

## 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 land and sea breezes, due to the temperature differences caused between the land and nearby coasts lines versus offshore. 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 group 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 will be touch upon.

\*The session will conclude with basic concepts of pressure and how wind 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 necessary basic weather fundamentals in order to better understand the surface weather maps (both marine surface and upper air weather analyses and forecast charts) **enabling a mariner to learn how to become self-reliant in their own weather forecasting!**

## . Part 2...”Understanding Surface Weather Maps and their Symbols 1300-1600

\*With the “**The Weather Primer**”, under your belt, you will be prepared to enter the world of marine weather analysis and forecasts charts!

\*We begin with the all-important discussion of the marine advisory and warnings system of the National Weather Service-NWS - (Small Craft Advisories (SCA), Gale, Storm, and Hurricane Force Warnings).

\*We then will look at “Scales of Weather Systems” (Global Scale; Jet Stream; Synoptic Scale; lows & highs, Meso-scale; squall lines, Micro Scale; thunderstorms/micro-bursts/waterspouts) and how each one affects the cruising sailor.

We will spend a significant time discussing “Synoptic Scale Weather Systems” and their fronts, especially those that dominate middle latitudes between 30/60N, because they do impact the mid-west before perhaps impacting the US coastline then offshore before moving to the higher latitudes of New England and Nova Scotia.

The impact of middle latitude “lows & highs” and their associated “Synoptic Scale Features” such as fronts (cold, warm, occluded, & stationary), and troughs & ridges & squall lines will be discussed.

We will then discuss how to read Surface Weather Maps, identifying their symbols, and how to use these to keep your boat out of the heaviest weather. Chicago, being influenced by the Great Lakes will allow us to look at its effects on local scale weather

\*It is vitally important to understand the importance of documentation and verification of forecasts. Lee will take you through this cultural process by comparing forecasts (48-96 hours surface pressure forecasts) 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 forecast discussed and just promoted (at the very least, a medium degree of confidence, in order to make safety decision and strategic planning).

\*The day will conclude with a brief discussion of where can continue their training for further advanced topics such as upper air 500 Mb charts and advanced forecasting and routing (mainly blue water cruising).

