



# Diving Safety Lines

Spring Edition

2007

*Diving Safety Lines* is a semi-annual release by the Afloat Safety Directorate of the Naval Safety Center. The information contained herein is a summary of research from selected reports of diving hazards to assist you in your mishap prevention program. *Diving Safety Lines* is intended to give advance coverage of safety-related information while reducing individual reading time. This bulletin does not, in itself, constitute authority but will cite authoritative references when available. It is recommended that this bulletin be made available to all hands.

## DJRS??? What is it?

The Navy/Marine Corps new Dive/Jump Reporting System (DJRS). Yes, you read that correctly Dive and Jump. As it turns out, divers had a system to log our dives (that not so easy to use DRS 5.1.5), and jumpers use to have a similar program, but it no longer exists. So some smart IT folks sat down and figured out that these two reporting systems are very similar and the majority of Navy jumpers are divers as well. Hence, the combined use of one system.

This new web based system will make many improvements to our old way of reporting dives. First, and foremost, it's web based so there won't be any issues with loading and updating software at each command. Second, we will have a global list of all divers and jumpers. Eventually, you will be able to set up an account so you can keep track of your own personal dive history. [Note: if you are a diver only (no jump qualifications) you won't see anything relating to parachute operations, just your dives; however if you have both qualifications (ie. SEALs, EOD, Force Recon.) you'll see all your dives and jumps].

The system will be based on roles and privileges within a dive unit. With the appropriate privileges you can do things such as add a diver to your unit, log dives, approve dives, view command history, view subordinate command's history, check qualifications/currency, and much more.

DJRS has additional Non-Functional Requirements that have been stressed more than any one thing since we started this project...

### Simplicity

The user community has made amply clear that they want the new dive and jump modules to be as simple as it can possibly be consistent with mission success. In particular:

- Screen transitions and the number of screens should be minimized
- Selection boxes, check boxes, and radio buttons should be used instead of typing wherever possible
- The most common scenarios and values should be pre-populated as defaults

### Speed

As a requirement, speed is closely related to simplicity. Since logging dives and jumps is routine activity, it needs to be streamlined. It is critical to the success of the project that a user be able to log a dive or a jump correctly, yet very quickly. If the process takes much time, it will not get done properly.

### Agility

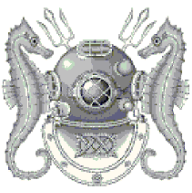
The Navy needs a system that is able to change as their needs change.

We hope to demo the system at the Working Divers Conference and on our surveys this calendar year. Please feel free to provide input as we progress to provide that best possible product to the fleet.

**LCDR ROBERT CROUCH**

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# DRS!



## Issues with DRS?

Having trouble with DRS? Here is a common problem we have been seeing lately.

This is a problem that seems to never go away, we get phone calls daily from Units that are having trouble submitting dives. Please have your DRS guy read these DRS tips Thanks.

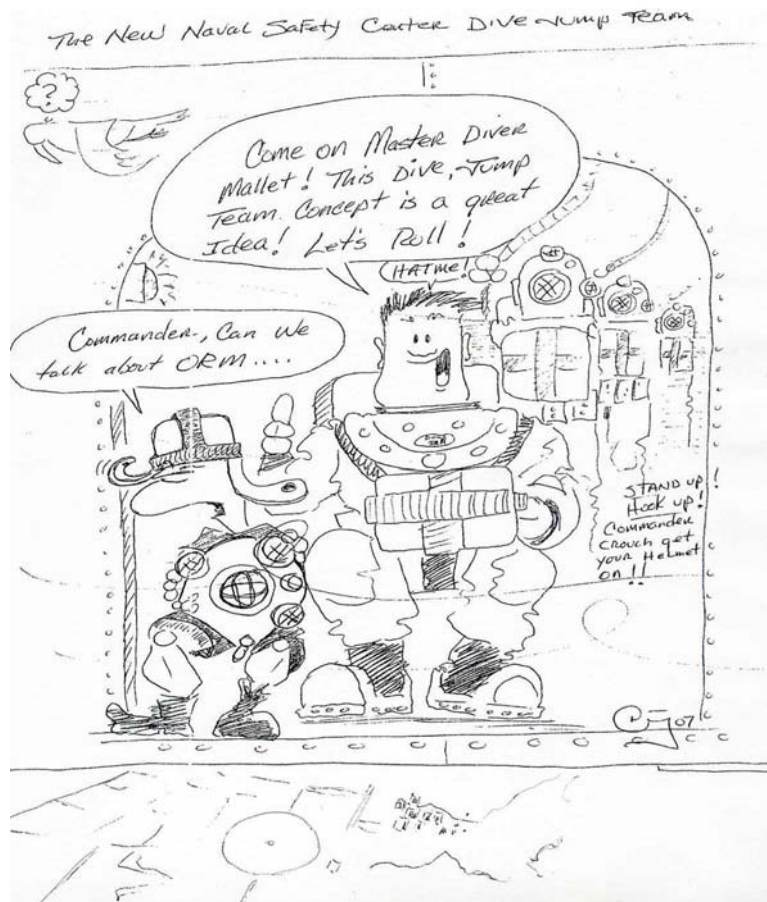
1. Your dive report attachments are getting dropped from your e-mails. Therefore, we are not able to upload your dives. We found out it is NMCI not letting all large compression files thru their firewall.

If you get a email from us or your administrator saying: A MIME attachment of type <application/octet-stream> was removed sorry your attachment was dropped.

Here is how to fix the problem, the file is a compression file and has a extension of .lzh, we need you to rename the file extension to .doc so the firewalls will think it's a Word document and will let the attachment through. Leave the 1<sup>st</sup> part of the file name alone, it will start with your UIC, date code (A is for January), and the day you compressed the file I.E (63393C02.doc). We will e mail you when we receive your dives, don't expect a return right away. We do travel.

2. The computer geeks are hard at work on the new DRS program or should I say (DJRS), Dive Jump Reporting System. We are looking at a test date by the end of the year. This Web-based program will solve a lot of the problems sending and reviewing dives. Every diver will be able to review his or her own dive history and the MDV will be able to review their Command Dive History. This will improve the tracking of dives completed.

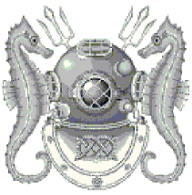
3. If you need a copy of the DRS program it is on our web site at <http://www.safetycenter.navy.mil> or for a copy on CD e mail your request to: [Safe-divesalvage@navy.mil](mailto:Safe-divesalvage@navy.mil).





## Here are some recent updates and Diving issues we are seeing

1. Check your U.S. Navy Underwater Cutting and Welding Manual 0910-LP-111-3300. The current update is Change B dated 1 June 2002.
2. Updated technical manual for the Conshelf XIV regulator, PMS requires the first stage to be set as per manufacture's specifications (140 +/- 5psi). Go to [www.aqualung.com](http://www.aqualung.com) for an updated copy.
3. NAVSEA has moved the AIG messages to a secure site instead of using the password. Authorized users are required to use their Common Access Card (CAC) or DoD issued PKI certificates to open this site. If unable to open the secure site, users should verify that their certificates are valid, or have been registered on the PC in use (using ActivCard Gold), and that the PC's internet options are configured to support SSL and TLS. Users still encountering difficulties may contact the SUPSALV webmaster for assistance. For submarine commands who do not have CAC card readers, your divers will need to keep their PKI certificate on a floppy or flash drive to be able to log onto the website or continue to track AIGs via message traffic.
4. Haskel booster pumps air quality requirements for drive air. Haskel ISO 8573.1 recommends a minimum ISO quality air supply for air motors to be Class 4 or better. You will have to contact Haskel for a copy of the air quality recommendations SKIS-100 Rev A 02 sep 99 since it is not listed on their web site. POC Industrial Technologies Division Phone (818)843-4000 Fax (818)556-2549
5. New MK 16 MOD 0 NSW 0910-LP-103-8515 Technical Manual dated 30 Nov 2006.
6. New MK 25 MOD 2 Tech man 600-A3-MMA-010/53833 Rev 1, 15 March 2006. Also FARS have been shifted to A new web site <https://pmsnsw.org> but you will need a PKI certificate to log on to website instead old password.
7. Tag Out Users Manual (TUM) has been updated, Rev 2 dated Sept 2006. The TUM is posted electronically at <http://www.submepp.navy.mil/jfmmtum.shtml> or <https://mercury.tdmis.navy.mil>
8. NAVFAC requirements on hyperbaric pressure vessels and relief valves technical memorandum TM-CHENG/05-10-SCA states every relief valve that is tested and/or repaired must be accomplished using the new NAVFAC form, and is required to be kept on hand for trend analysis, this goes for non-certified, scuba-charging systems also.
9. Umbilical Issues: (1) Divers umbilical's are not properly labeled or tagged, and have been found connected to the wrong umbilical port, (ie red's umbilical connected to green's port).  
(2) Improper umbilical spinnaker shackle being utilized ie using a miniature shackle vice to 5,000#lb rated shackle.  
(3) Strain relief's either not connected or connected to the piping system instead of mounting brackets. Refer to the umbilical manual.
10. I am sure everyone performing the post-dive PMS on the Zeagle buoyancy compensator has noticed a problem with the R-2 PMS card. It has you tear down the power inflator after each dive. Kerry Duffy is aware of this and we are working on correcting the PMS card.



11. Diving Salvage Warfare Specialist (DSWS) Personnel Qualification Standards (PQS) have been revised see message date time group 281342Z FEB 07

12. OPNAV Instruction 5100.19E, Dated January 2007 contains three volumes Distribution is Electronic only and will be found at Navy Directives Website: <http://daps.dla.mil> Once approved and signed. A summary of the instruction will soon be posted on our web site.

13. Some of the new HP hoses provided by Bauer are coming with inadequate documentation. Specifically, the tags on the hoses show a hydro test to 150% pressure not a proof test to 200% pressure. The photo has an example, note the incorrect service pressure. To remedy this Bauer sent me the Certificate of Compliance (COC) showing a 690 BAR (10,143 PSI) proof test. Future hoses will have the tags modified to represent the proof test. Until these hoses with the additional proof test information become available, use the COC to satisfy the 200% requirement. This is sufficient for 5,000 PSI service.

This applies to hoses with Bauer part number HOS-0080 ordered with a small HPAC as a unit or individually. For hoses or parts other than this, you will need to request the COC from the manufacturer.

Brian Pratschner

DATE: 9/1/06

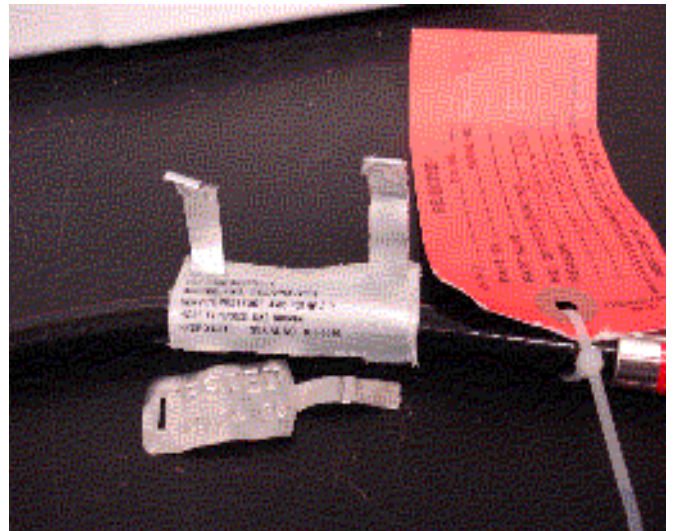
**\*CERTIFICATE OF COMPLIANCE\***

We hereby certify that we have supplied the following:

COMPANY: BAUER COMPRESSORS  
 CUSTOMER P.O.# 024141-00  
 EUROPOWER PART #: 04737C104C104-72 PP SS  
 BAUER PART #: HOS-0080  
 INVOICE/PACKING # 1119491-35  
 BATCH #: N/A  
 QUANTITY: 40 pcs  
 DESCRIPTION: HOSE ASSEMBLIES

COMMENTS: 100 % PRESSURE TESTED AT 690 BAR FOR 30 SECONDS.

AUTHORIZED SIGNATURE:



TAG INFORMATION  
 Fill hose assembly  
 Service Pressure 4500PSI HP AIR



# Upcoming Safety Surveys

## SURVEY SCHEDULE

DATE	COMMAND	UIC
04/12	USS JACKSONVILLE	20825
05/01	SEAL DELIVERY TEAM TWO	08842
05/28	USS MIAMI	21368
05/29	USS SPRINGFIELD	21691
05/22	3 <sup>RD</sup> FORCE RECON CO, 4 <sup>TH</sup> MARDIV	73010
05/25	EODMU 6	55238
05/31	USS MINNEAPOLIS ST. PAUL	20884
06/04	USS TOPEKA	21463
06/05	EODMU 7	82630
06/06	EODTEU ONE	30202
06/08	NAVAL SPECIAL CLEARANCE UNIT	31968
06/11	EODMU 3 DET SOUTHWEST	48176
06/12	EODMU 3	55447
06/14	EODMU 3 CHINA LAKE	30697
06/25	EODMU 17	47150
06/27	EODMU 11 DET NORTHWEST	30203
06/29	EODMU 11 DET BANGOR	42969

## Coast Guard Diving Mishap

Commandant's All Hands - Final Action on CGC HEALY Mishap

To the men and women of the Coast Guard:

On 17 August 2006, we lost two of our shipmates assigned to CGC HEALY, LT Jessica Hill and BM2 Steven Duque, in a tragic diving accident in the Arctic. There are valuable lessons to be learned by all of us regarding leadership, risk management, training and program oversight that apply to all Coast Guard operations. Therefore, I am directing all personnel to read my entire report. To help ensure public access to the report on the Internet, Coast Guard members with access to a CG Standard Workstation should view my report posted on CG Central at: (<http://cgcentral.uscg.mil>). Anyone without CGSW access can view a copy of the same report online at: ([http://www.uscg.mil/ccs/cit/cim/foia/Electronic\\_Reading\\_Room.htm](http://www.uscg.mil/ccs/cit/cim/foia/Electronic_Reading_Room.htm)).

Consistent with my commitment to the families of LT Hill and BM2 Duque, each family was provided a copy of my report and has been personally briefed by the Coast Guard Chief of Staff, VADM Papp, earlier this week. We once again express our deepest sympathies as the entire Coast Guard continues to mourn the loss of these two dedicated, hard working individuals. Please keep them, their families and the HEALY crew in your thoughts and prayers. I understand that there is nothing which will make up for the loss of LT Hill and BM2 Duque. We will honor our lost shipmates by taking timely action, at all levels, to improve our dive program.

In addition to this administrative investigation, a Commandant's Vessel Safety Board has been convened to prevent any similar mishap in the future. Its work is ongoing. The results of that mishap analysis will be disseminated via ALCOAST upon its completion in the coming months.

Concurrent with the public release of this investigation today, the Pacific Area Commander, VADM Wurster, is briefing HEALY crewmembers and the media in the cutter's homeport of Seattle. As the convening authority, VADM Wurster has taken action to hold HEALY's Commanding Officer, Executive Officer and Operations Officer accountable for failing to meet their personal responsibilities surrounding this mishap.

This is a brief summary of what occurred. In the late afternoon hours of 17 August 2006, three Coast Guard divers from HEALY attempted to conduct two, 20-minute cold water familiarization dives at 20-foot depth during an ice liberty stop in the Arctic ice approximately 490 nautical miles north of Barrow, Alaska. After one of the divers exited the water due to equipment malfunction, the other two divers continued the dive in 29-degree Fahrenheit waters. The divers quickly descended to depths far exceeding their planned depth, one diver descending to 187 feet and the other diver descending to at least 220 feet. Once it became evident that too much tending line had paid out to support a 20-foot dive depth, the divers were brought to the water surface. The divers were recovered with no vital signs and were pronounced dead after extensive resuscitative efforts failed. Final autopsies report cause of death for both LT Hill and BM2 Duque as "Asphyxia with pulmonary barotraumas with possible air embolism" (lack of oxygen with severe air pressure damage to the lungs, including possible air bubbles in the circulatory system).

The bottom line is that this dive should have never occurred. The investigation revealed numerous departures from standard Coast Guard policy that should have precluded diving under the circumstances. Had HEALY's Commanding Officer, Executive Officer, Operations Officer and dive team followed policies established in Coast Guard and Navy Diving manuals, they would not have permitted diving operations.

HEALY had only two qualified and current divers that day; this dive evolution required at least three qualified and current divers, and one qualified Dive Supervisor not actually diving. Additionally, the Diver Tenders were not qualified. Despite these problems, the dive plan was approved by the Commanding Officer without a pre-brief, an operational risk assessment or any medical evacuation plan, as required by Coast Guard and Navy policy.

A critical factor in the loss of the divers was that neither diver wore a weight belt, as required by the Navy Diving Manual. Instead, both divers carried approximately 60 pounds of weight in the pockets of their buoyancy compensation devices (BCD), approximately 2-3 times more weight than normally used by experienced divers in similar cold water and ice dive conditions. The BCD has pockets to carry and, if necessary, jettison weight. However, LT Hill and BM2 Duque filled not only the weight pockets, but also the equipment pockets of the BCD. Thus, much of the divers' weight was not easily jettisonable. Although LT Hill had some experience diving in the Arctic, this was her first SCUBA dive in the Arctic. This was BM2 Duque's first cold water dive.

Adding to the risk of the operation, the ship was holding "ice liberty" at the same time, and in close proximity to the dive evolution. The ice liberty included "polar bear plunges," football and consumption of both alcoholic and non-alcoholic beverages. Neither LT Hill nor BM2 Duque consumed alcohol prior to diving.

The deaths of LT Hill and BM2 Duque were preventable and resulted from failures at the Service, unit and individual levels. The investigation revealed failures in leadership within the chain of command aboard HEALY, as well as numerous departures from standard Coast Guard policy. Had a proper risk assessment been conducted, this tragedy could have been avoided. As a Service, we failed to exercise sufficient programmatic oversight of the dive program, including failures to adequately staff our dive units and conduct annual dive safety surveys. This mishap further highlighted our need to improve dive expertise in unit dive lockers and address shortfalls in dive program policy, guidance, training and experience. As a result, we will elevate program management on par with other high risk, training-intensive operations such as aviation. A comprehensive list of the corrective actions I have ordered, including those that have been completed, is contained in my report posted online.

We cannot prevent every Coast Guard casualty. Despite the professionalism, bravery, and dedication of our workforce, in rare cases we suffer a serious injury or death in the line of duty. As Coast Guard men and women we accept that risk, but we will not accept preventable loss or injury. This tragedy has prompted us to re-examine our dive program to ensure it is as well managed and safe as such inherently dangerous operations allow. The safe conduct of Coast Guard training is fundamental to Coast Guard readiness. Without it, there can be no successful Mission Execution. When it comes to dangerous operations such as diving, "good enough" is never good enough. We can do better. We will do better.

The sacrifices LT Hill and BM2 Duque made in service to their Nation will never be forgotten. Their loyalty and dedicated service will forever be appreciated by the U.S. Coast Guard.

Admiral Thad Allen

This and other All Hands from the Commandant are posted on the Coast Guard Internet Home Page in the Commandant's Corner ([WWW.USCG.MIL/COMDT](http://WWW.USCG.MIL/COMDT)) and on the OURCG Tab of CGCENTRAL at [HTTP://CGCENTRAL.USCG.MIL](http://CGCENTRAL.USCG.MIL).



# WESS

## WESS and Diving

While we are receiving adequate information for diving mishaps, command reps are leaving out some of the gear used during the dive. This may be due to repetitive and lengthy questions in WESS about the dive gear used during a mishap. It is very important to list all the gear used during the mishap. This provides the NEDU, NAVSEA, and us with the ability to track possible trends in defective equipment. Although the WESS report may seem to be tedious and repetitive, it's a necessary evil to help prevent the injury or death of a fellow diver.

You don't need to submit the report until 30 days after the date of mishap. We have submitted an update to change the "Help screens" for diving mishaps to help you prepare a more accurate report. If you experience problems with your mishap report, please submit a WESS feedback with your constructive comments. Also, send an e-mail with the same information to "[Safe-Divesalvage@navy.mil](mailto:Safe-Divesalvage@navy.mil)". We want to change the way the database works. Your feedback and our lobbying will make it happen.

Remember, we are here to answer your questions at (757) 444-3520 Ext. 7837 (DSN 564). That's the group ring for all the divers.

HMCS Bradly Stewart

## Welcome Aboard to CWO3 Jeff Annon

I just want to start off by saying that I'm excited to be here and look forward to getting out and seeing the incredible work you all have been doing out there in support of the war. Additionally, I want to thank CWO2 Hennig for a timely turnover during the holidays and wish him luck at his new assignment at SERMC.

Now to get down to business! In the short time I have been here, I can tell you that manipulating our safety survey schedule is a never ending job. The surge deployments and OPTEMPO of commands is just incredible. The one thing I need to get across to everyone is that, we have a firm two- year schedule that is generated from our data base. That schedule is also driven by the geographical locations of every command. We normally visit concentrated areas such as Hawaii, San Diego, Groton, and overseas on two separate occasions during the year. We do this so that the odds to catch every command due that FY are in our favor. We understand that sometimes this is just not possible, especially with today's deployment schedules. What I need from these commands is open communications and a proactive approach in scheduling your survey, if you are missed for whatever reason. Keep in mind that it is just not fiscally responsible for us to travel across the country to survey one command. We will not dispatch a team for one command, but instead will group you into the next set of commands due in your area. If we keep things grouped in this way, it makes my job easier and in turn you get your survey completed, generally, in a reasonable time with no worries.

Next topic is changes within your commands. We have seen many EOD, Marine and Fleet Diving units merge or even change names and locations. The information in the data base is only as good as the information I receive. If you belong to one of these commands or have knowledge of these recent changes, I need your information. I will need the following: Command UIC, name, location, POC, Email address and phone number and lastly message address plain language address, so I can get you on the mailing list and our diving AIG.

Once again, I look forward to getting out and seeing some new faces and hearing the great things our community is doing. Until then.....dive safe!

CWO3 Jeff S. Annon

# SUMMER RECREATION SAFETY

## Swimming



Summer Off-Duty Safety

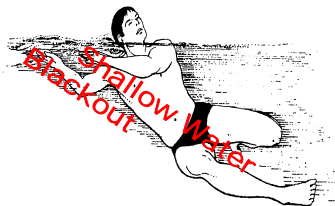


- Practice Swim Techniques
  - Always Swim With A Friend
  - Swim In Areas With Life Guards
  - Do Not Drink Alcohol.
- Look Before You Leap



- Recreation and off-duty mishaps are the number 1 cause of injury and the number 2 killer of Navy personnel. Today's training is to make you aware of the hazards associated with common leisure-time activities. It will also familiarize you with basic precautions.
- A variety of factors contribute to the typical swimming mishap. Too many people mistakenly consider themselves skilled swimmers. Yet, most can only qualify as class III swimmers. Seldom do they consider the consequences of cold water, alcohol and fatigue. Overestimation of ability and underestimation of the effects of such conditions are the leading causes of drowning and disabling injuries. Know your limits and don't exceed them.
- A Lt Aviator was snorkeling for lobster. he saw a 2 to 3 foot nurse shark and believing them to be passive, he netted it to show his girlfriend in his boat. Holding the shark by its tail at arms length his friend took pictures. suddenly, the shark twisted, biting the officer in his arm. he tried to get the shark to release his arm by hitting the shark. he had to go to the dispensary. There the doctor injected the shark with a muscle paralyzer . The shark let loose.

Look Before You Leap!



- Safe Boating Course
- Load Capacity
- Safety Equipment
- Float Plan
- Personal Flotation Devices (PFDs)
- Weather Conditions

- Two Sailors had been drinking beer throughout the evening and decided to go swimming. One of the shipmates climbed into the life guard stand and his friend, already in the water, started shouting I am drowning as a joke. The would- be rescuer jumped head first from the life guard stand into the shallow water. [He fractured his spinal cord].
- Even in the presence of a life guard, things can go wrong. Do not assume your every move is being observed. Each of us must assume responsibility for our own safety. Shallow water blackout (unconsciousness in areas like swimming pools) occurs because swimmers practice the dangerous technique of hyperventilating and breath-holding. They believe they can hold their breath longer by exhaling carbon dioxide rapidly. Unconsciousness and death can occur because this practice interferes with the brain's normal automatic signals to the body to breathe.
- The overwhelming majority of boat operators who have fatal mishaps have never taken a safe boating course. The main causes of these mishaps are collision, falling overboard and alcohol. Intoxicated operators cause approximately 50 percent of all serious boating accidents. OPNAVINST 5100.25A requires small boat qualification training prior to renting a MWR boat and the wearing of a pfd in boats under 16 feet. It is recommended all boaters follow these guidelines . Take a Coast Guard approved boating course.