

Federal Boat Management Guide

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Federal Boat Executive Committee and the
General Services Administration

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A. Introduction

Watercraft of all shapes and sizes are used by Federal agencies to accomplish a wide variety of missions. To support those agencies using watercraft, the General Services Administration (GSA) in partnership with the Federal Boat Executive Committee (FBEC) and the Interagency Committee for Property Management (ICPM), offers this boat management guide as a suggested framework for developing management policies and operational program standards for Federal boat managers. While the information in this guide may also apply to watercraft 65 feet or longer (referred to as “vessels”), this guide is specifically focused on watercraft that are less than 65 feet in length (referred to as “boats” in this document).

Federal boats are generally exempt from many of the regulations that apply to private recreational and commercial boats. Consequently, although based upon those regulations, compliance with the information contained in this document by Federal agencies is strictly voluntary. However, regardless of the contents of this guide, agencies should be aware that their boat programs and operations are still subject to any legal requirements that may apply. At the very least, this guide strongly suggests that agencies implement a management structure that is responsible for the effective administration, operation, maintenance, safety, operator/crew training, and financial needs of the agencies’ boat fleet.

In addition, this guide suggests that agencies' standards should identify the risks that may not be addressed or identified under the Federal Management Regulation (FMR) or other government-wide regulations, but which are uniquely associated with boat operations. This guide also suggests that agencies should meet or exceed the standards contained in the FMR or U.S. Coast Guard guidance. Finally, as stewards of tax-payer provided assets, agencies are encouraged to create the highest standards possible for the management of their boat programs.

We see this document as “living” guidance that is designed to evolve with improvements to management techniques, best practices, or technology within the boating world. In addition, GSA and the FBEC will continually review this guide in order to enhance the clarity and usefulness of the information contained herein. Consequently, the FBEC and GSA encourage suggestions for improvement.

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B. Applicability

This document applies to Federal agencies that own and/or operate boats exclusively in the service to the Federal government for the conduct of federally funded governmental missions and official business. This guide strongly encourages agencies to establish the standards and controls necessary to manage these taxpayer provided assets as effectively and efficiently as possible.

In addition, although it may contain helpful information, this document does not apply to tactical boats, vessels, warships, and submarines owned or operated by the Department of Defense (DOD). This document also does not apply to state government, local government, academic, or commercial boats.

Finally, this document does not supersede or relieve any agency of the requirements to comply with any existing U.S. and U.S.-ratified international laws, regulations, policies, and directives, nor the laws and regulations of state and local governments and jurisdiction in which the boat(s) may be stationed or operating.

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C. Useful Definitions

Federal agency boat managers may find the following definitions helpful for the management of their boat programs and operations.

Airboat: A shallow draft boat driven by an airplane propeller and steered by an airplane rudder.

Demise charter: A lease of a vessel in which all control is relinquished by the owner to the charterer, and the charterer bears all the expenses of operation.

Federal Boats: For the purposes of this guide only, Federal boats are public boats owned/leased and operated by Federal agencies (excluding the Department of Defense) that are less than 65 feet in length. Boats are further broken down into the following categories:

- Large Boats- craft between 45 and 64 feet, 11 inches;
- Medium Boats- craft between 25 feet and 44 feet, 11 inches;
- Small Boats- craft less than 25 feet in length.

Federal Vessels: For the purposes of this guide only, Federal vessels are public vessels owned/leased and operated by Federal agencies (excluding the Department of Defense) that are 65 feet or more in length.

Barge: A non-powered vessel with a flat bottom, typically used for transport or a work platform and moved by a tugboat. A barge may also be used for living quarters.

Canoe: An open craft or open boat with pointed ends that is propelled with a single-bladed paddle.

Captain: (synonymous with definition of “pilot”, below)

Catamaran (Cat): Any twin hulled boat, whether powered by motor or sail. A cat-hulled boat is more efficient through the water than an equivalent size monohull. Cats are more commonly powered by sails rather than motors.

Commercial Service: “Any type of trade or business involving the transportation of goods or individuals, except service performed by a combatant vessel.” For more information, see 46 U.S.C. 2101.

Crew Member: Personnel qualified to assist in the safe operation of a vessel.

Dinghy: Small boat used to service a larger boat

Ferry Boat: Boat used to transport people and/or cars across a waterway.

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Fireboat: A boat capable of providing fire-fighting capabilities for fires on other boats or on land.

Kayak: Similar to a canoe, usually designed for a single paddler, and generally quite seaworthy. A kayak is typically propelled by a double-bladed paddle.

Passenger: an individual carried on a boat/vessel except: the owner or individual representative of the owner; the pilot or captain; a member of the crew engaged in the business of the vessel who has not contributed consideration for carriage and who is paid for on board services; or, if chartered, an employee of the charterer engaged in the business of the charter. For more information, see 46 U.S.C. 2101.

Pilot: A person actively engaged in controlling a vessel at any given time. This is usually the captain, or a designated representative (a "mate"). Also may refer to a person who is familiar with a particular area of water, and who is hired to help control a vessel in waters that may not be familiar to the captain or crew. Most large harbors require that visiting vessels hire a local harbor pilot. Note that even though a pilot other than the captain may be at the controls, the captain is still in charge and ultimately responsible for the vessel.

Row Boat: A boat propelled by a person or people with oars.

Power boat: A boat primarily propelled by an engine/engines, includes:

- Runabout - Small and fast recreational boat
- Cruiser – Mid-size powerboat with cabin and overnight facilities
- Trawler - Long range powerboat, capable of crossing large expanses of water.
- Racing boat - Boat designed for speed. Colloquially called "Cigarette" boat, which is a manufacturer's brand name.
- Tug boat - Work boat designed to tow barges or assist large ships entering or leaving a dock.
- Personal Watercraft (PWC)- A boating version of a motorcycle. Often commonly called a "Jet Ski", a manufacturer's brand name.

Public Boat or Vessel: a boat or vessel that is owned, or demise chartered, and operated by the United States Government and is not engaged in commercial service. A demise charter temporarily transfers full control and possession of the vessel to the government, and the government assumes legal and financial responsibility for the vessel.

Registration: a certificate issued pursuant to rules in 33 CFR part 173, a record under the maritime laws of a foreign country, or a certificate issued by a political subdivision of a foreign country.

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Safety Management System: means a structured and documented system enabling vessel personnel to effectively implement the applicable safety and environmental protection policies. The safety management system must document: (1) Safety and pollution prevention policy; (2) Functional safety and operational requirements; (3) Recordkeeping responsibilities; and (4) Reporting responsibilities. In addition, a safety management system must also be consistent with the functional standards and performance elements of International Maritime Organization (IMO) Resolution A.741(18).

Sail Boat - A boat primarily propelled by the wind.

Submersible vessel: A vessel that is capable of operating below the surface of the water.

Vessel: Includes every description of watercraft or other contrivance capable of being used as a means of transportation on water, but does not include aircraft. For purposes of this document, vessels refer to watercraft that are 65 feet or longer in length.

D. Boat Acquisition

1. Acquisition Planning

Acquisition planning is a means of preparing, developing and acquiring the information you need to: design the acquisition project; assess the benefits, risks, and risk-adjusted life-cycle costs of alternative solutions (such as rent/lease vs purchase); and establish realistic cost, schedule, and performance goals for the selected alternative, before either proceeding to full acquisition of the capital project or terminating it.

Planning must progress to the point where you are ready to commit to achieving specific goals for the completion of the acquisition before preceding to the actual acquisition phase. Information gathering activities may include market research of available solutions, architectural drawings, engineering and design studies, and reviewing prototypes.

Planning is a useful segment of a capital project. Depending on the nature of the project, one or more planning segments may be necessary. During the planning phase, when contemplating a performance-based acquisition, agency program offices should evaluate their service requirement and determine:

- Whether a performance-related baseline problem exists (cost, quality, timeliness, impact to agency mission);
- The level of risk associated with the service or product not being optimally provided (importance to mission of the service being provided optimally);
- The level of confidence the agency has in its own "performance work statement or statement of objectives document" to solve the baseline problem;
- The amount of risk the agency wants to assume for managing the service impact on its own versus shifting to a vendor; and
- The readiness of the program to measure the impact of the service on its program performance goals/mission, as well as the readiness of Program staff to participate in the PBA process.

Before you acquire a federal boat or vessel, you must comply with the current version of OMB Circular A-76. If you are acquiring a federal boat or vessel, you

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must assure that the private sector cannot provide a chartered boat or vessel or related services more cost-effectively.

Part 7 (section 300) of the Office of Management and Budget's Circular A-11 establishes policy for planning, budgeting, acquisition and management of Federal capital assets, and instructs agencies on budget justification and reporting requirements for major non-information technology capital assets. The policy and budget justification and reporting requirements apply to all agencies of the Executive Branch of the Government subject to Executive Branch review. An exhibit 300 must be submitted for all major investments in accordance with Part 7 (section 300) of Circular A-11.

Capital asset planning via the Exhibit 300 process is intended to help boat managers better understand their responsibilities with respect to cradle-to-grave asset management and budgeting. As mentioned, cradle-to-grave, life cycle management and acquisition planning requirements are contained in OMB's Circular A-11, Part 7 (Exhibit-300) and OMB's Capital Programming Guide. These documents can be accessed by visiting: http://www.whitehouse.gov/omb/circulars_a11_current_year_a11_toc/

In addition to the OMB provided documents to help agencies through the Exhibit 300 process, GSA has also developed the "Aircraft & Vehicle Capital Asset Planning Desk Guide". While this current draft focuses on motor vehicles and aircraft, the questions also apply to boat and vessel investments. The desk guide can be accessed by visiting http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_BA_SIC&contentId=24717 and downloading the "E-300 Desk Guide".

B) General Services Administration Schedule

The General Services Administration's Schedule 84, "Total Solutions for Law Enforcement, Security, Facilities Management, Fire, Rescue, Clothing, Marine Craft and Emergency/Disaster Response", provides agencies a procurement mechanism to acquire marine craft and equipment, repair services, and other marine related products and services.

Information regarding Schedule 84 and these marine-related line items can be accessed by visiting: <http://www.gsa.gov/EligibleMain/scheduleSummary.do?scheduleNumber=84&id=143>

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A break down of the categories available under Schedule 84 follows:

Line Item 260 10 *Marine Craft Electronics Bridge and/or Other Marine-specific Electronic Equipment and Marine Craft Safety Equipment (other than Personal Flotation Devices)* - Includes all types of electronic-type equipment used specifically in or on Marine Craft such as: position finders, specialized marine radios, specialized marine computer hardware, monitors, beacons, electronic sounding equipment and all types of marine craft safety equipment.

Line Item 260 11 *Marine Craft Trailers and Trailer Accessories/Spare Parts* - Includes all types of marine craft trailers, trailer equipment and supplies.

Line Item 260 13 *Marine Craft Modifications, Marine Craft Repair and Marine Craft Spare Parts* includes repair of all types of Marine Craft and other products covered under this Schedule - including, but not limited to, marine craft boat modification packages, repair of engines, floating barriers, booms, floats and moorings. In addition, this line item Includes all types of spare parts and replacement parts and accessories for marine craft not covered elsewhere under this schedule. Also includes consulting and training services related to Marine Craft Modifications and Marine Craft Repair.

Line Item 260 14 *Harbor/Waterfront Security Products and Services and Professional Marine Security Services* – Includes all types of Harbor and Waterfront security products as well as, but not limited to, surveillance equipment and monitoring equipment utilized specifically in the harbor/Waterfront or Marine Craft environment. Also includes, but not is not limited to, any type of professional marine security services, and consulting and training related to Harbor/Waterfront Security or other Professional Marine Security (excludes marine transportation).

Line Item 260 01 *Boats, Powered* - Includes Parts & Accessories

Line Item 260 03 *Boats, Non-powered* - Includes Life Rafts, Options and Accessories

Line Item 260 06 *Boats, Inflatable, Powered and Non-powered* - Includes Options and Accessories

Line Item 260 09 *Inboard and Outboard Engines, Marine Diesel Propulsion Engines (Ranging in Horsepower from 150-4,000)* - Includes parts and accessories

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Line Item 260 12 Floating Marine Barriers and Booms, Floats, Perimeter Floats, and Moorings - Includes parts and accessories

Line Item 260 98 *Ancillary Services*

C) Renting or Leasing Boats/Equipment (with or without Captain Services)

The acquisition plan must address and consider the alternatives to acquiring the needed services. Specifically, the rental or lease of boats should be considered as an alternative to the purchase of boats.

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E. Identifying and Registering Boats

A government-wide standard for the identification and/or registration of Federal boats does not exist. Thus, agencies are free to identify and/or register their boats to support their specific management and mission needs. Depending on the size their boats, agencies may also want to consider the following information:

1) While boats operated by the Federal government are exempt from these requirement (unless the boat is recreational in nature), Federal boat managers may opt to follow the guidelines found in the Code of Federal Regulations (CFR) 33-46.173, "Vessel Numbering and Casualty and Accident Reporting".

2) The guidelines of the National Vessel Documentation Center (NVDC) apply to Federal boats of at least 5 net tons. As a component of the United States Coast Guard, the NVDC processes vessel documentation transactions and maintain vessel documentation records. Vessel documentation is a national form of registration. Documentation provides conclusive evidence of nationality for international purposes, provides for unhindered commerce between the states, and admits vessels to certain restricted trades, such as coastwise trade and the fisheries.

Under CFR 46-67.5, any vessel of at least five net tons wholly owned by a citizen or citizens of the United States is eligible for documentation under this part. This includes, but is not limited to, vessels used exclusively for recreational purposes and vessels used in foreign trade. Vessels requiring documentation are described in CFR 46-67.5 as any vessel of at least five net tons which engages in the fisheries on the navigable waters of the United States or in the Exclusive Economic Zone, Great Lakes trade, or coastwise trade, unless exempt under CFR 46-67.9(c), must have a Certificate of Documentation bearing a valid endorsement appropriate for the activity in which engaged.

For purposes of vessel documentation, a governmental entity (CFR 46-67.41) is a citizen for the purpose of obtaining a vessel document if it is an entity of the Federal Government of the United States or of the government of a State.

- More information can be obtained from The National Vessel Documentation Center by visiting:
<http://www.uscg.mil/hq/cg5/nvdc/default.asp>

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- Title 46 CFR part 67 (Vessel Documentation regulations) may be found in text and .pdf formats by visiting:
www.access.gpo.gov/nara/cfr/waisidx_01/46cfr67_01.html.

3) Federal boat managers may elect to register their boats within the State(s) in which the boats will primarily be operated. State and local government information can be readily obtained from the National Association of State Boating Law Administrators (NASBLA). NASBLA is a national nonprofit organization that works to develop public policy for recreational boating safety. NASBLA represents the recreational boating authorities of all 50 states and the U.S. territories. NASBLA offers a variety of resources, including training, model acts, education standards and publications. For more information, visit <http://nasbla.org/i4a/pages/index.cfm?pageid=1>.

NASBLA also offers an online Reference Guide to State Boating Laws at: <http://www.nasbla.net/referenceguide/>. This guide attempts to answer questions related to recreational boating safety public law. Topics covered include boating education, operator age, water skiing, boat noise, numbering & titling, personal watercraft, boating under the influence, personal flotation devices and more. The data in the current guide was supplied by the states and collectively updated during 2007. Data can also be updated by boating law administrators (or designates) for the individual states at anytime. Thus, users should be aware that the information contained in the Reference Guide is subject to change at any time and facts should be verified with individual state boating law administrators if there are any questions.

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F. Managing Boats

Boats are no different from other Federal personal property and should be properly recorded and inventoried within a property management system. The property management system should be the tool through which agencies satisfy the administration, operation, safety, training, maintenance, and financial requirements of their boat fleets. For example, the US Customs and Border Protection (CBP) employs the SAP system for personal property management (acquisition through disposal) and fuel expense/budget management. In addition, CBP employs the Customs Automated Maintenance and Inventory Tracking System (CAMITS) to manage all aspects of the fleet; e.g., acquisition, location, maintenance, operation, and disposal.

For further guidance, visit GSA's Personal Property Management web page at: <http://www.gsa.gov/personalpropertypolicy>

G. Operating Boats

Agencies need to deploy and operate their assets to accomplish their missions in the most effective, efficient, and safe manner possible. Consequently, agencies are in the best position to determine how best to operate their assets. However, here are some additional items for agencies to consider:

1. Official use

Official use of a Government boat is using a Government boat to perform an agency's mission(s), as authorized by that agency. All Federal boats shall be used for official government purposes only. In determining whether or not a boat's use is official, agencies should consider factors such as, but not limited to, whether:

- The use is essential to the completion of an operation, mission, or other legitimate agency function or activity; and
- The use is consistent with the purpose for which the boat is intended.

2. Rules of the Road

The US Coast Guard's Navigation Center has created a web page that combines the International and Inland Navigation Rules, making comparison between the two sets of Rules is easier. This page can be found at:

http://www.navcen.uscg.gov/mwv/navrules/rotr_online.htm

While all efforts have been made to ensure these online Navigation Rules are complete and accurate, the U.S. Coast Guard advises that it makes no claims, promises or guarantees about the accuracy, completeness, or adequacy of the contents of and expressly disclaims liability for errors and omissions in the contents of this web site. The Coast Guard recommends that those seeking official versions of the Navigation Rules should refer to the International Navigational Rules Act of 1977 (Public Law 95-75, 91 Stat. 308, or 33 U.S.C. 1601-1608), and, the Inland Navigation Rules Act of 1980 (Public Law 96-591, 94 Stat. 3415, 33 U.S.C. 2001-2038).

3. Travel on Government boats

While there is no specific language governing the use of Federal boats for official travel, the Federal boat managers should be aware of the Federal Travel Regulation language (41 CFR 301-10.200 to 301-10.266) covering the

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authorized use of Government “vehicles” for travel purposes. The Federal Travel Regulation can be accessed at www.gsa.gov/fttr.

4. Fueling Resources

GSA’s SmartPay® Program offers the mission-critical Ships’ bunkers’ Easy Acquisition (SEA Card®) program that provides the Military services and Coast Guard a means to procure bunker fuel and fuel related services. Federal Civilian Agencies are allowed to participate but must submit participation requests to the Department of Defense, Defense Energy Support Center, Government Fuel Card Program Management Office (GFC PMO). The GFCPMO can be contacted at:

SEA Card® Program Manager

Telephone: 703-767-0687

DSN: 427-0687

FAX: 703-767-8746

<http://www.desc.dla.mil/DCM/DCMPage.asp?PageID=613>

The SEA Card® program allows for fueling at 300 ships’ bunker contract locations worldwide as well as permitting Open Market (OM) or local purchases at non-contract locations in a pilot program. More than 2,500 ports worldwide are covered for OM purchases. In addition, the following ancillary charges are authorized under the SEA Card® Program:

Demurrage

Backhaul

Overtime

Boom Fee

Fuel Surcharge

Wharfage

Laytime

The Defense Energy Support Center (DESC) purchases provides the Department of Defense and other government agencies with comprehensive energy solutions (fuel and other forms of energy) in the most effective and economical manner possible. More information about DESC’s fuel programs can be located at <http://www.desc.dla.mil/>.

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H. Shore-based Support for Boats

Agencies that normally operate boats in a specific area will probably have vendors identified when needed for repairs or other support services. However, agencies will want to assure that any vendor used for maintenance/repairs is capable of performing the marine work.

Agency boat managers should also be aware that shore support personnel (especially those that need to access government facilities) may have to register for a Transportation Worker Identification Credential (TWIC). The TWIC is a biometric credential that ensures only approved workers are eligible to enter a secure area of a Maritime Transportation Security Act-regulated port or vessel unescorted.

Those required to obtain a TWIC are...

- Company, vessel, and facility security officers and personnel responsible for security duties are required to obtain a TWIC.
- Individuals who frequently access secure areas in the course of their employment will also need to obtain a TWIC. These populations include but are not limited to:
 - Non-credentialed mariners in vessel crew -Longshoremen
 - Facility employees who work in a secure area -Drayage truckers
 - Truckers bringing/picking up cargo at a facility -Surveyors
 - Agents -Chandlers
 - Port chaplains -Other maritime professionals

More information on the TWIC can be obtained at from the Transportation Security Administration at:

[http://www.tsa.gov/what we do/layers/twic/index.shtm](http://www.tsa.gov/what_we_do/layers/twic/index.shtm)

Finally, agency managers who need shore support services may be able to obtain them through GSA's schedules program. The "DOCKSIDE FACILITIES MAINTENANCE, REPAIR SERVICES AND DRY DOCKING SOLUTIONS" schedule includes services for regular maintenance, general repairs, and/or a complete overhaul of federal marine boats. This schedule can be accessed at: <http://www.gsaelibrary.gsa.gov/ElibMain/ScheduleSummary?scheduleNumber=03FAC&x=9&y=12>

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The Special Item Numbers (SINs) can cover the full range of vessel sizes, from the smallest patrol craft to aircraft carriers.

- SIN 812-001 Dry Docking Services

Dry Docking Services include, but are not limited to, the lifting of vessels out of the water for inspection and maintenance, the repair of hull surfaces, and undocking after completion of work. Services also include providing all provisioning, labor, and materials for dry-docking operations for a variety of classes of marine vessels. Services can include:

- Floating dry docks;
- Graving dry docks;
- Marine railways;
- Vertical lifts; and
- Travel lifts and cranes to remove marine vessels from the water for inspection, testing, maintenance, and repair services.

- SIN 812-002 Dockside Maintenance and Repair Services

Dockside Maintenance and Repair Services include, but are not limited to, the performance of full inspection, testing, repair and maintenance services for federal marine vessels. These maintenance and repair services include:

- Preservation of ship structures;
- Deck-covering systems;
- Welding processes;
- Temporary hull access;
- Electrical and HVAC systems;
- Auxiliary machinery systems;
- Shipboard ventilation systems;
- Electrical rotating machines;
- Generators and motors;
- Propulsion systems; and
- Tank and void inspection, testing, repair, and maintenance.

The dry docking SIN includes, but is not limited to, providing all provisioning, labor and materials for dry docking operation of a variety of classes of marine vessels.

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I. Inspecting & Maintaining Boats

Agency boat managers should be aware that their new boats and motors have warranty periods. Agencies should make full use of that warranty if problems occur during its period.

Boat managers should also establish regular boat maintenance and inspection programs to ensure compliance with applicable U.S. Coast Guard requirements, manufacturers' warranty requirements, and agency-prescribed requirements. In addition, regular maintenance/inspection programs will increase the life span of the boat and improve the safety of the crew and passengers. At a minimum, maintenance/inspection programs should check the following items:

ENGINE:

Oil Leaks, Oil Pressure, Belts, Hoses, Transmission, check neutral safety switches, Fresh Water System, Salt Water System, Head Bolts, Hose Clamps, Anodes, Fuel Filter, Fuel Tank, Instruments, Gear Shift, Throttle/shift controls, Air Cleaner, alternator output, and Exhaust System

TOP SIDE/DECK:

Check steering, hatches, windlass, stanchions, chain plate, winch(es), steering, mast (if applicable), rigging (if applicable), cleats, sail furlers (if applicable), sails (if applicable), check sea cock drain, anchor, and davit(s).

ELECTRONICS:

VHF Radio, GPS, SSB Radio, Depth Sounder, Radar, Gauges, Radio Antenna, compass, All Connections, Fuses, and Auto Pilot.

ELECTRICAL:

12 Volt Supply, Shore Supply, Batteries, Generator, Running Lights, Cabin Lights, Head Lights, Alternators, Breakers, gauges lights, test CO monitor

SAFETY:

Life Jackets, Life Raft, Life Ring, Flares, First Aid Kit, Fire Extinguisher, Fume Detector, and Emergency Position Indicating Radiobeacons (EPIRBs).

ON BOARD SYSTEMS

Air Conditioner, Water Maker, Refrigeration, Stove, Washing Machine (if applicable), Solar Power (if applicable), and Propane Tank (if applicable).

TRAILERS:

Check brakes, tire wear and pressure, brake lights, trailer bunks, trailer tongue, and locking mechanisms.

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HULL:

Propeller(s), Propeller shaft(s), Shaft Packing, Rudder, Through Hull Fittings, Keel, Port Holes, and Paint

PLUMBING:

Fresh Water System, Salt Water System, restroom/head, sink, galley sink, bilge pump/bilge alarm, Float Switch, Hoses, Hose Clamps, shower (if applicable), water filters, Fresh Water Tank, Waste Holding Tank

Remember, operation of vessels with inoperable equipment should be avoided at all times.

Finally, as with all Federal personal property, agencies should use the appropriate record keeping procedures to record and track all maintenance actions; inspections; and when component parts were repaired and/or replaced. A good way to ensure proper maintenance and inspections is to maximum use of checklists with mechanic or inspector signatures on the appropriate files.

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J. Staffing and Training Boat Operators and Crew

Agency boat managers should establish minimum training requirements for personnel that operate/crew the boats, maintain the boats, and any other personnel associated with the management of boats, as required by or applicable to the agency's mission.

At a minimum, vessel operators/crew should receive training equivalent to that obtained through the US Coast Guard Auxiliary's Boating Skills and Seamanship (BS&S) course. The BS&S course is comprehensively designed for both the experienced and the novice boater. The course, now in its 13th edition published in 2007, consists of eight core required two hour lessons plus five elective lessons, providing up-to-date knowledge for handling boats in all conditions. Information on the BS&S course, along with a class finder, can be obtained by visiting:

http://nws.cgaux.org/visitors/pe_visitor/classes/boating_skills_and_seamanship.html

The BS&S course is based on the material found in the US Coast Guard's Boat Crew Seamanship Manual. This manual presents the approved methods and procedures for the conduct of Coast Guard boat operations. The Coast Guard Auxiliary also uses this manual for the conduct of vessel facility operations. The Boat Crew Seamanship Manual can be found under the Boat Crew Program Manuals heading at:

<http://www.uscg.mil/hq/cg3/cg3pcx/publications/comdtinst/default.asp>

Whether or not agencies take advantage of Coast Guard provided training, agencies should ensure that the training personnel do receive cover the following topics:

- Boat crew duties and responsibilities
- Crew efficiency factors
- Team coordination and risk management
- First aid
- Survival equipment and pyrotechnics
- Marlinespike seamanship
- Boat characteristics
- Boat stability
- Boat handling
- Basic maneuvering
- Communications
- Weather and oceanography

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- Aids to navigation
- Search and rescue
- Person-in-the-water recovery
- Towing
- Fire fighting, rescue, and assistance.

2. In addition to the Coast Guard, the Federal Law Enforcement Training Center's Marine Training Branch, and the Customs and Border Protection's National Marine Training Center train police professionals regarding how to safely and effectively work in and around the marine law enforcement environment. The training includes specialized instruction for marine law enforcement tactics, trailering, vessel handling skills, electronic and traditional navigation, and counter terrorism tactics used by marine law enforcement personnel. All of training programs are accredited with the Federal Law Enforcement Training Accreditation Board. Information on this training can be obtained by phone at 912-267-2334 or via email at FLETC-MarineTrainingBranch@DHS.gov.

3. While focused on crew of larger vessels, another training resource available through the Coast Guard is the National Maritime Center (NMC). The NMC is like a national Division of Motor Vehicles, but instead of licensing motorists, the NMC is licensing and credentialing Merchant Mariners. The NMC mission is to issue credentials to qualified mariners and approve training courses in the most efficient and effective way possible. Approximately 212,000 actively employed merchant mariners, who serve as crew members aboard vessels operating on America's waterways and the world's oceans, now receive the processing of their licenses and/or credentials through the NMC. Information regarding courses approved by the NMC can be found at: http://www.uscg.mil/nmc/approved_courses.asp. The center can also be contacted by visiting <http://www.uscg.mil/nmc/default.asp>

4. Finally, the Department of Interior offers the Motorboat Operator Certification Course (MOCC) several times a year throughout the country. The course, approved by the National Association of State Boating Law Administrators, gives participants the training required to permit operation of watercraft. It reviews minimum requirements for safe operation of motorboats and includes a review of legal requirements, preparations, navigation, operations, emergency procedures, rescue, self rescue, trailering, fire suppression and basic seamanship. The course includes both classroom and on-the-water instruction. There is an on-the-water practical exam during which the student must demonstrate certain skills to pass as well as a written exam with a passing grade of 70 required. Information regarding DOI's MOCC can be obtained by visiting: <http://training.fws.gov/EC/Resources/MotorBoat/mocc.htm#mocc>

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K. Managing for Safety on Boats

With lives and property at stake, Federal boat managers should establish safety programs, policies, procedures, and practices that enhance safety within their programs and operations.

1) Managing Risk

An important part of any safety program is the ability to manage risk. Risk analysis and risk management processes identify and mitigate hazards and provide procedures for managing risk to an acceptable level. The following information is provided to help boat managers tackle risk.

Risk is the chance of personal injury or property damage or loss, determined by combining the results of individual evaluations of specific elements that contribute to the majority of risk concerns. Risk generally is a function of severity and probability. While some general guidance is provided below, more Information on risk management can be obtained by downloading the Coast Guard Commandant Instruction 3500.3, "Operational Risk Management" at www.uscg.mil/directives/ci/3000-3999/CI_3500_3.pdf - 2007-07-24

Risk management information can also be obtained by visiting the Coast Guard at <http://www.uscg.mil/hq/cg5/cg5211/risk.asp>

General principles of Risk Management include but are not limited to:

- Everyone is responsible for managing risk
- Accept no unnecessary risk
- Accept necessary risk when benefits outweigh costs
- Make risk decisions at the appropriate level
- Make decisions at the appropriate level
- Managing risk is a continuous process

The basic steps in the Risk Management Process include:

- Identifying the mission or task to be accomplished
- Identifying the hazards and dangers to:
 - the personnel;
 - the boat;
 - environment; and
 - mission success.
- Assessing the risk of each hazard/danger
- Identifying options to avoid or mitigate the risk
- Evaluating Risk versus Gain
- Executing decision(s)
- Monitoring the situation

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One of the hardest aspects of risk management is assessing the risk associated with each identified hazard or danger. Many generic or industry-specific models exist for assessing risk. Agencies may have already developed their own risk assessment models for other aspects of their operations. If they haven't already done so other operational areas, agencies are urged to find or develop a risk assessment model for their boats that best meets the agencies' needs, capabilities, and mission requirements. A suggested risk assessment model can be obtained by downloading the Coast Guard Commandant Instruction 3500.3, "Operational Risk Management" at

www.uscg.mil/directives/ci/3000-3999/CI_3500_3.pdf - 2007-07-24

However, here are some common questions that agencies should ask during the risk assessment process:

- How much risk is appropriate?
 - To save a life?
 - To protect property?
 - To protect the environment?
 - To accomplish the mission?

- What can go wrong?
 - With equipment?
 - With personnel?
 - With the environment?
 - Do safe guards exist?
 - Are safe guards effective?

In addition, when assessing risk, agencies should consider the following list of common causes of injury and accidents in order to develop and implement logical, cost-effective risk control measures:

- (a) Human factors;
- (b) Structural failure;
- (c) Mechanical/systems failure;
- (d) Collision;
- (e) Allision;
- (f) Fire;
- (g) Inadequate stability;
- (h) Grounding; and
- (i) Hazardous material reactions.

Factors that may contribute to or influence risk include:

- (a) Boat design limits;

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- (b) Repair standards;
- (c) Stability tests and reports;
- (d) Emergency drills;
- (e) Safety systems;
- (f) Operator qualifications and training;
- (g) Night operations;
- (h) Proximity or probability of emergency assistance;
- (i) Embarked personnel;
- (j) Staffing levels;
- (k) Management and funding;
- (l) Inspection suitability;
- (m) Material condition;
- (n) Nature of operations;
- (o) Operating environment and weather;
- (p) Safety record.

2). Safety Management System.

A Safety Management System is a structured and documented system enabling Federal agencies to support their boat personnel in effectively implementing required safety and environmental protection policies. For each boat, the safety management system should document— (1) Safety and pollution prevention policy; (2) Roles and responsibilities of the boat operator(s) and crew; (3) Functional safety and operational requirements; (4) Recordkeeping responsibilities; and (5) Reporting responsibilities. In addition, agencies' safety management systems should be consistent with the functional standards and performance elements of International Marine Organization Resolution A.741(18).

An important aspect to the Safety Management System is a float plan. Prior to any boat trip, this document suggests that a float plan be filled out indicating the individuals on the boat (or number of trip participants), the boat's destination, and the anticipated time of return. The boat captain or operator should designate an on-shore emergency response contact prior to leaving the dock. If the boat is delayed the captain or operator will communicate with the onshore contact to let them know the boat and crew are safe and to set another return time. If the boat captain has not returned by the time indicated and has not called to revise their float plan, the on-shore contact should attempt to initiate communication with the boat captain and if there is no response after 15 minutes the contact will personally try and locate the appropriate agency field staff (if nearby). After 45 minutes, if the boat captain cannot be reached, the on-shore emergency response contact should call 911 (which will alert the Coast Guard) and the Reserve Manager.

A float plan typically answers the following questions:

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- Description of the vessel (type, size, color, features, etc.);
- Vessel's departure point, destination(s), and point of return (if different from departure point);
- Purpose of the trip or voyage;
- Places the vessel planned to stop during the voyage;
- Navigation equipment on board (such as GPS, Loran C, Radar, compass, sounder, etc.);
- Number of people on board the vessel (as well as some basic information about each crew member such as
- Communications equipment on board, including type of radio and frequencies monitored, cellular numbers of any persons on board; and
- Addition points of contact along the vessel's planned route;

4. An accident response plan

Boat managers should develop policies and procedures for responding to accidents and other emergencies involving their boats. These policies and procedures should comply with federal, state, and local laws, regulations, and guidance, as well any applicable agency internal polices.

5. Accident/incident reporting and investigation

Boat managers should develop policies and procedures for reporting boat accidents and incidents that involve their boats. These policies and procedures should comply with federal, state, and local laws, regulations, and guidance, as well any applicable agency internal polices.

Federal law requires the operator – or owner, if the operator is deceased or unable to make the report – to file a boating accident report with the State reporting authority when, as a result of an occurrence that involves a boat or its equipment:

- A person dies
- A person disappears from the vessel under circumstances that indicate death or injury
- A person is injured and requires medical treatment beyond first aid
- Damage to vessels and other property totals \$2,000 (lower amounts in some states and territories) or more
- The boat is destroyed.
- Accidents involving deaths, serious injury or significant loss of property must be reported to the appropriate authorities within 24 hours.

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In addition, boat managers should also be aware of state and local laws that may add to these requirements.

Further information regarding accident reporting requirements may be accessed at http://www.uscgboating.org/safety/accident_reporting.aspx.

Boat managers should also be aware that, in accordance with 49 USC §1131, the National Transportation Safety Board (NSTB) is authorized to investigate any major marine casualty defined in 49 CFR Part 850 and 46 CFR Subpart 4.40 (except a casualty involving only public vessels) occurring on, or under, the navigable waters, inland waters or territorial sea of the United States, or involving a vessel of the United States, or involving a public vessel of the United States and any other vessel. ..

Furthermore, in accordance with 46 USC § 6301, the United States Coast Guard is authorized to investigate any marine casualty involving death, serious injury, material loss of property, material damage to vessels, or significant harm to the environment occurring on the navigable waters or territorial sea of the United States, or involving a vessel of the United States, or involving a public vessel of the United States and any other vessel. The USCG may also investigate certain marine casualties outside the territorial sea. Information regarding reporting/investigation of marine accidents/incidents may be accessed at www.nts.gov/Surface/marine/marine.htm.

L. Sustainable Boat Management

There are many definitions for the word “sustainable.” This document relies on Executive Order (E.O.) 13514, “Federal Leadership in Environmental, Energy, and Economic Performance” to provide a definition. E.O. 13514 defines “sustainable” as the creation and maintenance of conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations.

Accordingly, boat managers should, as resources allow, seek out and consider adoption of sustainable strategies, policies, procedures, technologies, and practices that reduce the footprint that their boat programs and operations upon the environment in which they accomplish their missions. In addition, boat managers should become aware of any federal, state, and local laws, regulations, and guidance, as well any applicable agency internal policies, that may impact the ability to achieve sustainability.

Elements of sustainability include, but are not limited to, the following topics.

A) Hazardous Material/Waste Management and Preventing Pollution

Boat managers should develop policies and procedures for the management and disposal of hazardous material and waste resulting from their boat operations. In addition boat managers should develop policies and procedures to prevent pollution. These policies and procedures should comply with federal, state, and local laws, regulations, and guidance, as well any applicable agency internal policies.

The following resources are provided to help in the development of your policies and procedures:

- 1) Title 33 United States Code--Navigation and Navigable Waters

CHAPTER I--COAST GUARD, DEPARTMENT OF HOMELAND SECURITY PART 155--OIL OR HAZARDOUS MATERIAL POLLUTION PREVENTION REGULATIONS FOR VESSELS

http://www.access.gpo.gov/nara/cfr/waisidx_08/33cfr155_08.html

"Federal Facility Compliance Act of 1992

http://www.epa.gov/fedfac/documents/federal_facility_compliance_act.htm

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2) The Coast Guard's National Response Center (NRC) is a part of the federally established National Response System and is the sole national point of contact for reporting all oil, chemical, radiological, biological and etiological discharges into the environment anywhere in the United States and its territories. Information about the NRC and spill reporting can be accessed at <http://www.nrc.uscg.mil/nrchp.html>.

B) Marine Emissions:

By signing Executive Order (E.O.) 13514, "Federal Leadership in Environmental, Energy, and Economic Performance," the President challenged Federal agencies to take the lead in reducing greenhouse gas emissions; increasing energy efficiencies; preventing pollution; eliminating waste; and fostering sustainable technologies, products and services. Boat managers should be aware of the requirements of E.O. 13514 because exemptions from the requirements are very limited. More information on E.O. 13514 may be accessed through the Federal Register at <http://www.gpoaccess.gov/fr/index.htm>.

E.O. 13514 defines "excluded vehicles and equipment" as any vehicle, vessel, aircraft, or non-road equipment owned or operated by an agency of the Federal

Government that is used in:

- (i) combat support, combat service support, tactical or relief operations, or training for such operations;
- (ii) Federal law enforcement (including protective service and investigation);
- (iii) emergency response (including fire and rescue); or
- (iv) spaceflight vehicles (including associated ground-support equipment);

In addition, the U.S. Environmental Protection Agency's (EPA) emission control program for marine engines consists of several sets of standards which vary based on the type of engine (gasoline or diesel powered) and engine size. These standards apply to exhaust emissions of new, spark-ignition propulsion marine engines beginning with the 2010 model year. Boat managers should refer to EPA's web site for additional information about the standards and the certification and compliance programs, as well as for regulatory updates.

Information regarding the emissions standards for diesel marine engines can be found at the EPA's web site at:

<http://www.epa.gov/otaq/marine.htm>

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Information regarding the emissions standards for gasoline boats and personal watercraft can be found at the EPA's web site at:

<http://www.epa.gov/otaq/marinesi.htm>

An overview of the EPA's emission standards for marine engines can be found at: <http://www.epa.gov/otaq/regs/nonroad/marine/420f04031.pdf>

C) Marine Alternative Fuels

In order to reduce their use of fossil fuels and their emission of greenhouse gases, boat managers should consider the development of policies and procedures that encourage the use of alternative fuels within their boats. There are a variety of alternative fuels available, such as ethanol, natural gas, propane, synthetic and bio-diesel. However, not all are suitable for or are available in sufficient quantities for the support marine operations. In addition, modifications to existing engines and equipment may need to be made in order to use alternative fuels. Consequently, boat managers should first consult the manufacturers of their boats and equipment before using alternative fuels.

Information about alternative fuels can be accessed through the Defense Energy Support Center's Alternative Fuels Information Station at <https://www.desc.dla.mil/DCM/DCMPage.asp?pageid=591>.

Additional information is available through the Department of Energy's Alternative Fuels Data Center at <http://www.afdc.energy.gov/afdc/>.

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M. Replacing or Disposing of Boats

A. Disposal of boats falls under the property management sections of the Federal Management Regulations. Agencies should have internal policies that implement the following:

- Federal Management Regulations (FMR) Part 102-35, “Disposition of Personal Property” (41 CFR 102-35);
- FMR Part 102-36, “Disposition of Excess Personal Property” (41 CFR 102-36);
- FMR Part 102-37, “Donation of Surplus Personal Property” (41 CFR 102-37);
- FMR Part 102-38, “Sale of Personal Property” (41 CFR 102-38);
- FMR Part 102-39, “Replacement of Personal Property Pursuant to the Exchange/Sale Authority” (41 CFR 102-39);
- FMR Part 102-41, “Disposition of Seized, Forfeited, Voluntarily Abandoned, and Unclaimed Personal Property” (41 CFR 102-41); In addition, 40 U.S.C. 558 outlines procedures for the disposition of vessels forfeited to the Federal Government;.and
- FMR Part 102-42, “Utilization, Donation, and Disposal of Foreign Gifts and Decorations” (41 CFR 102-42).

B. Exchange/Sale: Exchange/Sale is an authority provided by Section 503 of Title 40, United States Code, under which executive agencies, when acquiring replacement property, may exchange or sell similar items and may apply the exchange allowance or proceeds of sale in whole or in part payment for the property acquired. When replacing personal property, agencies should consider use of the exchange/sale authority before considering any other disposal option. The regulations on exchange/sale are contained in the Federal Management Regulation (FMR) at Part 102-39 (41 CFR 102-39). For more information on exchange/sale, please visit:

http://www.access.gpo.gov/nara/cfr/waisidx_08/41cfr102-39_08.html

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N. Other Resources:

ORGANIZATIONS:

- Boating Basics Online:
<http://www.boatingbasicsonline.com/content/general/>
- United States (US) Coast Guard:
<http://www.uscg.mil/default.asp>
- US Coast Guard Auxiliary:
<http://www.cgaux.org/>
- US Coast Guard's Office of Boating Safety:
<http://www.uscgboating.org/>
- US Coast Guard's Navigation Center:
<http://www.navcen.uscg.gov/Default.htm>
- Department of Transportation's Maritime Administration:
http://www.marad.dot.gov/ships_shipping_landing_page/mhi_home/mhi_home.htm
- National Safe Boating Council:
<http://www.safeboatingcouncil.org/>
- National Oceanic and Atmospheric Administration's Office of Marine and Aviation Operations: <http://www.oma.noaa.gov>
- Canadian Coast Guard: <http://www.ccg-gcc.gc.ca/eng/CCG/Home>
- US Navy's Military Sealift Command: <http://www.msc.navy.mil/>
- American Bureau of Shipping: <http://www.eagle.org/eagleExternalPortalWEB/>
- National Marine Safety Committee: <http://www.nmsc.gov.au/>
- Passenger Vessel Association, <http://www.passengervessel.com/>
- Association of Marina Industries, <https://www.marinaassociation.org/>
- Army Corps of Engineers, <http://www.usace.army.mil/Pages/Default.aspx>
- American Boating Association, <http://www.americanboating.org/safety.asp>
- American Association of Port Authorities, <http://www.aapa-ports.org/>

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- American Boat and Yacht Council, <http://www.abycinc.org/>

LAWS AND REGULATIONS:

- Title 46 CFR Parts 9 through 15 directly relate to The National Maritime Center and US Coast Guard Merchant Mariner's process.
<http://www.uscg.mil/nmc/cfr.asp>
- Title 46, Shipping; CHAPTER I--COAST GUARD, DEPARTMENT OF HOMELAND SECURITY; PART 25—REQUIREMENTS:
http://www.access.gpo.gov/nara/cfr/waisidx_08/46cfr25_08.html
- Federal Boating Regulations: The U.S. Code of Federal Regulations (CFR), Title 33, "Navigation and Navigable Waters", and Title 46, "Shipping", authorize the U.S. Coast Guard to regulate the manufacture and safety standards of recreational and commercial vessels, along with related equipment. While Federal Government boats (except for recreational type boats) are generally exempt from these regulations, they are offered here for information. The regulations include:
 - Title 33, CFR: <http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=200833>
 - Title 46 CFR: <http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=200846>
 - Manufacturer certification: 33 CFR 181.5-19
 - Identification of boats: 33 CFR 181.21
 - Display of capacity information: 33 CFR 183.21-27
 - Safe loading: 33 CFR 183.31-43
 - Safe powering: 33 CFR 183.51-53
 - Flotation: 33 CFR 183.101-335
 - Electrical systems: 33 CFR 183.401-460
 - Fuel systems: 33 CFR 183.501-590
 - Ventilation: 33 CFR 183.601-630
 - Start-in-gear protection: 33 CFR 183.701-715
 - Navigation lights: 33 CFR 183.801-810
 - Backfire flame control: 46 CFR 25.35
 - Safety Management System: 33 CFR 96
- Negligent operation Negligent or Grossly Negligent Operation of a vessel which endangers lives and/or property is prohibited by law. The Coast Guard may impose a civil penalty for negligent operation. Grossly

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Negligent Operation is a criminal offense and an operator may be fined up to \$5,000, imprisoned for one year, or both. Some examples of actions that may constitute negligent or grossly negligent operation are:

- Operating a boat in a swimming area.
- Operating a boat while under the influence of alcohol or drugs: 33 CFR 95
- Excessive speed in the vicinity of other boats or in dangerous waters.
- Hazardous water skiing practices.
- Bowriding, also riding on seatback, gunwale, or transom.
- Carriage and use of personal flotation devices (PFDs) : 33 CFR 175.1-25
- Carriage and use of visual distress signals (VDS): 33 CFR 175.101-140
- Carriage of fire extinguishing equipment: 33 CFR 145
- Vessel identification system: 33 CFR 187

More Coast Guard Information:

<http://www.uscgboating.org/regulations/fedreg.htm>

- 40 CFR 112.7(c)(1)

SUMMARY: Facilities must have “appropriate containment and/or diversionary structures to prevent discharge oil from reaching a navigable water course.”

Water Resources Development Act of 2007

Boat Record (RCS-G-OSR-2067, Form CG-2580)

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O. Additional Safety Information

Safety And Survival		
Boaters Check List		
Click on any item for more detail	Yes	No
Personal Flotation Devices (PFDs)		
Sound Producing Devices		
Bell-Boats 12m (39,4 ft) or longer		
Navigation GPS and RADAR		
Fire Extinguishers		
Visual Distress Signals		
Ventilation		
Backfire Flame Arrester		
Fuel Systems		
Anchor and Anchor Line		
Alternate Propulsion		
Dewatering Device		
General Conditions		
Overall Vessel Condition		
Electrical Systems		
Galley and Heating		
Numbering		
Registration/Documentation		

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Emergency Position Indicating Radio Beacon		
Marine Sanitation Device		
Pollution Placards		
Navigation Rules		
FCC Marine Radio License		

Personal Flotation Devices (PFDs)

- As part of your pre-departure inspection of PFDs check for wear or abrasion, weak or torn seams, and secure straps and buckles. Some types of PFDs are equipped with inflation devices; check to be sure cartridges are secure and charged.

Fire Extinguishers

- Do you have all required quantities and types of fire extinguishers?
- Have they been checked within the past year?
- Are serviceable units tagged by a licensed facility?
- Are units accessible?
- Is at least one accessible from the helm or cockpit?
- Are you and your crew familiar with their operation?

Fuel System

- Is the system properly grounded at the filter, tank, deck, pump, etc.?
- Is the fuel tank free from rust or contamination?
- No leaks from tank, hose or fittings.
- Hoses U.S.C.G. approved and free of cracking or stiffness with adequate slack to account for vibration.
- Is tank secured?
- Fuel shut-off valve on tank and at engine.
- Engine compartment and engine clean and free of oily rags or flammable materials.
- Blower switch at remote location.
- Is your fuel system protected from siphoning?

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Safety Equipment

- Lifelines or rails in good condition.
- Emergency Position Indicating Radio Beacons
- Stanchions or pulpit securely mounted.
- Hardware tight and sealed at deck.
- Grab rails secure and free of corrosion or snags that may catch your hands.
- Non-skid surfaces free from accumulated dirt or excess wear.

Ground Tackle

- At least two anchors on board.
- Anchor and rode adequate for your boat and bottom conditions.
- Tackle properly secured.
- Length of chain at anchor.
- Thimble on rode and safety wired shackles.
- Chafing gear at chocks for extended stays or storm conditions.
- Anchor stowed for quick accessibility.

Stoves

- Labeled and designated for marine use.
- Properly ventilated to remove carbon-monoxide from cabin.
- Retainers or rails for pots and pans while underway.
- If built-in, properly insulated and free from combustible materials, CNG and LPG (propane).
- Stored in separate compartment from boat's interior and engine room.
- Tightly secured shut-off valve at tank.
- Proper labeling and cautions in place at tank location.
- Hoses, lines and fittings of approved and inspected type.
- Compartment is ventilated overboard and below level of tank base.

Electrical System

- Wiring approved for marine applications.
- System is neatly bundled and secured.
- Protected against chafing and strain.
- Adequate flex between bulkhead and engine connections.
- Clear of exhaust system and bilge.
- System is protected by circuit breakers or fuses.
- Grounds to Zincs if required.
- Wire terminals and connections sealed to prevent corrosion.

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Bilge Pumps

- Will pump(s) adequately remove water in emergency? Do you have a manual backup? Are bilges clean and free to circulate (clear limber holes)? Do you check bilges frequently and not rely on automatic pumps?

Corrosion Prevention

- Through-hulls, props, shafts, bearings, rudder fittings, and exposed fastenings free of non-destructive corrosion.
- Zincs are adequate to provide protection.
- Through-hulls are properly bonded.
- Inspect the steering cables, engine control linkage and cables, engine mounts and gear case for corrosion.
- These items are properly lubricated or painted to prevent undue corrosion.

Through-hulls

- Strainers, intakes and exhaust or discharge fittings are free from restrictions such as barnacles, marine growth or debris.
- Inspect sea valves for smooth operation.
- Handles are attached to valves for quick closure.
- Hoses are in good condition and free from cracking.
- Double hose-clamps below the waterline.
- Anti-siphon valve fitted to marine toilet.
- Through-hull plugs are near fittings or attached to hose in case of emergency.

Batteries

- Stored in non-corrosive, liquid tight, ventilated containers.
- Non-conductive covers are fitted over posts.
- Batteries are well secured.