ASSIGNMENT 1

Textbook Assignment: "Compasses," chapter 2, pages 2-1 through 2-33.

1-1. Which of the following definitions best describes the term "magnetism"?

1. The characteristic properties passed by magnets
2. A phenomenon of nature known only by its effects
3. The magnetic, or attractive, power of all metals

1-2. What are the two types of magnetism?

1. North and South
2. Hard and soft
3. Permanent and induced
4. Mechanical and corrosive

IN ANSWERING QUESTIONS 1-3 THROUGH 1-5 SELECT THE TYPE OF MAGNETISM FROM COLUMN B THAT MATCHES THE DEFINITION IN COLUMN A NOT ALL RESPONSES ARE USED AND RESPONSES MAY BE USED MORE THAN ONCE.

A. DEFINITION	B. TYPES OF MAGNETISM
1-3. Magnetism caused by the influence of an external force	1. Induced
1-4. Magnetism retained for long periods, unless a demagnetizing force is applied	2. Natural
1-5. Magnetism that remains after a magnetizing force is removed	3. Residual
	4. Permanent

1-6. The Earth's magnetism in the Northern and Southern Hemispheres are called what types of magnetism?

1. Positive and negative magnetism
2. Permanent and induced magnetism
3. North and south magnetism
4. Blue and red magnetism

1-7. The south-seeking end of a bar magnet has what type of magnetism?

1. Red magnetism
2. Blue magnetism
3. Negative magnetism
4. Permanent magnetism

1-8. What Earth component is the limiting factor of a magnetic compass?

1. Magnetic poles
2. Magnetic equator
3. Vertical
4. Horizontal

1-9. Which of the following facts is NOT consistent with variation?

1. Earth's magnetic properties are not uniformly distributed
2. Earth's magnetic properties are not at the same location as the geographic poles
3. The closer your ship is to the equator, the less the variation will be
4. Magnetic lines of force are called magnetic meridians

1-10. The difference between the geographic North Pole and the magnetic North pole is defined by which of the following terms?

1. Permanent magnetism
2. Induced magnetism
3. Variation
4. Deviation

1-11. When a variation for an area is figured, what factor determines which compass rose should be used?

1. The one that has the smallest variation
2. The one that has the smallest correction
3. The one that has the latest year indicated
4. The one that is closest to your position

1-12. The compass rose indicates a variation of 9° 42.0' E (1976), with an annual decrease of 2'. What is the variation in 1995?

1. 9° 00' E
2. 9° 04' E
3. 10° 00' E
4. 10° 03' E

1-13. What U.S. Navy vessels are provided with a magnetic steering compass?

1. All Navy vessels
2. Combat vessels only
3. Surface ships and craft only
4. Vessels with wooden hulls only

1-14. Of the following locations aboard ship, in which one is the steering compass usually located?

1. Centerline
2. Abaft the beam
3. Portside to the helmsman
4. Adjacent to the chart table

1-15. If a ship has two magnetic compasses, how is the second compass referred?

1. Secondary compass
2. Steering compass
3. Standard compass
4. Alternate compass

1-16. In the term "137° PSC", what does the PSC stand for?

1. Per standard compass
2. Per ship's compass
3. Per steering compass
4. Pilothouse steering compass

1-17. What magnetic compass is usually the most accurate?

1. The steering compass
2. The standard compass
3. The ship's compass
4. The portable steering compass

l-l8. For best reliability, the magnetic compass should be kept free of sources of induced magnetism.

1. True
2. False

IN ANSWERING QUESTIONS 1-19 THROUGH 1-22, SELECT THE FUNCTION FROM COLUMN B THAT MATCHES THE COMPONENT IN COLUMN A. RESPONSES ARE USED ONLY ONCE.

A. COMPONENT	B. FUNCTION
1-19. Card	1. Used to align the compass
1-20. Magnets	2. Made of nonmagnetic material
1-21. Gimbals	3. Graduated in degrees from 0 to 359
1-22. Binnacle	4. Permits compass to remain level

1-23. Which of the following type(s) of magnetism influence(s) deviation?

1. Permanent only
2. Induced only
3. Residual
4. Permanent and induced

IN ANSWERING QUESTIONS 1-24 THROUGH 1-27, SELECT THE MAGNETISM FROM COLUMN B THAT MATCHES THE CHARACTERISTIC IN COLUMN A. NOT ALL RESPONSES ARE USED AND RESPONSES MAY BE USED MORE THAN ONCE.

A. CHARACTERISTIC	B. MAGNETISM
1-24. Hard iron	1. Permanent
1-25. Soft iron	2. Residual
1-26. Created in the ship's structure during construction	3. Induced
1-27. Varies according to the intensity of the component of Earth's field	4. Natural

1-28. What is the most common method of determining deviation at sea?

1. Comparing past and present compass headings against a gyrocompass
2. Verifying compass records against a deviation table
3. Recording the compass readings on all intercardinal headings
4. Swinging ship

1-29. All deviation is removed after a magnetic compass is adjusted.

1. True
2. False

1-30. Which of the following degaussing coils counteracts the ship's longitudinal permanent and induced magnetism?

1. A
2. F
3. M
4. Q

1-31. Which of the following degaussing coils will counteract the ship's vertical permanent and induced magnetism?

1. A
2. F
3. L
4. M

IN ANSWERING QUESTIONS 1-32 THROUGH 1-35 SELECT THE DESCRIPTION FROM COLUMN B THAT MATCHES THE DEGAUSSING COIL IN COLUMN A. RESPONSES ARE ONLY USED ONCE.

A. COILS	B. DESCRIPTIONS
1-32. A	1. Made up of loops in vertical planes parallel to the ship's frames
1-33. F	2. Encircles the after 1/3 of the ship
1-34. L	3. Encircles the forward 1/3 of the ship
1-35. Q	4. Made up of loops in vertical fore-and-aft planes

1-36. What coil serves the same purpose as the F coil?

1. A
2. L
3. Q
4. M

1-37. Which of the following types of headings may be used to name a course or heading?

1. True
2. Magnetic
3. Compass
4. All of the above

1-38. When correcting or uncorrecting the compass from one heading expression to another, which of the following formulas is correct?

1. Correcting, add east deviation
2. Correcting, add west variation
3. Uncorrecting, add east variation
4. Uncorrecting, subtract east deviation

1-39. Converting from true course to compass course is called uncorrecting the compass.

1. True
2. False

1-40. How often is the magnetic compass adjusted?

1. Quarterly
2. Semiannually
3. Annually
4. When the deviation exceeds 3°

TO STEER MAGNETIC COURSE	WITH VARIATION	TRUE COURSE	WITH GYRO ERROR	HEADING PER GYRO COMPASS
DEGREES	DEGREES	DEGREES	DEGREES	DEGREES
000	4W	A	0	354
180	9E	189	0	189
270	4W	B	1E	C
315	8E	323	3E	320
225	13W	212	3W	215
358	D	002	E	007

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Figure 1A

COMPUTE TRUE HEADINGS IN ANSWERING QUESTIONS 1-41 THROUGH 1-43. REFER TO FIGURE 1A.

1-41. What is the value of A?

1. 354
2. 356
3. 004
4. 000

1-42. What are the values of B and C?

1. 274 and 273
2. 266 and 265
3. 266 and 267
4. 274 and 275

1-43. What are the values of D and E?

1. 4W and SE
2. 6W and SE
3. 4E and SW
4. 4E and 6W

1-44. The comparison of which two headings indicates deviation?

1. True and magnetic
2. True and steering
3. Steering and standard
4. Magnetic and standard

1-45. The comparison of which two headings indicates variation?

1. True and steering
2. True and magnetic
3. True and standard
4. Gyro and true

1-46. If your ship is involved in an underway replenishment, how often should the gyro check be made?

1. Every 15 minutes
2. Every 30 minutes
3. Once an hour
4. Once every 4 hours

1-47. Which publication is used to swing ship?

1. H.O. 229
2. H.O. 226
3. H.O. 251
4. H.O. 266

1-48. In most cases, how many hours should it take to successfully swing ship?

1. 1
2. 2
3. 3
4. 4

1-49. Swinging ship may be accomplished anytime.

1. True
2. False

1-50. How soon prior to getting under way should the gyrocompass be lit off?

1. 1 hr
2. 2 hr
3. 3 hr
4. 4 hr

1-51. Aboard ship, the master gyro should be located in which of the following places?

1. Where least effected by ships motion
2. Where least effected by pitch and roll
3. Where it is safe from battle damage
4. All of the above

1-52. What is the maximum mechanical error allowed in a properly functioning gyrocompass?

1. 10
2. 20
3. 50
4. 40

1-53. Where are gyro repeaters located?

1. Pilothouses and bridgewings
2. After steering
3. Secondary conning station
4. All ship's control stations

1-54. How often is gyro error determined?

1. Once a watch
2. Once every 4 hours
3. Once a day
4. Twice a day

1-55. Which method of checking the accuracy of a gyro compass is called the Franklin technique?

1. Terrestrial range
2. Azimuth of Sun
3. Trial and error
4. Amplitude of Sun

1-56. Which line should be used to align a PMP with a nautical chart?

1. Latitude
2. Longitude
3. Any straight line
4. Rhumb line

1-57. A telescopic alidade fits what size of gyro repeater?

1. 6 in.
2. 7 1/2 in.
3. 8 in.
4. 10 in.

1-58. What is the disadvantage of obtaining gyro error by terrestrial range?

1. Difficult to see unlighted ranges at night
2. Only as accurate as the bearing recorder
3. Only as accurate as the bearing taker
4. All of the above

1-59. Most harbors will have at least how many sets of ranges?

1. One
2. Two
3. Three
4. Four

1-60. When should the Franklin technique of determining gyro error be used?

1. In open ocean
2. When entering or leaving port
3. Prior to getting under way
4. All of the above