D1NR - AIDS VERIFIER TRAINING GUIDELINE AND CHECK OFF LIST

INTRODUCTION

This Auxiliary Private Aid to Navigation Verifier Qualification Guide defines the skills required for an Auxiliarist to become a qualified Aid Verifier. Each of seven sections contains a listing of specific tasks in which an Auxiliarist must demonstrate proficiency in order to complete an AV verification mission successfully.

This guide also functions 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 understand what is expected.

Any currently qualified AV may mentor an AVC-Aid Verifier Candidate. The mentor's responsibility is to initial each AV Task as the AVC becomes proficient in it. When the AVC becomes proficient in all of the AV Tasks, they are ready to be checked off by an ADSO-AN Staff Officer.

When an AVC-Aid Verifier Candidate has difficulty finding qualified mentors, he or she is encouraged to contact:

a. Their **FSO-AN** (Flotilla Aid to Navigation Staff Officer),
b. Their Auxiliary **SO-AN, ADSO-AN** or **DSO-AN.**
c. Their local CG Aid to Navigation Team (ANT).

The local ANT Chief, the ADSO-AN, and the DSO-AN are normally AVQs or have knowledge of their whereabouts. As each task is completed, the ADSO-AN signs off each task on the "*ATON Verifier Qualification Check Off List*." The ADSO-AN must be a qualified AV in order to perform this function.

When all of the AVCs tasks are completed, the ADSO-AN will contact the Auxiliary District Staff Officer. It is the responsibility of the ADSO-AN to forward an e-Mail to the DSO-AN indicating that the AVC has completed the qualification process.

The DSO-AN forwards the ADSO-ANs e-mail with appropriate comments to the Director of Auxiliary for update to the member's record and file.

This guide is the only listing of your completed tasks. Take all appropriate steps to see that it is not lost.

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

ATON Verifier Training Check Off List

Member Name **Member ID Number**

1	**KNOWLEDGE OF CHARTS AND NAUTICAL PUBLICATIONS**				
	No.	Description of Task	Mentor	AVQ	Date
	1	Demonstrated the use of Chart No.1			
	2	Demonstrated the basic parts, symbols and abbreviations used a Nautical Chart for a Private Aids to Navigation.			
	3	Used the LNM-Local Notice to Mariners to make corrections to a chart.			
	4	Demonstrated knowledge of the Coast Pilot.			
2	**KNOWLEDGE OF PATONS PRIVATE AIDS TO NAVIGATION**				
	No.	Description of Task	Mentor	AVQ	Date
	1	Discussed to whom the PATON Regulations apply.			
	2	Discussed the penalty for failure to comply with the PATON regulations.			
	3	Discussed the difference between Class I, II, and III PATONS.			
	4	Discussed the maintenance and discontinuance of PATONs.			
	5	Completed an application for a Private Aid to Navigation.			
3	**KNOWLEDGE OF PATON PRIVATE AID TO NAVIGATION DISCREPANCIES**				
	No.	Description of Task	Mentor	AVQ	Date
	1	Demonstrated the use of the Light List.			
	2	Demonstrated familiarity with the PATON Verification Report.(1)			
	3	Described the conditions that cause a PATON to be discrepant.			
	4	Described how to report non-permitted Aids.			
	5	Completed the necessary reports for AUXDATA			
4	**KNOWLEDGE OF THE IALA-B AID TO NAVIGATION SYSTEM**				
	No.	Description of Task	Mentor	AVQ	Date
	1	Explained the characteristics and purpose of the major aids to navigation that comprise the IALA-B Aid To Navigation System.			
	2	Described the characteristics of lighted PATONs.			
	3				
	4				
5	**KNOWLEDGE OF THE SOUNDING GUIDELINES FOR PATONS**				
	No	Description of Task	Mentor	AVQ	Date
	1	Explained how to check the accuracy of an echo sounder.			
	2	Explained the effect of the wind and current on the position of a floating aid to navigation.			
	3	Described the procedure for taking soundings at a PATON.			
6	**KNOWLEDGE OF POSITIONING PRIVATE AIDS ELECTRONICALLY**				
	No	Description of Task	Mentor	AVQ	Date
	1	Explained the difference of position accuracy provided by GPS, DGPS, and WAAS.			
	2	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.			
	3	Explained how to interpret the various quality / accuracy readouts provided by a GPS set.			
	4	Explained the use of waypoints and how they are established, verified and used by a GPS.			
	5	Explained the use of routes and how they are established, verified and used by a GPS set.			
7	**KNOWLEDGE OF AV ANNUAL MAINTENANCE AND REQUALIFICATION PROCESS.**				
	No	Description of Task	Mentor	AVQ	Date
	1	Describe the Annual Maintenance requirement for an AV in your District.			
	2	Describe the District Re-qualifications requirements for an AV in your District.			

AIDS VERIFIER TRAINING GUIDELINES

SECTION 1 – CHARTS AND NAUTICAL PUBLICATIONS

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

REFERENCES	a.	**NOS Chart No. 1 –** to be provided by the AVC. [Available at pollux.nss.nima.mil.pubs].
CONDITIONS	Task may be performed at any location, at any time.	
STANDARDS	AVC should perform tasks in a reasonable time without prompting. Referral to NOS Chart No. 1 publication is allowed.	
PERFORMANCE CRITERIA **Check Off Number**	**Task Description**	
1.	AVC provides the information requested by the AVQ from a copy of NOS Chart No. 1. The focus of this task should be on aids to navigation and depths.	
Date Mentor Initials		Date AVQ Initials

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

REFERENCES	a.	**NOS Chart No. 1 –** to be provided by the AVC.
	b.	**Local NOS Chart of the AOR –** to provided by the AVC.
	c.	**AN02 – Federal Short Range aid to Navigation Study Guide –** Reference pages 9 through 21. Available on the ATON Web Page of the First Northern Aid to Navigation Web Site.
CONDITIONS	Task can be performed at any location, at any time. 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.	
STANDARDS	AVC should perform tasks in a reasonable time without prompting but with reference to a NOS Chart of the AOR.	
PERFORMANCE CRITERIA **Check Off**	**Tasks**	
1.	AVC identified the longitude scale on a NOS Chart.	
2.	AVC identified the nautical mile scale on the NOS Chart.	
3.	AVC identified the latitude scale on the NOS Chart.	
4.	AVC identified and interpreted depths on the NOS Chart.	
5.	AVC identified depth curves on the NOS Chart.	
6.	AVC identified the "Identification Block" on the NOS Chart.	
7.	AVC identified the "Horizontal Datum" and "Vertical Datum" on a NOS Chart.	
8.	AVC identified the symbols for buoys and their configuration on the NOS Chart.	
9.	AVC identified the symbols for prominent local landmarks and stated whether they were accurate positions versus approximate positions.	
10.	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.	
11.	AVC identified the symbols for a Wreck, Rock, and a Rock visible at various levels.	
Date Mentor Initials		Date AVQ Initials

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

REFERENCES	a.	Reference the **NOS Chart** for your AOR. Chart is to be provided by the AVC**.**
	b.	Print a copy of the latest **LNM** – **Local Notice to Mariners**. The latest hard-copy LNM of the local AOR is to be provided by the AVC. Available on-line at **http://www.navcen.uscg.gov/pubs/LightLists/LightLists.htm** Print out the pages for your AOR.
	c.	Read the reference in the **AN02-FEDERAL Short Range Aid to Navigation Study Guide** on page 5. Available on the ATON Web Page of the First Northern Aid to Navigation Web Site.
CONDITIONS	Task may be performed at any location, at any time.	

STANDARDS	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.
PERFORMANCE CRITERIA **Check Off**	**Task**
1.	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 Northern Aid to Navigation Web Site..
2.	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.
3.	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.
4.	AVC stated that temporary corrections are made in pencil.
5.	AVQ provided the AVC with a LNM with two corrections to be made to the NOS Chart for the local AOR.
6.	AVC made the correct margin notes to indicate the two corrections have been made to the NOS Chart.
Date Mentor Initials	Date AVQ Initials

Task 1-4 Demonstrate knowledge of the Coast Pilot.

REFERENCE	a.	**Print a copy of the U.S. Coast Pilot that covers your AOR.** The latest hard-copy of the Coast Pilot for your AOR is to be provided by the AVC. Available on the Internet at **http://chartmaker.ncd.noaa.gov/nsd/coastpilot.htm** Print out the pages for your AOR.
	b.	Read the reference in the **CU02-Chart Updating Study Guide** on pages 46 to 49. Available on the CU Web Page of the First Northern Aid to Navigation Web Site.
CONDITIONS	Task may be performed at any location, at any time.	
STANDARDS	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.	
PERFORMANCE CRITERIA **Check Off**	**Task**	
1.	Referencing the Coast Pilot, AVC will provide information requested by the AVQ.	
2.	AVC indicated the correct procedure for submitting corrections to the Coast Pilot.	
Date Mentor Initials	Date AVQ Initials	

SECTION 2 – PATON – PRIVATE AIDS TO NAVIGATION

TASK 2-1 Discuss to whom the PATON regulations apply.

REFERENCES	a.	**14 USC 83**
	b.	**33 CFR 66.01 – 1 –** Available at http://www.access.gpo.gov/nara/cfr/waisidx_03/33cfr66_03.html
	c.	**33 CFR 66.01 – 3 –** Available at http://www.access.gpo.gov/nara/cfr/waisidx_03/33cfr66_03.html
	d.	**COMDTINST 16500.16A JUN 7 1995** – See the PATON Web Page on First Northern Aid to Navigation Web Site at http://www.uscgaan.com
CONDITIONS	Task may be performed at any location, at any time.	
STANDARDS	AVC should discuss the points below from memory, in a reasonable time, without prompting or referral to a reference document.	
PERFORMANCE CRITERIA **Check Off**	**Task**	
1.	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**.**	
2.	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.	
3.	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	Mentor Initials	Date	AVQ Initials

TASK 2-2 Discuss the penalty for failure to comply with PATON regulations.

REFERENCE	a.	**14 USC 83 –** See District AN Web Site.
	b.	**COMDTINST 16500.16A JUN 7 1995 –** See PATON Web Page on First Northern Aid to Navigation Web Site.
CONDITIONS	Task can be performed at any location, at any time.	
STANDARDS	AVC discusses the points from memory, in a reasonable time, without prompting or referral to a reference document.	

PERFORMANCE CRITERIA **Check Off**	**Task**
1.	AVC stated that any person or agency that operates a PATON without authorization may be subject to a fine of up to $100 for each offense.
2.	AVC stated that the Coast Guard considers each day an unauthorized aid is in operation as a separate offense.
3.	AVC stated that when more than one aid is used to mark a waterway, each aid is considered a separate offense.

Date	Mentor Initials	Date	AVQ Initials

TASK 2-3 Discuss the difference between Class I, II, and III PATONS.

REFERENCES	a.	**33 CFR 64** - Available at http://www.access.gpo.gov/nara/cfr/waisidx_03/33cfr66_03.html
	b.	**33 CFR 67** - Available at http://www.access.gpo.gov/nara/cfr/waisidx_03/33cfr66_03.html
	c.	**33 CFR – 01-16** - Available at http://www.access.gpo.gov/nara/cfr/waisidx_03/33cfr66_03.html
	d.	**AN06 - ATON DISCREPANCY REVIEW PRESENTATION** – review this PowerPoint training presentation. Available on the ATON Web Page of the First Northern Aid to Navigation Web Site.
CONDITIONS	This task may be performed any time, at any location**.**	
STANDARDS	AVC will discuss the points from memory, in a reasonable time, without prompting or referral to a reference document.	

PERFORMANCE CRITERIA **Check Off**	**Task**
1.	AVC stated that a Class I PATON is a mark used for wrecks, marine structure or other works that owners are legally obligated to maintain.
2.	AVC stated that a Class II PATON is a mark, exclusive of Class I aids, located in waters used for general navigation.
3.	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	Mentor Initials	Date	AVQ Initials

TASK 2-4 – Discuss maintenance and discontinuance of PATONs.

REFERENCES	a.	**33 CFR 66.01 – 25** - Available at http://www.access.gpo.gov/nara/cfr/waisidx_03/33cfr66_03.html
CONDITIONS	This task may be performed any time, at any location.	
STANDARDS	AVC will discuss the points from memory, in a reasonable time, without prompting or referral to a reference document.	

PERFORMANCE CRITERIA **Check Off**	**Task**	
1.	AVC stated that a Class I PATON is to be maintained without expense to the Coast Guard.	
2.	AVC stated that a Class I PATON may not be removed until:	
	a.	The obstruction it marks has been completely removed.
	b.	The owner(s) have permission of the District Commander for removal.
3.	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.	
4.	AVC stated that the District Commander has the authority to order the discontinuance and removal of a previously approved PATON whenever it is determined to be no longer being operated in the public interest.	
5.	AVC stated that Class II and III PATONS are usually charted on NOS Charts and shown in the Light List.	
6.	AVC stated that PATONs are subject to inspection by the Coast Guard without prior notice and at any time.	
7.	AVC stated that 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.	
8.	AVC stated that discrepancies must be corrected as soon as is practicable.	

Date	Mentor Initials	Date	AVQ Initials

TASK 2-5 Complete an application for a Private Aid to Navigation.

In AORs using the On-Line PATON System, the on-line 2554 screen will be used.

REFERENCES	a.	**33 CFR 66.01 – 25** - Available at http://www.access.gpo.gov/nara/cfr/waisidx_03/33cfr66_03.html
	b.	
	c.	**2554 Private Aid Application Form.** Available on the PATON Web Page of the First Northern Aid to Navigation Web Page.
CONDITIONS	This task may be performed at any time, at any location.	
STANDARDS	AVC will complete this report in a reasonable time with referral to a reference document.	

PERFORMANCE CRITERIA **Check Off**	**Task**
1.	AVC completed a CG-2554 Form or on-line PATON System without error and in a legible fashion using the data input provided in (b.) below.
2.	Acme Corporation, 135 Main Street, Warwick, RI is requesting to establish and maintain a private aid to navigation that will be deployed between May 15th and October 15th each year to mark a hazard (Rock) on the Weymouth Back River in Weymouth MA at 042-25-16.800N / 072-56-10.500W in a depth of 14 feet at MLW. The aid is a white can with orange bands and diamond with the word "Rock" in black letters in the center of the orange diamond on both side of the aid. James Doe, 12 Beach Street, Weymouth MA at 781-772-4220 is in charge of maintaining this aid.

Date	Mentor Initials	Date	AVQ Initials

SECTION 3 – PATON – PRIVATE AID TO NAVIGATION DISCREPANCIES

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

REFERENCE	a	**Light List for your AOR.**
	b.	**AN02 - ATON Study Guide** – Read the section on ATON Discrepancies on pages 13 through 18, and pages 35 through 37. Available on the ATON Web Page of the First Northern Aid to Navigation Web Site.
CONDITIONS	This task may be performed any time, at any location.	

STANDARDS	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.
PERFORMANCE CRITERIA **Check off** **Task**	
1.	AVC fills in the data for two Private Aids from the Light List on the forms provided below for three different PATONs. AVQ selects the page.

PATON #1

Aid Name (Show complete name of aid)			
LLNR	Latitude	Longitude	
Depth of Water	Aid Type	Light Characteristic	Color and markings on Aid
Chart Number	Duration and Remarks		

PATON #2

Aid Name (Show complete name of aid)			
LLNR	LLNR	LLNR	
Depth of Water	Depth of Water	Depth of Water	Depth of Water
Chart Number	Duration and Remarks		

Date	Mentor Initials	Date	AVQ Initials

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

REFERENCE	a.	**Private Aid Verification Form** (Use the form authorized in the District.)
	b.	**D1NR - PATON SYSTEM AV 7054 PATON Verification Screen**. Available on the PATON Web Page of the First Northern Aid to Navigation Web Site.
CONDITIONS	This task may be performed at any time, at any location.	
STANDARDS	AVQ will present two copies of the PATON Verification forms that is being used in the District to the AVC.	
PERFORMANCE CRITERIA **Check Off** **Task**		
1.	AVC fills in the data on the forms below from the Private Aid Verification Forms provided by the AVQ.	

PATON #1

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

PATON #2

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

Date	Mentor Initials	Date	AVQ Initials

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

REFERENCES	a.	**AN02 - ATON Study Guide** – Read the section on ATON Discrepancies on pages 13 through 18, and pages 35 through 37. Available on the ATON Web Page of the First Northern Aid to Navigation Web Site.
	b.	**D1NR - PATON SYSTEM AV 7054 PATON Verification Screen**. Available on the PATON Web Page of the First Northern Aid to Navigation Web Site.
CONDITIONS	This task may be performed at any time, at any location.	

STANDARDS	AVC will discuss the pertinent points from memory, in a reasonable time, and without prompting or referral to a reference document.	
PERFORMANCE CRITERIA **Check Off**	**Task**	
1.	AVC stated that an aid is discrepant when it does not conform to the permitted specification for the PATON.	
2.	AVC indicated the importance of verifying that the on-scene observation of the PATON matches the specification on the Private Aid Verification Report, the listing for the PATON in the Light List (if any), and the symbols and abbreviations used on the NOAA chart to identify the PATON (if any). AVC stated that any mismatch is a reportable discrepancy. Charted symbol and abbreviation errors are Chart Update reports.	
3	AVC stated the importance of reporting whether the PATON complies with the IALA-B Aid to Navigation System.	
4.	AVC stated that aid discrepancies include:	
	a.	Aid is missing.
	b.	Lack of prescribed signal.
	c.	Incorrect light characteristic if affixed.
	d.	Improper color.
	e.	Improper shape.
	f.	Aid is off station and does not mark the best water.
	g.	Damaged or sinking.
5.	Referencing the Private Aid Verification Form being used in the District, the AVC indicates how discrepancies are notated and reported.	
Date Mentor Initials		Date AVQ Initials

TASK 3-4 Describe how to report non-permitted aids.

REFERENCES	a.	**AN04 - D1NR 7054 AID TO NAVIGATION REPORT** (03-04-08) - Available on the PATON Web Page of the First Northern Aid to Navigation Web Site.
	b.	**Private Aid Verification Form** (Use the form authorized in your District.)
	c.	**AN02 - ATON Study Guide** – Non-Permitted Objects or Aids
CONDITIONS	This task may be performed at any time, at any location. It is recommended that this task be completed while underway on an AN Patrol using an actual non-permitted object	
STANDARDS	AVC will demonstrate their ability to report a non-permitted object.	
PERFORMANCE CRITERIA **Check Off**	**Task**	
1.	The AVC indicated that the Coast Guard considers all non-permitted objects as dangers to navigation.	
2.	The AVC reported the observation of a non-permitted PATON on the ANSC-7054 Aid to Navigation Discrepancy Report or on another special form authorized in the District for this purpose. AVC also explained to whom to forward this report. When unable to complete this task on-scene, use the example below: **Aid is a red barrel, laying on its side, with the number 3 painted on it nearby the HHYC at 042-34-56.600 N / 069-54-25.800 W in 20 feet of water. Aid was observed last Sunday at 1450 on the Swift River in Columbus, MA**	
3.	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 Mentor Initials		Date AVQ Initials

TASK 3-5 Complete the necessary reports for AUXDATA.

REFERENCES	**ANSC 7030 Activity Report - Mission** – for Mission Activity. Available on the National Forms Web Page.
CONDITIONS	Task can be performed at any location, at any time
STANDARDS	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.
PERFORMANCE CRITERIA **Check off**	**Tasks**

1.	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. AVC also indicated that the Annual AN Awards program is determined only from data resident in AUXDATA as of December 31 each year.
2.	AVC stated the Mission Code used when reporting PATON activity.
3.	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.
4.	AVC explained the importance of entering a correct OPCON reference.
5.	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.
6.	AVC explained that AN Patrols are reported in POMS as a Mission 03 and this activity is recorded as part of the annual Operations underway requirements for Coxswain or Crew.
7.	AVC indicated that his or her name is entered as LEAD on the ANSC 7030 ACTIVITY REPORT – MISSION.
8.	AVC completed an ANSC 7030 Activity Report Mission for the following ATON activity performed while on an authorized AN Patrol **While on the patrol, you verified 8 PATONs. 5 of these PATONs were discrepant.**
Date Mentor Initials	Date AVQ Initials

SECTION 4 – THE IALA-B AIDS 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.

REFERENCES	a.	**NOS Chart No. 1 –** to be provided by the AVC. On line at **http://pollux.nss.nima.mil.pubs**
	b.	**U.S. Coast Guard Aid to Navigation Booklet. ANSC 3022.** Blocks of 100. Order from the Materials Department through your FSO-MA.
	c.	**AN02 ATON Study Guide –** Read the section on Federal Short Range Aids to Navigation. Available on the ATON Web page of the First Northern Aid to Navigation Web Site.
CONDITIONS	Task can be performed at any location, at any time.	
STANDARDS	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.	
PERFORMANCE CRITERIA **Check Off**	**Tasks**	
1.	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.	
2.	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.	
3.	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."	
4.	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 and color for its use in the main channel.	
5.	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). Note: Not used on the Western River System.	
6.	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.	

7.	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. Usually 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 usually 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 normally called a "Speed Buoy." When it controls wakes, it is usually called a "No Wake Buoy." When it marks a swimming area, it is often called a "Swim Buoy."
Date	Mentor Initials	Date AVQ Initials

TASK 4-2 Describe the characteristics of lighted ATONs.

REFERENCE	a.	Review **NOS Chart Number 1.**
	b.	Review the **Light List** for your AOR. Download selected pages from the internet.
CONDITIONS	Task can be performed at any location, at any time.	
STANDARDS	AVC will discuss the pertinent points from memory, in a reasonable time, and without prompting or referral to a reference document.	

PERFORMANCE CRITERIA **Check Off**	**Tasks**	
1.	FIXED	Light is on all of the time from sunset to sunrise.
2.	OCCULTING	The total duration of the lighted period is longer than the total period of darkness.
3.	ISOPHASE	The duration of light and darkness is equal.
4.	FLASHING	The light duration is shorter than darkness period. The frequency of the flashes is not greater than 30 flashes per minute.
5.	QUICK FLASHING	The light duration is shorter than the darkness period. The repetition rate is 50 to 70 times per minute.
6.	VERY QUICK FLASHING	The light duration is shorter than the darkness period. Repetition rate is 80 to 159 times per minute.
7.	ULTRA QUICK FLASHING	The light duration is shorter that the darkness period. Frequency rate is not greater than 120 flashed per minute.
8.	MORSE CODE	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.
9.	FIXED and FLASHING	The light has the same characteristic as a FIXED light, but with flashes of higher intensity at the published repetition rate.
10j.	ALTERNATING	The light has same characteristics as a FIXED light but the color will change (alternate) at the published repetition rate.
11.	Measuring a light period.	AVC explained the proper procedure for time the light characteristics for a LB—Lighted Buoy.
Date	Mentor Initials	Date AVQ Initials

SECTION 5 – KNOWLEDGE OF THE SOUNDING GUIDELINES FOR PATONS

Task 5-1 - Explain how to check the accuracy of an echo sounder.

REFERENCE:	a.	Check the **Owner's Manual for the echo sounder**. (to be provided by the AVC)
	b.	**AN02 Federal Short Range Aid to Navigation Study Guide**. Read the guideline on page 33. Available on the ATON Web Page of the First Northern Aid to Navigation Web Site.
CONDITIONS	This task may be performed any time while underway or at the dock when the weather and seas are calm on a vessel equipped with a echo sounder.	
STANDARDS	AVC should perform the listed tasks without error. The task must be completed in a reasonable time, without prompting or referral to a reference document.	

PERFORMANCE CRITERIA **Check Off**	**Task**

1.	AVC turned on and adjusted the echo sounder as necessary before getting underway. The AVC performed a quality check to insure that the echo sounder was reading accurately. The task can be coordinated with Task 5-5. below. AVC noted the procedure in the log or pre-underway check list.
2.	AVC determined the correct depth unit of measure for the echo sounder by referencing the Information Block on the current NOS Chart for the area.
3.	AVC set up the correct depth unit of measure on the Fathomer—feet, meters, or fathoms.
4.	AVC explained the correction required for the location of the echo sounder's transponder on the vessel (OPFAC) and how it was determined.
5.	When vessel is equipped with interactive GPS Chart Plotter and Depth sounder, AVC checked that the correct depth unit of measure was set up on the electronic equipment.

Date	Mentor Initials	Date	AVQ Initials

Task 5-2 - Explain the effect of wind and current on the position of a floating aid to navigation.

REFERENCE	a.	**Current Tables.**
CONDITIONS	Task can be performed at any time, at any location.	
STANDARDS	AVQ will provide location and date. Task should be performed in a reasonable time and without prompting.	
PERFORMANCE CRITERIA **Check Off**	**Task**	
1.	AVC will explain the effects on a floating aid by the Set and Drift of the current—Wind and other elements. AVC will explain the meaning of the term, "Watch Circle."	
2.	Upon receipt of a location and a date, AVC will look up the current predictions from the Tide Tables or on a GPS set.	

Date	Mentor Initials	Date	AVQ Initials

Task 5-3 - Describe the procedure for taking soundings at a PATON.

REFERENCE	a.	**AN02 Federal Short Range Aid to Navigation Study Guide**. Read the guideline on page 33. Available on the ATON Web Page of the First Northern Aid to Navigation Web Site.
CONDITIONS	Task can be performed at any time while underway in calm seas and weather.	
STANDARDS	AVC will perform the tasks listed below in a reasonable time without prompting or referral to a reference.	
PERFORMANCE CRITERIA **Check Off**	**Tasks**	
1.	AVC indicated that the echo sounder must be calibrated before getting underway.	
2.	AVC will explain that while taking soundings near any aid to navigation that the boat should never transit outside of the navigable channel at any time for any reason.	
3.	AVC will explain that the boat should be maneuvered close aboard the private aid using extra precautions that the aid could be positioned over shoals and/or obstructions. Depths will be recorded from an electronic echo sounder that is corrected for the position of the echo sounder's transducer.	
4.	AVC will explain that special precautions must be taken near a fixed private aid to navigation due to the possibility of shoaling or obstructions near the aid's position. AVC will explain the term "riprap" and how it should be handled when positioning a private aid.	
5.	AVC will explain the importance of recording the date and time when the depth is taken.	
6.	AVC will indicate that reported depths must be corrected for the height of tide in tidal areas.	
7.	AVC explained the use of a lead line for determining the depth of the water.	
8.	AVC corrected the depth reading for the position of the transducer and the height of tide, and compared the reading to the charted depth for the location. AVC obtained the height of tide reading from the almanac screen on the vessel's GPS or own personal hand-held GPS.	

Date	Mentor Initials	Date	AVQ Initials

SECTION 6 – KNOWLEDGE OF LOCATING PRIVATE AIDS ELECTRONICALLY.

Task 6-1 - Compare the position accuracy between GPS, DGPS, and WAAS.

REFERENCES	a.	**MN-CU11-GPS WAYPOINT Training Presentation** (7-15-07) **MN-CU12-GPS ROUTES Training Presentation** (3-23-07) – Review these two PowerPoint training presentation that are available on the CU Web Page of the First Northern Aid to Navigation Web Site.
CONDITIONS	This task may be performed at any time and place.	

STANDARDS	AVC will perform the tasks listed below in a reasonable time without prompting or referral to a reference guide.
PERFORMANCE CRITERIA **Check Off**	**Tasks**
1.	AVC explained how to check that a GPS is working accurately before getting underway.
	AVC also explained that SA error is controlled by the Air Force from Boulder, CO and can be reset whenever necessary to distort the accuracy of GPS position output.
2.	AVC explained that the accuracy of GPS readings is approximately 10 meters after SA error was removed.
3.	AVC explained that the accuracy of DGPS readings is approximately 10 feet, 95%of the time.
	AVC explained that DGPS corrections are from local ground stations.
4.	AVC explained that the accuracy of WAAS readings is approximately 8 to 10 feet, 99% of the time.
	AVC explained that WAAS corrections are satellite generated in conjunction with ground stations.
Date Mentor Initials	Date AVQ Initials

Task 6-2 - 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.

REFERENCES	a.	**Read the section on the use of GPS in the AN02 - ATON Study Guide** available on the ATON Web Page of the First Northern Aid to Navigation Web Site at www.uscgaan.com/
	b.	Review the **GPS Operating Manual** for your GPS set or the set on the vessel.
	c.	**GPS** – either your personal GPS or the set on the vessel.
	d.	Reference your **NOS Nautical Chart** (to be provided by the AVC.)
CONDITIONS	This task may be performed at any time and place.	
STANDARDS	AVC should perform the tasks listed below in a reasonable time without prompting. Reference to the GPS Operating Manual is permitted.	
PERFORMANCE CRITERIA **Check Off**	**Tasks**	
1.	**HORIZONTAL DATUM** - 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 Datum to use.
2.	**DISTANCE UNIT OF MEASURE** – 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.
3.	**HEADING** – AVC explained that the Heading of a OPFAC is 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.)
4.	**VARIATION** – 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 read from the Compass Rose on a nautical chart that is nearest to your position.
5.	**DATE and TIME** – 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 location data (Fixes) for private aids.	

6.	**LATITUDE and LONGITUDE –** AVC explained that the Coast Guard uses Deg—Min—Sec readings. Most GPS sets are pre-set to show decimal seconds (Deg—Min or "00.000.") AVC indicated that a GPS set should Be adjusted to reflect the Coast Guard standard in order to avoid reporting errors—000-00-00.00.
7.	**GPS ALARMS –** AVC explained the following available Alarms:
	WAYPOINT ALARM – AVC described as a pre-set diameter in miles that triggers an alarm whenever a boat penetrates the protective circle around the waypoint.
	OFF COURSE ALARM – AVC indicated that establishing a XTE—Cross Track Error parameter in the GPS, creates this alarm. The alarm sounds whenever the boat crosses the error limit on either side of the track line.
	ANCHOR ALARM – AVC indicated that an alarm is created by establishing a diameter (nautical miles) that triggers the alarm whenever a boat drifts outside of the limits of the circle's circumference.
8.	**VERTICAL DATUM – DEPTH –** AVC indicated that when the echo sounder 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 should match the Vertical Datum used on the nautical chart of the AOR.

Date	Mentor Initials	Date	AVQ Initials

Task 6-3 - Explain how to interpret the various accuracy readings provided by a GPS set.

REFERENCES	a.	**Read the section on the use of GPS in the AN02 - ATON Study Guide** available on the ATON Web Page of the First Northern Aid to Navigation Web Site at www.uscgaan.com/
	b.	Review the **GPS Operating Manual** for your GPS set or the set on the vessel.
	c.	**GPS** – either your personal GPS or the set on the vessel.
CONDITIONS		This task may be performed at any time.
STANDARDS		AVC will perform the tasks listed below in a reasonable time without prompting or referral to a reference guide.
PERFORMANCE STANDARDS Check Off		Tasks
1.		**THREE DIMENSION POSITIONS** – AVC explained that a three-dimension is obtained by the GPS after acquiring data from four satellites. Such positions are generally named, "3D Differential."
	a.	AVC also explained that a three-dimension position must be used to when position private aids.
2.		**HDOP – Dissolution of Position Error** – AVC explained that this error indicated the geometry of the satellites in relation to your position on the earth's surface. Lower readings indicate readings that are more accurate. Readings of 1 to 2 are acceptable.
	a.	AVC reviewed the HDOP scale in the GPS Operating Manual for the GPS set being used and expressed the accuracy of the current satellites position readings being generated by the GPS set.
3.		**EPE – Estimated Position Error** (in feet) – AVC explained this error is an expression of the accuracy of the position being generated by the GPS. The expression, in feet, represents the diameter of a circle in which the position exists.
4.		AVC indicated the benefit for recording position error on PATON documents into order to enhance the professionalism of reporting Auxiliary PATON positions.

Date	Mentor Initials	Date	AVQ Initials

Task 6-4 - Explain Waypoints and how they are established, verified and used by GPS.

REFERENCES	a.	Read the section on the use of GPS in the **AN02 - ATON Study Guide** available on the ATON Web Page of the First Northern Aid to Navigation Web Site at www.uscgaan.com/
	b.	Review the **GPS Operating Manual** for your GPS set or the set on the vessel.
	c	**GPS** – either your personal GPS or the set on the vessel.
	d.	Reference your **NOS Nautical Chart** for the AOR (to be provided by the AVC.)

CONDITIONS	This task may be performed at any time and place.
STANDARDS	AVC performs the tasks in a reasonable time without prompting or referral to a reference.

PERFORMANCE CRITERIA Check Off	Tasks
1.	AVC explained the composition of a Waypoint as used by GPS, including LAT/LON, a number, and a symbol.
2.	AVC explained the need to use simple waypoint descriptions to avoid clutter on an electronic nautical chart.
3.	AVC indicated five methods for loading waypoints into a GPS.
	1. Manual entry of Latitude and Longitude.
	2. Cursor entry using an electronic nautical chart screen.
	3. Bearing and range entry from an underway position.
	4. Entry of waypoints from a remote computer.
	5. Actually visiting the site and updating the LAT/LON position to the GPS.
4.	WAYPOINT VALIDATION – AVC explained that every new waypoint should be considered suspect until verified by actually visiting the waypoint site and by correcting any LAT-LON error in the GPS on-scene.
5.	AVC indicated the importance of creating an Excel spread sheet list of waypoints in order to reference additional information about the waypoint.
6.	AVC explained a technique for finding a PATON using the "permitted position" for validating that the PATON is missing.

Date	Mentor Initials	Date	AVQ Initials

Task 6-5 - Explain Routes and how they are created and used by GPS.

REFERENCES	a.	**Read the section on the use of GPS in the AN02 - ATON Study Guide** available on the ATON Web Page of the First Northern Aid to Navigation Web Site at www.uscgaan.com/
	b.	Review the **GPS Operating Manual** for your GPS set or the set on the vessel.
	c.	**GPS** – either your personal GPS or the set on the vessel.
	d.	Reference your **NOS Nautical Chart** for the AOR (to be provided by the AVC.)
CONDITIONS		This task may be performed at any time and place.
STANDARDS		AVC should perform the tasks listed below in a reasonable time. Reference to the AVC's GPS Operating Manual is allowed.

PERFORMANCE CRITERIA Check Off		Tasks
1.		AVC explained the composition of a Route as used by GPS to be a series of verified Waypoints linked together in the order that you plan to use them.
2.		AVC explained the need to plot the Waypoints used in a Route on a nautical chart to validate that there are no obstructions present along the proposed track line.
3.		AVC indicated that benefits of using Waypoints that reference Aids to Navigation in order to provide the addition validation of sight to objects and to increase the safety aspect of the Route.
4.		AVC indicated the importance of establishing routes in their operating area and for patrols that required the transiting of long distances as a safety measure in the case of poor weather or fog.
5.		AVC indicated three methods for loading Routes into a GPS.
	a.	Manual entry of Waypoints from the GPS Waypoint Library.
	b.	Cursor entry using an electronic nautical chart screen.
	c.	Entry of the Waypoint alongside the object.