US COAST GUARD
Hurricane Season 2019

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Hurricane Season

- 1 June through 30 November each year.

- September is historically the most active period during the year.

- Annual hurricane workshops are held in various locations prior to the start of hurricane season. These provide a forum for exchange of information between government, industry, and other regional stakeholders.
When is the Hurricane Season?

- Atlantic Hurricane Season: June 1 – November 30th
- Peak of season August and September
Off Season Expectations

• **Assess and Learn from Last Year:**
  - assess lessons learned from the previous year and update plans accordingly prior to the start of the annual hurricane season on 1 June.

• **Work with Partners:**
  - Maintain interaction with industry partners, including state, federal and local partners should continue throughout this time.
Hurricane Categories

- CATEGORY 1  74 – 95 MPH
- CATEGORY 2  96 – 110 MPH
- CATEGORY 3  111 – 129 MPH
- CATEGORY 4  130 – 156 MPH
- CATEGORY 5  157 + MPH
Weather Information from NWS

- Web: weather.gov/houston, hurricanes.gov
- Twitter: @NWSHouston
- Facebook: https://www.facebook.com/NWSHouston
Beware of Gulf Developers!

- In recent years most storms have tracked for days across the tropical waters before making landfall (Ike, Katrina, Rita)
- This is not always the case. Storms can form over the Gulf and move ashore within 1 to 3 days (Humberto, Alicia)
- Need to stay aware of what is going on during hurricane season and prepare ahead of time!
- Between 1851 and 2006, 56% of Texas landfalling hurricanes formed in the Gulf (Merrell, 2013)
Facilities

• Plans for fleeting areas and lay-up vessels at facilities that are unable to depart port should be provided to the Sector Waterways Management Division prior to the start of the hurricane season.
Tugs/Barges

- **Written Agreements** should be made with terminal owners/operators for berthing of vessels prior to a heavy weather event. The COTP will expect to see written agreements when allowing vessels to be berthed at facilities.

- **Plans** for laying up vessels and barges should be provided to the COTP.
Facilities

- Ensure required hurricane response equipment is on-hand and operational.

- Conduct regular tests of emergency systems, such as communications and power systems.

- Provide updated list to COTP of vessels/barges in excess of 500 GT moored at facility for over 30 days.
Port Conditions

- **Whiskey** - set when gale force winds are due within 72 hours. “Condition 4”
- **X-Ray** - set when gale force winds are due within 48 hours. “Condition 3”
- **Yankee** - set when gale force winds are due within 24 hours. “Condition 2”
- **Zulu** - set when gale force winds are due within 12 hours. “Condition 1”
Port Condition Whiskey

- Port Status: open to all commercial traffic.
- COTP establishes a safety zone requiring all self-propelled oceangoing vessels over 500 GT and all oceangoing barges and their supporting tugs to report their intention to depart or remain in port.
- Any of these vessels or tugs intending to remain in port must complete a REMAINING IN PORT CHECKLIST and submit to COTP within 24 hours.
- COTP will advise the port of intentions for setting next port condition (X-RAY).
Condition Xray

- Port Status: The Port remains open to commercial traffic.
- Port Condition X-ray will be set 48 hours prior to arrival of tropical storm force winds associated with tropical cyclone activity.
- Vessels that have submitted a request to remain in Port will receive either acceptance of plan or denial of request.
Condition Yankee

- Port status: vessel traffic control measures in effect.
- Establish a Safety Zone controlling vessel movements and activities as appropriate.
- COTP approve or direct, as necessary, final mooring arrangements for vessels remaining in port.
Condition Zulu

- Port status: closed to all vessel traffic except for vessel movements and activities specifically authorized by the COTP.

- Establish a Safety Zone prohibiting vessel movement and activities.
Notifications

- BROADCAST NOTICE TO MARINERS will be sent at these intervals as severe weather approaches
  - 72 HOUR
  - 48 HOUR
  - 24 HOUR
  - 12 HOUR

- Questions can be directed to the Sector Houston-Galveston Vessel Traffic Service (281) 464-4837 or Command Center 281-464-4854
HOUSTON HURRICANE FACTS

• The evacuation of the Houston-Galveston area before a hurricane presents a logistical problem.

• Coastal counties must evacuate their residents in the low lying areas that may be inundated with the water surge that could be as high as 22 feet during a Category 5 storm.

• Current estimates of individuals that reside in the surge zones of Liberty, Chambers, Harris, Galveston, Brazoria, and Matagorda are between 800,000 and 1,000,000.
• High probability of wind damage and the possible loss of electricity or public services.
• Hurricane Rita - People reported being on evacuation routes for 24 hours or more trying to get to shelters, hotels, and homes of family and friends.
• Approximately 130 people died during the Hurricane Rita evacuation.
During Hurricane Ike a 13-foot storm surge swept across Galveston Island, destroying hundreds of homes in its wake.

Ike's 110-mph winds shattered windows in skyscrapers in downtown Houston, and the deluge of rain the storm dumped left city streets flooded and filled with debris.

Hurricane Ike was responsible for nearly $20 billion in damages and the deaths of dozens of people in Texas, Louisiana, and Arkansas.
Hurricane Harvey
Harvey Rainfall Totals

As of 1600 CDT on August 31st
Pre-Storm Strategy & Priorities

- **Safety of all USCG First Responders and Dependents**
  - Authorize Evacuation for Dependents

- **Save Lives in Distress**

- **Protect the Marine Environment**

- **Restore Ports and Waterways**
  - Verify ATON Status and Channel Depths
  - Inspect Facilities
  - Coordinate Salvage Operations
  - Ensure Port Security
Pre-Storm Unit Relocation

• **Four Coastal Patrol Boats**
  – Positioned all 87’ Patrol Boats to Sabine, TX on 22 Aug and further relocated to Abbeville, LA on 23 Aug as weather forecasts continued to evolve.

• **Five Boat Stations – 26 Boats**
  – STA Freeport: Relocated 2 RB-S IIs via trailer to Lake Jackson Fire Dept & 2 RB-Ms moved to SFO Galveston via ICW.
  – STA Galveston, STA Houston, STA Sabine and STA Lake Charles: Relocated 14 RB-S IIs and 3 SPC-SWs via trailer to higher ground and moored 5 RB-Ms locally.
Initial Crisis Phase & Challenges

• Local 911 Call Center Failures
  – SCC quickly inundated, all 14 phones and 10+ phone lines receiving 1,000+ calls per hour
  – Shear volume of calls forced rollover to D8, LANTAREA, NCC, NRC, and ICC

• Primary and Secondary T1 Data Line Failure
  – SCC lost computer access and Rescue 21 Communications with Air and Surface Assets

• Limited Roadway Access
  – 85% of Harris County covered in flood waters
  – Leaving numerous CG First Responders Forced to Shelter in Place.
  – Making it extremely difficult for Flood Punt Teams to travel to locations where they could launch

• Significant lightning prevented air assets from launching until 4 hours after receipt of first distress calls
Triage of 1,000+ Calls/Hour

- **Version 1.0: 0000-1800 on 27 August**
  - SCC overwhelmed with calls; all available ICP Staff moved to SCC to assist

- **Version 2.0: 1800-27 August to 1200-30 August**
  - SCC’s adjoining conference room set-up as a Call Center
  - Staffed with 50+ personnel (Active Duty, Reserve, Civilian & Auxiliary) operating 8-12 hour shifts
  - 24 Hour Chaplain and CISM Support

- **Version 3.0: 1200-30 August to 11 September**
  - Mission tasking relayed to aircraft via Google Docs

- **Version 4.0: 1200-30 August to 11 September**
  - All Sector Call Center lines are transferred to NCC Call Center
  - All Cases are entered into GeoSuite
  - Sector SAR Branch monitors GeoSuite heat maps and dispatches Air and Surface assets as necessary.
  - GeoSuite provides real time data for multiple users at the State & CG Level

- **Each case must still be evaluated by SAR Branch for Surface or Air response based on severity of the situation.**
Urban SAR Operations

- USCG Assets Deployed in Theater at Height of Urban SAR Response
  - 25 Flood Punt Boats
  - 4 Air Boats
  - 30 Helicopters
  - 8 Fixed-Wing Aircraft
  - 2 Truck Teams

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USCG Flood Punts

- 9 Flood Punt Teams – 25 Total Boats
  - MSU Paducah (3 boats)
  - MSU Huntington (3 boats)
  - Sector Lower Mississippi (6 Boats)
  - Sector Upper Mississippi (6 Boats)
  - MSD Peoria (3 Boats)
  - Gulf Strike Team (4 Boats)

- 4 Air Boats

- 2 Truck Teams

- 4,814 People Rescued
USCG Air Assets

- **19 MH-65 Dolphin Helicopters**
  - AIRSTAs Houston, Corpus Christi, Mobile, New Orleans, Savannah, Miami, Traverse City, & HITRON

- **11 MH-60 Jayhawk Helicopters**
  - AIRSTAs San Diego, Mobile, Clearwater, Cape Cod, & Elizabeth City

- **3 HC-144A Ocean Sentry Fixed Wing Aircraft**
  - AIRSTAs Cape Cod, Mobile, Corpus Christi, Miami

- **3 HC-130 Spartan Fixed Wing Aircraft**
  - AIRSTAs Elizabeth City & Clearwater

- **2 C-27J Spartan Fixed Wing Aircraft**
  - AIRSTA Elizabeth City

- **1,719 People Rescued during 682 Rescue Sorties**
- **Over 1,400 Flight Hours**
Keys to Port Reconstitution

• Timely re-opening of the ports/channels with restrictions to minimize economic impact

• Effective daily communication to the maritime community
  – Marine Safety Information Broadcasts, Port Coordination Team and Navigation Restoration Team meetings

• Restoration of Critical AToN

• Hydrographic Surveys by USACE, NOAA and other port partners
  – Emergency dredging/shoal removal
  – Salvage operations
Questions?

• **Numbers to Know:**
  
  – Sector Houston-Galveston Vessel Traffic Service (281) 464-4837
  – 24 Hour Command Center (281)-464-4854
  – Sector Houston-Galveston Waterways Mgmt Div 281-464-4891 or 4890