

RESEARCH PAPER

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Architectural features of workshop no. 8 at the Dagdiesel Caspian Factory, Republic of Dagestan, the Russian Federation

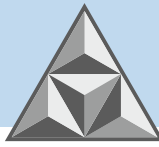
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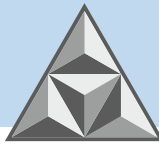
Increasing international tensions in Europe in the early 1930s, with the extensive militarisation of foreign countries, forced the Soviet leadership to take drastic measures to strengthen its own maritime borders comprehensively. The article examines the history and architectural features of the unique factory building of the assembly and testing workshop no. 8 at the Dagdiesel Factory in Caspian, which stands out among the buildings of the enterprise for its courage and originality in terms of solving construction problems. The article reveals the reasons and prerequisites necessitating the establishment of the future flagship of the Republic's Naval Industry on the Caspian coast. Original elements of the site of the assembly and testing workshop no. 8 of the Dagdiesel Factory define the specific features of Kaspiysk city.

Key words: industrialisation, "Dagdiesel" Factory, assembly and testing workshop No. 8, naval architecture, Caspian, 1930s

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НАУЧНАЯ СТАТЬЯ

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Архитектурные особенности цеха № 8 Каспийского завода «Дагдизель», Республика Дагестан, Российская Федерация

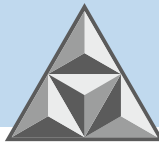
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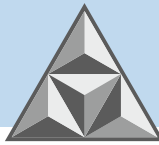
Усиление международной напряженности в Европе в начале 1930-х гг. в связи с широкой милитаризацией зарубежных стран заставило советское руководство принимать кардинальные меры по всестороннему укреплению собственных морских границ. Рассматривается история создания и архитектурные особенности уникального заводского корпуса сборочно-испытательного цеха № 8 Каспийского завода «Дагдизель», выделяющегося среди возведенных объектов предприятия смелостью и оригинальностью решения строительных задач. Раскрываются причины и предпосылки, обусловившие необходимость создания на каспийском побережье будущего флагмана военно-морской индустрии республики. Оригинальные элементы объекта сборочно-испытательного цеха № 8 завода «Дагдизель» стали определять смысловое содержание города Каспийска.

Ключевые слова: индустриализация, завод «Дагдизель», сборочно-испытательный цех № 8, военно-морская архитектура, Каспийск, 1930-е гг.

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INTRODUCTION

In the USSR the 1930s were a time of rapid industrialisation. I.V. Stalin, in his speaking at a meeting of economic executives in February 1931, noted: "We are 50-100 years behind the advanced countries. We have to run that distance in 10 years. Either we do it, or we are going to get crushed" [1].

The Soviet industrial policy priorities were set so that the state became competitive in the military sphere. The Defence industry provided the country with the weapons and combat vehicles. The main aim of military industrialisation in the Soviet Union was to steer the country's course towards scientific and technological progress. The significant effort was needed to make a gap for achieving the military and industrial activity.

The exploitation of the USSR's ocean space was the most important task. This was necessary for the development of the country's economy and the strengthening of its military-strategic position on sea borders. The industrialisation plans included re-equipping the entire technological production of the Soviet country, taking into account the technical development of Germany, France, the USA and other countries [2-4].

THE NEED FOR A NAVAL MILITARY TEST BASE IN THE USSR

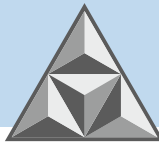
Due to increasing international tensions in Europe in the late 1920s and early 1930s, the Soviet leadership was forced to take drastic measures to comprehensively strengthen their own Armed Forces following the extensive militarisation of Germany and Italy, the deployment of Japan's large-scale aggression against China and the expansion of its army to the Far Eastern borders [5].

In the 1930s the Soviet government was focused on the construction of specialised factories for the production of military weapons. The starting point was the "Directives for the preparation of the first five-year plan for the development of the national economy of the USSR" issued at the 15th Congress of the CPSU(b) in 1927 and the Resolution "On the state of national defence" (1929). The documents contained the provisions and guidelines for the radical technical reconstruction of the army, aviation and navy. Along with modernizing the existing weapons, the USSR Revolutionary Military Council and the People's Commissariat for Military and Naval Affairs had a goal to obtain prototypes and ensure the mass introduction of modern weapons into the army as soon as possible. In January 1931, the USSR Revolutionary Military Council revised the previously approved construction plan for 1931-1933 and formalized the guidelines for the scientific development of the first five-year plan of the development of the military industry.

The study of the history of the military industrialization of the autonomous republics of the USSR is relevant at the present stage; however, it does not study enough. In the 1920s and 1930s the prospects of the industrial development of the Dagestan ASSR, the largest and most multinational republic of the USSR, were very bright. Dagestan had a large undeveloped foothill area with an access to the sea. Between 1927 and 1933, 1.163 industrial factories were founded in Makhachkala, Derbent, Khasavyurt, Dagestan Ognly and other settlements.

CONSTRUCTION OF ASSEMBLY AND TEST WORKSHOP NO. 8 AT DAGDIESEL FACTORY IN THE DAGESTAN ASSR

However, during the period under study, the construction of one of the country's industrial giants, the Dagdizel factory, on the Caspian Sea coast in Dagestan ASSR, began. But the area 20 km



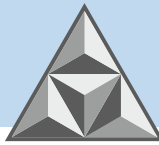
south of Makhachkala was covered by the swamps, named "Turalinskaya Zemlya", unsuitable for construction. In 1931, however, the drainage work began. The proximity to the sea and to the railway has made it possible to supply building material for the rapid construction of more than 140,000 m² of buildings. Geological tests and chemical analysis of the rocks of Mount Turali have shown that it is a single monolith, and the stone remains granite in structure. The stone reserves made it possible to build not only a factory and an artificial bay attached to it, but also a larger workers' settlement [6]. The secrecy of the project required a change in the name of the factory. Until 1937 it was called Dvigatelstroy, then Factory no. 182 (Mailbox No. 1), Dagdiesel [7].

The construction of large-scale military-industrial production in the Dagestan ASSR with the support of I.V. Stalin and G. K. Ordzhonikidze was a significant success in the economic sphere and in solving the human resources problems of the region and the country as a whole. Young enthusiasts came to the construction site and were involved in the implementation of the technological plans. However, the high level of activity of the workers could not compensate for the shortcomings of the management system, the weakened attention of the management of the factories to the material supply and living conditions of the specialists employed in production [7]. Despite all the difficulties, the construction of the Dagdiesel factory became a symbol of the 1930s. In a very short time the factory became one of the country's leaders in the production of underwater equipment, along with factories producing naval weapons - Factory no. 175 in Bolshoi Tokmak, Factory no. 19 in Taganrog, Factory no. 239 in Kiev [8]. This has facilitated rapid progress in the application of the latest technical tools in the factory. Dagestan gradually transformed from an agricultural-industrial area into an industrial-agricultural territory.

The factory building for Dagdiesel's assembly and test workshop No. 8 stood out among all the facilities constructed at the factory for its boldness and originality in solving construction problems (Fig. 1). The construction of the workshop building required a great deal of effort and material resources. The underwater part of the array was designed and developed by experienced specialists, P.I. Klimov and M.Y. Sokolov; the above-water part was designed by engineers A.S. Desortsev, G.I. Akhtenstein and P.P. Parfenov.



Fig. 1. Modern view of the building of the assembly and testing workshop no. 8 of the Dagdiesel factory, 2022
(photo by the author)



In 1937, the assembly and testing workshop no. 8 of the Dagdiesel factory began to work. Constructed a few kilometres offshore, workshop no. 8 still amazes and delights even specialists with its boldness and originality (Fig. 2). The test platform, which occupied about 5,000 m² and had an observation tower 39 m high (Fig. 3), was built in the sea at a distance of 2.7 km from the shore. There was a lift, taking people up to the observation tower, located on the ninth floor. The main facade was a solid brick surface, bounded by blank reinforced concrete walls of the administrative and household spaces, which went under the water. The floors inside were connected vertically by stairways and horizontally by bars at floor level and concrete window frames.

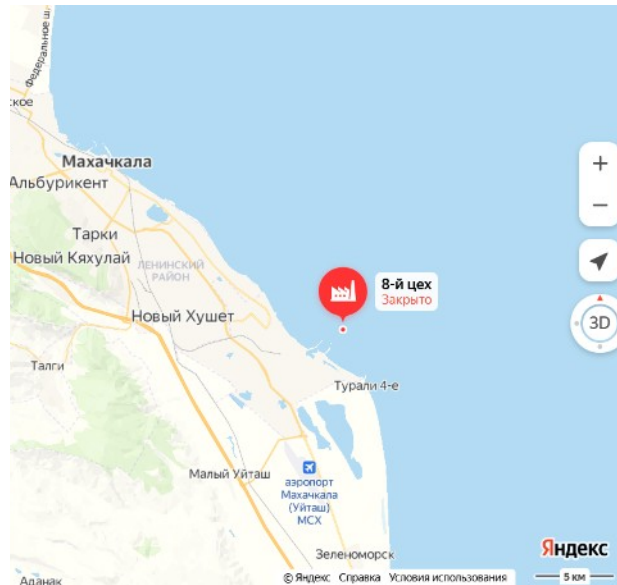
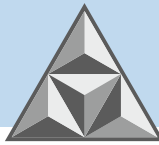


Fig. 2. Location of Dagdiesel's assembly and test workshop no. 8 (Yandex Navigator, 2022)



Fig. 3. Observation tower of Dagdiesel Factory no. 8 (2022, photo by the author)



The building of workshop no. 8 is an example of the art of construction in terms of its clarity, simplicity and conciseness of its architectural forms. A trench with a capacity of 530,000 m³ was made using the dredgers "Stepan Razin" and "Volgo-Kaspiy no. 6". The underwater part of this pavilion, called the Massive, was built on shore. The large Massive's platform was laid 14.0 m high with 1.5 m thick walls. The complex technical work carried out by the builders of the factory is still astonishing in its scale and uniqueness of implementation [3].

The three floors under the water were used as working and living quarters for the staff who worked on a shift schedule. Every three months, a shift of 20 people arrived at the site (Fig. 4) to test the new equipment.

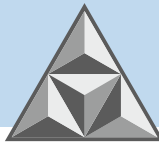


Fig. 4. Assembly and test workshop with access to the sea (2022, photo by the author)

The torpedo hall had an expressive composition that blended harmoniously into the architectural complex of the workshop. The architectural shape of the building was defined by constructivist forms. This unique site contained all the facilities needed for work - the canteen, meeting room, library, hospital ward (Fig. 5) and the director's office with an open balcony.



Fig. 5. Infirmary (2022, photo by the author)



The workers played basketball and volleyball in the middle of the basement in a large gym. Despite the airiness and lightness of the structures and the abundance of glass on the upper floors of the workshop, the building had a monumental appearance and protected the lower floors from water penetration.

The slogan containing the claims to provide the country with motors and engines has become a symbol of the hard work of the workers' and specialists' team on the site. The staff of the "Dvigatel" factory's design department designed and tested the new D-5 and PB-7 torpedoes between 1935 and 1936. The D-5 torpedo was obtained by increasing the diameter of the main car cylinders and the D-4 tank. Engine power increased from 300 to 400 hp. Speed at 4000 m increased by 16%, from 43 to 50 knots. The PB-7 torpedo had an increased tank pressure, longer charge compartment length and reduced (thanks to the wrapping of the tank with wire) weight. It increased the torpedo charge from 250 kg to 500 kg. The torpedo was made and tested on the stand (on the brake). Attaching a tank to any torpedo improved its tactical qualities. In the first quarter of 1937, a prototype was tested at sea [11].

Original elements of the site of the assembly and testing workshop no. 8 of the Dagdiesel Factory defined the secure facility of Kaspiysk. It was only possible to get to the workshop with a special pass. This policy was followed until the end of May 1946. This unique workshop, which occupied the area of a small city quarter, existed until 1966. The scientific progress in military affairs posed a different challenge to the Soviet industrial complex. To test the torpedoes, different conditions were needed - primarily greater depths. The workshop was closed and the station's equipment removed. Today, guides take tourists there by boat, positioning the excursion to the abandoned workshop as a mysterious "Caspian Fort Boyard". From the shore you can see the high observation tower and the walls of the station.

CONCLUSIONS

In the 1930s, the use of advanced domestic industry brought Soviet military architecture to the highest level. In terms of its architectural and structural design, the workshop no. 8 examined in the article was a large engineering complex. The expressive silhouette of the high observation tower and the horizontal planes of the workshop were visible from the Caspiy shore. The panorama of the factory was accentuated by the vastness of the Caspian Sea. A team of engineers and architects worked on the construction of assembly and test shop no. 8 at the Dagdiesel Factory, using reinforced concrete structures in the lower shell of the shop, supplemented by brickwork on the upper floors.

The construction of the workshop proceeded rapidly: three years later the plant was in operation, and a year later the first tests were conducted. The new version of the factory included a testing facility, a canteen, a meeting room and an infirmary. The working conditions for employees have been designed to meet the necessary temperature, lighting, ventilation and other sanitary and epidemiological standards. In 1942, after the evacuation of the factory to Kazakhstan, operation of the workshop was stopped; after the Second World War it was restored and discontinued in the early 1960s, due to the production of new torpedoes requiring greater depths for testing.



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