Experimental 'Viking voyages' on Eastern European rivers 1983–2006

Rune Edberg

Abstract. Several experimental boat voyages on rivers in Eastern Europe and the ex-USSR have taken place during the last decades. All have confirmed that travelling on rivers, against stong current or in shallow waters, is a challenging and sometimes quite impossible task. The notion that Scandinavians brought their own vessels to and across Russia, as sometimes suggested by imaginative scholars, is neither supported by archeological and historical research, nor by these experiments.

The 1991 dissolution of the Soviet Union lead to a considerable loosening of previously strict travel restrictions for foreign visitors. This meant that it became possible to study the conditions applicable to the Viking Age voyages on the eastern waterways first hand. Since then, a number of voyages have been undertaken *(fig. 1)*. In the present article, I will briefly present them, and try to establish what they have accomplished and what they have added to previous research.

As early as 1983, a Swedish expedition traveling in the boat Krampmacken, attempted to obtain permission to cross the Soviet Union on its way to the Black Sea. The crew was however forced to turn back at the easternmost Polish border. At the time of renewed efforts with Krampmacken in 1985, the expedition picked up where it had been forced to leave off, but instead followed the river Vistula (Wisla) upstream as far as possible. From there, the crew, with the help of a cart, pulled the boat across the Carpathian Mountains, and continued on to Miklagård (Constantinople / Istanbul) via the rivers Ondava, Bodrog, Tisza and Danube (through Poland, Czechoslovakia, Hungary, Yugoslavia, Rumania, Bulgaria and Turkey). Krampmacken was 8 meters long *(fig. 2)*. The design was based on a Gotlandic boat find. Erik Nylén headed the project, and I participated on one leg of the journey.

The Norwegian Havørn expedition became pioneers in the newly ex-Soviet states. In 1992, it traveled down parts of the rivers Daugava (in Latvia) and Dnepr (in the Ukraine). Havørn was a 16 meters long ship, a 2/3-scale replica of the Gokstad ship *(fig. 3)*. A group whose driving force was Thor Engøy owned the ship.

From the Varangians to the Greeks

The next attempt was made by the Swedish Aifur expeditions in 1994, 1996 and 2001, respectively. The route went through the rivers Neva, Volkhov, Lovat, Usvyatya and Kasplya in Russia, the Dnepr in Russia and the Ukraine and the Daugava in Belarus and Latvia. The goal of the expedition was to travel the "Road from the Varangians to the Greeks" as it is outlined in the Russian Primary Chronicle.

The Aifur was 9.5 meters long, based on a combination of several Viking Age originals *(fig. 4)*. She was collectively owned by an organization consisting of ten members with Jan Johansson as chairman. I was responsible for documenting it all.

The 1996 Aifur voyage ended at the mouth of the river Dnepr (in the Ukraine), but the Himingläva expedition, which took place in 2004, acted as a geographical continuation of the Aifur voyages. Himingläva started out at the mouth of the Dnepr with the Caspian Sea as its goal. The idea was to recreate a trip that is known from Swedish rune stones and Icelandic sources, often referred to as The Voyage of Ingvar ("Ingvar the Far-traveled"). After that, the expedition traveled across the Caucasus, partially on rivers and partially by land with the help of oxen (in Georgia and Azerbadzhyan). The 9.75 meters long Himingläva was modeled the largest of the smaller boats found in conjunction with the Gokstad ship find *(fig. 5)*. Håkan Altrock owned the boat and also headed the expedition.

The Don and the Volga

The Finnish boats Rus and Heimlösa Rus were both 12-meter long replicas of a find made in the inner parts of the Gulf of Finland, the so-called Lapuri boat. The voyages undertaken with the two ships, in 1994 and 1996–2000, mainly took place on open water, and to some degree on West European rivers affected by the tide. The experiences gained from those trips fall outside the scope of this paper, but in the year 2000, the Heimlösa Rus traveled up the Don and continued to Volgograd via the Volga–Don canal, and from there on to Astrakhan on the Volga *(fig. 6)*. These expeditions were lead by the owner of the boats, Fredrik Koivusalo.

My latest example is a Polish expedition, which traveled on the rivers Vistula, Bug and Dnepr (in Poland and the Ukraine) onboard the boat Welet in 2006. The Welet was a 12 meters long replica of a Viking Age boat find from Danzig-Ohra (Gdansk-Orunia) *(fig. 7)*. Henryk Wolski headed the expedition.

We may see more expeditions of this kind, but then again, maybe not. One of the factors that deter potential arrangers of such voyages is the very thick red tape and the corruption that rages within the old Soviet areas. These problems only seem to compound with each year. It was because of problems like that, that the 2004 Himingläva expedition had large parts of its travel plans spoiled by bullheaded Russian authorities at the border crossings. In 2006 Henryk Wolski had to dole out a large sum of pledge money in order to get the Welet across the Ukrainian border. The worst case scenario is that the research window that was opened to foreign researchers in 1991 has been slammed shut for now.

Varying quality

Whatever the future holds, there have now been enough successful attempts at these types of journeys that we can flesh out a few

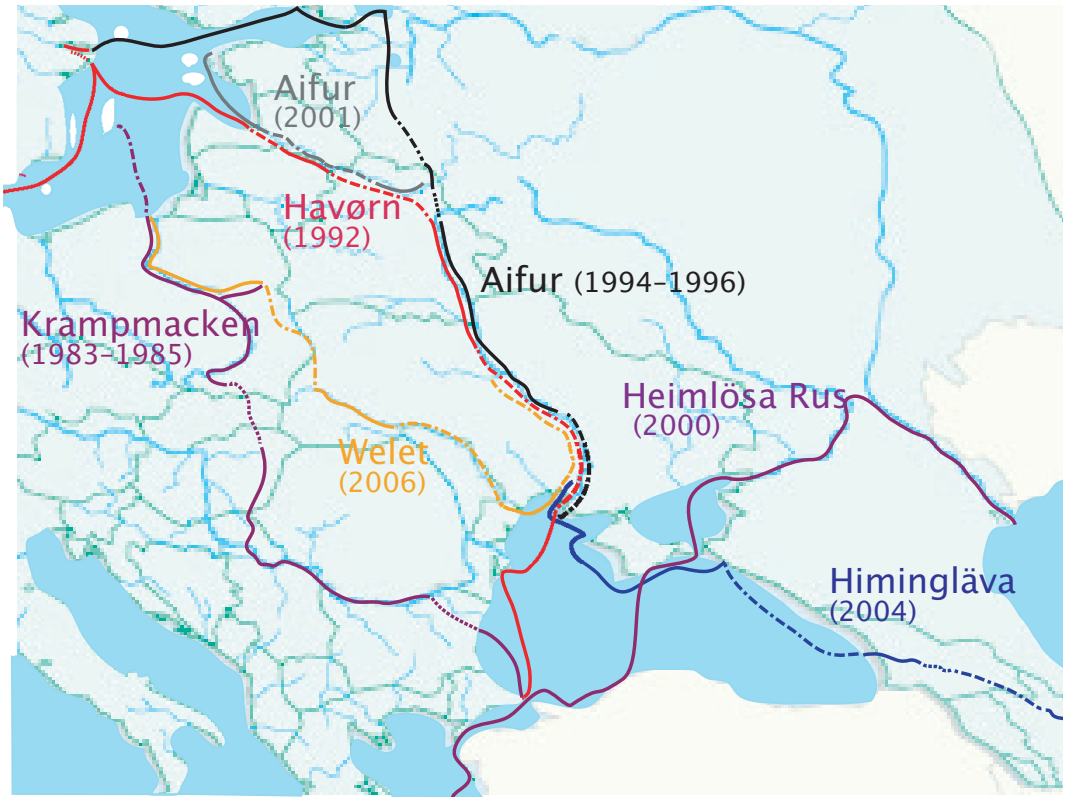

Fig. 1. Schematic map of the various expeditions discussed in the paper, drawn by the author.

general implications. The basis of such conclusions is, of course, the available documentation, which varies in quality. This causes a problem for the interpretation in itself.

The most well documented of these voyages were the Krampmacken expedition (Nylén 1983, 1987a, 1987b: also Oreheim 1989; Sjöstrand 1988) the Aifur expedition (Edberg 1998, 2002), and the Himingläva expedition (Altrock 2005). The Rus expedition is documented in a book (Koivusalo 1996) while documentation of the Heimlösa Rus voyages only appears to be available on line (www.qnet.fi/rus-project/). To the best of my knowledge, there is no documentation in the true meaning of the word regarding the Havørn's voyages. There are, however, some unpublished accounts that cover parts of the journey (Engøy 1992; Altrock 1993). To my knowledge, there is, as of yet, no documentation regarding the Welet's voyage in 2006, other than a TV documentary and on the Internet (http:// welet. best.net/pl).

There were also large differences in preparations, starting points, ambitions and organization between the expeditions. This, too, must be observed when evaluating the

Fig. 2. Krampmacken under sail on the Vistula River in 1983. Photo courtesy of Erik Nylén.

Fig. 3. Havørn was forced to interrupt the journey up the Daugava River in 1992. Photo courtesy of Håkan Altrock.

Fig. 4. Aifur in shallow water on the Lower Lovat in 1996. Photo courtesy of the The Aifur association.

Fig. 5. Himingläva with draft oxen in a mountain pass in the Caucasus, 2004. Photo courtesy of Håkan Altrock.

Fig. 6. Heimlösa Rus under sail on the River Don in 2000. Photo courtesy of Fredrik Koivusalo.

Fig. 7. Welet under sail on the River Bug in 2006. Photo courtesy of Henryk Wolski.

outcomes. The following are examples of this.

Amphibian vessels?

The scholar's own preexisting knowledge always plays a role in what types of questions he will pose.

For example, Erik Nylén had researched the ships depicted on the Gotlandic picture stones, and as a result, he come up with the theory that relatively small vessels could have traveled across the Baltic ocean and on rivers, as well as being pulled across land between the rivers. In other words, they would have been used much in the way of an amphibian vessel.

The carefully selected crew of Krampmacken put in a lot of practice before it set off. The crew sailed around Gotland and back and forth to the mainland. They did not, however, practice traveling on any river. When it came to those points during the 1983 and 1985 journeys, when the boat had to be rowed or towed up-stream on the Vistula and Bug rivers, the crew was unable to travel any more than ten kilometers per day, despite much toil. It became obvious that this vessel was not suited for this purpose. When, after some time, farther progression on the rivers became entirely impossible, Erik Nylén had the crew, partially aided by horse, pull the boat on wheels across the

Carpathians and the Dukla pass (500 meters above sea level).

The best part of the journey with Krampmacken was that Erik Nylén never gave in to temptation by allowing engines or other anachronisms. The expedition did, however, allow the use of a car to haul provisions and extra crew to trade off with, which was also the case with Havørn, Aifur and Himingläva.

Heroic toil

Havørn's 1992 trip on the Daugava begun once the lower parts of the river had been bypassed and the boat launched in Aizkraukle, upstream of three hydroelectric power plants built in the 1900's, whence the crew and ship was brought by truck. In open water on the Baltic, the boat had proved to be a good sailing vessel, but on the rivers the opportunities to sail were few and far between, and the crew was reduced to rowing or towing the ship from shore. This worked reasonably well up until Jekabpils, where a 300 meters long section of 8-knot rapids was transversed only after three days of heroic toil. After this, the crew was forced to transport the ship by truck for some distance. The river is unregulated beyond Jekabpils, and the journey could continue until Kraslava where, once again, a truck had to be brought in, this time across the water shed all the way to Mogilyev on the Dnepr. From that point on, the Havørn traveled towards the Black Sea mostly by engine.

The most obvious of the Havørn legacies came to be the shattering of old stereotypes relating to the idea that eastward Viking voyages with this type of vessel had been practical. In light of the experience of the expedition, the popular image of crews rolling ships and boats long distances on logs, also came across as unrealistic.

Unfortunate consequences

To a large extent, the Aifur expeditions of 1994, 1996 and 2001 followed in the footsteps of the Krampmacken expeditions. However, poor practical leadership had some unfortunate consequences. The voyages' research program was abandoned at a couple of occations and tractor and truck transports robbed the expedition of some important experiences.

The 2004 Himingläva expedition ran into similar problems, despite a clearly defined and determined leadership. As an example, the expedition crossed the eastern part of the Black Sea by car ferry. The lack of time also caused the journeys through Georgia and Azerbaydzhyan to be undertaken in an ahistorical fashion.

The 2006 Welet expedition partially traveled along the route that Erik Nylén originally had planned for Krampmacken, i.e. Vistula–Bug and across the border to the Ukraine. Although the commander in charge of the Welet expressed thoughts along the line of experimental archaeology, one is left with the impression that he had expected to travel rather quickly, and therefore did not hesitate to apply anachronistic methods to achieve his goal. The Welet passed through locks (among other places at the 22 meter high Wloclawek dam in Vistula the same spot that the crew of Krampmacken managed to pass by way of pulling the boat overland), and also resorted to overland transport whenever it seemed suitable. An onboard motor was used intermittently. Regardless of this, there is still much to be learned from this expedition. The truck transport across the border was the re-

sult of the Bug's low water level. The considerably smaller boat Krampmacken also had problems with sandbars and currents in this same spot. After the boarder crossing, the Welet was launched in Dniestr, where downstream rowing and sailing worked well for quite a distance, up until the power plant by Novodniestrovsk. Beyond that point, the crew was forced to resort to a very long overland transport across the Ukraine, past the politically turbulent Moldavia, all the way to the mouth of the Dniester.

Maps and Preparations

As long as the Iron Curtain remained in place, studying maps was the most common – and often the only – way for Western scholars to estimate which waterways would have been viable options back in the Viking Age. It was easy to overestimate the possibilities that way, every blue line on the map appeared to be a possible route. Older research also pointed to a connection between archaeological finds and the rivers, and many scholars felt this meant that they had enough proof, albeit indirect, of journeys by boat.

Before the Krampmacken expedition, Erik Nylén had one of his students perform a study (Elmér 1982). The account of potential river routes between the Baltic and Miklagård makes for a very interesting document of that era in itself. Elmér's source material consists entirely of relatively small-scale maps. It shows data regarding the length of each river, and there is also some information about height above sea level, collected from the maps. There is no material from hydrological and similar sources, and there is no information about the conditions of the rivers, that may have been gleaned in historical sources and/or newer travelers' logs. The author's rash conclusion, i.e. that basically all rivers would have been easily passable during the Viking Age, was the foundation upon which the planning of the Krampmacken expedition rested.

Neglected information

In 1993–1994, when the Aifur organization prepared for the expedition, it was quite difficult to obtain data for planning at a reasonable cost. Our main sources of information were the US Air Force's topographical maps in the scale of 1:500 000, which were available in Sweden at that time. It was not until the 1996 voyage that we were able to obtain reliable regional Russian maps (oblast-) in scales of 1:500 000 and 1:200 000. By the time the 2001 voyage took place, the situation had improved even farther. For example, we were able to purchase excellent, previously classified, Belarus maps in the scales of 1:100 000 and 1:50 000 in a bookstore in Riga. These even showed the rapids of the Daugava River, and the average speed of the river's current was marked at regular intervals. In Latvia, I also bought a handbook of the Soviet waterways, printed in the 1970's.

However, some of the same areas that were neglected during the planning stages of the Krampmacken expedition were also overlooked during the planning for the Aifur expedition. The library searches were not as thorough as they could have been, and after a short reconnaissance trip along the Lovat in 1995 I underestimated the potential problems that could be encountered on this leg of the journey. The consequence was that the following year, as the expedition reached the impassable middle part of the river, the crew was mentally unpre-

pared, become negatively surprised, and accepted an offer of tractor transport.

Prejudices and lack of knowledge

Today, as I look back on things, I also get a feeling that many of us Swedes who took part in the Krampmacken and Aifur expeditions subconsciously viewed Eastern Europe, and the Soviet Union in particular, as terra incognita, unknown land. The 1000 years between now and the Viking Age was a black hole. This may partially have been caused by the essentially different political systems and by the language barrier. There were also not many of us who had visited the Eastern Block as tourists. Oftentimes we were prejudicial and had a lack of knowledge. In regards to the Soviet Union and the ex-Soviet Union, our non-existent or rudimentary knowledge of the Russian language leading to actually existing information not being utilized at the planning stages.

The development of the Internet shortly thereafter lead to a revolution regarding available information, so that the Himinglä-va expedition did not have any problem obtaining good, large scale maps of their proposed route in 2004. Their reconnaissance and other preparation seem to have been much more adequate (although this expedition ran into other obstacles like the ones mentioned before, and to which we will return later in the article).

Copies and mentality

One commonly voiced viewpoint is that only ships and boats that are as realistic a copy of the original as possible will do if one expects to be able to come to any reliable conclusions of such experiments. According to such viewpoints, the boats should also be manufactured using only period tools and methods. The opposing camp is of the opinion that it works just fine to attempt a journey, as long as the vessel is a reasonably close facsimile of the original boat, especially considering the fact that it never will be possible to recreate a 100% accurate reconstruction of a prehistoric boat. All of the boats presented in this article more or less belong in the latter camp.

It becomes even more obvious that experimental boat archaeology cannot be compared to scientific experimentation when you consider that the crew must consist of modern people, inevitably steeped in a modern mould. They are volunteers, who participate at their own expense and under their own terms. One can say that the participants join up in order to have their preexisting conceptions fulfilled, much in the same manner as the researcher poses his question according to his own preexisting conceptions. The modern mindset is thus revealed on all levels.

Active Material Culture

People are, however, influenced by their environment. It is the active role of the material culture: the character of the voyage changes if you have a motor onboard, since it demands to be used. Mobile phones, GPS, computers and satellite connection are other flagrant examples of how the modern era sneaks into the experimental journeys. The Krampmacken expedition took place in the 1980's, before the inception of mobile phones and GPS, which gave it a slightly different character than the later expeditions. In the relatively short time span covered by this paper, about two decades, the improved telecommunications along with

other innovations have shrunk the psychological distance considerably.

It has also become apparent that the rivers themselves have changed, too, both by natural processes, and, more often than not, by human intervention. Ture Arne photographed the Aifur rapids on the Dnepr in 1913, but when the Aifur passed that same spot, a 100-meter deep dam covered it. Beyond that, each power station affects the river both up stream and down. Depending on the terrain, the effect can sometimes be noticeable for hundreds of kilometers. Even before these hydroelectric dams became a decisive factor, extensive rock clearing and dredging work was commonly performed to facilitate navigation and log driving. The untrained eye does not catch such measures.

Political problems

Armed with the practical experiences of the 1983 journey on the Vistula and Bug rivers, Erik Nylén expressed the opinion that "the rivers seem not to have changed much in the past 1000 years" (Nylén 1983:104). The fact that hydroelectric power stations had been built did not escape him. However, any good reference book will also confirm that in the case of the Vistula River, for example, extensive straightening of the river's course as well as clearing of both the shoreline and river bed have taken place, especially after WW II. The intention was to make the river Eastern Europe's main transport artery. Nylén was wrong.

Another problem for the interpretation is the political situation. All the experimental projects carried out to date have been strongly affected by political circumstances, even after the fall of the Soviet Union. As an example, the Himingläva expedition was denied permission to travel along the coast of the pro-Russian splinter republic of Abkhasia in 2004, and the Welet was unable to travel across the stretch of the Dniestr that borders the pro-Russian splinter republic Transnistria in Moldavia.

Bureaucracy and hospitality

Border crossings have sometimes been bureaucratic nightmares, and problems with visas have forced crewmembers to have to stay behind or cut short their participation early. As a rule, the expeditions have had very small budgets to work with, or have been self financed, so that payment of the bribes demanded to police and other officials have barely been feasible.

Occasionally, a problem of a different kind cropped up, especially for the Aifur expedition in Latvia in 2001 and for the Himingläva expedition in Georgia in 2004. This was just how to handle a much too hospitable local population – it is not easy to turn down invites to village feasts, and one cannot fail to attend parties put on by the host country's various organizations and authorities, who may have done everything in their power to facilitate the realization of the expedition. The result is that it sometimes becomes very difficult to find the time to complete the mission itself.

Achievements and conclusions

Despite the weaknesses and shortcomings previously discussed, one must not under any circumstances throw out the baby with the bath water and view what actually was achieved, oftentimes entailing great personal sacrifices and selfless effort, as a failure. (Of course, from a scientific standpoint, failures can be just as important as successes.) The fact of the matter is that by now, many attempts have been done on many

Eastern European rivers, big and small, with boats and ships of a Scandinavian Viking Age design. The documentation and project evaluations that have been performed to date, especially those from the Krampmacken, Aifur and Himingläva expeditions, have provided an empirical foundation for the discussion relating to pre-historic travel and communication. The single most important point to be made regarding these expeditions is that these were theoretical ideas that were put into practice, which is always a good starting point in scientific matters. Some conclusions may seem embarrassingly simple, but when compared to certain older literature, it becomes apparent that there were many misconceptions about the possibilities and limitations of riverine travel.

Varying conditions on the rivers

One such circumstance that is often disregarded in the discussion is the fact that there are great differences between each and every river. Some are wide and deep while some are narrow and shallow, and sometimes vice versa. The water table also differs from year to year and from season to season, and often radically. A lot of water (spring thaw) implies swifter currents, whereas a low water table (summer drought) means a continuous risk of running aground. Ten years ago, when I was trying to evaluate the 1994–1996 Aifur expedition, and tried to find detailed information about the water table of the rivers in northwestern Russia, this information was entirely inaccessible. Through a Swedish hydro expert who had been on assignment in Novgorod, I was eventually able to access and publish information for the Volkhov River. In this day and age, such data, which provides a striking example of the condition of the water table, is easily accessible over the Internet.

In other words, there will be times when travel on a river is not possible, and river travel, especially against the current, has its own peculiarities and difficulties. Keeled ships and boats have proven to be relatively heavy to handle. It is also never easy to move ships and boats long distances across land. That is why river traveling, as a general rule, is a time consuming endeavor, even when viable.

Travelers followed the river

A clear example is the often cited passage from the Russian Primary Chronicle regarding "The road from the Varangians to the Greek" that follows along the River Lovat. Over time, the Aifur expedition became intimately familiar with the dramatic seasonal changes in the river's water table, its relatively steep slope, and the hundreds of rocky rapids. The Lovat runs for approximately 540 kilometers, and experiments showed that boat travel was not a viable option on its middle and upper parts. Comparisons to written sources indicated that this also had been the case in historic times, and the archaeology of the river paints much the same picture. This is not to say that the chronicle is lying, but rather, that it should be interpreted as an indication of travelers following the river and took advantage of the sailable portions. The rest of the journey had to be completed on foot, on horseback or on sleigh.

The Krampmacken expedition utilized draft horses on the leg of the journey that saw them intersect southern Poland. In my opinion, this must be viewed as an *ad hoc* solution, and to have oxen pull the boat

across some mountains in the Caucasus Mountains (1150 meters above sea level), as was done on the Himingläva expedition, was creative. But it should be viewed more as an achievement in sports, rather than as a confirmation of facts given in Saga of Ingvar the Far-traveled.

Research breakthrough

In conclusion, the experimental voyages have returned good results, which have caused a revision of many opinions regarding Viking Age river travel. Another important effect is that much of the experiences from these journeys have inspired various archaeological, historical and ethnological studies, which have been carried out in order to place these experiments in their correct context and in order to judge their relevance and validity. A good example of this is Søren Sindbaek's study, where he studied Staraya Ladoga, Timerovo, Gnezdovo and other Russian locations where finds of a Scandinavian nature have been made, from the viewpoint of these places being used for cargo storage and reloading at the turning point between summer and winter transport (Sindbaek 2001). The large amount of sleigh parts that have been unearthed in Novgorod support this theory. I view this as a confirmation of the fact that a research breakthrough has taken place in the issues surrounding these topics.

There is a great need for a widening and deepening of such studies. All kinds of comparative material relating to just how the traffic was set up and how it flowed in these areas in pre-history is specifically valuable. Locally made, light, flat-bottomed boats have been standard on the Eastern rivers in historical times and things were surely not different in prehistory. Scandinavian travellers most likely used craft of this type.

On the other hand, crossing the Baltic, carrying armed men, provisions and cargo, demanded seaworthy ships, quite unsuitable for river traffic. Viking Age centres in Rus, such as Staraya Ladoga and Ryrikovo Gorodishche were not only political strongholds and emporia but also the nodes where the means of sea, river and land transport were changed (cf. Sindbæk 2001). There, seagoing ships could be left among countrymen and trading parters for the winter, if necessary (cf. Sorokin 2006).

The suggestion that rowing-boats, like those often found in Swedish boat burials, regularly were used to cross the Baltic can hardly be sustained. The "Vikings" had the know-how to make sailing vessels, big enough to carry men and cargo for a safe passage even under rough weather conditions. Such ships are, of course, well known by archaeologists (cf. Bill 1991).

The Volga Routes

To date, the routes stretching from Ladoga towards Volga have not received the same practical-experimental attention as "The Road from the Varangians to the Greeks" and Ingvar's route to the Caspian Sea. The Volga Road, most likely by way of Lakes Onega and Beloozero, is generally assumed to have played a role in the connections between Scandinavia, the Volga Bulgars and the Caliphate in the 9th and 10th centuries. The rich hunting grounds, which were to become the foundation upon which the prosperity of the medieval Novgorod Republic rested, lay directly north of this route. The construction of the gigantic canals and power plants in the last century has transformed the waterways completely

in this area. It is, however, not impossible that previously unexplored sources, both in terms of the landscape and within the archival material, could shed more light on many questions regarding long distance travel in this vast area.

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