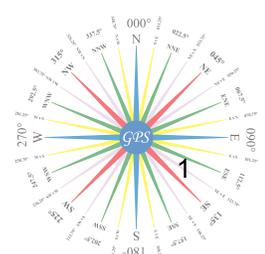


- 1 339 Ref: Electronics, AIS, Broadcast, Information C
 Automatic identification systems (AIS) are expected to broadcast all of the following information EXCEPT _____.
- A. navigation status B. ship's heading C. port of origin D. time stamp
- 2 1697 Ref: Electronics, AIS, Broadcast, Information D
 Which information must automatic identification systems (AIS) automatically provide to appropriately equipped shore stations, vessels and aircraft?
- A. Vessel's type C. Navigational status
 B. Vessel's course D. All of the above
- 3 1835 Ref: Electronics, AIS, Broadcast, Information B
 While underway, a vessel over 100,000 gross tons with an automatic identification systems (AIS) is expected to broadcast all of the following information every 1 to 10 seconds EXCEPT _____.
- A. rate of turn C. navigational status
 B. name of vessel D. ship's heading
- 4 1836 Ref: Electronics, AIS, Broadcast, Information D
 While underway, automatic identification systems (AIS) broadcast all of the following information every 1 to 10 seconds EXCEPT the _____.
- A. speed over ground C. course over ground
 B. latitude and longitude D. ship's scantlings
- 5 1848 Ref: Electronics, AIS, Broadcast, Information C
 With respect to automatic identification systems (AIS) which of the following information is broadcast every one to ten seconds?
- A. Vessel's draft C. Navigational status
 B. Air Draft D. Dimensions of vessel
- 6 1849 Ref: Electronics, AIS, Broadcast, Information B
 With respect to automatic identification systems (AIS), which information is expected to be broadcast every 1 to 10 seconds?
- A. Name of ship C. IMO number
 B. Ship's heading D. Vessel's draft
- 7 1850 Ref: Electronics, AIS, Broadcast, Information D
 With respect to automatic identification systems (AIS), which information is expected to be broadcast every 1 to 10 seconds?
- A. Rate of turn C. Navigational status
 B. Latitude and longitude D. All of the above
- 8 1851 Ref: Electronics, AIS, Broadcast, Information A
 With respect to automatic identification systems (AIS), which information is required to be broadcast every 1 to 10 seconds?
- A. Time stamp C. Location of antenna
 B. Destination D. None of the above
- 9 1852 Ref: Electronics, AIS, Broadcast, Information B
 With respect to automatic identification systems (AIS), which information is required to be broadcast every 1 to 10 seconds?
- A. Call sign and IMO number C. MMSI number and call sign
 B. Course over ground and MMSI D. Route Plan and navigational status
- 10 1853 Ref: Electronics, AIS, Broadcast, Information D
 With respect to automatic identification systems (AIS), which information is required to be broadcast every 1 to 10 seconds?
- A. Call sign C. Route plan
 B. Vessel's draft D. None of the above



11 1729 Ref: Electronics, AIS, System, Broadcast A

Which of the following statements is TRUE regarding automatic identification systems (AIS)?

- A. AIS is a short-range VHF-FM system that automatically broadcasts a vessel's position, course, speed and other safety related information to all those with similar equipment in the area.
- B. AIS is a one-way centrally managed system that requires the local VTS to send commands to instruct each vessel to broadcast position, course, speed and other safety related information to all those with similar equipment in the area.
- C. AIS is a global tracking system that relies upon INMARSAT C service to communicate vessel position, course, speed and other safety related information to all those with similar equipment in the area.
- D. AIS is a short-range 3 cm X-band radar system that automatically sends a vessel's position, course, speed and other safety related information to all those with similar equipment within the area.

12 1731 Ref: Electronics, AIS, System, Broadcast B

Which of the following statements is TRUE regarding automatic identification systems (AIS)?

- A. AIS is designed to replace ARPA, maneuvering boards, and visual bearings as a means to ascertain the risk of collision.
- B. AIS provides near real-time information regarding another vessel's speed over ground and heading regardless of visibility.
- C. AIS will not provide information on another vessel if that vessel is indistinguishable in radar sea clutter.
- D. AIS can be relied upon as the sole means to determine course changes due to other AIS equipped traffic.

13 340 Ref: Electronics, AIS, System, Requirements D

Automatic identification systems (AIS) are required to _____.

- A. provide safety-related information automatically to shore stations, other vessels and aircraft
- B. receive safety-related information automatically from similarly equipped vessels
- C. exchange safety-related information with shore-based facilities
- D. All of the above

14 1730 Ref: Electronics, AIS, System, Requirements A

Which of the following statements is TRUE regarding automatic identification systems (AIS)?

- A. The master may, at his/her discretion, turn off the AIS if he/she believes that it may compromise the safety or security of the vessel.
- B. Under no circumstances shall AIS be turned off while underway as this could endanger the vessel and those around her.
- C. AIS is always required to be operating if the vessel is in or in the vicinity of a VTS area.
- D. AIS is always required to be operating if the vessel is within 100 nautical miles of the coastline.

15 1733 Ref: Electronics, AIS, System, Requirements D

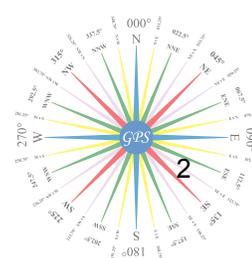
Which of the following statements is TRUE regarding automatic identification systems (AIS)?

- A. AIS will not provide information on another vessel if that vessel is indistinguishable in radar sea clutter.
- B. AIS can be relied upon as the sole means to determine risk of collision and safe speed.
- C. AIS is designed to replace ARPA, maneuvering boards, and visual bearings as a means to ascertain the risk of collision.
- D. AIS provides the other vessel's identity, dimensions and navigational status regardless of visibility.

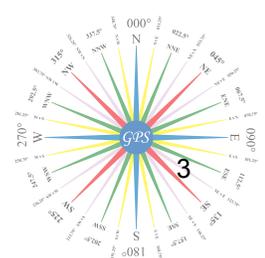
16 1195 Ref: Electronics, AIS, System, Texting D

The short text messaging feature of the automatic identification system (AIS) allows for messages of up to _____.

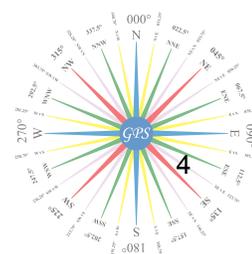
- A. 56 characters
- B. 64 characters
- C. 128 characters
- D. 158 characters



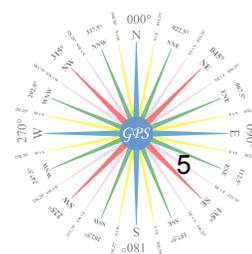
- 17 1732 Ref: Electronics, AIS, System, Texting C
Which of the following statements is TRUE regarding automatic identification systems (AIS)?
- AIS cannot be used to make passing arrangements because the system is not capable of this type of ship-to-ship communications.
 - AIS cannot be used to make passing arrangements because the ship-to-ship text messaging feature is for emergency use only.
 - AIS can be used to make passing arrangements via ship-to-ship text messaging but a vessel operator is not relieved from the requirement to sound whistle signals or make arrangements via bridge-to-bridge radiotelephone.
 - AIS can be used to make passing arrangements via ship-to-ship text messaging thus relieving a vessel operator from making such arrangements via bridge-to-bridge radiotelephone or signaling intent to pass via whistle signals.
- 18 269 Ref: Electronics, AIS, VHF, D
An automatic identification system (AIS) transponder transmits and receives information broadcasts on _____?
- 10 cm, S-band radar
 - 3 cm, X-band radar
 - UHF L-band
 - VHF maritime band
- 19 1380 Ref: Electronics, AIS, VHF, C
What does an automatic identification system (AIS) transponder use to transmit and receive information broadcasts?
- 3000 Mhz and 9200 Mhz
 - 2182 Khz and 2187.5 Khz
 - 161.975 Mhz and 162.025 Mhz
 - 1575.42 Mhz and 1227.6 Mhz
- 20 529 Ref: Electronics, AIS, VHF, Channels A
In general, on how many radio channels will an automatic identification system (AIS) operate?
- 2
 - 4
 - 6
 - 8
- 21 1246 Ref: Electronics, AIS, VHF, Range B
The typical operating range of automatic identification systems (AIS) at sea is nominally _____.
- 50-75 nm
 - 20-25 nm
 - 6-8 nm
 - 3-4 nm
- 22 2040 Ref: Electronics, Course Recorder A
You have replaced the chart paper in the course recorder. What is NOT required to ensure that a correct trace is recorded?
- Test the electrical gain to the thermograph pens
 - Set the zone pen on the correct quadrant
 - Line the course pen up on the exact heading of the ship
 - Adjust the chart paper to indicate the correct time
- 23 363 Ref: Electronics, ECDIS, Charts, Digital, IHO B
Chart information details to be used in ECDIS should be the latest edition of information originated by a government-authorized hydrographic office and conform to the standards of (the) _____.
- International Maritime Organization
 - International Hydrographic Organization
 - NASA
 - US Coast Guard
- 24 758 Ref: Electronics, ECDIS, Charts, Digital, Raster D
Raster-scan chart data is _____.
- the only format recognized by IMO/IHO
 - organized into many separate files
 - composed of files that are smaller than vector files
 - a digitized "picture" of a chart in one format and one layer



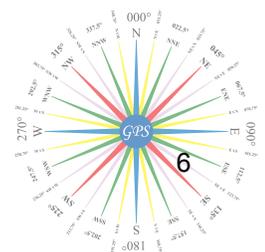
- 25 430 Ref: Electronics, ECDIS, Charts, Digital, Type C
 ECDIS units incorporate Digital Chart Data Formats, which include _____.
 A. vector only C. vector and raster
 B. raster only D. imposed viewing
- 26 271 Ref: Electronics, ECDIS, Display, Information, A
 An ECDIS is required to display which information?
 A. Soundings C. Meteorological data
 B. Waypoints D. Radar targets
- 27 272 Ref: Electronics, ECDIS, Display, Information, C
 An ECDIS is required to display which information?
 A. Radar targets C. Hydrographic data
 B. ARPA vectors D. All of the above
- 28 273 Ref: Electronics, ECDIS, Display, Information, D
 An ECDIS is required to display which information?
 A. Water temperature C. Speed of advance
 B. Climatology data D. Depth contours
- 29 1682 Ref: Electronics, ECDIS, Display, Information, A
 Which data must ECDIS be able to record at one-minute intervals?
 A. Course made good history C. Speed through the water
 B. Estimated time of arrival D. Shaft RPM
- 30 1683 Ref: Electronics, ECDIS, Display, Information, D
 Which data must ECDIS be able to record at one-minute intervals?
 A. Position C. Course made good history
 B. Electronic navigational chart source D. All of the above
- 31 1720 Ref: Electronics, ECDIS, Display, Information, D
 Which of the following are data layer categories to be displayed on ECDIS?
 A. ECDIS warnings and messages C. Notice to Mariners information
 B. Hydrographic Office data D. All of the above
- 32 1721 Ref: Electronics, ECDIS, Display, Information, C
 Which of the following data layer categories is NOT displayed on ECDIS?
 A. Notice to Mariners information C. Ship hydrodynamic information
 B. ECDIS warnings and messages D. Hydrographic Office data
- 33 1726 Ref: Electronics, ECDIS, Display, Information, D
 Which of the following must the electronic chart of an ECDIS display, as required by IMO/IHO?
 A. Hydrography
 B. Ferry routes
 C. Regulatory boundaries
 D. All of the above
- 34 881 Ref: Electronics, ECDIS, Display, Information, Display Base C
 The database resulting from (1) the transformation of the electronic navigational chart (ENC) by ECDIS for appropriate use, (2) the updates to the ENC by appropriate means, and (3) the additional data added by the mariner, is called the _____.
 A. display base information
 B. standard display information
 C. system electronic navigational chart
 D. chart display information



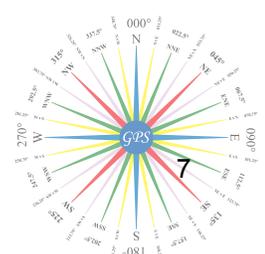
- 35 1015 Ref: Electronics, ECDIS, Display, Information, Electronic Nautical Chart A
The level of database information which cannot be removed from the ECDIS display and consists of information which is required at all times in all geographic areas and under all circumstances is the _____.
- A. display base information C. system electronic nautical chart
B. standard display information D. chart display information
- 36 497 Ref: Electronics, ECDIS, Display, Information, Minimum C
If the electronic chart is part of an ECDIS, it must display the minimum data required by IMO/IHO, to include all of the following EXCEPT _____.
- A. hydrography C. tidal currents
B. aids to navigation D. regulatory boundaries
- 37 880 Ref: Electronics, ECDIS, Display, Information, Standard Display B
The database information that should be shown when a chart is first displayed on ECDIS is the _____.
- A. display base information C. system electronic nautical chart
B. standard display information D. chart display information
- 38 425 Ref: Electronics, ECDIS, System, Requirements, B
ECDIS must be able to perform all of the following EXCEPT _____.
- A. determine true bearing and distance between two geographical points
B. determine magnetic compass deviation
C. transform a local datum to the WGS-'84 datum
D. convert "graphical coordinates" to "display coordinates"
- 39 1725 Ref: Electronics, ECDIS, System, Requirements, D
Which of the following must an ECDIS system be able to perform?
- A. Conversion of "graphical coordinates" to "display coordinates"
B. Transformation of local datum to WGS-'84 datum
C. Calculation of true azimuth and distance between two geographical points
D. All of the above
- 40 426 Ref: Electronics, ECDIS, System, Requirements, Alarms A
ECDIS must give an alarm for which of the following cases?
- A. If the ship is going to reach a critical point on the planned route
B. When the speed of a dangerous target exceeds a set limit
C. If the ship's ETA has changed beyond the set limit
D. All of the above
- 41 427 Ref: Electronics, ECDIS, System, Requirements, Alarms B
ECDIS must give an alarm for which of the following cases?
- A. When the speed of a dangerous target exceeds a set limit
B. When the specified limit for deviation from the planned route is exceeded
C. If the ship's ETA has changed beyond the set limit
D. None of the above
- 42 428 Ref: Electronics, ECDIS, System, Requirements, Alarms D
ECDIS must give an alarm for which of the following cases?
- A. When the specified limit for deviation from the planned route is exceeded
B. If the ship, within a specified time set by the watch officer, is going to cross a safety contour
C. If the ship, within a specified time set by the watch officer, is going to cross the boundary of a prohibited area
D. All of the above



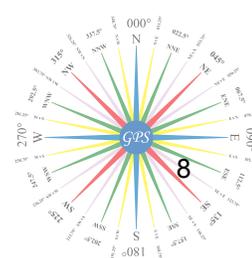
- 43 429 Ref: Electronics, ECDIS, System, Requirements, Record C
 ECDIS must have the capability to preserve the record of the voyage track for the previous _____.
 A. 4 hours C. 12 hours
 B. 6 hours D. 24 hours
- 44 254 Ref: Electronics, Fathometer B
 All echo-sounders can measure the _____.
 A. actual depth of water C. average depth from waterline to hard bottom
 B. actual depth of water below keel D. average depth of water to soft bottom
- 45 274 Ref: Electronics, Fathometer B
 An electronic depth finder operates on the principle that _____.
 A. radio signals reflect from a solid surface
 B. sound waves travel at a constant speed through water
 C. radar signals travel at a constant speed through water
 D. pressure increases with depth
- 46 487 Ref: Electronics, Fathometer D
 If a sound signal is emitted from the oscillator of a fathometer, and two seconds elapse before the returning signal is picked up, what depth of water is indicated?
 A. 1648 fathoms C. 1048 fathoms
 B. 1248 fathoms D. 824 fathoms
- 47 541 Ref: Electronics, Fathometer B
 In modern fathometers the sonic or ultrasonic sound waves are produced electrically by means of a(n) _____.
 A. transmitter C. transceiver
 B. transducer D. amplifier
- 48 1176 Ref: Electronics, Fathometer B
 The recording fathometer produces a graphic record of the _____.
 A. bottom contour only up to depths of 100 fathoms
 B. depth underneath the keel against a time base
 C. contour of the bottom against a distance base
 D. depth of water against a distance base
- 49 1501 Ref: Electronics, Fathometer B
 What should you apply to a fathometer reading to determine the depth of water?
 A. Subtract the draft of the vessel. C. Subtract the sea water correction.
 B. Add the draft of the vessel. D. Add the sea water correction.
- 50 1594 Ref: Electronics, Fathometer D
 When operated over a muddy bottom, a fathometer may indicate _____.
 A. a shallow depth reading
 B. a zero depth reading
 C. no depth reading
 D. two depth readings
- 51 1622 Ref: Electronics, Fathometer A
 When using a recording depth finder in the open ocean, what phenomena is most likely to produce a continuous trace that may not be from the actual ocean bottom?
 A. Echoes from a deep scattering layer
 B. Echoes from schools of fish
 C. Multiple returns reflected from the bottom to the surface and to the bottom again
 D. Poor placement of the transducer on the hull



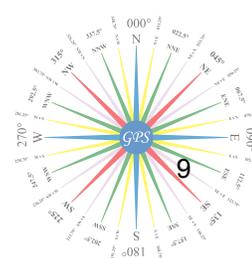
- 52 1624 Ref: Electronics, Fathometer A
 When using an echo sounder in deep water it is NOT unusual to _____.
 A. receive a strong return at about 200 fathoms (366 meters) during the day, and one nearer the surface at night
 B. receive a first return near the surface during the day, and a strong return at about 200 fathoms (366 meters) at night
 C. receive false echoes at a constant depth day and night
 D. have to recalibrate every couple of days due to inaccurate readings
- 53 1687 Ref: Electronics, Fathometer D
 Which factor has the greatest effect on the amount of gain required to obtain a fathometer reading?
 A. Salinity of water C. Atmospheric pressure
 B. Temperature of water D. Type of bottom
- 54 1381 Ref: Electronics, GPS, B
 What does not contribute to the commercial GPS receiver position error?
 A. Satellite clock C. Atmospheric/ionospheric propagation
 B. Ship's speed D. Satellites' orbits
- 55 1771 Ref: Electronics, GPS, C
 Which statement concerning GPS is TRUE?
 A. It cannot be used in all parts of the world.
 B. There are 12 functioning GPS satellites at present.
 C. It may be suspended without warning.
 D. Two position lines are used to give a 2D fix.
- 56 1855 Ref: Electronics, GPS, D
 With respect to failure warnings and status indications, GPS receivers should provide, at a minimum, _____.
 A. an indication within 5 seconds if the specified HDOP has been exceeded
 B. a warning of loss of position
 C. a differential GPS status indication of the receipt of DGPS signals
 D. All of the above
- 57 985 Ref: Electronics, GPS, DGPS A
 The highest level of commercial navigational accuracy is provided by _____.
 A. DGPS, within a coverage area C. PPS, without selective availability
 B. SPS, without selective availability D. NAVSAT, using the Doppler-shift
- 58 677 Ref: Electronics, GPS, Doppler C
 Most GPS receivers use the Doppler shift of the carrier phase to compute _____.
 A. Latitude C. Speed
 B. Longitude D. Time
- 59 107 Ref: Electronics, GPS, HDOP B
 A low HDOP (Horizontal Dilution of Precision) number such as 2 indicates a _____.
 A. poor fix C. poor signal quality
 B. good fix D. good signal quality
- 60 1591 Ref: Electronics, GPS, HDOP A
 When navigating using GPS, what is an indicator of the geometry of the satellites that your receiver is locked onto?
 A. Horizontal Dilution of Precision C. Doppler Shifting
 B. Selective Availability D. Precision Coding



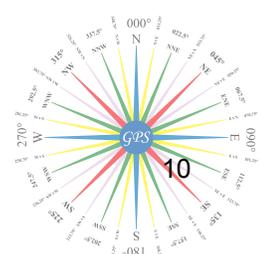
- 61 1626 Ref: Electronics, GPS, SA B
When using GPS without Selective Availability, you may expect your horizontal accuracy to be better than _____.
A. 3 meters C. 100 meters
B. 20 meters D. 200 meters
- 62 1689 Ref: Electronics, GPS, SA B
Which feature, when set to zero, might allow a GPS unit to have an accuracy equivalent to Precise Positioning Service receiver capability?
A. Transit C. Auto-correlation
B. Selective Availability D. Anti-spoofing
- 63 1801 Ref: Electronics, GPS, SA B
Which type of GPS receiver has at least four channels to process information from several satellites simultaneously?
A. Sequential C. Multiplex
B. Continuous D. None of the above
- 64 1627 Ref: Electronics, GPS, Satellites C
When using GPS, how many theoretical position lines are required for a two-dimensional fix?
A. 1 C. 3
B. 2 D. 4
- 65 1789 Ref: Electronics, GPS, Satellites B
Which theoretical minimum number of measurements from satellites does a GPS receiver need in order to provide an exact three-dimensional position?
A. Five C. Three
B. Four D. Two
- 66 1846 Ref: Electronics, GPS, Warning A
With regard to GPS, a civilian receiver may be capable of achieving the same accuracy as a military receiver if _____.
A. selective availability is set to zero
B. the satellites are all below 15° in elevation
C. your vessel is equipped with a Doppler receiver
D. the horizontal dilution of precision is high
- 67 1854 Ref: Electronics, GPS, Warning A
With respect to failure warnings and status indications, GPS receivers should provide, at a minimum, _____.
A. a warning of loss of position
B. a cross-track error alarm
C. an indication of a change in satellite configuration
D. an alarm if engine speed is suddenly reduced
- 68 50 Ref: Electronics, Log D
A Doppler log in the bottom return mode indicates the _____.
A. velocity of the current C. depth of the water
B. bottom characteristics D. speed over the ground
- 69 51 Ref: Electronics, Log B
A Doppler log in the volume reverberation mode indicates _____.
A. speed being made good C. the set of the current
B. speed through the water D. the depth of the water



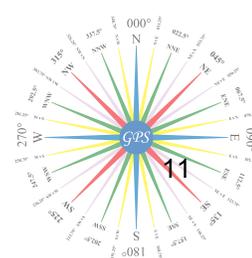
- 70 52 Ref: Electronics, Log B
A Doppler speed log indicates speed over ground _____.
A. at all times C. in the volume reverberation mode
B. in the bottom return mode D. only when there is no current
- 71 53 Ref: Electronics, Log C
A Doppler speed log indicates speed through the water _____.
A. at all times C. in the volume reverberation mode
B. in the bottom return mode D. only when there is no current
- 72 1542 Ref: Electronics, Log A
What will NOT induce errors into a Doppler sonar log?
A. Increased draft
B. Pitch
C. Roll
D. Change in trim
- 73 828 Ref: Electronics, RADAR, ARPA D
The ARPA may swap targets when automatically tracking if two targets _____.
A. are tracked on reciprocal bearings
B. are tracked at the same range
C. are tracked on the same bearing
D. pass close together
- 74 1347 Ref: Electronics, RADAR, ARPA A
Vessel required to have an Electronic Plotting Aid (EPA) must have a device to indicate the _____.
A. speed of the vessel over the ground or through the water
B. depth of the water
C. vessel's position
D. relative heading
- 75 1349 Ref: Electronics, RADAR, ARPA A
Vessels required to have an Automatic Radar Plotting Aid must have a device to indicate the _____.
A. speed of the vessel over the ground or through the water
B. vessel's position
C. ECDIS generated trackline
D. AIS information of vessels in the vicinity
- 76 1350 Ref: Electronics, RADAR, ARPA B
Vessels required to have an Automatic Radar Plotting Aid must have a device to indicate the _____.
A. distance to the next port
B. speed of the vessel over the ground or through the water
C. time of the next navigational satellite pass
D. None of the above
- 77 1486 Ref: Electronics, RADAR, ARPA B
What is TRUE of the history display of a target's past positions on an ARPA?
A. It provides a graphic display to emphasize which vessel is on a collision course.
B. In the true presentation, it provides a quick visual check to determine if a vessel has changed course.
C. The display is one of the primary inputs and must be in use when using the trial maneuver capability.
D. It provides a graphic display of a target vessel's relative course, speed, and CPA.



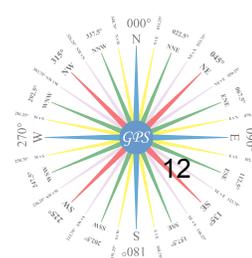
- 78 1540 Ref: Electronics, RADAR, ARPA C
 What will cause the ARPA to emit a visual alarm, audible alarm, or both?
 A. An acquired target entering into a guard zone
 B. A tracked target lost for one radar scan
 C. A tracked target entering your preset CPA-TCPA limits
 D. A target being initially detected within a guard zone
- 79 1623 Ref: Electronics, RADAR, ARPA B
 When using an ARPA, what should you consider in order to evaluate the information displayed?
 A. The target vessel's generated course and speed are based solely on radar inputs.
 B. Navigational constraints may require a target vessel to change course.
 C. The trial maneuver feature will automatically determine a course that will clear all targets.
 D. You cannot determine if a small target has been lost due to sea return.
- 80 1629 Ref: Electronics, RADAR, ARPA C
 When using the ARPA in heavy rain, which action should you take?
 A. Increase the radar gain to pick up weak echoes through the rain.
 B. Increase the STC setting to reduce close-in spurious signals.
 C. Navigate as though the effective range of the radar has been reduced.
 D. Increase the range of the inner and outer guard rings.
- 81 1656 Ref: Electronics, RADAR, ARPA B
 Which ARPA data should you use in order to determine if a close quarters situation will develop with a target vessel?
 A. Set and drift of the current C. Predicted time of CPA
 B. Relative track information D. Initial range of acquisition
- 82 2077 Ref: Electronics, RADAR, ARPA D
 Your ARPA has automatic speed inputs from the log. Due to currents, the log is indicating a faster speed than the speed over the ground. What should you expect under these circumstances?
 A. The generated CPA will be less than the actual CPA.
 B. The generated TCPA will be later than the actual TCPA.
 C. The range of initial target acquisition will be less than normal.
 D. The targets true course vector will be in error.
- 83 2078 Ref: Electronics, RADAR, ARPA A
 Your ARPA has been tracking a target and has generated the targets course and speed. The radar did not receive a target echo on its last two scans due to the weather. What should you expect under these circumstances?
 A. The ARPA will generate data as if the target was still being tracked by radar.
 B. The ARPA will give an audible and/or visual lost target alarm.
 C. The ARPA will generate data based on sea return echoes from the vicinity where the target was lost.
 D. The ARPA has lost all "memory" of the target and must recompute the target data.
- 84 2079 Ref: Electronics, RADAR, ARPA B
 Your ARPA has two guard zones. What is the purpose of the inner guard zone?
 A. Alert the watch officer that a vessel is approaching the preset CPA limit
 B. Warn of small targets that are initially detected closer than the outer guard zone
 C. Guard against target loss during critical maneuvering situations
 D. Sound an alarm for targets first detected within the zone
- 85 275 Ref: Electronics, RADAR, ARPA, EPA A
 An Electronic Plotting Aid (EPA) will drop off a target's vector is more than _____ minutes elapse between each manual plot.
 A. 10 C. 3
 B. 6 D. 2



- 86 432 Ref: Electronics, RADAR, ARPA, EPA C
Electronic Plotting Aid (EPA) has which built in functions?
A. Automatic target tracking C. Target CPA and time of CPA (TCPA)
B. Trial maneuvering D. Plots at least 20 targets simultaneously
- 87 433 Ref: Electronics, RADAR, ARPA, EPA D
Electronic Plotting Aid (EPA) has which built in functions?
A. Time of closest point of approach (TCPA) C. Plots at least 10 targets at one time
B. Target trails D. All of the above
- 88 481 Ref: Electronics, RADAR, ARPA, EPA A
How many targets can an Electronic Plotting Aid (EPA) track at the same time?
A. 20 C. 5
B. 10 D. 2
- 89 1496 Ref: Electronics, RADAR, ARPA, EPA D
What option does an Electronic Plotting Aid (EPA) not have?
A. Dual VRMs/EBLs C. Preset CPA/TCPA
B. Target Trails D. Trial Maneuver
- 90 1541 Ref: Electronics, RADAR, ARPA, EPA C
What will cause the Electronic Plotting Aid (EPA) to emit a visual alarm, audible alarm, or both?
A. An acquired target entering into a guard zone
B. A tracked target lost for one radar scan
C. A tracked target entering your preset CPA-TCPA limits
D. A target being initially detected within a guard zone
- 91 1625 Ref: Electronics, RADAR, ARPA, EPA B
When using an Electronic Plotting Aid (EPA), what should you consider in order to evaluate the information displayed?
A. The target vessel's generated course and speed are based solely on radar inputs.
B. Navigational constraints may require a target vessel to change course.
C. The trial maneuver feature will automatically determine a course that will clear all targets.
D. You cannot determine if a small target has been lost due to sea return.
- 92 1630 Ref: Electronics, RADAR, ARPA, EPA C
When using the Electronic Plotting Aid (EPA) in heavy rain, which action should you take?
A. Increase the radar gain to pick up weak echoes through the rain.
B. Increase the STC setting to reduce close-in spurious signals.
C. Navigate as though the effective range of the radar has been reduced.
D. Increase the range of the inner and outer guard rings.
- 93 1685 Ref: Electronics, RADAR, ARPA, EPA D
Which Electronic Plotting Aid (EPA) data should you use in order to determine if a close quarters situation will develop with a target vessel?
A. Vessel's true vector indicates vessel will cross your heading
B. Relative track information
C. Predicted time of the closest point of approach (CPA)
D. Initial range of acquisition
- 94 2084 Ref: Electronics, RADAR, ARPA, EPA C
Your Electronic Plotting Aid (EPA) has two guard zones. What is the purpose of the inner guard zone?
A. Alert the watch officer that a vessel is approaching the preset CPA limit
B. Guard against target loss during critical maneuvering situations
C. Warn of small targets that are initially detected closer than the outer guard zone
D. Sound an alarm for targets first detected within the zone



- 95 2083 Ref: Electronics, RADAR, ARPA, EPA D
Your Electronic Plotting Aid (EPA) has automatic speed inputs from the log. Due to currents, the log is indicating a faster speed than the speed over the ground. What should you expect under these circumstances?
A. The generated CPA will be less than the actual CPA.
B. The generated TCPA will be later than the actual TCPA.
C. The range of initial target acquisition will be less than normal.
D. The targets true course vector will be in error.
- 96 389 Ref: Electronics, RADAR, Beam Width A
Coral atolls, or a chain of islands at right angles to the radar beam, may show as a long line rather than as individual targets due to _____.
A. the effects of beam width C. the pulse length of the radar
B. limitations on range resolution D. the multiple-target resolution factor
- 97 835 Ref: Electronics, RADAR, Beam Width C
The beam width of your radar is 2°. The left tangent bearing of a small island, as observed on the PPI scope, is 056°pgc. If the gyro error is 2°E, what bearing would you plot on the chart?
A. 052°
B. 056°
C. 059°
D. 060°
- 98 1129 Ref: Electronics, RADAR, Beam Width D011NG C
The picture shown represents the geographic location of a vessel and the radar presentation at the same time. Which statement is TRUE?
A. Ship No. 1 is not detected due to the shadow effect of the headland.
B. The small island is not detected due to the effect of beam width.
C. A tangent bearing of the headland to the south-southeast should be corrected by adding one-half of the beam width.
D. Ship No. 2 is not detected due to the reflective mass of the background mountain overpowering the ship's reflective signals.
- 99 2093 Ref: Electronics, RADAR, Beam Width C
Your radar has a beam width of 2°. The radar gyro bearing of the right tangent of an island is 316°. The gyro error is 1°E. Which true bearing should be plotted on the chart?
A. 313°
B. 314°
C. 316°
D. 317°
- 100 507 Ref: Electronics, RADAR, Character C
If there is any doubt as to the proper operation of a radar, which statement is TRUE?
A. Only a radar expert can determine if the radar is operating.
B. All radars have indicator lights and alarms to signal improper operation.
C. A radar range compared to the actual range of a known object can be used to check the operation of the radar.
D. The radar resolution detector must be energized to check the radar.
- 101 808 Ref: Electronics, RADAR, Character C
The 10-cm radar as compared to a 3-cm radar of similar specifications will _____.
A. be more suitable for river and harbor navigation
B. provide better range performance on low lying targets during good weather and calm seas
C. have a wider horizontal beam width
D. have more sea return during rough sea conditions



102 809 Ref: Electronics, RADAR, Character D
 The 3-cm radar as compared to a 10-cm radar with similar specifications will _____.
 A. give better range performance in rain, hail, etc.
 B. display small targets in a mass of dense sea clutter at a greater range
 C. have less sea return in choppy rough seas
 D. display a more maplike presentation for inshore navigation

103 1130 Ref: Electronics, RADAR, Character D011NG A
 The pictures shown represent the geographic location of a vessel and the radar presentation at the same time. Which statement is TRUE?
 A. Ship No. 1 does not appear as an individual target due to the effect of beam width.
 B. Small island is not detected due to the multiple echo effect from the mountain.
 C. A tangent bearing of the headland to the south-southeast is corrected by subtracting one-half of the beam width.
 D. Ship No. 2 is not detected due to the side lobe effect of radar reflecting from the mountain.

104 1424 Ref: Electronics, RADAR, Character A
 What is the approximate wave length of an X Band Radar operating on a frequency of approximately 9500 MHz?
 A. 3 cm C. 30 cm
 B. 10 cm D. 100 cm

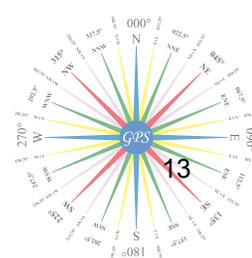
105 1545 Ref: Electronics, RADAR, Character D
 What would give the best radar echo?
 A. The beam of a three masted sailing vessel with all sails set.
 B. A 110-foot fishing vessel with a radar reflector in its rigging.
 C. A 300-foot tanker, bow on.
 D. A 600-foot freighter, beam on.

106 1671 Ref: Electronics, RADAR, Character A
 Which condition indicates that your radar needs maintenance?
 A. Serrated range rings C. Multiple echoes
 B. Indirect echoes D. Blind sector

107 1775 Ref: Electronics, RADAR, Character D
 Which statement concerning the operation of radar in fog is TRUE?
 A. Radar ranges are less accurate in fog.
 B. Navigation buoys will always show up on radar.
 C. A sandy beach will show up clearer on radar than a rocky cliff.
 D. Small wooden boats may not show up on radar.

108 2094 Ref: Electronics, RADAR, Ducting B
 Your radar indicates a target; however, there is no visible object at the point indicated. A large mountain, approximately 50 miles away on the same bearing as the target, is breaking the horizon. You should suspect the radar target is caused by _____.
 A. a submerged submarine C. sub-refraction
 B. ducting D. ionospheric skip waves

109 277 Ref: Electronics, RADAR, Echoes B
 An indirect radar echo is caused by a reflection of the main lobe of the radar beam off the observer's vessel. Which of the following is NOT a characteristic of indirect echoes?
 A. Their bearing is almost constant, even when the true bearing of the contact changes appreciably.
 B. They always appear on a bearing of 90° from the true bearing of the contact.
 C. The indirect echoes usually appear in shadow sectors.
 D. When plotted, their movements are usually abnormal.



110 2035 Ref: Electronics, RADAR, Echoes A
 You have another ship overtaking you close aboard to starboard. You have 3 radar targets bearing 090° relative at ranges of .5 mile, 1 mile, and 1.5 miles. In this case, the unwanted echoes are called _____.

- A. multiple echoes
- B. spoking
- C. indirect echoes
- D. side-lobe echoes

111 1631 Ref: Electronics, RADAR, Navigation C
 When using the radar for navigating _____.

- A. the best fix is obtained by using a tangent bearing and a range
- B. and using two radar ranges for a fix, the objects of the ranges should be close to reciprocal bearings
- C. and using ranges, the most rapidly changing range should be measured last
- D. and crossing a radar range of one object with the visual bearing of a second object, the two objects should be 80° to 110° apart

112 546 Ref: Electronics, RADAR, RACON B
 In order to insure that a RACON signal is displayed on the radar, you should _____.

- A. increase the brilliance of the PPI scope
- B. turn off the interference controls on the radar
- C. use the maximum available range setting
- D. increase the radar signal output

113 547 Ref: Electronics, RADAR, RACON D
 In order to insure that the racon signal is visible on your 3 cm radar, the _____.

- A. 10 cm radar should be placed on standby or turned off
- B. gain control should be turned to maximum
- C. radar should be stabilized, head up
- D. rain clutter control should be off but, if necessary, may be on low

114 889 Ref: Electronics, RADAR, RACON C
 The description "Racon" beside an illustration on a chart would mean a _____.

- A. radar conspicuous beacon
- B. circular radio beacon
- C. radar transponder beacon
- D. radar calibration beacon

115 1869 Ref: Electronics, RADAR, RACON D
 You are approaching a light fitted with a RACON. The light may be identified on the radar by _____.

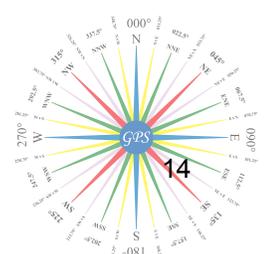
- A. a dashed line running from the center of the scope to the light
- B. an audible signal when the sweep crosses the light
- C. a circle appearing on the scope surrounding the light
- D. a coded signal appearing on the same bearing at a greater range than the light

116 1872 Ref: Electronics, RADAR, RACON A
 You are approaching a sea buoy which emits a racon signal. This signal is most frequently triggered by which type of radar?

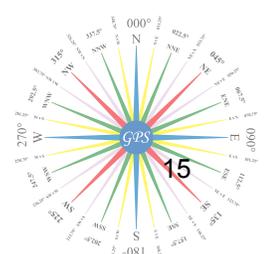
- A. 3 cm
- B. 10 cm
- C. Both 3 cm and 10 cm
- D. Signal does not depend on radar type.

117 1978 Ref: Electronics, RADAR, RACON D017NG B
 You are radar scanning for a buoy fitted with a racon. Which radar screen represents the presentation you should expect on the PPI?

- A. A
- B. B
- C. C
- D. D



- 118 1200 Ref: Electronics, RADAR, RAMARK C
 The signal from a ramark will show on the PPI as a _____.
 A. coded signal on the same bearing and at a greater range than the transponder
 B. circle surrounding the transponder
 C. radial line from the transponder to the center of the PPI
 D. dashed circle at the same range as the transponder
- 119 1166 Ref: Electronics, RADAR, Sea A
 The radar control that reduces weak echoes out to a limited distance from the ship is the _____.
 A. sensitivity time control (sea-clutter control) C. brilliance control
 B. receiver gain control D. fast time constant (differentiator)
- 120 1167 Ref: Electronics, RADAR, Sea D
 The radar control that shortens all echoes on the display and reduces clutter caused by rain or snow is the _____.
 A. sensitivity time control (sea clutter control) C. brilliance control
 B. receiver gain control D. fast time constant (differentiator)
- 121 1168 Ref: Electronics, RADAR, Sea B
 The radar control used to reduce sea return at close ranges is the _____.
 A. gain control C. fast time constant
 B. sensitivity time control D. pulse length control
- 122 1639 Ref: Electronics, RADAR, Sea B
 When you turn on the fast time constant (differentiator) control of a radar it will _____.
 A. enhance weak target echoes and brighten them on the PPI
 B. reduce clutter over the entire PPI by shortening the echoes
 C. only suppress weak targets to a limited distance from the ship (sea clutter)
 D. reduce the beam width to provide a map-like presentation for navigation
- 123 1690 Ref: Electronics, RADAR, Sea B
 Which general statement concerning radar is FALSE?
 A. Raising the antenna height increases the radar range.
 B. The ability of radar to detect objects is unaffected by weather conditions.
 C. Radar bearings are less accurate than radar ranges.
 D. Radar should be checked regularly during clear weather to ensure that it is operating properly.
- 124 148 Ref: Electronics, RADAR, Stab C
 A radar display which is oriented, so that north is always at the top of the screen, is called a(n) _____.
 A. relative display C. stabilized display
 B. composite display D. unstabilized display
- 125 147 Ref: Electronics, RADAR, Target C
 A radar contact will remain stationary on a relative motion radar display only when it is _____.
 A. on the same course as your vessel
 B. at the same speed as your vessel
 C. on the same course and speed as your vessel
 D. on a reciprocal course at the same speed as your vessel
- 126 756 Ref: Electronics, RADAR, Target B
 Radar makes the most accurate determination of the _____.
 A. direction of a target C. size of a target
 B. distance to a target D. shape of a target



- 127 2003 Ref: Electronics, RADAR, Target A
 You are underway at 10 knots. At 1800 you note a radar contact dead ahead at a range of 10 miles. At 1812 the contact is dead ahead at a range of 8 miles. The estimated speed of the contact is _____.
- A. dead in the water
 - B. 5 knots
 - C. 10 knots
 - D. 15 knots
- 128 2004 Ref: Electronics, RADAR, Target D
 You are underway at 5 knots and see on your radar a contact 10 miles directly astern of you. 12 minutes later, the contact is 8 miles directly astern of you. What is the estimated speed of the contact?
- A. Dead in the water
 - B. 1 knot
 - C. 10 knots
 - D. 15 knots
- 129 2037 Ref: Electronics, RADAR, Target B
 You have been observing your radar screen and notice that a contact on the screen has remained in the same position, relative to you, for several minutes. Your vessel is making 10 knots through the water. Which statement is TRUE?
- A. The contact is dead in the water.
 - B. The contact is on the same course and speed as your vessel.
 - C. The contact is on a reciprocal course at the same speed as your vessel.
 - D. The radar is showing false echoes and is probably defective.
- 130 2092 Ref: Electronics, RADAR, True Motion D009NG B
 Your radar displays your ship off center. As you proceed on your course, your ship's marker moves on the PPI scope while echoes from land masses remain stationary. What is this display called?
- A. Off center
 - B. True motion
 - C. Stabilized
 - D. Head up
- 131 2095 Ref: Electronics, RADAR, True Motion A
 Your radar is set on a true motion display. Which of the following will appear to move across the PPI scope?
- A. Own ship's marker
 - B. Echo from a ship at anchor
 - C. Echoes from land masses
 - D. All of the above
- 132 1621 Ref: Electronics, RADAR, Unstabilized D
 When using a radar in an unstabilized mode, fixes are determined most easily from _____.
- A. center bearings
 - B. tangent bearings
 - C. objects that are close aboard
 - D. ranges
- 133 1 Ref: Electronics, Rate of Turn Indicator C
 "An electronic or electric device that indicates the rate of turn of a vessel," defines a/an _____.
- A. magnetic compass
 - B. gyro-compass
 - C. swing meter
 - D. odometer

