

*United States Coast Guard Auxiliary*  
**District First Southern**  
**Aid to Navigation Team**

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# **AUXILIARY AID TO NAVIGATION VERIFIER QUALIFICATIONS GUIDE**

## **INTRODUCTION**

This Auxiliary Aid to Navigation Verifier Guide was designed to allow Auxiliarists to become Aid Verifiers. Each section contains a listing of tasks that will allow Auxiliarists to become proficient in the skills needed to complete the A/V mission.

This guide can function as a syllabus for a workshop or as a self-study guide. Each listing allows the “AVC” Aid Verifier Candidate, as well as the “AVQ” Aid Verifier Qualifier, to know what is expected of them. Within D1SR the AVQs are the current ADSO-ANs, and DSO-AN.

As each task is completed, the authorized AVQ personnel will sign off on both the Task Page and Check Off List.

When all of the tasks are completed, the AVQ will submit a “Letter of A/V Certification” along with the completed Check Off List to the DSO-AN.

The DSO-AN will sign off and forward the “Letter of A/V Certification” along with the Check Off List to:

**Director of Auxiliary (SR) (oax)**  
**First Coast Guard District**  
**BATTERY PARK BLDG**  
**1 SOUTH STREET**  
**2<sup>ND</sup> FLOOR ROOM 207**  
**NEW YORK, NY 10004-1499**

Certification is complete only when endorsed by your District Director of Auxiliary.

Members who attain A/V certification are entitled to wear the Operations Program Ribbon.

## AtoN / PatoN Verifier Qualification Check Off List

<b>Member Name</b>	<b>EPID#</b>
<b>Division #</b>	<b>Flotilla #</b>
<b>Current Coxswain</b> YES / NO	<b>Course Date</b>

**NOTE: Non-Coxswains are required to complete all PQS Tasks.  
Current Coxswains need only to complete PQS Tasks with an asterisk/or in **BLUE****

<b>1 KNOWLEDGE OF CHARTS AND NAUTICAL PUBLICATIONS</b>					
No.	Description of Task	Non Cox	COX	Date	Qualifier
1	Demonstrated the use of Chart Number 1		Waived		
2	Demonstrated the basic parts, symbols and abbreviations found on a NOS chart.		Waived		
3	Demonstrated making corrections to a NOS chart using the LNM—Local Notice To Mariners.		Waived		
4	Demonstrated knowledge of the Coast Pilot.		Waived		
<b>2 KNOWLEDGE OF PatoN REGULATIONS</b>					
No.	Description of Task	Non Cox	COX	Date	Qualifier
1	*Discussed to whom the PatoN Regulations apply.				
2	*Discussed the difference between Class I, II, and III PatoNs.				
3	*Discussed the maintenance and discontinuance of PatoNs.				
<b>3 KNOWLEDGE OF PatoN DISCREPANCIES</b>					
No.	Description of Task	Non Cox	COX	Date	Qualifier
1	*Demonstrated the use of the Light List.				
2	*Demonstrated familiarity with the PatoN Verification Report.				
3	*Described the conditions that cause a PatoN to be discrepant.				
4	*Prepared a report for an unauthorized PatoN.				
5	*Completed the necessary reports for AUXDATA				
<b>4 KNOWLEDGE OF THE IALA-B AID TO NAVIGATION SYSTEM</b>					
No.	Description of Task	Non Cox	COX	Date	Qualifier
1	Explained the characteristics and purpose of the major aids to navigation that comprise the IALA-B Aid To Navigation System.		Waived		
2	*Described the characteristics of lighted AtoNs.				
<b>5 KNOWLEDGE OF POSITIONING PRIVATE AIDS BY SOUNDINGS</b>					
No.	Description of Task	Non Cox	COX	Date	Qualifier
1	*Explained the effect of the wind and current on the position of a floating aid to navigation.				
<b>6 KNOWLEDGE OF POSITIONING PRIVATE AIDS BY ELECTRONIC MEANS</b>					
No.	Description of Task	Non Cox	COX	Date	Qualifier
1	*Explained the critical units of measurement that must be pre-set into a GPS set in order to maximize the accuracy of its positioning capability.				

## SECTION 1 - Knowledge of Charts and Nautical Publications.

### Task 1- 1 Demonstrate the use of Chart No. 1

<b>REFERENCES</b>	a.	<b>NOS Chart No. 1</b> – to be provided by the AVC.
<b>CONDITIONS</b>	Task may be performed for ADSO-AN or DSO-AN only.	
<b>STANDARDS</b>	AVC should perform tasks in a reasonable time without prompting. Referral to NOS Chart No. 1 publication is permitted.	
<b>PERFORMANCE CRITERIA</b>		
Check Off                      Tasks		
<b>a.</b>	AVC provided the information requested by the AVQ from a copy of NOS Chart No. 1.	
Date	AVQ signature	

### Task 1- 2 Demonstrate the basic parts, symbols, and abbreviations found on a chart.

<b>REFERENCES</b>	a.	<b>NOS Chart No. 1</b> – to be provided by the AVC.
	b.	<b>NOS Chart of the AOR</b> – to be provided by the AVC.
	c.	<b>AtN/CU Study Guide</b> – Read Section VII – Nautical Charts and Chart No. 1
<b>CONDITIONS</b>	Task can be performed for ADSO-AN or DSO-AN only. It is often helpful when the task is performed within the location covered by the NOS Chart and that the charted items are identified with the actual objects.	
<b>STANDARDS</b>	AVC should perform tasks in a reasonable time without prompting but with reference to a NOS Chart of the AOR.	
<b>PERFORMANCE CRITERIA</b>		
Check Off                      Tasks		
<b>a.</b>	AVC identified the longitude scale on a NOS Chart.	
<b>b.</b>	AVC identified the nautical mile scale on the NOS Chart.	
<b>c.</b>	AVC identified the latitude scale on the NOS Chart.	
<b>d.</b>	AVC identified and interpreted depths on the NOS Chart.	
<b>e.</b>	AVC identified depth curves on the NOS Chart.	
<b>f.</b>	AVC identified the “Identification Block” on the NOS Chart.	
<b>g.</b>	AVC identified the “Horizontal Datum” and “Vertical Datum” on a NOS Chart.	
<b>h.</b>	AVC identified the symbols for buoys and their configuration on the NOS Chart.	
<b>i.</b>	AVC identified the symbols for prominent local landmarks and stated whether they were accurate positions versus approximate positions.	
<b>j.</b>	AVC identified the Compass Rose and indicated the purpose of each of its parts. Outer Scale - True Inner Scale – Magnetic Variation Error – Geographical. Location of True North.	
<b>k.</b>	AVC identified the symbols for a Wreck, Rock, and a Rock visible at various levels.	
Date	AVQ signature	

**Task 1- 3 Using the LNM—Local Notice to Mariners, make corrections to a chart.**

<b>REFERENCES</b>	a.	<b>NOS Chart</b> of the AOR – provided by the AVC.
	b.	<b>LNM</b> – Local Notice to Mariners - latest hard-copy LNM to be provided by the AVC from the Internet.
	c.	<b>AtoN/C/U Study Guide</b> – Read Section XII – AtoN/CU Reports and Publications
<b>CONDITIONS</b>	Task may be performed for the area ADSO-AN or the DSO-AN	
<b>STANDARDS</b>	AVC should perform tasks in a reasonable time without prompting or referral to any reference other than a NOS Chart of the AOR and a copy of the LNM-Local Notice to Mariners – provided by the AVC from the Internet.	
<b>PERFORMANCE CRITERIA</b>		
	Check Off	Tasks
<b>a.</b>		AVC stated the sources of correction data is found on the Internet as the Local Notice to Mariners and is also available as a link on the First Southern District Web Site.
<b>b.</b>		AVC stated that when correcting a chart, the proper procedure is to start with the most recent LNM and work backward. This avoids redundant errors.
<b>c.</b>		AVC stated that permanent corrections are made in ink. The use of red ink should be avoided, as it is difficult to read under the red lights commonly used during night operations.
<b>d.</b>		AVC stated that temporary corrections are always made in pencil.
<b>e.</b>		AVQ provided the AVC with a LNM with two corrections to be made to the NOS Chart for the local AOR.
<b>f.</b>		AVC made the correct margin notes to indicate the two corrections have been made to the NOS Chart.
Date		AVQ Signature

**Task 1- 4 Demonstrate knowledge of the Coast Pilot.**

<b>REFERENCES</b>	a.	<b>U.S. Coast Pilot</b> - latest hard copy for the AOR to be provided by the AVC from the Internet.
	b.	<b>AtoN/CU Study Guide</b> – Read Section X – Coast Pilot Updating
<b>CONDITIONS</b>	Task may be performed for ADSO-AN or DSO-AN only..	
<b>STANDARDS</b>	AVC should perform tasks in a reasonable time without prompting but with reference to a U.S. Coast Pilot – provided by the AVC from the Internet.	
<b>PERFORMANCE CRITERIA</b>		
	Check Off	Task
<b>a.</b>		Referencing the Coast Pilot, AVC will provide information requested by the AVQ.
Date		AVQ signature

## SECTION 2 - Knowledge of PatoN Regulations.

### TASK 2-1 Discuss to whom the PatoN regulations apply.

<b>REFERENCES</b>	a.	14 USC 83
	b.	33 CFR 66.01
	c.	33 CFR 66.01
	d.	AtoN/CU Study Guide – Read Section IV – Private Aids to Navigation
	e.	AtoN/CU Study Guide – Read Section XVIII – Private Aids to Navigation Application
<b>CONDITIONS</b>	Task may be performed for ADSO-AN or DSO-AN only.	
<b>STANDARDS</b>	AVC should discuss the points below from memory, in a reasonable time, without prompting or referral to a reference document.	
<b>PERFORMANCE CRITERIA</b>		
Check Off		Task
*a.	AVC stated that no one, other than the Armed Forces, may place private aids (PatoNs) anywhere in the navigable waters of the United States without permission from the Coast Guard.	
*b.	AVC stated that permission to deploy a PatoN must come from the Commandant of the Coast Guard or the District Commander of the local Coast Guard District.	
*c.	AVC described “Navigable Waters” as:	
	a.	Coastal waters below MHW—Mean High Water.
	b.	Waters subject to tidal ebb and flow.
	c.	Inland waters that are used for interstate or foreign commerce.
d.	Inland waters that with “reasonable cost improvements” could, in the near future, be used for interstate or foreign commerce.	
Date	AVQ signature	

**TASK 2- 2      Discuss the difference between Class I, II, and III PatoNS.**

<b>REFERENCES</b>	a.	<b>33 CFR 64</b>			
	b.	<b>33 CFR 67</b>			
	c.	<b>33 CFR – 01-16</b>			
	d.	<b>AtoN/CU Study Guide – Read Section IV – Private Aids to Navigation</b>			
<b>CONDITIONS</b>	This task may be performed for ADSO-AN or DSO-AN only.				
<b>STANDARDS</b>	AVC will discuss the points from memory, in a reasonable time, without prompting or referral to a reference document.				
<b>PERFORMANCE CRITERIA</b>					
<table border="0" style="width: 100%;"> <tr> <td style="text-align: center; width: 25%;">Check Off</td> <td style="text-align: center; width: 25%;">Task</td> <td></td> </tr> </table>			Check Off	Task	
Check Off	Task				
<b>*a.</b>	AVC stated that a Class I PatoN is a mark on wrecks, marine structure or other works that owners are legally obligated to maintain.				
<b>*b.</b>	AVC stated that a Class II PatoN is a mark, exclusive of Class I aids, located in waters used for general navigation.				
<b>*c.</b>	AVC stated that a Class III PatoN is a mark, exclusive of Class I and II aids, located in waters not ordinarily used for general navigation.				
Date	AVQ signature				

**TASK 2-3      Discuss maintenance and discontinuance of PatoNs.**

<b>REFERENCES</b>	<b>a.</b>	33 CFR 66.01 – 25
	<b>b.</b>	<b>AtoN/CU Study Guide</b> – Read Section IV Private Aids to Navigation
	<b>c.</b>	<b>AtoN/CU Study Guide</b> - Read Section XVIII Private Aids to Navigation Application
<b>CONDITIONS</b>	This task may be performed for ADSO-AN or DSO-AN only.	
<b>STANDARDS</b>	AVC will discuss the points from memory, in a reasonable time, without prompting or referral to a reference document.	
<b>PERFORMANCE CRITERIA</b>		
<b>Check Off</b>	<b>Task</b>	
<b>a.</b>	AVC stated that a Class I PatoN is to be maintained without expense to the Coast Guard.	
<b>b.</b>	AVC stated that a Class I PatoN may not be removed until:	
	<b>a</b>	The obstruction it marks has been completely removed.
	<b>b</b>	The owner(s) have permission of the District Commander for removal.
<b>c.</b>	AVC stated that a Class II and Class III PatoN may be removed by notifying the appropriate Coast Guard District Commander, at least 30 days in advance of removal.	
<b>d.</b>	AVC stated that the District Commander has the authority to order the discontinuance and removal of a previously approved PatoN whenever it is determined that the PATON is no longer being operated in the public interest.	
<b>e.</b>	AVC stated that Class II and III PatoNS are usually charted on NOS Charts and advertised in the Coast Guard Light List.	
<b>f.</b>	AVC stated that PatoNs are subject to inspection by the Coast Guard without prior notice and at any time.	
<b>g.</b>	AVC stated that Critical discrepancies must be reported to the District Commander by the most expeditious means. The correction of the discrepancy must be reported by the same means.	
<b>h.</b>	AVC stated that discrepancies must be corrected as soon as is practicable.	
Date	Signature	

## SECTION 3 – Knowledge of Paton Discrepancies.

### TASK 3-1 Demonstrate how to use the Light List.

<b>REFERENCES</b>	<b>a</b>	Light List Volume 1 – Atlantic Coast COMDTPUB P16502.1 Available at <a href="http://www.uscg.mil/d1/navinfo.htm">www.uscg.mil/d1/navinfo.htm</a>				
	<b>b</b>	AtoN/CU Study Guide – Read Section III – AtoN Discrepancies				
<b>CONDITIONS</b>	This task may be performed for ADSO-AN or DSO-AN only					
<b>STANDARDS</b>	AVC will be provided with data to identify three aids, by LLNR, by general location and name, and by Latitude and Longitude. Task should be completed in a reasonable time using the Light List – provided by the AVC.					
<b>PERFORMANCE CRITERIA</b>						
<table border="0"> <tr> <td style="text-align: center;"><small>Check off</small></td> <td style="text-align: center;"><small>Task</small></td> </tr> <tr> <td style="text-align: center;"><b>*a.</b></td> <td>AVC fills in the data for three Aids from the Light List sample on below on the forms provided below. LLNRs 36675, 36715, and 36795.</td> </tr> </table>			<small>Check off</small>	<small>Task</small>	<b>*a.</b>	AVC fills in the data for three Aids from the Light List sample on below on the forms provided below. LLNRs 36675, 36715, and 36795.
<small>Check off</small>	<small>Task</small>					
<b>*a.</b>	AVC fills in the data for three Aids from the Light List sample on below on the forms provided below. LLNRs 36675, 36715, and 36795.					

#### AID ONE

Aid Name			
LLNR	Latitude		Longitude
Height	Range	Structure	Color
Chart Number	Remarks		

#### AID TWO

Aid Name			
LLNR	Latitude		Longitude
Height	Range	Structure	Color
Chart Number	Remarks		

#### AID THREE

Aid Name			
LLNR	Latitude		Longitude
Height	Range	Structure	Color
Chart Number	Remarks		
Date	AVQ signature		



**Task 3- 2 Demonstrate familiarity with the Private Aid Verification Report.**

<b>REFERENCES</b>	a.	<b>D1SR Private Aid Verification Form</b>
	b.	<b>AtoN C/U Study Guide – Section IV– Private Aids to Navigation</b>
<b>CONDITIONS</b>	This task may be performed ADSO-AN or DSO-AN only.	
<b>STANDARDS</b>	AVC will refer to the two copies of the Private Aid Verifications forms and will fill in the data requested below.	
<b>PERFORMANCE CRITERIA</b>		
Check Off Task		
<b>*a.</b>	AVC fills in the data on the forms supplied below from the Private Aid Verification Forms	

**PatoN One**

Class	Depth	Owner's Name		
Owner's Address		Last verified	Light color	
Name of Aid		Latitude	Longitude	
Light color and characteristic			LLNR	

**PatoN Two**

Class	Depth	Owner's Name		
Owner's Address		Last verified	Light color	
Name of Aid		Latitude	Longitude	
Light color and characteristic			LLNR	

**TASK 3- 3 Describe conditions that cause a PatoN to be discrepant.**

<b>REFERENCES</b>	a.	<b>AtoN/CU Study Guide – Read Section III – AtoN Discrepancies</b>
	b.	<b>CG-5474 Discrepancy Form</b>
<b>CONDITIONS</b>	This task may be performed for ADSO-AN or DSO-AN only.	
<b>STANDARDS</b>	AVC will discuss the pertinent points from memory, in a reasonable time, and without prompting or referral to a reference document.	
<b>PERFORMANCE CRITERIA</b>		
	Check Off	Task
<b>*a.</b>	AVC stated that an aid is discrepant when it does not conform as described in ATONIS.	
<b>*b.</b>	AVC stated that aid discrepancies include:	
	a.	Aid is missing.
	b.	Lack of prescribed signal.
	c.	Incorrect light characteristic if so affixed.
	d.	Improper color.
	e.	Improper shape.
	f.	Aid is off station and does not mark the best water.
	g.	Damaged or sinking.
<b>*c.</b>	Using the PID List Form from D1SR as a reference, complete a discrepancy report showing that the PatoN is sinking.	
Date	AVQ signature	

**TASK 3- 4 Describe how to report an Unauthorized PatoN.**

<b>REFERENCES</b>	a.	<b>CG-5474 Discrepancy Form</b>
	b.	<b>AtoN/CU Study Guide – Read Section IV – AtoN Discrepancies on</b>
<b>CONDITIONS</b>	This task may be performed for ADSO-AN or DSO-AN only	
<b>STANDARDS</b>	AVC will demonstrate their ability to complete a Discrepancy Report to report an unauthorized aid.	
<b>PERFORMANCE CRITERIA</b>		
	Check Off	Task
<b>*a.</b>	Aid is a red buoy, lying on its side, with the number 3 painted on it nearby the North Cove Marina at 040-42-48 / 074-01-06W in 20 feet of water. Aid was observed last Sunday at 1450hrs on the Hudson River in New York.	
<b>*b.</b>	Aid is a white can with the words “No Wake” in black letters in 17feet of water off the Perth Amboy Marina at 040-28-44-00N / 074-13-54W. Aid was observed last Sunday at 2:00PM on the Raritan Bay in NJ	
<b>*c.</b>	AVC explained the importance of determining the owner of the unauthorized aid. AVC stated that the Auxiliary is not authorized to contact an unauthorized aid owner unless specifically directed to by the Coast Guard.	
Date	AVC signature	

**TASK 3- 5 Complete the necessary reports for AUXDATA.**

<b>REFERENCES</b>	a.	<b>ANSC 7030 Activity Report Mission</b> – for Patrol use
	b.	<b>ANSC 7030 Activity Report Mission</b> – for Mission Activity
<b>CONDITIONS</b>	Task can be performed for ADSO-AN or DSO-AN only.	
<b>STANDARDS</b>	AVC must complete an ANSC 7030 – Activity Report Mission form for a patrol, for AN activity while on the patrol, and for AN activity when not on a patrol. Task should be completed in a reasonable time.	
<b>PERFORMANCE CRITERIA</b>		
	Check off	Tasks
<b>*a.</b>		AVC stated that the purpose of reporting PatoN activity in a timely manner is to provide support statistics regarding the performance of the PatoN program concerning: PatoN Missions; PatoN Verifications; and PatoN Discrepancies.
<b>*b.</b>		AVC stated that Mission 31 is used for reporting PatoN activity.
<b>*c.</b>		AVC stated that each person performing PatoN verifications are responsible for preparing their own ANSC 7030 ACTIVITY REPORT – MISSION, referencing UNIT/INDIVIDUAL as the Type of Resource.
<b>*d.</b>		AVC explained the importance of entering a correct OPCON reference.
<b>*e.</b>		AVC accurately completed an ANSC 7030 – ACTIVITY REPORT – MISSION. AVC limited one Mission type to a single report.
<b>*f.</b>		AVC indicated that when PatoN verification is performed as part of an authorized Patrol, the total time allowed for Individual AtoN activity is limited to 15 minutes.
<b>*g.</b>		AVC indicated that his or her name is entered as LEAD on the ANSC 7030 ACTIVITY REPORT – MISSION, and other members of a boat patrol do not get listed on the PatoN 7030.
<b>*h.</b>		Complete an ANSC 7030 Activity Report Mission for the following AtoN Patrol. <b>You completed a 5.25 hour AtoN Patrol today under orders in your AOR. You were underway at 1055 with two crew: John Doe, 1145678, and John Smith, 1148765.</b>
<b>*i.</b>		Complete an ANSC 7030 Activity Report Mission for the following AtoN activity performed while on the above AtoN Patrol <b>While on the patrol, you verified 8 PatoNs. 5 of these PatoNs were discrepant.</b>
<b>*j.</b>		Complete an ANSC 7030 Activity Report Mission for the following AtoN activity. <b>While on a pleasure trip on your boat last Sunday, you verified 4 PatoNS. It took 1.5 hours to complete the verifications.</b>
Date	AVQ Signature	

## **SECTION 4 - Knowledge of the IALA-B Aid to Navigation System.**

### **TASK 4-1 Explain the characteristics and purpose of the major aids to navigation that comprise the IALA-B Aid to Navigation System.**

<b>REFERENCES</b>	a.	<b>NOS Chart No. 1</b> – to be provided by the AVC.
	b.	<b>U.S. Coast Guard Aid to Navigation Booklet. ANSC 3022. Blocks of 100.</b>
	c.	<b>AtoN/CU Study Guide</b> – Read Section II – Federal Short Range Aids to Navigation
<b>CONDITIONS</b>	Task can be performed for ADSO-AN or DSO-an only.	
<b>STANDARDS</b>	AVC will, in response to the AVQ, identify on the NOS Chart and explain the function of a selected quantity of Aids to Navigation. This will be performed from memory, in a reasonable time, without prompting or referral to a reference document.	
<b>PERFORMANCE CRITERIA</b>		
	Check Off	Tasks
a.		AVC stated that red, conical (Nun), even numbered, lateral buoys mark the starboard side of the channel when returning from sea. When lighted, light will be red.
b.		AVC stated that green, cylindrical (Can), odd numbered, lateral buoys mark the port side of a channel when returning from sea. When lighted, the light will be green.
c.		AVC stated that red and white vertically striped Safe Water Marks are used to mark the center of the channel or fairway. This buoy is lettered and will display a red ball at the top. When lighted, it will display a flash of Morse Code “A” with a white light. If fitted with a radio beacon, it will broadcast Morse Code “A.”
d.		AVC stated that a buoy with red and green horizontal bands marks a junction in a channel. The top band designates the buoy’s use in the main channel (returning from the sea) and the secondary band designates the buoy’s use in the secondary channel (returning from the sea). When lighted, it will show the light color indicated by the top horizontal band with a light characteristic if Composite Group Flashing of 2+2+1. When not lighted, the buoy will reflect the shape for its use in the main channel.
e.		AVC stated that Isolated Danger Marks were positioned over hazards to navigation, are black buoys with a red horizontal stripe and a black ball on top, and when lighted, will show a white light displaying Group Flashing (2).
f.		AVC stated that Special Purpose buoys are used to mark with no lateral significance, such as: Anchorage areas; Fish net areas; Spoil grounds; ODAS Buoys and Traffic Separation Schemes. When lighted, these aids will show yellow lights. Buoys will be lettered, not numbered.
g.		AVC stated that Regulatory Marks may be white buoys or daymarks with orange horizontal bands above and below any of the following symbols:
	a	Orange diamond with a cross inside indicates a Boat Exclusion Area where boats are not allowed to enter. Called an “Exclusion Buoy.” The reason for the exclusion may be shown outside the diamond in black letters.
	b	Orange diamond indicates danger. The nature of the danger may be printed on the inside of the diamond in black block letters. This is called a “Danger Buoy.”
	c	Orange circle indicated a controlled area. The nature of the restriction is printed inside the circle in black block letters. When it restricts speed, it is called a “Speed Buoy.” When it controls wakes, it is called a “No Wake Buoy.” When it marks a swimming area, it is called a “Swim Buoy.”
Date	AVQ signature	

**TASK 4- 2 Describe the Characteristics of Lighted AtoNs.**

<b>REFERENCES</b>	a.	<b>NOS Chart Number 1</b> – to be provided by AVC.
	b.	<b>Light List Volume 1</b> – Atlantic Coast COMDTPUB P16502.1
<b>CONDITIONS</b>	Task can be performed for ADSO-AN or DSO-AN only..	
<b>STANDARDS</b>	AVC will discuss the pertinent points from memory, in a reasonable time, and without prompting or referral to a reference document.	
<b>PERFORMANCE CRITERIA</b>		
<div style="display: flex; justify-content: space-around;"> <span>Check Off</span> <span>Tasks</span> </div>		
*a.	<b>FIXED</b>	Light is on all of the time from sunset to sunrise.
*b.	<b>OCCULTING</b>	The total duration of the lighted period is longer than the total period of darkness.
*c.	<b>ISOPHASE</b>	The duration of light and darkness is equal.
*d.	<b>FLASHING</b>	The light duration is shorter than darkness period. The frequency of the flashes is not greater than 30 flashes per minute.
*e.	<b>QUICK FLASHING</b>	The light duration is shorter than the darkness period. The repetition rate is 50 to 70 times per minute.
*f.	<b>VERY QUICK FLASHING</b>	The light duration is shorter than the darkness period. Repetition rate is 80 to 159 times per minute.
*g.	<b>ULTRA QUICK FLASHING</b>	The light duration is shorter than the darkness period. Frequency rate is not greater than 120 flashed per minute.
*h.	<b>MORSE CODE</b>	The light flashes in a pattern of short and long durations to signal in International Morse Code. For example, a light listed as Mo (A) will have a short flash, followed by a prolonged flash, followed by a period of darkness equal to the duration of the previous flash.
*i.	<b>FIXED and FLASHING</b>	The light has the same characteristic as a FIXED light, but with flashes of higher intensity at the published repetition rate.
*j.	<b>ALTERNATING</b>	The light has same characteristics as a FIXED light but the color will change (alternate) at the published repetition rate.
*k.	<b>Measuring a light cycle.</b>	AVC explained the proper procedure for time the light characteristics for a LB—Lighted Buoy.
Date	AVQ signature	

## SECTION 5 - Knowledge of Positioning PatoNs by Sounding.

**Task 5-1 Explain the effect of wind and current on the position of a floating aid to navigation.**

<b>REFERENCES</b>	a.	<b>Current Table</b> – to be provided by the AVC.
<b>CONDITIONS</b>	Task can be performed for ADSO-AN or DSO-AN only.	
<b>STANDARDS</b>	AVQ will provide location and date. Task should be performed in a reasonable time and without prompting.	
<b>PERFORMANCE CRITERIA</b>		
	Check Off	Task
<b>*a.</b>	AVC will explain the effects on a floating aid from the influence of Set and Drift of the current—Wind and other elements. AVC will explain the meaning of the term, “Watch Circle.”	
<b>*b.</b>	Upon receipt of a location and a date, AVC will look up the current predictions from the Current Tables or on a GPS set.	
Date	AVQ signature	

## SECTION 6 - Knowledge of positioning private aids by electronic means.

**Task 6-1 Demonstrate knowledge of the critical unit of measurements that must be pre-set into a GPS in order to maximize the accuracy of its positioning capability.**

<b>REFERENCES</b>	a.	<b>AtoN/CU Study Guide</b> – Read Section XI – The Use of GPS.
	b.	<b>GPS Operating Manual</b> – to be provided by the AVC.
	c.	<b>GPS</b> – to be provided by the AVC.
	d.	<b>NOS Nautical Chart</b> – to be provided by the AVC.
<b>CONDITIONS</b>	This task may be performed for ADSO-AN or DSO-an only	
<b>STANDARDS</b>	AVC should perform the tasks listed below in a reasonable time without prompting. Reference to the GPS Operating Manual is permitted.	
<b>PERFORMANCE CRITERIA</b>		
	Check Off	Tasks
<b>*1.</b>		<b>HORIZONTAL DATUM</b> - AVC explained the definition of a Horizontal Datum in GPS and how it related to a nautical chart and the accuracy to a GPS position reading.
	a.	AVC explained where to find the correct Horizontal to use.
<b>*2.</b>		<b>SPEED UNIT OF MEASURE</b> – AVC indicated that while operating on the water, the Speed Unit of Measure must be set to Knots – Nautical Miles per Hour.
	a.	AVC explained the difference between MPH and KNOTS.
<b>*3.</b>		<b>HEADING</b> – AVC explained that the Heading was related to the type of Compass used on the boat.
	a.	An Analog Compass uses Magnetic Headings.
	b.	Electronic Compasses can be offset to reflect True Headings and be compensated and corrected for Deviation Error.
<b>*4.</b>		<b>VARIATION</b> – AVC explained that some GPS sets have automatic Variation correction capability while others must be corrected for Variation manually.
	a.	AVC indicated that Variation can be obtained from the Compass Rose on a nautical chart that is nearest to your position.
<b>*5.</b>		<b>DATE and TIME</b> – AVC explained that most sets obtain date and time data from the satellites. It is usually more accurate that a watch or clock on your boat and should be used when reporting position data of private aids.
<b>*6.</b>		<b>LATITUDE and LONGITUDE</b> – AVC explained that the Coast Guard uses Deg—Min—Sec readings. Most GPS sets are pre-set to show decimal seconds (Deg—Min or “00 00.000.”) AVC indicated that a GPS set should be adjusted to reflect the Coast Guard standard in order to avoid reporting errors—000-00-00.000.
<b>*7.</b>		<b>VERTICAL DATUM – DEPTH</b> – AVC indicated that when the Fathometer is integrated or bundled into the GPS, a depth datum must be established in the GPS. AVC indicated that the Vertical Datum established in a GPS must match the Vertical Datum used on the nautical chart of the AOR.
Date		AVQ Signature