

Detailed Syllabus Outline for the 2015 Southwest International Boat Show

Part 1...“The Weather Primer” (0800-1200)

*This three hour and half hour session will introduce mariners to weather 101 basics, starting with definitions of weather, climatology and the atmosphere. There will be a brief discussion of the different layers of the atmosphere, focusing on the lowest layer, the troposphere, where most weather occurs.

*An important discussion will focus on how the atmosphere is heated, and its interaction with the earth’s surface (land and water). This then leads into the important topic of the role of the sun’s radiation in generating the temperature differences between the land and nearby coasts lines versus offshore when it comes to land and sea breezes. As a mariner it is important to relate to these land-sea temperature differences as it influences weather in a fairly narrow range where much sailing and power boating takes place.

*Other important topics include how clouds form, the groups and types of clouds found within each group. Clouds produce precipitation but not all precipitation is equal as well as the clouds that produce them.

*The session will conclude with basic concepts of pressure and wind, how it works which provides the foundation of reading weather maps from the surface pressure maps to upper air charts (such as 500 Millibars-Mb). Attendees of this three-hour “**Weather Primer**” allows one to gain confidence with the necessary understanding of basic weather fundamentals. This will allow for better understand the weather maps (both marine surface and upper air weather analyses and forecast charts).

Part 2... “Understanding Surface Weather Maps and their Symbols (1300-1630)

*The afternoon sessions will look at “Scales of Weather Systems” (Global Scale- the Jet Stream; Synoptic Scale- Low & High Pressure; Meso-scale- dry lines & squall lines; Micro Scale- thunderstorms/micro-bursts/waterspouts). Global Scale is about “Global Pressure & Wind Belts”, such as those that prevail off the Texas coastal and offshore areas & the Gulf of Mexico- all within the “Trade Wind Belt”. This leads into the meat and potatoes of the symposium: “Synoptic Scale Weather Systems” of Low and High Pressure, especially those dominate middle latitudes between 30/60N, because they do impact once again the Texas coast as well as the entire Gulf of Mexico. Specifically, middle latitude Lows have synoptic scale features such as fronts (cold and sometimes warm fronts). These systems and features also impact the US SE coast & offshore waters of the Atlantic Ocean before moving to the higher latitudes of New England and Nova Scotia and beyond. The impact of middle latitude “lows & highs” and their associated synoptic scale features, also include troughs squall lines, dry lines, along with ridges will be discussed. A further discussion will include the identifiable map symbols as they are routinely depicted on surface pressure charts such as those prepared by the National Weather Service’s (NWS) Ocean Prediction Center (OPC), and the National Hurricane Center’s (NHC) Tropical Analysis and Forecast Branch (TAFB,) both important line offices of the NWS, located in College Park, MD, & Miami, FL.

*It is vitally important to understand the importance of documentation and verification of forecasts. Lee will take you through this cultural process by comparing surface pressure forecasts (48-96 hours) to the most current surface pressure analysis charts, having the same valid date and time. One must a built in culture of belief in the human intelligence forecasts discussed and just promoted (a medium degree of confidence), in order to make safety decision and strategic planning).

*There will also be a short presentation on methods of receiving weather information at sea.

*The day will conclude with a Question & Answer session until 5:00 PM.