

SCANDINAVIAN WARSHIPS AND NAVAL POWER IN THE THIRTEENTH AND FOURTEENTH CENTURIES

Jan Bill

AS for many other parts of Europe, the thirteenth and fourteenth centuries were for Denmark a time characterised by internal and external wars. Thanks to its geography, and to the geography of the North Sea and Baltic area in general, seafaring always held an important position in the economics and politics of the country. Ships were needed to tie together the various parts of the country and when wars were fought, naval operations were mandatory. At the same time, Denmark during the eleventh to fourteenth centuries, thanks to its fertile lands and short distances to large north European urban centres, became much more influenced by continental social, economic and political developments than the likewise markedly maritime Scandinavian countries Norway and Sweden. It is therefore of interest to know whether the Danish situation, combining a Scandinavian maritime society with continentally coloured economic and social development, led to the early creation of structures that might foretell the formation of permanent navies like those known from the sixteenth century on.

In investigating this question it has to be admitted that neither the archaeological nor the literary sources provide ample information on maritime warfare and we have to extrapolate from scarce source material when we want to discuss high medieval naval organisation in Denmark. It is possible to attack at least three questions concerning the general issue because of the existence of relevant sources. These are: What were the ships like that were used for war in Scandinavian waters during the thirteenth and fourteenth centuries? What kind of military operations were they involved in? What kind of organisation was established in order to provide ships, crews and provisions for these naval forces?

The reason for asking what ships used for military purposes in high medieval Scandinavia looked like is that they may themselves reflect the organisation behind their existence. Specialised warships have a long history in Scandinavia before the twelfth century, their existence being archaeologically documented from at least the fourth century BC and the third, fourth, eighth, ninth, tenth and eleventh centuries AD.¹ The late medieval production and use of specialised

¹ The examples referred to are the Hjortspring boat, the Nydam boats, the larger of the Kvalsund boats, the Gokstad and Oseberg ships along with the Ladby, the Hedeby 1, the Roskilde 6 and the Skuldelev 2 and 5 vessels.

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1. View from north-west of the royal shipyard Engelborg on the island Slotø outside Nakskov, south-eastern Denmark. The ships were being built in the triangular area between the two walls stretching from the tower to the coast. Photo Hans Stiesdahl, National Museum of Denmark

warships is also well documented in Scandinavia, most markedly by the construction of a strongly fortified naval shipyard in 1509 by the Danish king Hans outside the town Nakskov in south-eastern Denmark (see Illustration 1).² The ships produced there and in the royal shipyard in Copenhagen were specialised men-of-war, equipped with cannon that could sink an enemy ship. Both the longships of the preceding centuries, and the heavily armed warships of the late medieval and early modern period represented specifically military investments closely associated with the power structures of their times. Is it possible to identify a similar situation in the High Middle Ages?

In order to discuss this question, we have the widest array of sources available, although they are far short of what we would like to have. The written sources from thirteenth and fourteenth-century Scandinavia do frequently mention ships, but generally without revealing much, if anything, about their

² I. Ericsson, 'Engelborg på Slotø – skibsværft, fæstning og lensmandssæde fra kong Hans' tid', *Hikuin*, 14 (1988), 261–74.

construction and characteristics. Names for ship-types are frequently reported, especially *navis/schep*, *skute*, *cogge*, *snekke* and, more seldom, *holc*. This type of information, however, is problematic, as we have no guarantee that medieval writers were consistent in their use of the names of ship types. From around 1400, there are examples in north European sources that the same ship alternately is called a cog and a hulk.³ Nor can we be sure that we are able to identify the meaning of these terms today. In this context the problem is especially evident for the term *cogge* as this frequently appears in military contexts. There are, however, indications that cogs, as archaeologically defined today, were not as dominant in north European seafaring in the thirteenth and fourteenth centuries as previously thought. For this reason, it is necessary to distinguish between the literary and the archaeological cogs, a discussion that we will return to later. What is clear from the written sources is that fleets very often consisted of ships of different types and sizes. The examples mostly come from the fourteenth century, probably because the number of written sources from this century is much larger than from earlier years. A Danish fleet of 1316 is said to have included forty-five cogs and ‘many other ships’, and in 1360, monasteries and towns were required to provide ‘cogs and fast ships’ for the king.⁴ The dualism in the last source is especially interesting as it may reflect that ship types other than cogs were not only available but also necessary.

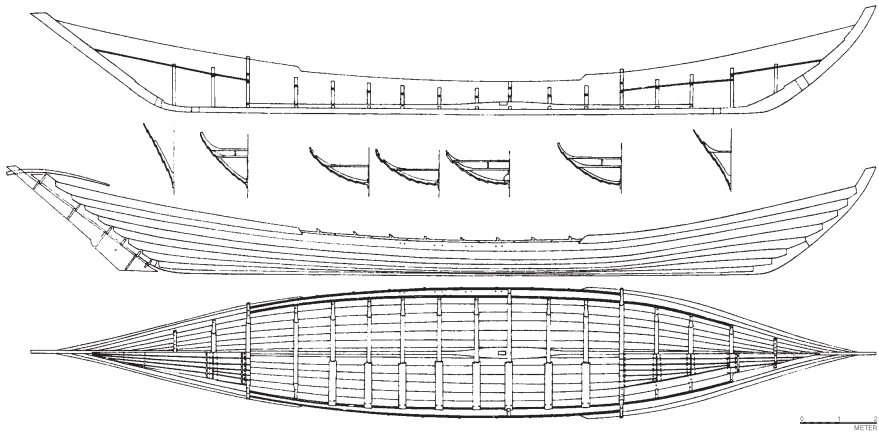
Another type of information which can be extracted from the historical sources is about the size of vessels. In a military context, this was normally given as the number of armed men the ships carried, more seldom in the dead-weight tonnage, or cargo capacity. Most frequent, though, is the use of vague terms like ‘large’ and ‘small’.

Iconographic sources can be more specific and can convey fairly detailed information on both ship construction and ship use. Detailed ship pictures from the High Middle Ages, however, are fairly rare in Scandinavia, as has been demonstrated in a recent study of Scandinavian ship depictions from 800 to 1400. While not claiming to be complete, the study was able to register only fifty-three images from the Gothic period (1275–1400), including a high percentage of very simple renderings providing little detailed information. The situation is not much different for the Romanesque period (1080–1275), although the number of images was substantially larger, namely one hundred and ninety-three. This is due to the even higher proportion of graffiti and the poor state of preservation for many of the ship pictures of this period.⁵ Furthermore, the artists producing images of ships may have had other concerns than

³ S. Flidner, ‘“Kogge” und “Holk”’, in K. Löbe et al., *Die Bremer Hanse-kogge. Ein Schlüssel zur Schiffahrtsgeschichte. Fund. Konservierung. Forschung*. Monographien der Wittheit zu Bremen 8 (Bremer, 1969), 67 n. 152.

⁴ N. Lund, *Lid, leding og landeværn* (Roskilde, 1996), 284. *Annales Danici Medii Aevi*, ed. Ellen Jørgensen (Selskabet for Udgivelse af Kilder til dansk Historie, 1920), 187.

⁵ M. Felbo, ‘Skibsbilleder i Skandinavien 800–1400. Kontekst og funktion, indhold og kildeværdi’ (unpublished MA thesis, University of Copenhagen, 1999), 10.



2. The Helgeandsholmen V ship find, as reconstructed from the archaeological remains. The vessel is a rare example of a combined rowing and sailing vessel from the fourteenth century. It may be suggested that it was used for military purposes in the narrow waterways leading through the archipelago to Stockholm. After Varenius 1989

accurately depicting contemporary vessels. Illustrations may show old or exotic ship types because they more efficiently conveyed the message of the image, or simply because artists relied on model books or convention.⁶

Finally, archaeological sources present us with hard-core data on ship construction, and here is a field in which Scandinavia – especially southern Scandinavia – can present a quite rich and detailed record. This does not solve the problem of weak sources, however, as the archaeological finds may not be easily identified as being military or non-military vessels, or tell us much about their use and ownership.

A common problem is that very often only small portions of a hull, and then often only the bottom, is preserved. Of a total of some fifty finds from thirteenth and fourteenth-century Scandinavia, only two to my eyes offer some evidence that they may have been used for military purposes. This does not mean, of course, that the rest were not. We just do not have any indication that they were. By chance it appears that the two archaeological finds to some extent represent what appear to be the two main categories of warships of their time, the big ship and the galley, and certainly the two contemporary, dominant ship-building traditions that can be attested in the archaeological material, the clinker-built or all-clinker-built tradition and the cog tradition.

⁶ See *ibid.*, 26–7, C. Villain-Gandossi, 'Illustrations of Ships: Iconography and Interpretation', in *Cogs, Caravels and Galleons. The Sailing Ship 1000–1650*, ed. R. W. Unger (London, 1994), 169–74, and R. W. Unger, *The Art of Medieval Technology. Images of Noah the Shipbuilder* (New Brunswick, 1991), 9–14 for discussion.

The first example is the unusually well preserved, c.19 m long, all-clinker-built Boat V from Helgeandsholmen in Stockholm (see Illustration 2).⁷ The construction of the vessel is dated to between 1316 and 1350 and it is made for propulsion with oars and sail. It is very slim and lightly built, and is obviously constructed for personnel transport. Due to its restricted cargo capacity, it is unlikely to have had an economic function, like fishing or transportation of bulk goods. With its eight pairs of oars and available space for standing personnel on slightly raised decks in the stem and stern, it may have been efficient for guard and control purposes in the narrow waters of the Stockholm archipelago and in Lake Mälaren. It is certainly not to be regarded as a true galley or longship, and it may also simply have been the transport vessel for a magnate or an official of some kind. In its construction it shows some traditional features – for example the use of short, flush scarfs in the plank joints of the underwater hull – that had fallen out of use in cargo carriers by the beginning of the fourteenth century.⁸ Thus it is not only in its propulsion and function, but also in its construction details that it is related to the longships known from ninth, tenth and eleventh century finds from Denmark, Norway and Germany.

The second example is a cog, built around 1390, and recently excavated outside Skanör.⁹ The vessel is in terms of construction quite similar to the Bremen cog from 1380, which serves as a model for the archaeological cog.¹⁰ Defining features are the combination of flush-laid bottom and clinker-built sides, the straight stem and stern posts connected to the keel plank with large, knee-shaped timbers, and the luting of moss, kept in place with laths and characteristic staples called ‘sintels’ in the literature. The Skanör cog was somewhat larger than the medium-sized Bremen cog, but the only reason for claiming it to have been in military use is the fact that fourteen stone cannon balls, of two different sizes, were found in the wreck. Only preliminary drawings have so far been published of the ship, but they do provide a clear impression of the poor and unfortunately all too common state of preservation.

One of the few Scandinavian ship depictions relevant to the discussion of high medieval maritime warfare is the beautiful but heavily restored mural found in the village church of Skamstrup in central Sjælland, Denmark (see Illustration 3). The motif, found in one of the vaults and dated to c.1380, shows the legend of a sailing contest between the Norwegian saint, Olav, and his heathen brother. St Olav, defending the honour of the Christian faith, was sailing a large, slow vessel, called *The Ox*, while his brother was using his speedy vessel

⁷ Björn Varenius, *Båterna från Helgeandsholmen* (Stockholm, 1989), 38–45, 88–9.

⁸ J. Bill, ‘Getting into Business – Reflections of a Market Economy in Medieval Scandinavian Shipbuilding’, in *Shipspace. Essays for Ole Crumlin-Pedersen on the Occasion of his 60th Anniversary, February 24th 1995*, ed. O. Olsen, J. Skamby Madsen, and F. Rieck (Roskilde, 1995), 195–202.

⁹ A. Bunse and B. M. Jakobsen, ‘Skanörskoggen. Forundersökning. Rapport från år 1992 och 1993’, *Marinarkeologisk tidskrift*, 1995:1, 13–15.

¹⁰ W. Lahn, *Die Kogge von Bremen, Band 1. Bauteile und Bauablauf* (Bremerhaven/Hamburg, 1992).

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3. Late 14th century mural from the parish church of Skamstrup, Denmark. The scene illustrates the legend of St Olav, who with the help of God, wins a sailing contest against a much faster ship in his large, slow vessel.
Photo: Werner Karrasch, the Viking Ship Museum in Roskilde

named *The Snake*. Miraculously St Olav won the contest, and, according to legend, his ship was sailing so fast that an arrow fired forward fell behind the ship.

The artist of the Skamstrup mural very deliberately stressed the differences between *The Ox* and *The Snake*. He is showing us the former as a huge ship with castles fore and aft and even with a rudimentary top castle – perhaps only a wicker basket – while the latter appears as a smaller vessel with no castles, and crowded with soldiers. Although the story the artist wanted to tell was an old one, he obviously chose to illustrate it with contemporary ship types. The two ships in the depiction could very well represent the two main warships of the thirteenth century, the small but fast and the large but slow – or, to speak in the language of a 1360 chronicle, the *liburna* and the cog.

Although none of the remaining ship finds can be identified as fighting ships, and thus give us no direct information on the character of warships, they still help us to map the general technical development of shipbuilding in the period. An analysis carried out on all the known ship finds from the area of medieval Denmark, and dated independently between 1000 and 1600, demonstrates the presence of two significant periods of change in ship construction in this

area.¹¹ One of these was during the thirteenth century, where many of the building techniques so characteristic of the ships of the Viking age gave way to new methods that were being commonly used all over northern Europe. The change is so dramatic that it is justified to speak about the end of a specifically Nordic shipbuilding tradition, and although the archaeological material is somewhat biased towards smaller vessels, it is unthinkable that this change was not also significant for the construction of ships used in war.

The archaeological finds show that by the middle of the twelfth century, the first cog-like vessels had appeared in Scandinavian waters.¹² Thirteenth-century cog finds are fairly few, but during the fourteenth century cogs form a significant proportion of the biggest vessels found, and they must have played an important role, in peace as well as war, at that time. On the basis of historical evidence, some researchers have strongly emphasised the military role of the cog, but the archaeological finds, apart from documenting the presence of the cogs, also give reason to be critical of this attitude.¹³

The putative military qualities of the cog are, especially, its large dimensions and high sides together with its sturdy construction. Comparison is often made with the longships of Scandinavian type, which are known from Viking-age finds in Norway and Denmark. Such a comparison, however, is anachronistic, because although literary sources indicate that vessels called cogs existed at the same time as the Viking ships, the known archaeological examples of cogs are all much later. Furthermore, the oldest example of the archaeological cog – the Kollerup cog from the middle of the twelfth century – does not have the qualities that should have made it superior to ships of Scandinavian type. Although very massively built, it is rather narrow, not especially high-sided, and certainly not impressive when compared to the largest, all-clinker-built ships of the twelfth century (see Illustration 4).¹⁴ Remains of such a ship, known as the ‘Big Ship from Bryggen’ in the literature, was found as reused timbers in foundations in the Norwegian town of Bergen.¹⁵ A reconstruction of the vessel has demonstrated that it had a cargo capacity of at least 120 tons, which can be compared to the 35 tons of the Kollerup cog.¹⁶ Recent dendrochronological analyses of the

¹¹ J. Bill, ‘Small Scale Seafaring in Danish Waters AD 1000–1600’ (unpublished dissertation, University of Copenhagen, 1997).

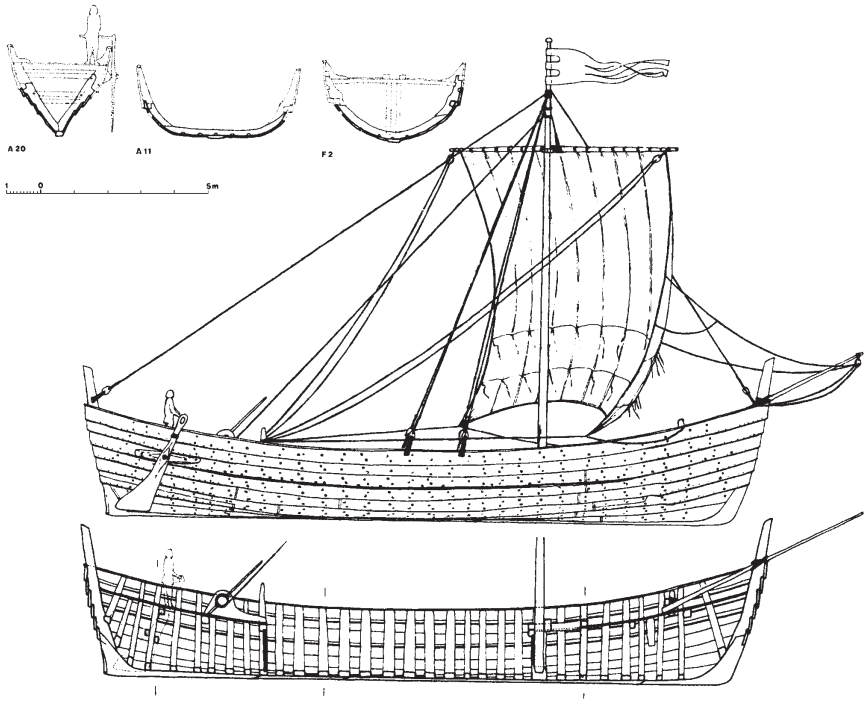
¹² A new dendrochronological dating of the Kollerup cog places it in the mid-twelfth century, with a provenance in southern Jutland – possibly in the north Frisian area. See A. Daly, E. H. Eriksen and A. Englert, ‘New Dendro Dates for Danish Medieval Ships from Eltang and Kollerup’, *Maritime Archaeology Newsletter from Roskilde, Denmark*, 14 (2001), 61.

¹³ See e.g. T. J. Runyan, ‘The Cog as Warship’, in *Cogs, Caravels and Galleons*, 47–58, and P. Heinsius, *Das Schiff der Hansischen Frühzeit* (Weimar, 1956).

¹⁴ P. Kohrtz Andersen, *Kollerupkoggen* (Thisted, 1983).

¹⁵ A. E. Christensen, ‘Boat Finds from Bryggen’, in *The Archaeological Excavations at Bryggen, ‘The German Wharf’, in Bergen 1955–68*, vol. I, ed. A. E. Herteig (Bergen, 1985), 47–278.

¹⁶ A. E. Christensen, ‘Hanseatic and Nordic Ships in Medieval Trade. Were the Cogs Better Vessels?’, in *Medieval Ships and the Birth of Technological Societies. Volume I: Northern Europe*, ed. C. Villain-Gandossi, S. Busuttill, and P. Adam (Malta, 1989), 18–19. For the cargo



4. The Kollerup cog, wrecked on the northwest coast of Jutland, as reconstructed by Kohrtz Andersen (1983). No indications of upper structures were found, and indeed the hull shape, with its restricted stability, does not invite the construction of extensive upper works. That does not exclude, though, other 12th century cogs from having castles. Drawing by Per Kohrtz Andersen

timbers show that it was constructed locally as early as in 1187, and that some protruding beams, found elsewhere in the excavation, belonged to this ship. This makes it the earliest known example of this technique.¹⁷ Comparing the Bergen ship with tonnage data preserved in the written sources it was clearly in the absolute top-size class in north European shipbuilding of the time,¹⁸ and demonstrates beyond doubt that, although cogs may have been built much larger than the examples which have been accidentally preserved for us to investigate, they

capacity of the Kollerup cog, see e.g. O. Crumlin-Pedersen, 'Ships as Indicators of Trade in Northern Europe 600–1200', in *Maritime Topography and the Medieval Town*, ed. J. Bill and B. Clausen (Copenhagen, 1999), 9–18.

¹⁷ T. S. Bartholin and A. Englert, 'Dendro-dating of the "Big Ship" from Bergen', *Maritime Archaeology Newsletter from Roskilde, Denmark*, 13 (2000), 48.

¹⁸ J. Bill, 'The Cargo Vessels', in *Cogs, Cargoes, and Commerce: Maritime Bulk Trade in Northern Europe, 1150 to 1400*, ed. L. Berggren, A. Landen and N. Hybel (Toronto, 2002), 92–112.

can hardly have had an advantage in terms of size potential in the twelfth century. Clinker-built ships could be made just as large. The recent finding and excavation of two large fourteenth-century ships of a hitherto completely unknown type on the Mecklenburg coast provide further evidence for this. The ships, which are both clinker-built from very massive pine planks, measured around 8 metres in width and 25–30 metres in length.¹⁹ The two finds are a reminder of how limited our knowledge of the shipbuilding of this period still is.

However, cogs are frequently mentioned as being used for military purposes in the written sources, for example in England, where Runyan has extrapolated that they constituted 57 per cent of about 1300 ships that were arrested for military service during the years 1337–60.²⁰ However, cog finds are extremely rare in England, where so far only remains of one possible cog have been found, in spite of the quite large number of high-medieval ship finds that have been excavated, for example in London.²¹

The same situation appears to exist in the Scandinavian countries. In Denmark, as already mentioned, there are several cog finds, but they present a very different find distribution from that of clinker-built vessels. While the latter – or remains of them – can be found virtually everywhere, including as reused timbers in wells and other constructions, the cogs are found almost solely as wrecks. Also the evidence for cog-building within the Danish area, with the exception of the twelfth-century finds probably from north Frisian areas, is very meagre. Three of four fourteenth-century wrecks of cogs found within the borders of medieval Denmark have been dendrochronologically analysed and they have all proved to be built from German and Polish oak, indicating that local production of this vessel type in Denmark was probably not common at that time.²² Also remarkable is that the extensive excavations in the harbour of Bergen, which was a very important port and trade station for Lübeck, have

¹⁹ See F. Lüth and T. Förster, 'Schiff, Wrack, "baltische Kogge"', *Archäologie in Deutschland* (1999, no. 4), 8–13, for a preliminary description of the Gellen wreck. A second wreck was excavated at the island of Poel in the Bay of Wismar in 1999.

²⁰ Runyan, 'The Cog as Warship', 49; T. J. Runyan, 'Ships and Fleets in Anglo-French Warfare, 1337–1360', *The American Neptune*, 46 (1986), 92–3. In fact, the type of only 325 of 1291 arrested ships could be identified, but of these no less than 187 were described as 'cogs'. The second most common description was as 'ships', of which there were 46.

²¹ D. Goodburn, 'Reused Medieval Ship Planks from Westminster, England, Possibly Derived from a Vessel Built in the Cog Style', *International Journal of Nautical Archaeology*, 26 (1997), 26–38; P. Marsden, *Ships of the Port of London, Twelfth to Seventeenth Centuries AD* (London, 1996).

²² The Vejby cog was built in 1372 in Gdansk/Elbląg (N. Bonde and J. S. Jensen, 'The Dating of a Hanseatic Cog-Find in Denmark. What Coins and Tree Rings Can Reveal in Maritime Archaeology', in *Shipsshape. Essays for Ole-Crumlin-Pedersen*, 112–14), the Lille Kregme cog c.1362 in Pommerania (F. Rieck, 'Ll. Kregme koggen. Et middelalderligt skibsforlis i Roskilde Fjord', in *Søfart, politik, identitet – tilegnet Ole Feldbæk*, ed. H. Jeppesen (Helsingør, 1996), 23), and the Skanör cog c.1390 in northern Germany ('hatte' (Anders Bunse), 'Rapport fra Skanörskoggen', *Marinerat*, 14: 9, 1997).

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5. The ship depictions from the parish churches of Himmelev (left) and Skråbelev (right), in Denmark. The depictions shows that in the thirteenth century the longship still had a strong position in the both formal and informal art. Photos: National Museum of Denmark

produced only one piece of planking possibly originating from a cog, although hundreds of ship fragments were found.²³

These observations may lead us to ask whether the name ‘cog’, as used in the written sources, does not have a somewhat wider meaning than the archaeologically defined cog. As mentioned before, during the thirteenth century, Scandinavian shipbuilding and cog-building practices amalgamated to a large extent, and by the fourteenth century, it was virtually only the choice of building material that distinguished the two vessel types from each other to the casual observer. Broader, sawn planks were preferred for cogs, while narrower, split planks were used for the clinker-built vessels. Other differences, such as in the bottom construction, the choice of luting method and material, and the choice of nails, were not visible from the outside. Thus it may have been other, more visible characteristics, for example the use of castles, an especially boxy hull shape or just a mere size criterion, that in some areas and periods made for the use of the term cog. In the present state of research, it is important to avoid rigidly translating the cog of the documentary sources into a vessel belonging to the building tradition that we archaeologically characterise as the cog. The cogs mentioned

²³ Christensen, ‘The Boat Finds from Bryggen’, 203. Christensen believes the plank, the deposition of which is dated from context to the early fifteenth century, originates from an early carvel-built ship.

over the next pages are all from the literary sources and should thus not be confused with the archaeological cogs, of which we have far fewer examples.

The development of military vessels in Scandinavia may well have followed the same pattern as in other parts of northern Europe, although based on local ship types. The growth in size has already been touched upon but it may be worth mentioning that Norwegian contemporary sagas, written between the late twelfth and the mid-thirteenth century, attest to a strong competition among Norwegian nobles in building the largest warships. Those appear still to have been equipped with oars, but it is also clear that speed was being sacrificed for the advantages of height and of carrying more men on board. They were fighting platforms, not troop-carriers like the earlier longships.²⁴ A Norwegian *Speculum Regale*, which was written down between 1240 and 1263, mentions that warships had castles in the stem and stern, as well as in the mast top.²⁵ This is about half a century later than the Dunwich seal, the oldest known north European representation of the same feature, but this may well be a coincidence. It is noticeable that castles do not occur on the few thirteenth-century ship depictions that we have in Scandinavia, but they are, as demonstrated by the examples from Skråbelev and Himmelev, not very detailed ship representations (see Illustration 5).

The waters that the ships were intended to be used in could have set limits on their size. According to the historian Saxo Grammaticus, writing around 1200, the Norwegian king in about 1160 gave a large warship, 'built with the greatest of art in the fashion of a dragon', to the Danish king. The ship, however, was so big that it could not be used in the shallow coastal waters and rivers south of the Baltic, where the Danish king was operating.²⁶ Fast, manoeuvrable troop transports were of course always of importance for naval operations in a time when war at sea still was very much hand-to-hand combat, and therefore there still existed a need for rowed vessels, although the large ships were becoming floating fighting platforms. This is probably the background for the 1360 report of towns and monasteries in Denmark that provided ships for the king. The source states that the king demanded cogs (*coggonas*), as well as ships called *liburnae*.²⁷ The word *liburna* is an ancient Latin term describing a Roman type of low, fast warship, and it is supposed to mean longship or fast ship in its medieval, north European usage.

The word 'cog' is being used to describe some of the vessels in military use in Denmark from 1249 on, and in 1304 it is this term the Danish king used when

²⁴ R. Malmros, 'Leding og skjaldekvaed. Det elvte århundredes nordiske krigsflåder, deres teknologi og organisation og deres placering i samfundet belyst ud fra den samtidige fyrstedigtning', *Aarbøger for Nordisk Oldkyndighed og Historie*, 1985 (1986), 95–6.

²⁵ *Konungs skuggsiá*, ed. Ludvig Holm-Olsen (Oslo, 1945), 60, 1.4–32.

²⁶ Saxo Grammaticus *Danmarks Krønike*, ed. F. Winkel Horn (Copenhagen, 1898/1975), 169–74.

²⁷ *Annales Danici Medii Ævi*, 187.

he wanted a new type of warship at his disposal other than those the *leding* organisation traditionally provided him with. The king, Erik Menved (1286–1319), in general was eager to modernise his military apparatus, and certainly large, high warships with castles must have operated in Danish waters on several occasions already before his time. Among the things preserved in the written sources are, for example, records of the Hansards' attack on Copenhagen in 1249 and, in cooperation with the Danes, their successful blockade of Norway in 1284. The close interaction with the Hanseatic towns, partly as allies, partly as enemies, during the thirteenth and fourteenth centuries must have ensured a balance of power, and therefore probably also a degree of similarity in naval organisation on both sides of the south-west Baltic during that time. The types of military operations in which ships and the fleets were involved were just as varied as those of land forces. Ships could be used for terrorising waters and coasts or for scouting, they could carry invasion armies or blockade individual towns or entire countries, and they could be used in large fleets for fierce sea battles or in smaller groups to protect convoys. However, it seems that the role of the individual ship can be described in two simple categories: as a means for transporting land troops in amphibious operations or as a platform for fighting other ships. Although ships certainly were used for attacks on coastal towns and castles, they were little suited for direct engagement against soldiers protected by any substantial fortification. Considering that with their tarred wood, ropes and sails ships are quite inflammable and considering that, due to stability requirements, ships could not be built very high nor carry heavy catapults, they were easily outmatched by land-based defences. An example is the failed invasion of Norway by the Danish king Waldemar I in 1168, where the defenders, according to Saxo, successfully blocked a strategically important strait by means of catapults.²⁸ The ships' role in such operations was therefore first and foremost to function as troop transports and to cut off the enemy from the seaward side.

The ships used for transportation and landing of forces in southern Scandinavia and the Baltic had to change during the High Middle Ages as a result of changes in how battles were fought on land. In the eleventh and twelfth centuries, mainly rather lightly equipped infantry were used, and in the protected, shallow waters of southern Scandinavia, such forces could be transported very efficiently in combined rowing and sailing vessels with shallow draft and built for high speed. The Roskilde 6 longship, dated by dendrochronology to 1025 or later, is an outstanding example of such a vessel. A preliminary reconstruction indicates that it measured 36 metres in length, with a beam of only 3.5 metres and a draught of about 1 metre, and that it carried about 100 men, 78 of whom could row the vessel.²⁹ A slightly older, but more thoroughly researched

²⁸ *Saxo Grammaticus*, 214–15.

²⁹ J. Bill, M. Gøthche, and H. M. Myrthøj, 'Nordeuropas største skibsfund. Skibskirkegård under museumsoen i Roskilde', *Nationalmuseets arbejdsmark*, 1998, 140–3.

example is the late-tenth-century longship from Hedeby, which measured c.30 metres and transported around 60 soldiers.³⁰ In spite of a relatively high number of ship finds from the twelfth and thirteenth centuries, finds of this type are lacking. Numerous passages in Saxo Grammaticus' *Gesta Danorum* demonstrate, however, that it was still in use in Baltic waters during the reign of Waldemar I the Great (1157–82).³¹

However, the increased use of heavy cavalry from the twelfth century on must have led to an increasing portion of the vessels used for amphibious operations being sturdy cargo vessels capable of transporting the large, specially trained war-horses and heavy equipment. Urbanisation and the construction of coastal fortresses to protect land and cities had a similar effect, as they made it necessary to bring along siege machines and provisions that would make it possible to besiege the enemy for weeks or months. The invasion fleet Lübeck sent in 1362, heading for Copenhagen and Helsingborg, is a good example of such an enterprise. The fleet consisted of 27 cogs, 25 smaller ships and 2740 armed men. With them they brought three *Werke*, a type of over-sized crossbow, and five catapults. After plundering Copenhagen, the fleet continued to Helsingborg, where it was supposed to meet allies from Sweden and Norway. These, however, never turned up, and the whole expedition was brought to a devastating end for the Hansards when the Danish king, Waldemar IV Atterdag, succeeded in capturing twelve of their cogs with a sudden fleet attack while the Hansards were besieging Helsingborg castle. It is reported that the seized cogs were full of provisions and weapons for the besieging army.³²

Fighting at sea was basically infantry fighting from movable platforms, and major advantages were those of height and of manoeuvrability. As these two are contradictory, it is not strange that both galley-type vessels that could be rowed and massive vessels that could be built very high were favoured. Ability to fight at sea was the tool for one of the most powerful naval campaigns that could be launched: the isolating of whole countries or areas. It was to be a common naval practice from the seventeenth century on. In the High Middle Ages this concept, which was so much more realistic in the narrow, south Scandinavian waters than in the Channel, was probably realised in Scandinavia much earlier than elsewhere in Europe. The most impressive example is the fleet blockade of Norway that the Hanseatic towns and the Danish king established in 1284. Norway had at this time become dependent on grain imports, and the blockade was therefore a very powerful weapon. Perhaps the embargo established at the same time by the Hanseatic towns was even more efficient. Within a year the Norwegians had to negotiate a humiliating peace with the Hanseatic towns. Unfortunately the treaty did not include Denmark, and in the following years Norwegian ships,

³⁰ O. Crumlin-Pedersen, *Viking-Age Ships and Shipbuilding in Hedeby/Haithabu and Schleswig* (Schleswig and Roskilde, 1997).

³¹ Saxo Grammaticus, 150–286.

³² K. Fritze and G. Krause, *Seekriege der Hanse* (Berlin, 1989), 118–23; J. Barfod, *Flådens fødsel* (Copenhagen, 1990), 14–15.

assisted by Danish outlaws who had settled at a small, Danish island, Hjelme, in reality took control of Danish waters. Another example of a blockade comes from the civil wars in Denmark, where in 1326 the king was caught with his army on the island of Falster which was being guarded by a fleet collected by his enemies.

As to organisation, the sources from the thirteenth and fourteenth centuries mention several different ways of raising and provisioning fleets. The *leding*, which probably formed the backbone of naval organisation in the thirteenth and the first half of the fourteenth century, is described in an appendix to the Law of Skåne (c.1200) and, in some more detail, in the Law of Jutland from 1241.³³ The organisation described in these texts appears to be a coastguard, manned and provisioned by the farmers on the basis of land taxation. Each *hafnæ* (the unit in this system, which was to present and provision one man) could only be called upon for service for sixteen weeks every fourth year, but in the years in between a fee had to be paid.³⁴ Ships for the coastguard were normally, according to the Law of Jutland, paid for by the *skiben* (a group of *hafnæ*, responsible for equipping and manning one ship) but built by the *styresman* who was also in charge of the ship. If, however, the farmers of the *skiben* found that the *styresman*'s building was going to be too expensive, they could build the ship themselves. In the Law of Skåne it is not the *skiben* but the king who is responsible for providing ships for the *leding*, and, for using his own ship, the king could pay the *styresman*.

There are few sources to inform us how this system functioned in practice when it came to the building, manning and provisioning of ships. Possibly a royal confirmation of rights to the monastery of St Peter in Næstved, dating to 1249, does give some indication. The text, which is only preserved in summary, states that no one should embarrass the peasants and bailiffs of the monastery by 'the construction of cogs or moats or felling of timbers for donjons'.³⁵ This may indicate a direct peasant involvement in the construction of vessels for military use, but could also simply reflect the intensive consumption of timber that such constructions required. However, the source seems to document that cogs or cog-like vessels were used as warships in the middle of the thirteenth century.

Half a century later, in 1304, King Erik Menved attempted to introduce the use of cogs in a *leding* system. Together with his most prominent supporters, he issued a law that is today only known in its Jutland edition. On the basis of a new land assessment, the farmers would be organised in groups, each of which would be taxed 10,000 marks. Every group would in this way finance the buying of a cog of fifty lasts and its manning and equipping for an expedition of sixteen weeks duration every year.

It is uncertain both to what extent this *coggeleding* replaced or simply

³³ The most comprehensive discussion of the *leding* in the thirteenth and fourteenth centuries are found in N. Lund, *Lid, leding og landeværn* (Roskilde, 1996).

³⁴ See Lund, chapter 1 in this volume.

³⁵ *Diplomatarium Danicum*, 1:7, 326.

supplemented the existing *leding* organisation, and to what extent the reform succeeded.³⁶ The *coggeleding* is not mentioned in other sources, and it is unlikely that it survived the collapse of the Danish kingdom in 1332–40. The fact that it was possible for Erik Menved to send a fleet of forty-five cogs and many other ships against Stralsund in 1316 indicates at least a temporary success for the *coggeleding* and demonstrates perhaps also that it was thought of as an offensive, rather than a defensive weapon.³⁷

Along with the coastal defence system of the *leding*, the maritime power presented by church and lay magnates undoubtedly played a very important if not dominant role. In 1208, the powerful Hvide family, for example, was able to transport their own army to western Sweden to help a member of the family in his efforts to take the Swedish throne.³⁸ From the middle of the fourteenth century onwards, however, the towns came much more into focus as economic bases for naval activities. In 1358 King Valdemar IV Atterdag ordered bread, drinks, herrings, peas and beans to be sent from the towns as provisions for his ships, and on an expedition into Slien he forced the people there to give him, among other things, ships. Although not specifically stated, this must refer to the town of Slesvig rather than to the farmers living along the fiord. The already mentioned report from the Sealand Chronicle from 1360 perhaps in one source combines the last example of the *leding* principle being applied, in this case to the monasteries, and pointing to the towns as the major future lay provider of maritime power.

Towards the end of the fourteenth century, towns and the nobility were the dominant sources for ships and men for naval actions. In 1384, Queen Margaret sent nine ships to fight pirates in Danish waters and of these seven were put at her disposal by the country's seneschal, Henning Podebusk, and three other noblemen. Those ships were, by the way, quite small as they carried only ten to twelve armed men each.³⁹

In 1396, Queen Margaret decreed that those holding royal offices and townsmen should present ships for the defence of the kingdom, and that they should equip them with men and provisions when necessary.⁴⁰ The decree, which also regulated a number of other matters, is known from versions written for Jutland and for Fyn but probably covered the entire country and in this sense is general. It is important to note, however, that the section of the text dealing with defence makes several references to the 'Vitalie Brothers'. Those were privateers who originally had been invited to the Baltic in 1391 by Mecklenburg nobles and the Hanseatic towns of Ribnitz, Golwitz, Rostock and Wismar to fight Queen Margaret and prevent her taking power in Sweden. It is thus clear

³⁶ Lund, *Lid, leding og landeværn*, 282–4.

³⁷ See the Sealand Chronicle 1316 in *Annales Danici Medii Aevi*.

³⁸ Lund, *Lid, leding og landeværn*, 241.

³⁹ *Hanserecesse: Die Recesse und andere Akten der Hansetage*, series 1, 1256–1430, ed. K. Koppmann, vols I–VIII (Leipzig, 1870–97), II, no. 276, 4; IV, no. 154, 4 and 185, 8.

⁴⁰ *Aarsberetninger fra Det Kongelige Geheimearchiv*, 5, ed. C. F. Wegener (Copenhagen, 1852–83), 55–6.

that the 1396 decree certainly represented a way of creating a maritime force to be used against a very real and present threat, but it is not certain that it actually was thought to be a way of creating a new, permanent organisation.

The Vitalie Brothers soon became a threat to the seafaring of the other Hanseatic towns, and as early as 1394 Lübeck and Stralsund had to send out armed ships to protect their trade against them.⁴¹ In 1398 the problems were great enough to make the Danish queen and the Hanseatic towns cooperate. Margaret promised to send three large ships with two hundred armed men on board and guns, the first written evidence of shipboard use of guns in Denmark. Lübeck promised a large cog with fifty men, Hamburg a small ship with fifteen men, other Hanseatic towns a large ship with seventy men, Prussia a large ship with seventy-five men and Livonia a small ship with thirty-five men.⁴² The source gives a good impression of the size of vessels used for fighting at sea at the end of the fourteenth century. The term cog was no longer used to distinguish the largest class of ships. The pattern shown by the scarce and mixed source material illustrates that maritime warfare in southern Scandinavia seemingly was organised and financed in a variety of ways during the thirteenth and fourteenth centuries. The kings' and the loyal magnates' own contributions undoubtedly always played a major role by providing the largest and best-manned vessels, perhaps apart from vessels and troops that were simply hired for specific campaigns. There are no signs of these big ships being specialised warships, and they could therefore be used for other purposes in times of peace. As warships, however, they had their limitations due to draught and restricted manoeuvrability, and it was important to supplement them with other types of vessels. Galleys were essential because they could operate in shallow waters and were less dependent on wind direction, but they were of little use apart from their military function. It appears that this type of vessel was provided by the *leding*, a coastal defence system where farmers paid for, manned, and equipped galleys under the direction of local officials. This organisation apparently had its heyday in the twelfth and thirteenth centuries. Its earliest history is very vague but the system appears to have declined slowly towards the end of that period. However, in 1360 monasteries and towns could still be required to supply galleys.

The initiative of Erik Menved in 1304 to make the farmers finance an expedition force of cogs is important as it was seemingly not based on their serving on the vessels themselves as in the traditional *leding*, but instead on their paying for the hire of professional soldiers for the ships. Because of the continued need for galleys, the new organisation may have supplemented rather than replaced the traditional *leding* and perhaps its greatest importance was that it made the king less dependent on the magnates for providing offensive maritime power.

Erik Menved's initiative pointed to the future in the sense that it provided a more professional navy, but its economic basis did not last. The crisis and

⁴¹ *Hanserecesse*, vol. III, no. 411; vol. IV, no. 192.

⁴² *Ibid.*, vol. IV, no. 482.

changes in the structure of the agricultural sector in the course of the fourteenth century and the pawning of land deprived the naval forces of resources. The towns, instead, turned out to be of more and more importance. This is consistent with what can be seen in other parts of northern Europe, for example in England, and it was a logical development since the towns not only represented a financial resource but they also had ships and seamen and could provide them even if they did not have money. The first time this new approach appeared in full scale was in the decree of Queen Margaret of 1396, but the presentation and context provided does not allow us to decide whether it was thought of as a permanent reorganisation of Denmark's naval affairs or simply an action made to deal with what was considered a temporary threat. Thinking of the size of medieval Danish towns, which were numerous but very small, it is also clear that they would not be the providers of any larger ships. Their role would rather mirror that of the earlier *leding*, although their vessels would be of merchant rather than military types.

It appears that in the thirteenth and fourteenth centuries in Denmark there were few signs of the development of a permanent navy. The most significant change was the disappearance of the *leding* as a coastal defence system, which was partly a result of the changing character of naval warfare, partly of societal changes. The attempt by Erik Menved to create a cog fleet on a tax basis in the long run proved abortive and Queen Margaret was just as dependent on her magnates as any monarch before her. The dissolution of the *leding*, however, may be seen as a step towards professionalisation, in the sense that the resources thereby released could be invested in the ships of the nobility and their hired soldiers. It set the stage for the emergence of state navies in Scandinavia in the sixteenth century.

