The
Aids to Navigation Bulletin

National Aids to Navigation School **Winter 2008**

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, 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:

AtoN Bulletin Editor (tnaton)
US Coast Guard Training Center
End of Highway 238
Yorktown, VA 23690-5000

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.

School Telephone Numbers

(757) 856-XXXX

General Information/YN	2139
LT B. Huff, School Chief	2143
LT M. Griffin, Asst School Chief	2509
CWO D. Merrill, Tech Advisor	2145
LTjg T. Speelhoffer, Operations	2350
BMCM W. Weir, Minor Aids	2066
EMCS K. Wiehrs, Major Aids	2795
BMC A. Hunter, Buoy Deck TT	2068
Fax	2326

After Hours Technical Support Hotline

(757) 449-3681

Editor: LTjg Tracy Speelhoffer

School Home Page:

www.uscg.mil/tcyorktown/ops/naton/index.shtm

Deadlines for Articles:

Spring 2008 - 30 April
Summer 2008 - Phonebook
Fall 2008 - 15 August
Winter 2009 - 15 November

Volume 35, Number 2

On the Cover:
CGC JUNIPER conducts ATON Ops in harsh winter conditions
Photo courtesy of CGC JUNIPER

IN THIS ISSUE . . .

NATON School Info.....2

News Clips.....6

Technical Corner.....21

Positioning.....28

Buoy Deck Training Team.....30

Phone Book Corrections.....31

Good Times.....32

USCGC JAMES RANKIN onloads ice buoys as the sun rises in Baltimore, MD in preparation for another day of ice buoy ops.

Student Remote Access to Computer Accounts

by BMC Colin Langeslay, NATON School

As the Coast Guard shifts to the CAC card logon system, we have been getting lots of questions about how students will logon here at Yorktown, as computer access is critical to some of our courses. To avoid computer difficulties for NATON "C" School students, here is some helpful information that you should arrive with to remotely access your account:

1) You CAN use your real accounts to login BUT you cannot expect to be able to use Outlook to access your e-mail, or expect to access documents from your U Drives/My document folders.

2) Students need to come to Yorktown with the following info:

-Your workstation name/IP address

-Your Terminal Services Server name

-Your Exchange Server name

Contact your home ESU to get this info. If you're going to use a Terminal Services Server, logon to that server and attempt to use Outlook BEFORE you leave your unit.

3) If you've gone through the procedure of getting the certificates and pin number setup for the CAC card, and have registered at the online portal, you should be able to logon with your CAC card here at Yorktown. Students should either already be CAC enforced (meaning you can ONLY log on with your CAC) or CAC exempted (which means you can't use your CAC to log on and are allowed to continue with your user name/password).

4) And finally, students should arrive at Yorktown with good contact information for their home ESU.

Please remember that Yorktown IRM will help you any way they can, but will not be able to manipulate a user's account. Students still need to be supported by their home ESU. Preparation on the student's part is the key to all of this working correctly. We appreciate everyone's cooperation as we continue to ensure that our students are able to get the best training possible with minimal complications. We look forward to seeing you here.

Direct Access ETR's and CGMS Messages

by YN2 Raven Lancaster, NATON School

Recently there has some confusion from units with regards to how to go about requesting, cancelling and substituting students for courses at NATON. Hopefully this will answer some questions. Additional info can be found on TQC's website:
http://www.uscg.mil/hq/tqc/Index.shtm#

REQUESTING COURSES
Below are the prerequisites/requirements for each course held here at NATON:

Minor Aids
Minor Aids Maintenance AtoN Servicing Tech (MAM): Three months at an AtoN unit.
AC Minor AtoN Tech Course: ANC-MAM or District Training Team MAM road course.
River Tender: Currently stationed on or ordered to a CG River Tender.
Construction Tender: Chief Warrant Officers and Coast Guard enlisted E-4 and above, who serve as CO's/OIC's/XPO's and construction deck supervisors on WLIC's.
Construction Tender for MK's: MK's E-4 and above assigned to WLIC class tenders.
ATON Tower Climber: Three months at an AtoN unit.

Major Aids
Automated Lighthouse Technician: EM's/ET's E-4 and above.
Differential Broadcast Site Maintenance: EM's/ET's E-4 and above.
Solar Powered Major Aids to Navigation: EM's/ET's E-4 and above.

Operations
Aid Positioning: E-4 through E-9 responsible for positioning AtoN; must have been at an AtoN unit for three months.
Officer Basic AtoN: Assignment to an AtoN supervisory billet.
Officer Advanced AtoN: Officer Basic AtoN (ANC-OB). Prospective CO's, XO's, OIC's, and XPO's of AtoN cutters.
Officer in Charge AtoN Team: OIC's and XPO's of ANT's; E-5 and above.
Training Team: CG personnel serving on AtoN Training Teams.

When submitting an ETR, ensure you include comments pertaining to the situation, such as "only qualified member departing the unit," "mbr has orders as XPO of ANT Hampton Roads," "second request for this course," etc. Also include in the comments if you want the member to attend the course on an alternate date if they don't get a seat in the course you're requesting. When a member has requested alternate course dates, the ETR will automatically be moved on to the next convening date if the member does not get a seat in the class requested. If no alternate dates are listed, the ETR will not be forwarded to the next class.

Example ETR comments:

Mbr reported aboard on _____. Request alternate dates if mbr is unable to attend this class convening.
Mbr attended MAM course on _____ at Yorktown. Request alternate dates of 10MAR or 07APR convenings if mbr is unable to attend this class convening. (AC)
Mbr reported aboard on _____. Only other qualified positioning tech is departing the unit. Request alternate dates. (AP)
Mbr is/has orders to be _____ (OIC or XPO) of ANT _____. (ANT)

SUBSTITUTIONS/CANCELLATIONS
When substituting or cancelling a course, ensure you alert NATON School and send the appropriate message as soon as possible. This enables us to find a replacement so we don't waste a seat in the class. Below are templates for proper cancellation/substitution messages.

CANCELLATION REQUEST TEMPLATE
R
FM UNIT
TO COGARD TQC CHESAPEAKE VA
INFO COMDT COGARD WASHINGTON DC//COURSE MANAGER*//
COGARD TRACEN YORKTOWN//TNATON//
CHAIN OF COMMAND
OTHER AFFECTED AFLOAT OR ASHORE UNITS
BT
UNCLAS //3502//
SUBJ: CANCELLATION REQUEST FOR COURSE TITLE/COURSE CODE, CLCVN DATE**
1. REQUEST CANX QUOTA FOR MEMBER RANK & NAME, EMPLID.
2. MEMBER UNABLE TO ATTEND DUE TO REASON***.
3. OPTIONAL: REQUEST MEMBER BE RESCHEDULED TO ATTEND COURSE AT A LATER (OR SPECIFIC) DATE.
4. POC: NAME/RANK/TELEPHONE NUMBER.
BT
NNNN

SUBSTITUTION REQUEST TEMPLATE
R
FM UNIT
TO COGARD TQC CHESAPEAKE VA
INFO COMDT COGARD WASHINGTON DC//COURSE MANAGER*//
COGARD TRACEN YORKTOWN//TNATON//
CHAIN OF COMMAND
OTHER AFFECTED AFLOAT OR ASHORE UNITS
BT
UNCLAS //3502//
SUBJ: SUBSTITUTION REQUEST FOR COURSE TITLE/COURSE CODE, CLCVN DATE**
1. REQUEST CANX QUOTA FOR MEMBER RANK & NAME, EMPLID.
2. MEMBER DOES NOT NEED TO/ CANNOT ATTEND DUE TO REASON***.
3. REQUEST SUBSTITUTE MEMBER RANK & NAME, EMPLID.
4. MEMBER MEETS ALL PREREQUISITES.
5. OPTIONAL: REQUEST MEMBER BE RESCHEDULED TO ATTEND COURSE AT A LATER (OR SPECIFIC) DATE.
6. POC: NAME/RANK/TELEPHONE NUMBER.
BT
NNNN

* COURSE MANAGER (CG-###) can be found in the master training list (MTL).
http://cgweb.comdt.uscg.mil/g-ocu/programs/MTL.htm

** COURSE TITLE/COURSE CODE, CLCVN DATE can be found on TQC's website.

*** CHOOSE ONE OF THE FOLLOWING REASONS:
Medical reasons, failure to meet weight standards, administrative reasons, operational commitments, failure to meet prerequisites, family emergency/hardship

If you have any other questions regarding requesting, cancelling, or substituting courses, please don't hesitate to contact us at NATON.

STANT Muskegon Receives Third Consecutive Kimble Award

by BM1 Brian Fiscus, USCG STANT Muskegon

The U.S. Coast Guard Station and Aids to Navigation Team (STANT) in Muskegon, MI was presented with the Sumner I. Kimball Award on the afternoon of 10 October 2007. The award was presented to the crew by Captain Bruce Jones, Commanding Officer of Sector Lake Michigan, in Milwaukee. Mr. Jonathan Seyferth was also in attendance on behalf of Michigan Representative Pete Hoekstra. This award recognizes those units that achieve and maintain the highest standards of boat and crew readiness. The award is authorized when a Coast Guard Station meets or exceeds a score of 90% of the total possible points. The crew in Muskegon earned 47 of 50 points (94%).

Of the twenty six Coast Guard ATON units that have a BUSL assigned to it, STANT Muskegon is the only unit in the Coast Guard that has earned this recognition during three consecutive inspections (2003, 2005, and 2007).

STANT Muskegon's ATON AOR spans 180 nautical miles of lake Michigan's eastern shore from Michigan city, IN to Frankfort, MI and is responsible for 26 lighted buoys, 86 unlighted buoys, 49 lighted structures, 15 lighthouses, and 1 daybeacon.

Great Lakes Coast Guard Rescues 1,289 Buoys

by PA3 William B. Mitchell, District 9 Public Affairs

When they first settled here, they thought this day would never come.

Tiny, little zebra mussels have built entire thriving civilizations on buoys.

Then one day, they heard a loud clamor and the ground beneath them began to shake violently. Soon after, their entire world was removed from the water and placed on a buoy deck.

It won't be long now until everything they've ever known will come to an end. Some of them crawl out of their shells and try to make a run for it, but the sun is emerging. It dries up the puddles on the deck and the little pink creatures dry up and perish.

This drama unfolds every year when the Coast Guard Cutter BRISTOL BAY of the Ninth District does its part in Operation Fall Retrieve in the waters of western Lake Erie.

Operation Autumn Retrieve, also known as the Fall Haul, is the largest domestic buoy recovery operation in the U.S. Coast Guard. It commenced October 14, 2007, with a goal of retrieving 1,289 navigational aids, and was completed in December. The aids, approximately half in the region, are taken out of service during the winter months due to decreased vessel traffic and to minimize damage from ice and inclement weather.

To accomplish the aids to navigation mission, the Ninth Coast Guard District employs six Coast Guard cutters; five Aids to Navigations teams; five small boat stations with aids to navigation duties; the Lamplighters, civilian employees who manage the inland waters of Northern Minnesota; and partner with the Canadian Coast Guard and the St. Lawrence Seaway Development Corporation.

It isn't as much a massacre of buoy critters as much as it is a rescue of 1,289 buoys that would have surely perished at the icy hand of old man winter.

CGC SYCAMORE Hosts High School Class

by ENS Leigh Dorsey, USCGC SYCAMORE (WLB 209)

It's a cold, blustery morning as a van of high school students and scientists from the Prince William Sound Science Center pulls up at the Coast Guard pier. Rain falls intermittently, mixed with some occasional ice pellets as kids head to school—a typical mid-December day in Cordova, Alaska. Not a typical school day however, for the group of marine biology students from Cordova High School. Armed with a net, a couple of Conductivity/ Temperature/Depth (CTD) instruments, a sediment grabber, an underwater camera, an array of collection bottles, Petri dishes, and a few microscopes, the budding marine biologists clambered aboard CGC SYCAMORE for a day trip to a quiet bay in the rich waters of eastern Prince William Sound. After a welcome aboard from the Commanding Officer, CDR Kevin Dunn, and safety brief from BM1 Jason Scott, the students spent the hour-long transit to Simpson Bay observing local sea birds with avian biologist Neil Dawson, learning about the environmental effects of oil spills with oceanographer Dr. Scott Pegau, and receiving a tour of the SYCAMORE from MK3 Joshua Lockwood and FN James Nichols.

With the ability to hold position and the proximity of the ocean relative to the buoy deck, the 225' turned out to be an exceptional platform to conduct "over the side" scientific operations.

Several operations were performed from the buoy deck. First, zooplankton specialist

Dr. Rob Campbell oversaw the group in lowering a fine mesh net where it sank for about 200 feet before they pulled it to the surface, emptying its contents into collection buckets. Although the water appeared to be devoid of life at first glance, upon further inspection numerous displays of tiny sea life were evident, including minute jelly fish, comb jellies, copepods, amphipods, arrow worms, sea shrimp, and even a squid larvae. Microscopes set up on the messdeck provided an even closer look, and teacher Cara Heitz directed her students to take turns drawing their favorite plankton. Next, the CTD instrument was lowered over the starboard buoy port at a measured pace to allow the instrument to take temperature and salinity readings at depth intervals. The data from the instrument furnished a vertical profile of temperature and salinity for the 230-foot water column. While hauling the CTD back up, field biologist Kevin Siwicke lowered a sediment grabber over the port side. Once the grabber hit bottom, education specialist Lindsay Butters sent a "messenger" in the form of a metal tube hurtling down the line to activate the spring-operated mechanism that closed the jaws of the grabber around a small patch of sediment. Once hauled back onboard, the grabber yielded a parcel of oozing mud, complete with polychaete worms and tunicates.

Members of SYCAMORE's crew assisted, supplying extra line for the sediment grabber, a wash down hose, and even a few dried starfish (previous buoy critters) from the ATON shop for inspection under the microscopes.

The trip was a huge success, providing eighteen high school students with a chance to conduct college-level experiments with world-class scientists, along with a behind-the-scenes glimpse of the Coast Guard.

CGC ALDER Summer/Fall 2007 Notes

by ENS Matthew Winland, USCGC ALDER (WLB 216)

July 2007 Waukegan Shoal LB 3 (photo at left): ALDER departed Duluth, MN in late July 2007 to correct a discrepant Waukegan Shoal LB 3, reported only as sinking. Arriving on scene, ALDER discovered the 6X20 almost entirely submerged with only the top 18 inches of cage and light showing. Thankfully, ANT Waukegan personnel rigged a foam buoy with nylon messenger to the offset bail which made recovery much safer. It turns out that the buoy was actually sitting on the bottom with the counterweight pushed into the muddy bottom: a 20 feet tall buoy in 18 feet of water. Interestingly, the brave soldier was still displaying the proper light characteristics.

August 2007 Recovery of sunken boat in the St. Mary's River (photo at right): Headed northbound up the St. Mary's River on the way back to Duluth from Lake Michigan, ALDER used the crane to dewater & recover a sunken boat. With some assistance from the local station, the sunken boat was no longer a hazard to navigation.

August 2007 Working ATON in Lake St. Clair (photo at left): While working ATON in Lake St. Clair, two lakers make passing arrangements 500 yards off ALDER's port side.

November 2007 Decommissioning Lake Superior NOAA buoys for the season (photo at right): Underway to begin the fall Lake Michigan ATON run, ALDER stopped to decommission Lake Superior NOAA buoys 45006 and 45001. Both were already showing signs of icing. NOAA 45001 also showed signs of having experienced heavy seas; one solar panel was completely missing, leaving only frayed wires behind. Shortly after working NOAA 45001, one of the infamous "Gales of November" came blowing, bringing with it waves with heights in excess of 10 feet and winds greater than 30 knots.

A Lesson in Lighthouse History

by PA3 Annie Berlin, District 1 Public Affairs

The Coney Island Lighthouse gives a warm feeling to mariners returning home after a long journey, but for a bunch of fifth graders, it's the coolest thing since the TV show "Are you smarter than a 5th grader?"

With the help of the family of Frank Schubert, the last known lighthouse keeper in the country, Coast Guard Petty Officer 1st Class Michael Johnson, from Aids to Navigation Team New York in Bayonne, N.J., organized a fieldtrip for the fifth grade class of Public School 48 to the Coney Island Lighthouse. To get the school's 100 students ready for exams, the teachers introduce a more hands-on type of learning. This is the first of three history-related fieldtrips the class will take in preparation for their exams.

"All the trips we take end up being on Staten Island, but Brooklyn is part of their history too," said Doreen Crinigan, who has been teaching for 22 years, six of them in Brooklyn. "How often will any of them get to climb a lighthouse in their lifetime?" she commented.

Coast Guard Petty Officer 1st Class Spencer Wilson and 3rd Class Petty Officers Benjamin Hughes and Balmore Claros joined Johnson in welcoming the children and giving them an introduction to the lighthouse and what the Coast Guard does to maintain it.

"We wanted to make sure the children understand its purpose and its importance," said Johnson, whose team of lighthouse technicians visit Bergen Point every three months to service the light and inspect the structure. "Half of them probably didn't even realize that there was a lighthouse out there. It helps them have an idea of what's in their neighborhood."

Each Coast Guard member took turns taking groups of seven or eight students at a time up the 87 stairs to the top of the lighthouse. For the Coast Guardsmen, it was a fun day away from daily maintenance and the normal workday. "We just wanted to keep the children safe and answer any questions they had as they climbed up and down the stairs," said Hughes.

The rest of the class gathered around the visiting members of the Schubert family; Ken, Chris-

topher and Scott Schubert, Francine Goldstein, and Pamela and Jacqueline Ali, to hear stories about the family growing up in the keeper's house and how their father and grandfather had cared for the light.

Frank Schubert lived in the lighthouse keeper's quarters with his family from 1960, when he was assigned the position of keeper, to 2003 when he passed away. He was the last known lighthouse keeper in the country, and took pride in the Coney Island light throughout the 43 years that he and his family spent there.

"I was scared when the stairs were really small at the top," said smiling and wide-eyed Jessica Cabrera, 10.

Each student enjoyed the Lighthouse, but they all agreed the view was something to behold.

"My favorite part was seeing the shore and the ocean from the top," said Alexandrea Fenn, 10, who came to the lighthouse on her second day of school after moving from Las Vegas. "There aren't any lighthouses in Vegas," she said.

Along with learning about the historic lighthouse, the students also learned about the Coast Guard and its missions.

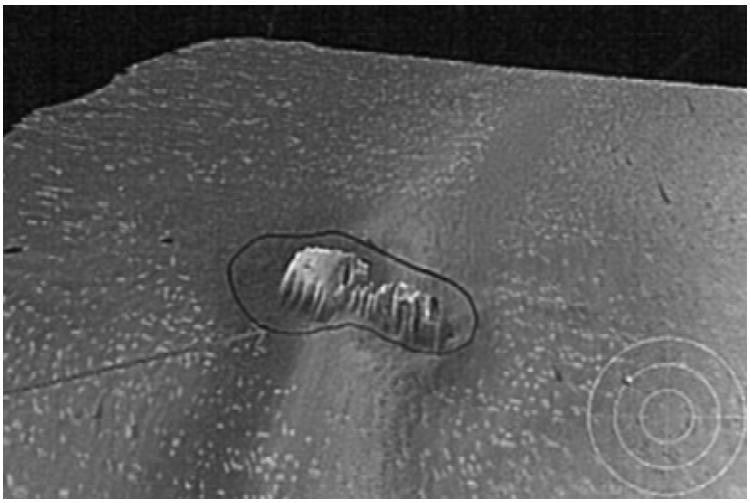
The fifth-grade teachers at PS 48 host many visitors for their students, from fire fighters to Army sergeants to moneymakers on Wall Street.

"We want the children to hear from real people," said Diane Picucci, the school's principal. "These are people they can aspire to, people from their world. And now they know the Coast Guard," she said.

New York Harbor Buoy Recovery

by LT Amy Florentino, USCGC KATHERINE WALKER (WLM 552)

CGC KATHERINE WALKER services aids to navigation throughout New York Harbor, an area where heavy traffic and seasonal ice floes often lead to buoy allisions and sunken hulls. Most hulls and moorings are recovered with the use of a grapnel hook and chain. However, in past years some of these hulls were unable to be recovered, leaving hazards to navigation and a fouling hazard for the existing buoy.



Sonar image of sunken hull after bottom survey.

The use of bottom surveys and sonar has helped KATHERINE WALKER locate some of these missing hulls. After location, recovery remained a problem. The hulls had little to no chain attached and attempts to recover them with a grapnel were unsuccessful. Ever increasing drafts on oil tankers and container ships as well as major dredging projects demanded that KATHERINE WALKER continue attempts to recover these hulls. Joint operations with the New Jersey state police, Jersey City Fire Department and the MSST Boston/New York Dive Teams proved to be a solution to this problem. Though dive teams have been used on buoy tenders for years, the heavy currents, hazardous water conditions and low visibility in New York Harbor posed a new challenge.

Once in the water, KW's small boat assists a diver to the marker. Divers were deployed from the decks of the Jersey City Fire Boat, which was better suited for dive ops.

Careful planning with the dive team ensured the evolution was safe. Timing the dives around slack water and staging the divers off the Jersey City Fire Boat helped minimize time in the water. To increase safety of the divers in the highly congested waters, KATHERINE WALKER used their small boat as a picket boat and worked with Vessel Traffic Service to minimize traffic near the dive. Using the sonar on the dive boat and a remote operated vehicle, we were able to pinpoint the exact locations of the hulls. Due to the murky condi-

tions, the dive team and KATHERINE WALKER's crew carefully planned the subsequent recovery. The first dive team descended to the bottom and affixed a Norwegian fender and tag line to the buoy hull. After placing the marker, the dive boat moved away from the buoy location and the KATHERINE WALKER moved in. KATHERINE WALKER's deck force attached a shot of chain around the tag line and lowered it carefully down to the sunken buoy. We then affixed slings to the chain and an additional Norwegian fender. The slings were buoyant enough to mark the buoy location and strong enough to allow retrieval of the chain by the cutter.

With the recovery mooring set up and lowered to the exact location of the sunken hull, the dive team went back to work. Despite zero visibility, the divers were able to affix the chain to the buoy immediately after reaching the bottom. After affixing the recovery mooring, KATHERINE WALKER began to retrieve the sunken hull. Not knowing exactly what was attached to the buoy, the buoy deck supervisor carefully raised the load and monitored the weight on the crane. Before we knew it, a hull popped up to the surface. The hull had obviously been hit by a vessel, was holed, partially flooded and needed to be dewatered prior to coming on board. Despite the damage to the hull and its age, it was in good enough condition to be returned to the buoy depot for refurbishing.

The successful recovery of a lost hull in the murky waters of New York Harbor was certainly an accomplishment. The teamwork displayed between all units involved was exceptional. Each unit learned more about the others' mission and the evolution paved the path for future operations.

First sight of daylight in several years. Despite heavy growth and a hole that caused it to initially sink, the hull was in good shape and even the light was intact.

The Christmas Tree Ship Sails Again

by CDR John Little and ENS Erin Chlum, USCGC MACKINAW (WLBB 30)
with photos contributed by PA3 Matthew Schoefield, District 9 Public Affairs

Christmas trees piled high on MACKINAW's buoy deck

As part of the Christmas Tree Ship event and the Great Lakes Operation Fall Retrieve, the USCGC MACKINAW (WLBB 30) delivered over one thousand Christmas trees to deserving Chicago families on Saturday December 1, 2007. The original Christmas Tree Ship, the schooner ROUSE SIMMONS, started the tradition in 1896, when Captain Hermann Scheunemann docked his tree-laden schooner on the riverbank near the Clark Street Bridge carrying over 5,000 freshly cut trees from Michigan's Upper Peninsula. To many, this marked the start of the Christmas season.

USCGC MACKINAW (WLBB 30) is in her second year as the Christmas Tree Ship, continuing the tradition of its predecessor (WAGB-83), which resurrected this historic event in 2000. On November 19, 2007 the crew of the MACKINAW, with help from JROTC cadets from Ogemaw Heights High School, loaded 1,100 trees cut by local growers from Northern Michigan on the cutter's fantail. This allowed MACKINAW to keep the buoy deck clear and continue aids decommissioning on the southbound transit to Chicago. For only the second year, the Christmas Tree Ship arrived at Chicago's Navy Pier with both buoys and trees on her decks.

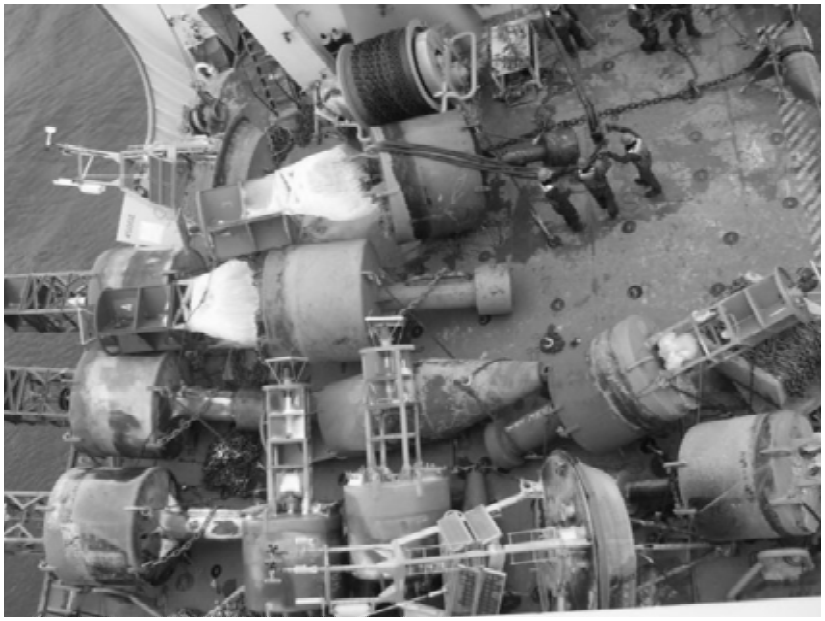
Distributing trees on the fantail

The balsam furs, blue spruce and scotch pines are purchased by the Chicago Christmas Tree Ship Committee, which fundraises throughout the year to make this event possible. The Christmas Tree Ship Committee represents diverse aspects of the Chicago boating community such as the Coast Guard Auxiliary, Interna-

tional Shipmaster's Association and the Chicago Yachting Association.

On behalf of Ada S. McKinley Community Services, Inc., volunteers from the Sea Cadets, Young Marines and the Sea Explorer Scouts assisted the MACKINAW crew with the offloading ceremony. Once offloaded, the trees were packed into trucks for distribution throughout the Chicago area. This popular event also caught the attention of the media, with coverage from the Weather Channel, several local Chicago TV and radio outlets and New York's HDTV News.

Following the Christmas Tree Ship Festivities, MACKINAW continued decommissioning aids in southern Lake Michigan that mark the vital commercial waterways of Gary, IN and south Chicago, IL. Throughout Operation Fall Retrieve, MACKINAW decommissions over 40 large buoys in lakes Michigan and Huron, which mostly consist of 8X26 buoys and the 3-meter NOAA weather buoys. The cutter also sets more than 20 winter marks. Upon completion of the fall buoy season, MACKINAW's crew then turns their attention to icebreaking operations as upper lakes temperatures continue to plummet.



Her duties as the Christmas Tree Ship fulfilled, MACKINAW returns its attention to AtoN with a full deck

JUNIPER Completes 37-day AMIO Patrol

by LTJG Jennifer Makowski, USCGC JUNIPER (WLB 201)

Crew of the JUNIPER completes AMIO preps in Key West

The idea of rushing home from Key West, Florida to endure sub-freezing temperatures and a forecast of sleet and snow in Newport, Rhode Island may not seem conceivable. For the crew of CGC JUNIPER, however, who departed Newport on October 15th, these weather conditions were not only tolerable, but even appealing as JUNIPER returned on November 20th from a five-week patrol in the Florida Straits. Facing the combination of an increase in attempts by Cuban migrants to reach U.S. soil and the recent de-commissioning of eight Florida-based Coast Guard patrol boats, the Coast Guard called on JUNIPER to serve as a Cuban migrant holding platform in support of Operation BLUE HAMMER, part of the Coast Guard's Alien Migrant Interdiction Operations (AMIO). JUNIPER's 37-day patrol included 648 hours of underway time, seven days of engine maintenance, and liberty time in Key West and Miami.

JUNIPER first stopped in Key West to load AMIO supplies such as a large tent and a portable shower and toilet which were all staged on JUNIPER's buoy deck. Within hours of departing Key West and the famous Fantasy Festival, JUNIPER immediately went to work, welcoming 82 migrants interdicted at sea by other Coast Guard vessels. This fast pace continued throughout the patrol, giving JUNIPER a total of 138 Cuban migrants, including ten suspected migrant smugglers. Three-person security teams watched over the migrants around the clock as they used wool blankets to make their temporary home on JUNIPER's buoy deck. The galley staff provided two meals per day, normally consisting of black beans and rice with fruit in the morning. Seaman Juan Reyes, born in the Dominican Republic and raised in Providence, served as the sole interpreter throughout the patrol, and helped alleviate the language barrier. The security teams provided the children with crayons and coloring books and the adults with playing cards, dominoes, and Cuban news articles

JUNIPER's security watchstanders look over the migrants on their buoydeck

downloaded from the internet to stave off boredom and restlessness.

During Tropical Storm Noel, rough seas and high winds plagued the Florida Straits, but with 38 Cuban migrants living on the buoy deck, JUNIPER remained at sea. Under the "wet-foot/dry-foot" Cuban migrant policy, any Cuban migrant who reaches U.S. soil may remain in the U.S. and eventually apply for citizenship. With only one operational engine due to a previous engine casualty, LCDR Richard Wester, JUNIPER's Commanding Officer, searched for protection from the weather. "Our [bow and stern] thrusters allowed us to hold our position in the lee of the Marquesas for four days. Facing our stern towards the wind shielded our guests on the buoy deck from the harsh elements. You could barely tell that the wind was blowing 40 knots," he later stated.

The "CH" buoy's knotted mooring

When the AMIO mission was complete and after a well-earned port call in Miami, JUNIPER began its trek home just behind Noel's path of destruction. The Chesapeake Bay Entrance Lighted Whistle Buoy "CH" was found off station, and with its primary unit unable to respond, JUNIPER agreed to re-locate the buoy, which marks the center of a precautionary area where four major traffic lanes converge. JUNIPER found the aid 500 yards off station with a badly knotted chain.

Thanks to the efforts of JUNIPER's engineers, who tirelessly worked to fix a broken engine during their liberty time in Key West, and the deck force for untangling a monstrous knot in the "CH" buoy chain, JUNIPER made record speed towards Newport. As the ship pressed northward, the crew's excitement grew greater as the air temperatures dropped and the anticipation of a Thanksgiving dinner with family and friends became a reality.

Historical Helpers

by PA2 Matthew Schofield, District 9 Public Affairs

Boards cracking, nails creaking, and a general cacophony of hammering and prying were what made the day feel different for a crew of happy volunteers. A contingent of crewmembers from Coast Guard Cutter HOLLYHOCK came in to help restore a large part of Port Huron's history.

The eight volunteers, ranging from Seamen to Petty Officers, wanted to help repair the Fort Gratiot Hospital, which is near the Coast Guard Station in Port Huron, Michigan. They offered up their time and energy for a good cause, like most Coasties would.

The first hospital in St. Clair County, Fort Gratiot Hospital was built at Fort Gratiot in 1830, and was recently moved by the City of Port Huron to Lighthouse Park, where it will become an important part of the Fort Gratiot Lighthouse museum complex. Along with the move, extensive renovations are being done to the building. This project includes plans to clean out, refurbish, panel, and paint the hospital to look like it did during its heyday. It will also feature a display complete with beds, mannequins and memorabilia to recall the atmosphere of the hospital during its operational days.

Out of respect for the past, the crew saw the degenerated building as a chance to preserve history. With the help of other volunteers, the Coast Guardsmen pulled out the floor and prepared the new joists that will set the foundation for the entire project.

"It is a great way to preserve history and to give something back to the community," said LCDR Mike Davanzo, Commanding Officer of HOLLYHOCK.

He added, "We have an active history program and I think it is great to be a part of living history."

Being part of a service that takes great pride in its own storied past, it is always rewarding for Coast Guardsmen to work hard when it results in the preservation of history.

Non-Reflectorized Fluorescent Dayboard Film

by Mr. Keith M. Davis, CG-432

COMDT CG-432 has approved a non-reflectorized fluorescent film made by SMV Technologies, Inc., for use in the fabrication of dayboards. The film meets or exceeds the requirements established in G-ECV Specification 473A, "Specification for Elastomeric and Non-Reflectorized Fluorescent Film." The film is a non-reflectorized vinyl film for use in exterior applications where high visibility, conspicuity and long term duration are required. It has an outdoor durability of five (5) years when properly applied, with a two (2) year shelf life. The film uses pressure-sensitive adhesion and can be applied by using a motorized squeeze roll applicator or a simple hand roller.

The film can bought directly from SMV Technologies, Inc., via purchase order or credit card. The price of the film is listed below:

USCG6100EL	Coast Guard Red	$1.27/SF
USCG5000EL	Coast Guard Green	$1.27/SF

Sizes: 24" X 50 yds (300SF) @ $381.00 Roll (minimum of 1 roll)
36"X 50 yds (450SF) @ $571.50 Roll (minimum of 1 roll)
48" X 50 yds (600SF) @ $762.00 Roll (minimum of 1 roll)

Minimum order: 1 Roll

Point of contact: SMV TECHNOLOGIES, INC.
Attn: Betty Thorp
2431 Destiny Way
Odessa, Florida 33556
Telephone: 1-727-372-1512
1-877-768-8324
Fax: 1-727-375-9146
1-888-327-6768

Dayboard fabricators can still purchase the pressure-sensitive vinyl elastomeric film from Avery-Dennison that has been purchased in the past. SMV Technologies' film is another approved film for dayboards that can be used on U.S. Coast Guard aids to navigation.

Analyzing a Sling Failure

by LCDR Steve Wittrock and ENS Janya McCarron, USCGC ASPEN (WLB 208)

Recently, ASPEN was tasked with setting a standard 19,000-lb, 6-meter NOAA weather buoy approximately 500 nautical miles west of Eureka in just over 13,000 ft of water. The weather was an 8-10ft swell, plus a wind chop caused by the 10-15 kt winds; a very typical day in the North Pacific. Conditions were deemed manageable, and preps for setting the buoy commenced. To attach the main block to the sea catch quick release, a safe working load of 13k basketed synthetic sling was chosen. With the basket configuration on the sling, the manufacturer's stated 26k capacity would be sufficient for the 19k buoy.

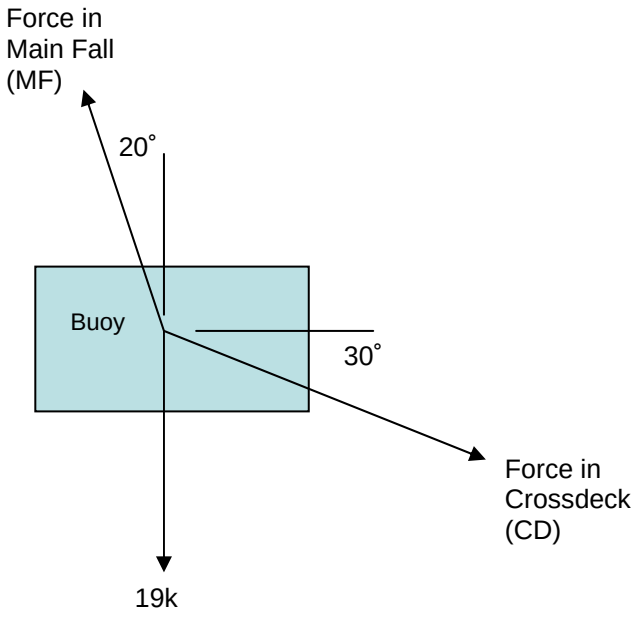
Once the buoy was rigged with a cross deck and all required tag lines, the initial lift to slide it out the door was commenced. Due to the ongoing pitching by the cutter in the swell, the BDS used an exaggerated outboard lead between the main and cross deck, while maintaining tension on the cross deck to help control the fore/aft swing. Shortly after picking the buoy off of the deck, the 13k sling parted at the quick release hook, causing the buoy to fall to the deck. Fortunately, the buoy was only about 6 inches off of the deck and still over the rear saddle that supported the keel. The BDS and the buoy deck crew quickly regriped the buoy and hard-decked the main block. The buoy was rerigged with a shackle and larger sling between the quick release and the main block and set without incident.

After an analysis of the failure, there were two primary causal factors noted. The first was the increased force developed between the opposing forces of the main and the cross deck, and the other was the type of surface that the sling basketed through on the quick release.

NOAA buoy just prior to picking up

Opposing Forces

The force on the main fall and all rigging gear in line is a combination of the load being lifted, the amount of outboard lead on the main, and the crossdeck load added to the system. As shown below in the free body diagram of the system that ASPEN was lifting, the load on the main fall was significantly greater than the dead weight of the load it was lifting.



$$\sum F_x = 0$$

$$-MF\sin(20) + CD\cos(30) = 0$$

$$CD = MF\frac{\sin(20)}{\cos(30)} = .395MF$$

$$\sum F_y = 0$$

$$MF\cos(20) + (-19) + (-F_{CD}\sin(30)) = 0$$

$$.939MF + (-19) + (-.395MF)(.5) = 0$$

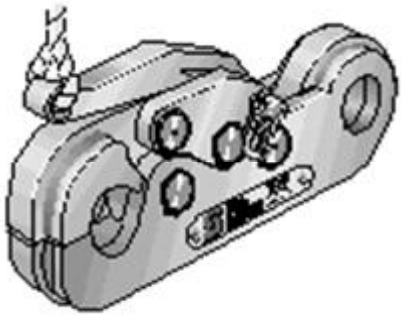
$$\underline{\underline{MF = 25.6k}}$$

$$\underline{\underline{CD = 10.1k}}$$

Explanation: In analyzing the entire system, the tension in the cross deck was adding an additional force in the downward direction which increased the amount of tension the sling had to withstand. Even though the cross deck wasn't pulling down directly, the 30^o angle it was pulling at was enough to approach the safe working load that the sling was rated at. The force on the sling was calculated using two equations (F_x and F_y, the sum of the forces in the horizontal direction and the sum of the forces in the vertical direction. Downward values considered negative) and two unknown values (force in the Main Fall, MF, and force in the Cross Deck, CD). With two equations and two unknown values, the forces from the cross deck and the main fall can be solved for.

Basket Rigging

The synthetic sling that was rigged was basketed around the eye of the Sea Catch quick release which has somewhat blunt edges. To gain a true double load on a basket rig requires the sling to slide to exactly even the load on both sides of the sling, similar to a pulley. The blunt edges can prevent this and slightly overload one side while the other side is taking less stress. Additionally, the blunt edges can cause a stress concentration which also contributed to the sling failure.



Sea Catch quick release device

One additional note; the sling that failed was about 2-3 years old, but had just returned from its annual weight test. This sling appeared to be in good working condition with no indications of reduced capacity. Generally, each year all slings are reviewed; if there is any indication of damage they are replaced, but if they had little use they are weight tested and kept in service.

Summary

The two causes of this sling failure were the results of the opposing forces and the way the basket sling was rigged on the quick release device. It is important to always understand the full force that will be exerted on the sling when selecting the appropriate capacity. In this case the actual loading on the sling was approximately 35% greater then the weight of the buoy alone. Additionally, ensuring a smooth fairlead on the sling is critical to develop a double capacity on a basket rig as well as eliminate stress concentrations on edges.

Notes from the NATON Technical Advisor

CWO4 Dave Merrill, NATON School

This was a great article written by LCDR Steve Wittrock and ENS Jayna McCarron, USCGC ASPEN. It goes to show that even when you have a great plan and have followed all of the safety requirements, MISHAPS can occur. Of note was the fact that none of the crew was hurt or would have been hurt had the buoy decided not to land on its feet. Why? The deck crew were all in their assigned positions, in a safe place, ready to quickly respond to a 6-meter NOAA buoy loose on their deck. Here are a few more of my observations. There are lessons for the most seasoned of us. Please read on.

The sling parted exactly where I would have expected it to given the description of bunching at the quick release hook. Pinch points like this will significantly reduce the working load limit of a synthetic sling even to a point of less than half the WLL. I've pull tested many synthetic slings to destruction at rigging shops around the country and have had it proven time and again that pinching or bending a sling around even a moderately sharp object will result in (very) early failure.

ASPEN was correct in their observation, "to gain a true double load on a basket rig requires the sling to slide to exactly even (on) the load on both sides of the sling, similar to a pulley." If one side of the basket hitch is tighter than the other it will take a majority of the load. In this case, a 13K sling and a 19K buoy may sound like a recipe for an early failure, but there was a safety factor that should have prevented this accident.

All synthetic slings are built with a 5 to 1 safety factor. Of course this would only apply to brand new sling right out of the box. As soon as they're put into service they'll begin to degrade (very slightly). There are several things that will cause a sling to degrade. Along with time (a sling is designed for X number of cycles), there's ultraviolet light (one of the worst), dirt (critters), wear spots, etc. Nonetheless, given the weights ASPEN referred to, this sling should not have parted. The 5 to 1 safety factor should have prevented that—until we go back to the fact that the sling was bent around a moderately sharp object, significantly reducing the WLL.

ASPEN mentioned that the sling was 2 to 3 years old. This is old by Coast Guard synthetic sling standards. We at NATON recommend that a sling be discarded and replaced prior to proof testing as the cost of pull testing a synthetic sling is about 95% of the cost of a new sling.

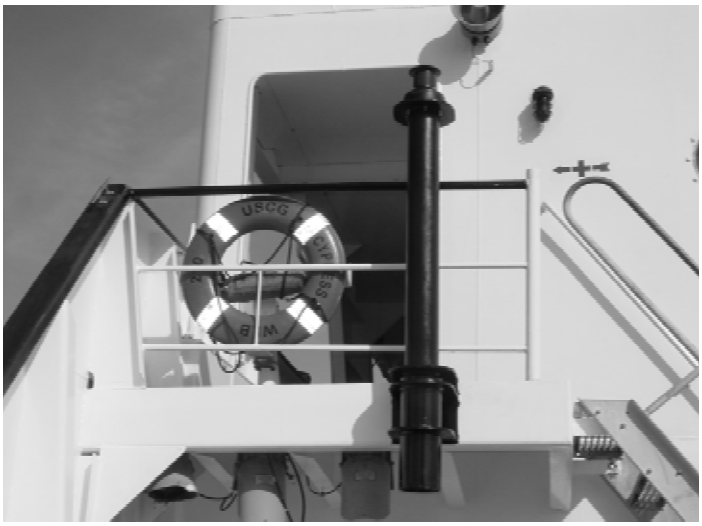
There is a probable change to the Naval Engineering Manual, Chapter 570, that will extend the 200% proof testing requirement from once every two years to once every five years. When I told you that a 2 to 3 year old sling is old by Coast Guard standards, I was referring to the current proof test standards. Under the new requirements I would expect slings in the Coast Guard to be kept for up to 5 years. I still don't/won't recommend pull testing old synthetic slings; it's just not cost effective. Cheap insurance is to buy new.

Be safe out there.

Innovation Aboard CGC CYPRESS

by LCDR Riley Gatewood, USCGC CYPRESS (WLB 210)

CGC CYPRESS found a creative use of their J-bar davit mounts. Previously, whenever we slotted or deployed buoys in or out of the pocket, a line handler was positioned on the respective air castle, and that individual would place a couple of round turns on the hand rail to maintain control of the cage line. After several handrail repairs, the DC's fabricated a stanchion with a Harken two-speed winch on top. This specialized stanchion in the J-bar davit mount provided the line handler the capability to keep tension on the cage line, using a winch, thereby improving personnel safety for a more controlled hand-over-hand technique.



Freeing mudded-in sinkers with the Level Arm

by CWO4 Dave Merrill, NATON School

It's time for another reminder to the WLBB/WLB/WLM fleet regarding the proper use of the level arm on the inhaul winch. Too often in my travels throughout the fleet I witness or hear of the buoy deck supervisor (BDS) using the level arm to free a mudded-in sinker that the inhaul winch is unable to lift, or pulling in just one more link of chain so that the link will easily slide into the chain stopper; you know, the chain under heavy strain, the same chain that the inhaul winch just stalled out trying to lift. Let's make this clear: The level arm is not designed for heavy lift. It shall not be used to free a mudded-in sinker. If the inhaul winch won't lift the sinker, place the sinker in the chain stopper and break it out with the ship. The same applies to using the level arm to pull that one more link of chain under strain. Instead of trying to pull in one more link of chain, try paying out a link. The result is the same, a link of chain that easily slides into the stopper. Yes, Boatswain's Mate, I know, the level arm typically has just a little bit more torque than the inhaul winch and if the inhaul winch won't lift it, there's a chance that the level arm will. All true, but lifting heavy loads was never the intent of the level arm. The level arm was designed to spool chain or line evenly on the drum of the inhaul winch. That's it. It simply wasn't designed to pull mudded-in sinkers, or to get that last link of chain under a heavy strain. Each time you do this, you risk significant damage to your equipment and even injury to personnel. This risk is compounded in a seaway where shock loading of the level arm can easily occur. Some recent history—many of you "salty" BDS are too new to the AtoN community to know that one of our 175's ripped the level arm right out of the deck while it was under strain. Don't repeat a mistake of the past. The first time it was called a MISHAP and we all used it as a learning tool. The second time we'll call it a MISHAP and all learn again, but unlike the first time, it won't go so easy on the offender. All of this will be clearly spelled out in the new AtoN Seamanship Manual. Until then, be advised, be safe, and use your equipment as it was intended to be used.

Vessel Configurations

by BM1 Rudy Patten, NATON School

Picture the following scenario: Your crew has ensured that all of the equipment and parts you will need for your upcoming buoy run are on board and ready for use, your positioning team has verified that the aid information in I-ATONIS and AAPS is up-to-date and accurate for every single aid in your AOR, the work schedules have been run and used to plan your trip and your crew has been trained and is motivated and ready to work. Your unit gets underway and works a number of aids due for servicing. Unfortunately, after returning to homeport, you discover something that tells you EVERY SINGLE aid you serviced was positioned incorrectly, and will have to be revisited ASAP at a great cost of time and money. What happened?

What happened was that despite the efforts of your crew to check the accuracy of your aids in I-ATONIS/AAPS, they forgot to check the accuracy of your vessel configurations in I-ATONIS/AAPS. Any aid positioned with an inaccurate vessel configuration is an aid that was not positioned correctly and is very liable to be off station when revisited and position checked again using a proper configuration. The positions you recorded with the wrong vessel configurations are therefore invalid.

What's the problem? The Leica or Trimble receiver is giving the user the position of the GPS antenna. The antenna can be anywhere; the mast, above the pilothouse, placed on top of an aid, etc. If offsets are not appropriately applied to compensate for the difference between the physical location of the antenna and where the aid is actually being found or set from, the difference between the reality and the fiction of an aid's position can be dozens of yards, resulting in a false on or off station determination by AAPS.

So what do we do to solve this problem? With a correct vessel configuration in AAPS, offsets are applied to the DGPS signal to compensate for the difference between the location of the GPS antenna and the buoy port in use. This "tricks" AAPS into using the selected buoy port as the position it is receiving from the DGPS receiver.

How to do it? Easy. Choose a reference point. The reference point can be and often is the GPS antenna, but it doesn't have to be. If you choose a reference point other than the antenna, you will need to have a measurement FROM that reference point TO the antenna. Also from that reference point we measure distances (we call them offsets) to our buoy ports. Measure all offsets in yards (convert from whatever unit of measure is easiest for you, but ultimately the measurements MUST be in yards) from the reference point to any buoy port that you will utilize for positioning.

Measure fore and aft and athwartships offsets separately. Fore and aft measurements are positive for buoy ports forward of the reference point and negative for buoy ports aft of the reference point. Athwartships measurements are positive for buoy ports to starboard of the reference

point and negative for buoy ports to port of the reference point.

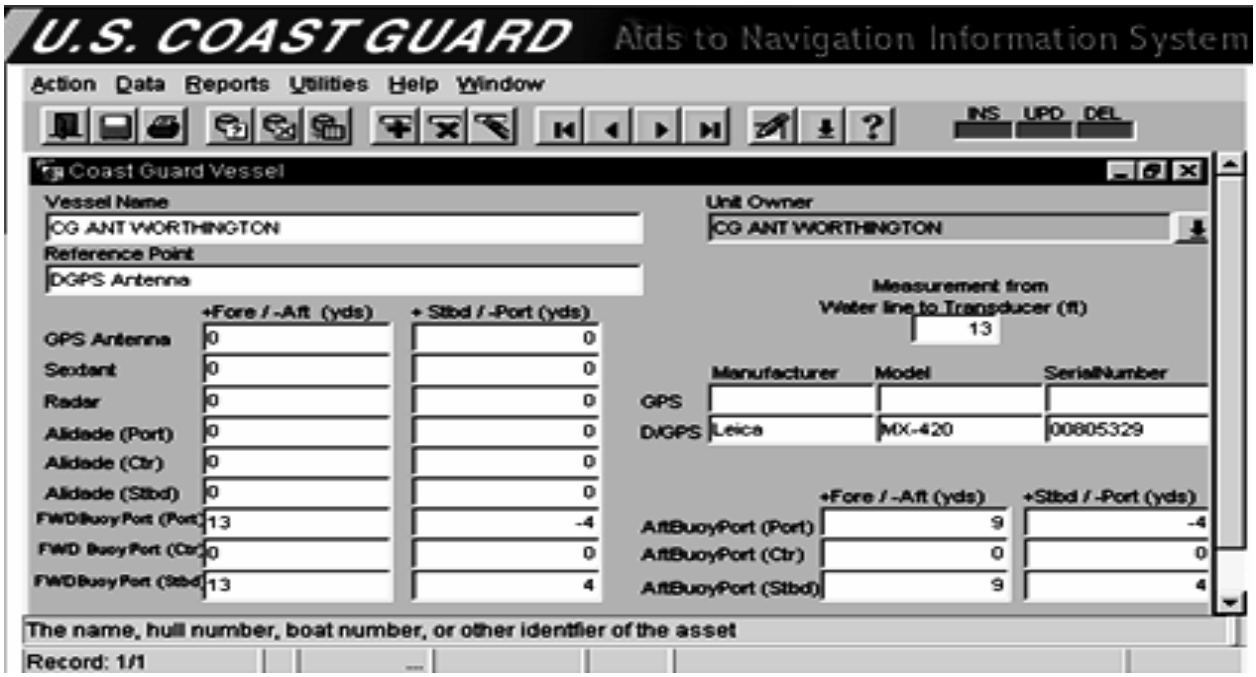
Enter the correct measurements, IN YARDS, that you got either from the ship's drawings or by manual measurement, into the correct column and section in the Vessel Configuration screen of either I-ATONIS or AAPS. To get to this screen, use the Data dropdown menu and select Vessels.

In addition to these measurements, you will need to enter the manufacturer, model and serial number of the receiver being used for positioning. You will also have to make note of what you are using as your reference point. And finally, you will have to enter your waterline to transducer measurement (this measurement will be the only one recorded in feet) if that applies. This is for units whose fathometer does not already account for the waterline to transducer measurement, and gives depth under the keel.

When positioning aids with a jump kit, where the GPS antenna is placed directly next to the aid, you will have offsets of 0 yeards. A vessel configuration still needs to be created for a jump kit, however, because AAPS requires a vessel configuration to be selected in order to position an aid.

Save all of your CORRECT vessel configurations in I-ATONIS/AAPS, and also print out paper copies to store in your hardcopy folder along with your DGPS receiver verifications and any other info not related to a specific aid. Finally, when positioning an aid, be sure to choose the correct vessel configuration, and on the plot screen, choose the correct buoy port. Accurate vessel configurations are one of many important steps you'll need to position aids to navigation using due care.

Example of a Vessel Configuration in IATONIS



Mechanical Chain Stoppers

by BM1 Chris Wilcox, NATON School

Regular maintenance of your ship's mechanical chain stoppers is a very vital part of keeping the buoy deck ready for any situation that may occur. Many Buoy Deck Training Team visits come up with one common discrepancy: lack of proper maintenance on the mechanical chain stopper. Remember, in the not too distant past, this was the only option we had, and in many cases is still our only choice. Below is a brief daily inspection that can be performed to ensure your mechanical chain stopper is safe and operational:

1. Ensure the horse collar fits. Remember, when the chain stopper was manufactured, they were made individually, therefore the port may not fit on the starboard and vice versa; simply inscribing an S or P would suffice.

2. Inspect the throat of the chain stopper for wear. Keep in mind, there is no guidance at this point for maximum wear. With that being said, the mechanical chain stopper specific to your class boat is designed to accommodate the smallest size chain that you use. If it is unable to perform this task, it needs to be repaired.

3. Inspect welds on gussets. A WLM mechanical chain stopper failed at 8500 lbs due to undiscovered cracked welds.

4. Ensure bail pin is attached to stopper.

5. Ensure zerk fittings are properly lubricated.

6. Ensure hinge pins are properly lubricated.

7. Ensure cotter keys are present and properly opened.

8. Finally, check the functionality of the stopper itself:
   - Slip pin
   - Strike bail
   - Lift chain stopper with sledge hammer
     - The chain stopper should fairly easily move upward to the peak, then lower back about halfway down.
     - While the stopper is in this position, ensure the spring is intact, not overly rusted, free of dirt and properly lubricated.

These steps will ensure that your stopper is ready when you need it. Whether it is gear that's used on a daily basis or something that doesn't see regular action, we have to take the time to keep up with our equipment—a few minutes on PMS can prevent potentially disastrous mishaps.

The following are corrections to pages 10 and 23 of the Summer 2007 ATON Phone Directory. Corrections are outlined. If you have a correction to information in the Directory, please forward it to the editor and we will publish it in the next Bulletin.

District 7 (page 10)

Cutters

ANVIL BMCS R. Harlacher
(843) 724-7666

HAMMER BMCS M. Kempton
(904) 564-7607

HUDSON CWO M. Moretti
(305) 535-4375

JOSHUA APPLEBY CWO J. Vandenheuvel
(727) 502-1569/70/71/72

MARIA BRAY CWO R. Hutchison
(904) 564-7613

OAK LCDR M. Glander
(843) 554-8541

VISE CWO N. Feustel
(727) 893-3331
735-4137

National Data Buoy Center (page 23)

Director Dr. P. Moersdorf
(228) 688-1722

Operations Branch Chief Dr. C. Teng
(228) 688-7101

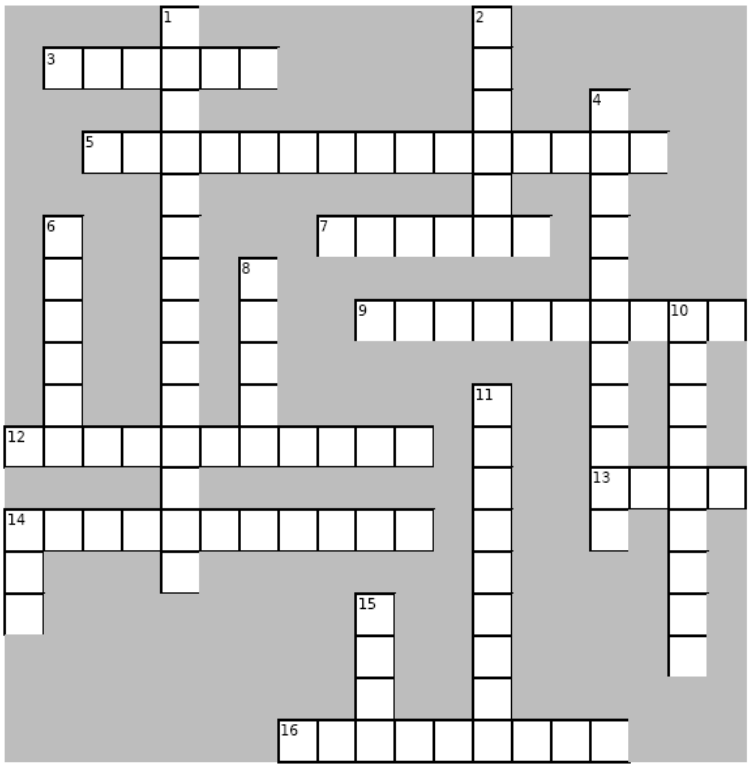
Secretary Ms. E. Kohsnann
(228) 688-1212

Scheduling Officer CWO D. Bear
(228) 688-1713

Data Assembly Center 24/7
(228) 688-2835

Fax
(228) 688-2869

Rigging Odds & Ends



Across

3 most common type of natural fiber in use
5 individual wires of strand are laid up to the left and strands laid down to the right
7 a pair of adjoining links, one which may turn independently of the other
9 line under 1-3/4" in circumference
12 useful in stopping chain
13 foundation of wire rope
14 both the wires of the strands and the strands laid up to the left
16 the distance it takes one strand to go completely around the rope

Down

1 shackle used in all loading operations
2 inspected bi-annually and each time a new wire rope is installed
4 sling configuration where the sling is passed under the load and both ends attached to lifting hook
6 two short lengths of chain connected by an iron ring
8 most common type of synthetic fiber in use
10 provides maximum flexibility and elasticity to wire rope structure
11 chain that shall not be used in slings or to secure deck loads
14 the direction of twist of the strands in the rope
15 answer to the connect the dots in the Good Times section of the Winter 2007 NATON Bulletin

National Aids to Navigation School

AFTER HOURS
Technical Support Hotline

(757) 449-3681

Call for after hours and weekend technical support questions!

Underway on Friday night? Sunday? Have a Question?

WE CAN HELP!!

DEPARTMENT OF HOMELAND SECURITY
Commanding Officer
US Coast Guard Training Center
Yorktown, VA 23690-5000

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE: $300

Presorted
Standard Mail
Postage & Fees Paid
US Coast Guard
Permit No. G-157