

Kevin Nichols. LOGISTICS OF INVASION: THE ANGLO SAXON MOVEMENTS TO POST-ROMAN BRITAIN. (Under the direction of Dr. Michael Enright) Department of History, March 2002.

The purpose of this thesis is to examine the military and military-related economic capabilities of Anglo-Saxons during the migration era (5-6th centuries). This period was a time of crisis for the Roman Empire as "barbarian" peoples crossed into the empire's territory on all fronts. In Britain, Picts, Scots, Saxons, and others were raiding settlements. The Saxon raids would lead to the formation of Anglo-Saxon England. This thesis is a study of these events. Many unresolved issues surround the Anglo-Saxon movements to Britain. Was it a small migration, or a large tribal resettling? The types of ships used are also of great importance. Did they carry masts and sail, or were they simply oared vessels? In order to study these questions, it is necessary to look at all available data. Unfortunately, key aspects of ship characteristics are not known, and therefore sections of this thesis must remain theoretical. Many historical writers have recorded information that will be of use in this study including: *De Excidio et Conquestu Britanniae* by Gildas and Bede's *Historia Ecclesiastica Gentis Anglorum*. *Germania* by Tacitus and the *Beowulf* poem provide valuable insights into Germanic society. Through the works of these writers and others, as well as through archaeological data, this thesis will explore Germanic society prior to and during Rome's decline. The capabilities, materials, and time involved to build the longship type vessels used in the movement to Britain are all relevant topics. Finally, an overview of Britain its culture and people is necessary in an effort to discern why events transpired in the way that they did. In essence, this thesis looks at three simple questions: (1) Who invaded Britain in the fifth

and sixth centuries? (2) What probable vessels were used to cross the North Sea from Europe to Britain? (3) Why would a group of people (large or small) undertake the invasion of Britain? This thesis concludes that the warband or *comitatus* was the key group making the journey to Britain. Moreover, the invasion was not a massive tribal migration, and the use of oared or sailed vessels was not the key factor of the invasion. The time required to build these ships and the level of organization required to coordinate a tribal operation of this sort did not then exist. Also, similar levels of organization comparable to the warband were in place in Britain as well as in Germanic areas. In the event, however, the Saxons replaced the British as the ruling aristocracy.

LOGISTICS OF INVASION:
THE ANGLO-SAXON MIGRATION TO POST-ROMAN BRITAIN.

A Thesis
Presented to
The Faculty of the Department of History
East Carolina University

In Partial Fulfillment
Of the Requirements for the Degree
Master of the Arts in History

by
Kevin H. Nichols
February 2002

Acknowledgments

Many people assisted me in the writing of this thesis, and while they might never know to what degree they have influenced my academic pursuits, and me, I can only offer my thanks. First and foremost to Dr. Michael Enright for enthusiastically supporting me and my ideals when I was anything but sure about them. Dr. Timothy Runyan provided much needed suggestions and criticisms, which made me continuously revise my work and choose my words carefully. Dr Anthony Papalas and Dr. McKay Sundwall both provided direction and support on vital aspects of the thesis, making it more comprehensive than it might have been without their guidance. Outside of my committee I would like to thank some of the other students in the Maritime Studies Program, particularly Scott Whitesides and Eric Bruning, for the gallons of coffee and hours of pleasant discussion over a myriad of topics, making the stay at East Carolina University a more enjoyable one.

My family deserves my deepest thanks. To my parents, who always gave me the freedom to follow my interests, no matter how strange they might have seemed to them, and finally to my wife Colleen, who unselfishly placed her goals on hold, and offered suggestions and insights on this thesis, that I may not have considered without her input. Her support allowed me to finish this work and without it, I would most likely still be fighting a losing battle of wits against my scanner and computer. This thesis is dedicated to her.

Table of Contents

Introduction.....	1
Chapter 1. Germanic Society.....	4
Chapter 2. Anglo-Saxon Use of Sails: A Literary Critique.....	38
Chapter 3. Anglo-Saxon Ships: An Archaeological Perspective.....	53
Chapter 4. Motives For Invasion.....	105
Chapter 5. Conclusion.....	130
Bibliography.....	134

List of Figures

1.	Spear Points from the Migration Period.....	30
2.	Shield Bosses and Axe Heads from the Migration Period.....	31
3.	Scandinavian Rock Carvings Depicting Boats.....	55
4.	Frame of Skinboat.....	56
5.	Reconstruction of a Logboat Depicting Toolmarks.....	59
6.	Lacing Details on the Ferriby Boat.....	62
7.	Reconstruction of the Ferriby Boat.....	63
8.	The Karlby Ship Carving.....	65
9.	Clinker Construction.....	67
10.	Transverse View of the Nydam Ship.....	70
11.	Longitudinal View of the Nydam Ship.....	71
12.	Segment of the Sutton Hoo Hull Construction.....	75
13.	Hull Form of the Graveney Boat Depicting Composite Strake Use.....	76
14.	Excavated Remains of the Graveney Boat.....	79
15.	The Roskilde Fjord Ships.....	81
16.	Internal View of Vessel Cargo Hold.....	83
17.	Evolution of Longship Design.....	86
18.	Warship Lines and Hull Forms.....	87
19.	Excavated Tools for Ship Construction.....	89
20.	Nail Making Tool.....	90

21.	Diagram of Planning Long Strakes.....	92
22.	Sectioning Wood for Ship Construction.....	93
23.	Process of Nail Production.....	95
24.	Bayeux Tapestry Depicting Ship Construction.....	97
25.	Effects of Wind on Sails.....	101
26.	Keel Types Related to Stability.....	104
27.	Northern Europe Land and Water Trade Routes.....	107
28.	Locations of British Tyrants as mentioned by Gildas.....	118

Introduction.

Over the course of Britain's often-violent history, successful waves of invaders have seized control of the island. As a result of these military incursions, a great deal of information concerning British history from 400-600 A.D. has been lost to modern scholars. The texts that do exist often contain contradictory information, leaving historians with the task of trying to ascertain early writers' credibility and predilection. Archaeology is a great assistance in helping to establish when peoples of identifiable cultural differences occupied the same areas of land. Underwater archaeologists and maritime historians have provided data regarding ship construction, vessel types and capabilities, shedding much needed light on early medieval maritime activities. Nonetheless, the two centuries known as the "Post Roman" or "Anglo-Saxon Migration Period" still contain many unresolved issues.

The present study examines some of the key issues involved in the Anglo-Saxon migrations to (post-Roman) Britain. Many of the issues pertaining to these movements are still hotly debated topics. Unresolved aspects of the migration include: mast and sail use by Anglo-Saxons, and the scale of the *Adventus Saxonum*. Was it, for example, the result of a massive tribal movement, or a smaller, militarized invasion? This thesis will examine and offer possible solutions to these questions.

Chapter one is an analysis of Germanic society, its social structure, economy, and military. Within this chieftain-level society¹, issues such as control of resources for the

¹ Richley H. Crapo, *Cultural Anthropology, Understanding Ourselves & Others, 2nd Edition* (Guilford, Connecticut: Dushkin Publishing Group, 1990), 358.

purposes of ship construction will also be examined. The question: why risk resources, including lives and ships by taking to the sea are important for enabling an understanding of Germanic warrior society. Clearly economic issues (loot) played a key role in Saxon maritime ventures.

Chapters two and three explore the nature of Germanic shipping, focusing on the Anglo-Saxons. The Saxons were proficient, confident and knowledgeable seamen; numerous sources record acts of Saxon piracy and raids. Chapter two examines literary records in an effort to explore the nature of Saxon vessels and most importantly, the issue of sail use by Germans. Some scholars maintain that the migration of Anglo-Saxons was quite large, on a tribal level.² In order to bring the entire tribe from the continent to Britain (estimates by Michael Jones place such numbers at no more than 100,000, and probably far less)³, sails must have been used.⁴ Hence this topic is crucial. This theory also assumes that women, children, the old and infirm, could not work oars.

Chapter three is an appraisal of the available archaeological data. Several shipwrecks have been found and documented that are relevant to the migration period. Vessels such as the Nydam and Sutton Hoo ships are vital evidence for this time period. Experimental archaeology and the information it has yielded will also be examined in this study. A discussion of factors such as the time involved in ship construction will be

² Ibid., 370.

³ For an overview of barbarian tribal population including numbers of men of a fighting age see: Michael E. Jones, *The End of Roman Britain* (Ithaca: Cornell University Press, 1996), 266-268.

⁴ John Haywood, *Dark Age Naval Power, A Reassessment of Frankish and Anglo-Saxon Seafaring Activity*, rev. ed. (Norfolk, England: Anglo-Saxon Books, 1999), 108. Haywood has argued that in order to make the crossing to Britain in sufficient numbers that "settlers came in sailing ships with small professional crews who could make several return journeys in a season."

noted. Analysis of the capabilities of these representation vessels will provide insights regarding the abilities of Anglo-Saxon seafarers to make extended passages.

As a final aspect of the migration, this thesis will explore the conditions in Britain at the arrival of the Anglo-Saxons. The political situation on the island following the withdrawal of the Romans in c. 410 is of key importance in examining military matters. Of equal importance is the nature of British society and military organization. An examination of this topic will discern the ability of the British to resist or accept assimilation into a new dominant culture.

Chapter I: Germanic Society

Two predominant theories have emerged to explain the size and numbers of people involved in the Germanic movement to Britain. One theory is that it was a massive movement that involved whole tribes of people who embarked on ships for Britain and, upon arrival, overwhelmed the native inhabitants by sheer numbers and force of arms. The natives were then either annihilated, pushed to the fringes of the island, or perhaps, although hard to imagine, driven off Britain entirely. The other theory suggests, on the contrary, that it was smaller more militarized units of fighters alone that arrived in Britain and that they were subsequently able to dominate the island. While the seizure of land certainly involved conflict, the majority of the native British population was left essentially unaffected, except for a change in overlords.¹

In order to examine the plausibility of the two theories, it is necessary to examine salient aspects of Germanic society during the migration period. Political control and tribal hierarchy must be explored, as well as the economic structures needed to facilitate naval operations on a large scale. Central to the examination is the *comitatus* that appears to have comprised the military wing in movements carried out by Germanic peoples during this time. It formed a fundamental military and socioeconomic unit. As it may be better to progress from the general to the more specific, this chapter will commence with

¹ Various scholars have been proponents or detractors of the above-mentioned theories. For example, Sir Frank M. Stenton has called the invasion of Britain "a series of national migrations," see: Frank M. Stenton, *Anglo-Saxon England* (Oxford: Clarendon Press, 1943), 274. This theory, from a logistical standpoint requires sail use on the part of the Anglo-Saxons according to John Haywood, *Dark Age Naval Power, A Reassessment of Frankish and Anglo-Saxon Seafaring Activity* who states that in order to explain the settlement patterns, large numbers of people must have been involved, which would require sails, in order to transport the necessary people. For an opposing view, which involves a limited number of Germanic invaders see: Michael E. Jones, *The End of Roman Britain* and N.J. Higham *The English Conquest: Gildas and Britain in the Fifth Century*.

an examination of the larger tribal structure and progress towards a consideration of warband phenomenon.

There is a paucity of information concerning Germanic tribes during the migration period. Roman writers such as Tacitus and others do provide some detail concerning the nature of Germanic society. Tacitus states that the German landscape is:

satis ferax, frugiferarum arborum impatiens, pecorum fecunda, sed plerumque improcera. ne armentis quidem suus honor aut Gloria frontis: numero gaudent, eaeque solae et gratissimae opes sunt.

fertile in cereals, but unkindly to fruit-bearing trees; it is rich in flocks and herds, but for the most part they are undersized. Even the cattle lack natural beauty and majestic brows. The pride of the people is rather in the number of their beasts, which constitute the only wealth they welcome.²

The statement indicates that at the time Tacitus wrote (98 A.D.) some Germans were sedentary and either practiced farming or pastoralism. This observation does not suggest a market economy with any surplus. The Germanic economy was quite simple and lacked the intensive agricultural practices that could make full use of its territory. On the other hand, new lands were always desirable, which led to continual warfare. When there was a good harvest, it generally meant that starvation and disease could be kept to a minimum in the coming winter. Surplus was not always useful when it existed, because reserves could not be laid in. Germanic peoples did not possess large granaries (*horrea*) comparable to ones that Roman cities utilized.³

² Tacitus, *Germania* 5:2, translated by M. Hutton (Cambridge: Harvard University Press, 1970).

³ Herwig Wolfram, *The Roman Empire and Its Germanic Peoples* (Berkeley: University of California Press, 1990), 7.

Regarding tribal rank structure Tacitus observed that:

Reges ex nobilitate, duces ex virtute sumunt. nec regibus infinita aut libera potestas, et duces exemplo potius quam imperio, si prompti, si sonspicui, si ante aciem agant, admiratione praesunt.

They take their kings on the ground of birth, their generals on the basis of courage: the authority of their kings is not unlimited or arbitrary; their generals control the people by example rather than command, and by means of admiration which attends upon energy and a conspicuous place in the front line.⁴

This observation describes both a royal (*reges*) and a military (*duces*) command structure. However, it is possible that Tacitus was thinking of two forms of kingship that supplemented one another. Kings were possibly rulers of several warbands and may not have descended from a long line of royalty. Individual power and means to coerce others may have been limited. Tacitus states that where small matters are concerned "chiefs consult," while for larger issues "the community; but with this limitation, that even the subjects, the decision of which rests with the people, are first handled by the chiefs."⁵ When the word community is used, one should not think of large groups or densely populated areas. Tacitus states that the Germans "do not permit their houses to touch one another and that they live separated and scattered."⁶ He adds that "they have not learned to use quarry-stone or tiles: the timber they use is unshaped, and stops short of all

⁴ Tacitus, *Germania* 7.1, translated by M. Hutton (Cambridge: Harvard University Press, 1970), 141.

⁵ *Germania*, 11: 1-2.

⁶ *Germania*, 16: 1.

ornament.”⁷ Based on these plausible observations, it is clear that the diffused community is most likely the result of the poor farming land in the region. The utilitarian nature of the dwellings should come as no surprise, given the simple nature of the knowledge and tools then available in the north.

When commenting on the Germanic economy, Tacitus notes that the gods have denied them gold and silver, presumably referring to mining, but observes that silver vases are given as gifts among them. Roman contact and influence created a market for gold and silver items within the tribes nearest to the Roman borders. These tribes recognized and carried Roman manufactured coins for currency, while tribes further from the empire’s influences practiced simple barter without coinage. Germanic use of iron appears to be rare, according to Tacitus. Few Germans used swords; most carried short spears with narrow and short iron heads. Helmets and armor were extremely scarce. All warriors use shields.⁸ The value of metal items, particularly weapons, is noted by Tacitus who observes that weapons are commonly exchanged as part of a dowry that a husband gives to his future wife’s family.⁹

When citing the *Germania* as a historical source, there are several factors concerning its reliability that must be acknowledged. The central question is this: to what extent can the information provided by Tacitus be considered historically accurate? Generations of historians have taken his book as a reliable account, but many others have

⁷ *Germania*, 16: 3.

⁸ *Germania*, 6: 1-3.

⁹ *Germania*, 18: 1-3.

debated the point. In the early twentieth century Karl Trudinger and Eduard Norden established that the *Germania* was part of a long literary tradition. This means that the text has classical patterns and conventions that are adhered to, regardless of how one views the question of historical accuracy. Such must be taken into consideration when examining the text. Recently, studies have emphasized the literary nature of the *Germania*, and suggested that many of its observations are a rhetorical invention. As such its value as a historical source should be reduced.¹⁰

In determining the reliability of Tacitus' descriptions, it is important to note that the reader cannot be sure about conditions at the time of his writing and that ethnographic writing tends to be descriptive, as opposed to narrative. That means that his accounts of Germanic peoples may be inaccurate and misrepresent them. Neither, perhaps, are the latest issues or developments included. Furthermore, Tacitus is writing for a Roman audience and ethnographic terms and stereotypes of foreign cultures are going to be present. While writing under these conditions, and working with various data sources, Tacitus understandably sometimes produced errors. Nonetheless, the *Germania* continues to remain an important historical source of information. Later authors of Germanic history such as Bede and Gregory of Tours wrote about Germanic peoples also and their works show that cultural changes had occurred by the seventh and eighth centuries. But some continuity did exist and that lends credibility to Tacitus. To use the

¹⁰ J.B. Rives, *Tacitus Agricola, Germania, Dialogus* (Oxford: Oxford University Press, 1999), 56-57.

Germania as a historical source is practicable, therefore, as long as one is willing to accept some degree of uncertainty.¹¹

The economy of Germanic society drastically changed between the time Tacitus was writing and the migration period (5-6th centuries). By the second century A.D., land and water routes had been established to facilitate more extensive trade. This trade was profitable enough to warrant the establishment of trading ports from modern Flanders to the mouths of the Ems and Elbe rivers.¹² Imports consisted of weapons, bronze artifacts, glass, and pottery, wine, foodstuffs and probably cloth, all of which came from the Empire. Exports consisted of amber, furs, animals, and slaves.¹³ This growing dependence on Roman trade goods may have been one of the main causes of increased social stratification within Germanic society. Social stratification is readily observable in the archaeological record, much of it seeming to have occurred after the first century. According to Tacitus: "In burial there is no ostentation."¹⁴ He observes nonetheless that some men are buried with their armor. He also records the use of pyres and tombs at the same time, suggesting that these practices must have been reserved for an elite few. Literary and archaeological sources (grave studies) indicate that armor was extremely rare among the Germans.¹⁵

¹¹ Ibid., 63-66.

¹² Archibald R. Lewis, *The Northern Seas, Shipping and Commerce in Northern Europe A.D. 300-1100* (Princeton: Princeton University Press, 1958), 9.

¹³ Ibid., 37.

¹⁴ Tacitus, *Germania* 27: 1, translated by M. Hutton (Cambridge: Harvard University Press, 1970).

¹⁵ Several literary sources conclude that armor was rare among the Germans, see: Tacitus, *Germania* 6: 2-3, trans. M. Hutton. *Ammianus Marcellinus, The Later Roman Empire* (A.D. 354-378)

Social stratification became more pronounced in the 5-6th centuries. Many early Anglo-Saxon cemeteries have been investigated, for example, and reveal a discernable difference in grave goods associated with certain individuals. Of course this assumes that weapons within a burial denote a warrior, thought to be an individual of a higher social standing than others.¹⁶ The archaeological evidence is further supported by some surviving law codes, written about 600 A.D., which state that the king has the responsibility for maintaining law and order within his kingdom and that the law governs all ranks within society: nobles, freemen (ceorls), unfree peasants and slaves. These laws defined payments for damages that an injured party could claim from another party. Each individual of a given class was essentially assigned a value; members of the higher and noble classes were valued more highly than others.¹⁷ The law identified three classes of free men. The *wergeld* (price for an individual) of a landed noble was set at 1,200 shillings, at 600 shillings for a lesser noble, and 200 shillings for all free commoners. People without kin, foreigners and criminals had no legal recourse and could be injured,

trans. Walter Hamilton (New York: Penguin Books, 1986), 109, 411-412. *Beowulf*, trans. Howell D. Chickering, Jr. (New York: Anchor Books, 1989), 452-6, 2615-24. Archaeological sources include: Leslie Alcock, *Economy, Society and Warfare Among the Britons and Saxons* (Cardiff: England, University of Wales Press, 1987), 262, 268, 298. Heinrich Harke, "Early Saxon Weapon Burials: Frequencies, Distributions, and Weapon Combinations," in *Weapons and Warfare in Anglo-Saxon England*, ed. Sonia Chadwick Hawkes (Oxford: Oxbow Books, 1989), 49-62.

¹⁶ Leslie Alcock in *Economy, Society and Warfare Among the Britons and Saxons* (Cardiff, England, University of Wales Press, 1987), Alcock's study examines mortuary data and the social stratification that Anglo-Saxon material culture recovered from graves may demonstrate. Also, Martin Welch in *Discovering Anglo-Saxon England* (University Park: Pennsylvania State University Press, 1992), provides an excellent survey of burial practices and a physical anthropological analysis of Anglo-Saxon skeletal remains. This study was undertaken in an effort to expound on nutrition and potential disease within an Anglo-Saxon community.

¹⁷ Barbara Yorke, *Kings and Kingdoms of Early Anglo-Saxon England* (London and New York: Routledge, 1990), 18.

or killed with impunity.¹⁸ While these law codes were established some generations after the migration period, the combined testimony of legal codes and archaeological evidence suggests that further social stratification had already occurred among Anglo-Saxon settlers during the migration period.

Many Germanic groupings were under the authority of two figures, a king and a general. The role of the king differed from group to group, but was largely of a religious nature. The role of this individual was to appease the gods in order to bring fertility of both crops and people, and to preside over tribal religious ceremonies. The general, or military leader, on the other hand, was concerned with warfare and was often selected due to his demonstrated skill as a warrior. Germanic tribes were constructed around a family unit that was joined by kinship ties (fictive or otherwise). This common bond created a feeling of unity with other members. Another component of tribal society that could either be used as a source of military power, when it did not create instability was the warband or *comitatus*.

The *comitatus* was often in conflict with traditional tribal structure. Warfare was the primary means for Germanic men to accumulate wealth and prestige. Young men would attach themselves to an important leader noted for victories and become loyal to him, often in contrast to tribal obligations. Warbands had no strict tribal allegiances and could cut across kin groups and even tribal organizations in recruiting. These warbands

¹⁸ Richard Abels, *Alfred the Great: War, Kingship and Culture in Anglo-Saxon England* (London and New York: Longman Limited, 1998), 35-36.

could be an asset to a tribe, but because war and plunder was the focus of the group, they did not have a fixed place within a traditional tribal structure.¹⁹

The *comitatus* formed the basic military unit in what is called the Heroic Age. It would be easy to imagine large numbers of warriors sitting around a hall coveting the favors of great lords and battling enemies for fame and glory. However, the society that created the *comitatus* and the etiquette involved within such an organization is far more complex than the image. The early Middle Ages witnessed almost continuous warfare with what would today be considered very small military forces. In general, the most that any leader could hope for was to establish a personal hegemony. During the Heroic Age, the economic and political infrastructure was not in place to support large, national armies. The most any local leader aimed for was to control his territory and perhaps expand it, to the detriment of his neighbors. This created a world of endemic warfare and frequent political amalgamation that characterized the formation of established kingdoms in the early medieval period. To better understand the nature of the people who were crossing over to Britain, therefore, it is necessary to examine the *comitatus*, within which they lived, its recruitment strategies and its military capabilities.

Several historical sources provide information concerning the *comitatus*. One of the most detailed is the *Beowulf* poem. Here too, certain problems exist although at the other end of the spectrum, post migration evidence. The poem was written between c. 680 and 800 (perhaps as late as the year 1000).²⁰ While even the *terminus ante quem*

¹⁹ Patrick J. Geary, *Before France & Germany, The Creation and Transformation of the Merovingian World* (Oxford: Oxford University Press, 1988), 55-56.

²⁰ Colin Chase, ed., *The Dating of Beowulf* (Toronto: University of Toronto Press, 1981), 8-9.

postdates the migration period, passages referring to mead halls, for example, have been supported in the archaeological record with finds that date to the migration period. That renders sections of the poem useful for a study of early Germanic society.

In addition, the size of warbands appears to have remained more or less constant over time. In 357 King Chnodomarius had 200 attendants with him when he was leading an alliance of Alamanni and other tribes.²¹ That figure suggests that larger forces would not be common until the political amalgamation of smaller entities into larger kingdoms had taken place at a much later time. So while the poem is not contemporary with the migration period, the basic element of a warband seems to have been present prior to and after the composition of the *Beowulf* poem.

It has been said that an army moves on its stomach; this is also the case with any warband. In several passages, the *Beowulf* poet states: "Thus the brave warriors lived in hall-joys"²²; and in another passage, "It was a great feast, they drank rare wine."²³ Another important passage states that:

At times the warriors made their horses rear, let fine dark steeds go racing in contest wherever the footing was straight and firm, the paths well known. At times the scop, athane of the king, glorying in words, the great old stories, who remembered them all, one after another, song upon song found new words, bound them up truly, began to recite Beowulf's praise, a well-made lay of his glorious deed, skillfully varied his matter and style.²⁴

²¹ Ammianus Marcellinus, *The Later Roman Empire (A.D. 354-378)* (London: Penguin Books, 1986), 16.12.60

²² *Beowulf*, 99, translated by Howell D. Chickering Jr. (New York: Anchor Books, 1977).

²³ *Ibid.*, 1230-31.

²⁴ *Ibid.*, 864-874.

These passages suggest that at least some warriors spent their time in a lord's hall as full time retainers and engaged in sports, such as horse racing. These men certainly were not bound to the land plowing fields. If a lord was to maintain a number of professional warriors in his hall, he must be able to provide them such things as food, alcohol, and entertainment. This also suggests that there was a non-warrior class of peasants, who were bound to the land and provided food for their lord. Presumably, this was done to ensure the protection of the lord and his warriors. Tacitus writes, "It is the custom in their states to bestow upon the chief unasked and man by man some portion of one's cattle or crops."²⁵ The socio-economic situation of the migration period, both on the continent and in Britain could be described as unspecialized mixed farming, supplemented with cottage industries and a little trade, but lacking currency.²⁶

Once a ruler had the economic support of the local farming community, he had to be able to attract and maintain a body of warriors. In order to accommodate this professional military force, a building, often called a "hall" or a "mead hall" was constructed. The hall represented the fundamental cultural/social site that created legitimacy for the lord of a warband. These halls varied in size and shape. Halls of Germanic origins were almost universally rectangular in shape, while British halls were both rectangular and circular.²⁷ Generally, the hall consisted of a timber building with

²⁵ Tacitus, *Germania* 15: 3, translated by M. Hutton (Cambridge: Harvard University Press, 1970).

²⁶ Leslie Alcock, *Economy, Society and Warfare Among the Britons and Saxons* (Cardiff: University of Wales Press, 1987), 285.

²⁷ *Ibid.*, 242-243.

large squared uprights, presumably with an infilling of thinner planks or wattling. An example of a hall of this construction is located at Doon Hill, East Lothian. This hall is of British origin and is associated with the *Gododdin*. The floor plan is a rectangle or actually more polygonal in nature because the ends of the hall taper to form end-bays. The overall dimensions of the hall are approximately 70ft (20m) by 32ft (10m) giving an area of about 2250 sq ft. (216m²). Internal breakdown of the space consisted of central doors in each of the long walls, and the lateral division into a large central hall, most likely to serve during public functions, with a small private set of rooms at each end. This hall dates to the late sixth to early seventh century, and while that does post-date the migration period, it also appears to be indicative of earlier halls.²⁸

If one assumes that the size of a given hall was a direct reflection of social standing, Doon Hill represents a hall of intermediate size for the period although many halls dating to the migration period appear to be smaller. The construction of these halls involved high quality carpentry, built of massive squared uprights with an infilling of thinner planks. The building is rectangular in shape with tapered bays at each end. The ends provided an enclosed space, perhaps for the leader of the groups while the central open hall likely served in public functions. Utilizing metalworkers and potters to decorate the interior and aid in construction demonstrates the level of social control that some warband leaders had over the local population.²⁹

²⁸ Ibid., 244-246.

²⁹ Ibid., 244.

The literary evidence contains numerous examples of the kinds of ornaments that decorated a hall as well as the activities that normally occurred within it. Bede mentions that the "king, who had just come in from hunting, stood warming himself by the fire with his thegns."³⁰ After Grendel is wounded, the mead hall, Heorot, is ordered to be decorated with tapestries that "gleamed, gold weavings on walls, marvelous pictures..³¹ In addition to decorations and other war trophies that might decorate the hall, there was normally a hearth (or several) placed in the hall for light and warmth. The warriors sat on benches while the lord maintained a high seat or "throne" so as to hold the prominent position.

Once established in his hall with a retinue of warriors, the lord must see to their room, board, entertainment, and most important of all, rewards for service. Feasting as already noted was a common activity and at the end of an evening when the lord retired to his private chambers, the warriors then "cleared away the bench-planks, laid out their bedding."³² The warriors slept in the common room with their shields and weapons nearby. One of the most problematic issues facing a warlord was how to keep his *comitatus* together. The famous king, Hrothgar, of the *Beowulf* poem: "dealt out rings, treasures at his table."³³ And that Hrothgar was praised:

³⁰ Bede, *Ecclesiastical History of the English People* (New York: The World's Classics, 1994), 3.14.

³¹ *Beowulf*, trans. Howell D. Chickering, Jr. (New York: Anchor Books, 1977), 99.

³² *Beowulf*, trans. Howell D. Chickering Jr. (New York: Anchor Books, 1977), 1239.

³³ *Ibid.*, 80-81.

Manfully, generously, that famous king, hoard-guard of heroes, repaid the battle-rush with those fine gifts, such horse and treasure that no man will fault them who has the least care to tell the truth.³⁴

The passage indicates that Hrothgar rewarded his followers who demonstrated skill and courage in combat. The types of gifts handed out are often described as gold rings but on other occasions "a golden standard, helmet and mail-shirt, a jewel-crusted long-sword"³⁵ served as rewards. Just as warriors tried to prove themselves to their lord, the lord rewarded veterans and preserved unity within the hall. Many practices and rituals existed to maintain peace and order within a hall. One crucial ritual is the offering of mead to the warriors. Poets of the day often referred to mead as the "bitter drink" because it appears that upon the acceptance of the drink, the warrior was duty bound to serve his lord. The duty could persist beyond the lord's death. Two examples of this are identified in Anglo-Saxon poetry. One example is recorded in the *Battle of Finnsburh* poem. Danes serving under Hnæf are attacked while guests at Finn's hall. During the fighting Hnæf is slain, but his warriors fight on. The poet states: "Never have I heard of sixty victors in a battle between men behaving more nobly and more worthily, and never of youths better repaying shining mead than his young warriors paid Hnæf."³⁶ Another example comes from the poem *The Battle of Maldon*. After the Anglo-Saxon lord, Byrhtnoth is killed, some of the men flee from the battlefield while others stay and fight to the end. Ælfwine says "Remember the times we oft spoke at mead, when on the bench

³⁴ Ibid., 1046-1049.

³⁵ Ibid., 1021-1023.

³⁶ S.A.J. Bradley, translator and editor, *Anglo-Saxon Poetry* (Rutland, Vermont: Everyman's Library, 1982), 509.

we uttered boasts, heroes in hall, concerning hard conflict: now we can test who truly is bold."³⁷

The drinking of mead also carried with it a ritualistic aspect that served to unify the warband, while at the same time establishing a ranking of warriors within a hall.

Within the Beowulf poem, this ritual is covered with a great deal of precision:

Wealhtheow came forward, Hrothgar's queen, mindful of courtesies; attired in her gold, she welcomed the men. The noble lady gave the first cup, filled to the brim, to the king of the Danes, bade him rejoice in this mead-serving, beloved by his people; he took it happily, victory-famed king, the hall-cup and feast. The lady of the Helmings walked through the hall, offering the jeweled cup to veterans and youths until the time came that the courteous queen, splendid in rings, excellent in virtues came to Beowulf, brought him the mead³⁸

This ritual accomplishes far more than simply uniting a group of "brothers." The ritual also serves to indicate a hierarchy within the hall. By serving the king first, (the poem declares it to be a necessary custom,) Wealhtheow establishes Hrothgar as lord of the hall. The others who drink after the king, thereby acknowledge the ruler's authority by drinking from the cup as the queen offers it to them. After the king has drunk from it. The order in which people are served would then indicate the various ranks of members within the *comitatus*. The poem indicates this by Wealhtheow's progress around the hall to serve the veterans first and thereafter the youths.³⁹ The distinction made between veterans and youths is clearly an important one. This role filled by the queen along with

³⁷ Louis J Rodrigues, *Three Anglo-Saxon Battle Poems* (Felinfach: Llanerch Publishers, 1996), 51.

³⁸ *Beowulf*, trans. Howell D. Chickering Jr. 613-624.

³⁹ Michael J. Enright, *Lady with a Mead Cup: Ritual Prophecy and Lordship in the European Warband from La Tène to the Viking Age* (Dublin, Ireland: Four Courts Press, 1996), 10.

her lord presiding, creates a binding rite that demonstrates a constellation of lordship, hierarchy, and disparity of rank. The lord provides the feast, while testing and assigning newcomers a seating place within the hall. This demonstrates to everyone the status of a given individual. The new arrival must wait to be served mead by the queen, thus establishing his position in the hall. At all times the superior rank of the lord and other retainers who are served first is publicly visible. Warriors in this society were constantly aware of their status and place.⁴⁰

The lord must be aware of the fragile balance of the warband. The mead hall with its "hall joys" paints an intriguing picture of warriors eating, drinking and waiting for the chance to do battle for their lord. Unfortunately, this picture is too simple and straightforward. The warriors in a mead hall were seeking out every chance to show other warriors up and jealousy over gifts must have been extreme. Awards to one man could shame another into seeking revenge for a self-perceived slight by the lord of the hall. The fact that Beowulf is noted for never having killed a drinking companion suggests that violence in a hall was a regular occurrence. The Beowulf poet also finds it noteworthy to mention that during the celebration over Grendel's death, "none of the princely Scyldings betrayed each other."⁴¹ The picture that develops concerning the nature of the *comitatus* is one of jealousy, violence and possible betrayal, all while men are trying to earn the favor of great lords. Regardless of the jealous and violent nature of

⁴⁰ Ibid., 16.

⁴¹ *Beowulf*, trans. Howell D. Chickering Jr., 1018-1019.

the warband, young men continued to seek out lords in order to join. In light of this environment, one may now examine who would join a warband and why.

Because a warrior society depends on the martial skill and prowess of its soldiers, the complete and efficient training of its youth must have been vitally important.

Warriors in the heroic age had a limited life expectancy, and during their short military careers they had to earn a lord's favor through valor on the battlefield, with the hope of one day receiving a grant of land to establish their own halls. Tacitus observes:

plerique nobilium adolescentium petunt ultro eas nationes, quae tum bellum aliquod gerunt, quia et ingrata genti quies et facilius inter ancipitia clarescunt magnumque comitatum non nisi vi belloque tueare: exigunt enim principis sui liberalitate illum bellatorem equum, illam cruentam victricemque frameam; nam epulae et quamquam incompti, largi tamen apparatus pro stipendio cedunt.

many of the high-born youth voluntarily seek those tribes which are at the time engaged in some war; for rest is unwelcome to the race, and they distinguish themselves more readily in the midst of uncertainties: besides, you cannot keep up a great retinue except by war and violence, for it is from their leader's bounty that they demand that glorious warhorse and that murderous and masterful spear: banquetings and a certain rude but lavish outfit are equivalent to salary.⁴²

It is interesting to note that Tacitus stresses that it is the high-born youth that in times of peace in their own tribes seek out service to another lord elsewhere. Other stories mention recruiting warriors from other tribes. Guthlac, a leader of a *comitatus* from about 690-699 attracted warriors from "various races" (*diversarum gentium*) and that military success won him and his followers "immense booty" (*immensas praedas*).⁴³

⁴² Tacitus, *Germania*, 14: 2-3.

⁴³ Stephen S. Evans, *Lords of Battle Image and Reality of the Comitatus in Dark-Age Britain* (Woodbridge, Suffolk: Boydell Press, 1997), 28.

Another example of warriors traveling across great distances to serve a lord and win glory is noted in *Beowulf*. Beowulf and his companions arrive at Hrothgar's hall and are announced as "a troop of Geats has arrived here, traveling across the broad sea."⁴⁴ Bede writes about king Oswine and that "noblemen from almost every kingdom flocked to serve him as retainers."⁴⁵ It has been established that warriors who were of age could seek a lord to serve. Such passages clearly recall the descriptions of Tacitus.

Boys who became warriors were taken away from their immediate families to live apart from others. At this point they began training, learning warfare and hunting. Fosterage occurred among the families of the warrior elite. This practice served to strengthen bonds and alliances between chiefdoms and served to increase extended kinship ties with other groups. Beowulf was fostered out: "I was seven years old when the treasurer-giver, gold-friend of Geats, took me from my father. King Hrethel kept and fostered me well."⁴⁶ This age of about seven or eight seems to have been significant. In *Two Lives of Saint Cuthbert*, we see that Cuthbert joined a group of other boys at age eight, which Bede (Cuthbert I) records "was the first year of boyhood succeeding from

⁴⁴ *Beowulf*, trans. Howell D. Chickering Jr., 361-62.

⁴⁵ Bede, *Ecclesiastical History of the English People* (New York: The World's Classics, 1994). 3.14.

⁴⁶ *Beowulf*, trans. Howell D. Chickering Jr., 2428-2430.

infancy.”⁴⁷ Early on, a young boy was given wooden weapons and a shield to practice his skills and to improve dexterity as well as to fight other boys.⁴⁸

The time involved to train a young warrior varied from group to group, but it seems that a youth became a warrior about the age of fourteen.⁴⁹ The education provided to a warrior was far different then that of a farmer or other craftsman. Such is also referred to in *Rigspula*. This is an Icelandic poem, found in the *Codex Regius*, which was written about 1270. The meter and diction of this poem links it to a much earlier Germanic poetics, as demonstrated in Anglo-Saxon and Old Saxon poetry.⁵⁰ The passage in question seems relevant to the training given to young Anglo-Saxon warriors. The rearing of children of different classes is discussed. The sons of thralls were taught to work with animals in the fields, while the children of free farmers learned to build homes and run a farm. The son of a jarl received specific training as a warrior and hunter:

There Jarl grew up in the halls;
He swung the shield and fitted the bowstring,
Bent the bow and shafted the arrow,
Let fly the dart and wielded the spear,
Rode horses and loosed hounds,
Drew swords and swam the stream...⁵¹

⁴⁷ *Two Lives of Saint Cuthbert*, trans. Bertram Colgrave (Cambridge: Cambridge University Press, 1940), 155.

⁴⁸ Hilda Ellis Davidson, “The Training of Warriors,” in *Weapons and Warfare in Anglo-Saxon England*, Sonia Chadwick Hawkes, ed. Oxford University Committee for Archaeology Monograph No. 21, 1980, by the Oxford University Committee for Archaeology (Oxford: Oxford University Committee for Archaeology and Individual Authors, 1989), 20.

⁴⁹ *Ibid.*, 20.

⁵⁰ *The Sagas of Icelanders*, trans. Katrina C. Attwood, George Clark, Ruth Ellison (New York: Penguin Books, 2000), xxii.

⁵¹ Hilda Ellis Davidson, “The Training of Warriors,” in *Weapons and Warfare in Anglo-Saxon England*, 18.

Obviously, the training given to future warriors was far different than the training of non-combatants. This should not really be a surprise, except perhaps the early age at which the training commenced. Similarly, the specialized training men receive in the military today consists of things a "civilian" would never dream of doing (or perhaps want to).

As the training of an individual neared completion, there was some form of a rite of passage to gain acceptance to the adult warrior society. In some cases a test for a youth to gain acceptance to a warband could be brutal and dangerous. In several Irish tales, for example, young men who wanted to belong to the *fianna* (a warband form), had to undergo a test, such as burial up to their waists and defending themselves with a shield and hazel-stick, while others threw javelins at them.⁵²

When a youth was accepted as an adult warrior, he could be given weapons, or in other cases he might have to earn his weapons. In some instances weapons could be given as gifts, or a young warrior could inherit a family weapon. Two examples in the literature refer to this custom. In the *History of the Lombards* (24) it is said that a prince had to receive his first weapons from a ruler, other than his father. The young Alboin won a victory by killing the son of the king of the Gepids, but because he had not received arms from a ruler, Alboin could not sit beside his father during his own victory celebration. Alboin then went to the king of the Gepids and requested the arms of the dead prince. The king not only granted Alboin's request, he ensured him that none of his

⁵² Ibid., 14.

warriors would attack Alboin.⁵³ Tacitus writes about the role that a woman played in keeping weapons until her children were of a weapon-bearing age. As a bride, a woman received a gift of weapons from her family to hold for her sons: "The things she takes she is to hand over inviolate, and worthy to be valued, to her children, what are to be taken by her daughters-in-law and passed on again to her grandchildren."⁵⁴ Once a warrior was given his weapons or earned them, he was considered an adult within a warband. Upon this recognition, he would sit at a bench in a mead hall with other novice warriors, waiting to prove themselves and eager to earn their much-needed reputations.

While warriors strove to achieve individual recognition on the battlefield, they also acted as part of a unit. The issue thus becomes: what weapons, armor, and tactics did the Anglo-Saxons units employ and how effective were they on the battlefield.

Speaking of the early Germans, Tacitus observes:

rari gladiis aut maioribus lanceis utuntur: hastas vel ipsorum vocabulo frameas gerunt angusto et brevi ferro, sed ita acri et ad usum habili, ut eodem telo, prout ratio poscit, vel comminus vel eminus pungent.

Few use swords or the longer kind of lance: they carry short spears, in their language 'frameae,' with a narrow and small head, but so sharp and so handy in use that they fight with the same weapon, as circumstances demand, both at close quarters and at a distance.⁵⁵

Tacitus also indicates that the infantry would let loose showers of missiles. This statement is ambiguous because Germanic troops had several types of missile weapons at

⁵³ Ibid., 20.

⁵⁴ Tacitus, *Germania* 18: 1-3, translated by M. Hutton (Cambridge: Harvard University Press, 1970).

⁵⁵ Ibid., 6.1.

their disposal. Short-range weapons were usually spears; these weapons are found frequently in graves, often with more than one spear in a given grave. This suggests that a number of spears would have been thrown, leaving one as the primary melee weapon.⁵⁶

Archers also appear to have been used, but to what extent is not clearly known. The Huns were excellent horse-mounted archers. Other barbarian tribes do not appear to have used archers as a primary component of their armies. Ammianus Marcellinus in the late fourth century describes the Huns and Alans as the most formidable of all warriors because they "shoot from a distance arrows tipped with sharp splinters of bone instead of the usual heads," and these arrows are joined to the shafts with "wonderful skill" attesting to the skill of these archers and their equipment.⁵⁷ Among the descriptions of the Western barbarians, the sixth-century *Strategikon* of Mauricius depicts troops that are armed with shields, spears and short swords. The Slavs were also equipped with shields, javelins and wooden bows with arrows smeared with a poisonous drug.⁵⁸ In addition to literary observations, longbows recovered from bog deposits in southern Scandinavia, such as at Thorsberg, included intact longbows constructed from a single piece of wood ranging from 1.51-1.65m in length. Furthermore, 125 arrowheads, 14 of which are of bone, as described by Ammianus Marcellinus, have been recovered.⁵⁹

⁵⁶ Hugh Elton, *Warfare in Roman Europe AD 350-425* (Oxford: Clarendon Press, 1996), 64.

⁵⁷ Ammianus Marcellinus, *The Later Roman Empire (A.D. 354-378)* (London: Penguin Books, 1986), 412.

⁵⁸ Elton, *Warfare in Roman Europe AD 350-425*, 60.

⁵⁹ *Ibid.*, 63-64.

Most warriors were equipped with a shield and to leave it on the battlefield was an act so shameful that many survivors of battle “ended their infamy with a noose.”⁶⁰ Armor, other than the shield, seems to have been scarce and reserved for an elite few: “Scarcely one or two at most have metal or hide helmets.”⁶¹ Quilted gambesons and leather jerkins are unlikely to survive in the archaeological record, even if their use was common. At the same time, it is unlikely that this garment would be mentioned in a literary description of Germanic soldiers. These factors make it impossible to determine if this simple type of armor was worn or not.

Shields appear to be the primary defensive equipment of a barbarian army. Roman authors consistently comment on the lack of armor of German troops, but never suggest that shields were in short supply. These shields were rarely placed in graves or simply do not survive due to poor preservation. Their construction consisted of wood or hide with a metal boss. The numerous shield bosses recovered exhibit a conical construction suggesting that the shield may have been employed as a weapon, either to smash into an opponent, or to use one’s shield to knock an enemy’s shield out of the way in order to stab at the body with the spears favored by many Germanic tribes.

In addition to the bosses, shields often had a metal band around the edge. Shields recovered from bog deposits and from Skedemosse in Denmark all present a generally round form of differing sizes.⁶² Shields could be fairly small or over one meter

⁶⁰ Tacitus, *Germania* 18: 6.6, translated by M. Hutton (Cambridge: Harvard University Press, 1970).

⁶¹ Ibid. 6.3

⁶² Elton, *Warfare in Roman Europe AD 350-425*, 69.

in diameter, such as the ones mentioned in the *Battle of Maldon* where Byrhtnoth ordered his men to "build the battle-hedge."⁶³ This line refers to the formation of a shield wall, which consisted of overlapping shields to form a protective wall with one warrior's shield providing protection for the man next to him. To effectively implement this tactic, the shields would have to be fairly large to ensure the protection of two warriors. Excavated graves from Anglo-Saxon England have recovered shield bosses with stains in the ground indicating that the shields might have been larger than 2 ft. 9 in. in diameter.⁶⁴ Fighting with short spears would still be easy and keeping a tight formation ensured better discipline on the battlefield. Shields in use during the migration period appear to have been considerably smaller than later Anglo-Saxon shields. Shield bosses from deposits indicate that shield from the 4th century had an average diameter of about 50cm. This suggests that the shield wall may not have existed at this time, or at least was not intended to be a static defense, due to the inadequate size of the shield needed for protecting two people.⁶⁵ Shields from this time suggest that the melee was the major tactic and not the shield-wall. It seems probable that tactics changed over time or when confronted by differently equipped enemy forces. Earlier Germanic troops using smaller shields could be more maneuverable on the battlefield, retreating and turning back on

⁶³ Louis J. Rodrigues, "The Battle of Maldon," in *Three Anglo-Saxon Battle Poems* (Felinfach: Llanerch Publishers, 1996), 43.

⁶⁴ Leslie Alcock, *Economy, Society and Warfare Among the Britons and Saxons* (Cardiff, England: University of Wales Press, 1987), 299.

⁶⁵ Sonia Chadwick Hawkes, "The Training of Warriors," in *Weapons and Warfare in Anglo-Saxon England*, 5.

attackers, with the possibility of a shield-wall serving as an initial formation until individual combat ensued. Later shield-walls such as the ones used at Maldon and Hastings were far more static and when ranks broke it often signified a rout of the army.

Researchers often misrepresent the weapon types used by warriors of the migration period. Swords, while extensively documented, appear to have been rare. Armor, especially helms, was probably even more so and was reserved for a select few of high status.⁶⁶ Even at the time of the *Beowulf* poem, armor among some groups was still rare and reserved for a select few. Upon the arrival of Beowulf and his companions, a Scylding watchman states that, "Never have I seen a mightier noble, a larger man, than that one among you, a warrior in armor. That's no mere retainer so honored in weapons."⁶⁷ Later in the poem, the value of mail is made readily apparent when Beowulf states:

If death takes me; will carry my body to a bloody feast, hardly in mourning, will dine alone, splash his lair red; no need for you to worry any longer about my burial! But send back to Hygelac, if battle takes me, this excellent war-shirt shielding my breast, my finest cloak; it is Hrethel's heirloom, Weland made it.⁶⁸

These passages indicate that among barbarian groups, even in the time of *Beowulf*, armor was rare and only the wealthiest and most successful warriors could afford it. According to the *Beowulf* poem, even great warriors may have received armor as some form of a

⁶⁶ For a detailed examination of the material goods associated with a member of the ruling elite, including arms and armor, see Bruce Mitford, *The Sutton Hoo Ship-Burial* (London: The Trustees of the British Museum, 1968)

⁶⁷ Howell D. Chickering, translator, *Beowulf*, 247-250.

⁶⁸ *Ibid.*, 450-455.

loan or gift, but it was simply too valuable to have an individual buried in it. Upon his death Beowulf wanted his mail shirt returned to Hrethel.

Regardless of available protection, the foot soldier made up the greatest component of any Germanic army. The types of hand-to-hand weapons available to this warrior may be examined in order to see how the available weapons were used in conjunction with defensive equipment to create an army. The most common weapon on the battlefield during this time was the spear. Several designs appear to have been in use and may represent regional preferences. Spears, in many ways represent a logical choice for the melee weapon carried by most Germanic peoples.

Considering that raw materials are scarce, the spear is cheap, simple to make, and requires little training to use effectively. In addition to these factors, the weapon is versatile enough to be thrown if necessary, or applied in hand to hand combat. It is quite effective at piercing the available armor of the early Middle Ages.

Having sketched, albeit superficially, some salient aspects of Germanic warrior training, weaponry and ethos, let us now explore the tactics and actions of an army in the field. The archaeological record reveals cemeteries and fortified locations but is unable to do much with battles between small numbers of men. These are far more difficult to study and locate. The literary record often remarks that on a given day army A under lord X fought army B under lord Y and one side suffered a defeat resulting in improbable casualty figures. Such sources offer useful data and some inferences can be gleaned from their examination.

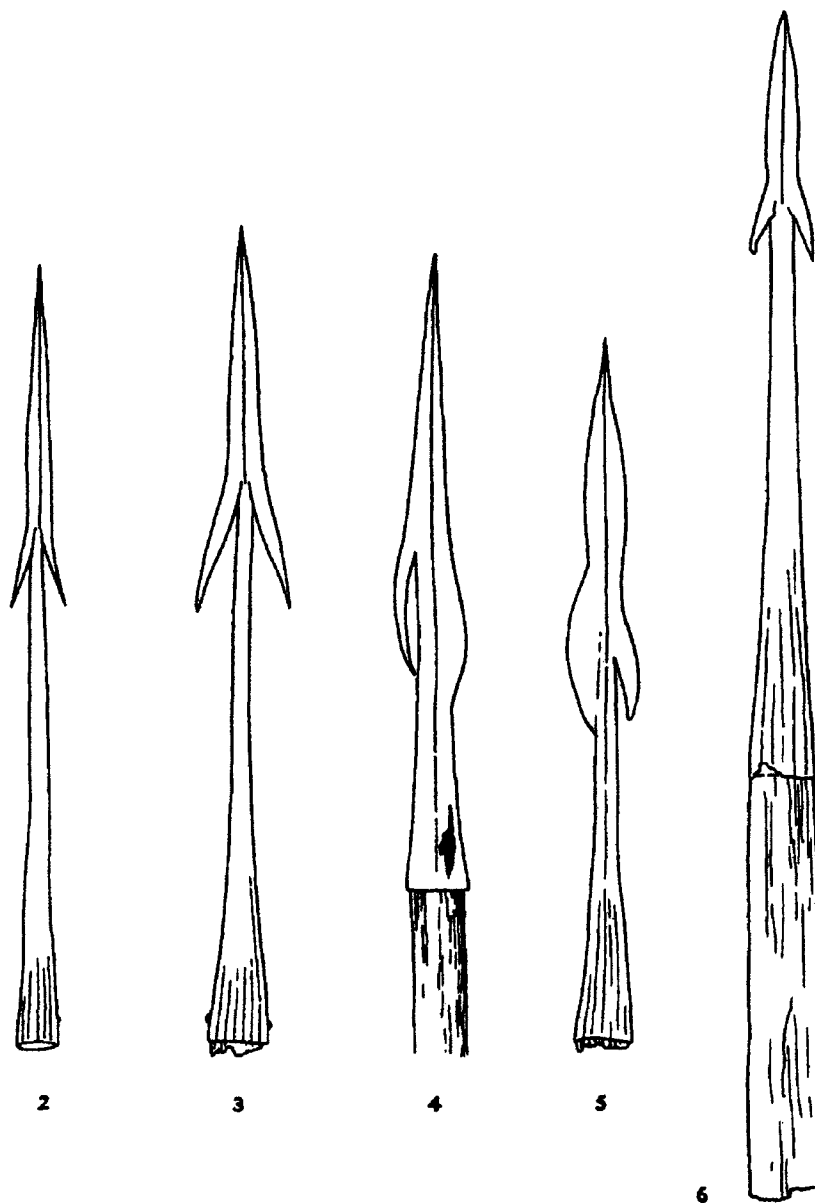


Figure 1. Spear Points from the Migration Period: 2, Spearhead, Vimose; 3, Spearhead, Nydam I; 4, Spearhead, Vimose; 5, Spearhead, Nydam I; 6, Spearhead, Kragehul. John Hines, "The Military Context of the adventus Saxonum: some continental evidence," in *Weapons and Warfare in Anglo-Saxon England* (Oxford: Oxford University Committee for Archaeology, 1989, 31.

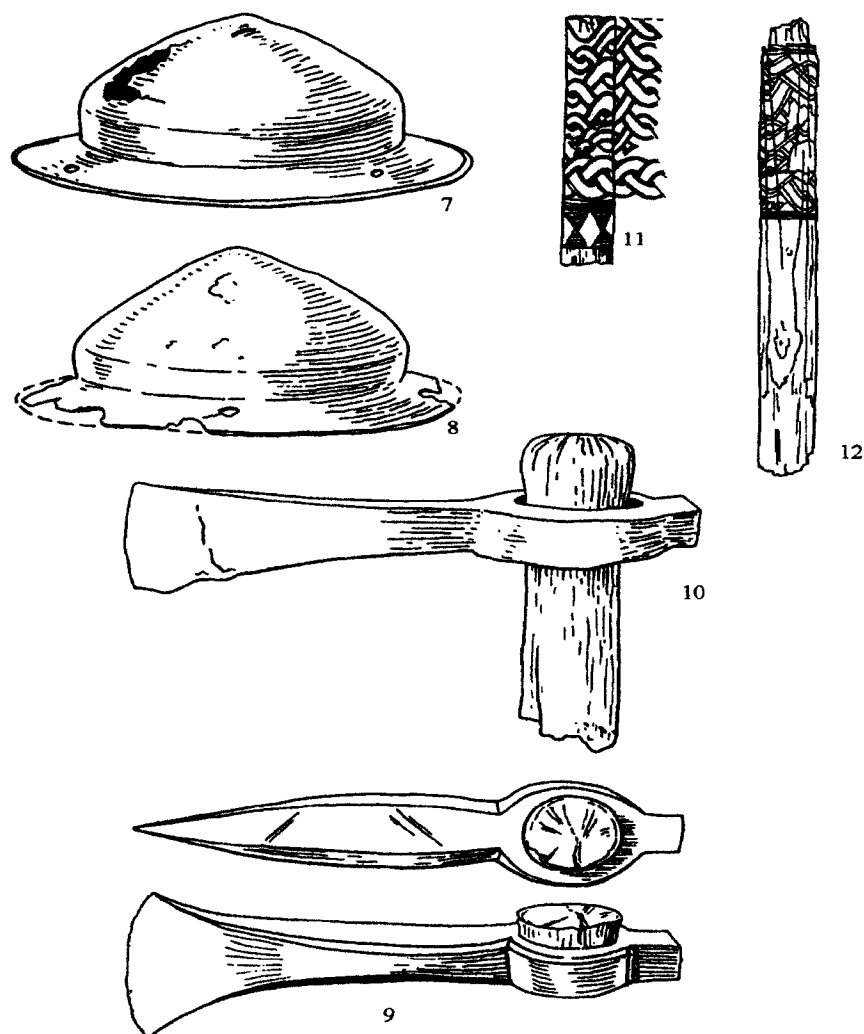


Figure 2: 7, Shield boss, Nydam I; 8, Shield boss, Kragehul; 9, Axehead, Nydam I; 10, Axehead, Kragehul; 11, Decorated spearshaft, Kragehul; 12, Decorated spearshaft, Nydam III. John Hines, "The Military Context of the adventus Saxonum: some continental evidence," in *Weapons and Warfare in Anglo-Saxon England* (Oxford: Oxford University Committee for Archaeology, 1989, 33.

While it seems that only professional warriors engaged in fighting, evidence suggests that non-warriors could indeed be a part of an Anglo-Saxon army. The writer of the *Battle of Maldon* states that Byrthnoth positioned his troops and ordered them to hold their ground. After that he stationed himself "among his hearth-troops he knew to be true."⁶⁹ This passage suggests that Byrthnoth's army consisted of proven veterans, his hearth-troops, and a non-professional component, possibly local men defending their homes, or perhaps a levy that owed Byrthnoth service. Another example of non-professional military personnel involved in Anglo-Saxon warfare comes from Bede (IV.22) who records: after a battle, a man named Imma was wounded and left for dead. Imma recovered and was taken prisoner by men from the opposing army. He was asked to identify himself and stated that he was a peasant who was with the supply train and that his job was to bring food to the soldiers. He was taken at his word, but later due to his bearing, speech and mannerisms, was found out to actually be a thegn. These distinctions are noteworthy because within this passage it is apparent that an Anglo-Saxon army in the field could have a supply train supporting it. Such could allow for longer campaigns over greater distances than what might be expected. Also, a warrior's training set him aside in more ways than simply vocation. In significant other respects, a warrior differed from the non-warriors of Anglo-Saxon society.

The Anglo-Saxon military differs from most other contemporary militaries in their lack of cavalry forces. Earlier on, Tacitus records that the Germans have "more

⁶⁹ Louis J. Rodrigues, "The Battle of Maldon," in *Three Anglo-Saxon Battle Poems*, 37.

strength in infantry, and accordingly cavalry and infantry fight in one body.”⁷⁰ This statement by Tacitus is most likely a generalization for all Germans, and does not necessarily refer explicitly to any one tribe, or to the groups that migrated to Britain.

The Anglo-Saxon military was not a cavalry force but many Germanic tribes did utilize cavalry. In 536, Belisarius entered Rome and shortly after the Ostrogothic king, Wittigis pursued Belisarius with the intent of besieging Rome. Belisarius had fortified a bridge and left a garrison there to guard it, but during the night the Ostrogoths forced a crossing. The following morning, Belisarius went out with 1,000 horsemen to check the bridge and was attacked by a force of Ostrogothic cavalry. Luck and a hasty retreat was the only thing that saved Belisarius as he fled back to Rome.⁷¹ If this statement is accurate, then Goths, who lived contemporary with the Anglo-Saxon migrations used a great deal of cavalry, enough to rout 1,000 horsemen. In addition, Vegetius stated that while few in number, Roman cavalry had benefited from studying Goth, Hun and Alan cavalry. While the territory of the Alamanni is not actually conducive to cavalry forces, they fought wonderfully on horseback, even pushing back Roman cavalry at Strasbourg in 357.⁷² It is certain that many Germanic military forces had cavalry although it seems that most tribes used cavalry as scouts and not as the main force of an army. Certain tribes were even known for their cavalry tactics and forces such as the Huns who: “Being lightly equipped and very sudden in their movements they can deliberately scatter and

⁷⁰ Tacitus, *Germania* 6:4-5, translated by M. Hutton (Cambridge: Harvard University Press, 1970).

⁷¹ E.A. Thompson, *Romans and Barbarians* (Madison: University of Wisconsin Press, 1982), 77.

⁷² Elton, *Warfare in Roman Europe AD 350-425*, 59.

gallop about at random, inflicting tremendous slaughter.”⁷³ Anglo-Saxons, conversely, are not mentioned as using cavalry forces and archaeological data supports this. Few items associated with tack and harness and other accoutrements have been found in Germanic graves from the migration period in England.

It is certain that by the 9th century horses were used by the Anglo-Saxon military, but even at the Battle of Hastings the *Bayeux Tapestry* the Saxons formed in a shield wall as an infantry force.⁷⁴ Regardless of the depictions on the *Bayeux Tapestry*, Anglo-Saxons had horses and most likely used them to ride to a battle and then dismounted to fight as infantry.⁷⁵ The *Anglo-Saxon Chronicle* records in 877 that King Alfred “rode after the mounted force with troops to Exeter.”⁷⁶ The seventh century Welsh poem, *Gododdin*, mentions in several passages that the Britons used horse mounted soldiers even in battle, but it appears that, in spite of knowledge of cavalry tactics, the Anglo-Saxons did not adopt the usage. This should not seem so unusual; if the Saxons were gaining supremacy in Britain, then their tactics and methods of warfare were

⁷³ Ammianus Marcellinus, *The Later Roman Empire (A.D. 354-378)* (London: Penguin Books, 1986), 412.

⁷⁴ To examine the way Anglo-Saxon society was changing regarding horse use and to look at the laws and decrees affecting people see: R.H.C. Davis, “Did the Anglo-Saxons have warhorses?,” in *Weapons and Warfare in Anglo-Saxon England*, Sonia Chadwick Hawkes, ed. (Oxford: Oxford University Committee for Archaeology and Individual Authors, 1989), 141.

⁷⁵ Scholars have made arguments for Anglo-Saxon horse and infantry use, see: C. Warren Hollister, *Anglo-Saxon Military Institutions on the Eve of the Norman Conquest* (Oxford: Clarendon Press, 1962)

⁷⁶ *The Anglo-Saxon Chronicles*, translated by Anne Savage (New York: Barnes & Noble Books, 2000), 96.

obviously successful and it would be poor strategy to adopt the tactics of the forces you are already successfully fighting.

The *Bayeux Tapestry* and other sources also provide information on the lack of archers in a late Anglo-Saxon army. Even earlier, bows were certainly used; 125 arrowheads have been found in the Nydam bog deposits for example. These were accompanied by bows that are over five feet long; this constitutes a true longbow. Arrowheads are also found in graves of the fourth and fifth century graves on the continent, particularly in Frankish territory. But in England only six gravesites with arrows are known. These are in Kent and the Isle of Wight, which exhibit other aspects of Frankish influence as well. Use of the bow was widespread on the continent and was likely used in Britain. Its primary use was as a hunting weapon. The material culture associated with archers does not appear in Germanic graves in Britain, and certainly not as a warrior's grave goods.⁷⁷

The tactics used by later Anglo-Saxons appears to be such that an army could move quickly by horse. Upon making enemy contact, however, it would then dismount and fight in a defensive shield-wall formation or move to engage an enemy in close hand-to-hand individual melee fighting. Archers are as uncommon as dedicated cavalry units. The individual warrior had a round shield, which served as his only protection but could be used as an additional weapon if needed. Swords, helms, and armor were reserved for the very rich while the common soldier would use a spear either as a missile or melee weapon. Axes, while not as common, are depicted in the *Bayeux Tapestry*. Warriors

⁷⁷ Leslie Alcock, *Economy, Society and Warfare Among the Britons and Saxons* (Cardiff: University of Wales Press, 1987), 298.

often trained from their youth to serve a lord and these warriors's individual courage and ruthlessness in battle ensured their reward in gold, weapons, and praise. This system encouraged the warriors to excel in individual combat which helps to explain why groups of archers were not employed during the migration period. It would be hard to distinguish oneself from other archers and gain the reputation of a courageous warrior, while using the bow. Shield walls, archers, and cavalry gain prominence as the heroic age and the *comitatus* system are breaking down, giving way to large, territorial kingdoms where individual actions are more likely to go unnoticed and un-rewarded.

With equipment and tactics examined, the size of these armies may now be taken into account. The *Anglo-Saxon Chronicle* in 456, states that 4,000 Britons were killed at Crecganford and that in 508, a British king named Natanlaod was killed with 5,000 of his men. These figures are almost certainly inaccurate; the work of paid poets whose job it was to sing the praises of great leaders and warriors. While these numbers create an exciting image of battle, the Laws of Ine of Wessex from the late seventh century state that any group of men numbering above 35 counts as an army. It should be understood that this obviously represents minimum numbers, but it is highly probable that there were more armies of under one hundred during the migration period (and in early Anglo-Saxon England) than the one with over 4,000 killed at Crecganford.

Inflated accounts and figures taken at face value make the mass migration of thousands of Anglo-Saxons seem reasonable. A more realistic appraisal of the available sources creates a different and far more likely picture. In 449, the *Anglo-Saxon Chronicle* records the coming of the Angles in three ships. The same number of ships is

recorded in 477 and in 514. Two ships are mentioned in 501. Only in 449, when Angles are mentioned and in 514 when the West Saxons are cited, does the *Anglo-Saxon Chronicle* specifically identify who is on the ships. It is thought by some scholars that the use of the number three represents a literary convention and they may be right. The order of magnitude at least is probably correct. Two to six ships represents perhaps one hundred to three hundred warriors. Given the law codes of later time periods when armies generally were becoming larger, three hundred warriors certainly could constitute a powerful force.⁷⁸ The *Anglo-Saxon Chronicle* entry for 786 records that Cyneheard, the brother of the dispossessed Wessex ruler Sigeberht, attempted to overthrow King Cynewulf. Cyneheard and his army numbered eighty-five men and despite that the force was almost enough to seize an entire kingdom. The Anglo-Saxon armies of the migration period were small by modern standards and structured around a lord who maintained his authority by richly rewarding his loyal followers. The lord and his men excelled at personal skill on the battlefield and even in smaller numbers constituted a viable army, which could carve out personal kingdoms on the continent or, indeed after landing in Britain.

⁷⁸ Michael E. Jones, *The End of Roman Britain* (Ithaca, New York: Cornell University Press, 1996), 41.

Chapter II: Anglo-Saxon Use of Sails, A Literary Critique.

When the Anglo-Saxons arrived in Britain, initially perhaps as mercenaries and then as enemies of the British, it is certain that they came by boat. Maritime capabilities are thus crucial to our understanding of how this was accomplished and a variety of sources must be interrogated in order to establish its nature. It has been the subject of much debate. A central question is the extent to which the Anglo-Saxons and any others could move large numbers over water. An examination of ship building technology, as well as ship capabilities must be examined in order to answer the question raised.¹

Archaeological evidence concerning Anglo-Saxon shipbuilding has been found in England as well as the Anglo-Saxon homeland areas on the continent. The most significant material culture remains consist of the ships themselves as well as detailed imprints of ships. Images of ships are also known from stone carvings, coins, and pottery. Evidence for this period is vague. Much of it difficult to accurately date (such as stone carvings) or comes from later time-periods (making the date less relevant.) Arguments over the Anglo-Saxons use of mast and sail on early longships have become crucial. In order to effect a movement of young, old, and potentially infirm people, it would be impossible to have them "man" oars. Sail use, on the other hand, could have

¹ Historians are divided over the size of the Anglo-Saxon migrations to Britain. Sir Frank Stenton stated the Anglo-Saxon migrations were "unique in any case among contemporary movements... a series of national migrations." *Anglo-Saxon England*, 3rd ed. (Oxford: Oxford University Press, 1971), p 277. Other historians believe that the movement was undertaken by small independent military groups. H.M. Chadwick's criticizes the large migration theory in *Origins of the English Nation* (Cambridge: Cambridge University Press, 1907), pp. 12-14, 181 ff. For recent archaeological data concerning early Anglo-Saxon populations, see C.J. Arnold, *Roman Britain to Saxon England* (Bloomington: Indiana University Press, 1984).

made the movement of large numbers more feasible. There is no archaeological evidence for the use of sail by Anglo-Saxons during the migration period (400-600 A.D).

Literary evidence, while slight, does contain passages referring to both sails and ships. The writings of Tacitus, Claudian, Sidonius, Gildas and Procopius, contain passages referring to Anglo-Saxons and the ships used by them. The Anglo-Saxons at the time of the migrations were an illiterate people, and remained so for quite a long time. Hence there are no contemporary Anglo-Saxon documents that describe their vessels, vessel capabilities, or their motives for making the journey to Britain. This negates the possibility of conducting a comparative literary analysis of Roman and Germanic writings and one must thus rely on the works of Roman writers alone. But Romans had little or no first hand knowledge of Anglo-Saxons and were writing about simple "barbarians."

A further hindrance is that later Anglo-Saxon literature does not contain detailed accounts of a maritime tradition. The *Anglo-Saxon Chronicle*, which was probably started in the ninth-century under King Alfred, is a record that utilized earlier sources and contains short passages pertaining to the original invasion. There is no mention of sails. An early Anglo-Saxon reference to sea-going ships under sail is found in the *Andreas* poem written about 800 A.D. The *Beowulf* poem also contains a reference to mast and sail aboard vessels.² This poem ostensibly describes the world of the sixth century, however and so pertinence is uncertain; any details associated with ships are likely to be

² *Anglo-Saxon Poetry*, translated and edited by S.A.J. Bradley (London: Everyman's Library, 1982), 217.

contemporary and thus, perhaps as late as 1000 A.D. The dating of the poem is a debated topic. The poem could have been written in the ninth-century Anglo-Scandinavian region, eighth-century Mercia, or as early as seventh-century Northumbria or East Anglia. All possibilities post-date the migration period.³

The earliest recorded mention of sail use by an Anglo-Saxon author comes from Bede in his *Ecclesiastical History of the English People*, which was begun in the 690's A.D. and completed over the next two or three decades. Bede relates the story of the priest Guthfrith with two companions returning from Farne Island who are caught in a storm: "so fierce a wintry tempest arose that we could make no progress either by sailing or rowing and expected nothing but death."⁴ At the last minute a prayer from Ethelwald saved them from the sea. This passage describes a boat that was carrying only three people and was written circa the last decade of the seventh century. It is far removed from the migration era. Other passages from Bede mention storms, winds, and anchors but do not mention masts or sails.

The Roman historian Tacitus, in 98 AD, described vessels that he observed in use in Scandinavia:

Suionum hinc civitates, ipso in Oceano, praeter viros armaque classibus valent. forma navium eo differt, quod utrimque prora paratam semper adpulsui frontem agit. nec veils ministrant nec remos in ordinem lateribus adiungunt: solutum, ut in quibusdam fluminum, et mutabile, ut res poscit, hinc vel illinc remigium.⁵

³ Michael E. Jones, "The Literary Evidence for Mast and Sail during the Anglo-Saxon Invasions," *Studies in Medieval and Renaissance History*, n.s., 13 (1992): 54-55.

⁴ Bede, *Ecclesiastical History of the English People* (New York: The World's Classics, 1994), 5:1.

⁵ Tacitus, *Germania*, 44:1, translated by M. Hutton, revised by M. Warmington (London and Cambridge, Massachusetts, 1970).

Beyond these tribes the states of the Suiones, not on, but in, the ocean, possess not merely arms and men but powerful fleets: the style of their ships differs from normal in this respect, that there is a prow at each end, with a beak always ready to be driven forwards; they neither work it with sails, nor fix oars in banks to the side: propulsion is by means of free paddles as on certain rivers, and reversible as occasion demands, for movement in either direction.

While this passage predates the Anglo-Saxon migrations by three centuries, it does serve as a starting point for an examination of classical literary evidence.

Archaeological investigations have found vessels that match the descriptions of Tacitus and have confirmed his observations about the vessels. These archaeological finds have given Tacitus and his observations credibility.⁶

After Tacitus, the works of the fifth century poet Claudian, contain references to the Anglo-Saxons:

Inde Caledonio velata Britannia monstro, ferro picta genas, cuius vestigial verrit caeruleus Oceanique aestum mentitur amictus: "me quoque vicinis pereuntem gentibus" inquit "munivit Stilicho, totam cum Scottus Hivernen movit et infesto spumavit remige Tethys. illius effectum curis, ne tela timerem Scottica, ne Pictum tremere, ne litore toto prospicerem dubiis venturum Saxona ventis."⁷

Next spoke Britain in the skin of some Caledonian beast, her cheeks tattooed, and an azure cloak, rivalling the swell of ocean, sweeping to her feet: "Stilicho gave aid to me also when at the mercy of neighbouring tribes, what time the Scots roused all Hibernia against me and the sea foamed to the beat of hostile oars. Thanks to his care I had no need to fear Scottish arms or tremble at the Pict, or keep watch along all my coasts for the Saxon who would come whatever wind might blow.

⁶ For an examination of early ship finds, including the Hjortspring and Nydam ships, both of which match the descriptions of Tacitus, but post-date his writings, see: Robert Gardiner, ed., *Conway's History of the Ship. The Earliest Ships*, vol. 1 (Annapolis, Maryland: Naval Institute Press, 1996), 74-78.

⁷ Jones, "The Literary Evidence for Mast and Sail during the Anglo-Saxon Invasions," 38-39.

This passage was written in A.D. 400, and has been cited by scholars as evidence to support the use of sail by Anglo-Saxons during the fifth-century voyages to Britain.⁸

The passage does not mention sail use, but implies that where there is wind on the water there must be people utilizing mast and sail. Wind, currents and weather-patterns have an effect on any vessel in the water, and not only vessels under sail. Tacitus writes about the seas around Britain stating: "However, they brought the report that the sea was sluggish and heavy to the oar and comparatively torpid even to the wind--I presume because of land and mountain."⁹ This was written long before the Anglo-Saxon migrations commenced, but it is noteworthy that Tacitus mentions how wind effects vessels even under oar.

It is important to establish Claudian's credibility in order to be able to access the references. He was a court poet and wrote for an audience composed of the court aristocracy of Milan. Claudian writes in a stylized fashion. Moreover, Milan was far removed from any Saxon activity. Hence, Claudian's work probably represents a type of propaganda. The wind that he mentions is most likely a metaphor applied to denote the nature of the Saxon attacks. It was not uncommon for Roman authors to associate certain traits with tribes of barbarians. Burgundians, for example, were held to be extremely tall

⁸ Other scholars have translated the section of the passage pertaining to sail use differently. Patrick Sims-Williams translates this as "nor look out along my whole shore for the Saxon coming with the uncertain winds," "The Settlement of England in Bede and the *Chronicle*," *Anglo-Saxon England* 12 (1983), p. 9 n. 33. R.W. Chambers translates it as "watching along all the shore for the Saxon who would come with any wind." *England Before the Norman Conquest* (London, 1928), pp. 8-9. These translations share the trait that wind is mentioned but in uncertain terms with regards to sailing ships, and depict more the Saxon ability to achieve surprise by sea mobility.

⁹ Tacitus, *Agricola*, 10:5-6, translated by M. Hutton, revised by H. Warmington (London and Cambridge: Harvard University Press, 1970).

and Britons (or Picts) tattooed, while Saxons were a byword for surprise, mobility and raiding by sea.¹⁰

Claudian writes, "whatever wind might blow." If this statement is to be taken literally it could argue against exclusive sail use by the Anglo-Saxons and suggests that oar power may have been the method of propulsion. Even with modern sailing vessels, one cannot sail on "whatever wind might blow." It is difficult to sail closer than forty degrees off the direction of the wind even for modern sailing vessels. To travel in a given direction on "whatever wind might blow" suggests that oars would be needed.

It is not known if Claudian ever traveled to areas of Saxon habitation. He probably never traveled outside of Italy. Indeed, he probably never saw a Saxon, much less witnessed their raids. Both the poet and his travels are poorly documented. It is known that he spent time in Rome as well as Milan, but no evidence exists to suggest that he ever went to Gaul or Britain. His apparently uncertain knowledge of the geography of Gaul and the Rhine area is poorly deployed in his work. The western regions play a minor role in his writing and do not seem to include any first-hand personal knowledge. Claudian's reference to Saxons thus appears to be a form of poetic license; he provides no significant details and simply associates Anglo-Saxons with the sea. When Britain is raided it is invariably by the Saxons, Picts, or the Scots. Hence, Claudian's writings do not lend any support to the thesis of mast and sail use by the Anglo-Saxons and in fact, may serve to argue in favor of oar use alone (the only technical aspect of Saxon ships mentioned directly). Overall, he must be viewed as a unreliable source of information

¹⁰ Jones, "The Literary Evidence for Mast and Sail during the Anglo-Saxon Invasions," 38-39.

having more then likely never seen a Saxon boat. Nor is it likely that he ever came into close contact with anyone who had.¹¹

Saxons are also mentioned by Sidonius Apollinaris, a Gallic aristocrat who wrote between 456 and 477. The historical accuracy of his letters is much debated. Sidonius was educated within the late Roman education system. This system encompassed a platform of classical and mythological literary allusions. The audience that he writes for is a product of the same system and thus expects a luxuriant metaphorical style. C.E. Stevens, an historian and biographer of Sidonius, remarks that, "in the letters the living man is smothered in the conceits of borrowed verbiage."¹²

Sidonius edited his letters to ensure a receptive response. Several passages refer to Saxons and their ships. Some historians, including Michael E. Jones, who describes Sidonius' writings as, "the borrowed conventions of classical rhetoric; personal ignorance; and cultural prejudice", has heavily criticized these "sightings".¹³ Historian O.M. Dalton states that a great deal of Sidonius' writings are products of poetic license and represent, "a great opportunity lost"¹⁴ with regards to what could have been learned.

Another passage by Sidonius remarks on the ships and the manner in which the Saxons operated:

¹¹ Ibid., 40-41.

¹² C.E. Stevens, *Sidonius Apollinaris and His Age* (Oxford: Clarendon Press, 1933), 174.

¹³ Jones, "The Literary Evidence for Mast and Sail during the Anglo-Saxon Invasions," 42.

¹⁴ Ibid., 46.

inter officia nunc nautae, modo militis litoribus Oceani curvis inerrare contra Saxonum pandos myoparones, quorum quot remiges videris, totidem te cernere putes archipiratas: ita simul omnes imperant parent, docent discunt latrocinari.¹⁵

You... were roving the winding shores of Ocean to meet the curving sloops of the Saxons, who give the impression that every oarsman you see in their crew is a pirate captain-so universal is it for all of them simultaneously to issue orders and obey orders, to teach brigandage and to learn brigandage.

It is curious to note that Sidonius utilizes the term *myoparon* when referring to the Saxon ships. This term is derived from the Greek and is a term for a light pirate's galley. The term carries no connotations for the use of sail.¹⁶ The reference to the curved sloops of the Saxons does match the archaeological evidence of vessels such as the Nydam or Sutton Hoo ship. These vessels did not carry sails. Other passages of his writings contain many of the previously mentioned stereotypes associated with the Saxons. The source of the cited passage is reportedly a messenger who had just witnessed a Saxon fleet arrive:

hostis est omni hoste truculentior. Improvisus aggreditur praevisus elabitur; spernit obiectos sternit incautos; si sequatur, intercipit, si fugiat, evadit.¹⁷

That enemy [the Saxons] surpasses all other enemies in brutality. He attacks unforeseen, and when foreseen he slips away; he despises those who bar his way; and he destroys those whom he catches unawares; if he pursues, he intercepts; if he flees, he escapes.

¹⁵ Sidonius, *Poems and Letters*, translated by W.B. Anderson (London and Cambridge: Harvard University Press, 1965), 2: 419-33.

¹⁶ Jones, "The Literary Evidence for Mast and Sail during the Anglo-Saxon Invasions," 43.

¹⁷ Sidonius, *Poems and Letters*, 2, 419-33.

This passage further illustrates the poetic fancies associated with the Saxons. None are convincing or even marginally persuasive. The same letter does mention sail use by

Saxons:

praeterea, priusquam de continenti in patriam vela laxantes hostico mordaces
 anchoras vado vellant...¹⁸

Moreover, when ready to unfurl their sails for the voyage home from the continent and to lift their gripping anchors from enemy waters, they are accustomed on the eve of departure to kill one in ten of their prisoners by drowning or crucifixion...

It has been argued that reference to sails simply reflects a common poetic motif.

Michael Jones equates this passage with such sayings as "swelling sails," "anchors aweigh," "Vela laxantes... anchoras vado vellant,"¹⁹ a frequent convention of maritime conditions. The passage mentions crucifixion, and seems to be a creation of Sidonius, the bishop who conceivably was grinding an axe for Saxons. Reliable historians like Ammianus Marcellinus cite the execution of captives.²⁰

While Sidonius' descriptions of Saxons and their pirate ships might provide potentially useful information, other sections of his writings concerning ships and the people using them lack credibility. One cannot selectively accept and dismiss sections of a passage to suit an agenda. While Sidonius directly mentions sail use by Saxons, it is unlikely that he ever witnessed Saxon vessels sailing. His Saxon references were probably derived at second or third hand. In one of his letters there is a reference to

¹⁸ *Ibid.*, 419-33.

¹⁹ Jones, "The Literary Evidence for Mast and Sail during the Anglo-Saxon Invasions," 44.

²⁰ *Ibid.*, 45

traveling to Bayeux, an area that was settled by Saxons, but there is no mention of Saxons in this letter.²¹

Finally, Sidonius appears to have made a serious error in writing about maritime matters. In one letter, he describes a Saxon vessel as follows:

cui pelle salum sulcare Britannum ludus et assuto glaucum mare findere limbo²²

The Aremorican region too expected the Saxon pirate, who deems it but sport to furrow British waters with hides, cleaving the blue sea in a stitched boat.

This is an unusual description of a Saxon vessel. Sidonius is the only Roman writer to treat seagoing hide boats as anything other than uniquely British. No other Roman writer associated the hide boats with Saxons or any Germanic people. In the first century B.C. Julius Caesar states that the hide boats found in Britain were a new type of craft to the Romans. Later in Spain he utilized that technology to construct his own hide boats. Numerous other writers such as Pliny, Lucan, and Solinus all mention hide boats in use by the British. It is possible that Sidonius borrowed the reference from an earlier source and either was mistaken as to who was using the boat or else disregarded it the reference in favor of mentioning Saxon use of the vessel type. In light of Sidonius' apparent misuse of facts and his highly stylized form of writing, his letters may be dismissed as a source for the maritime activities of Anglo-Saxons and their use of mast and sail.

²¹ Stevens, *Sidonius Apollinaris and His Age*, 75-77.

²² Jones, "The Literary Evidence for Mast and Sail during the Anglo-Saxon Invasions," 46.

Gildas also presents information concerning the Anglo-Saxons and their ships.

While the date of his floruit is uncertain most evidence suggests that Gildas wrote his *De Excidio Britonum*, (The Ruin of Britain) during the first half of the sixth century, probably completing it in 540 A.D. It is likely to have been written in either northern or western Britain, and is one of a few surviving narratives from sixth-century Britain. Rather than history, it is a text, with a moral purpose. Gildas denounces the moral and political failings of his countrymen. Like Sidonius, Gildas writes in the highly stylized rhetoric favored by the late Roman educated elite. According to N. Higham, the primary purpose of the *De Excidio Britonum* is spelled out in its introduction:

1. To rehearse and so establish the 'damages and afflictions' suffered by the 'fatherland' (by which he apparently meant what had been Roman Britain). This could be achieved very briefly because they were contemporary and not at issue within Gildas's circle.
2. To explain why those same 'damages and afflictions' had come about, and enable responsibility to be assigned where appropriate.
3. To mount an offensive against those responsible. Since Gildas adopted an explanation that was couched entirely in terms of morality and obedience to God, this took the form of complaints against the moral and spiritual condition of those responsible, whom Gildas believed it essential to bring to contrition and back to obedience to God.²³

With these premises serving as the basis for his writing, it is understandable that the brief preface presented by Gildas is the only historical section of the text. In this, Gildas does mention Saxons and their arrival on the shores of Britain:

²³ N.J. Higham, *The English Conquest Gildas and Britain in the Fifth Century* (Manchester and New York: Manchester University Press, 1994), 10.

Gildas also presents information concerning the Anglo-Saxons and their ships.

While the date of his floruit is uncertain most evidence suggests that Gildas wrote his *De Excidio Britonum*, (The Ruin of Britain) during the first half of the sixth century, probably completing it in 540 A.D. It is likely to have been written in either northern or western Britain, and is one of a few surviving narratives from sixth-century Britain. Rather than history, it is a text, with a moral purpose. Gildas denounces the moral and political failings of his countrymen. Like Sidonius, Gildas writes in the highly stylized rhetoric favored by the late Roman educated elite. According to N. Higham, the primary purpose of the *De Excidio Britonum* is spelled out in its introduction:

1. To rehearse and so establish the 'damages and afflictions' suffered by the 'fatherland' (by which he apparently meant what had been Roman Britain). This could be achieved very briefly because they were contemporary and not at issue within Gildas's circle.
2. To explain why those same 'damages and afflictions' had come about, and enable responsibility to be assigned where appropriate.
3. To mount an offensive against those responsible. Since Gildas adopted an explanation that was couched entirely in terms of morality and obedience to God, this took the form of complaints against the moral and spiritual condition of those responsible, whom Gildas believed it essential to bring to contrition and back to obedience to God.²³

With these premises serving as the basis for his writing, it is understandable that the brief preface presented by Gildas is the only historical section of the text. In this, Gildas does mention Saxons and their arrival on the shores of Britain:

²³ N.J. Higham, *The English Conquest Gildas and Britain in the Fifth Century* (Manchester and New York: Manchester University Press, 1994), 10.

Tum erumpens grex catulorum de cubili leaenae barbarae, tribus, ut lingua eius exprimitur, cyulis, nostra longis navibus, secundis velis omine auguriisque, quibus vaticinabatur, certo apud eum praesagio, quod ter centum annis patriam, cui proras librabat, insideret, centum vero quinquaginta, hoc est dimidio temporis, saepius vastaret, evectus...²⁴

"Then a pack of cubs burst forth from the lair of the barbarian lioness, coming in three keels, as they call warships in their language. The winds were favorable; favorable too the omens and auguries, which prophesied, according to a sure portent among them, that they would live for three hundred years in the land towards which their prows were directed, and that for half the time, a hundred and fifty years, they would repeatedly lay it waste.

Utilizing this paragraph as an argument for mast and sail presents some difficulties. There may be a correlation between Gildas' use of the words *secundis velis* and Claudian's statement of the Saxons coming "whatever wind might blow." It smells like a literary convention, and no other aspects of Saxon maritime technology are mentioned. There are other translations for the words *secundis velis*. It is possible to translate the phrase as "favorable winds," or as "favorable sail" (or perhaps more ambiguously as "smooth sailing").²⁵ The nature of the Latin sentence structure allows the words to be either associated with the Saxon ships or with the omens and auguries. The ambiguous nature of Gildas' style thus makes his meaning uncertain and other translations cannot improve the matter.

Gildas makes one other reference to Saxon ships, which does not either support or refute mast and sail use by Saxons.

²⁴ Gildas, *The Ruin of Britain*, edited and translated by Michael Winterbottom (London: Rowman and Littlefield, 1978), 26.

²⁵ Jones, "The Literary Evidence for Mast and Sail during the Anglo-Saxon Invasions," 48.

Cui supradicta genetrix, comperiens primo agmini fuisse prosperatum, item mittit satellitum canumque prolixiorem catastam, quae ratibus advecta adunatur cum manipularibus spuriis.²⁶

The mother lioness learnt that her first contingent had prospered, and she sent a second and larger troop of satellite dogs. It arrived by ship...

Once again, Gildas fails to directly mention any sort of detailed use of specific maritime technology associated with the Saxons other than ship use.

Elsewhere, Gildas is not so vague. In Chapter 16 of *De Excidio* he describes the ships of other people in simple, straightforward terms that are easy to translate.

alis remorum remigumque brachiis ac velis vento sinuatis vecti.²⁷

They came relying on their oars as wings, on the arms of their oarsmen, and on the winds swelling their sails.

This passage provides a clear image of a vessel that could be powered by both oars and sail. When one considers that Gildas is here referring to Celts, his clearer description is what one would expect. It can be confirmed from other contemporary writers as well as by the archaeological record of the curragh. It is significant that the statements pertaining to Saxons do not contain reference to mast and sail. Neither Bede nor the author of the *Historia Brittonum*, a ninth-century British work, which utilized and incorporated earlier material, ever mention sail use when describing Saxon ships.²⁸

²⁶ Gildas, *The Ruin of Britain*, 26.

²⁷ *Ibid.*, 21.

²⁸ Jones, "The Literary Evidence for Mast and Sail during the Anglo-Saxon Invasions," 51.

When evaluating Gildas' writing for its maritime value, it seems clear that his *De Excidio Britonum* is unable to provide clear evidence for sail use by the Anglo-Saxons.

The works of Claudian, Sidonius, and Gildas comprise the contemporary western literature that can be drawn upon for a literary investigation of sail use by Anglo-Saxons. These texts do not present a convincing argument to support the use of mast and sail by the Anglo-Saxons during the migration period. The contemporary literary evidence is thus vague and unrevealing.

One other writer requires mention. Procopius, a contemporary of Gildas, wrote in the middle of the sixth century. He was a Greek historian who described the ships of the Angles in Britain in his *History of the Wars*:

And there were no supernumeraries in this fleet, for all the men rowed with their own hands. Nor do these islanders have sails, as it happens, but always navigate by rowing alone.²⁹

This is a clear statement presenting no translation problems. It brings our survey of the literary record full circle and returns us to the argument that supports the use of oars alone by the Anglo-Saxons. But Procopius is not without his detractors. His writing contains an odd blend of geographical or ethnographical digressions along with the passage mentioned above which contains a description of the Anglian Fleet. The passage also records an assortment of strange happenings including information such as descriptions of oared vessels along with vastly increased numbers of people together with ships in fleets and even a ghost story. In spite of such passages, many scholars see the historical accounts as reliable. Averil Cameron stated:

²⁹ Jones, "The Literary Evidence for Mast and Sail during the Anglo-Saxon Invasions," 52.

There is just enough plausible detail, among the hearsay and the personal comment, to qualify as serious evidence, with sufficient distortion to make its interpretation highly problematic.³⁰

Regardless of such problems, Procopius did have firsthand experience with warships and other vessels in use during the sixth century. This information was learned through a source in a Frankish government center. The connection links the Frankish kingdom of Clovis to Britain and Byzantium. Through his contacts, he was aware of sail use by Romans, Celts, and Germanic peoples. It is interesting to note that he ascribes a lack of sail use specifically to the Angles. Another reference that adds to his credibility concerns the Angles' lack of horse use. This conspicuous factor is unique to the Anglo-Saxons. He says that the Anglo-Saxons were distinct from other Germanic peoples in their reliance on infantry as opposed to cavalry. That may be correct. In many ways, therefore, Procopius offers more credible accounts written in a clear fashion.³¹ He provides the only firsthand account concerning ship use by Anglo-Saxons and he records men using oars. He makes no mention of mast and sail use by Anglo-Saxons.

³⁰ Jones, "The Literary Evidence for Mast and Sail during the Anglo-Saxon Invasions," 52

³¹ *Ibid.*, 53-54.

Chapter III: Anglo-Saxon Ships, An Archaeological Perspective.

The archaeological record is not sufficient to fill the gaps contained in the literary record on sail use by Anglo-Saxons. Peoples moving to new lands rarely leave behind enough material evidence to accurately date their numbers and movements. Numerous sites exist in Britain that contain Anglo-Saxon remains. Crucial to these finds is the accurate dating of early Anglo-Saxon settlement sites. The movements by Anglo-Saxons to the island were oriented towards piracy and raiding, but it is difficult to determine exactly when raids changed into settlement. The question of early Anglo Saxon material culture on the island is further hindered by the question of the *litus Saxonicum*.¹ Britain and essentially the rest of the Roman world went through stages of "barbarization." This partly occurred because of the use of Germanic soldiers in the Roman army. These men were described as either *laeti* or *foederati*. *Laeti* were generally used to resettle lands depopulated by war. *Foederati* (federates) were free people (barbarians) who had settled within the empire and had retained their own laws, leaders, and customs while fighting on the payroll of the Roman army.² With virtually every aspect of the Anglo-Saxon movement to Britain subject to debate, the only aspect that is agreed upon is that the

¹ The only literary reference concerning the Saxon Shore comes from the *Notitia Dignitatum*, a Roman source with an uncertain context, probably around the early fifth century. It lists a count as the commander of the Saxon Shore, *comes litoris Saxonici per Britanniam*. Currently the issue of whether the Saxon shore was an area that was attacked by raiding Saxons, or an area in which Saxon *foederati* were employed to defend the coast is subject to debate. For discussions concerning the Saxon Shore, see: Donald A. White, *Litus Saxonicum: The British Shore in Scholarship and History* (Madison, Wisconsin: University of Wisconsin Press, 1961), who argues that the shore was settled by Saxons. Also see Stephen J. Johnson, *The Roman Forts of the Saxon Shore* (London: St Martin's Press, 1976) who argues that the shore was defended against Saxons. Due to the uncertainty of the issue, archaeological data gathered from the Saxon Shore has been interpreted as both used by invaders and defenders.

² Michael E. Jones, *The End of Roman Britain* (Ithaca and London: Cornell University Press, 1996), 33-34.

movement to Britain, either as raiders or defenders, was accomplished by boat. That shall be the starting point of this chapter.

Before one can examine motives, methods, or numbers of people involved in maritime operations, the vessels themselves, in terms of their capabilities, construction and utilization, require discussion. This chapter will investigate aspects of early Anglo-Saxon shipbuilding and its evolution through the time of the migrations to Britain.

Some Germanic peoples had a maritime culture for centuries before Roman contact. Scandinavian rock-carvings dated to between 8000 and 2000 BC provide evidence of early boat use.³ These carvings depict small craft with a single individual on board. The vessels appear as transparent in the carvings so that one can see the person's legs and cargo in the boat. This view demonstrates that the carvers knew and wanted to share their knowledge of what was inside the boat. These small single-occupant boats were possibly utilized in hunting or fishing and were probably open to allow for cargo storage.

³ Sean McGrail, ed., *Aspects of Maritime Archaeology and Ethnography* (London: Trustees of the National Maritime Museum, 1984), 41-51.

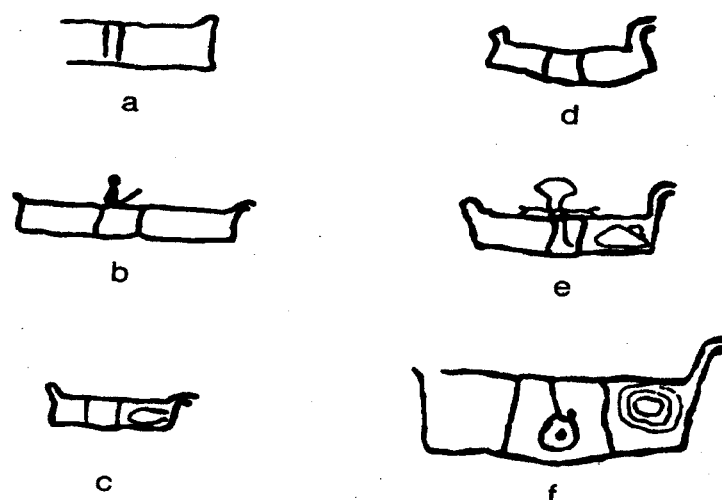


Figure 3; Scandinavian rock-carvings depicting open skinboats. Some contain an individual and cargo (b and e), others show just cargo in the craft (c, e and f). (Detlev Ellmers, "The Earliest Evidence for Skin Boats in Late Paleolithic Europe," in *Aspects of Maritime Archaeology and Ethnography*, ed. S. McGrail) [London: Trustees of the National Maritime Museum, (1984), 51]

The boat is thought to be constructed of a hide stitched to a frame. These sewn hide craft were essentially a wooden frame with hide stitched over it, to form a hull. Skin-covered boats are representative of primitive forms of boat building. However, their use extends for several millennia. Julius Caesar, while on his campaigns in Britain in 55-54 BC, describes how his army made skin boats while in Spain in 49 BC: "Caesar ordered his soldiers to make boats of the kind that his knowledge of Britain a few years before had taught him. First, the keels and ribs were made of light timber, then the rest of the hull of the boats was wrought in wickerwork, and covered over with hides."⁴

⁴ George Bass, *A History of Seafaring based on Underwater Archaeology* (London and New York, Walker and Company, 1972), 115.

Another contemporary writer, Pliny (IV: 104, VII: 206) described British vessels as boats made of a wicker framework covered with hides. These boats were not restricted to either the Roman era or the British Isles. Strabo (3.3.7) mentions their use in northern Spain. Other sources record their use throughout the Middle Ages and into modern times with what is thought to be the last working Scottish curraugh (hide boat) in use dating to the nineteenth century. It is likely that Germanic peoples utilized hide boats before they adopted plank-built craft.⁵

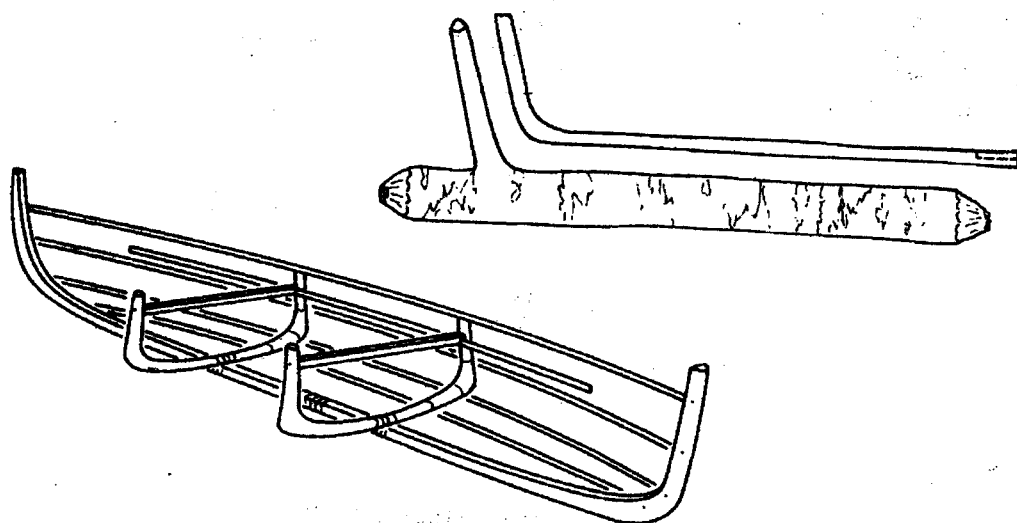


Figure 4; Frame of skinboat replica, made from deer antler and birch. (Detlev Ellmers, "The earliest Evidence for skin boats in late Paleolithic Europe," ed. S. McGrail, in *Aspects of Maritime Archaeology and Ethnography*. London: Trustees of the National Maritime Museum, 1984, 54)

Another type of craft that was contemporary with skin boats, but demonstrates an advance toward true-planked craft, is the logboat. Logboats have been discovered in

⁵ Sean McGrail, *Ancient boats in N.W. Europe, The archaeology of water transport to AD 1500* (London and New York 1987), 187.

Britain, Ireland, France, Belgium, the Netherlands, Germany and Denmark. Unlike hide boats, which do not survive (in the archaeological record), logboats resist decay far better. Several examples have been excavated and documented. Out of the more than 60 logboats that have been studied, about half of them date to the prehistoric period. Others are as recent as the 18th century. A recent example dates to 1773 in New Zealand.⁶ Their long use attests to their effectiveness as coastal craft with sea-going capabilities.

Logboat construction involves the hollowing out of a log in order to create a buoyant hull (this construction method creates what could be called the "dug out" boat). Normally, further alterations would be done to the outside of the boat such as planing the exterior of the log in order to reduce drag. Modifications to the hull were completed in order to facilitate sea-worthiness and handling of the boat on the water. One example of an early logboat is the Clapton boat.

The Clapton boat was discovered in 1987, about 40 meters from the west bank of the River Lea, at the edge of Springfield Park, Clapton in the London Borough of Hackney. Dendrochronology suggests that the boat was constructed between 950-1000 AD.⁷ While this find post-dates the migration period, it does provide evidence that the Anglo-Saxons were utilizing logboats for some types of work, even during the clinker-built longship era. The Clapton boat was found in what was considered to be a rural Saxon location.

⁶ Sean McGrail, *The Ship, Rafts, Boats, and Ships From Prehistoric Times to the Medieval Era* (London: Her Majesty's Stationary Office, 1981), 68.

⁷ Peter Marsden, "A Late Saxon logboat from Clapton, London Borough of Hackney," *International Journal of Nautical Archaeology and Underwater Exploration* 18 (1989): 89-111.

The boat contains valuable ship construction data. This boat is quite small, (see figure 3) perhaps built for only a single person and some cargo. The interior of the boat demonstrates how adzes and axes were employed to cut the boat out of a tree. It is 3.73m long, 0.6 m wide and 0.4 m deep. The craft has a rounded external hull with a tapered stem and stern. One end is squared off at the gunwale level.⁸

Examinations of the logboat indicate that four types of tools had been used in cutting the wood. It is interesting that even on small craft multiple tools were used and that in a rural environment. The tools, as determined by cut marks in the wood, included: a flat edged tool, probably an axe or chopper. This tool had been used to shape the flat sides of the transverse bulkhead. The bulk of the interior was hewed out by an adze-like tool which had a broad, slightly curved blade. Smaller, more detailed trimming was accomplished with a smaller adze which had a cup-shaped blade. The last tool used was a drill which made five holes in the boat. Two of these holes served to hold a tie that strengthened the split end of the boat.⁹

⁸ *Ibid.*, 92.

⁹ *Ibid.*, 92-93.

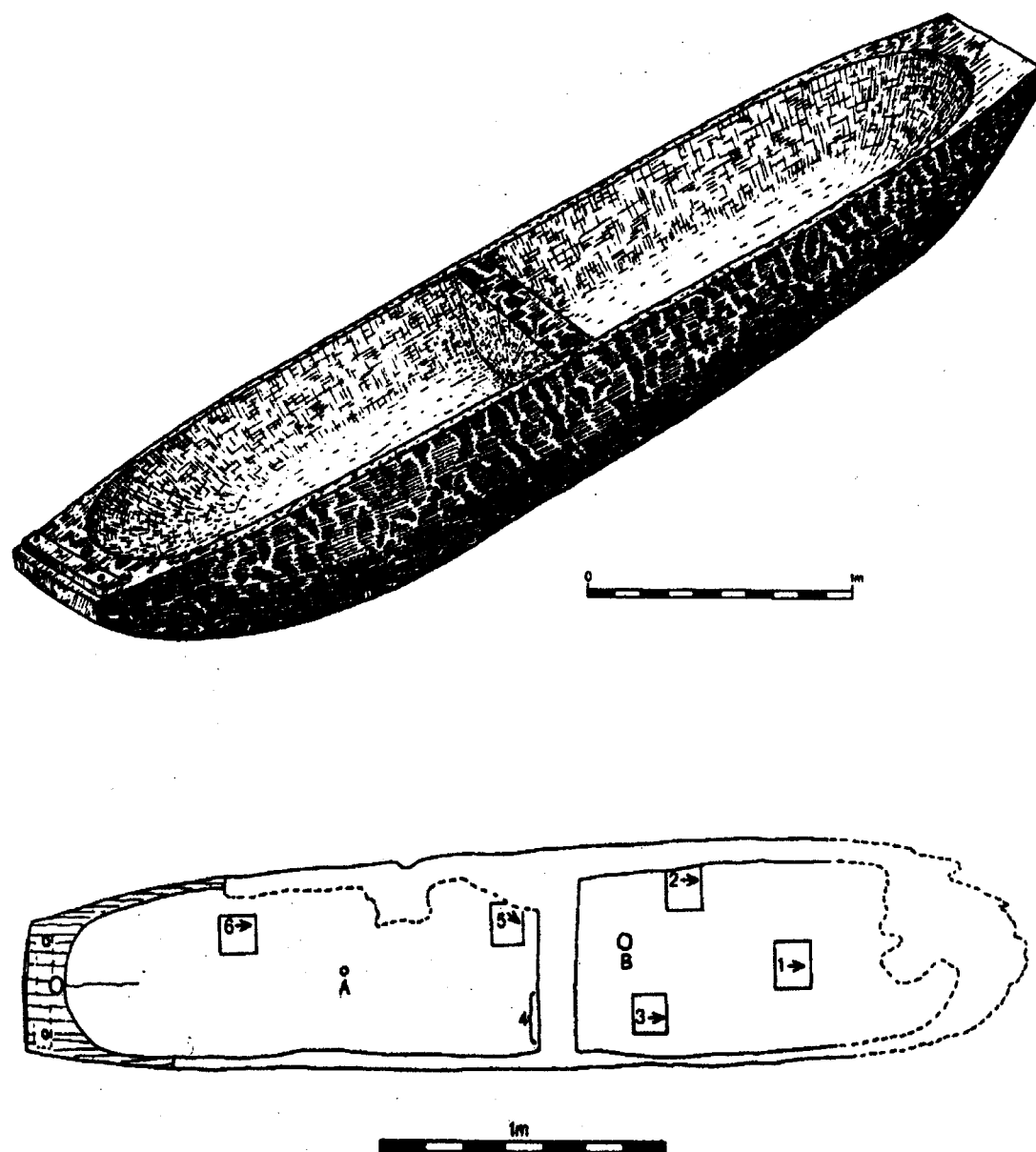


Figure 5. Reconstruction and plan showing locations of toolmarks. Peter Marsden, "A late Saxon logboat from Clapton, London Borough of Hackney," *International Journal of Nautical Archaeology and Underwater Exploration* 18.2 (1989): 96.

Lack of wear on the interior of the boat and well-defined tool marks suggest that the boat may have only had a short life before it was lost or abandoned. There was a large split in the wood along the center of the boat that had been repaired during the Anglo-Saxon period. The repair indicates that even small craft such as this one had value and were important enough to warrant repairs. Reconstruction of the boat suggests that the vessel was suitable for river travel by a single occupant who sat in the center of the boat, on the only bulkhead within the vessel, with a small amount of fishing equipment or cargo. Propulsion was most likely by paddling.¹⁰

The Clapton vessel demonstrates logboat utilization during Anglo-Saxon England. It is important to realize the various tools and kinds of efforts that were expended in building even a small watercraft. It is impossible to determine whether or not the boat was the product of an individual farmer or fisherman, working individually, or with the help of skilled boat builders. The individual who used the boat during this time either had access to a large variety of tools, or skilled workers living in the area contributed to the project. Regardless of circumstance, the boat represents the work of a diverse tool assemblage and demonstrates that even small boats of the time were worth repairing, as opposed to discarding them and building new ones.

In spite of their extensive history, logboats have constraints that limit their usefulness. The size of the available logs is the limiting factor in creating larger vessels with greater capabilities. Logs provide the boat's rigidity. Although the log is not a true keel, it must serve in that same capacity. The use of certain cross-sections of a tree as the

¹⁰ *Ibid.*, 94-96.

hull has a direct bearing on the shape of the sides of the boat. When changing from a logboat to plank boat construction, boat builders addressed this problem. A change was necessary in order to produce vessels of greater size and cargo-carrying capacity.¹¹

Another boat design contemporary with the logboat and hide boat is the sewn plank boat. It represents a clear movement from the log and hide construction toward the longships of the migration period. The Ferriby boat finds are representative of the sewn plank boat. These boats are examples of Bronze Age vessels from England. Sewn plank boats are technologically more complex than logboats and their use is as extensive as logboats in terms of time and regions. The site where these three boats were found and excavated lies along the Humber River at North Ferriby, Yorkshire. Only one of the three boats was intact enough for reconstruction to take place.

The Ferriby boats date to the twelfth or thirteenth centuries B.C, making them the oldest sewn-plank boats in Europe. Their construction consists of three bottom strakes and a short piece of side planking. The main bottom plank is over 13.3 m long. Individual planks were laced together with yew whose thin branches were pounded and twisted into a flexible state. The center plank was comprised of two scarfed planks 14 cm thick and had a width of 65 cm. Other bottom planks on either side of it were about half as thick and were rabbeted into the upper edges of the main, central plank. This

¹¹ Sean McGrail, ed., *Maritime Celts, Frisians and Saxons* (London: Council for British Archaeology, 1990), 62.

fitting technique is best described as “tongue and groove,” and was held in place by battens inside the seams.¹²

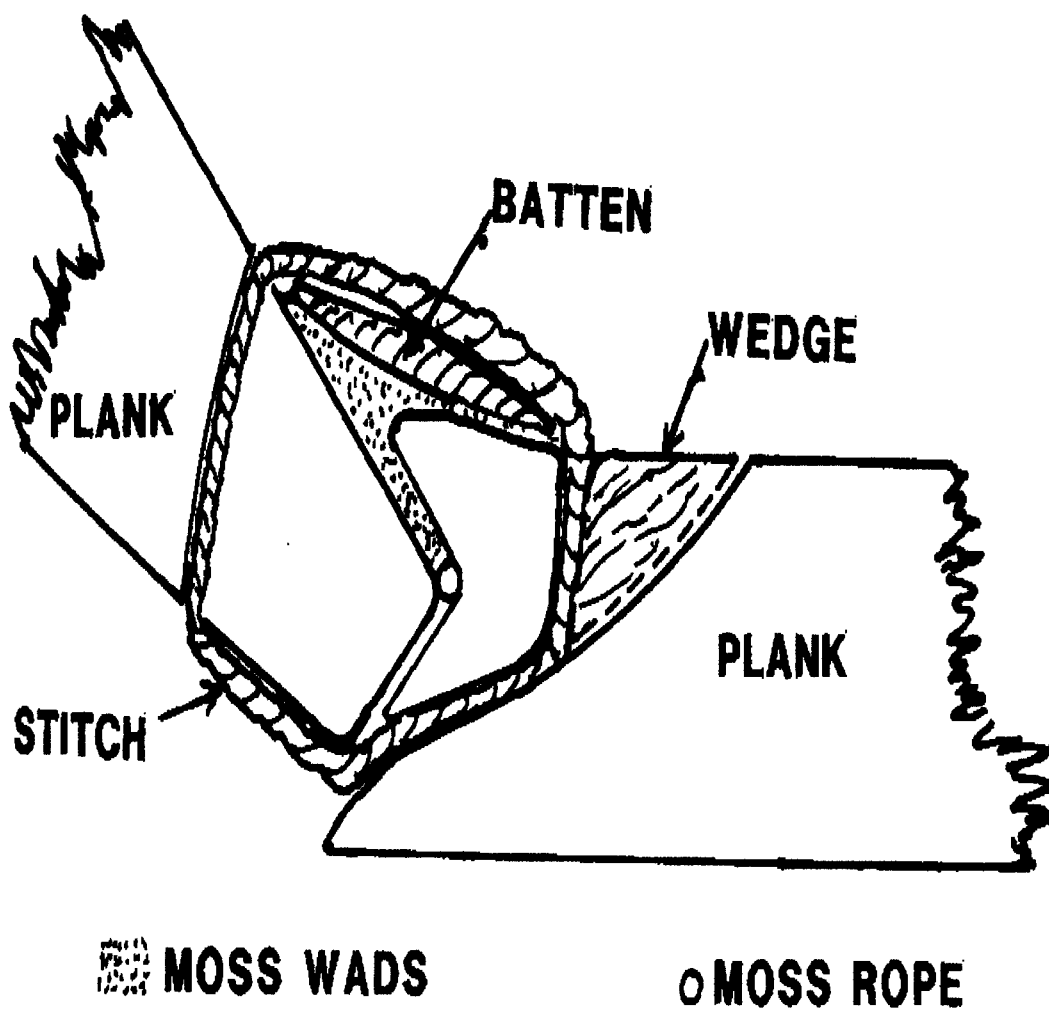


Figure 6. Lacing details on the Ferriby boat, illustrates a bottom and side plank seam. (Richard Steffy, *Wooden Ship Building and the Interpretation of Shipwrecks* College Station: Texas A&M University Press, 1994, 39)

¹² Richard J. Steffy, *Wooden Ship Building and the Interpretation of Shipwrecks* (College Station: Texas A&M University Press, 1994), 37-39.

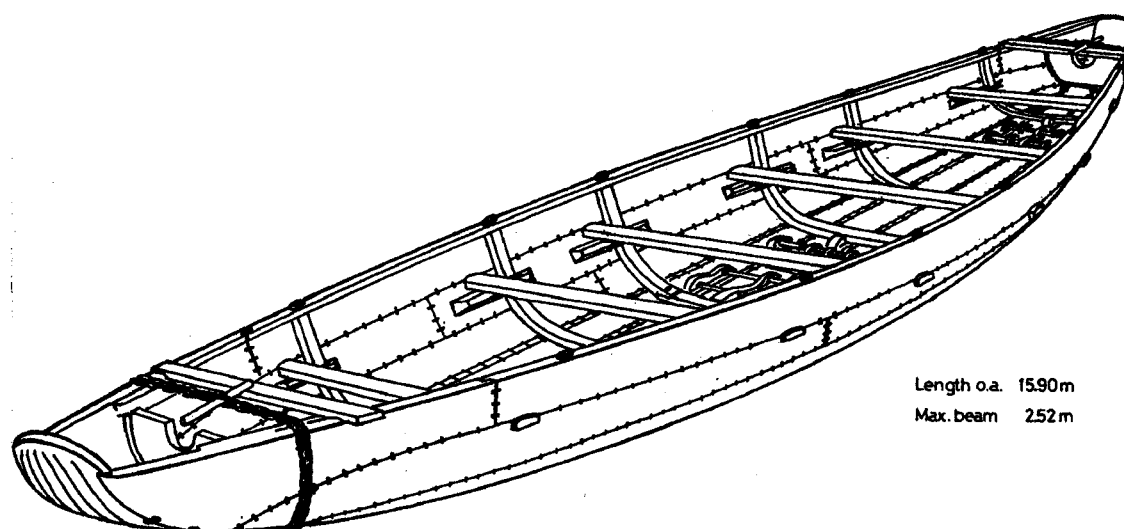


Figure 7. Reconstruction of Ferriby boat number 1, shows internal support structure. (Richard Steffy, Wooden Ship Building and the Interpretation of Shipwrecks College Station: Texas A&M University Press, 1994, 39)

Carved from the same bottom planks were a series of cleats through which horizontal holes were cut and rods inserted. These and others like them supported lateral framing and bulkhead members.¹³ The planks were all made of oak; similar construction techniques using cleats extends to the Viking age. Internal construction consisted of three ribs set into projections from the bottom planks and then lashed to side cleats. Other internal supports consist of several crossbeams that serve as thwarts. These are notched and placed over the top strakes. A packing of withies held in the bottom of the craft by longitudinal laths restricted the movement of bilge water and protected the

¹³ Ibid.

caulking and stitching.¹⁴ These boats had narrow beams, were probably paddled in deeper water, and could have been pushed with poles in shallow areas. The overall length and structural soundness of the Ferriby boat gave it a great deal of potential for inland as well as limited off shore or inter-island use. The various construction methods employed, as well as the extended use of these boats, indicates that they were successful. Craft such as these pre-date the boats employed by the Anglo-Saxons to reach Britain but lasted to become contemporary with the clinker-built vessels used in the invasion of Britain. That these boats still had uses as fishing vessels and as coastal traders. The various boat-types that were used simultaneously attests to a long maritime tradition among the Germanic peoples.

Evidence for the types of vessels used by Germanic groups to reach Britain comes from several sources including literary passages, iconographic evidence on coins, and carvings. Obviously the most reliable data is from the ships themselves. No known archaeological sites contain ships dating from the period 400-600 AD. Furthermore, many of the archaeological sites with ships contain only fragmentary evidence or impressions left in the dirt. In spite of the limited evidence, a reasonably reliable picture of the craft used migration era groups can be constructed.

The Karlby ship stone carving (Figure 7) is an example of iconographic evidence. It is held to be representative of vessels dating to the later migration period based on

¹⁴Sean McGrail, ed., *Rafts, Boats, and Ships From Prehistoric Times to the Medieval Era* (London: Her Majesty's Stationary Office., 1981), 17-18.

decorative animal ornament. Unfortunately, the stone was not discovered in a datable context and that greatly reduces its evidentiary value.¹⁵

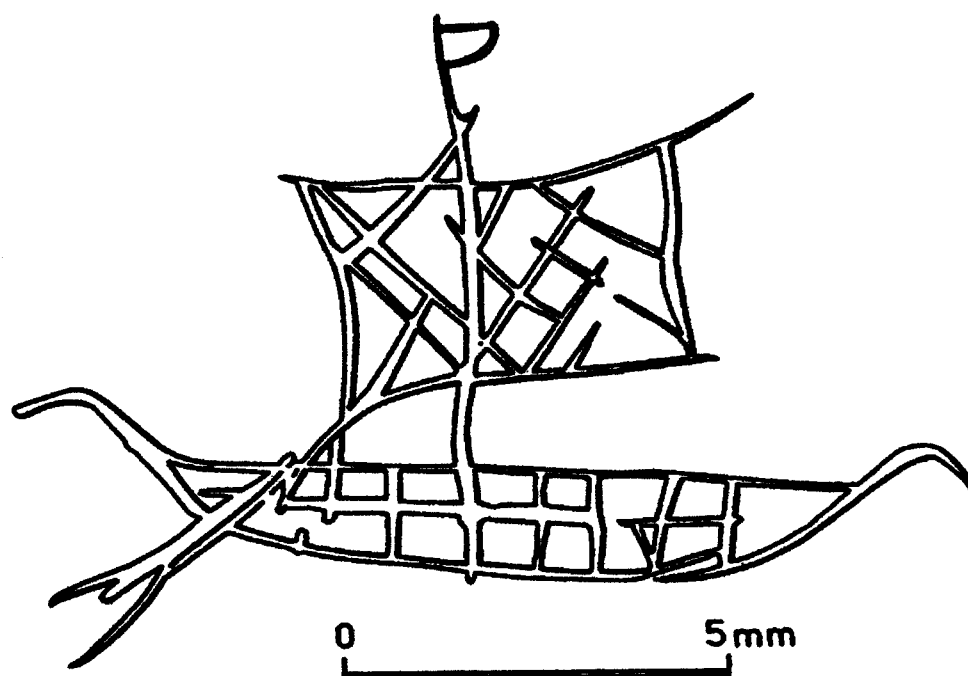


Figure 8. The Karlby ship carving. John Haywood, *Dark Age Naval Power A Reassessment of Frankish and Anglo-Saxon Seafaring Activity* Norfolk, England; Routledge, 1991,) 97.

Boat finds have been discovered in England at Sutton Hoo and Graveney and in Scandinavia and Germany at Nydam, Halsnøy, and Kvalsund. The Skuldelev ships (11th century), while later than the Anglo-Saxon movements to Britain by about 400-500 years, demonstrate the evolution of ship building as well as construction of purpose-built vessels. These finds represent an example of the evolution of the longship. The logboat

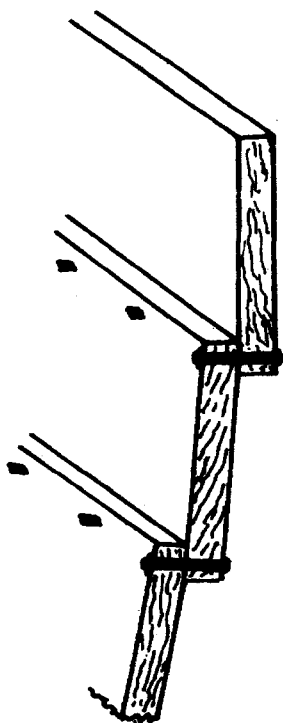
¹⁵ John Haywood, *Dark Age Naval Power A Reassessment of Frankish and Anglo-Saxon Seafaring Activity*, rev. ed., (Norfolk, England: Anglo-Saxon Books, 1999), 96-97.

and hide/sewn boat represent an earlier form of boat building that served local and coastal uses. Craft such as these are useful for tracing boat designs from Roman times through the tenth century when Viking ships were in use. Regarding the evolution of Scandinavian technology, Angela Evans states: "Of all objects found during the period 300-1000 A.D., boats are the most conservative with a fundamental shape that changes little over the centuries."¹⁶ The fact that there was not a rapid assimilation of other groups' ship-building methods, in tandem with the fact that Romans were using fore-and-aft rigged vessels (considered to be a superior design) and had contact with the Germanic tribes, suggests that the clinker-built longship design found in the archaeological record throughout Europe, was well suited and a highly successful vessel for the purposes for which they were employed.

"Clinker-built" refers to a method of arranging the strakes, (rows of planking on the side or bottom of a ship that run from stem to stern to form the hull of a vessel) so that they overlap and are fastened together through the overlap. The term "clinker-built" is only appropriate to vessels built in the Northern European tradition. Clinker-building included the planks overlapping the majority of their length without any substantial thinning of the overlapping sections. The overlap usually consisted of the lower edge of the upper plank outside the upper edge of the lower plank. The planks also could have a good deal of fairing (trimming of edges to reduce drag or to join pieces to create watertight fittings) in areas such as the stem and stern where several pieces were joined

¹⁶Angela C. Evans, "The Clinker-Built Boats of the North Sea, 300-1000 A.D.," in *The North Sea*, edited by Arne Bang-Anderson, Basil Greenhill, and Egil Harald Grude (Oslo: Oxford University Press, 1985), 63-78.

together.¹⁷ The planks were joined together in one of two ways. Either they were fastened together with ties that were secured to a cleat or else the planks were fastened together with trenails. By the 4th century the method of lashing planks became obsolete. Nailing the planks together created a more seaworthy design.¹⁸ This construction technique created a strong and seaworthy hull that could “work” in rough seas without damaging the integrity of the vessel.



Typical clinker construction.

Figure 9. Typical clinker-built hull construction indicative of blue water capable boats used during the migration period. Richard Steffy, Wooden Ship Building and the Interpretation of Shipwrecks (College Station: Texas A&M University Press, 1994,) 100.

¹⁷ Basil Greenhill and John Morrison, *The Archaeology of Boats and Ships* (New York: Naval Institute Press, 1995), 59.

¹⁸ *Ibid.*, 191.

The keel assumed two distinct configurations within the clinker building tradition. One design was the keel plank boat which is associated with shallow, protected waters such as rivers and coastal areas. Vessels with this design have been found in areas between northern Denmark and the northern parts of France. The other basic design consists of vessels with T-shaped keels, some of which could be quite small, and are found in Scandinavia. These ships ranged in size from 25 feet and smaller, such as the Bjorke boat, to vessels that were quite large. An effective chronology of ship design and construction can be constructed from existing archaeological data. While it is not an exhaustive list, exclusion of a ship design does not necessarily mean that it was not in use. In the absence of a ship that fits into the migration period, existing data must be utilized for research purposes. Several ships have been found which both pre-date and post-date the Anglo-Saxon invasions. Ships that are fairly near to the migration period are the Nydam ship, the Sutton Hoo ship burial, the Graveney boat, and the Skuldelev ships. The Skuldelev ships are from the 10-11th centuries. They post date the migration and are not of Anglo-Saxon origin but add important data to ship types and their construction.

The transition from sewn boat to longship is underway in the construction of the Nydam ship, a vessel contemporary with the earliest part of the migration period. The planks on this vessel are not sewn; they are fastened together with iron clench nails. Clenching is the process by which the end of a nail is "clenched" or bent over an iron rove (backing plate) on the inside of the hull. To add internal strength and rigidity to the hull, ribs were cut and fashioned to form horizontal support for the vessel. The ribs were

lashed to cleats that were fastened to the planking. This method of attaching ribs is typical of sewn boats and early longship designs.¹⁹

No known longships are contemporary with the migration period, but some come close. One such vessel is the Nydam ship. It was discovered in 1864 in Schleswig, north Germany, and was the first ancient vessel to be properly excavated, and reconstructed by an archaeologist. The ship has been dated to between 310-350 AD. The craft was deposited in a bog, and like other ship finds, was an offering, most likely involving some kind of war-related ritual.

The ship is eighty-two feet long with a beam (width) of approximately nine feet. It is built completely of oak, with the exterior hull of the craft consisting of only thirteen pieces of wood: the backbone of the ship was a thick broad plank that had only a small projection into the water. These were stem and sternposts and five strakes on each side. These strakes consist of a long single plank running the full length of the vessel and are twenty inches broad. All of the timbers used in the construction are unscarfed with the exception of the gunwale.²⁰ The use of unscarfed wood is an earlier construction method and was no longer used by the time of the Sutton Hoo ship construction (7th century). The use of large, single planks also attests to the skill of the boat-builders. It required a great deal of time and skill to split solid logs forming single planks.

¹⁹ George F. Bass, *A History of Seafaring Based on Underwater Archaeology* (New York: Walker and Company, 1972), 162-163.

²⁰ Angela Evans, "The Clinker-built Boats of the North Sea, 300-1000 A.D.," 65-66.

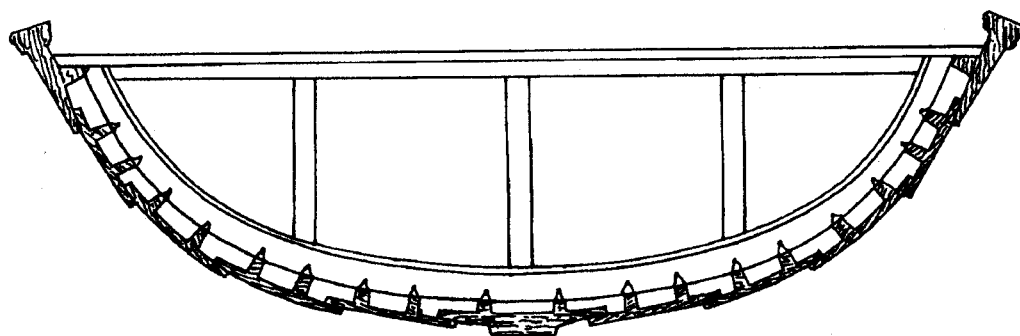


Figure 10. Transverse view of the Nydam ship with overlapping strakes and clench nails use. (Richard Steffy, Wooden Ship Building and the Interpretation of Shipwrecks (College Station: Texas A&M University Press, 1994, 101)

Propulsion was by oars and thirty oarlocks are lashed to the gunwale of the ship. The vessel was controlled by means of a large steering-oar, most likely located at the stern of the ship. No evidence exists to suggest that the ship carried a mast or utilized sails in any fashion. The long, narrow shape of the vessel, but more importantly the lack of a true keel, would make sail use difficult.²¹

In spite of the vessel's length-to-beam dimensions, open interior and low freeboard, it is sturdy and seaworthy, able to make coastal trips and short open ocean passages. Nydam-type ships certainly are candidates for use by Anglo-Saxons as vessels that could have been employed during the raids and subsequent settlement of Britain. The shape of the Nydam ship allows it to "slice" through rolling seas and its narrow beam would make it quite fast under oars.

²¹ Bass, *A History of Seafaring Based on Underwater Archaeology*, 162-163.

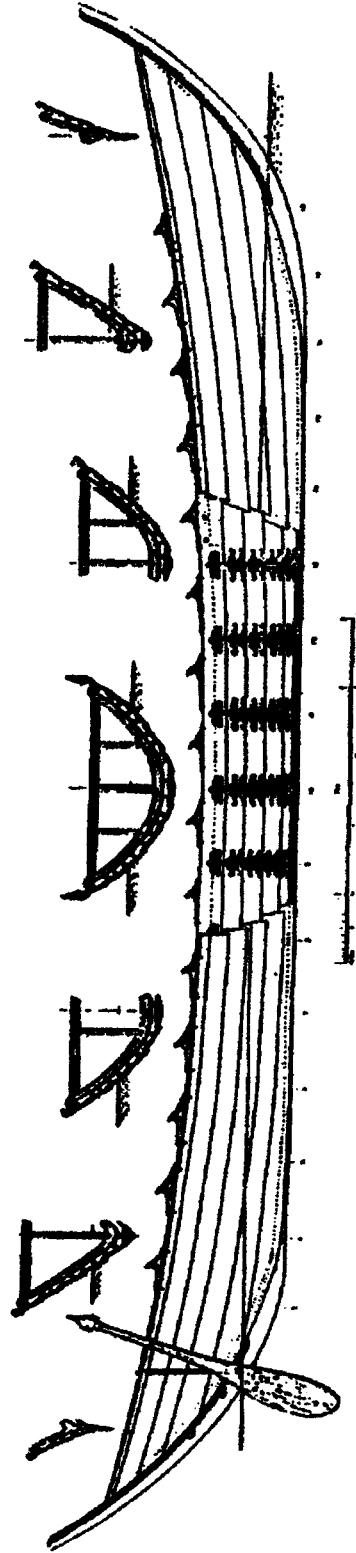


Figure 11. Longitudinal view of the Nydam Ship, with transverse hull construction. (OleCrumlin-Pedersen, "The Boats of the Angles and Jutes," Maritime Celts, Frisians and Saxons, ed. Sean McGrail (Nottingham: Derry & Sons Limited, 1990), 109.

Towards the end of the sixth century new techniques in shipbuilding began to appear. The use of long, single strake is discontinued, in favor of composite strake. Other characteristics are contiguous, such as hull ship, vessel form, and are observable at the Sutton Hoo site.²²

During the sixth and seventh centuries, Anglo-Saxons dominated portions of Britain. In East Anglia, near the River Deben, across from the town of Woodbridge, lies the Sutton Hoo ship burial. The ship, a large ocean-capable vessel, measures ninety feet long, fourteen feet in its beam and has a depth amidships of four a one half feet. The prow of the vessel rose to approximately twelve feet, six inches. The ship drew only two feet of water, which allowed it the versatility to navigate inland by utilizing rivers.²³ This ship, in order to serve as a burial chamber, possibly for Redwald, a Saxon Bretwalda or "High King,"²⁴ had to be hauled overland for more than a third of a mile. To do this the ship was most likely pushed on rollers until it was over a burial trench that had been dug to hold the ship. It was then lowered into the trench and loaded with burial deposits and covered with dirt. This method of ship burial is also used in Viking sites in Norway.²⁵

Sutton Hoo exhibits several technical advances in comparison with the Nydam Ship. Most noticeable is the use of composite strakes, which is a single strake comprised

²² Angela Evans, "The Clinker-built Boats of the North Sea, 300-1000 A.D.," 65-66.

²³ Rupert Bruce-Mitford, *The Sutton Hoo Ship-Burial* (London: The Trustees of the British Museum, 1968), 37-41.

²⁴ Ibid., 20.

²⁵ Ibid., 37.

of several lengths of timber. These sections are riveted together at overlapping joints. The Nydam ship, in contrast, utilized solid pieces of wood to form its strakes. The strakes on the Sutton Hoo vessel are estimated to be only one-inch thick. This data is gathered from surviving clinch-nails that are about two inches from head to rove. These refinements in technique demonstrate that either the boat-builders had become more confident in their wood and iron working, or simply that in order to produce larger vessels, joining strake sections had become a necessity.²⁶ It certainly is easier to produce several smaller strakes, than one large one. Another advance is that the Sutton Hoo ship probably had its internal ribs fastened directly to the strakes and not lashed to cleats as in the Nydam ship. This created a stronger hull, able to withstand heavier seas.

Thirty-eight to forty oarsmen powered the boat. They would have been exposed to the elements in the open boat. No evidence for a mast or rigging was discovered with the ship.²⁷ Some scholars have argued that due to the preservation of the site and the vessel's design characteristics, it was capable of, and likely was sailed.²⁸ The Sutton Hoo ship, in the methods involved in its construction as well as the capabilities of the vessel, indicates that technological change occurred in the latter portion of the migration period.²⁹

²⁶ Ibid., 41-42.

²⁷ Ibid., 42.

²⁸ For an examination of the argument over sail use by Anglo-Saxons, including the Sutton Hoo Ship see John Haywood, *Dark Age Naval Power, A Reassessment of Frankish and Anglo-Saxon Seafaring Activity* rev. ed., (Norfolk, England: Anglo-Saxon Books, 1999), 97-105. Haywood argues that in spite of the archaeological evidence, which lacks mast and sails, the Sutton Hoo ship has all of the characteristics of a sound sailing vessel.

²⁹ Numerous scholars have argued either for or against the use of sail by the Sutton Hoo vessel. Leslie Alcock stated: "In sum, then, all the available archaeological evidence is for rowing boats, not sailing vessels, among the early English and their continental ancestors...but it is inconceivable that the

Several shipwrecks dating from the tenth through the twelfth centuries have been excavated. These wrecks come from the Viking age and post-date the Anglo-Saxon migration by several centuries. The vessels help to illustrate the progression of northern European shipbuilding.

The Graveney boat was discovered in 1970 in the Graveney Marches in Kent and was dated by dendrochronology to about 927 A.D. The boat was about fourteen meters long, with a maximum beam of just less than four meters. The vessel is thought to have served as a cargo ship and had been purpose-built to function exclusively in that capacity. Experiments in reconstruction have given the craft a carrying capacity of about seven tons.³⁰ Conversely, Nydam and Sutton Hoo are thought to be warships whose main function was to serve as troop transports. The vessel was a clinker-built hull with composite strakes, which average about 4.5 meters each. This is similar in construction to the Sutton Hoo ship, whose strakes were about 5.5 meters each.

idea of sail, known in the Bay of Biscay before the Christian era, had not been diffused to the North Sea by the time of the Migration. Fortunately we are saved from the conclusion that the archaeological evidence has not given us the full range of Anglo-Saxon ships by the latest, authoritative reconstruction of the Sutton Hoo ship which shows it under sail before a following wind (*Aurthur's Britain*, p 301).” This reference refers to the work of H. Akerlund, who speculated that the hull of Sutton Hoo was strong enough to support mast and sail. This speculation was accepted by R. Bruce-Mitford in *The Sutton Hoo Ship Burial* (London, 1975). However a strong hull does not mean sail use and this assessment is simply speculation and is subject to criticism. Later ships, such as the Kvalsund ship, whose midship area was not disturbed by a burial chamber, had a hull and keel as strong as Sutton Hoo's, if not stronger, and still exhibited no evidence for mast and sail.

³⁰ Valerie Fenwick, ed., *The Graveney Boat a Tenth-Century Find from Kent* (Greenwich: National Maritime Museum, 1978), 29.

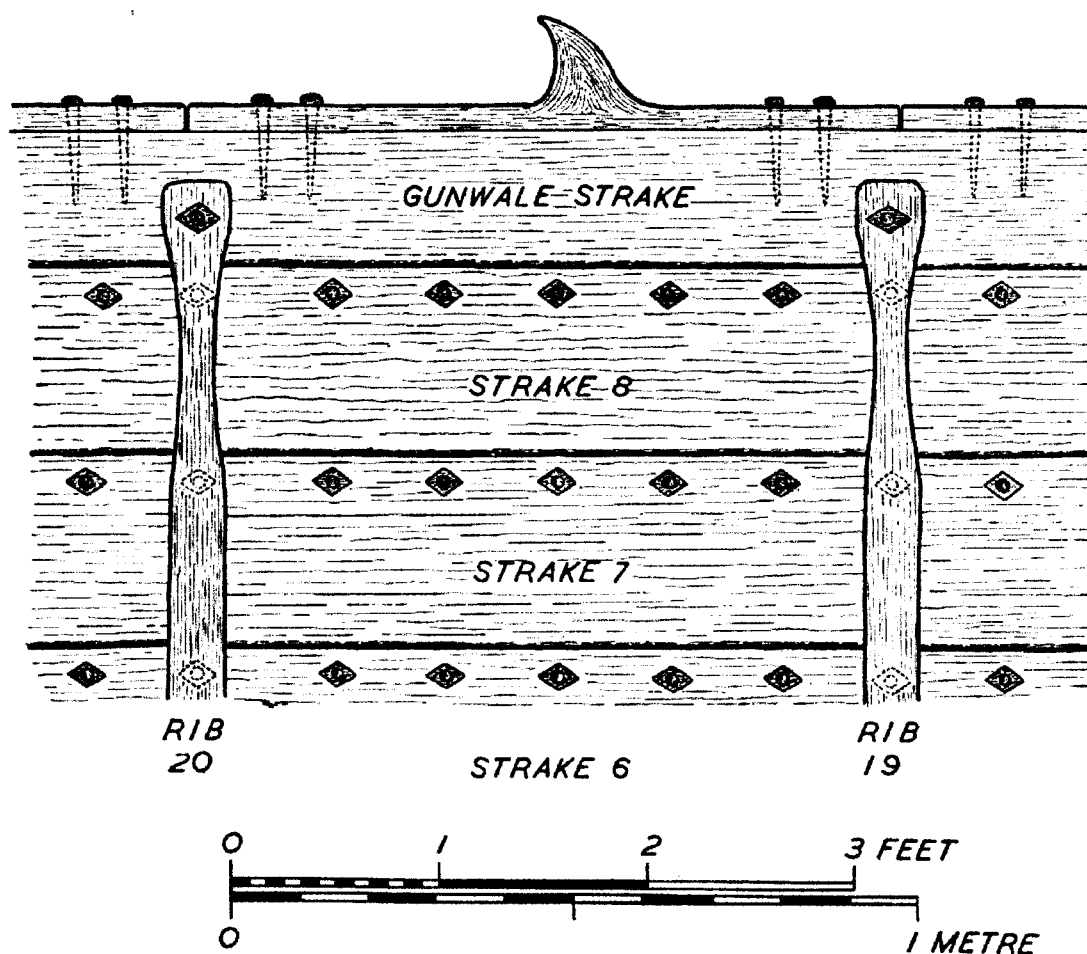


Figure 12. Segment of Sutton Hoo hull construction. Note the increased use of iron fasteners. (Bruce Mitford, *The Sutton Hoo Ship-Burial* (London: The Trustees of the British Museum, 1968) 41.

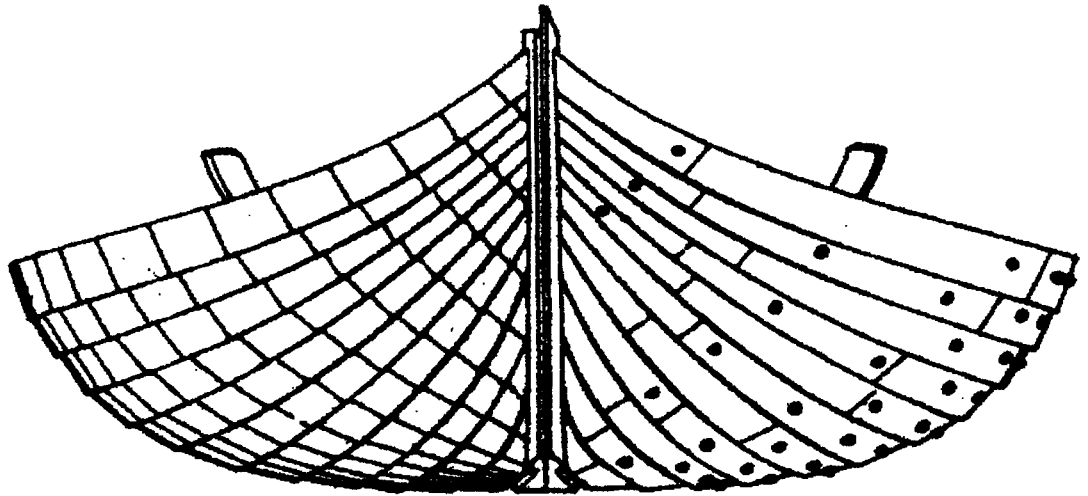


Figure 13. Hull form of the Graveney Boat. The right side of the diagram illustrates the use of composite strakes found on the Sutton Hoo ship through Viking times. (Valerie Fenwick, *The Graveney Boat: a Tenth-Century Find from Kent* (Greenwich: National Maritime Museum Archaeological Series number 3, 1978) 297.

The ship is constructed entirely of oak. The keel, or centerline strake, was thicker than the hull strakes and was hewn on the ship's underside to leave a central web between the garboards. This left enough wood for the ship to easily take groundings, with enough wood at the stem and stern to be used to cut a box scarf for the posts. This false keel keeps the ship's draft shallow, and should be considered a plank-keel and not necessarily a true keel. Intentional beaching may have been part of the craft's functions. The scarfs on the vessel are beveled on the top and bottom edges; this served to create a working stable hull and allowed the laps (areas where the scarfs overlapped) to be made watertight.³¹ Wooden pegs and iron clench nails were employed as fasteners for the hull. Unfortunately, due to the state of the ship's preservation, little of the wooden pegs

³¹ Ibid., 93-96.

survive. The nails were driven in from the outside of the hull and clinched on the interior. The ship probably used a starboard steering rudder, which would see almost continuous use in England for the next two centuries, as illustrated in manuscripts and in the Bayeux Tapestry.³²

The Graveney Boat's hull was not fully intact when discovered. This allowed for speculation concerning the vessel's methods of propulsion and use. Ships depicted in the Caedmon manuscript, the Bayeux Tapestry as well as town seals from neighboring Faversham and Fordwich, provide iconographic evidence depicting how the Graveney Boat may have been sailed. It is argued that the ship had a single mast-step with provisions for lowering it forward as illustrated by ships in the Bayeux Tapestry. The ship probably carried a single sail, made of wool. Rope was found with the ship, which suggests that the mast was stayed.³³

It is with aspects of construction as well as assumptions of the vessel's ability to carry sail, that notions of function are considered. The size of the ship places it in the category of merchant ships of about average size. The vessel was capable of traveling in unprotected waters in relative safety. The ship's draft / beam ratio and long pronounced sheer-line indicates that the ship, while carrying a heavy centralized cargo amidships, would provide stability and balance with the center of the ship acting as the center of buoyancy. The only flaw in the vessel is the low freeboard (hull area above the water,) this meant that in pitching seas or with the ship heeled over under sail, the ship would

³² Ibid., 251-252.

³³ Ibid., 251-254.

become quite wet, perhaps to the point of swamping the vessel. It is possible that some form of leather or canvas dodger was employed to prevent this problem although no evidence exists to prove this.³⁴

The Graveney boat (Figure 14) represents one of the oldest vessels of the clinker-built tradition that has been called a purpose-built vessel. Sutton Hoo and the Nydam ships share many similarities and have been classified as war ships, or more accurately, troop transports. With some knowledge now achieved of separate "war" and "merchant" ships from the post-migration era, a question to consider is this: in what ways, if any did merchant ships work with war ships as part of a raiding or trading unit? This might have allowed cargo ships to carry supplies and loot, while troop ships landed disembarking troops to raid inland. The Viking age ships from Roskilde Fjord indicate that different types of ships could be found together.

One of the most spectacular finds comes from the latter part of the Viking era dating to about 1000 A.D. This group of shipwrecks was located in Roskilde Fjord. The fjord is more than two kilometers wide, but the water is shallow, rarely greater than one meter in depth. Any vessel traveling the fjord is restricted in movement by the narrow channels of greater depth. The ships were discovered in a channel called *Peberrenden*.³⁵

³⁴ Ibid., 303-306.

³⁵ Olaf Olsen and Ole Crumlin-Pedersen, *Five Viking Ships from Roskilde Fjord* (Copenhagen: National Museum, 1978), 9.

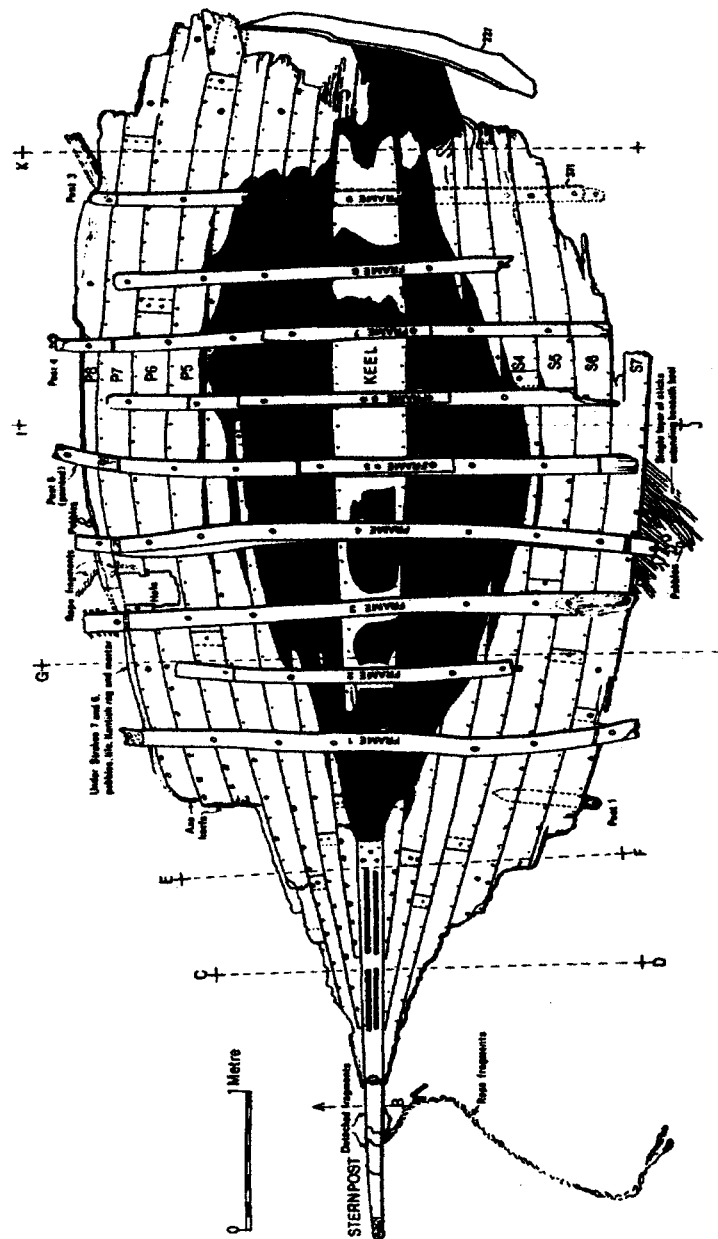


Figure 14. Excavated remains of Graveney Boat. Note the composite strakes and fasteners used on the ribs, also the lack of a mast step should be observed. (Valerie Fenwick, The Graveney Boat: a Tenth-Century Find from Kent Greenwich: National Maritime Museum, Archaeological Series number 3, 1978),15)

Five vessels were discovered and excavated, after a cofferdam was erected and water was pumped out to expose the ships. The vessels were intentionally scuttled after being loaded down with stones. The purpose was to block the channel to raiders. Between the two narrow approaches the blockade was initiated by ramming pilings into the earth. These oak posts were barbed to make it more difficult to raise them. The ships were sunk against some posts, while other posts were punched through the hulls to anchor them in place.³⁶

Excavation and study of the vessels has contributed greatly to our knowledge of Viking era ships. Of the five ships studied, three types have been distinguished. Two of the vessels are warships: Wreck 2 is a typical longship and Wreck 5 is a smaller warship. Wreck 1 is a large trading vessel and Wreck 3 is a small merchant ship. The last craft, Wreck 6 is a smaller coastal vessel, perhaps a fishing boat. Wreck 5, when it was used, was a light, strongly-built vessel that was 17.4 meters long and 2.6 meters in beam. This ship was capable of oar or sail propulsion. The ship was constructed of seven strakes on each side of the keel, the bottom four were oak and the upper three were ash. Internal strengthening was achieved with the use of sixteen ribs. Cross beams at every other rib provided support for plank-built decking. This ship also had stationary thwarts above the deck beams at twelve of the frames; At this point oar holes were cut out of the top strake. Twenty-four men could be used to oar the ship, when not under sail. Evidence for sail use was found in the keelson, which had a mast-step. The top strakes of the vessel were used on another ship and transferred to this ship at one point, that is observable in older

³⁶ Ibid., 61.

oar holes that were patched when new ones were cut to fit this ship. Other repair work, and a keel that appears to have been beached numerous times, suggests that this ship had a long career before it was scuttled.³⁷ This ship, while soundly built and seaworthy, was likely utilized for local traveling in protected waters or making short open ocean crossings.

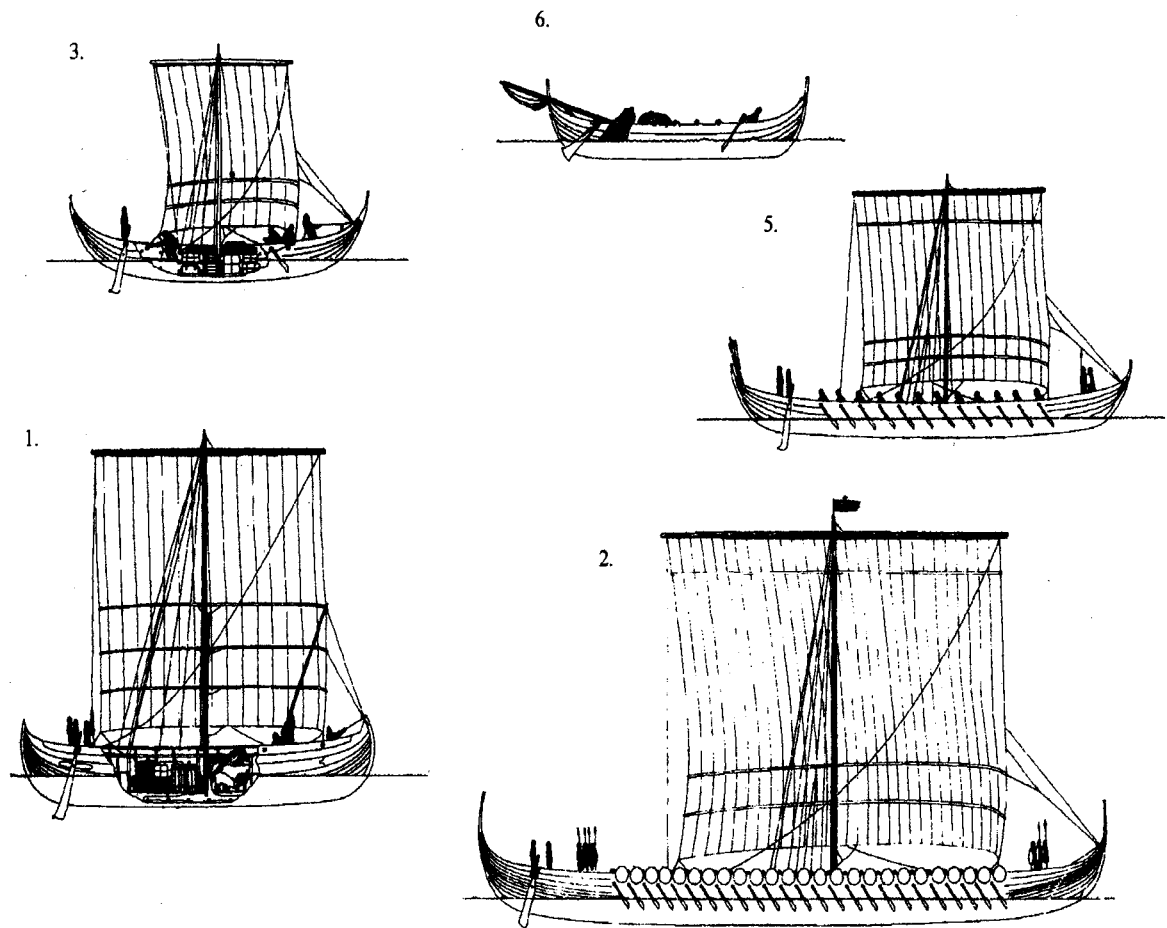


Figure 15. View of the five ships found at Roskilde Fjord, including sail plans, cargo storage areas, and relative size differences. (Gillian Hutchinson, Medieval Ships and Shipping (London: Leicester University Press, 1997), 6)

³⁷ Ibid., 105-106.

The larger longship (Wreck 2) is of the ocean going type. 29 meters long and 4 meters in beam, this vessel also carried twenty to twenty-five pairs of oars. Poor preservation limits what can be learned from this ship. However, all of the parts recovered were made of oak. Keel planks had been worn down from numerous beachings. The ship was capable of oar or sail-driven propulsion and numerous repairs suggest that it was old when scuttled.³⁸

The two trading ships share many of the same characteristics as the warships, but important distinctions are observable. The ships are clinker-built of oak, have oar holes and mast steps for sailing. The key differences between them are the ships' dimensions. The small trading ship (Wreck 3) is 13.8 meters long and 3.4 meters in beam. The ship has a length to beam ratio of 4.1:1, while the small warship's ratio is 6.7:1. The cargo ship has a wider area to hold trade items which reduces the ships oaring abilities. The warship has a low deck from stem to stern and oar holes along the length of its hull; the trading ship has a half deck fore and aft. The center has an open hold about 4 meters long. Oar holes on the trading ship are in the fore and aft sections and only total 7 ports in number. Out of the seven ports, only four of the holes show signs of use. This indicates that the crew of the ship numbered five to six men, far too few to make an effective raiding ship.³⁹

Wreck 1, the largest trading vessel, is different from the other ships. It does not appear to share the characteristics of local shipbuilding traditions. The ship is built of

³⁸ Ibid., 111-112.

³⁹ Ibid., 115-116.

pine, and had planks twelve to thirteen meters long. This wood was not available in Danish forests at this time. Southern Norway appears to be a strong candidate for a building location. Wreck 1 is 17 meters long and 4.5 meters wide. The long strakes, high sides, and wide beam impart a different character to this ship. It is unsuited for beaching actions, is solid and heavily built and ideal for open ocean travel while transporting trade items in its hold. This ship, like the smaller trading vessel, was decked fore and aft with a large cargo area amidships. Internal strength was achieved by a system of crossbeams and large horizontal knees. A large wooden block was found at the forward end of the ship. This block had three indentations to secure the tracking spar to the sail. This allowed the sail to be set for different points of sail, further increasing the ship's sailing potential.

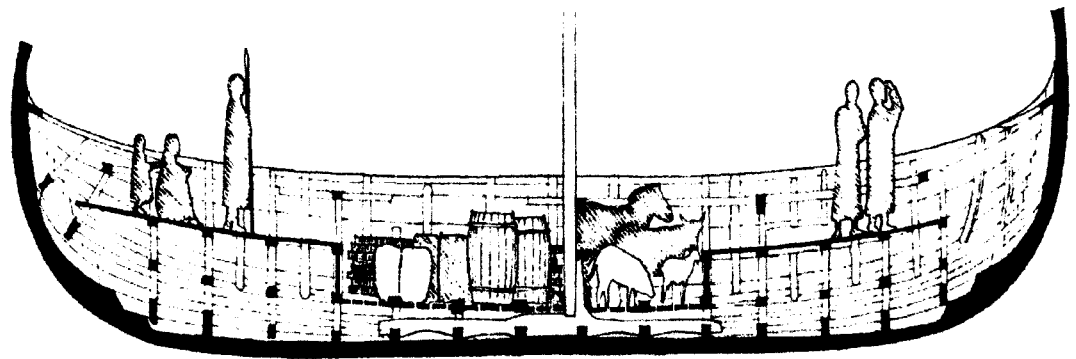


Figure 16. Internal view of the cargo hold and internal structure of the large trading vessel at Roskilde Fjord, (Wreck 1). (Olaf Olsen and Ole Crumlin-Pedersen, Five Viking Ships from Roskilde Fjord, Copenhagen: The National Museum, 1978,) 121)

Wreck 6 was also built of pine but its dimensions are far different than the large trading ship. It is 11.6 meters long and 2.5 meters in beam. It is an open boat that could sail and most likely be paddled, but not oared. There are no oar piercings on the upper strakes. No evidence for a deck was recovered, and internal supports, while present, do not represent a vessel that was used in open water. This craft was probably best suited for fishing and other localized uses.⁴⁰

A number of things have been learned from this survey. In spite of the limited evidence available concerning the ships employed in the migration period, trends do begin to appear. With the beginning of longship construction, a trend towards larger ships commences; these vessels are no longer hindered by the length of the tree that needed to be hollowed out. Sewn boats have size limitations due to the nature of their construction. Stitching is only strong enough to maintain integrity on craft of smaller size. At some point the strakes become too large to be held in place by lacing techniques. Smaller strakes could be employed. However, the oldest longship, the Nydam ship, was constructed out of solid strakes. Composite strakes are not observed until the Sutton Hoo find and appear to be a later hull construction technique. A further hindrance to the sewn boats is that even with composite strakes, on a large sewn boat the hull would work and flex on confused seas, resulting in a structurally unsound vessel.

Longship construction exhibits a chronological trend toward more complex and more seaworthy hull configurations utilizing smaller composite strakes, and the implementation of sails. This continues up to the Viking era, when purpose-built ships

⁴⁰ Ibid., 116-124.

like the Graveney and Skuldelv ships begin to emerge. To make the longships sail effectively, an evolution from a flat-bottomed vessel to a plank keel and onwards towards a true keel was needed. This assists in pointing a vessel under sail but reduces the beaching abilities of the ship, without damaging the hull.

In migrating to Britain, it now seems most likely that the Anglo-Saxons utilized oared longships such as the Nydam Ship or possibly craft similar to the Sutton Hoo find. In either case, a central issue concerning the migration is the possibility of Anglo-Saxon use of sail. Current archaeological evidence indicates that sails were not in use by Anglo-Saxons at this time. Objections have been raised in that the archaeological finds are limited and the materials involved in sailing gear, such as rope and wool sails, would not survive (in the archaeological record).⁴¹ These arguments, while credible, tend to be tied to a mass-migration theory which in turn requires large numbers of sailable craft to get to Britain in order to achieve Anglo-Saxon dominance. Available data do not support this. Considering the amount of time and materials involved in longship construction, it is possible that only small numbers of warriors were raiding the British coast and then found opportunities to settle permanently. Warbands that controlled resources in an area might be able to justify the expense of time and materials to build warships, especially if there stood to be a good return on the investment.⁴² Men in good condition would have

⁴¹ John Haywood, *Dark Age Naval Power: A Reassessment of Frankish and Anglo-Saxon Seafaring Activity*, rev. ed. (Norfolk, England: Anglo-Saxon Books, 1999), 100-110.

⁴² For an explanation concerning the economic support structure of the *comitatus*, see Stephen S. Evens, *Lords of Battle, Image and Reality of the Comitatus in Dark-Age Britain* (Woodbridge, England: The Boydell Press, 1997), 121-135.

the physical strength to row a vessel the necessary distance and upon arrival to beach the ship and raid inland.

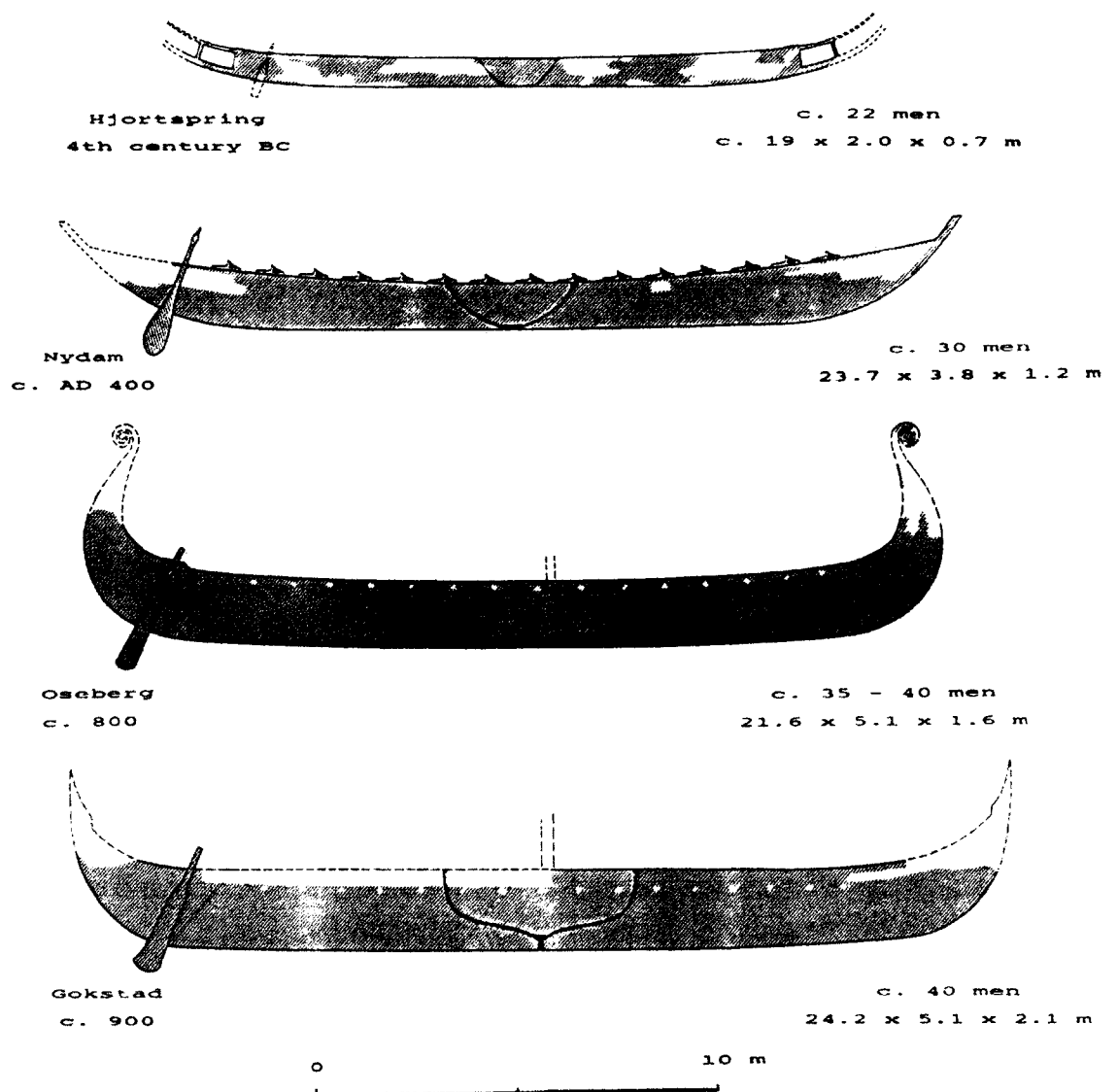


Figure 17. Evolution of the Longship. The dark lines amidships represent the changing hull configuration, of central importance to building ocean capable ships. (Ole Crumlin-Pedersen, "Ship Types and Sizes AD 800-1400," in Aspects of Maritime Scandinavia AD 200-1200, Roskilde, Denmark: The Viking Ship Museum, 1991), 73)

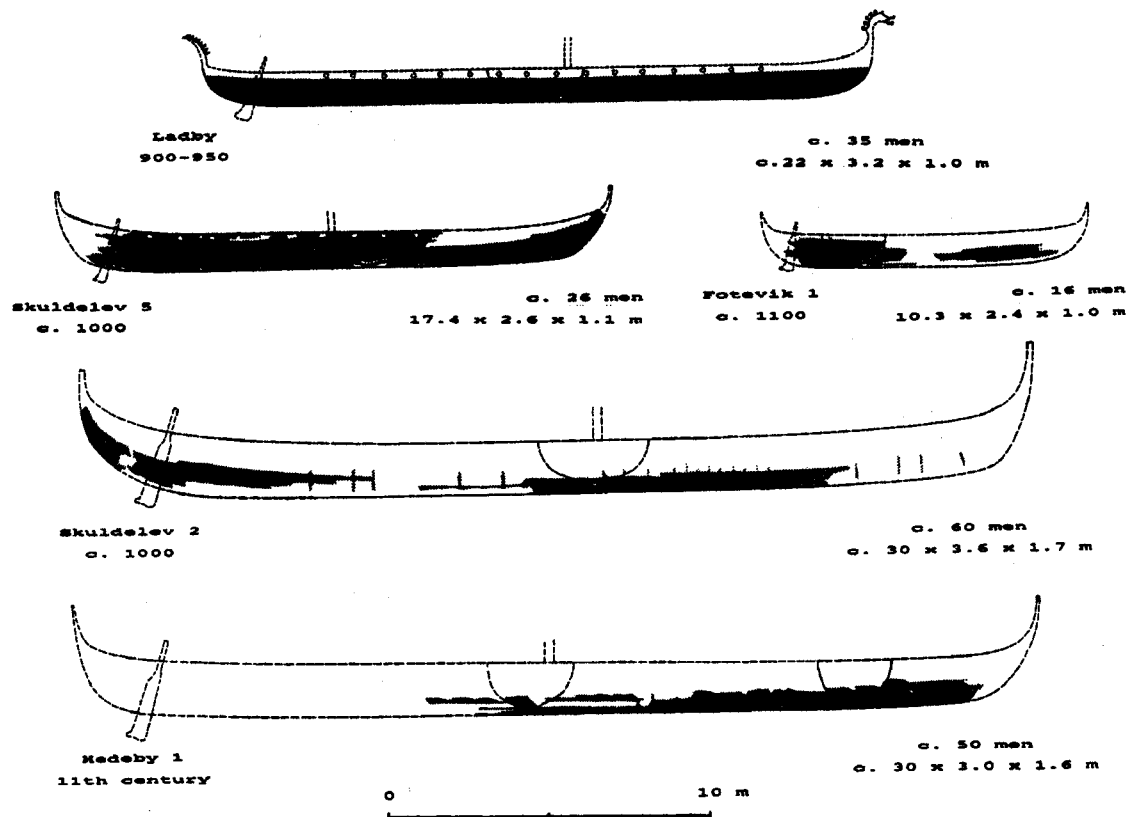


Figure 18. Warship lines, with lines amidships illustrating hull form evolution. (Ole Crumlin-Pedersen, "Ship Types and Sizes AD 800-1400" in Aspects of Maritime Scandinavia AD 200-1200 Roskilde, Denmark: The Viking Ship Museum, 1991), 74)

Regardless of the changing hull design or length of various vessels, purpose built or not, one factor remains a constant. Essentially all of the clinker-built ships in question were constructed utilizing basically the same tool kits. This is perhaps the only area concerning the Anglo-Saxon migrations where the literary record supports the archaeological record. One begins, however, to get an idea as to how difficult, how expensive and time consuming it would be to build the numbers of ships necessary for a

full-scale migration by sea and an invasion thereafter. Construction methods, together with the time required to build ships, are crucial factors. All had to be carefully planned long in advance. Let us examine the various aspects involved more fully.

When building any longship, the first thing that must be done is to select trees, cut them down and turn the logs into useful timber. Romans used saws, but with the collapse of the empire, it seems that their use declined. Saws were not used throughout the migration period and throughout most of the Viking era. Numerous other cutting and hacking tools were used to accomplish the same goal. One of the most important and complete collection of tools comes from The Mastermyr find, a Viking Age tool chest from Gotland. It contains an entire tool assemblage for both blacksmithing and carpentry work. The tools date from the end of Viking era, about 1000 AD, and are thought to represent tools in use throughout the early Iron Age.⁴³ Important tools to a shipwright would be the various axes and adzes as well as the tools to make clenched nails and rivets. The Mastermyr Find allows one to examine these tools in detail. Figures 15 and 16 illustrate some of the most common and versatile shipbuilders' tools. These tools are all forged of iron. The marks made by them on ships' planking serve to demonstrate how they were employed in the construction process.

⁴³ Greta Arwidsson and Gosta Berg, *The Mastermyr Find, A Viking Age Tool Chest from Gotland* (Lompoc, California: Larson Publishing Company, 1999), 21.

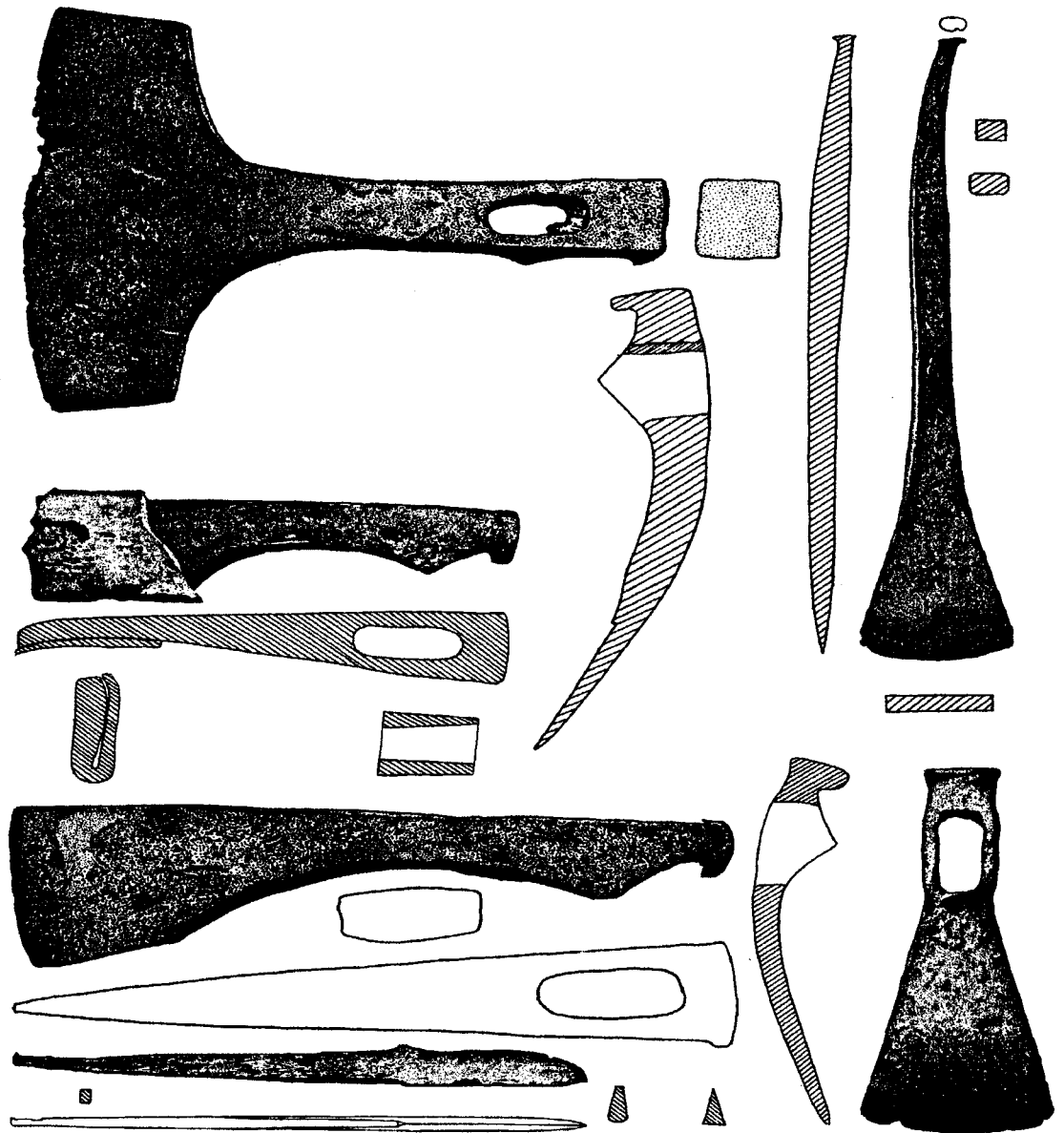


Figure 19. Tools from the Mastermyr Find. Contents include: a chisel, axes and adzes, all of central importance to ship construction. (Greta Arwidsson and Gosta Berg, The Mastermyr Find, A Viking Age Tool Chest from Gotland (Lompoc, California: Larson Publishing Company, 1999), Plate 26)

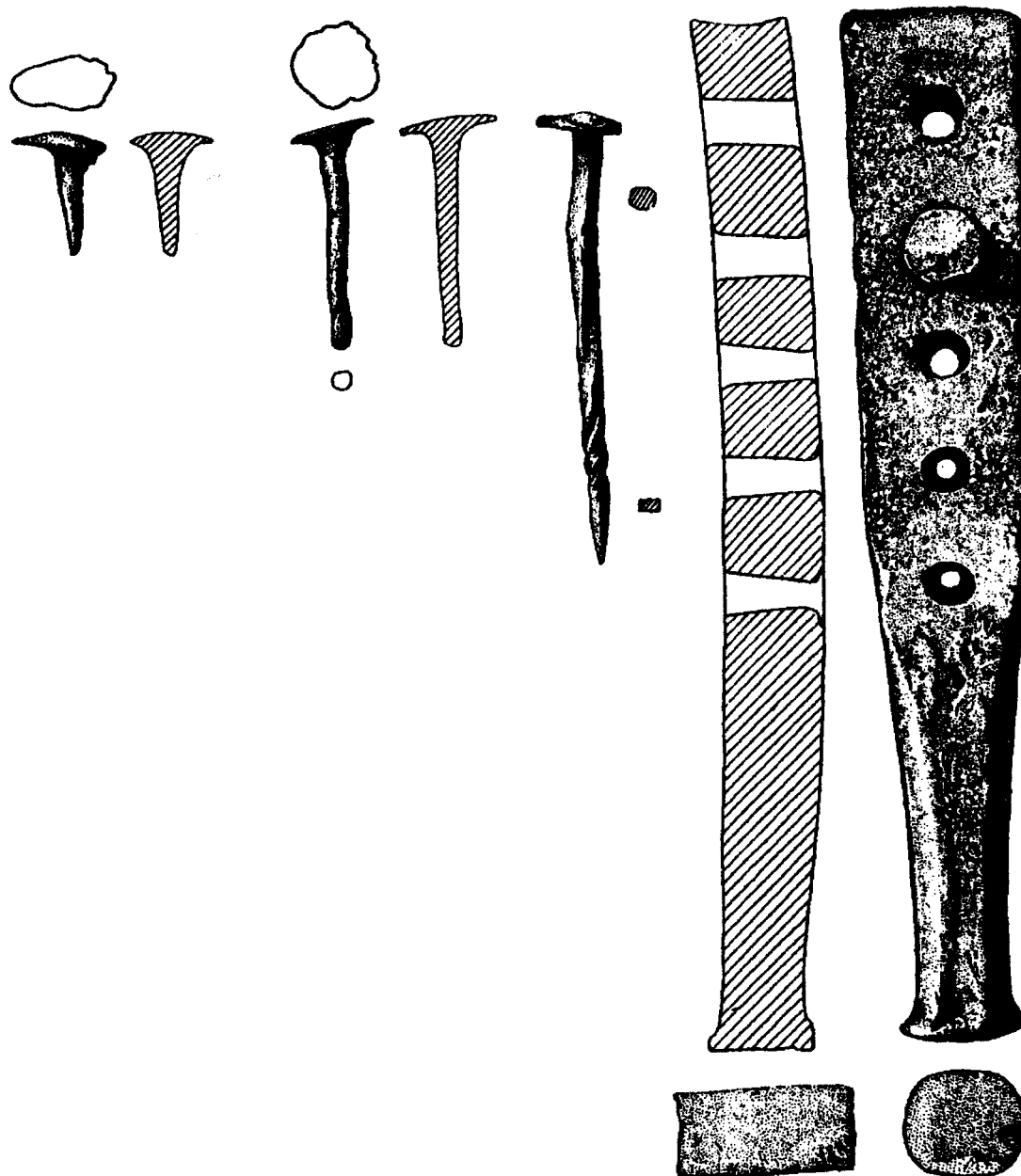


Figure 20. Nail making tool with template for nails of varying sizes. (Greta Arwidsson and Gosta Berg, The Mastermyr Find, A Viking Age Tool Chest from Gotland (Lompoc, California; Larson Publishing Company, 1999), Plate 23)

With knowledge of tools available, the next obvious step is to examine the ways in which logs were processed into ship planking. In most cases, oak was the wood of choice due to its strength. This also meant that working with the wood presented certain challenges. After a tree was felled it was best to allow the wood the chance to dry out and season. This drying allows the moisture content of the wood to be altered. In fresh wood, moisture is present in two forms: free water in the cells and bound water in the cell walls. As the wood dries certain properties of the wood are altered.

Properties of dry wood as opposed to green wood are then: greater hardness and stiffness with the result that compressive and bending strength are all increased. At the same time, toughness and resistance to shock are reduced. Ship-builders have at times used both fresh and seasoned wood. Once the tree is felled, the first stage in creating usable timber is to remove the bark and sapwood. The size of the tree may give the wood its purpose. Straight logs are needed for keels, masts, and long strakes, such as in the Nydam ship.⁴⁴

⁴⁴ Sean McGrail, *Ancient Boats in N. W. Europe, The Archaeology of water transport to AD 1500* (London: Longman Group, 1987), 27-28.

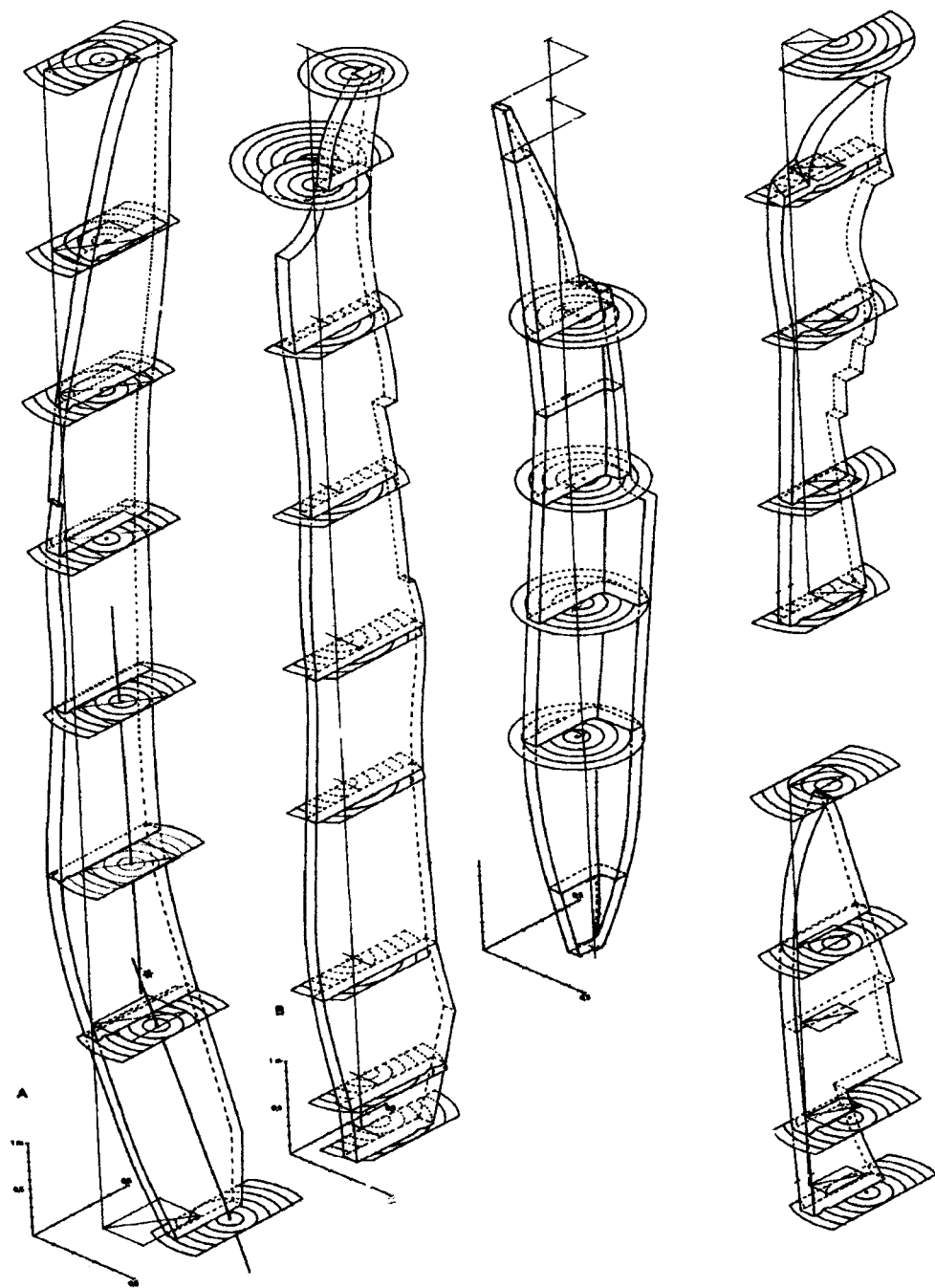


Figure 21. Diagram of planning long strakes from a log, for construction of the Nydam Ship. (Beat Arnold, "The Heritage of logboats and Gallo-Roman boats of Lake Neuchatel: technology and typology," in *Maritime Celts, Frisians and Saxons* (London: Council for British Archaeology, 1990), 59)

Planks are made out of half logs, such as the oak-bottom planks on the Ferriby boat. This technique continued throughout the Middle Ages. The procedure for working a log is as follows: (1) Take a log and select plane it into two equal halves. (2) Remove any bark that is left on the log halves. (3) Split from alternate sides, using wedges. (4) Remove outer sapwood by notching intervals along the log and then removing the wood between the notches. (5) Plane down the inner surface of the log halves. Then cut bevels along the plank edge to get the desired breadth. Work the edges of the log to make parallel planks, unless curved edged are desired or needed. (6) Hew away the outer heartwood of the half-logs to achieve a planned surface. Planks can now be drilled for sewing or for the placement of clench-nails.⁴⁵

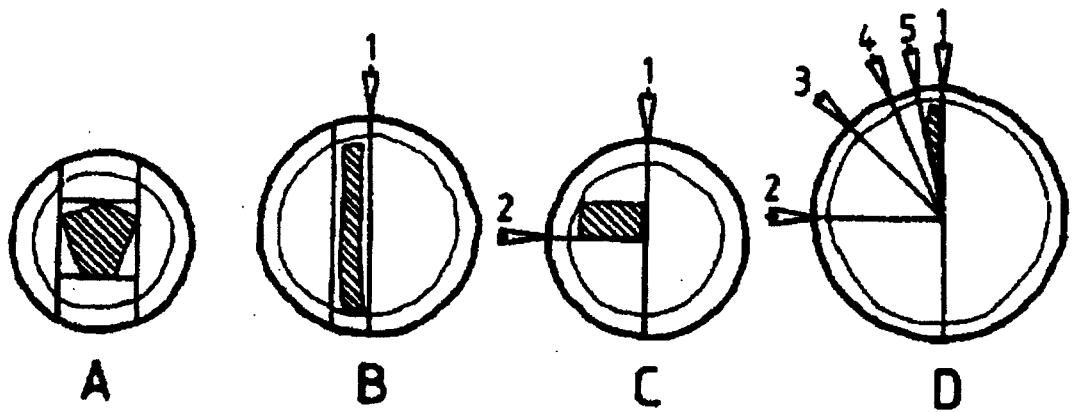


Figure 22. Diagram on planning wood for various ship parts. This technique became prevalent by the time that the Sutton Hoo ship was built. A. Large plank cut from log for keel, stems, or frames. B. After log is split into two sections, each half can be worked for plank production (used mainly for pine wood) C. To produce beams and stringers, logs would be split into four sections first. D. Radial splitting to make planks out of oak. (Ole Crumlin-Pedersen, "Aspects of Viking-Age Shipbuilding" *Journal of Danish Archaeology* 5, (1986): 218)

⁴⁵ Ibid., 29-30.

Once all of the timber sections have been cut, planned and adzed out, the assembly of the vessel can commence. Clinker-built ships differ in one important way than the later "plank on frame" ships such as cogs. The hull takes its form from the planking and internal supports are added later. In "plank on frame" construction, a frame is constructed and then the hull is attached. Clinker building takes the opposite approach. As the frames are completed and are ready to be attached, nails, rivets, or clench-nails are used for this work. The process of making nails requires a trained smith and the method is difficult and time consuming. Figure 19 outlines the process of nail production. Considering the numbers of nails used in a single ship, the labor involved in nail production is extremely time consuming.

Nails have been used on clinker-built vessels dating to the fourth century and were found in the Nydam ship. Iron fasteners allowed larger and stronger ships to be built and to give the hull the ability to "work" in rough seas. Lacing and other methods of stitching accomplish the same goal but lacing is subject to chafing under turbulent conditions as the planks rub against the lace, a combination of sinew and moss as used on the Ferriby boat. Iron fasteners constitute one of the crucial steps in building larger, stronger and more capable vessels. No method of ship construction is without fault. Iron fasteners are an improvement over lacing but using iron fasteners created new problems. Iron works differently than wood so that on a flexing hull iron would wear against the wood, slowly gouging out the strakes. This necessitated the re-fastening of the strakes at various intervals depending on ship condition.

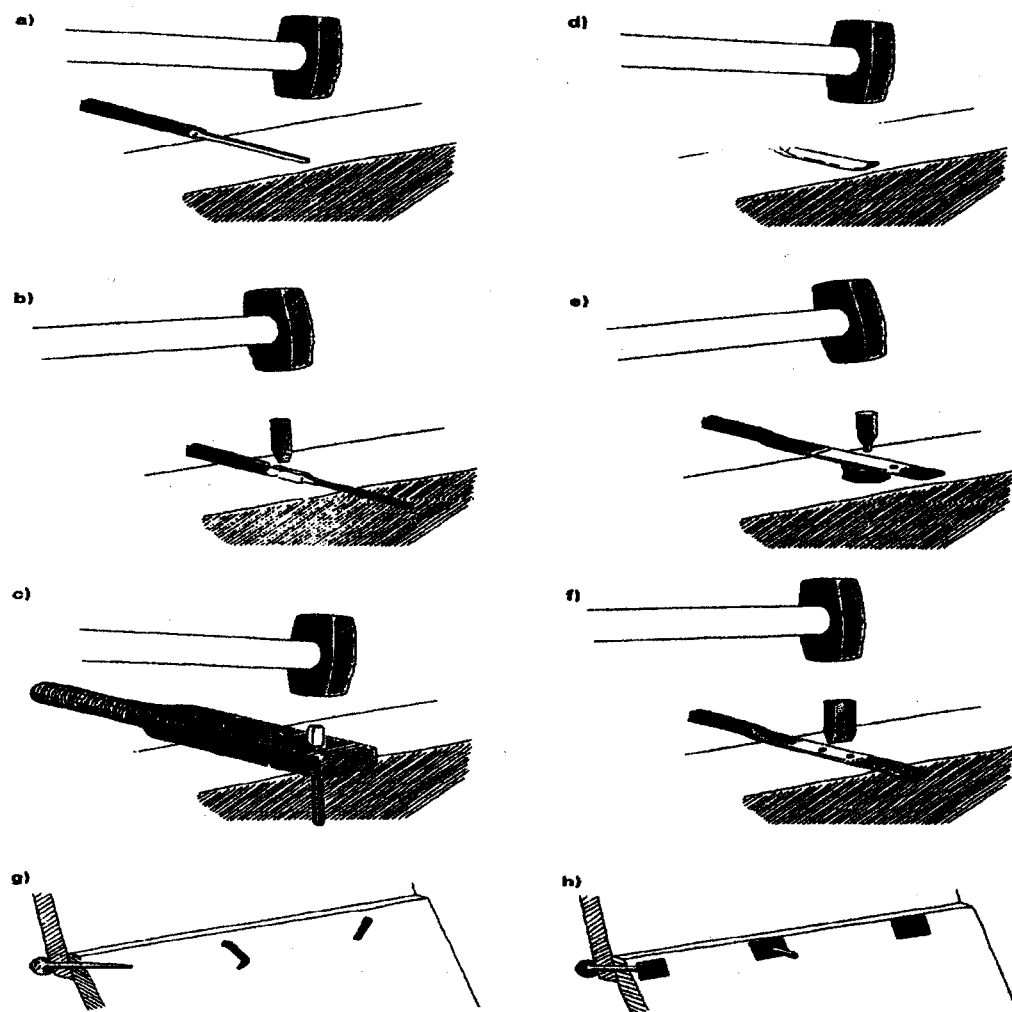


Figure 23. Steps involved in nail production. (a) Iron rod, while red-hot are hammered out to form the shank. This produces a square cross-section that can be worked into a taper, (b) A chisel is used to cut the nail from the rod (c) Using a nail iron (Figure 16) the nail head is hammered out (d) roves are made from an iron bar, which is hammered out to form a strip (e) using a punch to mark holes at intervals (f) Individual roves are cut off from the rod, using a chisel. (g) Nails can be used at tacks or spikes (h) nails in conjunction with roves can be used to form rivets for clinker built boats. (Jan Bill, "Iron Nails in Iron Age and Medieval Shipbuilding," in Crossroads in Ancient Shipbuilding, Proceedings of the Sixth International Symposium on Boat and Ship Archaeology (Roskilde: Oxbow Books, 1994), 56)

The socio-economic aspects of iron forging and all of its associated implications are beyond the scope of this paper but it may be stated that as these ships become larger and more complicated to build, their construction evolved beyond the means of a few individuals to master. At this stage (migration period) both skilled blacksmiths and carpenters were necessary to build ships. As they too must eat and survive, there are larger forces driving the economy of work. These forces could be war-band leaders or wealthy merchants for example. The important factor is that these ships represent a significantly changing economy with new and various levels of social stratification. Longships, and the massive investment in time and materials required to build them, represent an expense that very few could afford.

In spite of the fact that a migration era ship has not been located, underwater archaeologists have made important advances in understanding maritime factors of the migration period. Much of the knowledge we have today is a result of the work conducted in the area of ship archaeology. The knowledge gained from studying the material culture of the migration period, when collected with the literary evidence, allows one to draw more satisfactory conclusions in greater detail than simply a drawing upon just one type of data. Experimental archaeology is also of use. It has served to bridge many gaps in understanding what ships were like and how well something worked. For example, researchers can observe axes, adzes and other tools recovered from an archaeological record and know that these tools were utilized in shipbuilding (Figure 20). But experimental archaeology can help to establish how well the tools and the vessels they built actually worked. A brief discussion seems called for.



Figure 24. William the Conqueror's fleet under construction. The tools shown are similar to those found in the Mastermyr tools. Arne Emil Christensen, "Viking Age Boat-Building Tools," in Woodworking Techniques before A.D. 1500 (Greenwich: B.A.R. International Series 129, 1982), 328)

The time required to build an early medieval vessel is not recorded. Experimental archaeology attempts to use the same tools and techniques to gain a better understanding of the methods and time involved in ship-construction. Ole Crumlin-Pedersen estimated that at least three months were required to build a larger craft from the Viking period.⁴⁶ Variables involved in shipbuilding during the Middle Ages make determining time spent building a vessel almost impossible to compute.

Archaeologists have reconstructed functional vessels from the past in order to better understand ships' characteristics. The *Saga Siglar* (replica of wreck 1) and the *Roar-Project* (wreck 3,) are replicas respectively of the Skuldelev wreck 1, the large ocean going trading ship, and wreck 3, the coastal carrier. The *Saga Siglar* ship has a different hull form and is larger than ships of the migration period. It had several modern alterations to its construction. This reduces its value for purposes of calculation times and building methods of medieval ships. The smaller *Roar-Project* was constructed using traditional tools and methods.⁴⁷

The *Roar Project*, was built by people with experience in making replicas. It was intended to match the original as closely as possible. The building methods consisted of felling oak trees, laying the keel and clenching nails, all by traditional methods. Building that ship required twenty-two months. This is far longer than would normally be required, due to the builders having to learn different construction methods while work was in

⁴⁶ McGrail, *Ancient boats in North West Europe The Archaeology of Water Transport to AD 1500*, 161.

⁴⁷ Ole Crumlin-Pedersen, "Aspects of Viking-Age Shipbuilding," *Journal of Danish Archaeology*, 5 (1986): 213.

progress. In contrast, building the larger *Saga Siglar* using modern tools took a surprising six months.⁴⁸

Sea trials were undertaken with the *Roar-Project* vessel. It functioned well under various conditions. The ship sailed well compared to other ship designs from the age of sail although the ability to point into the wind was somewhat reduced when compared to later fore and aft rigged ships. Longships seem to perform best when the wind is astern to abeam.⁴⁹ In general these ships all performed quite well when being used for their intended purposes. Cargo ships were quite capable of transporting goods and warships seemed perfectly capable of beaching and offloading troops to conduct raids. Performance was hindered by marine growth on the bottom of the hull which the Anglo-Saxons would also have had to contend with. The Anglo-Saxons may have hauled the boats for cleaning, perhaps just before going on extended trips and raids. The *Roar* ship was estimated to have a five-ton cargo capacity based on modern freeboard calculations. This was later lowered to four-tons when it was thought that five was too weighty and could potentially swamp the ship in large seas.⁵⁰

As no ships from the migration period have been discovered, experimental archaeology from the 5-6th centuries remains theoretical in nature. Viking era ships have far different hull shapes than vessels such as the *Nydam* ship. Even if the *Nydam* ship had sails, its lack of a keel would make sail handling unwieldy. An explanation of the

⁴⁸ Ibid., 216-218.

⁴⁹ Sean McGrail, ed., *Aspects of Maritime Archaeology and Ethnography* (London: Trustees of the National Maritime Museum, 1984), 123.

⁵⁰ Ibid., 225-227.

physics of sailing (with emphasis on the importance of the keel) seems to be warranted here.

As the wind passes over and is redirected by the curve of the sail, the wind is forced to go to one or the other side of the sail. Air going to leeward, which is to the outside of the sail, speeds up; this causes the air pressure on the leeward side to decrease. While this is happening, air on the windward side, this is the inside of the curve, is moving more slowly, creating greater pressure on the sail. This results in force acting on the sail from the windward to the leeward side. Some of this force directs the boat forward and some force dissipates due to friction on the sail. Most of this force is directed sideways against the sail and the vessel. With the sail trimmed correctly, enough force is directed forward, to draw the boat upwind while at the same time reducing lateral (sideways) drag.

Most sailing vessels have at least two sails in its standard sail-plan. The jib functions in the same way as the mainsail described above. However, the jib, a sail in the fore section of the craft, serves to accelerate the airflow before the mainsail, which does the same thing, further speeding up the airflow. With the sails overlapping, the increased efficiency is the result of the sails catching more air and increasing the gap of speeded up air further back on the mainsail. This causes the boat to sail faster and to point better into the wind. Modern vessels can point closer than 45 degrees into the wind, when working

on an upwind tack.⁵¹ Figure 21 illustrates the wind's effect on the sail and its corresponding effect on the keel of a vessel.

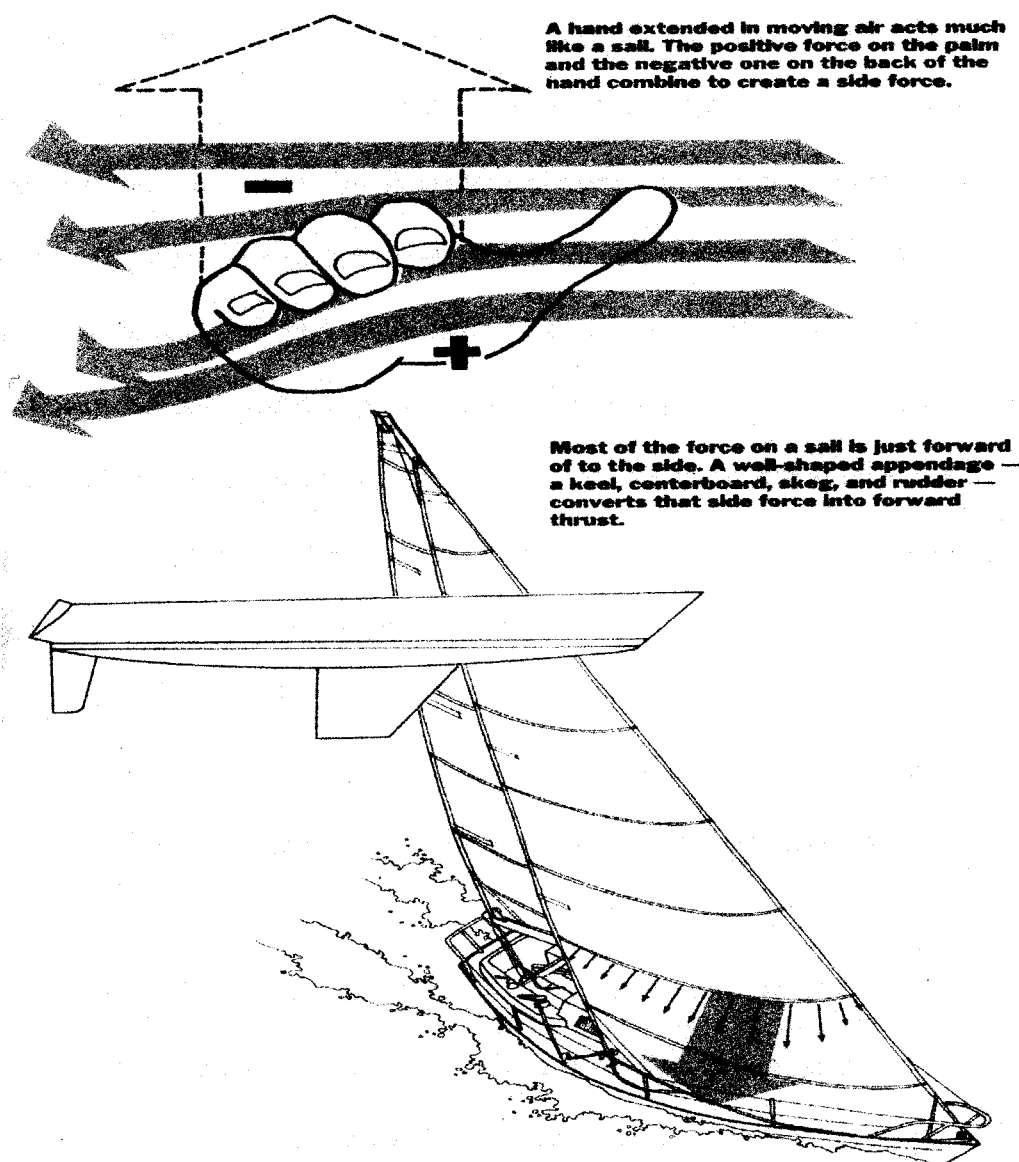


Figure 25. Effect of the wind on sails (or sail in the case of longships) with the sail and keel working to push the boat forward. (John Rousmaniere, The Annapolis Book of Seamanship, New York: Simon & Schuster, 1989, 21)

⁵¹ John Rousmaniere, *The Annapolis Book of Seamanship* (New York: Simon and Schuster, 1989), 20-21.

The forces acting on the sails are turned into forward propulsion because of the actions of the keel or any part of the vessel that is below water. The main function of the keel is to keep sideways sliding to a minimum. The size and shape of the keel dictate how much energy is spent going forward or is lost to lateral drag. As the force acts on the sails, the wind will try to blow the boat over. The boat begins to heel, that is to lean over on its side. The keel fights to counter this movement and right the ship and the result is that the vessel takes the path of least resistance and pushes forward. This is why sailboats sail heeled, leaning on an angle.⁵² It is precisely this function that cannot occur with any efficiency on any longship. The only time that a single square sail would be of good use on a boat lacking a true keel is on a following sea, with the wind off its stern. When this occurs the wind merely pushes the boat along and none of the advantages of fore and aft rigged ships, or the windward performance of later ships, is gained. Viking ships have been shown to possess the ability to sail to windward, but earlier ship finds lack the draft provided by a keel that is necessary to keep lateral drag to a reasonable level.

With the archaeological record as a guide, one can readily observe a progression from smaller coastal ships of various designs leading up to large ocean-going trading and warships as are found in the *Skuldelev* shipwrecks. Many types of vessels, which might be regarded as "technologically inferior," have long use histories and are found prior to the migration period as well as after the formation of Anglo-Saxon kingdoms (7th century). Germanic people had a long maritime tradition involving multiple vessel designs that

⁵² *Ibid.*,

were constructed to suit their needs long before the migration era. In terms of the Anglo-Saxon migrations to Britain, the chronologically closest known types of vessels are the *Nydam* and *Sutton Hoo* ships. In both of these cases, there is no evidence that either ship ever carried sail. Substantial differences do exist in the technology used in building the two ships. The *Sutton Hoo* ship, as previously mentioned, is far more seaworthy than the *Nydam Ship*. The clinker-built rowing ships, as recovered in the archaeological record, limited the scale of the Anglo-Saxon invasion. If one wishes to establish the number of troops that could cross in a vessel such as the *Nydam* ship, it is quite possible to do so. The *Nydam* ship had space for thirty oarlocks. Assuming only one man for each oar on three ships, one reaches a total invading force of ninety men. With the added possibility of a few officers or commanders, this amounts to a one hundred-man army. While it is certainly a small force in today's terms, it was considered to be a sizeable army during and after the migration period. The laws of Ine in the seventh century consider any number over thirty-five men to constitute an army.⁵³

This confirms Bede's observation in *The Ecclesiastical History of the English People*: "The race of the Angles or Saxons, invited by Vortigern, came to Britain in three warships."⁵⁴ It seems reasonable that if three ships full of troops were considered to be sufficient to repel raiders by Vortigern, then three ships constituted a serious threat.

In sum, the available archaeological evidence does not support the conclusion that Anglo-Saxons of the fourth and fifth centuries used sail-driven vessels. More

⁵³ Jones, *The End of Roman Britain*, 100.

⁵⁴ Bede, *The Ecclesiastical History of the English People* (Oxford: World's Classics paperback, 1994), 27.

importantly, even had sails been available, the resources to build a fleet in order to effect a through invasion, which would include non-combatants simply did not exist.

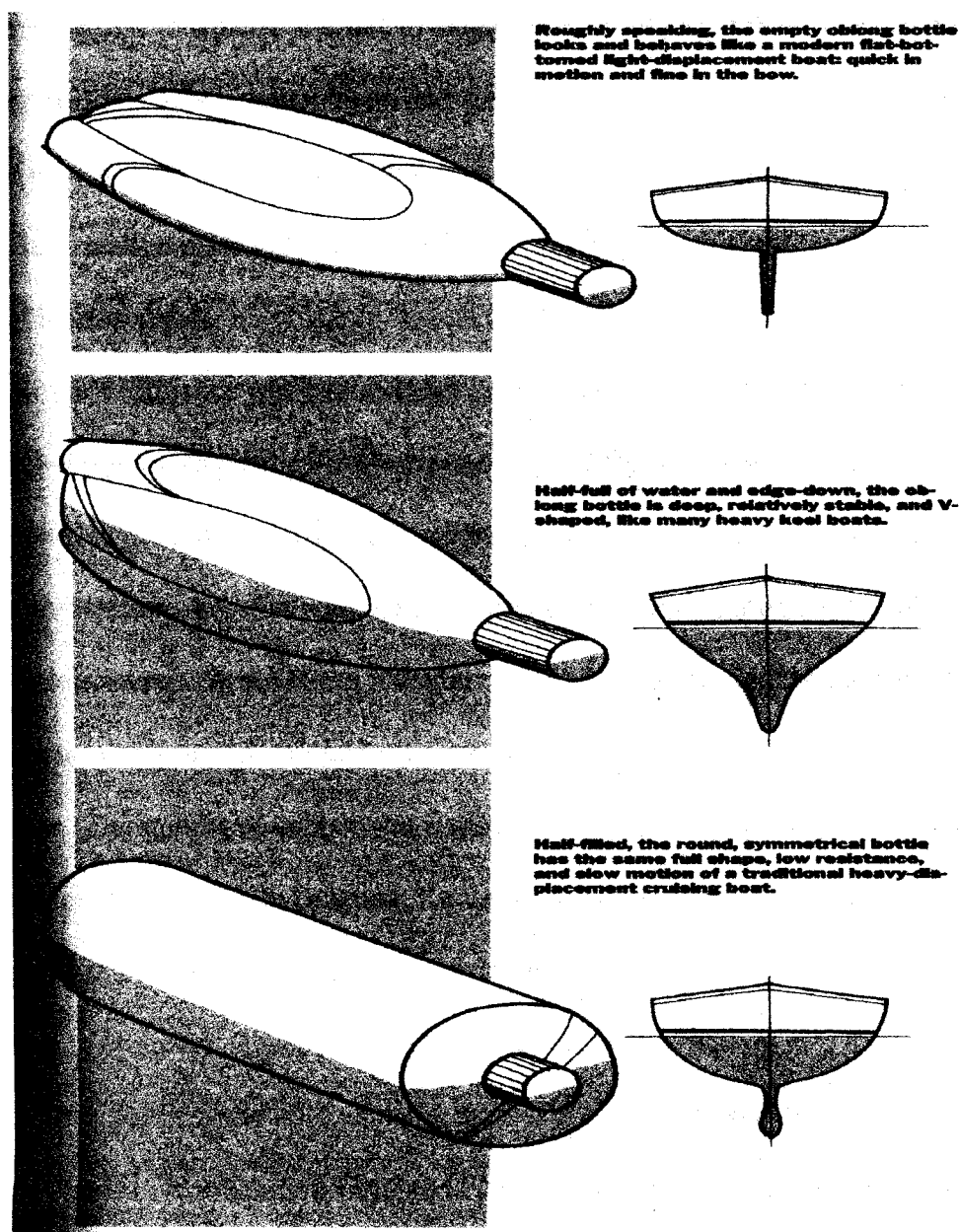


Figure 26. Illustration of keel types as related to stability. Note hull changes from earlier ships such as the Nydam ship to the various Skuldely wrecks, particularly in hull shape. When compared to Figure 17, the cross sections and hull shape evolution is readily apparent, as well as the advantages of increased stability. John Rousmaniere, The Annapolis Book of Seamanship, (New York: Simon & Schuster, 1989), 15.

Chapter IV: Motives for Invasion

This chapter explores the reasons some Anglo-Saxon warbands undertook a dangerous journey to Britain. It seeks to understand the nature of their passage, the state of affairs in Britain upon their arrival, and their subsequent successful domination over much of the island. As background, one may note that Roman laws and documents provide information pertaining to trade with Germanic people as well as their acts of piracy of Roman goods.

Rome's influence was based on her armies and highly organized government. This created a sense of prestige that extended beyond Rome's borders. Rome's large population also needed raw materials in order to acquire those components necessary for Rome's civilization. For that reason a great deal of new development and exploitation of raw materials accrued in the North Atlantic region. In Britain, Kent became a center for the production of iron. Silver and lead came from the Mendips, Flintshire and Derbyshire. The mining of copper was a specialty in Anglesey, and grain and hides came from a variety of regions. In Belgium, Romans used iron and zinc from the Meuse and the Argonne regions and utilized iron deposits in the Massif Central. The Romans also mined iron in Noricum, Rhaetia and in the Alps. Germanic regions also exported furs, slaves, amber, feathers and wild animals. Roman's were the first in Spain to mine the copper of Huelva. Northeastern Gaul and Flanders saw the development of a large

woolen industry. The presence of large numbers of legionnaires everywhere on the frontiers stimulated mining for arms and agricultural development.¹

In exchange for these raw materials from Roman controlled sources, Britain received wine from western Gaul, Garonne and the Loire, salt came from Saintogne and olive oil was shipped from the continent via the Garonne or Rhone-Loire routes. Roman arms were sent to the German and Scandinavian regions as well as bronze and other metal manufactured items. According to Tacitus, wine, pottery and coins were also trade items.²

An examination of early trade networks suggests that Rome, as the migration period approached, was content to allow an increasingly large amount of maritime trade to be conducted by native peoples under Roman jurisdiction.³ The Roman road networks clearly indicate that Rome was first and foremost a continental power and culture, not a maritime one such as the Greeks or Phoenicians that had preceded them.⁴ This is further indicated by the lack of contact that Roman roads have with the Atlantic. In some cases roads appear to follow routes that intentionally avoid waterfronts. This a crucial factor in understanding why, in a short time, innovative Irish, British and Saxon mariners were able to conduct a great deal of trade with Gaul and the Iberian Peninsula. These new traders could gain confidence by navigating throughout the North Sea and then, when

¹ Archibald R. Lewis, *The Northern Seas, Shipping and Commerce in Northern Europe A.D. 300-1100* (Princeton: Princeton University Press, 1958), 4-7.

² Tacitus, *Germania*, 5: 3-5.

³ Lewis, *The Northern Seas, Shipping and Commerce in Northern Europe A.D. 300-1100*, 8, 44.

⁴ *Ibid.*, 4-7.

later laws started to restrict trade, would be able to raid Gaul for the items desired by the tribes on the Baltic.

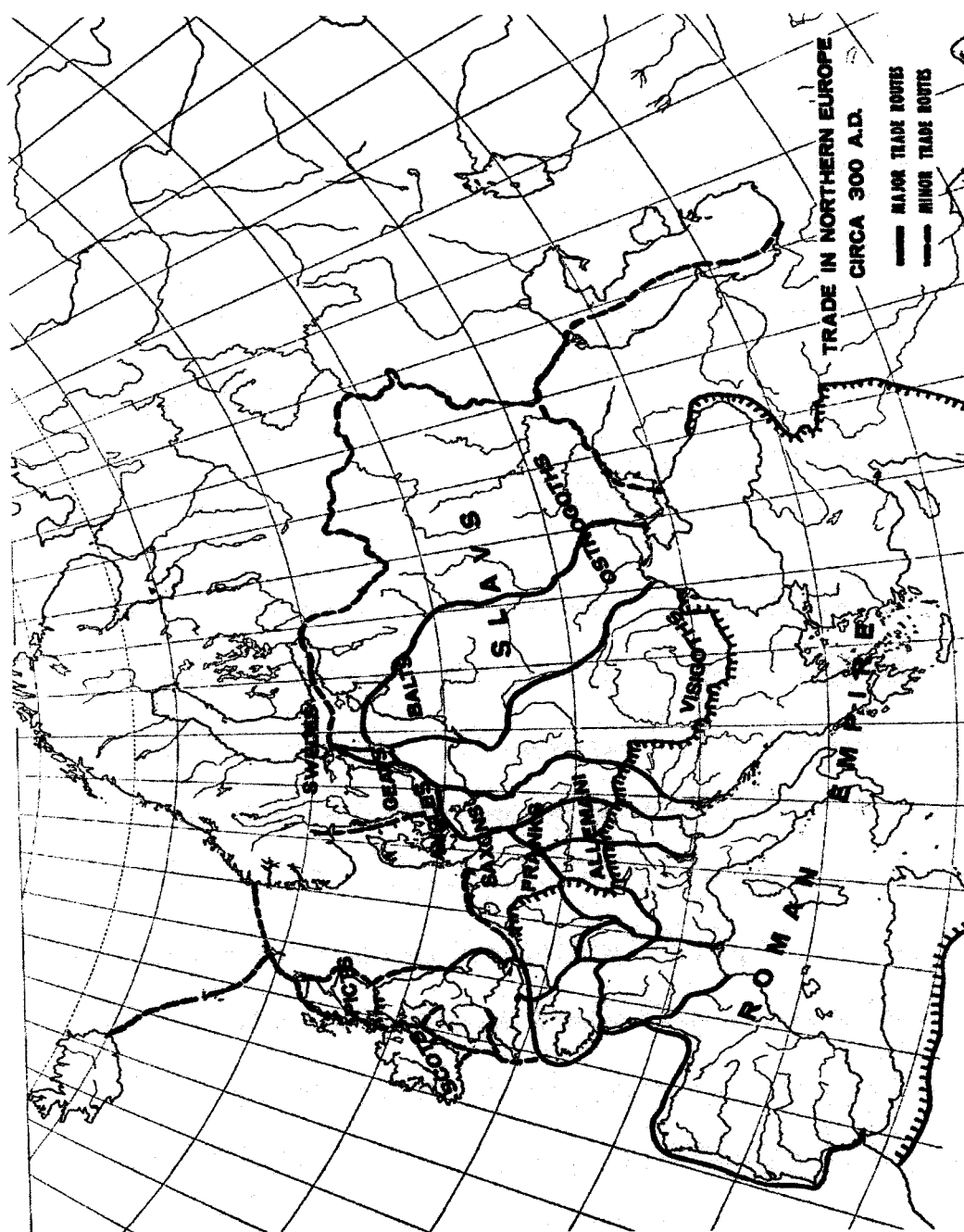


Figure 27; Land and Water Trade Routes in Northern Europe Circa 300 A.D. Archibald R. Lewis, The Northern Seas Shipping and Commerce in Northern Europe A.D. 300-1100 (Princeton, New Jersey: Princeton University Press, 1958),33.

The third century was a time of change. It was a time of crisis for the Roman world. Two centuries of peace and prosperity ended in inflation, civil war, and in early stages of Germanic invasions. The long standing trade routes started to break down, giving rise to Saxon and Frankish piracy. By 355, Frankish forces, along with the Alemanni, moved into Belgium and Gaul to establish kingdoms in Roman territory. The barbarians were able to sack several cities at the end of a long military campaign. Rome finally had to let them settle on the western side of the Rhine in Roman territory. These movements coincided with an increase in Saxon coastal raids and early settlements near Boulogne. This threatened the trade route with Britain and possibly forced a withdraw of Roman naval units from the North Sea.

The fourth century witnessed a decentralization of the Roman government regarding trade. But metal items still traveled across the Rhine and Danube and the continued trade in weapons was important. Other manufactured items of bronze, glass and pottery were traded. Also, Roman trade items reached all parts of Germany. One key difference was that those trade items that formerly had been produced in the Mediterranean region were now being manufactured in Gaul.⁵ During the third and fourth centuries, the empire had taken a different view of trade with non-Romans. The early Empire had welcomed trade from across the frontiers. The commerce was of such a magnitude, that Rome used all the goods and raw materials that the Germanic tribes could produce. That had long since changed. The political and military situation of the

⁵ Ibid., 36-49.

fourth century saw a restriction of trade with Germans. This general practice of trade restriction may have started in 297 A.D. with the signing of a treaty with Persia which stated that trade between the empire and the Sassanian kingdom was limited to two points along the frontier.⁶

During the fifth century, a similar practice was implemented along the Rhine-Danube line, where Rome sought to regulate trade with Germanic tribes. Barbarian peoples were able to pass through only two portals according to the regulation of the Counts of Commerce of Moesia and Illyricum. Another such restriction was found in Pannonia under the control and supervision of the Count of Commerce for that province.⁷ It is possible that as early as the fourth century this practice of regulating trade was already in place in various areas. In 369 the *Notitia Dignitatum* outlines a commercial system that states that trade between Romans and Goths can only occur in two specific places across the frontier. A similar situation was in place along the upper Danube and Rhine. The Theodosian Code in 367 A.D. records that barbarian delegates entering Roman controlled territory must go to specified stations in order to acquire transport into the empire. These stations may have also served as legal trading posts. This law code also forbade Roman subjects to go outside the empire without passports.⁸ Restrictions such as these further stipulated the amount of currency and the quantity of goods a trader

⁶ *Ammianus Marcellinus*, XIV: 3, XXIII: 3. Translated by John, C. Rolfe (Cambridge: Harvard University Press 1952).

⁷ Lewis, *The Northern Seas, Shipping and Commerce in Northern Europe A.D. 300-1000*, 39.

⁸ Mommsen, Theodore and Meyer Pavlvs, *Theodosiani Libri XVI CVM Constivtionibvs Sirmondianis* (Berlin: Apud Weidmannos, 1954), vii, 16, I.

could transport within the Empire.⁹ These controls sought to limit what items could be traded with barbarian tribes. Gold was now the item to trade for, an attempt to bring specie back into the empire. Bronze and iron items, especially weapons, a long standing favorite trade item were now outlawed. The list of illegal items grew to include wine and olive oil. By 381 A.D. the Theodosian Code had laid the framework for a prohibition of trade with barbarians it stated:

IMPPP. GRAT(IANVS), VAL(ENTIN)ANVS ET THEOD(OSIVS) AAA.
PALLADIO C(OMITI) S(ACRARVM) L(ARGITIONVM). A legatis (gen)tium
devotarum ex his tantum speciebus, quas de locis pr(opriis), unde convenient, huc
deportant, octavari vectigal accipia(nt; quas) vero ex Romano solo, quae sunt
tamen lege concessae, (ad pro)pria deferent, has habeant a praestatione immunes
ac l(iberas). DAT. PRID. NON. IVL. CONST(ANTINO)P(OLI), ACC(EPTA)
XII K. AVG. SYAGRIO ET EVCHERIO [CONSS.].

Loyal friendly peoples [that is, those friendly to Rome] are allowed to export goods [to the Empire] from their own regions upon payment of 1/8 customs levy [15 %]. They may purchase from Roman territory only those which the law allows. But these shall be duty free.¹⁰

This law indicates that Rome was taking defensive measures by restricting trade with what the empire must have perceived as a potential enemy. This restriction forbid the export of ship plans to foreign peoples,¹¹ an attempt to limit non-Roman maritime peoples from building Roman-designed trading or war ships.

Roman law seems to have backfired. Rome had enacted a deliberate policy to weaken the economies of potential enemies. This intentional reduction in trade goods

⁹ Ibid., ix, 23, 1-2.

¹⁰ Theodore Mommsen and Meyer Pavlvs, *Theodosiani Libri XVI CVM Constivtionibvs Sirmondianis*. Berlin: Apud Weidmannos, iv, 13, 8.

¹¹ Ibid., ix, 40, 24.

reaching Germany and Scandinavia and the ending of trade routes along the Frisian coast to Jutland was the result of Roman legislation, and Romans probably hoped that it would end Saxon piracy along the coast by simply denying them the goods that fueled their economy.¹² Unfortunately, by this time it was far too late to curb trade with the Germanic tribes. Trade had flourished virtually unchecked for three centuries and during that time Germans had grown accustomed to and possibly dependent upon Roman goods. At the same time, Saxon and other pirates had become familiar with the coast of Gaul and had started probing Britain. The outlawing of trade in certain Roman goods and restrictions on those leaving the Empire without special clearance, compounded by the restriction on trade along the frontiers and other coastal areas, resulted in barbarian peoples going into Roman territory to acquire the material goods that Roman law attempted to withhold. Under these circumstances, barbarian peoples had a strong motive to build up their maritime capabilities for the purposes of coastal piracy. Piracy would be more effective than trying to raid inland across the frontier. Maritime raids gave Saxons the initiative. They had options of selecting the attack site, and the ability to carry larger amounts of plunder aboard ships.

Even with an increase in Saxon piracy, the Roman navy should have been powerful enough to stop these raids. This failure of the Roman navy appears to be the result of more bad policy. The *Notitia Dignitatum* records that a Roman fleet was still on station on the Somme in 428. Furthermore, Saint Germanus visited Britain in 429.¹³

¹² Lewis, *The Northern Seas, Shipping and Commerce in Northern Europe A.D. 300-1100*, 41.

¹³ E.A. Thompson, *Saint Germanus Of Auxerre And The End Of Roman Britain* (Woodbridge, Suffolk: The Boydell Press, 1984), 13.

Saint Germanus traveled throughout the British countryside and aided in the repulse of raiding Picts and Saxons. Evidently, at this time, communications with Britain had not entirely broken down.

Shortly after this time, the Britons in 446 A.D. sent an envoy to Rome to request aid to fight the Saxons.¹⁴ Unfortunately for the Britons, Rome had larger problems to contend with and could offer no help. Responding to news from Rome in about 449, a British king named Vortigern hired mercenaries to protect British shores. These two events (429-449) assist in creating parameters for a chronology of the removal of Roman naval forces from the channel. With the removal of Roman naval power, communications with Britain effectively ceased to exist. It is unknown what happened to Rome's Somme fleet. Some possibilities include the fact that it may simply have dispersed because of a lack of a steady payroll from the Empire. Or it may have left Rouen to link up with the Seine River fleet. It may also have sailed to Western Britain or Gaul to join other Roman naval forces. The only thing known for certain is that by 450 Roman naval strength in the English Channel was non-existent.¹⁵ This opened the way to Britain for Saxon pirates and, ultimately, invaders.

Various Germanic peoples have a long history as a maritime culture. One of the first recorded references to of Germanic and Frankish naval power occurs in 12 B.C. when Augustus's stepson Drusus led a Roman fleet up the North Sea coast of Germany

¹⁴ Gildas, *The Ruin of Britain and other works*, translated by Michael Winterbottom (London, Phillimore & Co. LTD., 1978), 18: 2-3.

¹⁵ Lewis, *The Northern Seas, Shipping and Commerce in Northern Europe A.D. 300-1100*, 59.

and faced naval opposition from the Bructeri who fought and lost a naval battle with the Romans on the river Ems.¹⁶ Naval engagements and piracy increased so that by the late third century Eutropius states that the coasts of Belgica and Armorica were infested with Frankish and Saxon pirates.¹⁷

Obviously, not all Saxon men of military age were involved in piracy. Many served the Roman army as *foederati*. These Germanic troops under their own leaders had served for centuries in the Roman Empire from Britain and the Rhine to Phoenicia.¹⁸ In Britain, the *Notitia Dignitatum*, which mentions the *Litus Saxonicum*, (or the Saxon Shore) has created a great deal of controversy regarding its meaning. The name *Litus Saxonicum* could mean that this shore was protected by Saxon *foederati*, or, contrariwise, it may have been a shoreline that had been attacked numerous times by Saxon raiders? Linguistically, either meaning is possible. No written evidence exists stating that there were ever *foederati* stationed in Britain.¹⁹ Conversely, the Romans had never named any other frontier area after the enemies that threatened it.²⁰ Currently the issue is unresolved. However, two points may be made concerning the name of the shore. Britain during this time was raided by Scots and Picts. This suggests that if Saxons were invited to Britain

¹⁶ *The Geography of Strabo*, VII, trans Horace Leonard Jones (Cambridge: Harvard University Press, 1954), 1.3.

¹⁷ *Eutropius*, IX:21, Translated by John Clarke (Boston, Peter Edes, 1793).

¹⁸ John Haywood, *Dark Age Naval Power, A Reassessment of Frankish and Anglo-Saxon Seafaring Activity*, rev. ed. (Norfolk, England: Anglo-Saxon Books, 1999), 77-80.

¹⁹ Michael E. Jones, *The End Of Roman Britain* (Ithaca, New York: Cornell University Press, 1996), 33.

²⁰ Haywood, *Dark Age Naval Power*, 77.

to defend the coast, the Saxons must not have been perceived as being as serious a threat as the Picts or Scots, certainly not beyond the abilities of the native British to control. Second, if the Saxons had been raiding the coast, then Vortigern made one of the greatest tactical errors in history by inviting the Saxons to Britain. Either interpretation is possible.

While the debate regarding the *Litus Saxonicum* remains unresolved, there is no question that the final years of the fourth century witnessed the withdrawal of Roman troops from Britain to the continent. In 401, Stilicho recalled to Italy reinforcements that had been sent to Britain as well as legions who were long established in Britain.²¹ This slow but steady siphoning of forces away from Britain left the native British in a precarious position. In the end, Gildas records:

Sumptu publico privatoque adiunctis secum miserabilibus indigenis, solito structurae more, tramite a mari usque ad mare inter urbes, quae ibidem forte ob metum hostium collocatae fuerant, directo librant; fortia formidoloso populo monita tradunt, exemplaria instituendorum armorum relinquunt. In litore quoque oceani ad meridianam plagam, quo naves eorum habebantur, quia et inde barbaricae ferae bestiae timebantur, turres per intervalla ad prospectum maris collocant, et valedicunt tamquam ultra non reversuri.

They gave the people stirring advice, and left them manuals on weapon training. They also placed towers overlooking the sea at intervals on the south coast, where they kept their ships: for they were afraid of the wild barbarian beasts attacking on that front too. Then they said goodbye, meaning never to return.²²

²¹ *Claudian The Gothic War*, Translated by Maurice Platnauer (Cambridge, Massachusetts: Harvard University Press, 1956), Vol. II, 157.

²² Gildas, *The Ruin of Britain and Other Works*, translated by Michael Winterbottom (London, Phillimore & Co. LTD., 1978), 18. 2-3.

This completed the removal of Roman forces in Britain, leaving Britain exposed to the peoples who raided its coasts for centuries.

The long tradition of Germanic piracy and raids fostered knowledge of the sea-routes and coastlines. In conjunction with the individuality and maneuverability of the warband structure, this created an inviting situation for those leaders who chose to seize opportunities in a weakened Britain. The evacuation of the Roman military left an island populated by farmers and bureaucrats. Unable to defend themselves from raiders, they invited the Saxons to the island to serve as protectors. Gildas states:

Tum omnes consiliarii una cum superbo tyranno caecantur, adinvenientes tale praesidium, immo excidium patriae ut ferocissimi illi nefandi nominis Saxones deo hominibusque invisi, quasi in caulas lupi, in insulam ad retundendas aquilones gentes intromitterentur.

Then all the members of the council, together with the proud tyrant, were struck blind; the guard – or rather the method of destruction – they devised for our land was that the ferocious Saxons (name not to be spoken!), hated by man and God, should be let into the island like wolves into the fold, to beat back peoples in the north.²³

This passage indicates that the Saxons were invited to the island, to protect the British from what was thought of to be a greater threat from the people in the north, probably the Picts. The Saxons accepted the offer to provide protection and in return received payment in what Gildas calls “supplies.”²⁴ It should also be noted that the Saxons must have been given more than simply subsistence items. With a lord’s need to reward his troops with loot, basic staples would not have been a sufficient. Gildas next writes, “The mother lioness learnt that her first contingent had prospered, and she sent a second and

²³ Ibid., 23: 1.

²⁴ Ibid., 23: 5.

larger troop of satellite dogs.”²⁵ With this statement in mind, it seems that reports of the situation in Britain were reaching the Saxon homelands and more warbands saw an opportunity for gain. *The Anglo-Saxon Chronicle* for 449 A.D. records: “King Vortigern gave them territory” providing that the Angles “fight the Picts.” The Angles were able to beat the Picts in battle and “They then sent to Angel, commanded more aid, and commanded that they should be told of the Britons’ worthlessness and the choice nature of the land.”²⁶ It appears that the Germanic peoples were thereby made aware of the situation in Britain and such may have presented a chance for young warriors and leaders to carve out land for themselves in far less time than would have been possible in Germany. It is possible that by the early fifth century Germanic warbands, through fosterage practice, were becoming more stable and established. Seizing land from the Britons allowed young warriors the chance to take land without disturbing any pre-existing continental *status quo*.

Further reducing any concerted possibility of British action against the Saxons, the British, in the midst of a power vacuum, became involved in a civil war prior to and possibly continuing into the early years of Saxon occupation of the island. Any attack on a British ruler by Saxons would likely alleviate another British ruler’s problems of having to fight an enemy ruler. The phrase, “my enemy’s enemy is my friend,” probably formed part of the British ruling elite ideology. Gildas summed up the nature of the ruling elite in Britain after Roman authority departed:

²⁵Ibid., 23: 4.

²⁶ *The Anglo-Saxon Chronicles*, translated by Anne Savage (New York: Barnes & Noble, Inc., 2000), 29.

Reges habet Britannia, sed tyrannos; iudices habet, sed impios; saepe praedantes et concutientes, sed innocents; vindicantes et patrocinales, sed reos et latrines; quam plurimas coniuges habentes, sed scortas et adulterantes; crebro iurantes, sed periurantes; voventes, sed continuo propemodum mentientes; belligerantes, sed civilia et iniusta bella agents;

Britain has kings, but they are tyrants; she has judges, but they are wicked. They often plunder and terrorize the innocent; they defend and protect – the guilty and thieving; they have many wives – whores and adulteresses; they constantly swear – false oaths; they make vows but almost at once tell lies; they wage wars civil and unjust;²⁷

Gildas writes from the perspective of one who is highly critical of the current rulers; he compares them to the “just” Christian rulers of Roman Britain’s past. Gildas is writing to his contemporaries in an effort to proclaim that there is a relationship between their own morality and obedience to God’s laws. Their success at evicting their enemies (Saxons) from the island depends upon the attitude of God towards them. All they had to do was return themselves and their rulers to the moral Christian rule and God’s blessing would help them against the heathen Saxons.²⁸ Even with Gildas’s bias, it is unlikely that he strayed too far from the facts. Had he done so his contemporaries would likely have known it and such would have greatly reduced the impact of his writing. It thus seems that Gildas’s assessment of the British kings is not overly far from the mark.

²⁷ Gildas, *The Ruin of Britain and Other Works*, translated by Michael Winterbottom (London, Phillimore & Co. LTD., 1978), 27.

²⁸ N.J. Higham, *The English Conquest. Gildas and Britain in the Fifth Century* (Manchester: Manchester University Press, 1994), 13.

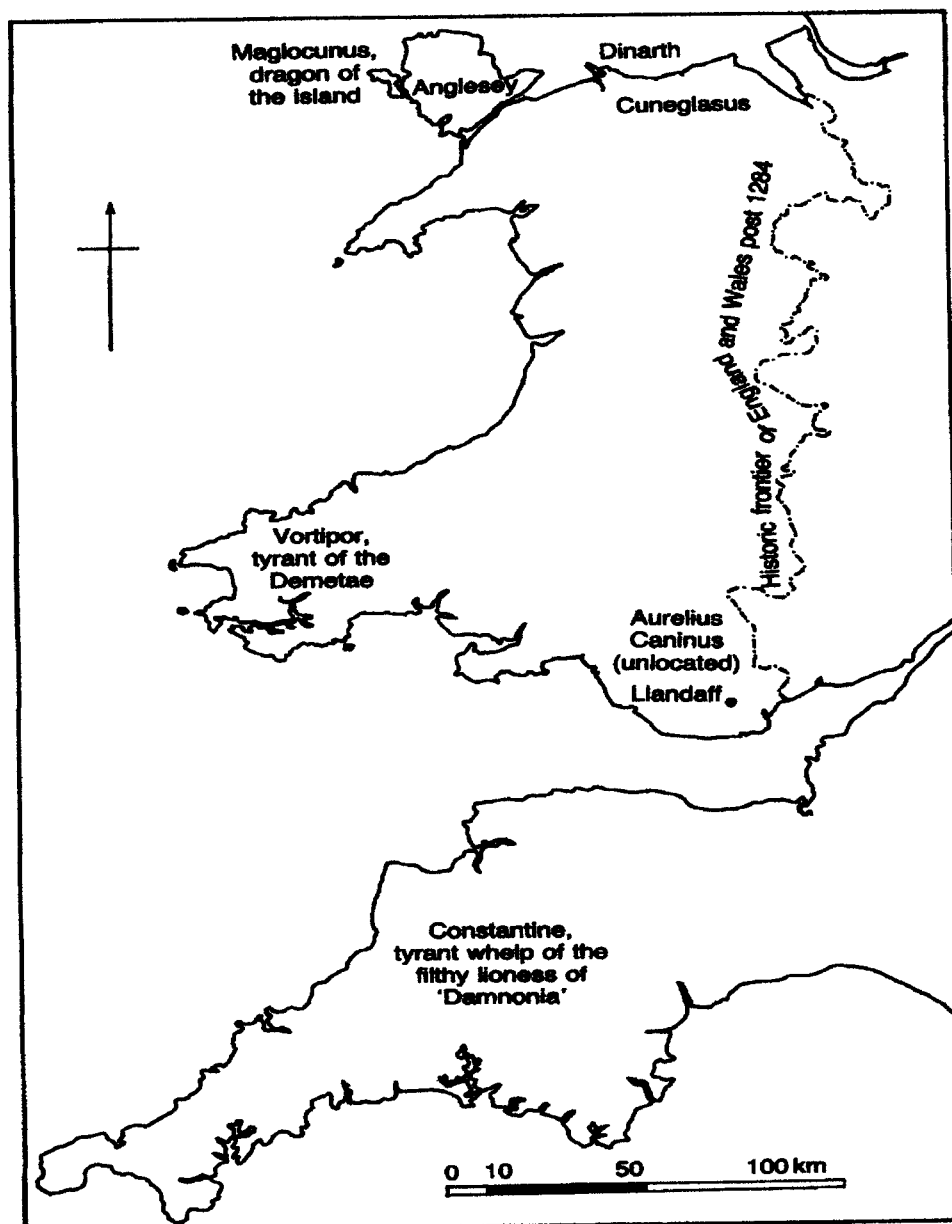


Figure 28. The British tyrants mentioned in the *De Excidio Britanniae*. Note location of their Kingdoms on the western side of the island and their distances from each other. This distance would make it difficult for individual rulers to support each other against the Anglo-Saxons, even if they wanted to. (N.J. Higham, *The English Conquest: Gildas and Britain in the Fifth Century* (Manchester: Manchester University Press, 1994), 109)

Territorial geography played a role as well. Figure 28 depicts the distances between the various rulers named by Gildas. The distances between them, as well as the nature of the rulers, characters, probably served to keep them from coming to each others aid or in presenting a unified front against the Saxon until it was too late. The tyrants Gildas complained against (Figure 28) exercised both civil and military authority within their own territories and that was what they were concerned with. The lack of a centralized authority in Britain probably had a great deal to do with the Saxon's ability to seize and hold large sections of Britain.²⁹

Regardless of their internal conflicts, British rulers should have been able to resist or absorb the Anglo-Saxons. Considering the population of Britain and the comparatively small numbers of Germanic warriors arriving by ship, an explanation other than a purely military one must account for the Saxon's success. Let us review the evidence.

Population estimates for Britain at the time of the Anglo-Saxon arrival varies. Taking into account the rapid cultural change that occurred in parts of Britain, it has often been supposed that massive numbers of Anglo-Saxons came to Britain. Estimates of population demographics show a different picture. Archaeologists who have analyzed settlements place the population of Roman Britain at between three and four million inhabitants.³⁰ It has been argued that Britain's population fell dramatically in the fifth and sixth centuries, perhaps by as much as a factor of two.³¹ Taking that extreme decline

²⁹ Ibid., 157.

³⁰ Michael E. Jones, *The End of Roman Britain* (Ithaca, New York: Cornell University Press, 1996), 13.

into account still leaves about one million Britons in the area that would become Anglo-Saxon England. With the arrival of the Saxons, many might have fled, either inland or off of the island, and perhaps many were killed. To suggest that 'racial cleansing' or genocide was being practiced is improbable as it is completely uncharacteristic of all other Germanic migrations on the continent.³² While there is no doubt that fighting occurred, it seems reasonable to suppose that most of the native British would have been left untouched. Even if one supposes that 200,000 were driven off, most likely to Wales, or killed (an amazing feat for any medieval force), this would still leave 800,000 native inhabitants. Numbers for Saxon arrivals are simply not available but range from a couple of tens of thousands to perhaps as high as 200,000 total invaders. Assuming, as scholars do, that one out of every five people in a tribe is of fighting age or ability,³³ this leaves an available military force of 40,000 men. So taking a high estimates of Anglo-Saxons (200,000) and a low British one (800,000) this still leaves, at the least, a four to one difference between populations in the Anglo-Saxon controlled territory.³⁴

With such a numerical difference, some form of cultural domination may have occurred but they would have been circumscribed. It would not be practical or sensible for invaders to adopt the military tactics of the people they were in the process of

³¹ Bryan Ward-Perkins, "Why did the Anglo-Saxons not become more British?," *English Historical Review*, (June 2000), 522.

³² Bryan Ward-Perkins, "Why did the Anglo-Saxons not become more British?," *English Historical Review*, (June 2000), 522.

³³ This ratio of men of fighting age versus men of non-military age in tribal population estimates is listed in, Michael E. Jones, *The End of Roman Britain* (Ithaca: New York, Cornell University Press, 1996), 267.

³⁴ Bryan Ward-Perkins, "Why did the Anglo-Saxons not become more British?," 523.

defeating. The Anglo-Saxons adopted few British customs; they rejected the British religion and borrowed only a few Brittonic words into Old English.³⁵ In some cases the British may not have objected too strongly to the Anglo-Saxon practices or simply not cared. Britain, in contrast to Gaul, appears to have gone through a rapid discarding of Roman ways. Gildas, for example, frequently makes note of the lawlessness of the native Britons: "Ever since it was first inhabited, Britain has been ungratefully rebelling, stiff-necked and haughty."³⁶ Regarding the throwing off of Roman ways Gildas notes: "Their obedience to the edicts of Rome was superficial: their resentment they kept repressed, deep in their hearts."³⁷ If these statements are correct, at least some Britons were not upset to see the Romans depart for good. If you were in the British ruling elite, you now had the chance to establish yourself or your family as independent instead of being ruled by an emperor in Rome.

The extent of the British dismissal of *Romanitas* is of interest in ascertaining the effect of the Anglo-Saxon invasion. In Britain, towns, coinage, architecture in brick and stone, complex industries, and many technologies such as wheel-thrown pottery, all vanish during the fifth century. Vestiges of the Roman era survive, such as the use of Latin by the educated and the persistent use of field-boundaries, estate structures, and systems of tax collection.³⁸ These estates most likely were semi-autonomous and were

³⁵ Ibid., 526.

³⁶ Gildas, *The Ruin of Britain and Other Works*, translated by Michael Winterbottom (London, Phillimore & Co. LTD., 1978), 4:1.

³⁷ Ibid., 5: 2.

³⁸ Bryan Ward-Perkins, "Why did the Anglo-Saxons not become more British?," 528.

not affected as greatly by the collapse of the Roman governmental system. In fact, in the absence of government tax collectors, it should come as no surprise that tax collection was maintained. More taxes would now stay with the lord of an estate and not be forwarded to a central bureaucracy. When compared to the situation across the channel, it is not what survives that provides the most striking picture, it is what disappears.

Changes in Britain occurred in Anglo-Saxon controlled areas as well as in areas still under British rule. Within British ruled areas, there was an abandonment of Roman ways, and a decentralization of religious and political boundaries. Towns, such as Caister-by-Norwich ceased to exist.³⁹ Gildas records that in the wake of Saxon invasions "our citizens abandoned the towns and the high wall,"⁴⁰ and that after fighting the Saxons, "All the major towns were laid low by the repeated battering of enemy rams."⁴¹ While there is no evidence suggesting that Saxons used siege engines in their wars with the Britons, it is possible that Gildas refused to accept that some of the British may have voluntarily left the urban centers, and discarded Roman and Christian ways in the

³⁹ Several arguments from an archaeological perspective challenge Gildas and his assessment. Archaeologists are generally in agreement that many Roman forts had been abandoned and that some towns, particularly with long distance commercial trade, had become deserted in the 5th century, but that many walled towns show a continuous occupation. For a detailed archaeological analysis see: Leslie Alcock, *Arthur's Britain, History and Archaeology AD 367-634* (New York: St. Martin's Press, 1971), 185-190, 101

⁴⁰ Gildas, *The Ruin of Britain and other works*, translated by Michael Winterbottom (London, Phillimore and Co. Ltd., 1978), 19:1.

⁴¹ *Ibid.*, 24:3.

process. This occurred in western as well as eastern Britain, suggesting that it was not a result of Anglo-Saxon incursions.⁴²

The rapid de-Romanization of elements of British society, along with some signs of successful resistance to Anglo-Saxon domination, may be linked. A return to a militarized tribal society probably offered better protection in a politically diffused environment such as post-Roman Britain. Less Romanized sections of British society may have been able to adapt quickly and return to an earlier tribal ways of life,⁴³ becoming in fact, more similar than dissimilar to Anglo-Saxon society. We may thus ask: how were the British warbands organized, and what effect did such organization have on their contacts with Anglo-Saxons.

Sources for Celtic social structure are rare for this brief but important period. The Welsh law books, though strictly relevant only to early medieval Wales, depict the nature of pre-Anglo-Saxon arrangements in the region. These law books reveal a pyramidal structure: at the top, was the king; immediately below him, a small class of officials, and a large *teulu*, the king's personal bodyguard or *comitatus*. Next is a very broad base of bondsmen, people who worked the land and provided other services which supported the upper levels of the structure. There does not appear to be a free spear-bearing class of *ceorl* as in Wessex.⁴⁴ This is significant. If British society is more stratified than that of the Anglo-Saxons the social upheaval resulting from replacement of authority at the top

⁴² Ward-Perkins, "Why did the Anglo-Saxons not become more British?," 528.

⁴³ *Ibid.*, 528.

⁴⁴ Leslie Alcock, *Economy, Society and Warfare Among The British And Saxons* (Cardiff: University of Wales Press, 1987), 261-262.

is going to have little effect on the group as a whole. The lower members of society are more likely to be complacent regarding their new rulers. They had never been closely connected to the previous ruling class.

One source is especially important here. The *Gododdin* poem is crucial to understanding Celtic warband society. It dates to around A.D. 600 and is attributed to one Aneirin. In many ways the poem is similar to *Beowulf* in that it depicts warrior society, its rituals, weapons, rulers and motives. Such poems are useful in providing a cross-cultural comparative analysis. At face value the *Gododdin* agrees with the law codes. The poem is an epic about a group of fallen warriors, about 300 of them. These warriors gathered for a campaign from throughout the British kingdoms. They came from areas such as Gwynedd, Pictland, Aeron, Elfed and the south.⁴⁵ (This reminds us of Tacitus's point about Germanic lords recruiting from outside their kingdoms). The number of warriors recruited has been thought by some scholars to represent a poetic convention. But it actually suits the usual general estimate for warriors in a very large warband. One key difference between Anglo-Saxon and British warriors is that the British all appear to have been mounted and armed with swords and spears. The exact ratio of weapons is impossible to determine. Some scholars have argued that these mounted men represent the elite and that they were accompanied by a larger force of unmentioned infantry.⁴⁶ However, this argument is difficult to support. Analysis of

⁴⁵ *The Gododdin of Aneirin*, XX, translated by John T. Koch (Cardiff: University of Wales Press, 1997), 73.

⁴⁶ K.H. Jackson, translator, *The Gododdin* (Edinburgh: Edinburgh University Press, 1969), 13-18. has argued that the number three hundred represents three hundred chiefs, each of which would be

literary and archaeological sources does not suggest that early medieval armies reached the large size of many thousands suggested by Kenneth Jackson, for example.⁴⁷ Also, if a class of lesser warriors (spear bearers) existed, they left no trace in law codes, which would have granted them rights or privileges.⁴⁸

In general the economies that supported, both Anglo-Saxon and British warbands on the island appear to have been quite similar. Mixed farming provided resources for both groups. Industry also appears to be similar in both cases although British social controls appear to have been stricter. One of the Welsh laws refers to skilled crafts and hints at some upward social mobility, but only on approved authority:

Three arts which a bondman cannot teach his son without the consent of his lord: clerkship and smithcraft and bardism; for if the lord be passive until the clerk be tonsured or the smith enter his smithy or a bard graduate, he can never enslave them after that.⁴⁹

These skilled craftsmen were probably few in number. They received support from their lord who collected foodstuffs from his farmers and numerous bondsmen. British rulers seem to have had a greater degree of social control over their people than Anglo-Saxon lords.

Returning to warrior societies, it is clear that similarities outweighed differences.

The *Gododdin* refers to warriors earning mead: "violence at the boarders was payment

accompanied by supporting foot soldiers. He suggests that anything from three thousand or more would be reasonable for the whole army.

⁴⁷ For an explanation of likely sizes of the forces involved, see: Leslie Alcock, *Arthur's Britain, History and Archaeology AD 367-634* (New York: St. Martin's Press, 1971), 334-338.

⁴⁸ Leslie Alcock, *Economy, Society and Warfare Among The British And Saxons* (Cardiff, University of Wales Press, 1987), 264.

⁴⁹ *Ibid.*, 292

for the mead.”⁵⁰ This refers to the fighting that a warrior would do to expand his lord’s holdings. The lord dispensed gifts: “From the herd, he used to distribute horses in winter.”⁵¹ Even the practice of fosterage appears to have been carried out by the British warbands. *The Gododdin* records: “It was better still when he went with the men to Catraeth. He was a fosterling.”⁵² The whole epic nature of the poem stresses men earning mead and following their lord into battle only to be utterly destroyed. In spite of the many similarities with Anglo-Saxon warbands, including shield use and weapon types employed, the British military appears to have had one significant difference, the use of horses.

The *Gododdin* of circa 600 has numerous references to the use of horses as a standard practice amongst the British military.⁵³ It is possible that Germans also rode horses to battle and then fought dismounted as seems to be the case in later Anglo-Saxon England. During the migration period, however, it is also possible that the Anglo-Saxons were strictly an infantry force.⁵⁴ The *Gododdin* makes it clear that warriors fought from horseback: “in the day of combat Bleiddig, son of Beli would do feats of arms, upon the

⁵⁰ *The Gododdin of Aneirin*, translated by John T. Koch (Cardiff: University of Wales Press, 1997), 436.

⁵¹ *Ibid.*, 1240.

⁵² *Ibid.*, 1198.

⁵³ *Ibid.*, 35, 37, 45, 47, 49, 51, 73, et al.

⁵⁴ Arguments have been raised that the Anglo-Saxons may have had a larger archer and cavalry wing to their military than previously thought, see: Charles W. Hollister, *Anglo-Saxon Military Institutions on the Eve of the Norman Conquest* (Oxford: Clarendon Press, 1962), 131-136. It must be noted that many of the sources used in this argument date to the 11-12th centuries, some of which are post Norman conquest, and therefore may have reduced value for military organization during the migration era, 5-6th centuries.

back of a very white steed.”⁵⁵ More convincing is the poet’s praise of a warrior named Marchleu, who “scattered ash wood [spears] from the four clefts of his hand while he was mounted upon a bright slender steaming [steed].”⁵⁶ This tactic is not the cavalry charge of the latter Middle Ages. Archaeological evidence suggests that at this time stirrups were not in use and the shock of a charge would have unhorsed the rider.⁵⁷

There is no doubt that the Anglo-Saxons were ultimately victorious over the native British. The conspicuous use of horses on the part of the British may have played a large role in their defeat. Whether or not the Germans employed horses during the migration period, evidence suggests that horses eventually found widespread use by Anglo-Saxons, not as cavalry but merely as transport. The Britons used horses as a standard part of their tactics. All things being equal, it is possible that the Britons, having been pushed out of the better agricultural regions that enabled a large warband might not have been able to frequently raise sizable forces. This would have been due to the need for farmers to supply provisions for warriors as well as fodder for horses. That may help to explain how two extremely similar societies could come into contact and yet one completely dominate the other.

Returning to the question of reasons for the Anglo-Saxon migration, this study suggests that the main motive for the *adventus Saxonum* is the ease with which land and wealth might be gained from native Britons apparently far more so than by warfare

⁵⁵ Ibid., 1145-1146

⁵⁶ Ibid., 316-317.

⁵⁷ Leslie Alcock, *Economy, Society and Warfare Among the British and Saxons* (Cardiff: University of Wales Press, 1987), 300.

conducted in the homeland. The process of fostering, by this time was probably creating larger, more powerful bands making it increasingly difficult for lesser rulers to maintain power.⁵⁸ The opportunities in Britain were hard to turn down considering the invitation and initial offering of land and pay. This was followed by the chance to see first hand, from an established “beach head” so to speak, the capabilities of a potential adversary. It created the perfect opportunity for courageous leaders to exercise personal initiative and to carve out a personal kingdom without the possible repercussions of disturbing the *status quo* on the continental homeland. The nature of the *comitatus* which stressed personal achievement and glory exacerbated the situation by ensuring conflict between British and Anglo-Saxon warbands. The fighting could not, however, result in the extermination of all the natives. This is demonstrated by Bede’s praise of Æthelfrith because of the lands he brought under English control “having killed or subjugated the natives.”⁵⁹ Also, in the *De Excidio et Conquestu Britanniae*, we find numerous instances of Britons paying tribute to Saxons: “it had been full of peoples, mistress of races, ruler of provinces: now it had become tributary.”⁶⁰ This passage refers to the church of Gildas’s day paying tribute to Saxon rulers. The war of the Saxon federates commenced with demands for tribute by the Saxons who “swore that they would break their agreement and

⁵⁸ Stephen S. Evens, *Lords of Battle*, 119-120.

⁵⁹ Bede, *Ecclesiastical History of the English People* (New York: The World’s Classics, 1994), I. 33-34.

⁶⁰ Gildas, *The Ruin of Britain and other works*, translated by Michael Winterbottom (London, Phillimore and Co. Ltd., 1978), 1:5.

plunder the whole island unless more lavish payment were heaped on them.”⁶¹ Following the war, at least some of the native British paid tribute to the Saxons: “Do not give holy things to the dogs, or throw your pearls before swine”⁶²

It is impossible to pay tribute to someone if you are dead, or if your means of collecting taxes decline – unlike living farmers and bondsmen who pay theirs. Considering the similar nature of the two societies, the probable size of their armies and the technology at their command (swords and spears), it seems far more likely that one ruling elite simply displaced the other, leaving the vast majority of the population largely unaffected.⁶³ This could have been accomplished from an established foothold on the island. Political unrest among native Britons and the individual initiative of Germanic warband leaders (as well as their need to reward followers,) further encouraged the displacement of the native aristocracy. The situation within Britain had created an environment whereby warbands could rebel against former employers and take control of large portions of the country. New personal kingships were thus created.

⁶¹ Ibid., 23: 5.

⁶² Ibid., 94: 3.

⁶³ For an analysis of British and Germanic cultures similarities and possible co-evolution see: Michael E. Jones, *The End of Roman Britain* (Ithaca, New York: Cornell University Press, 1996), 102-107.

Conclusion

This study has focused on an examination of the logistics involved in the Anglo-Saxon migrations to Britain. In order to do so it was necessary to look at the *comitatus* and related institutions, both social and economic, which facilitated the warband's existence. While such has involved the examination of numerous topics, the central theme has been this: who would undertake a journey to Britain, and why? An assessment of the ability of warbands to construct ships, and the capabilities of these vessels to serve as either troop transports or supply ships has been crucial to an understanding of the numbers involved in migration. Finally, the motives for making the voyage as well as on the other side, the nature of British society and its ability to resist the Anglo-Saxons, has been examined.

Germanic society was such that personal courage was critical to a warrior serving a lord. Various social controls existed in an effort to create a form of brotherhood and stability to these warbands. The lords created a ranking system by deciding where a warrior would sit in the hall, and the lord's queen added legitimacy to this ranking by offering mead to soldiers in a ceremonial format. This ranking system served to create a fictive kinship which also encouraged warriors to excel one another in order to earn their lord's favor. The lord was required to reward service in the form of gifts to his followers. This created a circular arrangement where a lord attracted followers by being victorious on the battlefield and rewarding his retainers. Word of his success would spread, attracting more men. The lord would have to reward this new larger body of troops so he would have to go to war to acquire the necessary gifts to distribute.

Certain items in Germanic society were more valuable than others. Roman manufactured goods carried a great deal of prestige. The presence of Roman manufactured items as grave goods suggests that the ability to acquire Roman made goods may have been a factor that led to early social stratification among the Germans. The restricting actions of the later Roman Empire may then have played a large role by encouraging Germanic piracy. Roman laws became increasingly restrictive, forcing Anglo-Saxons to take to the water to outflank other tribes (and Roman garrisons on land,) in order to raid settlements for these vital goods.

The contemporary literary record refers to Saxon pirates while the archaeological record enables us to examine the nature and construction of ships likely employed by the Anglo-Saxons. The use of mast and sail by Anglo-Saxons are still hotly debated topics but they are directly related to the *adventus Saxonum*. The central issue is whether a small military force moved to Britain, or, if the movement consisted of whole tribes. Proponents of the “mass-migration” theory maintain that sail use would have been necessary in order to transport the infirm, children, sick and women. These would most likely not have been able to work oars. The traditional picture of the migration once it had reached Britain is also in question. Were the native inhabitants displaced, or was some type of genocide practiced? This is an important consideration when determining how either a large “national” invasion, or a smaller military force might have controlled the native British.

This work concludes that the available data do not support the theory of Anglo-Saxons mast and sail use on their vessels of the fifth and sixth centuries. For the purpose

of migration, it might not even have mattered. The contemporary economic organization of Germany, with mixed farming and local craftsmen involved in the necessary jobs of tool production, simply could not have built enough ships, with sail or otherwise, to effect a massive movement of people. The time and skill involved in building ships, such as those of Nydam or Sutton Hoo, were far too egregious to assume that hundreds of these ships were built in order to transport the thousands of tribal people needed to make a crossing. Even if the ships were available, it is unlikely, given population disparities, that tribally organized groups would have had the 'critical mass' necessary to overrun the native inhabitants. Another explanation is needed.

In the fifth century, in the wake of Roman departure, Britons were fighting a civil war. The British warband structure, while similar in many ways to that of the Anglo-Saxons, had not had to function in a military capacity for centuries. Roman troops had always provided protection. When the Romans finally withdrew from Britain in c. 410, the British were left with farmers and politicians, but no military. Vortigern and his council invited Saxons to Britain to defend it from raiders from the north (the use of barbarian troops to protect Roman territory, was a common Roman practice); unfortunately, the plan backfired and resulted in Anglo-Saxon domination over much of the island.

That the Saxons initially arrived as mercenaries appears beyond doubt. However, the mass extermination theory seems to buckle at this point. Both Gildas and Bede speak of natives subjugated and paying tribute. This could not have occurred if all of the Britons had been killed or driven from Saxon dominated lands. Warbands **needed a**

civilian infrastructure to survive and the nationality of those providing food probably did not make any difference to Anglo-Saxon warriors. Conversely, it probably made little difference to a British farmer whether or not he gave his taxes to a Germanic lord, British ruler, or a Roman official, as long as he and his family were left alone.

Finally, in examining the nature of the two societies, the similarities between them far outweighed the differences so that the displacement of one ruling elite by another is entirely plausible, particularly when it is the same elite in both societies that engages in warfare. No wholesale slaughter of Britons did or could take place. History has hundreds of examples of one people invading another, yet it is difficult if not impossible to find a pre-modern case of successful genocide actually carried out.¹ Wars end when the leaders of one side are killed, or surrender to the other side, not when every man, woman, and child of the opposition has been killed. William the Conqueror ended Anglo-Saxon rule of England in 1066 at the Battle of Hastings. Sources indicate that he probably had about 5,000 men with him. After the battle, there were no widespread executions of the populace. Neither do Germanic migrations into Gaul and other areas make any mention of the widespread killing of native populations. Even in the Americas, Cortez, acting with the help of biological warfare, was unable to destroy all Indians. To think, therefore, that it was possible for the Saxons in the fifth and sixth centuries in Britain to exterminate a much larger native population is a position that this study finds untenable.

¹ Frank M. Stenton, *Anglo-Saxon England* (Oxford: Clarendon Press, 1943), 18.

Bibliography

Primary Sources.

- Aneirin. *The Gododdin of Aneirin, Text and Context from Dark-Age North Britain*. John T. Koch, ed. Cardiff: University of Wales Press, 1997.
- Bede. *The Ecclesiastical History of the English People, The Greater Chronicle, Bede's Letter to Egbert*. Edited by Judith McClure and Roger Collin. Oxford: Oxford University Press, 1994.
- Chickering, Howell D, Jr. Translator and editor. *Beowulf: A Dual-Language Edition*. New York: Anchor Books, 1989.
- Clark, John, translator. *Eutropius compendious History of Rome*. Boston, Peter Edes, 1793.
- Colgrave, Bertram, translator. *Two Lives of Saint Cuthbert*. Cambridge: Cambridge University Press, 1940.
- Gildas. *The Ruin of Britain and Other Works*. Edited and Translated by Michael Winterbottom. London: Phillimore & Co. Ltd., 1978.
- Jackson, Kenneth, H., trans. *The Gododdin*. Edinburgh: Edinburgh University Press, 1969.
- Mommsen, Theodore, and Meyer, Pavlv. *Theodosiani Libri XVI CVM Constitvtionibvs Sirmondianis*. Berlin: Apud Weidmannos, 1954.
- Platnauer, Maurice, translator. *Claudian*, 2 vol. Cambridge, Massachusetts: Harvard University Press, 1956.
- Rolfe, John C., translator. *Ammianus Marcellinus*. Cambridge, Massachusetts: Harvard University Press, 1952.
- Savage, Anne. *The Anglo-Saxon Chronicles*. New York: Barnes & Noble Inc., 2000.
- Sidonius, *Poems and Letters*, 2 volumes, translated by W.B. Anderson. London and Cambridge, Massachusetts, 1965. p. 419-33.
- Strabo, *The Geography of Strabo*, Translated by Horace Leonard Jones, Cambridge, Massachusetts: Harvard University Press, 1923.
- Tacitus. *Agricola, Germania, Dialogus*. Cambridge: Harvard University Press, 1970.

Thorsson, Ornnolfur. Ed. *The Sagas of Icelanders, A Selection*. New York: Penguin Books, 1997.

Tours. *Gregory Of Tours, The History of the Franks*, Translated by Lewis Thorpe. London: Penguin Books Ltd, 1974.

Secondary Sources / Books

Abels, Richard. *Alfred The Great, War, Kingship and Culture in Anglo-Saxon England*. London and New York: Addison Wesley Longman Limited, 1998.

Alcock, Leslie. *Economy, Society and Warfare Among the Britons and Saxons*. Cardiff: University of Wales Press, 1987.

Alcock, Leslie. *Arthur's Britain History and Archaeology AD 367-634*. New York: St. Martin's Press, 1971.

Arnold, C.J. *Roman Britain to Saxon England*. Beckenham, 1984.

Arwidsson Greta and Berg Gosta. *The Mastermyr Find A Viking Age Tool Chest from Gotland*. Lompoc, California: Larson Publishing Company, 1999.

Bachrach, Bernard, S. *The Anatomy of a Little War*. Boulder, Colorado: Westview Press, 1994.

Bachrach, Bernard, S. *Merovingian Military Organization 481-751*. Minneapolis: University of Minnesota Press, 1972.

Arne Bang-Anderson, Basil Greenhill, and Egil Harald Grude, eds. *The North Sea: A Highway of Economic History and Cultural Exchange*. Oslo: Norwegian University Press, 1985.

Bass, George F. *A History of Seafaring Based on Underwater Archaeology*. New York: Walker and Company, 1972.

Blair, Peter H. *Roman Britain and Early England 55B.C.-A.D. 871*. New York: The Norton Library, 1966.

Bowen, E.G. *Britain and the Western Seaways, A History of Cultural Interchange Through Atlantic Coastal Waters*. New York: Praeger Publishers, 1972.

- Bradley, S.A.J. translator and editor. *Anglo-Saxon Poetry*. London: Orion's Publishing Group, 2000.
- Chadwick, H.M. *Origins of the English Nation*. Cambridge: Cambridge University Press, 1907.
- Christiansen, P.G. *The Use of Images by Claudian Claudianus*. The Hague and Paris, 1969.
- Clarke, Helen and Ambrosiani, Bjorn. *Towns in the Viking Age*. New York: St. Martin's Press, 1991.
- Contamine, Philippe. *War in the Middle Ages*. New York: Basil Blackwell, 1984.
- Crapo, Richley, H. *Cultural Anthropology, Understanding Ourselves & Others, 2nd Edition*. Guilford, Connecticut: Dushkin Publishing Group, 1990.
- Dodge, Theodore, A. *Great Captains, Caesar A History of the Art of War Among the Romans Down to the End of the Roman Empire, with a Detailed Account of the Campaigns of Julius Caesar*. New York: Noble Offset Printers, Inc, 1963.
- Drew, Katherine. Ed. *The Barbarian Invasions, Catalyst of a New Order*. New York: Holt, Rinehart and Winston, Inc., 1970.
- Elton, Hugh. *Warfare in Roman Europe, AD 350-425*. Oxford: Clarendon Press, 1996.
- Enright, Michael J. *Lady with a Mead Cup: Ritual, Prophecy and Lordship in the European Warband from La Tene to the Viking Age*. Portland: Four Courts Press, 1996.
- Evison, Vera, I. *The Fifth-Century Invasions South of the Thames*. London: The Athlone Press, 1965.
- Evans, Stephen S. *The Lords of Battle, Image and Reality of the Comitatus In Dark Age Britain*. Suffolk: The Boydell Press, 1997.
- Fenwick, Valerie. *The Graveney Boat: a Tenth-Century Find From Kent*. Greenwich: National Maritime Museum, 1978.
- Fisher, D. J. V. *The Anglo-Saxon Age c. 400-1042*. New York: Marboro Books Corp., 1973.
- Gardiner, Robert. Ed. *Conway's History of the Ship, The Earliest Ships, The Evolution of Boats into Ships*. Annapolis, Maryland: Naval Institute Press, 1996.

- Goffart, Walter. *The Narrators of Barbarian History (A.D. 550-800)*. Princeton: Princeton University Press, 1988.
- Goffart, Walter. *Barbarians and Romans A.D. 418-584, The Techniques of Accommodation*. Princeton: Princeton University Press, 1980.
- Gransden, Antonia. *Historical Writing in England c.550 to c.1307*. Ithaca, New York: Cornell University Press, 1974.
- Greenhill, Basil and John Morrisson. *The Archaeology of Boats and Ships*. Annapolis: Naval Institute Press, 1995.
- Griess, Thomas. *Ancient and Medieval Warfare*. New Jersey: Avery Publishing Group Inc., 1984.
- Harries, Jill. *Sidonius Apollinaris and the Fall of Rome AD 407-485*. Oxford: Clarendon Press, 1994.
- Hawkes, Sonia C. Ed. *Weapons and Warfare in Anglo-Saxon England*. Oxford: Oxford University Committee for Archaeology and Individual Authors, 1989.
- Haywood, John. *Dark Age Naval Power, A Reassessment of Frankish and Anglo-Saxon Seafaring Activity*. Revised Edition. Norfolk: Anglo-Saxon Books, 1999.
- Herwig, Wolfram. *The Roman Empire and Its Germanic Peoples*. Berkeley: University of California Press, 1990.
- Higham, N.J. *The English Conquest: Gildas and Britain in the Fifth Century*. Manchester: Manchester University Press, 1994.
- Higham, N.J. *An English Empire: Bede and the Early Anglo-Saxon Kings*. Manchester: Manchester University Press, 1995.
- Hollister, Warren C. *Anglo-Saxon Military Institutions on the Eve of the Norman Conquest*. Oxford: Clarendon Press, 1962.
- Hutchinson, Gillian. *Medieval Ships and Shipping*. Rutherford: Fairleigh Dickinson University Press, 1994.
- Johnson, Stephen. *The Roman Forts of the Saxon Shore*. New York: St. Martin's Press, 1976.

- Jones, Michael E. *The End of Roman Britain*. Ithaca and London: Cornell University Press, 1996.
- Lewis, Archibald R. and Timothy J. Runyan. *European Naval and Maritime History, 300-1500*. Bloomington: Indiana University Press, 1985.
- Lynn, John. Ed. *Feeding Mars: Logistics in Western Warfare from the Middle Ages to the Present*. Boulder: Westview Press, 1993.
- McGrail, Sean. *Ancient Boats in N.W. Europe*. London: Longman Group, 1987.
- McGrail, Sean. Ed. *Aspects of Maritime Archaeology and Ethnography*, London: Trustees of the National Maritime Museum, 1984.
- McGrail, Sean. Ed. *Maritime Celts, Frisians and Saxons*. London: Council for British Archaeology, 1990.
- McGrail, Sean. Ed. *Medieval Ships and Harbours in Northern Europe*. Greenwich: BAR International Series No. 5, 1979.
- McGrail, Sean. Ed. *The Ship, Rafts, Boats and Ships From Prehistoric Times to the Medieval Era*. London: Her Majesty's Stationary Office, 1981.
- McGrail, Sean. Ed. *Woodworking Techniques before A.D. 1500*. Greenwich: BAR International Series No. 7, 1982.
- Mitford, Bruce. *The Sutton Hoo Ship-Burial*. London: Alden & Mowbray, Ltd. 1968.
- Olsen, Olaf and Ole. Pederson-Crumlin, *Five Viking Ships from Roskilde Fjord*. Copenhagen: The National Museum, 1978.
- Pedersen-Crumlin, *Aspects of Maritime Scandinavia*. Roskilde: The Viking Ship Museum, Denmark, 1991.
- Rodgers, William L. *Naval Warfare Under Oars, 4th to 16th Centuries, A Study of Strategy Tactics And Ship Design*. Annapolis: Naval Institute Press, 1967.
- Rousmaniere, John. *The Annapolis Book of Seamanship*. New York: Simon and Schuster, 1989.
- Snyder, Christopher A. *An Age of Tyrants Britain and the Britons A.D. 400-600*. University Park: The Pennsylvania State University Press, 1998.

- Steffy, Richard. *Wooden Ship Building And The Interpretation Of Shipwrecks*. College Station, Texas: Texas A&M University Press; 1994.
- Stenton, Frank, M. *Anglo-Saxon England*, Oxford: Clarendon Press, 1943.
- Stenton, Frank, M. *Anglo-Saxon England*, 3rd edition, Oxford: Clarendon Press, 1971.
- Stevens, C.E. *Sidonius Apollinaris and His Age*. Oxford: The Clarendon Press, 1933.
- Thompson, E.A. *Romans and Barbarians, The Decline of the Western Empire*. Madison: University of Wisconsin Press, 1982.
- Thompson, E.A. *Saint Germanus of Auxerre and the End of Roman Britain*. Woodbridge, Suffolk: The Boydell Press, 1984.
- Webster, Leslie and Michelle Brown. *The Transformation of the Roman World, AD 400-900*. Berkeley: University of California Press, 1997.
- Westerdahl, Christer, Ed. *Crossroads in Ancient Shipbuilding, Proceedings of the Sixth International Symposium on Boat and Ship Archaeology*, Roskilde 1991. Oxford: Oxbow Books, 1994.
- Whittock, Martyn, J. *The Origins of England 410-600*. Totowa: Barnes & Noble Books, 1986.
- Yorke, Barbara. *Kings and Kingdoms of Early Anglo-Saxon England*. London: Routledge, 1990.

Secondary Sources / Articles.

- Adams, William Y., Dennis P. Van Gerven, and Richard S. Levy. "The Retreat from Migrationism." *Annual Review of Anthropology* 7 (1978): 483-532.
- Arenhold, L. "The Nydam Ship at Kiel." *Mariner's Mirror* 4 (1914): 182-85.
- Basch, L. "On the Reliability of Ancient Writers in Matters Maritime." *Mariner's Mirror* 66 (1980): 366-69.
- Biddick, Kathleen. "Field Edge, Forest Edge: Early Medieval Social Change and Resource Allocation." *Archaeological Approaches to Medieval Europe*, edited by Kathleen Biddick, 105-118. Kalamazoo, MI., 1984.
- Bill, Jan. "Iron Nails in Iron Age and Medieval Shipping." *Crossroads in Ancient Shipbuilding*, edited by Christer Westerdahl, 55-64. Oxbow Books., 1994.

- Burnham, C. P. "The Coast of South-East England in Roman Times." *The Saxon Shore: A Handbook*, edited by Valerie A. Maxfield, 12-17. Exeter, 1989.
- Carver, M.O.H., ed. "Pre-Viking Traffic in the North Sea." *Maritime Celts, Frisians, and Saxons*, Edited by Sean McGrail, 117-25. London, 1990.
- Clark, G. "The Invasion Hypothesis in British Prehistory." *Antiquity* 40 (1966): 172-89.
- Dickinson, Tania. "The Present State of Anglo-Saxon Cemetery Studies." *Anglo-Saxon Cemeteries*, (1979): 11-13.
- Davidson, Hilda, E. "The Training of Warriors." In *Weapons and Warfare in Anglo-Saxon England*, Edited by Sonia Chadwick Hawkes, 11-24. Oxford University Committee for Archaeology, 1989.
- Farrell, A. W. "Mast and Sail in Scandinavia in the Bronze Age." *Mariner's Mirror* 63 (1977): 190;65 (1979): 83.
- Freeman, E. A. "The Tyrants of Britain, Gaul, and Spain, A.D. 406-411." *English Historical Review* I (1886): 53-85.
- Hawkes, Sonia C., and G.C. Dunning. "Soldiers and Settlers in Britain, Fourth to Fifth Century." *Medieval Archaeology* 5 (1961): 1-70.
- Hayes, P.P. "Roman to Saxon in the South Lincolnshire Fens." *Antiquity* 62 (1988): 321-26.
- Hind, J.G.F. "Litus Saxonicum-The Meaning of 'Saxon Shore'." In *Roman Frontier Studies* 1979, edited by W.S. Hanson and L.J.F. Keppie, 317-24. Oxford, 1980.
- Howells, William W. "Estimating Population Numbers through Archaeological and Skeletal Remains." In *The Applications of Quantitative Methods in Archaeology*, edited by R.F. Heizer and S.F. Cook, 158-76. Viking Fund Publication in Anthropology 28. New York, 1960.
- Jones, Michael E. "Saint Germanus and the *Adventus Saxonum*." *Haskins Society Journal: Studies in Medieval History* 2 (1990): 1-11.
- , "The Literary Evidence for Mast and Sail during the Anglo-Saxon Invasions." *Studies in Medieval and Renaissance History*, n.s., 13: (1992)
- Lennard, R. V. "The Character of the Anglo-Saxon Conquests: A Disputed Point." *History*, n.s., 18 (1933-34): 204-15.

- Marcus, G.J. "The Nydam Craft and the Anglo-Saxon Invasions." *Mariner's Mirror* 41 (1955): 66.
- Marsden, Peter. Ed. "A late Saxon logboat from Clapton, London Borough of Hackney" *The International Journal of Nautical Archaeology and Underwater Exploration* 18 (1989): 89-111.
- Russell, J.C. "Recent Advances in Medieval Demography." *Speculum* 40 (1965): 84-101.
- Sims-Williams, Patrick. "Gildas and the Anglo-Saxons." *Cambridge Medieval Celtic Studies* 6 (1983): 1-30.
- Thompson, E.A. "Britain, A.D. 406-410." *Britannia* 8 (1977): 303-18.
- Usher, A.P. "A New Estimate of the population of Britain in Roman Times." *The Geographical Review* 20 (1930): 674-76.
- Ward-Perkins, Bryan. "Why did the Anglo-Saxons not become more British?" *English Historical Review* 65 (June 2000): 514-533.
- White, Donald A. "Changing Views of the *Adventus Saxonum* in Nineteenth and Twentieth Century English Scholarship." *Journal of the History of Ideas* 32 (1971): 585-94.
- Williams, Patrick S. "The Settlement of England in Bede and the Chronicle," *Anglo-Saxon England* 12: (1983).