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Published in the USA
 Bylye Gody
 Has been issued since 2006.
 E-ISSN: 2310-0028
 2023. 18(2): 565-576
 DOI: 10.13187/bg.2023.2.565

Journal homepage:
<https://bg.cherkasgu.press>



Mastering of Traditional Waterways of Kazakhs

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Abstract

Watercraft such as rafts and boats were required to convey goods and people across the major rivers and lakes of Central Asia and vast Kazakh steppes. There was made “mes sal” using the skins of wholly slaughtered bulls, horses and camels. The skin of the cattle was blown and fastened tightly, several blown *meses* were tied together and a wooden platform was placed on its top. Four, six or eight blown skins of livestock were used to make one “mes sal”. The mes made of camel-skin was described in the memoirs of the X century traveler – Ibn Fadlan. There were reports that mes sal was used in Kazakhstan until the beginning of the XX century. In the beginning of the XVIII century, a simple swimming tool “raft” was used, which was made of logs, a bundle of reeds and willow branches. That is because in the second half of the XIX century, the Kazakhs living near the Syrdarya River compacted the reeds to each other growing along the river, tied and combined with long, then a series of reed bundles was assembled horizontally and made temporary raft to cross the river. It was mainly used in rivers with frequent channel changes, as the rafts could not withstand the current. The boat was one of the most widely used watercraft utilized in various sectors of the household for transporting people and goods, fishing. There were more than twenty types of boats in Kazakhstan, depending on the structure, size and design.

Keywords: mes sal, raft, boat, camel boat, transportation.

1. Introduction

The Kazakh people is a nation that has inhabited the Land of the Great Steppe for centuries, preserving the traditions of ancestors for future generations. At present time we are witnessing the revival of our national culture which has been formed for centuries, especially the development of Kazakh ethnography, the evolution of a new aspect of the ethnography science that became the object of special research on individual issues, and studied in detail from a scientific point of view.

The main sources of the article are the materials of expeditions, scientific-research work, and field ethnographic data of the XVIII-XIX centuries that carried out in Kazakhstan by travelers.

The methodological basis of the study is the historical, objective, and systematic principle. In the course of writing the article the evolution of development in mastering traditional waterways on a comparative-historical basis, the definition of their specificity in comparison with other regions was considered. The systematic principle was based on the chronological basis of the formation of waterways.

With the development of society in human civilization, the importance of water transport has increased. Water transport is one of the most significant components of the material culture and economic activity of any population.

Historically, the Kazakh people have been able to overcome the obstacles of rivers and lakes from the ancient times and could use their knowledge and experience in this area in accordance with their interests. In the beginning of the XVIII century, the water transport system in the Caspian, Balkhash, Aral Sea, Syrdarya,

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Irtys, Ural, Esil, Ili and other large rivers of the Kazakh steppe played a very important role for Kazakhs, Uzbeks, Karakalpakhs and neighboring Russian people. In the organization of traditional types of farming and everyday life, water supply has played an important role in human life and the system of livelihood. In addition to fishing, man has mastered the transportation of goods. The image of a boat with three paddles preserved on the walls of the architectural mausoleum in Zholaskan burial ground in Mangystau, as well as a sailboat are the evidence of abundant natural water sources, which is an example for the mastering water in the regions with seas, rivers and lakes and communication ways over the water (Figure 1).

2. Materials and methods

The works of Russian researchers of the XIX and early XX centuries were used as sources for writing this work. During this period, many Russian researchers, travelers and officials who visited the Kazakh steppe for different purposes and for different reasons left valuable information about the life of the local population. When studying this problem, the works of N.O. Ostroumov, N.A. Borodin, S.I. Rudenko, N.P. Rychkov, A. Zamyatin, which contain the meanings and features of the use of types of water transport among the Kazakhs were used as a data. Despite the fact that most of them are descriptive in nature, their works serve as representative sources about Kazakh society in general, and the ethnography of Kazakhs in particular. For a full-fledged study of the traditional transport of Kazakhs, works of fine art that are able to convey visual information were considered in addition to scientific works and research. Paintings by artists such as N.N. Karazin, A.L. Melkov, T.G. Shevchenko, A.A. Popov more clearly reflect the features of the types of boats of the Kazakhs of the Aral Sea region, which written sources are not able to provide in full. The research methodology was based on the application of both general scientific principles and special methods of historical cognition. In particular, we used the principles of historicism, objectivity, social analysis and the retrospective method to effectively solve the tasks that were set. The socio-economic features of the considered period and their impact on the change of traditional types of Kazakh water transport made it possible to identify the principle of historicism. Socio-economic processes were studied using the principle of social analysis, taking the interests of the local Kazakh people into consideration. The retrospective method allowed revealing the problem in the process of historical development. Moreover, when studying the works of Russian researchers and archived data, we used source-based methods, which made it possible to describe and analyze in more detail the available materials in order to introduce them into scientific circulation.

3. Discussion

The analysis of the literature study showed that the works of pre-revolutionary Russian researchers of the XIX and early XX centuries were repeatedly used when writing various works on the history of Kazakhstan by prominent Soviet historians, such as Ch.Ch. Valikhanov, M.V. Sazonova, N.A. Borodin, N.P. Ivlev, U.H. Shalekenov, etc. In their works there are references to the types of water transport on the territory of Kazakhstan and Central Asia. However, to date, no special scientific papers on our topic have been published. The selected works of Ch.Ch. Valikhanov mention the ways of using ferry boats (*sal*) in the South Kazakhstan region (Valikhanov, 1985: 263). P.P. Semenov in his illustrative collection called "Picturesque Russia: Our Fatherland in its land, historical, tribal, economic and everyday significance" described the mobile ferry boats on the Syr Darya River, which were made of reeds for everyday use (Zhvopisnaia Rossiya..., 1885).

In the collection of documents and materials called "Kazakh-Russian relations in the XVIII-XIX centuries (1771–1867)" Captain Schultz describes the application methods, as well as the manufactured ferries in Khiva that were delivered through the Aral Sea to the Syr Darya (Kazakhsko-russkie otnosheniya..., 1864). The collection of articles by S.I. Rudenko published as "An essay on the life of the north-eastern Cossacks" mentions the ferries of East Kazakhstan on the Black Irtys (Rudenko, 1930).

In the other periodical called "Ethnographic Review" N.P. Ivlev and M.N. Ivlev wrote an article called "Crossings and bridges of nomads". It tells about the unusual use of "mes sal" made from the skins of cattle that crossed the Chagan River, which flows into the North-West coast: The local population packed bags of camel skin, and over these inflated bags up to four, five, six people were placed, in whose hands they crossed the river using oars from the logwood of the white poplar (Ivlev, Ivlev, 1995). He was one of the first authors who described not only about ferries, but also about fishermen and the fishing industry of the Syr Darya. He described in detail about the local water transport, which was an important attribute for the local population.

Thus, the above review shows that in the works devoted to water transport of Kazakhs, the works of pre-revolutionary Russian researchers were used only partially and were not the object of research.

Based on the above, the authors plan to organize an ethnographic expedition on the territory of Kazakhstan, where water transport is used as a daily use in the modern period.

4. Results

The usage of *sal*, "mes sal".

In ancient times an inflatable "*mes sal*" was made from the skins of wholly slaughtered livestock to cross a large river in a treeless steppe on the territory of Central Asia and Kazakhstan (Turkestanski sbornik, 1887: 301) (Figure 2). Mostly "*mes sal*" was made of bull skin, in some cases there was used untanned skin,

that is rawhide leather of other livestock. For example, in ancient times, when slaughtering a fat bull or a cow, our ancestors carefully removed the skin from the carcass and took all necessary precautions. Certainly, they tried not to slaughter cattle and keep its skin wholly. About ten kilograms of salt were sprinkled on the removed skin.

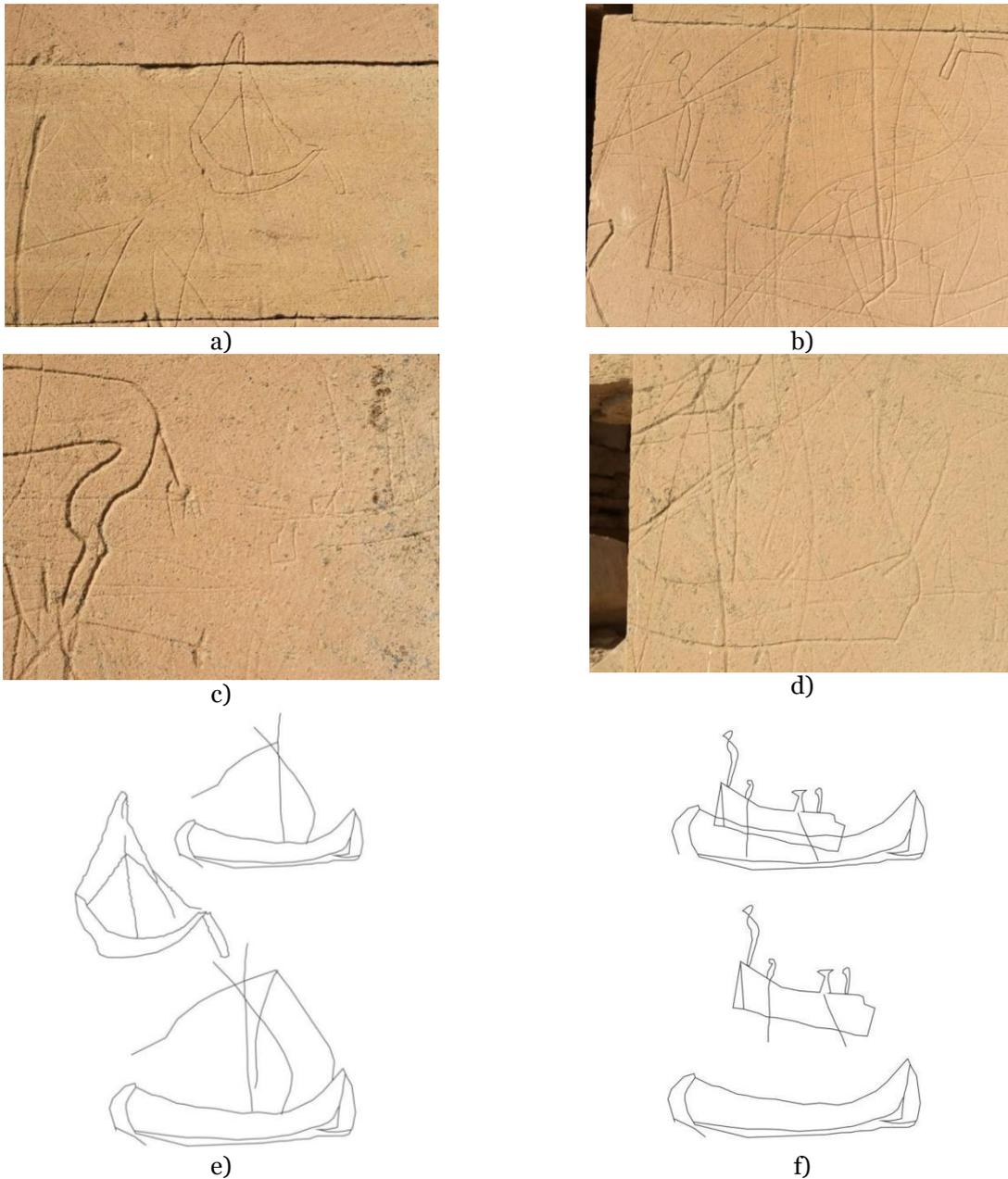


Fig. 1. Boat and its computer drawing. Zholaskan burial ground. XYIII XIX centuries. Mangystau region, Tupkaragan district

In the memoirs of Ibn Fadlan, a traveler who lived in the X century, he reports the sals were made of camel's skin. It was informed that on the sals of inflated camel skin they put clothes, weapons, food, and several people and small livestock to transport across the Sagyz, Embi, Oiyl and Ural rivers. It is described that while crossing the Shagan River which flows into the northwestern shore of the Aral the local people sat on the inflatable sacks made of camel skin; It could carry up to four, five, six people and cross the river using a piece of white poplar tree as an paddle (Ivlev, Ivlev, 1995: 30). According to some sources, the fast-flowing rivers in the mountains were crossed by using inflated skin of a goat by one person. In some cases, the river was crossed by holding it with one hand, and swimming with the second hand (Rossiya, 1903: 568).

There are also sals made of horse skin. Towards the end of the winter, when the ice of the Caspian Sea began to melt, fishermen blew skins of horses and made *sal* "raft" out of reeds (Borodin, 1901: 26-27). Such sals could carry up to four people.

In his memoirs, Plano Carpini says about leather boats as follows: "... They took blown skins while crossing rivers and filled them with various available items. Then they put seeds and other hard objects in the middle and sat down towards the middle. These boats were tied to the horse's tail and tried to cross the river. A person used to swim next to the horse to control it. Sometimes a boat is rowed with the help of two paddles" (*Puteshestviya...*, 1993: 46). It is clear that the word "leather boat" meant sals.

In comparison, this type of transport was used in other neighboring nations. For example, in the 287th volume of the Turkestan Collection "Collection of essays about the Turkestan region in general and associated with the country of central Asia" we can see an illustration of the use of mes sal by British troops in Afghanistan (*Figure 3*). In the picture, more than thirty inflated mes of large livestock were placed side by side, on the top a surface cover made of rods was placed. This mes is carrying about 19 people (*Turkestanski sbornik*, 1887: 301).

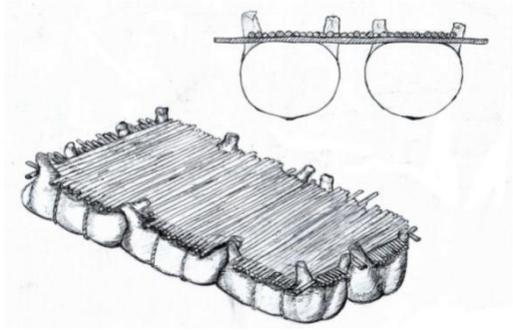


Fig. 2. Mes sal. Reproduction. Painted by A.N. Rakhmetov.



Fig. 3. Mes sal

In military campaigns air-filled sal was often used to cross the large rivers as the construction of a floating bridge. In order to make sal Kazakh people fill the skin of the wholly slaughtered livestock with air through the hole in the neck and firmly tie it in the traditional way. In the shallows of the river, several meses were tied together and connected to each other, then a wooden platform was built on top of it. It took four, six or eight meses to make one sal. The sal for loads up to 1500 kg is made of 20-30 meses. The greater the number of meses, the greater its load-bearing capacity. Depending on the thickness of the skin, the strength of the sal lasted up to two years.

In other words, Kazakhs made "mes sal" using skins of camels, oxen, and in some regions they used horses' skins. There is data that shows this type of water transport existed on the territory of Kazakhstan until the beginning of the XX century (*Ivlev, Ivlev, 1995: 34*).

Sal. At the beginning of the XVIII century, a simple swimming raft was used which was made of logs, reeds, and willow branches (*Figure 4*) (*Zhivopisnaia Rossiya...*, 1885: 448). Water Transport for conveying people and cargo by water has become the most convenient means of temporary communication for the Kazakh people living near rivers and lakes. In the second half of the XIX century, Kazakhs inhabited along the Syr Darya River made a temporary raft, compacting reeds growing on the banks of the river, tied and combined with long, then a series of reed bundles was assembled horizontally and made a temporary raft. According to the data, these rafts were used to cross all rivers, and for a long time they moved along the current.

The species made of reeds, cattail, and willow branches had a diameter of about 50 cm and a length of 4-5 meters. These 6-8 bundles were laid in a row, 3-4 strong poles were placed horizontally (under-above), tied by pulling together with a rope, and a mattress made of boards was placed on the top, which were also fixed with a rope. Such sal vehicles were able to carry 2-3 people or cargo across large rivers. It is discarded if water absorbs, and the lifting capacity decreases. For this reason, sal is a temporary water transport that can withstand only one summer. It is considered to be a vehicle with temporary seasonal significance due to the fact that it does not withstand the strong current of the river, and when sal hits the rocks and stones in the river, it breaks down quickly. Such sals were often used to cross rivers and lakes during military campaigns and resettlements.

We can see in Mamediyarov's record dated back to 1811 that trade caravans crossed the Shu River through the Kok Murgyn gorge with a sal (raft) made of reeds, and passed the Arys River through a willow sal (*Ivlev, Ivlev, 1995: 31; Valikhanov, 1985: 263*).

In order to cross large rivers and lakes, some people packed a reed in their arms as an aid and swam to the next shore with the other hand. In particular, in the fast-flowing Syrdarya River, reeds were not submerged in water, so they used a bunch of reeds (*Zhivopisnaia Rossiya...*, 1885: 448). In the early times, there are oral reports of the construction of a sal that was used to carry cargo from the rivers, and several of them were tied up in parallel, then wholly skin was blown up to cross large rivers and lakes.

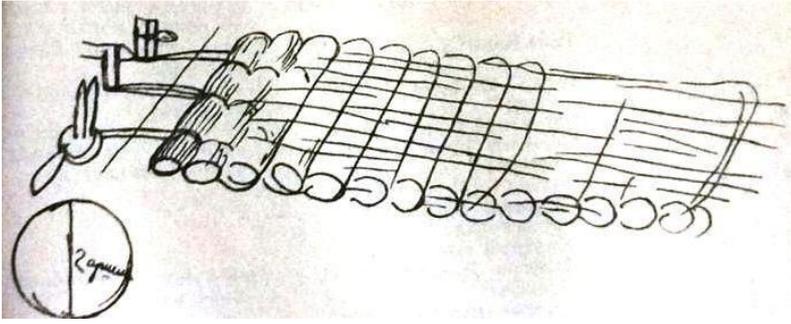


Fig. 4. Reed sal on the river Shu [251, p. 263]

Captain Schultz of the General Staff of the Russian military in 1846 wrote in his note about the sal (raft) ferry at river crossings as following: “Currently, there is no water transport in the Syrdarya, instead of it pieces of wood with a length of 4-7 fathom (8.5-14.9 m) and a width of 2 yard (142 cm) firmed to each other by iron are used as sals (rafts). They can carry loads weighing up to 6-12 horses or 125-250 pounds (2000-4000 kg). In August 1846, there were not many of them. There was described that the trunk of mulberry, black willow and oak trees used for sals, which were made on the Land of Khiva, unloaded across the Amu Darya River to the Left Bank of the Aral, and then transported to the Syrdarya ([Kazakhsko-russkie otnosheniya..., 1964: 330](#)). According to some sources, the ferry service was used to drive cattle on the Black Irtysh ([Rudenko, 1930: 11](#)).

Mostly, they were used for cargo transportation along the current on these rivers. In the steppe rivers of the southern region of Kazakhstan, sal was made of light trees such as poplar or poplar glaucous and in large rivers of the east and south-east of the country they used pine to make sal. Tasaral is a scraper tool that was also called a sal (raft) by 1- Balkhash fishermen, the shape of which is four-pointed, tied with a mixture of reeds, cattail, the length and width, height are about 2 meters. The scraper tool was used earlier instead of a boat. The scraper is called as a grass truck or tug by Kazakhs of Atyrau and Mangistau regions, Irgiz district of Aktobe region, Orenburg City of Russia, Aral District of Kyzylorda region.

When floating the sal, it was pushed out of the shallows and along the shore by a long ditch in front and directed towards the current of the river. For the transportation of heavy cargo, a large sal was built collectively and together, calling for help from village to village.

The Kazakhs sometimes equated the boat with a bridge. In other words, a floating bridge was brought for the passage of personnel and military equipment across the water dams. It can be made from local floating devices or assembled using available materials. In the eastern and south-east regions of the country, the method of transporting felled trees by water is called “floating sal”. That is, by using the float of trees to deliver the goods. They were mostly used to deliver sawn pine logs to settlements.

It was difficult to control it because the sals could not withstand the current. It is mainly used in rivers with frequent channel changes. For this reason, as we have mentioned above, they were made of lightweight materials, such as reeds or cattails and after reaching the designated point, they were drained into the water. The Kazakhs expressed their bad mood, strong tiredness or unfinished work as “*sal was drained*”, “*sal is draining now*”. This is due to the expiration date of the sal and the fact that the sal flows into the water, i.e. it is used in water. We can find following sentences in Zh.Aimautov's novel named “Akbiyek”: “*Mukash `s sal drained into water, he didn't know what to say*” ([Aimautov, 2003](#)).

In the summer of 1859 in the materials of the expedition two methods of making sals was shown to cross Zhanadarya river which is one of the mouths of the Syrdarya River, the first is by swimming along the stream, and the second is by tying and placing reeds side by side ([Kazakhtyn etnografialyk kategorialary..., 2017: 91](#)).

In general, the sal is a type of transport of seasonal significance. After all, it is difficult to drive the sal and it is not suitable for long-term use. In the course of a strong current, the sal was temporarily used because it touched rocks and quickly decomposed. That's why people insisted on developing other types of transport. The most effective for the population is the use of long-lasting types of boats, which are convenient for transporting cargo, people, and livestock.

Boats and ships

The most widely used type of water transport for sailing is *the boat*, which was utilized in fishing and crossing rivers with deep water or wide valleys without bridges, for moving to the other bank, for transporting goods on waterways, and in various sectors of the farming.

Water transport boats and sometimes a barge (a large tug vessel with an open surface for cargo), a ferry or a ship were used for crossing the Amu Darya, Syr Darya and Ili rivers.

There were also private boats brought to the Aral from Khiva. The boatmen were engaged in cargo transportation. One of the deepest and most widely used rivers in Kazakhstan is the Syrdarya River. The trade caravan passed through four crossings of the Syr Darya: from the 1st port to Ushir crossing – 16,

Mortyk – 30, Shirik – 80, Kimakalğan – 100 km. Beginning in late autumn, a reed road was built over the Syrdarya ice to pass a trade caravan in winter ([Kazakhsko-russkie otnosheniya..., 1964: 471](#)).

Bunched reeds were placed to cross the river. The Kazakhs called the construction of a bridge made by hand as *kuzer salu*. Such bridges could withstand water, livestock and vehicles passing through them. Because, the thickness of the reeds is like a barrel, that is, it is packed as two people's arm span, it is tied tightly to each other with a rope and fixed horizontally on the river. Mostly, after the ice broke and water began to flow, they laid packed reeds to make a kuzer (bridge). The packed reeds froze in the cold, and horses, carts, and other vehicles easily passed over them. Kazakhs along the Torgai, Syr, Ili and Balkhash built a kuzer on the ice. N.P. Rychkov wrote in his diary about nomadic villages crossed Karatorgai river by making kuzer ([Rychkov, 1772: 57](#)). The word Kuzer is also found in the poems of Musabek Baizakov. In his poem "The mouse and the camel":

I can't pass kuzer like this,
If I fall down, I'll swim.

It's true, the camel wrestler, proudly,

There is the value of knees with knees ... – it tells the grief of a mouse that was afraid to cross a crossing ([Bes gasyr., 1989: 199](#)).

In the neighboring part of the Amu Darya, these boaters formed one Artel of 14 people, set out a boat to lift 2,000 pounds (32,000 kg) of things, called the manager "darga" and the rest were rowers and loaders ([Sazonova, 1978: 87](#)). The military document of 1860 shows the installation of boat transport at the crossings through the Syr Darya. Boat transportation developed along the Syr Darya at the Perovsk Fort, the Kubas crossing and the Kulek crossing of Kuandaria. The boatmen charged passersby a fee for the passage. At the same time, the total number of boats transporting the trade caravan reached till 80. Written works indicated that at that time the number of Kazakh boats increased significantly. In 1856, there were 19 boats at Mortik crossing, and in 1862 it consisted of 120 boats ([MKZ, 1912: 394](#)). From these data, it can be seen that water transport in the Kazakh steppe has been developing and increasing from year to year.

The construction and naming of the boats varied depending on the size. Although the names were different, the functions were the same. The names of boat types are reflected in the linguistic regional features.

A *fishing boat* is a sailing boat used for fishing for at least two people. The sail was covered with calico cloth, which was put down only to protect it from the waves on a windy day. This name and type of boat is used in the Aral Sea region, in some areas of Atyrau region, Kostanay, Mangistau regions, and in the Volga region of Russia. In the Aral Sea region, it is also called *zhekkemdi* boat (a sailing boat). Photographic data and drawings determine that sailing boats were also widely utilized in the Aral Sea.

A *kabandan boat* is a boat used to throw a kabandan sein on deep water, on the shore, at the mouth of rivers and lakes. This type was widely used in the Aral district of Kyzylorda region.

Kolas boat, astau boat, zhekkem boat is the local name of a sailboat that has become widely used in the Atyrau region.

A *ship, reuishke* is a type of large boat carrying heavy cargo or several people, divided into several parts with oars in two places.

Poshalka is a small boat without a sail which flows into rivers of narrow, shallow channels, goes fishing or conveys cargo, people on the other side of the river.

A *container boat* is a local name used among Caspian fishermen as a short, wide boat that can be paddled by a single person to carry fish from a large boat to the shore.

A *floating boat* is a small boat that is used to cast a net, to pull the ropes of a net and other additional work, moves under the sway of large boats when entering the Bay.

Kodyran boat (swaying) is a small boat without sails, a kind of boat that is often used in the household, in the transport of people and cargo. The reason for the calling of kodyran is due to the fact that it moves along one edge of the river until it passes from one edge to the other.

Kysaubay is a primitive double sailboat that was used in the Aral Sea region in old times, at the moment the name and the boat is out of use. It was abandoned due to drying up of the Aral Sea.

Single-rowed boat belongs to a group of boats with one person rowing, carrying cargo, and fishing.

Cultural boat is the name that was formed in the modern era. A type of boat designed for swimming along the river, along the seacoast.

A *single boat* is the name of a single-seater small boat in the language of the Kazakhs of Turkmenistan ([ADM 2: Tynyshtykov, 1962](#)).

Kirzhim boat is the name of a boat in the language of the Kazakhs of Turkmenistan, the boat with flat bottom, a wide capacity that is for rivers with a wide channel ([ADM 1: Bekzhigitov, 1958](#)).

Ushan boat is a large type of sailing boat in the language of the Kazakhs of Turkmenistan ([ADM 3: Aizharykov, 1962](#)).

Kurmau boat (net) is a type of small light boat that can be used for casting nets. Widely utilized in the Kurchum district of East Kazakhstan region ([ADM 4: Tumenbayev, 1957](#)).

Suzgi boat (filter) is a type of large boat that filters water.

Karbyz boat (watermelon) is a large type of cargo boat. It was used in the Kurchum district of East Kazakhstan region.

Double boats/camel boats are two heavyweight boats that are connected and doubled for carrying cargo. It is known that nomadic Kazakhs, located along the lower flow of the Syr Darya river moved far to the periodic settlement; they used double boats as a transport for crossing the Syr Darya river in the spring to the spring settlement, and in the autumn to the winter settlement. As well as double boats served as caravan routes across the Syrdarya River. The reason for calling a camel boat is also associated with heavy lifting. The camel boat was called by the Kazakhs of the Syrdarya region, the double boat was called by the Kazakhs of Karakalpakstan (ADM 5: Nurbayeva, 1956) (Figures 5-6).



Fig. 5. Camel boat. The end of the XIX century. RK CSCDF.



Fig. 6. Camel boat. Reproduction. Painted by A.N. Rakhmetov.

Heavy boats were also used by neighboring Karakalpak and Uzbek peoples. For example, the sart boat and Khiva boats were large and very heavy. These boats were often utilized for cargo transportation because of the difficulty of fishing (Shalekenov et al., 2003: 230).

Data on boats carrying up to five or six horses can be found in the materials of the expedition on the Zhanadarya river. The Kazakhs say they used the only large boat made of small trees to carry such goods across the Syr Darya River. The trade caravan on the Amu Darya River was widely used for cargo transportation. Small boats utilized on the Amu Darya River carried 300-600 pounds (4800-9600 kg), medium boats and large boats carried 600-800 pounds (9600-12800 kg) and 1000-1200 pounds (6000-19200 kg) respectively.

A large type of boat that carries cargo, serves as a means of transportation, and goes fishing in the middle of the sea, that is, to the Ocean is called *ship*.

M.V.Sazonova, who specifically studied the traditional environment in Khorezm also said that the local population called small type of boat with a load of up to 3 tons as *kaiyk* (boat), and large boats with a load of up to 60-70 tons called *keme* (ship) (Sazonova, 1978: 83). We have already mentioned that the name of a large type of *keme* (boat) is widely used in the language of the Caspian coast Kazakhs of the Kazakh territory. In the XIX century, trade relations with Central Asia with the caravan routes connecting Russia were carried out in the northern and southern directions. There were two branches of the northern direction (Sazonova, 1978: 83).

In the first direction, trade caravans moved from Urgenish to Kazaly, Irgiz and to Orenburg through Or, the length of the route was 1,400 km. The second is the road through Konyrat to Urgenish, from the Embiriver to Orenburg. In particular, the distance of 300 km to Konyrat was crossed by ship, it totally consisted of 1,300 km. The cargo was delivered by small boats from Urgenish and Shabat and then by caravan to the Red Arbat (400 km). It was transported along the railway to Uzynada (225 km). Further from Uzynada was transported by ship from the Volga to Small Novgorod by sea. Another cargo transportation was from Urgenish to Uaz by ship and to Krasnovodsk (545 km) by caravan loading to camel and then it was conveyed by sea to the center of Russia. We realize that from the beginning of Russian colonization until the construction of the railway to the city of Tashkent, the ship was of great importance as a road connection.

In winter, during the period when communication on the sea, lake, dam and river ceased, once a week they came to the shore of the river, lake, and called for plowmen from other winter settlements, alternately distributed food (Sazonova, 1978: 83). In general, the peoples of the Amu Darya sacrificed a bull or cow when a new boat or ship was launched into the water, read the Koran and cooked “palay” (rice) in large cauldrons. When going out on the open sea and getting into a difficult situation, boatmen often remembered the Prophet Nuk and gave alms.

The legend of the Prophet Nuk's ship which stopped at the top of mountain Kazygurt has been preserved among the people. When the Prophet Nuk, who is one of the most revered prophets in the Islamic religion, asked Allah what measures would be taken for the atheists, Allah created a ship to the Prophet Nuk

to take believers and living beings of the world, one pair (females, males) from 18,000 universe and save them from the flood that covered the Earth. It is called the ship of the Prophet Nuk by people.

According to one legend, Hubby, the Son of Ambar-mother disappeared in the Amu Darya river. He was the ruler of the underwater world. There was formed the concept that Hubby Sultan protected and survived boats and ships from water disasters on the rivers and lakes. At the same time, the peoples of Central Asia understood that there is the villain that can cause floods and shipwrecks. According to the interpretation, Hubby Sultan, who protects against the villain, fights for the survival of people. For this reason, fishermen, in memory of the Prophet Nuk or Sultan Hubbi, a follower of the Prophet Nuk read the Koran and distributed alms to the saints when they came home safely (Sazonova, 1978: 83) (ADM 6: Tazhimuratova, born in 1958). There is some information about the ship in the oral literature. The ship is of great importance as a road connection. For example, from Astrakhan to the modern city of Aktau, the most convenient way was to sail by ship across the Caspian Sea. In 1912, there were two ships "Emba" and "Tamara" in the Ural region. By the end of June, the ship "Gurevtsev" was launched. The ships "Emba" and "Tamara" are very inconvenient to transport people. By the end of this year, two more ships "Samarkand" and "Arag" were put into operation. The cost of a ticket for transportation by ship from Astrakhan to modern Aktau was 10 rubles of the I level (class), 3 rubles of the III class (Zamyatin, 1914, 34).

The origin of the phrase "the boatman gives way to the ship's crew" was born in connection with the fact that the ship is a more productive, industrial means of communication than a boat. The phrase "the soul of the people in the ship is one" has taken its place in the memory of the people.

Along with written and oral data, photo documents are the evidence of the widespread use of water transport. Among them photos are taken in A.L. Melkov's expedition "Crossing on the Syr Darya", A.A. Popov's painting "Kazakhs in the Volga", "The schooner in the Kosaral Fortress", "Constantine", "Mikhail schooner" and "Fortress of Raiym" were painted by Taras Grigoryevich Shevchenko during the Aral expedition led by Russian explorer and sailor A.I. Butakov from 1848–1849. We can notice from the picture "View from Syrdarya river" and photos of "Moonlight night in Kosaral", "Kazakh Settlements in Kosaral" (Shedrost serdtsa, 1992: 152) the features of the boat types of Kazakhs near the Aral Sea.

Construction methods of a boat and a ship

The basic structure of boats was the same in all regions of Kazakhstan. All of the above-mentioned traditional boats were made of poplar and black willow. Uzbek and Karakalpak people made of trees as black willow, white willow and poplar glaucous (Shalekenov et al., 2003: 230). Because the boat is a perennial vehicle. During the construction of the boat, the trees were completely dried for at least 10-15 years and stored in the shade. The paddles of boats are made of light wood for easy and quick rowing. A boat builder in the Aral Sea region earned 70 rubles at the same time. It took about 40 days to build a boat with a length of 5 fathom (10 m) and a width of 2 fathom (4 m) with a salary of 9 to 11 rubles. Carpenters were paid between 90 and 108 rubles a month to construct boats (Ostroumov, 1888: 178).

All types of boats and all the ancient types of historical epochs were made of wood. Archaeological excavations have shown that ancient boats were made of whole trees. One of the archeological boats is exhibited in the Hermitage Museum.

The wooden coffin was considered to be like a boat by scientists dating back to the IV-II Centuries BC found in the Kokzhar burial ground in Kurchum district of East Kazakhstan region. The coffin, made in the form of a boat (rook), has a length of 2.45 m, a width of 0.5 to 0.3 meters, and a height of 0.25 meters from the bottom to the preserved part above (Omarov, 2011: 128-135). The Kokzhar burial ground is located 2 km from the village of fishermen named Kokzhar. Since the fishing village is located on the left bank of lake Zaisan, we are not mistaken if the coffin in the form of a boat was used as a water transport.

In the traditional environment, boats have different names depending on the size and structure. The basic structure and name of the boats are the same in all regions of Kazakh land. The bottom of the boat is called *ultan* or *taban* (sole), and the shape of the hull is convex. Wooden boards that are installed on the bottom or ultan (sole) are called *butys*. Wooden parts are installed that stretch the butys boards from the end to the head inside, separating the boat according to its size, and this is called *boke*. Boke trees are trunks that are laid horizontally from the bottom of the boat to the edge. As a rule, boats with 8-12 boke are strong and safe (Kazakhtyn etnografialyk kategorialary..., 2017: 705; Doskaraev, 1958: 83-162). There are several wooden *bogen* (barriers) that strain boards inside, the width and length are various depending on the size of the boat. Separation of the boat through bogen is applied to strong rivers.

There is a mash for fastening sails, an anchor for throwing into the water, a place for casting the net, storing caught fish and sitting space for three or four people in large boats which are sent to the seas. The width of the boats was wide that was built for rivers with a strong current and changing channels as the Syr Darya river. Two walls of one of the largest Kazakh boats constructed on the Syr Darya River are made of 64 round wooden balk. On the sole or ultan, 15 round pieces of wood are installed along the entire length and connected into each other. The ultan is divided into three places by boke, and the wall is divided into two places by bogen. The paddle is also made of round wood, two additional shields are installed on the head which are suitable for swimming and the handle is fixed to the head of the boat by a ring.

To make the boat without nails from several wooden parts, the wooden walls were drilled to make a hole and connected the two wooden parts to each other with wooden nails 5-6 cm long. The wooden nails are

made of round wood with a diameter of 1-1.5 cm. The boat which was constructed of wooden parts embedded in wooden nails, was first immersed in water and then taken out again. Then the tree swelled a little in the water and wooden nails were fixed firmly. This ensured that the boat was watertight. Hole of wooden nail in the wooden parts of the boat were drilled with a drill called *barbi*. The *barbi* was made by blacksmiths. The blacksmiths made two types of *barbi*: the first type is a tool for drilling wood with a four-edged steel spike at the end, which moves in a reciprocal motion with a special tensioner, and the second type is as the first one with a sharpened steel spike at the end. When the horizontal tree with a rope moves up and down, spike of the *barbi* moves in opposite directions, drills the tree. This tool is also called *parbi*, *parmi* among the people.

One model of a Kazakh boat is kept in the open exhibition of the Aral Fishermen's Museum. This type of boat is 4.75 meters long and 45 cm high. There are five boke on the *ultan* (bottom) of the boat. The first boke is 60 cm, the second boke is 93 cm, the third boke is 104 cm, the fourth boke is 95 cm, the fifth boke is 66 cm. The uneven length of the piece of boke tree was due to making the boat by hand and the quality of the wood's bending. The wood on both sides of the boat are fixed to each wall with a total of ten wooden poles, five by five.

In the Syr-Aral region, the boat was turned over and the boat's wood was lubricated from the bottom to the top of the wall by grasped horse oil on the surface of the soup. The reason for turning the boat over and lubricating it is that the *ultan* (sole) is small, the walls on both sides are shielded, the oil flows from the top to the bottom and is absorbed into the wood (ADM 7: Esbergenov 1950). The oil is applied to the wood to prevent water penetration. Natural black oil was also used to lubricate the boat.

The inner side of a fisherman's boat, a horizontal tree for straining the inner side and for a person to sit on and the hollow in front part is called *azyna* (Kazakhtyn etnografialyk kategorialary..., 2017: 848).

It is called *sylauysh* (washbasin) which is made of a net that hangs on the sides of the boat, the edge of which is soaked in water. These data prove the abundance of professional vocabulary in relation to water transport.

Most fishermen have learned to construct their own boats without the help of carpenters. This is confirmed by written data. "Most of the nets, fishing nets and boats are made by fishermen themselves. Fish was sometimes traded to Russian merchants for food such as flour and salt. It cost 13 rubles and 80 tiyn (coin) during the paper time resolution in 1896–1897. The government received 297 rubles from Aral fishermen for 9 months, that is, 144 percent income in a year. The cost of raw materials for the construction of nets and boats was as follows: 20 pounds of yarn for making nets - 11 rubles, 15 pounds of scraps of wood bark floating on the surface of the net - 60 tiyn (coin), 10 pounds of twisted yarn - 2 rubles, 2 pounds of pottery that immerses the net in water - 90 tiyn (coin). In general, it took 18 rubles and 20 tiyn (coin) to make a net. At the same time, I.Geyer said the construction of a boat cost was as follows: wood and woodworking - 12 rubles, glue oil and clamps to fasten the trees together - 1 ruble, paddle handle - 30 tiyn (coin), three paddles - 40 tiyn (coin), generally to make a boat in the Aral Sea region was - 13 rubles" (Geyer, 1896).

One of the types of transport for cargo and people, the ship is made mainly of maple and black willow. The ship is larger and wider than the boat, so it is constructed from 360 parts. It is believed that wood cannot be skimped when constructing a ship, and if it is skimped, it will fail in the water. The strongest and most influential masters were involved in the construction and assembly of one ship. A total of 20 people took part in the shipbuilding. First of all, a flat bottom is created, on which both sides of the vessel are pointed. It is collected from logs, which are fixed on top of each other through grooves, forming the bow and back of the ship. The bottom of the ship is called *ultan*. The log is fixed along the *ultan*. This log is also the basis of the sail. The main part of the board, which is a support connection, is made of the same horizontally fixed logs.

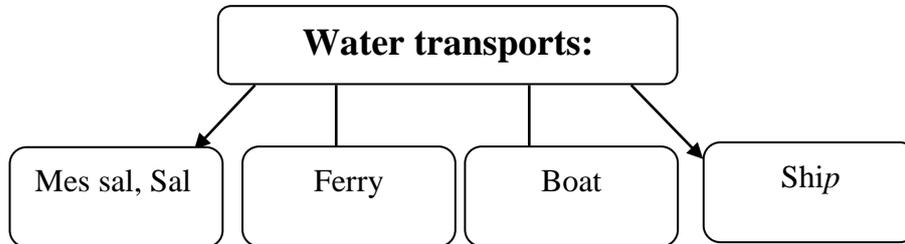
The number of such logs reach up to 14 till 18. The breaks between the logs are filled with cloth or dry reeds, fluff of cattail. There is a large pillar shaped as a paddle with a diameter of 25-40 cm and a length of about 4 meters at the back of the vessel, on which an iron spring is installed. This spring is the main basis for guiding the ship. Above the horizontally placed support logs to the back of the ship, another row of logs is covered with boards. The log boards are fixed with iron nails to the trough of a ship made of horizontally placed logs.

A wooden platform will be installed on the bow and back of the ship. The bow is made of thick logs. The logs at the bottom of the ship are placed lengthwise and fastened only horizontally through the notches. There is a node mounted on a central basic log near the bow of the ship, connected both edges of rope which is 3 meters long and 0.5 meters in diameter. At the top of the pillar is a round hole through which one end of the rope is passed. The other end of the rope is tied to the front column from the bottom. The length of this rope reaches 85-100 meters.

The results of this article were used for museumification of objects and for a traveling exhibition of traditional vehicles. The authors used water transport as a mobile function for people and as household needs. Illustrative examples are given in the form of a diagram and a photo (Figures 5-6) from rare archival materials, as well as the shape of the boat and the method of use are reconstructed. The typology of the use of water transports was systematized.

The traditional water transport system is one of the most interesting and complex topics in interdisciplinary relations. Along with lectures on ethnology, special courses, seminars, it can be used to create interdisciplinary connections in the ethnoarchaeological direction. The scientific materials collected during the writing of the article are used in higher educational institutions of the country, including for the

development of special courses of lectures and the writing of textbooks and manuals, including modules for bachelors, masters, PhD doctors in the specialty "Ethnology and Anthropology", "Archeology and Ethnology", "History", that is, as disciplines for elective modules. Photo documents are presented for discussion among ethnographers, which make up additional materials of the article that are planned to be published by the "Ethnographic Atlas of the traditional transport system of the Kazakhs" and used in the main sections of its branch "Ethnographic Atlas of the Kazakh people". The authors plan to take part in local history, museum discourses, electronic excursions on the topics "Traditional water transport among Kazakhs", "Water transport system: yesterday and today".



The authors used field ethnographic materials and systematized all types of water vehicles from the Stone Age to the present day. As an example, they were found on stone sculptures of tombstones of the XVIII century (Figure 1) in the west of Kazakhstan in the Mangystau region (Caspian region).

5. Conclusion

Summarizing the given data above, water transport was in great demand in Kazakhstan. In the beginning of the XVIII century, the widely used mes sal and sal led to the development of other types of transport. One of them was a boat and a ship. However, similar wooden troughs the size of boats were found during archaeological excavations in the burial ground dating back to the IV-II centuries BC. That is, this type of water transport has been in use on the Kazakh land since ancient times.

Water transport was used in all regions of Kazakhstan, especially on large rivers such as the Syr Darya, Zhaiyk, Edil, Irtysh, Ishim, Ili, Talas, Shu. It is also widely utilized for crossing the Aral, Balkhash, Alakol and other large lakes and it was used for fishing. For example, there were crossings in Urgysh, Mortyk, Zhulek, Shyrak, and Kumsalghan where cargo was transported from the Syrdarya river. The caravan passed through a special crossing, not anywhere on the river. The crossings took place where military fortifications were located, where trade markets were formed.

Shipbuilding began in the second half of the XIX century. For example, the Turkestan album shows the shipbuilding of the masters of the Aral flotilla in Kazaly which was taken between 1871 and 1872. In addition, ship parts were purchased from neighboring Russian factories, and it determined that local shipping on major seas greatly facilitated the transportation of agricultural products and other items.

A photo reconstruction was made of the mes sal constructed by blowing skin, a double boat made by tying and connecting to carry heavy cargo, goods.

It is obvious that the activity of water transport of the Kazakh people, its types, methods of its creation, regional features and significance are still unexplored issues by scientists.

6. Acknowledgements

This research has been funded by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant No. BR18574057).

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