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 conditiotns may require vessels to alter course further 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. The frequency of wave heights 12 feet or higher has increased markedly as compared to the summer months. Frequencies of 10 percent or more extend from the Labrador Sea to the Norwegian Sea and as far south as 39°N. The highest frequency of these higher waves, 30 percent, appears along a band some 600 to 800 miles that leads north from near 50°N, 32°W to a point some 300 miles southeast of Iceland.

GALES: The frequency of gales increases in September, particularly over northern latitudes. Frequencies of 10 percent are found just off the south and southeast coast of Greenland while frequencies of 5 percent encompass a large portion of the central Atlantic north of 45°N. South of 40°N, winds of force 8 or greater are unlikely to be encountered except in storms of tropical origin.

EXTRATROPICAL CYCLONES: The frequency of extratropical cyclones has increased since August and occasional severe storms may be encountered. The primary area of cyclogenesis extends from some 300 miles off Cape Hatteras to Newfoundland and east-northeast to a point near 55°N, 25°W. Another area of major cyclonic development is off the northeast coast of Iceland. Since August, the extratropical cyclone tracks have shifted slightly south with primary tracks leading off the northeast coast of the United States towards the Norwegian Sea. Other primary tracks lead from the Great Lakes to the Davis Strait and across southern Scandinavia. Secondary tracks cross the Bay of Biscay into the northwestern Mediterranean Sea and northwestern Canada.

AIR TEMPERATURE: The mean air temperatures over the North Atlantic have begun to cool off from the previous month. Means range from under 4°C in the Davis Strait to over 28°C in the Caribbean Sea and Gulf of Mexico. Along the 40°N parallel, the mean air temperatures range from 19°C off the U.S. and Portuguese coasts to 22°C at 40°W. Ninety-eight percent of the temperatures fall beween −4°C and 8°C along coastal waters of Greenland to between 24°C and 32°C over the Gulf of Mexico and Caribbean Sea.

TROPICAL CYCLONES: September is the peak season for tropical storm activity. September will average between 4 and 5 tropical depressions that will reach tropical storm strength (34 knots or greater) with 2 to 3 of these reaching hurricane strength (64 knots or greater). For the period 1871–1975 the number of storms occurring in September has ranged from 1 to 8 per year.

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.

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.

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: Westerly winds prevail between 40°N and 60°N, with the exception of more northerly winds over the Bay of Biscay, the Portuguese coastal waters, and the region south of Nova Scotia. Speeds across this latitude belt generally run force 3 to 5. South of 40°N, the prevailing winds, averaging force 2 to 4, are northwesterly over the eastern half and east and southeasterly over the western half. Winds are more variable north of 60°N, producing southwesterly winds over the Norwegian Sea and northerly winds over the surrounding waters of Iceland. At these higher latitudes the wind speeds force 3 to 5.

PRESSURE: Increased cyclonic activity begins to take place during September resulting from moderate intrusions of colder air. The Icelandic Low, centered southwest of Iceland, becomes more well defined as its mean central pressure deepens to 1004 millibars. The Azores High with a central pressure of 1021 millibars, centered near 35°N, 30°W, is slightly weaker than in August.

VISIBILITY: The frequency and intensity of poor visibilities have continued to decrease since August. Percent frequency of poor visibilities (those less than 2 miles) exceeds 10 percent over the Grand Banks and coastal regions of Newfoundland. Coastal regions of Greenland including an area that extends some 800 miles southeast of Kap Farvel, the Greenland Sea, northwestern Norwegian Sea, and British coastal waters. A region of the Grand Banks still maintains the highest frequency (20 percent) of observations with visibilities less than 2 miles.

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

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.

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.

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.