

# The Aids to Navigation Bulletin

National Aids to Navigation School

Spring 2011



# National Aids to Navigation School

## US Coast Guard Training Center, Yorktown, Virginia

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ATON systems of the United States and its territories are established, operated, and maintained by the Coast Guard to assist mariners in locating their position and to warn of nearby dangers and obstructions. This is done for the benefit of commercial vessels, recreational boaters, and to support the operations of the Armed Forces. Title 14 of the US Code makes this a responsibility of the Coast Guard.

To satisfy these objectives, it's necessary for all who read the Bulletin to take an active part in determining its contents. If you have found a "better way" or performed a unique evolution, share it with other people in the ATON field. Submissions are welcome in any form. Articles and images may be submitted electronically to the editor via email at [nicholas.m.monacelli@uscg.mil](mailto:nicholas.m.monacelli@uscg.mil) or mailed to:

The Bulletin is published to support the individuals and units involved in providing a reliable ATON system for the mariner. The Bulletin seeks to meet the following objectives:

ATON Bulletin Editor (tnaton)  
 US Coast Guard Training Center Yorktown  
 1 USCG Training Center  
 Yorktown, VA 23690

- To provide a means of circulating job skill information among ATON technicians,
- To increase the professionalism and knowledge of all ATON personnel,
- To act as a channel for information flow amidst the ATON servicing units, Sector Office staffs, District Office staffs, Headquarters staffs, and units, and
- To publish articles and photographs about people, units, or events which may be of general interest to the ATON community.

Electronic submissions are preferred. Please keep photographs in original electronic form, and send them as separate files; do not imbed or copy them into word documents.

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### School Telephone Numbers

(757) 856-XXXX

General Information..... 2139  
 LT M. Crysler, School Chief..... 2143  
 LT S. Kingsley, Asst School Chief.. 2509  
 LTJG N. Monacelli, Operations.....2350  
 CWO S. Sawyer, Tech Advisor/  
 Buoy Deck Training Team.....2145  
 BMC K. Roberts, Minor Aids..... 2066  
 EMCS K. Wiehrs, Major Aids..... 2795  
 Fax ..... 2326

### After Hours Technical Support Hotline

(757) 449-3681

**Editor:** LTJG Nick Monacelli

### School Home Page:

[www.uscg.mil/tcyorktown/ops/naton/index.shtm](http://www.uscg.mil/tcyorktown/ops/naton/index.shtm)

### Deadlines for Articles:

Summer 2011 - Phonebook  
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**Volume 38, Number 2**

**On the Cover:** *Cut "D" Rear Range Light as re-built after severe weather tore down many critical ATON structures in Tampa Bay, FL*

*photo by BMI Eric Wieczorek, CGC VISE*

**NATON News.....2**  
**News Clips.....8**  
**Gallery.....28**  
**Technical Corner.....30**  
**ATON History.....33**  
**Good Times.....34**



*CWO Michael Hoag, CO of CGC BARBARA MABRITY, welcomes King Rex aboard during Mardi Gras festivities in New Orleans, LA.*

*Photo by PA2 William Colclough, Eighth District Public Affairs*

## From the Editor

by LTJG Nick Monacelli , NATON School

The great ATON stories and pictures keep streaming across my desk! This issue is packed full of great things from the Western Rivers to the crystal clear waters of Midway Atoll, to the frigid seas of Alaska. I appreciate all of the comments on the last Bulletin and look forward to continue to improve our publication. One new thing for this issue– the online version, posted to the inter– and intranet, is available in full color for the first time. If you are reading the version of this that came in the mail, don't forget to check out the excellent photos in their full glory online.

The internet site is: <http://www.uscg.mil/tcyorktown/Ops/NATON/bulletin.asp>

The intranet site is: <http://cgweb.tcyorktown.uscg.mil/Docs/Uploads/natonbulletin.pdf>  
 You can subscribe through both sites to get a notification in your inbox when I post the new issue online, which is normally a few weeks before the print version comes out.

Since the last issue, we said goodbye to Stacy Thomas, BDTT, and Virginia Thomas, museum curator. Before Virginia left, she created and implemented an electronic archive with information on all of our artifacts in the museum; see her article (next page) for more info on that.

Additionally, we were fortunate to have CWO John Haley, USCG retired, donate 3 new models to Training Center Yorktown.. We now have detailed models of both USCGC BUCKTHORN (WLI 642) and USCGC KATHERINE WALKER (WLM 552) in our museum collection, in addition to a model of USCGC CUYAHOGA (WIX 157) in the command suite. Stop by when you get a chance to take a look!

Thank you again for all of your support – I would not be able to put together such an outstanding Bulletin without your help.



*CWO John Haley, USCG retired, with his meticulously crafted model of “Katie Walker” (WLM 552)*

## NATON Museum Update

*by Virginia Neal Thomas, USCG AUX, Curator ATON Museum*

In September 2009 I was designated as Curator of the ATON Museum located in the atrium of Canfield Hall onboard Training Center Yorktown. My main focus was to create a cohesive story through artifacts and informational displays on the history of ATON in the United States.

Many of you may well be familiar with the eleven spectacular Fresnel Lenses on display including one from each order (1st thru 6th). These truly are the center of the collection, and remain the driving attraction for visitors. New signs and barriers were erected to protect these items as well as link their individual stories to the overall narrative of ATON in America.



*The museum's 1st and 2nd order Fresnel Lenses*

Beyond the lenses, the four display cases were updated and four informational panels were added. Items in the cases are now safely held in museum mounts and have descriptive labels to explain their importance. The informational panels cover four broad thematic areas: History, Technology, Personnel and Other Missions (wartime, alternate power, etc). These panels further create the broader story of ATON in the United States and attract a broad range of interest levels.



*Display case with different types of ATON illumination equipment*

Other less known but very interesting items include the original 1952 patent model of the Mechanical Chain Stopper by Capt. Niels P. Thomsen. The collection also holds a unique 4th Order rotating Bivalve Fresnel Lens made by the MacBeth-Evans Company of Pittsburgh, PA. This company was the only one to make such lenses within the United States.

My final work here involved creating a comprehensive digital archive of the items for preservation and access. The archive includes 331 items located in the museum and in 26 archival boxes. Each

item has a corresponding image making it easier for researchers to find historical ATON information. A copy of this archive is also being sent to the USCG Historian's Office to further increase access.

During my tenure at the ATON Museum, I have also completed my Masters of Arts in History from Old Dominion University. My thesis on female lighthouse keepers before the Civil War is available on the USCG Historian's website:

<http://www.uscg.mil/history/articles/ThomasVNWomansWork.pdf>



*Thomsen's Chain Stopper Patent Model*

I have thoroughly enjoyed my time at NATON and could not have asked for a better group of dedicated individuals to work with! Now on to the next transfer...



*4th Order Macbeth-Evans Lens*

## NATON Mythbusters!

by LTJG Nick Monacelli , NATON School

Fact or Myth: Aids Positioning is Pre-Arrival (Pipeline) training for those going to designated billets on ATON cutters.

### MYTH!

With very, very few exceptions, we will not grant quotas for the Aids Positioning course to members who do not have any experience with current positioning systems. The pre-requisite time onboard with the equipment is 3 months, as outlined in the course description on TQC's website. This time of year, we see many requests for individuals who have not yet reported to their new units and are asking for Aids Positioning. Because of the fast-paced and highly technical nature of the class, if an individual does not have any experience with current positioning systems, it is significantly harder to be successful in the course. If you believe that there is a special circumstance or would like to discuss any ETR regarding the Aids Positioning course, feel free to contact LTJG Nick Monacelli at (757) 856-2350.

Fact or Myth: MOORSEL does not work with the new Microsoft Vista standard image.

### FACT!

The Mooring Selection program, MOORSEL, does not work on a workstation with Image 6 (Vista). If you would like to continue to use MOORSEL, it is recommended to have a stand-alone computer with Windows XP installed.

## STAN Team Guidance on Padeye Weight Testing and Inspection

by MKC Jeffrey Roberts, STAN Team, ATON Division

This article is to clarify guidance to ATON field units addressing weight handling testing requirements for the STAN Team. As we continue with standard assessments of ATON units, we have been fielding a lot of questions specifically about pull testing padeyes on the TANB, BUSL and ANB. As inspectors, we check to ensure dates on all weight tests are current for each of the unit's platforms. Should a question arise during an assessment about the requirement for frequency and or type of inspection to be completed, the STAN Team inspectors will follow the respective platform's most current ALMIS PMS card, the reference which follows the Naval Engineering Manual COMDTINST M9000.6E, under Weight Handling and Fittings, Ch. 573 pages 573-9 and 573-10. The manual provides more in-depth information and details specific requirements. Units are also encouraged to review their applicable platform's Opera-

tor's Handbook (OPHBK) for conducting both unit inspections and for preparation for upcoming STAN visits. However, STAN recognizes that some items in the boat outfit list can be somewhat vague. In this case, it is necessary to utilize the other Tech Pubs, TCTO's, ALMIS PMS cards and technical prints. Each of our inspectors are utilizing the same inspection sheets from their particular platform's appendix in the OPHBK. If a question arises on a discrepancy, the unit should be referring to the classification appendix in the appropriate platform's OPHBK or in the case requiring further clarification/guidance, units should contact the Offices of Boat Forces STAN Team, ATON division.

Hopefully, we can clarify many of the issues affecting our standard ATON platforms prior to the inspection. Again, STAN will work with each unit to ensure they understand what is expected and are set up for a successful inspection. Lastly, STAN Team has updated to a newer method of providing a resource for units to get assistance in the form of an online forum. The forum can be accessed through the following link:

<http://webapp02.tcyorktown.uscg.mil/bfcforum/default.aspx>

## **Saving \$\$\$ With Refurbished Foam ATON**

*by LTJG Nick Monacelli, NATON School*

With the advent of LED lighting equipment, we find ourselves more often establishing foam-construction buoys as permanent ATON. After some recent discussion with field units regarding procurement of foam buoys, I contacted the Gilman Corporation in Gilman, CT, to get some additional information about their foam buoy refurbishing program. The president of the Gilman Corporation, Liz Gilman, provided me with a wealth of information about their program including how you can get involved and reap the benefits.

Gilman will pick up, at no charge to the unit, a full truckload of retired foam buoys from all CONUS locations. After reviewing the hulls, including the metal, foam and daymarks, Gilman sends the unit a quote for purchasing back the buoys; however, there is no obligation for the unit to purchase the refurbished buoys. If the originating unit does not want them back, they will be offered up to Coast Guard District offices throughout the country. The quote will include what parts of the buoy will be refurbished and if anything needs to be replaced (most often the bail). Most of the foam portions are easily refurbished by adding additional foam and applying heat to "melt" the foam and mold it back into its familiar shape. After repairing the structural parts of the buoy, Gilman will repaint the foam with a 2-part formula back to USCG specifications, in addition to installing new retro panels. The finished refurbished product comes with a 12 year warranty for both color and net buoyancy, presumably longer than the an-

ticipated life-span of the optic and mooring hardware on the aid.

The cost of a refurbished buoy is normally half of a new hull, and you'll have like-new hulls ready to go. For additional information, you can contact Liz Gilman at (860) 884-1566.

Before



After



## A Beacon of Stewardship

by CWO2 Christopher Runt, Sector Baltimore

One mild September morning, a convoy of dark-colored vehicles arrives at an otherwise vacant parking lot of a boat ramp. Coast Guard members from the Deployable Operations Group along with local ANTs begin to suit up for what is now an unusual, albeit important mission. They grab their tanks, flippers and goggles to load them into the 26-foot Trailerable Aids to Navigation Boat. Personnel from the ANT prepare laptop computers used for positioning aids to navigation and recording data, and then ease into the murky greenish-brown water. Excitement fills the air as Coast Guard members know they are about to make a difference for their environment.

Severe ice conditions and vessel allisions are a major cause of lost batteries from aids to navigation in the Chesapeake Bay. These batteries are a concern due to the fragile ecosystem of the region. Coast Guard members at units in the area took note of the problem and developed a plan to recover them. Crews from Sector Baltimore, Aids to Navigation Teams from St. Inigoes, Md., and Crisfield, Md., and the Deployable Operations Group Regional Dive Locker East based in Portsmouth, Va., put their plans into action for a six day excursion starting Sept. 8, 2010.

When a fixed aid to navigation is destroyed, all efforts are made to recover the structure: including its lighting equipment and batteries. Occasionally, when the structure is recovered, the battery is not located. To ensure the integrity of the waterway, the service rebuilds the structure. Since most cutters do not have divers stationed aboard, the batteries are unable to be recovered.



*Members of Regional Dive Locker East prepare to dive on Hallowing Point Light to recover four batteries*

A plan was developed to utilize Regional Dive Locker East to provide divers to work from the aids to navigation teams' small boats to search for and recover missing batteries. All the work was completed by Coast Guard personnel and assets. During this operation, 13 batteries were recovered from nine sites, removing the threat of hazardous materials being released into the

water from the batteries.

"We're trying to be good stewards in keeping the Potomac River clean," said Petty Officer 1st Class Jeffrey Smith, the Officer in Charge of ANT Potomac in St. Inigoes, Md. "We recovered four batteries, which accounts for all batteries knocked into the water from this aid over the past three years," he said referencing efforts at Hallowing Point Light.

Batteries were also recovered from the Potomac River, Mattox Creek, Patuxent River, Nomini Creek, Monroe Creek, Nanticoke River and Mine Creek. All of the batteries recovered were intact and recycled through authorized vendors.

Since 1994, the Coast Guard has employed a strict method of tracking batteries used to power aids to navigation by assigning a unique serial number to each battery and tracking them in a database from the time it is purchased until it is recycled. Using this system, the Coast Guard is able to identify the location of batteries that have not been recovered when an aid is rebuilt.



*A closer look at the corrosion taking hold after the batteries have been submerged for several years.*

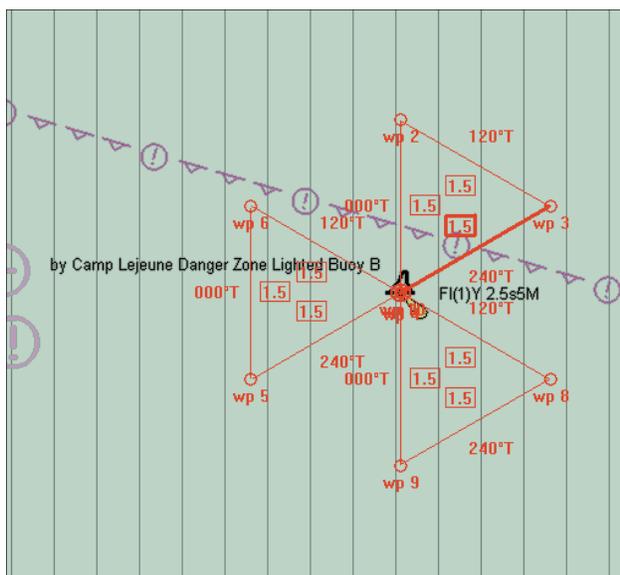
In the 1980s, the Coast Guard solarized its aids to navigation. This effort greatly reduced the number of batteries needed to power each aid and eliminated the reliance on batteries containing mercury. With light emitting diode technology, the Coast Guard is further reducing its reliance on batteries and moving to smaller, self contained lights that include the battery, light and solar panel in one small package. This transition will nearly eliminate the chance of battery loss from aids to navigation using technology.

The aids to navigation on the bay and tributaries protect the bay and its users by safely guiding mariners in support of commerce, fisheries, tourism and shipping. The Coast Guard will continue to do its part to keep the bay healthy both for the biological and economical wellbeing of the region and the 15 million residents that call the Chesapeake Bay area home.

## Low-Speed Track Follow for Buoy Fishing

by ENS Ian Phillips DeZalia, CGC ELM

It can often be difficult to find a practical way to test a capability that is only designed for use in very specific circumstances. However, once in a while such a situation presents itself to great effect. Recently ELM was able to employ the low-speed track follow function on the new WLB Dynamic Positioning System (DPS) upgrade to retrieve a sunken buoy. Using sonar, the grapnel hook and an ECPINS Vector search pattern, ELM was able to retrieve and replace LB “B” in the Camp Lejeune Danger Zone offshore from Jacksonville, NC. The functionality of hold heading and low-speed track follow in the new DPS system greatly enhanced the safety and efficiency of an often tedious operation.



A screenshot of the search pattern used.

ELM arrived on scene December 3rd to work LB “B” with a contractor onboard to assist with an operational test of the most recent DPS upgrade. While LB “B” had been reported riding low in October, it appeared to be staying afloat. However, when ELM personnel returned from Deepwater Horizon deployment in November and checked on the aid with the local small boat station the buoy was missing. It seemed likely that the buoy had sunk on station and would be recoverable within its most probable position (MPP), which became “datum” for its search and recovery.

Searching for and recovering the buoy had the potential to be very difficult and time consuming, as it involved deploying the grapnel hook overboard and dragging it on the sea floor to fish for the sunken buoy. To assist with this operation, the DPS contractor suggested ELM create a small Vector search pattern as a trackline and follow it with the low-speed track follow function. She was particularly excited to use this new feature because the manufacturer had been curious about how this application would be used in the field. The command was also eager to try it because the automated system had the potential to provide a more precise and systematic search function than normally attained using manual controls.

Arriving at MPP, ELM used sonar to locate what appeared to be the sunken buoy. A Vector search with 60 yard legs centered on the anticipated buoy location was automatically generated from the SAR patterns available on ECPINS. After setting the ship on the first leg of the Vector trackline and initiating “hold heading” commensurate with the on-scene environmental con-

ditions, low-speed track follow was initiated in DPS. Employing engines and thrusters the ship remained pointed into the wind while it executed the Vector search with the grapnel dragging for the buoy chain at a consistent 1.5 knot speed.

On the fourth turn of the search the chain on the grapnel came under strain. ELM was placed in “hold position” and the inhaul winch began to pull the grapnel inboard. Within minutes the bright yellow hull of LB “B” was clearly visible under the water’s surface. The plan was for the grapnel to catch somewhere on the buoy chain, but no one expected that it would snag the bridle allowing for the buoy to be pulled up in an ideal position to hook it and promptly lift it to the deck. It took less than two hours to complete the replacement of the 8X26 hull.

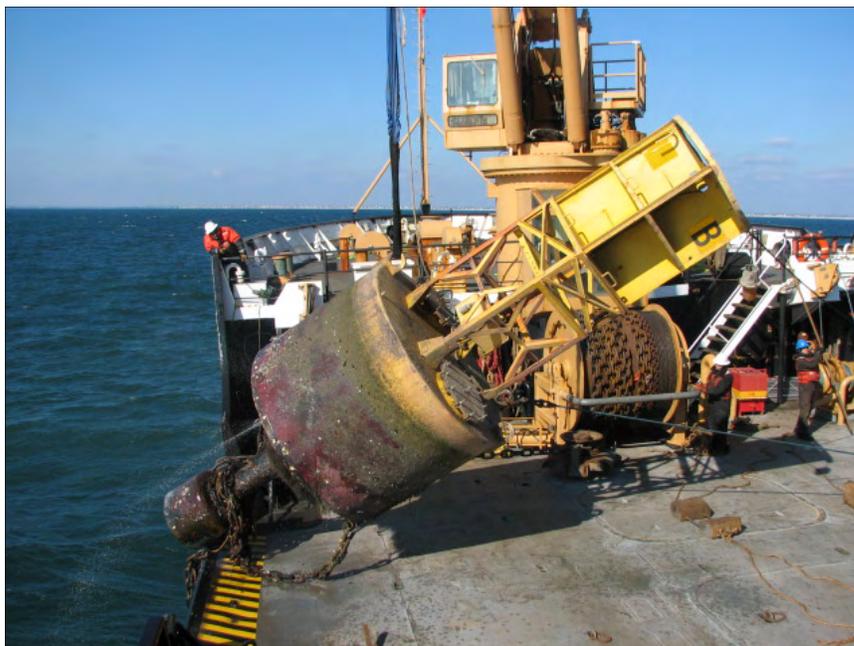
There may be other applications for low-speed track follow, but fishing for sunken buoy hulls is definitely one that capitalizes on the ECPINS and DPS autopilot functions available in modern tenders.

### Engaging Low-Speed Track Follow on DPS

- 1) Engage JSTK/DP
- 2) Ensure a Position Reference is selected
- 3) Ensure the correct trackline is active on ECPINS and is set in the proper direction
- 4) On the DPS screen under “Mode Function,” “JSTK/DP” select “Hold Heading” and “Hold Position”
- 5) Let the computer build a model and ensure the vessel is near the desired trackline
- 6) Select “Follow Track”
- 7) Confirm “Low Speed Track Follow” when prompted
- 8) Under “Chart Track” select “Chart” to confirm you are on the correct leg

#### Potential issue:

When the vessel passes over datum during a Vector search the system may automatically drop out of track follow. This occurs because DPS “thinks” the selected route has been completed. Momentum will carry the vessel past datum to the next leg. At that time track follow can be re-selected.



*Bringing the sunken hull on deck, leaks and all.*

## KUKUI Dive Team Battles the Buoys of Midway

by YN1 Lucas Spencer and LTJG Joan Hunter, CGC KUKUI

In the pristine waters of Midway there was once a battle of the Pacific. Known as The Battle of Midway, it was fought on June 4, 1942 and resulted in the U.S. Navy defeating the Japanese. The battle by most accounts was the beginning of the end of Japanese control in the Pacific. Although the battle ended over 65 years ago, one can still see the remnants of the war throughout the island, as another war rages with man and sea offshore. The buoys of Midway are essential to the safe navigation of the sailors off Midway, and CGC KUKUI assumes the duty of ensuring their up-keep. Along with Aids to Navigation (ATON), KUKUI also completes other missions in the vicinity of Midway such as Law Enforcement, Marine Debris Recovery, Multi-Unit Law Enforcement Patrol (MULEPAT), and transporting supplies and personnel (scientists) from Midway to Kure Atoll.

KUKUI has been working ATON off Midway Atoll for many years. But in September of 2010 after a casualty to her bow thruster, KUKUI could not complete the mission with the 225 foot cutter and had to rely instead on their collateral duty divers. KUKUI is one of three sea-going Buoy Tenders that has a Dive Team (the other two are CGC WALNUT and CGC SEQUOIA). Having divers available on a Buoy Tender increases the cutter's ATON capabilities and enables buoys to be worked when located in shoal water



*Breaking the buoy free*

or when other dangerous situations pose a threat to

both the cutter and crew. All Coast Guard Divers receive their training at the Naval Diving and Salvage Training Center (NDSTC) in Panama City, Florida, during an intense four month period, right alongside Army and Navy Divers.

CG Divers continue their training by applying the concepts learned at NDSTC to the Coast Guard ATON world. During an average buoy dive operation, lift bags are used to put slack in the chain enabling the heavy steel to be moved, manipulated, and broken at the shackle. Once

the strain on the chain is relieved with the lift bag, the buoy can be broke by hammering the split key out of the shackle. In both the chafe portion of the chain and at the bail of the sinker there are shackles that make it possible to break and work the buoy as if it was sitting on the deck of a ship. Underwater, the chafe can be measured, buoy broke, chain swapped, and the hull relieved by utilizing these methods and tools. Although there are many factors that are out of the diver's control that can make this evolution complex and more involved, this past fall KUKUI's Dive Team stepped up and showed everyone how efficiently diving ATON can be and how important CG Divers are to Coast Guard District 14.

Although the battle-like conditions that KUKUI faced in Midway may not be as historic as The Battle of Midway, both obstacles were pursued in much the same way. Both were accomplished with individuals that were willing to push themselves and do whatever it takes to accomplish the end goal. KUKUI had a three day transit to Midway Atoll from Honolulu, Hawaii, and was scheduled to service 19 aids within the work week. The original plan was for the cutter to work ten aids, the small boat two, and the divers to work seven. After KUKUI finished working the first buoy of the trip—the Midway Entrance Buoy—she experienced a casualty to her bow thruster. This prevented her from being able to significantly maneuver in shallow depths and hold station while positioning a buoy, thus rendering the 18 buoy evolutions unsafe to complete by the ship herself. KUKUI turned to her

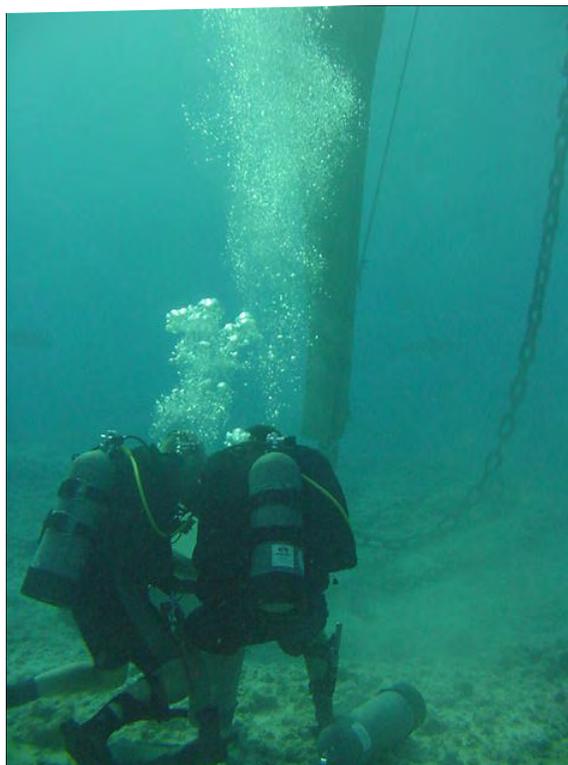


*The view from below*

Dive Team. In addition to the time constraint of having to complete all the buoys within the scheduled week in Midway, the Dive Team was also limited by having access to only one operational small boat. KUK I, as the small boat is called, had to handle the towing of the buoys and chain, as well as serve as the dive platform with all personnel and gear onboard. Outside of logistics, the Dive Supervisor and team had to pay particular close attention to each other. Repetitive dives within 18 hours of each other greatly increase the potential risk of incurring dive related injuries, therefore maintaining awareness and being meticulously attentive to every diver upon exit of the water was crucial to success. The closest hyperbaric chamber facility from Midway is in Honolulu, about 1,200 nautical miles away. The Dive Team planned for the worst case scenario, notifying both Coast Guard Air Station Barber's Point and the Navy's Mobile Diving and Salvage Unit (with hyperbaric capabilities) before they splashed any divers. These actions ensured that all key players were ready to spring into action for any emergency situation. Despite all the limitations and hurdles, the Dive Team was eager to face the chal-

lenges and conquer the ATON in the waters of Midway Atoll.

All six qualified divers were optimally utilized during the 18 buoy operations, ensuring no divers went into decompression. With the help of the three-man small boat and ATON positioning crew, the KUKUI finished its mission in four long days. The biggest highlight was the accomplishment of turning over an 8500-pound sinker in order to get the bail in the upright position. The buoy needed a hull relief and chain replacement, so the challenge lay in using lift bags to turn over the heavy, upside-down sinker in a controlled manner while finding the right balance of inflation to prevent the sinker from shooting to the surface. It took a good amount of time, but in the end the Dive Team successfully won their battle of Midway. As the sun was setting and falling behind the vast ocean, the small boat towed the final, dirty hull back at a grandma-low speed. The sunburned torn and tired personnel in KUKUI chugged along and one could feel the electricity in the air, as the crew exchanged glances they laughed as a new energy set in... HOO-YAH!!



*Filling the lift bags*



*Working to bring the rock off of the bottom*

## Life Aboard the Coast Guard Cutter CHIPPEWA (WLR 75404)

by Jeff Yates, reprinted from December 20, 2010 *Waterways Journal*

If one spends any time along the river or makes a “full hitch” aboard a towboat, chances are that he or she will pass one of the Coast Guard’s several inland waterway buoy tenders either setting a buoy or shoved into the bank while a crew services a shore aid.

I’ve encountered many of the unpretentious service vessels along various rivers over the past thirty-five years or more and had not given any serious thought to their never ending routine or to the dedication of their crews. I had not been aboard a Coast Guard buoy tender since touring the former Cutter SUMAC and her buoy barge as an impressionable teenager, early into my love affair with the river in 1959 while she was tied up at the Henderson, KY city front along the Ohio River.



USCGC CHIPPEWA (WLR 75404)

Fifty-one years later, I happened to strike up a conversation with Master Chief Boatswains Mate (BMCM) Scott W. Ehrich when the Cutter CHIPPEWA was offering tours during the Paducah Marine Industry Day celebration held in conjunction with the city’s annual Barbecue on the River celebration in September. Hearing of my five decade love affair with the river and my interest in how the Coast Guard goes about its mission of maintaining all the buoys, lights and day marks necessary to assure safe passage along the rivers, Ehrich invited me to ride along on a typical ATON (Aids to Navigation) run.

Based at a facility across a small bay from Paris Landing State Park, near Buchanan, TN, the CHIPPEWA and her crew typically maintain floating and shore-based aids along the Ohio River from Smithland Locks and Dam at Mile 918 to Mile 981 at Cairo and along the Upper Mississippi River to Chester, IL at Mile 109. Because of the differences in the flow and characteristics of the Ohio and Mississippi Rivers, his area of responsibility is one of the most challenging areas along the Western Rivers, Ehrich said.

He said that along the Ohio River portion of its service area, the CHIPPEWA maintains approximately 132 buoys and fourteen shore side aids and along the Upper Mississippi River por-

tion, they service approximately 450 buoys and sixty-seven shore side aids. The buoy barge can carry up to 104 buoys and 122 sinkers. During an average year the CHIPPEWA crew will replace more than a thousand missing buoys.



*Working river aids in tow*

The CHIPPEWA is a seventy-five foot towboat which fits into a notch on the stern of a 130 foot barge equipped with a self-powered service shop, storage above and below deck, a capstan for pulling errant or damaged buoys aboard and a 3,000 lb. capacity Appleton Marine crane for buoy retrieval or other applications as necessary. Stored in racks on either side of the service barge are two heavily-reinforced, twenty-foot john boats equipped with twin fifty

hp. outboards for use in retrieving buoys stranded on shore or for getting crew members closer to service aids where the barge cannot reach the shore in spite of its four and a half foot draft. The compact towboat draws only four feet two inches and after seeing first hand some of the maneuvering tricks displayed by Ehrich, I was surprised to learn it has only 750 hp. The CHIPPEWA and sister ship CHEYENNE, both with steel hulls and aluminum superstructures, were built at Tell City, IN by the former Maxon Construction Company in 1966.

The CHIPPEWA changed its home to Paris Landing in 2000 after operating out of Owensboro, KY for thirty five years. The Paris Landing facility also serves the cutter CIMMARON which tends to aids along the Tennessee and Cumberland Rivers. Ehrich said seventeen crewmen are assigned to the CHIPPEWA and it normally sails with thirteen crewmen aboard, leaving four behind at the Paris Landing facility to handle maintenance chores and support for the underway cutters. “We can’t safely sail with less than ten people,” he added.

On this trip, the CHIPPEWA was sailing with one open berth and I was fortunate to share a room on the upper deck with BMC Toby Vanwormer, the vessel’s second in command. BMC Ehrich had his own stateroom forward on the second deck while the rest of the enlisted crew members shared a ten-person bunkroom on the lower deck.

I boarded the CHIPPEWA at Paducah, KY November 9<sup>th</sup> shortly before the arrival of ten students from the NROTC program from Tilghman High School at Paducah, KY. They were the first of several groups of students to be given an opportunity to ride from Paducah to Cairo, IL to see first-hand how the Coast Guard fulfills its mission along the Inland Waterways. Senior Naval Science instructor, LCDR Donald Taylor (USN-Retired) said each year the students par-

ticipate in an orientation trip with a tour of a ship but this was their first year to board a Coast Guard cutter and be underway to witness its activities underway. “Kids love hands-on experience like this,” he said watching one of the students being assisted into a flame retardant fire-fighting suit by one of the CHIPPEWA’s crew members. “They can’t get that through a recruiting office!”

The students were able to see routine operations while the CHIPPEWA transited Lock and Dam 52 and as the tender checked several buoys or re-set some that had been knocked off station. They also saw a typical buoy retrieval operation where a very old buoy (pre-radar reflector) was discovered laying on the bank below the lock. In clockwork type unison Ehrich nosed the barge onto the shore where his crew scrambled up an embankment and attached a cable to the rusty buoy for the barge crane operator to pull it across the beach and lift it aboard for eventual disposal, all within only ten minutes.

Proceeding down the river, Ehrich zig-zagged from one side of the channel to the other, running within ten feet of each buoy to confirm it was still on station and marking a safe depth for navigation. He quickly scanned the digital depth-sounder and looked at the GPS coordinates and digital chart overlay to confirm each buoy was in the proper spot. Rising or falling river stages often require that a buoy be moved in or out from its previous position to better mark the channel’s edge or the end of a dike, he explained. The chart program has several custom features, one of which shows contours super-imposed from data gathered by ACOE survey vessels.

By 2:00 PM, we arrived at Cairo, IL for a quick stop where the students departed at the city’s cobblestone wharf and boarded a van for the return trip to Paducah. Within ten minutes, we rounded Cairo Point and continued up the Upper Mississippi River, stopping to check and/or reset each buoy along the way before finally stopping for the night. The rapidly-approaching nightfall did not curtail the CHIPPEWA’s crew from its mission as they continued to pick up and reset buoys as darkness enveloped their synchronized retrieval and dropping routine before Ehrich guided the barge into the right descending bank near Mile 12 between Hurricane Day mark and Antelope Light. Ehrich ordered the spuds on the buoy barge and the cutter to be dropped into the river bottom then the deck crew scurried ashore with bow and stern lines to shackle around sturdy trees to ensure a safe overnight mooring.

Then it was time for a wholesome supper prepared by FS1 Chris Vick, the CHIPPEWA’s amiable and talented cook and medical officer, who moments earlier was also stationed on the vessel’s stern with a sounding pole and a hand-held radio to confirm and relay the water depth to Ehrich as he landed the boat and barge for the night. At age 36, Vick has already spent half his life in the military with stints in three branches; seven years in the navy, five years in the Army and almost seven so far in the Coast Guard. With the exception of his Army tour, where he served as an ordinance specialist in Iraq, Vick has been a cook feeding small crews such as the CHIPPEWA all the way up to the ABE LINCOLN, the Navy’s largest aircraft carrier where he was one of twenty-eight cooks preparing meals for six thousand people. “I’ve always loved to cook and my parents encouraged it,” he remarked while preparing breakfast the next morning.

Most of us who have worked on line haul towboats or those familiar with the normal work routine are accustomed to twelve hour work days but I never gave any thought previously to the

long days put in by the crews aboard a typical inland waterway buoy tender. My second day aboard quickly illustrated the differences between the standard six hour watches aboard a tow-boat and the straight twelve-fourteen hour work shifts aboard an inland Coast Guard cutter. By 6:00 AM, the crew was quickly eating breakfast before heading to their assigned positions to prepare the vessel to get underway as others went through their checklists in the engine room and started the main engines. By 6:50 AM we had backed away from shore and within minutes were already easing up to reposition the first of more than thirty buoys that would be checked, moved, or replaced within the first few hours. There was no watch change as the deck crew hustled back to the boat to wolf down a quick lunch before heading back out to the next assignment as others came back aboard after clearing overgrown tree branches from a navigation light or retrieving a stray buoy from the river bank with one of the twenty-foot work boats.

Every situation is a learning opportunity aboard the CHIPPEWA as more experienced crew members train and assist newer or younger crew members with fresh challenges. From the Officer in Charge to the Executive Petty Officer on down the line to deck and engineering Petty Officers, they all were engaged in teaching their skills and proficiencies along to the new crewmembers, eager to qualify for their assigned position onboard. Each position on board from handling the cutter or small boat to working on the deck requires certain tasks to be signed off, demonstrated and then the member must sit in front of a board to answer questions regarding his knowledge in order to get his final qualification for the position.

The Officer in Charge, BMCM Ehrich has been aboard the CHIPPEWA for more than three years but will be heading to a new teaching assignment in Virginia in June. However, he was already in full teaching mode as he helped BMC Toby Vanwormer learn the tricks of safely handling the cutter and the proper placement of the buoys, which both veteran “Coasties” will agree is completely different from anything they had experienced previously. Ehrich joined the Coast Guard following high school graduation in 1988 and following his advancement through the ranks of various deck operations and navigation aid training, was soon on his way to command the helm of many different class and size buoy tenders.

“This seems like organized chaos,” he said as he described the obvious coordination and team work required to safely handle the various challenges of navigating the CHIPPEWA in extremely tight quarters through constantly-changing river conditions in all kinds of weather. Not only is he responsible for safely handling the boat and barge, he must also coordinate the deck crew during the placement or retrieval of possibly hundreds of buoys during a trip; he must also oversee the training and encourage the advancement of his junior crew members. He has a defi-



*Coming alongside*

nite fondness for the inland sector where he had never thought of being assigned earlier in his career. “At the end of the day this is the most satisfying feeling,” he said. “We can look back and say, ‘Here’s what we accomplished’”.



*Picking an aid washed ashore*

Executive Petty Officer Toby Vanwormer is a nineteen year Coast Guard veteran with a long list of assignments within the aids to navigation segment and he has had experience on many different size and types of Coast Guard vessels. “ATON (Aids to Navigation) is ATON he remarked, “and the principals are the same,” he said referring to the basic understanding of International regulations relating to placement of aids and how they direct traffic in

and out of ports or around navigation hazards. “However, how we go about accomplishing our mission along the Inland Waterways is completely different to anything I ever done before,” he added.

In his previous assignments, buoys and aids were set in previously determined positions of a particular area based upon charted information and they were generally not repositioned, Vanwormer noted. However, along the Inland Waterways, conditions are constantly changing and the Officer in Charge has full discretion on where to place the buoys. We must also work closely with the Corps of Engineers and the river industry, which has much input on placement of critical aids, he explained.

Retrieving errant buoys from their hiding places behind waist high piles of drift and debris seemed like child’s play to thirty-five year old, BM2 Robert Fortier who has served aboard the CHIPPEWA for a little over three years. When we arrived on shore to fetch the first buoy, he sent one of the others to snap a line to the mooring pin and the crewman climbed back aboard the twenty-footer. Fortier slammed both 50 HP outboards into reverse and the line sprang taught like a guitar string as water sprayed along both sides of the boat which shook and rattled until the reluctant buoy released its grip from the sand and mud and slid over and through the drift-wood and flotsam on its way back to the water.

He then let off the throttles, moved alongside the now floating buoy where a crew man tethered it to a reinforced deck fitting for transport back to the CHIPPEWA. Many times, he would speed off to another buoy and repeat the process, hanging another buoy on the other side of the

super-tough work boat and zip back to the CHIPPEWA at more than twenty mile per hour with water cascading from both buoys bouncing alongside. Fortier and his crew repeated this all day long.

A real master at boat handling, Fortier grew up in Massachusetts and has always been oriented to community service, he said. "I originally wanted to be a fireman but ended up joining the Coast Guard," he remarked. Previous to his assignment to the CHIPPEWA he had served as a coxswain on a 110 foot patrol boat in Puerto Rico and has also served as officer of the deck, boarding officer and has experience in countering narcotics along with search and rescue operations. "Everything here is different," he remarked, recalling his first assignment to the inland waterways where he had to learn how to read the water and the effects of the current and how to handle the smaller boat in conditions ranging from shallow water, raging currents, extreme drift accumulations, body wrenching slams in rough water, breath-grabbing heat and humidity and freezing water spray that coats the boat and crew during winter recovery operations. "I learned how to handle the boat in about three months but it took longer to get comfortable, he said, while instructing SN Joshua Leon as he experienced more "wheel time" to prepare for his qualification as boat coxswain. "Where else can you drive a boat through the trees?" he exclaimed as we ferried two more buoys back to the CHIPPEWA.

The second day ended after dark when we were spudded down and tied off at the Cape Girardeau city front. After grabbing supper in the combination galley and mess room, some of the crew went ashore to a favorite river front watering hole while others remained on board to catch up on their emails or to hit the rack in preparation for another non-stop day of zig-zagging up the river, checking and repositioning buoys and servicing shore aids.

The third day began as the one previous with the same pre-departure check list procedure and we were underway before 7:00 AM en route to Chester, IL as Ehrich and his crew checked and relocated more buoys and retrieved more strays from both shores along the river. Around 1:00 PM the CHIPPEWA turned around at Mile 109 and headed back down the river at a much faster pace. This day ended a little earlier than the others when we shoved into the left descending bank, spudded down and tied off again at approximately Mile 91 shortly before dark. After a more leisurely supper, several of the crew members went ashore and gathered around a campfire for some much needed rest and relaxation before returning to the boat before 9:00 PM.

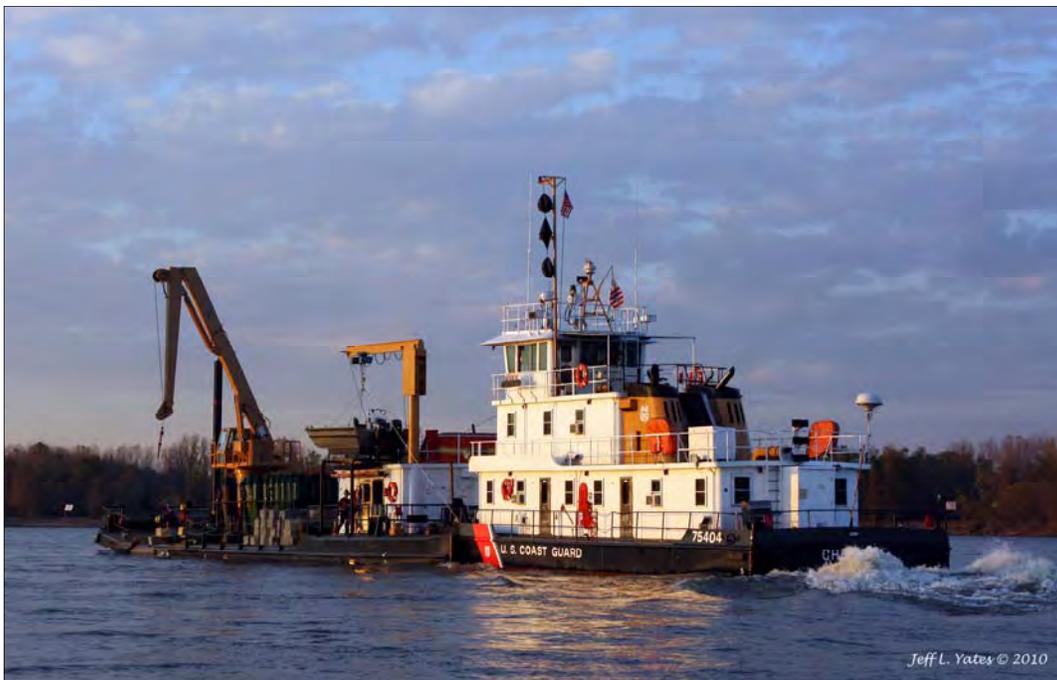
Before 7:00 AM on the fourth day, we were underway again, making 12 to 13 knots, twice the speed of the up bound trip with few interruptions for checking buoys or aids that had been serviced less than twenty-four hours previously. Having no navigation aids to service did not excuse the crew from other work details however, as they resumed maintenance and equipment service activities that were set aside during the up bound trip. FN Raymond Wert, an apprentice engineer switched from wrestling buoys to more comfortable quarters in the engineers' booth where he took time from his rounds to monitor and record various engine and equipment gauges and readings in the logbook and on the computer. Fresh from boot camp only a year previously, the nineteen year old Coast Guardsman was on his first tour of duty aboard ship. The son of a Coast Guard lieutenant Wert knew he was destined for a military career. "It was either the Coast

Guard or the Marines,” he remarked. “I didn’t even take the SAT’s” he added, recalling his early decision while still in high school at Lake Worth, FL. He didn’t expect an inland assignment however, adding, “I’m more a coast kind of person.”

This was an exceptionally long day for BMCM Ehrich who was at the helm for almost fifteen hours before we rounded Cairo Point and stopped along the right descending shore above the Illinois Central Railroad Bridge. He had considered stopping between Cape Girardeau and Cairo but took advantage of the clear night to make as many miles as possible before the weather changed to fog and rain before the next morning.

The final day began in a heavy mist and fog as we departed Cairo to continue up the Ohio where before long, Ehrich spotted a buoy near the Olmstead Lock and Dam project that needed re-setting to meet his standards. Throughout the return to Paducah, in spite of the rain and fog, the CHIPPEWA crew spotted buoys that required a closer inspection to assure they were on station as Ehrich made notes to check a couple shore aids for proper illumination on the next south bound trip. We arrived back at Paducah around 1:00 PM where Ehrich nosed the buoy barge into the public landing long enough for me to step off with my duffle bag and camera case. In only minutes, the CHIPPEWA was fading into the mist and fog as her crew continued up the Ohio to check the buoys and lights below Smithland Lock before turning around to head up the Tennessee River in hopes of making it back to Paris Landing so the crew could be home with their families for the remainder of the weekend.

After a week in port for maintenance and restocking, followed by the Thanksgiving holiday, the routine began all over again.



## Storm on the Range(s): Replacing Tampa Bay Structures After Bout of Severe Weather

by BMI Eric Wieczorek, CGC VISE

On 28 March 2011, a severe weather front swept across the entire eastern seaboard bringing strong winds, damaging hail, and even tornados in some areas of Tampa Bay, Florida. Over the next three days, heavy rains and winds buffeted the bay area. Nearly seven inches of rain fell with top wind gusts of 60 knots being reported at the St. Petersburg airport. Cutter VISE was actually on her way back to homeport as the front approached, in anticipation of the weather. Waterspouts across the Tampa Bay were reported to have a damaging effect on several range structures. The Hillsborough Cut “D” ranges (both front and rear) were disabled by the high winds; both of the structures were multi-pile wood construction, and had seen many years of service in the mostly protected northern reaches of the bay. The front range had its entire header with all lighting gear blown away while the rear range sustained much more extensive damage. The 12” x 12” timber mud sills had been snapped and the entire tower (approximately 30ft height) had toppled into the water. Another range across the bay in the Cut “J” channel had also suffered a header and tower topple. VISE



*Cut “D” as it looked upon arrival*



*The finished Cut “D”*

responded to the call from ANT St. Petersburg and the Tampa Pilots regarding the discrepancies. After re-loading all required gear, VISE headed across the bay to get to work. Once on scene, ANT St. Pete took the lead on the front range due to the extremely shallow water. They waded out to the structure and hand-carried all the gear to fabricate a new header. Meanwhile, VISE was on scene at the rear structure managing to rig the tower and broken timbers as a single pick. Upon inspection of the tower, the steel foundation was found to be well worn and deteriorated, requiring replacement. The crew had to fabricate an entirely new foundation from scratch as the tower was outdated and not a standard modular system. After less than half a day onscene, all worn timber was replaced, a new deck was installed and the tower was standing vertical once again. All traffic coming out of Port Sutton and the downtown portion of Tampa could once again navigate the channel safely. VISE found herself underway once more heading a short distance away to repair another range in the Cut “J” channel finding only a multi pile steel jig onscene. After several grapnel hook

tosses, the tower was snagged and craned aboard. Once again the crew's ingenuity came into play as yet another tower had a weathered base that needed replacement. In less than six hours a new header was installed and the recovered tower completed with 4KRW dayboards and RL-14 lantern were watching over Tampa Bay.



*Post-storm Cut "J" wreckage*

A few valuable insights were gained as a result of this operation, the first of which was the discovery of potential weak links in the ATON network around the bay. The storm system had weeded out the aids that could have been weak links during this year's upcoming hurricane season, which ultimately helps in the long run. Another lesson learned is that VISE and ANT St. Pete were ready to answer the call on short order and ensure safe navigation of commerce across Tampa Bay and the rest of the region.



*Cut "J" LWP*



*Carefully lowering the new foundation*

## CGC SMILAX Crowned Queen of the Fleet

by LTJG Lisa De Pace, Fifth District Waterways Management

Photos by PA3 David Marin, Fifth District External Affairs



*Presiding over the ceremony (left to right):  
ADM Papp, Commandant and Gold Ancient Mariner,  
RDML Lee, Fifth District Commander, and  
BMC M Hearn, OIC KANKAKEE and Silver Ancient Mariner*

Tradition courses through the veins of the Coast Guard and is at the heart of the Aids to Navigation mission, which dates back to the U.S. Lighthouse Service founded in 1789. In Atlantic Beach, North Carolina, history and heritage were celebrated as Coast Guard Cutter SMILAX (WLIC-315) became the “Queen of the Fleet” on April 14, 2011.

Cutter SMILAX is a unique 100-foot bay and sound construction tender. It was designed by the Coast Guard and built by Dubuque Boat & Boiler works in Dubuque, Iowa. The SMILAX’s keel was laid November 26, 1943, launched August 18, 1944 and commissioned November 1, 1944. At the time, she was the most expensive ship in her class, coming in at a cost of \$194,238 and is the only remaining cutter of her class. Like many construction tenders, SMILAX is responsible for fixed and floating aids to navigation and is one of three construction tenders serving the Fifth Coast Guard District. The title of “Queen of the Fleet,” or oldest commissioned cutter recognizes SMILAX’s sixty-seven years of service and counting. While the SMILAX is the first construction tender to receive this honor, she is not the first queen in the aids to navigation fleet.

The Coast Guard Cutter FIR (WLM 212) served as the oldest commissioned cutter from 1988 until she was decommissioned in 1991.

As the Commanding Officer of the SMILAX, Chief Warrant Officer Scott McAloon, relieved the “watch,” the hull emblazoned with gold hull numbers was revealed. As he addressed the four hundred guests, he honed in on tradition and heritage. Featured in the program was a picture of a very young Petty Officer 2<sup>nd</sup> Class putting the hull numbers on SMILAX years ago. At the time, the Petty Officer 2<sup>nd</sup> class did not know that SMILAX would become the “Queen of

the Fleet” and that his son would be the Commanding Officer to accept the honor. Like Chief Warrant Officer McAloon, more than 30 percent of his crew, are second generation Coast Guardsmen. With the proud families of the nineteen crewmembers looking on, it was clear that the blue line would continue in some of those children.

The distinction as “Queen of the Fleet” is as much an honor for the crew as it is for the ship. SMILAX’s gold hull numbers are worn on both the ball caps and name tags of each crew member. Pride was evident in each crew member as the Commandant, the Fifth District Commander, and Silver Ancient Mariner designated SMILAX as “Queen of the Fleet.”

With 67 years of service completed SMILAX has seen many crews and will continue to see many more. All of her shipmates past, present, and future work to keep the ship running and the aids to navigation mission completed. The back of the program featured SMILAX, pictured sailing to sea and a quote from a former Commanding Officer, Chief Warrant Officer Michael Davis that truly represents SMILAX’s unique legacy.

“The shoals and shifting sands, the uncharted inlets and shallow rivers, the hot summer days and cold winter nights, the aging equipment and rusting steel. These are but a few of the constants each SMILAX crew has faced, and throughout the decades each has learned from the former and persevered. SMILAX is unique, one-of-a-kind, and no other cutter can duplicate her abilities. And for each of us that have served her, preserving the past and changing for the future, the constant remains. And now she is Queen and all who have served can be proud to be a part of her legacy.”



*SMILAX showing off her new gold numbering*

## True Volunteers

*by PA2 Renee Aiello, AIRSTA Houston Public Affairs  
and SN Lauren Laughlin, ANT South Padre Island*

Aids to Navigation Team South Padre Island, located deep in southeastern Texas, proudly honors three of its own who selflessly dedicate their time as volunteer firefighters: Petty Officer 3rd Class Fabian Gonzalez, Fireman Lance Strand and Seaman Benjamin Dennard. All three are volunteer firefighters with the Laguna Vista Fire Department. Not only do they work for the Coast Guard, but on their off time they are on call for the fire department.

Gonzalez, Strand and Dennard are qualified crewmen on all ANT South Padre Island platforms. Strand is a qualified engineer and Gonzalez is a qualified coxswain. Dennard is taking classes to become an Emergency Medical Technician for the fire department which also contributes to the Coast Guard.

Every Tuesday night they have training with the Laguna Vista Fire Department where they will become Texas state certified firefighters. Although they are not yet state certified, they have enough training to work under a state certified firefighter. Strand has been to approximately 40 emergency calls, Gonzalez has been to over 70 and Dennard has been to more than 100 emergency calls to assist residents of Laguna Vista, Laguna Heights and Port Isabel.

“I joined the Laguna Vista Fire Department because I wanted to help in the community plus I get to put red and blue lights on my car,” said Gonzalez. Gonzalez has been stationed with ANT South Padre Island for almost two years and has been a volunteer with the fire department for almost one year. Both Strand and Dennard have been with ANT South Padre Island and fire department for one year. “I always knew I wanted to help save lives. The Coast Guard has provided me the opportunity to do both; be a Guardian and a firefighter and now I will have my EMT certification too,” said Dennard.

On any given day, the call may come alerting volunteer firefighters that their assistance is needed. Just as with the Coast Guard, response time is of the essence: the quicker the response time, the better chance of successfully mitigating the situation. On the evening of Nov. 29, 2010, Gonzalez, Strand and Dennard responded to a raging house fire that put their expert fire-fighting training to the ultimate test.

It was approximately 7 p.m., Nov. 29, and a two-story home quickly caught fire becoming fully engulfed in flames within minutes. Coast Guardsmen Gonzalez, Strand and Dennard were notified and responded to the fire, which lasted for three hours. Gonzalez and Lance were the first to arrive on scene and took control of a fire hose. They entered the house via the front door and proceeded to combat the fire in the living room and kitchen. They were only in the house for 20 minutes when the roof started to collapse. The pair evacuated the house and continued continue fighting the fire from outside. Dennard, along with another firefighter, worked to extinguish the

fire from the back of the house.

“I have been to many calls, but it was not until this last fire that I truly understood what it meant to be a firefighter. This fire was huge and the whole house became engulfed in flames so fast,” said Gonzalez. “That house fire was the biggest structure fire I have been to. I was really worried about the houses next to it catching fire. They didn’t and I am glad no one was hurt,” said Strand.

Volunteering comes second nature to many Coast Guardsmen. Some men and women who chose the Coast Guard as a career are giving by nature; others develop the trait after experiencing the fulfillment volunteering brings to one’s life. Senior Chief Petty Officer Robert Gonzales, officer-in-charge of ANT South Padre Island supports unit members who want to go out into the community and volunteer their time and energy toward a given cause. “Their volunteer services provide the community a greater ability to respond to emergency situation while facing the potential dangers of placing themselves in harm’s way to provide assistance to others,” said Gonzales. “Their off-duty contributions allow Coast Guard members the opportunity to be highly visible within their community, thus creating a great relationship between the local community and the Coast Guard,” he said. Additionally, Gonzalez, Strand and Dennard are involved with the Boys and Girls Club of Laguna Madre, where they coach basketball and other community activities.



*The “True Volunteers” of ANT South Padre. (left to right) :  
SN Dennard, FN Strand, and BM3 Gonzalez*





*From opposite top-left (clockwise):*

*Working ATON in Sitka,  
BMC Michael Bagley*

*WILLOW Breaking Ice  
ENS Rachel Douglas*

*SYCAMORE setting Valdez security buoy  
ENS Carla Geyer*

*ANT Ft. Lauderdale finds a surprise  
BM1 John Bagley*

*WISE as backdrop for  
BLACKTHORN memorial  
BOSN Mike Popelars*



## Coming Soon: I-ATONIS Query Repository

by Marie Sudik, NAVCEN

Calling all I-ATONIS queries! Do you have any I-ATONIS queries that you run on a regular basis? Do you think another ATON unit or dpw could use the same query?



We want to establish a resource on the IATONIS website to make available generic queries for use by anyone in the ATON community. This repository will leverage expertise across district dpws and ATON units by sharing best practices for managing aid information.

Sometime this summer, we will add the following screen to the I-ATONIS website accessible via the SUPPORT menu option. The <Read Me First> link will direct the user to a tutorial demonstrating how to use the query repository.



In the meantime, we need *your favorite queries* to populate this webpage. Please send your queries, in either .xls or .dqy format, to Marie Sudik at NAVCEN, Marie.P.Sudik@uscg.mil.

## **CG LED Lantern Instructions**

*by Jon Grasson, CG-432*

Light Emitting Diode (LED) lanterns purchased from Carmanah, Sealite, Tideland and Vega contain instructions from the manufacturer that are geared towards an international audience and may detail features that we do not use or allow our personnel to access. In addition, there are specific settings for some Carmanah and Vega lanterns that must be activated during programming to ensure proper operation. The Ocean Engineering Division at CGHQ has specific instructions for the above lanterns posted on our website:

<http://www.uscg.mil/hq/cg4/cg432/>

You will find the specific documents under Products/Services, LED Lantern Instructions. Be sure to download and print a copy of the applicable instructions before selecting, programming, installing, maintaining and troubleshooting any LED lantern. CIM M16500.3A Aids to Navigation Manual-Technical has been updated to include the latest LED lantern offerings but directs users to the above website for specific details. In addition, CIM 16500.19C Short Range Aids to Navigation Servicing Guide was recently updated with the latest LED lanterns and includes programming information (as requested), but directs the user to the website for more specific instructions.

## **“LEDBullets” for Range Lanterns**

*by Jon Grasson, CG-432*

The Ocean Engineering Division purchased a Light Emitting Diode (LED) insert for the RL14 range lantern that eliminates the CG flasher, lampchanger, lamps and mirror. The device is called the LEDBullet and it was developed under contract by Tideland Signal Corporation. They offer a substantial power savings in red and green, and have a long life (10-20 years). A clear glass or the existing spread lens is used to provide the necessary horizontal divergence, however the LEDBullet has sufficient divergence such that it can be used without a spread lens. Intensities are adjustable from approximately 2000 candela to 100,000 candela (76,000 for yellow) using a 3 degree spread lens. Higher intensities in white are anticipated. While this kit is specifically designed for the RL14, Tideland has developed a FA-240 kit for the Canadian CG that will be offered later this year. This kit replaces the same components and will never require focusing. For low intensity applications, this is an economical solution if the ANT has FA-240 housings on-hand. The LEDs used in the LEDBullet determines the signal color. A white LEDBullet cannot be used with a yellow, red or green spread lenses. However, a clear glass or clear spread lens can be used with white, yellow, red or green LEDBullet.

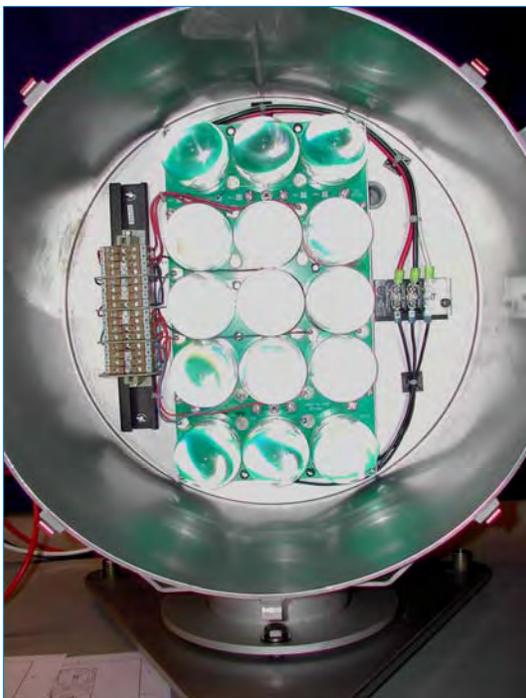
The 250mm with condensing panel (w/cp) does not have an elegant solution. For now, use a RL14 or FA-240 and sync an additional light to the LEDBullet if an all-around signal is required. The LEDBullet can be synced with existing CG slave flashers, the new CG-504 flasher, Tideland's MLED-120 lantern and Vega's VLB-67-SA standalone LED lantern.

Additional details are on our website under Products/Services, LED Lantern Instructions, and under Pubs/Software, Solar Sizing Programs and Tables, Ranges Solar Sizing Program compares legacy equipment with the LEDBullet.

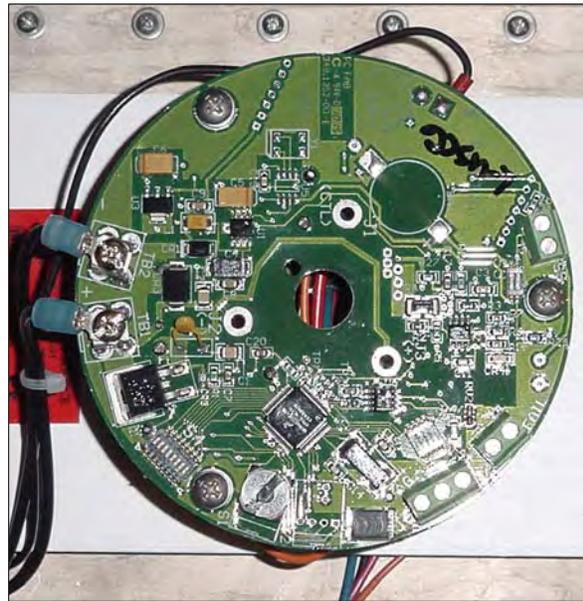
<http://www.uscg.mil/hq/cg4/cg432/>

Use this program to compare the capabilities of the existing RL14 installations and select a LEDBullet that is a close match to the existing intensity. Because these LEDs are much more efficient than the existing incandescent lamps, now is a good time to reevaluate the range using the range design spreadsheet and optimize the brightness balance and recommended intensities.

We have 30-40 white, red & green kits (a few yellow) at SFLC Baltimore that will be free-issue for conversions CG-wide. Contact your district (DPW) staff if you are interested in converting your range lanterns to LEDs.



*The front of the new LEDBullet assembly*



*A rear-facing view of the component card for the conversion*

## New 55-foot ANBs Aid ANT Mission

*originally submitted by CGHQ(oan) Staff  
reprinted from Winter 1976 Bulletin*

New aids to navigation servicing boats have been slowly making their appearance at selected units around the Coast Guard during the last four months. The 55-foot, V-bottom, all aluminum aids to navigation boats, are designed to be the primary servicing tool of Aids to Navigation Teams (ANTs), and to operate in inland waterways, bays, sounds and harbors for normal and emergency servicing of aids to navigation.

The builder, Robert E. Derecktor, Inc., of Mamaroneck, New York, contracted to build the first 12 boats of a 19 boat fleet. The contract for this construction was awarded on June 30, 1975, and the keel for the first hull was laid on October 18, 1975. The first boat was delivered to CG Yard for acceptance and sea trials in December 1976 and the twelfth boat will be accepted some time in April 1977.



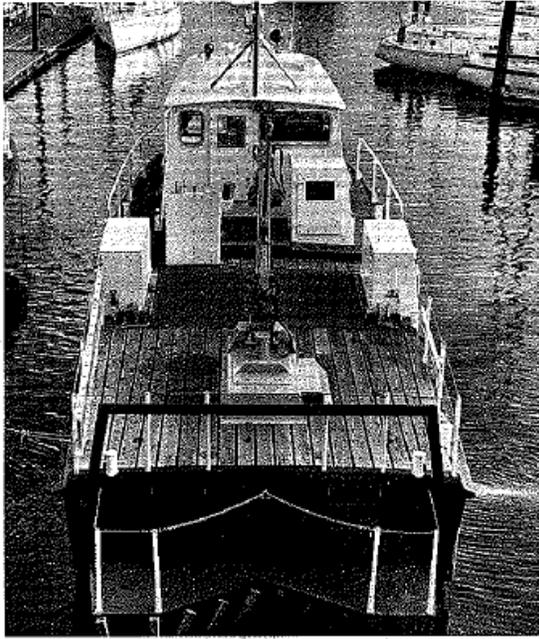
*55-foot ANB underway during trial runs*

The power plant chosen for the ANBs is the General Motors 12-V-71-T1 turbo-charged engines which develops 540 HP at 2300 RPMs. This produces a speed of about 21 knots. The designed draft with a full deck load of 4000 lbs is 5.29 feet and 5.0 feet

while unloaded. Another feature is the twin-disc "Omega" MC-514M 2.5-1 reduction gear. This "Omega" reduction gear allows shaft RPM to be varied independently of engine RPM which allows for greater maneuverability at slow speeds.

The fuel oil capacity of 1000 gallons gives the ANB a range of 340 miles at maximum speed. This range is increased to over 1000 miles if the engines are run at a more economical speed of 1000 RPMs for 9.6 knots.

The boat represents a new direction for aid servicing although the concept has been used for many years. Essentially, it is cheaper to operate and crew a boat of four than it is to operate and crew a ship of forty. Rather than recalling an entire crew of a buoy tender to respond to a discrepancy, it is better to send four people in a small boat to response to the emergency. Facilities located onboard include a galley and dinette which are located in the pilot house, a shower and



*Stern view of 55-foot ANB*

head, and bunks and lockers for four crew members. These facilities allow the ANT to extend their range of operations to include remaining away from home port for longer periods of time. Air conditioning and electric heating are provided in the pilot house, crew quarters, and the work shop.

Preparation for construction of the last seven 55' aids to navigation boats (ANBs) has recently begun in Florence, Alabama. On March 14, 1977, after competitive bidding, the contract was awarded to Kings Craft boat builders who will build the boat for \$328,550 each. The first ANB to be produced by this contract should be ready in February 1978 and one per month thereafter.

## White Replaces Gray as Battery Box Color

*originally submitted by Stan Walker  
reprinted from Summer 1976 Bulletin*

All Aids to Navigation units were advised by the August 10, 1976 COMDTNOTE 10540 of the availability and use of the new white battery boxes. White was adopted as the new color for battery boxes because it reflects heat, whereas gray tends to absorb heat. Joint analysis by the Research and Development Center and G-EOE revealed a correlation between battery failure and high temperatures within the battery box

The transition to white boxes will be gradual because many gray boxes now in use have a significant lifespan remaining. If you have gray boxes which are still in good shape, but consider that excessive heat is a potential cause of reduced battery reliability, white battery box tops can be procured for installation on existing gray boxes. Periodically, we receive complaints or see reference to additional problems associated with battery boxes. Some of these complaints include:

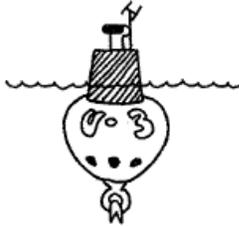
- 1) There is no good way to keep the top and bottom together.
- 2) A retainer is needed so that the top isn't blown off.
- 3) Excessive force is required to snap the two pieces together causing the breaking of the box.

We would like to have some feedback on the pros and cons, or any suggestions that you might have with the design of the new white battery boxes.

## A Buoy for All Occasions

*originally submitted by LTJG W. D. Peterson, CCGD8(oan)  
reprinted from Spring 1974 Bulletin*

The following new buoy types have been proposed to reduce the number of aids to navigation destroyed by collision.



Submarine Buoy:

Submerges whenever a large vessel approaches on a collision course. For increased reliability it is manned by a midget ex-U-boat captain.



Iceberg Buoy:

From the surface it appears to be a menacing iceberg which mariners carefully avoid. Not practical in the Gulf area (Cajuns attack them for ice cubes).



Cutter Buoy:

A mock Coast Guard patrol boat frightens away would-be wrong-doers. Unfortunately, it also attracts large numbers of fisherman requesting tows.



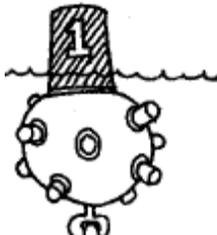
Decoy Buoy:

It has no mooring. Instead, it slowly cruises in a random pattern that leads vessels away from other buoys.



Turncoat Buoy:

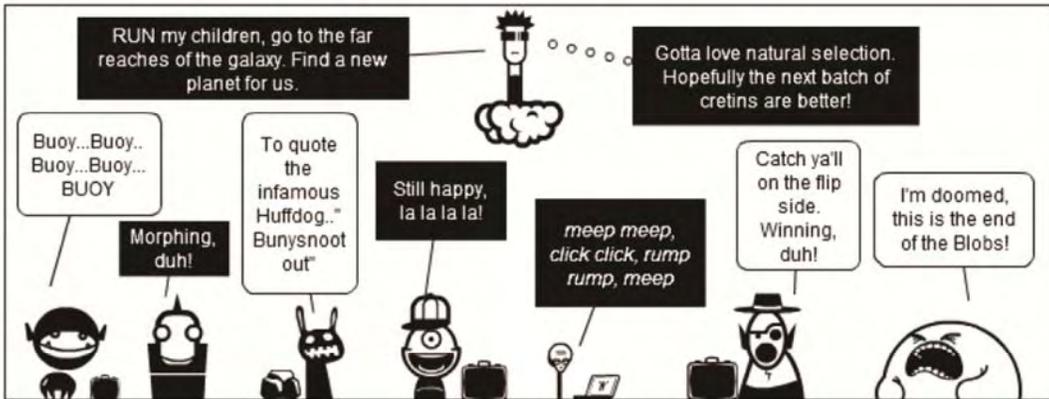
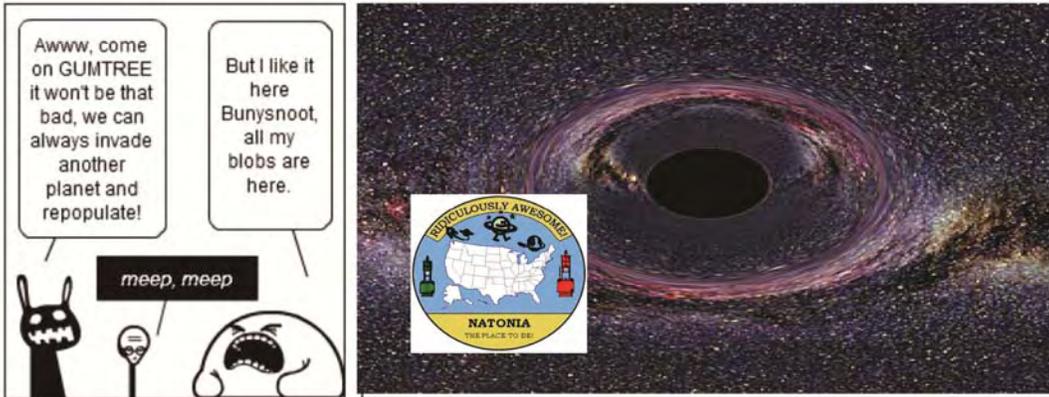
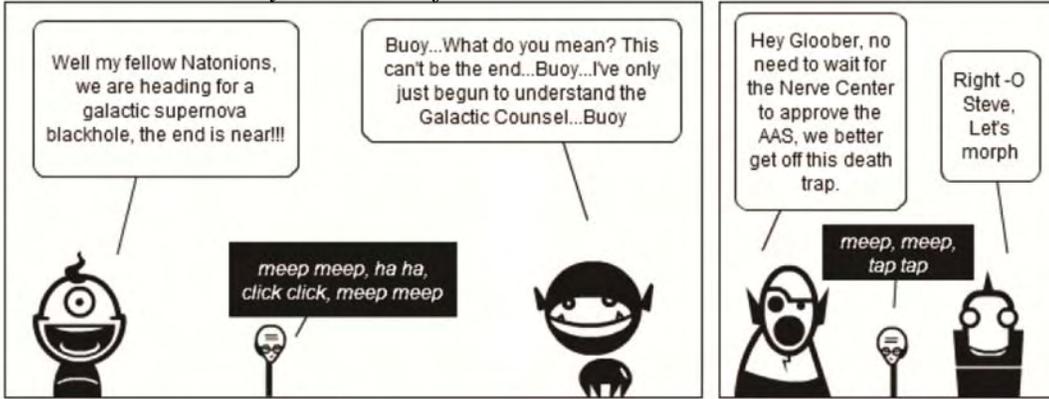
It flips over changing color, number, and shape according to a random time schedule. Mariners avoid channel whenever possible



THE ULTIMATE WEAPON.

# The Chronicles of NATONIA: The Final Chapter

by BMC Jennifer Zercher, NATON School



# National Aids to Navigation School



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