United States Coast Guard Auxiliary

[AV Version]

WEB-BASED PRIVATE AID TO NAVIGATION SYSTEM

Introduction

Since it is always possible that, with the long intervals between use, many AVs can feel uncomfortable getting back to using the on-line PATON System, we have performed a complete review and update of the procedures. This version should act as a reminder of the basic verification process and contains many new tips to increase your accuracy and credibility.

Also, there are many inactive AVs who have never received training on the PATON System or have never reported a private aid on-line. Perhaps, this new guideline will give you the impetus to become active again. We certainly can use your help. Many of our most productive AVs are currently on the DL and some key OPFACs are in the repair shop.

Please take the time to review this updated publication.

IMPORTANT: Do not use the GPS on your phone to take LAT/LONGs. Recently, we have experienced serious position errors from AVs using these devices. Stay with the old reliable marine-oriented GPS sets.

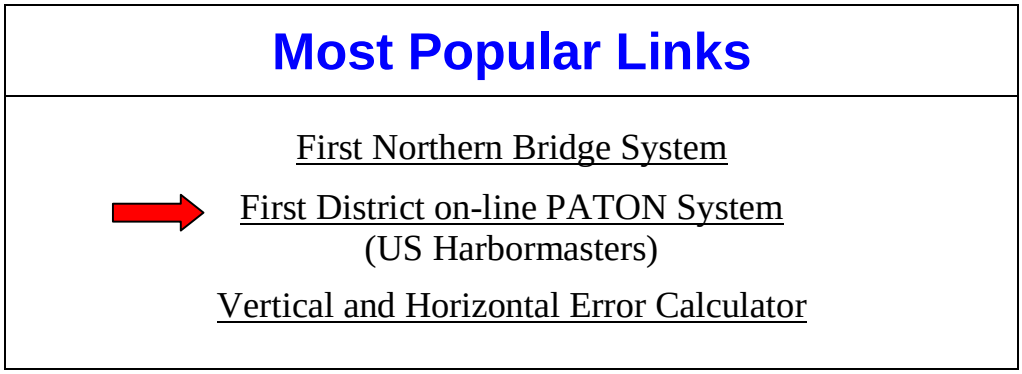
ACCESSING THE PATON SYSTEM

HOW TO LOG ON

WWW.USHARBORMASTER.COM (USCG D1)

WWW.USCGAAN.COM. (First Northern Web Site)

Go to the D1NRNavigation Systems home web page and click on the "**First District on-line PATON System**" in the "**Most Popular Links**" box to access the PATON System. Do not use other logons or you will lose some of the regular PATON features.



This ***User Logon Screen*** will appear.

HOW TO REGISTER

a. Click on the words, "*Registration Form.*" on the "*User Logon Screen*" to initiate the PATON Registration process. Note the **Red Arrow** on the example above.

b. This PATON Registration screen will appear.

Note to new registrants: Once you register, you will not be able to use the PATON system until your access code is approved by DPW 1 [Department Prevention Waterways] in Boston. You will receive an e-mail confirming your access codes when the approval process is completed.

- Fields designated with a ***red asterisk**** are required. This means that you must enter information in this field.
- The field names are self explanatory.
- If you are unsure of what to enter in any field, click on the field's "**Question Mark**" for further instructions. The instruction lasts for about six seconds.
- Note that the "***State***" field has a drop-down menu.

c. Additional USCG Auxiliary AV-Aid Verifier requirements

- Qualified and current USCG Auxiliary Aid Verifiers should select "USCG Auxiliary" as their ***Type of User***." This action causes an additional AV field to be added at the bottom of the PATON Registration screen, designated "***DISTRICT/DIVISION/FLOTILLA***."
- Select your ***District/Division/Flotilla*** from the drop-down menu.

d. Once you have completed and submitted your Registration Form, e-mail your DSO-NS that you have registered on the PATON System. Also indicate the CG ANT where you will be affiliated as an AV-Aid Verifier.

- CG ANT S West Harbor
- CG ANT South Portland
- CG ANT Woods Hole
- CG ANT Boston
- CG ANT Bristol
- CG ANT New York
- CG ANT Saugerties
- CG ANT Long Isl Sound
- CG ANT Moriches
- CG ANT Burlington.

AVs are normally assigned to the CG ANT AOR where they do their boating rather than where they live. This is called their "affiliation." *i. e.* You live in New Hampshire but keep your OPFAC in Boston Harbor. Your CG ANT affiliation would be CG ANT Boston.

If you are working for two CG ANTs, advise the DSO-NS. You will have to submit two registrations. The DSO-NS will guide you through the process.

The DSO-NS checks whether you are AV Qualified and will approve and assign your access to the CG ANT that you selected. You will receive an e-mail confirming your access codes when this has been completed.

***Note*:** You will not be able to log onto the PATON System until your access code has been approved. You will be e-mailed when the approval process has been completed by DPW 1.

IF YOU FORGET YOUR ACCESS CODE?

Just e-mail the D1 Private Aid to Navigation Manager at

Steven.R.Pothier@uscg.mil

or FrankJLarkin@verizon.net

CHANGING YOUR REGISTRATION RECORD

a. E-Mail the D1 Private Aid Manager or Auxiliary DSO-NS in order to correct any fields in your PATON Registration Record.

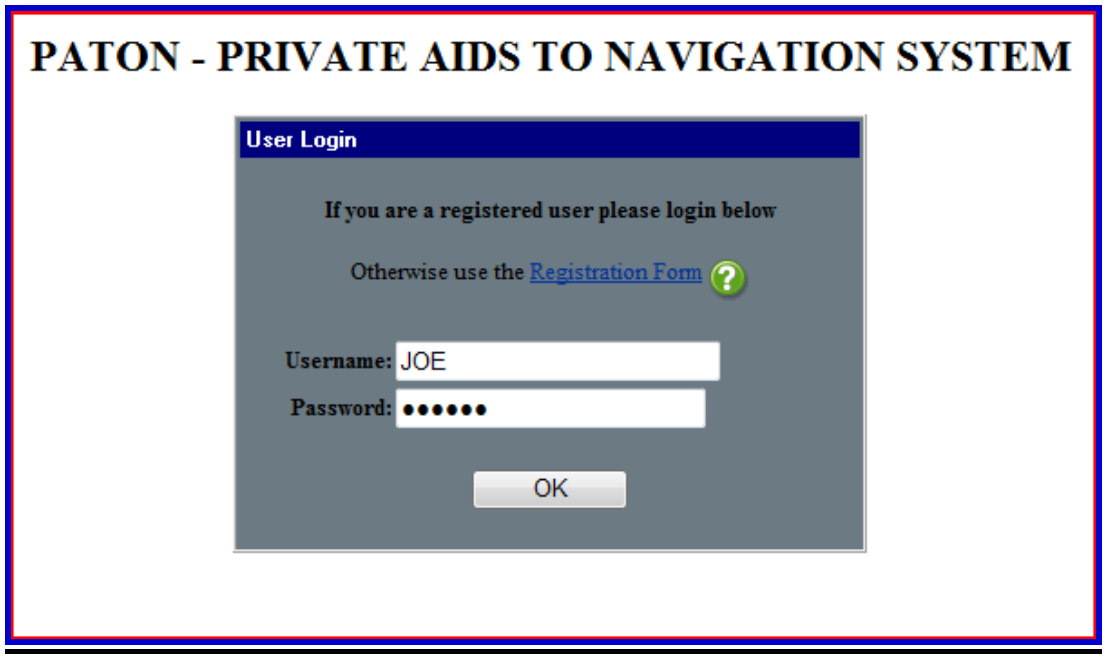
b. Be specific as to the field(s) that you want changed and the data that you want changed in each field.

c. It is critical that any changes in ***status, telephone number*** and/or ***e-mail address*** be reported in a timely manner.

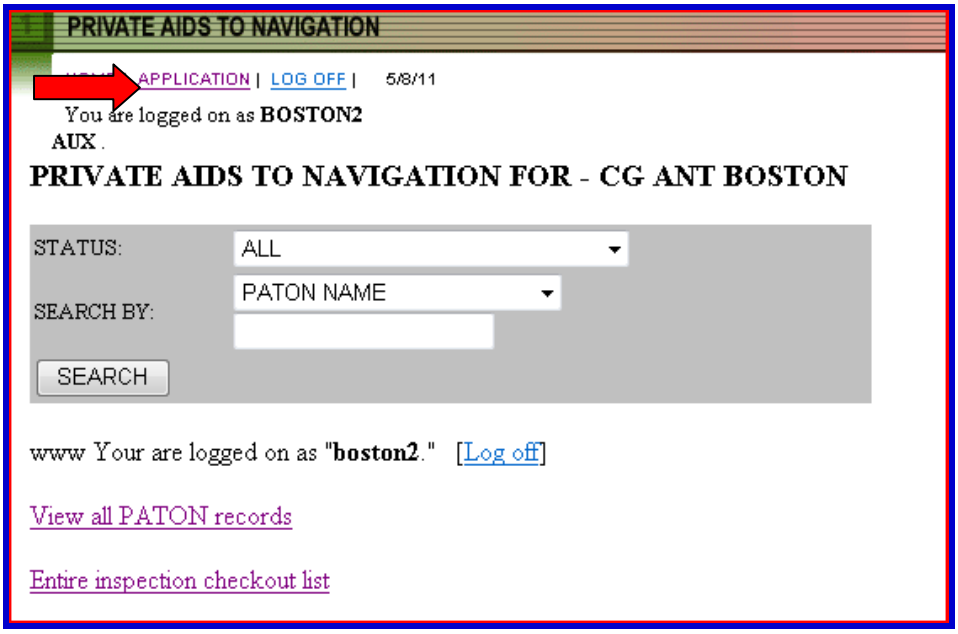
d. If you change your e-mail address without correcting your PATON Registration record, you will lose access to the PATON System.

PREPARING A PATON APPLICATION – CG 2554

- **You must be pre-registered and approved**,
  - Enter your "***Username*****"** and "***Password*****."**
  - Then, click on **"OK."** PATON Owners and Harbormasters will be able to view only the PATONs that they own and are permitted.
  - ***CG ANTs*** and ***AVs*** are able to view only those aids affiliated with the CG ANT where they are linked. "Affiliation" was explained in the User Registration section.
  - See the example below.



- **After you log-in**, the Private Aid to Navigation screen will appear.
- Click on the word, "**Application**," at the top-left of the Private Aid to Navigation screen.
  - See the example on page 6.

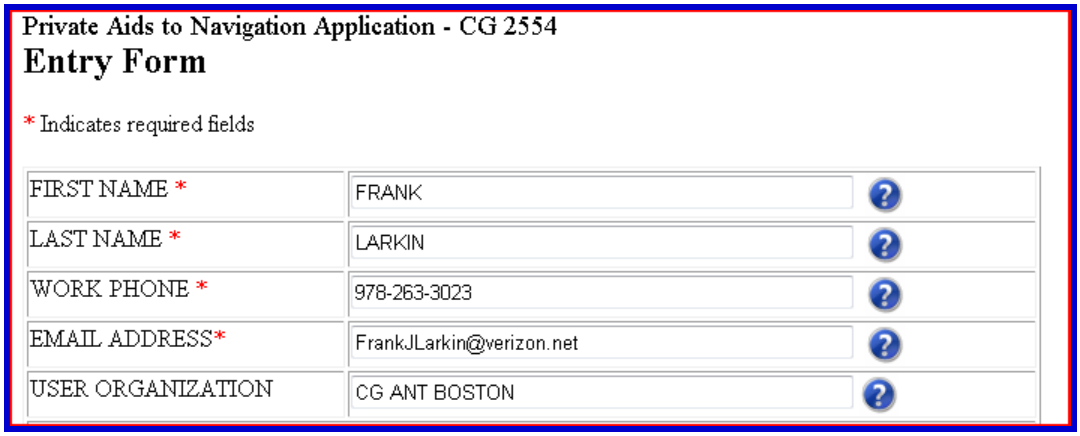


- This **Private Aid to Navigation CG 2554 – PATON Application Screen** will appear.
- This screen is explained in sections.

HEADER SECTION ON A PATON APPLICATION CG 2554 SCREEN:

- Fields designated with a **red asterisk** * are required. You must enter information in these fields.
- Some fields will be pre-populated with data from your Registration Record. You are able to change this data. **However, your Registration record will not be changed by this action**. It is recommended that you change your Registration Record first. Notify DPW 1 of the desired changes.

CG-2554 - HEADER FIELD GROUP



Note that the data in this Header Field Group has been retrieved from the Registration Record of the person that is logged onto the PATON System.

LOCATION, DEPTH AND PATON IDENTIFICATION DATA FIELD GROUP

The **PATON TYPE** field has optional bullets that, when selected, cause additional ***data field groups*** to be added to the CG2554 PATON Application.

- Floating is the alternative to Fixed.
- Lighted is the alternative to Unlighted.

CG-2554 – Location, Depth and PATON Type

Location, Depth and PATON Type.....

LATITUDE *	43	51	03.500	Seconds N
LONGITUDE *	71	57	25.670	Seconds W
GENERAL LOCALITY *	12354 Muddy River			
DEPTH AT DATUM	5.8	(Feet - corrected to chart datum)		
SUGGESTED PATON NAME *	Muddy River Buoy 4			
PATON TYPE*	◉ FLOATING ○ FIXED ○ LIGHTED ◉ UN-LIGHTED			
PATON PURPOSE *	MARKS A CHANNEL			
PATON CATEGORY *	Unlighted Buoy			
AID COLOR	RED			

- Most of the fields in this report are equipped with drop-down or bulleted menus in order to control the data that is entered in these fields.
- Explain in the "Comments" section any "**Other**" selections chosen on a menu.
- Report LAT and LONG as Degrees, Minutes and Seconds formatted as: **DD-MM-SS.SS.**

THE FLOATING PATON DATA FIELD GROUP

- When you designate a PATON TYPE as ***floating***, a field data group of three additional fields appear as is demonstrated in the example below.
- ***Floating*** is the alternative selection to ***Fixed.***
- The three fields in this data group are **required** when the PATON is designated as a floating aid. The "Buoy Material" field has a drop down menu. The three fields are:
  - Chain Length
  - Mooring Size/Weight
  - Buoy Material (Menu driven).

CG 2554 FLOATING PATON DATA FIELD GROUP

Floating PATON .....

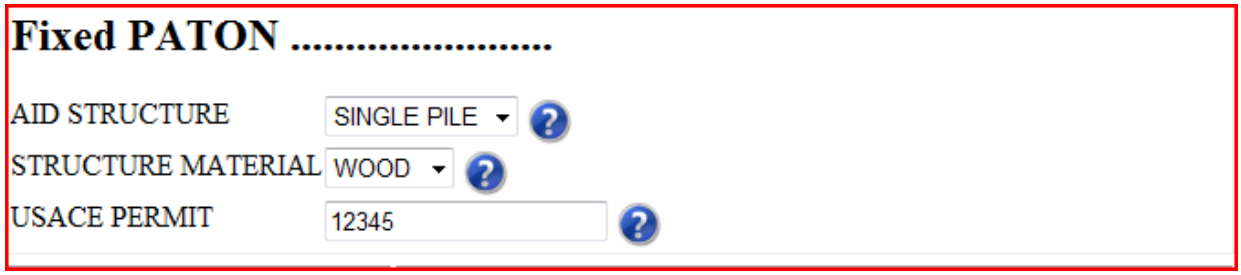
CHAIN LENGTH	45	(Chain length in feet)
MOORING SIZE/WEIGHT	200	(Size/Weight in pounds)
BUOY MATERIAL	FOAM	

THE FIXED PATON DATA FIELD GROUP

When you designate a PATON TYPE as ***fixed***, a field data group of three additional fields appears.

- ***Fixed*** is the alternative selection to ***Floating***.
- These three fields in this data group are ***required***.
  - Aid Structure (Menu driven)
  - Structure Material (Menu driven)
  - USACE Permit (All fixed PATONs, that are located in the water, must also have a Corps of Engineer's (USACE) permit reference before the Coast Guard can approve and issue a permit.)

CG 2554 FIXED PATON DATA FIELD GROUP



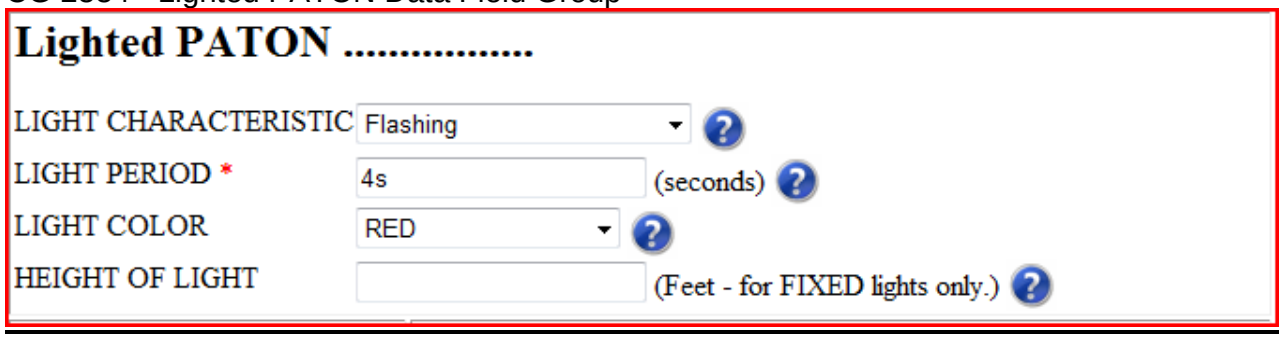
THE LIGHTED PATON DATA FIELD GROUP

When you designate a PATON TYPE as lighted, a data group of four additional fields appear.

The first three fields are ***required***.

- Light Characteristic. (Menu driven)
- Light Period.
- Light Color. (Menu driven)
- Height of Light. (**Only Fixed lighted PATONS must show the height of the light.** Click on the *Question Mark* for instructions for correctly measuring the height of a light.)

CG 2554 - Lighted PATON Data Field Group



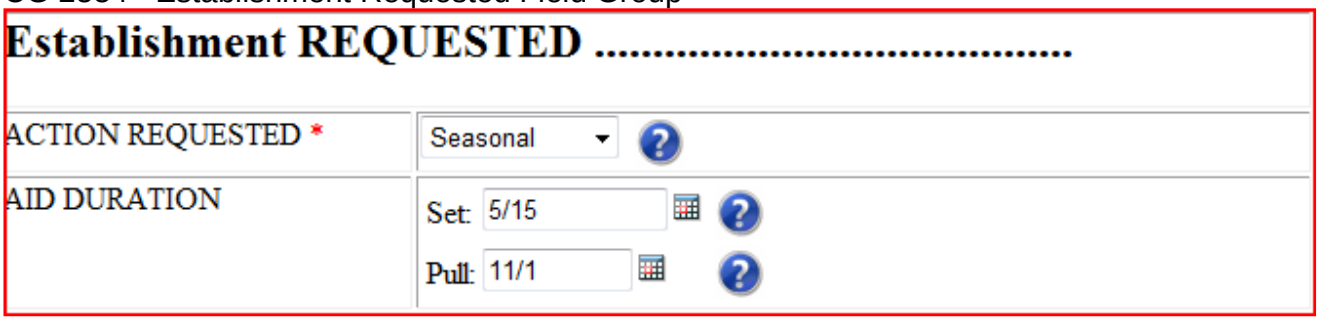
THE UNLIGHTED PATON OPTION

- Selecting "***Unlighted***" as a PATON TYPE field removes the "*Lighted PATON* data field group" from the PATON Application Screen.
- Unlighted is the alternative selection for lighted.

ESTABLISHMENT – Action Required and Duration

There are four options for "***Action Required***" – ***Annual, Seasonal, Temporary*** and ***Disestablish.***

CG 2554 - Establishment Requested Field Group



- ***Each Establishment option has a different duration requirement***. ***Duration*** is the time period that an established PATON is deployed during the year.
  - Annual indicates that the PATON is deployed all year round. **Duration dates are not required**.
  - Seasonal indicates that the PATON is deployed at specific times during the year. **A Set and Pull date is required with this option.**
  - Temporary indicates that the PATON is deployed for a fixed period of time. MM/DD/YY.
  - Duration can also represent the date when the aid will be dis-established.

COMMENTS

- Enter any comments needed to explain any menu selections of "***Other***" or any feature that is not included in the standard permit fields.
- These comments may become part of the PATON's permanent permit specification.

CG 2554 Comments

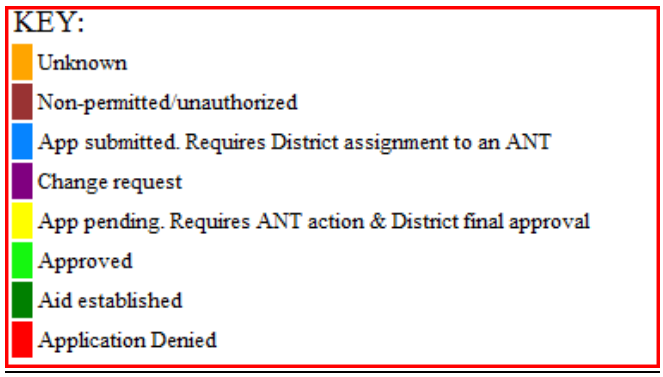
SUBMIT APPLICATION

- Click on the "***Submit Application***" button to transmit the PATON Application to DPW 1 for processing and approval.

Color Key Tracking System

The PATON Application Approval process can be tracked on line. Each step in the process is indicated by a color code. System Color Codes are described below.

Color Key Tracking System Codes



- **Light Blue** – means the PATON application has been received and is pending action by DPW 1.
- **Yellow** – means the PATON application is being approved by the CG ANT and/or the Harbormaster.
- **Light Green** – means that the PATON application has been approved.
- **Dark Green** – means that you have notified DPW 1 that you have established the aid (deployed the aid).

PATON PERMIT CANCELLATION GUIDELINES

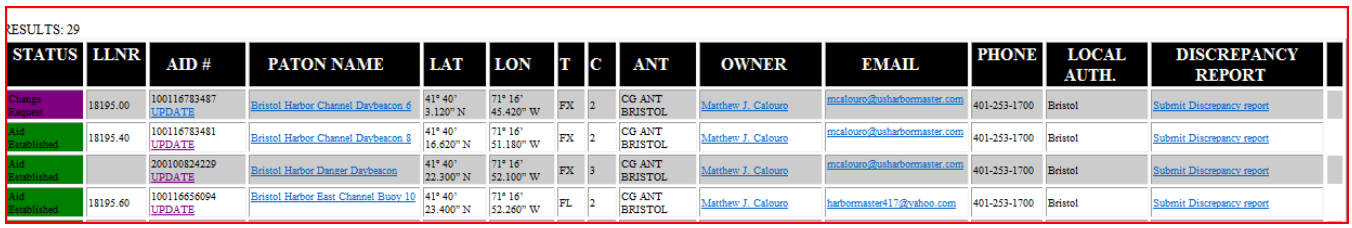
PATON Permits may be cancelled when:

- The aid is not established (set out) within a one-year window from permitted date.
- The aid is missing for two-consecutive years.
- Always check the "***Permitted Comments***" section for special notes regarding these issues.

ACCESS TO YOUR PATONS

Once your access code is approved and you log onto to the Web-Based PATON System, a list of the Private Aids to Navigation assigned to your linked affiliation will appear on the "***Private Aids to Navigation Screen***."

- **PATON Owners and HMs** – Will see only the PATONs that they own.
- **DPW 1** – Will view all PATONs.
- **CG ANT and AVs** – Will view all PATONs assigned to their AOR.



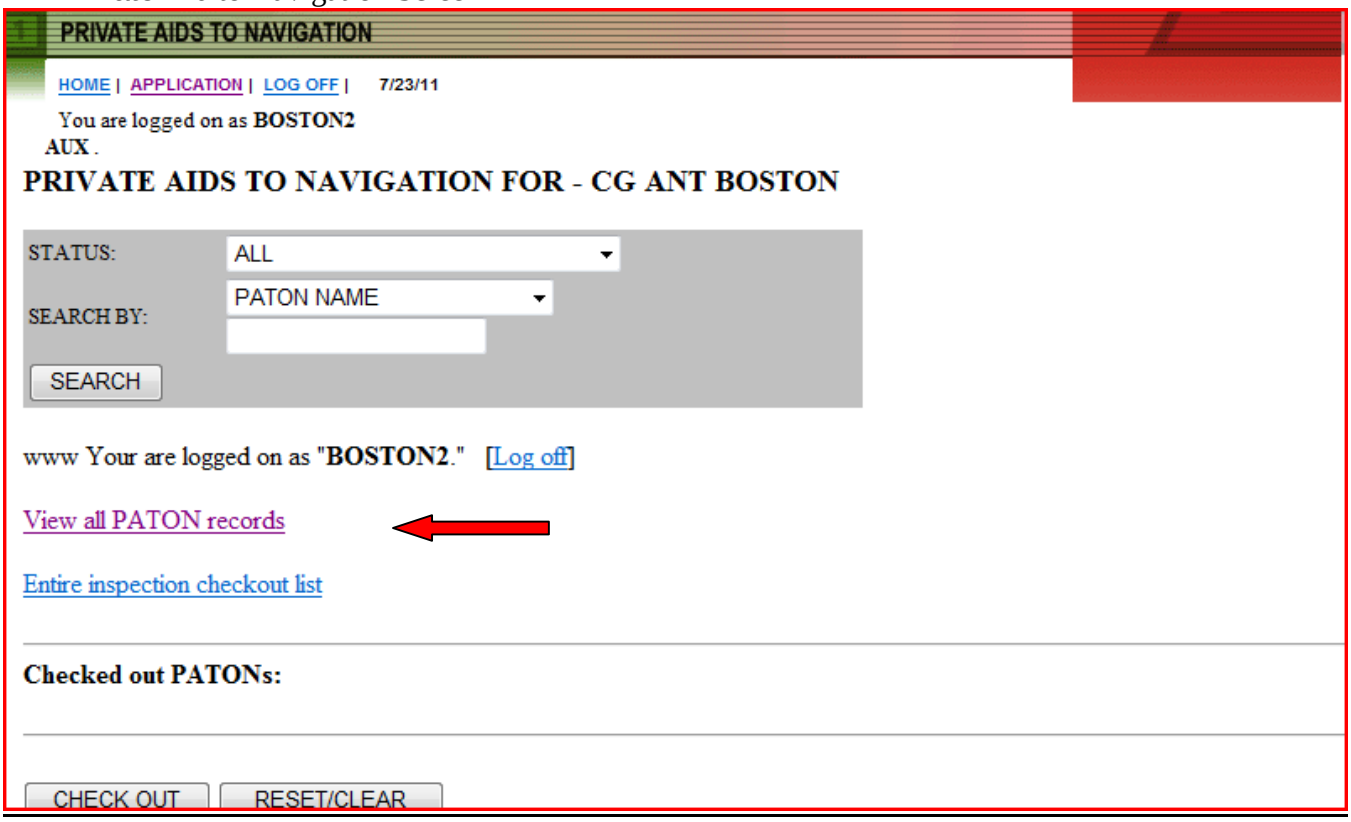
RESULTS: 29

STATUS	LLNR	AID #	PATON NAME	LAT	LON	T	C	ANT	OWNER	EMAIL	PHONE	LOCAL AUTH.	DISCREPANCY REPORT
Change Request	18195.00	100116783487 UPDATE	Bristol Harbor Channel Daybeacon 6	41° 40' 3.120" N	71° 16' 45.420" W	FX	2	CG ANT BRISTOL	Matthew J. Calouro	mcalouro@usharbormaster.com	401-253-1700	Bristol	Submit Discrepancy report
Aid Established	18195.40	100116783481 UPDATE	Bristol Harbor Channel Daybeacon 8	41° 40' 16.620" N	71° 16' 51.180" W	FX	2	CG ANT BRISTOL	Matthew J. Calouro	mcalouro@usharbormaster.com	401-253-1700	Bristol	Submit Discrepancy report
Aid Established		200100824229 UPDATE	Bristol Harbor Danger Daybeacon	41° 40' 22.300" N	71° 16' 52.100" W	FX	3	CG ANT BRISTOL	Matthew J. Calouro	mcalouro@usharbormaster.com	401-253-1700	Bristol	Submit Discrepancy report
Aid Established	18195.60	100116656094 UPDATE	Bristol Harbor East Channel Buoy 10	41° 40' 23.400" N	71° 16' 52.260" W	FL	2	CG ANT BRISTOL	Matthew J. Calouro	harbormaster417@yahoo.com	401-253-1700	Bristol	Submit Discrepancy report

PRIVATE AID TO NAVIGATION SCREEN

- This is the screen that appears when you log on to the PATON System.
- The screen shows your "Username." It appears after the phrase, "***You are logged on as***:" *i.e.***boston1.**
- The title (in the example presented below) shows the ***CG OPFAC*** to which you are logged on. *i.e.*. PRIVATE AIDS TO NAVIGATION FOR - **CG ANT BOSTON**.
- To see the entire list of PATONs managed by the CG ANT, click on "***View all PATONS.***

Private Aid to Navigation Screen



If your Division or CG ANT does not use the Check Out feature, ignore the next section and skip to "View all PATON records."

Currently, only ANT Bristol AVs are using this feature.

THE "CHECK OUT" PATON LIST FEATURE:

The System lists all of the PATONs that are identified as "YES" in the "Annual Verification "field and have not yet been verified during the current year on the "***Check Out***" list.

- A "**YES**" in the "Annual Verification" field puts the PATON on the "Check Out" List. The PATON will appear on the "Check Out" list. See example below.
- A "**NO**" in the "Annual Verification" field removes the "YES." The PATON will not appear on the "Check Out" List.

When a PATONs is verified during a year, the system does not show the PATON on the "Check Out" List.

"Check Out" List example

CHECK OUT | RESET/CLEAR

#	PATON NAME	DATE LAST INSPECTED
1	Duxbury Bay Beach Channel Buoy 14	07/12/10
2	Herring River Buoy 1	08/10/10
3	OXBOW BUOY 11	06/04/10
4	Hampton Inner Harbor South Channel Buoy 10	07/26/10
5	Hampton Inner Harbor South Channel Buoy 11	07/25/10
6	Hampton Inner Harbor South Channel Buoy 12	07/26/10
7	Hampton Inner Harbor South Channel Buoy 13	07/26/10

Items that appear on the "***Check Out*"** list can be checked out or reserved by a specific AV.

- This means that the system reserves the saves the PATON for a specific AV for a two-week period. The PATON will appear on a "***Checked Out*"** list during the two-week time window. It will ***not*** appear on the "Check Out" list during the same two-week period.
- If the checked out PATON is not reported as verified within the two-week time window, the system will return it to the "Check Out" list.
- To change a PATON from using the "Check Out" feature, a "***NO***" must be inserted in the "Annual Verification" field.

Uses for the PATON Check Out feature:

- It can be used as a scheduling technique to identify PATONs for verification in the current year. E.g. The POC pre-selects one/third of the PATONs for a particular year.
- It can be used as a reservation technique in areas where there is contention by AVs for the same set of PATONS.
- It can be simply used as a means to flag a specific PATON for special verification that has not yet been reported during the current year.

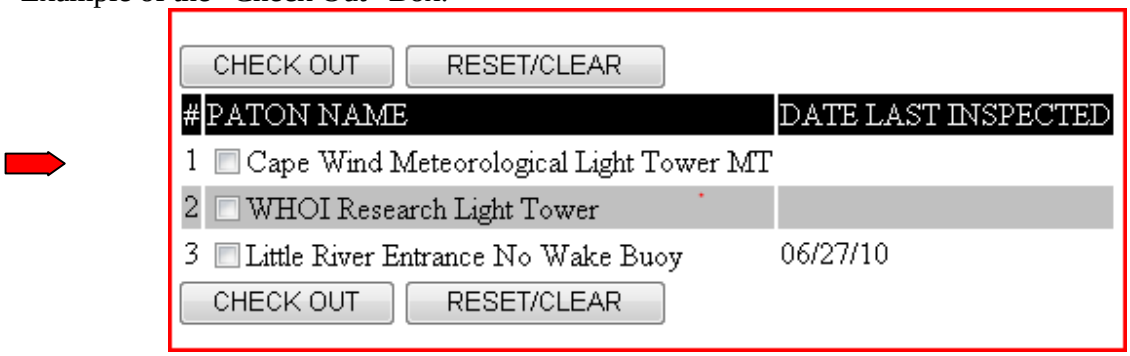
Note: Once a PATON is reported as verified within a current year, the PATON will not show on the "Check Out" list..

Caution: PATONs flagged with a "YES" in the Annual Verification field will continue to be included on the "***Check Out*"** List in each subsequent year until a "NO" is inserted in the Annual Verification field.

How to Check Out a PATON:

Only the items on the "Check Out" list are available to be checked out to an AV.

Example of the "Check Out" Box.



a. Click on the box at the left of the PATON that you want to "check out" for verification. See the **red arrow** above.

b. Click on the ***CHECK OUT*** button to add the PATON to the "***CHECKED OUT"*** PATON LIST as displayed below.

c. When you click on the "***Entire inspection checkout list,"*** you will be able to view all of the PATONs that have been checked out for your CG ANT AOR. See the example below.

Example of "Entire Inspection Check Out PATON List.

PRIVATE AIDS TO NAVIGATION FOR - CG ANT WOODS HOLE

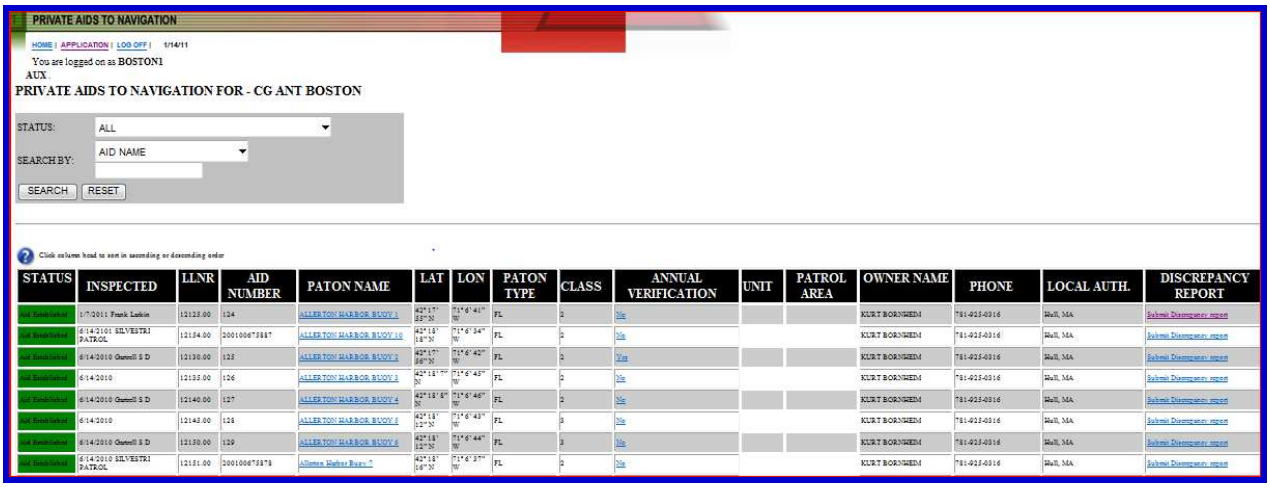
CHECKOUT DATE	AID ID	AID NAME	CHECKED OUT BY
05/06/2011	27202	Cape Wind Meteorological Light Tower MT	FRANK LARKIN [CAPECOD] [REMOVE]
05/06/2011	27242	WHOI Research Light Tower	FRANK LARKIN [CAPECOD] [REMOVE]
05/06/2011	27667	Little River Entrance No Wake Buoy	FRANK LARKIN [CAPECOD] [REMOVE]

Return to index page

d. Click on the [REMOVE] box at the far right to return the PATON to the "Check Out" list.

VIEW ALL PATON RECORDS

Standard PATON List.



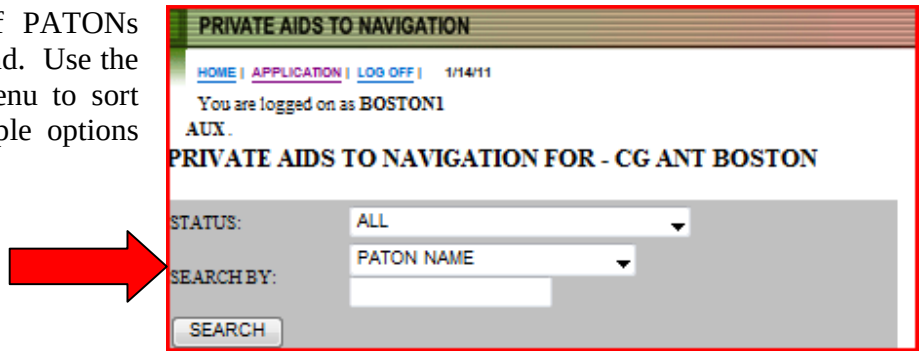
a. When you click on "*View all PATON Records*," all of the PATONs listed for the CG ANT will appear.

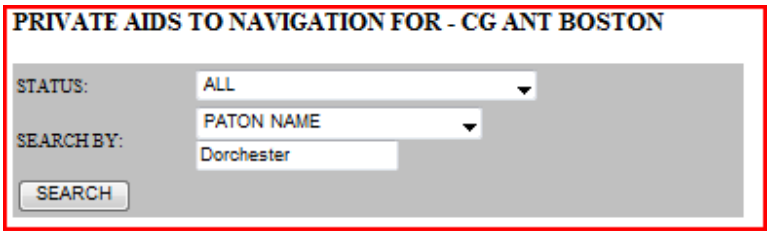
b. The initial PATON list should be sorted in alphabetical order.

c. You can sort this list by any of the fields by clicking on the header field name.

SEARCH OPTIONS

You can sort for groups of PATONs using the "***STATUS***" command. Use the ***SEARCH BY*** drop down menu to sort the list of PATONS. Multiple options are available





Since all aids have the name of the area or waterway as the front half of their description, enter this name in the blank field below the ***SEARCH BY*** field. "***Dorchester***" was selected in the example below.

RESULTS: 4

STATUS	INSPECTED	LLNR	AID #	PATON NAME	LAT	LON	T	C	ANN. VER.	UNIT	PATROL AREA	ANT	OWNER	EMAIL	PHONE	LOCAL AUTH.	DISCREPANCY REPORT
Aid Established	2011/06/04 Larkin, Frank	11260.00	153	Dorchester Bay Basin Channel Buoy 1	42° 18' 15.000" N	71° 3' 1.000" W	FL	2	No		BOS-2	CG ANT BOSTON	Frank Larkin	frankjlarkin@verizon.net	978-263-3023	Boston, MA	Submit Discrepancy report
Aid Established	2011/06/04 Larkin, Frank	11265.00	154	Dorchester Bay Basin Channel Buoy 2	42° 18' 17.000" N	71° 3' 3.000" W	FL	2	No		BOS-2	CG ANT BOSTON	Frank Larkin	frankjlarkin@verizon.net	978-263-3023	Boston, MA	Submit Discrepancy report
Aid Established	2011/06/04 Larkin, Frank	11275.00	156	Dorchester Bay Basin Channel Buoy 4	42° 18' 18.000" N	71° 3' 7.000" W	FL	2	No		BOS-2	CG ANT BOSTON	Frank Larkin	frankjlarkin@verizon.net	978-263-3023	Dorchester Yacht Club	Submit Discrepancy report
Aid Established	2011/06/04 Larkin, Frank	11280.00	157	Dorchester Bay Basin Channel Buoy 5	42° 18' 17.000" N	71° 3' 4.700" W	FL	2	No		BOS-2	CG ANT BOSTON	Frank Larkin	frankjlarkin@verizon.net	978-263-3023	Dorchester Yacht Club	Submit Discrepancy report

THE EXCEL SPREADSHEET FEATURE

a. Open a blank EXCEL spread sheet on your computer.

b. Place the cursor at the top left hand side of the PATON list and drill down to the lower left hand side of the list that you want to copy.

c. Paste the copied material on the blank EXCEL spreadsheet to generate your spreadsheet.

d. You can now manipulate the data on your spreadsheet any way that you want in EXCEL.

STATUS	LLNR	AID #	PATON NAME	LAT	LON	T	C	ANT	OWNER	EMAIL	PHONE	LOCAL AUTH.
Aid Established	11280.00	157 UPDATE	Dorchester Bay Basin Channel Buoy 5 x	42º 18' 17.000" N	71º 3' 4.700" W	FL	2		CG ANT BOSTON	Frank Larkin	frankjlarkin@verizon.net	978-263-3023
Aid Established	11275.00	156 UPDATE	Dorchester Bay Basin Channel Buoy 4 x	42º 18' 18.000" N	71º 3' 7.000" W	FL	2		CG ANT BOSTON	Frank Larkin	frankjlarkin@verizon.net	978-263-3023
Aid Established	11270.00	155 UPDATE	Dorchester Bay Basin Channel Buoy 3 x	42º 18' 16.000" N	71º 3' 5.000" W	FL	2		CG ANT BOSTON	Frank Larkin	frankjlarkin@verizon.net	978-263-3023

TIME SAVING TIP

Use the "**return arrow"** usually found at the top left-hand side of the screen to return to the full PATON file listing. This will avoid excessive waiting time while the system regenerates the complete file. Sometimes, you may get logged off the system.

THE ONE PAGE PATON VERIFICATION REPORT

View the "***One-Page PATON Verification Report***" by clicking on a ***PATON NAME***. This report contains the Official Image photo for the PATON (when available) and a Google map showing the location of the PATON. The permitted Lat/Long is used for this locating process.

Print out a copy of the One Page PATON Verification Report to use while on-scene when you are verifying the private aid to navigation. Use the ***print both sides*** option to save paper when the aid has an Official Photo.

- One of the AV's important responsibilities when verifying a PATON is to check whether any pertinent permit data is missing and to report the observed data on the 7054 AV Verification Report either by entering the correct data in the field provided or to show it in the AV Observation section.

The **One-Page PATON Verification Report** shows what information is currently in the PATON's record so you can readily suggest corrections based on your on-scene observations.

Use this form for recording your observations while on scene at the PATON.

An example of the One Page Verification Report is shown on page 16.

ONE PAGE PATON VERIFICATION REPORT

Edit Record

Discrepancy report

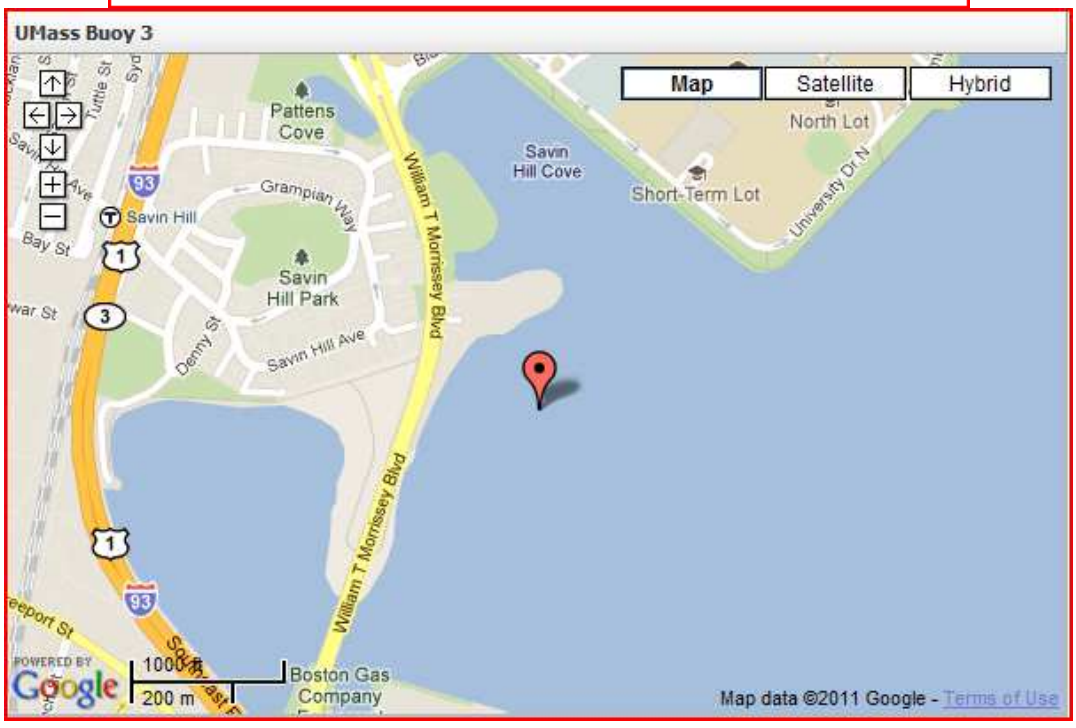
PATON NAME:	**UMass Buoy 3**
LLNR:	**11240.20**
AID NUMBER:	**100117297937**
CLASS:	2
ANNUAL VERIFICATION:	No
OPFAC ASSIGNMENT:	41949

Location, Depth and PATON Type.....

LATITUDE:	42° 18' 28.134" N
LONGITUDE:	71° 2' 34.644" W
GENERAL LOCALITY:	UMASS Channel, Neponset River
PATON TYPE:	Floating ,Unlighted
PATON PURPOSE:	MARKS A CHANNEL
PATON CATEGORY:	Unlighted Buoy
AID COLOR:	GREEN
DEPTH AT DATUM:	6.1

Floating PATON.....

BUOY MATERIAL:	PLASTIC
SOUND SIGNAL TYPE:	
ACTION REQUESTED:	Annual
AID DURATION:	Set: Pull:
DATE LAST VERIFIED:	7/13/2011
DISTRICT/DIVISION/FLOTILLA:	013/05/00
PATROL AREA:	BOS-2
PERMITTED COMMENTS:	Green Can



Use this Google feature to help find the aid, to check whether it is actually in the water in areas where map features are outdated, and as a sanity check on the aid's location.

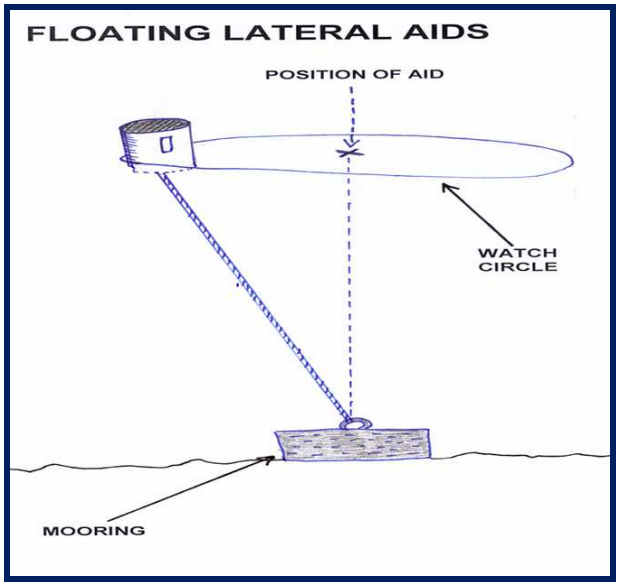
The Official Image photo can assist you and other AVs to identify the aid.

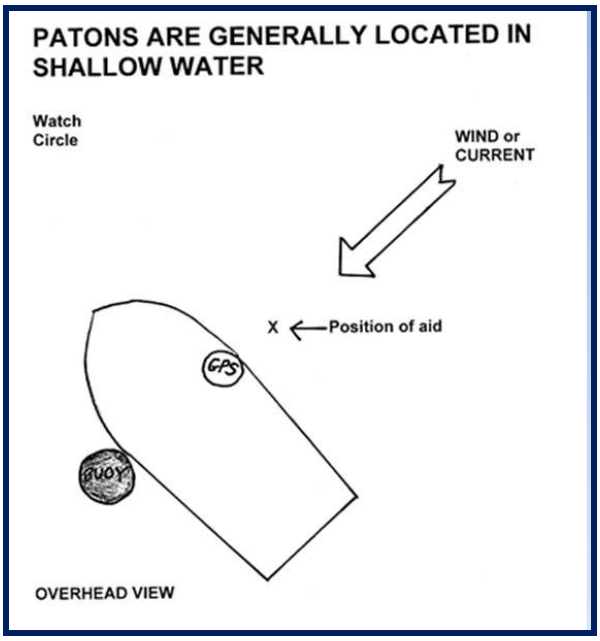
Maneuvering Techniques to use when verifying a Floating Lateral PATON

Understanding the concept of a Watch Circle.

A floating private aid can be located anywhere within it watch circle. Think of it as a leash on a dog. The watch circle defines the limits within which a buoy can move. Current and wind are generally the elements that determine where a buoy can be found within this circle. Current trumps wind. However, you must consider both during the verification process.

The most important factor needed to calculate a private aid's watch circle is usually missing which is the length of the aids harness. And, AVs are never allowed to bring a PATON up to short stay – directly over the aid's mooring. Therefore, the best that we can do is make an intelligent estimate of the location of the aid's mooring.



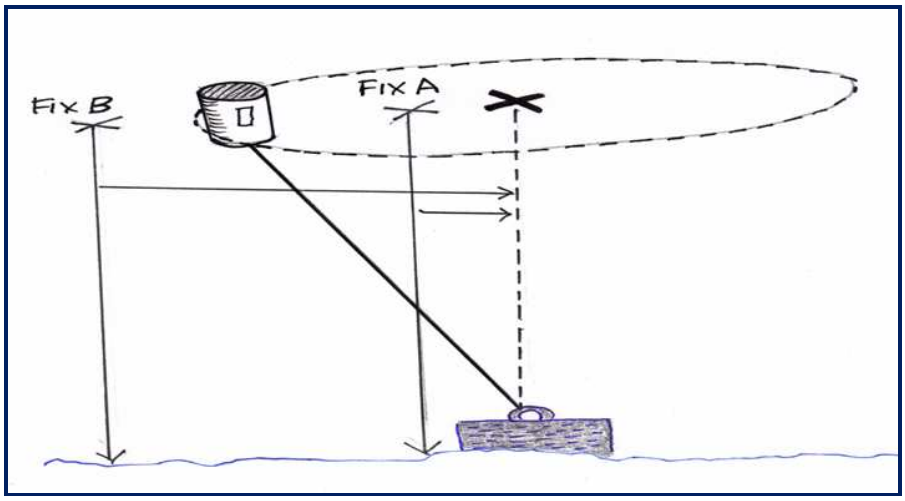


Maneuvering into the wind and/or current,

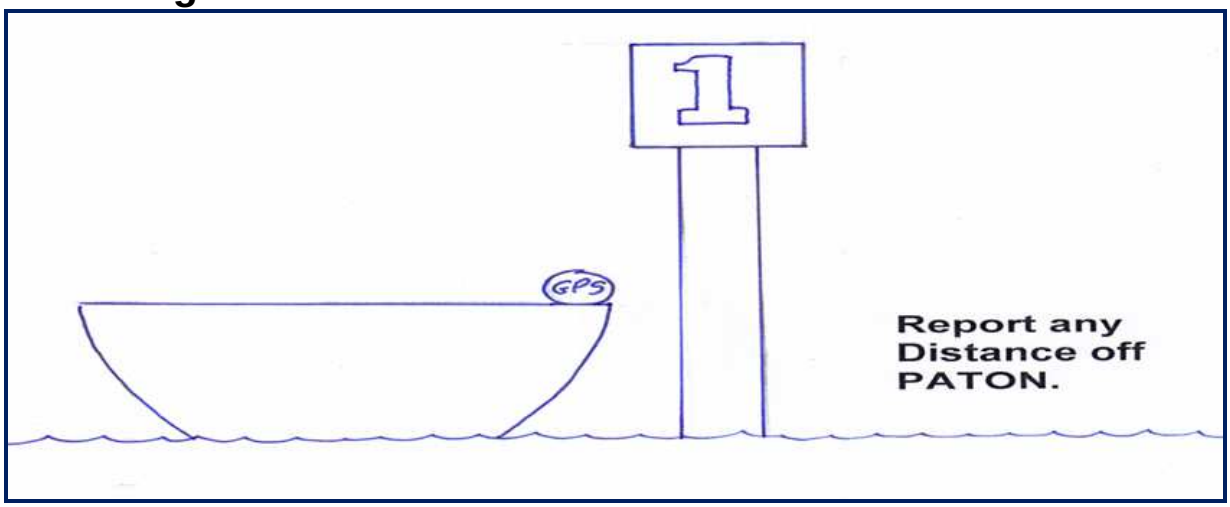
One technique is to move the boat into the current or wind away from the private aid for a short distance and closer to its mooring. Since PATONs are generally located in shallow water, maneuver the boat on the upwind or up-current side of the aid and take the fix or depth on the side away from the aid. The diagram at the left demonstrates this technique. While not perfect, it provides a more accurate estimate of the aids mooring which is the location of the permit's latitude and longitude.

Improving your odds

Fix B shows the place where fixes are normally taken. Note the distance between **Fix A and B**. By using the technique recommended above, you are able to attain a more accurate position. **Fix A** was taken from the upstream side of the boat and the boat was maneuvered on the upstream side of the aid. It's not perfect, but it's definitely much more accurate.



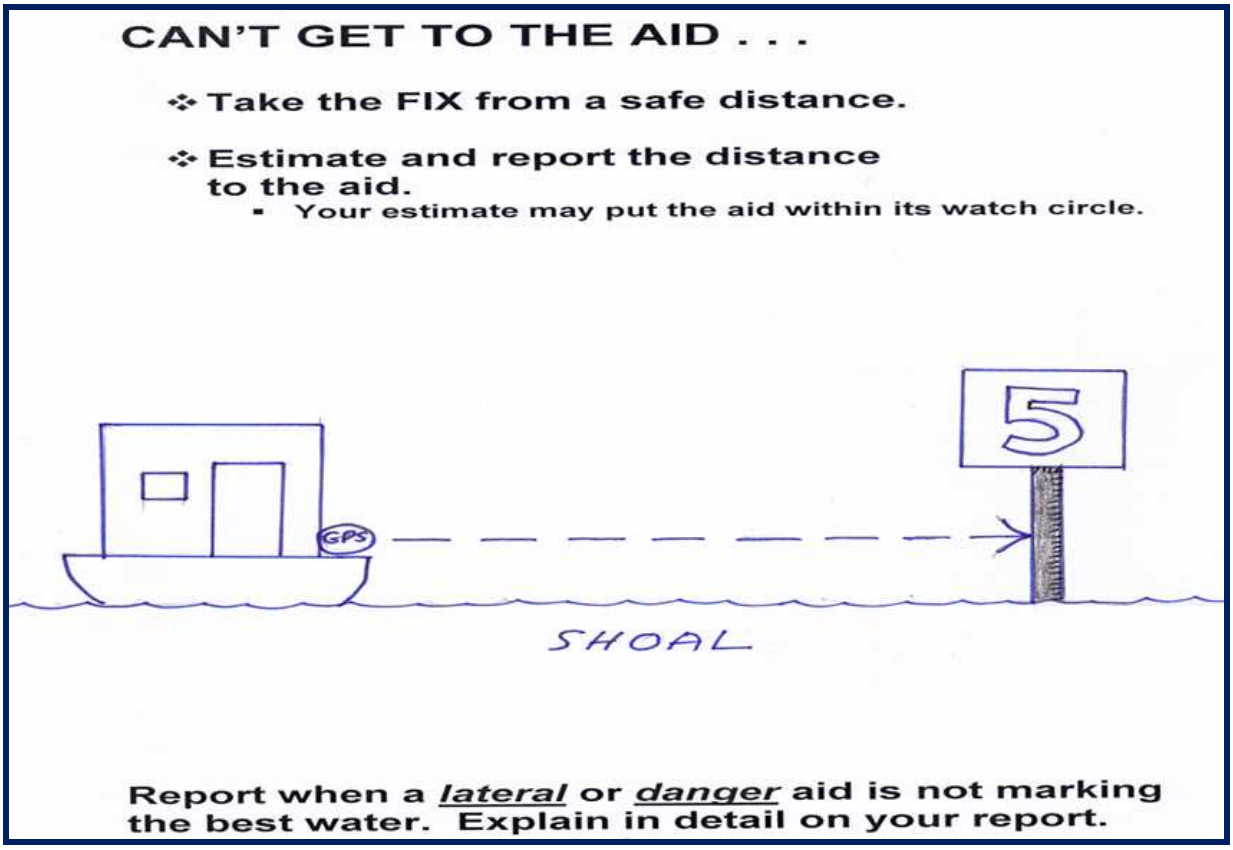
Maneuvering to a Fixed Aid.



Try to get as close as possible to a fixed aid and take the fix on side of the boat closest to the aid. Never put you boat in danger if there is any riprap or other obstructions near the fixed aid. When you can't get close, always provide an estimate of your distance to the aid from where the fix is taken with your report.

Riprap — also known as **rip rap**, **rubble**, **shot rock**, **rock armour** or **Rip-rap** — is rock or other material used to protect shorelines, streambeds, bridge abutments, pilings and other shoreline structures against scour, water or ice erosion.

It is made from a variety of rock types, commonly granite or limestone, and occasionally concrete rubble from building and paving demolition. It can be used on any waterways or water containment where there is potential for water erosion.



Guidelines for taking and reporting a Fix to a Federal Agency

Perform a pre-underway check of your GPS

Verify that the ***DGPS*** or ***WAAS*** feature is activated (enabled) on the GPS set.

Confirm that the ***horizontal datum*** in the GPS set matches the horizontal datum printed on the NOAA chart that you plan to use during the patrol. Your NOAA chart must have a **WGS84** or **NAD83** horizontal datum to be useful for Navigation System Program activity.

Check that the ***distance unit of measurement*** on the GPS is set to **NM -** nautical miles. Sets come set to statute miles.

Be sure that the ***unit of measure for a bearing or a heading*** in the GPS set matches the unit of measure read out capability of the compass that you plan to use. If the compass reads magnetic, you may need a copy of the vessel's ***Deviation Table*** to convert bearings to true on your reports.

Set the ***Latitude / Longitude*** in your GPS to ***degrees, minutes, and seconds*** - DD-MM-SS.SSS. This is the standard LAT/LON expression in the Coast Guard and it reflects the LAT/LONG used in the Light List.

Explain how the fix alongside the aid was determined and calculated.

A GPS set using ***WAAS,*** or a ***dGPS*** set are the recommended tools for taking a fix.

Hand held GPS sets with ***WAAS*** can produce LAT/LONG (Fixes) within 8 to 12 feet of the actual position of the aid on the earth's surface. That is inside the head of a pinhole on a chart.

Take the Fix when close aboard lateral aids while remaining in the navigable channel.

Fixes should be taken after the vessel stops at the aid or over the Aid's mooring or anchor. Recording fixes while a vessel is in motion can cause erroneous fixes, producing inaccurate reports.

Fixes taken for floating aids should be taken upstream and toward the wind of the aid in order to minimize the effect the aid's watch circle.

AVs are never allowed to pull an aid's harness up to short stay. **Note that the position of an aid is actually the location of the aid's anchor in the seabed.** Floating buoys move around on its harness over this anchor when affected by tidal current and wind. This movement is called its ***watch circle***.

Record and report supporting quality control data.

This practice significantly improves the quality level of your report.

- Include an "**Accuracy Statement**" on each report.
- Always show the **EPE—Estimated Position Error** or **HDOP—Horizontal Dilution of Position** for every fix taken.
- Include the **date and time** when each fix was taken.
- Report whether the GPS is operating in **3D** or **3D Differential** for each fix.
- Reference the **make and model of the GPS equipment** that you use to determine a fix.

SAMPLE ACCURACY STATEMENT:

1. A *Garmin GPS 76* GPS with *WAAS enabled*, operating in *3D Differential* was used to fix the aid. On-scene *EPE* was *7.0* feet. Pre-underway accuracy was checked *with another GPS.*

2. A *Hummingbird Wide 100* echo sounder was used to take the depth. Pre-underway accuracy was checked *at the dock with a hand-held echo sounder*. Correction for the transducer is *0.8 feet*. The on-scene Substation was *Neponset River* on *Boston*.

3. The reported fix and depth were taken approximately *8* feet off the PATON to offset for shoaling.

Copy and paste this Accuracy Statement to your Desktop. Modify the data to fit your GPS set. Yellow highlight indicates static data and practices. Green highlight indicate changeable data.

Guidelines for taking and reporting a Depth reading:

Random reporting of depth readings from echo sounders produces incomplete data. Besides the need to control the quality of the instrument, from a practical use, depths must relate to charted depths or depths recorded in the aid's specification. **Otherwise, depths reported in areas affected by the tide are no better than random numbers**. This difference becomes more significant in areas within the higher latitudes where tidal ranges vary 10 to 12 feet or more.

During the pre-underway check of the vessel's echo sounder.

Check that the vertical datum shown in the "***General Information Block***" on your NOAA chart reflects the depth UOM-unit of measure that is set up on your echo sounder—**feet, meters or fathoms.**

Use a lead line, a sounding pole or a hand-held depth sounder to determine the water depth.

Calculate the distance from the waterline to the position of the transducer on the vessel so you can correct depth readings. ("**Echo sounder reading minus the depth reading**.")

Check that the echo sounder is reading accurately. Compare the depth of water taken with a lead line or sounding pole to the echo sounders read out plus the correction for location of the transducer.

List the equipment used for taking the depth alongside the aid.

When an echo sounder is used, list the distance from the transducer to the water line.

Always record and report the date and time when a depth is taken.

When you operate in a tidal zone area, record and report the height of tide for the time when the depth is taken. Height of tide can be read from the almanac screen on a GPS or on-line from http://tidesonline.nos.noaa.gov.

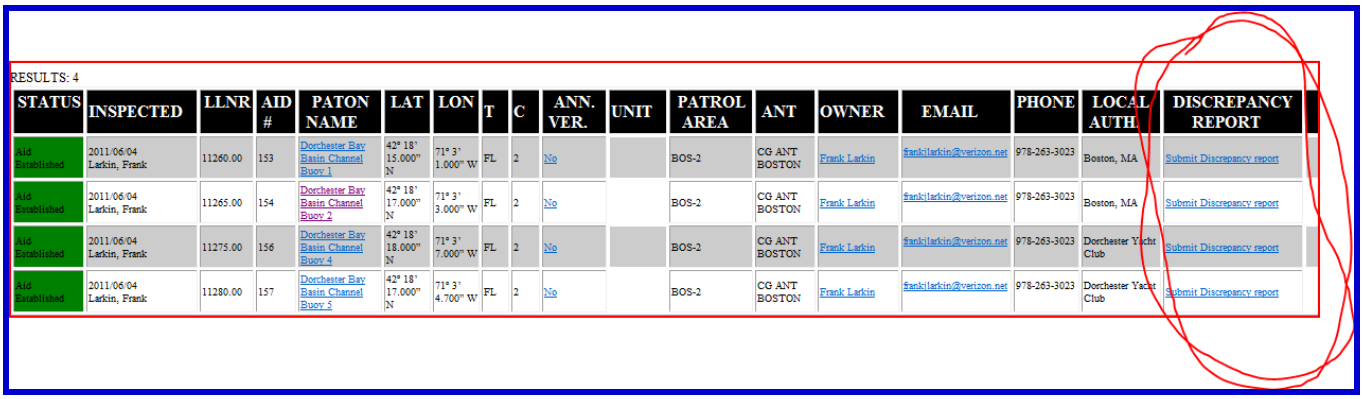
Maneuver the vessel upstream and into the wind of a floating aid to be closer to the anchor.

Compare the observed depth reading at datum to the charted datum. The formula for Estimated Depth at Datum is: (*Observed Depth* plus *Distance from transducer to the water line*) minus the *Height of Tide*).

Include an Accuracy Statement with every report.

PREPARING YOUR 7054 AV VERIFICATION REPORT FOR SUBMISSION TO THE COAST GUARD UNIT.

Click on the "***Submit Discrepancy Report***" field that is located at the far right end of a PATON listing.



RESULTS: 4

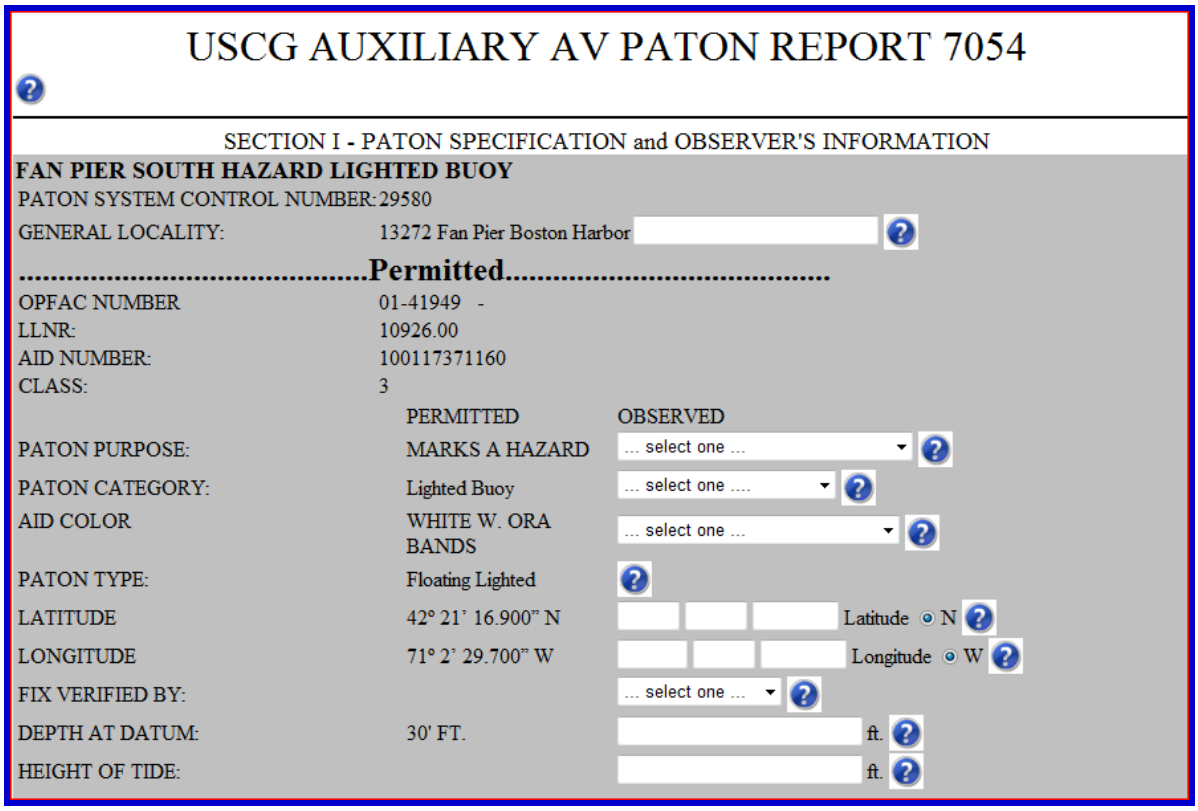
STATUS	INSPECTED	LLNR	AID #	PATON NAME	LAT	LON	T	C	ANN. VER.	UNIT	PATROL AREA	ANT	OWNER	EMAIL	PHONE	LOCAL AUTH	DISCREPANCY REPORT
Aid Established	2011/06/04 Larkin, Frank	11260.00	153	Dorchester Bay Basin Channel Buoy 1	42° 18' 15.000" N	71° 3' 1.000" W	FL	2	No		BOS-2	CG ANT BOSTON	Frank Larkin	frankilarkin@verizon.net	978-263-3023	Boston, MA	Submit Discrepancy report
Aid Established	2011/06/04 Larkin, Frank	11265.00	154	Dorchester Bay Basin Channel Buoy 2	42° 18' 17.000" N	71° 3' 3.000" W	FL	2	No		BOS-2	CG ANT BOSTON	Frank Larkin	frankilarkin@verizon.net	978-263-3023	Boston, MA	Submit Discrepancy report
Aid Established	2011/06/04 Larkin, Frank	11275.00	156	Dorchester Bay Basin Channel Buoy 4	42° 18' 18.000" N	71° 3' 7.000" W	FL	2	No		BOS-2	CG ANT BOSTON	Frank Larkin	frankilarkin@verizon.net	978-263-3023	Dorchester Yacht Club	Submit Discrepancy report
Aid Established	2011/06/04 Larkin, Frank	11280.00	157	Dorchester Bay Basin Channel Buoy 5	42° 18' 17.000" N	71° 3' 4.700" W	FL	2	No		BOS-2	CG ANT BOSTON	Frank Larkin	frankilarkin@verizon.net	978-263-3023	Dorchester Yacht Club	Submit Discrepancy report

The principal activity for "Section I – PATON Specification and Observer's Information" is for indicating any problems observed with the PATON's permitted specifications.

"Only enter data in a PATON specification field when an on-scene observation differs from the data shown in the left-hand column labeled "Permitted." Otherwise, leave the field blank."

"Leaving a field blank is indication that you agree with the permitted data shown on the report."

Click on the ***Question Mark*** after the field to review the instructions for entering data in the field. The instruction appears for six seconds.



Criteria for reporting PATONs off station.

Determining whether a PATON is considered to be off its permitted station has been a problem for many AVs. To resolve this issue, the following guide has been prepared to assist the AV in this determination. Criteria and actions have been established for three types of PATONs – Fixed PATONs, Floating Lateral PATONS and Floating Non-lateral PATONS. Each requires a difference course of action.

Fixed PATONs that are permanently affixed to the seabed.

Criteria:

The observed fix does not match the permitted Lat/Long exactly.

- When the aid is published in the Light List, the observed fix should also match both the permitted Lat/Long and the Lat/Long appearing in the Light List.
- Report these as documentation errors.
- Additionally, when the aid is charted on a NOAA chart, the observed fix should match the permitted Lat/Long, the Lat/Long in the Light List and the Lat/Long for the aid on the NOAA chart.
- Always be specific in your report as to what is causing the error – **Permit, Light List** or **Chart** or all three.

Action to take:

- Upon review of the 7054 AV Verification, the observed LAT/LONG is forwarded on-line to DPW1 for correction.
- **I-ATONIS and PATON permit** should be corrected by **DPW.**
- **DPW 1 will correct the Light List and NOAA Chart.**
- **Owner should be advised.**
- **AV reports must include an Accuracy Statement as supporting evidence.**

Improve your LAT/LONG Accuracy on a fixed aid by:

- **Take into account the distance that the GPS receiver is from the fixed aid.** As a standard practice, take each fix with the GPS held off the side of the OPFAC closest to the aid.
- **When it is difficult to get close to the aid due to riprap, shoaling or current**. Record the distance off the aid.
- **Remember, the Lat/Long that the GPS is producing is originating from the location of the GPS' antenna** or, when the antenna is self contained in the GPS set, from the position where the GPS is mounted on the OPFAC. Take the fix with the antenna closest to the fixed aid and/or estimate and record the distance from the antenna to the fixed aid. **Also consider the EPE error that is being recorded at the time when the fix was taken.** It is a good practice to use a hand held GPS positioned as close to the fixed aid as possible.
- ***Use these positioning techniques for fixed aids only.***

Floating "Lateral" PATONs are the aids that mark the edges of a navigable channel or fairway.

Criteria:

When the aid is charted, an aid plotting outside the charted circle symbol for the Aid on the NOAA chart is reportable as off station. Indicate this condition in the AV Observation section of your report.

When the aid not charted but published in the Light List, Aids not within 50 feet of the aid's Permitted LAT/LONG will be considered as off station.

The actual position of a floating aid to navigation is the location of its anchor or mooring. The aid itself floats around the anchor in what is termed its "***watch circle***" which can be affected by wind and/or current.

Take every precaution to compensate for the local affects of wind and/or current on the aid's watch circle and, therefore, provide more accurate observations. This natural offset can be compensated by heading the vessel toward or into the wind and/or current a short distance from the aid to be closer to the aid's anchor. Note this activity on the Standard Accuracy Statement on the 7054 AV Verification report.

If unable to get close to the aid safely, indicate the ***distance off*** the aid when the fix and depth was taken in the Accuracy Statement.

Warning: In low water areas, do not perform this offset because of the danger of fouling your prop or striking the aid's anchor. The prudent AV will only take fixes and depths at times of high water.

Determine the possibility of shoaling by calculating the depth at charted datum calculation. If the answer is negative, you have determined that the aid will strand or shoal at times of low tides.

If the aid is a lateral aid, it can be guiding the mariner into a shoal and cause a grounding or worse.

- No corrective action can be taken unless there is a valid Standard Accuracy Statement included on your 7054 AV Verification Report as supporting evidence.
- Upon review of the 7054 AV Verification, the observed LAT/LONG should be forwarded on-line to DPW 1 for correction
- The ***NS-CU07 Vertical and Horizontal Error Calculator*** should also be used. This tool is available on the Chart Updating Web Page at www.uscgaan.com.

Improve your LAT/LONG Accuracy on a floating "lateral" aid:

- **Compensate for any effect of wind or current**, take the fix on the side of the aid into the wind or current. Take the fix on the side of the vessel farthest from the floating aid.
- **If it is difficult to get close to the aid due to riprap or shoaling, estimate and record the distance from away from the floating aid.** The Horizontal and Vertical Error Calculator has a field for using this distance in your off station calculation.
- **Remember, the Lat/Long that the GPS is producing is originating from the location of the GPS' antenna** or, when the antenna is self contained, from the position where the GPS is mounted on the OPFAC.
- **Also be sure that the GPS is operating in 3D Differential and that the EPE Estimated Position Error is recorded at the time when the fix was taken and reported on the Accuracy Statement**.
- ***Use these positioning techniques for lateral aids only***.

Floating Non-lateral PATONS should be reported as off station based on the PTE – Position Tolerance Estimation System.

The **Position Tolerance Estimation System** evaluates three factors:

A. **The Risk Factor** – Regulatory private aids are always assigned a **LOW** Risk Factor.

B. **The Area Type** – Three Area Types are applied:

Type 1 - Restrictive Area – channels and canals. (75 feet) (Regulatory aids should never be located in a navigable channel.)

Type 2 - Less Restrictive – harbors and coves. (100 feet)

Type 3 - Little Restrictions – coastal and large harbors. (150 feet)

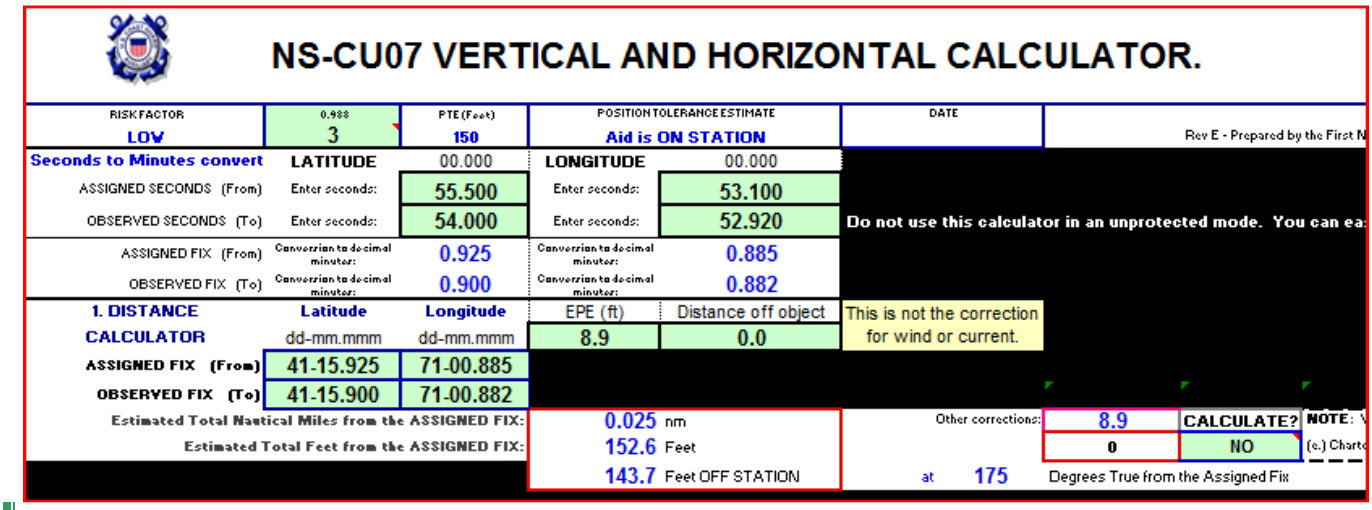
Criteria:

- **In a Type 1 situation**, AV would report an aid off station when the fix is **76** feet or more from the aid's permitted position.
- **In a Type 2 situation**, AV would report an aid off station when the fix is **101** feet or more from the aid's permitted position.
- **In a Type 3 situation**, AVs would report an aid off station when the fix is **151** feet or more from the aid's permitted position.

Action to Take:

- No action can be taken unless there is a valid Standard Accuracy Statement included on the 7054 AV Verification Report.
- Upon review of the 7054 AV Verification, the observed LAT/LONG should be forwarded on-line to DPW 1 for correction.
- Indicate the PTE type number calculated on your report in the AV Observation section on your 7054 AV Verification report.

The example below shows a Type 3 (least restrictive) situation where an aid would not be reported as off station. This form is available on the CU Web Page at www.uscgaan.com. EPE is 8.9 feet**.**



NS-CU07 VERTICAL AND HORIZONTAL CALCULATOR.

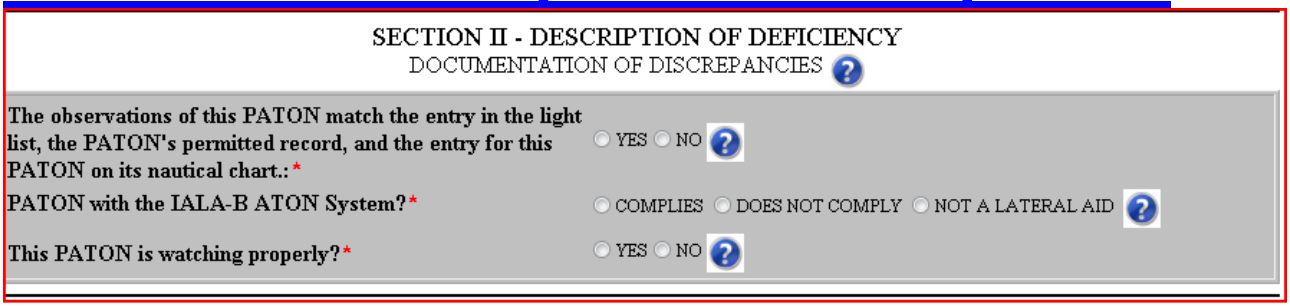
RISK FACTOR	0.988	PTE (Feet)	POSITION TOLERANCE ESTIMATE		DATE	
LOW	3	150	Aid is ON STATION			Rev E - Prepared by the First N
Seconds to Minutes convert	LATITUDE	00.000	LONGITUDE	00.000		
ASSIGNED SECONDS (From)	Enter seconds:	55.500	Enter seconds:	53.100		
OBSERVED SECONDS (To)	Enter seconds:	54.000	Enter seconds:	52.920	Do not use this calculator in an unprotected mode. You can ea	
ASSIGNED FIX (From)	Converrian to decimal minutes:	0.925	Converrian to decimal minutes:	0.885		
OBSERVED FIX (To)	Converrian to decimal minutes:	0.900	Converrian to decimal minutes:	0.882		
1. DISTANCE CALCULATOR	Latitude dd-mm.mmm	Longitude dd-mm.mmm	EPE (ft)	Distance off object	This is not the correction for wind or current.	
ASSIGNED FIX (From)	41-15.925	71-00.885	8.9	0.0		
OBSERVED FIX (To)	41-15.900	71-00.882				
Estimated Total Nautical Miles from the ASSIGNED FIX:			0.025 nm		Other corrections:	8.9 CALCULATE? NOTE:
Estimated Total Feet from the ASSIGNED FIX:			152.6 Feet			0 NO (c.) Charte
			143.7 Feet OFF STATION		at 175	Degrees True from the Assigned Fix

Use the Distance Standards below to estimate the distance off.

DISTANCE STANDARDS

One degree of Latitude	[01-00-00-00]	**60.8** nm
One Nautical mile or 1 minute of Latitude	[00-01-00-00]	**6,076** ft
One Second of Latitude	[00-00-01.00]	**101.3** ft
One-tenth of a second of Latitude	[00-00-00.10]	**10.1** ft.
One-hundred of a second of Latitude	[00-00-00.01]	**1.0** ft.

Section II – Description of Discrepancies



SECTION II - DESCRIPTION OF DEFICIENCY
DOCUMENTATION OF DISCREPANCIES

The observations of this PATON match the entry in the light list, the PATON's permitted record, and the entry for this PATON on its nautical chart.: * YES NO

PATON with the IALA-B ATON System? * COMPLIES DOES NOT COMPLY NOT A LATERAL AID

This PATON is watching properly? * YES NO

The first question deals with the documentation of the aid versus your on-scene observation of the aid.

- Compare your on scene observation to the permitted record.
- When aid is listed in the Light List, compare your on-scene observation to the permitted record and the Light List.
- When aid is charted, compare your on-scene observation to the permitted record, the Light List and the charted lat/long and the symbols and abbreviations for the aid on the NOAA chart.

- Respond with a "Yes" when all these factors are in sync.

The second question deals with whether the aid corresponds to the IALA-B Aid to Navigation System. ***The IALA-B system only deals with lateral aids*** – aids that mark navigational channels or fairways. Lighthouses are not considered lateral aids.

- When the aid is not a lateral aid, just check off, "**Not a Lateral Aid**" and move to the third question.
- When the aid is a lateral aid and it matches the IALA-B system, check off, "**Complies**." Matching the IALA-B System involves the shape, color, marking and retro-reflective material on the aid.
- When the aid is a lateral aid and it does not match the I-ALA B system, check off, "**Does not comply**."
- Attach a discrepancy photo to your report to demonstrate how the aid is not in compliance and explain the discrepancy in the AV Observation section on the 7054 AV Verification Report.

The third question deals with whether the aid is watching properly. This also is a **required** question.

Note that the standard lists of discrepancies do not appear on the 7054 AV Verification Report until you respond with a "NO" to this question.

Reporting an aid as "Watching Properly"

Answering YES or NO to the question, "***AID IS WATCHING PROPERLY***," on a PATON Report has very important ramifications to the person reviewing your report. When you respond with a "YES," you are, in effect, ***certifying*** that everything about this Private Aid is **absolutely perfect**.

You are certifying that there are no permit specification errors on the aid.

In other words, the permit specifications on the "One Page Verification Report" match the on-scene observation about the PATON. The ***most current permit specifications*** appear at the left-hand side of the 7054 PATON Verification Report screen, under the heading, "***Permitted***."

You are certifying that you have not observed any physical discrepancies on the aid.

In other words, the aid has all of its numbers or letters, the shape is right and if lighted, the light color is correct, the light is operating to its specified characteristic and light period, and the aid is not off station and is marking the best water.

When a PATON is listed in the Light List, you are certifying that the data in the Light List describes this aid perfectly as you viewed it while on-scene.

When an aid is charted, you are certifying that the charted position is exact on the chart. You are also certifying that the symbols and abbreviation on the chart are correct and reflect your on-scene observation and the entry for the aid in the Light List.

When the PATON is a lateral aid, you are certifying that the aid conforms to the IALA-B Aid to Navigation System- - correct color, shape, numbering and retro-reflective material.

When the PATON is a regulatory buoy, you are certifying that it conforms to the standard marking specified for a Regulatory Buoy – a white aid with two orange bands and black lettering and symbols. This is reported even when the PATON record specification has a different specification. Commonly, these aids are used for marking swim areas, no wake and speed zones, hazards, exclusion areas, etc.

When the aid is used for a special purpose, you are certifying that it is yellow with black letters. These aids typically mark mooring area boundaries, aquaculture facilities and aids, sail race marks, etc.

Use the ***NOAA on-line Chart Viewer*** which you can access from the "Helpful Links" page on the Navigation Systems web site at www.uscgaan.com.

NOAA updates these on-line charts within a week to ten days from when the aid correction appeared in the LNM-Local Notice to Mariners.

- Reference the LNM viewing feature that is shown at the top right-hand corner of this chart screen for the latest LNM update information.
- NOAA updates their on-line charts digitally whenever corrections are published in the Coast Guards LNM-Local Notice to Mariners while paper NOAA charts are corrected only when they are re-released and re-printed.

When the aid is charted, you need to plot your observed fix and check whether the aid is positioned on or off station on a NOAA chart.

Regulatory aids are only problematic when they are deployed within a navigable channel. Many regulatory aids are not charted nor listed in the Light List.

When the charted position differs from the Light List and the PATON is charted, your 7054 PATON Verification Report that initiates a LNM will correct the NOAA chart.

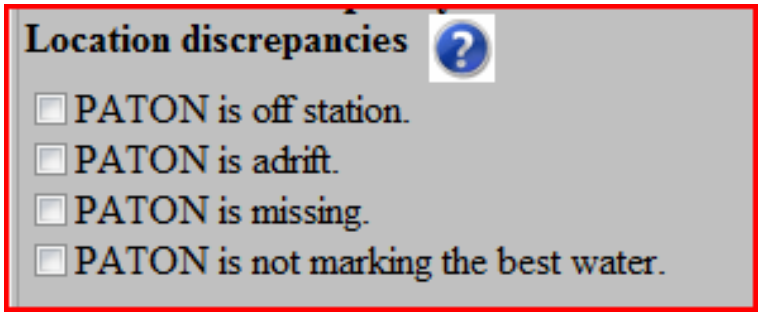
Use the **NS-CU07 Vertical and Horizontal Error Calculator** to calculate and report the number of feet an aid is off station and the True direction from the permitted Lat/Long.

When you are not sure whether or not a problem exists, contact your Navigation Systems Staff Officers for advice before reporting the aid to the Coast Guard.

DESCRIPTION OF DEFICIENCY

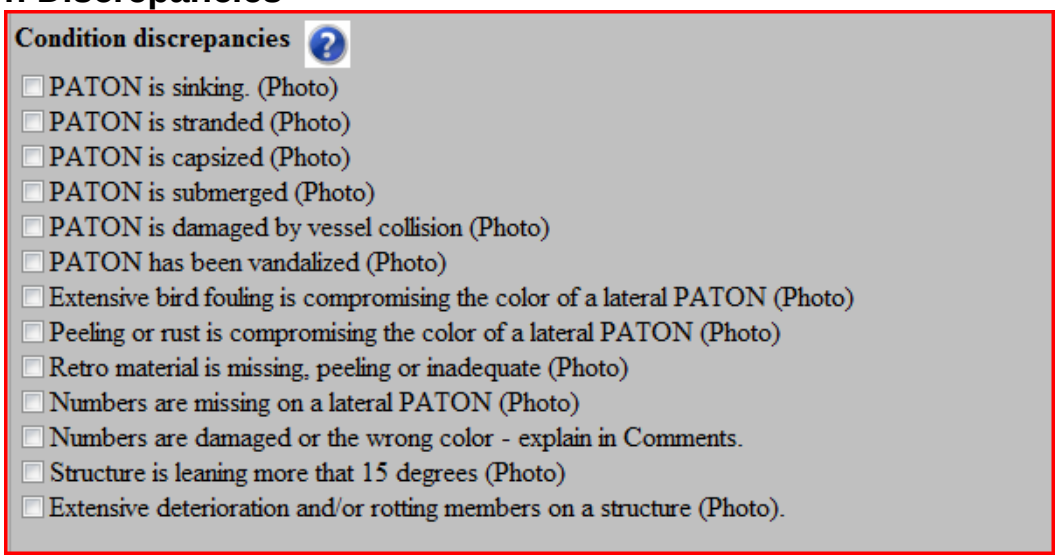
Check off each discrepancy that you observe on the aid. The discrepancy name should be self explanatory once you read the Training Guides. Discrepancy fields do not appear until you respond with a "NO" to the question, "Aid is Watching Properly?" on the 7054 AV Verification Report.

Location Discrepancies

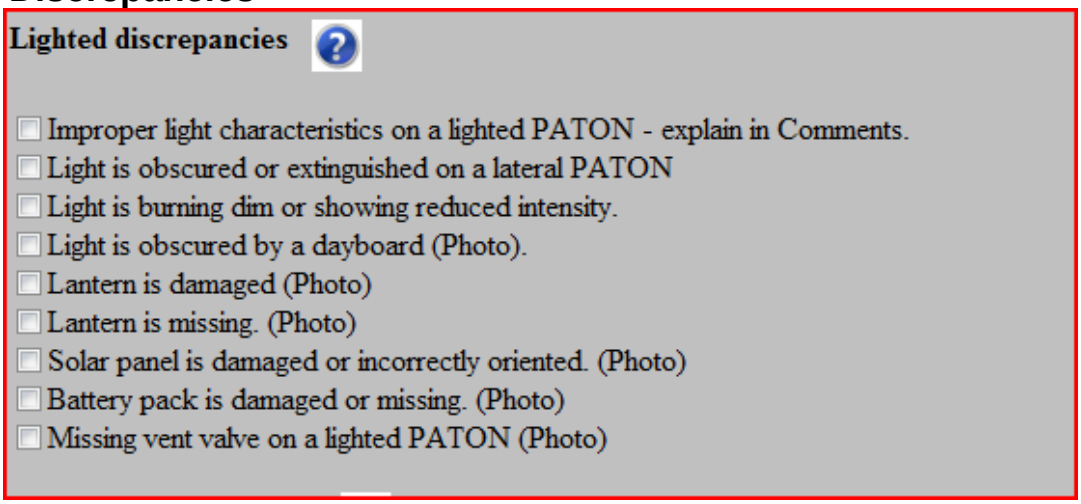


Each discrepancy that you check is reported to the CG ANT when you submit your report.

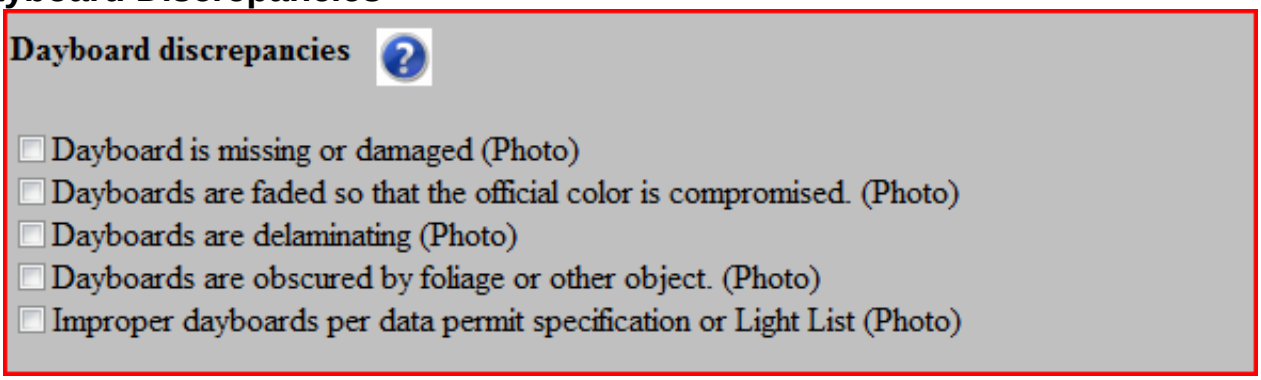
Condition Discrepancies



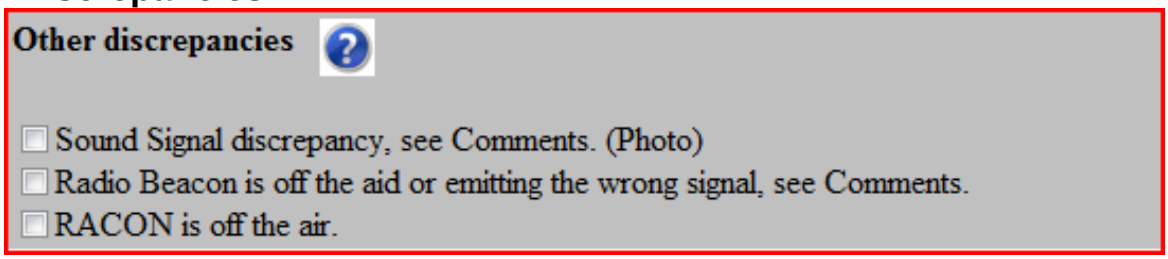
Lighted Discrepancies



Dayboard Discrepancies

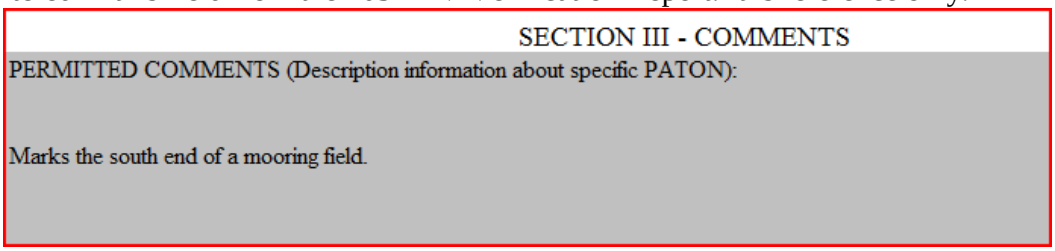


Other Discrepancies



PERMITTED COMMENTS

Permitted comments are reserved for explanations about fields in the PATON application only. Data cannot be entered in this field from the 7054 AV Verification Report. It is reference only.



AV OBSERVATIONS

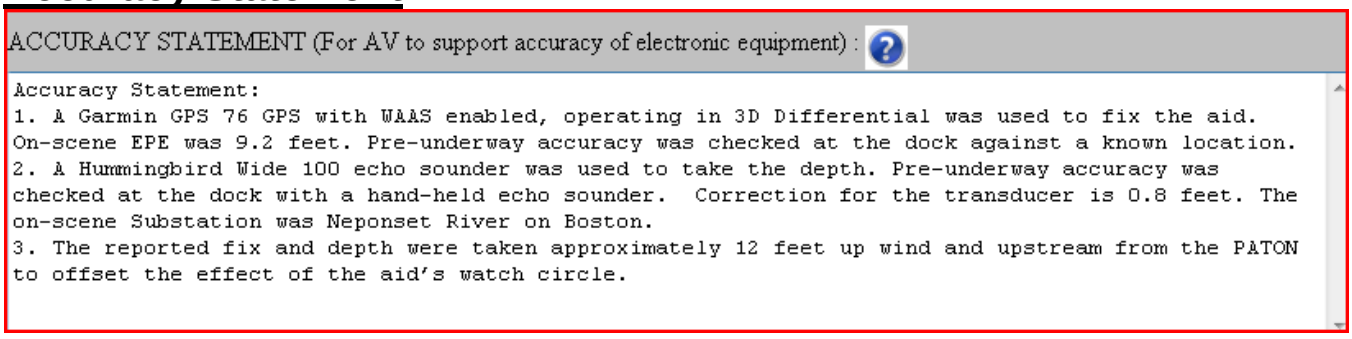
Always include any explanations that improve the clarity and credibility of your evidence about any problem(s) reported about a PATON.

IMPORTANT: If you have previously reported discrepancies about a PATON and it appears that no action has been taken to correct the situation, indicate the details of the problem in the ***AV Observation*** section. Also indicate how long this problem has existed and when you previously reported it. This is very important when reporting missing aids. PATON permits may be cancelled for aids missing over two years. Always quote credible and official sources.

As an AV or PAC, take the condition of the PATONs in your assigned Patrol Area seriously. Insist that corrective action be taken and that you get a response as to the reason why not, especially when the problem has persisted for many years.

In some situations, the CG ANT may need assistance to keep up with the backload of reported problems. Volunteer to assist the ANT with this backload. We are all on the same team.

Accuracy Statement



OFFICIAL IMAGE PHOTO of the PATON.

If possible, there should be no discrepancies appearing on the OFFICIAL IMAGE digital photo for a PATON.

Attach the photo to the 7054 Verification Report as a Discrepancy Photo. This is the quickest and easiest method to use.

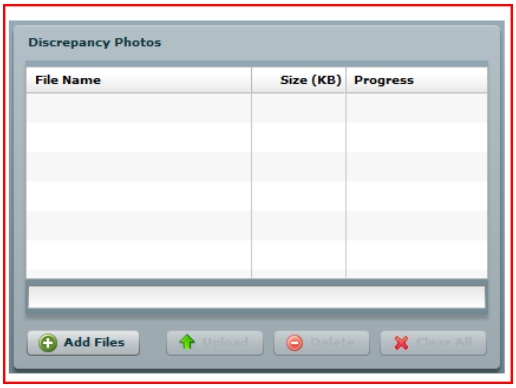
If you opt to e-mail the photo to the DSO-NS 013, label the photo with your Division Number, the LLNR or Aid Number and a brief description of the PATON. Do not use special characters or blank spaces which cause photos to reject. Underline is OK.

- E.g. **06_12345-Back_Riv_3** would represent the #3 on the Back River in Division 6. The LLNR was used.
- E.g. **03_20071436122_No_Wake** would represent a No Wake Buoy in Division 3. In this case there is no LLNR so only the Aid Number was reported.

SUBMITTING PHOTOS of a PATON

The PATON System allows for the inclusion of multiple photos of discrepancies observed on a PATON on the on-line 7054 PATON Verification Report***. Use a Microsoft browser, only.***

The PATON Photo Browser.



- Click on “ADD FILES” to browse your computer and select discrepancy photo(s).
- Click on the green arrow to add the photos to your report.
- A copy of the photo(s) will be sent to the CG ANT as part of your report.
- You will able to view the photos on the AV confirmation report – “Thanks for your Submission.”

Note the discrepancies showing on this photo. The CG ANT may opt to send a copy of your photo to the owner as evidence of the discrepancy.

SECTION IV – AV AUXDATA Activity Reporting

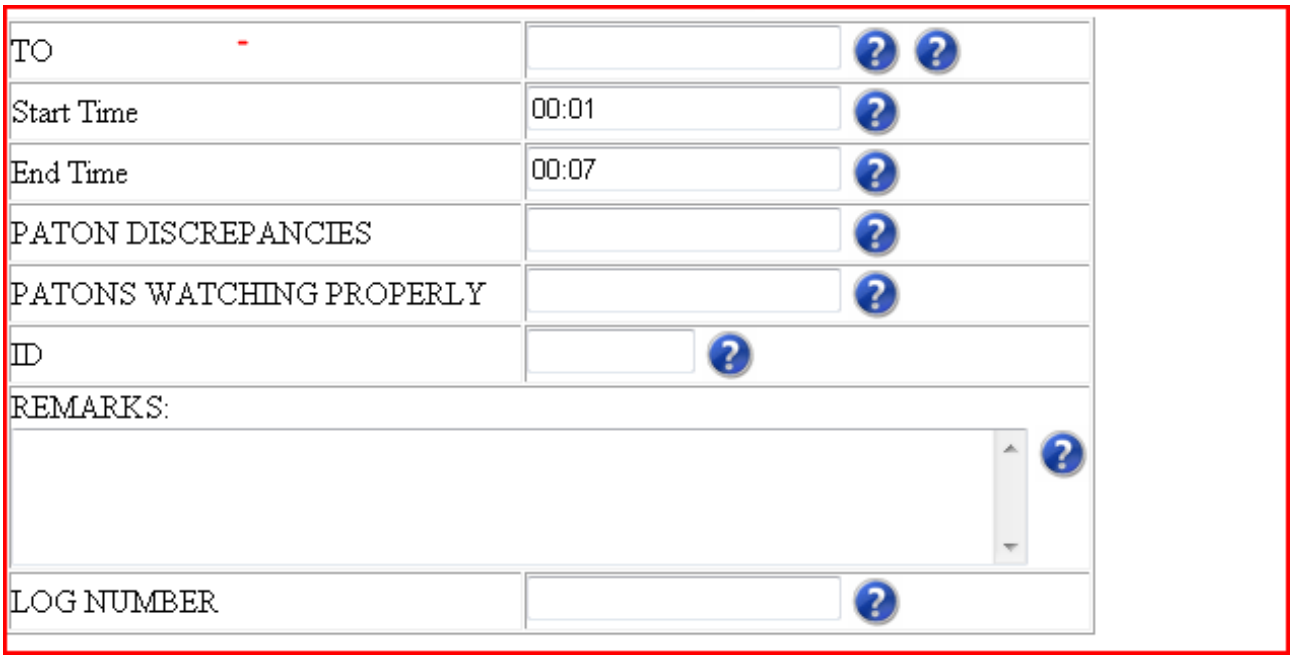
The following three fields are part of the AV 7030 report section. ‘Submitted by’ and ‘E-mail address’ is retrieved from your Registration Record. Enter you Division and Flotilla number in DD-FF format.

AV Section Data Group

SECTION IV - AV SECTION	
Submitted by *	FRANK LARKIN
Division - Flotilla *	10-17
Email Address *	FRANKJLARKIN@VERIZON.NET
PREPARE A 7030 AUXDATA ACTIVITY REPORT	☐

To make a 7030 AUXDATA Activity Report as part of your 7054 Verification Report, check off the ***YES*** button on the line, “Prepare a 7030 AUXDATA Activity Report.”

The following fields will appear.



Follow the instructions (***Question Marks***) to complete the report.

When a group of AVs perform a number of PATON verifications as a team, each member of the team may only report a portion of the total PATONs verified. The total number of PATONs verified by the team must always equal the total number of PATONs reported to AUXDATA. The name of the AV reported as LEAD is the only member that receives AUXDATA credit.

Important: Our Navigation Systems Programs get their recognition and support from your activity reports to AUXDATA. Help us stay funded by submitting these reports after each PATON Patrol.

REPORTING YOUR ACTIVITY TO THE COAST GUARD AND AUXDATA

The "***7054 AV Verification Report***" transmits your PATON observations to your affiliated CG Unit when you click the '**SUBMIT PATON REPORT'** button.

Copies are sent to Sector, CG ANT, DPW-1, DSO-NS, local ADSO-NS, and any AV-ANT working for the CG ANT.

When selected, it will also submit a "***7030 – Activity Report – Mission – Individual***" via the Internet to your SO-IS in order to report your PATON activity to AUXDATA.

You will receive a confirming e-mail copy of the 7030 report.

Handling Verification Reports submitted in error

Enter the statement "PLEASE IGNORE PREVIOUS REPORT" in the AV Observation section and resubmit a complete and corrected 7054 AV Verification Report immediately.

The CG ANT / Sector / AV PATON Report.

A specification error was reported. The buoy material was 'plastic' instead of 'foam.' A depth error was also reported as a discrepancy. The standard Accuracy Statement was also reported in the 'Accuracy Statement' section.

Corrections to Permitted Specifications are performed by DPW1.

Review of the AV Comments is performed by the CG ANT AV Staff. When determined necessary, first notice e-mails can be transmitted to the PATON Owners. This notification also becomes part of the PATONs digital record.

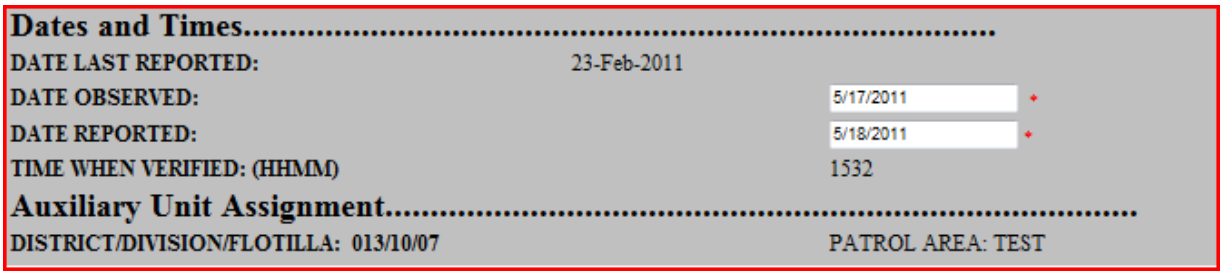
USCG AUXILIARY AV PATON REPORT 7054

SECTION I - PATON SPECIFICATION and OBSERVER'S INFORMATION

TEST CHANNEL BUOY 7

PATON SYSTEM CONTROL NUMBER:	30320	
GENERAL LOCALITY:	13270 - DORCHESTER BAY	
.....Permitted.....		
OPFAC NUMBER	**01-41949** -	
LLNR:	0.00	
AID NUMBER:	0.0	
CLASS:	3	
	PERMITTED	**OBSERVED**
PATON PURPOSE:	MARKS A CHANNEL	
PATON CATEGORY:	Unlighted Buoy	
AID COLOR	GREEN	
PATON TYPE:	Floating Un-lighted	
LATITUDE	42° 22' 12" N	° ' " N
LONGITUDE	71° 25' 12" W	° ' " W
FIX VERIFIED BY:		WAAS
DEPTH AT DATUM:	16.0 FT.	21 ft.
HEIGHT OF TIDE:		4.6 ft.
Floating PATON.....		
BUOY MATERIAL	PLASTIC	
ESTABLISHMENT.....		
ACTION REQUESTED	Seasonal	
AID DURATION:	Set: 05/01 Pull: 11/15	

Note: In the example above, the AV has entered only the permitted data that was observed as changed. The depth was the only observed change. AV entered the method used to take the fix and the HOT-Height of Tide for the time when the depth was observed. These entries enhance the credibility of the data in the AV's report.



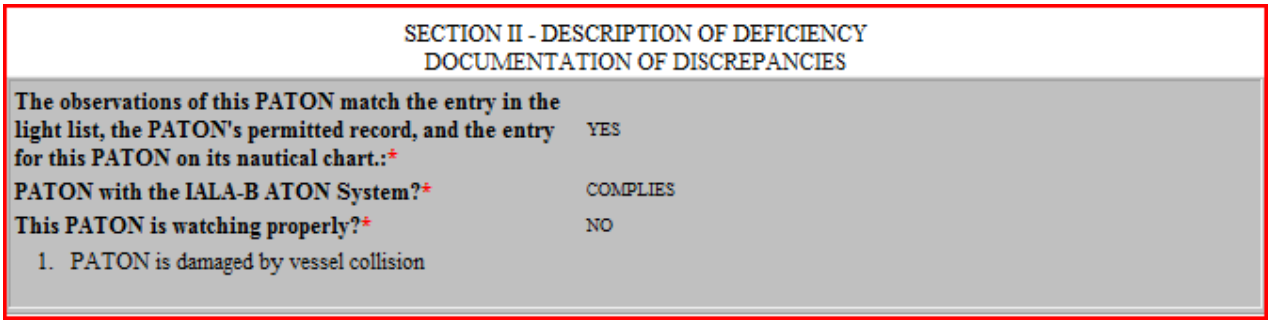
Dates and Times.....

DATE LAST REPORTED:	23-Feb-2011	
DATE OBSERVED:		5/17/2011 *
DATE REPORTED:		5/18/2011 *
TIME WHEN VERIFIED: (HHMM)		1532

Auxiliary Unit Assignment.....

DISTRICT/DIVISION/FLOTILLA: 013/10/07	PATROL AREA: TEST

In the example above, the AV changed the Date Observed to reflect when the verification actually occurred. The aid was pre-assigned to a specific Flotilla and a Patrol Area.

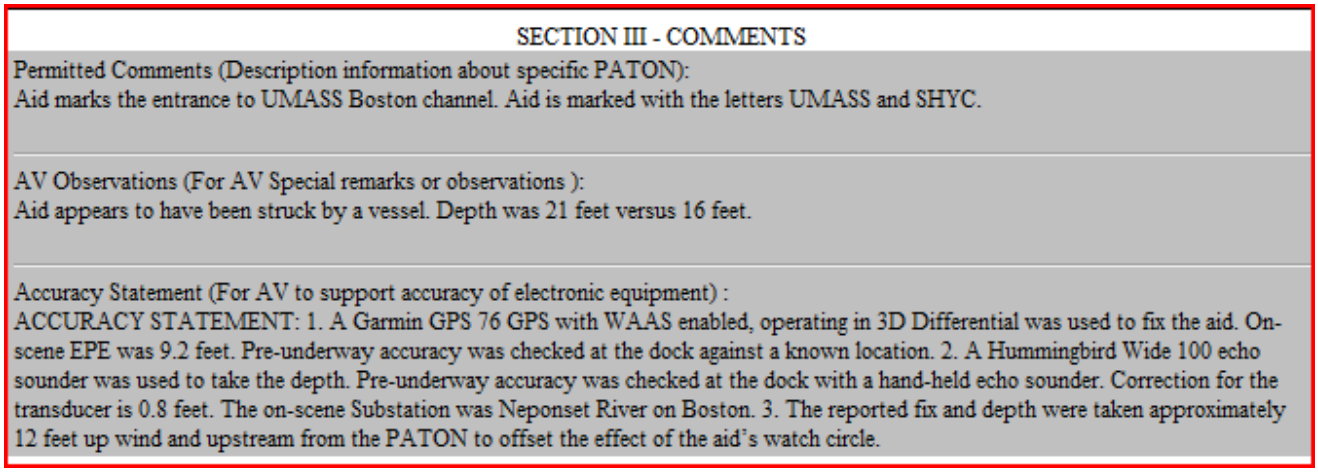


SECTION II - DESCRIPTION OF DEFICIENCY
DOCUMENTATION OF DISCREPANCIES

The observations of this PATON match the entry in the light list, the PATON's permitted record, and the entry for this PATON on its nautical chart.:*	YES
PATON with the IALA-B ATON System?*	COMPLIES
This PATON is watching properly?*	NO

1. PATON is damaged by vessel collision

In the example above, these three fields are required by the AV and are explained above.
NOTE: Any discrepancy that was checked by the AV appears in this section of this report.



SECTION III - COMMENTS

Permitted Comments (Description information about specific PATON):
Aid marks the entrance to UMASS Boston channel. Aid is marked with the letters UMASS and SHYC.

AV Observations (For AV Special remarks or observations):
Aid appears to have been struck by a vessel. Depth was 21 feet versus 16 feet.

Accuracy Statement (For AV to support accuracy of electronic equipment) :
ACCURACY STATEMENT: 1. A Garmin GPS 76 GPS with WAAS enabled, operating in 3D Differential was used to fix the aid. On-scene EPE was 9.2 feet. Pre-underway accuracy was checked at the dock against a known location. 2. A Hummingbird Wide 100 echo sounder was used to take the depth. Pre-underway accuracy was checked at the dock with a hand-held echo sounder. Correction for the transducer is 0.8 feet. The on-scene Substation was Neponset River on Boston. 3. The reported fix and depth were taken approximately 12 feet up wind and upstream from the PATON to offset the effect of the aid's watch circle.

Three distinct fields that make up the Comments Section.

Permitted Comments are generated from the Owner's Permit Application and are for reference only on this report.

AV Observations are entered by the AV on the 7054 PATON Verification Report. This is the area where the report reviewer in the CG ANT and HQ focuses their attention for information about the verification report. This section is segregated from the others so that it will be easier to read the information provided by the AV regarding problems associated with the aid.

Accuracy Statement is submitted by the AV as evidence of the accuracy of the GPS and Echo Sounder used to gather electronic-generated data. This data is important for the credibility of the data submitted. Data submitted without this statement is considered suspect.

Discrepancy Photos are encouraged since they provide direct evidence of the discrepancy and can be e-mailed directly to the owner. Photos leave little doubt as to the nature and extent of the discrepancy. A sample photo is shown on the following page.

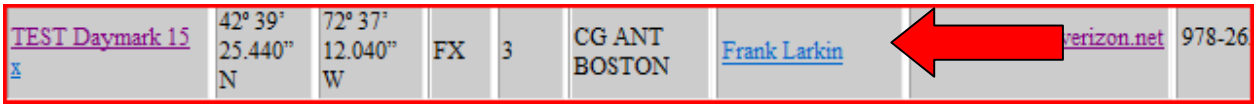
The example above shows the entry for the photo(s) as attached in the e-mail heading

The example above shows the actual photo image as it appears at the bottom of the report.

First Notice Communication to the PATON Owner

Advising the aid owner of the existence of a problem is one the keys for the overall success of the PATON Program. The idea is to notify the owner in a timely manner, on-line, with as much information as possible about the discrepancy. The method also provides a digital record in the PATON's history record.

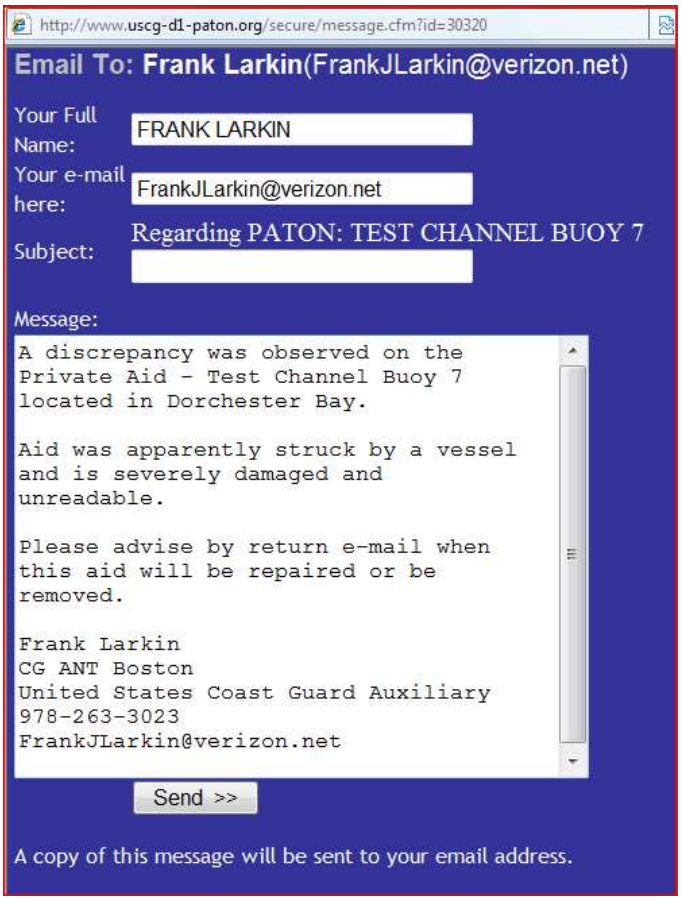
Click on the Owner's name on the PATON list to initiate a standard First Notice Communication e-mail.



The standard formatted e-mail will appear.

It is a simple matter to prepare a standard message on your desktop and to copy and past it into this e-mail.

A sample message is shown on page 37.



Click on the SEND>> button to transmit your message to the owner.

Note: This e-mail becomes part of the permanent digital history for the aid. An example is presented below.

Here is an example of the e-mail as it is received by the owner.

30320: TEST CHANNEL BUOY 7

Wed, May 18, 2011 9:23:21 PM

From: "FrankJLarkin@verizon.net" <FrankJLarkin@verizon.net> View Contact
To: FrankJLarkin@verizon.net

A discrepancy was observed on the Private Aid - Test Channel Buoy 7 located in Dorchester Bay.

Aid was apparently struck by a vessel and is severely damaged and unreadable.

Please advise by return e-mail when this aid will be repaired or be removed.

Frank Larkin
CG ANT Boston
United States Coast Guard Auxiliary
978-263-3023
FrankJLarkin@verizon.net

Below is a sample of the PATON's history record that recorded the e-mail to the owner as a permanent record.

This is an example of the e-mail recorded in the PATON History.

Notes:

*** BOSTON2 *** May 18, 2011 at 9:23 PM

30320: TEST CHANNEL BUOY 7
A discrepancy was observed on the Private Aid - Test Channel Buoy 7 located in Dorchester Bay.

Aid was apparently struck by a vessel and is severely damaged and unreadable.

Please advise by return e-mail when this aid will be repaired or be removed.

Frank Larkin
CG ANT Boston
United States Coast Guard Auxiliary
978-263-3023
FrankJLarkin@verizon.net

Once a relationship is established with the Aid owner, they usually respond and correct discrepancies upon receipt of this First Notice Communication. If not, the CG ANT has a digital record of the notification to the owner. Registered letters can be forwarded when the aid owner fails to comply with this notification.

AVs and/or PACs can be trained to produce the First Notification E-Mail saving considerable man-hours for the CG ANTs and Sectors.

Transmission of the First Communication e-mail to the owner completes the PATON System on-line cycle that started with the PATON Application, through the approval process, to the AV verification observations and report and finally to the notification of discrepancies to the owner.

How to effectively use the NS CU07 Vertical and Horizontal Error Calculator to determine distance off station from permitted to observed location of an aid.

Setting up the PTE – Position Tolerance Estimate feature.

Risk Factor – PATONs are normally considered a low risk factor. Field has been pre-entered as "**Low**."

Area Type – Four alternatives are available. Each alternative determines a different PTE value in feet. A pop-up instruction on the document explains this field. Select and enter an Area Type that is appropriate for the fix that you are evaluating.

- 1 – Restrictive area – channels and canals.
- 2 – Less Restrictive area – harbors and coves.
- 3 – Little Restrictions – coastal and large harbors.
- 4 – Lateral Aid.

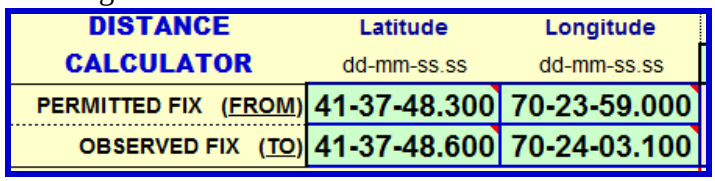
PTE – Position Tolerance Estimate. The system uses the following table to assign a PTE value to each Area Type selection.

Area Type 1 – 75 feet.
Area Type 2 – 100 feet.
Area Type 3 – 150 feet.
Area Type 4 - 50 feet.

Position Tolerance Estimate Message. Based on the value computed for the feet off station, the system will indicate whether an aid is on or off station.

Latitude and Longitude:

Enter the full latitude and longitude in **DD-MM-SS.SSS** format as is demonstrated below.



Also enter the EPE reading for the fix and any distance used off the object. This is not the distance maneuvered upstream or up wind to counteract current and/or wind. You may also enter a distance that the reading was taken from the PATON.

An EPE of 16.5 feet was used and a distance off of 10 feet. Note that the original calculation was 55.5 feet off station which is greater than the 50-foot off station criteria for a lateral aid.

VERTICAL AND HORIZONTAL ERROR CALCULATOR

RISK FACTOR	AREA TYPE	PTE (Feet)	POSITION TOLERANCE ESTIMATE	Activate the PTE feature by selecting the proper "Area Type" at the left.	Revision N - 05/1
LOW	4	50	AID IS ON STATION		

Dorchester Bay Buoy 5					
DISTANCE CALCULATOR	Latitude dd-mm-ss.ss	Longitude dd-mm-ss.ss	EPE (Ft)	DISTANCE OFF AID (Ft)	This is not the correction for wind or current.
			16.5	10.0	
PERMITTED FIX (FROM)	41-37-48.100	70-23-48.600			
OBSERVED FIX (TO)	41-37-48.600	70-23-48.900			

Estimated Total Nautical Miles from the PERMITTED FIX:	0.009 nm	Total other corrections:	26.5
Estimated Total Feet from the PERMITTED FIX:	55.5 Feet		
ESTIMATED TOTAL FEET FROM THE PERMITTED FIX, CORRECTED FOR EPE AND DISTANCE OFF THE AID:	29.0 Feet OFF STATION	AT 336	Degrees True

Using this data, the system calculates the distance that the aid was observed from its permitted position. The system determined that this aid was 0.009 nm or 55.5 feet off station. Compensated for EPE of 16.5 and 10 feet from the aid, the system determined this aid was an estimated 29.0 feet from its permitted position at 336 degrees True.

The PTE – Position Tolerance Message indicates the aid is on station because it is less than the PTE numerical tolerance of 50 feet.