

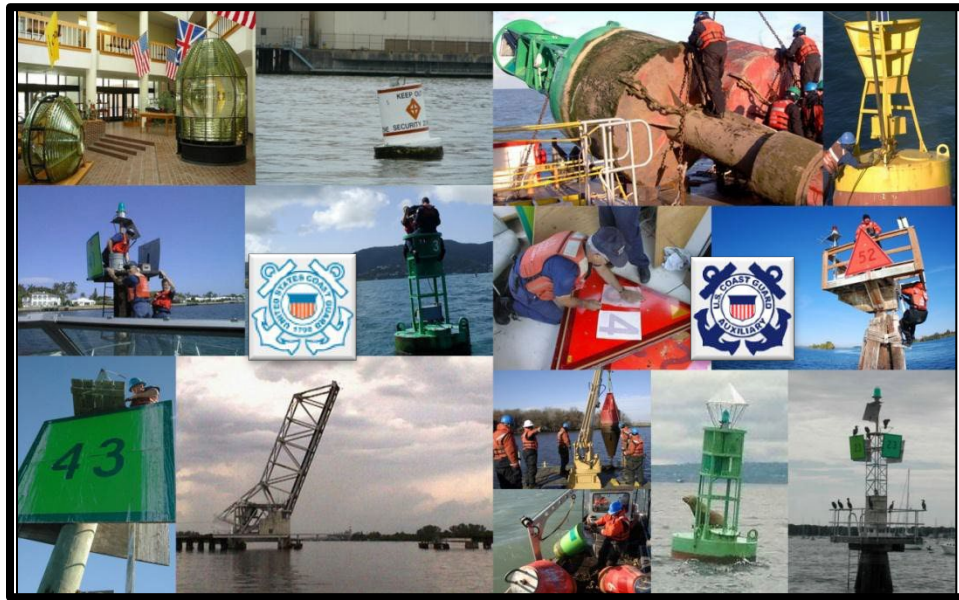


U.S. Department of
Homeland Security

United States
Coast Guard



Coast Guard Auxiliary Aids to Navigation Program



D7NS-0100.1 SEVENTH DISTRICT AIDS TO NAVIGATION VERIFIER PERFORMANCE QUALIFICATION STANDARD

**Coast Guard Auxiliary Aids to Navigation Program 16500.16 March 2024
and the additional requirements of District 7 March 2022**

16500.16

March 2024



Enclosure 1

Aids to Navigation Verifier (AV)

Performance Qualification Standard (PQS)

Introduction

This PQS is one section of the trainee's PQS "On the Job Training" (OJT) instructions. It is your OJT guide to qualification as an Auxiliary Aids to Navigation Verifier (AV-PQS). It is the trainee's responsibility to document completion of unit training items.

Verifying Officers shall:

- (01) Be certified as an Auxiliary Aids to Navigation Verifier – with PQS (AV-PQS) or equivalent if an active duty member.
- (02) Be experienced and have demonstrated the ability to evaluate, instruct, and observe other personnel in the performance of task criteria.
- (03) Enter their title, name, and initials in the Record of Verifying Officers section before making entries in your workbook.
- (04) Observe the trainee satisfactorily complete each task and document such with date and initials in the appropriate space provided in this PQS. It may be necessary to perform a task several times.
- (05) Not give credit for any task that is not performed satisfactorily.
- (06) Ensure all tasks are performed without prompting or use of references unless otherwise specified.

When you have completed all of the items required for this qualification, submit your completed PQS to your DIRAUX via the DSO-NS or procedures established in your District. Your DIRAUX will enter your qualification into AUXDATA II using Qualification Code "AV-PQS."

NOTE

No task may be waived. This PQS is the MINIMUM national requirement for AV-PQS qualification.



References:

The following references will aid you in completing the tasks in this PQS. (NOTE: *Links to on-line information accurate as of the date of revision only.*) Many of these references are also available as links on the Auxiliary's National Prevention Directorate, Navigation Systems' website. <https://wow.uscgaux.info/content.php?unit=p-dept>

*For Area of Operations.

- U.S. Chart No. 1 Symbols, Abbreviations and Terms used on Paper and Electronic Navigational Charts.
<https://www.nauticalcharts.noaa.gov/publications/us-chart-1.html>
- NOAA ASSIST for updates to NOAA charts and Coast Pilot
<https://www.nauticalcharts.noaa.gov/customer-service/assist.html>
- NOAA charts of local AOR. (if applicable)
<https://nauticalcharts.noaa.gov/>
- USACE charts of local AOR. (if applicable) <https://iencccloud.us/>
- Bridge Notices <https://www.navcen.uscg.gov/bridge-notice>
- USCG Light Lists. <https://www.navcen.uscg.gov/light-lists>
- *US Coast Pilot. <https://nauticalcharts.noaa.gov/publications/coast-pilot/index.html>
- *Local Notice to Mariners (LNM).
<https://www.navcen.uscg.gov/local-notice-to-mariners-main>
- Tide tables/Tide Predictions – <https://tidesandcurrents.noaa.gov/>
- Coast Guard Auxiliary Aids to Navigation Program Handbook, 16500.16 (series) <https://wow.uscgaux.info/content.php?unit=BX-GROUP&category=guides-and-handbooks>
- Aids To Navigation Manual-Administration, COMDTINST M16500.7(series) <https://www.dcms.uscg.mil/Our-Organization/Assistant-Commandant-for-C4IT-CG-6/The-Office-of-Information-Management-CG-61/About-CG-Directives-System/Commandant-Instruction-Manuals/smdsearch2823/16500/> or https://media.defense.gov/2023/Jan/24/2003148898/-1/-1/0/CIM_16500_7A.PDF
- Bridge Program, COMDTINST M16590.5 (series) [See dcms link above](#)
- BSX Policy Letter 19-01 dated 24 Jan 2024
- 33 CFR Part 66 Private Aids to Navigation
<https://www.ecfr.gov/current/title-33/chapter-I/subchapter-C/part-66>
- 33 CFR Part 114 General
<https://www.ecfr.gov/current/title-33/chapter-I/subchapter-J/part-114>
- 33 CFR Part 117 Drawbridge Operation Regulations
<https://www.ecfr.gov/current/title-33/chapter-I/subchapter-J/part-117>



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- 33 CFR Part 118 Bridge Lighting and Other Signals
<https://www.ecfr.gov/current/title-33/chapter-I/subchapter-J/part-118>
 - Standard Operating Procedure (SOP) for local area
 - USCG Auxiliary National Short-Range Aids to Navigation Training Guide
 - Nautical Chart Updating Training Guide
-

Forms:

The following forms (current edition) will aid you in completing the tasks in this PQS.

- Aids to Navigation Report (ANSC-7054) and District equivalent (if applicable)
 - Private Aids to Navigation Application (CG-2554)
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Aids to Navigation Verifier (AV)
Performance Qualification Standard (PQS)

RECORD OF VERIFYING OFFICERS		
Member Name:		Member Number:
Title	Verifying Officer's (VO) Name	Initials

RECORD OF MAJOR TASKS COMPLETED		
Task Number	Major Tasks	Date Completed
1.0	Charts and Nautical Publications	
2.0	US Aids to Navigation System	
3.0	Private Aids to Navigation (PATON)	
4.0	Aids to Navigation Discrepancies	
5.0	Private Aids to Navigation (PATON) Documentation	
6.0	Bridges	
7.0	Private Aids to Navigation (PATON) Certification and Currency Maintenance	
8.0	ENC Charts – Seventh District	
9.0	Locating Aids with GPS – Seventh District	



RECORD OF COMPLETION

Member Name:	Member Number:	
Training Prerequisites (Must be recorded in AUXDATA II)	Date	Member Training Staff Officer Signature
A. Completed AUXCT (Core Training), is in good standing	_____	
B. Be in BQ or AX status.	_____	
C. Completed Introduction to Risk Management Course (100202) and facilitated discussion.	_____	
D. Completed TCT Refresher Course and is in good standing. Recorded in AUXDATA II. (ONLY REQUIRED IF GREATER THAN 15 MONTHS SINCE LAST TCT/RM TRAINING.)	_____	
E. Completed of the following courses: 1) ICS 100 2) ICS 700	_____ _____	

All PQS requirements have been satisfactorily completed by the applicant as indicated below:

TASK	Date	VO Initial
A. Completion of Auxiliary Aids to Navigation Verifier AV- PQS	_____	_____
B. Successful completion of any District and/or Sector specific requirements.	_____	_____
C. DSO-NS recommendation for certification as a USCG Auxiliary Aids to Navigation Verifier (AV-PQS)	_____	_____
D. Documentation sent to DIRAUX by DSO-NS for approval and certification in AUXDATA II.	_____	_____



1.0 Charts and Nautical Publications

Member Name:		Member Number:	
Task Number	AUX-AV Task	Date	Initial
1.1	State the purpose of Chart No. 1	_____	_____
1.2	Identify horizontal datum of the nautical chart and GPS equipment.	_____	_____
1.3	Identify the basic parts, symbols, and abbreviations found on a chart or Electronic Navigation Chart (ENC) system (or equivalent item) to include: a. Longitude scale / measurement tool) b. Latitude scale c. Nautical mile scale d. Depth curves e. General identification (Title block) f. Vertical datum g. Compass rose h. Symbol for buoys i. Lighted vs. unlighted buoy j. Nominal range of light k. Approximate position l. Private Aid m. Wreck	_____	_____
1.4	State the purpose of the USCG Light List and explain the aid specific information provided.	_____	_____
1.5	Identify the Volume and Chapters of the United States Coast Pilot that apply to trainee's AOR.	_____	_____
1.6	State the purpose of the Local Notice to Mariners.	_____	_____
1.7	Identify and state the use of all Sections including the following Sections of the Local Notice to Mariners: a. Section II Discrepancies P/ATONs b. Section III Temporary Changes c. Section IV Chart Corrections d. Section VIII Light List Corrections e. Bridge Section	_____	_____
1.8	Explain the method of reporting chart and Coast Pilot corrections to NOAA and U.S. Army Corps of Engineers	_____	_____



2.0 US Aids to Navigation System

Member Name:		Member Number:	
Task Number	AUX-AV Task	Date	Initial
2.1	Identify the two IALA regions and state the region applicable to the trainee.	_____	_____
2.2	State the characteristics including color, shape, number or letters, and light color of the following aids: a. Starboard lateral aid b. Port lateral aid c. Preferred channel aid d. Safe water aid e. Isolated danger mark f. Special purpose aids g. Regulatory marks h. Wreck i. Ranges j. Port and starboard lateral aids (Western Rivers System) k. Port and starboard crossing daybeacons (Western Rivers System) l. Mile boards (Western Rivers System) m. Port and starboard lateral aids (Intracoastal Waterway)	_____	_____
2.3	State the characteristics of the following lights: a. Fixed b. Occulting c. Isophase d. Flashing e. Quick Flashing f. Morse Code "A" g. Group Flashing h. Composite Group Flashing	_____	_____
2.4	Demonstrate the ability to use a stopwatch or other appropriate and accurate timing device for timing a lighted aid	_____	_____



3.0 Private Aids to Navigation (PATON)

Member Name:		Member Number:	
Task Number	AUX-AV Task	Date	Initial
3.1	Describe the documentation from which the CG and Auxiliary obtain the authority for Private Aids to Navigation.	_____	_____
3.2	Explain the penalty for failure to comply with PATON regulations.	_____	_____
3.3	Explain the difference among the following types of PATON: a. Class I b. Class II c. Class III	_____	_____
3.4	Explain how often the following types of PATON are required to be verified: a. Class I b. Class II c. Class III	_____	_____
3.5	Explain the types of PATON that will usually appear on charts and in the Light List.	_____	_____
3.6	Correcting the depth of water for the height of tide or river/lake level. a. Explain the primary impacts on tide heights, and where to obtain predictions. b. Explain the seasonal and weather impacts on river and lake water levels, and where to obtain water level information. c. Explain how the depth reading from an echo sounder is corrected.	_____	_____
3.7	GPS / Electronic Chart System (ECS) set up: a. Verify the position confirms to chart datum. b. Demonstrate understanding of the need for position accuracy (Estimated Position Error) and other contributing factors. c. Describe how to configure GPS to read True heading OR how to correct for variation.	_____	_____



4.0 Aids to Navigation Discrepancies

Member Name:		Member Number:	
Task Number	AUX-AV Task	Date	Initial
4.1	State the definition of an aid discrepancy.	_____	_____
4.2	Using the Light List, identify the advertised characteristics of two (2) aids provided by the verifying officer.	_____	_____
4.3	Define the following terms: a. Missing b. Adrift c. Extinguished d. Burning dim e. Improper color f. Improper shape of buoy or dayboard g. Improper characteristic h. Off station i. Damaged j. Destroyed k. Left Descending Bank l. Right Descending Bank	_____	_____
4.4	Explain the procedure if you encounter the following: a. "Non-permitted" Aids to Navigation b. Areas where additional Federal Aids may be required.	_____	_____
4.5	Demonstrate the ability to check an aid to determine: a. If the aid is as described in Light List information and complies with IALA. b. That the aid is properly represented on the chart. c. That the lighted aid shows proper timing & characteristics. d. That the mile boards and/or dayboards are in good condition. e. If the structure appears sound. f. Visibility of the aid from all sectors. g. Retro-reflective tape condition.	_____	_____



5.0 Private Aids to Navigation (PATON) Documentation

Member Name:		Member Number:	
Task Number	AUX-AV Task	Date	Initial
5.1	Complete two 7054 Aids to Navigation Reports using information provided by the Verifying Officer. If district has its own form, complete that form as well.	_____	_____
5.2	Using the 7054 Aids to Navigation Report or District equivalent form identify all discrepancies for a PATON with information provided by the Examiner.	_____	_____
5.3	Using the 7054 Aids to Navigation Report, or District equivalent form report a “non-permitted” PATON with information provided by the Examiner.	_____	_____
5.4	Identify the following Auxiliary specific documentation and its use to report “Navigation Systems” Missions including: <ul style="list-style-type: none"> • 03 • 30 • 31 • 32 • 33 • 34 • 99B a. ANSC-7030 Activity Report or AUXDATA II Activity Log Entry	_____	_____



6.0 Bridges

Member Name:		Member Number:	
Task Number	AUX-AV Task	Date	Initial
6.1	Describe bridge protective systems.	_____	_____
6.2	Describe bridge lighting /marking systems and requirements for: a. Fixed bridges (33 CFR Part 118.65) b. Swing bridges (118.70) c. Single-opening bridges (118.75) d. Bascule bridges (single and double leaf) (118.80) e. Vertical Lift bridges (118.85) f. Retroreflective panels (118.100) g. Daymarks and lateral lights (118.110) h. Radar reflectors/racons/fog signals (118.120 and 118.130) i. Specific bridges in your area (33 CFR Part 117 subpart B)	_____	_____
6.3	Describe bridge vertical clearance gauge and use (117.47; 118.160).	_____	_____
6.4	Describe some common bridge and protective system discrepancies.	_____	_____
6.5	Describe how to report an extinguished or dim light, or any other bridge discrepancy.	_____	_____
6.6	Demonstrate use of ANSC-7054, 7055, or District equivalent form to make a bridge report.	_____	_____
6.7	Describe candlepower requirements for lights against background lighting as established in 33 CFR 118.60.	_____	_____
6.8	In addition to lighting, describe other markings used to highlight the navigation spans.	_____	_____



7.0 Private Aids to Navigation (PATON) Certification

Member Name:		Member Number:	
Task Number	AUX-AV Task	Date	Initial
7.1	State the tasks necessary to maintain currency as an AV-PQS in accordance with Chapter 2, Section C in the Coast Guard Auxiliary Aids to Navigation Program Handbook, 16500.16.	_____	_____
7.2	State any other District requirements for certification and/or currency as an AV-PQS.	_____	_____
7.3	Perform two verifications and complete associated paperwork. One of the verifications must be a lighted aid or survey of a lighted bridge.	_____	_____
7.5	<p>Seventh District requires that two day and two night aid verifications be performed during an underway check ride. (If night verifications cannot be done underway, the night portion may be done from shore.)</p> <p>The verifier will demonstrate:</p> <ol style="list-style-type: none"> 1. The ability to plan the mission. 2. The ability to direct the coxswain during the verifications. 3. The use of equipment to determine position and depth. 4. The ability to correct depth for tide. 5. The ability to take proper photographs. 6. Familiarity with the reporting requirements in the Coast Guard Sector or ANT unit. 		



8.0 ENC Charts – Seventh District

Member Name:		Member Number:	
Task Number	AUX-AV Task	Date	Initial
8.1	Define RNC.	_____	_____
8.2	Explain how RNCs were created.	_____	_____
8.3	What is the horizontal datum of an RNC?	_____	_____
8.4	Define ENC.	_____	_____
8.5	What is the horizontal datum of an ENC?	_____	_____
8.6	Explain the key differences between RNC and ENC.	_____	_____
8.7	Define and explain Zone of Confidence.	_____	_____
8.8	Explain the ENC numbering system.	_____	_____
8.9	What is the orientation of an ENC.	_____	_____
8.10	What is compilation scale?	_____	_____
8.11	Define and explain overzooming.	_____	_____
8.12	Where is the scale on an ENC?	_____	_____
8.13	Explain the query function.	_____	_____
8.14	What are the units of depth on an ENC?	_____	_____
8.15	Where are coordinates shown on an ENC?	_____	_____
8.16	Identify the following ENC Paper Chart symbols 1. Unlighted buoy 2. Lighted buoy 3. Beacon 4. Lighted Beacon 5. Nominal range of a light	_____	_____



Aids to Navigation Verifier (AV)
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Member Name:		Member Number:	
Task Number	AUX-AV Task	Date	Initial
8.17	Identify the following ENC Simplified Chart symbols 1 Unlighted buoy 2 Lighted buoy 3 Beacon 4 Lighted Beacon 5 Nominal range of a light	_____	_____
8.18	Identify the following ENC Proprietary Chart symbols using any proprietary chart. 1 Unlighted buoy 2 Lighted buoy 3 Beacon 4 Lighted Beacon 5 Nominal range of a light	_____	_____
8.19	Explain how to determine direction and distance on an ENC.	_____	_____



9.0 Locating Aids with GPS – Seventh District

Member Name:		Member Number:	
Task Number	AUX-AV Task	Date	Initial
9.1	What are GNSS? State the US version.	_____	_____
9.2	What are the main sources of GNSS error?	_____	_____
9.3	What are SBAS? State the US version.	_____	_____
9.4	What errors does SBAS not correct?	_____	_____
9.5	Explain GPS receiver start states.	_____	_____
9.6	What start state should be used for verifications?.	_____	_____
9.7	What datum is used for aid verification?	_____	_____
9.8	What percentage of measurements fall within these circles? a. CEP b. DRMS c. 2DRMS	_____	_____
9.9	What is the USCG 2DRMS standard?	_____	_____
9.10	Explain the position tolerance for fixed aids.	_____	_____
9.11	Where should the receiver be located for fixes?	_____	_____
9.12	What is the correct orientation of the receiver?	_____	_____
9.13	What is the recommended soak time?	_____	_____
9.14	Error values of recreational GPS are based on what data?	_____	_____
9.15	State three ways to check GPS accuracy.	_____	_____