Hurricane Preparedness

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Seamanship

“The time for taking all measures for a ship’s safety is while still able to do so. Nothing is more dangerous than for a seaman to be grudging in taking precautions lest they turn out to have been unnecessary. Safety at sea for a thousand years has depended on exactly the opposite philosophy.”

Admiral Chester W. Nimitz

Topics

- What is a Hurricane?
- What YOU Need To Do
- Preparing in Advance
- With Motivating Photos

Please …

- Now … interrupt and ask questions
- Afterwards … Learn more online
- Soon … Make a plan!

What is a Hurricane?

- Tropical (low pressure) wave comes off Africa
- Travels west over warm water.
- Heat of the ocean fuels the convection.
- Rotates counter-clockwise (northern hemisphere)
- Becomes tropical depression
- Becomes a tropical storm
- Becomes a hurricane

Tropical Waves
Wind

Hurricane

Tracks...Historical

Bermuda High Steering

Tracks...Unpredictable

Tracks...Cone of Uncertainty

Watch the updates continuously!
The Categories

- Category 1...64-82 knots...... 4-5 ft surge
- Category 2...83-95 knots........ 6-8 ft surge
- Category 3...96-113 knots...... 9-12 ft surge
- Category 4...114-135 knots..... 13-18 ft surge
- Category 5...135+ knots.........18-25 ft surge

Surge – the Biggest Danger

- Water is pushed up by the wind
- The low pressure “sucks” the water higher
- 0.1-0.2 inches per 10 millibars fall in pressure
- Labor Day storm - 888mb and 25 ft surge

Boats on Moorings

- Mooring’s scope can’t cope with surge
  - You bow goes underwater, or your cleats pull out
  - Leaving your boat on a mooring is a way to sink

- CGSC policies and recommendations
  - Tried and true practices

Motivating Photo - Surge

What do YOU Need To Do?

Prepare for the Storm
- Know the CGSC rules
- Reduce windage
- Be prepared to move

Prepare for Your Situation
- Boats on Moorings
- Boats on Land

Getting Help

- CGSC will do what it can for you, but …
- Do not ask or try to pay CGSC dock staff to take care of your boat – they have work to do.
- Your friends are useful, bribed if necessary, but ultimately …
- Your boat … Your responsibility
**Boats on Moorings**

**Tropical Storm Watch (NOAA 48hrs out)**
- By this time, recommended reduction of windage

**Tropical Storm Warning (NOAA 36hrs out)**
- By this time, mandatory reduction of windage, optional evacuation

Recommendation: Do these when a tropical storm is 72hrs away in the cone of uncertainty.

**Boats on Moorings**

**Hurricane Watch (NOAA 48hrs out)**
- By this time, mandatory reduction of windage; recommended evacuation.

**Hurricane Warning (NOAA 36hrs out)**
- By this time, mandatory evacuation

Recommendation: Do these when a hurricane is 72hrs away in the cone of uncertainty.

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**Reducing Windage**

- All sails down. Leave in the boat or at home
- Bimini and frame down, all canvas covers off
- Dingy and outboard off
- Secure all line ends (halyards)
- Replace dorades and cowl vents with covers
- Remove solar panels and windmills
- Remove “deck junk” - BBQs, Cushions, etc.
- You MUST do this!

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**Motivating Photo - Sails**

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**Places to Move to**

- Boatyards up the Miami River
- A slip in a marina, e.g., Dinner Key
- Coral Gables waterway (the mangroves)*
- Marine Stadium*
- Star Island
- Hurricane harbor, NoName harbor, Pines canal

* CGSC hopes to be able to ferry you ashore

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**Boatyards**

- E.g., Hurricane Cove, Oceanika
- Visit the yard in advance, check out the situation
- Befriend the dockmaster, find out what is needed
- Know the bridge schedule
- Go well in advance (before bridges lock down)
- BoatUS insurance pays half of haul-out
Boats in Slips – Tying Up

- Check your cleats and chocks
- Double all lines - bow, stern, springs
- Maximize line size
- Use snubbers and chafe gear
- Use fenders and fenderboards
- Don’t tie too tight – cleats break
- Do not tie across other boats and docks

Motivating Photos - Docks

Coral Gables Waterway

Tying to the Mangroves

Marine Stadium

Triple Anchors
Principles of Anchoring

Marine Stadium is 10ft - use 70ft rode plus chain
All lines over the anchor roller (not side chocks)
Put tag buoys on anchors
Drop primary anchor, reverse hard to set
Go 120ft perpendicular to expected wind
Drop secondary anchor, reverse hard to set
Fall 120ft off primary and secondary anchors
Drop tertiary anchor, reverse hard to set
Bring all rode to 70ft plus chain, add kellers, lash helm
And don’t use wimpy anchors

Motivating Photo - Anchoring

Take Inventory

Take photographs of your preparations
- Onboard
- From all sides

Inventory inside
- Make a list and take photographs
- Especially electronics and other valuables
- List anything you take off

Leave Your Information

Leave the following information in a ziplock taped in the cockpit (required in waterway)
- Boat name
- Year, Make/Model, Length of vessel
- HIN number, FL # or USCG Doc #
- Full name and date of birth
- Phone numbers and Email addresses
- Physical address

Preparing in Advance

Explore and practice at all the areas and anchorages beforehand
Get anchors, chain, shackles, rodes, floats, and chafe protection
Test the engine, check the prop, have clean fuel and filters
Check cleats
Close all seacocks
Prepare information cards, and take inventory
Get insurance, especially towing
Not using the boat or leaving town? ... reduce windage
Check the weather web pages every day
Read club emails when a storm is coming
Be able to complete the task without assistance
Motivating Photo - Prop

Final Word - Get Friends to Help
- Teams of three or four help each other
- Useful if you (or they) might be away
- Practice with team in advance (bribes help)
- Be able to cope if they bail on you

Prepare and practice, it’ll be OK!

Equipment - Anchors
- 46 lb Bruce: 1900 lbs
- 47 lb CQR: 3300 lbs
- 30 lb Danforth: 2200 lbs
- 18 lb Guardian: 3900 lbs
- 21 lb Fortress: 7600 lbs

Motivating Photo - Martini

The End
Any (more) Questions?

Mechanics of Wind Speed
- 15 knots (sailing): 1 lb/sqft: 700 lbs
- 30 knots (anchor): 4 lb/sqft: 600 lbs
- 60 knots: 16 lb/sqft: 2400 lbs
- 100 knots: 32 lb/sqft: 4800 lbs
- 120 knots: 64 lb/sqft: 9600 lbs
- Holding force of a ??? weight Delta: 1500 lbs
**Equipment - Rodes**

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**Equipment - Chain**

- 5/16 chain (high test) 2600 lbs
- 3/8 chain BBB 2600 lbs
- 3/8 chain (high test) 5400 lbs