LakeErieWX

Marine Weather Education and Forecasting Resources

Preparing Your Mac Forecast: A Workshop for Sailors

Introduction: My background and a discussion of the workshop's structure and goals.

Fundamentals: The ability to prepare a forecast and manage the weather on the racecourse requires a familiarity with basic meteorological principles. This section will present concepts such as barometric pressure, air masses, and the structure of the atmosphere. The confusing array of symbols, meteorological shorthand, terminology, and time systems that appear on forecasts charts will be reviewed.

Forecasting Low & High Pressure Patterns: The wind and weather conditions that you encounter on your way to the Island will be governed by the passage of low and high pressure systems. We'll examine the life-cycle and structure of a low pressure system, including cold fronts, warm fronts and stationary boundaries.

Assessing The Risk Of Thunderstorms: Thunderstorms can make the race more challenging in many ways—strong winds, large waves, dangerous lightning or visibility-limiting rain. This section will examine the various types of thunderstorms and the atmospheric ingredients that lead to their formation. Learn why thunderstorms often 'pop-up' late on summer afternoons and why some storms have short life-spans while others persist for hours. Discover why thunderstorms remain independent on some days and form into damaging long-lived squall lines on others. Reduce your chances of a hair-raising or wind-swept encounter with a thunderstorm by learning to assess the potential for their development using readily available Internet resources and the sky.

The Invisible Forces Controlling The Wind: This section will investigate the atmospheric forces that control the wind including large-scale dynamics and small-scale features such as lake and land breezes. The wide range of wind forecasting resources on the Internet and smartphone applications will also be reviewed.

Wave Forecasting: Wave heights can make all the difference between an enjoyable journey to the Island or a wet and uncomfortable one. This section will review the dynamics of wave formation and a few wave forecasting resources.

Putting It All Together: A Mac Forecast Routine: A strategy for preparing your Mac forecast will be presented. This section will include a hands-on practice Mac forecast exercise designed to reinforce the workshop's concepts and increase your familiarity with on-line forecasting resources.

After The Start – Monitoring The Weather: After the race starts, you'll need to monitor the weather for possible changes to your race strategy. A variety of observational resources will be examined. The National Weather Service's severe weather warning process will also be presented.

Doppler Weather Radar: Doppler weather radar has a lot to offer the weather-savvy Mac sailor. This section will introduce common types of Doppler weather radar and provide instruction in their interpretation and use. You'll learn how weather radar works (along with a few of its quirks) and how it can be used to monitor the development, intensity, and speed of approaching thunderstorms.

Instructor Biography

Mark Thornton has been sailing on Lake Erie for more than 20 years and currently owns *Osprey*, a C&C 35. His interest in weather forecasting grew from his experiences cruising and racing on the lake. Mark is a 2006 graduate of the Penn State University *Certificate of Achievement in Weather Forecasting*, a two-year program that develops skills in general, tropical, and severe weather forecasting.

He is the president of LakeErieWX LLC, a company dedicated to providing marine weather education and forecasting resources for recreational boaters (www.lakeeriewx.com). He served as race meteorologist for the 2014-2017 Bell's Beer Bayview Race to Mackinac, and is the past president of the Cleveland chapter of the American Meteorological Society. Mark is employed as the Vice-President of Administration for the law firm of Wegman, Hessler & Vanderburg, and as a Teaching Assistant in the *Certificate of Achievement in Weather Forecasting Program* at Penn State University. He can be reached by email at Mark@LakeErieWX.com.