

06, 12, and 18Z. Note this is easy to do if you are looking for data within the past 24 hours. It is doable but harder to sift through the archives to find older data. From a practical point of view this is not a limit, as we usually want this data now, as recent as possible, in most planning situations. A sample selection of ship reports is shown in Table 1.5-1.

That is all we need to do for now. The goal for now is to understand the wind symbols, appreciate that they are rounded values, and that the directions reported deserve our respect. Needless to say, as sailors we care which way the wind blows, 5° this way or that, can make a huge difference.

Finally we note that there is still another way to describe wind speeds and that is in terms of the Beaufort force scale. That very important concept, however, is more a description of the relationship between wind and sea state than it is actual wind speeds, so we postpone this till we get to Chapter 5 on sea state.

We will also need to come back to the process of extracting the true wind speed and direction from the apparent wind speed and direction that we detect from a moving vessel. It is always the true wind speed and direction we care about in weather analysis and forecasting.

Time for Trivial Pursuit!

What is the difference between the wind arrows A and B in Figure 1.5-9, and likewise between C and D? Each set has the same wind speeds indicated. A and B are more like surface winds, C and D are more like winds aloft.

The answer is shown in Figure 1.5-10. Wind arrows in the Northern Hemisphere are always drawn with the feathers on the left side, whereas in the Southern Hemisphere the feathers are drawn on the right side. We have yet to learn how and why this convention has evolved.

Presumably there is some practical reason behind this convention. We leave it as an exercise to think of some reason this is a useful convention—I do not know the answer!

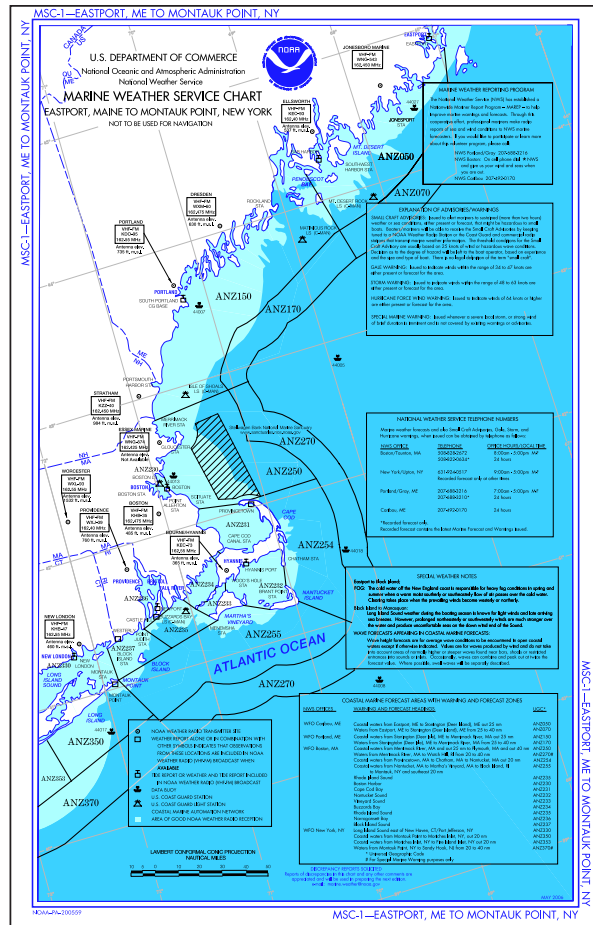


Figure 1.6-1 Front side of MSC-1

1.6 Getting Started on Resources

Sources of marine weather data, both for planning and for use underway by some form of wireless communications, are covered in depth in Chapter 8. Bits and pieces come up throughout the book as well, but here are a few primary sources to refer to as we get underway.

We start with an overview of your two main sources for local information (Marine Weather Services Charts and NOAA Weather Radio) and then outline the main resources online that provide data worldwide, so you can start working with them as well.

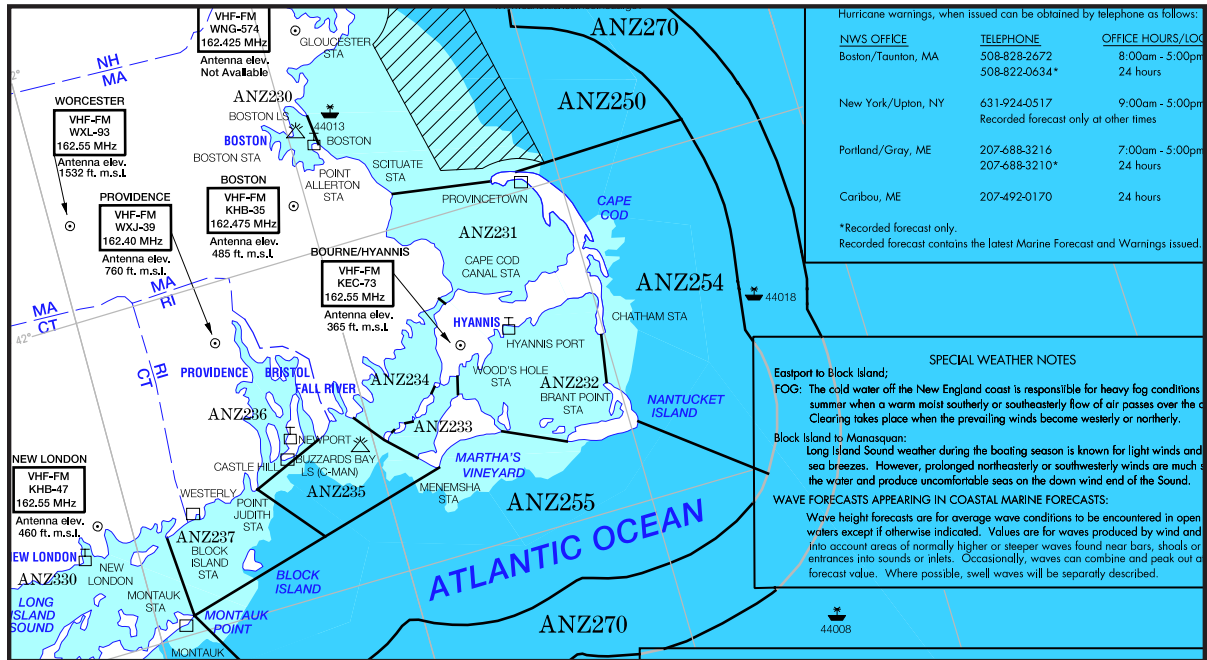


Figure 1.6-3 Section of MSC-1 showing coastal weather forecast zones defined. All broadcasts in voice and text refer to these zones, which makes this diagram crucial to interpretation of the reports.

Figure 1.6-4 Each MSC chart also lists the times that the USCG replays the NWS weather reports. These are valuable data in many cases because the USCG stations are often on higher power so you can hear the weather reports outside of the normal range of the NOAA weather radio broadcasts. Another virtue of these relays is they often cover much of the coast rather than just the region of one station. In the NOAA broadcasts you get just the data from the station broadcasting, unless you happen to be in an overlap area. They do not tell you what is going on in the neighboring zone. But the USCG replays cover more zones. (They also list the 2670 kHz reports, but I have never been able to receive these on any vessel I have been on, no matter how hard I try.) The coastal section of the high seas broadcasts also include multiple zones.

BROADCASTS OF MARINE WEATHER FORECASTS AND WARNINGS BY MARINE RADIOTELEPHONE STATIONS			
CITY	STATION	CARRIER FREQUENCY (kHz) VHF CH NO.	BROADCAST TIMES/UTC
Southwest Harbor, ME (USCG)	NMF-44	*#2670 ~Ch. 22A	1135, 2335 1135, 2335
Portland, ME (USCG)		*#2670 Ch. 22A	1105, 2305 1105, 2305
Boston, MA (USCG)	NMF	*#2670 ~Ch. 22A	1035, 2235 1035, 2235
Moriches, NY (USCG)	NMY-41	*#2670 ~Ch. 22A	0010, 1210 0010, 1210
Woods Hole, MA (USCG)		*#2670 ~Ch. 22A	0440, 1640 1005, 2205
Long Island Sound (USCG)		~Ch. 22A	1120, 2320
Activities, NY (USCG)		~Ch. 22A	1050, 2250

USCG VHF broadcasts normally contain coastal forecasts.
HF broadcasts normally contain offshore forecasts.
Marine warnings are broadcast upon receipt.

* Preceded by announcement on 2182 kHz. (2187.5 kHz future calling frequency)
~ Preceded by announcement on Ch. 16.
Single Sideband, Suppressed carrier, carrier frequency.

MSC-8 Mexican Border to Pt. Conception, CA
MSC-9 Pt. Conception to Pt. St. George, CA
MSC-10 Pt. St. George, CA to Canadian Border
MSC-11/12 Great Lakes
MSC-13 Hawaii Waters
MSC-14 Puerto Rico and Virgin Islands
MSC-14S Same as MSC-14 but in Spanish
MSC-15 Alaska Waters
MSC-16 Guam and the No. Mariana Islands

The content varies slightly with each chart to cover information unique to the region.

Sample Information on MSC charts

- Locations of all the VHF broadcast stations including antenna height that lets us figure range of the broadcast.
- VHF station identifiers (and frequencies) so you know which is best when several overlap.
- Locations of all the reporting stations, which is extremely valuable when sailing into unfamiliar waters.
- Boundaries of the forecast zones, presented as a list and more important, graphically marked out on the chart.
- Sources of Canadian data when applicable.
- How to use a cell phone to actually interrogate a buoy position or lighthouse on the chart to ask for current conditions.
- How to use email (FTPmail) to have reports and observations sent directly to your computer or cell phone. To see how this works, send an email to ftpmail@weather.noaa.gov with the body of the mail blank except for the word Help. Subject can be blank or what you choose. It is not used. You will get back instructions on how to access this very powerful source of weather data.
- Frequencies and broadcast schedules for USCG HF high seas weather for the adjacent coastal and ocean waters.
- Internet references for weather data as well as telephone numbers.

• ...and more. Each chart has some info unique to its location, an example here are the prevailing wind patterns around the Hawaiian Islands given on the back of MSC-13. If you to plan to sail to HI, this is a must have piece of information.

VHF NOAA Weather Radio

There are many wonderful weather resources online that we learn about later on, but chances are the same source we have used for the past 40 years will remain the primary source for coastal waters, namely the continuous NOAA weather radio broadcasts. They are available 24hr a day, 7 days a week. The MSC just described explains their content.

If you have a handheld VHF you can listen to these broadcasts at home for practice. There are also weather radios sold that receive the FM channels used, but they cost about as much as a handheld VHF these days. If you are located someplace well removed from your sailing waters then you cannot receive the short range FM signals for those waters, but you can tune them in online from several sources. These are not official NWS outlets, just companies or agencies that choose to do this.

See NOAA weather radio streaming audio (nws.noaa.gov/nwr/streamaudio.htm). In the old days, we passed on the trick play that you could always call the local West Marine and ask to be put on hold, since they use the live broadcasts as a background filler, but this is not needed any longer, though I believe they still do this in some places. Later we will go over how you get these VHF reports in text format online.

For now it is valuable to start listening to these broadcasts and make notes of any feature that is not understood. Chances are it will be covered later, or you can post a question at www.starpath.com/weath-erbook.

Primary US weather sources online

There are obviously thousands of websites with weather reports, but when it comes to US waters and adjacent oceans, there are just a few that might be considered the primary sources from which all the others get their data and then re-package it—which is not to say that some of these third parties do not

do a good job, many do, and we will go over some of them later on. For now please check and bookmark the sites in Table 1.6-1.

Table 1.6-1 Primary US Weather Sources
Ocean Prediction Center
<i>...main source for maps of US adjacent waters.</i>
www.opc.ncep.noaa.gov

National Data Buoy Center
<i>...main source for live and archived observations.</i>
www.ndbc.noaa.gov
National Hurricane Center
<i>...main source for tropical weather.</i>
www.nhc.noaa.gov

Marine Storm Warnings

Marine storm and hurricane warnings are broadcast hourly for the Atlantic and Pacific oceans and the Gulf of Mexico on the same shortwave channels that mariners use to obtain the time ticks. The broadcasts are continuous, 24hr a day on frequencies 2.5, 5, 10, 15, 20, and 25 Mhz in the shortwave band.

Atlantic highseas warnings are broadcast by WWV (from fort Collins, CO) at 8 and 9 minutes after the hour, and a Pacific highseas warning is broadcast at 10 minutes after the hour. WWVH (Kauai, HI) broadcasts a Pacific highseas warning at 48, 49, 50 and 51 minutes after the hour. Additional segments (at 11 minutes after the hour on WWV and at 52 minutes after the hour on WWVH) are used if there are unusually widespread storm conditions. The brief voice messages warn mariners of storm threats present in their areas.

The storm warnings are based on the most recent forecasts. The forecasts are updated at 0500, 1100, 1700, and 2300 UTC for WWV (male voice); and at 0000, 0600, 1200, and 1800 UTC for WWVH (female voice).

Here is the text of a typical storm warning announcement:

North Atlantic weather West of 35 West at 1700 UTC; Hurricane Donna, intensifying, 24.3 North, 60.8 West, moving northwest, 20 knots, winds 75 knots; storm, 65 North, 35 West, moving east, 10 knots; winds 50 knots, seas 15 feet.

These announcements are not considered a primary source of marine weather for well prepared mariners. Other more in depth sources are covered in Chapters 8 and 9. But this is certainly a minimum notice that is readily available on inexpensive SW radios.

For more information on radio time services see the National Institute of Standards and Technology at tf.nist.gov/timefreq

They also offer for download a very slick small software program for keeping your computer time accurate to the second (nistime-32bit.exe).



Grundig Yacht Boy is a popular SW radio