



Required Equipment & Bureau Policy Requirements





Learning Objectives

By the end of this unit, the participant will be able to:

1. Determine the equipment requirements for different size boats.
2. Identify the legal requirements for equipment acceptability.
3. Identify and ensure proper storage locations for specific equipment



Learning Objectives

By the end of this unit, the participant will be able to:

4. Inspect and determine the serviceability of the boats equipment.
5. Ensure compliance with USDOJ boat equipment requirements.
6. Cite operator and crew responsibilities concerning pollution regulations.



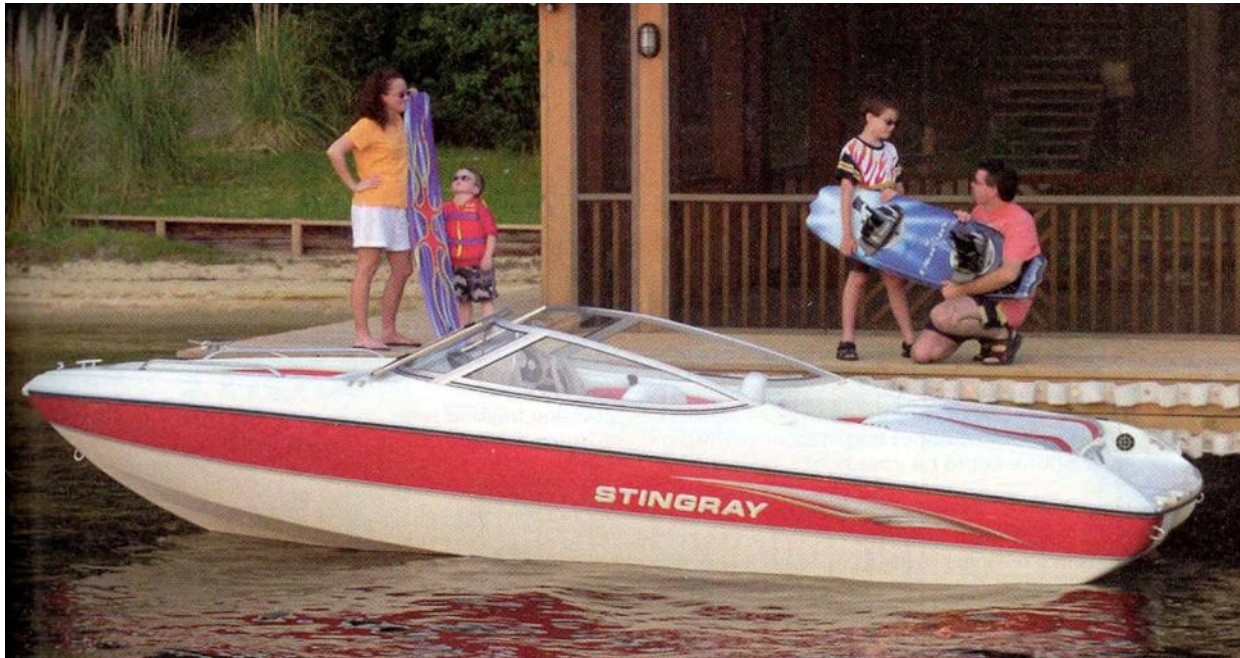
Practical Exercise Objectives

By the end of this unit, the participant will be able to:

1. Using "MOCC BOAT ORIENTATION FORM" or the "Pre-Departure Vessel Checks" handout and other applicable references, the participant will inspect a motorboat to determine if the required equipment is present and further identify recommended equipment specific to operations.

Equipment Regulations

Apply to Recreational Boaters



Federal, State, Local Laws

Law Enforcement May Board & Inspect Any Vessel
at Any Time in U.S. Waters

Equipment Regulations

Additional Requirements On the Job



Federal, State, Local laws, *plus Your Department and Bureau policies*

MOCC covers Federal laws, USDOl & Bureau Policies

Federal Requirements

USDOl and FWS policies later

Review and Know your State specific
regulations.

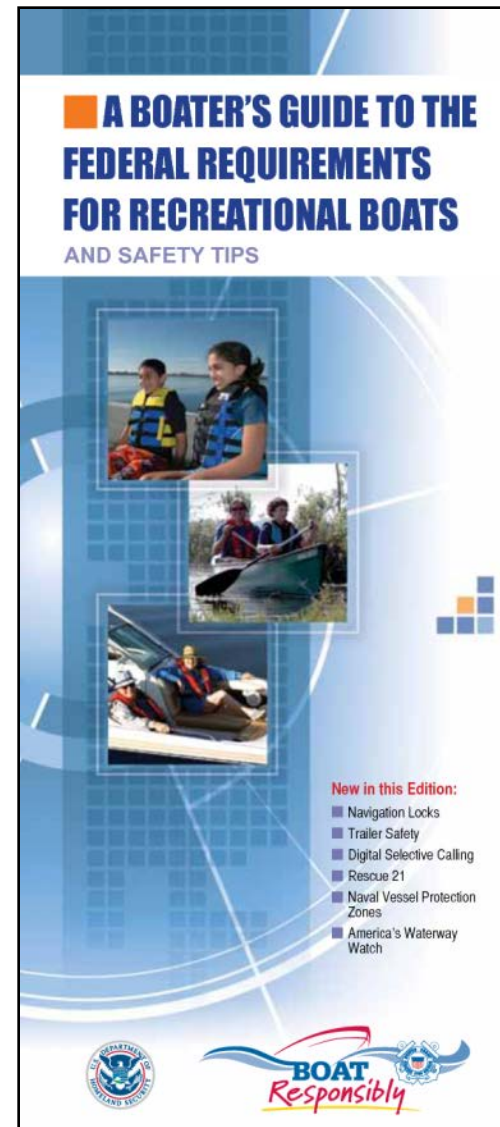


Resources

Student Manual (Chapter 3)

Federal Requirements for Recreational Boats

USDOJ Policy





Equipment Regulations

Topics to be covered:

Documentation / Registration and Numbering

Personal Flotation Devices (PFD's)

Visual Distress Signals

Fire Extinguishers

Ventilation

Backfire Flame Control

Sound Producing Devices

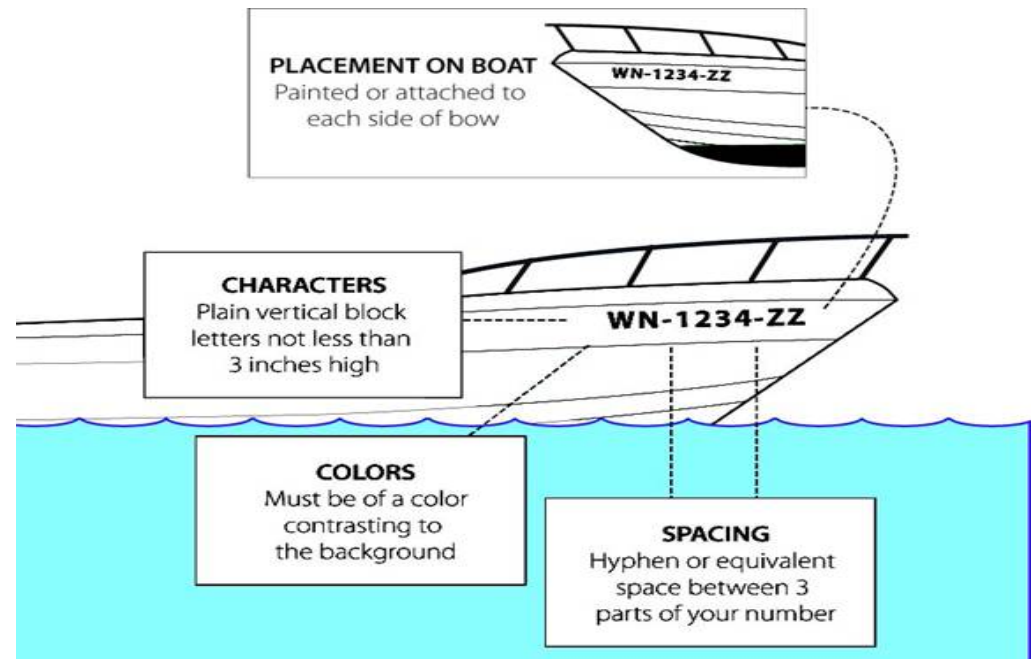
Navigation Lights

Pollution Regulations

Policy Recommended Equipment

Federal Requirements for Registration and Numbering

1. Plain block font
2. Contrast with background
3. Not less than 3" in height
4. Letters must be separated from numbers
5. Space between should equal width of widest letter

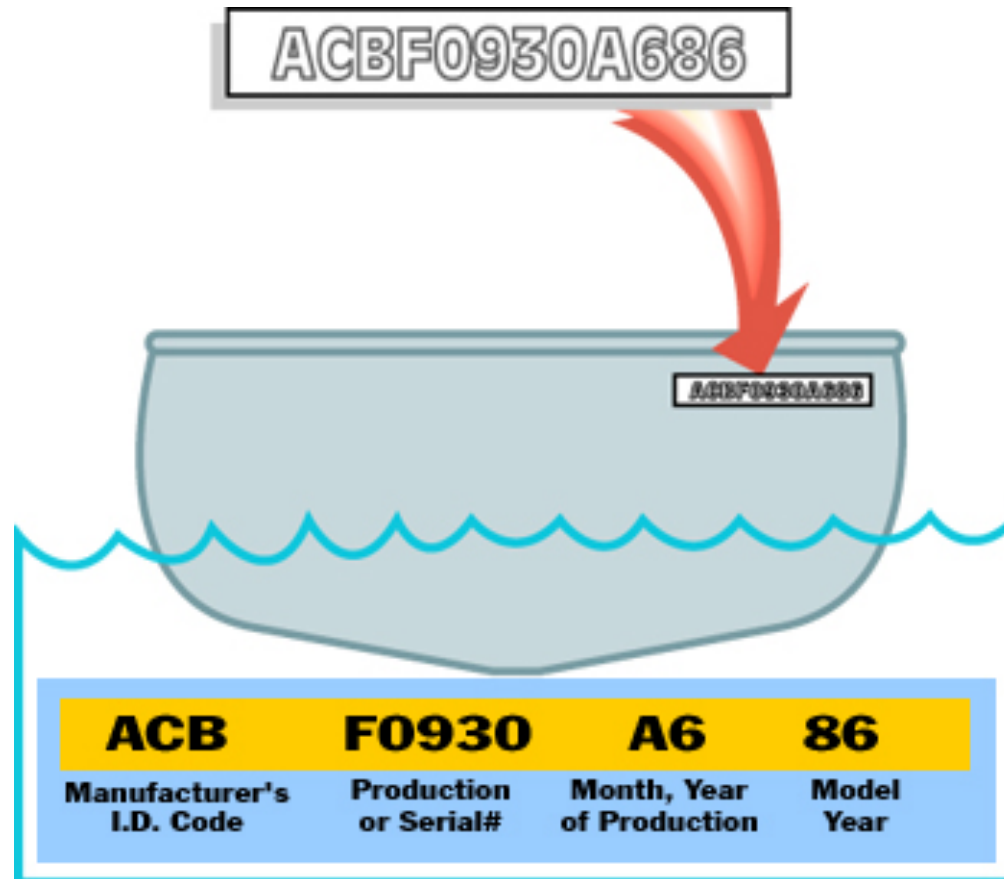


Federal Requirements Registration and Numbering

In lieu of state specific registration;
Publicly Owned Government Vessels may identify the boat
with conspicuous labeling and/or bureau emblems.



Hull Identification Number



(Required on vessels built after 1972)

Federal Carriage Requirements

Equipment Requirements are determined by the Vessel Length, Propulsion, Configuration and Number of People on the Vessel.



Federal Requirements for PFDs

All boats must have:

- One Type I, II, III, or V for each person on board

Boats 16-ft or longer must also have:

- One Type IV in addition to above



PFD Inspection Conditions

- Must be USCG Approved
- Must be Good & Serviceable
- Must be Readily Attainable
- Must be worn in some circumstances
- Designed functions can't be altered



Personal Flotation Devices

Five types of PFDs



Type I PFD

Offshore Life Jacket

- Most buoyant of PFD's (22 lbs.)
- Effective in ALL waters, especially rough
- Designed to turn most unconscious wearers face-up



Type II PFD

Near-shore Buoyancy Vest

- Intended for calm, inland water
- Chance for quick rescue
- Designed to turn some unconscious wearers face-up
- 15.5 lbs of buoyancy



Type III PFD

Flotation Aid

- Typically for calm, inland water
- Chance for quick rescue
- Wearers must turn themselves face-up
- Can tilt head back to avoid face-down
- 15.5 lbs of buoyancy
- Float coat, work/recreational vest



Common Type III Designs



Type IV PFD

Throwable Device

- Buoyant cushions, ring buoys, horseshoe buoys
- Designed to be thrown to person in water
- Must be grasped and held until rescue
- Not designed to be worn
- **MUST BE IMMEDIATELY AVAILABLE!**



Throwable Devices



Type V PFD

Special-Use Device

- Intended for specific activities
- May be worn instead of another PFD
- Some provide hypothermia protection (e.g., immersion suit)



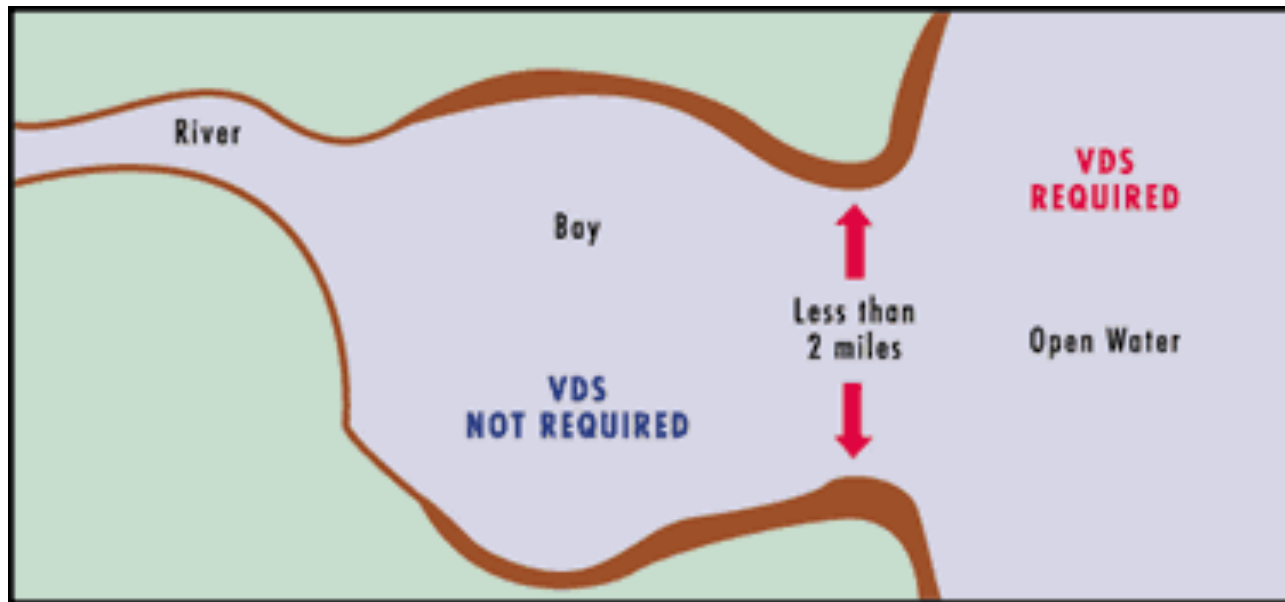
Federal Requirements

Visual Distress Signaling Devices



Visual Distress Signals

For use in coastal waters, the Great Lakes, and the high seas.



**Must be USCG Approved, Readily Attainable, Dry-
Stored, Current within Date of Expiration**

Visual Distress Signals

Vessels less than 16':
required to carry approved
VDS for night time use.

Vessels 16' - 65':
required to carry approved
VDS for ***both*** day time and
night time use.

Standard minimum Requirement:

- 3 Day & 3 Night Pyrotechnic
- 1 Day & 1 Night Non-Pyro
- Or any combination of above

Refer to Quick Reference Chart pages 42-43



Federal Requirements

Fire Extinguishers



Motorboats are required to carry one or more fire extinguisher(s)

Fire Extinguishers

Required on motorboats if there is any space where Flammable Materials or Vapors can present a Fire Hazard!

- Closed compartments
- Areas where portable fuel tanks may be stored
- Permanently installed fuel tanks
- Closed living spaces



Fire Extinguishers

Fire Classes

- **Class A**
combustible
solids like
wood



- **Class C**
electrical



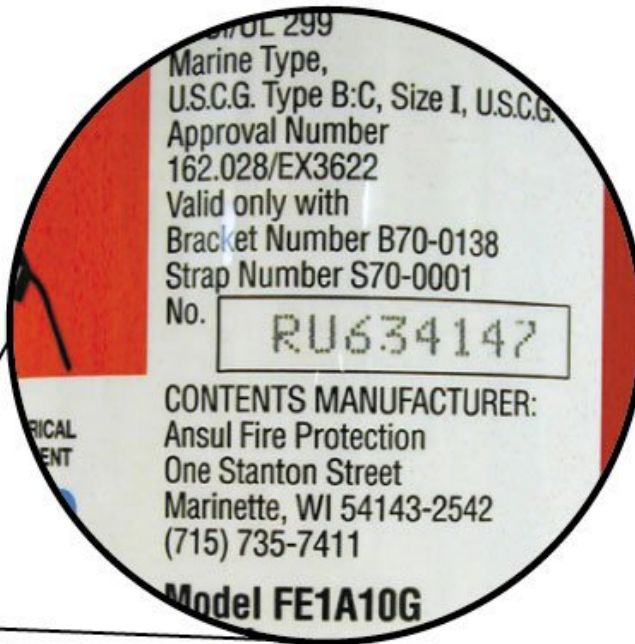
- **Class B**
flammable
liquids like
gasoline



- **Class D**
combustible
metals like
magnesium



Fire Extinguisher Inspection



Example Label:

- Type of Fire(s)
- Extinguishing Agent
- Size of Extinguisher
- USCG Approval #
- Servicing Requirements
- Bracket Requirements



Approved Agents and Size Comparison

Extinguisher Type	Class of Fire	Size/Lbs		Rationale:
		B-I	B-II	
CO2	B,C	4	15	High pressure gas agent, cools and displaces oxygen, ideal for extinguishing electrical fires
Halon or Halotron	A,B,C	2.5	10	High pressure gas that displaces oxygen and vaporizes quickly. <i>(Typically fixed/installed in enclosed machinery spaces)</i>
Dry Chemical Sodium/Potassium Bicarbonate or Mono Ammonium Phosphate	A,B,C	2	10	Pressurized powder agent, smothers fuel base. Highly corrosive on marine parts and electronics.
Foam- AFFF Aqueous Form Filming Foam	A,B	1.2	2.5	Water based agent, quenches, cools, blankets and smothers, can separate the vapor layer in class 'B' fires.



Carriage Requirements

Minimum Number of Hand-Portable Fire Extinguishers Required

Vessel Length	No Fixed System	With Fixed System
< than 26'	1 B-I	0
26' to less than 40'	2 B-1 or 1 B-II	1 B-I
40'-65'	3 B-I or 1 B-II and 1 B-1	2 B-I or 1 B-II

DOI and bureau policies regarding fire extinguishers exceed Federal requirements for recreational vessels

Federal Requirements

Ventilation and Fire Prevention

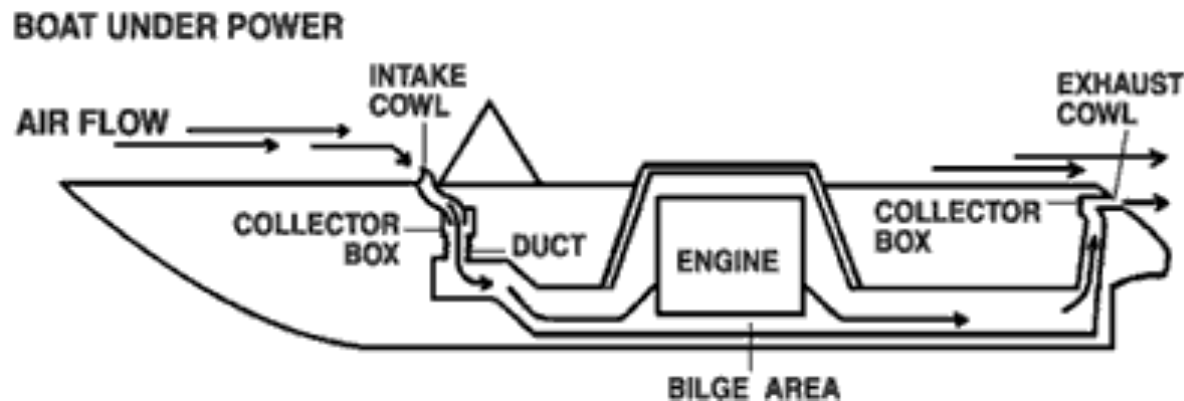


Ventilation Standards:

All inboards engines and enclosed compartments that may trap flammable vapors must have a ventilation system

Two ventilation-system types

- Natural
- Powered



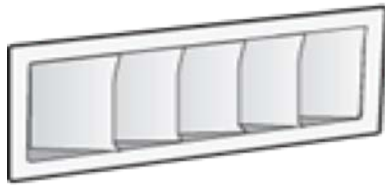
Ventilation Systems

- Exhaust openings must originate in the lower third of the bilge
- All openings in a compartment must be above the normal bilge line
- If blowers are attached they must be operational



Natural Ventilation System

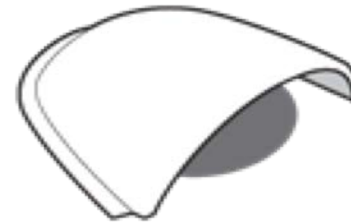
Consists of at least one intake and one exhaust cowl.



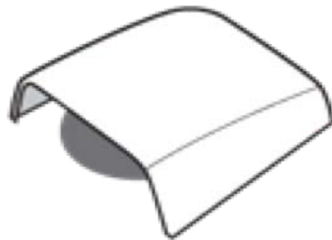
louvers/openings



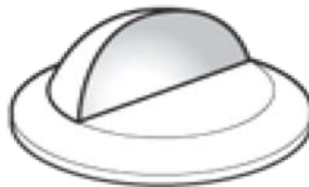
funnel



clamshell



cowl



plastic vent



cabin-top vent



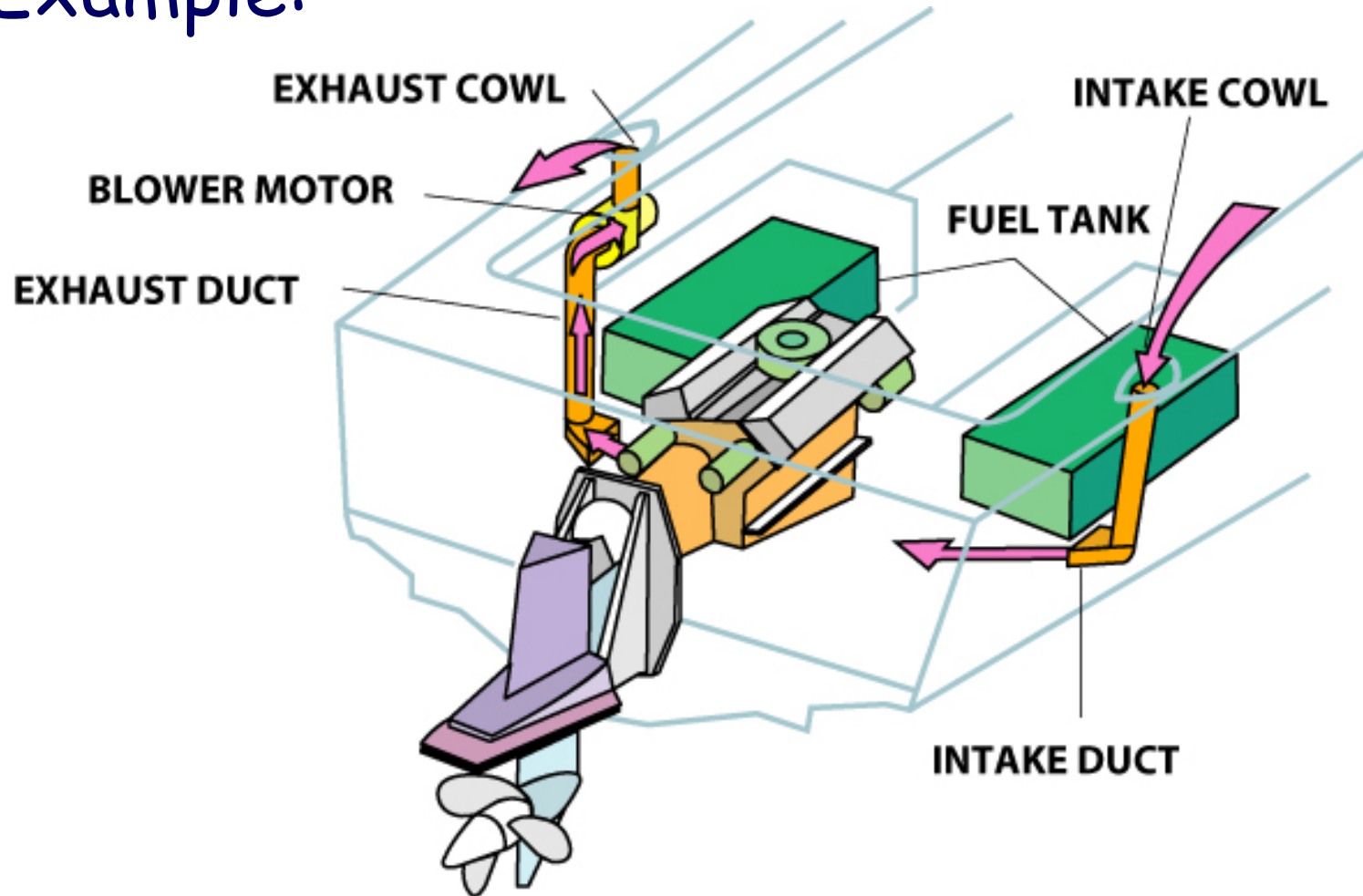
Natural Ventilation System

Natural system required:

1. For the engine box & connecting compartments
2. Where fuel tanks are stored or mounted & connecting compartments
3. Where there are electrical devices not ignition protected

Powered Ventilation System

Example:



Powered Ventilation System

Required for compartments with a remote started gasoline engine:

WARNING

**GASOLINE VAPORS CAN EXPLODE, RESULTING IN INJURY OR DEATH
BEFORE STARTING ENGINE:**

- Check engine compartment bilge for gasoline vapors, and
- Operate blower for four minutes, and
- Verify blower operation

**RUN BLOWER WHEN BOAT IS OPERATING
BELOW CRUISING SPEED**



Federal Requirements

Backfire Flame Arrestor

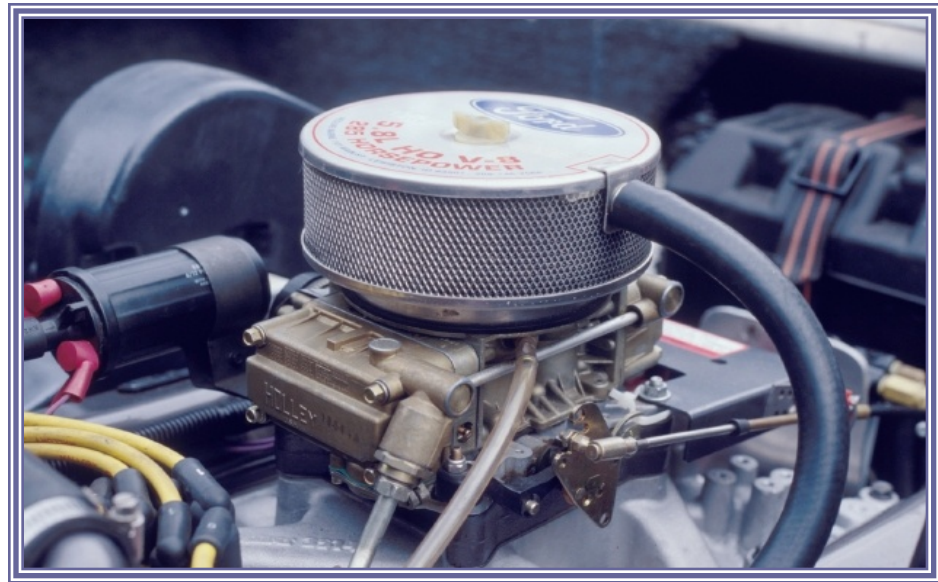
All gasoline engines, except outboards, installed after April 25-1940, must have a backfire flame control device.

Must be:

U.S.C.G. Approved
or meet

SAE J-1928

U.L. 1111 standards



Cowls, scoops and air fuel induction systems are acceptable.

Federal Requirements

Sound Producing Devices



Horns / Bells & Whistles

Sound Producing Devices

All vessels are required to carry some efficient means of producing a 4-6 second sound signal and audible for at least $\frac{1}{2}$ nautical mile/ (1,000yds).

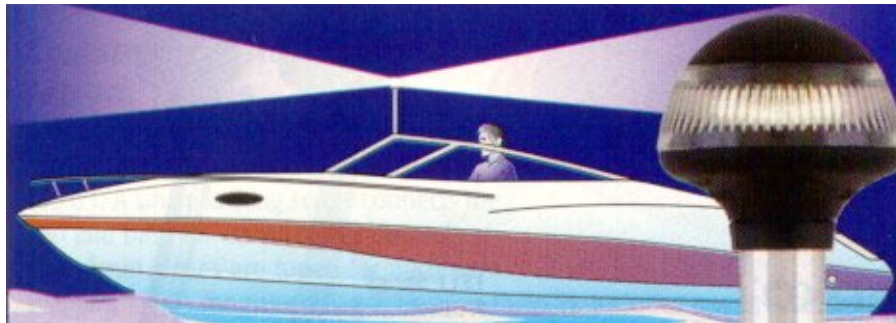
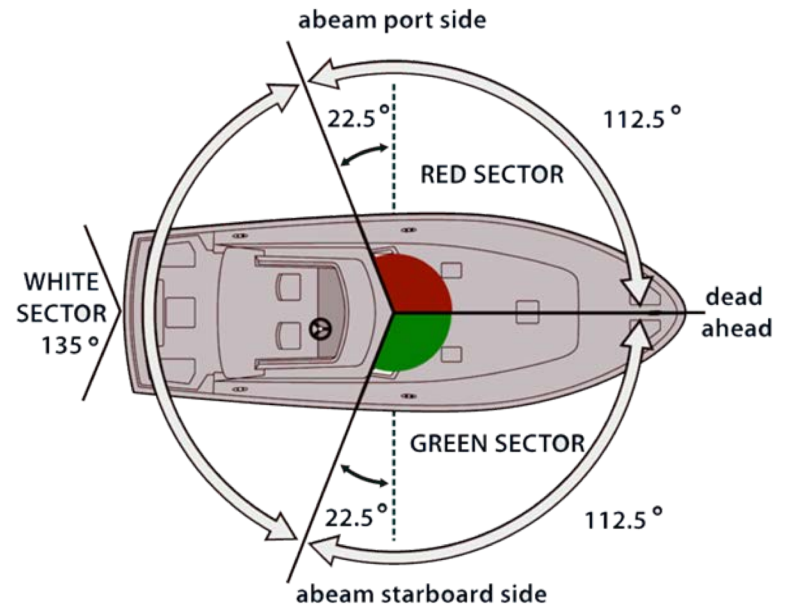
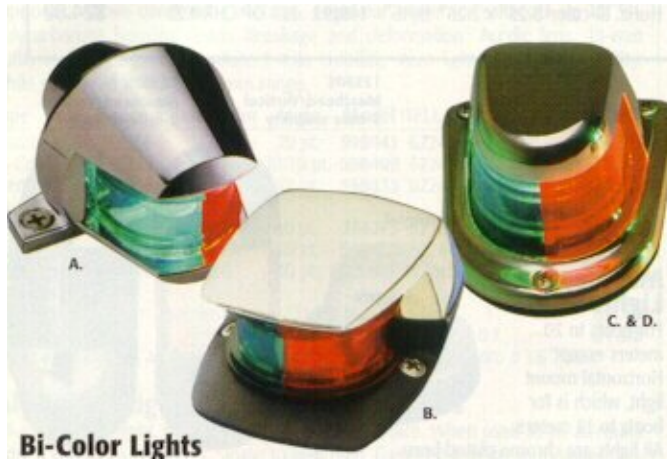
Larger vessels, > 65.6', must also carry a bell.

Signaling Devices



Federal Requirements

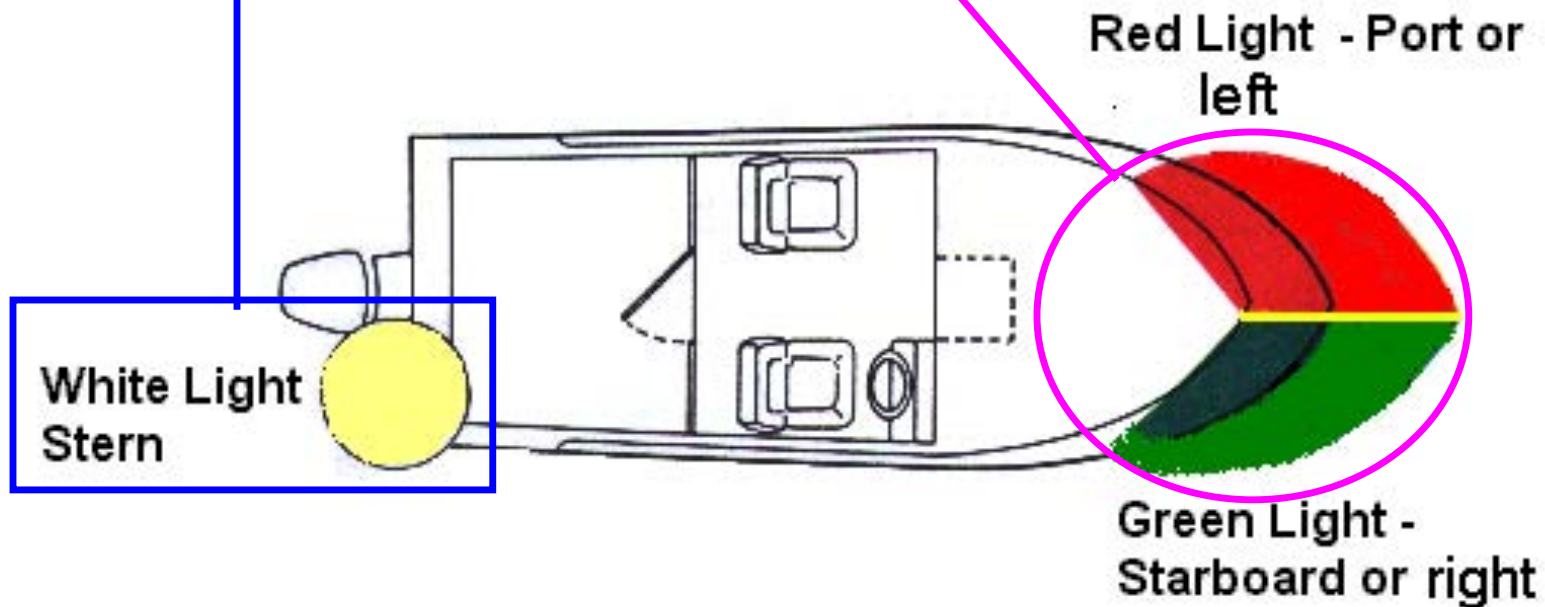
Navigation Lights



Navigation Lights Configuration

- White light visible from every direction

- Red and Green lights visible in 225 degree arc combined



Light-Use Requirements

When Running and when at Anchor:





Light-Use Requirements

Navigation Lights must be on when operating;

- Between sunset and sunrise
- During periods of restricted visibility.

All-around must be on when at anchor.

- Anchor light exceptions:
 - a) Boats <7-m (23') unless in or near narrow channel, fairway, anchorage, or where boats normally navigate;
 - b) Boats <20-m (65'7") if in special anchorage areas in inland waters.

Federal Requirements

Pollution Regulations & Waste Disposal



SOS/MARPOL Trash Placard

Required on vessels 26 ft and larger

Under the MARPOL agreement and U.S. federal law, it is illegal for any vessel to discharge plastic or garbage containing plastics into any waters. Additional restrictions on dumping non-plastic waste are outlined below. All discharge of garbage is prohibited in the Great Lakes or their connecting or tributary waters. Each knowing violation of these requirements may result in a fine up to \$500,000, and up to 6 years imprisonment.



The diagram illustrates the zones for trash disposal from a vessel. It features a blue background representing the ocean, with white lines indicating distances from the shore. Three white boxes with red text are placed at different distances from the shore, each containing specific disposal rules. A small white boat is shown in the water, and a larger white ship is shown further out. A red banner at the bottom contains the slogan 'LET'S ALL DO OUR PART TO PROTECT THE OCEANS!' and a small logo.

3 nautical miles from shore and anywhere in U.S. Lakes, Rivers, Bays, Sounds.
ILLEGAL TO DUMP Plastic
All other trash

3 to 12 nautical miles offshore
ILLEGAL TO DUMP Plastic
Dunnage, lining & packing materials that float. All other trash if not ground to less than one inch.

12 to 25 nautical miles offshore
ILLEGAL TO DUMP Plastic
Dunnage, lining & packing materials that float.

Outside 25 nautical miles offshore
ILLEGAL TO DUMP Plastic

State and local regulations may further restrict the disposal of garbage.

LET'S ALL DO OUR PART TO PROTECT THE OCEANS!

Oil Pollution Placard

5"x8" Placard Required on vessels
26 ft and larger



Must be posted near bilge switch and discharge controls!



Waste Management Plans

Required for vessels > 40' with a galley and berthing facility

VESSEL WASTE MANAGEMENT PLAN

All crew and persons onboard this vessel must dispose garbage and waste in the trash and recycling receptacles provided in the galley, berthing and machinery spaces. The receptacles will be emptied daily, or upon order from the captain, and stored in the aft compartment until the vessel returns to shore. The first mate and engineer are hereby charged with the proper removal and disposal at the appropriate shoreside facilities.

~By order of the Captain~

Marine Sanitization Devices

Designed specifically for marine applications and require USCG approval certifications



Holding & Treatment Tank



Marine Toilet



Discharge Pump



Marine Sanitization Devices

Installed toilets are required to be equipped with a MSD and in operable condition.

"No Discharge Zones" - Areas where waste discharge is prohibited. Valves must be locked or toilet access secured.

Porta Potty - **Is not a MSD** and does not require USCG certification.

All waste must be disposed of at an official pump out station or approved disposal facility.

More information at: <http://www.uscg.mil/hq/gm/mse/msd.htm>

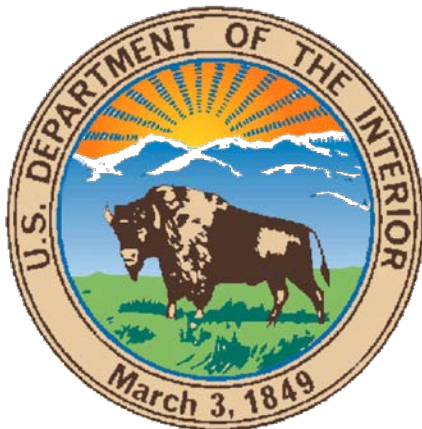
DOI Policy Requirements

General:

USDOl Policy Requires MOCC / PFD's

Specific:

Individual Bureau Policies & Field Areas
Require Additional Equipment and Practices





Policy Recommended Items

Additional Equipment & Supplies to be carried aboard:

- VHF-FM Marine Radio
- E.P.I.R.B. (Emergency Position Radio Beacon)
- Anchor(s) / Line and ground tackle
- Bilge Pump and/or Bailing Device
- Compass
- Charts/Publications and Navigation Tools
- Mooring Lines and Heaving Lines/Throw Bags
- First Aid Kit
- Fenders and Boat hook(s)
- Tool Kit and Spare Parts
- Extra Fuel and Oil and Absorbent Materials
- Spare Battery or Jumper Pack
- Spare propeller/s
- Alternate means of propulsion (oars, paddles, kicker engine)
- Flash Light w/ Batteries
- Search Light / Radar
- Detectors and Alarms (CO, Fire, High Water etc..)
- Signal Mirror, Die Markers, Chem-Lights, Extra Flares
- Tow Line, Bridle and Hardware
- Sun screen and sun glasses
- Survival gear (exposure suit, space blanket, shelter, fire making tools, etc.)
- Extra clothing, Food and Water
- Cargo Net, Webbing, Binoculars
- Cell Phone
- AM/FM Radio
- MISSION SPECIFIC ITEMS.....



Questions on Federal Requirements?

Documentation / Registration and
Numbering
Personal Flotation Devices (PFD's)
Visual Distress Signals
Fire Extinguishers
Ventilation
Backfire Flame Control
Sound Producing Devices
Navigation Lights
Pollution Regulations
Policy Recommended Equipment