



## **Safety Lines**

Volume 9

January 2009

*"Saving the Sea from People and People from the Sea"*

### **From the Department Chief**

Greg Kester, DC-M

After a six month sabbatical we are bringing back our Prevention Department newsletter "Safety Lines". During that period a lot of things have transpired, not the least was are National elections and new staff assignments. We have made several changes in our staff which includes the appointment of Kevin Cady as our Deputy Department Chief and Mike Nolan as our DVC-MS. I would also like to personally thank Denise Castrogiovanni for her service as DC-Md for 2007-2008, "Bravo Zulu".

We have also made some significant strides in our Department's programs. One of the major advances is in the area of our qualifications. Because of ALCOAST 387/07 TRAINING AND PERFORMANCE SUPPORT SITREP TWO and ALCOAST 505/08 AUXILIARY PURSUIT OF COAST GUARD MARINE SAFETY, SECURITY AND ENVIRONMENTAL PROTECTION QUALIFICATIONS we have completely revised the available PQSs for support of the Coast Guard Marine Safety programs. Our opportunities to support our Coast Guard Sectors will potentially expand from 16 to 27 qualifications. As this article goes to print CG-7411 is in the review and approval stages of those PQSs. More information will become available as this process advances.

Navigation Systems (Aids to Navigation) has seen a marked decrease in hours and support of the program. I attribute this to the lack of updated materials and the perceived lack of support for the program nationally. To alleviate some of these concerns we have been working on updating our training materials and report forms. We have had some challenges trying to get our materials approved, but with a little more perseverance, and support from our Headquarters partners, I hope to see this happen soon. One major changes, which is being driven by Chief DIRAUX, is to make this a National vs. a Sector by Sector program. We are anticipating the development of nationwide qualifications that will allow uniformity of our program throughout the entire nation.

We have submitted a new revised "Introduction to Marine Safety and Environmental Protection" course for review and approval. This course will replace our old version with an up-to-date course that will become our Prevention "A" school and provide our members with basic knowledge and skills in Maritime Safety/Security and Environmental Protection. More information will be transmitted in future TRIDENT Bulletins.

We are in the process of revising and updating the Prevention Department website to make it more user-friendly for those new to Prevention programs. A new format, including a place for members to post their Best Practices and experiences and an area for Frequently Asked Questions will also be included. This should be on-line shortly after N-TRAIN.

Your M Department staff are working hard to develop programs which meet the needs of the Coast Guard and to support Auxiliary membership in their goals to support those programs. Please forward your suggestions, ideas or comments to us via your staff chain. We look forward to hearing from you

## UPDATES ----

- 01 January the Aids to Navigation (AN) Staff Officers changed to Navigation Systems (NS) at all levels. This name change keeps the program name consistent with the Coast Guard and better reflects the many activities available to members.
- ICS 210 or ICS 300 will be required for both the MS Training Ribbon and Trident Device after 31 March 2009. This is in compliance with ALAUX 08/18 which required ICS 210 or ICS 300 for those 'qualifying in the Trident program.'" The on-line form will be updated to reflect this change.
- The website is being updated and there is a contest to design a new logo for the Department. See the website for details.





## **Sea Partners and America's Waterway Watch**

**Mary Larsen, DVC-MW**

A new decal for America's Waterway Watch is now available and in stock at the Auxiliary National Supply Center. In addition to ordering for your local flotilla, please take advantage of this opportunity and contact your nearby U.S. Power Squadrons group. As partners in this effort, we need to make sure they are supplied with materials as well.

America's Waterway Watch got some great publicity at the 2009 Space and Missile Defense Conference and Exhibition held in Huntsville, Alabama. The AWW booth for the event was manned by Lois and Duncan Wilkerson and Lynn and Richard Miles and Duncan estimated that about 460 contacts were made. He reported that each of the contacts was given one or more AWW pamphlets and wallet cards. Those with boats, or friends with boats, were given a decal and about 150 of these were distributed. Military contacts included members of the Army, Navy, Air Force and Marines.

Duncan reported his technique for interacting with visitors as follows. "Ninety five percent of the contacts had to be enticed by greeting them ... and then asking if they 'wanted to make America safer?' "

A large "thank you" go to these members for spreading the AWW message and for sharing it for others. If you have an event to report, please send information for the next issue of Safety Lines to me. It would be great to publicize your efforts.

In the Sea Partners area, the Aquatic Nuisance Species Traveling Trunks are now at ANSC and ready for use. There is one trunk designated for each district and they will be sent out for use at a specific event for a one or two week period. A copy of the contents of each trunk and the circulation policy will give you an idea how valuable these tools will be – and details to getting one for your event.

Please take advantage of our newest additions.



# Coast Guard Passes its Training Methods to the Auxiliary

By John Medici, BC-MSS

The Coast Guard uses a two pronged approach, involving training and qualification, to ensure its personnel will be able to properly perform their duties. Training involves a combination of classroom time and independent study courses to learn broad skills and required background information. Qualification focuses on specific duties and involves completing performance qualification standard (PQS) and on-the-job (OJT) training. This full-spectrum approach is typified in the Marine Safety Program's training and qualification system, an approach being adopted by the Coast Guard Auxiliary for its members desiring to serve at Coast Guard Marine Safety units.

Some Auxiliaries may not be familiar with the PQS program. This Program provides a system that defines the minimum level of competency required to perform specific duties. PQS is a compilation of the minimum knowledge and skills that an individual must demonstrate in order to qualify to stand watches or perform other specific routine duties necessary for the safety, security, or proper operation of a Coast Guard function or mission. The objective of PQS is to standardize these qualifications and facilitate their achievement by defining specific tasks or skills that must be demonstrated and recording their satisfactory performance. PQS requirements are professionally developed, standardized throughout the Coast Guard, and supported by manuals so that all PQS knowledge and skill tasks can be cross-referenced to requirements.

To verify that a member has been fully trained, following signoff of all PQS requirements, the candidate for a specific qualification may have to pass an oral board to assure that he/she has actually learned the materials outline in the PQS system. This comprehensive training and qualification system not only establishes minimum standards, but it allows personnel qualified in this system to go to a new unit with documented of skills that permit them to accomplish their duties at their new assignment.

The Auxiliary has adopted the PQS system of training to for its members desiring to serve at Coast Guard Marine Safety units. The Auxiliary's national staff develops the training and qualifications standards to support member participation in the various marine safety programs and activities.

For each of the assignment areas reviewed, members require a training process and a means to demonstrate their competency in the subject matter and techniques of their selected work area. Each work area is defined, described, broken down into elements and signed off in the document.

These PQSs mirror the Coast Guard's requirements and are tailored only to reflect physical and enforcement restrictions. Qualifications are maintained uniformly to assure the quality of training and to gain acceptance of Coast Guard personnel who must train and qualify members. Qualification board members at the unit level will ask hard questions and expect the same answers from Auxiliarists that they would get from Coast Guard personnel.

Auxiliary members who decide to enter into the MS direct support mission should expect to be held to Coast Guard standards. Because in most cases, they won't be working full time, Auxiliary members should also expect many of the qualifications to take a year or more to complete. Expect to work in a job for some time without full qualification on an "On the Job Training" basis. This is how the Coast Guard does it and what will be expected of you.

In most cases, an Auxiliary member will be qualified as an "Assistant". This title reflects the natural subordinate relationship of the volunteer to the Coast Guard. It does not reflect the expertise or responsibility assigned by individual local unit commanders. Auxiliary members have the advantage of serving in a single job for a long period of time gaining local knowledge and experience without the distraction of career advancement or transfer. Over time an Auxiliary members may well become the unit's expert in a specific PQS.

Every PQS task requires study. The Marine Safety Manual provides guidance and policy needed to understand what the Coast Guard wants and how it wants it done. It does not however, provide the basis of law required for enforcement. All Coast Guard members, and Auxiliarists in direct support, are required to know and understand the "Code Of Federal Regulations" (CFRs) applicable to individual PQSs.

The CFRs are law and sometimes difficult to understand, gaining full understanding may delay qualification even if the Auxiliarist has been trained in the practical aspects of the job. No one is expected to memorize the codes but everyone taking an oral board will not only be required to answer questions applicable to the code but must also be capable of locating the authority.

Currently, many Auxiliarists hold Coast Guard qualifications. The Coast Guard PQSs authorized have been phased out and replaced by Auxiliary PQS that more accurately reflect the expectations and authorities associated with the unique Auxiliary status. Coast Guard PQSs held by Auxiliarists will continue to be honored. Future direct support members should look to the Auxiliary for guidance on authorized jobs that they may support. Currently only seventeen PQSs are authorized by the Auxiliary. The authorized list will be expanded as the Coast Guard identifies its needs and how Auxiliary support can best be used.

PQSS authorized by the Coast Guard are expanding rapidly. The Auxiliary national staff is expanding to meet the increased workloads based on this need. As local units train new direct support members, local Auxiliary unit commands are urged to plan for attrition. Alternates will have to be identified for critical members and they will have to be trained and qualified if the system is to work over the long term.



## **Taking Locations and Depths And Reporting to Government Agencies**

**By Frank Larkin, DVC-MN**

In appreciation for the Navigation Systems Division's goals of Accuracy, Credibility, Professionalism and Service to the Coast Guard, it is necessary to revisit the ways that Auxiliarists submit information to all branches of the Coast Guard and other agencies. In the past, so much information was unusable that a negative image of the Auxiliary was created. Adhere to the following suggestions and you can be assured that your data will be of high quality.

First of all, it is important that both the provider and user fully understand the ability of the Coast Guard Auxiliary to develop data versus data generated by Coast Guard personnel. Note that the Auxiliary doesn't "position" anything, we "locate." The term "position" should not be used in your reports. There is a significant difference between these two terms. While the Coast Guard uses computers to calculate "positions," the Auxiliary uses a GPS to "locate."

That doesn't mean that the Auxiliary's data is not useful. But, it does mean that Auxiliary provided data cannot be used for some official Coast Guard positioning records. In order for the receiver to evaluate your credibility, always provide evidence of the accuracy level attained while generating the data, such as, identifying the

electronic equipment being used, the pre-calibration of this equipment to show that it is working properly, on-scene quality information as to the accuracy of the equipment when the readings were taken and the model and manufacturer of the equipment being used. All of this information creates an aura of credibility to your report and, while it looks like a major information gathering exercise, all of this information is readily available. Below are some guidelines.

## **Pre-underway checks of electronic measuring equipment are necessary.**

Aid to Navigation and Chart Updating patrols require a very precise use of navigation measuring equipment. Unfortunately, you may find that some of the equipment found on an OPFAC does not meet the accuracy and quality standards needed for taking proper on-scene fixes and depths required for formal reports to the Coast Guard and NOAA. Never embarrass yourself by submitting low quality data, or by not being able to make proper measurements due to equipment breakdowns or failure. Always be prepared. The two major problematic items are GPS sets and echo sounders.

A handheld **GPS** that is equipped with WAAS is a great adjunct to your navigation kit. Verify that the GPS is operating accurately during the pre-underway check by verifying its read outs against the OPFAC's GPS or against a known charted position. Always indicate how your GPS was calibrated during your pre-underway check. Mount the hand-held GPS to a large clipboard to keep it safe and available throughout the patrol. Purchase a power cord for your handheld GPS that plugs into the OPFAC's cigarette receptacle to save your GPS set's batteries. Keep the power cord in your personal Navigation Kit along with spare batteries.

As part of a pre-underway check, verify that the OPFAC's GPS is set up correctly. Here are a few key items that can have a serious effect on the accuracy of your final reports.

- **Horizontal Datum** – (Area) Does it match the NOAA nautical chart that you will be using? If not, correct the horizontal datum in the GPS set to match the nautical chart. New GPS sets usually come preset to WGS84 and most NOAA charts have WGS84 datum references. However, don't assume.
- **Vertical Datum** – (Depth) Does the unit of measure on the echo sounder match the depth showing in the General Information Block on the nautical chart that you are using? When they do not match, update the depth unit of measure on your echo sounder to match the chart before you get underway.
- **Operational accuracy** – Confirm that DGPS and/or WAAS is activated on the GPS. Verify the EPE or HDOP readings during the pre-underway check to insure the GPS is performing at a high quality level.
- **Nautical miles vs. statute miles** – New GPS sets usually come set to statute miles. Ensure that the GPS set that you use is reading in nautical miles.

- **GPS headings and bearings** – Check whether the read out on the GPS set and the compass match--True or Magnetic. Be sure that you understand how your electronic equipment is reading before you use it to gather data. If magnetic, you will need a copy of the OPFAC's Deviation Table.
- **Latitude and Longitude** - Set the Latitude / Longitude in the GPS to degrees, minutes, and seconds. This is the standard format for the Coast Guard. It also reflects the LAT/LON used in the Light List. This adjustment is performed on the Set Up screen and only takes a minute.
- **Check that the compass is operating correctly** –If your boat is moored to a finger float, check the reading that should be constant. Otherwise, use a known range. Electronic compasses are equipped with deviation error compensation features.
- **Is the Patrol's planned route is loaded into the GPS?** Operating on a pre-planned route not only saves you fuel and time, it is one of the best safety precautions you can establish to ensure you will be able to navigate back home if the weather deteriorates suddenly.
- **Pre-calibrate the echo sounder.** This can be accomplished with a lead line or a sounding pole. Compensate for the location of the transducer?
- **Check that the OPFACs nautical chart is current** and updated to the latest LNM. To be safe, carry the latest nautical charts in your navigation kit.

## **Guidelines for Taking a Fix**

A GPS set using **WAAS**, or a **DGPS** set, is the recommended tool for taking a fix. Hand held GPS sets with WAAS can produce LAT/LON (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 the chart. Horizontal sextant angles and bearings using a hand-held compass are not considered sufficiently accurate for use in the Auxiliary ATON program for taking a fix.

1. **Perform the Pre-underway Check on the GPS being used.**
  - a. Report how the pre-underway check was performed.
  - b. Record the Manufacturer Name and Model Number on your report.
  - c. Indicate how you knew that this instrument was operating accurately
  - d. Show how accurate the instrument was by reporting the EPE or HDOP readings achieved during the pre-underway check.
  - e. All of this data is available from your GPS and GPS Operating Manual.
2. **Explain how the fix alongside the object or aid was determined and calculated.**
  - a. Fixes taken to static objects – fixed aids or charted objects.
    - i. Move the GPS as close as possible to the fixed point or target.
  - b. Fixes taken of floating objects – floating aids or docks.
    - i. Read the Fix after the vessel stops alongside the floating object. Recording fixes while an OPFAC in motion introduces excess error to the GPS and can produce inaccurate readings.

- ii. Record your LAT/LON observations on a worksheet. Write clearly. You won't remember crossovers and overwrites later on when you are preparing your final report.
  - c. Make a note of exactly how the fix was obtained.
3. **Record quality control support for the fix, such as EPE and HDOP readings. Also show date and time.** This practice significantly improves the quality of your reports.
4. **Double check your readings before leaving the scene.**
- a. It is an efficient practice to use two GPS sets to double check your readings.

### **Guideline for taking and reporting a Depth**

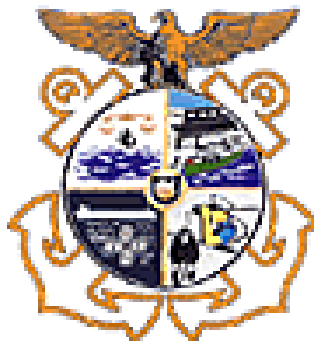
Random reporting of depth readings from echo sounders produces useless data. Besides the need to control the quality of the measuring instrument, from a practical aspect, depths must relate to the charted depths or depths recorded on the nautical chart. Otherwise, depths reported in areas affected by dams or tide are always vacillating. This difference becomes more significant in areas in the higher latitudes where tidal ranges vary from 10 to 12 feet. Depths taken in stormy weather where the wind has a long fetch will not be accurate.

1. **Perform the pre-underway check of an Echo Sounder.**
- a. Check that the vertical datum shown in the General Information Block on your nautical chart reflects the depth datum reading on your echo sounder.
  - b. If your echo sounder is integrated to your GPS set, verify that the depth datum (unit of measure) on the nautical chart, on the echo sounder and on the GPS set match.
  - c. Make note of the distance from the waterline to the location of the echo sounder's transducer so you can correct your depth readings
  - d. Use a lead-line or a sounding pole to validate the echo sounder's depth reading while still at the dock or mooring.
    - i. Compare the echo sounder reading plus the correction for the transducer to the depth obtained with the lead-line or sounding-pole.
  - e. Carry a lead line in your navigation kit as a backup to your echo sounder.
  - f. List the manufacturer's name and model number on your report.
2. **Maneuver your vessel as close as possible to the object or aid without leaving the navigable channel.**
- a. Be alert for riprap, shoaling, or other obstructions near the object or aid. If you think there may be a problem, abort the attempt. Safety first.
    - i. Try to observe the object or aid at low water from a safe distance to check for the suspected obstructions.
    - ii. Return at high water to take the depth reading.

**3. Record and report the date and time for each depth that you take.**

4. If you are operating in a tidal area, also record the "height of tide" for the time when the depth was taken.
- a. Read the "height of tide" from the Almanac Screen on your GPS.
  - b. Be sure that you are referencing the nearest Substation on your Almanac Screen.
    - i. Substations are geographically sensitive. As you move around in an AOR they can change.
    - ii. Substations are usually presented on a drop-down menu on the Almanac Screen on your GPS.
  - c. Calculate the "Estimated Depth at Charted Datum" for your report, as follows:
    - i. Observed Depth (from the echo sounder) **plus** the correction for the location of the vessel's transducer **minus** the "Height of Tide" **equals** the "Estimated Depth at Charted Datum."
    - ii. This is called an estimate because the height of tide is a projected figure not the actual height of tide. If necessary, your depth can be corrected by the receiving agency using the date and time information provided on your report.
  - d. Compare the "Estimated Depth at Charted Datum" to the depth appearing on the nautical chart.
    - i. A large discrepancy can be an indication that the object or aid is not on its charted station. In this case, you will need to take multiple readings as evidence to prove your case.
    - ii. Comment on this comparison in your report.

**If you are not following these guidelines, you may not be doing a complete and accurate job of reporting fixes and depths to the Coast Guard or NOAA.**



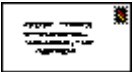


## Question to Safety Lines...

How do I get the test for the Initial Indoctrination to Marine Safety? It is not on the Auxiliary Testing Site.

## Safety Lines Reply

Initial Indoctrination to Marine Safety is an active duty course rather than an Auxiliary course. As such, we must follow the procedures for enrolling in and scheduling an end of course test for an active duty course. The test is not available through the Auxiliary National Testing Center. While each Sector has their own procedures, in general it must be scheduled through an active duty unit's Education Services Officer (ESO). Information that will be needed to be entered into the system to take the exam will include: name, address, city, state, zip code, phone number, member number, social security number, rank (AUX) and OPFAC (will be known to the ESO or may be obtained from your DIRAUX). Please follow your MS staff chain for information on the exact procedures in your area.



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