The earliest known Sailing Directions in English

Transcription and Analysis

Background

By early in the fifteenth century, northern shipmasters had access to hand-written copies of sailing directions to purchase, copy or simply memorise, as *aides mémoires* to familiar waters or as pilots for areas new to them. The number of copies of these sailing directions (or *rutters*) for northern waters was small and unsurprisingly, given conditions at sea, no used examples are known. The oldest surviving rutters compiled by northern seamen are copies which have been preserved in private libraries; they are a Middle English rutter, in several MS copies of variable length and accuracy, and the Low German *‘Seebuch’*, in a MS copy of each of two editions. The two better copies of the English rutter are bound with other MS treatises in two mediaeval *‘Grete Bokes’*, the Hastings collection (the rutter section of which is hereafter referred to as *H*) and the Lansdowne collection (the rutter hereafter referred to as *L*).

The Hastings book belonged to Sir John Astley (d. 1486); it was written by several scribes in good book hands on vellum of approximately 250 x 170 mm and has 320 leaves. In addition to the rutter, the volume contains a miscellaneous collection of treatises on knighthood, jousting, state ceremonial, classical texts, astrology, weather forecasting, and various domestic subjects. Astley expanded the book with two personal texts and, after his death, several further, unrelated texts were added. The Lansdowne book belonged to Sir John Paston (1442-1479); it was written in a good secretarial hand on paper of approximately 300 x 215 mm and has 222 leaves, 21 of which were added after Paston’s death; its contents are very similar to those of the Hastings book.

A printed version of approximately the first third of the text of *H* and *L*, entitled *A newe Routter of the Sea for the North parties* and attributed to Richard Proude, was added to the 1541 and subsequent editions of Robert Copland’s *The Rutter of the See*, the first rutter to be printed in English, in 1528. Copland’s work was a translation of Pierre Garcie’s *Le routier de la mer*, first printed in France in 1502. Textual differences between *A newe Routter* and *H* and *L* establish that the first was not copied directly from either of the other two and, since the printer ‘tailed off’ the type and added *Finis*, that portion of the text of the English rutter apparently existed independently in 1541, or had been separated for publication from a larger work. The word *newe* in the title suggests a corrected or augmented edition, but nothing is known of an earlier work, nor of Richard Proude.

The two surviving MS editions of Das Seebuch, designated ‘A’ and ‘B’ by Koppmann in 1876, have been dated by their watermarks to 1472/73 and 1466/67 respectively. They are bound
together, the title ‘Altes See-Buch’ having been added some time later. Since Kopppmann’s edit-
ion, the Seebuch has been the subject of various research projects but a comprehensive analy-
sis of the whole was not undertaken until Sauer’s work, published in 1996. This work is in two
parts, an analysis of the philology and content of the text, and an outline of contemporary
navigational techniques. No English translation of the Seebuch, nor any detailed comparison
between it and the English rutter, has yet been made.

Previous work on the H and L texts

The Lansdowne book has been available for study since at least the 1880s but the Hastings, al-
though it was known to exist, was not located for research until the late 1960s. Gairdner, who
transcribed L in 1889, identified the hand of the scribe William Ebesham, and so was able to date
that MS to t. Edward IV. A glossary of the place names in the pilot was appended to Gairdner’s
transcription by Delmar Morgan, who suggested that the directions had been compiled by
Clement Paston, whom he described as a well-known mariner t. Henry VIII. In 1947, Burwash
had no doubt that L was ‘in the main an English product’ because the place names were English
forms and much of the coast discussed was of interest only to English seamen. She also noted
that the rutter did not correspond very closely in arrangement or in data to any other, German,
French or Italian sailing directions, and that only it and the Seebuch dealt, although in a dis-
similar manner, with the E coast of England. Burwash described the directions as falling into five
geographical areas which covered all the usual English mediaeval sea trade routes except for Ice-
land, the North Sea and the Baltic.

In 1956, Taylor noted that, unlike Mediterranean pilots, the emphasis of the English rutter
was on tides, depths and grounds, with distances scarcely mentioned, and that the bearings were
based on a 32-point compass, a fact important in the dating of the original text. In 1967, Waters
transcribed and edited L, printed a facsimile of the 1557 edition of Proude’s printed extract,
amended and expanded Delmar Morgan’s glossary of place names, and noted the existence, but
at location unknown, of H which he thought to be a copy of L or of a common original. He
speculated on a north-eastern English origin for the rutter which, he suggested in a footnote,
had some similarities with the Seebuch in the treatment of the E coast of England. Because of
the different organisation of information, he was unable to compare L with The Rutter of the
Sea or Le routier de la mer. In 1984 and 1994, Lester, working on H and L concurred with all
the previous observations except that he preferred six rather than five geographical sections;
suggested that the absence of landmarks indicated that the directions were compiled by some-
one for his own use; and improved Waters' glossary of place names. Lester was of the opinion
that twelve of the twenty texts in the Lansdowne book, including the rutter, had been copied in
1468-69 from the Astley MSS (H) by William Ebesham. Lester also suggested that because its
subject is quite unlike that of the other texts in the book, the rutter may have been added as a
scribal filler.

In 1996, Sauer compared parts of L with the relevant chapters of the Seebuch, finding little
coincidence. He remarked on the geographical rather than thematic organisation of L and point-
ed out a number of deficiencies, for example, the absence of distances and the paucity of tidal
Establishments.

The dating of the H and L copies

On f. 130v of H there is a well-known full page coloured illustration of ships in an anchorage;
and on the last leaf, f. 138v, after five lines of text, there is another well-known illustration, also
coloured, of a ship taking soundings off an unidentified coast. The structure and rigging of the ships depicted on f. 130v, which may not always have been bound in with the text17, have been dated to the early sixteenth century, whereas the vessel on f. 138v, which is an integral part of the text, is almost certainly mid- to late fifteenth century.18 The absence of the Garter on the arms of the Earl of Hastings, reproduced on three pages of the book including the rutter, suggests that at least those parts of the collection were written before 1461 when he was appointed to the Order.

The discovery of Ebesham’s invoice, (drawn up, Ebesham poignantly adds, while he was in seintwarye [sanctuary] from creditors), for work done for Sir John Paston, establishes that L was copied in, or shortly before, 146819; the chronological evidence, therefore, allows L to be a copy of H, but not vise versa. To confirm this hypothesis, the two very similar MSS are compared in Appendix 2. The L text runs with ‘seamless joins’ from beginning to end whereas in H there is a space of four lines between two parts (here designated 5 and 6), after which the text is unbroken to the end.20 In addition to minor orthographical variants and ‘literals’, there are 15 defective compass bearings in L and but one in H. Of the other errors in L, ten arise from one or two missing words, and five from the omission of parts of two or more lines of text. The larger omissions appear to be the result of the scribe’s eye skipping over lines in his master copy, but the first and last words of each omission from L are nowhere vertically aligned in H, as might be expected at a ‘skip’. Conversely, there are a few minor errors in H which do not occur in L. Although there are a few peculiarities common to H and L, for example, a blank half line where a destination has been omitted, and the word tide (or strem) twice omitted from the duplex half tide (or half strem)21, it appears very probable that neither MS is a copy of the other but that both are copies, or copies of copies, of an unknown, and in some respects imperfect, ur-text.

Whatever the precise dating of H and L, it can be said with some confidence that both MSS, and therefore the ur-text of the English rutter, are some decades older than the printed editions of Garcia’s routiers and about a century older than Copland’s translation. They are also approximately contemporary with the MS copies of the Seebuch, although both rutters appear to contain fourteenth century material.

Analysis of the navigational information in the English rutter22

The H MS, which is textually better than the L, perhaps because the copyist had more understanding of maritime matters than Ebesham23, has been used for this analysis; it is transcribed in Appendix 1. Previous researchers have seen the English rutter as five (Burwash) or six (Lester) geographical sections, depending on whether or not the directions covering the E coast of England and the Channel, and the offshore routes across the Bay of Biscay, are separated. In the present work the rutter has been divided into seven parts, following Lester’s division, plus a separation of the Bay of Biscay coastal and off-shore routes. References to Lester in the identification of place names are to his glossary, which he derived from Waters’, in turn derived from Delmar Morgan’s. Most courses are given as ‘forward’ and ‘back’ bearings on a 32-point compass rose24; in general, that course which follows the direction of progress of the rutter has been appraised on current Admiralty charts.25 Those within about half a compass point (5.6º) of the correct course have been defined, somewhat arbitrarily, as ‘good’ and those within about one point (11.25º) as ‘acceptable’, with some tolerance for the situation. Those more than one point out, some of which are dangerous, have been deemed ‘aberrant’. Generally, points of departure and arrival have been taken for the appraisal as 1 nM off-shore.26 Of necessity, the mediaeval shipmasters obtained their bearings empirically; those may have been ‘magnetic’ or have been
Ill. 1 Ships in an anchorage. (New York, Pierpont Morgan Library, Hastings MS 775, f. 130v)
Ill. 2 Ships taking soundings off an unidentified coast. (New York, Pierpont Morgan Library, Hastings MS 775, f. 138v)
corrected automatically by an off-set magnetised needle fixed during manufacture of the compass. As it happens, recent research has established that the magnetic variation in western Europe around 1450 was less than half a point; no correction for deviation has therefore been necessary in this analysis.27

The few tidal Establishments given were easily checked but tidal stream information, since it is not always clear from the text whether it is for the flood or the ebb and whether it is flowing towards or away from the direction given, was more difficult, and at times impossible to analyse.28 Further, the positions of sandbanks 500 years ago, particularly on the E coast of England and in the Gironde, have changed and the tidal flow around them is unlikely to have been the same as today. Tidal stream analyses are therefore less than satisfactory.

Part 1 (H f. 131r, line 1 – f. 132r, line 16): The East Coast of England

The first part of the rutter lists waypoints and tidal streams from Berwick to The Downs, with compass bearings of the courses between the waypoints and with frequent references to rocks and sandbanks to be avoided. Directions through the sandbanks include leading marks, transits and depths; the instructions between Harwich and the Thames being particularly detailed using, in addition, compass bearings and, on one occasion, elapsed time. There are no distances (except the analogous elapsed time), few landmarks, no descriptions of the sea-bed, and no details of havens.

The compass bearings between identifiable waypoints, compared with those on an Admiralty chart, are listed in table 1a. The first three courses are seriously aberrant and, indeed, a safe passage from Berwick to Tynemouth requires a ‘dog-leg’ to avoid all dangers. The confusion continues with the stretch of coast from Hunt Cliff to the Humber where the S-bound bearings are all dangerous. These course errors between Berwick and the Humber have no obvious explanation. The course for the long passage between Wainfleet and Flamborough Head is safe for S- and N-bound ships, but only if the point of departure for the latter is 6 nM off-shore. From Wainfleet, from which only S-bound courses are given, the bearings are generally good until The Naze, from where the waypoints are sandbanks of uncertain position and the courses cannot be appraised. Over all, about 50% of the identifiable courses are ‘good’ or ‘acceptable’, the remainder are uncertain, aberrant and, in some cases, dangerous.

Tidal stream information, interspersed amongst the courses, generally includes both flood and ebb directions (although which is which is not always certain), and the time of change of direction of the stream is given in relation to HW ashore, i.e. the Establishment of that location.29 The delay between HW and the reversal of the tidal stream is given in the rutter as the formulaic ‘half tide (3 hours) or quarter tide (1 hr 30 mins) under other’ but the Establishment, necessary for the calculation of the delay, is not given. Since on the E coast of England the tidal wave, and therefore the time of HW, progresses regularly S-ward, a local seaman who knew the coast well could keep a mental tally of HW times ashore.30 Tidal stream directions are more complex; off the NE of England they radiate from an amphidrome oscillating in each tidal cycle between Tynemouth and the Wash, and off the SE they are distorted by the meeting of North Sea and Channel tides. Analysis is further complicated by the uncertainty of whether the directions given are those towards or from which the streams flow. Although today’s tide tables and atlases are of limited use because of the changed topography of sandbanks and shore lines, an overview of the 21 tidal predictions listed in table 1b suggests that the stream directions are approximately correct and that the times of change are, in general, within a quarter tide (1 hr 30 mins). Clearly these conclusions must be regarded with some circumspection.

The paucity of information, apart from course bearings and tidal stream directions, suggests that part 1 of the rutter was compiled by a shipmaster familiar with local landmarks and the
tide cycle, who required merely an aide mémoire for passage planning.\textsuperscript{31} The only advice on the best time of departure to benefit from the tidal stream is for the passage from The Downs to Sandwich with a contrary wind. Although this part would be of little use to a stranger visiting East Anglian ports, the courses and stream directions through shoal water could be a useful supplement to other pilot books, if any were available, which gave details of landmarks, havens and tidal Establishments.

Berwick, in the fourteenth and fifteenth centuries, was a prosperous port town; interestingly, the Inquisition of Queenborough (1375-1404) specified that the wage rate and portage allowance for crews working between London and Berwick were to be double that paid between London and Newcastle.\textsuperscript{32} The port towns of East Anglia were important during the years of large wool exports, on English, Hanse and other ships.\textsuperscript{33}

Chapter XIV of the ‘B’ MS of the Seebuch is the only other known rutter with sailing directions for the E coast of England and therefore its treatment of the area is of interest. The few similarities the English and German pilots share are more generic than specific. Both rutters progress from N to S; the English starting at Berwick, the German at the Wash but moving N to Flamborough Head and thence S, both ending in The Downs. The information in both is given in a narrative rather than thematic format, an organisation which in the Seebuch is unusual but in the English rutter is more general. Dissimilarities are more striking. The English rutter covers the whole of the E coast of England in under 700 words whereas the German has over 1800 words for about half the distance. This is due to the descriptions in the Seebuch of the approaches to, and anchorages at, East Anglian port towns, information omitted entirely from the English rutter. The Seebuch gives no tidal stream information but three Establishments; the English rutter is rich in tidal stream information but gives no Establishments. While both pilots give off-shore depths to assist in the avoidance of sandbanks, only the Seebuch records the nature of the sea-bed. Part 1 of the English rutter appears to have been written by a local mariner for his own use, the Seebuch appears to have been compiled for strangers to the area. Although there is no evidence of a direct relationship between the two pilots, it is curious that their strengths and deficiencies are so complementary.

Part 2 (H f. 132r, line 16 – f. 133v, line 15): The English Channel

This part deals with the S coast of England from The Downs to the Isles of Scilly via a series of eight waypoints on the English coast linked (with one gap) by course bearings. There are also over 30 courses from the English waypoints to locations in France. There are no identifying landmarks; no distances between waypoints; only three depths, all off the Kentish coast; and no instructions for entering or anchoring in havens. Tidal stream directions on the English side of the Channel, and their times of change relative to HW ashore, are interspersed with the courses and there are two – but only two – tidal Establishments for the whole length of the Channel. The bearings between identifiable waypoints have been listed in two groups, those along the S coast of England in table 2a and those across the Channel in table 2b. Of the nine courses listed in table 2a, three are aberrant while the remainder are good or acceptable (i.e. 67% safe); analysis of the courses to France, in table 2b, is more complex because of cross-passage tidal drift.

The tide flows vigorously through the Channel so that any trans-Channel course should allow for estimated drift (unless the duration of a passage is expected, fortuitously, to be a multiple of 12 hours, giving six hours drift in each direction). There is some evidence of such tidal allowances in the courses given, but confirmation of that is difficult because of the general inaccuracies of the compass bearings. Cross-Channel sailing directions range from the extremely detailed to the skeletal; from The Downs to Calais is an example of a detailed course with a tidal
correction, a suggested time of departure (two hours after HW Dover if the wind is WSW) and of arrival at Calais harbour (at or an hour before HW), and with instructions on avoiding the Goodwin and Brake sands. (If the point of departure from The Downs was other than from the S of the area, the course would lead over the Calliper Sands). In describing transit marks which have to be aligned before departure for Calais, a steeple and a fan are mentioned; the ‘fan’ has been translated by Lester as a weather-vane, but another possibility is that the word is related to French *fanal*, a signal light, which could be a fire beacon as in the illustration on p. 130.\textsuperscript{34}

In comparison with the Downs to Calais directions, other instructions give only the minimum of information, as examples: ‘Beachy Head and Dieppe SE and NW; Beachy Head and Cap d’Antifer, S and N; Arundel and Straus, SSE and NNW’, with no indication of tidal allowance, if any. The same caution has to be applied in the analysis of almost all the other trans-Channel courses. For example: the courses from Dungeness to Dieppe and to the R. Somme are seriously in error, but they happen to lead to the R. Authie (Berck) and to Boulogne, here there could be either errors in naming or an unknown tidal correction. The location described in the rutter as the *hey wode be weste deremome* [high wood to the W of Dartmouth] is unidentified by Lester but it could be the 164 m wooded hill 3 M to the W of Dartmouth, behind Start Bay and visible from the sea. Unless there is a substantial tidal correction, this departure point gives an aberrant course to Guernsey, however, where arrivals appear generally to be to the E of the island, perhaps for St. Peter’s Port; a similar doubt applies to the St. Catherine’s Pt. to Guernsey course.

The position of *stroterde* is uncertain; Lester suggests Sassetot in Seine-Maritime as a possibility, but the course leads to Cap d’Antifer (tidal stream ignored), the location assumed here. *Seyne hed* has been taken as Cap de la Hève, although its identification is also uncertain.\textsuperscript{35} *Chalkishorde*, identified by Waters/Lester as Chichester, is Calshot.\textsuperscript{36} Lester’s glossary suggests that *popil hope* is Hope Nose (Torquay, Devon)\textsuperscript{37}, but the two courses given from there lead towards the Baie de St. Brieuc, not to Ouëssant and Le Four (again ignoring tidal effects). Back bearings from Ouëssant and Le Four indicate that *popil hope* is in the region of Land’s End, an hypothesis perhaps confirmed by the Cornish context of the text. In part 2 there are no other courses to France from Land’s End whereas in part 5, Land’s End is important for both N- and S-bound passages.

The course given from Rame Head to Le Four is direct but leads over the Eddystone rocks; it would be dangerous at night. Locations variously described as *seynt marie of cille, cille,* and *seynt marie sownd of cille* have all been taken for the analyses as St. Mary’s in the Isles of Scilly; this allows a good result for all three given courses. The last course given, Ouëssant to Île de Sein, links part 2 with part 3 (and is repeated in part 3).

25 of the 32 courses from England to France listed in table 2b are identifiable; without any tidal allowance, 8 of these are ‘good’ (32%), 10 are acceptable (40%) and 7 are ‘aberrant’ (28%), an achievement of 72% safe. With the incorporation of a tidal allowance, that percentage might well be improved. Of the 7 uncertain courses, 3 are unidentifiable and may well be ‘good’ or ‘acceptable’, and 4 cannot be analysed.

Interspersed with the courses are tidal stream directions, although only for the English side of the Channel; an occasional note of the duration of the flow; and two tidal Establishments, all are listed in table 2c. The Establishments given are for the Solent (*with inne wiet* [within the Isle of Wight]), and for the havens between Start Point and Lizard Point; they are accurate to within half an hour.\textsuperscript{38} The stream directions are largely localised (Poole and Weymouth harbours and Portland Bill) and are difficult to analyse; they do not reflect the general Channel tidal flow.

The E to W direction of progress along the Channel, contrary to that of other rutters, suggests again that the compiler was working outwards from home on the E coast of England and
that at least this section of the work is original. The absence of landmarks suggests that he was familiar also with both sides of the Channel. That Calais is the most easterly continental port mentioned is perhaps because wool had to be unloaded at the Staple, firmly established there by 1400.

**Parts 3 and 4: The West Coast of Continental Europe**

This section of the rutter, working from St. Malo to Gibraltar and then N to Ireland, begins *In spayne and bretayne this is the cours and the tide*. Although it appears to have been intended as one chapter, it changes format about two thirds of the way through; the analysis has therefore been divided into two parts, the first defining in-shore courses from St. Malo to the R. Adour (part 3), and the second, courses across the southern Bay of Biscay, down the Iberian coast and then N to Ireland (part 4).

**Part 3 (H f. 133v, line 15 – f. 134v, line 4): Brittany and the Bay of Biscay**

A string of waypoints leads from St. Malo to the Île de Batz and then into the Chénal du Four from where it splits into an inshore passage through the Raz de Sein, and a more direct passage outside the Chaussée de Sein to the Gironde and the R. Adour in Bayonne. As before, the courses are interspersed with information about tidal streams; one, and only one tidal Establishment is given, purporting to be valid from the Raz de Sein to ‘Morocco’.

The courses between identifiable waypoints are tabulated in table 3a. From St. Malo to Le Four, the instructions are confused, indeed the course to the Île de Batz leads overland and is clearly in error. The correct passage plan, which has to be a dog-leg to clear the Paimpol peninsula, is informative: 60 nM from St. Malo on 292°39’, then 26 nM on 243° to a position c. 7 nM N of Batz from where La Lande (assumed to be the *langas*) would be ‘open’. From this position, after a distance of 37 nM on a course of 247° (which is the course given in the rutter from St. Malo), a course of 169° (given correctly in the rutter) leads through the Chénal du Four, passing Pointe de Saint-Mathieu by about 1 nM and clearing all the dangers of the Sound of Brest. The correct courses are therefore included, but in the wrong order. The location of the *est brigge* is uncertain but it may be Les Sept Îles which have to be passed on the first leg of the passage from St. Malo.40

*saym*, (the Île de Sein) has been taken to be the extreme W end of the rocks off the Chaussée de Sein and the *forlonde of fontenes* has been taken as the Pointe de Raz, both identifications agreeing with Lester’s. Which side of the island is intended to be the waypoint on Belle-Île, Oleron and Yeu is not clear but courses have been charted to the W side of each, (on Belle-Île, specifically to Pointe de Talut). Contradictorily, the course from Penmarc’h to Belle-Île, which may be aberrant, leads to the E side of the island.

There is advice for the best time to depart Audierne to take advantage of the tidal stream and a warning about the Îles de Glenans followed by sailing directions for the approaches to, and passage up, the Gironde. These instructions are far from clear and that, together with an ignorance of the positions of the sandbanks in early and mid-fifteenth century, negates any attempt accurately to plot the Gironde passage. The information has been paraphrased, with the component courses numbered, to draw up a possible, but not definitive, passage plan:

1    *goo fro the saym southe est and be est and ye be in lx fadim deep and x and ye schal falle with olleron*

   *When in 60 fms*41 [about 10 nM W of the Chaussée de Sein], sail on 124° [128° would be better] until, at 10 fms, the N end of Oleron is abeam [and off about 6 nM W],
After the Gironde, the passage continues to the R. Adour with the Île de Pilier, tutpert and pollis mentioned as waypoints. polehead, piper, pollis, pekelerre and tutpert have been identified by Lester, with more or less confidence, as, respectively, Cordouan, a sandbank, a group of small islands or rocks, Picquelier Island in the Vendée, and Pointe de Talut on the W side of Belle-Île. The course given from the Pointe de Talut to pollis is the same as that from Belle-Île to the Île de Pilier; if pollis is the Pointe de la Coubre as above and confirmed below by the accuracy of the course from Coubre to the R. Adour, then the course from Talut to pollis should be 140º i.e. SE or SExS and not ESE.

Of the 11 identifiable courses given, only two are dangerously wrong while nine are ‘good’; an achievement of 82% safe courses. A further six courses, three of which are to do with the Gironde, offer insufficient information to be analysed. It is curious that the order of presentation of forward and back bearings varies: while Pointe de Raz to Penmarc’h, Penmarc’h to Belle-Île and Île de Sein to Île d’Oleron work southward, Penmarc’h to Île de Sein’ and Île de Sein to Ouessant lead northward (the last is given in part 2 in a southerly direction only). These courses may have been derived from observations made later or were perhaps gleaned from another rutter.

The tidal information is simplistic: four stream directions, one time of directional change and one Establishment from Île de Batz to Gibraltar. The stream directions said to be E off the Île de Batz and ENE off St Mathieu, are more or less correct for the flood tide, but SW off the Pointe de Raz corresponds to the ebb. Half tide, or three hours, delay in change of stream direction between Ouessant and Le Four is aberrant, being correctly approximately one hour after HW ashore. The one tidal Establishment given, 15.00 from the Pointe de Raz to the Straits of Gibraltar, is inaccurate; the Establishments from Brest to Bayonne are around 16.00 and at Gibraltar it is about 18.00. Vpdrawtis are presumably local tidal anomalies in estuaries and deep bays; the word occurs again in part 7 with the same apparent meaning.

Part 4 (H f. 134v, line 4 – f. 135r, line 14): The West Coast of France and Spain and to Ireland

Part 4 consists of bearings for courses between waypoints situated along the W coast of Europe; no other information is given except a single warning to beware the Chaussée de Sein, a
warning, curiously, for a passage which does not pass the Chaussée. The data fall into three
groups; the first progresses S from waypoints on the French W coast to havens in N Spain; the
second continues S with waypoints along the Iberian coast to Gibraltar; and the third works N
with offshore courses from NW Spain to the Scilly Isles and Ireland. Because of the specialised
nature of the information (courses only), this part gives the appearance of being an extract from
a thematically organised rutter. If that rutter were of southern provenance, the courses might
be expected to be given S to N, but only seven of the 30 courses are defined by the S to N bear-
ing first, all but one of which start from Spain. The remaining 23 courses reflect the usual
direction of the English rutter, i.e. N to S, and are probably original material. It is possible, of
course, that an extract from an earlier, unknown, thematic English rutter, has been augmented
by borrowings from a rutter of southern provenance. The identifiable courses are listed in
table 4.

Pollis, of uncertain location, appears again as a waypoint; if it is taken, as in part 3, as the
Pointe de la Coubre (although Corduan is also possible), the course given (248º) is good as far
as Ortegal from where it must be altered for Finisterre. A direct course of 185º from Île de Yeu
to Cabo Machichaco would pass over the dangerous Plateau de Rochebonne; the given course of
146º clears well to the E of the Plateau but requires a correction, which is not given, to make the
dog-leg. The E/W Adour to Finisterre course leads over the Ortegal peninsula and may have
been meant merely as a directional indicator; to sail clear of land the course from the Adour has
to be no less than 275º. The S-bound course from the Ilhas Berlengas to Cabo Roca (158º) also
leads over land and would have to be no less than 180º to pass clear. W-bound from Cabo St Vin-
cent to Cabo St Maria the course must be S of W to avoid land and not 281º, and the courses
involving Cadiz are confused.

Analyses of the courses in table 4 show that there are 8 ‘good’ (26%), 8 ‘acceptable’ (26%)
and 6 ‘aberrant’ (19%) with a further 9 aberrant but possibly explicable, that is, something over
52% safe courses. Of the eleven courses from Brittany to N Spanish havens, eight arrive E of
the objective (and three to the W); the sample is too small to draw conclusions, but this may be
evidence either of ‘fail-safe’ navigation – make landfall and turn to starboard (W) – or allowance
has been made for the westerly current which sets along the N coast of Spain.

Part 5 (H f. 135r, line 14 – f. 137v, line 5): Land’s End to the Isle of Man

Part 5, the longest in the rutter, begins A newe cours & tide betwene engelonde and erelonde,
suggesting, as did Richard Proude’s newe Routter of the northe partis, that this was either com-
pletely new information or an edited version of an older (and now unknown) pilot. The initial
courses lead from the SW of England to Irish havens between Tuskar Rock and the Old Head of
Kinsale; a stretch of coast beyond which, in the fifteenth century, the crews of English ships sail-
ing N and W respectively of those waypoints, were entitled to a wage increase of 20%. There
are also courses cross-linking the Irish S coast havens and two passages to the N of Ireland, one
clockwise around Ireland and the other anti-clockwise, the two meeting at Fair Head in the NE.
The Part ends with courses linking SW England, the Isle of Man, Wales and Ireland and finally,
an unusual invitation to take one’s rest at Rhuddlan in N Wales.

The courses are grouped roughly, but not exclusively, into: England to Ireland; England to
Wales and Lundy; along the S coast of Ireland; W and N coasts of Ireland; E coast of Ireland; and
courses across the Irish Sea. The directions are in narrative form, alternating courses with tidal
streams but for which there are no tidal Establishments. Within this restricted range of sailing
directions there is more detail than elsewhere in the rutter, with information about rocks, nar-
row channels and unexpected tidal stream directions. There are, however, no soundings, sea-bed
descriptions, harbour approaches or anchorages.
About 40 locations are named but not all are links in a chain of waypoints; some, for example the Bishop Rocks, have no commercial significance but may have been included as markers for tidal information. The location of St. Thomas Head is suggested by Lester to be between Weston-super-Mare and Cleveland but the course from there to Skomer would pass over St. Anne’s Head (the N point of the entrance to Milford Haven); a back bearing from Skomer gives a good course to Bideford Bay, one promontory of which might have been known as St. Thomas Head. Overall, the courses between SW England and Ireland and along the S coast of Ireland are identifiable and achieve four ‘good’, two ‘acceptable’ and two ‘aberrant’, i.e. 75% safe courses.

The courses in St. George’s Channel and the Irish Sea between England, Ireland, Wales and the Isle of Man, achieve seven ‘goods’, two ‘acceptables’ and two ‘aberrants’, a safe rate of 82%, although, as in part 2, the inclusion or omission of compensation for tidal drift is not known.

The passage around the W and N of Ireland is confused, with difficult identifications, waypoints out of sequence, and courses leading over land. To attempt to clarify the directions, the information from Blasket Sound to Rathlin Island has been paraphrased; the numbers denote individual legs of the passage:

1. blaskay and the ackiles – northe and southe
2. blaskey and the stakis of connothe – north northe est and southe southe west
2a. (but thou must goo northe and be est for a rok)
3. the stakis of rounney and the londe ende of erlonde northe est and southe southe west
3a. (and soo thou must goo to the ylonde of torre)
4. the stakis of connoth and [destination omitted] southe west and northe est
5. fro the stakis of connoth to the legge of rabyn the cours is west southe west and est northe est
6. the sownde of torre lyeth west southe west and est northe est
7. the sownde and the furlonde be est loswille lyeth west southe west and est northe est
7a. (but be ware of the rok in the baye of loswille).
8. fro the forlonde of loswille to donsmers hede the cours is west northe west and est southe est
9. the sownde of ranseyves the same cours with benostor.

The correct passage from Great Blasket Island around the N of Ireland is: Blasket Islands – Stags of Connaught (off Broadhaven Bay) – Stags of Rouney (off the Island of Aran) – Sound of Tory – Malin Head – Rathlin Isle – Fair Head. Using that passage plan as a template, the rutter’s information, after correction of the order of waypoints, may be interpretated as follows:

Passage 1, from Blasket Islands to Achill Island is good. There is no course from Achill to the Stags of Connaught, but see passage 2.

Passage 2, from Blasket to the Stags of Connaught, is acceptable provided Achill, which lies on the direct route, is avoided (see passage 1).

Passage 5, from the Stags of Connaught to Rathlin Isle, subsumes passage 4, if the omitted destination is the Stags of Rouney (Island of Aran), and passages 3, 3a and 6, (although 3 omits the course for the final leg from Malin Head to Rathlin Isle).

Passage 9 is obscure but is perhaps from the Sound of Rathlin to Fair Head on the NE coast, meeting there the anticlockwise passage to complete the circumnavigation; Lester agrees that benestor might be Fair Head.

Passage 8 appears to be a diversion from the circumnavigatory voyage; it leads into Loch Swilly suggesting that donsmers head might be Dunree Head on the E side of Loch Swilly, a course which would keep a ship clear of the rocks mentioned in 7a; Lester, however, suggests Dunmore Head, Donegal for donsmers head and therefore precludes entry into Loch Swilly.

The large number of suppositions and assumptions renders useless any estimate of accuracy of the courses on the W and N coasts of Ireland, but it is clear that several are only indications of general direction, not intended for detailed navigation.
Tidal streams in St. George’s Channel and the Irish Sea follow the coastline on both sides but radiate from and to an amphidrome in the channel between Ireland and the S end of the Isle of Man. The stream directions given in the rutter are in-shore or in havens and appear to be generally accurate. In St. George’s Channel the stream changes direction at 3 to 4 hrs after HW Milford Haven and Cork, cf. the 3 hours in the rutter for Milford Haven, Tuskar and all that see between erlonde and walis. In the Irish Sea, the streams reverse at about the time of HW Belfast, cf. the 1.5 hours delay reported in the rutter for Copeland Island, Dundalk and Ardglass. In general, therefore, the reported times are acceptable. It may be significant that there is no tidal information on the N coast of Ireland where streams are strong – was Ireland generally not circumnavigated? No serious tidal streams are encountered on the W side of Ireland, except around headlands, but these, too, are unnoticed.

Part 6 (H f. 137v, line 6 – f. 138r, line 12): The Gironde to Ouessant and Beachy Head

The format of part 6 is thematic, listing only pairs of soundings and descriptions of the sea-bed, both with reference to waypoints between the Gironde and England. Alone, it would have been of little use to a navigator and it is probable that it is an extract from another complete set of sailing directions. Because of its intrinsic interest it has been transcribed and analysed in tables 6a and 6b and, with two reservations, that information has been used to plot a hypothetical offshore course across the Bay of Biscay.

The first reservation concerns the rutter’s tidal datum and the height of the tide when the soundings were made, both of which are unknown. The depths given in the rutter cannot be related with any certainty to the Admiralty chart datum and, as the range of Spring tides on the French coast can be over 6m, there would be a significant error if HW or LW were wrongly chosen as the tidal height when the depths were measured. As the minimum depth is generally of greater importance to mariners than the maximum, however, it is probable that the soundings were either made at, or converted to, LWS, and that, given the lack of sophisticated bathymetry in the fifteenth century, LWS was the rutter’s datum. In table 6b, the soundings have been converted from fathoms to metres and corrected, on those assumptions, to conform to an Admiralty chart. Although these corrected soundings must be regarded with circumspection, any error will be common to all positions and, as the isobathic lines in the Bay follow the shape of the coast, any hypothetically reconstructed course based on soundings should be parallel to the actual.

The second reservation is the meaning of the recurring phrase opyn o in the context of an offshore passage. In current nautical English, ‘open of’ defines the spatial relationship between an object and a ship, for example, a mark which has become visible or abeam, the latter situation implying that the line of sight is at right angles to the ship. In the rutter, opyn o requires other interpretations since in its first occurrence, opyn o geronde, it almost certainly means ‘clear of the Gironde estuary’ and in subsequent appearances it refers to waypoints which would be out of sight during an off-shore passage. When used in reference to out-of-sight waypoints, open o must have had an alternative meaning.

The first possible interpretation is that shipmasters, accustomed to coasting around the Bay knew, from experience, the in-shore distances between waypoints. The distance run on an off-shore course (i.e. elapsed time x speed), therefore, with some instinctive correction for the difference between the length of the off-shore chord and the inshore arc, could give the shipmaster his approximate position relative to invisible waypoints. Alternatively, and more controversially, the meaning of opyn o might have been ‘at the same astral height as’, an expression which an experienced mid-fifteenth century English shipmaster would almost certainly have understood from talking to Iberian seamen to mean ‘due E or W of’, a convenient navigational fix off
the W coast of France. Although actually taking astral heights was, so far as is known, not part of an English shipmaster’s expertise, it was within the capabilities of contemporary Portuguese seamen, suggesting the possibility of some Iberian influence in the compilation of part 6 of the English rutter.46

The suggested ‘on the latitude of’ meaning for opyn o fails in the Channel section of the passage, where the phrase relates to waypoints such as The Lizard and Beachy Head becoming visible in a northerly direction. It is possible, therefore, that there are two components to part 6; the Bay of Biscay section, possibly of Iberian provenance and reflecting the use of astro-techniques for out-of-sight waypoints, and the Channel section, of English provenance, based on traditional, visible waypoints as listed in part 2 of the rutter. The phrase ‘open of’ occurs twice elsewhere in the rutter, both instances in part 3: La Lande ‘visible from behind’ the Île de Batz, and the ship ‘abeam of’ Terre Nègre in the Gironde; neither occurrence contributes to the present debate.

Using the data in table 6b, the soundings were pricked on a chart on lines drawn to correspond with each interpretation of opyn o, in one case subtended at right angles to the ship’s course (‘abeam’) and in the second, due W from the waypoint. Two courses were then drawn from the Gironde to Ouessant between the pairs of soundings given in the rutter. The course based on the interpretation of opyn o as ‘abeam’ was found to be irregular and took ships over the Plateau de Rochebonne. The course based on opyn o meaning ‘on the latitude of’ was, with the omission of one obviously erronious sounding, straight and clear of all dangers. The rutter’s picturesque description of the sea-bed at each sounding (‘stinking mud’ and ‘fishy stones’) was compared with the more mundane Admiralty data (‘mud’ and ‘stones’) and with known geological conditions; a good coincidence was found over the length of the ‘latitude’ course.47

This hypothetical course runs from the Pointe de la Coubre, on a bearing of 310° (probably thought of as NW (315º), across the Bay of Biscay.48 It passes just clear E of the Plateau de Rochebonne which lies 35–40 nM W of the Île de Ré, and about 15 nM W of the end of the Chaussée de Sein and its off-lying rocks. Extrapolation of the course beyond the Île de Sein leads further to the W of Ouessant than the positions indicated by the soundings and than is necessary for ships bound for England. It is probable, therefore, that an alteration of course from the original 310° to due N was made, probably between the latitudes of the Île de Sein and Penmarc’h, to pass between the two rutter soundings opyn o Ouessant and to lead more conveniently into the Channel. The course across the Bay of Biscay before the alteration also appears to lead further to the W than is necessary (after passing the Plateau de Rochebonne) but this may have been an allowance for the easterly set of the current.49 The section of chart in illustration 3 shows the suggested passage plan from the mouth of the Gironde to Ouessant, including the northerly alteration. It is some 260 nM in length which would require at least two days and nights, during most of which a ship en voyage would be out of sight of land.

It is known that ships, including those carrying pilgrims, were sailing off-shore between England and the Iberian peninsula in the fifteenth century and, indeed, parts 4 and 7 of the rutter give courses for such passages. It is not known, however, if the wine ships bound for England and northern Europe followed the French coastline or sailed off-shore across the Bay of Biscay, if they passed through or outside the Chênal du Four, and if outside, whether they sailed to the E or W of Ouessant. And, if bound for England, did they sail straight across the Channel and then follow the English coast eastward, or did they cross diagonally to a convenient English waypoint? Copland’s rutter gives only coastal sailing directions from Ouessant to the Gironde and so, in default of any other information, it has been assumed that the wine ships held inshore.50 The hypothetical passage plan described here, however, indicates that the wine ships sailed off-shore to the W of Ouessant and then diagonally across to Beachy Head. The coast of Brittany was notoriously dangerous and by sailing directly from Bordeaux to Ouessant ships
could avoid the dangerous headlands, reduce the risks of piracy, and save time on the passage. It would be surprising if the offshore route was not generally used by shipmasters with compasses and confidence.

If the course required an understanding of latitude, the first section of part 6 could not have been compiled by an English shipmaster before the second half of the fifteenth century. Iberian ships had been trading between Biscayan and English ports since the thirteenth century, however, and it is possible that an English seaman, aware of the Iberians’ ability to calculate their ‘northing’, had the Bay of Biscay section of a roteiro copied and translated without fully understanding the techniques involved, a situation presaging the translation by Copland of García’s routier. In translation, perhaps, altura became ‘open of’, a term with which English shipmasters were familiar. A southern European provenance for the Biscay directions would also explain the progression in this Part from S to N.

Part 7 (H f. 138r, line 12 – f. 138v, line 5): Northwest Spain to Southeast and Southwest England

This highly specialised part of the rutter, perhaps incomplete, appears to be the work of yet another hand; in 28 lines of text it offers only two courses from NW Spain to SW and SE England. No tidal information was necessary for much of this passage as there would have been little or no off-shore stream, and no soundings by lead-line were possible until the continental shelf was reached and the course led into the Channel.
After beginning here beth the groundes of Engelonde bretayne and cille, (which is inappropriate) the instructions may be interpreted as follows: a course of 23º from Cape Finisterre is to be followed until, at an estimated two parts ouyr the see, those bound for the Severn should alter course to 11º, and at an estimated three parts, those bound for the Channel should alter to 34º. The Severn-bound ships stay on 11º until they reach soundings when they alter again to due N until reaching 72 fms and fair grey sand. They are then on the Rig, between Cape Clear and the Scilly Islands, and should continue N until they find mud, when the course should be altered to 68º or 79º, and thence to Stepilhorde. The Channel-bound ships hold the 34º course until they reach soundings when they alter to 45º until they are in 40 fms. If they find there stremy gronde they are between Ouessant and the Scilly Islands and must hold their course until they find 60 fms from where the course is 68º alonge the see, et cetera.

A reconstruction of these instructions is not straight-forward. In default of other information, a ‘part’ has here been interpreted as a quarter of the distance from Finisterre to Land’s End; as this is c. 480 nM, the first alteration of each course takes place at c. 240 nM for the Severn passage and c. 360 nM for the Channel passage. For the former, the first leg of 240 nM on a course of 23º, followed by 11º, leads to the edge of the continental shelf after c. 11 nM at a depth of 90 to 100 fms with fine grey sand on the sea-bed (Jones Bank). A further 140 nM due N then leads to an area of muddy bottom at c. 40 fms whence a 45º course leads into the middle of the Bristol Channel. From there a 79º course leads to the S side of that Channel. These directions certainly allow a safe passage, but Jones Bank (if it is still in the same position) is too far S to be the rig and the alternative of Labadi Bank, which also has fine sand, is not S of a muddy area. Stepilhorde and its coppid hill, which ye schal not fayle by much, has not been identified but appears to be somewhere on the S side of the Bristol Channel. Lester suggests that stepilhorde is Steephill, Ventnor, Isle of Wight, but the ship should be in the Severn estuary; the meaning of coppid hill, unexplained by Lester, is probably ‘like a high-crowned hat’.

For those ‘bound for the narrow sea’ (the Channel) the passage follows a sweeping arc of c. 360 nM around NW Brittany to an uncertain point on the N side of the Channel; the distances and final location cannot be accurately calculated as the depths given do not correspond with those on today’s Admiralty charts. Towards the end of the passage a shipmaster would be able to identify points on the English coast and could refer to part 2 of his rutter for the remainder of the voyage (which may explain the terminal et cetera).

Part 7 may have been added to the English rutter for shipmasters sailing to and from Coruña with Santiago de Compostela pilgrims, a route of growing popularity early in the fifteenth century. The S to N progression of the directions, the return voyage for an English ship, suggests a southern provenance for this part of the rutter. The somewhat abrupt ending perhaps marks the point at which the English editor of the rutter, copying from another pilot, realised that the passage had reached familiar waters. Although the instructions for both courses appear to be good, they imply several days of accurate steering out of sight of land and an accurate judgement of distance, calculated with the formula [elapsed time (by sand-glass) x estimated ship’s speed (by eye)] – with no possible confirmation of position by sounding until the final stages.

Summary

From the evidence of surviving copies, the assembly of navigational information which made up the fifteenth century English rutter, was an eclectic mix written in several styles and formats. Of variable accuracy and thoroughness, much of it would have been of little use to shipmasters unfamiliar with the areas described but as an adjunct to other contemporary sailing directions, the rutter could have been useful.
Parts 1, 2 and 3 contain incomplete sailing directions for the E coast of England, the Channel and the W coast of France; they are written in a narrative rather than thematic format, probably by the same hand, and appear to have been notes for the compiler’s own use. The first two parts, printed and published in 1541, may at one time have existed independently. Part 5 contains sailing directions for Ireland and the E coast of England; it is also in narrative style but with more detailed information. Duplications and some confusion of waypoints in this part, suggest the addition of information from other contributors to the compiler’s own notes.

Parts 4 and 6 are thematically organised sailing directions, the former giving courses between waypoints on the W coasts of France and Spain and the latter listing waypoints, soundings and sea-bed information in the Bay of Biscay and Channel. They appear to be largely extracts taken from sailing directions of northern and southern provenance. A hypothetical off-shore passage from the Gironde to England has been plotted from the information in part 6. Part 7 bears no resemblance to any of the preceding parts; written in narrative form, it is very specialised, with complete sailing directions for two passages between Cape Finisterre and England. It appears to be of southern origin and was intended for ships returning pilgrims from Coruña to England.

Tidal stream directions, included only in those parts written in narrative format, are detailed and generally accurate but tidal Establishments, landmarks and distances are omitted except in part 7 in which distances en voyage are given. Information about the nature of the seabed is given only sporadically except in Part 6 in which it is detailed and accurate and related to waypoints and soundings. The accuracy of course bearings varies from 87% safe in part 3, 70% in part 2 and about 50% safe in parts 1, 4 and 5, although knowledge of incorporated tidal allowances could improve these figures. The value of the rutter’s information would have been: parts 1, 2 and 3 – restricted in use to local seamen; parts 4, 5 and 6 – of limited use without other information; part 7 – complete and usable per se.

The compiler, or editor, appears to have been a late fourteenth/early fifteenth century literate shipmaster from the E coast of England. He may have carried wool to the Calais Staple, freighted to and from Brittany, Bordeaux, Spain and Ireland, and carried pilgrims to Coruña – or, at least, he prepared for such passages. The information in the rutter is eclectic, but that covering his home waters, especially if it were intended for the use of others, is less than generous.

Table 1a: Courses on E coast of England

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Rutter</th>
<th>Chart</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berwick</td>
<td>Golden Stones</td>
<td>S/N = 180º/360º</td>
<td>123º/303º</td>
<td>aberrant course</td>
</tr>
<tr>
<td>Holy Isle</td>
<td>Berwick</td>
<td>WNW/ESE = 292º/112º</td>
<td>301º/121º</td>
<td>acceptable course</td>
</tr>
<tr>
<td>Bamburgh</td>
<td>Farne Islands</td>
<td>N/S = 360º/180º</td>
<td>075º/255º</td>
<td>aberrant course</td>
</tr>
<tr>
<td>Tynemouth</td>
<td>Farne Islands</td>
<td>NNW/SSE = 337º/157º</td>
<td>351º/171º</td>
<td>aberrant course</td>
</tr>
<tr>
<td>Flamborough</td>
<td>Hunt Cliff</td>
<td>NW/SE = 315º/135º</td>
<td>321º/141º</td>
<td>see text</td>
</tr>
<tr>
<td>Huncliff</td>
<td>Humber</td>
<td>SE/SNWXN = 146º/326º</td>
<td></td>
<td>see text</td>
</tr>
<tr>
<td>Wainfleet</td>
<td>Flamborough</td>
<td>NNW/SSE = 337º/157º</td>
<td></td>
<td>safe but see text</td>
</tr>
<tr>
<td>Wainfleet</td>
<td>Cromer</td>
<td>ESE = 112º</td>
<td>108º</td>
<td>aberrant course</td>
</tr>
<tr>
<td>Spurn Head</td>
<td>Cromer</td>
<td>SE = 135º</td>
<td></td>
<td>good course</td>
</tr>
<tr>
<td>Kirklees</td>
<td>Orfordness</td>
<td>SxW = 191º</td>
<td></td>
<td>good course</td>
</tr>
<tr>
<td>Orfordness</td>
<td>Orwell</td>
<td>SW = 225º</td>
<td></td>
<td>good course</td>
</tr>
<tr>
<td>Orwell</td>
<td>Naze</td>
<td>SW = 225º</td>
<td></td>
<td>good course</td>
</tr>
</tbody>
</table>

The courses given between The Naze and the sandbanks the spetis, the horse scho, the grene banke, the slade, the brakis and the knake are too uncertain to be appraised.
Table 1b: Tidal streams on E coast of England

<table>
<thead>
<tr>
<th>Location</th>
<th>Stream</th>
<th>Delay to Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bamburgh</td>
<td>NNW</td>
<td>quarter tide be-owtyn</td>
</tr>
<tr>
<td>Tynemouth</td>
<td>NE/SW</td>
<td>= 1 hr 30 m</td>
</tr>
<tr>
<td>Flamborough/Huntcliff</td>
<td>WSW/ENE</td>
<td></td>
</tr>
<tr>
<td>Whitby</td>
<td></td>
<td>half [tide]</td>
</tr>
<tr>
<td>Huntcliff/Humber</td>
<td>SExS/NWxN</td>
<td>= 3 hrs</td>
</tr>
<tr>
<td>Flamborough</td>
<td>NW/SE</td>
<td>quarter tide and half [tide]</td>
</tr>
<tr>
<td>Holderness on the londe</td>
<td>NE</td>
<td>(? or 1/4 tide &amp; 1/2 of quarter)</td>
</tr>
<tr>
<td>The Well</td>
<td>E/W</td>
<td>= 2 hr 15 m</td>
</tr>
<tr>
<td>Cromer on the londe</td>
<td>WNW</td>
<td>half streem vndir rothir</td>
</tr>
<tr>
<td>Winterton/Kirkley on the londe</td>
<td>NW</td>
<td>half streem vndir rothir</td>
</tr>
<tr>
<td>Kirkley/Orfordness</td>
<td>SSE</td>
<td>quarter tide</td>
</tr>
<tr>
<td>Orfordness/Orwell</td>
<td>SSE</td>
<td>= 2 hr 15 m</td>
</tr>
<tr>
<td>Orwell haven</td>
<td>S/N</td>
<td></td>
</tr>
<tr>
<td>Orwell/Naze</td>
<td>SxE</td>
<td></td>
</tr>
<tr>
<td>Shoeburyness</td>
<td>S/N</td>
<td></td>
</tr>
<tr>
<td>Kentish Knock</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>N end Goodwin</td>
<td>SSW</td>
<td></td>
</tr>
<tr>
<td>S end Goodwin</td>
<td>SWxS</td>
<td></td>
</tr>
<tr>
<td>Thanet/? Whitstable</td>
<td>SSE</td>
<td></td>
</tr>
<tr>
<td>Sandwich &amp; Davies Gate</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>The Downs</td>
<td></td>
<td>half tide vndir rothir</td>
</tr>
</tbody>
</table>

Table 2a: Courses along the English Channel

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Rutter</th>
<th>Chart</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Margaret’s Stairs</td>
<td>Dungeness</td>
<td>SSW = 202º</td>
<td>227º</td>
<td>course safe but into fairway,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>not to Dungeness</td>
</tr>
<tr>
<td>Needles</td>
<td>Cornwall</td>
<td>W = 270º</td>
<td></td>
<td>indicative of direction only?</td>
</tr>
<tr>
<td>Portland</td>
<td>Berry Hd.</td>
<td>WxS = 259º</td>
<td>261º</td>
<td>acceptable course</td>
</tr>
<tr>
<td>Berry Hd.</td>
<td>Start Pt.</td>
<td>WSW = 247º</td>
<td>210º</td>
<td>good course</td>
</tr>
<tr>
<td>Start Pt.</td>
<td>Lizard</td>
<td>W = 270º</td>
<td>259º</td>
<td>aberrant course</td>
</tr>
<tr>
<td>Lizard Point</td>
<td>Land’s End</td>
<td>WNW = 292º</td>
<td>286º</td>
<td>acceptable course</td>
</tr>
<tr>
<td>Land’s End</td>
<td>Longships</td>
<td>NNW = 337º</td>
<td>315º</td>
<td>aberrant but short passage</td>
</tr>
<tr>
<td>Longships</td>
<td>St. Mary’s</td>
<td>WSW = 247º</td>
<td>247º</td>
<td>good course</td>
</tr>
<tr>
<td>From</td>
<td>To</td>
<td>Rutter</td>
<td>Chart</td>
<td>Comments</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------</td>
<td>---------------</td>
<td>--------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>The Downs</td>
<td>Calais</td>
<td>SE = 135°</td>
<td>140°</td>
<td>? tidal allowance</td>
</tr>
<tr>
<td>Dungeness</td>
<td>Cap Griz-nez</td>
<td>E = 090°</td>
<td>096°</td>
<td>acceptable course</td>
</tr>
<tr>
<td></td>
<td>Dieppe</td>
<td>SExE = 124°</td>
<td>177°</td>
<td>? tidal allowance</td>
</tr>
<tr>
<td></td>
<td>R. Somme</td>
<td>ESE = 112°</td>
<td>153°</td>
<td>? tidal allowance</td>
</tr>
<tr>
<td></td>
<td>Cap de la Hève</td>
<td>SSW = 202°</td>
<td>202°</td>
<td>good course</td>
</tr>
<tr>
<td>Beachy Head</td>
<td>Cap de la Hève</td>
<td>S = 180°</td>
<td>186°</td>
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</tr>
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<td></td>
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<td></td>
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<td>207°</td>
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<td></td>
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<td>214°</td>
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<td>popil hope</td>
<td>Le Four</td>
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<td>?</td>
<td>departure unidentified</td>
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<td>?</td>
<td>departure unidentified</td>
</tr>
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<td>Le Four</td>
<td>SWxS = 214°</td>
<td>205°</td>
<td>acceptable course</td>
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<td>190°</td>
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<td>Rame Head</td>
<td>Le Four</td>
<td>SSW = 202°</td>
<td>193°</td>
<td>acceptable course</td>
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<td>198°</td>
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<td>Le Four</td>
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<td>SxE = 169°</td>
<td>171°</td>
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<td>Scilly Isles</td>
<td>Le Four</td>
<td>SE = 135°</td>
<td>142°</td>
<td>safe course W of Ouessant</td>
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<td>Ouessant</td>
<td>SExS = 146°</td>
<td>154°</td>
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<td></td>
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<td>SSE = 157°</td>
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### Table 2c: Tidal Streams in the English Channel

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<td>S</td>
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<tr>
<td>Hastings</td>
<td></td>
<td>= 2 hr 15 m</td>
</tr>
<tr>
<td>Beachy Head</td>
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<tr>
<td>St. Catherine’s Pt.</td>
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<td>= 3 hrs</td>
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<tr>
<td>St. Catherine’s Pt. – St. Helens</td>
<td></td>
<td>quarter tide</td>
</tr>
<tr>
<td>St. Helens – Chichester</td>
<td></td>
<td>= 1 hr 30 m</td>
</tr>
<tr>
<td>Solent [Establishment]</td>
<td></td>
<td>half tide vndir rothir</td>
</tr>
<tr>
<td>Hastings</td>
<td></td>
<td>= 3 hrs</td>
</tr>
<tr>
<td>Beachy Head</td>
<td></td>
<td>quarter tide</td>
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<tr>
<td>St. Catherine’s Pt.</td>
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<td>= 1 hr 30 m</td>
</tr>
<tr>
<td>St. Catherine’s Pt. – St. Helens</td>
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<td>half tide vndir rothir</td>
</tr>
<tr>
<td>St. Helens – Chichester</td>
<td></td>
<td>= 3 hrs</td>
</tr>
<tr>
<td>Needles</td>
<td></td>
<td>southe mone maketh hiest water</td>
</tr>
<tr>
<td>Poole harbour</td>
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<td>HWS = 12.00 hrs</td>
</tr>
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<td>Weymouth harbour</td>
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<td>Portland Bill</td>
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<tr>
<td>Start/Lizard [Establishment]</td>
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### Table 3a: Inshore Courses on the Western Seaboard of France

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<td>St. Malo</td>
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<td>ENE/WSW</td>
<td>aberrant course</td>
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<td></td>
<td>For ships E-bound</td>
<td>NE</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td>For ships W-bound</td>
<td>WSW</td>
<td>?</td>
</tr>
<tr>
<td>Chéanal du Four</td>
<td>Sx/E/NxW = 169º/349º</td>
<td>169º</td>
<td>good course</td>
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<tr>
<td>Pte. de Raz</td>
<td>NW/SE = 135º/315º</td>
<td>137º</td>
<td>good course</td>
</tr>
<tr>
<td>Penmarc’h</td>
<td>NWxW/SExE = 124º/304º</td>
<td>124º</td>
<td>good course</td>
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<tr>
<td>Sein</td>
<td>N/S = 000º/180º</td>
<td>170º</td>
<td>acceptable course</td>
</tr>
<tr>
<td>Penmarc’h</td>
<td>WNW/ESE = 112º/292º</td>
<td>116º</td>
<td>good course to E isle</td>
</tr>
<tr>
<td>Sein</td>
<td>SExE = 124º</td>
<td>130º</td>
<td>good course</td>
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<tr>
<td>– approaches to the Gironde (Oleron to Castillon) are discussed in the text –</td>
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<td>Belle-Île</td>
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<tr>
<td>– for discussion on location of pekelerre and pollis, see text –</td>
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<tr>
<td>Belle-Île</td>
<td>pekelerre</td>
<td>WNW/ESE = 292º/112º</td>
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<tr>
<td>Talut Pt.</td>
<td>pollis</td>
<td>WNW/ESE</td>
<td>140º</td>
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<tr>
<td>pollis</td>
<td>R Adour</td>
<td>S &amp; N</td>
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Table 3b: Tides on the Western Seaboard of France as given in the Rutter

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<td>E/W</td>
<td>half tide = 3 hrs</td>
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<td>Ouessant – Le Four</td>
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<td></td>
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<tr>
<td>St. Mathieu</td>
<td>SW/NE</td>
<td></td>
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<tr>
<td>Pte. de Raz</td>
<td>a southe west mone maketh hiest</td>
<td>HWS = 15.00 hrs</td>
</tr>
<tr>
<td>Pte. de Raz – Gibraltar</td>
<td>water be the see coste and in the vpdrawtis it dooth not soo</td>
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<tr>
<td>Îles de Glenans</td>
<td>SW/NE</td>
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Table 4: The W Coast of France and Iberia and to Ireland

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<td>Île de Yeu</td>
<td>C. Machichaco</td>
<td>SExS/NWxN = 146°/326°</td>
<td>185°</td>
<td>see text</td>
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<tr>
<td>Belle-Île</td>
<td>C. Machichaco</td>
<td>SxExNWX = 169°/349°</td>
<td>175°</td>
<td>acceptable course</td>
</tr>
<tr>
<td>Belle-Île</td>
<td>Sântoña</td>
<td>S/N = 180°/360°</td>
<td>183°</td>
<td>good course</td>
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<tr>
<td>Belle-Île</td>
<td>Santander</td>
<td>NxE/SxW = 011°/191°</td>
<td>186°</td>
<td>good course</td>
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<tr>
<td>Belle-Île</td>
<td>C. Ortegal</td>
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<td>R. Adour</td>
<td>SE/NW = 135°/315°</td>
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<tr>
<td>C. Machichaco</td>
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<td>SExS/NWxN = 146°/326°</td>
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<tr>
<td>Sein</td>
<td>Sântoña</td>
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<td>C. Sta. Maria</td>
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<td>C. Sta. Maria</td>
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<td>C. Ortegal</td>
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<td>Scillies</td>
<td>SE/NW = 135°/315°</td>
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<td>Kinsale</td>
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<td>To</td>
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<td>Seven Stones</td>
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<td>063º</td>
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<td>Seven Stones</td>
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<td>Old H. Kinsale</td>
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<td>Copeland I.</td>
<td>wulwefrith ?</td>
<td>NNE/SSW = 022º/202º</td>
<td></td>
<td>? Firth of Clyde</td>
</tr>
<tr>
<td>Wolverfrith</td>
<td>benestor ?</td>
<td>SSE/NNE = 157º/337º</td>
<td></td>
<td>? Fair Head/ Anglesey</td>
</tr>
<tr>
<td>Copeland I.</td>
<td>S of I. of Man</td>
<td>SxE/NWxW = 124º/304º</td>
<td>147º</td>
<td>aberrant course</td>
</tr>
<tr>
<td>I. of Man</td>
<td>Ardglass</td>
<td>ENE/WSW = 067º/247º</td>
<td>080º</td>
<td>(to N of I. of Man)</td>
</tr>
<tr>
<td>I. of Man</td>
<td>Lambay I.</td>
<td>NE/SW = 045º/225º</td>
<td>052º</td>
<td>S end of I. of Man</td>
</tr>
<tr>
<td>Howth</td>
<td>Holyhead</td>
<td>E/W = 090º/270º</td>
<td>093º</td>
<td>W end – good course</td>
</tr>
<tr>
<td>Lambay</td>
<td>Ramsey I.</td>
<td>N/S = 360º/180º</td>
<td>175º</td>
<td>good course</td>
</tr>
<tr>
<td>Wicklow</td>
<td>Ramsey I.</td>
<td>NNW/SSE = 337º/157º</td>
<td>159º</td>
<td>good course</td>
</tr>
<tr>
<td>Leave Wicklow</td>
<td></td>
<td>SE/NW = 135º/315º</td>
<td></td>
<td>clears Wicklow Hd.</td>
</tr>
<tr>
<td>Tuskar</td>
<td>Ramsey I.</td>
<td>E/W = 090º/270º</td>
<td>124º</td>
<td>aberrant course</td>
</tr>
<tr>
<td>Waterford</td>
<td>Gresholm I.</td>
<td>E/W = 090º/270º</td>
<td>108º</td>
<td>(to clear Bishop Rock)</td>
</tr>
<tr>
<td>Location</td>
<td>Stream</td>
<td>Delay to Change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-------------------</td>
<td>-----------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milford Haven</td>
<td>E/W</td>
<td>half streme vndir rothir = 3 hrs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outside Milford Haven</td>
<td>NE/SW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land’s End – Lunday</td>
<td>WSW/ENE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lunday – Holmes Islands</td>
<td>ExN/WxS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron Grounds</td>
<td>NE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridgewater</td>
<td>WNW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lunday – Holmes Islands</td>
<td>E/W</td>
<td>[duplication of three items above]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Holmes – ketelis wood – Portishead</td>
<td>WxN/ExS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>King Road</td>
<td>E/W</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>all that see between erlond and walis goth</td>
<td>half tide vndir rothir = 3 hrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barrel Rocks – Small Rocks</td>
<td>NNE/SSW</td>
<td>half tide vndir rothir = 3 hrs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>for it floweth on land</td>
<td>E/W</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuskar – Dunmore</td>
<td>WSW/ENE but in the updrawtes it dooth not so</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuskar – the red banke</td>
<td>half tide vndir rothir = 3 hrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuskar – Benmore/Fair Head</td>
<td>SSE/NNW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copeland I. – Dundalk – S Ardglass</td>
<td>quarter tide vndir rothir = 1.5 hrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small I. – Barrels Rocks – Bardsey I.</td>
<td>all that see goth half tide = 3 hrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>on the mayne londe</td>
<td>E/W</td>
<td>half tide = 3 hrs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ramsey Island</td>
<td>N/S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bishop Rocks</td>
<td>NNW/SSE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 6a: Transcription, translation and commentary, part 6

<table>
<thead>
<tr>
<th>Transcription (paragraphed to match the translation)</th>
<th>Translation (punctuation added, names modernised)</th>
<th>Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opyn o geronde ther is wose and sonde to gedir &amp; it is bein xij or xiiiij or xvij fadim deep up on o pertus mamoschant there is styn-kynge wose and xij fadim deep Opon o pertus antiage ther is blak sonde</td>
<td>When clear of the Gironde, there is mud and sand together and it is between 12 or 14 or 16 fms deep. When open of Pertuis Maumusson, there is stinking mud and 12 fms depth. When open of Pertius d’Antioche, there is black sand. When open of the Pointe d’Arseaux, in 24 or 26 fms depth, there is large gray sand and small black stones with large white shells amongst them. When open of the Île d’Yeu there is, in 50 or 60 fms depth, muddy sand. When open of the Loire, there are striped stones and white shells. When open of Belle-Île there is, in 60 fms or 70, small round sand. When open of the Pointe de Penmarc’h there is, in 50 fms, black mud. When open of the same, in 60 fms, there is sandy mud with black fishy stones amongst it. When open of Ouessant, in 50 or 60 fms, there is red sand and black stones with white shells amongst them. Between the Scilly islands and Ouessant there are large striped pebbles with white shells amongst them. Outwith the Scillies, WSW of them, the bottom is red sand with white shells amongst it.</td>
<td>Opyn o is ambiguous, see text. geronde is grounde in L. Pertius Maumusson is the passage S of Île d’Oleron. Pertius Antioche lies between Île de Ré and Île d’Oleron. leyre is assumed to be the Loire. stremy is assumed to be ‘veined’. gronde here appears to refer to the material lying on the sea-bed. dial sand is assumed to be round grains suitable for an hour-glass. fischey stones are ‘mica fish’. Beyond Ouessant has been included here only for interest.</td>
</tr>
</tbody>
</table>
between cille and lesarde
the grounde is whit sonde
and white schellis amonge.
Opyn o lesarde is gret ston
as it were benys and it is
raggid ston. Opyn o dod-
man in xl fadim ther is red
sonde and white shellis and
smale blak stonis amonge.

Opon o portelonde ther is
fayre white sonde and xxi-
iij fadim with red schellis
ther in and in xiiiij or xvj
fadim ther is rokki grounde
and in som place ther is
fayre sley grounde Opon o
wiete ther is fer harde plat-
mer grounde and in the
farway in xxx fadim ther is
white chalk grounde Opon o
bechef ther is sonde and
grauell to gedir in xx fadim
deep.

Between the Scillies and
Lizard Point the bottom is
white sand with white
shells amongst it. When
open of Lizard Point, there
are large stones like beans
and it is rough stone. When
open of Dodman Point, in
40 fms, there is red sand
and white shells with small
black stones amongst them.
When open of Portland,
there is fair white sand and
24 fms with red shells
therein and in 14 or 16 fms
there is a rocky bottom and
in some places there is a
fair clay bottom. When
open of the Isle of Wight,
there is a fair hard flat bot-
tom and in the fairway, in
30 fms, there is a white
chalk bottom. When open
of Beachy Head, there is
sand and gravel together in
20 fms depth.

Dodman Point lies between
Falmouth and Fowey.

grounde here and below
must refer to the solid sea-
bed.
platmer is assumed to be
‘flat’.57
sley is cley in L which is al-
most certainly correct.
<table>
<thead>
<tr>
<th>Soundings</th>
<th>Sea-bed information</th>
<th>Postulated chart position</th>
<th>Distance from hypothetical course</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Open o</strong></td>
<td><strong>rutter</strong></td>
<td><strong>chart</strong></td>
<td><strong>lat. N</strong></td>
</tr>
<tr>
<td>The Gironde</td>
<td>12</td>
<td>M S</td>
<td>45°46’</td>
</tr>
<tr>
<td></td>
<td>or 14</td>
<td>M S</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or 26</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or 29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. Maumusson</td>
<td>12</td>
<td>‘stinking’ M</td>
<td>45°48’</td>
</tr>
<tr>
<td></td>
<td>or 22</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>P. d’Antioche</td>
<td>–</td>
<td>blk S</td>
<td></td>
</tr>
<tr>
<td>Pte. d’Arseaux</td>
<td>24</td>
<td>I gy S, sm blk St &amp; l w Sh</td>
<td>46°16’</td>
</tr>
<tr>
<td></td>
<td>or 26</td>
<td>S, Sh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or 48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>île d’Yeu</td>
<td>50</td>
<td>M S</td>
<td>46°42’</td>
</tr>
<tr>
<td></td>
<td>or 60</td>
<td>M S</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or 92</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Loire</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Belle-Île</td>
<td>60</td>
<td>sm rd S</td>
<td>47°19’</td>
</tr>
<tr>
<td></td>
<td>or 70</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or 129</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penmarc’h</td>
<td>50</td>
<td>blk M &amp; blk fishy stones</td>
<td>47°49’</td>
</tr>
<tr>
<td></td>
<td>or 60</td>
<td>M S &amp; S</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or 92</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Ouessant</td>
<td>50</td>
<td>r S, blk St &amp; w Sh</td>
<td>48°27’</td>
</tr>
<tr>
<td></td>
<td>or 60</td>
<td>S Sh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or 92</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Between Scillies and Ouessant</td>
<td>l ‘stremy’ gr</td>
<td>w Sh</td>
<td></td>
</tr>
<tr>
<td>Off Scillies to WSW</td>
<td>r S</td>
<td>w Sh</td>
<td></td>
</tr>
<tr>
<td>Between Scillies and Lizard Point</td>
<td>w S</td>
<td>w Sh</td>
<td></td>
</tr>
<tr>
<td>Lizard Point</td>
<td>l St ‘beans’</td>
<td>rough St</td>
<td></td>
</tr>
<tr>
<td>Dodman Point</td>
<td>40</td>
<td>r S</td>
<td>5 nM W of Ouessant</td>
</tr>
<tr>
<td></td>
<td>74</td>
<td>w Sh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>sm blk St</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portland</td>
<td>24</td>
<td>w S</td>
<td></td>
</tr>
<tr>
<td></td>
<td>44</td>
<td>r Sh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14/16</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>26/29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isle of Wight</td>
<td>‘hard platmer’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In fairway off Wight</td>
<td>30</td>
<td>w chalk gr</td>
<td></td>
</tr>
<tr>
<td>Beachy Head</td>
<td>20</td>
<td>S ‘gravel’</td>
<td></td>
</tr>
</tbody>
</table>

**Abbreviations used in table 6b**

(Abbreviations are based, where possible, on Admiralty usage):

- blk black, f fine, fy fishy, gr ‘ground’, gy gray, l large, r red, rd round, sm small, stk stinking, str striped, w white.
- M mud, R rock, S sand, Sh shells, St stones.

Note: A position within 1 nM of the hypothetical course has been deemed to be ‘on course’.
Table 7: Courses from NW Spain to SE and SW England

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Rutter</th>
<th>Chart</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finisterre</td>
<td><em>ij partis ouyr the see</em></td>
<td>NNE</td>
<td>= 023°</td>
<td></td>
</tr>
<tr>
<td>then</td>
<td>100 or 90 fms</td>
<td>NxE</td>
<td>= 011°</td>
<td>and be bounde in to seberne</td>
</tr>
<tr>
<td>then</td>
<td>72 fms, fair grey sand</td>
<td>N</td>
<td>= 360°</td>
<td>betwene clere and cille</td>
</tr>
<tr>
<td>then</td>
<td>mud</td>
<td>N</td>
<td>= 360°</td>
<td></td>
</tr>
<tr>
<td>then</td>
<td><em>stepilhorde</em></td>
<td>NE or ExN</td>
<td>= 045° or 079°</td>
<td></td>
</tr>
<tr>
<td>Finisterre</td>
<td><em>ij partis ouyr the see</em></td>
<td>NNE</td>
<td>= 023°</td>
<td></td>
</tr>
<tr>
<td>then</td>
<td>100 fms</td>
<td>NExN</td>
<td>= 034°</td>
<td>yf bone in to the narow see</td>
</tr>
<tr>
<td>then</td>
<td>80 fms, <em>stremey ground</em></td>
<td>NE</td>
<td>= 045°</td>
<td>betwene huschant and cilli</td>
</tr>
<tr>
<td>then</td>
<td>60 fms</td>
<td>ENE</td>
<td>= 067°</td>
<td></td>
</tr>
</tbody>
</table>

Appendix 1: Transcription of the Hastings MS rutter

The original foliation is noted in square brackets [ ]; line ends are marked |; each ‘part’ has been separated and numbered. Abbreviations have been silently expanded and Middle English ‘thorn’ has been modernised to ‘th’. Random punctuation in the original has been omitted; punctuation marks added to the transcription are enclosed in square brackets [ ]. The capitalisation of the original has been preserved and no capitals have been added. Obscure Middle English place names and words have been translated at first occurrence and, as with explicatory additions, are enclosed in square brackets [ ].

[f. 130v] Full page illustration of ships with unidentified landmarks (illustration 1).

Part 1

[f. 131r] [Line 1, illuminated initial B, 4 lines depth] berwik lieth southe and northe of golde stones [rocks between Holy Isle and the Farne Islands]. *the ylond* [Holy Isle] and berwik hauen lyne [west north west and est southe est. and | fro vamborow [Bamborough] to the pointe of the ylond | the course lieth north and south:] and beware of the | goldestones. hit floweth north north west and quarter | tide. be owten fro tilmith [Tynemouth] to fenyn ylond [Farne Island] the cours is | north northe west and south south est[;] and tilmote is tide | north est and southe west. betwene the hedlond [Flamborough Head] and | houndeclif fote [Hunt Cliff Foot] the cours is north west and south est[;] and it floweth west southe west and est northe est[,] | And at whiteybes [Whitby] halfe. And fro hounde clif fote to humbr [R. Humber] | the cours is southe est and be/southe[;] north west and be | northe. ffro leyrenes [Wainfleet] to the hedelound the cours is north | north west and southe southe est. At the hedelonde the | streme setteth north west and southe est[,] And it floweth on the londe of holdirnes north est and quarter | tide in the fairwoy. And at hedlondes quarter tide and | half. And yf ye goo fro leyrenes to the schelde [cliffs at Cromer] ye schal | goo est southe est for to goo clene of rosand [a sandbank] and be | southe[.]. And yf ye have an ebbe goo southe est and be est[,] And yf ye | goo fro the spone [Spurn Head] to the schelde and at the | wynde be at north west your cours is southe est till ye | be passid welle bank [a sandbank]. And in welle [Wells-next the Sea] it floweth est and | west and ther gooth half streem vndir rothir[,] And at | the schelde it floweth on the londe west north west | and half streem vndir rothir be the londe till ye co | me to wyntirbornesse [Winterton Ness] and fro wyntirborne til ye |

[At bottom of folio, c. 30 mm representation of the arms of the Earl of Hastings]
to synngle rode it flowereth on the soude northe west and
quarter tide and half quarter undie rothe: and ye goo
fro the scheld to the holmes and it be in the night ye
shall goo byt ynni sethyne fro the wyster til the gas that
ye be passid humber and very and goo the estinone
course til ye come to ynni sethyne and goo yeoure course.
Southe southe est: til ye be passid the holymes but the
moste wisdome is to abide til it be day. Fro synngle hol
ymes to oxfordnesse and the wynde be on the soude.
Sank yeoure ives southe and belveste it flowereth on the
soude southe southe est. And at the holymes heed quar
ter tide fro oxfordnesse to oxfordesse. Waynys the cours
16 southe wester and it flowereth southe southe est. and
11 owest hanyn with me the 17 owest southe northe
And ye goo oute of owest waynys to the nose ye
muste goo southe wester fro the nose to the markis of
the spers. Yeoure cours 16 wester southe wester and it
flowereth southe and be est bynyge yeoure markis to
gedir that the parisshe steppe he ought be est ye abby
of synn holles than goo yeoure cours on the spers
southe til ye come to 2, 3 & 4, than goo yeoure
cours with the horse scho southe southe west and if
it be on flood come not be in ynni sethyne and that
shal bynyge yold to 5, 6, 7 ynni sethyne: than goo yeoure
course in to treynesse with the grene banke west southe
west: and at the horse scho it flowereth southe i northe
And oute of owest waynys for to goo oute at the
flade. Yeoure cours is est southe est: for cause of perige

Ill. 4-5 Sheets from the Hastings collection (left; New York, Pierpont Morgan Library, Hastings MS 775, f. 131v) and the Lansdowne collection (above; London, British Library, Lansdowne MS 285, f. 138r)
[f. 131r] come to kyrkle rode [Kirkley Road] it floweth on the londe northe west and | quarter tide and half quarter under rothir[.] And yf ye goo | fro the schelde to the holmes [Holm Sand] and it be in the nyght ye | schal goo but xvii fethym fro the coste til the gisse [estimate] | that | ye be passid lymer and vrry [Leeman and Ower sandbanks] and goo the estmore | course til ye come to xiiiij fadym and goo youre course | southe southe est tell ye be passid the holmys[,] but the | most wise is is to abide till it be day. fro kirkle hol | mys to Orfordenesse and the Wynde be on the londe[,] saile youre way southe and be/est[;] it floweth on the | londe southe southe est. And at the holmys heed quar | ter tide. fro orfordnesse to orwelle waynis the cours | is southe weste and it floweth southe southe est and | in orwell haun[,] withinne the weirs[,] southe and northe[,] | And ye goo oute of orwell waynis to the nase ye | must goo southe west[,] fro the nase to the markis of | the spetis [The Spits, a sandbank] youre cours is weste southe west. And it | floweth southe and be est[,] brynge youre markis to | gedit |that the pareshe stepill be ought be est the abbey | of seynt hosies [St. Osyth] than goo youre courses ouir the spetis [southe til ye come to x fadym or xij than goo youre | cours with the horse | | sandbank off Shoeburyness] southe southe west. And yf | it be on flood come not be in | viij fathim and that | schal brynge yow to xj or xij fathim than goo youre | course in to tennesse [Thames] with the grene banke [Isle of Grain] west southe | west[,] and at the horse so ho | it floweth southe and northe[,] | And oute of orwell waynis for to goo oute at the | slade [the Sled- | way] youre cours is est southe est for cause of the rigge | [rocks off Harwich]

[f. 132r] and the rokkis till ye come to xx fadym deep and for | the longe sonde[,] than ye may goo southe southe est | til ye come to xviij or xviij fathim deep[,] than ye must | goo southe a glass or iij for cause of the rokke[,] than goo | southe southe west and seke vp tenet [Thanet] | and seke vp v | fathim on the brakis [the Brake Sand[,] than goo youre cours southe[,] | it is youre faraway[,] and at the knake in the kentisshe | see [the Kentish Knock sandbank] it floweth | southe[,] at and the northe hed of godwyne | the streme renneth to the southe southe west and it | floweth fro Tenet on to wyet [? on bothe sides on the | mayne londe southe southe est. At | sandewiche at dauy | es gate southe[,] and in the downys goth half tide vnd | ir rothir[,] and yf ye ride in the downys and will | in to sandewiche haun[,] rere it [weigh anchor] be a | turnynge wynde | (head wind) | at an est south est mone and yf it be a folowynge | wynde ye | may abide the lenger[,] | 

Part 2

[f. 132r, line 16] And yf ye be bounde | to calis [Calais] haun and ride in the downys and the | wynde | be west southe west[,] ye must mere at a north north | est mone. And gete yow in to youre markis the stepill | in to the fan. than goo youre cours est southe est | ovyr[,] and aftir | youre wynde and youre tide serve | youre cours[,] and loke ye seke calis haun at a southe | southe est mone or ellis at a southe and be est[,] and yf | ye turne | tack in the downys come no nere goodwyn th | an ix fathim ne no nere the brakis than v fadm. ffo | seynt margrete steyres and ye will goo with dungenes | Dungeness[,] | youre best way is southe southe west and seke you | xviij fathim deep betwene seynt margret steyres and | 

[f. 132r] dungenes[,] gooth half tide. And fro dungenes to hildrenes [Cap Gris Nez] | youre | cours is est and weste[,] dungenes and the watir | of sowm [River Somme] lyeeth est southe este | west northe west[,] | denge | nes and depe [Dieppe] southe est and be est[,] northe west and | be | west[,] dungenes and the seyne hed [Cap de la Hève] southe southe west. go | fro dungenes and ye have xx fadym deep[,] west southe west | and est northe est that is youre cours a long | the see. | And at dungenes is half and half quarter tide and sou | the un to hastynge half tide[,] at bechiffe [Beachy Head] quarter tide. | bechif and depe southe est and northe west[,] bechif
and the seyne hed southe and northe, the ylonde of arundell and strotarde [Cap d’Antifer] southe southe est and northe northe west[,] the seyne hed and wolueshorde [St. Catherine’s Point] southe est and northe west[,] berfletnes [Pointe de Barfleur] and wolueshord southe est and northe northe west. The chapel of hoggis [St. Vaast de la Hogue] and the ned-lyys southe and northe[,] the seyne hed and wolueshorde southe est and northe, the seyne hed and wolueshorde. Wolueshorde and garnesey southe west and quarter tide at wolue shore. Ffr wolueshord to the lige of seynt Elenes [St. Helen, Isle of Wight] is half tide under rothir. And fro seynt elenes to chalkishorde de [Cal-shot] is half tide and a southe mone maketh hiest water withinne wiet [Solent, ‘inside Isle of Wight’]. The ned-lyys and the forne [Le Four] lieth southe west and be west northe est and be est[,] the ned-lyys and cornlonde [Cornwall] est and west. At the ned-lyys it floweth southe est and be west northe and be est. Wolueshorde and garnesey southe west and southe est and northe est and in the fayre way southe southe est and northe.

[f. 133r] northe weste. At waymouth with in hauyn est and west[,] at the bil at portelonde southe southe est and northe no[ther] the west. the seyne hed and portelonde lyeth west northe west and est southe est[,] portelonde and garnesey southe and northe[,] seyne hed and the heu wode be west derte mouthe [see text] est and be/southe[,] west and be northe. Abotis bery and the forne lyeth est and southe west[,] portelonde and beri londe [Berry Head] est and be northe[,] west and be/southe[,] bery londe and the start west southe west and est northe est[,] betwene portlonde and the start every hauyn is tid est and west. Develop between berilonde and the londes ende of en gelonde ther is half tide. In the fayreway betwene the start and lisart the cours is est and west and be ware of the hedre stonys [Eddystone Rocks]. All the haunenes be full at a west southe west mone betwene the start and lisart[,] the lon des ende and lesarde lyeth est southe est and west nor the west. At the londes ende lyeth raynolde stone [Runnel Stone]. A litil birthe of but xij fadim [a width of only 12 fms] schal lede yow al be owtyn[,] him. And southe southe west of the londes ende lyeth the gulf[,] the longeschepes and the londes ende lyen[,] northe northe west and southe southe est. and it flow eth west southe west and half tide vndir rothir be the londe but none [?] the longeschippes and seynt mary sounde of cille [Isles of Scilly] lieth west southe west and est northe est[,] seynt marie of cille and eschaute [Ouessant] lieth northe west and be northe[,] southe est and be southe. cille and the sayne [Île de Sein] lieth southe southe est and northe northe west. the sayne and huschant lieth southe and northe. huschant and

[f. 133v] the pople hop [see text] lieth northe and be west[,] southe and be est[,] huschant and lesarde [Lizard Pt.] northe and southe[,] lesarde and seynt mary sounde of cille est and west[,] but be ware the gulf. Seynt mary sownde and the forne northe west and south est[,] the forne and the pople hope northe northe west[,] and southe southe est. The forne and lesarde northe and be west[,] southe and be est[,] the forne and the grey [St. Michael’s Mount] be est[,] falmouth northe and southe[,] the forne and the ram hed [Ramehead] southe southe west and northe northe est[,] huschant and the ram hed north est and be northe[,] southe west and be southe est[,] the forne and berylonde northe est and be northe[,] southe west and besouth. the start and baspalis [Île de Batz] northe and southe[,] baspalis and the ramhed north and be est[,] southe and be west[,] garnesey and the heuywode be/west dert mouthe [?] the seyne hed and portelonde.

Part 3

[f. 133v, line 15] In spayne and bretayne this is the cours and the tide. fro seynt maluys
[St. Malo] un to baspalis the cours is est northe est and west southe west and opyn of baspalis lieth the langas it floweth est and west on the coste. the langas and the est brigge it floweth est and west and be west[,] northe est and be est til ye come in to youre fareway. yf ye be bounde estwarde ye schal goo northe est and yf ye be bounde west warde ye schal goo west southe west til ye come ayens the forne. At the forne goth half tide betwene hschant and the forne[,] the cours of the chanell of seynt mathyus [St. Mathieu[,] and ye goo withoute the braderith [L’Iroise[,] ye must goo for to goo clene of all daungeris youre cours is southe and be est[,] northe and be west[,] but wynde maketh cours. And at |

[f. 134r] seynt mathewes it floweth est northe est and west southe| west. at the forlonde of fontenes [Pointe de Raz] it floweth southe west| and northe est[,] but a man that rideth in the way| of odyerne [Audierne] at an ankir[,] he may begyn to rere at an| est southe est mone for to turne and the wynde be| at the northe est or how evir it be[,] fro the furlonde| of fontenes to the strayts of marrok a southe west mone| maketh hiest water be the seeoste and in the| updraw| tis it dooth not soo[,] the furlonde of fontenes and pen| mark lieth northe west and southe est and penmark| and the saym northe west and be west[,] southe est and| be est. the saym and hschant northe and southe[,] pen| mark and belille [Belle-Île] west northe west and| est southe est[,]| be ware of vas glenant [Îles de Glenans][,] the strem seteth southe| west and north est[,]| goo fro the saym southe est and be es| and ye be in lx fadim deep and x and ye schal dalle| with olleron [Île d’Oleron[,] than goo youre cours with the pole| hed[?] Cordouan, see text] southe est and be southe and ye be in xij fadim| deep and that schal lede yow with oute the pollis [? see text[,]| firo| the polles ye muste goo est northe est til ye be above| the piper [? see text[,]| than goo est and be northe for cause of the| hors scho [? see text]. And then ye may goo fro opyn on the blak| schore [Terre Nègre] est southe est til ye come as hy in| geronde as tal lamont [Talmont[,] for the groundes on the souther side| lyen fer oute and arne schore to are not sheer-to for ye may come no nere| hem than vij fadim[,] and when ye come| anens [abeam of] tala| mon ye schall goo with castillon [Tour de Castillon] southe southe est| and be ware of the middel grounde. Vse [Île d’Yeu] and belille lyen|

[f. 134v] southe est and northe west. belille and the pekelerre [Île de Pilier] lyen| west northe west and est southe[est][,] the tutpert [Pointe de Talut, Belle-Île] and the pol| lus lyne west northe west and est southe est[,] the pollis and| the borow of vaion [River Adour] southe and northe.

Part 4

[f. 134v, line 4] goo fro the pol| lus of amias [? see text] west southe west and goo clene of all| the coste| of spayne and ye schal come be siete of cap finestre[,] all hy| up[,] Vse and mache-| schaco [Cabo Machichaco] southe est and be southe[,] northe| west and be northe[,] belille and| macheschaco southe and| be est[,] than gio est and be northe for cause of the|[?] Cordouan, see text] southe est and be southe and ye be in xij fadim| deep and that schal lede yow with oute the pollis [? see text[,]| firo| the polles ye muste goo est northe est til ye be above| the piper [? see text[,]| than goo est and be northe for cause of the| hors scho [? see text]. And then ye may goo fro opyn on the blak| schore [Terre Nègre] est southe est til ye come as hy in| geronde as tal lamont [Talmont[,] for the groundes on the souther side| lyen fer oute and arne schore to are not sheer-to for ye may come no nere| hem than vij fadim[,] and when ye come| anens [abeam of] tala| mon ye schall goo with castillon [Tour de Castillon] southe southe est| and be ware of the middel grounde. Vse [Île d’Yeu] and belille lyen|

[f. 134v] southe est and northe west. belille and the pekelerre [Île de Pilier] lyen| west northe west and est southe[est][,] the tutpert [Pointe de Talut, Belle-Île] and the pol| lus lyne west northe west and est southe est[,] the pollis and| the borow of vaion [River Adour] southe and northe.
northe[;] the birlynges and the rokke seynter [Cabo Roca] soute southe | est and north north west[;] cape seynt vincent and cape | seynt marie est and be southe[,] west and be northe[,] cape | seynt marie and calus malus [Cadiz] southe est and be est[,] | norte west and be est[,] calus and the ryuer of ceuylle [Seville] | southe est and be southe[,] north west and be north[,] cape | seynt mari and the straytes southe est and northe west[,] | the straytes est northe est and west southe west[,] cape fe | nystre and meus nes [Mizen Head] northe and be west[,] southe and | be est[,] cap fenistir and clere [Cape Clear] in erlonde northe and southe[,] cap fenestre and cille north northe est and southe southe west[,] | clere and the nokowe of vaion southe est and northe | west[,] clere and seynt tony in spayne northe northe west and southe southe est[,] clere and ortingere northe | and be west[,] southe and be est[,] clere and the saym est | southe est and west northe west[,] clere and cille southe est and | northe west[,] cille and the hold hed of hyndifforde [Kinsale] southe | est and be est[,] northe west and bewest.

Part 5
[f. 135r] A new cours and | tide betwene engelonde and erlondo[,] the londes ende | and the olde hed of hyndifforde west northe west and | est southe est[,] schipmanhed of cille and the vij stony[,] southe west and northe est[,] the longeschippes and the vij[,] stony[,] est and west[,] the londes ende and the yokkis [Youghal] | northe west and south est[,] the londes ende and the | towre of waist forde norwest and southe southe est[,] | the towre of watir forde and the toure of velafad [Kinsale] | northe and southe[,] the londes end and saltays [Saltees] north | and be west[,] southe and be est[,] tuscard and the longeschippes | northe and southe[,] frestonhorde[?] and smale of skid | wale [the Small Rocks] north and be est[,] southe and be west[,] frestonhorde and seynt thomas forlonde [St. Thomas Head] on the west side of milforde | northe northe est and southe est southe west[,] est and weste it |

[f. 135r] floweth with in the hauyn and half streme vndir ro | thir and withouten it renneth northe est and southe | west[,] schipman hed and milforde northe est and be no | rthe[,] southe west and be southe[,] schipmanhed and londay | northe est and southe west[,] be ware of the vij stony[,] | frestonhorde and londay [Lundy Island] northe est and be northe[,] southe | west and be southe[,] londay and calday [Caldy Island] northe and southe[,] | fro the londes end to londay it floweth west southe | west and est southe est[,] fro londay to the holmes [Flat Holm and Steep Holm islands] est and | be northe[,] west and besouthe[,] be ware of the yren grondes [rocks, ? N Devon] | and of youre stremes of flood for thei sitten northe est | on the yren grondes and on ebbe spare not to goo[,] | for the stremes of brigge watir [Bridgewater] sette west northe west[,] and be ware of coluersonde [Culver Sand[,] it floweth fro londay to | the holmes est and west. and fro the holmes for to goo | clene of the washe grondes [rocks off Watchet] and of langbord | [Langford Grounds[,] the cours | is northe est and ye come on ebbe[,] and sithe | goo est and | northe est with portis hed[,] but yf ye haue a quarter | tide at the flat holme ye may goo est northe est or est | and be southe[,] and goo ouer langborde with ketelis wod | with a good ship for ye schal haue iij fadim on the | sone or more be that ye come there[,] betwene the hol[,] mes and keteleswode and portis hed it floweth west and | be northe[,] est and be southe. At kyngrode [King Road] hyt floweth | est and west and set on no lasse watir aboue ho | lmes than xij fadim at the lest. Seynt thomas for | londe and scalmay [Skomer Island] lyeth north west and southe est[,] | All that see betwene erlonde and walis goth | half tide |

[f. 136r] vndir rothir. londay and the olde hed of hyndifforde | lieth west and be northe and est and be southe and yf | ye be bounde [half line blank] | goo west northe west and ye schal go
clene of kidwale [Skidwhale] and smale[,] and ye haue an ebbe the streme setteth | northe northe est and southe southe west and ther is | half tide vndir rothir for it floweth on londe est and | weste. fro tuscarde to the old hed of hyndifforde the | cours is west southe west and est northe est [;] fro the olde | hed of hyndifforde to clere in erlonde the cours is west | and be southe[,] est and be northe. clere and meus nes | and thursay [Dursey Island] northe west and southe est[;] thursay and | the lewe [Loop Head] north north west and southe southe est[;] the | soude of blaskay [Great Blasket Island] lieth northe and southe. blaskay and | the ackiles [Achill Island] northe and southe[;] blaskey and the stakis of | connotho [Stags of Connaught, Broadhaven Bay] north northe est and southe west but | thou must goo northe and be est for a rok[,] the stakis | of rounney [Stags of Aranmore] and the londe ende of erlonde northe northe | est and southe southe west and soo thou must goo | to the ylonde of torre [Tory Island]. The stakis of connoth and [location omitted] | southe west and northe est[,] and fro the stakis of co | noth to the legge of rabyn [Rathlin Island] the cours is west southe | west est northe est; the sounde of torre lyeth west | southe west and est northe est[,] the sounde and the fur | londe be est[,] loswille [E side of entrance to Lough Swilly] lyeth west southe west and est | northe est but be ware of the rok in the baye of los | wille [Fanad Head]. fro the forlonde of loswille to donsmers hede [Dunmore Head] | the cours is west northe west and est southe est[,] the | }

[f. 136v] sounde of ranseyves [Ramsey Island] the same cours with benostor [? Benmore or Fair Head[,]], fro tuscarde to donsmere hed it floweth be the see costa | west southe west and est northe est but in the updrawtes | it dooth not soo. fro tuscarde to the red banke [?] it is | half tide vndir rothir. fro saltays to tuscarde the | cours is est and west[,] fro tuscarde to the hed of | the [s carris [the Skerries] for to goo clene of all the grounde betwene | tuscarde and dalcay [Dalkey Island] southe est and northe | northe west but and ye be bounde to capman ylonde | ye schal goo northe and be west for cause of ij rok | kis that yen in the wey and yf ye be bounde southe | warde ye schal goo southe est and be southe[,] fro cap | man ylonde to the forlonde of wolverfrith [?] ye schal | goo northe northe est and southe west[,] fro the | forlonde of woluefrythe to benestore southe southeest | and northe norwest[,] it floweth on the | costa betwene | tuscarde and benefrog southe southe est and northe | northe west[,] betwene capman ylonde and donbalk [Dundalk] and be southe arglas ther gooth quarter tide vndir | rothir[,] capman ylonde and the ile of man[,] the southe | end[,] lieth southe est and be est[,] northe west and be | west[,] the ylonde of man and arglas est northe est and | west southe west. the yle of man and lambay | ylonde northe est and southe west. the howe [Howth] and the | holy hed [Holyhead] est and west. lambay and the ramsayr northe | }

[f. 137r] and southe[,] the churche of wiklow and the ransayr | northe northe west and southe southe est[,] but a man | that rideth in the rode of wiklowe muste goo oute of | the churche of wiklowe southe west and northe west. tus | cardre and the ramseyr est and west[,] the towre of wa | tiforde and gresholme west and be northe[,] est and be | southe[,] all that see goth half tide betwene the smale | and skidohale and the barsseys [Bardssey Island] and it floweth este | and weste on the mayne londe, and at the ramseires | northe and southe. the stremes renne in | the sounde and be ootyn the beschopis and his clerkis [the Bishop and his Clerks rocks] northe | northe west and southe southe est[,] sculke holme [Skokkolm Island] and | the sounde of rams- seys northe and southe and be ware | the rok men calleth sampson for he lieth at the southe | poynete on seynt dauy [St. David’s Head] side and kepe more nere the | ylonde than the mayne londe til ye be passid the | poynete and thorow the sounde and than goo northe | til ye come at
a nothir rok[,] and for cause of that rok | ye must goo northe and bewest ellis northe and be | est for northe is even with the rok[,] and the name of | the rok is called the kep and he lieth 

under the watir | but hit breketh vp on hym and the breke scheweth[,] | And then youre cours is northe northe est for to go | with berseys stremes. And seynt dauyes londe northe | est and southe west[,] and so goo youre cours northe | northe est and southe southe west til ye come to yre [Point of Ayre (Isle of Man) or Point of ayr (Dee estuary)] | northe west vp on skotland[,] the holi hed and the | yle of man northe and be/est[,] southe and be west and |

[f. 137v] yf ye goo to chestre ye schal goo fro the scarris til ye | come anens the castell of 

rotlonde [Rhuddlan[,]| youre cours is | west southe west and est northe est[,] and take youre | slawhte [rest] on the maynelonde of walis[,] rotlonde and | the redbanke in chester water northe and southe[,]|

[gap of five lines] Part 6

[f. 137v, line 6] Opyn o [see text] geronde [River Gironde] ther is wose [mud] and sonde to 

gedr & | it bein xij or xiiij or xvij fadim deep[,] up on o | pertus mamoschant [Pertuis de 

Maumusson] there is stynkynge wose | and xij fadim deep[,] Opon o pertus antiage [Pertuis d’Antioche] ther is blak | sonde[,] Open o the tayle of ars [Pointe d’Arseaux] in xxiiij or xxxij fa | dim deep there is grey sonde and smale blake | stones and gret white shelles amonge[,] opon of vse | ther is in l. or lx fadim deep wosi sonde[,] Opon on | leyre [River Loire] ther is 

stremy gronde [?] and white shelles. Op | on o belille ther is in lx fadim or lxx smal dial | sonde[,] Opyn of penmark ther is in l. fadim blak | wose. Opyn of the saym in lx fadim ther is 

sondi | wose and blak fischey stonys [see text] amonge[,] Opyn of hus | channt in l. or lx fadim 

ther is red sonde and blak | stonys and white schellis amonge[,] betwene cille and | huschant ther is gret stremy gronde [?] with white | schellis amonge[,] with oute cille[,] west southe west of | him[,] the gronde is red sonde and white schellys | amonge[,] between cille and lesarde the gronde is whit |

[f. 138r] sonde and white schellis amonge. Opyn o lesarde is | gret ston as it were benys and it is raggid ston. Opyn | o dodman in xl fadim ther is red sonde and white | shells and smale 

blak stonis amonge[,] Opon o porte | londe ther is fayre white sonde and xxiiij fadim with | red 

schellis ther in and in xiiij or xviij fadim ther is | rokki gronde and in som place ther is fayre 

sley [clay] | gronde [?] Opon o wiete ther is fer harde platmer | gronde [flat seabed] and in the 

farway in xxx fadim ther is whi | techalki gronde[,] Opon o bechef ther is sonde and | 

grauell to gedir in xx fadim deep. Part 7

[f. 138r, line 11] here beth the groun | des of Engelonde[,] Bretayne and cille. And ye come | oute of spayne and ye be at cape fenestir[,] go youre | cours northe northe est and ye gesse yow 

ij partes | ouyr the see and be bounde in to seberne [River Severn[,]| ye muste | goo northe and 

be/est til ye come in to soundynge | and yf ye haue an c fadim deep or ellis iiiij | x | than ye schal go northe vn til ye sounde ayen in lxxij | fadim in fayre gray sonde and that is the 

rigge [shoal] that | lieth betwene clere and cille[,] than goo northe till ye | come in to soundynge 

of wose and than goo your | cours est northe est or ellis est and be northe and ye | schal not 

fayle moche of stepillhord [?][,] he resith al rounde | as it were a coppid [high crowned hat-

shaped] hill. And yf ye be iiij partis ouyr | the see and ye be bone in to the narrow see and ye 
go | northe northe est than chaunge youre cours and go | northe est and be northe til ye come 
in to soundinge | of an c fadim deep than goo youre cours northest |
til te come in to iiiij° fadim deep and yf it be stremy [? veined stones] | grounde it is betwene huschant and cille in the entre | of the chanel of flaundres and soo goo youre cours | til ye have fivti fadim deep than goo est northe est | a longe the see et cetera.

Below the last five lines of text there is an illustration filling the remainder of the page, of a ship sounding, off an unidentified coast (illustration 2).
Appendix 2: Comparison of texts of H and L

<table>
<thead>
<tr>
<th>Folio/line ref. no.</th>
<th>Hastings MS (H)</th>
<th>Lansdowne MS (L)</th>
<th>Variants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>131r/6 ref 1</td>
<td>ffloweth</td>
<td>folowith</td>
<td>folowith incorrect in L</td>
</tr>
<tr>
<td>131r/12 ref 2</td>
<td>and at whityes halfe ^</td>
<td>and at whitiews half ^</td>
<td>Omission of tide after</td>
</tr>
<tr>
<td></td>
<td>and fro hounde clif fote</td>
<td>and fro houndeclif fote ... half in both</td>
<td></td>
</tr>
<tr>
<td>131r/18 ref 3</td>
<td>at hedelonde quarter tide &amp; half ^</td>
<td>and half ^</td>
<td>As above</td>
</tr>
<tr>
<td>131v/5 ref 4</td>
<td>and to the estermare course</td>
<td>and yif ye go oute of cours</td>
<td>to incorrect in L</td>
</tr>
<tr>
<td>131v/15 ref 5</td>
<td>and yf ye go oute of orwell waynis</td>
<td>in the doownys goth half tide</td>
<td>Addition of yif in L</td>
</tr>
<tr>
<td>132r/12 ref 6</td>
<td>in the doownys gothe half tide undir rothir ... and will go into Sand-wiche ... At an est south of the moone and yif it be a flowyng wynde</td>
<td>Under rothir in both MSS Additional go in L est omitted from L flowyng incorrect in L</td>
<td></td>
</tr>
<tr>
<td>Part 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>132v/16 ref 7</td>
<td>dengenes and the seyne hed southe west go fro dengenes and ye have xx fadym deep un to hastings half tide at bechiffe the seyne hed and porte londe lyeth west northe west and est southe est portelonde and garnesey south and northe</td>
<td>dengenes ^ and ye have xx fadym depe unto hastings half tide as by cheffe the seyne heade at portonde ^ and garneseysouth and north</td>
<td>and the seyne hed southe west and go fro dengenes (2 x 1/2 lines) omitted from L as incorrect in L at incorrect in L lyeth west northe west and est southe est portelonde (2 x 1/2 lines) omitted from L</td>
</tr>
<tr>
<td>133v/2 ref 10</td>
<td>the langas and the est brigge lyeth south west and be west north est and be est And at seynt mathewes it floweth est northe est and west south west penmark and belille</td>
<td>the langas and the estbrigge lye south ^ and by west north est and by est And at seynt matheus it flowith est northe est and south south west Penmarke and be like</td>
<td>west omitted from L south in place of west in L belille in H; be like in L</td>
</tr>
<tr>
<td>134r/11 ref 11</td>
<td>And at seynt mathewes it floweth est northe est and west south west penmark and belille</td>
<td>And at seynt matheus it flowith est northe est and south south west Penmarke and be like</td>
<td>west omitted from L south in place of west in L belille in H; be like in L</td>
</tr>
<tr>
<td>134r/13 ref 12</td>
<td>use and belille lyen ... belille and the pekelerre</td>
<td>use and be lile lien ... be like and the pekelerre</td>
<td>belolle in H; be lile and be like in L</td>
</tr>
<tr>
<td>134r/28 ref 13</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
134v/4 Part 4 belille and macheschaco southe and be est. northe and be west. belille and seint tony southe and northe
134v/8 ref 14 macheschaco southe and be est. northe and be west. belille and seint tony southe and northe belille and (2 x 1/2 lines) omitted from L

135r/14 Part 5 and the vii stones southe west and northe est
135r/18 ref 15 and of langbord ye cours is northe est
135v/17 ref 16 and yf ye be bounde ...
136r/3 ref 17 and yf ye be bounde ...
136r/8 ref 18 fro tuscarde to the olde hed hyndilforde the cours is west south west and est northe est fro the olde hed of hyndilforde to clere in erlonde the cours is west south west and est northe est fro the olde hed of hyndilforde (1 1/2 lines) omitted from L
136r/23 ref 19 the sonde of torre lyth the sonde ^ and the west southe west and est forelone be est est northe est the sononde and the furlonde be est the cours is north and south south west north omitted from L
136v/8 ref 20 the cours is northe northe est and southe southe west the cours is north est and south south west est and be est northwest est and be west omitted from L
136v/24 ref 21 the southe end lieth the south end lieth south southe est and be est northe west and south south est est and by est northwest est and be west omitted from L
137r/1 ref 22 the church of wiklow The chirch of wiklowe northe northe west and south southest northe northe west and south southest omitted from L

137v/6 Part 6 geronde
grounde
137v/6 ref 23 H correct
138r/7 ref 24 sley
cley
138r/7 ref 24 L correct (for clay)

138r/11 Part 7 ... northe northe est than chaunge youre course and go northe est and by northe til ye come in to sowdyng
138r/26 ref 25 than chaunge youre cours and go northe est (about one line) omitted from L
Appendix 3: ‘Boxing’ the compass, angular bearings and lunar time

<table>
<thead>
<tr>
<th>Compass bearing</th>
<th>Notation</th>
<th>‘Lunar time’ at F &amp; C</th>
<th>‘Lunar time’ at quadrature</th>
</tr>
</thead>
<tbody>
<tr>
<td>0º/360º</td>
<td>N</td>
<td>00.00/12.00</td>
<td>05.36/17.36</td>
</tr>
<tr>
<td>11.25º</td>
<td>N by E</td>
<td>00.45/12.45</td>
<td>06.21/18.21</td>
</tr>
<tr>
<td>22.5º</td>
<td>NNE</td>
<td>01.30/13.30</td>
<td>07.06/19.06</td>
</tr>
<tr>
<td>33.75º</td>
<td>NE by N</td>
<td>02.15/14.15</td>
<td>07.51/19.51</td>
</tr>
<tr>
<td>45º</td>
<td>NE</td>
<td>03.00/15.00</td>
<td>08.36/20.36</td>
</tr>
<tr>
<td>56.25º</td>
<td>NE by E</td>
<td>03.45/15.45</td>
<td>09.21/21.21</td>
</tr>
<tr>
<td>67.50º</td>
<td>ENE</td>
<td>04.30/16.30</td>
<td>10.06/22.06</td>
</tr>
<tr>
<td>78.75º</td>
<td>E by N</td>
<td>05.15/17.15</td>
<td>10.51/22.51</td>
</tr>
<tr>
<td>90º</td>
<td>E</td>
<td>06.00/18.00</td>
<td>11.36/23.36</td>
</tr>
<tr>
<td>101.25º</td>
<td>E by S</td>
<td>06.45/18.45</td>
<td>12.21/00.21</td>
</tr>
<tr>
<td>112.5º</td>
<td>ESE</td>
<td>07.30/19.30</td>
<td>13.06/01.06</td>
</tr>
<tr>
<td>123.75º</td>
<td>SE by E</td>
<td>08.15/20.15</td>
<td>13.51/01.51</td>
</tr>
<tr>
<td>135º</td>
<td>SE</td>
<td>09.00/21.00</td>
<td>14.36/02.36</td>
</tr>
<tr>
<td>146.25º</td>
<td>SE by S</td>
<td>09.45/21.45</td>
<td>15.21/03.21</td>
</tr>
<tr>
<td>157.5º</td>
<td>SSE</td>
<td>10.30/22.30</td>
<td>16.06/04.06</td>
</tr>
<tr>
<td>168.75º</td>
<td>S by E</td>
<td>11.15/23.15</td>
<td>16.51/04.51</td>
</tr>
<tr>
<td>180º</td>
<td>S</td>
<td>12.00/24.00</td>
<td>17.36/05.36</td>
</tr>
<tr>
<td>191.25º</td>
<td>S by W</td>
<td>12.45/00.45</td>
<td>18.21/06.21</td>
</tr>
<tr>
<td>202.5º</td>
<td>SSW</td>
<td>13.30/01.30</td>
<td>19.06/07.06</td>
</tr>
<tr>
<td>213.75º</td>
<td>SW by S</td>
<td>14.15/02.15</td>
<td>19.51/07.51</td>
</tr>
<tr>
<td>225º</td>
<td>SW</td>
<td>15.00/03.00</td>
<td>20.36/08.36</td>
</tr>
<tr>
<td>236.25º</td>
<td>SW by W</td>
<td>15.45/03.45</td>
<td>21.21/09.21</td>
</tr>
<tr>
<td>247.5º</td>
<td>WSW</td>
<td>16.30/04.30</td>
<td>22.06/10.06</td>
</tr>
<tr>
<td>258.75º</td>
<td>W by S</td>
<td>17.15/05.15</td>
<td>22.51/10.51</td>
</tr>
<tr>
<td>270º</td>
<td>W</td>
<td>18.00/06.00</td>
<td>23.36/11.36</td>
</tr>
<tr>
<td>281.25º</td>
<td>W by N</td>
<td>18.45/06.45</td>
<td>00.21/12.36</td>
</tr>
<tr>
<td>292.5º</td>
<td>WNW</td>
<td>19.30/07.30</td>
<td>01.06/13.06</td>
</tr>
<tr>
<td>303.75º</td>
<td>NW by W</td>
<td>20.15/08.15</td>
<td>01.51/13.51</td>
</tr>
<tr>
<td>315º</td>
<td>NW</td>
<td>21.00/09.00</td>
<td>02.36/14.36</td>
</tr>
<tr>
<td>326.25º</td>
<td>NW by N</td>
<td>21.45/09.45</td>
<td>03.21/15.21</td>
</tr>
<tr>
<td>337.5º</td>
<td>NNW</td>
<td>22.30/10.30</td>
<td>04.06/16.06</td>
</tr>
<tr>
<td>348.75º</td>
<td>N by W</td>
<td>23.15/11.15</td>
<td>04.51/16.51</td>
</tr>
<tr>
<td>360º</td>
<td>N</td>
<td>24.00/00.00</td>
<td>05.36/17.36</td>
</tr>
</tbody>
</table>

Notes:
To ‘box’ the compass is to name in order the points on the rose.
F & C is ‘Full and Change’, when the moon is full or new. Hence HWF & C denotes a Spring High Water.
Quadrature is when the moon is 7 and 14 days old, i.e. it is in its first or last quarter and has a longitude 90º from that of the sun.
Notes:
1 The author is grateful to Drs. Wendy Childs, Maryanne Kowaleski and Richard Unger for their constructive comments on early drafts of parts of this paper and to Albrecht Sauer for useful discussions on the organisation of, and information in, Das Seebuch.
2 New York, Pierpont Morgan Library, Hastings MS 775, ff. 130v–138v; and London, British Library, Lansdowne MS 285, ff. 136r–142r. Also a poor copy of the first lines of the rutter. Bodleian Library, MS Rawlinson D 328, f. 183 and a later, more complete copy, probably of the Lansdowne MS, London, College of Arms, MS 2M 16, ff. 131-141.
3 MSS ‘A’ and ‘B’ are bound together in Hamburg, Commerzibibliothek, S72, ‘Altes See-Buch, saeculi, ut videtur, XIV’, MS ‘B’ ff. 1r–38r and MS ‘A’ ff. 39v–70v. There is also a ‘fragment’ of later date in the Gymnasialbibliothek, Halberstadt.
5 D.W. Waters, The Rutters of the Sea, (Yale, 1967), [Waters, Rutters], passim. Copland’s explains his translation: … a mariner of the Citye of London beinge in the towne of Bourdewes boughte a prety booke imprinted in the frenche language calleth the Rutter of the see … And consideringe that it was expedient and necessary for al Englishmen of his facultye to have it in theyr owne language … he instanted me to translate into English; introduction to Robert Copland’s Rutter of the Sea; Waters, Rutters, pp. 52-3.
6 Das Seebuch, ed., Karl Koppmann, Niederdeutsche Denkmäler I, (Bremen, 1876).
8 Dr Sauer and the present author propose to publish parallel translations of das Seebuch in German and English.
9 James Gairdner, Sailing Directions for the Circumnavigation of England and for a Voyage to the Straits of Gibralter, Hakluyt Society, (1889), [Gairdner, Directions]; E. Delmar Morgan’s notes and glossary, Gairdner, Directions, pp. 23-37, were used by Waters and Lester in the compilation of their glossaries.
10 Gairdner Directions, p. 25. The attribution is unlikely; Clement was William Paston’s fourth son, b. 1442, d. before 1479. He trained as a lawyer and left no record of sea-going: Colin Richmond, The Paston Family in the Fifteenth Century, (Cambridge, 2002), passim. Henry VIII is probably an error for Henry VII.
13 Waters, Rutters, transcription pp.185-95; facsimile copy pp. 25-34; ref. to H, p. 4 fn. 3.
14 Waters, Rutters, pp. 15-14; similarity with das Seebuch, p. 439, fn. 4.
15 Lester, Lansdowne, pp. 33-34 and Hastings, pp. 351-7.
16 Sauer, Seebuch, pp. 82-88.
17 Lester, Hastings, p. 334; after Astley’s death (1486) and a change of ownership, the book was expanded with other texts, notably Benedict Burgh’s ‘Cato’ and a Latin calendar; f. 130e may have been bound into the book at that time.
20 H f. 137v, after line 5.
21 f. 133e; line 3; f. 131r, lines 8 and 13.
22 An abbreviated version of this paper, without the tables, is to be published in the Mariner’s Mirror, the International Journal of the Society for Nautical Research.
23 Eshbash’s situation may have been similar to Copland’s: … me thought [translation] very diffyrgele to me, not knowinge the termes of maryners … as a blind horse in a myl turnynge the quern yngorantly …; Robert Copland, The Rutter of the See, (1571), p. 5.
24 Compasses with graduated cards were carried on some English ships late in the fourteenth century, v. fn. 12. Inventories of early fifteenth century English naval ships, however, show a compass on only two ships; The Navy of the Lancastrian Kings; Accounts and Inventories of William Soper, 1422-1427, ed. Susan Rose, Navy Records Society (1982), pp. 142 and 155. Compasses were probably the personal property of shipmasters and would not have appeared in ships’ inventories.
25 The Admiralty charts used were:
E coast of England: 108, 1190, 1191, 1192, 1406 and 1408;
English Channel: 2675;
Bay of Biscay: 1001, 1094 and 1104;
SW England, Wales, Ireland, Isle of Man: 1121, 1123, 1125, 1127, 1410, 2723 and 2725;
W coast of Spain, 87.

26 Statute and nautical miles are abbreviated to M and nM respectively.
28 Current convention defines wind direction as that from which it blows and tidal stream direction as that to which it flows. Medieval convention is less clear.
29 High and Low Water are abbreviated in the translation to HW and LW, with a suffixed S for Springs. Tide times are given in the rutter as lunar bearings; these are tabulated for Full, New and Quadrature moon times in Appendix 3. HWS occurs fortnightly at about the same time at each location – the Establishment or Lunar-tidal Interval of that place, defined in the rutter as the moon bearing at H- or LWS. Tide times taken from Reeds Nautical Almanac, [Westbourne, 2004].
30 There is about a ten hour difference between the Establishments of Berwick and the mouth of the Thames, with a more or less regular retardation from N to S until Norfolk from where the retardation accelerates to the Thames estuary. From there, the tides are complicated by the influence of water flowing in and out of the Channel.
31 Lester, Hastings, pp. 331-2, also suggests that a mariner, regularly sailing between Berwick, English, Irish and continental ports, wrote the rutter for himself.
32 E.g.: Item, entre Londres et Berewyke prendra ung mariner huit souez de louyer desquel il sera paie illecques affin qu'il en pourra acheter telles marchandises come lui plaira lequel seront chargez en meisme la nef en la quelle prendra ledit wagen pour son portage; Inquisition of Queenborough, article 13: The Black Book of the Admiralty, ed. Sir Travers Twiss, 4 vols. Rolls Series, (London,1871-6), [Twiss, Black Book].
33 Das Seebuch makes several references to laden vessels, e.g.: item waltu myt enen swaren schepe segelen in norwelle so wnm ene halve vuel dar is dat deyp genoech over alle sande... [if you want to sail into Orwell haven with a heavy ship, take the tide at half flood which is deep enough over all the sands ...]; das Seebuch, B, f. 37r, item 2.
34 Lester, Hastings, p. 357, line 69.
35 Sauer, in das Seebuch, identifies without comment seine hovede as Cap de la Hève; given the use made of the port by fourteenth and fifteenth century English military expeditions, Honfleur may have been the more specific location of syne hed.
36 Chalkishorde corresponds closely to Calchesorde in Inquisitions Miscellaneous, 1347, Rolls Series (1916 etc.) where it is the present-day Calshot.
37 Another possibility is Hope Cove, W of Dartmouth.
38 HWS Cows is at 12.30 against the rutter's 12.00, and HWS in the natural harbours of Penzance (04.40), Helford River (05.00), Falmouth (05.13) and Fowey (05.20), averages 05.00 against the rutter's 04.30.
39 Compass points have been converted to angular bearings, see Appendix 3.
40 Lester suggests the Tour de la Lande for langas but has no suggestion for est brigge.
41 Fathoms are abbreviated in the translation to fms.
42 Item, entre Londres et Irlande prendra ung mariner dix souez de louyer et le portage de trois dikers de cuir et sil passe la Holdeheude de Endeffelde vers le west adonques aura chascun mariner deux souez plus de regard et mesme le regard aura il silz passe Tuscard devers le north; Twiss, Black Book, Inquisition of Queenborough, article 7.
43 The tidal information in das Seebuch for the Brittany coast relates generally to LCS.
44 MLWS at Ile d'Oleron is 1 m, and at Ouessant 1.4 m, above chart datum; this correction has been subtracted from the soundings in Table 6b.
45 Visibility limit in nM = 2.072 x (√Hv + √Hh) where Hv and Hh are the heights in m above sea level of eye and object, which ≈ 17-18 nM from a medieval mast-top to trees on shore.
46 ‘Latitude’ was understood by academics ashore; Chaucer, in his 1391 Treatise on the Astrolabe, confirms this; Robinson, Chaucer, pp. xxix and 921. Portuguese seamen, apparently using Alturas, were able to return to the Açores after their discovery in 1427. In 1455 Alvis de Cadamosto gauged the height of Polaris relative to a lance when off Gambia and Diogo Gomes gives ‘heights’ along the W African coast in his 1460 Relação do Descobrimento de Guinea: António Estácio dos Reis, Medir Estrelas, (Lisbon, 1937), pp. 47-79. The exchange of information between shipmasters is recorded in an alliterative poem written c.1400: Thane the marynerse mellys [mix], and maysters of chippis, Merlyt iche a mate meny [tells] rille other; Of theire termys they talke, how they ware tyed, Morte Arthure, ed. Edmund Brock, Early English Text Society, 1961, lines 3652-4.
48 Ships sailing from and to England would have used the channel N of Cordouan; the Black Prince erected a beacon on Cordouan as a guide for the wine ships.
49 ‘When crossing the Bay, allow for some set to the E, particularly after strong W winds’, Reeds, p. 978.
51 Indicative of the dangers, brefs were sold to merchants by the counts of Léon as guarantees that their goods would be safe after shipwreck (contrary to the local droits de bris). In 1235, Guyomarc'h de Léon described the coast as une pierre plus précieuse qu’aucun joyau: Jean Delameau, Histoire de la Bretagne, (Toulouse, 1987), pp. 160-2.
52 Wendy R. Childs, Anglo-Castilian trade in the later Middle Ages, (Manchester, 1978), pp. 12 ff. From the 1451 fall of Bordeaux until Henry VII’s attempts in the 1480s to redress the situation, much of the wine was freighted on Breton, Gascon and Iberian ships.
53 O.E.D., ‘copintank’, ‘cf. 1519, Horman, Vulgaria 121/1, Sometyme men were coppid cappis like a sugar loaf’.
54 Coruña, the pilgrims’ port, was reached by direct passage from Bristol. The huge increase in licences for ships for this traffic early in the fifteenth century perhaps indicates that it had become preferable to travel by sea rather than overland; Wendy R. Childs, The Perils, or Otherwise, of Maritime Pilgrimage to Santiago de Compostela in the Fifteenth Century in Pilgrimage Explored, ed. J. Stopford, (York, 1999), pp. 123-143.
55 The meaning of stremy ground is unclear; by analogy with Middle English textile vocabulary, stremy may mean ‘striped’ perhaps indicating pebbles of schist interleaved with quartz or feldspar, i.e. ‘veined’ in current English. The word occurs twice in Part 6 and once in Part 7; Lester suggests scratches on the tallow ‘armed’ on the lead, caused by an undersea current dragging the lead over a rocky sea-bed; Lester, Hastings, pp. 358. Dr Gerald Roberts, University of London, kindly identified ‘mica fish’ as black lenticular porphyroclasts of biotite, distorted to fish shapes by tectonic stresses. They occur on the geological fault running through Quimper and out to sea, allowing an accurate latitude fix.
56 platmer is taken to be cognate with French ‘plat’.

In spite of intensive efforts it was not possible to obtain original reproductions of the three folios from the Hastings MS 775 kept in the Pierpont Morgan Library, New York. Illustrations 1 and 2 included in this paper are based on former reproductions by the Pierpont Morgan Library imprinted in Sauer, Das Seebuch, v. fn. 7; illustration 4 has been made available by the author.

Die ältesten bekannten Segelanweisungen in englischer Sprache.
Transkription und Analyse

Zusammenfassung

päischen Segelanweisungen mit ein. Obwohl der Komplierer des Textes nicht bekannt ist, legen
textimmanente Merkmale nahe, daß es ein Schiffer der Ostküste Englands war, dessen See-
gebiet sich vom Ärmelkanal und den Gewässern um Irland bis zu den atlantischen Küsten
Frankreichs und der Iberischen Halbinsel erstreckte.

Die englischen Informationen, die in einem narrativen Stil niedergeschrieben sind, schreiten
generell von Nord nach Süd fort und wurden wohl vom Komplierer als persönliche Erinner-
ungshilfe aufgezeichnet. Sie bestehen aus Wegpunktlisten, verbunden durch Kursangaben,
wobei Gezeitenstromangaben und wenige Landmarken, Lotungstiefen, Hafenzeiten, Boden-
beschaffenheiten des Meeresgrundes sowie Informationen über Ansteuerungen und Reeden
ingestreut sind.

Das als Auszüge aus anderen Segelanweisungen erkennbare Material ist thematisch geordnet
und besteht aus Kursen zwischen Wegpunkten oder Lotungstiefen mit Angabe der Grund-
beschaffenheit. Es schreitet generell von Süd nach Nord fort. Auf der Grundlage einer der
Sequenzen von Tiefangaben wird eine hypothetische Route der Weinschiffe über den Golf
des Biscaya nachgezeichnet.

Die wechselnde Lage von Sandbänken und Küstenlinien schließt den genauen Nachvollzug
der Kurse in bestimmten Gebieten aus, aber die Genauigkeit der nachprüfbaren Peilungen/
Kurse reicht von 87% »Sicherheit« an der französischen Westküste bis zu 50% »Sicherheit« an
der englischen Ostküste. Wenn bekannt wäre, ob die Schiffer ihre Versetzung durch Gezeiten-
strom berücksichtigt, könnten diese Zahlen besser sein. Die Richtungsangaben für Gezeiten-
strom sind meistens akzeptabel, aber ihre Zeitangaben sind für eine wirkliche Berechnung
durch zu wenige Hafenzeiten abgesichert. Der Wert der navigatorischen Angaben variiert ab-
hängig vom Seegebiet von »in Verbindung mit einem Lotsen wertvolle« bis »verhältnismäßig
sorgfältige, wenn auch schlichte Segelanweisung«.

Transcription et analyse des plus anciennes instructions nautiques connues
en anglais

Résumé

La plus ancienne aide à la navigation (Rutter) en langue anglaise comporte des instructions sur
la navigation dont l’agencement original est inconnu. Seules ont été conservées des copies
datant du milieu du XVe siècle, qui ne furent jamais utilisées en mer. L’article présent est une
analyse commentée des instructions nautiques provenant de la collection de manuscrits de
Hastings, de la Pierpont Morgan Library de New York. Le texte, écrit sur parchemin, qui com-
porte deux miniatures de navires colorées très connues, est daté d’avant 1461 et se rapproche
d’un autre texte issu de la Lansdowne Collection de la British Library de Londres.

Les indications forment un mélange éclectique de sources originaires d’Angleterre et d’ail-
leurs, qui furent probablement rapportées au début du XVe siècle. Elles comprennent également
des informations plus anciennes, datant peut-être du XIVe siècle et des extraits d’indications
concernant le Sud de l’Europe. Bien que le compilateur du texte ne soit pas connu, des caracté-
ristiques du texte révèlent qu’il devait s’agir d’un marin de la côte est de l’Angleterre, dont le
domaine maritime devait s’étendre de la Manche et des eaux irlandaises jusqu’aux côtes atlant-
tiques de la France et de la Péninsule ibérique.

Les informations en anglais, qui sont notées sur le mode narratif, suivent généralement un
axe Nord-Sud et furent certainement conçues comme un aide-mémoire personnel par le com-
Le matériel reconnaissable comme étant des extraits d’autres indications est ordonné par thèmes et est constitué soit de cours entre des repères, soit de profondeurs de sondage avec les données sur la composition des fonds marins. Il se déplace généralement du Sud vers le Nord. Sur la base d’une séquence de données de profondeur, une route hypothétique des navires chargés de vin est signalée à travers le golfe de Biscaye.

Les bancs de sable et la ligne côtière ayant changé, il est impossible de suivre exactement les cours dans certaines régions, mais la précision des relevements ou cours vérifiables va de 87% de fiabilité sur la côte ouest de la France à 50% de fiabilité sur la côte est de l’Angleterre. Si l’on savait si les marins prenaient en compte ce déplacement selon le courant des marées, les chiffres pourraient être améliorés. Les directions données pour le courant des marées sont la plupart du temps acceptables, mais leurs données horaires sont peu sûres pour un véritable calcul, du fait que trop peu de marées portuaires sont relevées. La valeur des données varie sur une échelle allant de «précieuse, en rapport avec un pilote» à «instructions relativement soigneuses bien que simples» selon le domaine maritime.