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THE NEED FOR TRANSPORTATION, ITS CREATION AND DEVELOPMENT PROCESSES

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Abstract: This article reflects the need for transport and its satisfaction, the formation and development of transport from the time of the formation of society. In particular, the stages of creation and development of the first vehicle, its creators, technical problems and their solutions are highlighted.
Key words: Self-propelled carriage, self-propelled carriage, steam carriage, passenger crew, steam distributor (zolotnik), gutta -percha tire, elastic tire, steam piston, internal combustion engine, gas engine, gasoline engine, diesel engine.

Introduction. Transport, like other types of industry, serves as a branch of material production. It does not produce products like other sectors of the national economy. The product of transport is the transportation of passengers and cargo from one place to another.

Without the transportation of objects, devices, people, especially today, it is impossible to perform any work productively and efficiently.

The need for freight transport arose at the earliest stages of human civilization. At the same time, it should be noted that in the early stages of human thought, the need for transport was minimal and existed only for personal needs.

In the 5th-6th millennia BC, water transport began to take shape as a means of hunting and transport. The trees flowing from the rivers contributed to the construction of these dams. In countries with developed animal husbandry, the idea of using tanned furs for transporting cargo from rivers emerged.

With the advent of metal structures, the development of animal husbandry and agriculture, and the exchange of various goods with neighbors, trade began to develop. Subsequently, the seizure of land and property, and slavery flourished. As the number of tribes increased, slave-owning countries emerged. As a result of armed conflicts and reparations, the need for water and land transport arose and developed.

The ancient civilizations or countries known to us appeared in the ancient East, on the banks of the Nile, Euphrates, Indus, Ganges, Yellow and Yangtze rivers and the Mediterranean Sea, in ancient Rome. The need for powerful transport, primarily water transport, led to its development.

For example, according to Herodotus, Egypt had a large river and navy for 700,000 soldiers 5,000 years before our era. Products of animal husbandry, crafts, and agriculture, building materials for the construction of temples, fortresses, and dwellings, as well as stones weighing up to 3 tons for the construction of pyramids and deities, were transported on ships across the Nile River. Shipping, that is, water transport, developed so rapidly that a lighthouse was built and installed on the island of Pharos in Alexandria at a height of 200 meters. The reflection of the bonfire is reflected in a metal mirror. It is no coincidence that the lighthouse of Faros is considered one of the 7 treasures.

Long before our era, giant ships for that time were built in Egypt. One of them was 93 meters long and rowed with 200 oars. The ship could accommodate an armed army of 3,000 men.

Land transport played a large role in the development of human society. From ancient Latin, the expression "Via est vita" (road is life) has reached us, which can be expressed as "Transport is a holiday."

The first carts appeared in Western Asia 5 thousand years before our era in steppe areas with flat terrain, where it was easy to move.

In these carriages, as early as the 17th century, almost all elements of the car were encompassed: the body, spring suspension, front axle pulley, brakes, tire-covered strong and light wheels, front axle, and later - gutta-perched tires.

For many centuries, oxen, donkeys, and later horses and other large domestic animals were used as ground-moving forces. But humanity has always been searching for a different source of energy. [1]

However, there is insufficient information about the sails used on land.

In 1752, Leontiy Shamshurenkov, a Russian servant in the Nizhny Novgorod Governorate, created the "self-driving carriage" ("samobeglaya kolyaska"). This cart was driven by two people.

In 1971, Shamshurenko's compatriot Ivan Petrovich Kulibin (1735-1818) created a modern design of the "self-propelled cart" of his time (Fig. 2). He used three wheels instead of four. The steady speed of the cart was maintained by the flywheel under the frame. In addition, braking devices with a specific portable gearbox and special springs were used [2]. The mechanism used in the cart was able to make it move quickly up the hill and slowly down the hill. As passengers, two people in an open body, and a third one, alternately pressing their feet on the drive levers, set the wheels in motion. At the same time, he managed the movement of the crew.

In 1690, the French physicist Denis Papin created a steam engine consisting of a piston and a cylinder called the "atomosphere." [3]

The principle of the invented steam engine was that water was poured under the piston at the bottom of the cylinder and heated using a flame. The resulting steam lifted the piston upwards. After this, the flame was ignited, and the piston was cooled with cold water and moved downwards under atmospheric pressure. The duration of this cycle was one minute. The inoperability of this machine has been proven.

Using Papin's idea, the English blacksmith Thomas Newcomen created a "water-casting machine." Each time, instead of boiling the water under the piston, he connected the steam boiler and cylinder with a tube. Initially, the steam from the boiler was transferred to the cylinder, and then the cold water in the container compensated for the steam.

In 1763, Ivan Polzunkov first designed a steam engine at the Kolivanovo-Voskresensk enterprise to drive an air furnace (mex). This machine consists of two Nyukmena-type steam-atmospheric cylinders [4].

Built in May 1766 (Polzunov died before the machine was put into operation), it was forgotten and neglected due to a malfunction in the same year.

The Newcomen machine was economically inefficient. However, in 1784, a mechanical machine was improved by James Watt, a mechanic at the University of Glasgow, and became the prototype of the world's universal mechanical engine. Watt added a condenser, a steam distributor (zolotnik) to the engine, and the steam was supplied from both sides of the piston [5,6].

He also introduced the unit of measurement "horsepower."

The first steam engine created a self-propelled transport unit of any power and independent of weather conditions. This machine, adapted for rotational motion, has become the basis of all types of transport.

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