

U.S. Coast Guard Auxiliary District 7

NAVIGATION SYSTEMS PATROLS



D7NS 30006.4

FEBRUARY 2026

A photograph taken from the perspective of someone on a boat, looking towards the water. The boat's white mast is prominent in the foreground, featuring a red light on the left, a yellow light on the right, and two American flags. The boat is moving across a body of water, leaving a white wake. In the background, there is a shoreline with buildings and a cloudy sky.

NS PATROLS

PLANNING

PREPARATION

EQUIPMENT

PROCEDURE

NS Missions under Orders



Performed aboard an operational facility (OPFAC)

**Conducted under ORDERS.
(Reimbursable or non-reimbursable.)**



NS Missions Without Orders



1. Performed from shore. May use private vehicle.
2. NS Missions in private vessels are **NOT** authorized.
3. Notify FC/VFC prior to departure.

MISSION PLANNING

Once the channels are designated - pick dates with suitable tides – especially for shallow channels.



StationId: 8670870
 Source: NOAA/NOS/CO-OPS
 Station Type: Primary
 Time Zone: LST_LDT
 Datum: MLLW

NOAA Tide Predictions

Fort Pulaski, GA, 2024
 (32 02.1N / 80 54.2W)




Times and Heights of High and Low Waters

April				May				June															
Time		Height		Time		Height		Time		Height		Time		Height									
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm								
1	01:17 AM	6.7	204	16	03:02 AM	6.5	198	1	02:10 AM	7.0	213	16	03:17 AM	6.4	195	1	03:57 AM	7.0	213	16	04:09 AM	6.0	183
	08:04 AM	1.1	34		09:39 AM	1.4	43		08:49 AM	0.8	24		09:46 AM	1.3	40		10:25 AM	-0.2	-6		10:24 AM	0.9	27
M	01:51 PM	5.8	177	Tu	03:43 PM	5.8	177	W	02:43 PM	6.3	192	Th	04:01 PM	6.1	186	Sa	04:31 PM	7.5	229	Su	04:53 PM	6.6	201
	08:03 PM	0.8	24		09:51 PM	1.4	43	o	09:00 PM	0.8	24		10:11 PM	1.5	46		11:03 PM	0.3	9		11:16 PM	1.3	40
2	02:23 AM	6.7	204	17	03:58 AM	6.4	195	2	03:15 AM	7.1	216	17	04:07 AM	6.3	192	2	04:57 AM	6.9	210	17	04:59 AM	5.9	180
	09:10 AM	1.1	34		10:37 AM	1.4	43		09:52 AM	0.5	15		10:35 AM	1.2	37		11:21 AM	-0.5	-15		11:12 AM	0.7	21
Tu	02:55 PM	5.9	180	W	04:40 PM	6.0	183	Th	03:46 PM	6.7	204	F	04:52 PM	6.3	192	Su	05:30 PM	7.9	241	M	05:41 PM	6.8	207
o	09:14 PM	0.8	24		10:52 PM	1.3	40		10:11 PM	0.6	18		11:07 PM	1.3	40								
3	03:32 AM	6.8	207	18	04:53 AM	6.4	195	3	04:19 AM	7.2	219	18	04:58 AM	6.3	192	3	12:04 AM	0.1	3	18	12:07 AM	1.0	30
	10:17 AM	0.9	27		11:28 AM	1.2	37		10:52 AM	0.1	3		11:20 AM	1.0	30		05:56 AM	6.9	210		05:49 AM	5.9	180
W	04:02 PM	6.2	189	Th	05:34 PM	6.2	189	F	04:49 PM	7.2	219	Sa	05:41 PM	6.6	201	M	12:15 PM	-0.7	-21	Tu	11:59 AM	0.5	15
	10:28 PM	0.5	15		11:47 PM	1.1	34		11:19 PM	0.2	6		11:58 PM	1.1	34		06:26 PM	8.2	250		06:27 PM	7.1	216

MISSION PLANNING

Be aware of special risks in NS missions - crew fatigues more quickly when the vessel is moving slowly or stopped.

Plan duration accordingly. RTB before you push the team too far.

	Atmospheric conditions and temperature °F	RealFeel °F	Atmospheric pressure inHg	Wind speed mph	Humidity
Night	 +82°	+93°	30	↙ SW 3.1	89%
Morning	 +81°	+86°	30	↙ SW 4.7	93%
Day	 +90°	+102°	30	▲ S 9.6	62%

MISSION PLANNING

Encourage the Coxswain to bring a full complement of crew for the facility – so the NS activity does not detract from operations.

Preferably bring at least two Aid Verifiers.

Bring trainee verifiers whenever possible.

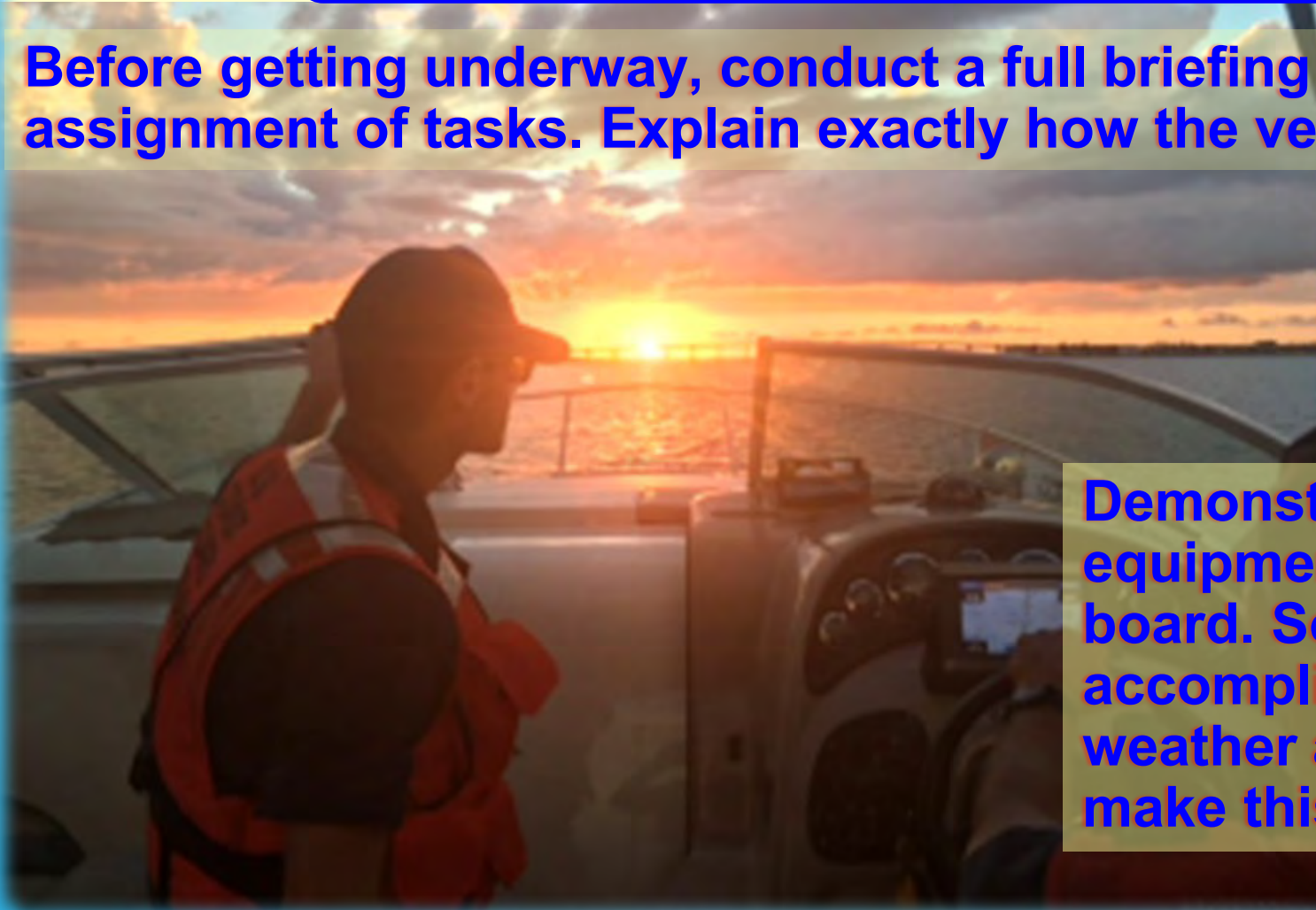


MISSION PREPARATION

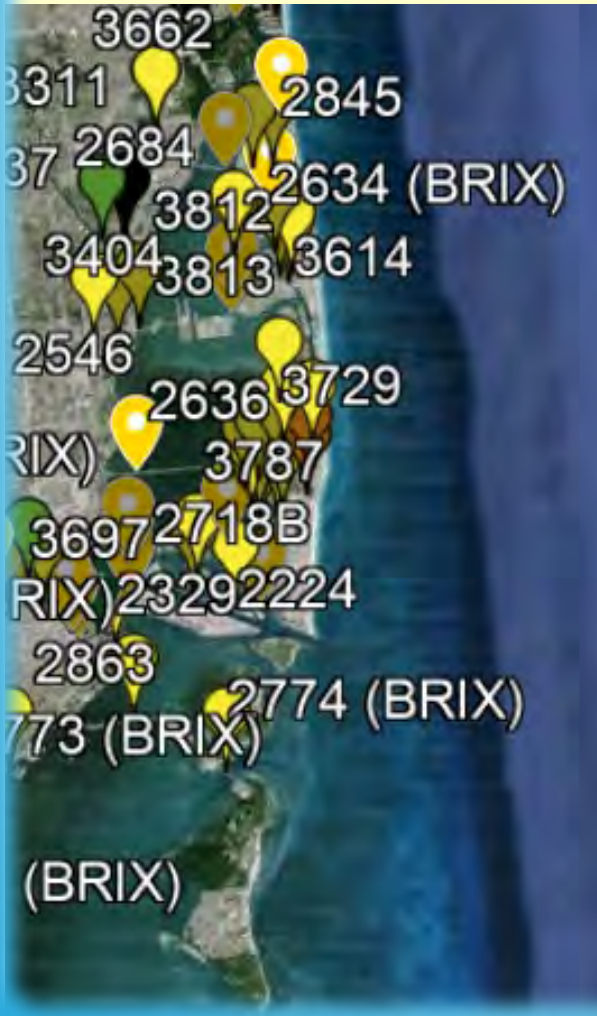
Before getting underway, conduct a full briefing of the mission plan and assignment of tasks. Explain exactly how the verifications will be done.

Check all equipment.

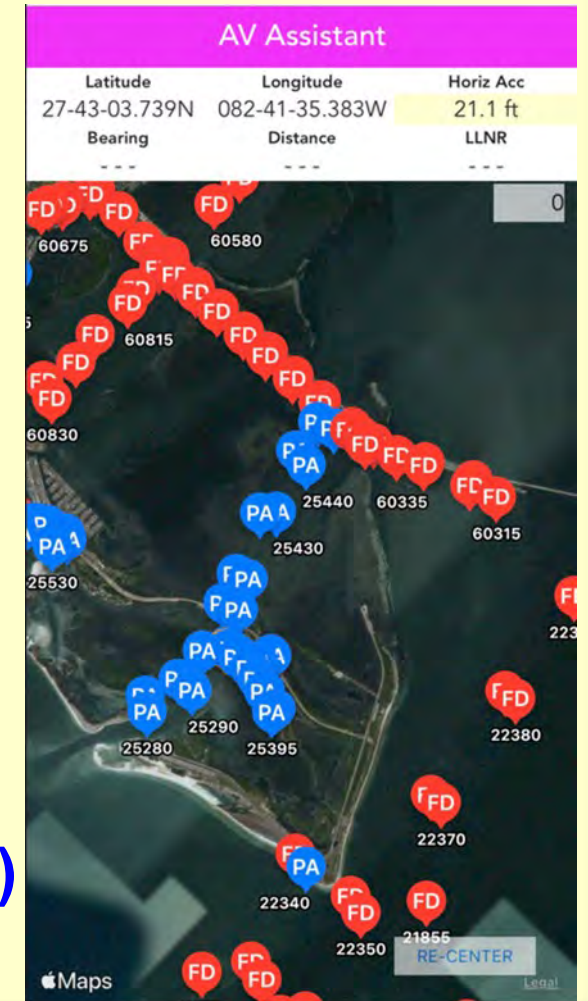
Demonstrate and practice using equipment with all Verifiers on board. Sometimes this can be accomplished en route, but weather and time do not always make this practical.



MISSION PREP - Bring

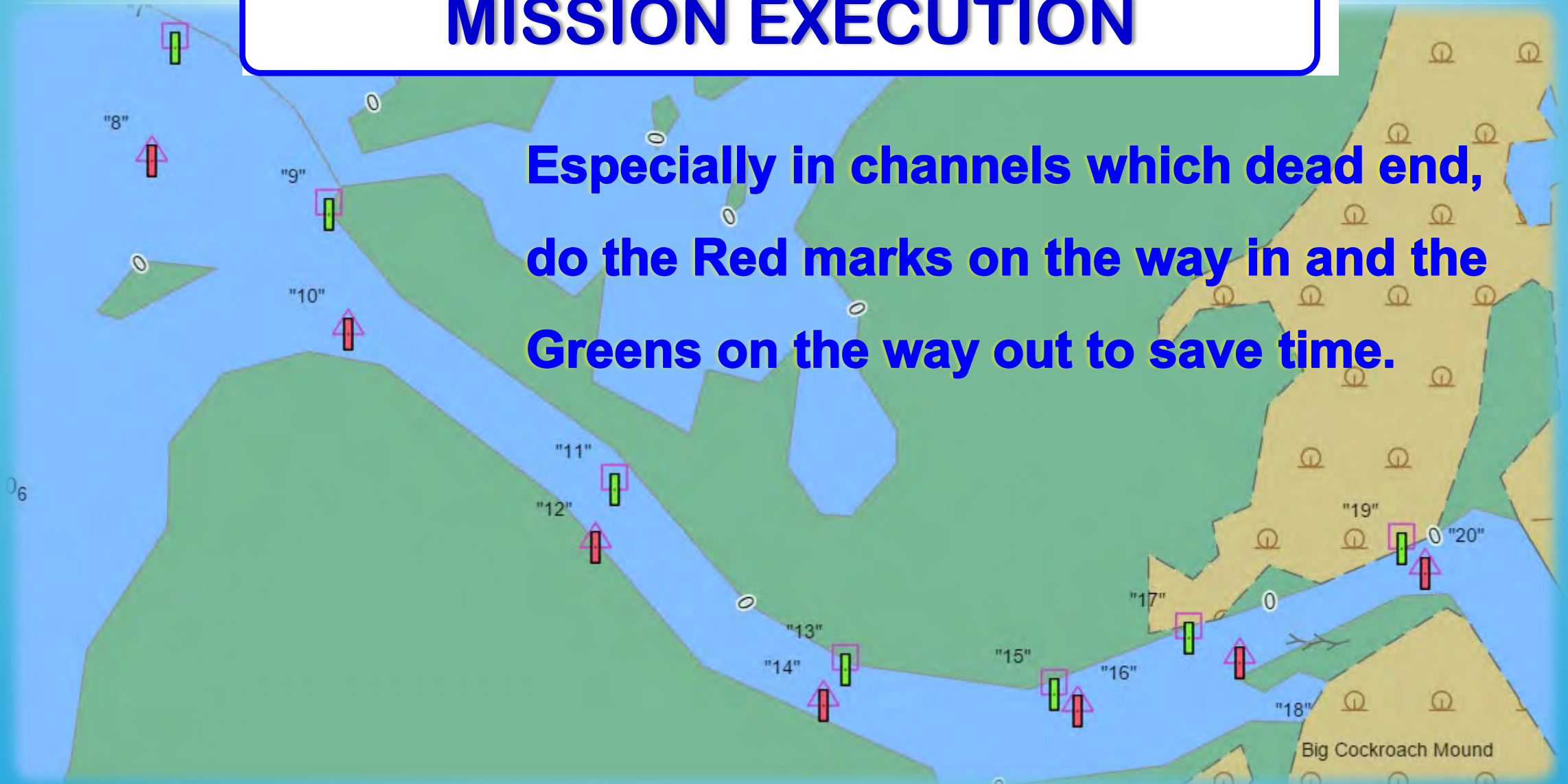


- **Current Light List and LNM for channels being verified (AV Assistant has both)**
- **ENC Chart –phone or tablet**
- **Bridge List – (Google Earth)**
- **Stopwatch or stopwatch app**
- **Backup power for devices**
- **Pole/lead line for depth**
- **Binoculars (or use Coxswain's)**

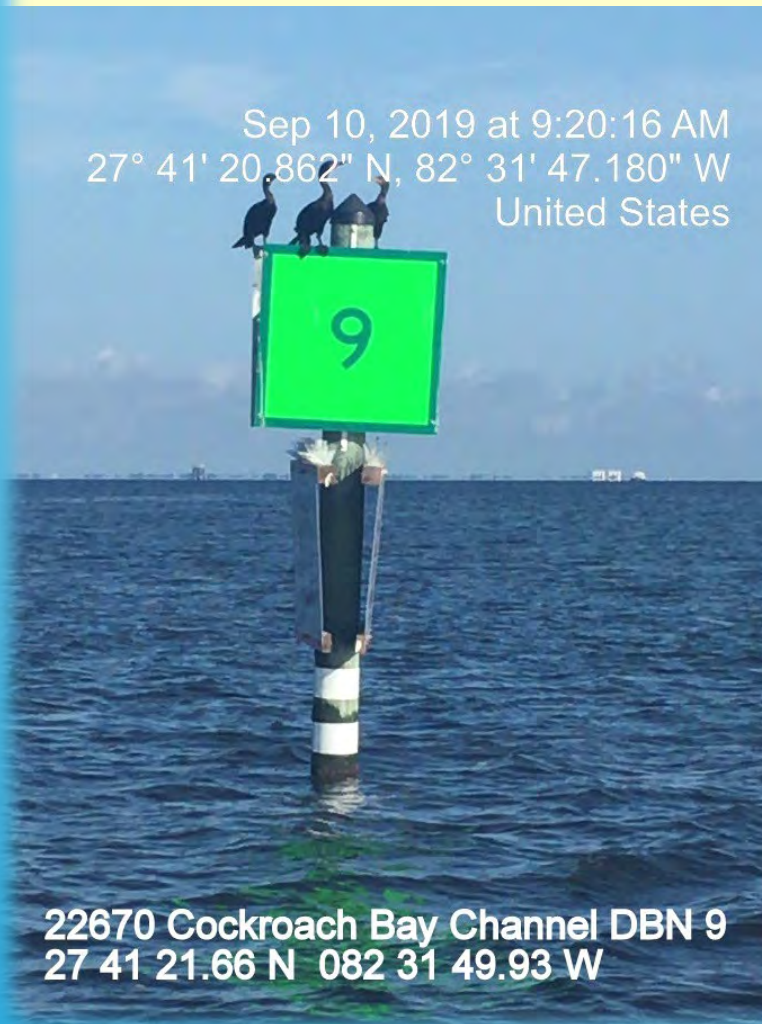


MISSION EXECUTION

Especially in channels which dead end, do the Red marks on the way in and the Greens on the way out to save time.



MISSION PHOTOS



- **Show the aid from the waterline to the top**
- **Dayboards/markings must be close, clear, and bright enough to see easily**
- **Take photos from both sides if differences are noteworthy**
- **Discrepancies should be evident in photo**
- **Need time, date, aid name, and position on photo (created automatically in AV Assistant)**

MISSION PHOTOS



MISSION PHOTOS



MISSION PHOTOS



MISSION PHOTOS



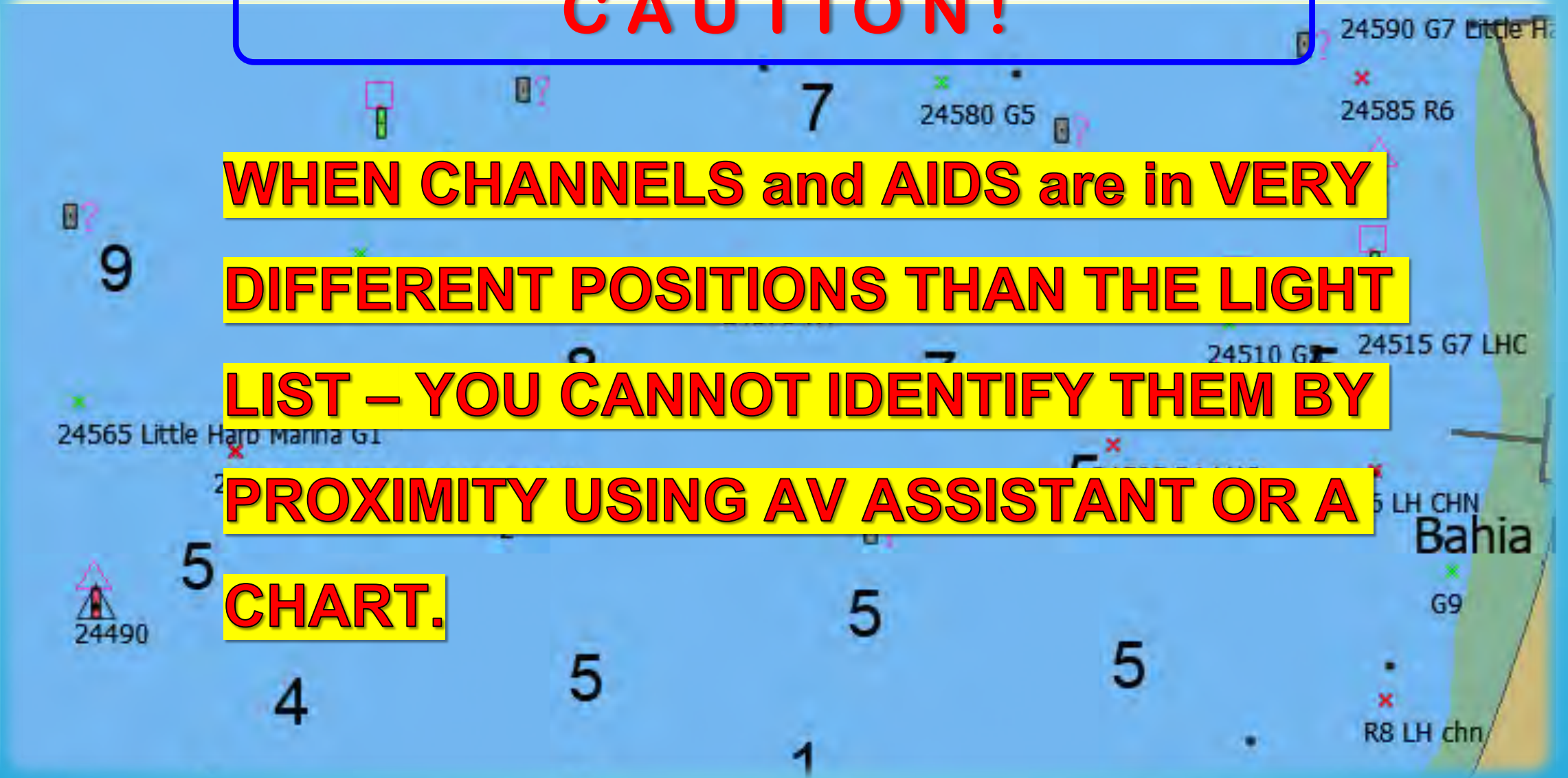
MISSION PHOTOS

24606.2 Simmons Park Channel
DBN 3
27 44 21.44 N 082 28 48.35 W



CAUTION!

WHEN CHANNELS and AIDS are in VERY DIFFERENT POSITIONS THAN THE LIGHT LIST – YOU CANNOT IDENTIFY THEM BY PROXIMITY USING AV ASSISTANT OR A CHART.



DISCREPANCIES

- Take the time to observe.
- Be specific:
- Record what you see: enter in AV Assistant or make detailed notes.
- Checking a box on a form is not enough.
- Have clear photo confirmation.
- **DO NOT LEAVE** until you are sure you have the right data and have finished inspecting and recording

**IMPROPER CHARACTERISTICS:
NUMBER WRONG COLOR
BACKGROUND WRONG COLOR
TAPE & NUMBER NOT REFLECTIVE**



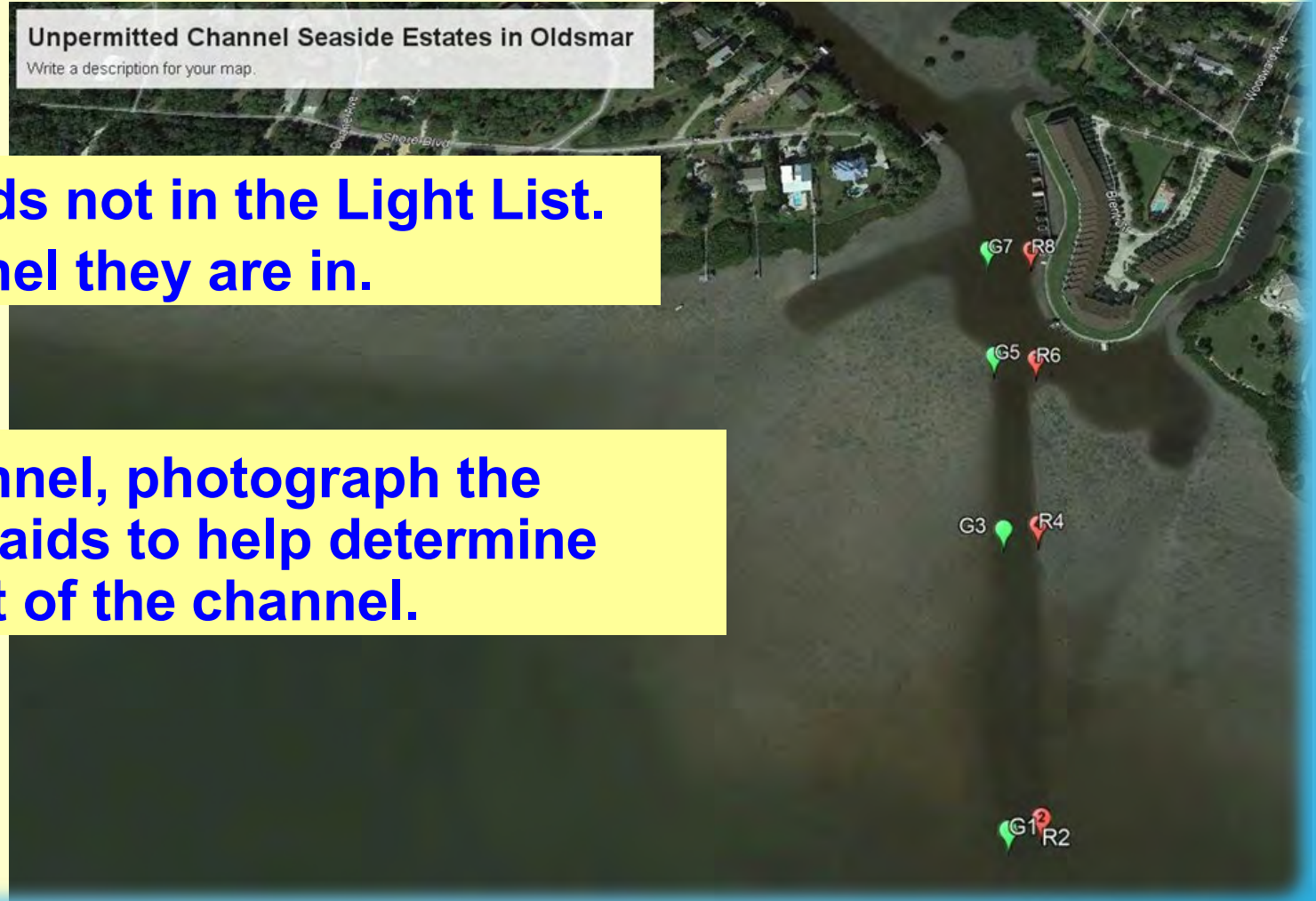
UNPERMITTED AIDS

Unpermitted Channel Seaside Estates in Oldsmar

Write a description for your map.

**Make careful notes of aids not in the Light List.
Always record the channel they are in.**

**For an unpermitted channel, photograph the
end point as well as the aids to help determine
ownership. Make a chart of the channel.**



UNPERMITTED AIDS

Plot the channel on a chart or Google Earth



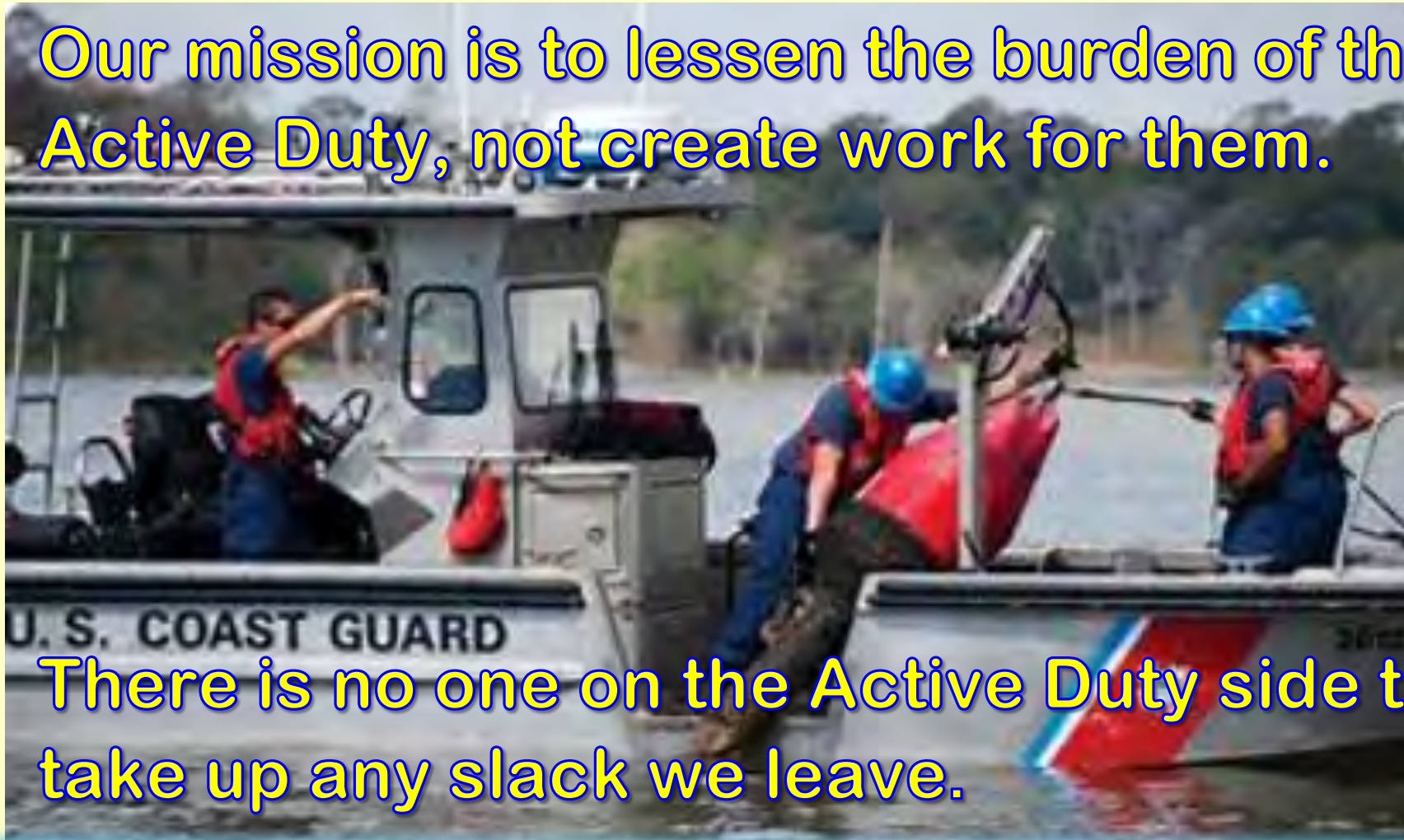
UNPERMITTED AIDS

Summarize the details of your observations

		RECORD OF VERIFICATION			MEASURED POSITION					
(1)	-2	Date	Verifier	STATUS	N Latitude			W Longitude		
No.	Name and	Verified	EMPLID		Deg	Min	Sec	Deg	Min	Sec
Unpermitted Channel										
	DBN 1	09/05/19	1243739	UN	27	57	45.82	82	33	30.42
	DBN 2	09/05/19	1243739	UN	27	57	48.34	82	33	28.58
	DBN 3	09/05/19	1243739	UN	27	57	49.30	82	33	38.49
	DBN 4	09/05/19	1243739	UN	27	57	51.03	82	33	36.84
	DBN 5	09/05/19	1243739	UN	27	57	51.04	82	33	45.08
	DBN 6	09/05/19	1243739	UN	27	57	55.09	82	33	44.75
	DBN 7	09/05/19	1243739	UN	27	57	57.47	82	33	49.37
	DBN 8	09/05/19	1243739	UN	27	57	57.00	82	33	47.00

Our Basic Mission

Our mission is to lessen the burden of the Active Duty, not create work for them.



There is no one on the Active Duty side to take up any slack we leave.

UNPERMITTED AIDS

Identify the apparent/most likely owner – verify if possible.

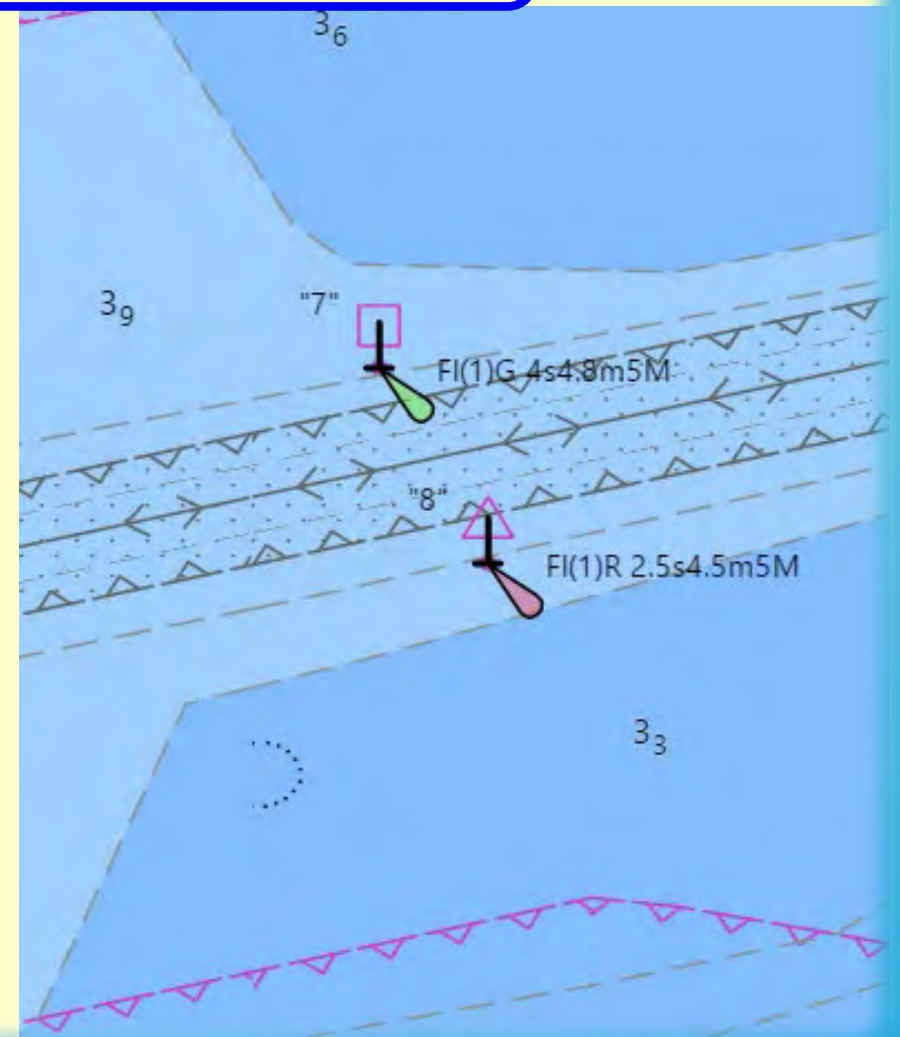
There are 8 unlisted aids leading to the Seazen Rocky Point Apartments at 7616 W. Courtney Campbell Causeway, Tampa, FL 33607. 813-734-7242.

This complex was opened in 2018. The person who answered the phone was unaware of anything related to the unpermitted aids but advised that the person to contact was (----) whose cell phone is (-----).

DEPTH MEASUREMENT

- Aids must mark the depth of water appropriate to the waterway
- Measure depth as close to the aid as possible
- Use appropriate methods
- Correct depth for tide and datum

COMDINST 16500.1D 18 December 2012



DEPTH TOOLS

Handheld depth finder



Tapes & weights



Facility depth sounder

Floating depth/sonar device – built in GPS, WiFi links to mobile app



DEPTH TOOLS

Calibrate all devices with a lead line or pole
Different types of seabed change the results



COMBINE
WITH
PREVIOUS
SLIDE

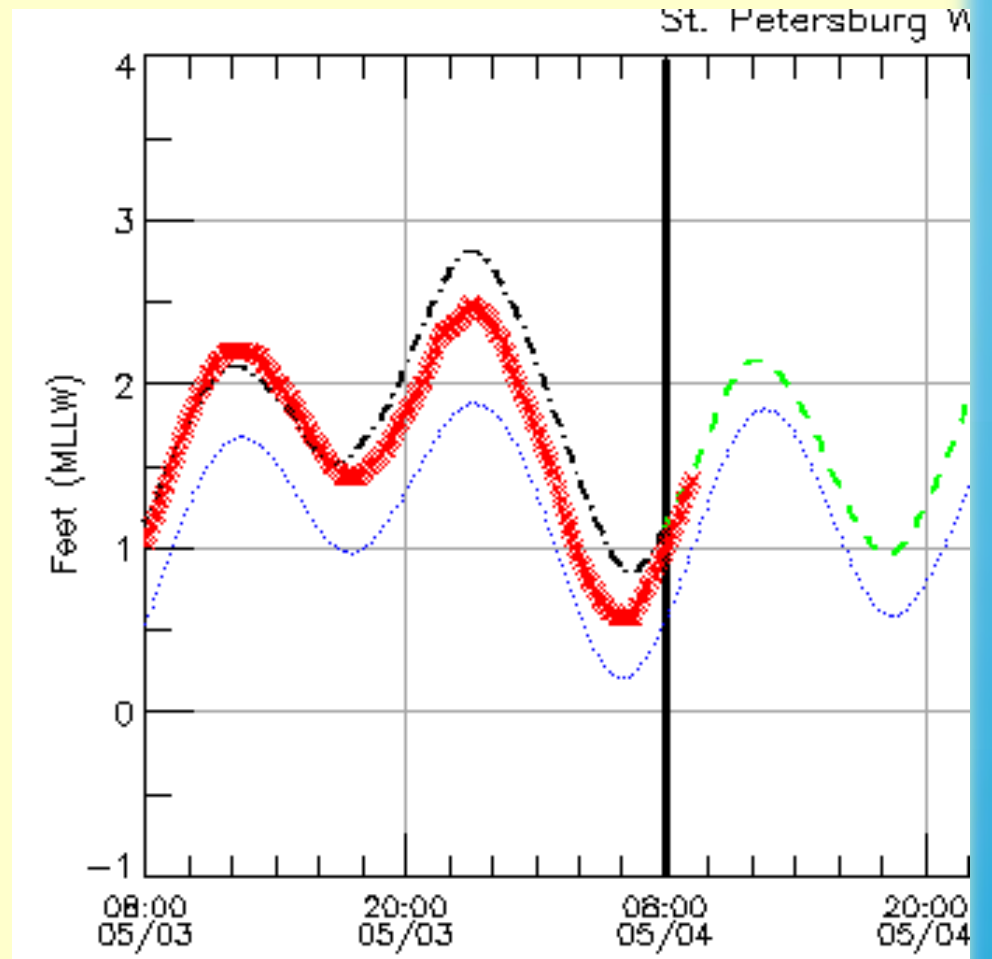


Allow for offset from transducer to waterline

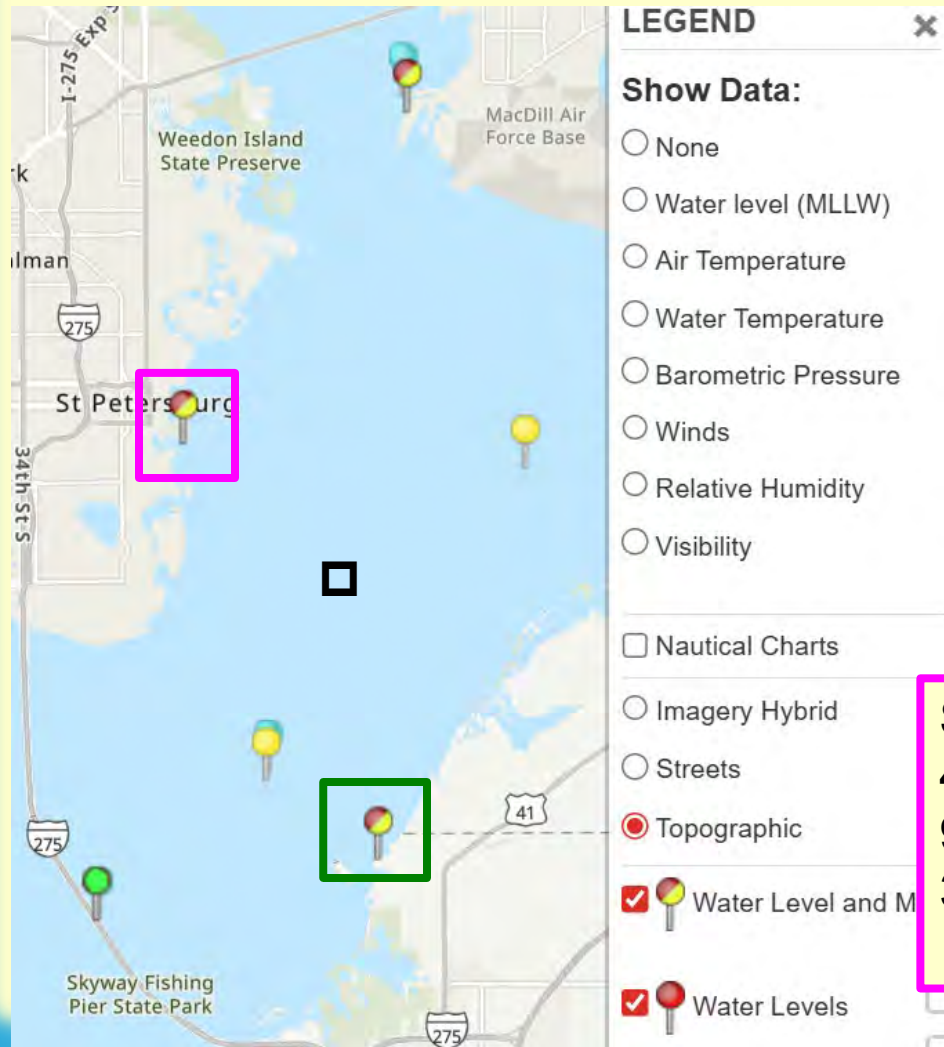
DEPTH - TIDES

- **Check vertical datum on chart – usually MLLW.**
- **Use NOAA tide chart for the nearest location, set for the same datum (available online). Use actual –not predicted – levels whenever possible.**
- **Correct depth readings for tide.**
(Don't expect the CG to do that for you.)

<https://tidesandcurrents.noaa.gov/map/index.html>



TIDES – Correct for Location



St Petersburg is 48 min later than Port Manatee.

Our location is midway between the two.





Our tide data will be about 24 min later than Port Manatee and 24 min earlier than St Petersburg

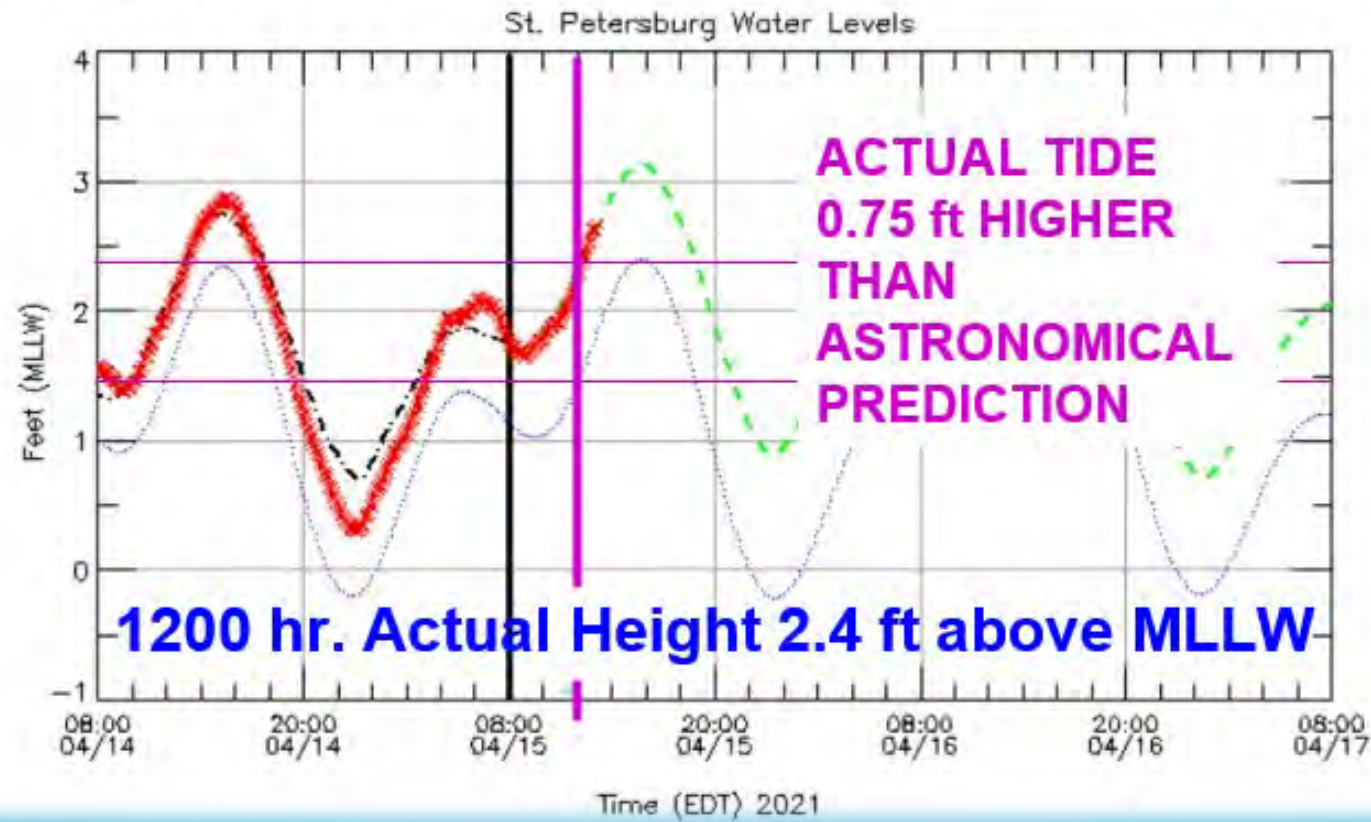
St Petersburg, FL 8726520
4:34 AM high 1.47 ft
9:48 AM low 0.69 ft
3:50 PM high 2.19 ft
11:15 PM low -0.43 ft

Port Manatee, FL 8726384
3:57 AM high 1.37 ft
8:59 AM low 0.59 ft
3:03 PM high 2.03 ft
10:26 PM low -0.45 ft

TIDES – EFFECT OF WIND

NOAA/National Ocean Service
Tampa Bay Operational
Forecast System (TBOFS)

Observation: 
Nowcast: 
Forecast Guidance: 
Tidal Prediction: 



DEPTH - CORRECTED

Time of Observation	Observed Depth	Transducer Depth Correction	Subtract Tide Station Actual Level	Add offset for our Location	Corrected Depth above MLLW
	ft	ft	ft	ft	ft
1200	12.5	+1.5	-2.8	+0.4	11.6

- Transducer is below the waterline, so we add back that offset.
- The actual tide was 2.8 ft above MLLW, so we subtract that.
- Our tide at our location is about 24 minutes earlier than at the tide station. That time difference means our water level is 0.4 ft less than at the tide station, so we subtract that (in effect using the tide station value 24 minutes earlier, which was 0.4 ft lower at 2.4 ft).

Remember the Mission



This is what the ANT teams are doing all day.

Nobody is sitting in the office waiting to adjust your depth readings for the tide.



WHAT ACTION IS NEEDED?

2019-09-09 12:13

24560 Village Marina DBN 8
27 43 29.06 N 082 28 37.46 W



Private aids, especially where there is constantly variable shoaling, are frequently moved.

What do we want the CG & owner to do?

Be specific about what is needed:

- Aid marks good water but not in AP— *owner needs to file corrected 2554.*
- Aid not marking good water – *owner needs to move aid and then file 2554.*
- Aid has other discrepancy – *owner needs to repair and then advise CG.*

NS PATROLS

Questions?

WE

Save Lives

US COAST GUARD AUXILIARY