use of achievements of scientific and technological progress, increasing labor productivity and implementation of integrated mechanization in production. The Far East heads of industrial enterprises made efforts to implement in production various devices, equipment and accessories, though they were horribly lacking. Thus, >60% of workers, involved in production, performed their work manually. Design and production of new machines for complex mechanization of timber procurement has been slow, far behind the scientific and technical requirements. When designing timber procurement enterprises, design engineers not always provided the project with new tools, modern equipment and computer technology as well as low-grade and refuse wood recovery plants. This has resulted in the fact that >700 thousand $m^3$ or 45%, i.e., almost half of wood raw materials remained unused, therefore, fulfillment of the marketable products manufacturing plan has not always been successful. At the same time, in countries such as Canada, Finland and Sweden the level of technical support of industrial facilities in the forest industry was significantly higher than in the USSR. For example while at foreign enterprises the wood raw materials supply and processing through the use of special transport means at specialized storehouse facilities required employing 100-120 people, securing similar turnover at the domestic enterprises required involvement of 600-800 people.

The acceleration of technical modernization of the forest industry in the Soviet Far East was a quite difficult process. The proportion of mechanized labor in logging was 35.1%, at warehouses 26.5% and in preparatory and auxiliary works 27.2%. In 1970-1975, for example, the timber industry enterprises of integrated plant "Kkabarovskles" dealt short the national economy of the country over 108.7 thousand $m^3$ of commercial timber. Thus, the plan on labor productivity and export of commercial timber was not fulfilled. The new production capacities were mastered slowly and logging technique was not fully used while purchased automatic lines remained idle due to the lack of skilled professionals who could competently serve them. As a result, the region was dominated by the export of raw unprocessed timber.

## RESULTS AND DISCUSSION

The main limiting factor of modernization consisted in the fact that the equipment was mainly imported from central regions of the country and thus the repair facility of the timber procurement enterprises of the Far East always felt an acute shortage of spare parts and could not cope in full with the total workscope. Thus, the central mechanical repair workshops of Komsomolsk-on-Amur were specialized in automobile repairing and automobile component manufacturing. Their annual turnover was only 630 thousand rub. at a time when necessary turnover amounted to 2,100 thousand rub. The tractors repairing plant "Avtoremles" in Khabarovsk could produce work in the amount of 2,200 thousand rub. while the required amount equaled to 4,500 thousand rub. This adverse trend which was related to the disproportion between the growth rates of the industry and repair facilities has characterized not only the development of the controversial forest industry but the entire industrial complex of the Soviet Far East economy (Svidersky, 1989).

## CONCLUSION

Thus, the main vector of intensification of primary industries of the Soviet Far East in 1965–1985 was directed to re-equipment and reconstruction of production. Many enterprises in the region were desperately in need of technical modernization, because they were built as far back as in the 1920-1930s. However, inconsistent implementation of these processes resulted in exceeding the statutory service life of fixed assets and equipment. At that, certain production areas were dominated by manual labor. Far East leaders at all level of governance in their official communication with the central ministries and departments tried to solve the problem, though as a rule, the allocated funds were insufficient for the deep reconstruction of the production. However, in practice, enterprises still managed to hold support repair of industrial buildings, machines and units. Such measures likely contributed to the decline in the quality of finished products and led to the problem of its merchandising. Crisis developments became especially aggravated by the mid-1980s. Party, Soviet and economic bodies relied not on improvement of economic methods of management but on strengthening planning and labor discipline in production. The economic mechanism was

becoming more and more money-losing and insusceptible to technical progress. The transition to a science and technology type manufacturing failed.

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