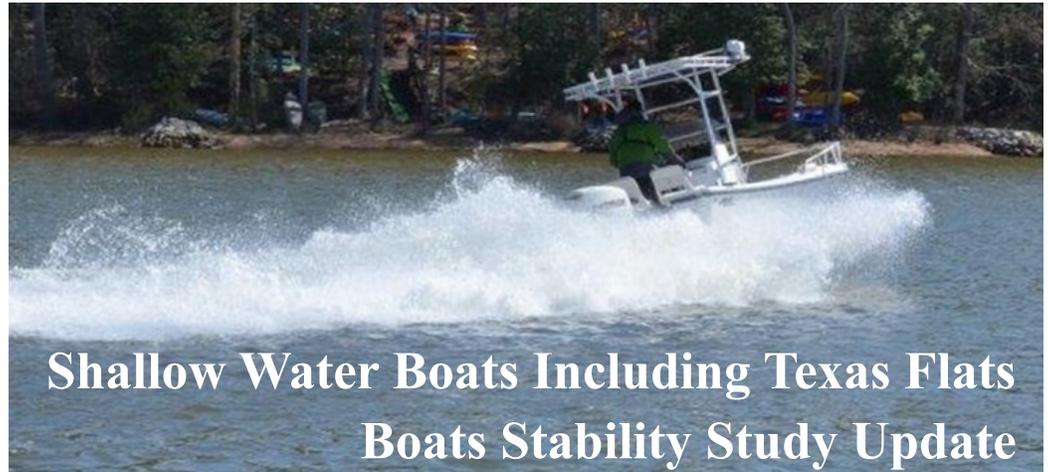




BOATING SAFETY CIRCULAR

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Shallow Water Boats Including Texas Flats Boats Stability Study Update

In our last issue of the Boating Safety Circular (Issue 88) we discussed the “Texas Flats Boat Stability Study.” Since then we have discovered that other style shallow water boats have the same handling characteristics as the Texas Flats Boats, so we have expanded our study to include those boats. In this article we will provide an update as to where we are with the study of these boats and where we intend to go.

As a recap, we have identified a distinct style of boat that has issues when performing turns. Essentially, these types of boats can “end swap.” The Coast Guard and partner contractors have performed extensive testing of these vessels. We have investigated design engineering changes to correct the problem to better assist us with understanding the causative factors. We have found that hull design can result in these boats failing to negotiate turns as expected.

What is unique about these boats that end swap? First, as they are intended to operate in shallow water, they have incorporated a tunnel along the centerline in

the aft portion of the hull to permit the outboard engine to run in an elevated position on a jackplate. Second, they have a high dead rise or deep vee in the forward part of the hull. Third, they tend to have very little containment for the occupants and operator. Lastly, they use an oversized anti-ventilation plate on the outboard.

The net result of these characteristics is that during a turn the boat may end swap. The interaction of these characteristics is as follows: the water flow through the tunnel changes as the boat turns, causing a disruption of water flow to the outboard. With the outboard no longer in the water, the outboard is not able to provide lateral resistance or directional control. The deep vee of the bow digs in to the water and without any lateral resistance from the outboard, the boat end swaps.

During the evaluation of these boats, a protocol was needed to evaluate their handling characteristics to provide consistent and repeatable results. Additionally, one of the goals of the project was to pro-

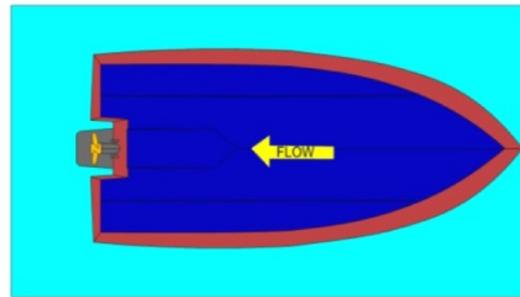
Boating Safety Circular

The *Boating Safety Circular* is a product of the United States Coast Guard's Office of Auxiliary and Boating Safety — Boating Safety Division — Recreational Boating Product Assurance Branch, Commandant (BSX-23), 2703 Martin Luther King Jr Ave SE, Stop 7501 Washington, DC 20593-7501

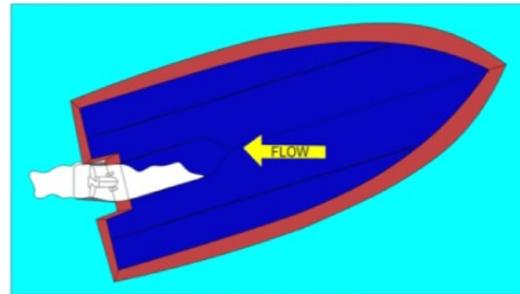
The *Boating Safety Circular* is for information only. No Federal Statutes or Regulations are established or changed in this circular.

www.uscgboating.org

Continued from page 1



GOING STRAIGHT
FLOW FOLLOWS TUNNEL INTO PROPELLER



WHILE TURNING
FLOW SEPARATES FROM SIDE OF TUNNEL,
CAUSING LOWER UNIT TO VENTILATE

“The Quick Turn Test applies to boats capable of exceeding speeds over 30 mph with remote steering.”

vide boat manufacturers with a tool to evaluate their boats. After looking at several potential protocols, the team concluded that the Quick Turn Test out of ABYC’s H-26 *Powering of Boats* standard was appropriate. As a voluntary industry standard, the Quick Turn Test has been utilized by many boat builders for years to determine handling characteristics of boats. H-26 *Powering of Boats* applies to all boats propelled by machinery except inflatables, canoes and kayaks, and pontoon boats, as these boats are covered by another ABYC standard. The Quick Turn Test applies to boats capable of exceeding speeds over 30 mph with remote steering. As a bench

mark, we tested two different models of 18-foot tunnel hull shallow water boats we had in inventory. Both were equipped with 115 horsepower outboards and were tested against the Quick Turn Test. Both of them failed.

Another part of the project was to see if the boats could be modified to reduce or eliminate the end swapping tendency. While there are several contributing factors to end swapping, the proposed engineering evaluation maintained the boat’s draft so the solution could be better incorporated into boat production. The proposed solution was to modify the hull with two different configurations of skegs and test the modified boat against the ABYC H-26 Quick Turn Test.

The first configuration consisted of two “long” skegs approximately 72 inches long and 4.5 inches tall. They were installed in the aft third of the boat parallel to the centerline approximately halfway between the keel and chine, one to port, one to starboard. This configuration aimed to ensure the boats would pass the test.

The second configuration was a set of “short” skegs approximately 18 inches



Continued from page 2

long and 4 inches tall installed just forward of the transom and again about halfway between the keel and chine. The short skegs were intended to see if a smaller design change would achieve the same outcome.

During testing, the long skegs enabled the boat to pass the Quick Turn Test. The increased hull-to-water contact provided by the long skegs improved the directional stability of the boat and greatly reduced the tendency of the stern to end swap. The test boat with short skegs installed was also able to pass the ABYC Quick Turn Test, but operator feedback indicated that the boat experienced some degradation of control that could still result in end swap in tighter turns, thus suggesting that longer skegs were appropriate.

While the engineering analysis and testing resulted in the development of one possible solution that may not be effective for every hull design. There may be other

possible design changes that could reduce the tendency of end swapping. Modifying the tunnel or changing the dead rise in the bow may eliminate the end swapping, but the feasibility of these modifications were beyond the scope of the project. However, these options could be explored by a manufacturer. In the end, builders should evaluate their boats for any off handling characteristics as each boat may vary between models and powering configurations. We also strongly recommend using the ABYC H-26 Quick Turn Test to determine the maximum speed at which the boat can pass the Quick Turn Test without end swapping and placing a warning label in the boat to advise the operator of this handling characteristic.

Building safe boats is the responsibility of the builder. However, due to the unique safety concerns of this niche type of boat, the Coast Guard is creating a webinar to inform builders and the boating public of the unique handling characteristics of shallow water boats that include "Texas Flats Boats." The overall goal of the webinar is to enhance awareness, provide potential solutions, and ensure that safety is paramount. The webinar will take place on May 12th 2016 at 2:00pm eastern standard time. If you are interested in participating in the webinar, you may register at www.abycinc.org/endswap. ■

"During testing, the long skegs enabled the boat to pass the Quick Turn Test."



Short Skegs Added



ABYC Quick Turn Test H-26



Long Skegs Added

Responsibility of a Recreational Boat Importer

The Coast Guard's Boating Safety Division routinely finds that many new importers are surprised to find out what their roles and responsibilities are as they apply to federal law. The Code of Federal Regulations 33 CFR 181.31(b) requires:

For boats manufactured outside of the jurisdiction of the United States, a U.S. importer must obtain a manufacturer identification code as required by paragraph (a) of this section. The request must indicate the importer's name and U.S. address along with a list of the manufacturers, their addresses, and the general types and sizes of boats that will be imported.

The U. S. Coast Guard does not have jurisdiction over foreign manufacturers and therefore a U.S. importer is required. The Coast Guard does have jurisdiction over the importer and the importer is treated as the manufacturer. The importer has the responsibility to ensure that all boats they import meet the Federal regulations. In the event that there is found to be a regulatory non-compliance or a substantial risk defect on the imported boats, the importer, not the foreign manufacturer, has the responsibility to conduct a notification of the defect or non-compliance and how they will correct the problem at no expense to the boat owners.

As stated in the Federal regulation listed above, each importer shall apply for a Manufacturer's Identification Code (MIC). The MIC is assigned to the importer and the importer will use this MIC as the first three characters of the Hull Identification Number (HIN) for all boats under their purview. Although the importer may be importing boats from multiple foreign manufacturers, the importer will only receive one MIC. Regardless of what foreign manufacturer builds the

boats, the importer is viewed by the Coast Guard as the manufacturer and will be responsible for providing notification of any defect or non-compliance that may become necessary. Additionally, the importer must keep a record of all first purchasers of each type of boat in accordance with 46 USC 4310. In the event of a defect or non-compliance, the importer is responsible for the notification process.

Many countries use the same HIN number format as the U.S. does and have a foreign MIC as the first three characters of their HIN number. Since the Coast Guard does not have jurisdiction over the foreign manufacturers it does recognize foreign HINs or MICs. Therefore, the importer cannot use these foreign manufacturer's HINs and must use a HIN beginning with their U.S. issued MIC. For example, a boat manufacturer in Costa Rica may produce a boat and apply a HIN using its Costa Rican assigned MIC of SPV10001G010. If the importer allows the boat to be sold in the U.S. with this HIN it creates a problem in that, within the Coast Guard's MIC database, SPV is assigned to a U.S. manufacturer who therefore becomes incorrectly identified as the manufacturer of the boat. Importers must ensure that their U.S. issued MIC is applied to the HINs of the imported boats.

Since importers are responsible for ensuring that all boats imported meet the Federal regulations, the Coast Guard emphasizes the importance that importers are acutely aware of these regulations. The Boat Builder's Handbook is an excellent guide for boat builders and importers alike can be found at <http://www.uscgboating.org/regulations/boatbuilders-handbook.php>.

■

"The importer has the responsibility to ensure that all boats they import meet the Federal regulations."

Marine Safety Alert

Inspections and Compliance Directorate

November 4, 2015

Safety Alert 10-15

Washington, DC

NAVIGATION LIGHTS

The rules are for your safety!

The U.S. Coast Guard is concerned about the sale and availability of unapproved recreational and commercial vessel navigation lights. Purchasers of such lighting should be aware replacement lighting may be improper for its application due to the failure by manufacturers to meet technical certification requirements. Furthermore, technical advances in marine lighting, such as the use of Light Emitting Diodes (LEDs), rope lighting, underwater lighting, and other various types of decorative lighting, may violate navigation light provisions of the Nautical Rules of the Road.

The requirements for all navigation lights aboard vessels are prescribed in Rules 20, 21, 22 and Annex I of the "Rules of the Road," which is the Convention on the International Regulations for Preventing Collisions at Sea (72 COLREGS) or the Inland Navigation Rules (33 CFR Subchapter E).

Specifications for lights vary depending upon the type of vessel but regardless of the light source (i.e., incandescent filament or LED):

- Recreational vessel and uninspected commercial vessel navigation lights must meet American Boat & Yacht Council (ABYC) standard A-16, in



LEDs under rub rail surrounding vessel.

accordance with specifications within 33 CFR 183.810 and 46 CFR 25.10-3, respectively.

- Commercial inspected vessels must be outfitted with navigation lights that meet or exceed Underwriters Laboratories standard UL 1104, as stated in the specifications of 46 CFR 111.75 -17.

Some manufacturers are producing and distributing navigation lights that do not meet the certification requirements indicated above. These lights are typically less expensive, making them a tempting choice for uninformed consumers. Use of lights that do not provide the proper chromaticity, luminous intensity, or cut-off angles could result in the issuance of a notice of violation or potentially cause an accident. Recreational boaters should ensure each purchased navigation light contains the following information

Some manufacturers are producing and distributing navigation lights that do not meet the certification requirements

Continued from page 5

on the light or its packaging:

- USCG Approval 33 CFR 183.810
- MEETS ABYC A-16 or equivalent
- TESTED BY (an approved laboratory) Name of the light manufacturer
Number of Model Visibility of the light in nautical miles
- Date on which the light was type-tested
- Identification and specification of the bulb used in the compliance test.

Boaters should be concerned about installing “decorative” lighting on their boats in various places, including underwater, on the rubrail, or just above the waterline. Care must be taken that these lights:

“Boaters should be concerned about installing “decorative” lighting on their boats in various places, including underwater, on the rubrail, or just above the waterline.”



LEDs under rub rail surrounding vessel.

- cannot be mistaken for navigation lights,
- do not impair the visibility or distinctive character of approved and properly placed navigation lights, and
- do not interfere with the operator’s ability to maintain a proper lookout. Such circumstances may represent a violation of Rule 20 that may result in enforcement action.

Rule 20 specifies that only those lights prescribed, or those that don’t interfere with those prescribed, may be used. Hazardous installation of additional lighting must be avoided. A violation can occur if the installation of additional lights can be

construed as a light required by the Rules for another vessel. For instance, blue underwater LED lights can appear to be flashing if there is any wave action, giving the appearance of a flashing blue light only authorized to be used by law enforcement vessels per 33 CFR 88.05.

Rule 21 provides the definitions for the masthead light, sidelights, stern light, towing light, all-round lights or task lights, and flashing or special flashing lights. Task lights are those lights which place the vessel in a special condition (e.g., all-round red over white over red for a vessel restricted in ability to maneuver).

Rule 22 provides for the intensity requirements of each light, per vessel size, so that they may be seen at a minimum range.

Annex I of the Rules, specifies the vertical and horizontal spacing of each of the required lights both in relation to the vessel hull and with respect to other navigation lights. Compliance with the provisions of Annex I ensures the light is properly

mounted for its intended purpose. The proper installation of any light is critical to it being “U.S. Coast Guard Approved,” as required by Annex I (COLREGs, paragraph 14 and Inland, 33 CFR 84.20).

The Coast Guard **strongly recommends** that:

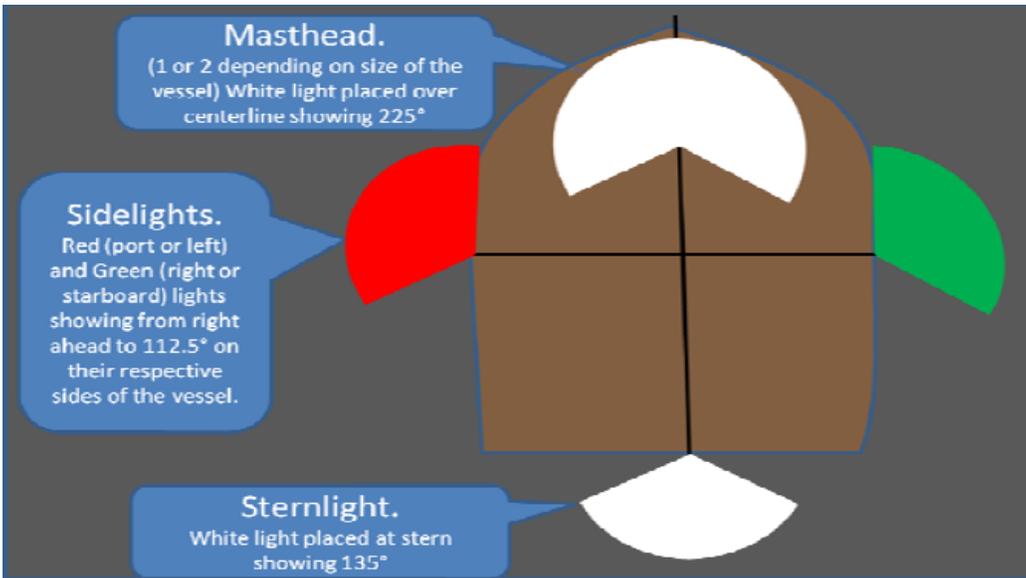
- boaters avoid purchase and installation of any light that does not present the required certification data, and
- retailers advise their customers to purchase certified navigation lights.

This Safety Alert is provided for informational purposes only and does not relieve any domestic or international safety, operational, or material requirement. This

Continued from page 6

Alert has been developed by the U.S. Coast Guard's Headquarters' Offices of Navigation Systems, Auxiliary and Boat-

ing Safety, and Investigations and Casualty Analysis. For questions or concerns, please email cgnav@uscg.mil. ■



Basic navigation lights required by most vessels including the arc of visibility of each of the lights. Exact placement aboard the vessel depends upon size and design but must be in accordance with Annex I of the Rules (33 CFR 84).

U.S. COAST GUARD
BOAT RESPONSIBILITY

ABOUT - REGULATIONS - SAFETY - RECALLS & SAFETY DEFECTS - MULTIMEDIA - STATISTICS - NISAC - GRANTS

BEACON ALERTS

- MARINE SAFETY ALERT ISSUED FOR DREDGING EQUIPMENT HAZARDS
- FY16 NATIONAL NONPROFIT ORGANIZATION FUNDING OPPORTUNITY APPLICATION DEADLINE ANNOUNCED
- GARMIN ISSUES MANDATORY SOFTWARE UPDATE FOR GHP REACTOR AUTOPILOT SERIES
- MARINE SAFETY ALERT ISSUED FOR NAVIGATIONAL LIGHTS
- COAST GUARD LAUNCHES BOATING SAFETY MOBILE APP

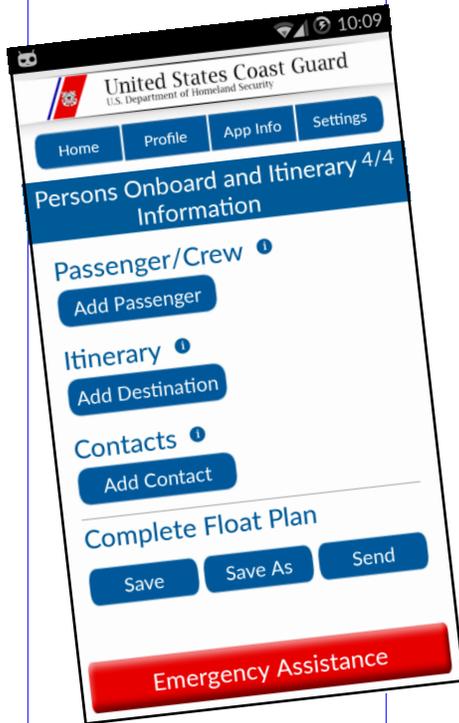
Manufacturers | Recreational Boaters | Boating Safety Partners

The Official Website of the U.S. Coast Guard's Boating Safety Division
The U.S. Coast Guard's Boating Safety Division is dedicated to reducing loss of life, injuries and property damage that occurs on U.S. Waterways by improving the knowledge, skills and abilities of recreational boaters.

WWW.USCGBOATING.ORG
Contact: Accessibility | Edits/Comments | Technical Support | Privacy Policy | Site Map | Feedback | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 | 2001

www.uscgboating.org

We've Got an App for That!



As the nation's recreational boating safety coordinator, the Coast Guard works to minimize loss of life, personal injury, property damage, and environmental harm. Our boating safety program involves public education programs, recreational boat safety standards, approval of boating safety equipment, and vessel safety checks for compliance with federal and state safety requirements. The Coast Guard Mobile App supports these missions by providing the essential services and information most commonly requested by boaters.

Features of the app include: state boating information; a safety equipment checklist; free boating safety check requests; navigation rules; float plans; and calling features to report pollution or suspicious activity. When

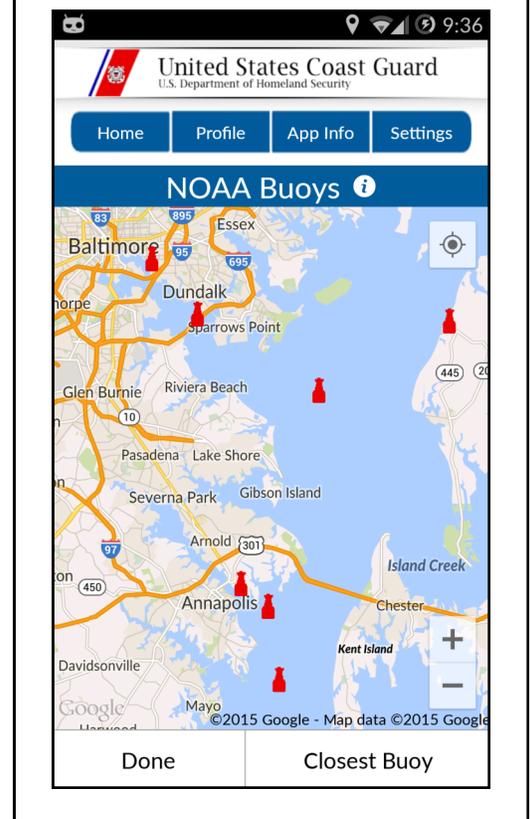
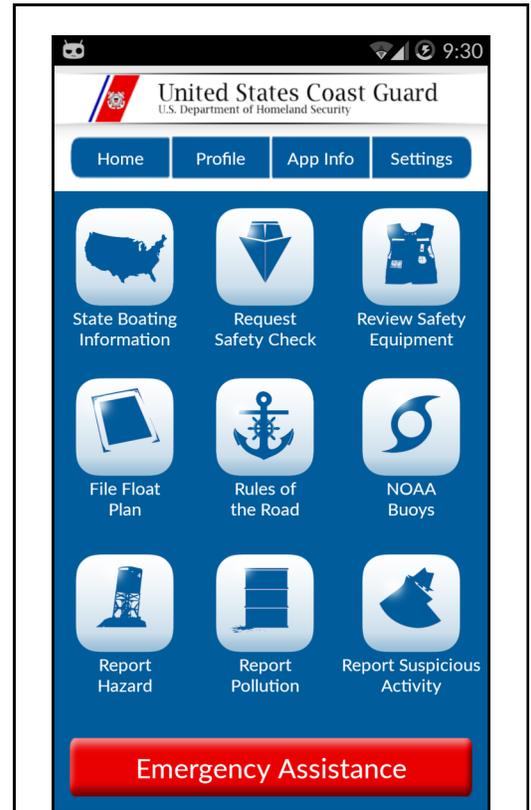
location services are enabled, users can receive the latest weather reports from the closest National Oceanic and Atmospheric Administration weather buoys as well as report the location of a hazard on the water.

The app also features an Emergency Assistance button which, with locations services enabled, will call the closest Coast Guard command center.

The Boating Safety Mobile app was not designed to replace a boater's marine VHF radio, which the Coast Guard strongly recommends all boaters have aboard their vessels. The app was mainly designed to provide additional boating safety resources for mobile device users.

The app is self-contained, so personal information is stored on the phone and is not sent to the Coast Guard unless the user chooses to send it. The Coast Guard does not track a user's location, and the app does not track a user's location unless the app is being used.

The app is available on both the Apple App Store and Google Play. ■



Does the Coast Guard Certify Boats?

Numerous questions come up during the process of issuing Manufacturer Identification Codes (MIC). However, one question seems to resonate over and over again; “how do I get my boat certified by the Coast Guard”? Well, the simple answer is that the Coast Guard does not certify boats intended for the recreational market. So what does it mean on the capacity plate when it says, “This boat complies with U.S. Coast Guard Safety standards in effect on the date of certification”?

If the Coast Guard doesn't certify boats, then why is there a “date of certification”? The recreational boat building industry operates on a self-certification system. The government places the burden on the builder of ensuring that all the Federal regulations are met. This certification language simply means that the builder is aware of the Federal regulations that are published in our *Boatbuilder's Handbook*, available on our website at <http://www.uscgboating.org/regulations/boatbuilders-handbook-p1-table-of-contents.php>, that the builder understands how to comply with those regulations, and that the builder certifies that the boat was built in compliance with those regulations.



There are instances whereby a builder may not do calculations correctly or may misinterpret the way a regulation is written.

To lessen the problems the builder may have in complying with the regulations, the Boat Builder's Handbook contains compliance guidelines that provide plain language interpretations of the regulations to assist the builder in understanding the regulations so he can comply with them.

Additionally, the Coast Guard has contracted factory inspectors who visit boat-building factories, acting on behalf of the Coast Guard, whose purpose it is to communicate to the builder why it is important to comply with the regulations, educate the builder on how to comply with the regulations, and perform inspections of the builder's boats to ensure compliance with the regulations. ■

One question seems to resonate over and over again; “how do I get my boat certified by the Coast Guard”?



It Does Save Lives!

Backyard Built Boats; Things You May Not Know

As a potential recreational boat buyer, there are many choices available to you for purchasing a boat. The buying options include purchasing directly from a manufacturer, purchasing from a boat dealer, broker, big lot store, or previous owner, or possibly, purchasing from a backyard boat builder. Among these buying choices you should be aware that there are serious issues when buying a backyard built boat that you may not know about.

By definition, a backyard boat builder is a “Person that builds a boat for his own use and not for the purposes of sale.” It is clear by the definition that a backyard built boat is not for sale to the public and it is illegal for the builder to do so. Backyard boat builders are not registered with the U.S. Coast Guard’s Boating Safety Division as a boat manufacturer and thus are not assigned a Manufacturer’s Identification Code (MIC). Without a MIC, the backyard boat builder cannot place a Hull Identification Number (HIN) on the boat but must receive a state assigned HIN upon registering the boat for their own use.

All recreational boat builders are required to meet the Federal safety standards during the manufacturing of a boat. However, these safety standards may not be adhered to by all backyard boat builders and there are no compliance programs in place for these builders as there are for registered recreational boat builders. One very critical safety standard is the requirement for all mono-hull boats less than twenty feet in length to have enough flotation so that they will not sink if they become swamped or capsize. Failure of the backyard boat builder to properly install

the required amount of flotation could put you and your family at risk on the water.

Additionally, if you do purchase a backyard built boat, you will likely have a problem when trying to register the boat with the state registration office. A purchaser of such a boat cannot legally register a backyard built boat if they are not the builder. The state registrar may ask for information to establish you as the boat builder. This may require you to show a materials list, parts list, or cost of materials.

If you are able to register the backyard built boat, you will then have to visit the state’s tax agency to cover the sales tax that you probably did not pay when purchasing the boat. You will need to present a bill of sale, or cost of the materials, parts, etc., for tax assessment purposes.

Another issue could be the lack of a warranty. It is not likely that a backyard boat builder will offer a warranty on the boat. Something might be able to be worked out with the builder, however, there is no guarantee that the builder will honor such an agreement or be obligated to do so. Without a warranty or some legally binding agreement, the purchaser will be on their own for any manufacturer’s defects and/or repairs that may occur which could result in costing the owner thousands of dollars.

Although buying from a backyard boat builder may be appealing because you could save a lot of money and get a really great deal but you should heed the advice from this article and avoid both the perils and problems that you may incur by purchasing such a boat. ■

“All recreational boat builders are required to meet the Federal safety standards during the manufacturing of a boat.”

Notices of Defects or Non-Compliances

Model Year 2016

YAMAHA MOTOR CORP USA

(Cypress, CA)
Year: 2016
Model(s): FSH 190
Units: 147
Problem: Navigation Lights.

LOWE BOATS

(Lebanon, MO)
Year: 2016
Model(s): 20 Bay Boat
Units: 1
Problem:

Model Year 2015

COBALT BOAT

(Neodesha, KS)
Year: 2015
Model(s): 296 & 302; 336 & 273
Units: 156
Problem: Fuel System.

K L INDUSTRIES

(Muskegon, MI)
Year: 2015
Model(s): Sun Dolphin Pro 120
Units: 1
Problem: Certification and HIN labels.

POTTER BUILT WELDING SERVICE

(Bristol, FL)
Year: 2015
Model(s): 1654
Units: 1
Problem: Safe Loading Maximum Weight and All Round Lights.

RHINO ROTO MOLDING

(Maple Lake, MN)
Year: 2015
Model(s): Beavertail Stealth 2000
Units: 4684
Problem: Hull Identification Number.

YAMAHA MOTOR CORP USA

(Cypress, CA)
Year: 2015
Model(s): AR240, SX240, 242 Limited (s)
Units: 205
Problem: Ventilation.

Model Year 2014

SEA RAY BOATS

(Knoxville, TN)
Year: 2014
Model(s): 270 SD & 270 OB
Units: 114
Problem: Ventilation.

BRP US INC.

(Benton, IL)
Year: 2014
Model(s): SeaDoo Spark
Units: 6221
Problem: Steering Column.

CAROLINA SKIFF LLC

(Waycross, GA)
Year: 2014
Model(s): Carolina Skiff 17 DLX
Units: 351
Problem: Safe Loading Maximum Weight.

G3 BOATS

(Lebanon, MO)
Year: 2014
Model(s): Deep Vee
Units: 50
Problem: Deck Hinge Failure.

MAY-CRAFT FIBERGLASS PRODS INC

(Smithfield, NC)
Year: 2014
Model(s): 1800 CC
Units: 28
Problem: Level Flotation.

STARDUST CRUISERS (DBA)

(Monticello, KY)
Year: 2014

Model(s): '1508' gasoline powered
 Units: 1
 Problem: Ventilation, Fuel System and Hull
 Identification Number.

Model Year 2013

BRP US INC

(Benton, IL)
 Year: 2013
 Model(s): ICON Binnacle
 Units: 2230
 Problem: Throttle and Shift Control.

CUSTOM FIBERGLASS PROD INC

(Bailey, NC)
 Year: 2013-15
 Model(s): C Hawk 18 CC
 Units: 147
 Problem: Level Flotation.

ESSEX PERFORMANCE BOATS

(Ontario, CA)
 Year: 2013
 Model(s): '24 Valor' inboard powered boat
 Units: 1
 Problem: Ventilation.

TIGE BOATS INC

(Abilene, TX)
 Year: 2013
 Model(s): RZR R20 Z1 23' Inboard Boat
 Units: 1
 Problem: Electrical System.

TRACKER

(Cypress, CA)
 Year: 2013-14
 Model(s): Grizzly 1860 CC
 Units: 129
 Problem: Flotation.

Model Year 2012

MERCURY MARINE

(Miramar, FL)
 Year: 2012
 Model(s): Mercury Mariner Power Tilt Steer
 Units: 2315
 Problem: Power Tilt Steering.

APPONAUG HARBOR MARINA

(Warwick, RI)
 Year: 2012
 Model(s): BF2.3D Motor
 Units: 1944
 Problem: Fuel System.

BOSTON WHALER

(Edgewater, FL)
 Year: 2012-14
 Model(s): 285/315 Conquest 250/280 Outrage
 Units: 288
 Problem: Electrical System.

CARAVELLE POWERBOATS

(Florence, AL)
 Year: 2012
 Model(s): 202 BR Inboard Powered Boat
 Units: 1
 Problem: Electrical.

SHOCKWAVE CUSTOM BOATS

(Corona, CA)
 Year: 2012
 Model(s): '25 Tremor' Inboard Powered Boat
 Units: 1
 Problem: Ventilation.

UFLEX USA, INC

(Sarasota, FL)
 Year: 2012
 Model(s): X-66 Tilts Steering Assembly
 Units: 1769
 Problem: Tilt Steering Assembly.

Model Year 2011

MCBC Hydro Boats LLC (DBA)

(Vonore, TN)
 Year: 2011
 Model(s): Hydra Sport Boats
 Units: 259
 Problem: Fuel System.

CORRECT CRAFT INC

(Orlando, FL)
 Year: 2011-15
 Model(s): Sport Nautique 200
 Units: 646
 Problem: Navigation Lights.

INNESPACE PRODUCTIONS LLC

(Redding, CA)
 Year: 2011
 Model(s): 'X-Model' IB Powered Submersible
 Units: 1
 Problem: Electrical System and Ventilation.

MERCURY MARINE

(Miramar, FL)
 Year: 2011
 Model(s): 40/50/60 Horsepower Four Stroke
 Units: 6735
 Problem: Fuel System.

MACKIE'S HOUSEBOAT PARTS AND REPAIR

(Redding, CA)
 Year: 2011
 Model(s): '1556 Custom' IB Houseboat
 Units: 7
 Problem: Ventilation and Fuel System.

PERKO INC

(Miami, FL)
 Year: 2011
 Model(s): 0540 0580 0582 1319
 Units: 3548
 Problem: Fuel System.

YAMAHA MOTOR CORP USA

(Cypress, CA)
 Year: 2011-12
 Model(s): VXR and VXS
 Units: 5734
 Problem: Engine and Gasoline.

Model Year 2010**MERCURY MARINE**

(Miramar, FL)
 Year: 2010
 Model(s): Mercrsr Alpha & Bravo Sterndrive
 Units: 12787
 Problem: Intermediate Shift Cable Separation.

ALEXANDRIA SEAPORT FOUNDATION

(Alexandria, VA)
 Year: 2010
 Model(s): Challenge Wherry
 Units: 1
 Problem: Failing boat test, failed max person in pounds, max weight capacity and flotation test for persons capacity re-tested.

CUMMINS MERCUISER DIESEL

Year: 1999-2010
 Model(s): QSM 11
 Units: 5311
 Problem: Diesels with hydraulic oil coolers require bracket replacement.

ELIMINATOR BOATS INC

(Mira Loma, CA)
 Year: 2010
 Model(s): '30 Daytona' Inboard Powered
 Units: 1
 Problem: Fuel System and Ventilation.

NAUTIC STAR BOATS

(Amory, MS)
 Year: 2010
 Model(s): Bay, OS DC, SSD, OS, RG
 Units: 82
 Problem: Boats manufactured in 2010 had extra character inserted into Hull Identification Number.

MALIBU BOATS

(Merced, CA)
 Year: 2010
 Model(s): Response LX
 Units: 31
 Problem: Basic Flotation.

YAMAHA MOTOR CORP

(Cypress, CA)
 Year: 2010
 Model(s): AR240 HO, 5X240 HO, 242 LTD
 Units: 775
 Problem: Dynamic Instability.

