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 available 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. The frequency of wave heights greater than or equal to 12 feet has continued to decrease from previous months with frequencies of 10 percent or more being supported in an area that extends from Iceland and the Faroe Islands south to 42°N and from Kap Favel to Ireland. Frequencies of 20 percent run along a band, some 300 miles wide, from near 53°N, 27°W, to 61°N, 18°W.

GALES: Winds of force 8 or greater over the North Atlantic are infrequent during June. Only in the waters near southern Greenland and over northern portions of the Norwegian Sea does the probability of encountering gales exceed 10 percent.

EXTRATROPICAL CYCLONES: Extratropical cyclones diminish in number and intensity from May to June. Major areas of cyclonic development exist along the east coast of North America from the Carolinas to the southern extent of the Labrador Sea, the eastern edge of the Bay of Biscay, the northwestern Mediterranean and off the Algerian and Tunisian coasts, and an area about 10 degrees in diameter centered at 60°N, 30°W. One primary track crosses Lake Winnipeg into the southeastern Hudson Bay where a majority of the Lows either turn north into Baffin Bay or east into the Labrador Sea. Another primary track crosses the Great Lakes into the Gulf of St. Lawrence and another extends from Cape Cod across Newfoundland where the lows either continue to northwest of Iceland or turn more easterly towards the Norwegian Sea. Secondary tracks cross the low countries into eastern Europe, from the Bay of Biscay and northwestern Mediterranean into Yugoslavia. Others run from Tunisia through southern Italy and from about 45°N, 40°W to 55°N, 32°W in the central Atlantic.

AIR TEMPERATURE: The mean air temperatures range from around 4°C along the Greenland coast to 28°C over areas of the Gulf of Mexico and Caribbean. Ninety-eight percent of the observations along the Greenland coast range from 0°C to 8°C while over the Gulf of Mexico and the Caribbean 98 percent fall between 24°C and 32°C. At 40°N, the mean temperatures range from 16°C off the U.S. Coast to 19°C north of the Azores.

TROPICAL CYCLONES: As compared to previous months, warmer sea temperatures in the southern latitudes during June increases the probability of tropical cyclone development. Over an average 10-year period, 7 tropical cyclones of force 8 or greater will take up residence in the North Atlantic with 3 of these reaching hurricane strength (force 12).

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: The Azores High is the most dominant feature of the North Atlantic during June and it largely controls the circulation. Between 35°N to 60°N the prevailing winds are southwesterly except off the Iberian Peninsula where they are northerly. South of 35°N the prevailing winds are northeasterly over the eastern half and east or southeasterly over the western half. Since winds north of 60°N are more variable, their mean directions are less meaningful but exhibit, at least in part, a northerly component. The lightest winds occur between 20°N to 40°N, under the central position of the Azores High, with an average force of 2 to 4. North of 40°N and south of 20°N the average force is from 3 to 5.

PRESSURE: The weather over the North is usually very pleasant in June. The number of active extratropical lows continues to decline and storms are usually confined to the higher latitudes. The weakening Icelandic low, centered at about 60°N, 35°W, has filled to over 1010 millibars. The Azores High is well defined this month and extends from the southeastern United States to northeastern Europe. It is centered over mid-ocean, about 30°N, 35°W, with a central pressure over 1024 millibars.

VISIBILITY: Foggy conditions continue to increase from the previous month for the Grand Banks and Sable Island Banks region. Thirty percent of the observations indicate visibilities of less than 2 miles for the Grand Banks and northern portion of the Sable Island Banks with a small area in the southeast corner of Grand Banks reporting as high as 40 percent. Poor visibilities (less than 2 miles) occur 20 percent of the time or more along the southern tip and eastern coast of Greenland with areas in the Greenland Sea reaching 30 percent. Another 20 percent area extends from Cape Cod to the Labrador Sea. The largest 10 percent area lies roughly to the north of a line from New Jersey across Iceland and through the Norwegian Sea. A smaller 10 percent area lies directly over the British Isles.

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)

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.

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.