The
Aids to Navigation Bulletin

National Aids to Navigation School **Fall 2009**

National Aids to Navigation School
US Coast Guard Training Center, Yorktown, Virginia

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.

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:

- 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.

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 tracy.m.speelhoffer@uscg.mil or mailed to:

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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.

The articles contained herein are non-directive and non-record material. They are published for informational purposes only.

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On the Cover: The crew of CGC FRANK DREW (WLM 557) renders honors as they pass the site of the CGC CUYAHOGA collision
Photo contributed by CWO4 Mo Etiemble, CO, CGC FRANK DREW
See details on page 2

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SN Daniel Beekman gives hand signals to the crane operator as BMC Mike Love supervises on board USCGC FIR (WLB 213)

Photo by PA3 Tara Molle

Remembering CUYAHOGA

by CWO Mo Etiemble, USCGC FRANK DREW (WLM 557) and LTJG Tracy Speelhoffer, NATON School

Students and Staff at Training Center Yorktown honor their fallen shipmates

On October 20, 2009, units all around the Coast Guard took time to remember the lives lost on board Coast Guard Cutter CUYAHOGA in 1978.

CUYAHOGA got underway from the pier at Training Center Yorktown with thirteen crewmembers and sixteen officer candidates to conduct an overnight training mission. At 2107, the Argentine coal freighter Santa Cruz II struck CUYAHOGA on her starboard side and CUYAHOGA flooded quickly and sank within two minutes. Eleven guardians lost their lives that night.

The photo on this issue's cover was taken on October 20th as Coast Guard Cutter FRANK DREW rendered honors as it passed the site where 31 years earlier the collision between the Cutter CUYAHOGA and the freighter Santa Cruz II took place. During the ceremony aboard FRANK DREW the names of our fallen shipmates were read over the 1MC followed by a toll of the ship's bell. The ceremony was concluded by announcing changes that were implemented as a result of this MISHAP that we take for granted today such as the testing of the ship's general alarm and whistle and having emergency lighting in berthing areas.

Training Center Yorktown held a memorial as well. Five surviving CUYAHOGA crewmembers, families of the lost guardians, and several OCS staff attended the ceremony, which began on the parade field and proceeded to the Old Yorke Chapel on base. RADM William (Dean) Lee, Commanding Officer Deployable Operations Group, presided over the event.

Survivors and family members of those lost take a photo following the ceremony at Training Center Yorktown

Memorials were held at other units around the Coast Guard as well, including the Coast Guard Academy, where OCS is now located. It is important that we continue to take the time to honor our fallen shipmates and, as FRANK DREW did, reflect upon the changes that were implemented to prevent another tragedy such as this one.

NATON Course Schedule FY2010

Aid Positioning (ANC-AP)
December 1 – 10, 2009
January 19 – 28, 2010
February 16 – 25, 2010
April 6 – 15, 2010
May 11 – 20, 2010
August 10 – 19, 2010
September 14 – 23, 2010

Officer Advanced ATON (ANC-OA)
March 15 – 19, 2010
April 26 – 30, 2010
June 14 – 18, 2010

Officer Basic ATON (ANC-OB)
March 8 – 12, 2010
June 7 – 11, 2010
August 30 – September 3, 2010

ANT OIC (ANC-ANT)
March 22 – 26, 2010
April 19 – 23, 2010
August 2 – 6, 2010

Minor Aids Maintenance (ANC-MAM)
November 30 – December 4, 2009
January 4 – 8, 2010
March 15 – 19, 2010
April 26 – 30, 2010
June 14 – 18, 2010
August 16 – 20, 2010

Advanced Minor Aids Maintenance (ANC-AMA)
December 7 – 11, 2009
January 11 – 15, 2010
February 8 – 12, 2010
March 22 – 26, 2010
May 3 – 7, 2010
June 21 – 25, 2010
August 23 – 27, 2010

ATON Tower Climber Safety (ANC-TC)
November 16 – 20, 2009
March 29 – April 2, 2010
April 12 – 16, 2010

River Tender (ANC-RIV)
September 20 – 24, 2010

Buoy Deck Supervisor (ANC-BDS)
December 7 – 11, 2009
March 1 – 5, 2010
May 17 – 21, 2010
August 2 – 6, 2010

Construction Tender (ANC-C)
March 1 – 5, 2010
August 16 – 20, 2010

Automated Lighthouse Technician (ANC-LT)
January 25 – February 12, 2010
July 26 – August 13, 2010

Solar Powered Major Aids (ANC-SP)
February 22 – 26, 2010
May 10 – 14, 2010
June 7 – 11, 2010
August 16 – 20, 2010
September 13 – 17, 2010

Differential Beacon (ANC-DB)
November 16 – 20, 2009
December 7 – 11, 2009
January 4 – 8, 2010
March 8 – 12, 2010
April 19 – 23, 2010
June 21 – 25, 2010
September 20 – 24, 2010

Training Team Management (ANC-TT)
May 25 – 28, 2010

NOTE: All course dates are subject to change. Please check TQC's website (http://www.uscg.mil/hq/tqc/default.asp) to confirm course dates before submitting ETR's.

"Super Dave" Concludes 33 Years of Service

by LTJG Tracy Speelhoffer, NATON School

On Friday September 11, 2009, at the blustery end of the Training Center Yorktown pier, Chief Warrant Officer Dave Merrill stood on the buoy deck of USCGC FRANK DREW and said goodbye to the Coast Guard. The Coast Guard said goodbye in return, and it's tough to tell who will miss the other more.

Dave enlisted in the Coast Guard in September 1976 and sixteen duty stations, one Surfman pin, one Cutterman pin, one Command Afloat pin, five buoy tenders, and 17 years of sea time later, retired in style on the deck of the ship he commanded from 2002 to 2005. On the buoy deck sat a red 7X17 with a glass lens 200mm lantern and the number 76, representing Dave's first year in the Coast Guard (1976). Ashore on the pier was a green 7X17 outfitted with an LED and the number 09, symbolizing Dave's last year (2009) in the Coast Guard. The progression of the technology from the legacy to modern ATON equipment paralleled the numerous technological changes that came about during Dave's time in the Coast Guard. It is an understatement to say that Dave saw the service transform over the course of his career.

It was a memorable ceremony, thanks in large part to the efforts of the crew of FRANK DREW, who took time out of their busy schedule to serve as the platform for such a special event. The ship looked fantastic, and the crew helped out in every way possible. The ceremony's guest list was a proverbial "who's who" of the ATON community, and included old shipmates galore, with over 100 in attendance. NATON's own Steve Kingsley was the Master of Ceremonies and CDR Wendy Calder served as the Host. CDR Ty Rinoski, Dave's shipmate back on the RED CEDAR, and now the XO at TRACEN Yorktown, was the Guest Speaker. Dave's children, Jason, now a Captain in the U.S. Air Force, and Renee, who made the trip from Australia, spoke as well. The speeches ranged from jabs at Dave's golf game to tales of Dave as a father to Jason and Renee to sea stories from shipmates both present at the ceremony and those who were unable to attend but sent emails and letters to be read. And of course, Dave's wife of 33 years, Toni, was recognized for all the sacrifices she made, and was clearly looking forward to having her husband back.

Besides the roast that CDR Rinoski put Dave through before he got to his actual remarks, and the touching presentation of the ceremonial flag detail, one of the highlights of the ceremony was when CDR Calder presented Dave with his own "Super Dave" cape, which he donned for a portion of the ceremony, and looked nothing less than natural, as if we had all been imagining it there the whole time anyway.

Because to many of us throughout the Coast Guard and especially in the ATON community, Dave really was "Super Dave." The remarks at the ceremony as well as conversations around the reception all had one resonant theme—Dave was the man, and he knew just about everything one could know about ATON. There were numerous stories of Dave helping out a shipmate in need, extending guidance to a wayward JO or two, coming up with a "creative" solution to a seemingly impossible problem, and always having that quick wit that kept things in perspective. Dave was a shipmate, a friend, and a mentor to so many over the span of his 33-year career.

And while Dave commented during his remarks that he felt like such a lucky guy to have had the fulfilling career he did, one thought flickered through the minds of everyone in attendance: not quite, Dave. We were the lucky ones, all the better for having served alongside you, whether it was for days or years. Whatever Dave's next endeavor is, I'm sure those who get to work with him in the future will consider themselves lucky, just like we did. Fair winds and following seas, Dave and Toni. We'll certainly miss you. Dave, get to work on that golf game!

Help Wanted!

by LTJG Tracy Speelhoffer, NATON School

Ahoy, ATON world! Hope everyone is doing well. Well, we here at NATON got to thinking about the upcoming transfer season, and we realized that quite a few of our folks are leaving this summer! In order to maintain the professional, high-quality training we pride ourselves on providing here, we wanted to get the word out that we're looking for a few good ATON people to come work with us and train the fleet for a couple of years.

It's a pretty good gig, actually. Yes, you're ashore, so how good can it be? But, although you're ashore, it's a great chance to keep in touch with the rest of the ATON community and be in on the latest changes and newest tools of the trade. And while you're here, there are plenty of opportunities to brush up on your other ATON skills—sit in on a positioning class, take an Advanced Minor class, the possibilities are endless!

To give you an idea of the type of work we do and the job openings we'll be having, we've broken it down by section. Check out your potential future job!

MINOR AIDS

Ahoy from the Minor Aids Section at NATON! The Minor Aids Section is comprised of one BMCM (Section Chief), one BMC and one BM1. We provide instruction in Minor Aids Maintenance, Advanced Minor Aids Maintenance, Tower Climber Safety and portions of the Officer Basic and Aids to Navigation Team (ANT) OIC course, each of which is five days long. When not teaching, much of our time is spent working on curriculum development, updating lessons plans, maintenance of training aids, and responding to e-mails and phone calls from units in need of technical assistance. We don't usually travel, but have made trips to District 14 to conduct training and occasionally do road shows at ATON conferences or round-ups. The BMC and BM1 are required stand base duty, which is generally on a pretty good rotation. The Section Chief assists with instruction at the school and is directly responsible for the Training Team Seminar course. Additionally the Section Chief travels while instructing the River Tender, Construction Tender, and Construction Tender for MK courses.

Job Openings This Transfer Season: Instructor (BMC), Instructor (BM1)

MAJOR AIDS

The Major ATON Section has five billets: one EMCS, one ETC, two ET1's and one EM1. We teach three courses: Lighthouse Technician (ANC-LT), offered three times a year and approximately three weeks long; Solar Lighthouse Technician (ANC-SP), offered six times a year and approximately one week long, and Differential Beacon ANC-DB, offered seven times a year and approximately one week long. We also assist with the Tower Climber Safety course as well

as the Minor Aids Maintenance and Advanced Minor Aids courses. When we're not teaching, we work on curriculum development, updating lessons and training aids, and working with C2CEN, Ocean Engineering, and other offices on the development of new Major ATON equipment. The desire to teach and instruct is fundamental to success. Familiarity with lighthouses and/or DGPS is a definite plus when working in this section, but is not required in order to become a very effective instructor. In addition to our primary duties, we also stand base duty—The EMCS and ETC stand OOD (Officer of the Day), and the First Class Petty Officers stand DMAA or SMAA (Duty Master at Arms or Safety Master at Arms) at one of the Barracks or at the Liberty Lounge.
Job Openings This Transfer Season: Instructor (ETC), Instructor (EM1)

OPS
There are three of us in the Operations Section, one LTJG and two BM1's. We teach the two-week Aid Positioning course and portions of the Officer Basic, Officer Advanced, ANT OIC and Tower Climber Safety courses (each one week long). We don't usually travel, but may venture out to a District ATON conference or two in the summer. We all stand duty—the LTJG stands Command Duty Officer and the two BM1's stand Duty Master at Arms. Familiarity with the IATONIS or AAPS programs is a definite plus when working in this section, but even if you haven't used it before you can pick it up pretty quickly. When we're not teaching, we work on curriculum development, updating lessons and training aids, and working with OSC, NAVCEN, and other offices on the development of future versions of IATONIS and AAPS. We also take calls from units having technical problems with these systems or other aspects of ATON admin or positioning. The LTJG is also the Editor of the ATON Bulletin (Sports Illustrated of ATON—complete with calendar!), which comes out every quarter.
Job Openings This Transfer Season: Section Chief (LTJG), Instructor (BM1)

Buoy Deck Training Team
The few, the proud, the Buoy Deck Training Team. Our team consists of a BOSN, two BMC's and two BM1's. At Yorktown we assist in the instruction of the Officer Basic, Officer Advanced, ANT OIC, and Tower Climber Safety courses (each one week long). On the road we train on a two year cycle all WLB, WLM and WLBB's. This past year we developed the exportable Buoy Deck Supervisor class, which is four times a year on a host cutter. We also are used in rigging instruction and judging at several of the Buoy Tender Roundups. A Buoy Deck Supervisor qualification is necessary, as we instruct students in how to safely execute the standard evolution. We travel on an average of 22 weeks per year, but lately that number is reaching the mid to high 20's. When we are not on the road we update our training to include power points, video, photos and our student guides. We are the only section within NATON that is exempt from standing duty due to our travel schedule.
Job Openings This Transfer Season: Instructor (BMC), Instructor (BMC)

NATON Museum Curator

by BMC Colin Langeslay, NATON School

The NATON Staff would like to introduce and welcome our newest team member, Auxiliarist Virginia Thomas. Virginia has been designated by the School Chief as the first ATON Museum Curator.

Virginia arrived in Yorktown this summer with her husband BM1 Stacy Thomas, a member of the Buoy Deck Training Team. Virginia learned conservation, archive and display skills through work with the Cordova Historical Society while previously stationed in Cordova, Alaska. She was awarded the USCG Auxiliary Commandant's Letter of Commendation by CGC SYCAMORE for creation of historic displays, updating the cutter's website, and serving as Ombudsman. Prior to moving to Yorktown, she was awarded the USCG Auxiliary Commendation Medal for her work documenting, preserving and displaying over 350 items at USCG Group/Air Station Port Angeles, Washington. In 2005 the Thomas' authored a book entitled *Guarding Door County: Lighthouses & Life-Saving Stations, documenting the Coast Guard's role in Door County, Wisconsin*. Additionally, she assisted the Door County Maritime Museum with work on lighthouses and displays. She's currently serving in her fifth year as a member of the USCG Auxiliary and qualified as AUXOP, Instructor, and Vessel Examiner.

Virginia served one tour in the Coast Guard achieving the rank of QM2 and she married Stacy in 2003. Virginia received her Bachelors of Arts in Latin from the University of North Carolina in 1997 and is currently pursuing her Masters of Arts in History at Old Dominion University in Norfolk, Virginia. As Curator, Virginia plans to produce a comprehensive archive of historical items; create several new displays; reorganize current exhibits; and scan important ATON documents, photos and publications. Virginia can be reached at Virginia.N.Thomas@uscg.mil.

Welcome to the staff Virginia, we're glad to have you aboard!

Editor's Note: *Although it is the ATON "Museum," due to restrictions to base access and the limited availability of our staff, we are sorry, but the museum is not currently open to the public. We are working on determining the most efficient way to schedule a time when we can open the museum to the public. Keep your eye out for updates!*

New ATON Structure—SPP (Single Pile Plastic)

by BMC Ben Hicks, BMC Shane Beck and BM1 Scott Jones, D8 ATON Training Team

A good example of the SPP Sturucture

Rohn Towers are the primary structures used in the Western Rivers as shore-based aids to navigation due to the fact that all parts can be hand-carried up the banks and constructed by shore parties when the cutter's crane can not reach the aid. With the rising cost of steel in the U.S., the price of the Rohn Tower has increased drastically in the past few years. The price to set up a 20ft Rohn Tower today not including the lighting equipment is approximately $1,164.00 versus $540.00 for a 15ft SPP (single pile plastic) structure. There are more benefits to these structures than just the cost. The primary benefit is safety. These structures are designed to be lowered, not climbed. After lowering, servicing the light and any other required maintenance can be conducted at ground level. Additionally, multiple personnel can service the aid, not just a single technician up on the structure. The Tower Climber Certification does not have to be considered when selecting personnel to service these types of structures. The SPP structure is plastic, therefore corrosion and weathering is not as big of a concern. The SPP structures cannot replace all of the shore aids on the Western Rivers since they are only built to 15 feet. They are not replacing the 30ft Rohn Towers or the dayboards in trees (don't be alarmed—we are asking the tree's permission and using tree-friendly nails). Given the size and weight of the materials needed to build this new structure versus the Rohn tower, the units are also able to transport it more easily to the river bank by small boat.

To purchase the SPP structure materials, the unit will need to visit their local friendly plumbing supply or hardware store. Since most components can be purchased locally, it will also reduce the spare tower parts inventory for many units. The only item that cannot be bought locally is the dayboard mounting bracket. When the unit needs more dayboard mounting brackets they simply let us at the District know and we will have them fabricated and shipped out.

The crew of CGC OSAGE builds their first SPP structure

As with all things new it usually comes with a required learning period, but the units will quickly see that this new structure is not only cheaper, it can be constructed quickly, safely and is less labor intensive. The information and plans have been passed to District 7, who modified and implemented the practice at ANT San Juan.

House Cleaning after 152 Years of Service

by SN Mark Patrzalek and MK3 Sean Dolan, USCGC HENRY BLAKE (WLM 563)

A view of the Tatoosh Island Lighthouse

At the entrance to the Strait of Juan de Fuca, a 65-foot tall lighthouse sits atop a 20-acre island approximately a half-mile off of Cape Flattery. The island is called Tatoosh Island and is the namesake of a chief of the Native American Makah Tribe. For 152 years, the Tatoosh Island Lighthouse has maintained the watch, safely leading mariners back to the Strait of Juan de Fuca. Prior to the establishment of the light, mariners were compelled to remain at sea until daylight to avoid the treacherous shoals located at the western entrance to the Straits.

Construction began in 1855 and the lighthouse was equipped with a first-order Fresnel lens. When construction was completed on December 28, 1857, the light became the third lighthouse within the Washington Territory and the northern most lighthouse on the continental west coast. The Federal Government later added a weather station to the light that operated from 1883-1966. Over the years, many keepers have called the Tatoosh Island lighthouse "home." The last keeper was relieved of his watch in 1977, when the light was automated by the U.S. Coast Guard.

On the morning of August 27, 2009, Coast Guard cutter HENRY BLAKE, crewmembers from ANT Astoria, and a HH-60 Jayhawk from Air Station Astoria assisted Mr. Doug Cameron (District 13 dpw Equipment Specialist) in cleaning house at the light. Old generators, more than nine pallets of miscellaneous hardware, a fuel tank, and many other items that had accumulated over the past 152 years were successfully removed. Thanks to some very impressive flying by the crew from Air Station Astoria, all of the items were safely hoisted off the is-

The HH-60 skillfully lowers equipment to HENRY BLAKE

The HH-60 dropping off another load of gear on HENRY BLAKE's buoy deck

land and placed on the buoy deck of HENRY BLAKE.

As the final pallet was placed on the deck of HENRY BLAKE that beautiful summer day, the ship's crew watched the HH-60 Jayhawk veer off into a fog bank. In the distance, waves crashed and sounded off the jagged Tatoosh shoreline as the lighthouse stood tall, keeping watch as it has proudly done for the last 152 years.

The house-cleaning exercise is a symbol of the past, present, and future for the Tatoosh Lighthouse and the U.S. Coast Guard. From the past, large pieces of glass lenses and a diesel generator were removed and replaced by present-day lighting and solar technology. Into the future, the light can now continue to offer safe passage into the Strait of Juan de Fuca. With the aid and support of the U.S. Coast Guard, the long history and tradition of the Tatoosh Lighthouse carries on.

CGC WALNUT Recovers Over 32 Metric Tons of Marine Debris

by First Class Cadet Jordan Wooddell

Although 400 nautical miles from land, the water appears blue as a neighborhood swimming pool and the seas seem calm as a dentist's fish tank. This is Maro Reef, one of the sites USCGC WALNUT worked for three weeks in Summer 2009. Though not a standard WLB mission, two members of the Army's Seventh Engineering Dive Team and two personnel from the NOAA Pacific Island Coral Reef Ecosystem Division joined Team WALNUT to seek out and remove derelict fishing gear and other marine debris from the Northwestern Hawaiian Islands' Papahanaumokuakea Marine National Monument. The patrol succeeded in removing over 32 metric tons of debris from the reefs and islands of the national monument.

WALNUT departed Oahu on June 21st, transiting over 800 miles to Maro Reef. Almost entirely submerged and not well-charted, this reef created a challenging transit for WALNUT's standard boats and three non-standard skiffs from WALNUT's anchorage location to the area of operations inside Maro Reef. For nine straight days, WALNUT divers and crewmembers worked from early morning to late afternoon to recover almost 14 tons of marine debris. Much of this debris was entangled in the reefs or buried in the sand, requiring several hours to free or cut away from the coral before loading it into one of three skiffs WALNUT used for this mission. While not the typical ATON operations that the WALNUT divers are accustomed to, Coast Guard ATON divers are uniquely suited to perform these operations, because they typically work with entanglement hazards and lift heavy loads from the seafloor. Hand cranks and a lot of teamwork succeeded in lifting the heavy loads into the skiffs for return to the cutter. In some cases, net bundles weighing more than 3,000 pounds were located, lifted by WALNUT's divers, and towed by WALNUT's work boat back to the cutter. At the completion of each day the skiffs returned the divers to WALNUT and offloaded the recovered debris. The debris was hoisted out of the skiffs using the crane and placed in one of two 8' by 8' by 20' cargo containers griped to WALNUT's buoy deck. Throughout the operation, NOAA personnel recorded data on the type and location of debris for use in their debris accumulation study. It is currently estimated that nearly 52 tons of marine debris collects in the Northwest Hawaiian Islands each year.

Bringing up a large load of debris

One side benefit of these operations was the opportunity to see and snorkel in a pristine coral reef environment. With the monument closed to fisher-

A load of debris brought onto the buoy deck

men and the isolated geography of the atolls, marine life thrives on these reefs. While several sharks were seen by the divers and snorkelers inside Maro Reef and later at Kure Atoll, the biggest hazard encountered were curious ulua (a.k.a jack crevalles) that attacked the divers' shiny knives and the stainless steel boat propellers (not a good self-preservation move on their part). Crewmembers also saw manta rays, albatross and the endangered Hawaiian monk seal.

After completing operations at Maro Reef, WALNUT continued westward to Midway Atoll where the cutter moored for the July 4th holiday. However, this port call was more routine than holiday as WALNUT crewmembers used heavy machinery maintained by the U.S. Fish and Wildlife Service to onload an additional 15 tons of marine debris that had washed ashore at Midway Atoll over the past year. WALNUT also delivered sixteen pallets of supplies to the refuge personnel and contractors that live on the island. Similar to the traditional lighthouse resupply missions, District 14 WLB's have frequently been tapped to deliver supplies to the many wildlife refuges located on remote island atolls in the Pacific Ocean.

After departing Midway, WALNUT traveled to the last atoll in the Hawaiian Island chain, Kure Atoll. At Kure Atoll, WALNUT personnel resumed marine debris recovery operations, removing an additional 2 tons of marine debris over the next three days while personnel from Civil Engineering Unit Honolulu collected 3 tons of soil from the island for an experimental PCB remediation project. This soil was transported back to Honolulu where the experimental remediation project will take place using funding from the Commandant's Innovation Council.

Over the course of 3 weeks, WALNUT removed over 32 metric tons of debris from the Papahanaumokuakea Marine National Monument while transiting over 2,900 nautical miles. While the typical debris collected during these operations is discarded fishing nets, pieces of plastic and other refuse which are harmful to fish, marine mammals, and coral were also found and removed. One of the best aspects of this operation is that the debris recovered is brought back to Honolulu where a local steel recycling company shreds the collected material and sends it to the local electric plant where it is burned and converted back into energy.

Many similar programs are springing up around the country to help address the problem of plastics in our oceans. Efforts have been undertaken by other WLB's to recover lost lobster traps, trawl nets and other debris from the ocean floor. While marine debris recovery operations are not a 'validated' Coast Guard mission at this time, the WLB and WLM platforms are well-suited for this type of operation due to their lifting capacity and ability to carry large amounts of collected debris on deck. Cutters KUKUI and WALNUT have been conducting marine debris operations since 1996. Since this program has started, over 540 metric tons of debris have been collected by USCG and NOAA vessels.

Assessing the Impact of an ATON Resource Hour

by ENS Isaac Slavitt, USCGC WILLOW (WLB 202)

Anybody on a buoy tender can tell you roughly how long it takes for their ship to work an average buoy, but ask the same person to factor in transit time and they might find it a little more difficult. Variables ranging from the vagaries of weather to shorter daylight periods add daunting complexity, especially over the course of a year. In fact, there's no easy way to access that kind of information. A simple metric – ATON Hours per Buoy Visit (AHPBV) – might help. Knowing what to expect from a certain number of ATON hours would help cutters plan their work and communicate those expectations to other stakeholders.

ATON resource hour data was gathered from the Coast Guard Business Intelligence (CGBI) web application. The "AOPS Resource Hours" cube allows all hours reported by individual units to be broken down by different dimensions. Hours classified as ATON were grouped by fiscal year and recorded for each WLB and WLM between 2006 and 2009. For this metric, all hours recorded as ATON were purposely used without subdivision in order to capture transit time and avoid differences caused by different data entry methods.[1]

Collecting data on cutter buoy visits was more difficult. The source database was the Integrated Aids to Navigation Information System (IATONIS), which was accessed through queries created in Microsoft Excel. A severe limitation of the IATONIS database is that is does not store information on all buoy visits as initially captured by the Automated Aid Positioning System (AAPS); only the data from the most recent buoy visit is available. One way to sidestep this problem is to use Aid Remarks comments left in IATONIS (which are stored permanently).[2] Fortunately, it is common practice for cutters to leave a remark for every single visit, usually including the reason for visit and other relevant servicing information.[3]

Counting these remarks can approximate the number of buoy visits, but this approach has drawbacks. The database table which stores comments does not track which unit made the visit, only which unit created the remark – usually the unit with primary responsibility for the aid. The obvious problem is that there is no reliable way to exclude visits conducted by another unit. Examples of such errors would include when a cutter works an aid for which they are not the primary unit, or if the unit assigned as primary owner has changed within the period queried (only the current primary unit is stored in IATONIS).

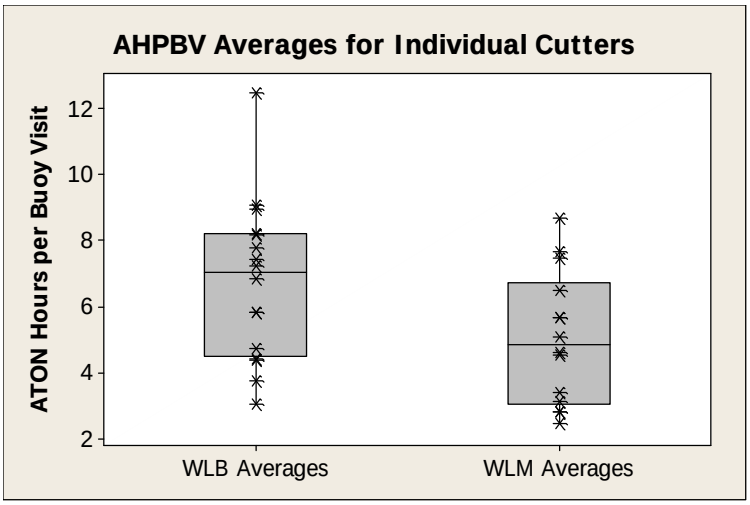
Despite these issues, there is a case to be made for using this data. First, the number of such errors is probably small compared to the overall number of buoy visits for a given cutter over the course of a year. Also, the number of visits by other units which are erroneously attributed to a

[1] It is possible in AOPS to assign ATON hours to several mission sub-categories, the use of which varies greatly between cutters and years – probably due to differing policies and personnel.
[2] This approach was suggested by Mr. Larry Jaeger of COMDT-432.
[3] In fact, these remarks are required by the ATON Manual – Administration, COMDTINST M16500.7A

cutter may help to balance her uncounted visits to other units' aids. Until a better way to access buoy visit information is developed, this may be the only way to retrieve the data in a consistent way.[4]

Having assembled the resource hour and visit numbers, no complicated techniques were required to calculate ATON Hours per Buoy Visit. For any cutter in a given year, the AHPBV is simply the number of underway resource hours classified as ATON divided by the number of buoy visits by that cutter in that year. The average AHPBV over the four years of data can then be calculated for each cutter. Averaging using all four years of ATON hours and buoy visits should help to smooth out differences between years which may have been caused by external factors. Accordingly, this average may more closely represent the unit's "true" AHPBV based on its AOR and other unit-specific factors.[5] Individual cutter data is displayed in a table at the end of the article.

Figure 1: Comparison of individual cutter AHPBV averages over the years examined



Once calculated, these individual cutter averages can in turn be averaged in groups to show AHPBV by platform and district. It turns out that the average AHPBV for all 225's is just under seven hours per visit, while the 175' fleet clocks in at around five hours per visit (Figure 1 illustrates the comparison). It should come as no surprise that the 175' WLM has a lower AHPBV; buoys assigned to 175's are typically closer to shore, closer to each other, and closer to homeport. It may be interesting to look at fleet-wide AHPBV differences, but there is significant variation between regions and cutters. Focusing on numbers from specific units is necessary for most practical applications.

Unit-specific numbers may be helpful in two ways: planning operations and expressing buoy work in concrete terms for non-ATON units. From the outside, ATON work can appear indefinite and imprecise; having this metric available makes it easier to speak the same language as a supervisory unit. If a buoytender is expected to log a certain number of ATON hours, they can approximate possible buoy visits in that time – transit included. Conversely, they can also estimate how many ATON hours they will need in order to meet a certain workload. If a planner can confidently say "giving up 100 ATON hours would cost about 14 buoy visits next year,"

[4] On a smaller scale, if a unit is devoted to increasing the accuracy of their AHPBV, they could probably use memory and judgment to weed out some of the remarks from other units' visits, and add on an estimate of how many aids they have worked for other tenders.

[5] One example of a factor which may artificially change a given year's AHPBV would be an extended maintenance period or other disruption of typical service where other units would account for many more buoy visits without accruing underway ATON hours for the pier-bound primary unit.

that might have more impact than the same message without a defined statistic based on historical data. Similar statements can be made about the time commitments of taking on a larger or smaller workload, disestablishing aids, or trading buoys between units.

While this measure may not be precise for a given aid, it is clearly predictive over longer term periods, and can be viewed as the "sum of all forces" acting on aid servicing for a given unit. Although the WLB and WLM were the only classes examined here, there is no reason that this method can not be extended (with minor tweaks) to any ATON platform or unit.[6] Looking beyond this individual metric, the ATON community needs better data in order to analyze and publicize its efforts. IATONIS should be changed as soon as possible so that information from individual buoy visits is kept permanently for analysis. The sooner this data starts getting stored, the sooner it can be used to help quantify and, hopefully, improve ATON work.

[6] A construction tender, for example, would have to take into account time spent on fixed aid work.

Buoy Visits per ATON Resource Hour

WLB 225

FY	ALDER	ASPEN	CYPRESS	ELM	FIR	HICKORY	HOLLYHOCK	JUNIPER	KUKUI
2006	3.85	10.29	14.19	7.68	6.45	9.08	3.68	6.18	2.99
2007	5.29	5.67	14.95	10.87	10.66	11.85	3.17	6.19	2.79
2008	3.06	9.07	10.40	4.33	7.64	8.20	3.29	7.62	8.28
2009	3.33	5.96	12.51	8.54	10.48	7.50	2.27	8.31	5.19
Avg	**3.77**	**7.45**	**12.49**	**7.80**	**8.24**	**8.98**	**3.04**	**6.86**	**4.38**

FY	MAPLE	OAK	SEQUOIA	SPAR	SYCAMORE	WALNUT	WILLOW	Avg
2006	6.86	3.44	8.36	10.67	4.43	2.91	8.31	
2007	6.28	5.99	3.37	10.17	5.08	4.06	7.19	
2008	8.75	5.56	7.62	13.40	6.61	4.01	6.42	
2009	11.89	4.66	4.84	3.62	8.09	6.67	7.44	
Avg	**8.20**	**4.75**	**5.84**	**9.07**	**5.85**	**4.42**	**7.26**	**6.77**

WLM 175

FY	ABBIE BURGESS	ANTHONY PETIT	BARBARA MABRITY	FRANK DREW	GEORGE COBB	HARRY CLAIBORNE	HENRY BLAKE	IDA LEWIS	JAMES RANKIN
2006	3.13	5.89	8.48	4.07	8.33	4.49	5.46	6.13	3.42
2007	3.22	6.34	7.82	3.18	5.66	6.03	7.56	4.77	2.91
2008	1.99	11.72	6.56	3.71	6.44	8.15	10.80	4.63	2.74
2009	1.51	7.43	8.22	3.04	5.52	4.82	10.78	3.67	2.18
Avg	**2.47**	**7.49**	**7.68**	**3.41**	**6.49**	**5.67**	**8.68**	**4.63**	**2.83**

FY	JOSHUA APPLEBY	KATHERINE WALKER	MARCUS HANNA	MARIA BRAY	WILLIAM TATE	Avg
2006	3.81	3.63	4.79	4.07	2.52	
2007	5.71	2.71	3.79	5.28	2.57	
2008	7.90	2.36	4.64	4.88	3.41	
2009	6.13	4.21	4.95	6.94	2.74	
Avg	**5.69**	**3.15**	**4.53**	**5.11**	**2.80**	**5.04**

Cross-Decking With Our Friends to the North

by MK3 Sean Dolan, USCGC HENRY BLAKE (WLM 563)

The small town of Port Angles, WA is no stranger to ships coming and going. It is the first major port as you steam towards the east in the Strait of Juan De Fuca from the Pacific Ocean. Forty nautical miles to the north is the picturesque city of Victoria, B.C. Both of these ports are homes to the pilots who provide guidance to commercial ships entering the pristine waters of Puget Sound and the San Juan Islands. On the 23rd of August 2009, Coast Guard ships from Russia, Japan, Canada and three U.S. Coast Guard cutters entered the harbor of Port Angeles to participate in Pacific Unity 2009.

Canadian Coast Guard Cutter PROVO WALLIS

The Northern Pacific Coast Guard Forum was founded by the Japanese Coast Guard in 2000 as an opportunity to build upon the unity of many nations' Coast Guards. Participants seek to share information on matters related to combined operations, exchange of information, illegal drug trafficking, maritime security, fisheries enforcement, illegal immigration, and maritime domain awareness.

Participating vessels included the Canadian Coast Guard Cutter PROVO WALLIS, a 65 meter (215 foot) buoy tender and the ACV SIYAY, a hovercraft that has the ability to conduct both ATON and SAR. Representing the Japanese Coast Guard was Cutter YASHIMA, a 150 meter (492 foot) long range high endurance cutter capable of carrying a helicopter. The Russian representation was the Cutter VOROVSKIY. She is a 123 meter (405 foot) high endurance cutter with the capability to carry a helicopter. Finally, our own Coast Guard Cutters MIDGETT, HENRY BLAKE and BLUE SHARK rounded out the fleet.

On the 3rd day of the gathering, HENRY BLAKE, PROVO WALLIS, and SIYAY got underway to work each other's buoys as well as cross-deck personnel to observe and provide guidance as each cutter conducted buoy evolutions. HENRY BLAKE deployed an 8x26LR for the PROVO WALLIS and a 3NR for the Cutter SIYAY. The PROVO WALLIS set a 9 ½ short leg buoy (weight comparable to an 8x26LBR) for HENRY BLAKE to work. With all three buoys set the crews went to work. First to go was the PROVO WALLIS. Crossdecking crewmembers included each cutter's Executive Officer, one Buoy Deck Supervisor and a few Buoy Deck Riggers. The 8x26LR was lifted high above the buoy deck of PROVO WALLIS and was secured down to the wooden buoy deck—another successful evolution for the experienced Canadian crew.

After a personnel transfer using the SIYAY, HENRY BLAKE commenced working on the Canadian 9 ½ short buoy. With help from the PROVO WALLIS crewmembers, BLAKE's deck force did a great job despite some rigging challenges due to the buoy configuration. Following HENRY BLAKE, it was time to observe a hovercraft work an aid. Upon completion of the buoy deck evolutions, the SIYAY captain and crew were gracious enough to provide tours and the ride of a life time to several crewmembers of HENRY BLAKE. The crew was thrilled to see the capabilities of a cutter that was steaming in excess of 50 knots along the scenic coastline of the Olympic Mountains with great ease and maneuverability.

Over the three days of the event, the objective of the Northern Pacific Coast Guard Forum was to build a rapport between nations and understand one another's capabilities. For HENRY BLAKE, PROVO WALLIS and SIYAY the event definitely hit its intended mark. This operation also left the crew of HENRY BLAKE looking at their job from a fresh perspective after seeing the differences between PROVO WALLIS' buoy evolution and their own. More importantly, HENRY BLAKE is confident and ready to respond to the call from our friends to the north if a need arises to keep all the aids located in the Straight of Juan De Fuca and the San Juan Islands watching properly.

The three ATON participants: PROVO WILLIS, HENRY BLAKE, AND SIYAY

NAVAID Sensor Panel Upgrade

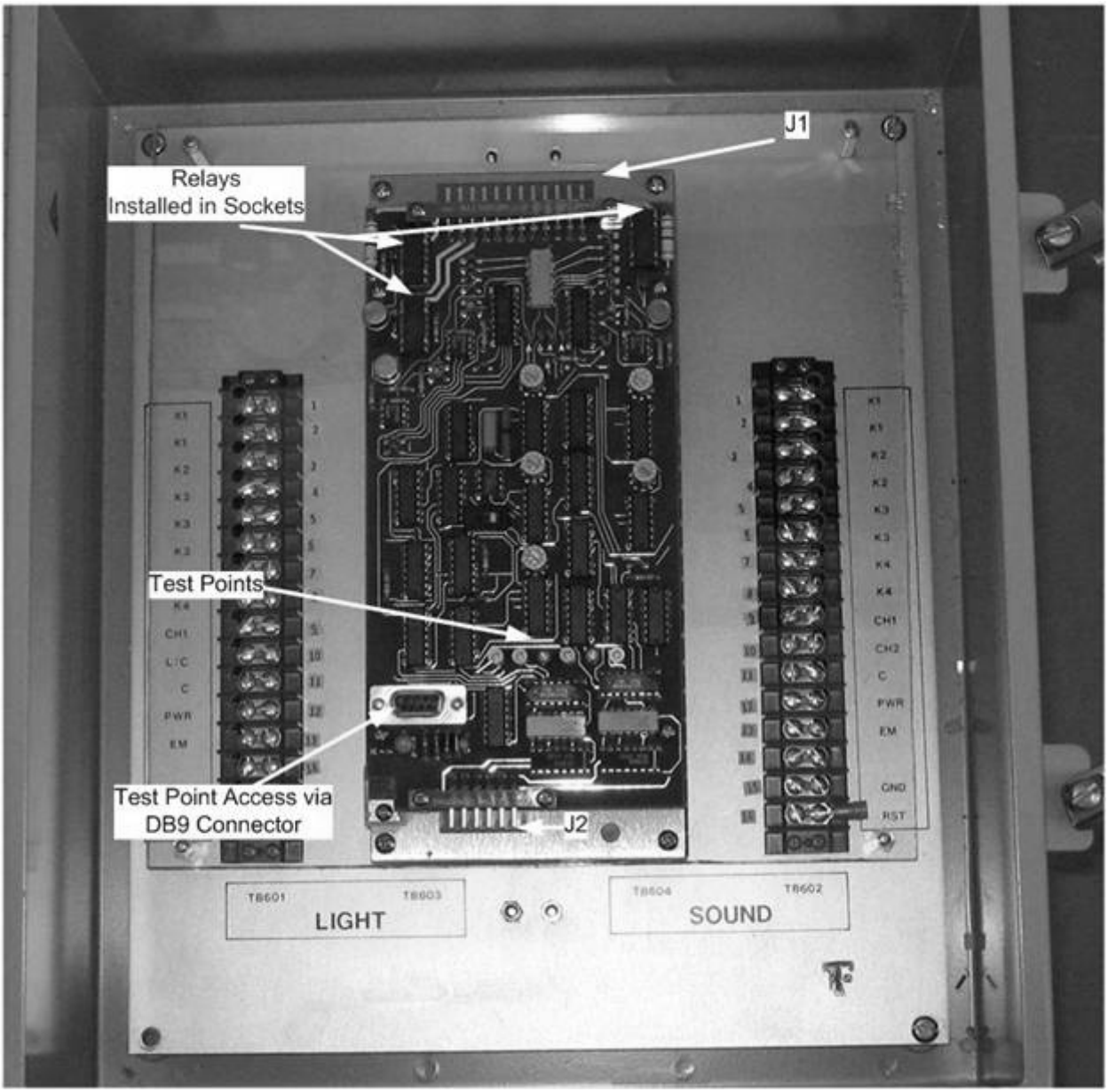
by Mr. Paul Lamczyk, C2CEN

C2CEN is currently developing an upgrade to the NAVAID Sensor Panel (GCF-RWL-2241). The upgrade will consist of replacing the two identical NAVAID Sensor Modules (Light and Sound), 5 VDC Regulator Board, and associated components with a single upgraded NAVAID Sensor Module. The upgrade also corrects the ambiguity of a non true/false open or close state being sent to the Tidelands Signal Corporation MC-1 ACMS monitor and control equipment. This ambiguity has been preventing the proper signal level from being sent to the ACMS Master Unit and thereby providing an incorrect Sound status. This is due to the incompatibility of the NAVAID Sensor Module operating at 5 VDC and the MC-1 operating at 12VDC. The Tidelands Signal Corporation MC-1 Navlink equipment requires an input level of 9.0VDC or greater for a digital input to be considered "on" and 2.0VDC or less for the digital input to be considered "off".

In addition, the upgraded NAVAID Sensor Module (shown in Figure 1) has the following features:

- Sockets for relays K1/K2 and K3/K4 to provide easier replacement instead of solder connections.
- Additional test points
- Replacement of various components that are no longer manufactured.

Currently, four upgraded NAVAID Sensor Modules have been delivered by the vendor to C2CEN for First Article Testing (FAT). Upon successful prototype and FAT installation and testing, the upgraded NAVAID Sensor Modules will be provided as part of a field change kit, including wiring harness and instructions. A revised NAVAID Sensor Panel (GCF-RWL-2241) technical manual will also be provided. It is anticipated that FAT will be completed by the end of 2nd Quarter FY10. In addition to the revised NAVAID Sensor Panel technical manual an updated Audio Visual Controller Manual (GCF-RWL-2098) will also be promulgated later in FY10.



Photograph of upgraded NAVAID Sensor module (First Article/Prototype Version) partially installed into NAVAID Sensor Panel. The upgraded NAVAID Sensor Module is installed on Lexan ® Panel. Holes are drilled in the Lexan ® Panels to provide test lead access to TB601 and TB602. Connections to TB601 and TB602 will be provided via P1 (J1mating plug) and wiring harness. Connections to TB603 and 604 will be provided via P2 (J2 mating plug) and wiring harness. Wiring harnesses will be routed under Lexan ® Shield. Pre assembled wiring harnesses with P1 and P2 attached will be provided with Field Change Kit. Note: First Article version of upgraded NAVAID Sensor Module does not have component labels etched on the circuit board. Production version will have component labels with conformal coating applied. The production version of the NAVAID Sensor Module will also have P1/J1 and P2/J2 connectors keyed to prevent incorrect installation.

CGC HAMMER Fills a Tall Order

by CWO Steve McDonnell, Sector Jacksonville

On June 29th, CGC HAMMER (WLIC 75302) had just completed a two week patrol in the vicinity of Port Canaveral, Florida. This was a routine mission in the Intercoastal Waterway, punching wood piles and clearing discrepancies, or so they thought. This trip would mark the end of business as usual for their seasoned veterans, however, as they were about to take on a project that would leave a benchmark in the ATON community for years to come. Over a four day period, CGC HAMMER achieved a near impossible feat by hoisting a 65 foot tower onto a "James River Structure" 15 feet above the waterline, with a fixed height totaling 85 feet above the waterline.

The impressive new tower

The St. Johns Bar Cut Rear Range is part of the primary range that river pilots use to bring deep draft vessels safely through the Mayport jetties at the entrance of the St. Johns River. The range was originally established back in the early 1960's, rebuilt in 1985, and this past April, was knocked down by high winds. The St. Johns Bar Cut Rear Range sits approximately two miles west of the Mayport Entrance Channel in Sister's Creek, Florida. Complicating repairs, this area is prone to shoaling and surrounded by marsh with environmentally sensitive areas. Because of these factors, there was a growing concern that the range could not be rebuilt in its original location and that CEU Miami would have to solicit commercial bids for new construction. Original repair estimates had a timeline as long as 6 to 12 months, with costs upwards of $750,000.

Constructing the new tower

Seventh District Prevention Waterways staff, Sector Jacksonville personnel and the Jacksonville Pilots Association met to discuss alternatives for a solution. With the port of Jacksonville's main industry being threatened and the risk of a potential major marine casualty,

Construction in progress...

it was crucial that this structure be repaired as soon as possible. The aid had already been unusable for over two months, requiring the pilots to steer center channel with shipboard navigation and only a small margin of error.

This past summer, HAMMER and ANT Jacksonville Beach crews proactively developed a plan to rebuild the aid utilizing a "James River Structure." Not everyone was optimistic, as this feat was a major undertaking with at least a moderate amount of risk. How would HAMMER get into an area with no available depth of water under keel? How could they lift a 65-foot tower onto a 15-foot platform using a 45-year-old Coast Guard construction tender's 60-foot crane, something that has only been attempted once or twice in the past?

Utilizing the ANT's 26-foot TANB, ANT Jacksonville Beach, HAMMER, and Sector Jacksonville personnel conducted a comprehensive channel survey to chart anomalies, find best water and devise a plan for success. After soliciting opinions and gaining consensus within the ATON community, including from Yorktown's NATON School and CG-5, HAMMER loaded the deck the week of July 4th and transited towards Sister's Creek. With a full moon and a high tide on their side, HAMMER skillfully navigated through and spud down in front of the remains of St. Johns Bar Cut Rear Range.

The crew in the middle of a busy day

Operating a construction tender is challenging enough due to its limited maneuverability. Even more complex, in shallow waters and with a strict timeline because of the full moon, HAMMER knew they had to work long hours to finish without endangering the unit or leaving the task incomplete. While punching piles and removing old debris could be tricky and back-

A close-up of work on the tower

breaking, the biggest challenge was still ahead—hoisting a non-standard 65-foot tower onto a 15-foot platform with the clock ticking.

On day one, HAMMER established the range line and punched a 60-foot steel pile (*Jig*) on AP. The bottom was relatively easy to punch through and the range platform was lined up, leveled, and welded into place. Day two presented more challenges as the bonnet on the crane could not reach high enough at an angle to punch the batter piles. Since the height of the tower was in excess of 80 feet, it was necessary to ensure that the piles were at least 30 feet deep to properly anchor the structure. With limited resources, and confronted with challenges, HAMMER's innovative approach was to manually drive the outer piles 5 to 10 feet deep in lieu of cutting them and as a result, the crane was able to punch through and set the base. The work was slow and time-consuming. The weather was fair at best with hard rains and winds in excess of 15 knots. HAMMER's crew worked through the night.

Day three was the day that HAMMER would have to leave. Up until this point, the tides had been on their side, but as the full moon began to wane, so did that extra cushion at high tide. HAMMER executed their plan; they pinned the base of the 65-foot tower and slowly boomed up. As the crane operator boomed up he turned to starboard, one to two degrees at a time. The entire process took over an hour, ensuring that physical control was maintained. When the tower was nearly vertical again, the team wedged the front side with wood beams to avoid shock loading or over-tipping the tower into the crane. At 1100 on July 2nd, the construction project was completed. Over the next few days, ANT Jacksonville Beach followed on by hanging the optics and working with the local pilots to ensure the aid was fully functional prior to placing it back in service.

The St. Johns Bar Cut Rear Range project was an undertaking that required extensive planning, measurable risk, and teamwork. CGC HAMMER and ANT Jacksonville Beach were successfully able to remove the existing debris, rebuild the structure, attach the tower, and replace the associated hardware. As a result of their efforts, St. Johns Bar Cut Rear Range will serve the Jacksonville community for more than 20 years. The Coast Guard capitalized on the talents of all members and corrected this critical discrepancy in 7 days in lieu of 12 months.

Updating the Interactive Courseware (ICW)

by BM1 Christopher Wilcox, NATON School

Over the past six months, with a crew of volunteers spending countless hours in a windowless room, the ICW has been updated for the WLM's.

The software was written by a very professional team at NAVAIR in Orlando, Florida. The team was charged with providing content, photos and video for five modules (Buoy Deck Supervisor, Safety Supervisor, Rigger, Crane Operator and Oxy-Fuel Operator). The NAVAIR team then took this content and edited it. The team consisted of a mixture of BM's, MK's, DC's and BOSN's. Cutters JAMES RANKIN and FRANK DREW sent their Commanding Officer and Executive Petty Officer, respectively. CWO4 Merrill, the NATON Technical Advisor, reviewed all content and added his expertise to the modules.

The software will be put in Microsoft Word format, making it possible to update it as needed. The old software is in a format that cannot be updated, making it out of date. Much time was taken to ensure all verbiage used, photos taken, and videos shot were in line with COMDTINST. Thank you to all those that participated—it was a resounding success that will aid in the development of buoy deck personnel!

Along those lines, we'd like to send a special thank you out to the crew of CGC FRANK DREW. In the past year, Commanding Officer CWO4 Maurice Etiemble, Executive Petty Officer BMC Marshall Miller, and the entire crew of CGC FRANK DREW have assisted the ATON fleet and NATON beyond expectations.

FRANK DREW was the instrumental cog in the redevelopment of the Interactive Courseware (ICW) software. Despite their busy schedule, FRANK DREW always found time to send BMC Marshall Miller to Orlando to develop this software. They volunteered to be the host cutter for the photo shoot to obtain necessary photos and video to allow the modules to be more user-friendly and easier to follow. BMC Miller brought forward command concerns and a very detailed knowledge of the evolution.

Not only did they help with the ICW rewrite, but after 33 years, CWO4 Dave Merrill ended a brilliant career, and when it came time to plan the retirement ceremony, FRANK DREW stepped up once again. BOSN Merrill is a former Commanding Officer of the FRANK DREW, and what a way to retire—on the very ship that you commanded. This wasn't an OPORDER or something FRANK DREW had to do; this was something they volunteered for, seeing the opportunity to give a great shipmate a memorable farewell. The crew had the ship looking fantastic, and their attention to detail was impressive. They were willing to help with any aspect of the ceremony, and were truly dedicated to giving a great send-off to one of their former Commanding Officers. The cutter and crew served as a reminder that the people of this service are clearly what make it special.

To Do List

by BM1 R.C. Patten, NATON School

Prior to getting underway to work aids, some things need to be done to one, minimize surprises on scene and two, actually achieve what you will ultimately claim you did on the new APR and FID for an aid. They are as follows:

Review the Accuracy Classification worksheet. Has anything in the waterway or on the aid itself changed? Has a previously moderate waterway risk level perhaps become great? Has the width of the channel or the beam of the composite user changed? Was chain added to, or subtracted from, the aid's mooring? Maybe the aid was moved to best mark the channel and the charted depth has changed? Give it some thought.

Similarly, we are required review the Discrepancy Response Decision Guide Part I before each regular servicing. Has the largest user increased or decreased? Has hazardous cargo commenced, or ceased, moving through the waterway? Has traffic density increased or decreased? Has something occurred that actually or perceptually increases the area's environmental sensitivity?

You also have to verify I-ATONIS, the chart and the Light List. All you have to do is open up the current and corrected chart or charts that the aid appears on. Have I-ATONIS, the aid folder and the Light List open and handy and compare the information in I-ATONIS/the aid folder with what is being advertised on the chart and in the Light List. Check the flash characteristic and sound signal on the chart and see if it matches I-ATONIS/the aid folder and the Light List. Ensure that your datum from the APR is at least close to the charted depth.

In accordance with the Admin Manual, you should also verify the Coast Pilot. This is less for the aid itself than it is for the waterway where the aid is located. Just make sure that the waterway is still being used and has the features as stated in the Coast Pilot.

Once you've done all of this for each aid you plan to service, you should have far fewer surprises when you arrive on scene. Comments stating that IATONIS, chart, and the Light List have been verified are required on the APR following an aid visit, and a comment stating that IATONIS has been verified is required on the FID. Since the Coast Pilot verification is required per the Admin Manual, but isn't required to be logged, it's a good idea to note verification of the Coast Pilot on the APR as well. Ensuring these verifications have actually been done is a HUGE part of the concept of "due care" and should not be taken lightly. Remember, tt's YOUR waterway!

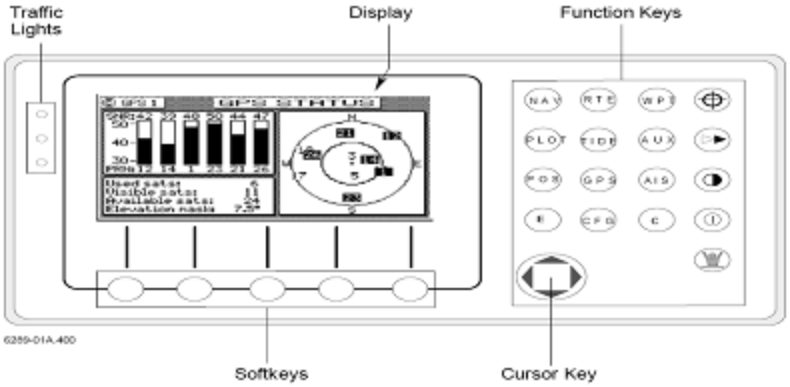
Dropped NMEA Strings

by BM1 Jennifer Zercher, NATON School

Your unit's receiver should be configured to deliver GGA, GRS, GSA and GST NMEA strings to AAPS, which ideally only needs be done once, during the initial setup. However, NATON has received several calls about missing NMEA strings. This is the fault of the LEICA MX-420 and not AAPS or the positioning computer.

When the LEICA receiver suddenly and without cause drops a NMEA string, your configurations will remain the same and still appear to be correct. When you pull up an APR or do a GPS test in AAPS though, one of the strings may not be there. This flaw doesn't seem to favor any particular string; it could be any of them, or more than one. If the LEICA drops your GGA string you will notice an obvious symptom: you will not receive any latitude or longitude in AAPS. If it drops your VHW string, you won't have any automatic heading input. If it happens to any of the other strings though, there are no obvious symptoms and it is easy to overlook. To make sure this doesn't take you by surprise, NATON, as always, recommends that you pull up the APR for the aid while you're still onscene to verify (among other things) that all required NMEA strings were properly received.

If you have lost one or more NMEA strings, the solution is rather simple, but it is just a work-around instead of a permanent fix. Unfortunately, the solution will not prevent the problem from happening in the future. Follow the steps below:



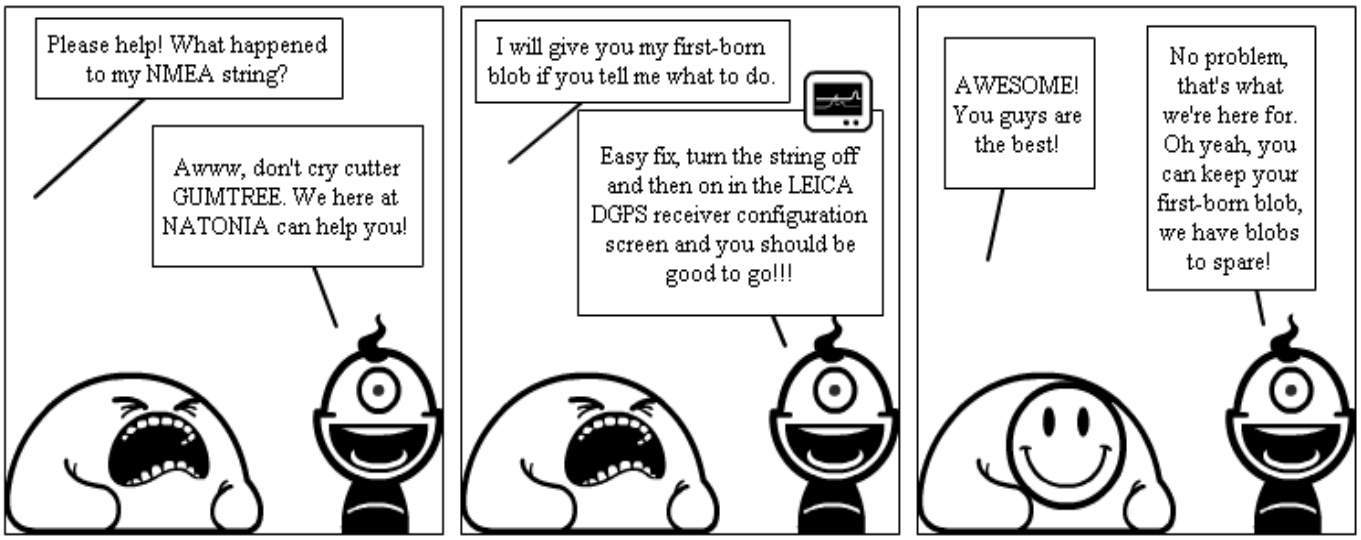
Step	Action
1	Press the "CFG" Function Key on the LEICA MX-420
2	Using the Cursor Key, Scroll down to "NMEA Output 2"
3	Press the "E" Function Key, and scroll to the NMEA string that isn't transmitting **Note**: The string will appear to be turned ON, however it isn't transmitting.
4	Using the "Change" Soft Key, turn the string OFF
5	Now using the "Change" Soft Key, turn the string ON
6	Go to AAPS, under the Utilities drop down menu select GPS Test
7	The NMEA string that was missing should now be transmitting to AAPS **Note**: Remember to click the EXIT button at the bottom of the GPS Test screen.

NATONIA

by BM1 Jennifer Zercher, NATON School

Welcome to NATONIA, land of ridiculously awesome adventures! Be on the lookout for new journeys in the NATON Bulletin. Let the shenanigans and hi-jinks begin!

The Chronicles of NATONIA



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