

Reducing Risk When Coastal or Blue Water Cruising

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Lee Chesneau's Marine Weather

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“Expect the Unexpected”

“When anyone asks me how I can best describe my experience of nearly forty years at sea, I merely say uneventful.

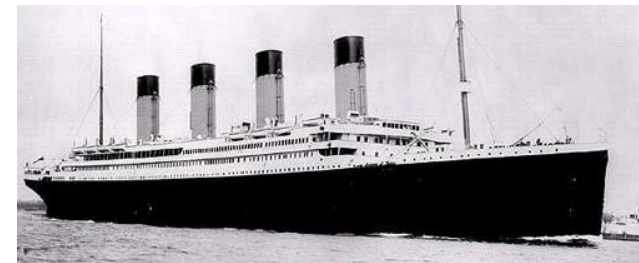
Of course there have been winter gales and storms and fog and the like, but in all my experience, I have never been in an accident of any sort worth speaking about. I have seen but one vessel in distress in all my years at sea...

I never saw a wreck and have never been wrecked, nor was I ever in any predicament that threatened to end in disaster of any sort.”

from a presentation by E.J. Smith, 1907



Captain of the *Titanic*



Attention to detail!?

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S S Amerika via S S Titanic and Cape Race N.F. April, 14, 1912

Hydrographic Office, Washington DC

Amerika passed two large icebergs in 41 27 N 50 8 W on the 14th
of April

Knutp, 10;51p

*Telegraphed 13 10 o'clock nykh
April 15, 1912*

PC

Jan

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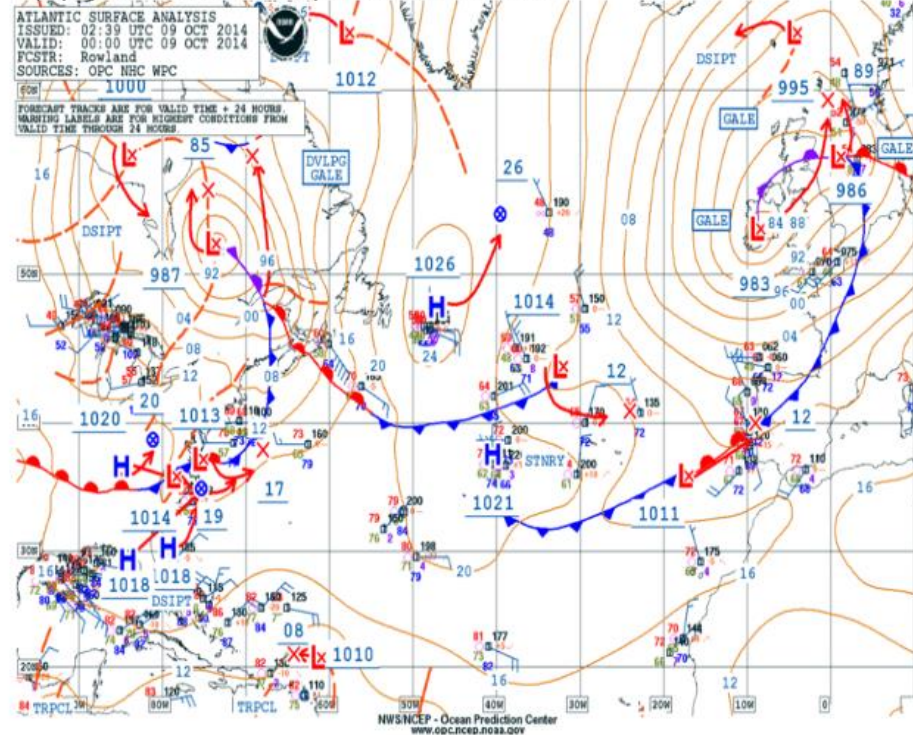
Hierarchy of Marine Weather Prediction Priorities

1. The skipper, the captain of every vessel, large or small must take on ultimate responsibility for **EVERYTHING**, including weather forecasting, vessel routing, & strategy decisions.
2. Prerequisite before leaving the dock: **What marine advisories, watches,& warnings** (as contained in the marine forecasts) are in play through 5 days (120 hours)? If within the margin of safety... cast off, or if at sea, make decisive and evasive actions.
3. Documentation & verification of your forecasts based on your current observations: Do you understand the products (e.g., can you read the graphical charts)? If so, then from the actual weather conditions you logged verify those conditions with the 24,48, & 96 hour forecasts predicted, based on the same valid times & expected vessel's position.
4. Human intelligence originated forecasts: Access and display surface pressure graphical analyses and forecasts (as well as text forecasts) in a logical display format.
5. When underway: You, the skipper/navigator go on deck & observe weather conditions at least every three hours, then log them (cloud groups & types, barometric pressure, dry & wet bulb temperatures, sea water temperature, visibility, wind & sea state conditions).
6. Weather models...often communicated in Gridded Binary Data File format (GRIBs); The utility and ease of 3 hourly predictions are very attractive, **BUT**...remember, they are models that represent a singular solution to the weather & may require accessing additional models for comparisons. Models should also be compared with the human originated forecasts. When they differ, requires one to choose which one verifies the best.
7. To accomplished 1-6 all requires understanding of marine weather & forecasting!!

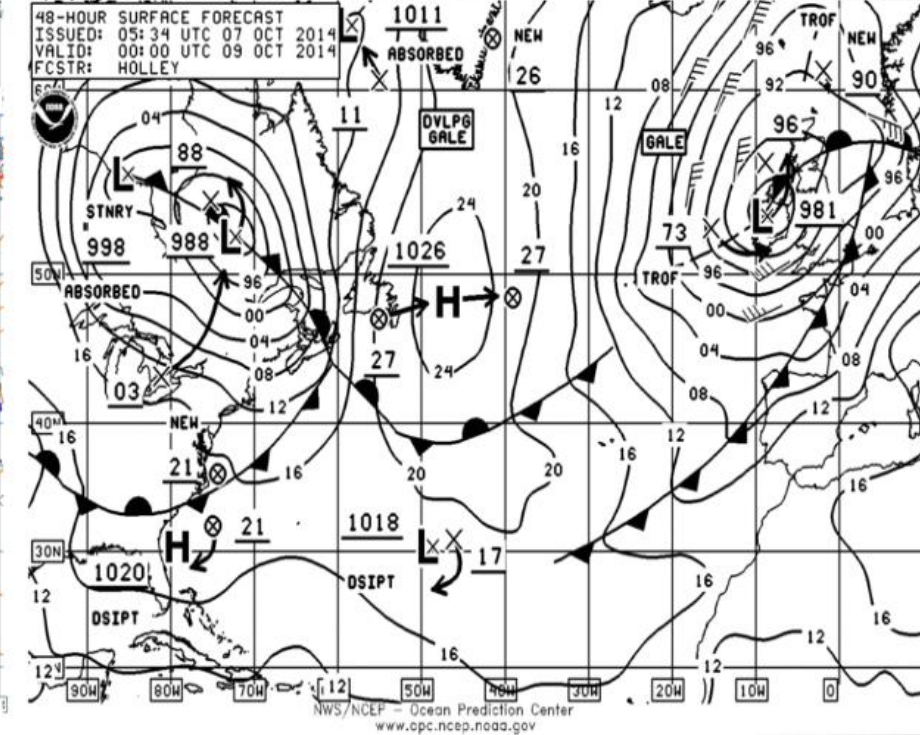
1. (a)

Do you verify 48 Hour Surface Forecasts?

Displaying the Atlantic Surface Analysis Valid: 00Z Oct 09 2014



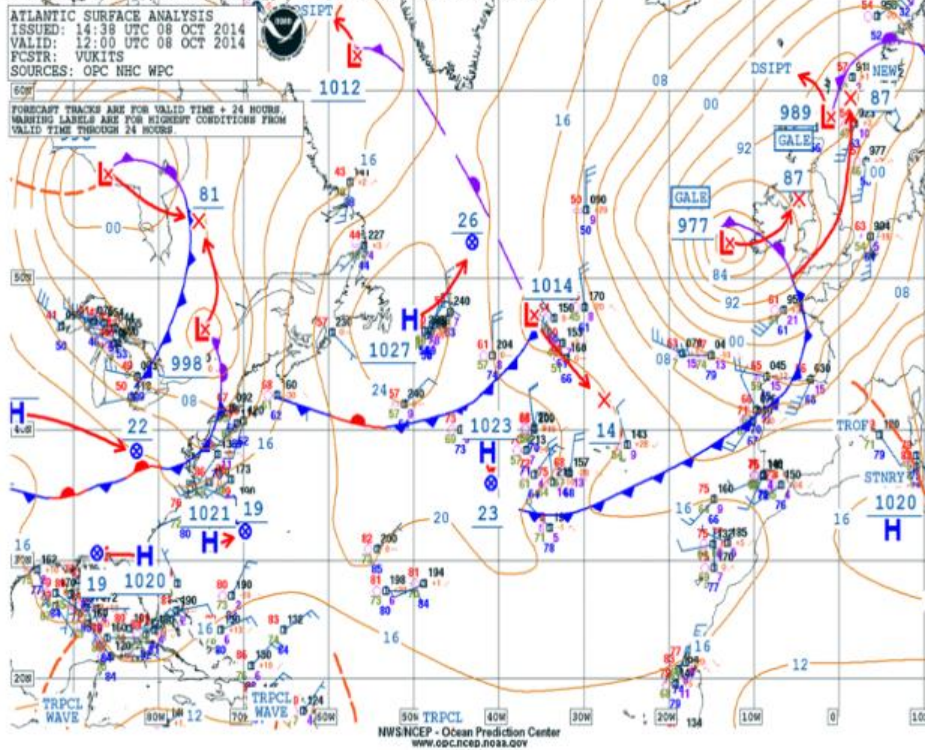
Displaying the 48 Hour Forecast Valid: 00Z Oct 09 2014



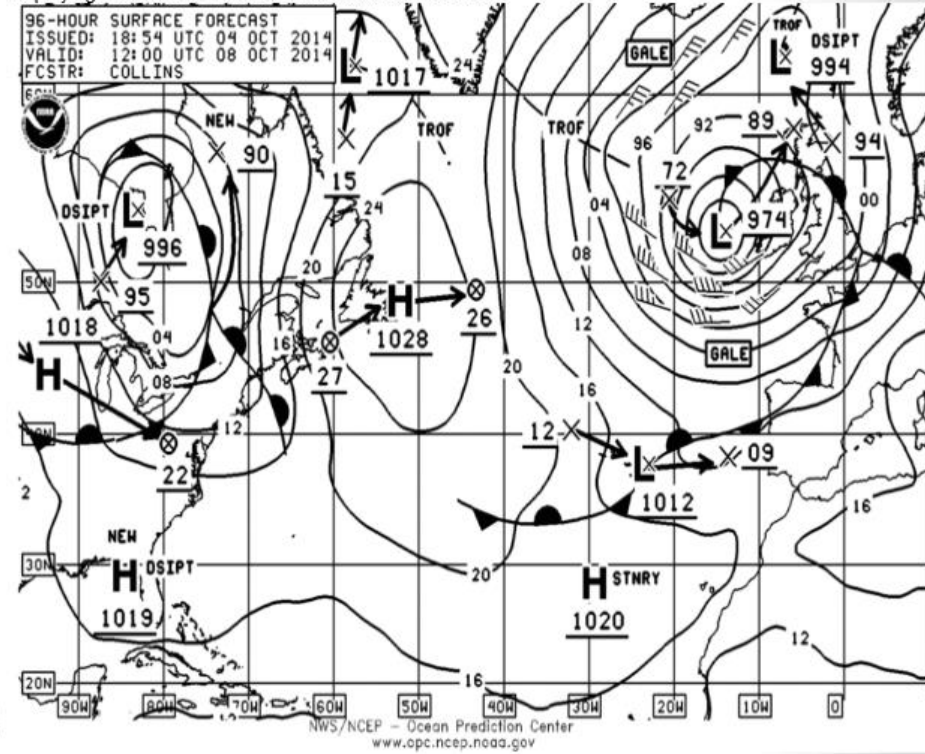
1. (b)

...and especially verify 96 Hour Surface Forecasts?!

Displaying the Atlantic Surface Analysis Valid: 12Z Oct 08 2014



Displaying the 96 Hour Forecast Valid: 12Z Oct 08 2014



2.(a)

Baltimore to Hatteras Canyon ...GALE WARNING...

**NW WINDS INCREASING TO 30 TO 40 KT...SEAS BUILDING
TO 15 TO 20 FT...**



**Who issues
Marine WARNINGS?**

2.(b)

NWS Marine Advisories and Warnings

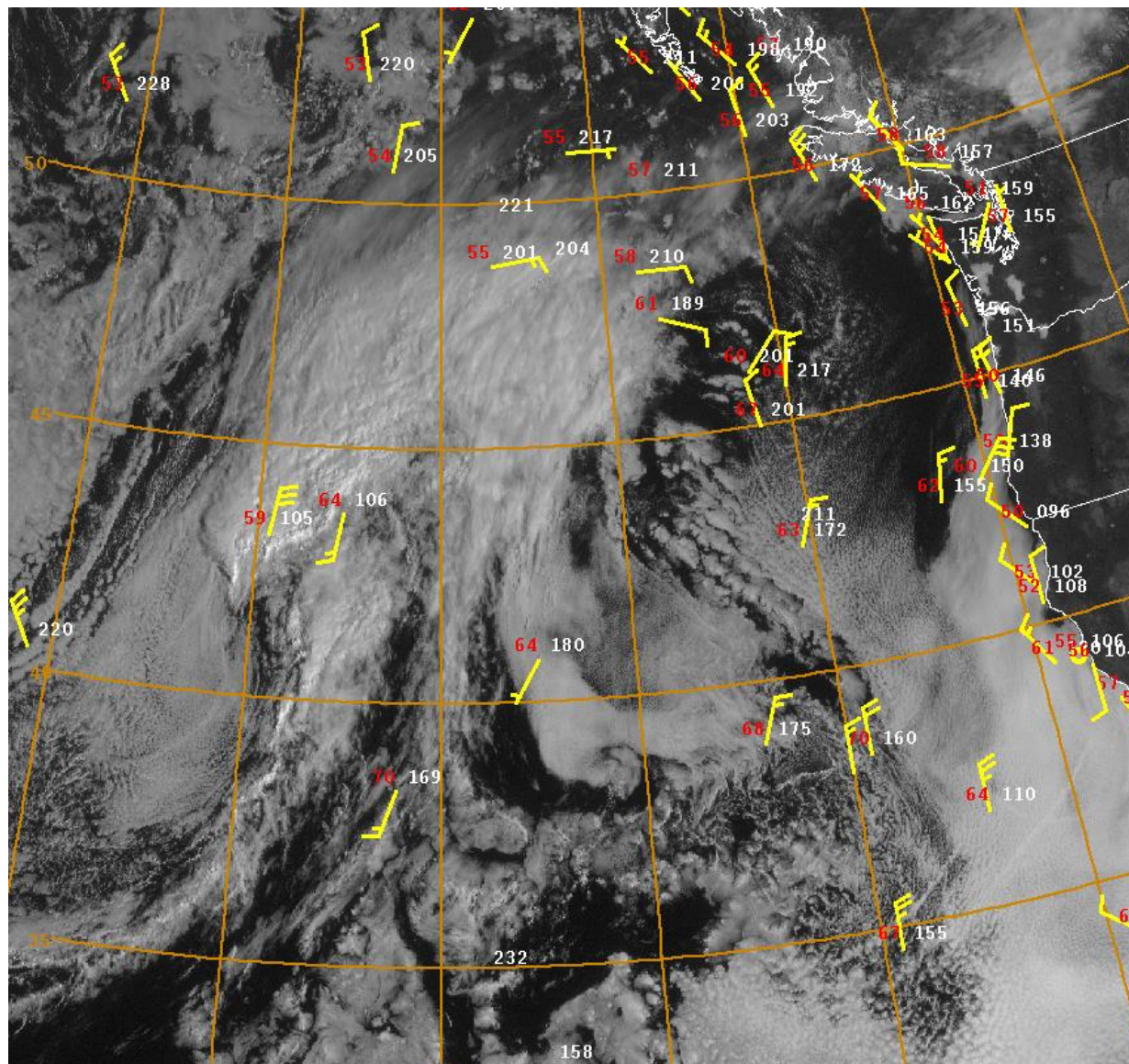
Never leave the dock without knowing which NWS marine advisories & warnings have been issued!!

- **Small Craft Advisory** – Issued for local coastal and inland waters only, 20-33 knots (Force 5-7), seas 5- 15 FT
- **Gale Warning** – 34-47 knots (Force 8/9)
- **Storm Warning** – 48-63 knots (Force 10/11)
- **Hurricane Force Warning** – 64+ knots (Force 12)

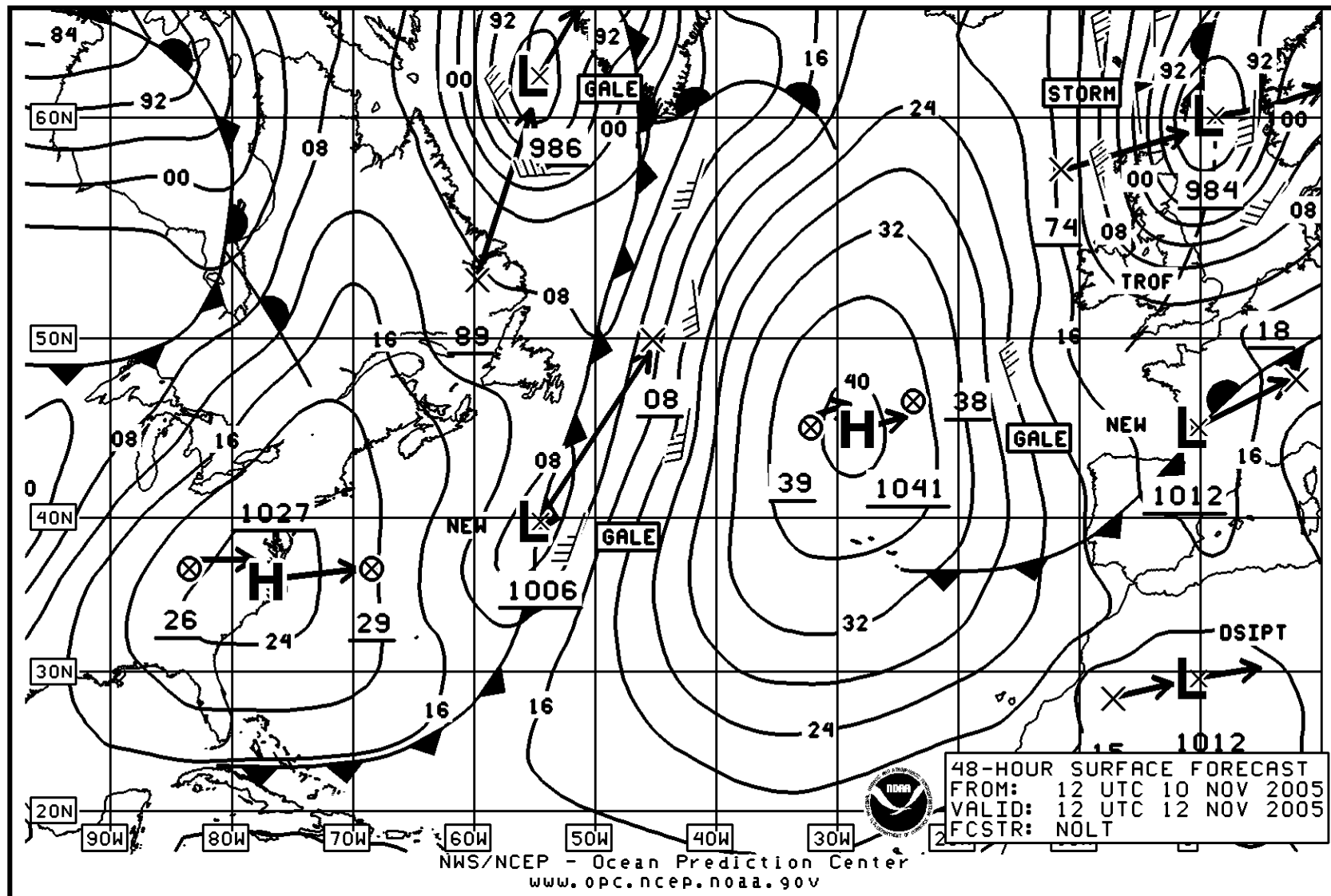
1. What Advisories & Warnings Are In Play (Small Craft Advisories, Gale, Storm, Or Hurricane Force)?
2. Is It Safe?!



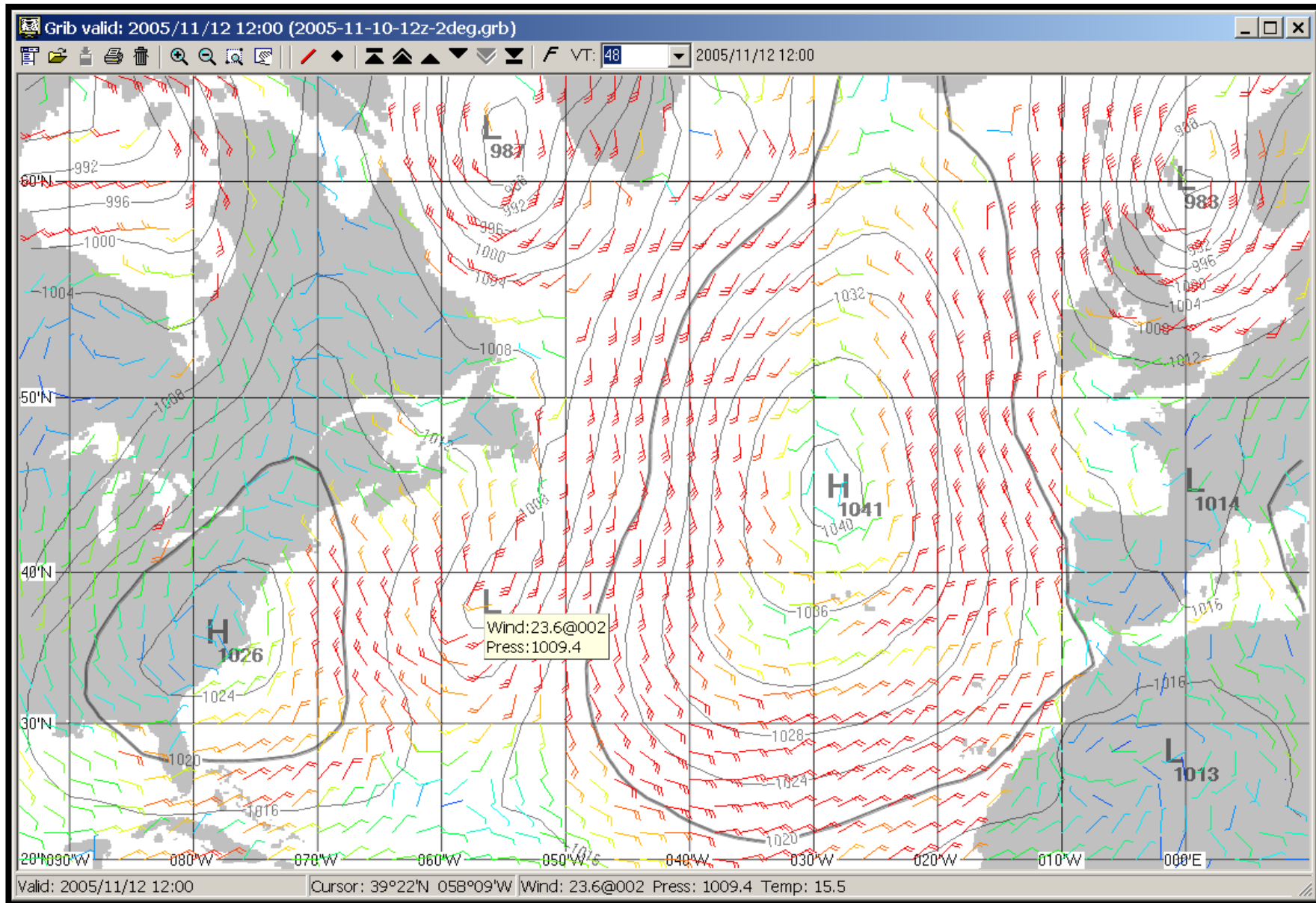
How Does Your Vessel Compare With Real Marine Weather Time Observations



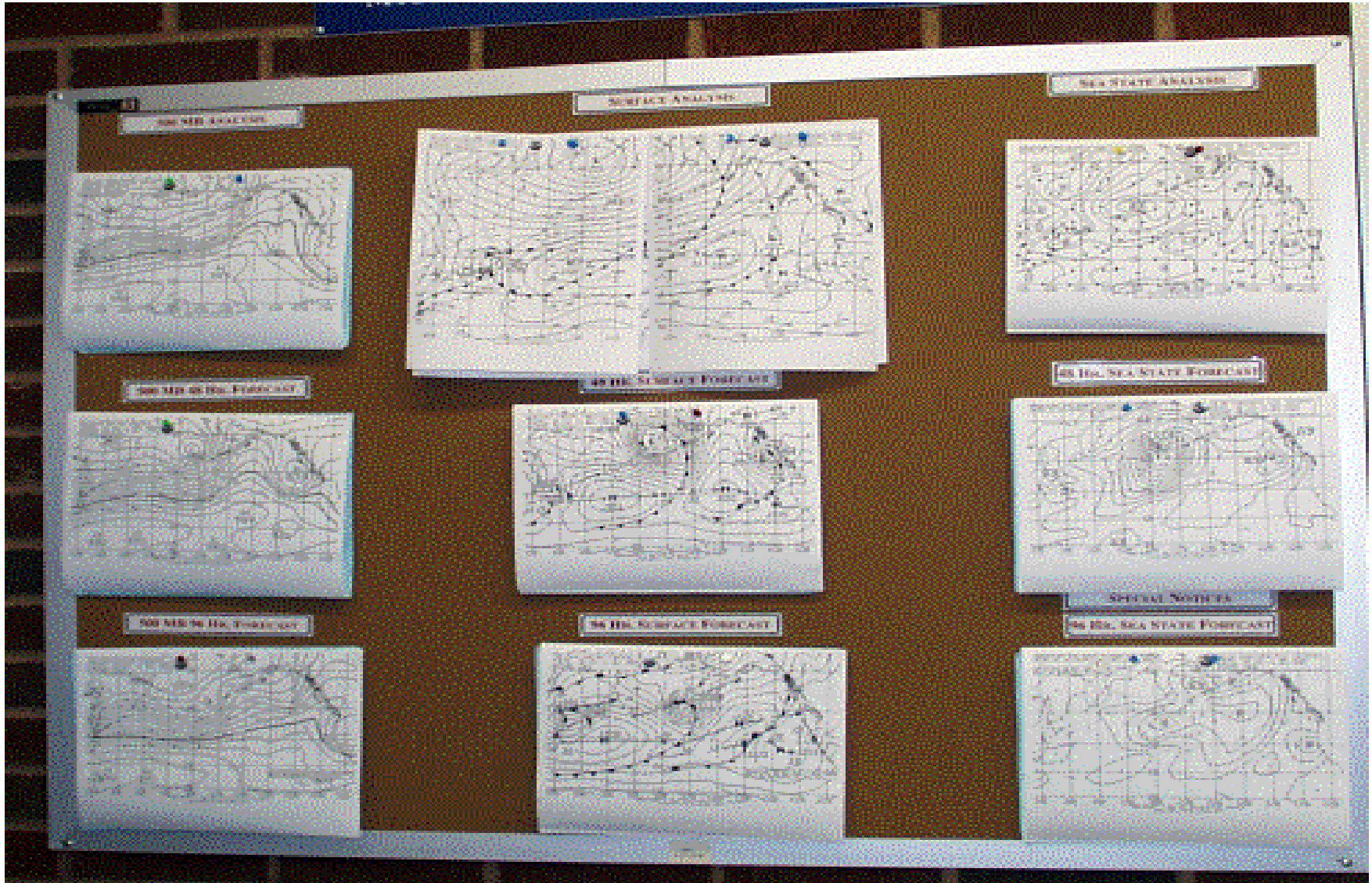
Do You Routinely Access & Monitor Human Intelligence Forecasts (e.g., 48 Hour Surface Forecast From the OPC Below)



Or Do You Just Rely On This Raw Model Output (The same 48 Hour Surface Pressure & Wind Forecast)?



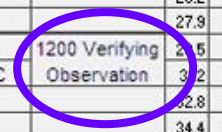
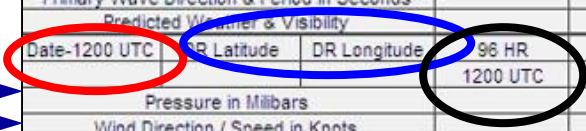
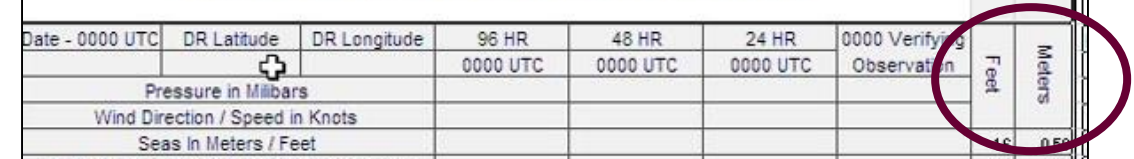
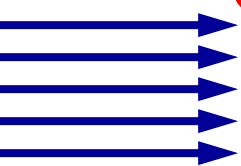
Do You Display WX In A Logical Way That Reflects The Logic of Clear & Precise Thinking?!



Vessel Tracking, Weather Prediction & Verification

Date - 0000 UTC	DR Latitude	DR Longitude	96 HR	48 HR	24 HR	0000 Verifying	Feet	Meters
			0000 UTC	0000 UTC	0000 UTC	Observation		
Pressure in Millibars								
Wind Direction / Speed in Knots								
Seas In Meters / Feet							1.6	0.50
Primary Wave Direction & Period in Seconds							3.3	1.00
Predicted Weather & Visibility							4.9	1.50
Date-1200 UTC	DR Latitude	DR Longitude	96 HR	48 HR	24 HR	1200 Verifying	6.6	2.00
			1200 UTC	1200 UTC	1200 UTC	Observation	8.2	2.50
Pressure in Millibars							9.8	3.00
Wind Direction / Speed in Knots							11.5	3.50
Seas In Meters / Feet							13.1	4.00
Primary Wave Direction & Period in Seconds							14.8	4.50
Predicted Weather & Visibility							16.4	5.00
Date - 0000 UTC	DR Latitude	DR Longitude	96 HR	48 HR	24 HR	0000 Verifying	18.0	5.50
			0000 UTC	0000 UTC	0000 UTC	Observation	19.7	6.00
Pressure in Millibars							21.3	6.50
Wind Direction / Speed in Knots							23.0	7.00
Seas In Meters / Feet							24.6	7.50
Primary Wave Direction & Period in Seconds							26.2	8.00
Predicted Weather & Visibility							27.9	8.50
Date-1200 UTC	DR Latitude	DR Longitude	96 HR	48 HR	24 HR	1200 Verifying	29.5	9.00
			1200 UTC	1200 UTC	1200 UTC	Observation	32.2	9.50
Pressure in Millibars							32.8	10.00
Wind Direction / Speed in Knots							34.4	10.50
Seas In Meters / Feet							36.1	11.00
Primary Wave Direction & Period in Seconds							37.7	11.50
Predicted Weather & Visibility							39.4	12.00
Date - 0000 UTC	DR Latitude	DR Longitude	96 HR	48 HR	24 HR	0000 Verifying	41.0	12.50
			0000 UTC	0000 UTC	0000 UTC	Observation	42.6	13.00
Pressure in Millibars							44.3	13.50
Wind Direction / Speed in Knots							45.9	14.00
Seas In Meters / Feet							47.6	14.50
Primary Wave Direction & Period in Seconds							49.2	15.00
Predicted Weather & Visibility							50.8	15.50
Date-1200 UTC	DR Latitude	DR Longitude	96 HR	48 HR	24 HR	1200 Verifying	52.5	16.00
			1200 UTC	1200 UTC	1200 UTC	Observation	54.1	16.50
Pressure in Millibars							55.8	17.00
Wind Direction / Speed in Knots							57.4	17.50
Seas In Meters / Feet							59.1	18.00
Primary Wave Direction & Period in Seconds							60.7	18.50
Predicted Weather & Visibility							62.3	19.00
Date - 0000 UTC	DR Latitude	DR Longitude	96 HR	48 HR	24 HR	0000 Verifying	64.0	19.50
			0000 UTC	0000 UTC	0000 UTC	Observation	65.6	20.00
Pressure in Millibars							67.3	20.50
Wind Direction / Speed in Knots							68.9	21.00
Seas In Meters / Feet							70.5	21.50
Primary Wave Direction & Period in Seconds							72.2	22.00
Predicted Weather & Visibility							73.8	22.50

Feet	Meters
1.6	0.50
3.3	1.00
4.9	1.50
6.6	2.00
8.2	2.50
9.8	3.00
11.5	3.50
13.1	4.00
14.8	4.50
16.4	5.00
18.0	5.50
19.7	6.00
21.3	6.50
23.0	7.00
24.6	7.50
26.2	8.00
27.9	8.50



Lee Chesneau's Marine Weather Vision

- To provide the mariner with the knowledge, tools and culture for independent decision-making in marine weather forecasting, route planning and heavy weather avoidance.
- To instill trust in the work done by this country's most qualified, talented, and dedicated professional marine meteorologists integrated within the National Weather Service's (NWS's) marine program.
- To provide the seminars, detailed training, and education programs as a foundation for mariners to have the confidence to principally rely on NWS analyses and forecasts.

Students completing a course will be knowledgeable of and have proficiency in determining current and expected weather conditions. Additionally, students will gain knowledge of:

- Atmospheric Composition, Properties and Behavior
- Differences Between Synoptic Meteorology and Climatology
- Scales of Weather Systems
- Anti-Cyclones
- Mid-Latitude Cyclones or Wave Cyclones
- Non Frontal Cyclones and Synoptic Scale Features
- Introduction to Wave Formation, Propagation and Decay
- Introduction to Upper Air 500 Mb
- Interpretation of OPC and NHC Graphical Product
- Weather Routing
- Local Weather Forecasting Issues

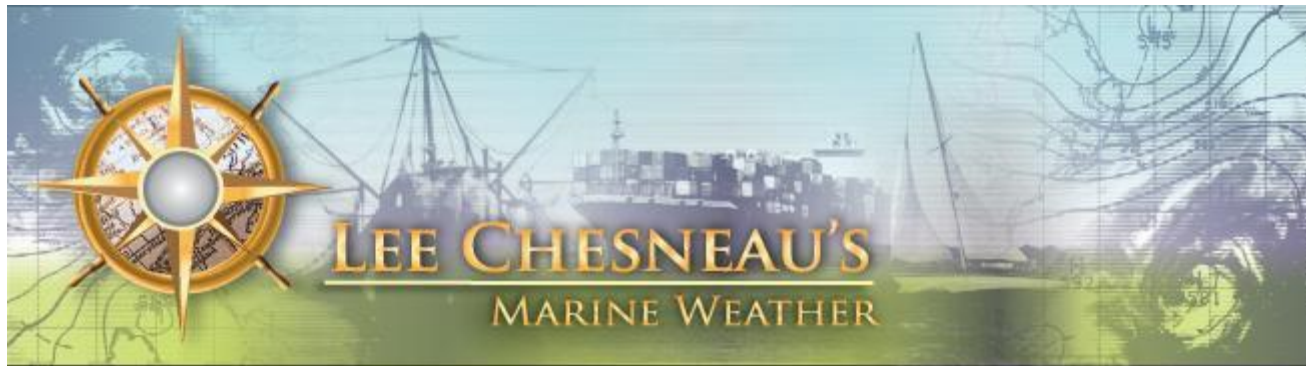
Developing Marine Weather Self Reliance

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See webpage for Two- Day Weather 1, Weather 11 & Weather 111 Marine Weather Self Reliance courses (restructured from the 5-day STCW courses taught at continuing professional maritime education institutions)

**2-Day Seamanship, Weather, Oceanography,
Communications, & Boat Outfitting Symposium (Nov 1-2)**

Seamanship, Oceanography, and Weather Collide for One Weekend...

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BELOW!**



John Rousmaniere
Sailor, Writer, Historian & Author of
The Annapolis Book of Seamanship



Pam Wall
Cruising Consultant, Outfitter and
Circumnavigator



Frank Bohlen
Oceanographer, Professor Emeritus
University of Connecticut



Lee Chesneau
Former Sr. Marine Meteorologist
NOAA/NWS Ocean Prediction Center

Heading Offshore? Passagemaking? LEARN from Top Industry Experts:

- Art of Blue Water Seamanship in Any Weather
- Fundamentals of Ocean Currents and the Impact of Wind & Waves on Offshore Cruising
- Properly Prepare/Outfit Your Boat
- Fundamentals of Weather Chart Reading
- Choose Communications to Monitor Offshore Weather



**LEE CHESNEAU'S
MARINE WEATHER**



Pam Wall

Date: May 1-3rd, 2015

Location:

MITAGS 692 Maritime Boulevard, Linthicum Heights MD 21090

Registration : <https://www.chesneamarineweather.com>

**“Some people are weather-wise,
but most are otherwise”**

Benjamin Franklin, 1790

