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NIZHNY NOVGOROD BELYANA BARGE IN THE XIX CENTURY

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Abstract: The article discusses a unique Belyana barge, which was built in the Nizhny Novgorod region for several centuries. Belyana as a type of vessels was designed for transportation of logs, sleepers, beams, planks and other forest products from the Upper to the Lower Volga. Originally, the center of Belyana construction was the village of Baki, which was situated on the Vetluga River, a tributary of the Volga River. The Belyana construction technique spread from the Vetluga river banks further to Nizhny Novgorod, and then to Perm region. Almost all aspects of Belyana construction starting from the logging finishing with its floating to the lower Volga, and also cost of transported products in the prices of the XIX century are disclosed. Due to Belyana is truly a popular invention, it was built by traditional methods, relying solely on the centuries-old experience. Any drawings for the construction never existed, that's why the author relied on preserved photographs and drawings in the historical reconstruction of this unique vessel. At the beginning of the article a brief overview of the geographical location of Nizhny Novgorod, as well as the names of wooden ships which were sailing on Volga and its tributaries in the same times with Belyana are given. At the end of the article practical recommendations on possible reconstruction of Belyana and using it as an interactive museum of ethnography are given.

Key words: Belyana barge, timber floating, the Volga river vessels

Introduction

Since its founding at the beginning of the XIII century to the present time, the City of Nizhny Novgorod has been a recognized center of the Volga river shipping and shipbuilding. This is facilitated by the geographical position of the city, as it is situated at the confluence of two of the most important rivers of the European part of Russia — the Oka and the Volga rivers. Only the City of Kazan could be compared to Nizhny Novgorod in this regard. It was situated near the junction of two giant Volga and Kama watersheds. But the Kazan region was less rich with forests suitable for obtaining material for shipbuilding. Kazan was also situated much further away from Moscow. But the main reason was the existence of the largest in those times the All-Russian Fair at

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Makarievo-Zheltovodsky monastery which had been directly influencing trade and industry of Nizhny Novgorod since the early days of its existence. Till the middle of the XIX century all ships in the Nizhny Novgorod region were built of wood with the use of metal only for fastening structures which served at the last stage of the wooden shipbuilding. Different wooden ships were sailing on Volga, Oka and its inflows. These were *budari, botniki, strugi, ladjas, doschans, shitiks, kladnie, kolomenki, kosnie, zavozni, pauzki, sokolki, velikovrazhki*, skiffs, barks and other vessels.

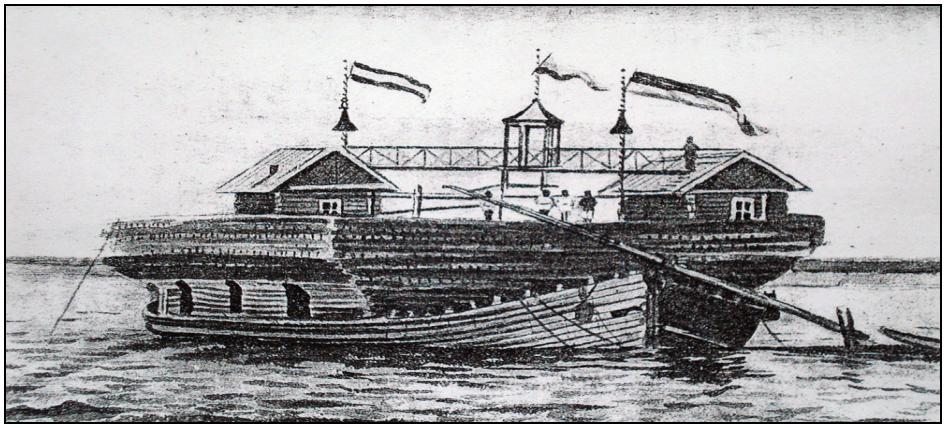

Figure 1. Graphical drawing of the Belyana (Archive of the Krasnie Baki settlement local history museum, 2015)

This article describes a Belyana barge which served for the transportation of forest products. The Vetluga River, one of the largest Volga tributaries in the Nizhny Novgorod region, is considered the place of occurrence of Belyana as a special type of vessels. Since Belyana is a ship which wasn't designed by engineers but was created by folk craftsmen, then of course, any drawings haven't been left; the author has relied on preserved pictures of the XIX century and indirect ethnographic data in the research of this vessel. The name Belyana speaks for itself. It was a ship which was never caulked (was white) and was used during only one season for the floating from the headwaters of the Volga river to its lower reaches to transport wood, lumber, stumps and chip wood materials (The report of the Nizhny Novgorod governor, 1903).

Construction of Belyana

Wood for building and loading of Belyana was produced along the banks of Medyana, Chernaya, Lapshanga, Sentyaga, Janushka, Usta, Bakovka, Belenkaya, Yaktanga and other Vetluga tributaries. It happened in winter.

Usually loggers left on fishing in late autumn after the establishment of a stable snow cover. All the winter they spent in the forest: cut down the trees and prepared them for a further transportation. Loggers lived in *zimnitsa-semi-dugouts* (seasonal temporary houses in a forest), which were arranged as follows. A large quadrangular pit about a half meter deep was made in the land. A wooden log house was put into it and six or seven frames were left on the top. This building had no windows as it was intended only for the night. Zimnitsa was heated by the smoke; a hole cut in a wall of a log house was used for smoke output. It also served as a front door. In such zimnitsa dugouts loggers slept over 80 or 90 days of their staying in the forest (Melnikov, 1976). In spring during the flood when the river increased in size, harvested logs were floated to Vetluga where they were processed to marketable condition — the boards, sleepers of different sizes were made of logs, as well as a part of logs was cut into firewood. Before starting of floating, timber logs were collected in small rafts. Usually their size was determined by the size of the width of the river rafting, as well as a large number of turns was taken into account due to forest rivers are very tortuous. Floating was made with the help of long poles which loggers used to push off from the bottom of the river and its banks sending a raft the fairway. After the delivery of logs to a place of confluence of a smaller river in Vetluga, sawmill works were started — simple logs turned into useful wood in a form of boards, bars, etc. After the logs had been processed, and the river had restored after the spring flood, a construction of Belyana started. As a rule, the construction took all summer long till autumn. At first a hull was manufactured. Fir beams and pine boards were used for its construction. It was traditional for the Volga wooden shipbuilding. Spruce boards were used for manufacturing a flat bottom; the sides were built of pine boards. Frames were also likely made of spruce. Frames carrying a very heavy load were located at a half to two meters' distance from each other. Overall length of Belyana ranged 80–120 m. All parts of the body were fastened together with iron pegs. In the early period (XVII–XVIII centuries) Belyana was likely built without any iron fasteners with the use of wooden dowels. All wooden vessels without any exception were caulked with tarred oakum which was made of flax or hemp. Such material was quite expensive and it was hardly used to caulk the seams of Belyana, a single-use vessel. Most likely, only the bottom seams were caulked with tarred oakum (conop') and other seams were treated with a *bast* (linden bark processed), which was made of linden liber and was less expensive. Judging by the old photographs of Belyana there weren't any flat strips over sutures. This means that the bast was attached in the grooves by means of iron clamps. Until recently, this technology was used to build *velikovrazhka-boat* (Philippov, 1996).

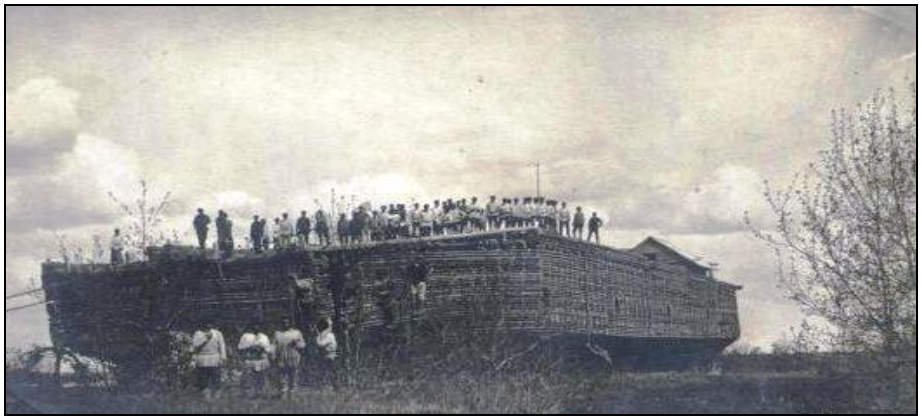

Figure 2. The end of the construction of the Belyana (Archive of the Krasnie Baki settlement local history museum, 2015)

After the core of Belyana was built, its loading started. The main purpose of the right loading of Belyana was to place as many goods as it was possible while maintaining the buoyancy and stability of the vessel. This process was quite long and required a lot of skills. In the Russian language there's a saying: "You'll assemble Belyana with your hands and you won't be able to disassemble it with the help of entire cities". Timber loaded into a ship was stacked on the bottom by the right rectangular stacks. Logs and beams pads were necessarily placed between boards to let the air access for the purpose of ventilation and avoiding timber rotting. Also, big spans were made between stacks. They served for the staff and workers' easy moving within Belyana. After the load rose above the boards, loaders began to expand its area gradually going overboard. Thus the so-called overhangs located on the thick logs were formed. In some cases, these overhangs reached several meters, and the width of the top of the vessel is from 20 to 40 m. On the upper floor, closer to Belyana nose, several crabs were set (kind of a simple winch) which served for rising and lowering anchors and lots. Several log houses were put closer to the middle of Belyana; they were connected with a bridge. A booth for the pilot was put in a middle of the bridge; workers serving at Belyana lived in the houses. The length of Belyana, judging by the old photographs ranged 60–100 m. After the construction of Belyana had been finished Belyana was conserved for a winter season, and spring floods were awaited. In spring big water rose Belyana, and its 3,000 km trip to the Lower Volga started.

Floating of Belyana

As it was mentioned above, Belyana served to transport lumber from the forest territories to treeless areas. The main consumers of these products were inhabitants of the City of Tsaritsyn (Volgograd nowadays), and to a less extent the City of Astrakhan. By the beginning of the XX century there were about 100 timber mills in Tsaritsyn. These timber-mills processed wood products, which went on sale in the lower reaches of the Volga and to the *Kalmyk uluses* and *Kazakh zhuzes* (principalities).

The floating of Belyana required special skills. A sail wasn't set at Belyana; boatmen labor wasn't used. The only engine of the boat was the power of the river. Since the flow of the rivers in the Volga basin in those days was not regulated, the skippers faced with the phenomenon of the channel annually changed. The pilot, who drove Belyana, had to not only perfectly know the river, but still be able to predict changes in the channel based on their own observations. To control Belyana steering wheel, which was set on the bow, two iron lots, which lowered the sides, as well as a *riskovy* (swivel) anchor and parking anchor were used. As it is known, the steering wheel at the vessel, the force that drives the flow of the river, can be effective in cases when the ship speed is less than the flow rate or exceeds the latter. To adjust the speed of the ship and maneuver, two lots, which were two round iron castings with the "ear" for tying the rope with, were lowered into the water from both sides of the vessel. If both lots simultaneously touched the bottom, the motion of Belyana was stopped. If the right lot was lifted off the bottom, Belyana turned left, if the left one — then, naturally, Belyana turned right. This method is still used by the people who mountain sled in winter. The riskovy anchor is used at very tight turns. By the force of the river the boat stopped exactly at the place of contact of the bottom and anchor. Parking anchor was used to temporarily stop Belyana for the purchase of products or sale of a part of the lumber. Probably, a part of Belyana was sold in all major cities of the Volga region. So, in 1894 500 thousand logs were delivered to Kozmodemyansk forest fair by 60 Belyana barges. Also there's a picture depicting the unloading of Belyana in Saratov (Tsvetkov, 1960). But, as it was mentioned above, the main consumer of forest products were the inhabitants of the lower reaches of Volga. A whole Belyana cost a lot.

Tumakov, in his manuscript devoted to Vetluga region, says that Belyana cost up to 2,000 rubles at the construction site. It raised up to 150 thousand pounds' cargo loaded up. And at the point of a sale one Belyana cost more than 100 thousand rubles (Tumakov, 1962). Even after deduction of workers' salaries and

other overhead costs the profits of timber merchants and merchants were huge. At the end of the XIX century the demand for firewood which was used for heat steam boilers of steamships greatly increased. Naturally, Belyana started to carry also firewood, and timber merchants' revenues increased. But, when in the early XX all ships switched to fuel oil, the demand for wood on the Volga reduced to a minimum. Also at the beginning of the last century, a large number of rail links appeared. The forest railway transport turned out to be less expensive than the river one. In this regard, there was no need to build Belyana, and this type of barges ceased to exist.

Conclusion

Nowadays it is possible to revive Belyana but not as an object of freight, but as a part of the recreational and tourist complex. There are wooden museumified vessels in many countries. When we don't have such a vessel but there are ethnographic and archaeological sources, a historical boat can be replaced by its reconstruction, i.e. by a "remake". Two Belyana boats which could be the tourist objects can be built in the Nizhny Novgorod region. One of them can be installed in the Krasnie Baki settlement.

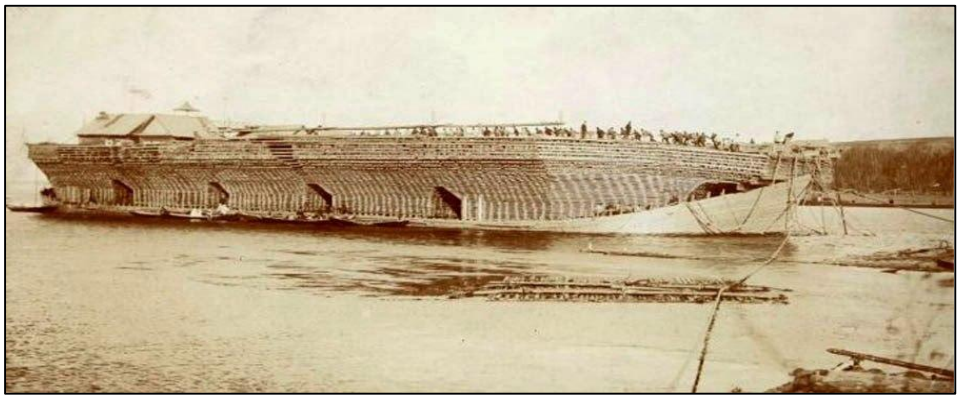

Figure 3. The construction of the Belyana (Archive of the Krasnie Baki settlement local history museum, 2015)

This settlement was the center of Belyana construction. Second Belyana can be installed in Nizhny Novgorod, which since the XIX century has been a recognized center of the Volga shipping and shipbuilding (Philippov, 2012). This historical reconstruction will serve to preserve the historical memory and cultural heritage, as well as it will increase the inflow of tourists to the Nizhny Novgorod region.

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