

Navigation General

General Compass Questions

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|---|---|----------|
| <p>1      213      Ref: Compass, Boxing, Heading<br/>                 A vessel heading ENE is on a course of _____.<br/>                 A. 022.5°<br/>                 B. 045.0°</p> | <p>C. 067.5°<br/>                 D. 090.0°</p> | <p>C</p> |
| <p>2      214      Ref: Compass, Boxing, Heading<br/>                 A vessel heading ESE is on a course of _____.<br/>                 A. 112.5°<br/>                 B. 135.0°</p> | <p>C. 157.5°<br/>                 D. 180.0°</p> | <p>A</p> |
| <p>3      215      Ref: Compass, Boxing, Heading<br/>                 A vessel heading NE is on a course of _____.<br/>                 A. 022.5°<br/>                 B. 045.0°</p>  | <p>C. 067.5°<br/>                 D. 090.0°</p> | <p>B</p> |
| <p>4      216      Ref: Compass, Boxing, Heading<br/>                 A vessel heading NNE is on a course of _____.<br/>                 A. 022.5°<br/>                 B. 045.0°</p> | <p>C. 067.5°<br/>                 D. 090.0°</p> | <p>A</p> |
| <p>5      217      Ref: Compass, Boxing, Heading<br/>                 A vessel heading NNW is on a course of _____.<br/>                 A. 274.5°<br/>                 B. 292.0°</p> | <p>C. 315.5°<br/>                 D. 337.5°</p> | <p>D</p> |
| <p>6      218      Ref: Compass, Boxing, Heading<br/>                 A vessel heading NW is on a course of _____.<br/>                 A. 274.5°<br/>                 B. 292.5°</p>  | <p>C. 315.0°<br/>                 D. 337.5°</p> | <p>C</p> |
| <p>7      219      Ref: Compass, Boxing, Heading<br/>                 A vessel heading SE is on a course of _____.<br/>                 A. 112.5°<br/>                 B. 135.0°</p>  | <p>C. 157.5°<br/>                 D. 180.0°</p> | <p>B</p> |
| <p>8      220      Ref: Compass, Boxing, Heading<br/>                 A vessel heading SSE is on a course of _____.<br/>                 A. 112.5°<br/>                 B. 135.0°</p> | <p>C. 157.5°<br/>                 D. 180.0°</p> | <p>C</p> |
| <p>9      221      Ref: Compass, Boxing, Heading<br/>                 A vessel heading SSW is on a course of _____.<br/>                 A. 202.5°<br/>                 B. 225.0°</p> | <p>C. 247.5°<br/>                 D. 270.0°</p> | <p>A</p> |
| <p>10     222      Ref: Compass, Boxing, Heading<br/>                 A vessel heading SW is on a course of _____.<br/>                 A. 202.5°<br/>                 B. 225.0°</p>  | <p>C. 247.5°<br/>                 D. 270.0°</p> | <p>B</p> |
| <p>11     223      Ref: Compass, Boxing, Heading<br/>                 A vessel heading WNW is on a course of _____.<br/>                 A. 270.0°<br/>                 B. 292.5°</p> | <p>C. 315.0°<br/>                 D. 337.5°</p> | <p>B</p> |

- 12      224      Ref: Compass, Boxing, Heading      C  
 A vessel heading WSW is on a course of \_\_\_\_\_.  
 A. 202.5°      C. 247.5°  
 B. 225.0°      D. 271.0°
- 13      413      Ref: Compass, CE, Deviation, C to M      C  
 Deviation is the angle between the \_\_\_\_\_.  
 A. true meridian and the axis of the compass card  
 B. true meridian and the magnetic meridian  
 C. magnetic meridian and the axis of the compass card  
 D. axis of the compass card and the degaussing meridian
- 14      494      Ref: Compass, CE, Deviation, C to M      D  
 If the compass heading and the magnetic heading are the same then \_\_\_\_\_.  
 A. the deviation has been offset by the variation  
 B. there is something wrong with the compass  
 C. the compass is being influenced by nearby metals  
 D. there is no deviation on that heading
- 15      500      Ref: Compass, CE, Deviation, C to M      A  
 If the magnetic heading is greater than the compass heading, the deviation is \_\_\_\_\_.  
 A. east      C. north  
 B. west      D. south
- 16      658      Ref: Compass, CE, Deviation, C to M      B  
 Magnetic compass deviation \_\_\_\_\_.  
 A. varies depending upon the bearing used  
 B. is the angular difference between magnetic north and compass north  
 C. is published on the compass rose on most nautical charts  
 D. is the angular difference between geographic and magnetic meridians
- 17      896      Ref: Compass, CE, Deviation, C to M      B  
 The difference between magnetic heading and compass heading is called \_\_\_\_\_.  
 A. variation      C. compass error  
 B. deviation      D. drift
- 18      987      Ref: Compass, CE, Deviation, C to M      A  
 The horizontal angle between the magnetic meridian and the north-south line of the magnetic compass is \_\_\_\_\_.  
 A. deviation      C. compass error  
 B. variation      D. dip
- 19      384      Ref: Compass, CE, Deviation, Cause      C  
 Compass deviation is caused by \_\_\_\_\_.  
 A. magnetism from the earth's magnetic field  
 B. misalignment of the compass  
 C. magnetism within the vessel  
 D. a dirty compass housing
- 20      411      Ref: Compass, CE, Deviation, Cause      D  
 Deviation in a compass is caused by the \_\_\_\_\_.  
 A. vessel's geographic position  
 B. vessel's heading  
 C. earth's magnetic field  
 D. influence of the magnetic materials of the vessel

- 21 412 Ref: Compass, CE, Deviation, Cause C  
Deviation is caused by \_\_\_\_\_.
- A. changes in the earth's magnetic field
  - B. nearby magnetic land masses or mineral deposits
  - C. magnetic influence inherent to that particular vessel
  - D. the magnetic lines of force not coinciding with the lines of longitude
- 22 436 Ref: Compass, CE, Deviation, Cause D  
Error may be introduced into a magnetic compass by \_\_\_\_\_.
- A. making a structural change to the vessel
  - B. a short circuit near the compass
  - C. belt buckles
  - D. All of the above
- 23 1811 Ref: Compass, CE, Deviation, Cause D  
Which would influence a magnetic compass?
- A. Electrical wiring
  - B. Iron pipe
  - C. Radio
  - D. All of the above
- 24 864 Ref: Compass, CE, Deviation, Heading C  
The compass deviation changes as the vessel changes \_\_\_\_\_.
- A. geographical position
  - B. speed
  - C. heading
  - D. longitude
- 25 722 Ref: Compass, CE, Variation, Agonic D  
On an isomagnetic chart, the line of zero variation is the \_\_\_\_\_.
- A. zero variation line
  - B. isogonic line
  - C. variation line
  - D. agonic line
- 26 812 Ref: Compass, CE, Variation, Agonic C  
The agonic line on an isomagnetic chart indicates the \_\_\_\_\_.
- A. magnetic equator
  - B. magnetic longitude reference line
  - C. points where there is no variation
  - D. points where there is no annual change in variation
- 27 852 Ref: Compass, CE, Variation, Annual Change D  
The chart indicates the variation was 3°45'E in 1988, and the annual change is increasing 6'. If you use the chart in 1991 how much variation should you apply?
- A. 3°27'E
  - B. 3°27'W
  - C. 3°45'E
  - D. 4°03'E
- 28 853 Ref: Compass, CE, Variation, Annual Change A  
The chart indicates the variation was 3°45'W in 1988, and the annual change is decreasing 6'. If you use the chart in 1991 how much variation should you apply?
- A. 3°27'W
  - B. 3°27'E
  - C. 4°03'W
  - D. 4°03'E
- 29 854 Ref: Compass, CE, Variation, Annual Change C  
The chart indicates the variation was 3°45'W in 1988, and the annual change is increasing 6'. If you use the chart in 1991 how much variation should you apply?
- A. 3°27'W
  - B. 3°27'E
  - C. 4°03'W
  - D. 4°03'E

- 30 866 Ref: Compass, CE, Variation, Annual Change B  
The compass rose on a nautical chart indicates both variation and \_\_\_\_\_.  
A. deviation C. precession  
B. annual rate of variation change D. compass error
- 31 644 Ref: Compass, CE, Variation, Isogonic A  
Isogonic lines are lines on a chart indicating \_\_\_\_\_.  
A. points of equal variation C. the magnetic latitude  
B. points of zero variation D. magnetic dip
- 32 653 Ref: Compass, CE, Variation, Isogonic D  
Lines on a chart which connect points of equal magnetic variation are called \_\_\_\_\_.  
A. magnetic latitudes C. dip  
B. magnetic declinations D. isogonic lines
- 33 661 Ref: Compass, CE, Variation, Location D  
Magnetic variation changes with a change in \_\_\_\_\_.  
A. the vessel's heading C. seasons  
B. sea conditions D. the vessel's position
- 34 1343 Ref: Compass, CE, Variation, Location B  
Variation in a compass is caused by \_\_\_\_\_.  
A. worn gears in the compass housing C. magnetism within the vessel  
B. magnetism from the earth's magnetic field D. lack of oil in the compass bearings
- 35 1345 Ref: Compass, CE, Variation, Location C  
Variation is not constant; it is different with every change in \_\_\_\_\_.  
A. speed C. geographical location  
B. vessel heading D. cargo
- 36 902 Ref: Compass, CE, Variation, M to T A  
The difference in degrees between true north and magnetic north is called \_\_\_\_\_.  
A. variation C. drift  
B. deviation D. compass error
- 37 1299 Ref: Compass, CE, Variation, M to T B  
True heading differs from magnetic heading by \_\_\_\_\_.  
A. deviation C. compass error  
B. variation D. northerly error
- 38 1346 Ref: Compass, CE, Variation, M to T C  
Variation is the angular measurement between \_\_\_\_\_.  
A. compass north and magnetic north  
B. compass north and true north  
C. magnetic meridian and the geographic meridian  
D. your vessel's heading and the magnetic meridian
- 39 1344 Ref: Compass, CE, Variation D  
Variation is a compass error that you \_\_\_\_\_.  
A. can correct by adjusting the compass card  
B. can correct by adjusting the compensating magnets  
C. can correct by changing the vessel's heading  
D. cannot correct

- 40 385 Ref: Compass, CE C  
Compass error is equal to the \_\_\_\_\_.  
A. deviation minus variation C. combined variation and deviation  
B. variation plus compass course D. difference between true and magnetic heading
- 41 485 Ref: Compass, CE A  
If a magnetic compass is not affected by any magnetic field other than the Earth's, which statement is TRUE?  
A. Compass error and variation are equal. C. Variation will equal deviation.  
B. Compass north will be true north. D. There will be no compass error.
- 42 865 Ref: Compass, CE B  
The compass error of a magnetic compass that has no deviation is \_\_\_\_\_.  
A. zero C. eliminated by adjusting the compass  
B. equal to variation D. constant at any geographical location
- 43 1213 Ref: Compass, CE A  
The standard magnetic compass heading differs from the true heading by \_\_\_\_\_.  
A. compass error C. variation  
B. latitude D. deviation
- 44 1289 Ref: Compass, CE B  
To find a magnetic compass course from a true course you must apply \_\_\_\_\_.  
A. deviation C. variation  
B. deviation and variation D. magnetic anomalies (local disturbances)
- 45 1566 Ref: Compass, CE C  
When changing from a compass course to a true course you should apply \_\_\_\_\_.  
A. variation C. variation and deviation  
B. deviation D. a correction for the direction of current set
- 46 1975 Ref: Compass, CE C  
You are proceeding up a channel at night. It is marked by a range which bears  $185^{\circ}T$ . You steady up on a compass course of  $180^{\circ}$  with the range in line dead ahead. This indicates that you(r) \_\_\_\_\_.  
A. must come right to get on the range C. compass has some easterly error  
B. course is in error D. are being affected by a southerly current
- 47 109 Ref: Compass, Compass Card C  
A magnetic compass card is marked in how many degrees?  
A. 90 C. 360  
B. 180 D. 400
- 48 301 Ref: Compass, Compass Card A  
As a vessel changes course to starboard, the compass card in a magnetic compass \_\_\_\_\_.  
A. remains aligned with compass north  
B. also turns to starboard  
C. first turns to starboard then counterclockwise to port  
D. turns counterclockwise to port
- 49 1555 Ref: Compass, General A  
When a magnetic compass is not in use for a prolonged period of time it should \_\_\_\_\_.  
A. be shielded from direct sunlight C. have any air bubbles replaced with nitrogen  
B. be locked into a constant heading D. have the compensating magnets removed

- 50 499 Ref: Compass, Gyrocompass, GE A  
If the gyrocompass error is east, what describes the error and the correction to be made to gyrocompass headings to obtain true headings?  
A. The readings are too low (small numerically) and the amount of the error must be added to the compass to obtain true  
B. The readings are too low and the amount of the error must be subtracted from the compass to obtain true  
C. The readings are too high (large numerically) and the amount of the error must be added to the compass to obtain true  
D. The readings are too high and the amount of the error must be subtracted from the compass to obtain true
- 51 192 Ref: Compass, Gyrocompass B  
A system of reservoirs and connecting tubes in a gyro compass is called a \_\_\_\_\_.  
A. spider element C. gyrotion  
B. mercury ballistic D. rotor
- 52 333 Ref: Compass, Gyrocompass B  
At the master gyrocompass, the compass card is attached to the \_\_\_\_\_.  
A. spider element C. link arm  
B. sensitive element D. pickup transformer
- 53 466 Ref: Compass, Gyrocompass B  
Gyrocompass repeaters reproduce the indications of the master gyrocompass. They are \_\_\_\_\_.  
A. accurate only in the Polar regions C. hand operated  
B. accurate electronic servomechanisms D. accurate only if the vessel is underway
- 54 625 Ref: Compass, Gyrocompass B  
Indications of the master gyrocompass are sent to remote repeaters by the \_\_\_\_\_.  
A. follow-up system C. phantom element  
B. transmitter D. azimuth motor
- 55 911 Ref: Compass, Gyrocompass B  
The directive force of a gyrocompass \_\_\_\_\_.  
A. increases with latitude, being maximum at the geographic poles  
B. decreases with latitude, being maximum at the geographic equator  
C. is greatest when a vessel is near the Earth's magnetic equator  
D. remains the same at all latitudes
- 56 975 Ref: Compass, Gyrocompass D  
The gyrocompass error resulting from your vessel's movement in OTHER than an east-west direction is called \_\_\_\_\_.  
A. damping error C. quadrantal error  
B. ballistic deflection D. speed error
- 57 1088 Ref: Compass, Gyrocompass A  
The most accurate method of determining gyrocompass error while underway is by \_\_\_\_\_.  
A. comparing the gyro azimuth of a celestial body with the computed azimuth of the body  
B. comparing the gyro heading with the magnetic compass heading  
C. determining from the chart the course made good between celestial fixes  
D. It cannot be determined accurately at sea due to drift of unknown currents.
- 58 1175 Ref: Compass, Gyrocompass A  
The reaction of a gyrocompass to an applied force is known as \_\_\_\_\_.  
A. precession C. gyroscopic inertia  
B. earth rate D. gravity effect

- 59 1208 Ref: Compass, Gyrocompass A  
The spin axis of a gyroscope tends to remain fixed in space in the direction in which it is started. How does this gyroscope become north seeking so that it can be used as a compass?  
A. By mechanically or electrically applying forces to precess the gyroscope  
B. By starting the compass with the spin axis in a north/south position  
C. By taking advantage of the property of gyroscopic inertia  
D. The rotation of the Earth (Earth rate) automatically aligns the gyroscope with north, except for speed errors
- 60 1765 Ref: Compass, Gyrocompass A  
Which statement about gyrocompass error is TRUE?  
A. The amount of the error and the sign will generally be the same on all headings.  
B. The sign (E or W) of the error will change with different headings of the ship.  
C. Any error will remain constant unless the compass is stopped and restarted.  
D. Any error shown by a gyro repeater will be the same as the error of the master compass.
- 61 1769 Ref: Compass, Gyrocompass A  
Which statement about the gyrocompass is FALSE?  
A. Its accuracy remains the same at all latitudes.  
B. It seeks the true meridian.  
C. It can be used near the Earth's magnetic poles.  
D. If an error exists, it is the same on all headings.
- 62 37 Ref: Compass, Instrument, Pelorus B  
A compass card without north-seeking capability that is used for relative bearings is a(n) \_\_\_\_\_.  
A. bearing circle C. bearing bar  
B. pelorus D. alidade
- 63 659 Ref: Compass, Magnetism, Dip C  
Magnetic dip is a measurement of the angle between the \_\_\_\_\_.  
A. geographic pole and the magnetic pole C. horizontal and the magnetic line of force  
B. lubber's line and true north D. compass heading and the magnetic heading
- 64 1052 Ref: Compass, Magnetism, Dip B  
The line connecting the points of the earth's surface where there is no dip is the \_\_\_\_\_.  
A. agonic line C. isodynamic  
B. magnetic equator D. isopor
- 65 1055 Ref: Compass, Magnetism, Dip B  
The line which connects the points of zero magnetic dip is \_\_\_\_\_.  
A. an agonic line C. a magnetic meridian  
B. the magnetic equator D. All of the above
- 66 1137 Ref: Compass, Magnetism, Dip D  
The points on the earth's surface where the magnetic dip is 90° are \_\_\_\_\_.  
A. along the magnetic equator C. the isopors  
B. connected by the isoclinal line D. the magnetic poles
- 67 1260 Ref: Compass, Magnetism, Dip D  
The vertical angle between the horizontal and the magnetic line of force is the \_\_\_\_\_.  
A. elevation  
B. magnetic angle  
C. vertical angle  
D. dip

- 68 486 Ref: Compass, Magnetism, Equator C  
If a ship is proceeding towards the magnetic equator, the uncorrected deviation due to permanent magnetism \_\_\_\_\_.  
A. increases C. decreases  
B. remains the same D. is unimportant and may be neglected
- 69 974 Ref: Compass, Magnetism, Equator D  
The greatest directive force is exerted on the magnetic compass when the \_\_\_\_\_.  
A. needles are nearly in line with the meridian C. variation is near zero  
B. vessel is near the magnetic poles D. vessel is near the magnetic equator
- 70 1069 Ref: Compass, Magnetism, Equator D  
The magnetic compass magnets are acted on by the horizontal component of the Earth's total magnetic force. This magnetic force is GREATEST at the \_\_\_\_\_.  
A. north magnetic pole C. magnetic prime vertical meridian  
B. south magnetic pole D. magnetic equator
- 71 332 Ref: Compass, Magnetism, Induced C  
At the magnetic equator there is no induced magnetism in the vertical soft iron because \_\_\_\_\_.  
A. the lines of force cross the equator on a 0°-180° alignment  
B. the quadrantal error is 0°  
C. there is no vertical component of the Earth's magnetic field  
D. the intercardinal headings have less than 1° error
- 72 626 Ref: Compass, Magnetism, Induced B  
Induced magnetism is found in \_\_\_\_\_.  
A. hard iron C. vertical iron only  
B. soft iron D. horizontal iron only
- 73 662 Ref: Compass, Magnetism, Induced B  
Magnetism which is present only when the material is under the influence of an external field is called \_\_\_\_\_.  
A. permanent magnetism C. residual magnetism  
B. induced magnetism D. terrestrial magnetism
- 74 743 Ref: Compass, Magnetism, Permanent B  
Permanent magnetism is caused by \_\_\_\_\_.  
A. operation of electrical equipment and generators on board ship  
B. the earth's magnetic field affecting the ship's hard iron during construction  
C. the horizontal component of the earth's magnetic field acting on the horizontal soft iron  
D. the vertical component of the earth's magnetic field acting on the vertical soft iron
- 75 955 Ref: Compass, Magnetism, Permanent C  
The Flinders bar and the quadrantal spheres should be tested for permanent magnetism at what interval?  
A. They are not subject to permanent magnetism; no check is necessary.  
B. Semiannually  
C. Annually  
D. Every five years
- 76 1127 Ref: Compass, Magnetism, Permanent D  
The permanent magnetism of a vessel may change in strength due to \_\_\_\_\_.  
A. a collision with another vessel  
B. being moored on a constant heading for a long period of time  
C. being struck by lightning  
D. All of the above



- 77 355 Ref: Compass, Magnetism C  
By convention, the Earth's north magnetic pole is colored \_\_\_\_\_.  
A. red C. blue  
B. white D. black
- 78 356 Ref: Compass, Magnetism D  
By convention, the Earth's south magnetic pole is colored \_\_\_\_\_.  
A. blue C. white  
B. black D. red
- 79 357 Ref: Compass, Magnetism A  
By convention, the north pole of a magnet is painted \_\_\_\_\_.  
A. red C. white  
B. blue D. black
- 80 358 Ref: Compass, Magnetism C  
By convention, the north seeking ends of a compass' magnets are colored \_\_\_\_\_.  
A. black C. red  
B. blue D. white
- 81 359 Ref: Compass, Magnetism B  
By convention, the south pole of a magnet is painted \_\_\_\_\_.  
A. red C. white  
B. blue D. black
- 82 360 Ref: Compass, Magnetism A  
By convention, the south seeking ends of a compass' magnets are colored \_\_\_\_\_.  
A. blue C. white  
B. red D. black
- 83 1070 Ref: Compass, Magnetism C  
The magnetic compass operates on the principle that \_\_\_\_\_.  
A. like magnetic poles attract  
B. unlike magnetic poles repel  
C. unlike poles attract  
D. the poles of the compass line up with the geographic poles of the earth
- 84 1125 Ref: Compass, Magnetism B  
The permanent magnetism of a vessel may change in polarity due to \_\_\_\_\_.  
A. being moored for a long time on one heading  
B. being struck by lightning  
C. steaming from the north magnetic hemisphere to the south magnetic hemisphere  
D. loading a homogenous magnetic cargo such as steel plate, iron bars, etc.
- 85 1126 Ref: Compass, Magnetism C  
The permanent magnetism of a vessel may change in strength due to \_\_\_\_\_.  
A. the nature of the cargo being carried C. major structural repair  
B. changes in heading D. All of the above
- 86 1403 Ref: Compass, Magnetism C  
What is an advantage of the magnetic compass aboard vessels?  
A. Compass error is negligible at or near the earth's magnetic poles.  
B. It does not have to be checked as often.  
C. It is reliable due to its essential simplicity.  
D. All points on the compass rose are readily visible.

- 87 1427 Ref: Compass, Magnetism A  
 What is the basic principle of the magnetic compass?  
 A. Magnetic materials of the same polarity repel each other and those of opposite polarity attract.  
 B. The Earth's magnetic lines of force are parallel to the surface of the Earth.  
 C. Magnetic meridians connect points of equal magnetic variation.  
 D. The compass needle(s) will, when properly compensated, lie parallel to the isogonic lines of the Earth.
- 88 1089 Ref: Compass, Part, Binnacle A  
 The MOST important feature of the material used for making the binnacle of a standard magnetic compass is that it is \_\_\_\_\_.  
 A. nonmagnetic  
 B. weatherproof  
 C. corrosion resistant  
 D. capable of being permanently affixed to the vessel
- 89 976 Ref: Compass, Part, Lubbers Line C  
 The heading of a vessel is indicated by what part of the compass?  
 A. Card C. Lubber's line  
 B. Needle D. Gimbals
- 90 1064 Ref: Compass, Part, Lubbers Line B  
 The lubber's line on a magnetic compass indicates \_\_\_\_\_.  
 A. compass north C. magnetic north  
 B. the direction of the vessel's head D. a relative bearing taken with an azimuth circle
- 91 1241 Ref: Compass, Adjustment, Coefficients B  
 The total magnetic effects which cause deviation of a vessel's compass can be broken down into a series of components which are referred to as \_\_\_\_\_.  
 A. divisional parts C. fractional parts  
 B. coefficients D. equations
- 92 1158 Ref: Compass, Adjustment, Dampen Deviation B  
 The principal purpose of magnetic compass adjustment is to \_\_\_\_\_.  
 A. reduce the variation as much as possible  
 B. reduce the deviation as much as possible  
 C. reduce the magnetic dip as much as possible  
 D. allow the compass bowl to swing freely on its gimbals
- 93 1560 Ref: Compass, Adjustment, Deviation Table C  
 When adjusting a magnetic compass for error, a deviation table should be made \_\_\_\_\_.  
 A. before correcting for any deviation  
 B. after correcting for variation  
 C. after adjusting the fore-and-aft and athwartships permanent magnets  
 D. before the quadrantal correctors are placed on the compass
- 94 956 Ref: Compass, Adjustment, Flinders Bar A  
 The Flinders bar on a magnetic compass compensates for the \_\_\_\_\_.  
 A. induced magnetism in vertical soft iron C. permanent magnetism in ship's steel  
 B. induced magnetism in horizontal soft iron D. vessel's inclination from the vertical
- 95 1261 Ref: Compass, Adjustment, Flinders Bar A  
 The vertical component of the Earth's magnetic field causes induced magnetism in vertical soft iron. This changes with latitude. What corrects for this coefficient of the deviation?  
 A. The Flinders bar C. Quadrantal soft iron spheres  
 B. The heeling magnet D. Bar magnets in the binnacle

- 96 1768 Ref: Compass, Adjustment, Flinders Bar A  
Which statement about the Flinders bar of the magnetic compass is CORRECT?  
A. It compensates for the error caused by the vertical component of the Earth's magnetic field.  
B. It compensates for error caused by the heeling of a vessel.  
C. It compensates for quadrantal deviation.  
D. It is only needed in equatorial waters.
- 97 663 Ref: Compass, Adjustment, Fore & Aft Magnets C  
Magnets are placed in horizontal trays in the compass binnacle to compensate for the \_\_\_\_\_.  
A. induced magnetism in the vessel's horizontal soft iron  
B. change in the magnetic field when the vessel inclines from vertical  
C. permanent magnetism of the vessel  
D. magnetic fields caused by electrical currents in the vicinity
- 98 173 Ref: Compass, Adjustment, Heeling Magnet B  
A single vertical magnet placed underneath the compass in the binnacle is used to compensate for \_\_\_\_\_.  
A. the horizontal component of the permanent magnetism  
B. deviation caused by the vessel's inclination from the vertical  
C. induced magnetism in the horizontal soft iron  
D. induced magnetism in the vertical soft iron
- 99 467 Ref: Compass, Adjustment, Heeling Magnet B  
Heeling error is defined as the change of deviation for a heel of \_\_\_\_\_.  
A. 2° while the vessel is on an intercardinal heading  
B. 1° while the vessel is on a compass heading of 000°  
C. 2° and is constant on all headings  
D. 1° while the vessel is on a compass heading of 180°
- 100 1363 Ref: Compass, Adjustment, Heeling Magnet B  
What are the only magnetic compass correctors that correct for both permanent and induced effects of magnetism?  
A. Quadrantal spheres  
B. Heeling magnets  
C. Athwartships magnets  
D. Fore-and-aft magnets
- 101 1573 Ref: Compass, Adjustment, Heeling Magnet B  
When crossing the magnetic equator the \_\_\_\_\_.  
A. Flinders bar should be inverted  
B. heeling magnet should be inverted  
C. the quadrantal spheres should be rotated 180°  
D. Flinders bar should be moved to the opposite side of the binnacle
- 102 1666 Ref: Compass, Adjustment, Heeling Magnet C  
Which compensates for errors introduced when the vessel heels over?  
A. The soft iron spheres on the arms of the binnacle  
B. Magnets placed in trays inside the binnacle  
C. A single vertical magnet beneath the compass  
D. The Flinders bar

- 103 664 Ref: Compass, Adjustment, Permanent Magnets A  
Magnets in the binnacles of magnetic compasses are used to reduce the effect of \_\_\_\_\_.  
A. deviation  
B. variation  
C. local attraction  
D. All of the above
- 104 414 Ref: Compass, Adjustment, Quadrantal Spheres D  
Deviation which is maximum on intercardinal compass headings may be removed by the \_\_\_\_\_.  
A. Flinders bar  
B. transverse magnets  
C. fore-and-aft magnets  
D. soft iron spheres on the sides of the compass
- 105 755 Ref: Compass, Adjustment, Quadrantal Spheres D  
Quadrantal error in a gyrocompass has its GREATEST effect \_\_\_\_\_.  
A. in high latitudes  
B. near the equator  
C. on north or south headings  
D. on intercardinal headings
- 106 1164 Ref: Compass, Adjustment, Quadrantal Spheres D  
The purpose of the soft iron spheres mounted on arms on the binnacle is to compensate for \_\_\_\_\_.  
A. the vertical component of the permanent magnetism of the vessel  
B. the residual deviation  
C. magnetic fields caused by electrical currents in the vicinity  
D. induced magnetism in the horizontal soft iron
- 107 1165 Ref: Compass, Adjustment, Quadrantal Spheres A  
The quadrantal spheres are used to \_\_\_\_\_.  
A. remove deviation on the intercardinal headings  
B. remove deviation on the cardinal compass headings  
C. remove heeling error  
D. compensate for induced magnetism in vertical soft iron
- 108 1667 Ref: Compass, Adjustment, Quadrantal Spheres A  
Which compensates for induced magnetism in the horizontal soft iron of a vessel?  
A. Iron spheres mounted on the binnacle  
B. A single vertical magnet under the compass  
C. The Flinders bar  
D. Magnets in trays inside the binnacle
- 109 345 Ref: Compass, Adjustment, Soft Iron D  
Before a magnetic compass is adjusted certain correctors must be checked to ensure that they are free of permanent magnetism. These correctors are the \_\_\_\_\_.  
A. fore-and-aft and athwartships magnets  
B. dip needle and heeling magnet  
C. heeling magnet and Flinders bar  
D. Flinders bar and quadrantal spheres