U.S. Department
of Transportation

**United States
Coast Guard**

**SEPTEMBER 1991
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Boating Safety Circular 72

LET'S BE CAREFUL OUT THERE PEOPLE!

The numbers speak for themselves. The typical recreational boater is more likely to have a collision with another vessel or a fixed object than any other type of boating accident. Collisions are the third most frequent cause of fatalities.

During the years 1986 through 1990, 16,835* boats were reported to have been involved in collisions. Almost 9,500 of the people filing accident reports attributed "improper lookout" as being the major cause. The second most frequent cause given was "other vessel or operator at fault."

TYPES OF BOATING ACCIDENTS - 1990

	Vessels Involved	Fatalities
TOTALS	**8,591**	**865**
Grounding	390	14
Capsizing	545	289
Swamping/Flooding	252	60
Sinking	210	11
Fire/Explosion (fuel)	274	14
Fire/Explosion (other)	97	2
Collision with another vessel	**4,422**	**81**
Collision with fixed object	**864**	**76**
Collision with floating object	262	13
Falls overboard	451	239
Falls within boat	139	1
Struck by boat or propeller	191	7
Other	470	29
Unknown	24	29

Perhaps due to the similarities between driving an automobile and operating a boat, there are those who think licensing of boat operators will result in a substantial reduction in the numbers of accidents. Actually, there are far more reasons why the boat operator is more susceptible to having a collision than is the driver of an automobile:

The automobile has a control station designed to provide optimum visibility in all types of driving conditions. Reclining bucket seats, rearview mirrors, windshield wipers and washers, defrosters, etc. are all intended to give the driver of an automobile maximum visibility. The typical boat, however, has a helm seat which is not similarly adjustable, and the operator lacks any additional accessories specifically designed to improve visibility, beyond the possible addition of a windshield wiper.

An automobile is equipped with a braking system that will bring a car to a complete stop within known distances depending on the particular rate of speed, and a steering system which responds instantly to a driver's turning of the steering wheel. The boat, however, is a vehicle which has no similar braking system. The act of coming to a complete stop is further complicated by the effects of way (momentum), windage, tide, current, and waves caused by weather conditions, a boat's own wake or wakes from other vessels. Steering response varies considerably depending upon, type of steering, boat type, hull design, direction of propeller rotation, trim, weight, and speed upon or through the water. These are but a few of the reasons why there are very significant differences between maneuvering a 30-foot tiller-steered sailboat, a 25-foot twin screw cabin cruiser and an outboard powered, 12-foot jonboat.

The typical automobile is equipped with a suspension system designed to minimize discomfort. The driver of an automobile travels an integrated system of paved highways and side streets with lane markings, one way and two way streets, speed limits, and other traffic signs and signals which properly direct vehicles in crossing situations.

See Note on Page 7

*The Coast Guard estimates that it receives reports for only a fraction of reportable accidents.

LEADING CAUSES OF COLLISIONS - 1986 - 1990

BOATS INVOLVED	CAUSES
9,426	Improper lookout
8,616	Other vessel/operator at fault
2,249	Submerged object (logs, rocks, etc.)
1,478	Operator inattention or carelessness
945	Other
754	Strong current, rough water, weather, etc.
721	Speeding
641	Other equipment failure
537	Navigational error
394	Rules of the Road infraction
373	Inexperience of operator
280	Improper navigation lights
214	View obstructed (bow in air, sun glare, bright lights, etc.)
194	Steering system failure (cable, pulleys, fittings, etc.)
176	Loss of stability: strong current, weather, rapids, whitewater, etc.
119	Force of wake or wave striking vessel
68	Poor visibility (rain, fog, darkness, etc.)
50	Throttle failure

The boat operator, however, must make decisions and judgements concerning a boat's operation (speed, course, distance, plan of action, etc.) in relation to wind, water and weather conditions. The boat operator must also detect and avoid other boats approaching at varying speeds from all points of the compass. The boat operator must keep a constant lookout to avoid water skiers, swimmers and other objects above and beneath the surface of the water. In addition, the boat operator is also exposed to various environmental stressors, like glare, heat, fatigue and vibration which are largely absent from the environment to which the driver of an automobile is exposed.

Having established the fact that a boat operator's task in avoiding a collision is clearly more difficult than that of the automobile driver, let's look at how the task is made even more difficult because of certain characteristics involving the design of the boat.

In order to avoid a collision, you have to be able to see out of your boat well enough to be able to make certain judgements about surrounding objects and actions to be taken:

Will you hit an object as you navigate along your current course?

Will another boat hit your boat if both of you continue to travel on your current courses and at your current rates of speed?

To avoid colliding with an object forward of your boat, you need to be able to see the surface of the water from the area immediately in front of your boat to a point on the horizon. After sighting an object and determining what it is, you have to make a conscious decision that you don't want to hit it; a simple task at five knots, but a split-second decision at 30 or 40. You need to be able to see moving objects on both sides of the boat in order to determine whether those objects are moving to a position in front and thus will pose a threat of collision. Although visibility aft is important from the standpoint of keeping a proper lookout, it is most important while you are docking or maneuvering in close quarters.

Windshields

In most powerboats larger than 13 feet in length the operator must look through a windshield. The ability to visually detect objects through a windshield can be substantially reduced due to dirt, glare, reflections from nearby surfaces or condensation. Window frames and other structural obstructions may further limit your visibility.

It's unfortunate that most boats lack windshield washers like those on most cars. Obviously visibility will be impaired by a dirty, cloudy, rain or spray soaked windshield. Windshield surface cleaning prior to and during boat usage is a problem of boat maintenance.

Because light reflects on and off of a surface at the same angle, it is much easier to design and minimize glare and reflection problems for the automobile driver whose eye positions are known and the area of eye positions is small (different sized drivers look through different parts of a windshield). Because a typical boat operator's position varies greatly, i.e., standing sometimes, in lieu of seated, boat operators' eye positions vary much more significantly. This makes it almost impossible to make design changes which will prevent reflections from reaching boat

operators' eyes.

The automotive industry's accomplishments in reducing the effects of glare and reflections on windshields are obvious. Most cars have gray or black windshield wiper brackets,dark colored, textured, horizontal surfaces between the base of the windshield and the instrument panel, and dull finished parts on the instrument panel, radio speaker, steering wheel, or any other interior features which could reflect onto the windshield. The use of similar dull finishes and textured, medium to dark colors, aft of the windshield and forward of the control station *on boats* would greatly reduce glare and reflection problems.

When looking through the windshield, most automobile drivers have an unobstructed view of the road ahead. Boat operators, however, are forced to look around far more obstacles. Windshield wipers are optional equipment on most runabouts and small cabin cruisers and are often owner installed equipment. Both factory installed and owner installed windshield wiper motors are frequently mounted on the top center of the windshield frame. In that location, the wiper motor housing frequently reduces the size of the operator's view through the windshield. Alternatively, with the windshield wiper motor mounted in a corner of the windshield or at the bottom of the windshield frame, the wiper motor housing is out of the line of sight and the wiped area is larger and will provide better foul weather visibility.

Many windshields are divided into several pieces. Each section is surrounded by a frame. Windshield frames on cabin cruisers generally help to support the cabin top, and the flying bridge on boats so equipped. The windshield frames must be sturdy. In addition, mechanical cables and electrical wires must interconnect the upper and lower controls on boats with flying bridges. A housing or tube of some sort to carry the cables and wires is generally located forward of the lower helm station. These are other design problems which limit the boat operator's visibility.

Bow Rails and Stanchions

Many boats with single control stations have a bow rail which blocks the operator's view of a portion of the water surafce forward of the bow when the operator is seated at the control station. Bow rail support stanchions, flag staffs and pennants or burgees are additional obstructions to the operator's field of view. Reflections off chrome or glossy stainless steel fittings may also inhibit the operator's ability to maintain a proper lookout.

Reflective Deck Surfaces

On the typical small cabin cruiser, deck surfaces are generally fiberglass and have the same surface color and texture both forward and aft of the windshield. The color is generally white or a light tint and the surface is generally smooth. White surfaces are coolest in summer. Smooth surfaces are cheapest to produce in fiberglass and are easiest to clean; however, some thought should be given to the glare and reflection problem. Again, the use of a non-gloss or textured surface would help to reduce reflections and

COLLISION ACCIDENT STATISTICS - 1986 - 1990

TYPE OF ACCIDENT	TOTAL	FATALITIES	INJURIES	PROPERTY DAMAGE
		1990		
Collision With Another Vessel	2,242	81	1,376	$7,180,500
Collision With Fixed Object	864	76	545	$2,959,600
Collision With Floating Object	269	13	100	$834,000
		1989		
Collision With Another Vessel	2,039	60	1,265	$6,707,500
Collision With Fixed Object	797	60	509	$2,665,000
Collision With Floating Object	296	8	116	$1,284,900
		1988		
Collision With Another Vessel	2,351	76	1,321	$6,187,900
Collision With Fixed Object	848	78	449	$2,460,400
Collision With Floating Object	376	13	126	$1,193,500
		1987		
Collision With Another Vessel	2,288	80	1,307	$5,893,200
Collision With Fixed Object	853	58	496	$2,124,300
Collision With Floating Object	314	17	93	$1,105,300
		1986		
Collision With Another Vessel	2,108	86	972	$4,9057,900
Collision With Fixed Object	914	79	432	$3,080,800
Collision With Floating Object	276	8	57	$614,700

greatly improve visibility.

Pedestal Seats on Bass Boats

Bass boat manufacturers mount plush, high-backed upholstered armchairs on pedestals forward of the control station. If the chair is turned sideways and locked, the boat operator can move his or her head from side to side and so gain visual access to the water on the other side of the back of the chair. However, if the chair is facing forward, some portion of the operator's forward field of view is permanently obscured. Labels warning bass boat operators to turn or lower their pedestal mounted seats might encourage more people to avoid a dangerous practice.

Exterior Storage Compartments

Cabin cruiser manufacturers and owners frequently mount large storage lockers on the foredecks to store fenders, lines, anchors, etc. Quite often the boxes restrict the field of view from the lower control station. Other manufacturers and owners attach fender stowage brackets to their forward rail stanchions. When fenders are installed in these brackets they too limit the boat operator's field of view.

Navigation and Communications Equipment

Owners mount radar receivers, depth sounders, and other large electronic gear on the operator's side of the windshield on the deck forward of the control station, or attach them to the overhead, making already limited visibility problems even worse.

Passenger Seating

On small outboard powered boats which lack remote steering the operator sits on the rear seat with the passengers sitting on forward seats to balance the load. The same seating configuration is true of bowrider designs. Obviously, the boat operator's forward visibility will be impaired by the people sitting up forward.

On many cabin cruisers passengers have a tendency to favor seating themselves on the leading edge of the forward cabin, often directly in front of the control station position. Both designers, manufacturers, and owners should consider the installation of hatches, grabrails and similar low profile hardware which serves a functional purpose and at the same time discourages would be sightseers or sunbathers from accidentally obscuring the view from the helm.

Seatback Riding To Improve Visibility

Frequently operators' views are so obstructed that when seated at the control station, they cannot see the horizon over the bow. Faced with such a situation the operator will sit on the seat back, the gunwale or stand or crouch at the control station. Unfortunately, these people compromise other safety aspects in order to gain visibility.

When you move from a helm position designed for sit down operation, you move completely away from the control station. Seated on the seatback or gunwale, you may not have a comfortable grip on the wheel and shift and throttle controls may be out of reach. If a situation develops in which you have to maneuver quickly, you might first have to return to a seated position at the control station in order to make a radical alteration of course, or manipulate the shift or throttle controls.

In addition, many marine law enforcement officers consider operation of a vessel while seated on the seatback, gunwale, etc. evidence of negligent operation. The danger of such boat operation is that you might fall overboard and be struck by the boat or its propeller.

Canvas tops and side curtains

When some bimini tops are in the down position, unfurled sections of canvas may hang down obscuring the operator's view through the windshield. Also, the unfurled section may tend to flap about in a headwind. The boat operator's visual attention can be diverted by noise of the flapping of the canvas.

Clear plastic side curtains create other sorts of visual problems. Made of flexible plastic, they are not flat when installed. The wavy surface distorts the view making target identification more difficult than normal. The plastic in side curtains has a tendency to become scratched fairly quickly; prolonged exposure to sunlight makes the material turn yellow.

Bow High Attitude

A planing boat's transition from a displacement mode to up on a plane can also be classified as a visibility problem. In many boats, visibility from the seated helm position is totally obscured while travelling in the transition mode. Sometimes, standing behind the wheel helps maintain forward visibility; however, in some cases, the wheelhouse roof or a canvas top over the cockpit area makes standing impossible. In such cases, forward visibility is obscured for some period each time the boat is brought up on plane. Many boat operators scan the waters ahead then quickly advance the throttle to get up on plane as quickly as possible. Unfortunately, many people operate their boats in the transition attitude for considerable amounts of time.

Use of Sound Signals in Restricted Visibility

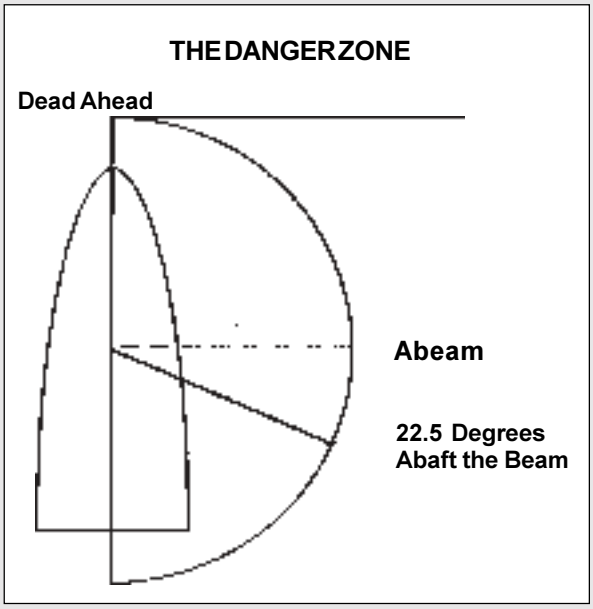
AVOIDING COLLISIONS

1. Always keep a proper lookout. Remember that "improper lookout" and "operator inattention or carelessness" are the most frequent causes for collisions reported to the Coast Guard. If passengers are seated where they block your view from the helm, have them sit someplace else.

2. Become knowledgeable on the Rules of the Road and once you know them, navigate your vessel defensively. Many people report they figured "it was the other guy who would alter course or reduce speed to avoid the collision." The Coast Guard book, "Navigation Rules, International and Inland" (COMDTINST M16672.2A) may be obtained from: Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The price is $6.50 per copy and the stock number is 050-012-00192-8. The book may be ordered in two ways -- by telephone or mail. To order by telephone, call (202) 783-3238, ask for the book by name and give the stock number. You may pay using your VISA or MasterCard.

3. Use The Danger Zone Concept. In **Boating Safety Circular 68** we reported on the significance of the "Danger Zone". Most control stations are located on the starboard side of the vessel. Although the danger zone concept is not specifically metioned in the Rules of the Road, it is a very helpful way to remember who has the right-of-way in a crossing situation.

Your boat's danger zone extends from a point dead ahead to a point 22.5 degrees aft of your starboard beam (the same horizontal arc as your boat's green sidelight). If you are underway and you see another vessel within the danger zone, the other vessel probably has the right of way and you must alter course (usually to starboard) or speed to avoid a collision. With most helm stations on the starboard (right-hand) side, the operator has an unobstructed view of the danger zone



4. Keep to the starboard side of a channel giving larger vessels restricted by their draft, the benefit of deeper water in the center of the channel.

5. Operators of powerboats should slow down in congested waterways. The presence or absence of a posted speed limit isn't the only factor you should use in selecting an appropriate speed. Be considerate of slower vessels, and vessels at anchor or under sail whose passengers should be given the minor courtesy of reducing your vessel's wake to a tolerable minimum.

6. Use a setting which minimizes your time in the "bow up" attitude, if your boat has an adjustable motor bracket, trim tabs or an adjustable lower unit.

7. Skippers of sailboats should try to avoid sailing through channels where larger vessels which may be restricted in their ability to maneuver by virtue of their size, windage, draft, susceptibility to current, etc., are least prepared for technicalities involving who has the right-of-way. Sailboarders should remember that they too are subject to the Rules of the Road, just like any other vessel.

The skipper of a sailboat underway under sail should have at least one member of the crew maintaining a proper lookout, particularly in relation to the actions of other boats astern and to leeward. The statistics show that improper lookout is five times more likely to cause a collision involving auxiliary sailboats than weather or water conditions, the second most frequent cause.

8. Operators of personal watercraft are reminded that according to Rule 14 - Head-on Situation, "When two power-driven vessels are meeting on reciprocal courses so as to involve risk of collision, each shall alter her course to starboard so that each shall pass on the port side of the other."

Many operators of personal watercraft who have filed accident reports following collisions reported that they didn't know which way to turn in the moments prior to the accident. Personal watercraft livery operators would be wise to ask customers who are about to rent their boats whether they are aware of this basic requirement under the Rules of the Road.

In **Boating Safety Circular 64** we described a collision between a 110-foot crewboat and a fishing party boat at anchor in a fog that had reduced visibility to less than a quarter of a mile. Neither vessel operator had observed requirements for sound signals prescribed in the Rules of the Road.

All operators of recreational boats are reminded that the Rules of the Road are intended to assure navigation safety for all vessels. During periods of limited visibility, the proper use of sound signals while underway or at anchor helps in the prevention of collisions.

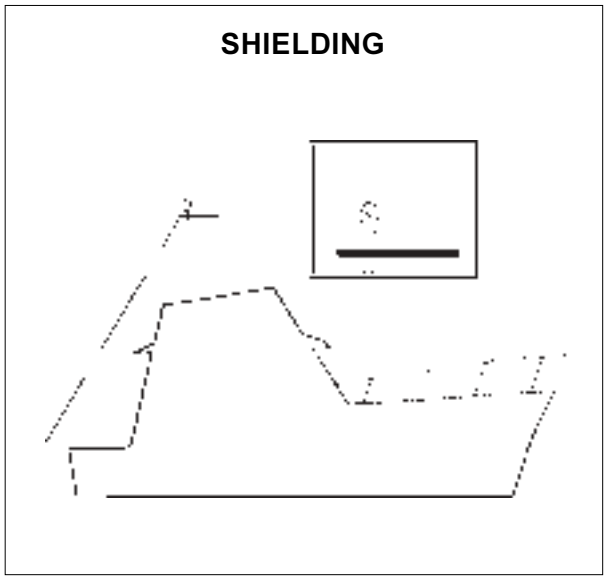
Glare from Masthead Light

In **Boating Safety Circular 65** we reported that manufacturers are clearly making an effort to comply with applicable portions of the Navigation Rules when installing navigation lights; however, many builders appear to have failed to determine whether there is a problem involving glare at the helm.

A properly installed navigation light complies with the Rules of the Road and does not produce glare. This means the light shines in the correct direction, is invisible to the operator of the boat on which it is installed, and does not shine on any parts of the boat. When navigation lights are on, a boat should sit in a shadow.

"Shielding" a navigation light points the light beam in the direction it is designed to shine and acts as an umbrella. Shielding shades the boat and eliminates glare in the eyes of the operator, as well as reflections off parts of the boat structure. If a light is high enough and is well-shielded, the entire boat will be bathed in shadow.

Control Station Design Concepts



The preceding discusses some of the ways in which boat design and the boating environment affect the boat operator's ability to maintain a proper lookout. The report, "Recreational Boating Safety Collision Research," upon which this article is based resulted in the publication of three final research reports:

Control Station Design Concepts for Bassboats, Bowriders, Runabouts, Skiboats and All Control Stations Designed For Sitdown Operation Only (AD-A055377 - Price: $15.00)

Control Station Design Concepts For Center Console Deck and Pontoon Boats (AD-A055726 - Price: $17.00)

Control Station Design Concepts For Cabin Cruisers and Flying Bridges (AD-A055406 - Price: $15.00)

The reports were developed under Coast Guard sponsored research to assist boat builders and designers in planning the control stations of various boat types. Use of the design concepts should provide adequate visibility, space and control locations for 90 percent of the user population while minimizing safety hazards within the control station area. The concepts cover the design of control stations that approximate the characteristics of the automobile control station for each of the titled groups of boat types.

Copies of the reports are available from:

The National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

Telephone: (703) 487-4650

DOES YOUR PFD HAVE A SUNBURN?

A Personal Flotation Device (PFD), like any other item of equipment, eventually gets old and worn, and must be replaced. How do you know when a PFD must be replaced? Broken zippers and frayed webbings are frequent indicators of a worn-out device. Less obvious is the cover fabric of a PFD which has been weakened by extensive exposure to sunlight.

The most popular Personal FlotationDevices are fabric-covered Type II near-shore buoyant vests and Type III flotation aids. The fabric covering most often used is one of several types of nylon or polyester.

These synthetic fabrics have a number of advantages for use in PFD construction. They are economical, durable, and resistant to rot caused by microbes. They can be dyed in a wide range of colors. They are easy for PFD manufacturers to work with. They "drape" reasonably well, and therefore are good for constructing wearable articles. The nylon fabrics used are similar to those often used in constructing jackets and camping gear.

Nylon and polyester are plastics, however, and like many plastics they can start to break down after extended exposure to the ultraviolet (UV) light in sunlight. Fabric manufacturers can include UV inhibitors to slow the degradation process, and dyes used to color the devices may also provide some protection. Generally, darker dyes provide more protection than light or bright dyes, such as "neon" (fluorescent) shades. This is not always the case, however.

A PFD with a UV damaged fabric cover should be replaced. A weak cover could split open and allow the flotation material inside to be lost. How can you tell when a fabric PFD cover is worn out? A cover which has torn due to weakened fabric is obvious. Badly faded bright colors can also be a clue that deterioration has taken place. Compare fabric color where it's protected, under a body strap, for example, to where the fabric is exposed. Another simple test is to pinch the fabric between thumb and forefinger of each hand and try to tear it. If the fabric cover can be torn this way the PFD should definitely be destroyed and discarded.

Fabric covered PFDs should ordinarily last at least several boating seasons in normal use (vacations, weekends, and evenings, for example). PFDs used every day in direct sunlight will probably have to be replaced more often. When the boat is being operated, PFDs should be out and worn by everyone on board. If they are not being worn, they should at least be out and readily available. When the boat is not in use, PFDs should be allowed to dry out, then stowed under cover out of the sun.

Note: The stock of original copies of **Boating Safety Circular 72** is exhausted. This is a revised version of **Boating Safety Circular 72** . The original version contained a Defect Notification and Recall Campaign list; "Questions and Answers About the New Recreational Vessel Fee (RVF); Consumer Fact Sheets covering "Coast Guard Boarding Policy" and "U.S. Recreational Vessel Fee"; and questionnaires soliciting comments on the Coast Guard Recreational Boating Standards and Consumer Relations programs. Those articles have been removed because they are no longer considered current or are available from other sources.

INDUSTRY STANDARDS ADOPTED IN SAFETY REGULATIONS

In the the Federal Register dated July 29, 1991 [56 FR 35817] the Coast Guard published a Final Rule adopting industry standards in place of detailed regulations in certain sections of Titles 33 and 46 of the Code of Federal Regulations (see affected CFR Titles and sections below). These amendments will eliminate the submission of technical information for affected components and reduce the overall cost and burden in staff hours and paperwork for both industry and the government, while providing a better method for ensuring that the affected components comply with Coast Guard regulations.

Since 1968 the Marine Safety Program has adopted over 250 standards and specifications to lessen the regulatory and administrative burden to both the Coast Guard and manufacturers. The rulemaking incorporates and updates both U.S. and international standards for numerous marine products including materials, backfire flame arresters, and hose assemblies for marine applications.

The Coast Guard has actively promoted use of industry standards in the spirit of the Office of Management and Budget Circular 119, "Federal Participation in the Development and Use of Voluntary Standards." This process has benefited both industry and government. Government costs are reduced for labor intensive tasks like plan review, equipment approval and verification of regulatory standards by field inspectors. Manufacturers no longer need to submit plans to the government for review when the product conforms to an incorporated standard. The amendments also adopt international standards, which will allow the United States to be more competitive in the world market.

The regulations in the rulemaking will have no effect on previously accepted installations as long as the equipment is maintained in good and serviceable condition. However, when a piece of equipment or system component is replaced, the regulations in the rulemaking apply to the replacement. The regulations are effective on August 28, 1991.

The following sections in Titles 33 and 46 of the Code of Federal regulations are affected by this rulemaking:

SUBCHAPTER L - WATERFRONT FACILITIES

33 CFR Part 127	Liquefied Natural Gas Waterfront Facilities

SUBCHAPTER O - POLLUTION

33 CFR Part 154	Oil Pollution Prevention Regulations for Marine Oil Transfer Facilities

SUBCHAPTER C -UNINSPECTED VESSELS

46 CFR Part 25	Requirements*

(*See related story at right)

SUBCHAPTER D - TANK VESSELS

46 CFR Part 32	Special Equipment, Machinery and Hull Requirements
46 CFR Part 34	Fire Fighting Equipment

SUBCHAPTER F - MARINE ENGINEERING

46 CFR Part 53	Heating Boilers
46 CFR Part 54	Pressure Vessels
46 CFR Part 55	Nuclear Powerplant Components
46 CFR Part 56	Piping Systems and Appurtenances
46 CFR Part 57	Welding and Brazing
46 CFR Part 58	Main and Auxiliary Machinery and related systems
46 CFR Part 59	Repairs to Boilers, Pressure Vessels and Appurtenances

SUBCHAPTER H - PASSENGER VESSELS

46 CFR Part 71	Inspection and Certification
46 CFR Part 76	Fire Protection Equipment

SUBCHAPTER I - CARGO AND MISCELLANEOUS VESSELS

46 CFR Part 91	Inspection and certification
46 CFR Part 92	Construction and arrangement
46 CFR Part 95	Fire protection equipment

SUBCHAPTER I-A - MOBILE OFFSHORE DRILLING UNITS

46 CFR PART 107	Inspection and certification
46 CFR Part 108	Design and equipment

SUBCHAPTER O - CERTAIN BULK DANGEROUS CARGOES

46 CFR Part 150	Compatibility of cargoes
46 CFR Part 153	Ships carrying bulk liquid, liquefied gas, or compressed gas hazardous materials

SUBCHAPTER Q - EQUIPMENT, CONSTRUCTION, AND MATERIALS: SPECIFICATIONS AND APPROVAL

46 CFR Part 162	Engineering equipment
46 CFR Part 163	Construction

SUBCHAPTER R - NAUTICAL SCHOOLS

46 CFR Part 169	Sailing School Vessels

SUBCHAPTER S - SUBDIVISION AND STABILITY

46 CFR Part 170	Stability requirements for all inspected vessels
46 CFR Part 174	Special rules pertaining to specific vessel types

SUBCHAPTER T - SMALL PASSENGER VESSELS (UNDER 100 GROSS TONS)

46 CFR Part 182	Machinery installation

SUBCHAPTER U - OCEANOGRAPHIC RESEARCH VESSELS

46 CFR Part 189	Inspection and certification
46 CFR Part 190	Construction and arrangement
46 CFR Part 193	Fire protection equipment

This rulemaking is of interest to readers of the **Boating Safety Circular**, because it includes the new requirements for backfire flame arresters in 46 CFR Parts 25 and 58.

"**Subpart 25.35 - Backfire Flame Control**

(a) Every gasoline engine installed in a motorboat or motor vessel after April 25, 1940, except outboard motors, shall be equipped with an acceptable means of backfire flame control.

(b) Installations made before November 19, 1952, need not meet the detailed requirements of this subpart and may be continued in use as long as they are serviceable and in good condition. Replacements shall meet the applicable conditions in this section.

(c) Installations consisting of backfire flame arresters bearing basic Approval Nos. 162.016 or 162.041 or engine air and fuel induction systems bearing basic Approval Nos. 162.015 or 162.042 may be continued in use as long as they are serviceable and in good condition. New installations or replacements must meet applicable requirements of subpart 58.10 of this chapter.

(d) [removed]

(e) [removed]

Subpart 58.10 - Internal Combustion Engine Installations

§ 58.10-5 **Gasoline engine installations**

* * * * *

(b) * * *

(2) All gasoline engines must be equipped with an acceptable means of backfire flame control. Installations consisting of backfire flame arresters bearing basic Approval Nos. 162.016 or 162.041 or engine air and fuel induction systems bearing basic Approval Nos. 162.015 or 162.042 may be continued in use as long as they are serviceable and in good condition. New installations or replacements must meet the applicable requirements of this section.

(3) The following are acceptable means of backfire flame control for gasoline engines:

(i) A backfire flame arrester complying with SAE J-1928 or UL 1111 and marked accordingly. The flame arrester must be suitably secured to the air intake with a flametight connection.

(ii) An engine air and fuel induction system which provides adequate protection from propagation of backfire flame to the atmosphere equivalent to that provided by an acceptable backfire flame arrester. A gasoline engine utilizing an air and fuel induction system, and operated without an approved backfire flame arrester, must either include a reed valve assembly or be installed in accordance with SAE J-1928.

(iii) An arrangement of the carburetor or engine air induction system that will disperse any flames caused by engine backfire. The flames must be dispersed to the atmosphere outside the vessel in such a manner that the flames will not endanger the vessel, persons on board, or nearby vessels and structures. Flame dispersion may be achieved by attachments to the carburetor or location of the engine air induction system. All attachments must be of metallic construction with flametight connections and firmly secured to withstand vibration, shock, and engine backfire. Such installations do not require formal approval and labelling but must comply with this subpart."

* * * * *

Editors Note: In reading the amendments to the backfire flame arrester regulations, it would appear that manufacturers of new boats and engines and owners of existing boats would be prohibited from installing flame arresters bearing USCG approval numbers, and would have to begin installing flame arresters labelled in accordance with SAE J-1928 or UL 1111. **This is not the intent of the new regulations.** The intent of the regulations is to remove the existing paperwork burdens associated with the present approval process for flame arresters, and instead, to adopt existing industry standards.

Therefore, a manufacturer with an existing certificate of approval for backfire flame arresters may continue to use those flame arresters until the certificate of approval expires. Manufacturers with existing inventories of Coast Guard approved flame arresters may continue to install them until such time as their inventories are exhausted. Owners replacing flame arresters may use either Coast Guard approved flame arresters or flame arresters labelled in accordance with SAE J-1928 or UL 1111 (whatever is available).

CONSUMER AFFAIRS

BOARDING HOTLINE/ BOARDING POLICY

As a part of Coast Guard initiatives to improve boarding policies and procedures, the Office of Navigation and Waterway Services recently expanded the services performed by the Boating Safety Hotline to include the collection of comments on Coast Guard boardings. Each boarding "feedback" call is transcribed on a report form which is sent to appropriate Coast Guard offices involved in boardings.

To date, the majority of the comments on Coast Guard boardings have been favorable. Complaints about boardings center on the following:

(1) Some boaters don't understand the purpose and the legal basis for boardings, i.e., they are unfamiliar with the Coast Guard's role as a law enforcement agency. They are often surprised or even resentful when the Coast Guard stops their vessels for "no apparent reason".

(2) Inspections are regarded as invasive and as deliberately looking for trouble. This is particularly true of the customs type inspections common in the Seventh Coast Guard District.

(3) Boaters are confused and concerned over what happens next if they are issued a Notice of Violation by the boarding officer.

A Consumer Fact Sheet was specifically developed to address these concerns. Copies of the Fact Sheet are available from the Coast Guard Consumer Affairs and Analysis Branch. Call the Boating Safety Hotline 1-800-368-5647.

Boaters who have given positive feedback are appreciative of a courteous attitude on the part of the boarding team, and appear to react favorably to the safety inspection, even when a violation is found, if the boarding officer explains the safety reasons for the various requirements.

BOATING SAFETY HOTLINE UPDATE

In 1986 the Coast Guard established a toll-free “800” number called the Boating Safety Hotline. The Hotline began on an experimental basis as a way to inform boat owners of safety recalls in progress, and to take complaints on problems that could be safety defects.

The Hotline also worked surprisingly well as a way to give the public fast and easy access to information on other boating safety topics. Hotline service reps are trained to answer questions on a variety of subjects ranging from equipment requirements on recreational boats, to the new MARPOL requirements and providing information on the new Recreational Vessel Fee requirements. The service reps usually send the caller additional information taken from an inventory of over 60 pamphlets, brochures, posters, fact sheets, articles, and video tapes.

Since its start, the Hotline has handled over 69,000 calls (more than 20,000 last year) and has proven itself as a valuable consumer relations tool. We are planning to upgrade Hotline telephone and computer equipment, invest more resources in service rep training, and expect to start a public awareness program through feature articles in newspapers and eventually a TV/radio Public Service Announcement campaign. The Hotline has worked well for the Recreational Boating Safety Program and could provide similar benefits for other Coast Guard programs.

WANTED!

ASSISTANCE IN THE FIGHT AGAINST BOAT THEFT

MARINE LAW ENFORCEMENT AGENCIES
ARE INCREASING THEIR EFFORTS
TOWARD THE RECOVERY OF STOLEN BOATS
AND PROSECUTION OF BOAT THIEVES

THE COAST GUARD ENCOURAGES
THE PUBLIC,
THE RECREATIONAL BOATING INDUSTRY,
LENDING INSTITUTIONS
AND
INSURANCE COMPANIES
TO PLACE A LARGER EMPHASIS ON USE OF

THE HULL IDENTIFICATION NUMBER (HIN)

TO IDENTIFY A BOAT
IN ANY PAPERWORK TRANSACTION
SUCH AS PURCHASE, SALE, TRANSFER,
INVENTORY, LOANS, INSURANCE, TITLING, ETC.