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A Meteorological Service in Fifteenth Century Sandwich

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SUMMARY

Minstrels (or waits) in the 15th century Port of Sandwich walked the streets at night and woke mariners with information about wind directions. The provision of this simple meteorological service may have been required to encourage merchant ships to use the harbour, which had become particularly tortuous as a result of silt accumulation in the River Stour. An increased frequency of east winds during the Little Ice Age would also have made the harbour difficult for sailing ships to leave.

It is difficult to imagine a meteorological service before the modern period. What instruments would it use and how would it make forecasts? After all, the large national meteorological services have only come into existence since meteorology has realised its long desired aim of being a predictive tool. The hope that the weather could be predicted with the same precision as the position of the planets has been a forlorn one, but today probabilistic forecasts have become a reality. Although reliable short-term forecasts were made last century, it was not until the development of the radio in the present century that they could be disseminated rapidly enough to achieve their current importance.¹

In earlier times weather forecasting suffered from this twofold problem: a lack of reliable predictive methods and an inability to communicate forecasts, even if they were accurate. The problem of dissemination could be overcome if the forecasts were long-term, hence the popularity of weather almanacs. The content of these almanacs although indicative of long and careful observation² owed more to astrology than meteorology. Books on weather-lore have remained popular to the present day,³ but reliance on such lore would make any official meteorological service unreliable.

Even in medieval times a service that avoided making predictions and restricted itself to descriptions of imminent weather in the immediate locality could operate effectively by eliminating both the problems of forecasting and dissemination. Limited documentary evidence suggests that the Port of Sandwich offered just this kind of meteorological service in the fifteenth century.

METEOROLOGY IN MEDIEVAL ENGLAND

England was an important centre of meteorological learning during the Middle Ages, claiming several early weather diaries. Royal 7 F viii manuscript in the British Museum, which describes the weather for the period March 1269 to February 1270,⁴ and the better-known diary of William Merle covering the years 1337-1344⁵ are the two earliest manuscripts. The most important of early meteorology in England took place at Merton College in Oxford. The college was a largely secular institution fostering astronomy, which included refining tables, predicting eclipses and making other prognostications.⁶ In this intellectual atmosphere an interest in weather observation, particularly as a test of astrological predictions, was encouraged. Merle also wrote treatises on weather prediction, but they tend to be descriptive rather than astrological studies.⁷

The weather diary for which Merle is so justifiably famous provides our first link with Sandwich. One part of the diary belonged to Nicholas de Sandwich who had just inherited his father's manors at Bilsington and Folkestone in Kent.⁸ Another portion may have found its way into Kent in the possession of Thomas de Bradwardine, who was Archbishop of Canterbury in 1349. Thus it appears that the most practical of fourteenth century meteorological knowledge could have diffused into Kent quite quickly. It is impossible to know whether the erudite owners of the Merle diary communicated its contents to potential users. However we have only to read Chaucer's *Canterbury Tales* to discover a lay public willing to listen to the statements of scholars of meteorology. The gallant Nicholas of Oxford in 'The Miller's Tale' could trade weather prophesies for amorous, or less frequently, fiscal rewards:

But he was poor, for all that he had learned
It was toward astrology his fancy turned.
He knew a number of figures and constructions
By which he could supply men with deductions
If they should ask him at a given hour
Whether to look for sunshine or for shower.

Although tracts on weather prognostication were common in medieval times, few appear to have been in practical use. More practical almanacs were delayed until the development of the printing press and the relaxation of laws forbidding 'telling the future.' Printing made them cheap enough to be available to farmers, seamen and travellers. *The Mariner's Prognosticacion*, a 16th C manuscript with a nautical flavour, gathers weatherlore from Ptolemy, Aristotle, Pliny, Virgil and other natural philosophers. It gives advice to seamen on the recognition of various weather tokens: the sun, moon and stars, the wind and thunder and the sound of the sea. An influential printed almanac *A Prognostication of Right Good Effect*⁹ suggests for example, 'Thunder in the morning signifies wind, about noon, rain and at evening, a great tempest.'

HISTORICAL GEOGRAPHY OF SANDWICH

Such was the meteorological information commonly available, but there were particular pressures that made weather important to the medieval Port of Sandwich. The port had an active and sparkling history.¹⁰ It rose from an obscure landing place on a horseshoe bend in the River Stour to become one of the most important ports in medieval England. Growth was aided by both geography and the aggressive independence of its administrators and seamen. Its decline came about largely as the result of an inexorable drift of sand and silt into the Stour and its estuary. As one of the original Cinque Ports it contributed much to the Royal Navies of medieval England, but with the loss of Normandy, naval power became more strategically placed in the ports of the West. Longer sea voyages required larger ships, and these could not use the small harbours of the Cinque Ports that had suffered so much from the movement of silt. By the mid-fourteenth century the naval supremacy of the Cinque Ports had been entirely lost. Sandwich seems to have been particularly successful in encouraging merchant vessels to occupy the harbour vacated by the warships. The town council managed to attract the large Flanders Galleys of the Grand Council of Venice besides much private shipping.¹¹

However, Sandwich's good fortune did not last. The outer reaches of the Stour were becoming ever more sinuous and the harbour filled with silt. The port seemed very active until well into the fifteenth century, but there is increasing evidence of difficulties with the accumulation of silt in this period. The mayor made tours of inspection along the river banks. These were to ensure that obstructions were removed so that a rapid flow of water would be encouraged. Regulations were also promulgated to prohibit the discharge of ballast in the harbour.¹² Arguments broke out between the men of Sandwich and neighbouring communities who were thought to be responsible for impeding the flow of water. The navigational difficulties presented by the Stour were such that ships often ran aground and sank. The decaying hulks further aided the deposition of silt.¹³ Thus the fifteenth century ended with the harbour in a sorry state, and from Elizabethan times on, it seemed that the only solution to the problems experienced by the port was to cut a new channel to the sea. The attempts at cutting a channel all came to nothing and the sad fate of the port was sealed.

Bad as the harbour was, it was not the only problem that Sandwich faced in the 15th C. The climatic deterioration that marked the beginning of the Little Ice Age was well under way and the period saw some particularly ferocious weather. The first half of the century shows an increase in the severity of windstorms and is notable for the abandonment of areas of cultivation and villages.¹⁴ Abnormally high frequency of blocking anticyclones and meridional circulation were common in the 1420's and 1430's. These were responsible for the unparalleled set of harsh winters in the 1430's. There is much documentary evidence that the changing climate affected the merchant shipping using the Port of Sandwich. In

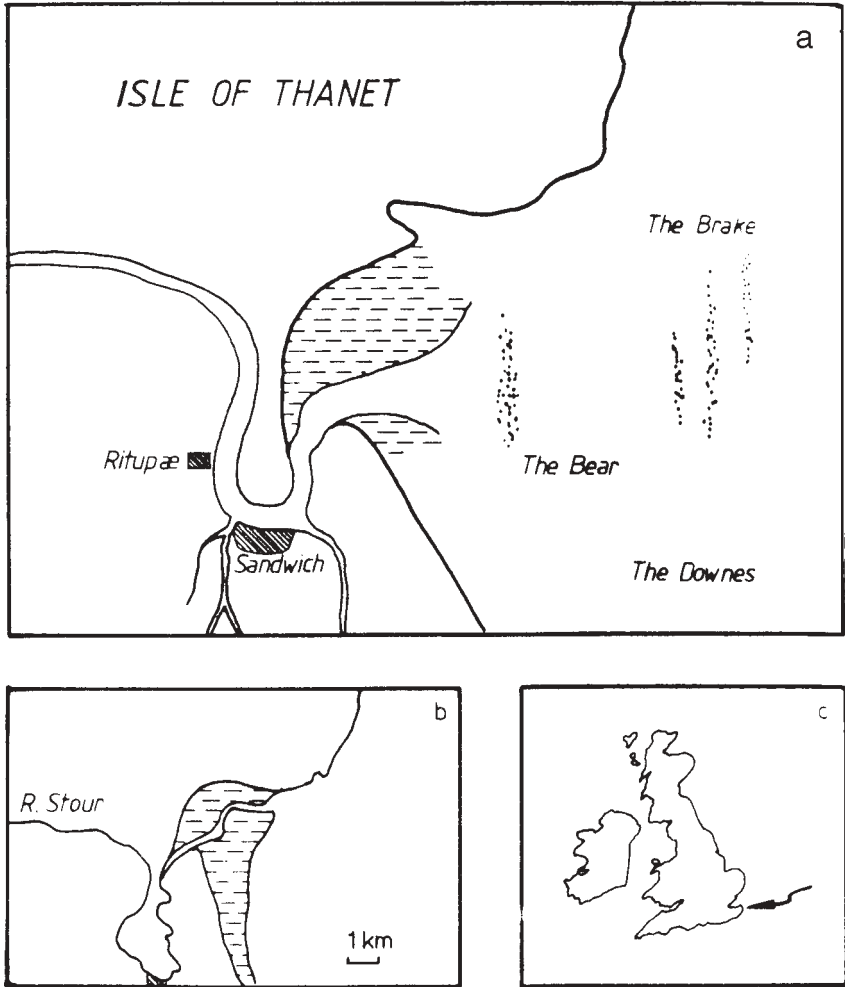


FIGURE 1

- (a) The Port of Sandwich and the estuary of the River Stour in medieval times. The map has been drawn from a number of early charts; in particular some early Elizabethan and Jacobean plans prepared for the possibility of cutting a new channel to the sea: British Library, Cotton MS. Aug. I.i.46¹⁵ and two maps in Clark (1973)¹⁶. These along with a chart of Sandwich Haven and The Downes made by Charles Labelye in 1737 (Robinson, 1962) hint at a narrowing and increasingly sinuous river. However, it is possible that the earliest charts over-emphasise the breadth and linearity of the channel (e.g. see R. Royal Ms. 18D.III in the British Library¹⁷). Broken hachures symbolise the tidal zone.
- (b) Inset shows the present condition of the same area.
- (c) Location map.

A METEOROLOGICAL SERVICE IN 15 C. SANDWICH

the fourteenth century the Venetian fleets had often come to the Downs off the coast from Sandwich to tranship their goods before dispersing to their various ports of call. However, in 1397 Venice had been advised that the Downs were unsuitable as a sheltered anchoring place ('road') and should no longer be used for transshipment. Instead the ships should proceed to the good harbours available near Rye or at Sandwich.¹⁸ The Venetian galleys had also routinely returned to Sandwich, gathering as a fleet before their long journey home, but often delays in re-assembly were so lengthy that they lost fair weather.¹⁹ A striking indication of the violence of the weather is given by the fate of one of these Venetian galleys in the winter of 1431-1432. The galley was blown off course on a voyage from Lisbon to Brugge and ended up circumnavigating the British Isles and made landfall in Norway.²⁰ This must have been a particularly disturbing incident because the Venetian galleys were regarded by contemporary observers as surpassing all other vessels,²¹ as they were powered by both oar and sail. They were said to be navigable in both favourable and adverse winds. Ordinary sailing vessels were much less manoeuvrable and could probably lay no nearer than seven points to the wind.²²

THE WAITS OF SANDWICH

The administrators of Sandwich faced the problems of a harbour more difficult to use with the high frequency of easterly winds that made departures difficult. Solutions such as dredging new channels were proposed, but proved impossible tasks. They tried to make the harbour attractive in more subtle ways. Sandwich had long offered low customs duties and provided warehouses for merchandise. It began to provide pilots for navigating the difficult estuary and even offered tourist attractions to the mariners. In particular it benefitted from arranging visits to the nearby shrine of St. Thomas Beckett, in Canterbury, for pious mariners.²³ The provision of weather information was another possibility. This is described by Schaseck, a standard bearer to the Bavarian emissary Leo Rozmital, who passed through Sandwich in February 1466:

It is the custom in Sandwich for men to perambulate the streets throughout the whole night, playing stringed instruments and sounding trumpets and announcing the direction of the wind. Hearing this, those merchants for whom the wind is favourable board their ships and direct their course homewards.²⁴

It is not easy to find further remarks on this custom. However, we know from the records of other English towns that it was common to retain musicians as watchmen. These watchmen, or more specifically waits, would pipe the watch at appropriate times through the night, sound alarms and waken certain people by playing music at their door. At first their duties were largely concerned with security, but later they became associated more with entertainment and pag-

entry.²⁵ There is a good account of their duties, for the fifteenth century, in *The Black Book of the Household of Edward IV*.²⁶ This tells that they were to pipe the watch and guard against fires and other perils. The Chamberlain of Dover 1365-7²⁷ employed some dozen musicians at this time (minstrels, horn-blowers, trumpeters, a harpist and a piper).

In Sandwich waits are listed among the ale-conners (ale testers), inspectors and umpires as officers of the town in the 15th C (William Boys, the Sandwich historian²⁸). There appear to have been two kinds of watchmen, the 'waytche' and the 'scowt waytche',²⁹ but our present interest focuses on the musicians who patrolled the streets at night. There were both pipers and minstrels listed in the records of the town. Two such minstrels were in the employ of the town when Leo Rozmital travelled through in 1466, because the civic records show that they were paid twenty shillings for their services in 1467. An official salary for musicians had long been a tradition in Sandwich, and some twenty years earlier the common wardsmen collected a penny from every household to pay the town

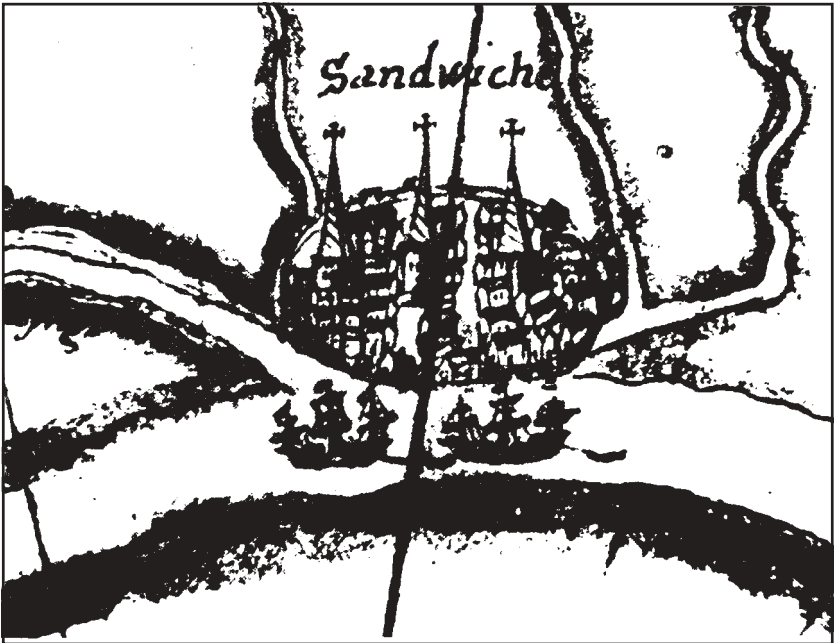


FIGURE 2

A view of Sandwich Harbour that is typical of that found on sixteenth century maps. The three churches certainly had weather vanes in the eighteenth century engravings printed in the book by Boys (1792)²⁸ and seem to be represented in earlier drawings, although they can have been of little use at night.

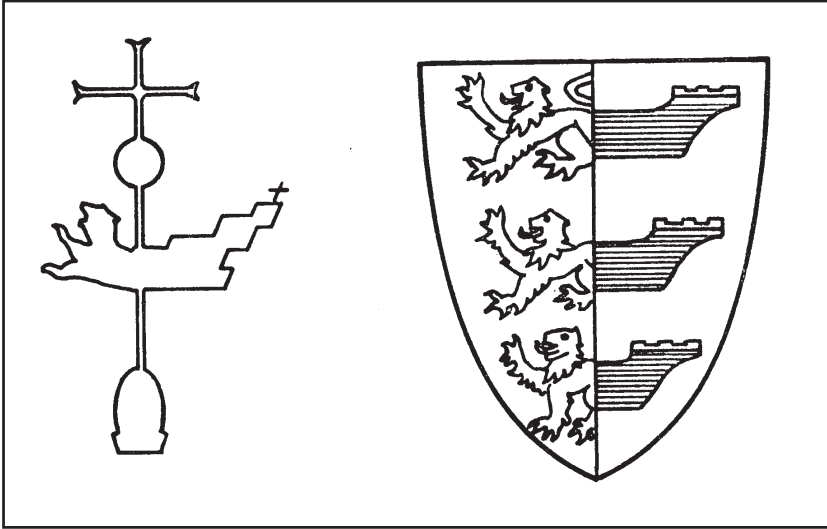


FIGURE 3

A sketch of the vane taken down from the steeple in Fordwich in 1588 and repaired by the local smith for 2s. Od., compared with the Sandwich coat-of-arms.

minstrels. There is little evidence of the kinds of instruments they played. However lutenists, such as Robert Cocke, were highly regarded. He was granted the right to bear the Arms of the Cinque Ports by a meeting of the General Brodhull at Romney.³⁰ The waits of Sandwich were also given livery and silver collars (no doubt the wait chains, in the style of mayoral regalia³¹) at the end of the fifteenth century. The duties of the minstrels of Sandwich cannot be ascertained from the documents available, but it may be significant that minstrels are listed in the Manuscripts of the Corporation of New Romney.³² In this document, the Sandwich minstrels appear next to the 'criers of the banns' which reminds us that they were probably involved in dissemination of information besides purely musical activities.

The only meteorological instrument available to these early observers would have been the weather vane. Even in the previous century the authorities of the Cinque Ports provided weather vanes to aid mariners.³³ It is also possible that there were weather vanes on top of the three churches in Sandwich. Needham³⁴ has drawn attention to a peculiarly regional weather vane that incorporated a charge from the Sandwich or Cinque Ports coat of arms: a demi-lion passant guardant points forward into the wind with the demi-hulk to the lee. There are records of just such a vane being taken down for repairs in Fordwich in 1588.

However, it is unlikely that weather vanes would have been very useful at night. Contemporary writers claim that the sailors of Sandwich were particularly talented at sensing the approach and direction of the wind and telling which sails were to be set.³⁵ Perhaps the Sandwich musicians shared their ability, like Chaucer's shipman of Dartmouth, skilled in brawling, filching wine and

.... in navigation, whether reckoning tides,
 Currents or what might threaten him besides,
 Harbourage, pilotage, or the moon's demeanour,
 None was his like from Hull to Cartagena.

CONCLUSION

The evidence from fifteenth century documents is tantalising, but insufficient to answer many questions we would like to raise about this early weather service. The association of meteorology with the town musicians will seem surprising to many people, but inspection of traditional wait melodies shows that meteorological information is not entirely absent, e.g. the tune known as 'The London Waits,' found in John Playford's book *The English Dancing Master*:

Past three a'clock, and a cold and frosty morning;
 Past three a'clock, good morrow, masters all.³⁶

This was a time of rapid coastal change in Britain and the Low Countries. This may have been a function of climate change, but inclement weather and the frequency of difficult easterly winds troubled mariners. No doubt they appreciated announcement of a change in direction. Despite an inability to make forecasts or to disseminate the information over a long distance, musicians in Sandwich could have created a very restricted but effective service. Climate and coastal change may have been driving forces in the need for Sandwich to make use of weather reporting at such an early date.

NOTES

The translations of Chaucer used in this paper come from T. Morrison, *The Portable Chaucer* (Viking Press, 1949).

¹ N. Shaw, *The Drama of Weather* (1933)

² N. Shaw, *Manual of Meteorology*, Vol. I (1932) Ch. viii

³ R. Page, *Weather Forecasting the Country Way* (1981)

⁴ *Weather*, xxix (1974), 233-7

⁵ *Weather*, xxviii (1973), 210-1

⁶ *Oxford Historical Society*, xxviii (1923)

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- ⁷ L. Thorndyke, *A History of Magic and Experimental Science*, Vol. III (1934)
- ⁸ A. B. Emden, *A Biographical Register of the University of Oxford* (1959)
- ⁹ *Weather*, xxix (1974), 416-26
- ¹⁰ D. Gardiner, *Historic Haven* (1954)
- ¹¹ *Ibid.* Ch. xiii
- ¹² Old Black Book (1432-1487), Kent Archives
- ¹³ J. Leland, *Itineraries* (1546) part vii, 127
- ¹⁴ H. H. Lamb, *Climate, Past, Present and Future*, Vol. II (1977), 457
- ¹⁵ A.W.H. Robinson, *Marine Cartography in Britain* (1962)
- ¹⁶ R.G. Clark, *Sandwich Information for District Planning and Conservation* (1973)
- ¹⁷ *Archaeologica Cantania*, LIV, 41
- ¹⁸ Cal. State Pap. Venetian (1397), 120, 36
- ¹⁹ Cal. State Pap. Venetian (1407), 156, 44
- ²⁰ H. H. Lamb, *op. cit.*
- ²¹ Hakluyt Soc. 2nd. Series, cvii (1957), 50
- ²² J. M. Martinez-Hidalgo, *Columbus' Ships* (1966)
- ²³ Cal. State Pap. Venetian (1429), 241, 63
- ²⁴ Hakluyt Soc. *op. cit.*
- ²⁵ C. A. Janssen, 'The Waytes of Norwich in Medieval and Renaissance Civic Pageantry' - thesis University of New Brunswick (1978); Music Book, vii (1952), 170-83
- ²⁶ A. R. Myers, *The Household of Edward IV* (1959)
- ²⁷ *Archaeologia Cantiana*, xxv, 85
- ²⁸ W. Boys, *Collections for a History of Sandwich* (1792)
- ²⁹ Old Black Book (1432-1487), Kent Archives
- ³⁰ White and Black Books of the Cinque Ports p. 35
- ³¹ Music Book, vii (1952), 170-83
- ³² Historical Manuscript Commission 5th Report, Part I Report and Appendix (1857) 546
- ³³ Exch. K. R. Accts (1365) 462, 23
- ³⁴ A. Needham, *Weather Vanes* (1953)
- ³⁵ Hakluyt Soc. *op. cit.*
- ³⁶ J. Playford, *The English Dancing Master* (1651)