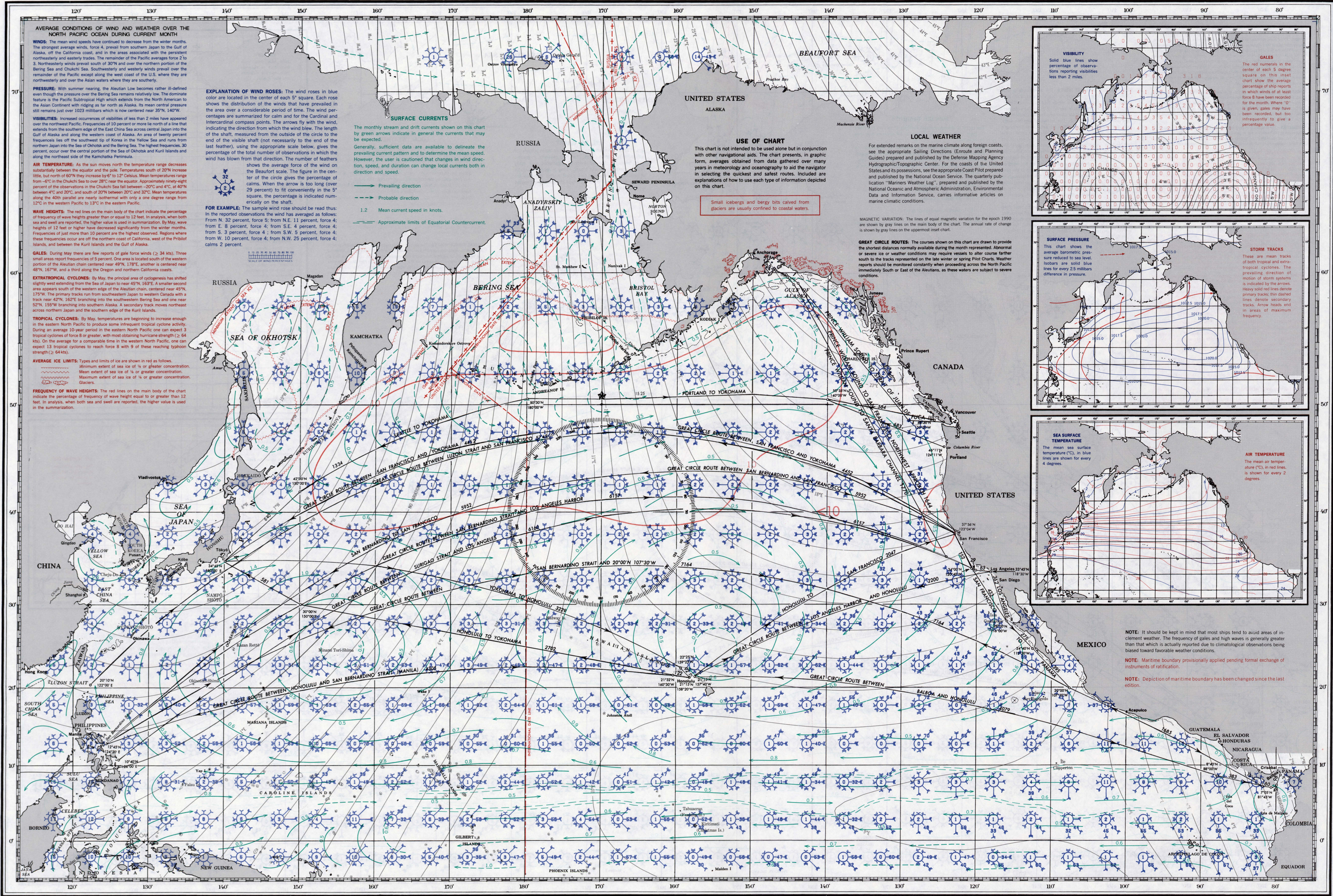


# PILOT CHART OF THE NORTH PACIFIC OCEAN



**AVERAGE CONDITIONS OF WIND AND WEATHER OVER THE NORTH PACIFIC OCEAN DURING CURRENT MONTH:**  
**WINDS:** The mean wind speeds have continued to decrease from the winter months. The strongest average winds, force 4, prevail from southern Japan to the Gulf of Alaska, off the California coast, and in the areas associated with the persistent northeasterly and easterly trades. The remainder of the Pacific averages force 2 to 3. Northeasterly winds prevail south of 30°N and over the northern portion of the Bering Sea and Chukchi Sea. Southwesterly and westerly winds prevail over the remainder of the Pacific except along the west coast of the U.S. where they are northeasterly and over the Asian waters where they are southerly.

**PRESSURE:** With summer nearing, the Aleutian low becomes rather ill-defined even though the pressure over the Bering Sea remains relatively low. The dominant feature is the Pacific Subtropical High which extends from the North American to the Asian Continent with ridging as far north as Alaska. Its mean central pressure still remains just over 1023 millibars which is now centered near 35°N, 140°W.

**VISIBILITIES:** Increased occurrences of visibilities of less than 2 miles have appeared over the northeast Pacific. Frequencies of 10 percent or more lie north of a line that extends from the southern edge of the East China Sea across central Japan into the Gulf of Alaska and along the western coast of Alaska. An area of twenty percent frequencies lies off the southwest tip of the Yellow Sea and runs from northern Japan into the Sea of Okhotsk and the Bering Sea. The highest frequencies, 30 percent, occur over the central portion of the Sea of Okhotsk and Kuril Islands and along the northeast side of the Kamchatka Peninsula.

**AIR TEMPERATURE:** As the sun moves north the temperature range decreases substantially between the equator and the pole. Temperatures south of 20°N increase little, but north of 60°N they increase by 6° to 12° Celsius. Mean temperatures range from -6°C in the Chukchi Sea to over 28°C near the equator. Approximately ninety-eight percent of the observations in the Chukchi Sea fall between -20°C and 4°C, at 40°N between 4°C and 20°C, and south of 20°N between 20°C and 32°C. Mean temperatures along the 40th parallel are nearly isothermal with only a one degree range from 12°C in the western Pacific to 13°C in the eastern Pacific.

**WAVE HEIGHTS:** The red lines on the main body of the chart indicate the percentage of frequency of wave heights greater than or equal to 12 feet. In analysis, when both sea and swell are reported, the higher value is used in summarization. By May, wave heights of 12 feet or higher have decreased significantly from the winter months. Frequencies of just more than 10 percent are the highest observed. Regions where these frequencies occur are off the northern coast of California, west of the Pribilof Islands, and between the Kuril Islands and the Gulf of Alaska.

**GALES:** During May there are few reports of gale force winds ( $\geq 34$  kts). Three small areas report frequencies of 5 percent. One area is located south of the western portion of the Aleutian chain centered near 49°N, 178°E, another is centered near 48°N, 167°W, and a third along the Oregon and northern California coasts.

**EXTRATROPICAL CYCLONES:** By May, the principal area of cyclogenesis has shifted slightly west extending from the Sea of Japan to near 45°N, 165°E. A smaller second area appears south of the western edge of the Aleutian chain, centered near 45°N, 175°W. The primary tracks run from southeastern Japan to western Canada with a track near 42°N, 162°E branching into the southwestern Bering Sea and one near 52°N, 155°W branching into southern Alaska. A secondary track moves northeast across northern Japan and the southern edge of the Kuril Islands.

**TROPICAL CYCLONES:** By May, temperatures are beginning to increase enough in the eastern North Pacific to produce some infrequent tropical cyclone activity. During an average 10-year period in the eastern North Pacific one can expect 3 tropical cyclones of force 8 or greater, with most obtaining hurricane strength ( $\geq 64$  kts). On the average for a comparable time in the western North Pacific, one can expect 13 tropical cyclones to reach force 8 with 9 of these reaching typhoon strength ( $\geq 64$  kts).

**AVERAGE ICE LIMITS:** Types and limits of ice are shown in red as follows:  
Minimum extent of sea ice of 1/4 or greater concentration.  
Mean extent of sea ice of 1/4 or greater concentration.  
Maximum extent of sea ice of 1/4 or greater concentration.  
Glaciers.

**FREQUENCY OF WAVE HEIGHTS:** The red lines on the main body of the chart indicate the percentage of frequency of wave height equal to or greater than 12 feet. In analysis, when both sea and swell are reported, the higher value is used in the summarization.

**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 for the Cardinal and Inter-cardinal 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 appropriate 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. 32 percent, force 5; from N.E. 11 percent, force 4; from E. 8 percent, force 4; from S.E. 4 percent, force 4; from S. 3 percent, force 4; from S.W. 5 percent, force 4; from W. 10 percent, force 4; from N.W. 25 percent, force 4; calms 2 percent.

**SURFACE CURRENTS**  
The monthly stream and drift currents shown on this chart by green arrows indicate in general the currents that may be expected.  
Generally, sufficient data are available to delineate the prevailing current pattern and to determine the mean speed. However, the user is cautioned that changes in wind direction, speed, and duration can change local currents both in direction and speed.

- Prevailing direction
- - - Probable direction
- 1.2 Mean current speed in knots.
- Approximate limits of Equatorial Countercurrent.

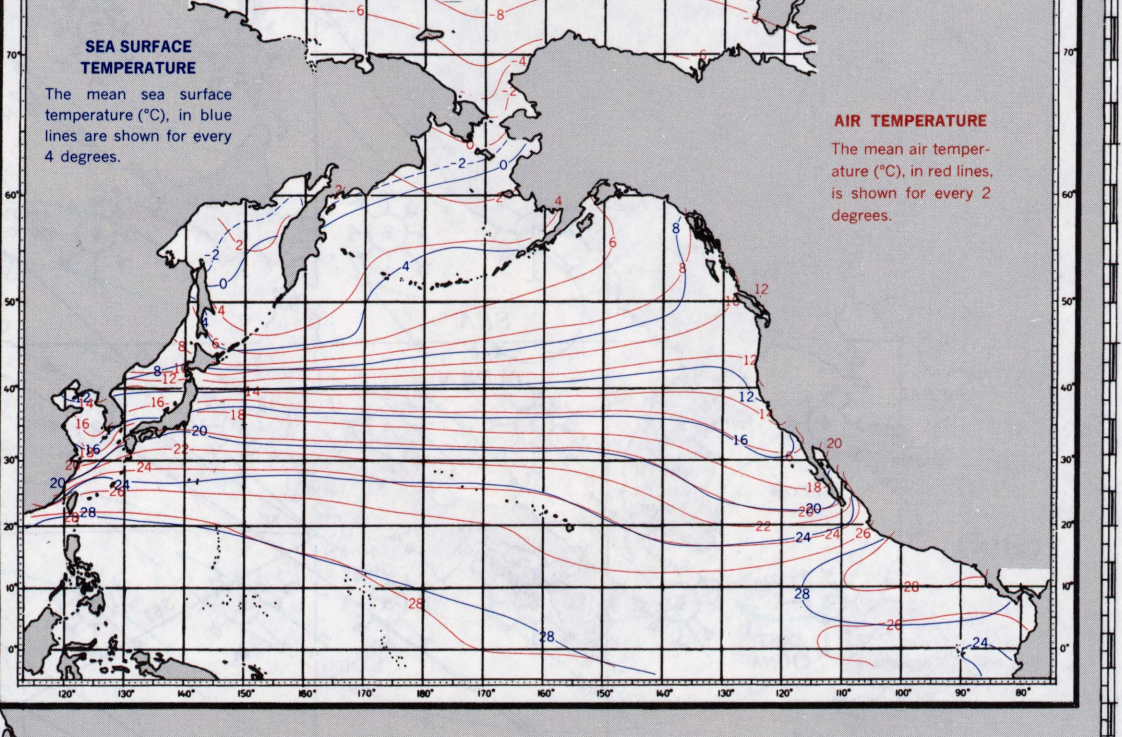
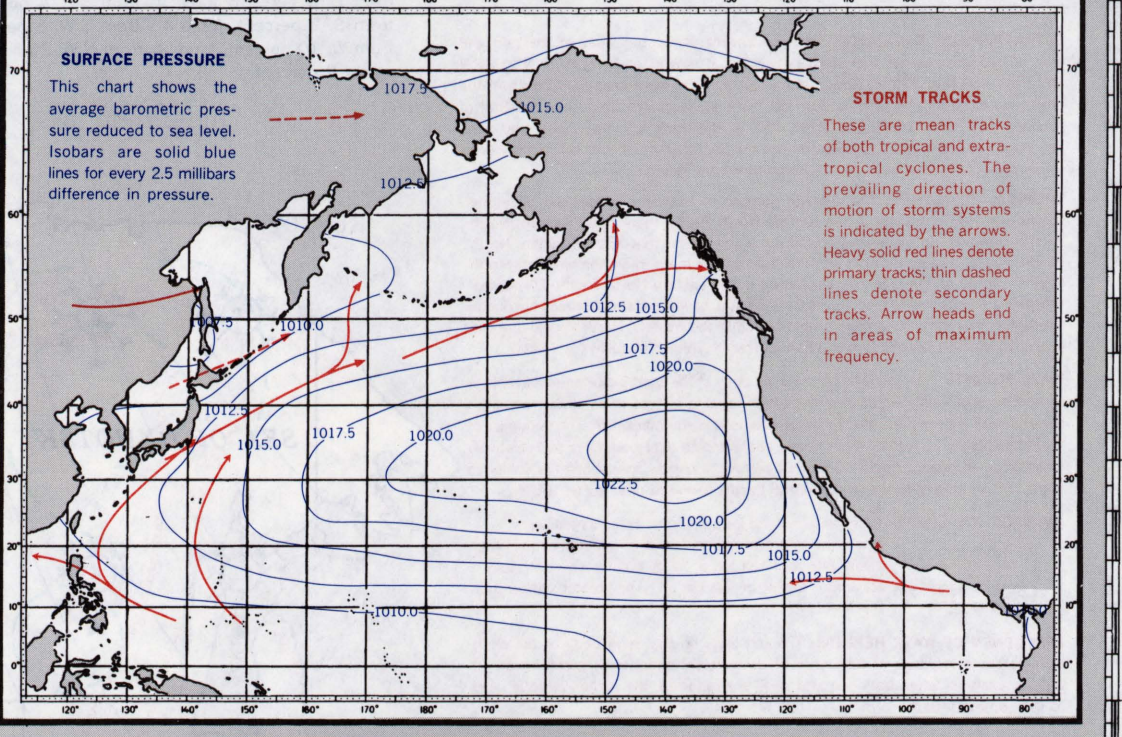
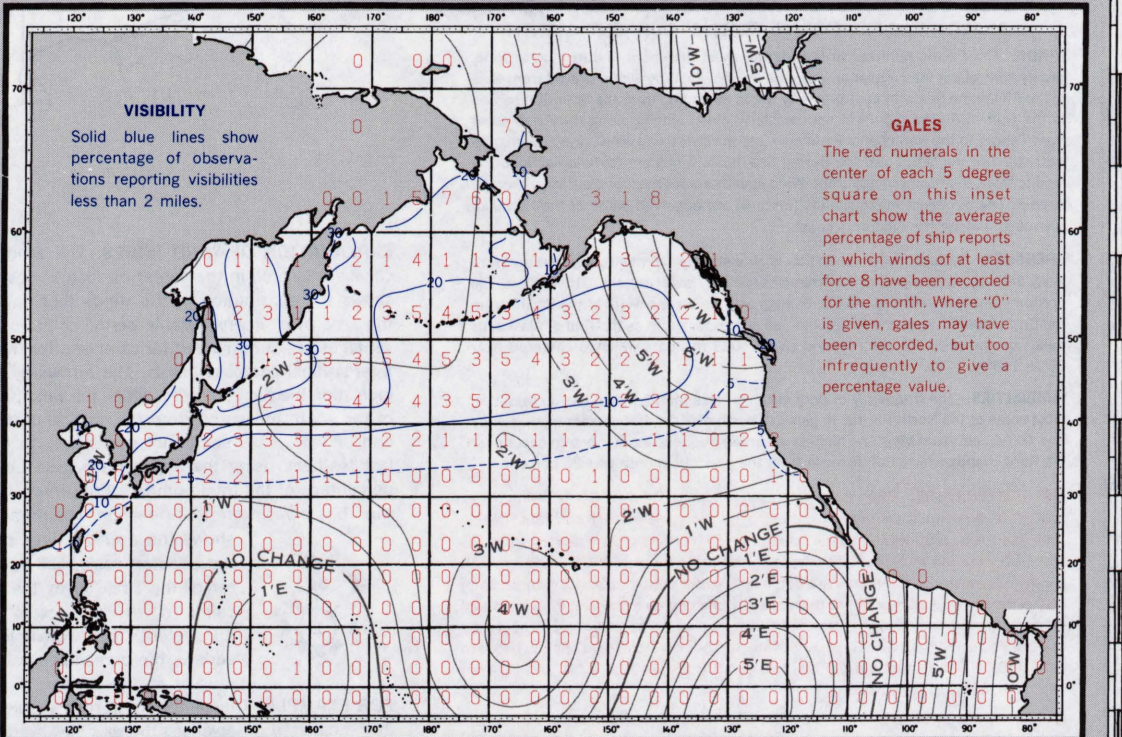
**USE OF CHART**  
This chart is not intended to be used alone but in conjunction with other navigational aids. The chart presents, in graphic form, averages obtained from data gathered over many years in meteorology and oceanography to aid the navigator in selecting the quickest and safest routes. Included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

Small icebergs and bergy bits calved from glaciers are usually confined to coastal waters.

**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 Defense Mapping Agency Hydrographic/Topographic Center. For the coasts of the United States and its possessions, see the appropriate Coast Pilot prepared and published by the National Ocean Service. The quarterly publication "Mariners Weather Log," prepared and published by the National Oceanic and Atmospheric Administration, Environmental Data and Information Service, carries informative articles on marine climatic conditions.

**MAGNETIC VARIATION:** The lines of equal magnetic variation for the epoch 1990 are shown by gray lines on the main body of the 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. Weather reports should be monitored constantly when proceeding across the North Pacific immediately South or East of the Aleutians, as these waters are subject to severe conditions.



**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.  
**NOTE:** Maritime boundary provisionally applied pending formal exchange of instruments of ratification.  
**NOTE:** Depiction of maritime boundary has been changed since the last edition.