

HURRICANE PREPAREDNESS GUIDELINES FOR MARINAS

SECTION VII Appendix A

EXAMPLE - MARINA HURRICANE PREPAREDNESS KIT INVENTORY SHEET

[Note: This list is typical and may be used as a guideline for preparing a list for a specific marina site and operation. The list is by no means complete or exhaustive – determine what else you will need. It is unlikely the “kit “ contents will be in one location, so it is suggested that the list be organized according to location. Also, some items, such as rope, nails will be needed in varying sizes, and the inventory lists must be broken down accordingly.]

Inventory Date: _____

Inventoried By: _____

Reviewed By Management (signature/date): _____

ITEM	QUANTITY TO STOCK	QUANTITY ON HAND	DATE REPLENISHED	ITEM CONDITION OK/COMMENTS
SAFETY & FIRST AID:				
First Aid Kits				
Stretchers				
Blankets				
Flares				
Medicine				
Barricades				
Warning Signs				
DC Powered Radios				
Sanitation Supplies				
Fire Extinguishers				
Potable Water Containers				
PERSONNEL GEAR				
Foul Weather Suits				
Foul Weather Boots				
Hard Hats				
Life Jackets				
Safety Harnesses				
VHF Handheld Radios				
Flash Lights & Batteries				

TOOLS AND EQUIPMENT				
Dock Bolt Wrench Set				
Small Tool Set				
Gasoline Powered Pump				
Hand Pump				
“Come-a-long”				
Generator w/ Fuel				
Extension Cords				
Sledge Hammer				
Hammers				
Shovel				
Pry Bar				
Ax				
Oil Spill Response Kit				
Mops, Brooms, Buckets				
Ice Chests				
Lanterns and Fuel				
Emergency Lights (DC)				
Emergency Lights (AC)				
Chain Saw				
SECURING MATERIALS				
Plywood, Bulk				
Plywood, Cut to Fit Windows				
Lumber (2”X4”X16’)				
Rope				
Lashing Cord				
Wire Ties				
Chain				
Anchors				
Cable w/ Clamps				
Nails – Asst. Sizes				
Spikes				
Screws				
Lag Bolts				
Masking Tape				
Duct tape				
Sandbags				
Fenders and Fendering Material				
Chafing Gear				
HDuty Trash Bags (Asst. Sizes)				

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Appendix B BOAT OWNER'S HURRICANE READINESS QUESTIONNAIRE

Use this as a worksheet to describe your boat's state of hurricane readiness and your preparation plans. Return a copy to the marina office and provide a copy to your alternates (an alternate must be named for the event of your absence).

Boat name: _____ Length: ____ Model: _____ Power ____ Sail ____

Owner's name: _____ Address: _____
 City: _____ State: ____ Zip: _____ Day phone: _____
 Night Phone: _____ Other Phones: _____

Captain's name: _____ Address: _____
 City: _____ State: ____ Zip: _____ Day phone: _____
 Night Phone: _____ Other Phones: _____
 Has boat keys? _____ Access to hurricane equipment? _____

Alternate #1's name: _____ Address: _____
 City: _____ State: ____ Zip: _____ Day phone: _____
 Night Phone: _____ Other Phones: _____
 Has boat keys? _____ Access to hurricane equipment? _____

Alternate #2's name: _____ Address: _____
 City: _____ State: ____ Zip: _____ Day phone: _____
 Night Phone: _____ Other Phones: _____
 Has boat keys? _____ Access to hurricane equipment? _____

Boat's current location: _____ Planned location during a hurricane: _____

If at a dock: Slip # _____
 Additional lines no.: _____ Length: _____ Size: _____ Chafing gear: _____ Fenders: _____

If at a hurricane hole:
 Travel time by water from present location: _____ Are there bridges? _____ If yes, will they open prior to hurricane? _____
 Has owner of surrounding land been contacted? _____ How will skipper and crew get ashore? _____
 Type of bottom: _____ Depth: _____ Number/types of anchors needed: _____
 Lines needed: _____ Number: _____ Length: _____ Size: _____
 Chain needed: _____ Number: _____ Length: _____ Size: _____
 Chafing gear: _____ Swivels: _____ Shackles: _____

If stored ashore, is boat already ashore and where? _____ If no, what arrangements have been made for hauling? _____
 Contact name (marina/property owner): _____ Phone number: _____

List all equipment needed to prepare boat:

List equipment to be stripped from boat:

Equipment	Current location	Equipment	Storage location
<input type="checkbox"/> Extra lines		<input type="checkbox"/> Electronics	
<input type="checkbox"/> Chafing gear		<input type="checkbox"/> Dinghy	
<input type="checkbox"/> Fenders		<input type="checkbox"/> Outboard fuel	
<input type="checkbox"/> Anchors + Ropes		<input type="checkbox"/> Sails	
<input type="checkbox"/> Swivels + Shackles		<input type="checkbox"/> Bimini	
<input type="checkbox"/> Wire ties		<input type="checkbox"/> Galley fuel	
<input type="checkbox"/> Duct tape		<input type="checkbox"/> Ship's papers	
<input type="checkbox"/> Exhaust Port Plugs		<input type="checkbox"/> Insurance Policy	
<input type="checkbox"/> Tool Kit		<input type="checkbox"/> Boat inventory/Photos	
Diagram of proposed hurricane docking or anchoring arrangement:		Hurricane plan final checklist:	
		<input type="checkbox"/> Arrange dock/anchor lines	<input type="checkbox"/> Remove bimini, sails, life rafts, etc.
		<input type="checkbox"/> Add chafe protection	<input type="checkbox"/> Disconnect shore power
		<input type="checkbox"/> Place extra fenders/fenderboards	<input type="checkbox"/> Close fuel valves
		<input type="checkbox"/> Duct tape windows/hatches	<input type="checkbox"/> Close all but cockpit seacocks
		<input type="checkbox"/> Plugs in engine ports	<input type="checkbox"/> Lock boat
			<input type="checkbox"/> Notify marina manager

Adapted from *Seaworthy*, a periodical of BOAT/U.S.

Date this Boat Hurricane readiness plan was tested _____ Signed _____

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Appendix C EMERGENCY RESPONSE AGENCY PHONE NUMBERS

EMERGENCY	911
<u>County Agencies</u>	
Emergency Management Agency	
Fire Department	
Sheriff Department	
Police Department	
Emergency Medical Service	
Medical Care Center	
Hospital	
County Public Health	
County Public Works	
<u>State Agencies</u>	
Emergency Management Agency	
Emergency Preparedness Division	
Environmental Protection Division	
Department of Natural Resources	
State Patrol	
Department of Transportation	
Attorney General	
<u>Federal Agencies</u>	
Federal Emergency Management Agency (FEMA) Hurricane Program Manager: William G. Massey	(770) 220-5430 (770) 220-5461 fax
U. S. Environmental Protection Agency	(800) 241-1754 (404) 562-9900
National Response Center	(800) 424-8802
U.S. Coast Guard – Marine Safety Office	
Chemical Transportation Emergency Center (CHEMTREC)	(800) 424-9300
<u>Local EMA Phone Numbers and Contacts</u>	

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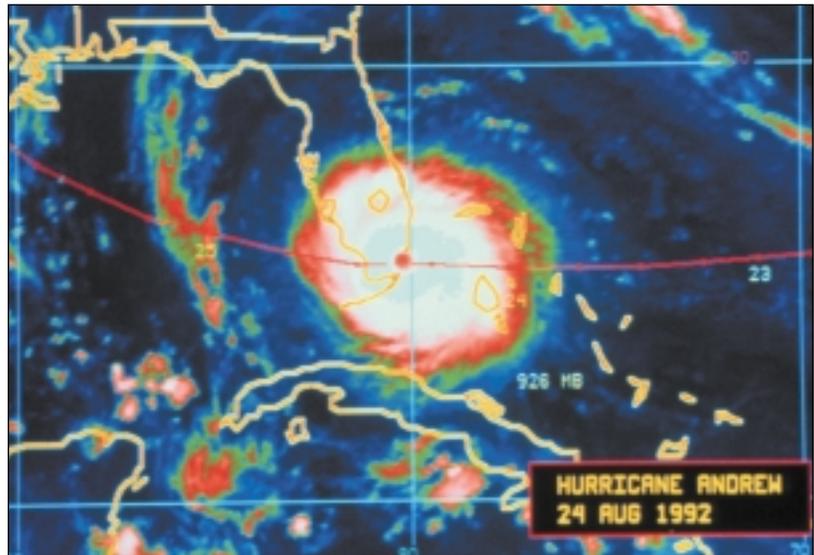
Appendix D Hurricane Preparedness Instructions for Boat Owners

[Note: This is an example of information to provide boat owners, along with the new or annual update for the "Boat Owner's Hurricane Readiness Questionnaire." This is typical information for presentation in boat owner hurricane awareness clinics.]

The key to protecting your boat from hurricanes or any threatening severe weather is planning, preparation, and timely action. A boat owner/operator may be held responsible for damages caused by his vessel during a natural disaster. Normally the National Weather Service will issue 48 and 24-hour warnings; however, in some instances only a 12-hour warning will be given. The marina will evaluate the storm threat and recommend evacuation accordingly.

Upon receiving first storm notice, the boat owner/operator should immediately take precautionary measures to see that his boat is properly secured.

Each boat owner needs a plan unique to the type of boat, the local boating environment, the severe weather conditions, and the characteristics of safe havens and/or plans for protection. The following preparation and precautionary suggestions are issued as guidelines to be used by the marine community. The following precautions and checklists are meant as guides only. It is stressed, however, that following these guidelines does not necessarily exempt the owner/operator from being held responsible should his boat cause damage to another's property; nor will acquisition of required safety equipment and following the suggested safety procedures necessarily assure that no damage will occur to the boat.



Hurricane Andrew - infrared image taken by GOES 7. Andrew is crossing the Florida coast and making landfall August 24, 1992, at Dade County, Florida.

GENERAL PRECAUTIONS

- ❑ Prior to the hurricane season, develop a detailed plan of action to secure your vessel in the marina, if permitted, or remove your boat from the threatened area, or take your boat to a previously identified hurricane refuge. Specifically identify and assemble needed equipment and supplies.
- ❑ Hurricane moorings should be located in advance. Permission should be obtained from appropriate persons. For keelboats, make certain there is enough water at low tide.
- ❑ A practice run should be made to check accessibility, depth of water, bridges, location of aids and/or obstructions to navigation and locations to secure lines or drop anchors. Drawbridges will not open for boats during evacuation procedures.

- ❑ Before a hurricane threatens, plan how you will remove valuable equipment from the boat. Determine how long it will take so you will have an accurate estimate of the time and work involved.
- ❑ After you have made anchoring or mooring provisions, remove all movable equipment such as canvas, sails, dinghies, radios, cushions, biminis and roller furling sails.
- ❑ Lash down everything you cannot remove, such as tillers, wheels, booms, etc. Seal all openings (use air conditioning duct tape) to make the boat as watertight as possible.
- ❑ Make sure the electrical system is off unless you plan to leave the boat in the water. If the boat is not to remain in the water, remove the battery to eliminate the risk of fire or other damage.
- ❑ Arrange for a reliable person to learn and carry out your hurricane plan if you are out of town during a hurricane or severe storm.
- ❑ Check your lease or rental agreement with the marina or storage area. Know your responsibilities and liabilities as well as those of the marina or storage area.
- ❑ Consolidate all documents including insurance policies, a recent photograph or video tape of your vessel, boat registration, equipment inventory, lease agreement with the marina or storage area, and telephone numbers of appropriate authorities, i.e., harbor master, Coast Guard, insurance agent, National Weather Service, etc. Keep the documents in your possession in a locked water-proof box. They may be needed when you return to check on your boat after the hurricane.
- ❑ Maintain an inventory list of both the items removed and those left on board. Items of value should be marked so that they can be readily identified.

Trailerable Boats

- ❑ Determine the requirement to load and haul your boat to a safer area. Be sure your tow vehicle is capable of properly moving the boat. Check the condition of your trailer; tires, bearings and axle. Too often a flat tire, frozen bearings, or broken axle prevents an owner from moving a boat.
- ❑ Do not evacuate your boat with your family evacuation. Hauling your boat as residents evacuate will only compound the traffic problems of the evacuation effort.
- ❑ Once at a safe place, lash your boat to the trailer and place blocks between the frame members and the axle inside each wheel. Owners of lightweight boats may wish to consider letting out about half the air in the tires, then filling the boat one-third full of water to help hold it down. (The blocks will prevent damage to the springs from the additional weight of the water.) Consult with the manufacturer for the appropriate procedure for your lightweight boat.
- ❑ Secure your boat with heavy lines to fixed objects. Because hurricane winds rotate and change direction, try to pick a location that allows you to secure the boat from four directions. It can be tied down to screw anchors secured in the ground.

Non-trailerable Boats in Dry Storage

- ❑ Determine the safest, obtainable haven for your boat and arrange to move your boat there. When selecting a safe location, be sure to consider whether storm surge could rise into the area. Wherever you choose to locate your boat for the duration of the hurricane, lash the boat to its cradle with heavy lines. Based on the weight of the boat, consider adding water to the bilge to help hold it down.
- ❑ Never leave a boat in davits or on a hydro-lift.

Non-trailerable boats in wet storage

The owner of a large boat, usually one moored in a berth, has three options. Each action requires a separate strategy. Another alternative, running from the storm, is not encouraged except for large commercial vessels.

- ❑ Secure the boat in the marina berth.
- ❑ Moor the boat in a previously identified safe area.
- ❑ Haul the boat.

Boats Remaining in Marina Berth

- ❑ Double all lines. Rig crossing spring lines fore and aft. Attach lines high on pilings to allow for tidal rise or surge. Make sure lines will not slip off pilings. Inspect pilings and choose those that seem strongest and tallest and are properly installed.
- ❑ Cover all lines at rough points to prevent chafing. Wrap with tape, rags, rubber hoses, etc. Install fenders to protect the boat from rubbing against the pier, pilings and other boats.
- ❑ Assess the attachment of primary cleats, winches, and chocks. These should have substantial back plates and adequate stainless steel bolt sizes.
- ❑ Batteries should be fully charged and checked to ensure their capability to run automatic bilge pumps for the duration of the storm. Consider backup batteries. Turn off all other devices consuming electricity.
- ❑ Do not stay aboard. First and foremost, safeguard human life. Winds during any hurricane can exceed 100 mph, and tornadoes are often associated with these storms. In addition, when winds and seas warrant, marine agencies remove their boats from service and will not be able to rescue foolish boaters.

Mooring Heads

- ❑ If your vessel is moored at a dock on a river, or in a marina near the ocean, it is possible that with an additional 5 to 10 foot or greater storm surge, the vessel could take a beating against the dock or even impale itself on the pilings.
- ❑ The best offshore mooring location for a vessel to ride out a storm is in the center of a canal or narrow river where at least doubled mooring lines can be secured to both shore, port and starboard, fore and aft.
- ❑ Do not raft vessels together at moorings or docks, especially if larger and smaller vessels are involved. The probability of damage to the vessels is greater than if they are moored separately.
- ❑ If the vessel must remain dockside at a private dock or marina, heavy duty fender boards (2" x 6") should be installed on a bare wood center piling to prevent damage. Lines should be doubled and even tripled where necessary to hold a vessel in the center of a berth or off seawall or dock pilings. Preventers should be installed at the top of the pilings so lines cannot slip off the top. Note that nylon line will stretch five to ten percent of its length.

Don't go down with your boat! Do not stay aboard. Winds during any hurricane can exceed 100 mph and tornadoes often are associated with these storms. First and foremost, safeguard human life.

Source: Fact Sheet DH 12 (1993), Florida Cooperative Extension Service, University of Florida, Gainesville, FL 32611.
<http://128.227.103.58/txt/fairs/23970>