

“Kenning be Kenning and  
Course be Course”:  
Maritime Jurimetrics in Scotland  
and Northern Europe  
1400–1600

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*This article explores the jurimetric significance of a phrase or formula, “kenning be kenning and course be course”, used in maritime law texts and disputes in late medieval and early modern Scotland and England. On open sea voyages, knowing one’s position and using that knowledge to plot the next stage of the trip depended, not only on topographical knowledge of coasts and their features, but also on knowledge of the “kennings” (sightings, or the distances between two visible points of coastal topography) encountered on coastal voyages or at the end of a sea-going passage, as well as knowledge of the “courses” to be sailed in the latter case. Knowing how far a vessel had travelled was also crucial in actions for payment of freight pro rata itineris or for payment of wages. The several versions of the Judgments of the Sea used in northern Europe stated what the law was in such disputes, but the remedies given were dependent on a calculation of distance in either kennings or courses. The Scottish context for this practice is explored in detail.*

**A. LAW AND NAVIGATION: THE SYMBIOSIS**

In the thirteenth-century Norse speculative treatise, *Konnungs Skuggsja* or *The King’s Mirror*, a conversation on the topic of seafaring occurs between father and son.<sup>1</sup> The latter wishes to become a sea-trader and to hear the old man’s views on cosmology, tides and winds. But at the outset his father stresses that, in addition to navigational skills, it is equally important to acquire knowledge of the law relating to

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<sup>1</sup> L M Larson, *The King’s Mirror (Speculum Regale—Konnungs Skuggsja)* (1917), 81 (henceforth, Larson, *King’s Mirror*). This work is thought to have been written during the reign of King Hakon IV of Norway (1217–1263).

trade by sea. Of prime importance, he tells his son, is the "*Bjarkey Code*",<sup>2</sup> which was local to the Baltic Sea. But he urges the young man to learn as much as he can about other sets of laws and sums up the practical benefits of such an exercise, saying:

If you are acquainted with the law, you will not be annoyed by quibbles when you bring suit against men of your own class, but will be able to plead according to the law on every case. . . . I regard no man perfect in knowledge unless he has thoroughly learned and mastered the customs of the place where he is sojourning.<sup>3</sup>

In the next breath, unsurprisingly, he counsels his son to learn languages.

Further evidence of an interconnection between legal and nautical skills is provided by several written guides to navigation in northern waters called "*routiers*" or "*rutters*". Some rutters simply gave sailing directions and pointed out distances, currents and hazards to be avoided; all clearly useful to seafaring traders and merchants. Others, in addition to this information, also contained versions of the twelfth- or thirteenth-century compilation commonly known as the *Judgments of the Sea* or the *Laws of Oleron*.<sup>4</sup> This code influenced several northern European sets of shipping law, such as the *Wisby Town Law*, and became part of the maritime law of both England and Scotland. In England it formed part of the *Liber Niger Admiraltatis*, the *Black Book of the Admiralty*, which may be dated to 1336, though some parts are possibly earlier. The earliest Scottish manuscript containing a version of the *Judgments*, entitled *Of Law and ye Custume of Schippis*, is dated to the second half of the fourteenth century.<sup>5</sup> The first printed rutter known to contain a version of the *Judgments of the Sea* is the Frenchman Pierre Garcie's *Le Routier de la Mer*; composed around 1483/84, though not printed until the early part of the sixteenth century. A larger version of this rutter, *Le Grant Routier*, was first printed in 1520, and it too includes *les iugements de la mer*.<sup>6</sup> English versions of

2 Birka, near Stockholm, was an important trade centre. The set of laws referred to as the "*Bjarkey* (i.e. Birch Isle) Code" is reproduced in R Keyser, P A Munch, C Storm and E Herzberg (eds), *Norges Gamle Nore Indtil 1387* (1846–1849), vol 1, part 3, 303–306.

3 Larson, *King's Mirror*, 81.

4 Probably dated to the mid-twelfth century and said to represent a collection of judicial decisions from the island of Oleron to the north of the Gironde estuary on France's Atlantic coast. A thirteenth-century date is postulated by S J Jados, *Consulate of the Sea and Related Documents* (1975), xiii. The Scottish writer, Habakkuk Bisset, gives 1266 as the date of composition: see P J Hamilton-Grierson (ed), *Habakkuk Bisset's Rolment of Courtis* (1622), Scottish Text Society, 3 vols (1920–1926) (henceforth Bisset, *Rolment*), vol 2, 249 (f 319). The fourteenth-century date suggested by O F Robinson, T D Fergus and W M Gordon, *An Introduction to European Legal History*, 2nd edn (1994), 94, is unconvincing. For a discussion of the more probable twelfth-century date, see D Burwash, *English Merchant Shipping 1460–1540* (1947), 171 (henceforth, Burwash, *English Merchant Shipping*) and D W Waters, *The Rutters of the Sea* (1967), 39 and n 43 (henceforth, Waters, *Rutters of the Sea*).

5 The Bute Manuscript is National Library of Scotland [NLS] MS 21246. See ff 171–174.

6 The dating of Garcie's *routiers* is examined in Waters, *Rutters of the Sea*, 3–4 and 24–27.

Garcie's *Le Routier de la Mer*, both containing the Judgments of the Sea, were published by Robert Copland, in 1528, and by Thomas Petyt, in 1536. Richard Proude's *Rutter of the See*, published in 1541 also contains the Judgments.<sup>7</sup>

During the fifteenth and sixteenth centuries it is obvious that skippers and seafaring (or ship-owning) merchants needed to know some law: such knowledge was simply part of the art of being a competent venturer. Indeed, the interconnection between seafaring, commerce and law can plainly be seen in what was being written and in what was being read. In Scotland, for example, the early seventeenth-century treatise on civil procedure, Habakkuk Bisset's *Rolment of Courtis*, prefaces the part dealing with maritime law by considering the relationship between "merchandise" (i.e. commerce) and "seae lawis".<sup>8</sup> And counted amongst the library of a sixteenth-century Dundee merchant were not only books on navigation and travel but also "twa gryt buikis of Law".<sup>9</sup> Just as today the almanacs used by commercial fishermen contain sections dealing with legislation,<sup>10</sup> so too, in an earlier age, seamanship and some knowledge of law were similarly coupled. But if seamen and merchants needed to know some law, might it not be equally true that lawyers, or those entrusted with the adjudication of disputes involving seafaring men, needed to understand something about seamanship? I think the answer is that they did, and in this article I want to explore the jurimetric significance of a phrase or formula, "kenning be kenning and course be course", which is found in both the English and Scottish versions of the Judgments of the Sea. In order to appreciate, however, just how this formula might have been interpreted and applied in the contexts to which it refers, we need to understand something of the art and practice of navigation during our period; what the Scottish Admiralty records of the time refer to as "the use and prettlick of the seyfayr".

## B. THE PROBLEM IN THE LEGAL TEXTS

In the section of Balfour's late sixteenth-century *Practicks* entitled "The Sea Lawis",<sup>11</sup> the phrase "kenning be kenning and course be course" appears twice. In chapter XI

7 Robert Copland, *The Rutter of the See with the Havens, Rodes, Soundings, Kennings, Windes, Floods and Ebbes, daungers and coastes of divers regions with the lawes of the Ile of Auleron, and ye iudgments of the sea* (1528); Thomas Petyt, *Rutter of the See* (1536). Sir Travers Twiss (ed), *The Black Book of the Admiralty* (1871–1876), vol 1, 89–131 (henceforth Twiss, *Black Book*), contains Petyt's version of the Judgments of the Sea. Proude's 1541 version of Copland's *Rutter of the See* added a new section, *A Neue Router . . . for the Northe Partyes, covering north-east England from Berwick-On-Tweed southwards*.

8 Bisset, *Rolment*, vol 2, 199: the pagination is that of the editor.

9 A H Millar (ed), *The Compt Buik of David Wedderburne, Merchant of Dundee*, Scottish History Society (1898), xxii–xxxi, 169.

10 For example, *Olsen's Fisherman's Almanac*, published annually.

11 P G B McNeill (ed), *The Practicks of Sir James Balfour of Pittendreich*, Stair Society, 2 vols (1962–1963) (henceforth Balfour, *Practicks*), 614. The *Practicks* cover the period 1469–1583. The two volumes have a continuous pagination.

the problem envisaged is the entitlement of seafarers to wages for a voyage which turns out to be longer than anticipated. The solution propounded requires a distinction to be drawn between those mariners whose reward is a share of any profit derived from the voyage and those who have hired on for payment of a wage. The former have to bear the expense of the protracted venture themselves. The latter, however, are to have their wages increased in accordance with this formula:<sup>12</sup> "[These] should be augmented kenning be kenning and course be course, eftir the rate of thair hyre, until thay cum to the port of discharge." Chapter XXIII envisages the case of a vessel which has either been wrecked or so badly damaged by a storm that she cannot complete her intended voyage, but whose cargo, or some part of it, has been saved. Here freight is payable to her master *pro rata itineris*, to be calculated "as gif the ship had maid the voyage, kenning be kenning and course be course".<sup>13</sup> Both situations are also included in Bisset's *Rolment of Courtis*, under the heading "The fourt buik Of admirall and seae lawes", and, again, the phrase "kenning be kenning and course be course" appears.<sup>14</sup> The provenance of this formula, as used by Balfour and Bisset, is intriguing and not without significance for this study.

The existence of a manuscript tradition in Scotland containing versions of the Judgments of the Sea has already been referred to. From an examination of six of these, dating from the mid-fourteenth to the late sixteenth century, one can plot the evolution of the two passages in Balfour and Bisset.<sup>15</sup> The earliest of these, the Bute Manuscript, speaks for itself:<sup>16</sup>

A mayster of a schip hyris men in a toun that ye schyp is of And sum of his men be maryit with the chepmen and wyth ye mayster and othyr sum has nocht in hand and thai be att thair awn recept and thai se at thai may nocht get thair fraucht and thai pass tyl ane othyr port . . . the mayster is haldyn for to engrose thair hyris and als far as thai pass syth be syth and body threw body als far as thai war hyrit. A schypp passys fra Burdews or fra ony uthyr stede and it hapnys to rayke and ryve [and] thai sauf thaim at that tyme ye best wyse at thai may And thai haf in wynys or uthyr gudes [and] the mayster or ye chepmen ar at grete debate the chepmen askys of ye mayster thair

12 The full text of this passage and several of the others referred to in this article are reproduced in Appendix A. In 1487, the crew of the Margaret Cely, hired to take the vessel to Armemuiden ended up having to sail her to Antwerp at an extra cost to the owner of two Flemish shillings per man. See Burwash, *English Merchant Shipping*, 48.

13 Balfour, *Practicks*, 616. When the *George Duffield*, bound from Cadiz to England, had to seek shelter because of her unseaworthy condition, the merchants and master agreed that "the half freight of the said voyage according to the use and custom of the sea" should be paid to the master and crew: *Austen contra Castelyn* (1541), in R G Marsden (ed), *Select Pleas in the Court of Admiralty*, Selden Society (1894), 106.

14 Bisset, *Rolment*, vol 2, 242 (f 315); 256 (f 323).

15 These manuscripts are all housed in the National Library of Scotland [NLS]. This article is based on a consideration of these alone. Other versions exist, but a brief survey indicates that they do not differ from those relied upon here.

16 NLS, MS 21246, items 11 and 21.

gudes the mayster aucht wele to haf his fraucht of als far as he has done his vayage In case gyf he may amend it at that tyme wele be it And gyf he may nocht mende ye schyp he may hyr another to do ye vayage And then he sal hafe the fraucht of al ye gudys that he has in ye schyp.

Although parallel in context to the relevant passages in Balfour and Bisset, these excerpts from the Bute Manuscript differ from them in two significant respects with regard to content. First, the formula used for calculating the rate of remuneration in a prematurely terminated voyage is expressed differently: "sight by sight and body through body". Secondly, no precise formula is given for calculating seamen's wages in the case of an extended voyage. These features are replicated in the next four manuscripts in order of date down to the 1560s.<sup>17</sup> Interestingly, both features—the precise method for calculating augmented wages and the imprecise method for reckoning the freight charges due—are simple translations of the formula represented in the English manuscript tradition of the Judgments of the Sea and exemplified by the *Liber Niger Admiralitatis*<sup>18</sup> and the *Liber Horn*.<sup>19</sup> In the former, the hired seamen's wages are to be increased "veue par veue et corps par corps" (view by view and course by course) and freight *pro rata itineris* is to be calculated "de tant comme la nef a fait de voiage sil plaist au maistre" (for as much of the voyage as the vessel has travelled, should this please the master).<sup>20</sup> In the *Liber Horn*, the corresponding phrases are "veve par veve et corps par corps" and "de taunt come la nef ad fet de veyage sil plest al mestre".<sup>21</sup> It is obvious that, in the case of liability for increased wages, there is a lack of scribal familiarity with, or understanding of, nautical terminology in both the Scottish and the English manuscript traditions; since the words "corps par corps" clearly refer to the course which a vessel has sailed. Two French versions of the Judgments of the Sea render this accurately as "cors"<sup>22</sup> and

17 (a) NLS, Adv MS 25.5.7 (c. 1470s); (b) NLS, Adv MS 25.5.6 (1488); (c) NLS, Adv MS 25.5.9 (possibly a copy of (b)); (d) NLS, Adv MS 7.1.9 (c. 1560s). In contrast to the precision in Balfour and Bisset is William Welwood who writes: "Gif the schip gangs farther nor the mariners wes hyred the mariners hyre sal be accordingly augmentit." Regarding partial payment of freight, Welwood simply states that the master "sall haif fraucht so far as he hes seruit": T Callender-Wade (ed), William Welwood's *The Sea-Law of Scotland, Shortly gathered and plainly dressit for the reddy use of all Seafairingmen* (1590), Scottish Text Society, (1933), titles 2, 51, and 6, 61 (henceforth, Welwood, *Sea-Law of Scotland*).

18 Twiss, *Black Book*, vol 1, 88–131. Twiss does not reproduce the version actually found in the original Black Book of the Admiralty but one taken from an eighteenth-century transcript, the Whitehall Manuscript: see Burwash, *English Merchant Shipping*, 172.

19 Twiss, *Black Book*, vol 3, 4–33. The version found in this manuscript is entitled *La Chartre D'Oleroun des Jugementz de la Meer*. Twiss dates its composition to 1321–1328. Andrew Horn (d 1328) was Chamberlain of the City of London and author of *Le Miroir de Justices (Speculum Justiciarorum)*.

20 Twiss, *Black Book*, vol 1, 114 and 92 respectively.

21 Ibid, vol 3, 26 and 8 respectively.

22 *Les Costumes D'Oleron et deu Jugamen de la Mar*. This fifteenth-century manuscript is described by Twiss as written "in old French intermixed with Gascon patois very much akin to Catalan": *Black Book*, vol 2, 210.

"cours",<sup>23</sup> but an identical mistranslation of this passage occurs also in the Flemish version of the Judgments known as *The Purple Book of Bruges*.<sup>24</sup> The rendering into Scots of the phrase "corps par corps" as "body threw body" must surely have caused scribes and copyists to scratch their heads in momentary puzzlement. It did not deter them, however, from giving a literal translation which has no meaning whatsoever in the context of a voyage from port to port in search of a cargo.

In the sixth and latest of these Scottish manuscripts, which is dated to the late sixteenth century, there is some change in the language used.<sup>25</sup> Both in the passage dealing with augmented wages and in that dealing with payment of freight *pro rata itineris*, computation of the sums involved is to be made in accordance with the formula "kenning be kenning and course be course".<sup>26</sup> This is the first Scottish manuscript I have seen in which the "kenning" appears in place of the French "veue" or the Scots "syth". But to the seafarers and merchants of northern Europe, however, a "kenning" already had a clear meaning.<sup>27</sup> The word itself denotes, in both English and Scots, sight or vision,<sup>28</sup> and it is used in this sense by both the *Jus Maritimum Lubecense in Usus Osterlingorum* and the Wisby *Stadslag van Sciprechte*.<sup>29</sup> Under the former, a merchant has the right to change his mind about using the ship he has chartered. But if he does so after she has sailed "ene kenninghe wegges to dher se vort" [a kenning out to sea], he must pay the full freight charge. In the latter, where a ship which has sailed "ut der kenninge" [out of sight], then has to return to port, the shippers must pay the full freight charge if they decide to transfer their merchandise to another vessel and the master must repay the shippers if he decides not to put to sea again.<sup>30</sup>

23 *La Manière Comment Les Matres des Navires et Marchants et Aultres Mariniers Compaignons se Doivent Regir et Gouverner Par le Jugement de la Mer et Roolle Dolayron*: Twiss, *Black Book*, vol 2, 432. This is the version compiled in the late fifteenth century by Pierre Garcie and printed in his *Grant Routier*.

24 Twiss, *Black Book*, vol 4, 302, 326 and n 4: the master is bound to increase the crew's wages, "wille hi of ne wille, lechame over lechame" (whether he wants to or not, body over body). Twiss suggests that the mistranslation may have been due to contractions in the manuscript from which the translation was taken. But scribal ignorance is an equally likely cause. A E Nordenskiöld, *Periplus* (1897), 103, also notes evidence of scribal ignorance in the German and Scandinavian sailing directions of the period.

25 NLS, Adv MS 24.6.3 (3).

26 Ff 214v and 216v.

27 It occurs in Copland's 1528 version of Garcie's *Grant Routier* and also in that of Petyt in 1536: see n 7 above. Note also, William Botoner's (or Worcester's) *Itineraria* (c.1490), [edited by J Nasmith in 1778], at 110; John Leland, *The Itinerary* (c.1552), vol 3, 19.

28 See, generally, W A Craigie (ed), *The Dictionary of the Older Scottish Tongue* (1937- ), sv "kenning"; *Oxford English Dictionary*, sv "kenning". For its use in this sense by Shakespeare, see A F Falconer, *A Glossary of Shakespeare's Sea and Nautical Terms including Gunnery* (1965), 41; C T Onions, *A Shakespeare Glossary* (1964), sv "ken". Note also E Beveridge (ed), *Fergusson's Scottish Proverbs: From the Original Print of 1641*, Scottish Text Society (1924), 40.

29 For the texts of the Lubeck Code of Maritime Law and the Wisby Town Law, see Twiss, *Black Book*, vol 4, 359, 391.

30 *Ibid.*, vol 4, 368 and 396 respectively.

P J Hamilton-Grierson suggested<sup>31</sup> that Bisset used that version of the Judgments of the Sea found in Thomas Petyt's *Rutter of the Sea* of 1536.<sup>32</sup> But while the structure of Bisset's text and his order of treatment do follow those of Petyt to some extent, the relevant section of the *Rolment of Courtis* cannot be described as a mere copy of Petyt's text; and Balfour's *Practicks*, even though they cover the same ground, follow neither the text nor the order of Petyt. Structural similarities on their own, however, are insufficient either to prove or disprove that Bisset or Balfour used Petyt's work. And yet, it is only once these English rutters are published, in the early years of the sixteenth century, that we see "kenning" substituted for "sight" in the Scottish manuscript tradition and its appearance in Balfour and Bisset. From this it is tempting to agree with Hamilton-Grierson that Bisset, at least, must have relied upon Petyt. But it would be unwise to ignore other, perhaps more plausible, sources.

Put bluntly, large portions of Bisset and Balfour are copied from other material, and this is nowhere more true than where they deal with maritime and shipping law. Bisset states that the Laws of Oleron and Wisby are followed in Scotland,<sup>33</sup> but he attributes his versions of the two rules under consideration to different sources, drawing a distinction between those rules of Scots shipping law which are derived from the Laws of Oleron and those which are derived from the Laws of Wisby.<sup>34</sup> The rule regarding the payment of freight *pro rata itineris* is attributed to the laws of Oleron, but there are indications that Bisset was not necessarily using Petyt as his immediate source. Petyt, for example, does not include an article dealing with the partnership rights of vessels fishing for herring or mackerel which is found in some versions of the Judgments of the Sea.<sup>35</sup> Bisset, on the other hand, reproduces this article.<sup>36</sup> Again, Bisset attributes the rule on the augmentation of seamen's wages to the Laws of Wisby, not to the Laws of Oleron, and it is unlikely that he would have done this had he been relying on Petyt, who also states this provision.

Balfour cites the "Book of Kintore" and the "Ship Lawis" as his immediate sources for chapter XI; and for chapter XXIII he cites Kintore only.<sup>37</sup> And, like Bisset, he acknowledges that the "Sea Lawis" of Scotland are derived, *inter alia*, from "the

31 Bisset, *Rolment*, vol 3, 212, n 241. The editor does not adduce any evidence to support his assertion.

32 See n 7, above.

33 Bisset, *Rolment*, vol 2, 202: "The greit Oaesian quhilkis are the scottis seas Observis the lawes of Oleron or Visbie. The scottis sea lawes follows the samin allanerlie."

34 *Ibid*, vol 2, 250 (f 320): "Certaine additionis and reulis of seae lawes quilkis are nocht contened in the majestie, and lawes of the realme of Scotland, nor in the buik of Oleron, Bot are called the auld lawes of Visbie."

35 For example, *Le Grand Routier*, art XXV: see Twiss, *Black Book*, vol 2, 432. This edition of Garcie's *Le Grant Routier* was printed in Poitiers (c.1541) by Jean de Marnef.

36 Bisset, *Rolment*, vol 2, 249 (f 319).

37 Balfour, *Practicks*, 614.

laws of Oleron and the lawis of Wisbie".<sup>38</sup> Yet despite this, Balfour, although he does specify the Laws of Wisby as a source on several occasions, never refers to the Laws of Oleron specifically as the source for any of his pronouncements on the "sea lawis" of Scotland: though many of these, such as chapters XI and XXIII, are clearly to be found in the Judgments of the Sea. In my view, Balfour's references to the "Ship lawis", which are always cited separately from either Kintore or the "lawis of Wisbie", may represent his use of material contained in the manuscript tradition already referred to. The Book of Kintore, on the other hand, may have been, like Balfour, a composite work which clearly contained some material culled from the Laws of Oleron.<sup>39</sup> Furthermore, Kintore and the version of the "Ship Lawis" relied on must have employed the "kenning be kenning" formula. Given the presence of the word "kenning" in northern European versions of the Judgments of the Sea, such as the *Jus Maritimum Lubecense* and the Wisby *Stadslag van Sciprechte*, and given that Balfour's declared sources for the "Sea Lawis" are legislation (both foreign and domestic), practicks, and case-law,<sup>40</sup> and that Bisset's purpose was to set out both "judgmentis and decreittis" applicable to maritime and shipping law, it is inherently improbable that either author would have felt the need or the inclination to have recourse to a non-legal tool such as an English rutter as a source of law.

### C. THE JURIMETRIC SIGNIFICANCE OF KENNINGS

Whether the provenance of the formula is attributable to the northern maritime codes or, through the medium of an English rutter, to the Judgments of the Sea, its occurrence clearly indicates legal awareness and sensitivity to a nautical term known and used throughout northern Europe. And, given the contexts in which the expression is found, it clearly has both spatial and jurimetric significance. That is to say, it represents a formula for the resolution of disputes where distance travelled would seem an obvious factor to be taken into account. Moreover, we shall see that this formula was capable of being applied with considerable precision. It was certainly more precise than the loosely worded injunction to pay for as much of the voyage as a ship had been able to make. In addition to the versions of the Judgments of the Sea already described, this looser expression is also found in the influential Catalanian

38 David Kintore was Vice-Admiral of Scotland during the mid-sixteenth century. The work attributed to him appears, unfortunately, to have been lost. See T Callender-Wade (ed), *Acta Curiae Admirallatus Scotiae (1557-1562)*, Stair Society, (1937) (henceforth ACAS), xv; Balfour, *Practicks*, lx, lxiii; D M Walker, *The Scottish Jurists* (1985), 44-45, 52-53.

39 Bisset cites the Laws of Oleron as his source for the rule regarding freight *pro rata itineris*. Balfour cites neither the Laws of Wisby nor the "Ship Lawis" but only Kintore.

40 Balfour, *Practicks*, 614: "The sea lawis collectit furth of the actis of parliament, the practiques, the lawis of Oleron and the lawis of Wisbie, and the constitutionis of Francois King of France, annis 1543. 1557."



maritime code, *Il Consolato del Mare*<sup>41</sup> and in both the *Gotland Sea Laws* and the *Purple Book of Bruges*.<sup>42</sup> As a formula it was far better suited to resolving the "quibbles" mentioned in *Konnungs Skuggsja* than these. In my opinion, the substitution of "kenning" for the French word "veue" in the northern European maritime codes, suggests interpretation by reference to and equation with a unit of measurement used by seamen working in the North Sea and in the Baltic.

The texts do not themselves, however, permit us to understand how this formula was applied. They do not explain what a kenning was and how it related to, or differed from, a course. They convey no impression as to its precision and no inkling of any problems associated with its use. Nevertheless, there are means by which we can learn more about the expression and its application. We know from the records of the High Court of Admiralty of Scotland that the Judgments of the Sea, variously described as the "buk of Orlinis" or the "buik of Olouris", were used in the court during the sixteenth century and, presumably, were in use long before that. We also know from the reports of cases decided by the court that expert evidence was frequently given about what was done at sea; this is referred to as the "use and prettick of the seyfair". It is an awareness of what the use and practice of the seafarer was, with regard to the calculation of distance at sea, which provides the key to understanding the formula and how it may have been applied. This, in turn, means that we have first to appreciate something of both the navigation techniques employed in northern Europe during the fifteenth and sixteenth centuries and the role of the rutters.

#### D. NAVIGATION IN NORTHERN EUROPE 1400-1600

Apart from rutters, the aids to navigation which were available to mariners during our period were the lead and line, the compass, the traverse board, the sand-glass, and the log and line.<sup>43</sup>

##### (1) Lead and line

*Le Grant Routier* assumes the use of the lead and line by its readers.<sup>44</sup> But these were not resorted to solely as a method of determining the depth of water beneath

41 Published in Barcelona in the fifteenth century, it contains material dating to the thirteenth century and possibly earlier: see Jados, *Consulate of the Sea*, xiii-xv.

42 Twiss, *Black Book*, vol 4, 55 and 302 respectively. Welwood, *Sea-Law of Scotland*, as already noted, employs the looser formulation: see n 17 above.

43 The major modern works on the history of navigation are: J B Hewson, *A History of the Practice of Navigation*, 2nd edn (1983) (henceforth, Hewson, *History of Navigation*); D W Waters, *The Art of Navigation in England in Elizabethan and Early Stuart Times* (1858) (henceforth, Waters, *Art of Navigation*); E G R Taylor, *The Haven-Finding Art*, 2nd edn (1971) (henceforth, Taylor, *Haven-Finding Art*); E G R Taylor and M W Richey, *The Geometrical Seaman: A Book of Early Nautical Instruments* (1962); A B A Hutson, *The Navigator's Art* (1974); W E May, *A History of Marine Navigation* (1973) (henceforth, May, *Marine Navigation*).

44 Taylor, *Haven-Finding Art*, 168.

the keel and could also be used to plot one's position during a voyage over open sea. For example, the earliest extant English rutter, the *Sailing Directions for the Circumnavigation of England and for a Voyage to the Straits of Gibraltar*,<sup>45</sup> describes how the master of a vessel bound for the Bristol Channel from Spain, having left Cape Finisterre on the French mainland astern, might pick his way across the Western Approaches, knowing when to change course by reading the sea bed with his lead and line:

Ye must north and by est till ye come into Sowdyng [a sounding], and yif ye have an C fadome depe or else xx/iiiix than ye shall go north in till the sonde [sand] ayen in lxxij fadome in feir grey sonde. And that is the Rigge [an underwater ridge] that lieth betwene clere [Cape Clear on the south coast of Ireland] and Cille [Scilly Isles] than go north till ye come into sowdyng of woyses [ooze or mud] and than go your cours est north est or els est and by north and ye shall not faile much of Stepilhorde.<sup>46</sup>

Writing of the Baltic Sea, the Italian cartographer, Fra Francesco Mauro, observed that navigation there was "not by chart or compass, but by the lead".<sup>47</sup> More recent investigation confirms that, for a time, the lead and line were probably regarded as being of greater importance than the compass.<sup>48</sup>

## (2) Compass

In *Konnungs Skuggsja*, which was probably composed around the middle of the thirteenth century, the only means of navigation explained to the young sea-trader are the stars, the movements of the waves,<sup>49</sup> and the horizon. Neither the compass nor the lodestone are mentioned, though the former was probably used by northern seamen from the twelfth century on.<sup>50</sup>

## (3) Traverse board

In the context of this article the traverse board is more important than either the lead and line or the compass, for it could be used to assess distance travelled. Often referred to simply as "the board", it was a flat piece of wood on whose surface were painted the points of the compass. A hole was drilled in the middle from which

45 For the text see J Gairdner (ed), *Sailing Directions for the Circumnavigation of England and for a Voyage to the Straits of Gibraltar*, Hakluyt Society (1889) (henceforth, Gairdner (ed), *Sailing Directions*). Taylor, *Haven-Finding Art*, 132, dates this text to the reign of Edward IV (1461–1470) but suggests that it may include parts of a fourteenth-century rutter.

46 Gairdner (ed), *Sailing Directions*, 21.

47 Francesco Mauro, *Mappa Mundi* (1457–1459), quoted in Taylor, *Haven-Finding Art*, at 131. Mauro's work is discussed by R V Tooley, *Maps and Map-Makers*, 7th edn (1987), 14 and 19 (henceforth, Tooley, *Maps*).

48 Taylor, *Haven-Finding Art*, 131, suggests that the compass was used only for direction and, thereafter, the course was plotted and sailed by lead and line.

49 Navigation by wave quality and direction was practised by Polynesian sailors on their inter-island trips: A Sharpe, *Ancient Voyagers in the Pacific* (1956); B Hilder, *Polynesian Navigation* (1963). Some Polynesian sailors maintain that wave rhythms can be detected "by the swing of their testicles": see D Lewis, *The Voyaging Stars* (1978); idem, *We the Navigators* (1972).

50 Waters, *Art of Navigation*, 21.

emanated eight wooden pegs attached to separate lengths of cord. A peg was then pinned into one of the eight holes drilled along each of the thirty-two compass points for every half hour (measured by a sand-glass) which the vessel sailed along a particular compass bearing. At two-hourly intervals (i.e. the end of a watch) the mean course of the vessel could be calculated and the distance travelled could be reckoned or estimated.<sup>51</sup> William Bourne indicates the importance of the traverse board when he complains of the conservatism of mariners and chides them for their reluctance to abandon it in favour of charts, the latter being referred to, disparagingly, as "sheepes skines".<sup>52</sup> It has been suggested that the traverse board may only have been used when navigating on the open sea and out of sight of land.<sup>53</sup> In my view, such use has implications for our understanding of the formula "kenning be kenning and course be course". Since distances measured in leagues or miles<sup>54</sup> could be more easily related to a vessel's rate of travel than those measured in kennings, the increased use made of traverse boards may well have contributed to the demise of the kenning as a unit of linear measurement.

#### (4) Sand-glass

Sometimes called a "dial", the sand-glass was in use by the late thirteenth century. Such an instrument might be either an hour or an half-hour glass. When used in conjunction with the traverse board, a record of the courses to be followed on particular voyages could be kept.<sup>55</sup>

#### (5) Log and line

There is an entry for January 1521 in a journal kept during Magellan's circumnavigation of the world which refers to the log.<sup>56</sup> Its use as a means of judging speed

51 In his *Sea Grammar* (1627), John Smith wrote that the board was placed upon the binnacle and described it as "a little round board full of holes upon lines like the Compasse, upon which, by the removing of a little sticke, they keepe an account of how many glasses (which are but halfe hours) they steare upon every point". A late sixteenth-century traverse board found on the Hebridean island of Barra is depicted in Waters, *Art of Navigation*, 32, plate X.

52 E G R Taylor (ed), William Bourne, *A Regiment for the See* (1574), Hakluyt Society series II (1963), 294 (henceforth, Bourne, *Regiment for the See*). Bourne expressed this opinion in the 1580 edition of his work. The reference is to portolan charts which were drawn on a sheepskin or goatskin. The oldest known portolan, the *Carta Pisana* (c.1275), was drawn on a sheepskin. On the *Carta Pisana*, see Tooley, *Maps*, 15.

53 For example, crossing the North Sea from Aberdeen to Bergen or to the Baltic ports. The suggestion in the text is by Waters, *Art of Navigation*, 36.

54 For a considerable time distances were sometimes given in leagues and sometimes in miles: for example, see Captain Greenville Collins, *Great Britain's Coasting Pilot* (1753 edn), 19–25. Describing a course for a vessel which enters the Firth of Forth bound for Leith, Collins writes: "From the Ile of May to Inch-Keith Island, the Course is W S W distance seven Leagues, and from Inch-Keith to Leith S S W three Miles". These two islands will figure prominently in later discussion. The coastal topography of the Firth of Forth is shown in the map annexed to this article.

55 Waters, *Art of Navigation*, 35–36.

56 See Hewson, *History of Navigation*, 154.

and distance is also attested by William Bourne's discussion of it in his *Regiment for the See*. As with the traverse board, distances could be judged with greater accuracy by this method, and its increased use during the sixteenth century may also have contributed to the demise of the kenning as a means of conceptualising distances travelled at sea.

## (6) Rutters

Apart from the printed rutters in general circulation, there would have been many other less formal and more localised rutters in use and reliance on these was probably very substantial.<sup>57</sup> And, as with the printed rutters, the information conveyed by these probably varied. The fifteenth-century *Sailing Directions*, for example, does not give distances between the ports and places it mentions. *Le Grant Routier* refers to the "veue" and contains sketches<sup>58</sup> of the landmarks to which it refers, but it also gives distances in leagues. Sixteenth-century English rutters gave distances in both leagues and kennings. A Scottish rutter from this period also exists. It is attributed to one Alexander Lindsay and was prepared in connection with the voyage in 1540 of James V to the Western Isles.<sup>59</sup> It covers the entire coastline of Scotland and also of north-east England as far as the Humber. This rutter, which will be analysed in greater detail in the next section, contains no sketches but it does give distances; sometimes in kennings, sometimes in miles, and sometimes in both. For the late sixteenth century, there has survived the *Booke of the Sea Carte*, containing cards with sketches of the British coast, including the coast from Leith to the Humber, marked on them.<sup>60</sup> But whereas the English kenning measured twenty miles,<sup>61</sup> the Scottish kenning was only fourteen miles in length.<sup>62</sup> In this connection

57 Waters, *Art of Navigation*, 16, remarks that seamen in north-western Europe relied "almost exclusively" on the rutter. During the seventeenth and eighteenth centuries, similar guides to coastal navigation remained popular. See, for example, Casparus Lootsman (i.e. Caspar the Pilot), *The English Coasting Pilot or Sea Mirrour* (1693); John Seller, *Coasting and English Pilots* (1670–1680); Collins, *Coasting Pilot*.

58 Collins' *Coasting Pilot* contains many sketches and profiles of parts of the Scottish coast as viewed from the sea. The three sketches reproduced in Appendix C are taken from Peter Goos, *The Lighting Colonne or Sea-Mirrour Containing the Sea-Coasts of the Northern, Eastern and Western Navigation: setting forth in divers necessarie Sea-Cards all the Ports, Rivers, Bayes, Roads* (1688). Note also Lucas Janszoon Wagenaer's chart of 1583 depicting the east coast of Scotland as far north as Aberdeen: *Schottlandt van Bambourg tot Aberdein* (NLS, Map Room, EMS 100A). Until replaced by photographs, Admiralty Pilot Books contained such sketches and profiles.

59 See A B Taylor, *Alexander Lindsay: A Rutter of the Scottish Seas*, National Maritime Museum, Maritime Monographs and Reports, No 44 (1980) (henceforth Lindsay, *Rutter*).

60 Discussed by Hewson, *History of Navigation*, 9–20, and Waters, *Art of Navigation*, 14.

61 Or thereabouts. See Botoner, *Itineraria*, 110: "per distanciam de le narrow see . . . v kennynngys, et quilibet kennynng continet 21 miliaria"; Leland, *The Itinerary*, vol 3, 19: "Scylley is a Kenning, that is to say about XX Miles from the very Westeste Pointe of Cornewaulle." Note also Waters, *Art of Navigation*, 11; Taylor, *Haven-Finding Art*, 170.

62 Lindsay, *Rutter*, 45.

it is interesting to note that, for the coastline between the Humber and Leith, the English *Booke of the Sea Carte*<sup>63</sup> employs a kenning of fourteen miles and of twenty miles for the remainder of England. While this raises the intriguing possibility that this part of the *Booke of the Sea Carte* may have been based on Lindsay, or on some other Scottish rutter, or that both works may have drawn on some common source, it also provides us with our first positive indication of the protean nature of the kenning.

What picture emerges from this brief consideration of the tools of navigation available to northern mariners during the fifteenth and sixteenth centuries? Charts played a relatively small role; their wider use only begins in the closing years of the sixteenth century.<sup>64</sup> Describing what was essential knowledge for navigation in northern European waters in the sixteenth century, Michel Coignet<sup>65</sup> stressed knowledge of capes, headlands, harbours, rivers, the distances between these, their respective bearings and high and low tides. At this point, of course, the temptation to quote Chaucer's description of the fourteenth-century shipman travelling on pilgrimage to Canterbury is irresistible. Not only do his skills correspond with those of Coignet's ideal mariner but he also sailed the same waters as those traversed by the mariners discussed in this article:

But of his craft to rekene wel his tydes, his stremes, and his daungers hym bisides, His herberwe, and his moone, his lodemenage, Ther nas noon swich from Hulle to Cartage. Hardy he was and wys to undertake; With many a tempest hadde his berd been shake. He knew alle the havenes, as they were, Fro Gootland to the cape of Fynystere, And in every cryke in Britaigne and in Spayne.<sup>66</sup>

Much of what the shipman and his fifteenth- and sixteenth-century successors knew, or needed to know, was the sort of information which found its way into the printed rutters. And, since some of these give distances in kennings, we have to turn to such a rutter in order to understand what a kenning was.

63 Discussed by Hewson, *History of Navigation*, 9–20, and Waters, *Art of Navigation*, 14.

64 We have the testimonies of contemporary witnesses to this: for example, Francesco Mauro, *Mappa Mundi* (1457–1459). Bourne, *Regiment for the See*, wrote that “ancient masters of shippes could keep a better account upon a boord (i.e. a traverse board)”: quoted by Waters, *Art of Navigation*, 36. Michel Coignet, *Instruction nouvelle des points plus excellents & necessaires, touchant l'art de navigateur* (1581), never mentions charts when discussing what pilots need to navigate. Note also the incident described in n 89 below. See also A B Taylor, “Some additional early maps of Scotland”, (1961) 77(1) *Scottish Geographical Magazine* 37–43; M C Andrews, “Scotland in the Portolan charts”, (1926) 42(3)–(5) *Scottish Geographical Magazine* 129–153; 193–213; 293–306.

65 Coignet, *Instruction nouvelle*, reproduced in part in John Sellar, *Practical Navigation or an Introduction to the Whole Art* (1699, 1717), 4.

66 The text quoted is taken from the Prologue to the *Canterbury Tales* in L D Benson and F N Robinson (eds), *The Riverside Chaucer*, 3rd edn (1988), lines 401–404, 30.

### E. KENNINGS AS UNITS OF DISTANCE IN LINDSAY'S RUTTER<sup>67</sup>

The data reproduced in Tables 1–4 of Appendix B has been gleaned from the information given by Lindsay. This, taken together with the kennings shown on the map annexed (see 89),<sup>68</sup> which is also based on Lindsay, permit us to draw some conclusions about what a kenning was commonly understood to mean by the early sixteenth century. Before doing this, however, several observations on the data need to be made.

First, Lindsay covers the east, north, west and south-west coasts of Scotland, and Table 1 shows that references to kennings predominate only for the east coast; particularly, it may be noted, for the north-east (see map). But of special interest is the different manner in which Lindsay conveys information about distances on the east and west coasts. For the east, Lindsay offers two sets of information. The first describes the courses to be sailed between Leith and the Humber to the south, and between Leith and Duncansby Head to the north. The second refers to the "Kenningis from Leith Hauen to Humber" and the "Kenningis from Leith Hauen to Dungisbie Head". The courses represent sailing directions, while the kennings appear to indicate the distances to be travelled along those courses. For the remaining coastline, however, both sailing directions and distances are conflated into single sections: for example, "Courses and Keningis from Dungisbe to the Mull of Cantyir" (i.e. Kintyre). The map depicts how the rutter could be used on a voyage north from Leith to, let us say, Aberdeen, or south from Leith to the Humber.<sup>69</sup> The skipper bound for Aberdeen from Leith is first told that his course between Inchkeith and the Isle of May is north-east-to-east. He is then informed that the distance between these is twenty miles. If he follows this course, he must then sail north to pass by Fife Ness, a distance of eight miles from the Isle of May, and from there a course north-by-east takes him the nineteen miles to Red Head to the north of Arbroath. From there, only thirty-three miles on a course north-north-east to "the foreland of Aberdeen" (i.e. Girdle Ness) takes him to his port of destination. Alternatively, on the second stage of this voyage, he could sail north-east from Inchkeith to Fife Ness, a distance we are told of two kennings, and thence north to Aberdeen. A voyage to Stornoway via the inhospitable waters and rugged coast of the Pentland Firth would have to be sailed on information presented in a different way. Having passed Duncansby Head, the mariner is told to sail north-west for five miles which will bring him to May Head. Then by sailing west-north-west for another six miles, he will reach Dunnet Head. And so he continue, following each change of

67 A B Taylor's edition of Lindsay is based on an early seventeenth-century manuscript (the Balfour Manuscript, NLS, Adv MS 33.2.27, item 29). For notes on the other texts and on the authorship of the rutter, see Lindsay, *Rutter*, 6–9. Note also E G R Taylor, *Tudor Geography* (1930), 59–63.

68 Not drawn to scale.

69 For the association of charts with the text see Lindsay, *Rutter*, 36–38.

course for the specified number of miles, until, by short hops, he reaches Cape Wrath to begin his crossing of the North Minch.

The reason for the preponderance of references to kennings on the east coast probably lies in the very different nature of that coast from the remainder of the Scottish coastline. The east coast is fairly regular and relatively free of offshore hazards in the forms of rocks and islands. This is not true of the north and west coasts which are heavily infjordated and densely packed with rocks, skerries and islands. Moreover, unlike the North Sea, northern and western waters have tide races, eddies and strong currents. Sailors in these western waters face regular tacking and changes of course during a voyage.

Secondly, Table 2 indicates the three units of distance used by Lindsay. As we have already noted, distances are sometimes stated only in kennings, sometimes only in miles, and sometimes as a combination of both. This Table places the use of the kenning, on its own, as a unit of distance in perspective. The number of occasions where this occurs is clearly very low, but an explanation for this must be postponed until some comment has been made on the use of the mile as a linear unit of distance measurement.

Thirdly, "xiiij mylles are taken in this Rutter", so it declares, "for a kennyng". But what type of mile is meant? The late Dr A B Taylor assessed the accuracy of Lindsay's distances by "translating" these into statute miles and checking them off against "the course as shown on the Ordinance Survey map".<sup>70</sup> Using this technique, he observed that it was difficult to make accurate comparisons.<sup>71</sup> The English statute mile, however, was only introduced during the reign of Elizabeth Tudor,<sup>72</sup> and it has to be said that checking distances in a Scottish rutter by reference to a unit of measurement which came to be accepted after its date of composition seems questionable. No less questionable is the use of a land map to ascertain distance at sea. This said, when Lindsay composed his rutter, the Roman or Italian mile of 5,000 feet, although used to represent distances on land, had also come to be widely accepted as the nautical unit of measurement.<sup>73</sup> That was certainly the case in England during the sixteenth century,<sup>74</sup> and *Il Compasso di Navigare*, a late-thirteenth-century

70 Ibid, 26.

71 Linear units of measurement were problematic even in England during the sixteenth century. See William Cunningham, *The Cosmographical Glasse* (1559); Hewson, *History of Navigation*, 156-157; May, *Marine Navigation*, 10-11.

72 G C Watkins, *Coastwise Navigation*, 3rd edn (1977), 2. See also Appendix B, Table 3. English miles varied according to whether they were long, short, or middle miles. The first cartographic work to adopt the statute mile was by a Scot, John Ogilby, *Britannia: A Geographical and Historical Description of the Principal Roads Thereof* (1675): see Tooley, *Maps*, 54.

73 The Roman mile was based on Ptolemy. The exceptions alluded to in the text were Norwegian seafarers who derived their nautical mile of 7,200 feet from Eratosthenes: R Morcken, "Norse nautical units and distance measurements", (1968) 54 *Mariners Mirror* 393-401.

74 For example, see Cunningham, *Cosmographical Glasse*; A H Markham (ed), *John Davis, The Seaman's Secrets* (1595), Hakluyt Society (1880).

Italian book of sailing directions, gives distances in "little sea miles" which are, in fact, nautical miles.<sup>75</sup> It was not until nearly the middle of the seventeenth century that Richard Norwood's *The Seaman's Practice*, published in 1637, recalculated one minute of latitude as 6,020 feet, which is close to the modern nautical mile, standardised at 6,080 feet.

When Lindsay's miles are correlated with nautical miles of 5,000 feet, the approximation between the two sets of figures in Table 3 is very close indeed; far closer than the correlation with the English statute miles employed by A B Taylor. Such differences as exist between Lindsay's figures and those calculated in nautical miles in Table 3 may be explained by the method used to measure distance travelled at sea.<sup>76</sup> In my view miles in Lindsay are the nautical miles of the day. But bearing in mind that miles are the preponderant units of distance in Lindsay and that a kenning was said to be fourteen miles, there is a danger that, if read with insufficient care, the impression may be formed that a kenning is simply and solely an aggregate linear unit of measurement. A closer reading of the text, however, suggests otherwise.

#### F. A CONCLUSION ON THE NATURE OF KENNINGS

According to Lindsay's figures, the overall distance from Leith to Fife Ness is thirty-two miles and the distance between these two points is broken down, in the section headed "Kennings from Leith Hauen to Dungisbie Head" into three stages: Leith to Inchkeith, four miles; Inchkeith to Isle of May twenty miles; and Isle of May to Fife Ness, eight miles. But although Inchkeith to Fife Ness is said to be two kennings, these cannot each represent a distance of fourteen miles since Inchkeith, the Isle of May and Fife Ness are not equidistant from each other. It is also curious that whereas Lindsay uses combinations of kennings and miles elsewhere in the rutter, he does not describe the distance between Leith and Fife Ness as two kennings and four miles.<sup>77</sup>

Although not equidistant from each other Inchkeith, the Isle of May and Fife Ness are, for the seaman, prominent and highly visible landmarks. From the masthead of a vessel standing off Inchkeith, the Isle of May<sup>78</sup> can easily be seen provided

75 R B Motzo (ed), *Il Compasso di Navigare* (1947). The *Compasso* is discussed by Taylor, *Haven-Finding Art*, 105, who identifies the "little sea mile" with the geometric mile. A geometric mile is a nautical mile: *Oxford English Dictionary*, sv "mile".

76 Morcken, "Norse nautical units", 397, thinks that figures may have been calculated by throwing a wooden chip into the sea and timing how long it took to pass between two notches cut into the ship's rail: a method which later came to be termed the "Dutchman's log".

77 Lindsay only uses combinations of kennings and miles for the west coast of Scotland: for example, "From Lough Spell (i.e. Loch Spelve) to Colonsa (i.e. Colonsay) south south west to south [one] kenning and xij myle"; "From the south end of Illa (i.e. Islay) to Cantyre (i.e. Kintyre) southest to south, [one] kenning and x myle."

78 The highest point on the Isle of May is fifty metres: Ordnance Survey, NT 69 NW, NE and NO 60 SW, SE.



weather conditions are suitable; and Fife Ness is what strikes the seaman's eye when in the vicinity of the Isle of May. So each of these landmarks may be described as a kenning and can be said to be a kenning apart; and the distance from the first to the last can accurately be described as two kennings.<sup>79</sup> A similar case for the use of the kenning as a purely visual measurement can be made for the distance between Leith and St Abbs Head. Here Lindsay, describing the courses to be sailed,<sup>80</sup> makes no reference to miles but gives the distance simply as three kennings: Leith to Inchkeith is one kenning; Inchkeith to the Bass Rock is another; and from the Bass Rock to St Abbs Head a third. Again, each of these natural features is visible to a vessel, in the order given, the one from the other.

It is most unlikely that Lindsay, who describes a voyage between Buchan Ness and Duncansby Head as six kennings, would have balked at converting a mere thirty-two miles between Leith and Fife Ness into two kennings and four miles. Moreover, as Table 4 of Appendix B demonstrates, calculations based on a kenning of fourteen miles produce some curious arithmetic. According to Lindsay, a voyage from Buchan Ness to Cromarty is five kennings which, using the multiplier of fourteen, would represent a distance of seventy miles between the two places. But when one calculates the distance given by Lindsay as an aggregate of the specific kennings listed plus the distances given only in miles, the calculation provides a total distance of eighty-eight miles, leaving a disparity of eighteen miles. Again, Lindsay sums up the section on the east coast from Leith to Duncansby Head with the verdict that the distance between them is fourteen kennings, "which maketh 146 milis". It should, of course, observing Lindsay's definition, "maketh" 196 of his miles. But, interestingly, although a kenning of fourteen miles is clearly not a factor of 146 miles, a course can be plotted on the chart between Leith and Duncansby Head using mainly the coastal topography referred to by Lindsay.<sup>81</sup> Table 6 lists these fourteen features, and each is visible from a vessel standing off the coast. Once more, the use of kennings seems best understood as a reference to visual units of distance rather than to linear units of fourteen miles.

Regardless of the type of mile Lindsay had in mind, so far as the east coast of Scotland is concerned, there is only one case where, on his figures, a kenning of fourteen miles is a factor of the number of miles stated. This is the distance between Inchkeith and Fife Ness and may well be little more than fortunate coincidence. Where, however, reference is made to a "kenning and a half", it would seem sensible to interpret this as indicating a specific distance of twenty-one miles. These

79 Which is exactly how Lindsay describes it: "From Inchkeith to Fyvisnes, ij kenningsis."

80 "From the north deip betuixt Leith and Kingorne to the Bas est by north and west by southe. From the Bas to S Ebbes Head est southeast and west northwest."

81 Appendix B, Table 5 shows the correlation between the features identified by Lindsay and those in the Forth Yacht Clubs' Association's *Pilots Handbook*, 2nd edn (1986), which is essentially a modern rutter.

concessions being made, I would submit that in Lindsay the kenning, where it occurs alone, does not denote a distance of fourteen miles or any multiple thereof. The internal evidence overwhelmingly suggests that the references to kennings are principally to the distances between two visible points of coastal topography.

Lindsay's rutter was probably produced for a specific purpose; which is thought to be James V's voyage to the Western Isles in 1540. But we need not believe (indeed it is highly improbable) that it was all his own work. Published rutters, such as that of Pierre Garcie, were compilations made up from different sources, and it may be that there was something of a northern-European rutter tradition to which the *Sailing Directions* and the German *Seebuch* belong. Both cover partly the same ground and may have a common origin in a French *routier*.<sup>82</sup> Furthermore, masters probably loaned notes to each other and we know that professional copyists were commissioned to prepare manuscript rutters.<sup>83</sup> Without doubt there would have been other, perhaps more localised, rutters used in Scotland before 1540 from which Lindsay gleaned some of his information, and the presence in Lindsay of meids points to reliance on older sources.<sup>84</sup> Indeed, A B Taylor surmised that the distances for north-east Scotland given by Lindsay were compiled from three sub-rutters prepared by different pilots.<sup>85</sup> That coastal pilot books were not always the work of one man is exemplified by Dutch sailing directions printed in 1541 and compiled, as the title proclaims, from the sketches of "die beste Pyloots".<sup>86</sup> And although Captain Greenville Collins, who was commissioned in 1681 to carry out a survey of the British coastline,<sup>87</sup> prepared most of the charts of Scottish waters personally, the chart of the east coast from Fife

82 The relationship between several of the continental rutters is explored fully in Waters, *Rutters of the Sea*, 7–12. Nordenskiöld, *Periplus*, 103–104, assigns the earliest manuscripts of the *Seebuch* to the late fifteenth century. Note also *Das Seebuch von Karl Koppmann; Mit einer nautischen Einleitung von Arthur Breusing; Mit Glossar von Kristoph Walther* (1876).

83 Nordenskiöld, *Periplus*, 103.

84 A "meid" is a landmark used as a means of identifying one's position at sea: M Robinson (ed), *The Concise Scots Dictionary* (1985) sv "meith". An example of the use of meids in Lindsay is afforded by the passage: "Iff ye pas by Fyvisnes tak head of one daunger called the Car whiche lyeth east northest of the forland, but hold the Stipill (i.e. steeple) of Karail (i.e. Crail) in sight and you sall avoid it." A list of the meids used during the great days of the Fife winter herring fishing is set out in H D Watson, *Kilrenny and Cellardyke: 800 Years of History* (1986), 231–234.

85 Lindsay, *Rutter*, 28. Taylor's conjecture is very probably correct. E G R Taylor also thought that the fifteenth-century *Sailing Directions* contained parts dating to the preceding century. Much information would also have been transmitted orally. In *Konnungs Skuggsja*, the young man, having failed to understand his father's comments on astral navigation, asks him to explain the topic to him once more. "I can indeed give such an explanation", is the reply, "just as I have heard it from the lips of well-informed men". See Larson, *King's Mirror*, 86–87. Burwash, *English Merchant Shipping*, 28, also considers that much information was transferred orally and furnishes evidence to support the view that knowledge was often confined to particular routes or areas.

86 *Dit is die Caerte van der Zee: om Oost ende West te zeylen, ende is van die beste Pyloots ende wt die alder beste Caerten, ghecorrigeert diemen weet te vinden, ende elcke cust op tsjin gheset.*

87 Captain Greenville Collins, *Great Britain's Coasting Pilot* (London, 1693).

to Montrose was based on a survey conducted by "Mr Mar an ingenious marriner of Dundee".

Nordenskiöld observed that geographically unimportant features, if significant to coastal navigators, were often drawn disproportionately large.<sup>88</sup> And we have already noted that sketches of coasts, identifying headlands, rocks, islands, buildings and the like, as well as observations about the seabed were included in the materials used by mariners during our period and for a considerable time thereafter.<sup>89</sup> Although it contains no topographical sketches, Lindsay's rutter, with its details of "Hauens, Soundis, and Daungeris", still fits very much into the northern European tradition of sailing directions. The information it contains, and the sources from which it was derived, permitted the calculation of distances, albeit non-linear distances, along the courses advocated.

The contents of the rutters used in northern European waters probably changed very little from the fifteenth to the mid-eighteenth centuries, and visual identification or kenning was clearly one of the most important aspects of coastal navigation. But, as already noted, there are occasions where Lindsay chooses to give distances in precise linear units. The distance from Buchan Ness to Tain, for example, is given as "v kenningis and half"; and from the mouth of the Spey to Inverness is said to be thirty-eight miles. There is no reason, however, to find this strange. Clearly measurement of distances travelled at sea could be estimated in miles and, since Lindsay's was a work of compilation, a mixture of various methods of assessing or attributing those distances should not be unexpected. When the linear measurement of distance became possible, the kenning acquired an additional meaning and was taken to represent a specific number of miles travelled by a vessel. Consequently, perhaps in the late fifteenth century and certainly by the mid-sixteenth century, there is a sense in which it becomes possible to speak of two types of kenning, the visual and the linear or arithmetical.

The late D P O'Connell suggested that the arithmetical kenning first evolved in Scandinavia or Iceland from whence its use spread to other countries in northern Europe.<sup>90</sup> While I am not sure (and would not, therefore, rule out the possibility) that the kenning as a linear unit of distance was borrowed from Scandinavia, the

88 Nordenskiöld, *Periplus*, 108. Appendix D depicts an example taken from Adriaen Gerritszoon, *De zeevaert ende onderwijsinge der gantscher Oostersche ende Westersche Zeevaerwater, door den vermaerden Pilot ende leermester der Stuerlyden* (1588): reproduced in Nordenskiöld, *Periplus*, 107, figure 46.

89 Waters, *Art of Navigation*, 1958, 11, describes a rutter of this sort as a "little pocket book". A Spanish envoy to the Swedish Court in 1578, describing his passage in a local vessel from Bornholm to Kalmar, observed that while no chart was used, the vessel did possess a "small written book" containing information about "the sea by Germany and the coast there". This suggests that the master possessed a local rutter. See Nordenskiöld, *Periplus*, 106, quoting from the letter of Captain Francesco de Eraso, dated 23 June 1578.

90 D P O'Connell, *The International Law of the Sea* (1982), vol 1, 124-125.

process of converting a non-linear measurement technique into a linear one is certainly observable there. An *itinerarium*, possibly from the eleventh century, contained in *Kong Valdemars Jorebog*, gives distances along the east coast of Sweden in units termed "veckosjoar".<sup>91</sup> Meaning literally a week at sea, the *veckosjo* came to represent a specific number of nautical miles, although opinions differ as to the precise figure.<sup>92</sup> Furthermore, and bearing in mind that English and Scottish kennings were not of equal length, the Norwegian *veckosjo* also differed in this respect from the Danish and Swedish *veckosjoar*. It would seem that conversion of an older form of measurement into a new one, while at the same time applying the old terminology to the new form, provides a plausible explanation of how the visual kenning eventually came to be an arithmetical kenning of fourteen miles.

But regardless of when and why the kenning came to acquire a numerical meaning, Lindsay uses it in both its original and more recently acquired sense. And this duality of meaning must have made life more difficult for those adjudicating claims for the payment of freight *pro rata itineris* or the payment of wages.

### G. SAILING DIRECTIONS "COURSE BE COURSE"

Commenting on the phrase "kenning be kenning and course be course", Sir Travers Twiss drew this distinction: a kenning was the distance "between well-known headlands or islands in sight of each other"; a course, on the other hand, represented the "distance between two headlands out of sight of each other but between which a vessel might keep one and the same course".<sup>93</sup> Both interpretations require some qualification. With regard to kennings, by the mid-sixteenth century, these, as we have seen, did not necessarily represent visual references but might also be used to represent distance units of fourteen miles in Scotland. So far as courses are concerned, the statement is simply untrue of rutters such as Lindsay's. We have already noted the different approaches to distance adopted by Lindsay between the east and west coasts of Scotland. We have also seen that for the eastern seaboard there are separate sections itemising the relevant kennings and the appropriate courses to be sailed; but that for the western littoral these two items of information are conflated into

91 For example, "De utlengi usque ad calmarne x ukaesio. Deinde usque skaegge nes ii ukaea." (From Utlangen to Kalmar 10 *veckosjoar*. From there to Skaggenness 2 *veckosjoar*.) See Nordenskiöld, *Periplus*, 101-102. The full text is to be found in S Aakjaer (ed), *Kong Valdemars Jorebog*, 3 vols, (1926-1943).

92 Nordenskiöld, *Periplus*, 102, regarded the *veckosjo* as equivalent to one nautical mile, a figure which must be incorrect. C O Cederlund, "Explaining a 13th-century cog wreck near Smaland Sweden", in S Busuttill and C Villain-Gandossi (eds), *Medieval Ships and the Birth of Technological Societies* (1989), vol 1, 81-113, at 93-94, suggests a length of eight nautical miles; Morcken, "Norse nautical units", 396, equates one *veckosjo* with six nautical miles of approximately 7,200 feet per mile. Morcken also suggests that the *veckosjo* came to represent the "distance rowed during a watch of two hours."

93 Twiss, *Black Book*, vol 1, 115, n 6.

composite sections of "Courses and Kennings":<sup>94</sup> a sound approach given the rugged nature of the west coast. But despite the paucity of kennings for the west coast, many of the western topographic features mentioned by Lindsay are within clear sight of each other from a vessel at sea. For the most part, therefore, southward navigation along this coast was to be pursued by sailing the prescribed courses for set distances computed by reference to those landmarks. A cluster of courses for the Firth of Clyde illustrates the point:

From Cantyir to Sanday est, xij myles. From Sanday to Arren norhest, xij myles. From Arren to Buit north norhest, viij myles. From Buit to Air est souhest, xv myles.<sup>95</sup>

But the same point can equally be made for the east coast also. The kennings, for example, on the voyage from Leith to Aberdeen (see map) are Inchkeith, the Isle of May, Fife Ness, Red Head and Girdle Ness. In suitable weather, each of these landmarks is visible, in the order given, from the other to a vessel sailing up the coast.<sup>96</sup> When we correlate these kennings with the courses Lindsay advises for this voyage, we see immediately how closely linked these two items of information are:

From the Road of Leith to Inchkeith north norhest. From Inchkeith to the Yle of Maj norhest to est. From Inchkeith to Fyvisnes norhest. The Yle of May and Fyvisnes ly south and north. Fyvisnes and the Red Head ly south to west and northe to est. The Red Head and the foreland of Aberdein lye south southwest and north norhest.

This exercise, which can be repeated for much of the remainder of both the east and west coasts, tells us that although there are cases where a course does represent the distance between places which are out of sight of each other, there are also very many instances where it does not. It would appear that in coastal sailing, distances might be calculated either in kennings or courses. And on open sea voyages, arithmetical kennings might be used.

Not all voyages undertaken in northern European waters were coastal. Scottish vessels sailed to Scandinavia and into the Baltic as well as down to the Low Countries.<sup>97</sup> Longer voyages out of sight of land, such as those between Scandinavia and Iceland or Greenland, and between Bristol and Iceland, were not uncommon.<sup>98</sup> On these

94 These are the "Courses and Kennings from Dungisbe Head to the Mull of Cantyir" and the "Courses and Kennings from the Mull of Cantyir unto Solvay".

95 Lindsay, *Rutter*, 52.

96 To see Girdle Ness from a position roughly east of Arbroath, a ship would have to be well out to sea and weather conditions excellent.

97 For Scottish overseas trade see D Ditchburn, "Trade with northern Europe 1297-1540", and A Stevenson, "Trade with the south", in M Lynch, M Spearman and C Stell (eds), *The Scottish Medieval Town* (1988), 161-179 and 180-206 respectively.

98 For the Norse voyages one may note that of Flokki from Bergen to Iceland: see T Ellwood (ed), *Landnamabok* (1908), 74. For English trade with Iceland, see, generally, Burwash, *English Merchant Shipping*, and R W Unger, *The Ship in the Medieval Economy 600-1600* (1980).

trips the mariner would have followed tried and trusted courses, such as those prescribed for an unbroken voyage from Norway to Greenland. This truly remarkable feat of navigation was achieved in three stages. Stage one was accomplished by sailing west and sufficiently to the north of Shetland so as to keep land just in view. Stage two involved sailing to the north-west but keeping such a distance from Sydero, the most southerly of the Faroes, "so that the sea bears half up the hillside". Thereafter, the third leg of the voyage required the vessel to pass through an area to the south of Iceland, "where birds and whales are encountered", and thereafter to proceed directly to Greenland. On this voyage coastal topography, in the shape of Unst, the cliffs on Sydero and in the region of Cape Farewell in Greenland, which rise to a height of 2,000 and 7,000 feet respectively, provided the navigator with highly visible, fixed reference points from which to plot his next course.

Voyages between Scotland and continental Europe do not involve island hopping, but wind and tide often combine to ensure that sailing in a direct line from Aberdeen or Leith to Bergen or Danzig is rarely possible and some voyages ended prematurely in the circumstances described in chapter XXIII of Balfour. In such situations, advance knowledge of the courses which would typically have to be sailed would permit the calculation of what proportion of a failed voyage had been successfully completed. And when the traverse board came into widespread use on ocean and open sea voyages during the later sixteenth century, this, used in conjunction with the sand-glass, enabled a master to reckon, in leagues or miles, the distance his vessel had sailed along a given course. It also made for more accurate dead reckoning if adverse weather conditions made necessary any departure from the intended course. And if the master also happened to possess a *toleta di marteloio*, a table giving the courses and distances between ports, computation of the distance travelled could be achieved with even greater accuracy.<sup>99</sup>

The sixteenth century can be seen as a watershed for navigational techniques. New instruments, such as the traverse board and the log and line, enabled speed to be calculated and the kenning was less suited to this purpose than the league or the mile. The increasing use of charts and tables meant that distance also could be calculated in leagues and miles or in the number of sailing days a voyage might be expected to take.<sup>100</sup> The older method of reckoning in kennings did not die out, though it did have to coexist with other methods of computing distance. But reckoning "course be course" was not, during the period with which this article is concerned, a precise science, and the overlap in use between kennings and courses

<sup>99</sup> See Waters, *Art of Navigation*, 37, for a fuller discussion of the traverse board.

<sup>100</sup> Ibid, 37 and 435. *Die Caerte van der Zee*, n 86 above, states that the crossing from Bornholm to Riga is eighty miles and takes two days. In the *itinerarium* contained in *Kong Valdemar's Jorebog* the voyage from Denmark to Syria is measured in days and nights.

must have made for interesting arguments in disputes where augmented wages or the payment of freight *pro rata itineris* were claimed.

### H. MARITIME LAW: JURIMETRICS AND “THE USE AND PRETTICK OF THE SEYFAIR”

In 1443 or 1444 a vessel (probably owned by the Earl of Orkney) carrying the goods of a number of Aberdeen merchants was wrecked at the Scaw on the northern tip of the Jutland peninsula. The merchants were unsure about their liability to pay all or some part of the freight due, but they were willing to “compeir befor the commisaris of burrowis” and, if so ordered, to pay the freight charge “als ferr as thai fynd that it is awnd”.<sup>101</sup> We do not know what the outcome was, but the issue is exactly the one catered for in the *Judgments of the Sea* and, subsequently, by Balfour, Bisset and Kintore. Such losses were a recurrent problem. In 1492, for example, the Lords of Council heard a complaint by Thomas Spalding against James Rollock, both Dundee burgesses. Rollock maintained that the vessel carrying their goods had been “brokin be aventure of sey and wedder”, but Spalding argued that she was under-manned, under-provisioned, and had inadequate rigging.<sup>102</sup> Spalding averred that he had volunteered to put these matters right but that his offer was declined. In his view, therefore, Rollock’s negligence was the effective cause of the vessel’s loss and not the storm which overtook her. This matter was remitted to the Admiral for judgment, but proof that the vessel had made an eighteenth part of the voyage was allowed and arrangements were made for depositions to be taken from others as to the profit made before she was driven ashore. But how could Thomas Spalding show that the vessel had accomplished an eighteenth part of her voyage? How could the correct proportion of the freight due by the merchants of Aberdeen be computed? More generally: how could apportionment of freight or wages, whether on coastal or open sea voyages be determined?

Clearly the answers to these questions lay in the application of the formula “kenning be kenning and course be course”. If one knew the total number of kennings or courses typically involved in making the voyage at the centre of a dispute, then, by establishing how many of these had been sailed, it was easy to calculate what proportion of the voyage the vessel had actually travelled. In the case of a claim for freight in respect of an uncompleted voyage, the owner of the vessel would

101 J Stuart (ed), *Extracts from the Council Register of the Burgh of Aberdeen 1398–1570* (1844), vol 1, 13. The entry is for 16 December 1444: “Dispute anent freight of goods in a barge wrecked at the Scaw.”

102 T Thomson (ed), *Acta Dominorum Concilii regnante Domino Jacobo Tertio (AD 1478–1495)* (1839), 274 (6 Feb 1492). Much stress is laid on the condition of a vessel’s ropes and tackle in the various versions of the *Judgments of the Sea* and in the *Wisby Town Law*: see Balfour, *Practicks*, 620 (ch XXVII); Bisset, *Rolment*, vol 2, 244; Twiss, *Black Book*, vol 1, 101.

be entitled to that share of the agreed freight charge represented by the fraction of the voyage actually travelled. So, returning to the hypothetical example of a voyage from Leith to Aberdeen, and following Lindsay's landmarks (Inchkeith, Isle of May, Fife Ness, Red Head and Girdle Ness), five kennings are involved: (1) Leith and Inchkeith; (2) Inchkeith and Isle of May; (3) Isle of May and Fife Ness; (4) Fife Ness and Red Head; and (5) Red Head and Girdle Ness. If this voyage ended prematurely when the ship was driven onto the sands of Lunan Bay to the south of Montrose, a claim for four-fifths of the freight charge would be arguable since the vessel had safely carried the goods for four out of the five kennings which this voyage entailed. Alternatively, and again on the basis of Lindsay, we can say that this voyage involved five courses, namely: Leith to Inchkeith; Inchkeith to Fife Ness; Fife Ness to Red Head; Red Head to Montrose; and Montrose to Girdle Ness. Since three of these had been sailed safely, a claim for three-fifths of the total freight might be advanced. Calculation of augmented wages would involve a similar apportionment. If the distance in kennings or courses to the anticipated port of loading was known, computation of the increase "after the rate of thair hyre"<sup>103</sup> was a simple matter. But if the process of division was simple, computation of the overall distance of voyages must have been problematic.

I have suggested, on the basis of Lindsay, that there were five visual kennings and five courses involved in our hypothetical voyage. But a seaman's case can be made for increasing this to six kennings, by interposing Scurdie Ness (to the east of Montrose) between Red Head and Girdle Ness, and to seven kennings if either Tod Head or Dunottar Point (to the south of Stonehaven) is added. And, again using Lindsay, one can increase the number of courses to be considered to at least six.<sup>104</sup> Opinions probably varied therefore among seamen as to which natural features were to be taken into account when reckoning the kennings associated with a particular coast. Similar differences of opinion must also have existed about the courses to be followed, whether in coastal waters or on the open sea. How might these difficulties have been resolved?

The expression "dead reckoning" generates controversy amongst historians of navigation.<sup>105</sup> In practice, however, it meant (and continues to mean) the "guess-timation" of either a ship's position or the distance travelled, calculated by reference to the instruments or faculties available to the mariner.<sup>106</sup> Similarly, navigation "by

103 Balfour, *Practicks*, 616 (ch XI); Bisset, *Rolment*, vol 2, 256 (f 323).

104 By plotting the positions of Fife Ness and Tod Head (or Dunottar Point) with reference to the Isle of May and Montrose respectively.

105 Hewson, *History of Navigation*, ch V. Note also C H Cotter, "Dead reckoning"; J H Harland, "Dead reckoning", and C Chowdhary-Best, "Dead reckoning", all in (1980) 66 *The Mariner's Mirror* at 79–80, 165–166 and 166–167 respectively.

106 Bourne, *Regiment for the See* (1574 edn), 237–238, linked "deade reckoning" to the use of the log. See also Morcken, "Norse nautical units", 397.



guess and by God” indicated the ability to guess one’s way to an intended destination. And yet maritime commerce in the “age of reconnaissance”<sup>107</sup> was prosecuted very successfully because navigation, despite its limitations, was not an altogether haphazard activity. The rutters and much of the early literature on navigation stress the importance of intuition and experience. For example, although the *Sailing Directions* detail the soundings to be taken once west of Cape Finisterre, in order to get to that position the mariner is told: “gesse you ij parties ovir the see”. And should night overtake a southbound vessel passing Cromer, the mariner is warned how to avoid two perilous shoals by standing off the coast in eighteen fathoms “till the gesse that ye be past” the danger.<sup>108</sup> Even the log and line and traverse board could only give approximate knowledge, at least in the early days of their use, and participants in ocean voyaging, such as John Davis, still stressed experience over technology.<sup>109</sup> In William Bourne’s eyes a “good coaster” was someone who “knowes every place by sight thereof”,<sup>110</sup> and for both Michel Coignet<sup>111</sup> and Peter Goos<sup>112</sup> also, experience and practice were the most highly valued skills in a mariner.<sup>113</sup> Medieval navigators in northern waters required and possessed detailed cognitive knowledge of the waters on which they sailed. Mental images of natural features such as the sea bed, of cliffs and rocks, sand banks and shoals, and of the winds and tidal currents would be learned and passed on. The absence of more sophisticated navigational aids promoted a necessarily deep knowledge of the maritime environment. Indeed it was this knowledge which paved the way for the written and then the printed rutter.<sup>114</sup>

In order to apply the formula “kenning be kenning and course be course”, an adjudicator needed to know how many kennings or courses were involved in a voyage. But this was specialist knowledge and as such beyond the competence of the Judge Admiral, the admirals depute or the bailies adjudicating in maritime disputes.<sup>115</sup> Moreover, given the evidence as to how distances were computed in

107 J H Parry, *The Age of Reconnaissance* (1963).

108 Gairdner (ed), *Sailing Directions*, 21 and 12 respectively.

109 See n 74, above. Davis wrote that to keep an account of the distance travelled the seaman should take “careful consideration of the number of leagues that the ship sayleth in every houre or watch to the nearest estimation that he possibly can give” (emphasis added).

110 Bourne, *Regiment for the see* (1574 edn), 171.

111 Coignet, *Instruction nouvelle*.

112 Goos, *Lighting colonne*.

113 Hutson, *Navigators Art*, 46: “Judging speed and distance was part of every sailor’s duties, but was the special responsibility of the pilot. Judgment was based on experience; the feel of the wind and sea, the motion of the ship all helped, but it was not an accurate method. It was really no more than guesswork.” This view is overstated: cf Hewson, *History of Navigation*, 153.

114 The cognitive processes of medieval seamen are explored by C O Frake, “Cognitive maps of time and tide among medieval seafarers” (1985) 20 *Man* (new series) 254–270.

115 On the Admiral and his subordinates, see: A R G McMillan, “The Admiral of Scotland” (1923) 20 *Scottish Historical Review* (SHR) 11–18; B Seton, “The Vice Admiral and the quest of the Golden Pennie” (1923) 20 SHR 122–128. Note also ACAS, xiii-xv.

fifteenth- and sixteenth-century northern Europe, it is unlikely that many merchants or underpaid mariners would have agreed with their shipmaster's reckoning. The obvious solution to this problem was to take the opinions of practised mariners familiar with the sorts of information needed by the adjudicator, and the records of the proceedings of the High Court of Admiralty of Scotland are replete with references to the "use and prettickle of the seyfair" or to the "use and consuetude" of mariners.<sup>116</sup> The number of kennings or courses involved in a voyage was, of course, a question of fact, and, as Callender Wade points out, "the Court was always ready to call in the assistance of seafaring men and merchants and to give judgment in accordance with what such men might decide to be recognised practice".<sup>117</sup> Indeed it was prepared to go beyond this on occasion and to appoint a panel of assessors, made up of "certaine honest seafarand men of the town of Leith and utheris", to establish what the custom was and then to pronounce judgment accordingly.<sup>118</sup> What is particularly interesting for present purposes, however, are those cases where reference to custom and practice are linked to the Judgments of the Sea.

In the first of these, *Pennicuke contra Sandis* (1557),<sup>119</sup> John Penicuik, the master of a privateer, raised an action against Andrew Sandys, a partner in the ship, for delivery of three artillery pieces and sundry items removed by the latter when the vessel docked in Leith. In support of his claim the pursuer "repetit the dispositioun of the Buk of Orlinis" and also deponed as to what was the customary practice in cases such as this. At the hearing on 20 December 1557, the court, having been "avisit therwith togidder with the depositions of certane famois witnes sworne and admittit thairto",<sup>120</sup> gave judgment in favour of the pursuer. In another case, *Nicolsoun contra Watsoun* (1560),<sup>121</sup> the pursuer was the master of a vessel which had been freighted by a number of Edinburgh merchants from Burntisland to Camp Veere. On the return voyage a combination of severe weather and the threat of capture by an English ship had forced Nicholson to take refuge in Crail, where Watson and another had agreed to stand caution for payment of half of the freight due. The action was raised when repeated requests for payment failed to produce a response. The pursuer founded on the law of the sea and the custom of the realm, but the defender averred that the action was incompetent since the Admiral had no jurisdiction in actions involving purely personal obligations. This argument failed and the pursuer was required to produce Flemings and Frenchmen "for preving of the consuetude libellat" by him. At the hearing on 30 October 1560 the pursuer, in

116 For proceedings between 1556 and 1561, see ACAS. Examples are found at *ibid*, 15, 31, 40, 41, 80, 81, 86, 122 and 125.

117 *Ibid*, xx.

118 *Lummsdane and his Collegis contra Gibsoun; Gilzem Oktin Frencheman*: see ACAS, 4 and 35.

119 *Ibid*, 31. The various stages of the case are also to be found at 22, 23, 25, 28, 40, 41 and 48.

120 *Ibid*, 41. Penicuik subsequently had difficulty in enforcing the judgment in his favour: see *ibid*, 48.

121 *Ibid*, 151, 153, 156, 158, 163, 164 and 168.

addition to such testimony, produced the charterparty,<sup>122</sup> his account book, and referred also to the law as stated in the “buk of Olouris”. On 6 November, judgment was given in favour of the pursuer. A third case is possibly of even greater interest, because it seems to demonstrate that the purpose, or at least part of the purpose, of using mariners and merchants with sea-going experience, particularly in cases where the Judgments of the Sea were also being pleaded, was to ensure that there was an acceptable correlation between practice and precept. Despite their widespread acceptance and use throughout northern Europe, we should not assume that the Judgments were applied uncritically or, indeed, inevitably. In *Nicolsoun contra Watsoun*,<sup>123</sup> for example, the reference to the “law of the buk of Olouris” is qualified by the phrase “safer as thai ar ressavit in this realme”.

In *Angus contra Turnbull* (1558)<sup>124</sup> John Turnbull had been hired as a seaman by Mark Angus and received advance payment of his wages. The action was for repayment of the advance and Turnbull’s defence was that he had been unable to serve aboard ship on account of illness. The Judgments of the Sea, the Laws of Wisby, the Flanders’ Sea Laws, the *Purple Book of Bruges* and the *Gotland Sea Laws* all obliged a master to arrange for care of mariners who fell sick during a voyage and to pay them, or, if they died, their relatives, any wages due.<sup>125</sup> But this case was different in one important respect: here the seaman had been taken ill before the voyage began. The case, therefore, raised an issue which was closely connected to a common provision in most of the north European maritime codes. But it was not one to which they provided the solution. Turnbull was given fifteen days in which to gather proof to corroborate his claim that he was too ill to work and the court sought the advice of “honest seyferand men” as to whether a seaman in Turnbull’s alleged situation would have to return all or part of his hire. One can see the argument here. If a seaman’s illness during a voyage did not prevent him from continuing to receive payment of his wages, under deduction of expenses for looking after him, then why should he not be entitled to retain in full those wages already paid to him before he became sick? In this particular context, therefore, the reference

122 In the “Epistle Dedicatory” to the *Abridgment of All Sea Lawes* (1613) William Welwood observes that it was quite usual for contemporary charterparties to include a choice of law clause stipulating that the proper law of the contract was that represented by the Laws of Oleron. Note also ACAS, xix.

123 *Ibid.*, 164.

124 *Ibid.*, 81.

125 The provision is rendered by Balfour, *Practicks*, 615 (ch VI), as follows: Gif seiknes cumis suddenlie to ony shipman doand his service or office, he may not ly langer in the ship, bot the master is haldin to gar have him to land, and gar get him ane house and ane reffect, or ludging and chamer, and to find him sic meit as quhen he was of gude health in the ship, togidder with ane woman or man to keip him . . . And gif he that was seik conualeseis, he sall have his hyre, repayand and rebateand the expensis made on him the time of his seiknes: and gif he dies, his wife, bairnis, or nixt kinnismen, sould have the samin. Note also Bisset, *Rolment*, vol 2, 248 (f 318), and Welwood, *Sea Law of Scotland*, title 5.

to what was normally done in cases of this sort makes perfect sense. It also points up, as do the other cases considered, that the court was prepared to turn to mariners for their opinions in cases of doubt. In all probability, it is in this practice of consulting seamen that the courts were able to apply the formula "kenning be kenning and course be course" in actions for payment of freight *pro rata itineris* and for payment of additional wages.

### I. CONCLUDING OBSERVATIONS

Carriage of goods by sea from the twelfth to the sixteenth centuries in northern Europe comprised two types of traffic, coastal and seagoing, and in both topographical knowledge of coasts and of their features was important. But on open sea voyages, knowing one's position and using that knowledge to plot the next stage of the trip depended on slightly extended skills. In both cases, however, those skills were acquired by experience, committed to memory, and passed on to others, either orally or in written notes. In particular, knowledge of the kennings encountered on coastal voyages or at the end of a sea-going passage, as well as knowledge of the courses to be sailed in the latter case, were cognitive skills possessed by all northern navigators. But mariners are individuals and until rutters came to be printed, and in all probability for a considerable time thereafter, opinions would often have differed as to how many kennings or courses were involved on any given voyage. Yet knowing how far a vessel had travelled was crucial in actions for payment of freight *pro rata itineris* or for payment of wages. The several versions of the Judgments of the Sea used in northern Europe stated what the law was in such disputes, but the remedies given were dependent on a calculation of distance in either kennings or courses. These matters were outwith judicial knowledge but could be resolved if the opinion of respected members of the seafaring community were sought and a consensual view could be established. This was the common practice in Scotland on a variety of other maritime issues, including those directly involving consideration of the Judgments of the Sea. I would submit that this is also what would have been done by any tribunal dealing with either of the two situations considered by this article.

### APPENDIX A

#### **Balfour, Practicks**

XI. Gif the maister of ane ship hyris marineris, sum upon thair awin finding and sustenatioun, and sum upon his costis. to ony heavin or town, and it happin that the ship can find na fraucht to go quhair sho was frauchtit to, and swa is constrainit to go farder, the marineris quha sould find thameselfis sould pass forwards upon thair awin costis; bot the wagis of

thame that were hyrit upon the maister's costis sould be augmentit kenning be kenning and course be course eftir the rate of thair hyre, until thay cum to the port of discharge.

XXIII. Gif ane ship beand laidnit to depart from ony place, and it happinis that scho, in hir voyage, befor scho cumis to hir discharge, perish, rive, or wrak be storme of wether or utherwayis, without the master's default, the master, marineris, and gudis, all or pairt being saif, the merchandis, gif they ask or require thair gudis or geir, should have the samin, gif the master pleisis, thay payand the fraucht as gif the ship had maid the voyage, kenning be kenning and course be course, and may pass out thairwith into ony uther vessel.

### **Welwood, Sea Law of Scotland**

Title 6. Gif the schip gangs farther nor the mariner wes hyred / the mariners hyre sal be accordingly augmentit.

Title 2. Giffe in the voyage the schip without the maisters fault / becums through stormes unable . . . the maister may aither fraucht ane uther schip / or bett his awne: Or in case the merchaunt will not agree thairto / the master sall haf fraucht so far as he hes seruit.

### **Liber Horn**

IV. Une nef se part de Burdeux ou aillours, il avient ascune foiz quel sempire, lem suave le plus qe lem peut des vins et des autres derrees, les merchautes [et le mestre] sount en graunt debat et demaundant les marchauntz se mestre avoir lour deniers, ils les deyvent biens aver, paiaunt lur fret de taunt come la nef ad fet de veyage, sil plest al mestre.

XX. Le mestre dun nef lowe ses mariners de la vile dont la nef est, les uns a mareage, les autres a deniers, il avient qe la nef ne poet trouver fret a venir en ses parties, et lur covient aler plus loinz, ceux qi sount a mareage la devient suire, mes ceux qi sount a deniers le mestre est tenuz a lur crestre lour lowers, vewe par vewe et corps par corps.

### **Bisset, Rolment of Courtis**

Fol. 323. Also the maister of the schip hyred his marineris to the toun that the schip is of, sum of there awin fynding, and sum at his coistis: It chanced that the schip can fynd na fraucht, quhere he wald be, and they moist go fordwarde: they that fynde theme selfis aucht to follow him, bot they that be at his coistis he aucht to raise there wayges kenning be kenning and course be course eftir the reat of there hyre for to go to ane certane place or weill as far, as they war hyred to.

Fol. 315. Also gif ane schip depairt from burdeaux or [ony] uthir place laidned or chance sumtymes that it wraik, and the maist part of the guid saifed the merchandis and the maister at gret stryfe, and the merchandis ask there gudis of the maister, and they aucht weill to have theme haifand the fraucht, as gif the schip had made the weyaige kenning be kenning and cours be cours gif it pleis the maister.

### **Petyt, Rutter of the See**

Judgment 20. Also the master of a shippe hyreth his mariners in the towne, that is some of theyr owne fynding, and other at his costes. It chaunceth that the shyp can fynde no freyght to go where he wolde be, and they must go ferther. They that fynde them selfe ought to folowe him, but they that be at his costes he ought to reyse theyr wage kenning be kenning and cours be cours after the rate of theyr hyre for to go to a certayne place.

Judgment 4. Also if a shyp depart fro Burdeux or another place laden, it chaunceth . . . that it wracketh and the moost parts of the goodes . . . is saved, the marchautes and the mayster be at gret stryfe and the merchautes aske theyr goodes of the mayster. They ought well to have them payenge the freyght, as yf the shyp had made the voyage kennyng be kennyng and cours be cours.

## APPENDIX B

**Table 1: Kennings as Components of Distances in Lindsay**

<i>Coasts</i>	<i>Distances</i>	<i>Kennings</i>
East		
St Abbs Head—Duncansby Head	22	11
North		
Duncansby Head—Cape Wrath	6	1
West		
Cape Wrath—Mull of Kintyre	16	4
South		
Mull of Kintyre—River Esk	14	0

Including references to combinations in kenning and miles.

**Table 2: Distribution of Units of Distances in Lindsay**

<i>Kennings</i>	<i>Kennings plus Miles</i>	<i>Miles</i>
11	8	43

**Table 3: Mensuration in Lindsay**

<i>Courses</i>	<i>Miles</i> <sup>1</sup>	<i>Nautical Miles</i> <sup>2</sup>	<i>Statute Miles</i> <sup>3</sup>
Leith—St Abbs Head	42	43	50
Leith—Inchkeith	4	4	5
Inchkeith—May Isle	20	21	25
May Isle—Fife Ness	8	8	5
Fife Ness—Red Head	19	20	25
Red Head—Girdle Ness	33	35	38
Girdle Ness—Buchan Ness	28	29	26
Buchan Ness—Torrissen	14	14	16
Buchan Ness—Duncansby	84	89	93

<sup>1</sup> These include four instances of references to kennings where a multiplier of fourteen has been used by me.

<sup>2</sup> The figures in nautical miles of 5,000 feet are rounded off.

<sup>3</sup> These are the figures produced if, like A B Taylor, one equates Lindsay's miles with statute miles.

**Table 4: Kennings as Units of Fourteen Miles in Lindsay**

<i>Voyages</i>	<i>Kennings</i>	<i>Miles</i>
Buchan Ness—Torrissen	1	14
Torrissen—Banff	1	14
Spey Mouth—Cromarty	3 5	42 70
Buchan Ness—Torrissen		14
Torrissen—Banff		14
Banff—Spey Mouth		18
Spey Mouth—Cromarty		42 88

**Table 5: Comparative Analysis of Topography**

<i>Voyages south from Leith</i>	
<i>Lindsay</i>	<i>Modern Pilot</i>
Inchkeith	Bass Rock
Bass Rock	Fidra <sup>1</sup>
St Abbs Head	St Abbs Head

<i>Voyages north from Leith</i>	
Inchkeith	Inchkeith
May Isle	May Isle
Fife Ness	North Carr Buoy <sup>2</sup>
Red Head	Arbroath
Girdle Ness	Girdle Ness
Ythan Mouth	Ythan Mouth
Buchan Ness	Buchan Ness

<sup>1</sup> Fidra is a small island to the west of the Bass Rock.

<sup>2</sup> This buoy marks a dangerous reef to the north-west of Fife Ness.

**Table 6: Landmarks from Leith to Duncansby Head**

Inchkeith	Torrisness
May Isle	Banff
Fife Ness	Spey Bay
Red Head	Tarbat Ness
Scurdie Ness	Ord of Caithness
Girdle Ness	Noss Head
Buchan Ness	Duncansby Head

## APPENDIX C

Peter Goos, *The Lighting Colonne or Sea-Mirrour* (Amsterdam, 1688)



In this form sheweth the land Catenes when you sail alongst by it.



This sheweth Boeckenes when you saile alongst by it.



This showeth the northest point of Orkenes when you sayle alongst by it.



## APPENDIX D

## Chart of the Mouth of the River Gota

Adriaen Gerritszoon, *De zeevaart ende onderwijsinge der gantscher Oostersche ende Westersche Zeevaerwater, door den vermaerden Pilot ende leermester der Stuerlyden* (Amsterdam, 1588)



**MAP**  
**Kennings Along the East Coast of Scotland**

