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## THE HAUGVIK BOAT – A PRE-ROMAN IRON AGE BOAT FIND FROM NORTHERN NORWAY

In research on prehistoric boats in Scandinavia, both boats and parts of boats found in bogs have always been an important resource. Some of the best known boat and ship finds were recovered from this type of context. Through the research project »Boats in Bogs«, under the auspices of *Vitenskapsmuseet*, the Museum of Natural History and Archaeology in Trondheim, 29 sites of boat finds in bogs have been documented in the Museum's district. One find from Haugvik in Sømna, Nordland, found in the 1920s and 1930s, was quite surprisingly dated to the transition period between the Bronze Age and Pre-Roman Iron Age (Sylvester 2006). New datings of boat parts found in 2006, however, show that the Haugvik boat find cannot be dated to the Bronze Age, but must be placed in the Pre Roman Iron Age, most likely the 1<sup>st</sup> or 2<sup>nd</sup> c. B.C. This makes the find one of the oldest in Norway, and it is one of very few traces of a plank-built boat from this period in Scandinavia.

### HISTORY AND SITE OF THE FIND

The boat parts were found in a bog on the Haugvik farm in the municipality of Sømna in S. Helgeland, the region that comprises the southernmost part of the county of Nordland. Haugvik is located at latitude of 65° N., about 350km (220miles) N. of Trondheim (Fig. 1). The remains of the boat were found on at least two occasions by two different people. The first time, the remains emerged when a drainage ditch was dug through the bog in the 1920s. Apparently the finder did not tell anyone about the discovery, and we do not know how much of the boat was discovered. The second time that remains of the boat were found was when Ole Haugvik, the owner of the land, was cutting peat in the bog in 1931. He found the boat remains lying right on the gravel underneath the peat at a depth of about 0.7 to 0.8m. Haugvik was asked to place the boat pieces in a dry place under the *stabbur* (storehouse on pillars), and he may also have rubbed a tar-like substance on the pieces.

In July 1941 – ten years after the find was made – the boat parts were examined by one of the museum's contact persons in the region. For reasons that were not specified, he gave permission for the best preserved part to be sawn into two pieces. Perhaps this was to make it easier to send to Trondheim. In 1942, the boat parts were sent to the Museum of Natural History and Archaeology in Trondheim. They were registered in the museum's

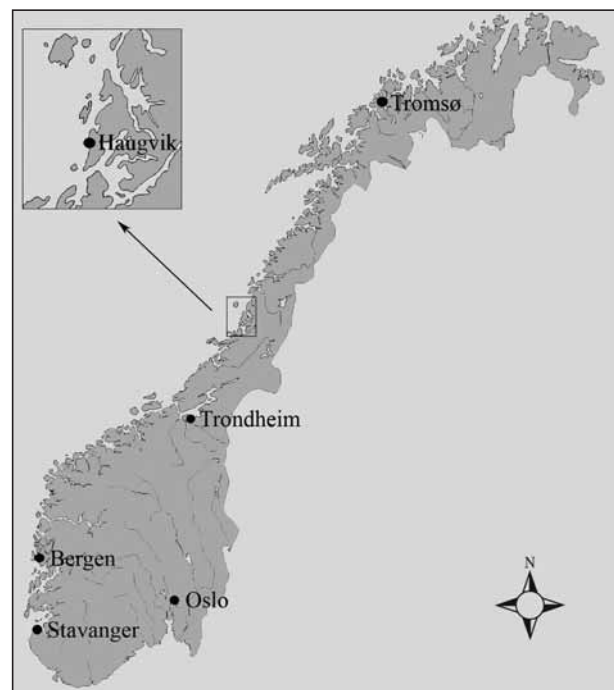


Fig. 1 Map of Norway showing the location of Haugvik.



**Fig. 2** Coastal landscape at Haugvik. The site of the find, which is a bog today, was probably a bay in the Bronze Age. Then, as now, the coast was an archipelago with relatively calm and shallow water, sheltered from the open sea (Photo M. Sylvestre).

accessions and incorporated in the collection. Correspondence between the museum in Trondheim and the contact person in the region resulted in a decision to conduct a small-scale investigation of the site in 1943, with a thorough survey of the peat pit. During the survey, several highly decayed parts of the boat found in the 1920s were rediscovered. These were also sent to the museum in Trondheim. The plan was to dig a few trenches in the area where Haugvik had found the boat remains, but one had to give up the project due to problems with water flowing in. Instead, a metal spike was used to probe for any remaining boat parts, but this proved fruitless. In the summer of 1944, Haugvik once again cut peat in a delimited area close to the site of the find, but he did not find any more of the boat.

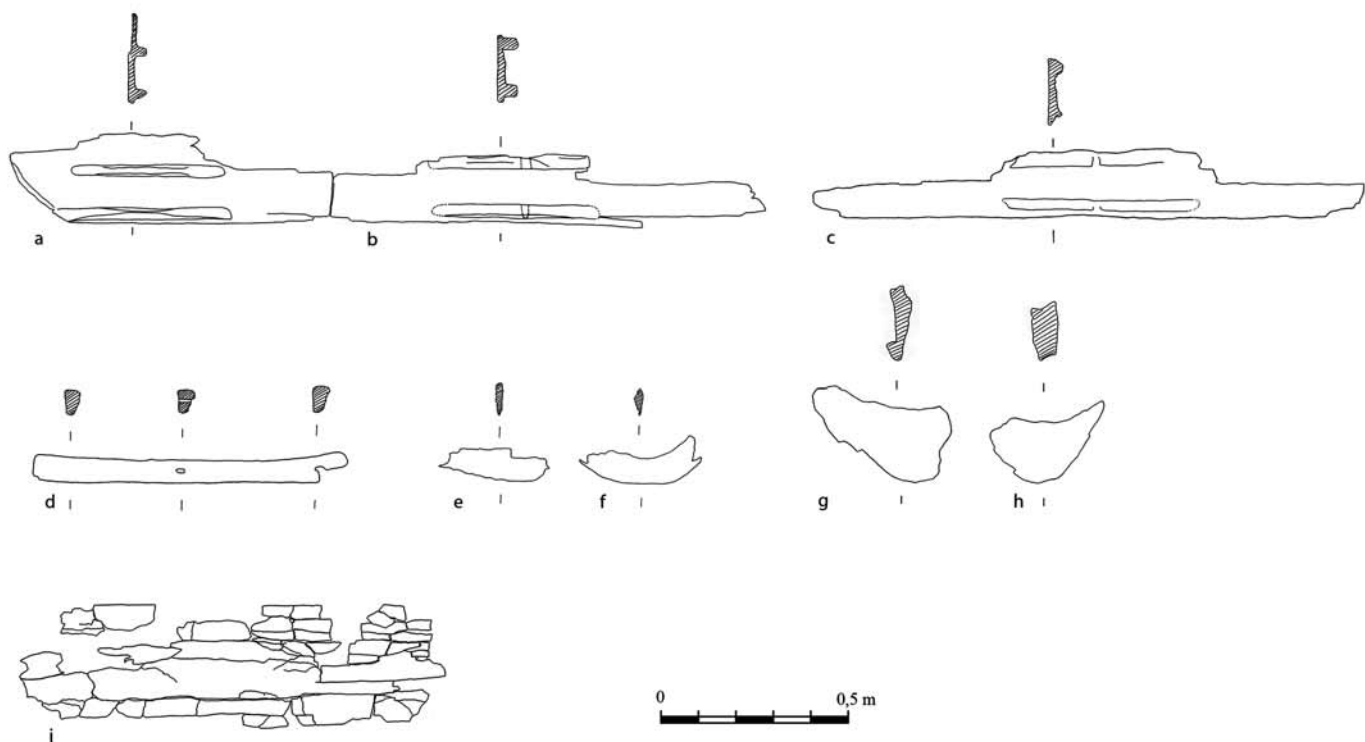
In September 2006, the Museum of Natural History and Archaeology conducted an archaeological and paleobotanical survey of the site. The aim of the excavation was primarily to determine whether more pieces of the boat existed, and also to look for timber made from young wood, which could be used for new and more precise <sup>14</sup>C dating. Another intention has been to investigate the deposit and other circumstances of the site where the boat parts were found in the 1920s and 1930s. The highly decayed remains of a boat part with faint traces of a cleat were discovered, and a piece that probably comes from the boat's caprail. The boat parts were not lying *in situ*, but had been moved by Ole Haugvik in 1931. The wood was probably so poorly preserved even at that stage that he had not lifted it out of the bog.

The bog where the boat parts were found lies approximately 10 to 12 m above sea level and 300 m from the present shoreline. The area is a part of the wide strandflat, which comprises the W. part of Sømna (Fig. 2). There is information about shoreline displacement from a locality about 20 km E. of Haugvik (Drange 2003). It is possible to use a shoreline displacement curve for this locality as a basis for calculating an equivalent curve for Haugvik by taking account of the isobase direction and gradient. The calculations show that the sea level was about 8 m higher around the year 0, about 11.5 m higher in about 500 B.C. and about 15 m higher in about 1000 B.C. This means that the Haugvik find, which is dated to approximately 1<sup>st</sup> or 2<sup>nd</sup> c. B.C., must have lain near the shoreline when it was deposited or abandoned.

The paleobotanical analyses of a peat column removed from the dig in September 2006 are not yet complete, but preliminary analyses of diatoms in the gravel immediately below the peat nevertheless indicate that the boat find may have lain in open fresh water during the period before the peat began to grow. A sample of the peat from the base of the column has been <sup>14</sup>C dated to the period 20 B.C. to A.D. 40 (2005 ± 25 BP; Tua-6271), and this dating must be regarded as a *terminus ante quem* for the dating of the boat find.

## DESCRIPTION OF THE BOAT TIMBERS

Today, two boat components are preserved (Figs 3-4) with carved cleats (a-b) and (c), a worked board with treenails (d), four very decayed pieces, which may originate from the interior reinforcement of the Haugvik boat (e-h), and finally the decayed boat part with faint traces of a cleat, found in 2006 (i).



**Fig. 3** Preserved boat timbers of the Haugvik find (Drawing M. Sylvester).

The boat part (a-b) of pine (*Pinus sylvestris*), which was sawn in two in 1941, is 205cm long and 23cm across the widest part (Fig. 4). The thickness varies between 1.5 and 1.8cm. The diagonal bevelling seen on the left side of the piece is not part of its original shape; it is due to decomposition. On the inside of the timber, four cleats have been carved, divided into two rows. The distance between the row of cleats is 98cm measured from hole to hole. The cleats are about 30cm long, with a width of about 3cm at the base, and a height of about 4cm in the centre. The distance between the two cleats in each row is 11.5 to 13cm. The holes in the cleats are triangular or trapezoid, with sides of about 2cm. The holes are not drilled, but carved or chiselled out with a sharp tool, and traces of this process are visible on the inside of the holes. The carving of the holes seems remarkably fresh, and they seem to have no traces of wear. Tool marks can be seen on each side of the piece.

Piece (c), which is in far worse condition than (a-b), is also made of pine (*Pinus sylvestris*). It is 149cm long and about 18cm across the widest part. The thickness is the same as (a-b), about 1.5 to 1.8cm. The remains of two cleats have been preserved.

The worked board (d) is also of pine (*Pinus sylvestris*), and a length of 84cm has been preserved. The piece is 6 to 7cm wide and about 5cm thick. Although the board is badly decayed, it is possible to see that the cross section is an elongated rectangle. One of the faces is flat, and the other slants inward with faint traces of profiling. More or less at the centre and at one end, there are two rectangular nail holes of about 1 by 1.9cm. The distance between the holes is 37cm, and the two treenails that sat in the holes have been preserved. One nail is of pine (*Pinus sylvestris*), and the other is of goat willow (*Salix caprea*) or aspen (*Populus tremula*). This piece was found lying parallel to the two boat parts (a-b) and (c), and in the museum's accession catalogue it was interpreted as part of the boat's caprail. Arne Emil Christensen uses



**Fig. 4** Haugvik. – Boat timber after being sawn in two pieces and before it was sent to the museum in Trondheim in 1941 (Photo P. E. Fredriksen).

the term *essinglist* (caprail) for this piece (Christensen 1988: 7). The interpretation seems reasonable, and the rail was probably nailed down with the flat side facing the inside or outside of the upper part of the boat's side.

The pieces (e-h) are so poorly preserved that it is difficult to draw any conclusions about their position and function in the boat. In the accession catalogue, it is speculated that two of the pieces originate from frames; these must be pieces (g) and (h). Christensen interprets these pieces as fragments of frames as well (Christensen 1988: 7).

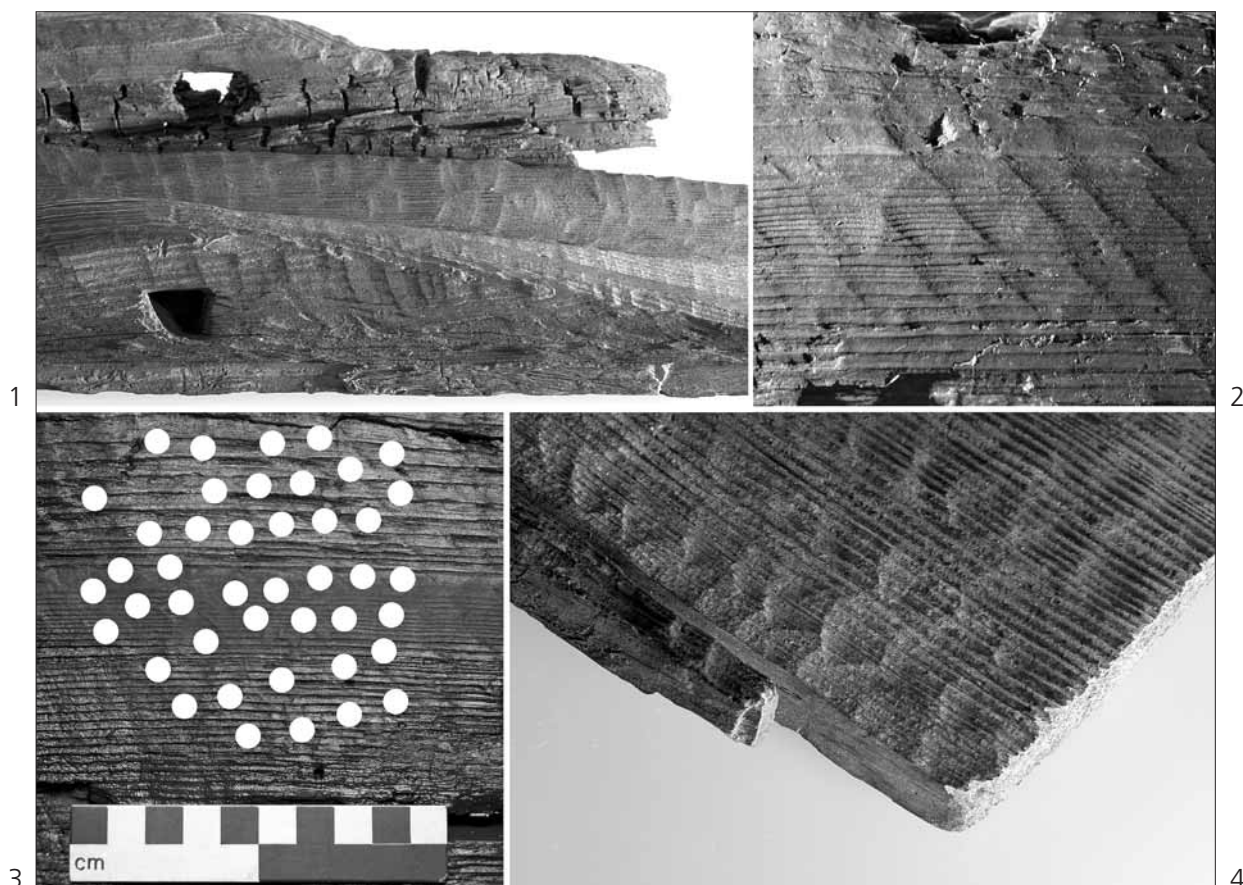
The boat part (i) of pine (*Pinus sylvestris*), which was found in September 2006, is in about 50 fragments. The fragments have been assembled as far as possible by the museum's conservators. The total length is 114cm and the piece is about 33cm wide across the widest part. The thickness varies between 1.5 and 2.0cm. On the inside, faint traces of a cleat are visible, and there are well preserved tool marks on both sides of the piece. A total of four fragments have an original faceted edge preserved, and it is likely that the whole piece comprises the fragmentary remains of the upper part of the boat's side.

## TOOL MARKS

On the best preserved parts found in 1931, and also on the piece found in 2006, clear and fine tool marks are visible (Fig. 5). On the boat part (a-b), there are tool marks on both the outside and the inside, but they are clearest on the inside. The area around the cleats has been hewn using a tool with a blade of about 1.5 to 1.7cm. The area between the two rows of cleats is finely carved using a tool with a blade of only 1 to 1.2cm, and one can clearly see how the surface has been worked in a technique, in which one carving mark erases the previous one. The result of this technique is an even and smooth surface.

On the piece (i) found in autumn 2006, the tool marks on both the inside and the outside are remarkably well preserved. Silicon casts were taken of both the sides before PEG treatment and freeze drying, and later a more thorough analysis will be undertaken to investigate the tool marks and the woodworking tech-





**Fig. 5** Haugvik. – **1** Traces left by a tool with a blade width of about 1.5 to 1.7 cm in the area between the cleats on (a). – **2** The outside of the boat part (i) with tool marks. – **3** 43 tool marks in an area of 10 by 10 cm on the outside of (i). – **4** Traces left by a tool with a blade width of about 1 to 1.2 cm on the inside of the boat part (a) (Photos M. Sylvester).

niques used on the Haugvik boat. Within future experimental archaeology, carving tests in pine with copies of Pre-Roman Iron Age tools will be carried out. At the current stage, the tool marks on the piece have been documented photographically, and it seems as though there may be traces of several phases in the boat building process, with the use of various types of tools and carving techniques. The number of tool marks within an area of 10 by 10 cm on the outside of the boat part is at least 43. The surface preparation of the outside of the boat thus required about 4500 »axe cuts« per square metre, which is an impressive number of work movements.

### DATING OF THE HAUGVIK BOAT

As early as 1941, it had been established that the boat find from Haugvik must be prehistoric, and the find was compared with the Bårset boat and the Kvalsund ship from the late Iron Age/Viking period (Pedersen 2002: 9; Myhre 1980: 30).

Detlev Ellmers (1972: 333) argues that the Haugvik find must be dated to the Roman period or the Migration period. He bases this dating on a comparison with the cleats on the Nydam ship and the Halsnøy boat.

Today, the Nydam ship has been dendochronologically dated to cal. A.D. 310 to 320 (Rieck 2003: 304), and from the Halsnøy boat there is a <sup>14</sup>C dating that places the find in the period cal. A.D. 380 to 540 (Myhre 1980: 30).

Arne Emil Christensen also dates the Haugvik boat to the Iron Age based on comparison with the Nydam find, and he places the find in the period from the late Roman period to the Migration period (Christensen 1988: 7). In a more recent work, he confirms this dating, but he emphasizes that the double cleats are so far the only detail that can provide an indication of the date (Christensen in press).

Like the Halsnøy boat, the Nydam ship has double cleats. Ellmers (1972: 333) argues that the double cleats are a dating element; more recent vessels have only one cleat, and the older Hjortspring boat has three or more. The number of cleats is thus the principal argument in the typological dating of the Haugvik boat to the Roman period or the Migration period by both Ellmers and Christensen.

In connection with the new studies of the Haugvik find, four samples have been selected for <sup>14</sup>C dating. The first sample was taken from piece (h), which was dated to the period 840 to 540 cal. B.C. (2585±85BP; T-17519). Due to the great age of the sample, collated with typological dating, as well as the possibility that the sample had been polluted by a tar-like substance, a second dating was approved for validation. The new sample was drilled out of the back of one cleat on piece (b). The result of the sample is a dating to the period 780 to 420 cal. B.C. (2490±110BP; T-17519 I). As well as the dating of the pieces found in the 1920s and 1930s, samples of the uncontaminated pieces found in 2006 have also been taken. A sample has been taken from one of the fragments with a faceted edge on boat part (i) with the result 390 to 230 cal. B.C. (2245±25BP; TUa-6379), and one sample has been taken from what is probably part of the caprail, with the result 195 to 110 cal. B.C. (2120±25BP; TUa-6378). Since the boat find cannot be older than the most recent dating, the conclusion must be that the Haugvik boat dates back to about the 1<sup>st</sup> or 2<sup>nd</sup> c. B.C. This dating harmonizes well with the paleobotanical results, where the earliest peat is now dated to 20 B.C. to A.D. 40. The most probable explanation for the dating of the boat parts found in the 1920s and 1930s to the late Bronze Age or early Pre-Roman Iron Age is the contamination with a tar-like substance applied by Ole Haugvik in 1931, but other explanations cannot be excluded.

## REMAINS OF A PLANK-BUILT BOAT?

Although not much of the Haugvik boat has been preserved, there is no doubt that the find with its early dating represents an important contribution to Scandinavian ship and boat archaeology; the boat find shows which technological standards existed and were applied in boat building during this period, from which we have so few finds. As mentioned, it was established early on that the Haugvik find was pre-historic, and the find was later interpreted as the remains of a plank-built boat with carved cleats, dating to the Roman Iron Age or the Migration period. The dating has now been pushed back to the Pre-Roman Iron Age, but is it still reasonable to interpret the find as the remains of a plank-built boat? No traces of joints have been preserved in the form of holes for sewing or nail holes along the edges. Naturally, this may simply be because the original edges were not preserved, but it could also indicate that they never existed – that the boat find is not the remains of a plank-built boat, but something else. Crumlin-Pedersen (pers. comm.) has argued that it is just as likely that the Haugvik find represents the remains of an expanded logboat. In his opinion, it is possible to document this nautical technology in Scandinavia back to at least the 1<sup>st</sup> c. A.D. (Crumlin-Pedersen 2006). However, the pattern of annual growth rings shows that this cannot be the case. The growth rings, for example on the piece (a) (Fig. 5, 4), are nearly perpendicular to the cross section, indicating that the pieces were cut radially or tangentially from the pine log. If the Haug-

vik find was the remains of an expanded logboat, the pattern of the annual growth rings would be different, and the conclusion is therefore that the find represents the remains of a plank-built boat.

Both the dating and the construction details on the Haugvik boat make the Hjortspring boat from about the middle of the 4<sup>th</sup> c. B.C. (Crumlin-Pedersen & Trakadas 2003) the closest parallel find. Evidence that plank-built boats of the Hjortspring type existed so far N. is provided by the find of a thwart at Hampräs in Västernorrland, Sweden (Jansson 1994; Holmqvist 1997); the thwart, which has been <sup>14</sup>C dated to the Pre-Roman Iron Age, is a clear parallel to the aft thwart in the Hjortspring boat.

Since so little of the Haugvik boat has been preserved, and several of the pieces are very poorly preserved, it is naturally not possible to draw detailed conclusions about the boat's full shape and size, but we can conclude that it was fully possible to build a wooden plank-built boat with a thin shell on the Norwegian coast in the Pre-Roman Iron Age. This may not come as a surprise, but the Haugvik boat is the first tangible archaeological evidence of this.

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