



Boating Safety Circular 69

“A cup of gasoline spilled in the bilges has the potential explosive power of 15 sticks of dynamite!”

So said a Coast Guard pamphlet, “Ventilation Systems for Small Craft”(CG-395) published more than 20 years ago. *Fifteen* sticks of dynamite? Asked for their opinions, boat manufacturers and boat owners, State boating law authorities, Coast Guard Auxiliarists, etc., would all disagree. Judging from the number of letters and telephone calls we receive each year, they also disagree on the ventilation system requirements for various boats.

Historically, the regulations covering ventilation began as an operator requirement. Like the early regulations which required all boat operators to carry life preservers, operators of most gasoline powered motorboats (except open boats) built after April 25, 1940 were required to equip every engine and fuel tank compartment with a natural ventilation system. Boat builders and operators could supplement a boat’s ventilation system by installing a bilge blower; however, a bilge blower is part of a powered ventilation system. Powered ventilation was not required by regulation until 1980.

Subpart 25 of Subchapter C of Title 46, Code of Federal Regulations contains regulations covering ventilation applicable to uninspected recreational motorboats manufactured before August 1980, when ventilation became a manufacturer requirement. According to paragraph 25.40-1:

46 CFR 25.40 -1 Tank and engine spaces.

(a) All motorboats or motor vessels, except open boats, the construction or decking over of which is commenced after April 25, 1940, and which use fuel having a flashpoint of 100 degrees fahrenheit, or less, shall have at least two ventilator ducts, fitted with cowls or their equivalent, for the efficient removal of explosive or flammable gases from the bilges of every engine and fuel tank compart-

ment. There shall be at least one exhaust duct installed so as to extend from the open atmosphere to the lower portion of the bilge and at least one intake duct installed so as to extend to a point at least midway to the bilge or at least below the level of the carburetor air intake. The cowls shall be located and trimmed for maximum effectiveness and in such a manner so as to prevent displaced fumes from being recirculated.

(b) As used in this section, the term “open boats” means those motorboats or motor vessels with all engine and fuel tank compartments, and other spaces to which explosive or flammable gases and vapors may flow, open to the atmosphere and so arranged as to prevent the entrapment of such gases and vapors within the vessel.

(c) Where alterations are needed for existing motorboats or motor vessels to comply with the requirements in this section, such alterations shall be accomplished as soon as practicable but in any case shall be completed by June 1, 1966.

In June 1966 the Coast Guard published the pamphlet, CG-395, which contained what many would consider an exaggerated comparison between 15 sticks of dynamite and a cup of spilled gasoline. More importantly, however, the pamphlet also defined an “open boat” as one which meets each of the following conditions:

1. Engine and fuel tank compartments shall have as a minimum 15 square inches of open area directly exposed to the atmosphere for each cubic foot of net compartment volume.

2. There must be no long or narrow unventilated spaces accessible from such compartments in which a flame front could propagate.

3. Long, narrow compartments (such as side panels), if joining engine or fuel compartments and

Inside:

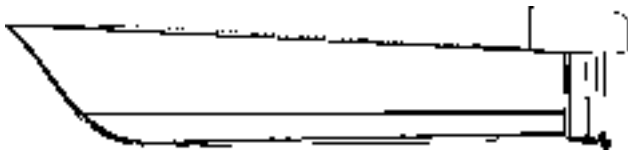
"No Certificate? - No Numbers!"

Construction begun after April 25, 1940 but before July 31, 1978

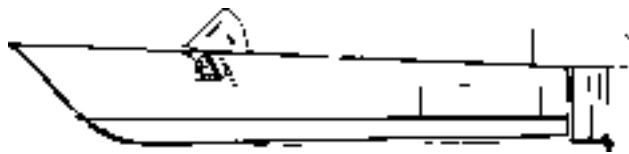
Applicable to: All motorboats or motor vessels using **gasoline** as a fuel.

Exceptions: "Open boats." "Open boats" means those motorboats or motor vessels with all engine and fuel tank compartments, and other spaces to which explosive or flammable gases and vapors from these compartments may flow, open to the atmosphere and so arranged as to prevent the entrapment of such gases and vapors within the vessel.

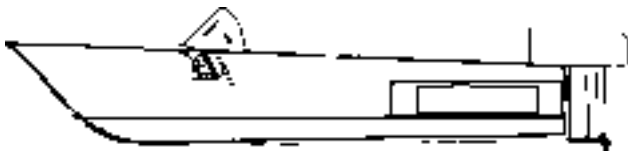
Natural Ventilation System Required For: Every engine and fuel tank compartment.



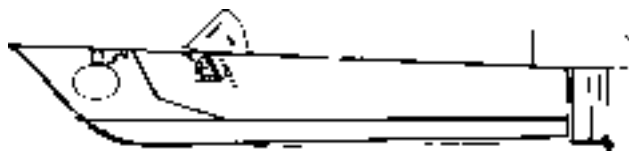
Open Motorboat
Natural Ventilation? No.



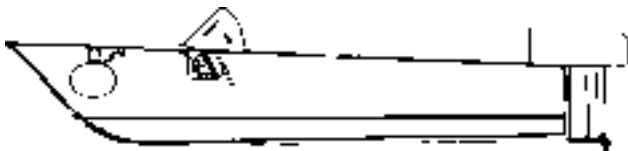
Open Motorboat with Portable Tank
Natural Ventilation? No.



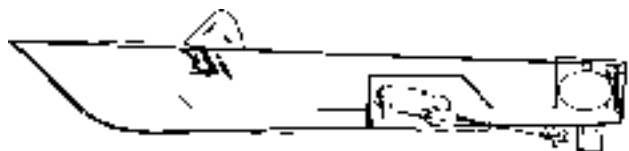
Portable Tank in Enclosed Compartment
Natural Ventilation? Yes.



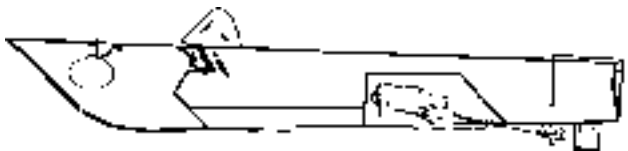
Permanent Tank
Natural Ventilation? Yes. Fuel tank compartment is not "open to the atmosphere"



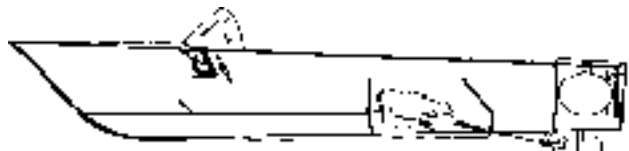
Permanent Tank
Natural Ventilation? No. Boat meets definition of "open boat".



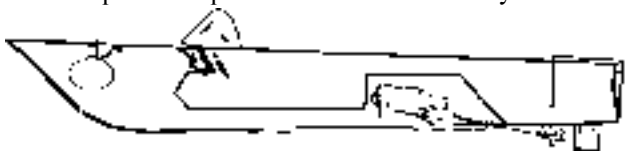
Permanent Tank and Engine Compartments
Natural Ventilation? Yes.



Permanent Tank and Engine Compartments
Natural Ventilation? Yes. Since fuel tank and engine are installed in separate compartments, then **each** compartment requires a separate natural ventilation system

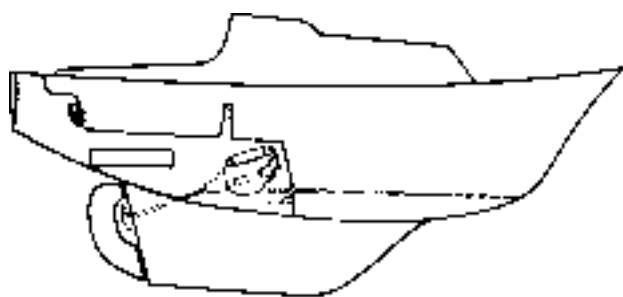


Permanent Tank and Engine Compartments
Natural Ventilation? Yes. Since fuel tank and engine are installed in separate compartments, then **each** compartment requires a separate natural ventilation system



Permanent Tank and Engine Compartment
Natural Ventilation? Yes.

Construction begun after April 25, 1940 but before July 31, 1978



Permanent Tank and Engine Compartment
Natural Ventilation? Yes.



Portable Tank in Enclosed Compartment
Natural Ventilation? Yes.

Natural Ventilation System Requirements: At least two ventilator ducts, fitted with cowls or their equivalent, for the efficient removal of explosive or flammable gases. There shall be at least one exhaust duct installed so as to extend from the open atmosphere to the lower portion of the bilge and at least one intake duct installed so as to extend to a point at least midway to the bilge or at least below the level of the carburetor air intake. The cowls shall be located and trimmed for maximum effectiveness and in such a manner so as to prevent displaced fumes from being recirculated.

not serving as ducts thereto, shall have at least 15 square inches of open area per cubic foot provided by frequent openings along the full length of the compartment formed.

In March 1977, the Coast Guard published an Advance Notice of Proposed Rulemaking soliciting comments on the need for regulations which would require *powered* ventilation systems on gasoline powered inboard and inboard/outdrive boats to lessen the possibility of fire and explosions which were the primary cause of property damage and the second greatest cause of personal injury from boating accidents. The effectiveness of the existing natural ventilation regulations had been questioned in a 1975 report based upon information from two independent research projects. The report showed that a natural ventilation system is effective only when a boat is moving fast enough to force air through the ventilation ducts, or when the wind is at sufficient velocity and direction to blow through the ducts. The report concluded that there was a definite need for some type of forced ventilation on boats to remove explosive and flammable gases before the engine is started. Boating accident statistics indicated that most fires and explosions occurred while the boat was dead in the water after fueling.

In July 1978, the Coast Guard proposed final regulations covering powered ventilation based on

the comments received. The Coast Guard believed that the proposed minimum safety standards for ventilation systems, together with the Electrical and Fuel System Standards (published as a separate project in January 1977) would significantly reduce the probability of gasoline vapors collecting in the boat where they could be easily ignited, causing a fire or explosion.

The final rule which was published December 17, 1979 reflected many of the comments received. Comments indicated that the regulations should apply to outboard boats as well as those powered by inboards. Comments also suggested that powered ventilation should be required in engine compartments, and natural ventilation in any compartment where gasoline vapor could be present. The Coast Guard agreed. The regulations would require both powered and natural ventilation systems to be used in compartments that have a permanently installed gasoline engine. Only natural ventilation systems would be required for fuel tank compartments.

The Coast Guard also agreed with comments which suggested that ventilation should not be required for fuel tank compartments where the fuel tank vents to the outside of the boat, since the accumulation of fuel vapors in the compartment was improbable. However, the regulations would require ignition protection of any electrical com-

Construction begun after July 31, 1978 but before August 1, 1980

or which are in compliance with 33 CFR Part 183

Applicable to: All motorboats or motor vessels and all boats as defined in the Federal Boat Safety Act of 1971 using **gasoline** for electrical generation, mechanical power or propulsion.

"Boat" means any vessel:

- (1) manufactured or used primarily for noncommercial use; or
- (2) leased, rented or chartered to another for the latter's noncommercial use; or
- (3) engaged in the carrying of six or fewer passengers.

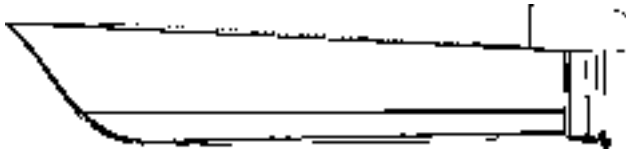
Exceptions: "Open boats."

"Open boats" means those motorboats or motor vessels with all engine and fuel tank compartments, and other spaces to which explosive or flammable gases and vapors from these compartments may flow, open to the atmosphere and so arranged as to prevent the entrapment of such gases and vapors within the vessel.

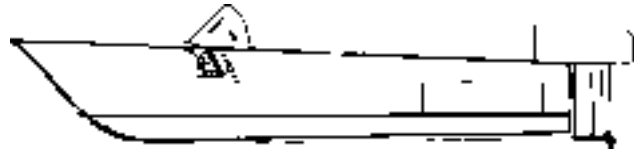
Natural Ventilation System Required For: Every engine and fuel tank compartment except fuel tank compartments that:

- (1) Contain a permanently installed fuel tank if each electrical component is ignition protected in accordance with 33 CFR 183.410(a); and
- (2) Contain fuel tanks that vent to the outside of the boat.

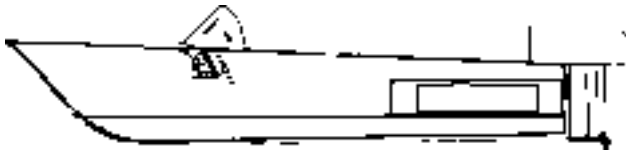
Powered Ventilation System Required For: Every engine compartment (if the boat is built in compliance with 33 CFR Subpart K*).



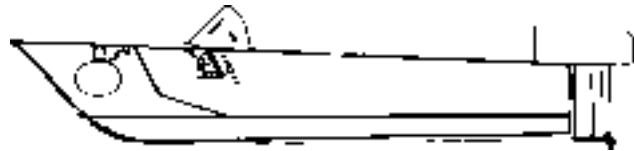
Open Motorboat
Natural Ventilation? No.



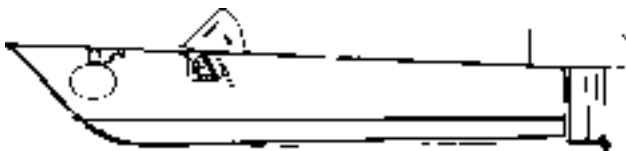
Open Motorboat with Portable Tank
Natural Ventilation? No.



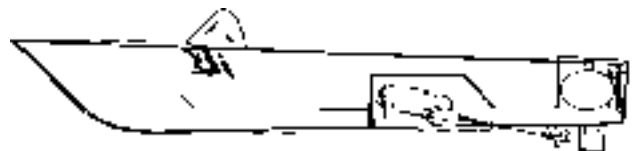
Portable Tank in Enclosed Compartment
Natural Ventilation? Yes.



Permanent Tank
Natural Ventilation? Yes. Fuel tank compartment is not "open to the atmosphere".
No. If fuel tank vented to outside of boat.



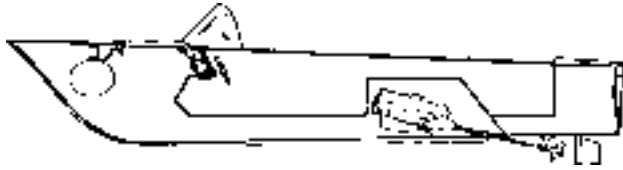
Permanent Tank
Natural Ventilation? No. Fuel tank compartment is "open to the atmosphere".



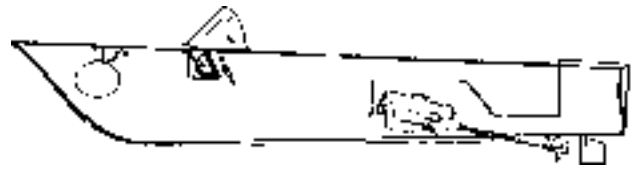
Permanent Tank and Engine Compartment
Natural Ventilation? Yes.
Powered Ventilation? Optional.*

Construction begun after July 31, 1978 but before August 1, 1980

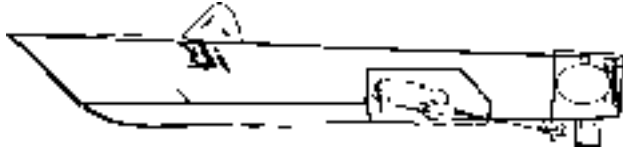
or which are in compliance with 33 CFR Part 183



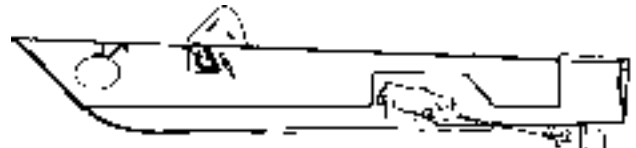
Permanent Tank and Engine Compartment
Natural Ventilation? Yes.
Powered Ventilation? Optional.*



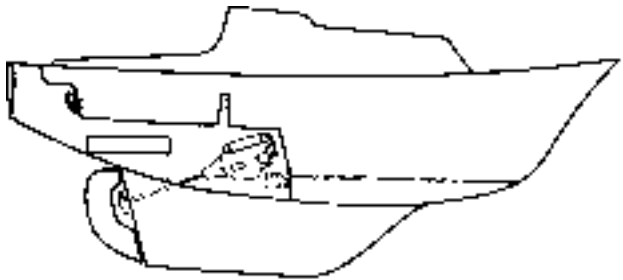
Permanent Tank and Engine Compartments
Natural Ventilation? Yes.
Powered Ventilation? Optional.*



Permanent Tank
Natural Ventilation? Yes, unless the tank is equipped with a vent to the outside of the boat and fuel tank compartment contains no electrical components.
 Engine Compartment
Natural Ventilation? Yes.
Powered Ventilation? Optional.*



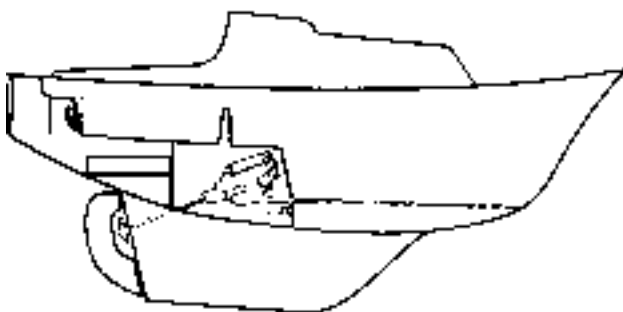
Permanent Tank
Natural Ventilation? No. Compartment is "open to the atmosphere".
 Engine Compartment
Natural Ventilation? Yes.
Powered Ventilation? Optional.*



Permanent Tank and Engine Compartment
Natural Ventilation? Yes.
Powered Ventilation? Optional.*



Portable Tank in Enclosed Compartment
Natural Ventilation? Yes.



Permanent Tank
Natural Ventilation? Yes, unless the tank is equipped with a vent to the outside of the boat and fuel tank compartment contains no electrical components.

Natural Ventilation System Requirements: At least two ventilator ducts, fitted with cowls or their equivalent, for the efficient removal of explosive or flammable gases.

There shall be at least one exhaust duct installed so as to extend from the open atmosphere to the lower portion of the bilge and at least one intake duct installed so as to extend to a point at least midway to the bilge or at least below the level of the carburetor air intake. The cowls shall be located and trimmed for maximum effectiveness and in such a manner so as to prevent displaced fumes from being recirculated.

Engine Compartment
Natural Ventilation? Yes.
Powered Ventilation? Optional.*

ponent in a compartment containing a fuel tank in order to limit the probability of an explosion in the event of a gasoline leak.

The Coast Guard also sought comments on whether interlocks which would prevent the engine ignition system from being energized should be required. Several comments objected to interlocks because they could cause confusion when a boat has to be started quickly in an emergency. Some manufacturers submitted sales literature indicating that interlocks were available in the market. Since there were recognizable problems associated with interlocks and the Coast Guard's policy is to impose the minimum requirements necessary to achieve an adequate level of safety, no interlocks were required for propulsion engines or auxiliary generators.

The Coast Guard Ventilation Standard applicable to manufacturers of all boats which have gasoline engines for electrical generation, mechanical power or propulsion was published December 17, 1979. The standard applied to all boats built after July 31, 1980, except manufacturers were given the option of electing to comply with the standard any time after July 31, 1978.

Concurrently, the Coast Guard amended the ventilation regulations in 46 CFR Part 25 to make the existing regulations agree with the new ventilation regulations. According to the two new paragraphs (d) and (e) in 46 CFR Part 25.40-1:

(d) Boats as defined in the Federal Boat Safety Act of 1971 built after July 31, 1980 or which are in compliance with 33 CFR Part 183 are excepted from these requirements.

(e) Boats as defined in the Federal Boat Safety Act of 1971 built after July 31, 1978 are excepted from the requirements of paragraph (a) for fuel tank compartments that:

(1) Contain a permanently installed fuel tank if each electrical component is ignition protected in accordance with 33 CFR 183.410(a); and

(2) Contain fuel tanks that vent to the outside of the boat.

With the addition of paragraph (d) above, boats built after July 31, 1978, but before August 1, 1980, can have very different ventilation systems (See "Puzzle"). These differences would explain the multitude of opinions on the type of ventilation that is actually required in various boats.

The third effect of the ventilation regulations

THE 1979 MODEL YEAR PUZZLE

You are a State Marine Police Officer inspecting a boat for compliance with the ventilation regulations or a Coast Guard Auxiliarist conducting a Courtesy Motorboat Examination (CME). The boat is inboard powered and was manufactured in August 1978 (a 1979 model). The engine is in one compartment and the fuel tank is located in a separate compartment which is not "open to the atmosphere".

What are the applicable ventilation regulations?

The boat's ventilation system could consist of:

(1) Natural ventilation in each compartment meeting 46 CFR 25.40-1(a):

" . . . at least two ventilator ducts, fitted with cowls or their equivalent, for the efficient removal of explosive or flammable gases from the bilges of every engine and fuel tank compartment. "

(2) Alternatively, the manufacturer could have built the boat in compliance with the Ventilation Standard as allowed under *subparagraph (d)* of 46 CFR 25.40-1. The boat would have a blower and natural ventilation in the engine compartment and might or might not have natural ventilation in the fuel tank compartment, depending upon whether any electrical components in the compartment were ignition-protected in accordance with 33 CFR 183.410(a).



(3) Third, the boat could have had a blower and natural ventilation in the engine compartment and the fuel tank compartment could have been equipped with natural ventilation meeting subparagraph 25.40-1(a) or (e). However, unlike alternative (2) above, the blower could have been supplemental equipment. As we explained earlier, until August 1980, all boats had to

have natural ventilation, but builders and owners could supplement a boat's ventilation system by installing a blower. Since powered ventilation did not become mandatory until August 1980, the mere presence of a blower in a 1979 model boat does not necessarily mean that it complies with the Ventilation Standard in 33 CFR Subpart K.

(4) Finally, the manufacturer could have built the boat with natural ventilation in the engine compartment and installed a natural ventilation system meeting the requirements of *subparagraph (e)* of 46 CFR 25.40-1 in the fuel tank compartment.

A possibility of four different ventilation systems in one 1979 model year boat! No wonder there's confusion among those who are enforcing the ventilation regulations on just which requirements *do* apply.

Construction begun after July 31, 1980

Applicable to: All boats as defined in the Federal Boat Safety Act of 1971 that have **gasoline** engines for electrical generation, mechanical power or propulsion.

"Boat" means any vessel:

- (1) manufactured or used primarily for noncommercial use; or
- (2) leased, rented or chartered to another for the latter's noncommercial use; or
- (3) engaged in the carrying of six or fewer passengers.

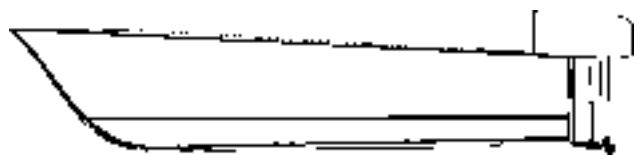
Powered Ventilation System Required For: Each compartment in a boat that has a permanently installed gasoline engine with a cranking motor for remote starting.

Exceptions: A compartment containing permanently installed gasoline engine equipped with a cranking motor (remote starting) which is "open to the atmosphere." "Open to the atmosphere" means a compartment that has at least 15 square inches of open area directly exposed to the atmosphere for each cubic foot of net compartment volume. Note: Suppose a permanently installed engine lacks remote starting, i.e., it is started by a hand crank on the engine. Removal of the engine cover or box to start the engine makes the engine compartment "open to the atmosphere" and powered ventilation is not required.

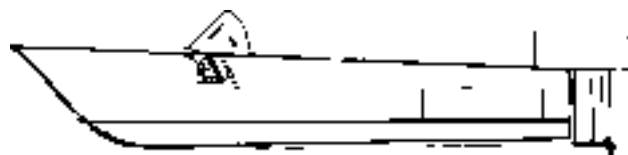
Natural Ventilation System Required For: Each compartment in a boat that:

- (1) Contains a permanently installed gasoline engine;
- (2) Has openings between it and a compartment that requires ventilation, where the aggregate area of those openings exceeds 2 percent of the area between the compartments. The exception is an accommodation compartment above a compartment requiring ventilation that is separated from the compartment requiring ventilation by a deck or other structure
- (3) Contains a permanently installed fuel tank and an electrical component that is not ignition-protected in accordance with 33 CFR 183.410(a);
- (4) Contains a fuel tank that vents into that compartment; or
- (5) Contains a non-metallic fuel tank meeting certain technical requirements concerning permeability provided in the regulations

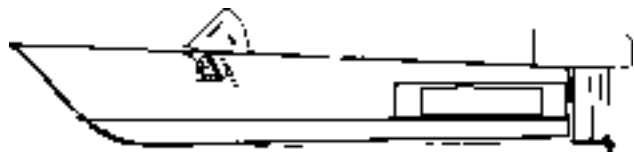
Exceptions: Compartment is "open to the atmosphere."



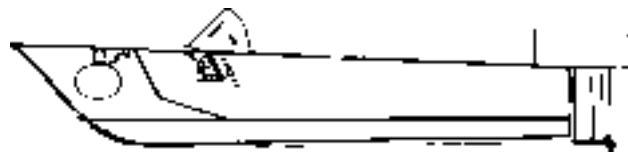
Open boat
Powered Ventilation? **No.**
Natural Ventilation? **No.**



Open boat with Portable Tank
Powered Ventilation? **No.**
Natural Ventilation? **No.**

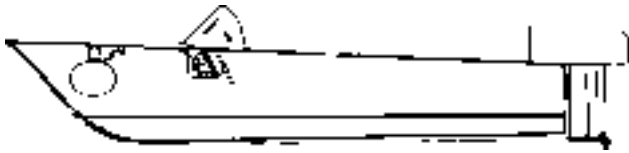


Portable Tank in Enclosed Compartment
Powered Ventilation? **No.**
Natural Ventilation? **Yes.** Fuel tank compartment is not "open to the atmosphere".

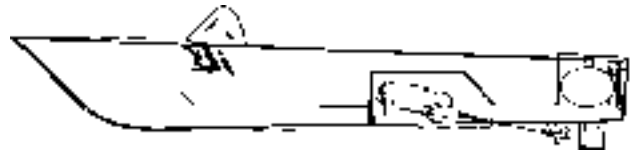


Permanent Tank
Powered Ventilation? **No.** If fuel tank vented to outside of boat.
Natural Ventilation? **Yes.** Fuel tank compartment is not "open to the atmosphere".

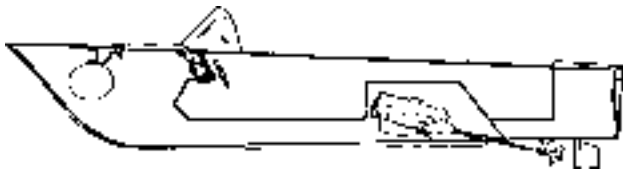
Construction begun after July 31, 1980



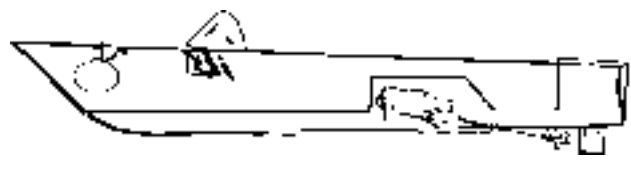
Permanent Tank
 Powered Ventilation? *No.*
 Natural Ventilation? *No.* Fuel tank compartment is "open to the atmosphere".



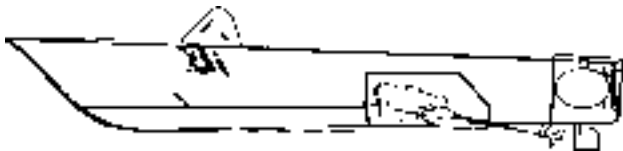
Permanent Tank and Engine Compartment
 Powered Ventilation? *Yes.*
 Natural Ventilation? *Yes.*



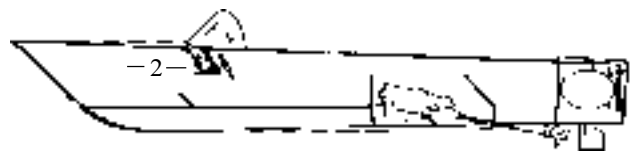
Permanent Tank and Engine Compartment
 Powered Ventilation? *Yes.*
 Natural Ventilation? *Yes.*



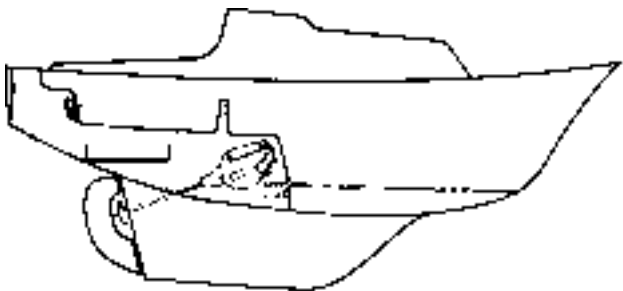
Permanent Tank and Engine Compartments
 Powered Ventilation? *Yes.*
 Natural Ventilation? *Yes.*



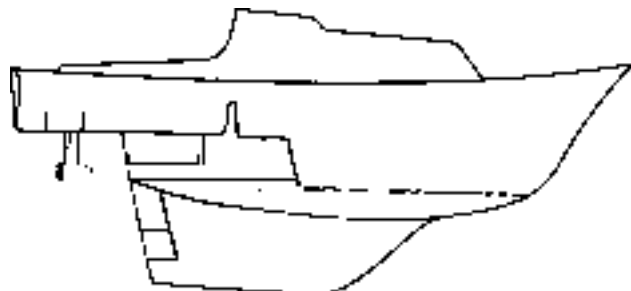
Permanent Tank
 Powered Ventilation? *No.*
 Natural Ventilation? *No.* Unless fuel tank compartment contains electrical components which are not ignition-protected. Note: this boat subject to Fuel Standard and tank required to be vented to outside.
 Engine Compartment
 Powered Ventilation? *Yes.*
 Natural Ventilation? *Yes.*



Permanent Tank
 Powered Ventilation? *No.*
 Natural Ventilation? *No.* Compartment is "open to the atmosphere" and helm station electrical components ignition-protected, i.e., they are at least two feet from gasoline fuel sources.
 Engine Compartment
 Powered Ventilation? *Yes.*
 Natural Ventilation? *Yes.*

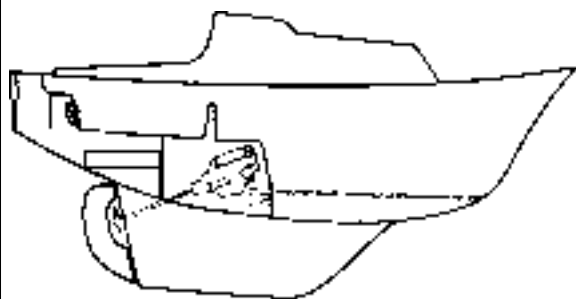


Permanent Tank and Engine Compartment
 Powered Ventilation? *Yes.*
 Natural Ventilation? *Yes.*



Portable Tank in Enclosed Compartment
 Powered Ventilation? *No.*
 Natural Ventilation? *Yes.* Fuel tank compartment is not "open to the atmosphere".

Construction begun after July 31, 1980



Permanent Tank

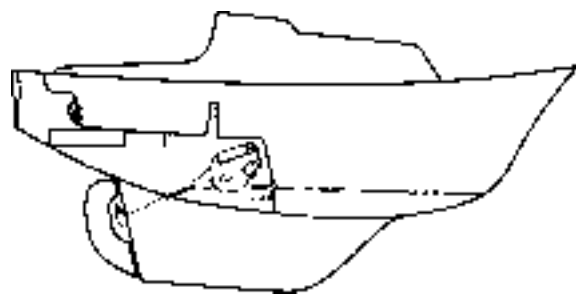
Powered Ventilation? **No.**

Natural Ventilation? **No.** Fuel tank compartment contains electrical components which are ignition-protected, i.e., they are higher than the gasoline fuel source and installed in an enclosure.

Engine Compartment

Powered Ventilation? **Yes.**

Natural Ventilation? **Yes.**



Permanent Tank

Powered Ventilation? **No.**

Natural Ventilation? **Yes.** Fuel tank compartment contains electrical components which are not ignition-protected, i.e., they are within two feet of the gasoline fuel source and are not installed in an enclosure.

Engine Compartment

Powered Ventilation? **Yes.**

Natural Ventilation? **Yes.**

Note: These boats are subject to the Fuel System Standard and their fuel tanks are required to be vented to the outside.

Powered Ventilation System Requirements:

An exhaust blower system consisting of one or more exhaust blowers. Each intake duct for an exhaust blower must be in the lower one-third of the compartment and above the normal accumulation of bilge water.

Natural Ventilation System Requirements:

A natural ventilation system consisting of:

(1) A forward facing* supply opening or duct from the atmosphere (located on the exterior surface of the boat) or from a ventilated compartment or from a compartment that is open to the atmosphere; and

*** Note: The requirement for supply openings to face forward was removed for boats built after March 1987.**

(2) An exhaust opening into another ventilated compartment or an exhaust duct to the atmosphere.

(3) Each exhaust opening or exhaust duct must originate in the lower one third of the compartment.

(4) Each supply opening or supply duct and each exhaust opening or exhaust duct in a compartment must be above the normal accumulation of bilge water.

(5) The minimum internal cross-sectional area of each supply opening or duct and each exhaust opening or duct must exceed 3.0 square inches.

[There are additional technical requirements concerning minimum aggregate internal cross-sectional areas of supply openings and ducts and exhaust openings and ducts]

[There are additional technical requirements concerning minimum aggregate internal cross-sectional areas of terminal fittings for flexible ventilation ducts.]

More complete information and illustrations covering the Ventilation System Standard applicable to boats manufactured after March 1987 may be obtained by requesting a copy of the Ventilation System Compliance Guideline from the American Boat and Yacht Council, 405 Headquarters Drive, Suite 3, Millersville, Maryland 21108. There is a \$10.00 charge (which includes postage and handling) for the guideline, payable by check or money order.

published December 17, 1979 was the establishment of a new Subpart D - Ventilation in Part 175 of Title 33. Part 175 was created in March 1973 to prescribe operator equipment carriage requirements, e.g. PFD carriage requirements, applicable to boats as defined in the Federal Boat Safety Act of 1971. According to the new Subpart D:

175.201 Ventilation

No person may operate a boat built after July 31, 1980, that has a gasoline engine for electrical generation, mechanical power or propulsion unless it is equipped with an operable ventilation system that meets the requirements of 33 CFR 183.610(a), (b), (d), (e) and (f) and 183.620(a).

As a result of this change in the regulations, boat owners must ensure that when replacing any components in the ventilation system of a boat built after July 31, 1980, replaced components are similar to those which were originally installed by the boat manufacturer.

On June 23, 1986, the Coast Guard proposed amendments to the Ventilation Standard in 33 CFR Part 183. Section 183.620(b) prescribed construction and testing requirements for natural ventilation systems. Section 183.620(b)(1) required that each supply opening in a natural ventilation system face forward and be located on the exterior surface of the boat. Tests had shown that many openings

act as ventilation openings in the boat and the direction in which openings are facing has less impact on the effectiveness of the natural ventilation system than does the overall configuration of the boat. The Coast Guard proposed removal of the requirement for these openings to face forward

The Coast Guard also proposed removal of Section 183.620(b)(2) which required testing to ensure that air flowed into or out of the supply or exhaust openings of a natural ventilation system when the boat was in a wind flowing from bow to stern at a velocity of 10 miles per hour and the engine was not operating. Coast Guard tests had also shown that the airflow velocity inside a properly installed natural ventilation system may be so minimal and variable as to strain the ability of conventional airflow measuring devices. All 27 of the comments were received were in favor of the proposed amendments. These amendments were published as a final rule October 23, 1986 with an effective date of August 1, 1987; however, an exemption to the effective date allowed the construction of boats without forward facing supply openings in their natural ventilation systems as early as March 1987.

Operators of Boats Built After July 31, 1980

Applicable to: Operators of all boats as defined in the Federal Boat Safety Act of 1971 that have **gasoline** engines for electrical generation, mechanical power or propulsion.

"Boat" means any vessel:

- (1) manufactured or used primarily for noncommercial use; or
- (2) leased, rented or chartered to another for the latter's noncommercial use; or
- (3) engaged in the carrying of six or fewer passengers.

33 CFR 175.201 Ventilation: No person may operate a boat built after July 31, 1980, that has a gasoline engine for electrical generation, mechanical power or propulsion unless it is equipped with an operable ventilation system that meets the requirements of 33 CFR 183.610(a), (b), (d), (e) and (f) and 183.620(a).

Practical Effect: On a boat built after July 31, 1980, the regulations prohibit the alteration of a natural or powered ventilation system, except for replacement of worn out system components. Replaced components must be similar to those which were originally installed by the boat manufacturer.

A boat's ventilation system includes the exhaust blower label. Each boat that is required to have an exhaust blower must have a label that:

- (1) Is located as close as practicable to each ignition switch;
- (2) Is in plain view of the operator; and
- (3) Has at least the following information:

-WARNING -

GASOLINE VAPORS CAN EXPLODE. BEFORE STARTING ENGINE OPERATE BLOWER FOR 4 MINUTES AND CHECK ENGINE COMPARTMENT BILGE FOR GASOLINE VAPORS.

“NO CERTIFICATE?” — “NO NUMBERS!”

When a boat manufacturer or importer sells a recreational boat, the company should provide a Certificate of Origin to the purchaser. The purchaser needs a Certificate of Origin to obtain a title or register a boat with State numbering authorities. The procedure is the same as when an automobile is purchased. In the boating world this document is also often called a Manufacturer’s Statement of Origin, Master Builders Certificate, Carpenters Certificate, etc. They are all the same thing.

We receive numerous complaints from owners who are unable to register their boats and obtain State registration numbers because they do not have a Certificate of Origin. The State authorities tell many of these people to request a form from Coast Guard Merchant Vessel Documentation offices called a “Builders Certification,” which the Coast Guard offices use to establish the fact that vessels intended for documentation were U.S. manufactured. It is not necessary to use the “Builders Certification” form for boats which will be registered in a State.

To eliminate confusion, printed below is a prototype Manufacturer’s Certificate of Origin for the use of recreational boat builders and importers. Copy this form, or use it as a model for designing your own. Put your company logo on it if you want to. Just try to make sure you complete a Certificate of Origin and that the form accompanies each boat you build. This will make it much easier for the eventual first purchasers of your products to title and register their boats.

MANUFACTURER'S CERTIFICATE OF ORIGIN	
1. Vessel Data:	
Hull Identification Number: _____	
Model Name: _____	
Length: _____ Beam: _____ Draft: _____	
Place of Construction: _____	
Hull Material:	
<input type="checkbox"/> Wood <input type="checkbox"/> Steel <input type="checkbox"/> Aluminum <input type="checkbox"/> Fiberglass <input type="checkbox"/> Other	
2. Certification:	
I _____ Do Hereby Certify that the facts recited herein are true and that I have personal knowledge of these facts because I:	
<input type="checkbox"/> A. Personally performed the construction	
<input type="checkbox"/> B. Supervised the construction at and on behalf of	

(Name of Company)	
Signature: _____	
Date: _____	

The following is an excerpt from an actual Coast Guard Marine Casualty Report.

TWO DEAD — FOUR RESCUED AFTER SEVEN HOURS IN THE WATER

Four fishermen spent the night clinging to the capsized 29-foot pleasure craft “REEL ACTION.” Bodies of two companions trapped in the cabin were recovered by divers in waters four miles off the coast of Ocean City, NJ, on 10 September 1988.

“...the proximate cause of the casualty was the failure of the operator to recognize the meaning of the navigation lights.”

A 29-foot sport fisherman with six men aboard left Ocean City, New Jersey at 11:30 p.m. for a popular offshore fishing spot in the Atlantic. Just after midnight the two men at the helm sighted a large unknown vessel displaying three white lights in a vertical line. Neither man knew what the three lights indicated.

Assuming the unknown vessel to be a large fishing boat or passenger ferry, the “REEL ACTION,” underway at 10 knots, altered course, intending to pass astern. Unfortunately, the other vessel was neither a fishing boat nor a ferry. She was a 63-foot tug towing two large barges.

When the 29-foot sport fisherman passed astern of the tug, she crossed the towline at about a 45 degree angle and became fouled. She was turned sharply to port, pulled stern-first by the towline and eventually broke free. But the “REEL ACTION” did not escape a collision with the oncoming barges. Four men were thrown into the water — the other two never surfaced.

A little knowledge would probably have prevented this accident. The Coast Guard’s Marine Casualty Report confirmed this. The proximate cause of the casualty was the failure of those navigating the “REEL ACTION” to recognize the meaning of the navigation lights displayed on the other vessel. Also, even though both vessels had VHF radios, neither attempted communication with the other.

Between them, the two men at the helm of the 29-foot sport fisherman had a great deal of experience in small boats, but neither had any formal boating or navigation training. They had just bought the “REEL ACTION” and this was their first venture offshore to go fishing at night. They had plenty of electronics: a VHF-FM radio, a Loran C receiver, a depth finder, and

other safety equipment. The most important element they lacked? Experience navigating offshore at night.

They didn’t understand the importance of staying out of shipping lanes and away from large ships. They hadn’t read or studied the International and Inland Regulations for Preventing Collisions at Sea (the “Rules of the Road”). They should have learned the meanings of the various navigation light displays. They would have been alerted to the fact that when the length of the tow, from the stern of a towing vessel to the after end of her tow exceeds 200 meters, a towing vessel displays three white lights in a vertical line.

Because of their unfamiliarity with navigation lights they did not realize that the tug — with her barges in tow, stretching out nearly half a mile — could sink them. The tug, it turned out, had simply proceeded to her destination. It wasn’t until later that the crew on the tug learned the fates of those on board the sport fisherman.

Lesson To Be Learned:

Don’t go boating until you know the Rules of the Road.

At night, avoid anchoring or operating in commercial vessel shipping lanes.

If you plan to navigate at night, learn the various navigation light displays, but don’t make assumptions. If in doubt, use the VHF radio for communication with another other vessel. (Channel 16 or 13).

Moral To The Story:

**KNOW BEFORE YOU GO!
TAKE A BOATING SAFETY COURSE!**

WHAT RECREATIONAL BOATERS SHOULD KNOW ABOUT SHARING THE WATER WITH COMMERCIAL BOATS

Safety for the recreational boater begins with an awareness of the constraints under which commercial vessels must operate. Here are some safety tips boaters should know when operating in the vicinity of commercial vessels — not only at sea, but particularly in more congested inland waters.

□ Commercial vessels operate 365 days a year, 24 hours a day, in all weather.

□ The speed of a ship, towboat or tugboat can be deceptive. A towboat can travel one mile in seven minutes. A big ship even faster. It takes a fast ship only 10 minutes to get from the visible horizon to a boater's location.

□ Large ships and tugs pushing or pulling tows must maintain speed to maintain steerage way. They must stay in the channel with sufficiently deep water. A ship that is slowing down does not steer well, because it needs propeller action on the rudder for good steerage response. Most ships require a maneuvering speed of 10 to 15 knots.

□ Large ships and tugs pushing or pulling tows running downstream in a swift current have less steerage way than other vessels moving upstream against the current.

□ When underway, a large ship requires 4 to 6 minutes to stop even after reversing its engines.

□ When a ship's engines are "full astern," in most cases her bow will swing to starboard. A boater near a ship that is going astern should maneuver to the ship's port side.

□ Pilots of ships and tugs pushing or pulling tows have a blind spot which can extend for hundreds of feet in front of their vessels.

□ In narrow channels "undertow" from a tug or from what she is pushing or pulling can cause a smaller vessel to be pulled toward the tow.

□ Tugs often tow objects on a long submerged line which is difficult to see.

□ A tug or its tow can steal the wind from a sailboat.

WHAT RECREATIONAL BOATERS NAVIGATING NEAR COMMERCIAL SHIPPING CAN DO FOR SAFETY

□ Commercial vessels are often restricted in their ability to maneuver and therefore have the right of way over all recreational boats (even sailboats).

□ Try to avoid large ship channels, but where it is necessary to use such channels, respect the rights of larger vessels: (1) they have the right of way; (2) they are restricted in their ability to maneuver (steer, speed up, slow down or stop); and (3) they require deeper water for safe navigation. Keep to the starboard (the right-hand) side of the channel. If it becomes necessary to cross such a channel, check for other vessels and pass astern of oncoming vessels.

□ Designate a lookout, one person in the boat to watch for commercial traffic.

□ Boaters navigating frequently amidst commercial vessel traffic should install a VHF radio. Establish "bridge to bridge" communication in tight maneuvering situations.

□ Avoid cargo loading docks; use safe anchorages out of navigation channels. Never tie up to a buoy.

□ Don't water ski or operate a personal water craft around tows, though a vessel's "undertow" or in ship channels.

□ Understand whistle signals. At least five or more short blasts on the whistle is the "danger" signal. Stay clear of vessels sounding this "danger" signal.

□ When boating at night, watch for big ships and tugs with tows. Know the meaning of a ship's lighting configuration. Pay particular attention to the sidelights of the other vessel. If both sidelights are visible, your boat is dead ahead — MOVE OUT FAST. A power driven vessel towing astern has two masthead lights in a vertical line — 3 lights in a line if the length of the tow exceeds 200 meters — plus a yellow towing light above the stern light.

□ At night, make sure *your* navigation lights are bright and not obscured by flags, sails, other on board equipment or parts of your boat's structure.