Maintaining Threat Awareness During This Tropical Storm and Hurricane Season (2017)

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Overview

- Tropical Storm and Hurricane Season Outlook
- The State of Tropical Storm Forecast Science
- Best Sources of Information To Make Decisions
- Prepare, Response and Recovery Plans
Tropical Storm and Hurricane Season Outlook
2017 Storms Thus Far

Tropical Storms = Winds 39 MPH or higher
Hurricane Winds = 74 MPH or higher
Major Hurricane – 111 or higher
Moving into a period of highest activity
Tropical Storm and Hurricane Season Outlook
2017 Forecasts—National Hurricane Center (US)

- 11 to 17 named storms in 2017 (Tropical Storm Level or higher)
  - 5 to 9 could become hurricanes
  - 2 to 4 major hurricanes

- An average season produces:
  - 12 named storms
  - 6 become hurricanes
  - 3 become major hurricanes
The Tropical Storm Science
How Accurate Are Forecasts?

Forecast Errors for The Atlantic Basin (2012-2016)

<table>
<thead>
<tr>
<th>Forecast Period</th>
<th>12 Hours</th>
<th>24 Hours</th>
<th>36 Hours</th>
<th>48 Hours</th>
<th>72 Hours</th>
<th>96 Hours</th>
<th>120 Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Track (Miles)</td>
<td>25.2</td>
<td>39.7</td>
<td>53.8</td>
<td>70.7</td>
<td>96.6</td>
<td>148.4</td>
<td>195.9</td>
</tr>
<tr>
<td>Intensity (MPH)</td>
<td>5.8</td>
<td>9.0</td>
<td>11.3</td>
<td>13</td>
<td>14.5</td>
<td>15.8</td>
<td>16.4</td>
</tr>
</tbody>
</table>

- Scientific Improvements continue in Tropical Storm Forecasting
- Eastern sides of storm are the most intense
- “Eye wall” most damaging winds—20 to 50 mile wide zone
- Forecast error at 48 hours could mean the difference between 100 MPH and 50 MPH winds
- Better to take a risk management approach to decisions
Best General Sources Of Information to Make Decisions

- [http://www.nhc.noaa.gov/](http://www.nhc.noaa.gov/)
Prepare, Response and Recovery Plans

• Minimize impact to personnel, property and profits
  • Understand key thresholds for every port function/stakeholder
    • Wind, Crosswinds, Waves, Currents, Precip, Storm Surge, Lightning
  • Severe Weather Playbook
    • Gracefully shut down impacted functions as storm progresses
    • Instruct stakeholders on recommended actions
    • Alert messaging system to communicate risks and actions
    • Communication of your pain points
  • Reduce impacts 40% or more with well orchestrated Preparation, Response and Recovery plan and execution
Weather Plans Grease the Gears of an Efficient and Reliable Port

WEATHER & WATER IMPACTS

Rail Capability
Import/Export Imbalance
Chassis Supply & Mgmt
Safety Security Environ Rqmts
Larger Vessels/ Cargo Surges

Whse/DC Hours
Info Sharing
Vessel Alliances
Peak Season Volumes

Labor
Vessel Schedule Integrity
Natural & Man Made Geo-Political Events

Turn Times
Free Time
Vessel Management
Hours of Service Rules

Turn Times
Free Time
Vessel Management
Hours of Service Rules

Trouble Tickets
Operating Hours

Weather and Water Business Solutions
TWS Confidential Information – Not for Public Release
TruWeather Wants to Become Your Weather Risk Management Partner

- safety
- productivity
- port efficiency
- tenant satisfaction
- revenue
- innovation
thank you.

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