

OIC - NW: COMPETENCE 3

Use of Radar and ARPA for the Safety of Navigation

1	In general, on how many radio channels will an automatic identification system (AIS) operate?			
	2	4	6	8
2	The description "Racon" beside an illustration on a chart would mean a:			
	radar conspicuous beacon	circular radio beacon	radar transponder beacon	radar calibration beacon
3	What will cause the Electronic Plotting Aid (EPA) to emit a visual alarm, audible alarm, or both?			
	An acquired target entering into a guard zone	A tracked target lost for one radar scan	A tracked target entering your preset CPA-TCPA limits	A target being initially detected within a guard zone
4	With regards to ARPA, what is the IMO requirement to acquisition?			
	No special requirement	Acquisition should be done manually	Acquisition can be manual or automatic	Acquisition should be automatic
5	Your ARPA had two guard zones. What is the purpose of the inner guard zone?			
	Alert the watch officer that a vessel is approaching the preset CPA limit	Guard against targets loss during critical maneuvering situations	Warn of small targets that are initially detected closer than the outer guard zone	Sound an alarm for targets first detected within the zone
6	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 submerged submarine	ducting	sub-refraction	ionospheric skip waves
7	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

8	Comparing manual and automatic acquisition in ARPA, which is most sensitive?			
	Manual acquisition	Not relevant	Automatic acquisition	Same sensitivity
9	In a charted water with a depth of 35 meters, a 380-meter long vessel dropped her anchor during a normal weather condition. If you want to achieve a reading in the Variable Range Marker (VRM) of 0.355 n. miles on the ARPA, representing the maximum swing of the ship. What scope of the anchor should you use?			
	5	10	6	8
10	The 10-cm radar as compared to a 3-cm radar of similar specifications will:			
	be more suitable for river and harbor navigation	provide better range performance on low lying targets during good weather and calm seas	have a wider horizontal beam width	have more sea return during rough sea conditions
11	Vessels required to have an ARPA must have a device to indicate the:			
	time of CPA	speed of vessel over ground	direction of other vessels	time of next satellite
12	What is the approximate wave length of an X Band Radar operating on a frequency of approximately 9500 MHz?			
	3 cm	10 cm	30 cm	100 cm
13	When using the radar for navigating:			
	the best fix is obtained by using a tangent bearing and a range	and using two radar ranges for a fix, the objects of the ranges should be close to reciprocal bearings	and using ranges, the most rapidly changing range should be measured first	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
14	A radar contact will remain stationary on a relative motion radar display only when it is:			
	on the same course as your vessel	at the same speed as your vessel	on the same course and speed as your vessel	on a reciprocal course at the same speed as your vessel

15	As an ARPA user, what is your indication on the display of a linear extrapolation into the future of a target's motion, based on measurements of the target's range and bearing on the radar in the recent past?			
	Target's predicted motion	Closest point of approach	Trial maneuver	Future predictive extrapolation
16	How many targets can an Electronic Plotting Aid (EPA) track at the same time?			
	20	10	5	2
17	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
18	Vessel required to have an Automatic Radar Plotting Aid must have a device to indicate the:			
	speed of the vessel over the ground or through the water	distance to the next port	time of the next navigational satellite pass	none of the above
19	What are the IMO requirements regarding separation of Radar and ARPA information?			
	It should be possible to run the ARPA in simplified mode.	No requirement	ARPA and radar information should be independently controlled	It should be possible to cancel the radar information
20	What is TRUE of the history display of a target's past positions on an ARPA?			
	It provides a graphic display to emphasize which vessel is on a collision course	In the true presentation, it provides a quick visual check to determine if a vessel has changed course	The display is one of the primary inputs and must be in use when using the trial maneuver capability	It provides a graphic display of a target vessel's relative course, speed, and CPA

21	Electronic Plotting Aid (EPA) has which built in functions?			
	Time of closest point of approach (TCPA)	Target trails	Plots at least 10 targets at one time	All of the above
22	With regards to ARPA, what the IMO minimum continuously tracking requirements?			
	30 targets	50 targets	20 targets	100 targets
23	In order to insure that the racon signal is visible on your 3 cm radar, the:			
	10 cm radar should be placed on standby or turned off	gain control should be turned to maximum	radar should be stabilized, head up	rain clutter control should be off but, if necessary, may be on low
24	The ARPA may swap targets when automatically tracking if two targets:			
	are tracked on reciprocal bearings	are tracked at the same range	are tracked on the same bearing	pass close together
25	The radar control used to reduce sea return at close ranges is the:			
	gain control	sensitivity time control	fast time constant	pulse length control
26	When using an ARPA, what should you consider in order to evaluate the information displayed?			
	The target vessel's generated course and speed are based solely on radar inputs.	Navigational constraints may require a target vessel to change course.	The trial maneuver feature will automatically determine a course that will clear all targets.	You cannot determine if a small target has been lost due to sea return.
27	Which Electronic Plotting Aid (EPA) data should you use in order to determine if a close quarters situation will develop with a target vessel?			
	Vessel's true vector indicates vessel will cross your heading	Relative track information	Predicted time of the closest point of approach (CPA)	Initial range of acquisition

28	You are running parallel to the coast and take a running fix using bearings of the same object. If you are making less speed than used for the running fix, in relation to the position indicated by the fix, you will be:			
closer to the coast	farther from the coast	on the track line ahead of the fix	on the track line behind the fix	
29	Your ARPA has two guard zones. What is the purpose of the inner guard zone?			
Alert the watch officer that a vessel is approaching the preset CPA limit	Warn of small targets that are initially detected closer than the outer guard zone	Guard against target loss during critical maneuvering situations	Sound an alarm for targets first detected within the zone	

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