A 14th century boat from Vordingborg Castle, Denmark, and the use of boats in medieval military operations

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Abstract: In 2012, the remains of a well-preserved 14th century boat were found in the moat at Vordingborg Castle, Denmark. This paper briefly presents the boat-find. Subsequently, the written evidence for the use of small boats comparable to the Vordingborg Boat, in special military operations in Northern Europe – from the Viking-Age to the High Middle Ages – will be discussed. The paper concludes by comparing the Viking-Age and Medieval maritime special military operations with operations conducted in the Second World War (1939–1945).

Keywords: medieval boat-find, Vordingborg Castle, maritime warfare, special military operations, *Gesta Danorum*

In the second half of the 14th century, Vordingborg Castle was completely rebuilt and modernised. The outdated fortress underwent a makeover, building a state-of-the-art stronghold with an inner and outer castle, heavy walls and a water-filled moat. Besides being a military stronghold, the new castle housed the royal treasury and archives along with Valdemar IV's chancellery and personal chapel. Clearly, the king had chosen the castle as a place for long-term residence, and for demonstrating his ambition of restoring the Danish Kingdom to its former glory as a Northern European and Baltic superpower (Wille-Jørgensen 2014: 226–240).

A very big ambition to strive for, since the kingdom that Valdemar IV (ca. 1320–1375) had inherited was in a very bad condition. Under the reign of Valdemar IV's father, Christopher II (1276–1332), the Kingdom of Denmark became bankrupt, and Christopher II had pawned both land and castles to magnates from Germany and Holstein in order to survive. Valdemar IV saw it as his calling to restore Denmark's position as one of the most important powers in Northern Europe and especially in the Baltic Sea Region. Impressive diplomatic skills, determination, increased taxation, and use of military force led to a gradual restoration of the Danish Kingdom (Daly *et al.* 2021: 111–113).

Due to its geographic position, Vordingborg Castle was a key site in securing Valdemar IV's Baltic ambitions. It was a well-suited location for assembling war fleets before embarking on military operations in the Baltic Sea Region, and well-placed for summoning the king's advisors, the realm's magnates, and high-ranking men of the clergy. Furthermore, it functioned as a place for diplomatic meetings with foreign powers.

After Valdemar IV's reign, Vordingborg Castle served many different purposes, but soon lost its status as an important military and political site. In the second half of the 17th century, a royal mansion was built at the site, but the royal family never took up residence, and bit by bit, the buildings were demolished and the building materials used for other purposes. In the early 19th century, the remains of the castle tower – the so-called Goose Tower – were declared as a protected historic monument, one of the first buildings in Denmark to be given this designation. This was followed by extensive and continued archaeological excavation campaigns at the castle site and a protection of the remains at the castle site as a whole (Wille-Jørgensen 2014: 20–189).

Between 2005 and 2014, Vordingborg Castle underwent major restorations, turning it into a modern historical experience centre, The Danish Castle Centre. Besides building new exhibition facilities and a new museum shop and café, a large-scale restoration of the historical buildings and fortifications was conducted. The construction works led to renewed archaeological excavations and among the many interesting finds was a small clinker-built boat found in the castle's moat (Fig. 1).

Fig. 1 The excavation of the Vordingborg Boat was conducted in October-November 2012. Lars Meldgaard Sass Jensen headed the overall survey and excavation campaigns at Vordingborg Castle, and Christian Lemée and Thor Giversen conducted the excavation of the boat-find (photo: C. Lemée)

The well-preserved boat was excavated and documented in a campaign stretching from October to November 2012 (Lemée 2013). After completing the *in-situ* recording, all the components were salvaged and kept waterlogged, awaiting post-excavation recording. The outline and details of boat components were recorded using a FaroArm and the NURBS-based drawing programme Rhinoceros-3D (Daly *et al.* 2021: 97–98).

A detailed presentation of the boat-find and the dendrochronological and metallurgical investigations conducted has already been published in the International Journal of Nautical Archaeology (Daly *et al.* 2021). In this paper, I will therefore only briefly present the boat-find, focusing mainly on its reconstruction, and then discuss the use of boats, comparable to the Vordingborg Boat, in medieval military operations.

Analysing and reconstructing the boat-find

In 2018, the recording of the boat components was completed, and the process of analysing and reconstructing the boat began. The oak (*Quercus sp.)* keel is much worn and the scarf joining the keel and aft stem has been repaired with numerous repair patches – both from the inside and outside. The profound wear on the underside of the keel probably stems from frequent grounding and dragging the boat ashore, and since the wear is also found on the repair patch, placed on the outside, the use of the boat continued for quite some time after the boat were repaired. The aft stem is also made of oak, and has joining surfaces for four runs of strakes on each side. The fore stem was not preserved, but it is estimated that it was crafted in a similar fashion to the aft stem (Daly *et al.* 2021: 97–101).

All preserved planks are made from oak. Only one – the uppermost strake port side – is tangentially converted, the rest of the planks are converted by radial cleaving. No decorative mouldings have been found on the planks and the

length of the planks differs significantly, from 78 to 283 cm. The longitudinal scarfs between the planks are between 12 and 15 cm long, and terminate in diverse ways: some with a lip and others smoothly. The planks are riveted together using iron rivets and roves. The planking also shows numerous repairs and the Vordingborg Boat was clearly a much-worn and heavily repaired boat when it was finally deemed beyond repair, and abandoned. The boat had seven floor timbers made of naturally-curved oak. The floor timbers were attached to the planking with treenails and wedges (Daly *et al.* 2021: 101–104).

A 1:10 reconstruction model was built (Fig. 2). Piece by piece, the hull form and the dimensions of the original boat re-emerged, revealing a small boat: 5.45 m in length, 1.33 m wide, and with a distance of 45 cm from the upper keel surface to the top of the inwale. The boat was powered by oars only, and due to two preserved sets of thole-pins, the rowing stations and number of rowers could be established. Hence, seated at two rowing stations, two persons with an oar in each hand would have powered and steered the boat (Daly *et al.* 2021: 104–105).

The documentation of the boat-find also included dendrochronological analysis, leading to AD 1355– 1366 as the estimated felling date for the trees used for building the boat. The building and use of the boat are therefore suggested to have taken place during the second half of the 14th century, which corresponds with the major construction works and fortifications at Vordingborg Castle initiated by Valdemar IV (Daly *et al.* 2021: 105–107).

Valdemar IV's building activities, turning the Castle into one of the most important military and political sites in his realm, must have resulted in years where the site was buzzing at times with activities conducted by craftsmen, military personnel, and servants in the royal household. It is in relation to these activities that the building and use of the Vordingborg Boat should be interpreted.

Small boats, like the Vordingborg boat, were used for many purposes, and it is impossible to determine the exact usage of the specific boat found at Vordingborg. In fact, it is probably most likely that the boat was used for many different purposes, such as fishing, small-scale transport of people, goods and building materials, or as a tender transporting people, goods or messages between land and ship or between two ships. And lastly, due to the military context in which the boat was found, it could have been used in different military situations, a usage that I will investigate in greater detail in the following.

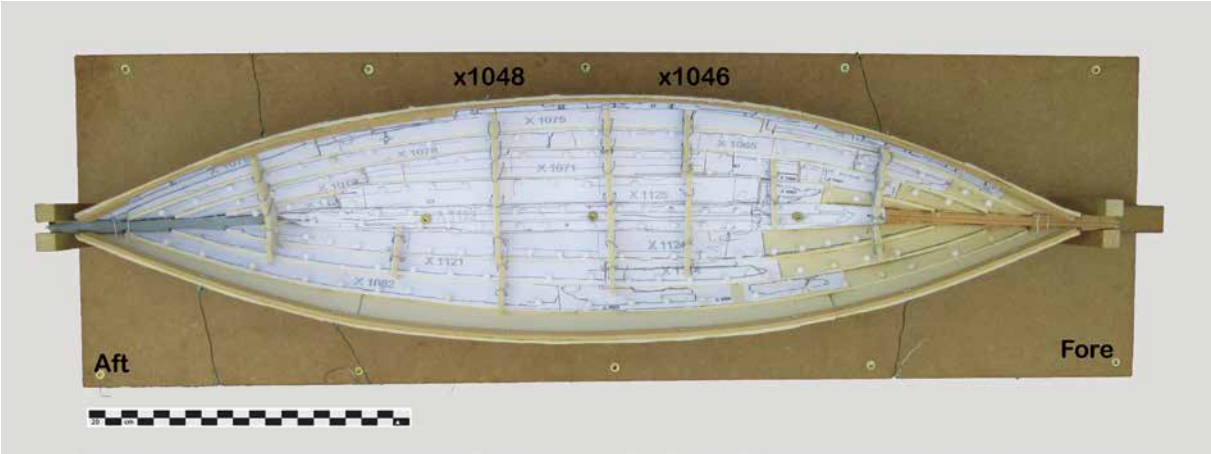

Fig. 2 The 1:10 reconstruction model crafted by Vibeke Bischoff. The boat's two rowing station were placed at frame x1046 and x1048 (photo: M. Ravn, Viking Ship Museum in Roskilde).

Boats in Medieval Military Operations

Small boats are rarely mentioned in the written sources of the late Viking Age and High Middle Ages. However, the archaeological record clearly shows that small boats – log boats, expanded boats and plank-built boats – were crafted and used in great numbers. Also, by scrutinising the early 13th century book *Gesta Danorum* (the history of the Danes), written by the clerk Saxo Grammaticus (ca. 1160– after 1208), I have been able to find several examples of small boats being used in military activities.

Boats were used as tenders supporting the communication between the commanders of large warships of the fleet, or for transferring supplies and personnel between warships or between land and ship. Small boats were also used in military operations conducted in waters where large ships could not be used, including places like the rivers of continental Europe and especially the Ukrainian and Russian river systems (Hjardar, Vike 2014: 350; Sorokin 2015). Finally, boats were used in special military operations conducted by small military units.

In *Gesta Danorum* book five, there is an account of a magnate and fleet commander, Erik, conducting a sabotage operation in a small boat. The text reads:

"He therefore climbed into a small boat and, rowing silently, carried himself close to the enemy's keels, where he gradually drilled with a gimlet through the timbers near the waterline and shortly made his return, scarcely lifting his oars above the surface. He conducted the operation so cautiously that none of the sentinels detected his arrival or departure." (Saxo Grammaticus [1998], 125).

It does seem strange that a fleet commander conducts a sabotage operation all by himself, and the story may have been slightly exaggerated, designed to show the courage and willpower of Erik. Perhaps Erik did in fact have a few warriors with him in the boat or maybe Erik simply gave the order for the operation?

In book fourteen, a mid-12th century medieval magnate and pirate, Vedeman, uses small boats for reconnaissance before initiating landing operations. This in regard to navigational obstacles, and to prevent an ambush by the enemy when landing his warriors:

"As often as they sailed close in to land, it was their habit to entrust an initial survey of the territory to their scouts, in case they should happen to encounter anything unknown or unforeseen there." (Saxo Grammaticus [2015], Book xiv.6.2., 1025).

Vedeman's warriors participated in defending the Danish coasts from Wendish pirate attacks and conducted small-scale raids in the homeland of the Wends. Vedeman also participated in large-scale amphibious military operations against the Wends in the second half of the 12th century, and in one of these operations, led by bishop and magnate Absalon (ca. 1128–1201), reconnaissance was conducted in small boats in order to find a suitable place for landing cavalry:

"On that same day, when the king had mooted a plan to invade the province of Julin once more, Absalon during the first watch of the night sought out suitable landing places; noticing a firmer-looking piece of ground, he fixed stakes there and, as markers, knotted together reeds by the bank, so that at dawn the next day by locating these identifying signs he was able to indicate the access point on the shore where they could easily set down men and their horses." (Saxo Grammaticus [2015], Book xiv.42.7., 1335)

A similar reconnaissance operation conducted in order to find a suitable place for landing ships and warriors is mentioned in Flateyjarbók in the Saga of Kong Olav Haraldsson (written ca. 1300). In this case, however, the special forces encounter four men guarding the landing site. The small unit, consisting of nine warriors, decide to engage the four guards and kill them before setting up markings at the spot best suited for landing the main forces of the fleet (Flatøybok [2015], Book 1, 75).

The military operations against the Wends in the second half of the 12th century, led by Absalon and the Danish king Valdemar I (1131–1182), were not the first conflicts between Danes and Wends. From the mid-10th century and onwards there was a constant struggle for supremacy over the south-west part of the Baltic Sea Region between Danish and Wendish magnates and kings. Some families were allies, others were in an everlasting state of conflict.

In *Gesta Danorum* book ten, there is an account of Wendish warriors conducting a special operation in a small boat resulting in the kidnapping of the Danish king Svend Tveskæg (ca. 963–1014):

"[…] rowing in a small skiff across the harbor, which was bristling with longships, they ventured right alongside the king's vessel, where the steersman announced that he had some confidential information which Sven really ought to know about. Believing that he was bringing a report of some matter discovered in the night, the king drew back the awning which covered the ship and, poking his head out, leaned forward towards the caller, expecting a friendly conversation. When the other saw that Sven was ripe for his treachery, he suddenly gripped his neck in a brutally savage clasp, dragged him from the ship and with the help of his assistants tossed him into their pirate boat. Then they sped away in flight with rapid strokes of their oars." (Saxo Grammaticus [2015], Book x.9.3, 709).

Fig. 3 Rowing tests conducted in 2015 on Roskilde Fjord with Gisle, one of the Viking Ship Museum's Gislinge Boat reconstructions. The Gislinge Boat is a boat-find from Zealand, Denmark dated to ca. 1130 (photo: W. Karrasch, Viking Ship Museum in Roskilde).

Svend Tveskæg's large war fleet campaigned in the Wendish's homeland, and the account shows that bold, brave and well-executed special operations could in fact delay or even stop a superior military force.

The examples above provide a glimpse of the Early Medieval special military operations, but the accounts provide little insight in terms of the design of the small boats used in the operations. Here, we must turn to the archaeological finds for guidance, boat-finds like the one from Vordingborg Castle (dated to 1355–1366), the three Gokstad boats from Norway (dated to ca. 895) and the boat found near Gislinge on Zealand, Denmark (dated to ca. 1130). Together, these finds show how small boats looked during the 9th–14th centuries. It was probably in vessels similar to these that the special military operations mentioned in *Gesta Danorum* were conducted (Fig. 3).

Since the Vordingborg boat has not been reconstructed in full-scale, no rowing tests have been conducted, and the boat's seaworthiness and speed are unknown. However, the smallest of the Gokstad boats (6.5 m long) has been reconstructed by the Viking Ship Museum in Roskilde nine times, and the Gislinge boat (7.7 m long) three times, while the largest Gokstad boat (9.7 m long) has been reconstructed twice by the Viking Ship Museum's boatbuilders. Norwegian and British researchers and boatbuilders have also reconstructed some of the Gokstad boats, and recently an article about the middle-sized Gokstad boat (ca. 8 m long) has been published (Planke *et al* 2022). Reconstructing the Gislinge boat has turned into a global phenomenon, due to an open source boatbuilding project conducted at the Viking Ship Museum in Roskilde, making the working drawings for the boat available for free download. Hundreds of people from many different countries have downloaded the drawings and many have crafted their own full-scale reconstruction or model of the boat (Sørensen *et al.* 2016).

In the following, I will summarize the data gained and insights learned from rowing and sailing with the Viking Ship Museum's reconstructions of the smallest and largest of the Gokstad Boats and the Gislinge Boat, exploring the boats' usability in regard to the special military operations specified in *Gesta Danorum*. However, it must be stressed that the data and insights are only estimates, since very few proper rowing tests and test-sailings with the reconstructions have been conducted.

Both of the Gokstad boats are lightly-built. They have a hull-form which makes them fast but also likely to capsize if not handled correctly. The largest Gokstad Boat has considerable rowing power – ten oars operated by five rowers – compared to the light hull, and the estimated top speeds for both oars and sail are significantly higher than for the smallest Gokstad Boat. The shallow draft of the boat – making it possible to navigate in shallow waters – and the potential for high speed suggests that this boat type was suitable for the reconnaissance operations mentioned in *Gesta Danorum*. The smallest Gokstad Boat is easy to row silently through the water, making this boat type suitable for the nightly sabotage operations mentioned in *Gesta Danorum*. The boat from Gislinge is a somewhat heavier built boat than the Gokstad Boats. It has greater stability and is less likely to capsize. The boat is especially suitable for transporting a small amount of cargo, but a vessel like the Gislinge Boat could also have been employed in the special military operations described in *Gesta Danorum* (Tab. 1).

Boat-find	Reconstruction	Top speed (est.)	Average speed (est.)	Comments
Largest Gokstad Boat, dated to ca. AD 895	*Eik Sande*	Oars: 5–6 knots Sail: 6–7 knots	Oars: 2–3 knots Sail: 3–5 knots	Lightly built and fast boat, with a considerable rowing power.
Smallest Gokstad Boat, dated to ca. AD 895	*Joanna*	Oars: 4–5 knots Sail: 5–6 knots	Oars: 2–3 knots Sail: 3–4 knots	Lightly built and fast boat. Easy to row silently through the water.
Gislinge boat, dated to ca. AD 1130	*Estrid*	Oars: 4–5 knots Sail: 5–6 knots	Oars: 2–3 knots Sail: 3–4 knots	A heavier built boat, with greater stability, than the Gokstad Boats. Primarily suited for small-scale transport of cargo.

Table 1 Data and insights gained from rowing and sailing with the Viking Ship Museum's reconstructions of the smallest and largest of the Gokstad Boats and the Gislinge Boat. The data was estimated in collaboration with the Viking Ship Museum's sailing manager and boatbuilder Tom Nicolajsen.

Comparing operations – past and present

Fig. 4 One of Denmark's memorials for Anders Lassen (1920-1945), a Danish soldier and commando, who participated in several of the operations conducted by SSRF and SBS during the Second World War. Lassen was awarded the Victory Cross and Military Cross (two bars) along with other awards and honors. Today, Lassen serves as a role model and inspiration for Denmark's special forces, the Frogmen Corps and the Huntsmen Corps (photo: M. Ravn, Viking Ship Museum in Roskilde).

The history of warfare and armed conflicts shows several examples of special military operations: operations by small, specially-trained military units conducting reconnaissance, sabotage, raids, and deceptions. The seaborne sabotage, kidnapping, and reconnaissance operations mentioned in *Gesta Danorum* are part of the earliest evidence we have of such special military operations in Scandinavia and Northern Europe. To conclude, I will compare the late Viking Age and early Medieval operations with seaborne operations conducted by the British special forces during the Second World War (1939–1945).

First coined Special Operations Executive, later Special Air Service, the British special forces were commissioned by Churchill to "set Europe ablaze" by conducting sabotage, reconnaissance, and guerrilla warfare against the Axis Powers. Within these organisations, more or less independent and self-governing maritime units operated, including units like the Small Scale Raiding Force (SSRF) and Special Boat Section/Special Boat Service/Special Boat Squadron (SBS) (Parker 2004).

While the SBS mainly operated in the Mediterranean Sea Region, the SSRF conducted raids in the English Channel region from the beginning of 1942 until the SSRF's operations ended in November 1942. Founded by Major Gus March-Phillips and Major Geoffrey Appleyard, the SSRF conducted amphibious raids at night on military installations and coast defenses on the Channel Islands and in Normandy. Raiding parties of

only 10–15 persons in small boats executed successful sabotage missions, captured several German soldiers, and confiscated code and signal books (Fig. 4) (Harder 2010: 211–273).

Even though the direct impact of the raids was minimal in regard to the Germans' ability to defend the Northern coats of occupied France, the attacks had a demoralizing effect on the German soldiers manning the remote radar stations and other military installations on the Channel Islands, and it seems reasonable to assume that the sabotage and kidnapping raids mentioned in *Gesta Danorum* had a similar demoralising effect on enemy forces (Harder 2010: 243–245).

It is interesting to note the similarities in regard to assignments throughout the history of special military operations. We find detailed written examples of reconnaissance, sabotage and raids conducted by special forces using small boats from the late part of the Viking Age and onwards. And even today, the special forces are mainly engaged in these tasks. The means – methods, skills and equipment – utilised today are different from those in the Viking Age and High Middle Ages, but there is still a link between the special forces of the past and the special forces of today when it comes to the objectives of the operations.

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