PILOT CHART OF THE NORTH ATLANTIC OCEAN

USE OF CHART

This chart is not intended to be used alone but in conjunction with other navigational aids. The chart presents, in graphic form, averages obtained from data gathered over many years in meteorology and oceanography to aid the navigator in selecting the quickest and safest routes. Incuded are explanations of how to use each type of information depicted on this chart.

LOCAL WEATHER: For extended remarks on the marine climate along foreign coasts, see the appropriate Sailing Directions (Enroute and Planning Guides) prepared and published by the National Imagery and Mapping Agency. For the coasts of the United States and its possessions, see the appropriate Coast Pilot prepared and published by the National Ocean Survey. The bimonthly publication "Mariners Weather Log", prepared and published by the National Oceanic and Atmospheric Administration, Environmental Data and Information Service, carries information on marine climatic conditions.

MAGNETIC VARIATION: The lines of equal magnetic variation for the Epoch 2000 are shown by gray lines on the main body of the chart and the Mediterranean inset chart. The annual rate of change is shown by gray lines on the uppermost inset chart.

GREAT CIRCLE ROUTES: The courses shown on this chart are drawn to provide the shortest distances normally availabe during the month represented. Abnormal or severe ice or weather conditions may require vessels to alter course farther south to the tracks represented on the late winter or spring Pilot charts. Ice and weather reports should be monitored constantly when proceeding south of Cap Race, as these waters are subject to irregular hazards.

WAVE HEIGHTS: The red lines on the main body of the chart indicate the percentage of frequency of wave heights equal to or greater than 12 feet. In analysis, when both sea and swell are reported, the higher value is used in the summarization. Wave heights of 12 feet or more are confined mainly to mid-ocean areas with the region observing frequencies of 10 percent or more extending from near 38°N, 62°W to 65°N, 0°W and from southern Greenland to just northwest of the coast of Spain. Frequencies of 20 prcent extend from Iceland south to 42°N and between Greenland and waters west of Ireland.

GALES: Winds of force 8 or higher are rare south of 40°N, and their frequency and duration in higher latitudes have decreased over the preceding months. The area with the highest frequency of occurrence, 10 percent or more, is located off the southern tip of Greenland. The frequency of gales is near 5 percent over most of the central Atlantic north of 40°N, and over the Golfe du Lion in the Mediterranean Sea.

EXTRATROPICAL CYCLONES: Lows continue to develop frequently off the Carolina coast northeast to Newfoundland. Other major areas of cyclonic development include the eastern Bay of Biscay, the region between Algeria and Sardinia, and a small area centered near 60°N, 27°W. Primary tracks leading from the Great Lakes and Delaware Bay head northeast towards Newfoundland where they spread across the northern latitudes of the North Atlantic. One secondary storm track leads from the Azores northeast to waters off northwest Spain where it divides heading north towards the British Isles and east across the Bay of Biscay into the northwestern Mediterranean Sea. Another track crosses central Italy and the northern Adriatic into eastern Europe.

AIR TEMPERATURE: During May, a marked increase in mean air temperatures is noted for middle and northern latitudes. The mean air temperature over Baffin Bay has increased for −9°C in April to 0°C in May. Most middle and northern latitudes have increases of 2°C to 4°C while the increase in southern latitudes are held to 1°C to 2°C. Extreme maximum temperatures only increase slightly over the previous month but significant shifts in minimum temperatures occur as they run 4°C to 6°C warmer.

TROPICAL CYCLONES: The frequency of tropical cyclones begins to increase slightly during May, but they are still infrequent. For the period of record eleven tropical storms were reported, of which three attained hurricane force.

OCEAN CURRENTS: The green arrows on the chart indicate the prevailing direction, and the numerals show the mean current speed in knots. The broken arrows indicate the probable surface current flow where data are sparse, but more importantly, they indicate directional variability such as in the Sargasso Sea, in regions of entrainment between currents setting in opposing directions, in nearshore tidal regions, and in the northern seas where currents are generally weak and easily influenced by winds.

EXPLANATION OF WIND ROSES: The wind roses in blue color are located in the center of each 5° square. Each rose shows the distribution of the winds that have prevailed in the area over a considerable period of time. The wind percentages are summarized for calm and the Cardinal and Intercardinal compass points. The arrows fly with the wind, indicating the direction from which the wind blew. The length of the shaft, measured from the outside of the circle to the end of the visible shaft (not necessarily to the end of the last feather), using the scale below, gives the percentage of the total number of observations in which the wind has blown from that direction. The number of feathers shows the average force of the wind on the Beaufort scale. The figure in the center of the circle gives the percentage of calms. When the arrow is too long (over 29 percent) to fit conveniently in the 5° square, the percentage is indicated numerically on the shaft.

FOR EXAMPLE: The sample wind rose should be read thus: In the reported observations the wind has averaged as follows: From N. 40 percent, force 7; from N.E. 19 percent, force 7; from E. 6 percent, force 5; from S.E. 5 percent, force 5; from S. 5 percent, force 5; from S.W. 9 precent, force 5; from W. 8 percent, force 5; from N.W. 5 percent, force 4; calms 3 percent.

WINDS: Winds over the greater part of the Atlantic between 40°N and 55°N are generally westerly while north of 55°N they are mainly northerly. Between 30°N and 40°N the prevailing winds are southwesterly over the western half and northerly over the eastern half. South of 30°N the winds are predominantly easterlies. Average wind speeds north of 40°N are force 3 to 5 while south of 40°N they are force 2 to 4. Over Mediterranean waters, northwesterly winds of force 2 to 4 are most common while over the Gulf of Mexico and the Caribbean the prevailing easterlies average force 2 to 4 over the Gulf and force 3 to 5 over the Caribbean.

PRESSURE: The Icelandic Low centered east of Kap Farvel has filled during May to a mean central pressure of 1010 millibars. The Azores High builds slightly to a central pressure of 1023 millibars centered near 32°N, 35°W. As the mean pressure increases over the North Atlantic the north-south pressure gradient decreases, associated with continued moderation in mid-latitude and sub-tropical weather.

VISIBILITY: The frequency of visibilities less than 2 miles increases over the Grand Banks from the previous month, while the rest of the North Atlantic experiences little change. Waters to the north of Iceland, between Delaware Bay and southern Greenland, and most of the North Sea, Irish Sea and English Channel report poor visibilities (less than 2 miles) 10 percent or more of the time. The highest frequency of poor visibilities, 30 percent, occurs over the Grand banks with the surrounding area from Georges Bank to the southwestern Labrador Sea reporting 20 percent.

NOTE: it should be kept in mind that most ships tend to avoid areas of inclement weather. The frequency of gales and high waves is generally greater than that which is actually reported due to climatological observations being biased toward favorable weather conditions.

EXCEPTIONAL ICE SIGHTINGS
△ Berg (year sighted)
○ Growler (year sighted)

TROPICAL CYCLONES
The mean tracks of tropical storms and hurricanes are shown in green. They appear only during the season of maximum frequency (May-November). These tracks represent averages. Movements of individual systems may vary widely.

GALES
The red numerals in the center of each 5-degree square on this inset chart show the average percentage of ship reports in which winds of at least force 8 have been recorded for the month. Where "0" is given, gales may have been recorded, but too infrequently to give a percentage value.

SURFACE PRESSURE
This chart shows the average barometric pressure reduced to sea level. Isobars are solid blue lines for every 2.5 millibars difference in pressure.

EXTRATROPICAL CYCLONES
The mean tracks of extratropical cyclones are shown in red. Solid red lines denote primary tracks; dashed lines denote secondary tracks.

VISIBILITY
Blue lines show the percentage of observations reporting a visibility of less than 2 miles.

AIR TEMPERATURE
The mean air temperature (°C), in red lines, is shown for every 2 degrees.

SEA SURFACE TEMPERATURE
The mean sea surface temperature (°C), in green lines, is shown for every 4 degrees.

NOTE
For complete explanation of the wind roses, current arrows, wave heights, and magnetic varitation, see the appropriate explanation on the main body of the chart.