



VIKING SHIP  
MUSEUM

Project: Thoroughbred of the Sea  
The trial voyage to Dublin

## Description of the project

seastallion.dk



December 2007

*The return of the Viking long ship  
1200 nautical miles from Denmark to Dublin*

# Introduction

1200 years ago the Vikings invaded Ireland. The Scandinavians came sailing in their infamous warships.

The Vikings brought death and destruction. They murdered, raped, pillaged monasteries and burnt houses to the ground.

Timid eyes would look out over the sea when favourable winds encouraged a surprise attack from the sea. A mild spring breeze could put bloodthirsty warriors ashore intending to go berserk.

But the Vikings were also brave farmers, merchants and town planners. The Irish capital Dublin was founded by Scandinavian settlers. Therefore we have a common past. The bond of history links us forever.

## **Out in the wide world**

The Vikings cultivated a culture with an insatiable hunger for discovering and conquering new land: new meadows for their cattle to graze, new markets for trading, new territories to control.

The source of our ancestors' lust for adventures was the sea. Nowadays the sea is often looked upon as an obstacle when travelling from one place to another. But for the Vikings the world opened up where the land turned into water.

The connection to the sea made the Vikings the most excellent seafaring people of their time. They took possession of the oceans by learning to navigate on the open sea. Their experiences allowed them to construct highly specialized ships be it fishing boats, merchantmen or warships.

Longships were the most precious and beautifully decorated of all vessels, built for speed and effective transport of warriors. Decorated to impress and frighten everyone who was so bold as to put up resistance.

The Vikings set the stage that both Denmark and Ireland considered themselves seafaring nations during the next centuries and partly still do today.

## **In the wake of the Vikings**

In the summer 2007 a crew of 65 men is going to set out in the wake of the Vikings. From Roskilde to the Orkney Islands and farther to the Irish capital Dublin.

The following summer the crew returns to Roskilde sailing around the south of England and across the North Sea.

His Royal Highness Crown Prince Frederik is patron of the project.



The vessel to this voyage is *the Sea Stallion from Glendalough*. With a length of 30 m the Sea Stallion is the world's largest reconstruction of a Viking ship. A reconstruction of a ship that was found on the bed of the Roskilde Fjord.

Scientific investigations of the wreck revealed that the ship was built by Vikings in Ireland in 1042. 30 years later the ship ended her days on the bottom of Roskilde Fjord.

### **The world is watching**

The voyage from Roskilde to Dublin and back again will be the biggest experimental archaeological project ever. Already in its making the experiment has stirred up international recognition.

Ship and crew engage on a voyage no one has dared to undertake in thousand years. A voyage which probably will be both the first and last of its kind.

The ship will sail in some of the most difficult waters at all, with biting winds and strong currents tearing at the sailor, with treacherous skerries hidden shortly below the sea's surface, with dark vertical walls of rocks piling up and blocking the heavy swell from the Atlantic Ocean.

For the Viking Ship Museum this voyage is an outstanding scientific experiment that will answer thousands of questions historians, archaeologists and boat builders have wondered about for a long time.

Wanderlust and spirit of adventure are the driving forces for the crew. In that respect the modern human being has many features in common with the Vikings.

### **The journey can begin**

The Viking Ship Museum, ship and crew together will put Roskilde on a world map, where it has not been since the Viking period.

The project is called Thoroughbred of the Sea. In the beginning the experiment was made of the same substance as dreams. We are now approaching the spectacular culmination. After 10 years of preparations the dream will come true.

A four-week trial voyage to Norway in the summer 2006 has assured us of the ship's special seaworthiness. And the crew is capable of sailing her. We are ready to sail in the wake of the Vikings.

We announce the ship is ready – the journey can begin.



#### **The Sea Stallion from Glendalough**

The reconstruction of Skuldelev 2 was launched on September 4th 2004 and Her Royal Highness Queen Margrethe christened the ship 'Havhingsten fra Glendalough' (in English: The Sea Stallion from Glendalough).

In sagas and skaldic verse the warships of the Vikings received poetic pet names like 'wave stallion' and 'sea horse'.

Glendalough is a legendary Irish place south of Dublin, in the Wicklow Mountains. Its Irish name means 'the glen of two lakes'.

# Skuldelev 2

Local fishermen from Roskilde Fjord had known for a long time that there was a shipwreck at the bottom of the fjord opposite the village Skuldelev. They also knew that people talked about a very old wreck. Rumour had it that these were the remains of a ship that could be dated back to the time of Queen Margrethe I.

The excavation began in 1962. Soon the archaeologists became aware of that they were witnesses of a find even more sensational than they had imagined.

It was the remains of five Viking ships that appeared out of the mud at the bottom of Roskilde Fjord. The ships lay in the centre of a sailing channel – scuttled deliberately as part of Roskilde’s defence works.

### Skuldelev 2

Archaeologists excavated five Viking ships at the bottom of the Roskilde Fjord in 1962.

The excavation took place outside of the village of Skuldelev. The wrecks’ official names are Skuldelev 1, 2, 3, 5 and 6.

Skuldelev 2 was by far the largest wreck. And it turned out to be the remains of an ocean-going warship built by Vikings in Dublin in 1042.



Today the five wrecks are on display in the Viking Ship Museum.



### Sea Stallion in numbers

- Length: 30 m
- Draught: 1,2 m (including the rudder)
- Breadth: 3,8 m
- Oars: 60
- Sail: 112 m<sup>2</sup>
- Weight: 8,3 t (without mast, rigging and oars)
- Crew: 65



## Viking ship with Irish ancestors

The largest and most impressive of the wrecks was the 30 m long warship. Only 25 per cent of the ship timbers have survived, but it was enough for the archaeologists to declare Skuldelev 2 one of the Viking's famous ocean-going warships.

Scientific examinations of the ship timbers verify that the Vikings built the ship in 1042 in Dublin. The Irish capital was founded by Vikings. It was a flourishing trading place with a large Scandinavian population and close ties to the rest of the Viking world. Three decades later the ship ended her days at the bottom of Roskilde Fjord.

In her halcyon days Skuldelev 2 represented the absolute pinnacle of Viking shipbuilding technology. A highly specialized ship built for speed and carrying many people over the open sea and waters with strong currents. A daring construction since the ship was extraordinary slim in relation to her impressive length. Form, function and aesthetics merge into a higher unity.

The warships had an enormous importance in cultural history. Using them the Vikings were able to retain control and communication in a large and geographically dispersed area of domination.

### Why did Skuldelev 2 come to Denmark?

William the Conqueror invaded England in 1066. Himself and his Norman troops defeated the English king Harald Godwinson. Harald's sons fled to Dublin where they were presumably equipped with a ship to bring them to Denmark for seeking help. However, later they appeared before the Danish king Svend Estridsen. Possibly they arrived on board Skuldelev 2 at the king's court in Roskilde? And perhaps their mission was to co-ordinate the pincers-attack on William's troops launched in 1069 with advances from Dublin in the west and from Denmark in the east, where from Svend Estridsen sent a fleet of 240 ships.



Skuldelev 2 has probably played a role in the diplomatic crisis following the Battle of Hastings in 1066 when the Danes lost supremacy in England. The battle also marks the end of the Viking Age. The Danes tried to regain the power. Maybe this was the reason why Skuldelev 2 sailed from Dublin to Roskilde.

### Thousand years and a stone's throw

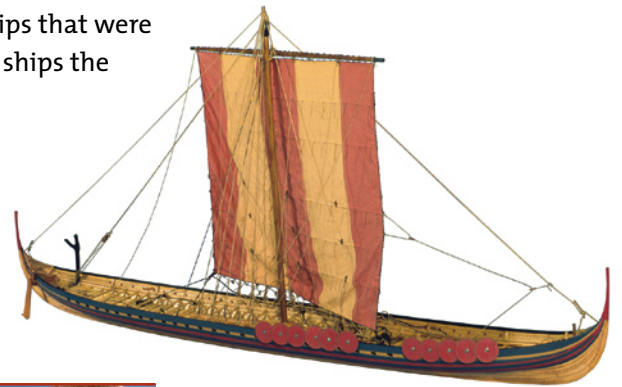
Skuldelev 2 redounded to her owner's honour. Selected materials and the best handicraft the then boat builders were able to create were united in a design that was admired a thousand years ago.

And still is to this very day.

The ship was chosen as one of twelve representatives for outstanding Danish design and handicraft in the so-called Canon of Danish Art and Culture, compiled by the Danish Minister for Culture in 2006. The longship of the Vikings is part of the Danish national cultural heritage at the same level as Jørn Utzons opera building in Sydney, the world-famous LEGO brick and Hans Christian Andersen's fairy tales.

Together with the other four wrecks Skuldelev 2 is on show in the Viking Ship Museum in Roskilde. Just 100 m away five full-scale reconstructions are moored in the museum's harbour. So to speak, the five Viking ships that were built a thousand years ago are within a stone's throw of the five ships the museum has reconstructed.

7,000 iron nails and rivets,  
2,000 m of ropes and the  
timber of 300 oak trees were  
needed for the full-scale  
reconstruction of Skuldelev 2.



The model of Skuldelev 2 in scale 1:10 was finished in 1998 and provided the knowledge for the building of a full-scale reconstruction.



The launch in Roskilde was attended by 15,000 visitors and 52 million television viewers around the world.



### From the wreck to the reconstruction

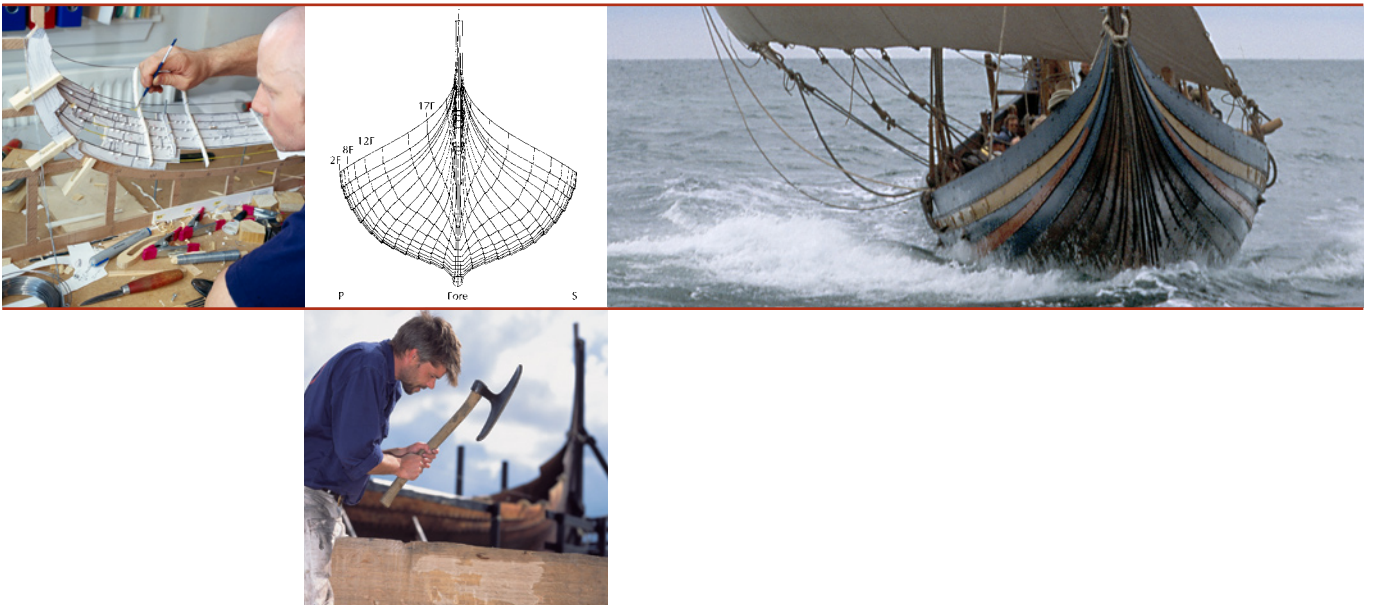
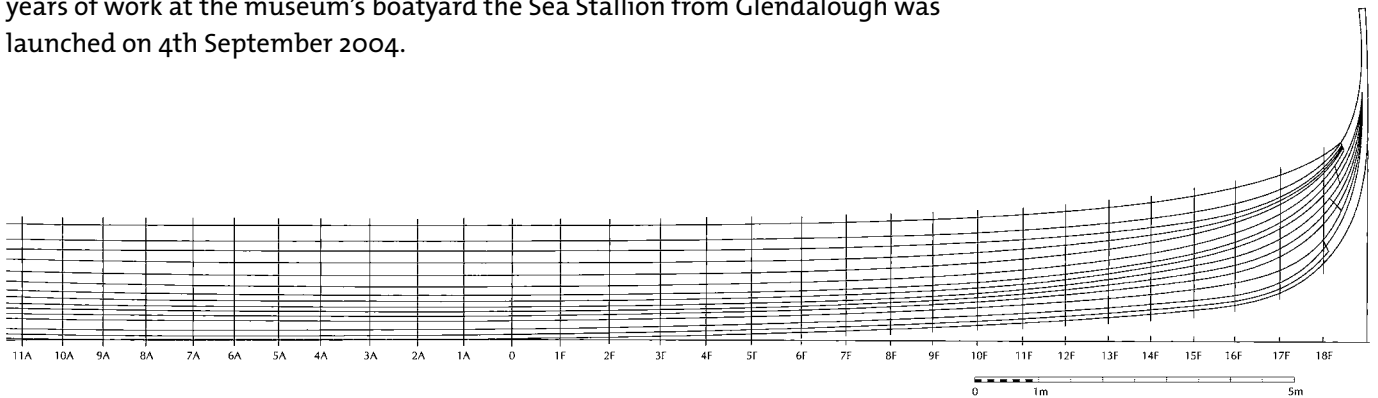
In the summer 2007 the world's largest reconstruction of a Viking ship will sail to the Irish capital Dublin. The sailing voyage marks the climax of 10 years of purposeful work.

In 1996 the Viking Ship Museum received donations from the Tuborg Foundation and the Augustinus Foundation by help of which it was possible to construct a model of Skuldelev 2. After two years of laborious work the model in scale 1:10 was completed.

Again, the Viking Ship Museum received a donation from the Tuborg Foundation in 2000. This time it amounted to 10 million crowns, which gave the museum's six boat builders the opportunity to start the building of a reconstruction in scale 1:1.

The ship was built using the same materials and techniques that were used for the original. Also the tools corresponded to those of the Vikings. The planks were chopped with axes, which are true copies of Viking time-axes, some of them found in Ireland.

Many more than 600,000 visitors observed the working progress. And after four years of work at the museum's boatyard the Sea Stallion from Glendalough was launched on 4th September 2004.



# To Dublin and back

The trial voyage to Dublin is a fantastic venture under Viking Age conditions. The Sea Stallion will be tested under realistic conditions in the very waters the original ship was built to cross.

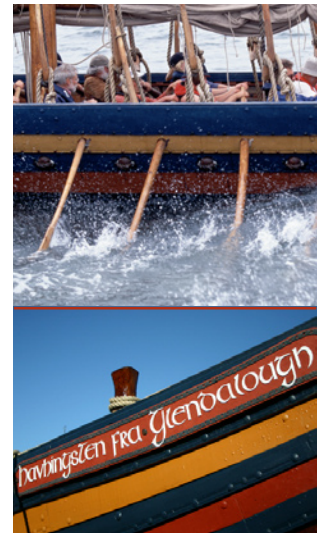
The trial voyage will cover two summers.

On July 1st 2007 ship and crew depart from Roskilde. The planned route takes them through the Limfjord to Thyborøn where they will wait for favourable wind to tack over Skagerrak to Stavanger in Norway. From there the Sea Stallion will sail to the Orkney Islands, around the northern coast of Scotland and head southwards across the Irish Sea to Dublin. Estimated time of arrival is the beginning of August - six weeks after the leaving of Roskilde. The leg across the North Sea from Stavanger to the Orkneys is 240 nm (ca. 450 km). Depending on wind and weather we expect this part of the voyage to last 2-5 days and nights.

## The worst is yet to come

The most difficult part follows: the churning waters north of Scotland and in the Irish Sea are characterized by a great tidal amplitude, strong currents and rough weather. The waters are terribly difficult to cross. When the strong current is going outward it meets swell from the Atlantic Ocean, which creates steep waves, and these constitute a significant risk to an open boat.

Beside the strong currents and the powerful tides the waters at the edge of the Atlantic are known for shifting weather. Unforecasted storms and dense fog are common in these areas and challenge a sailor's skills to the limit.



In the Viking period the route to Dublin would go round the north of Scotland. Here one finds waters with extreme currents (up to 12 knots). The strait between Scotland and the Orkneys is narrow, full of maelstroms and high seas – and can be extremely difficult to pass.

Because of the immense tidal amplitude the Irish Sea is full of currents, too. We expect to have to cope with tidal currents of approximately 7 knots all the way to Dublin.



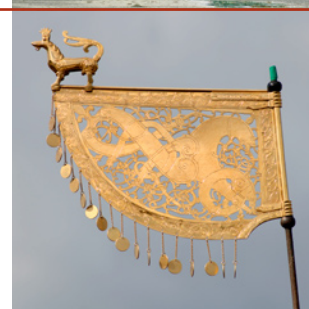


The ship overwinters in Dublin at the National Museum, where she will be prepared for the return voyage. The 30th June 2008 Sea Stallion from Glendalough puts to sea bound for Roskilde. This journey leads around the southern coast of England, across the North Sea and through the Limfjord to Roskilde. Estimated time of arrival: beginning of August.

### **Out in the world.... and at home anyway**

The Sea Stallion's voyage will be carried out on its own terms: when the wind is favourable the ship shall cover as great a distance as possible. Therefore, the final route will be decided upon by the skipper along the way, according to weather conditions and safety considerations.

On her route, but especially on the way to Dublin round the north of Scotland, the Sea Stallion will pass places which up to this day are characterized by the Viking time. Place names, cultural traditions and languages are living witnesses of the Vikings' presence. Many Scotsmen and Irishmen are descendants of Vikings alike we are in Scandinavia.



# Life on board the Sea Stallion

In the summer 2006 the Viking Ship Museum undertook a four-week trial voyage with the Sea Stallion from Glendalough. The journey led across Kattegat, Skagerrak and the North Sea.

The objective of the sailing was to test the ship and to teach her crew how to sail her. Prior to this voyage a number of shorter sailing trips mostly in Roskilde Fjord were undertaken.

The crew members are volunteers. They have been assessed selected by the museum on the basis of their seamanship, commitment, social skills, physical condition and special competences. Only the best members of the crew can be allowed to sail to Dublin.

The ship is organized in six sections. Each room has two foremen. All 65 men on board have their own allotted place aboard the ship and several tasks to fulfil. The skipper, mates, helmsmen, command repeaters, cooks, nurses, foremen and the PR-representative constitute the core crew. The core crew schedules and evaluates the sailing continuously.

## Without food and drink...

This summer's trial voyage was a success. The ship proved her seaworthiness in heavy winds and 3-m-waves on the Skagerrak. Until now the highest speed achieved was 11 knots – with an average speed of 5 knots over four weeks. The maximum speed is estimated to be 15-20 knots.

When beating the wind, ship and crew proved to be able to sail 60° to the wind, which is satisfactory for a Viking ship that in general cannot sail as close to the wind as modern keel-boats.



During the four-week trial voyage in the summer 2006 ship and crew sailed to the island of Læsø in the Kattegat, to Lysekil on the Swedish coast, to Oslo, Tønsberg and Kristiansand in Norway and to Thyborøn at the mouth of the Limfjord.



The crew consists mainly of Danish people, but there are also sailors from Ireland, England, Norway, Sweden, the Netherlands, Germany, New Zealand, Australia, Canada and Scotland on board. Commands are given in Danish.



Having a crew of 65 the volume and weight of the necessary water and food is a significant factor. According to our experiences 2.5 l of water are needed per man and day. In the light of a possible five-day tacking journey across the North Sea there need to be some 1000 litres water on board. Furthermore at least one ton of food has to be carried.

The crew is divided into two groups forming the two watches, each watch lasting four hours at a time. There is an exception with the first dog watch 1600 to 1800 and the last dog watch 1800 to 2000, when one watch only lasts two hours, thereby ensuring that the 'hard' watch from 0000 to 0400 has to be done by both groups alternately.

### Safety comes first

The crew's safety will be valued higher than the archaeological experiment at all times. It is compulsory to wear a life jacket on board. The ship is equipped with life rafts and other safety devices as well as with state-of-the-art technology concerning communication, navigation and weather forecast.

Beside the extensive training trips all crew members participate in a maritime safety course held by the Danish Navy. Additionally some crew members take or took part in a practical course on heavy weather sailing in open boats organized by Fosen Folk High School in Norway.

The Sea Stallion requires about 15 tons of ballast to provide optimum stability in the water (to gain the right trim). Crew, equipment, water and food are part of the ballast.



The Sea Stallion from Glendalough is a large ship with cramped conditions. Each crewmember has a space of about 0,8 m<sup>2</sup>. Sailing the open ship without comfort and private space is also a social experiment for the 65 present-day people. Exposed to wind and weather on the open sea where anything can happen.



# Why do we do it?

Why spend 10 million crowns on building a reconstruction of a Viking ship? And why spend nearly the same amount on sailing this ship to Dublin and back again?

The answer is simple: to gain knowledge.

The Vikings discovered America several centuries before Columbus. Like our ancestors we can set out on a historical discovery voyage with the Sea Stallion from Glendalough. But whereas the Vikings would search new land, we search new knowledge.

The trip to Dublin and back to Denmark is in a certain way a journey back in time. A journey where we gather knowledge and experiences that have been lost and forgotten in the thousand years between.

The trial voyage shall deliver valuable information about the very reconstruction. By building and sailing the ship we do also gain knowledge about the society these warships were a part of.

Briefly speaking we shall:

- Test the reconstruction
- Gain new knowledge about the Vikings' world
- Communicate this knowledge both to scholars and to a broad audience

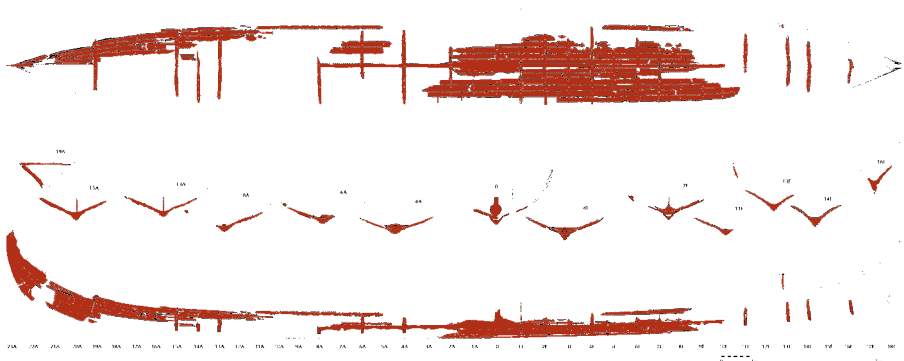
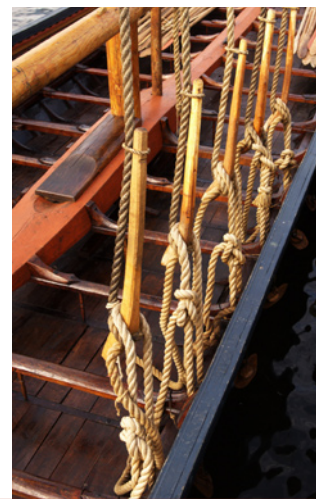
## Together we are stronger

Through this journey we will get closer to the people of the Viking period. We will learn about them and about ourselves.

The original ship was built and used by people who all have left their traces on the ship. These traces represent an inexhaustible source of information. Nobody is capable of deciphering and interpreting them alone. Traditional archaeological methods have proved inadequate. Therefore the Viking Ship Museum has incorporated a close cooperation between people with different areas of expertise and experiences. The boat builder, the sailor, the archaeologist and the historian are all of equal importance for the overall analysis.



Building a reconstruction of a Viking ship and sailing it has great merits – both as a form of scientific research and as an education project for a broad audience.



The surviving ship timbers of Skuldelev 2 are the primary source for the reconstruction. But many important features like rudder, mast, sail and rigging are lost. Thus other ship finds as well as the museum's experiences from earlier reconstructions became another source for the reconstruction. The Sea stallion is not a 100 per cent true copy – it is our best offer to what Skuldelev 2 originally looked like.

### **The Sea Stallion is a hit**

A project of the size and uniqueness like Thoroughbred of the Sea will of course not come to a close when the ship safely returns to Roskilde in August 2008.

After the ship's return experts from the Viking Ship Museum will analyse the enormous amounts of data recorded along the way and will make the results accessible to the public. 'Ships and Boats of the North', the museum's English series of monographs, will serve as a forum for academic discussion as well as a number of scientific lectures and articles. Reports and other material will be made available on the museum's homepage.

The voyage with the Sea Stallion will be communicated to the general public by exhibitions, on the museum website, through print media and by film.

The story of the sailing voyage will be told in a popular scientific book about trial voyages. Books and articles with a more personal approach to the big adventure of sailing in the wake of the Vikings are planned to be published in Danish and English.

Both in Denmark and abroad there is a huge interest in the voyage to Dublin beforehand.

The four-week voyage on the Kattegat, Skagerrak and the North Sea in 2006 was reported in more than 170 newspaper articles, mostly in the Danish and Norwegian media. Numerous programmes were broadcasted in radio and TV. Even an Australian radio channel joined the Sea Stallion on her way into the Oslo Fjord on a light summer night.

### **Everything is ready**

After three years of training and test sailing the ship and her crew are ready for the big venture and the Viking Ship Museum is ready to conduct the biggest ship archaeological experiment ever.

Scheduling has reached a higher level. The Viking Ship Museum has launched a new model of organizing the project in order to keep control over all different threads, to ensure the communication within the project and to raise the necessary funds.

The official cooperation between Roskilde and Dublin was set going. In Dublin a steering committee has been established consisting among others of the Danish Ambassador, the director of the National Museum of Ireland and civil servants from the Irish Department of Arts, Sport and Tourism.

The Viking Ship Museum was established in 1969 and is the leading institution in experimental ship archaeology today.



Experimental ship archaeology is based on activities. A wide range of questions and answers first appear when we find ourselves in the same situations as those our ancestors faced in earlier times.

# About the Viking Ship Museum

The Viking Ship Museum is an independent institution. It is a state-approved specialist museum for ships, seafaring and ship building in ancient and medieval times. The museum is funded partly by state and local community grants and partly by a high level of self-generated income and donations from foundations.

In 1969 the Viking Ship Hall opened as a big show-case built of glass and concrete around the wrecks of the five Viking ships. By 1997 the museum was extended by the opening of the Museum Island and the Museum Harbour, which today host many of the museum's activities.

Here, the visitors can gain a unique insight into various aspects of the museum work, thus becoming active participants in the communication process.

One of the facilities on the Museum Island is the boatyard where reconstructions of Viking ships and traditional Nordic wooden boats are built and maintained.

The museum's large collection of boats, some 40 vessels – among them the reconstructions of the five Viking ships – are moored in the Museum Harbour.

The Viking Ship Museum is one of Denmark's largest historico-cultural institutions and it received five stars as an international tourist attraction. We concentrate on providing creative, research-based experiences. Thanks to the continuous introduction of new activities, exhibitions and ways of communication, a visit to the museum is an active, cultural experience.

By focusing on the ships the museum sets the Viking period in perspective and brings history to life for the annual 150,000 visitors.

On the museum homepage [www.vikingshipmuseum.dk](http://www.vikingshipmuseum.dk) you will find information about the work and activities of the museum. And naturally also about the Thoroughbred of the Sea and the great trial voyage to and from Dublin.

The Sea Stallion from Glendalough has her own homepage: [www.seastallion.dk](http://www.seastallion.dk).





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Erwan Cruan page: 7, 8, 12.