Spring 2013

History 4262.002 The Rise Of English Sea Power 1399-1714 MWF 9 – 9:50 am Wooten Hall 210

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Required Books:

Lockyer, Roger. Tudor and Stuart Britain: 1485-1714, 3rd ed.

Nelson, Arthur. The Tudor Navy: The Ships, Men and Organization, 1485-1603

Davies, J.D. Pepys's Navy: Ships, Men & Warfare, 1649-1689

Purpose of this Course:

This course is designed to teach students about the most important aspects of the early modern history of the Navy Royal/Royal Navy. Topics will include the administrative and technological development of the English navy during the reigns of the Tudor and Stuart monarchs, its use by those monarchs in the rise to power of the English state from 1399 until 1714, and the influence of both the navy and the sea upon English culture and society during the period under study.

Course Requirements and Grading Policies:

Students will take three major exams. In addition, they will write a 10-page paper. All will be graded on a strict 100-point scale. The final will <u>NOT</u> be comprehensive.

Graduate Students:

Graduate students taking this class will write a 25-page historiographical paper in lieu of the 10-page undergraduate paper.

The grades will be assigned as follows:

A = 90 - 100 points
B = 80 - 89 points
C = 70 - 79 points
D = 60 - 69 points
F = 59 and below

Exams, and Papers (percentage of grade)

1 st Exam (25%)	Friday, February 8
2 nd Exam (25%)	Wednesday, March 6
Bibliography for Paper	Wednesday, March 6
Paper Due (25%)	Monday, April 8
3 rd Exam - Final (25%)	Wednesday, May 8
	(8 - 10 am)

General Outline (with some appended readings from Davies):

Lancaster and York

I. Henry IV, Henry V, Henry VI, Edward IV, Edward V, Richard III

- A. Ships, 1066 1455
- B. Administration
 - 1. 1216 1420
 - 2. 1420 1455
- C. Social History, 1204 1455
- D. Operations
 - 1. 1360 1410
 - 2. 1410 1455

Tudors

- II. Henry VII
- III. Henry VIII, Edward VI, Mary I, Elizabeth I
 - A. Ships, 1509 1602
 - B. Administration
 - 1. 1509 1574
 - 2. 1574 1603
 - C. Social History
 - 1. Officers, 1509 1603
 - 2. Men, 1509 1603
 - D. Operations
 - 1. 1509 1523
 - 2. 1523 1550
 - 3. 1550 1572
 - 4. 1572 1587
 - 5. 1588
 - 6. 1589 1603; Davies pp. 10 12

Early Stuarts

- IV. James VI & I and Charles I
 - A. Ships, 1603 1639
 - B. Administration
 - 1. 1603 1630
 - 2. 1630 1639
 - C. Social History, 1603 1639
 - D. Operations
 - 1. 1603 1630
 - 2. 1630 1639
- V. The Navy and the Fall of Charles I

Commonwealth the Protectorate

- VI. Parliament, Oliver Cromwell, Richard Cromwell
 - A. Ships, 1649 1660
 - B. Administration, 1649 1660
 - C. Social History, 1649 1660
 - D. Operations
 - 1. 1649 1654
 - 2. 1654 1659

Later Stuarts

- VII. Charles II and James II; Davies pp. 19 24
 - A. Ships, 1660 1688; Davies pp. 38 86
 - B. Administration, 1660 1688; Davies pp. 25 32
 - C. Social History, 1660 1688; Davies pp. 33 36
 - D. Operations
 - 1. 1660 1668
 - 2. 1668 1687
- VIII. William III and Mary II, Anne
 - A. Ships, 1688 1714
 - B. Administration, 1689 1714

- C. Social History, 1689 1714
- D. Operations
 - 1. 1688 1692
 - 2. 1693 1700
 - 3. 1701 1714

Readings:

Tudors

<u>Henry VII</u> (1485 – 1509) Lockyer pp. 1 – 26; Nelson pp. 7 – 35 <u>Henry VIII</u> (1509 – 1547) Lockyer pp. 27 – 106; Nelson pp. 36 – 62 <u>Edward VI</u> (1547 – 1553) Lockyer pp. 107 – 123; Nelson pp. 63 – 73 <u>Mary I</u> (1553 – 1558) Lockyer pp. 124 – 138; Nelson pp. 74 – 81 <u>Elizabeth I</u> (1558 – 1603) Lockyer pp. 184 – 252; Nelson pp. 82 – 210

Early Stuarts

<u>James VI and I</u> (1603 – 1625) Lockyer pp. 253 – 294; Nelson pp. 211 – 216 <u>Charles I</u> (1625 – 1649) Lockyer pp. 295 – 358; Davies pp. 12 – 14

Commonwealth and Protectorate (1649 – 1660) Lockyer pp. 359 – 378; Davies pp. 14 – 18, 25

Later Stuarts

<u>Charles II (1660 – 1685)</u> Lockyer pp. 392 – 425; <u>James II</u> (1685 – 1688) Lockyer pp. 426 - 436 <u>William III and Mary II</u> (1689 – 1702) Lockyer pp. 436 - 454 Anne (1702 – 1714) Lockyer pp. 455 – 476

Additional Background and Naval History Readings:

Tudor Social and Economic History Lockyer pp. 139 – 161 Ireland and Scotland (1485 – 1603) Lockyer pp. 162 – 183 Ireland, Scotland, and Overseas Possessions (1603 – 1714) Lockyer pp. 477 – 510 Early Stuart Social and Economic History (1603 – 1660) Lockyer pp. 379 – 391 Late Stuart Social and Economic History (1660 – 1714) Lockyer pp. 511 – 530 Strategy and Deployment (1649 – 1688) Davies pp. 223 – 246 Tactics and Battle (1649 – 1673) Davies pp. 248 – 268 Social History:

Officers (1649 – 1689) Davies pp. 88 – 106
Recruitment (1649 – 1689) Davies pp. 108 – 120
Naval Crews (1649 – 1689) Davies pp. 122 – 133
Work and Life Aboard Ship (1649 – 1689) Davies pp. 135 – 176
Dockyards, Bases, and Victualling (1649 – 1689) Davies pp. 178 – 202
Foreign Navies (1649 – 1689) Davies pp. 204 – 221
The Glorious Revolution and After (1688 *et seq.*) Davies pp. 270 – 284

No extra credit work will be assigned or accepted.

Structure of Major Exams:

A review for each of the major exams will be given out three (3) weeks prior to the date on which each exam will be given. Six (6) of the questions on the review will be chosen by the instructor to include in the exam upon which the review is based. The chosen questions will be divided into three (3) pairs. The instructor will determine the pairings. Each student must select one question from each of the three pairs

of questions for a total of three essays. Students are expected to use the list of possible essay questions on each review to prepare for the particular test for which that review has been prepared.

Papers:

The body of papers will be ten (10) pages in length.

Papers will be double-spaced with margins (left, right, top, and bottom) of one inch.

Students will use 12 point Times Roman typeface.

Use endnotes only.

DO NOT USE FOOTNOTES!!!

DO NOT USE PARENTHETICAL CITATIONS!!!

Students will cite sources using the style described in Turabian/Chicago Manual handout.

Failure to use the specified style will result in a deduction of points.

The instructor has established a turnitin.com site for this class. Students will upload an electronic copy of their paper to the site and will hand in a paper copy to the instructor, both by the date indicated above (Monday, April 8, 2013).

Each student must meet with the instructor to discuss paper topics. Students will be assigned individual paper topics at these meetings.

Punctuality and attendance:

Students are expected to be on time for all class meetings and examinations. Attendance will be taken at each class meeting. Students who miss more than five (5) class meetings during the semester will be dropped one letter grade. In addition, attendance will be used, at the instructor's discretion, to determine whether or not the student receives the instructor's "benefit of the doubt" when grades are assigned at the end of the semester.

Office Hours:

Monday and Wednesday 12 noon – 4 pm in Wooten Hall Rm 228

Contacting Your Instructor:

It is best to contact your instructor via email. I am not in my office outside of office hours very often, but I check my email regularly. I will get back with you as soon as possible.

Information Concerning Grades:

FERPA rules require that information concerning grades be communicated directly to students by the instructor. This means that I cannot communicate information concerning a student's grades via email or telephone. The instructor and student must meet face-to-face.

Handout and Test Return Policy:

Those students missing class when instructional items and graded tests are distributed can pick up missed materials and graded tests during office hours.

Class Notes:

The instructor will <u>not</u> furnish class notes or copies of the presentations to students. If you miss a lecture, get the notes from one of your fellow students in the class.

Student Behavior:

Students are expected to act like responsible adults in class. This means no talking or engaging in any other disruptive activity once class has begun. Students may speak when called upon by the instructor or, within reason, when reacting to something done or said by the instructor. Students who fail to comply

with this standard of behavior will receive two warnings. If a third warning proves necessary, then the offending student/students will be told to leave the classroom.

Persons who are late getting to class on the day of a test or on the day of the final will not be allowed to take the test/final if they arrive after any students have completed and handed in their tests. Know what day your tests are being given and get to class on time.

If you leave class while a test is being administered with your books or any other materials in your possession, your test will be taken and graded based upon what you have completed.

Cell Phones:

Cell phones will be turned <u>completely off</u>. If a student needs to have the cell phone on vibrate for some reason, he or she must see the instructor before class for permission.

During tests, cell phones must be put away so that they are not visible to the student. No text messaging allowed. Sending or receiving text messages during an exam will be considered prima facie evidence of cheating and will be handled accordingly.

Use of Computers in Class:

Students may use computers to take notes in class. However....

While the instructor understands the popularity and convenience of laptops for this purpose, he also knows that far too often students use their computers to play games and surf the Internet. The misuse of a computer during class in this manner not only harms the student engaged in the activity, but it also is a distraction to others around the student who might actually be in class for the purpose of taking notes in preparation for the tests. To protect the studious, students who misuse their computers in this way will, when caught, be told to shut off their computer.

Make-up Policy for Major Exams

A student missing the First or Second Exam must make up the exam by the beginning of class the following week. A make-up exam will be placed in the History Help Center for students who <u>meet with the instructor</u> and arrange to take the make-up. Make-up exams will not be automatically placed in the Help Center. It is the student's responsibility to make sure that a missed exam is made up within the specified one-week period. Unless other arrangements are made with the instructor, all students who do not make up a test within the one-week make-up period will receive a "0" ["zero"] for that exam.

Disability Accommodation (ADA):

"The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the Office of Disability Accommodation website at http://www.unt.edu/oda. You may also contact them

by phone at 940.565.4323." The ODA liaison for the Department of History is Dr. Pomerleau (Wooten Hall Room 234; phone 940-565-4214).

Academic Ethics (Cheating and Plagiarism):

Students will be held accountable for acts of cheating, dishonesty, or plagiarism as defined in the student handbook. This includes, by the way, the use of cell phones to text answers to one another during an exam. Any student found to be engaging in any form of dishonest conduct during the taking of an exam will be expelled from that particular class period and will receive a "0" ["zero"] for that exam.

History Help Center:

Located in Wooten Hall, Room 220, the History Help Center provides assistance to students enrolled in history courses at UNT.

The Instructor reserves the right to add to or to make changes to any and all of the forgoing descriptions, instructions and/or information at his discretion.

Nautical / Naval Terms

- 1. <u>Aback</u> a term applied to a vessel whose yards are so trimmed that the wind is on their forward side and tending to drive her astern
- 2. Abaft towards the stern of a ship, relative to some other object or position.
- 3. Aboard on or in a vessel. Close aboard is to be in close proximity to a ship or obstruction.
- 4. About across the wind in relation to the bow of a sailing vessel.
- 5. <u>Adrift</u> a term denoting floating at random, as of a boat or ship broken away from its moorings and at the mercy of winds and waves.
- 6. <u>Afloat</u> the condition of resting buoyantly upon the water, the upward pressure being equal to that of gravity.
- 7. Aft at or near the stern or after part of a ship (opposite of fore).
- 8. Astern behind a vessel.
- 9. Athwart something which is directly across the line of a ship's course.
- 10. <u>Awash</u> the condition when the seas wash over a wreck or shoal, or when a vessel is so low that water is constantly washing aboard in quantities.
- 11. Away an order to shove off or to lower a boat or draft of cargo.
- 12. Aweather towards the direction of the wind; to windward.
- 13. <u>Aweigh</u> the situation of the anchor at the moment it is broken out of the ground. When this situation occurs, the ship is no longer secured to the ground and will drift unless under sail or power.
- 14. <u>Ballast</u> additional weight carried in a ship to give it stability and/or to provide a satisfactory trim.
- 15. <u>Batten Down</u> to secure the openings in the decks and sides of a vessel when heavy weather is forecast.
- 16. <u>Beam</u> the transverse measurement of a ship at its widest part. It is also a term used in indicating direction in relation to a ship.
- 17. <u>Bearing</u> the direction or point of the compass in which an object is seen, or the direction of one object from another, with reference to (1) the nearest cardinal point of the compass, or (2) true north, measuring clockwise.
- 18. Beating working to windward by successive tacks.
- 19. <u>Becalm</u> to blanket a sail or vessel by intercepting the wind with other sails or with another vessel. A vessel unable to make progress through the lack of wind is *becalmed*.

- 20. <u>Bend, to</u> to secure a sail to a yard or other spar. Also, to shackle the chain to the anchor.
- 21. <u>Binnacle</u> a wooden box or non-magnetic metallic container for the compass.
- 22. <u>Boatswain</u> (pron. $b\bar{o}$ 'sun) in the U.S. Navy, a warrant officer whose major duties are related to deck and boat seamanship.
- 23. <u>Boatswain's Mate</u> in the U.S. Navy, a petty officer who supervises the deck force in seamanship duties.
- 24. Bollards two vertical heads of iron or wood to which mooring lines are made fast.
- 25. Boom Out a Sail, to to extend a corner of a sail with a spar.
- 26. <u>Bow</u> the foremost end of a ship.
- 27. <u>Bowditch, Nathaniel</u> (1773-1838) the author of the *American Practical Navigator*, the great American epitome of navigation, known popularly among seafarers as *Bowditch*. It is published by the U.S. Naval Oceanographic Office.
- 28. <u>Bowline</u> (pron. *bō'lin*) the line leading forward from the bow chock when a vessel is tied up to a wharf.
- 29. <u>Bowsprit</u> (pron. $b\bar{o}$ 'sprit) a large spar projecting from the stem of sailing vessels.
- 30. <u>Boxing the Compass</u> to name the points (and quarter points) of the compass from north through south to north and return backwards and to be able to answer any question respecting it divisions.
- 31. Break a sudden rise or drop in a vessel's deck line.
- 32. <u>Bridge</u> an elevated athwartship platform from which a vessel is navigated and all activities on deck are in plain view.
- 33. <u>Bring To, to</u> to heave a vessel to the wind.
- 34. <u>Broadside</u> the full weight of metal which can be fired simultaneously from all the guns on one side of a warship.
- 35. <u>Bulkhead</u> a vertical partition dividing the hull into separate compartments.
- 36. <u>Bulwark</u> the planking or woodwork, or steel plating in the case of steel ships, along the sides of a ship above its upper deck to prevent seas washing over the gunwales.
- 37. By the Head when a vessel is deeper than her normal draft forward.
- 38. <u>By the Lee</u> the situation when a square-rigged vessel running free on one tack is thrown off by a sea or bad steering sufficiently to bring her sails aback on the other tack.
- 39. <u>By the Stern</u> when a vessel is deeper than her normal draft at the stern, out of trim by an excess of weight aft.

- 40. By the Wind sailing close-hauled.
- 41. <u>Capstan</u> a cylindrical barrel fitted in larger ships on the forecastle deck and used for heavy lifting work, particularly when working anchors and cables.
- 42. <u>Careen</u> to list; a vessel is hove down by careening her, when in a light trim, by use of tackles to a dock or trees on a river bank for the purpose of cleaning her bottom.
- 43. <u>Cat o'Nine Tails</u> an implement of punishment in the old navy. It consisted of nine cords each with three knots, all lashed to a short heavy piece of rope. To be so punished was to be *introduced to the gunner's daughter*.
- 44. <u>Celo-navigation</u> the science of finding a ship's position by means of observations of heavenly bodies and the mathematical calculation attending them.
- 45. <u>Close-hauled</u> the condition of sailing when a vessel sails as close to the wind as possible with her sails full and drawing.
- 46. Come To, to to turn toward the wind.
- 47. <u>Coxswain</u> (pron. *coxs'n*) the helmsman of a ship's boat and the senior member of its crew who has permanent charge of it.
- 48. <u>Davits</u> small cranes from which a ship's boats are slung.
- 49. <u>Dismasted</u> to lose a mast.
- 50. <u>Draft</u> the depth of water a ship draws.
- 51. <u>Ensign</u> the flag carried by a ship as insignia of her nationality, usually hoisted on a staff over the railing about her stern.
- 52. Fall Off, to to deviate from the course to which the head of a ship was previously directed.
- 53. Fathom a nautical measure equal to six feet.
- 54. <u>Flag Officer</u> naval officer above rank of captain. So called because the officer is authorized to fly a personal flag.
- 55. Flagstaff a pole on which a flag is hoisted and displayed.
- 56. Forecastle (pron. fō'c'sul) forward section of weather deck.
- 57. <u>Freeboard</u> the distance, measured at the center of the ship, from the waterline to the uppermost complete deck that has permanent means of closing all openings in its weather portions.
- 58. <u>Gaff</u> a spar that stands or hoists on the after side of the mast and supports the head of the sail.
- 59. Gunwale (pron. gunnul) the upper edge of a vessel's or boat's side.

- 60. <u>Halliards</u> the ropes, wires, or tackles used to hoist or lower sails.
- 61. <u>Hatch</u> an opening in a ship's deck affording access into the compartment below.
- 62. <u>Haul, to</u> to pull (nothing is ever "pulled" aboard ship)
- 63. <u>Haul the Wind, to</u> to bring a sailing vessel nearer to the wind after she has been running before the wind.
- 64. Head toilet facilities.
- 65. <u>Heave To, to</u> to operate a sailing ship or powered vessel in such a way as to make no headway (the vessel remains relatively stationary). [syn. "to lie to"]
- 66. <u>Heel, to</u> to lean over to one side, though not permanently.
- 67. Helm the steering mechanism of a ship.
- 68. <u>Hull</u> the body of a vessel exclusive of masts, yards, sails, rigging, machinery, and equipment.
- 69. <u>Hull-down</u> a ship so far distant that only its masts, and/or sails, funnels, etc., are visible above the horizon.
- 70. <u>Hull a Ship, to</u> to penetrate a vessel's hull with shot.
- 71. <u>Inboard</u> towards midships.
- 72. <u>Jackstaff</u> flagpole at the bow from which the union jack is flown when a ship is not under way.
- 73. Keel the main center-line structural member, running fore and aft along the bottom of a ship.
- 74. <u>Keel-haul</u> a punishment in which a man was hauled down one side of a vessel under the keel and up the other side.
- 75. <u>Knot</u> a measure of speed, not distance, in nautical miles per hour (equivalent to app. 1.1508 statute miles per hour)
- 76. <u>Larboard</u> left (now referred to as "port") side of a ship when looking forward.
- 77. <u>Larboard (or Port) Tack</u> the situation of a sailing vessel with her sails trimmed for a wind which comes over her larboard (or port) side.
- 78. Lee the side of a ship, promontory, or other object away from the wind.
- 79. Leeward, to (pron. loo'ard) being situated, or having a direction, away from the wind.
- 80. <u>List</u> the inclining of a ship to one side or the other due usually to a shift in the cargo or the flooding of some part of the hull. It is a longer-term situation than a heel.
- 81. Magazine compartment aboard ship or ashore fitted for the stowage of ammunition.

- 82. On the Beam the direction at right angles to a ship's heading or line of her keel.
- 83. Outboard away from a vessel; away from the center fore and aft line.
- 84. Overhaul to overtake another vessel.
- 85. <u>Patent Log</u> (also, Taffrail Log) a mechanical device used for the purpose of measuring the distance a vessel has sailed.
- 86. <u>Plimsoll Mark</u> a figure marked on thesides of cargo carriers indicating the depth to which the vessel can be loaded under given weather and water conditions.
- 87. Poop the raised deck and after structure at the stern of a vessel.
- 88. <u>Press of Sail</u> said of a vessel which carries an extraordinary spread of canvas for some special purpose such as to avoid stranding, to escape an enemy, etc....
- 89. <u>Purchase</u> general term for any mechanical arrangement of blocks and line for multiplying force.
- 90. <u>Quarterdeck</u> ceremonial area of the main deck. In sailing vessels, it is abaft the mainmast. It was from the quarterdeck that the captain or master commanded a sailing vessel.
- 91. Rake, to to maneuver a warship so that it can fire down the length of an adversary.
- 92. <u>Rigging</u> all the rope, chain, metalwork, and associated fittings used to support and operate the masts, spars, flags, sails, booms, and derricks of sailing vessels, and the masts, booms, and derricks of powered vessels.
- 93. Rudder a flat vertical surface astern by which a ship or boat may be steered.
- 94. <u>Scuppers</u> draining holes cut through the bulwarks to allow any water on deck to drain away down the ship's side.
- 95. Sheave (pron. shīv) the revolving wheel (or pulley) in a block.
- 96. Shoal a patch of water in the sea with a depth less than that of the surrounding water.
- 97. Spanker the fore and aft sail set from the after mast of a sailing vessel.
- 98. Spars a term applied to all masts, yards, gaffs, booms, etc.
- 99. <u>Starboard</u> right side of a ship when looking forward.
- 100. <u>Starboard Tack</u> the situation of a sailing vessel with her sails trimmed for wind which comes over her starboard side.
- 101. <u>Steerage Way</u> to have sufficient headway for the rudder to grip the water so that a vessel will answer to her helm.
- 102. <u>Stem</u> the foremost timber or steel member forming the bow of a vessel.

- 103. Stern the after end of a vessel.
- 104. <u>Strake</u> line of planks or plates running the length of a vessel.
- 105. <u>Superstructure</u> all construction above the main deck of a ship.
- 106. <u>Tack, to</u> the operation of bringing a sailing vessel's head to wind and across it so as to bring the wind on the opposite side of the vessel.
- 107. <u>Tackle</u> (pron. *tākle*) name used for a purchase after a line has been rove through the sheaves and the standing part has been made fast to one of the blocks. Essentially synonymous with "purchase" in everyday usage.
- 108. <u>Taffrail</u> the upper part of a ship's stern.
- 109. <u>Tiller</u> lever that turns the rudder on a boat. Synonymous with "helm" in a larger vessel.
- 110. <u>Van</u> the forward part or group of a formation of ships.
- 111. Waterline the line indicated along the side of a vessel by the plane of the surface of the water.
- 112. Weather towards the point from which the wind blows.
- 113. Weather Deck an uncovered deck exposed to the weather.
- 114. Weather Gage the advantage of the wind. It refers to the position of a ship under sail when she is windward of another ship.
- 115. Weigh to raise or lift the anchor.
- 116. Windward, to in the direction from which the wind blows.
- 117. <u>Yards</u> long, nearly cylindrical spars, tapering toward the ends, used for supporting and extending sails.

Compass points

#	Compass point	Abbr.	Traditional wind point	True heading
1	<u>North</u>	N	Tramontana	0.00° or 360.00°
2	North by east	NbE		11.25°
3	North-northeast	NNE		22.50°
4	Northeast by north	NEbN		33.75°
5	<u>Northeast</u>	NE	Greco or Bora	45.00°
6	Northeast by east	NEbE		56.25°
7	East-northeast	ENE		67.50°
8	East by north	EbN		78.75°
9	<u>East</u>	Е	Levante	90.00°
10	East by south	EbS		101.25°
11	East-southeast	ESE		112.50°
12	Southeast by east	SEbE		123.75°
13	Southeast	SE	Sirocco	135.00°
14	Southeast by south	SEbS		146.25°
15	South-southeast	SSE		157.50°
16	South by east	SbE		168.75°
17	South	S	Ostro	180.00°
18	South by west	SbW		191.25°
19	South-southwest	SSW		202.50°
20	Southwest by south	SWbS		213.75°
21	Southwest	SW	Libeccio	225.00°
22	Southwest by west	SWbW		236.25°
23	West-southwest	WSW		247.50°
24	West by south	WbS		258.75°
25	<u>West</u>	W	Poniente or Zephyrus	270.00°
26	West by north	WbN		281.25°
27	West-northwest	WNW		292.50°
28	Northwest by west	NWbW		303.75°
29	<u>Northwest</u>	NW	Mistral	315.00°
30	Northwest by north	NWbN		326.25°
31	North-northwest	NNW		337.50°
32	North by west	NbW		348.75°



