

# GLADDING MARINE SURVEYING AND CONSULTING, LLC

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## VESSEL LONG TERM STORAGE IN FLORIDA

I have encountered a number of unfortunate incidents where boat owners have had mishaps during long-term storage. These incidents occurred on vessels whose owners had experience laying their vessels up in northern climates but encountered problems here in Florida. The incidents shared a common theme. The vessels were not attended during their lay-up period, debris accumulated in critical areas, substantial rainfall occurred and warm weather prevailed.

These incidents would likely have been prevented or far less damage would have occurred had the vessels been visited at some point during their lay-up period. Many vessels routinely make it through long-term storage without incident but owners who are new to the process in this area may benefit from good advice on proper preparation. In addition they should consider paying someone to verify their actions are effective rather than waiting until the end of the lay-up to discover trouble.

Water intrusion by far seems to be the biggest problem although invasions by insects and other small creatures can be troublesome too. Water intrusion is most likely on vessels that rely on scupper drain systems to bail their weather decks. Dirt and debris clogs the deck drain fittings then water builds up on decks and cockpits and floods through hatches or doors to the hull interior. In cases where a vessel has a garboard drain plug that allows the water to run out completely little damage is likely. Vessels where water can accumulate in significant quantities are a different matter.

Significant standing water inside a vessel during lay-up in Florida's warm high humidity climate can be disastrous. Depending on how clean the vessel is and the amount of standing water mold and mildew can run amok to varying degrees. The result is an expensive clean-up and/or replacement of soft goods and refinishing of painted and varnished cosmetic finishes. This process is an unfortunate way to begin one's cruising season...

The following is a list of items to be considered for long-term lay-up. This list should be considered advisory and by no means guarantees a trouble free process (you don't know what you don't know). Consideration of the following should improve the experience and possibly save serious trouble when the time comes to put ones vessel back into service.

### LONG TERM LAY-UP CHECKLIST

#### **DECOMMISSIONING:**

1. Remove perishable food stuffs to avoid pest damage intrusion
2. Clean and stow linens and clothing to avoid souring and mildew
3. Thoroughly clean all interior surfaces to avoid mildew
4. Drain potable water systems to avoid freeze damage
5. Empty, flush and deodorize waste system to avoid sewer gas odor and lube toilets to help insure they will function reliably when put back in use

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6. Empty and clean shower sumps to avoid odors
7. Secure seacocks in closed position and install bronze wool in exterior openings to avoid pest intrusion
8. Sailboats:
  - A. Inspect shrouds and stays to insure they have adequate tension and cotter pins are installed to prevent loosening from vibration
  - B. Run halyards to top of mast with telltales and bag remainder to prevent UV damage
  - C. Cover or stow sheets to prevent UV damage
  - D. Remove and stow sails
9. Cover or plug with bronze wool all hull vent fittings, drains and pump discharges to avoid pest intrusion
10. Top off fuel tanks and treat fuel to prevent moisture accumulation and fuel degradation
11. Secure valve on propane system to prevent gas accumulation at hull interior
12. Main engines and generators:
  - A. Flush with freshwater prior to lay-up to prevent corrosion and scaling in cooling system
  - B. Change lube oil and filters to prevent engine damage from contaminants in oil
  - C. Drain raw water systems to prevent freeze damage
  - D. Test antifreeze to prevent freeze damage
13. Flush air-conditioner cooling system with freshwater to prevent corrosion and scaling
14. Batteries – Proper lay-up will be dependent on a number of factors:
  - A. Lead acid wet cells with their relatively high discharge rates may benefit from a trickle charge to insure they are not ruined during lay-up. Vessels with a reliable solar charging system should consider leaving it on
  - B. AGM type batteries low discharge rates may be better served by disconnecting and allowing to rest
  - C. Very experienced owners who have absolute confidence in their DC electrical systems may find leaving them on line may provide back-up water removal system in the event other measures fail
15. Electronics and entertainment equipment should be removed to avoid damage from excessive heat, cold or moisture
16. CO monitors, smoke alarms, stereo memory and other battery draining devices should be disabled

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## RECOMMISSIONING

1. Restore function to all essential systems prior to reloading your vessel so that you have good access to everything and can conveniently perform any service or maintenance necessary to guarantee the safe and reliable operation of your vessel
2. Reconnect batteries and connect vessel to dock power if available and prove function of battery charging systems
3. Flush freshwater system of antifreeze if used then refill tank and prove function of system and that water is sweet and free of unpleasant odors
4. Prove function of head system and overboard discharge pump if one is installed
5. Prove function of dewatering bilge pumps, shower sumps and other water system pumps
6. Open seacocks and prove their function; service if necessary
7. Remove screens and other covers on all thru-hull and vent fittings
8. Connect LPG system and perform leak test: *With the appliance valves off, open the cylinder supply valve. Close the cylinder supply valve. Observe the pressure gauge reading. The pressure indicated should remain constant for not less than three minutes. If any leakage is indicated by a drop in pressure, check the entire system with a leak detection fluid or detergent solution to locate the leak. Test solutions shall be non-corrosive and non-toxic. Repairs shall be made before retesting and operating the system.*
9. Change raw water impellers on main engines and generators
10. Reinstall electronics and entertainment equipment
11. Reconnect and test function of all alarms including CO, smoke, LPG and high water
12. Sailboats:
  - a. Tune rig
  - b. Return halyards to their ready positions
  - c. Unbag sheets
  - d. Reinstall sails
13. When essential systems have all been restored to service reload vessel with food, personal effects and other gear and be on your way...