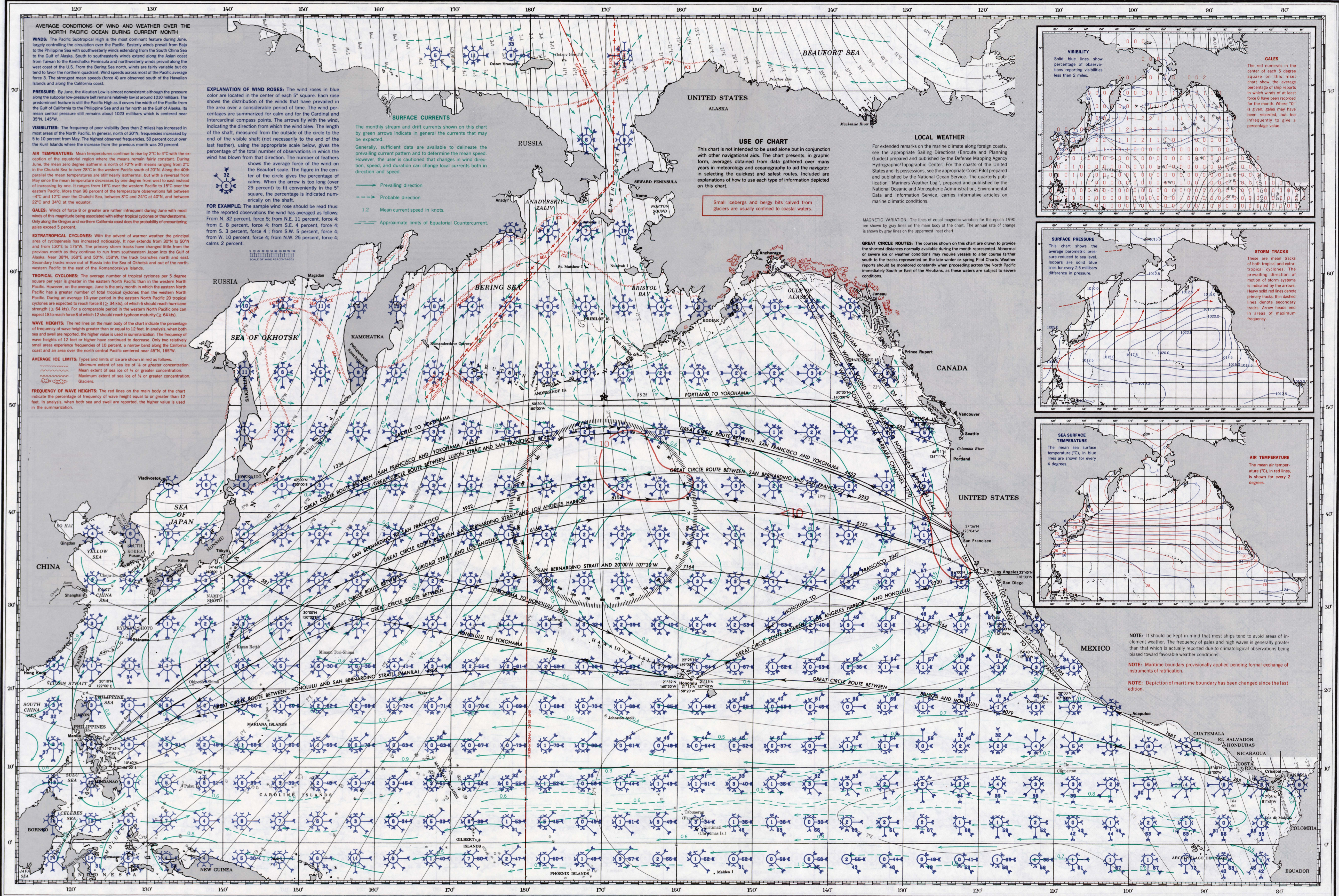




# PILOT CHART OF THE NORTH PACIFIC OCEAN



### AVERAGE CONDITIONS OF WIND AND WEATHER OVER THE NORTH PACIFIC OCEAN DURING CURRENT MONTH

**WINDS:** The Pacific Subtropical High is the most dominant feature during June, largely controlling the circulation over the Pacific. Easterly winds prevail from Baja to the Philippine Sea with westerly winds extending from the South China Sea to the Gulf of Alaska. South to southeasterly winds extend along the Asian coast from Taiwan to the Kamohaka Peninsula and northwesterly winds prevail along the west coast of the U.S. From the Bering Sea north, winds are fairly variable but do tend to favor the northern quadrant. Wind speeds across most of the Pacific average force 3. The strongest mean speeds (force 4) are observed south of the Hawaiian Islands and along the California coast.

**PRESSURE:** By June, the Aleutian Low is almost nonexistent although the pressure along the subtropical low-pressure belt remains relatively low at around 1010 millibars. The predominant feature is still the Pacific High as it covers the width of the Pacific from the Gulf of California to the Philippine Sea and as far north as the Gulf of Alaska. Its mean center pressure still remains about 1023 millibars which is centered near 35°N, 145°W.

**VISIBILITIES:** The frequency of poor visibility (less than 2 miles) has increased in most areas of the North Pacific. In general, north of 30°N, frequencies increased by 5 to 10 percent from May. The highest observed frequencies, 50 percent occur over the Kuril Islands where the increase from the previous month was 20 percent.

**AIR TEMPERATURE:** Mean temperatures continue to rise by 2° to 4°C with the exception of the equatorial region where the means remain fairly constant. During June, the mean zero degree isotherm is north of 70°N with means ranging from 2°C in the Chukchi Sea to over 28°C in the western Pacific south of 20°N. Along the 40th parallel the mean temperatures are still nearly isothermal, but with a reversal from May since the mean temperature decreases by one degree from west to east instead of increasing by one. It ranges from 16°C over the western Pacific to 15°C over the eastern Pacific. More than 95 percent of the temperature observations fall between -4°C and 12°C over the Chukchi Sea, between 8°C and 24°C at 40°N, and between 22°C and 34°C at the equator.

**GALES:** Winds of force 8 or greater are rather infrequent during June with most winds of this magnitude being associated with either tropical cyclones or thunderstorms. Only along the Oregon and northern California coast does the probability of encountering gales exceed 5 percent.

**EXTRATROPICAL CYCLONES:** With the advent of warmer weather the principal area of cyclogenesis has advanced noticeably. It now extends from 30°N to 50°N and from 130°E to 175°W. The primary storm tracks have changed little from the previous month as they continue to run from southeastern Japan into the Gulf of Alaska. Near 38°N, 168°E and 50°N, 158°W, the track branches north and east. Secondary tracks move out of Russia into the Sea of Okhotsk and out of the northwestern Pacific to the east of the Komandorsky Islands.

**TROPICAL CYCLONES:** The average number of tropical cyclones per 5 degree square per year is greater in the eastern North Pacific than in the western North Pacific. However, on the average, June is the only month in which the eastern North Pacific has a greater number of total tropical cyclones than the western North Pacific. During an average 10-year period in the eastern North Pacific, 20 tropical cyclones are expected to reach force 8 (≥ 34 kts), of which 6 should reach hurricane strength (≥ 64 kts). For a comparable period in the western North Pacific one can expect 18 to reach force 8 of which 12 should reach typhoon maturity (≥ 64 kts).

**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. The frequency of wave heights of 12 feet or higher have continued to decrease. Only two relatively small areas experience frequencies of 10 percent, a narrow band along the California coast and an area over the north central Pacific centered near 45°N, 165°W.

**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) 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 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.

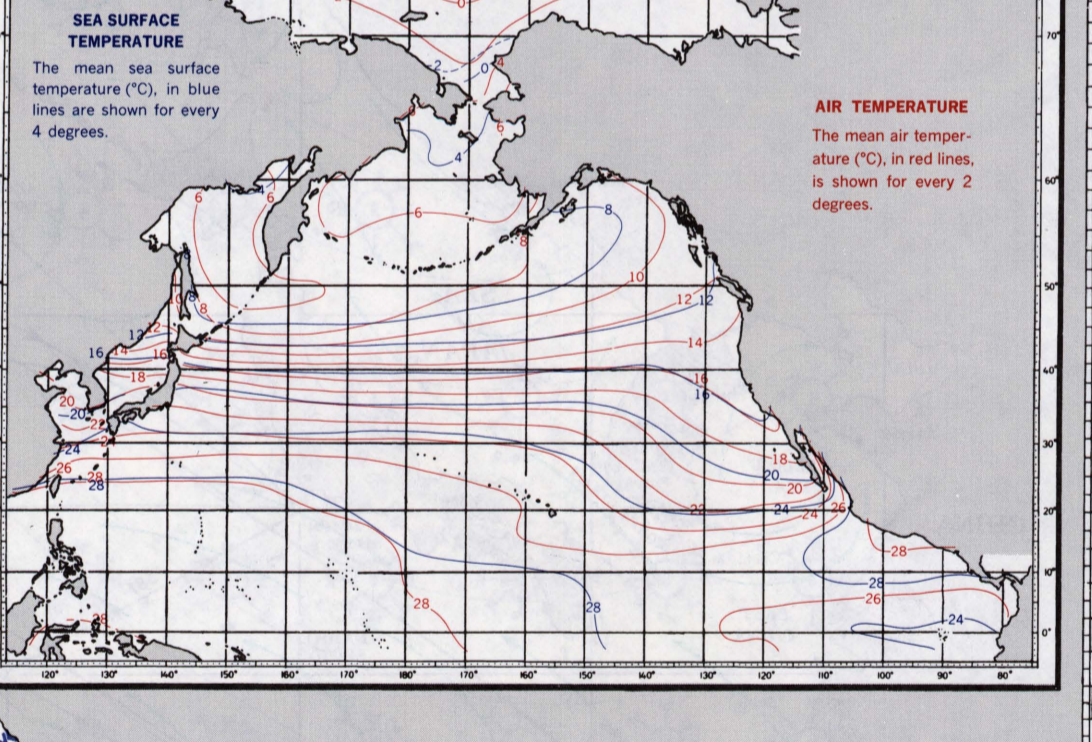
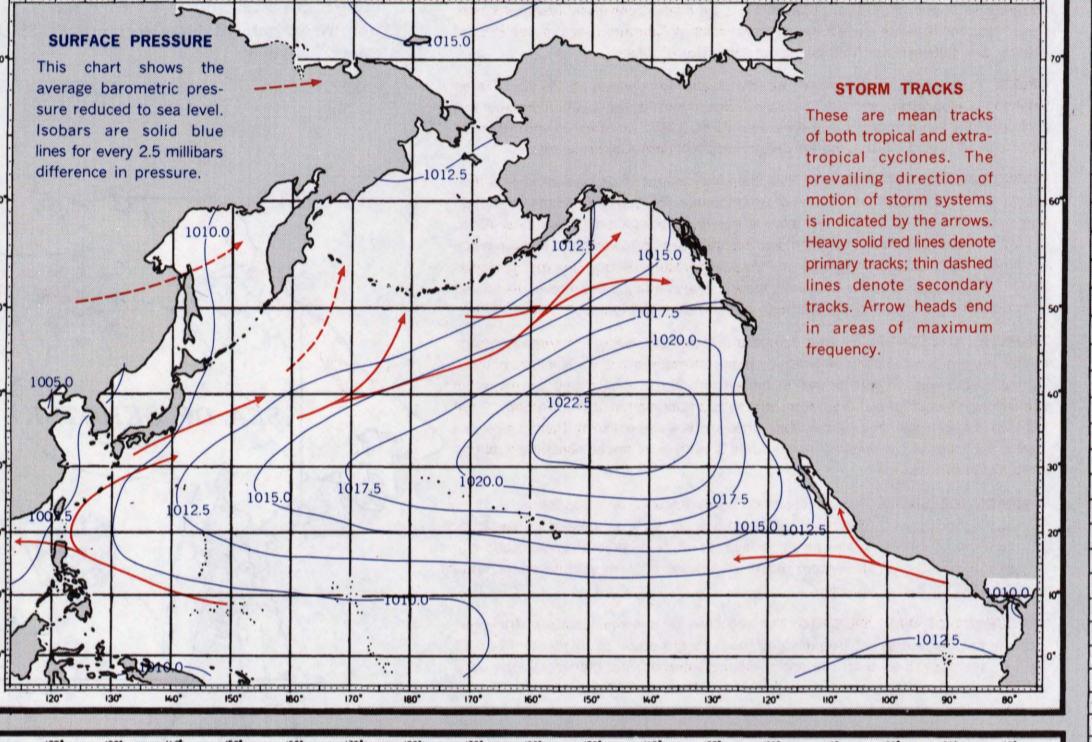
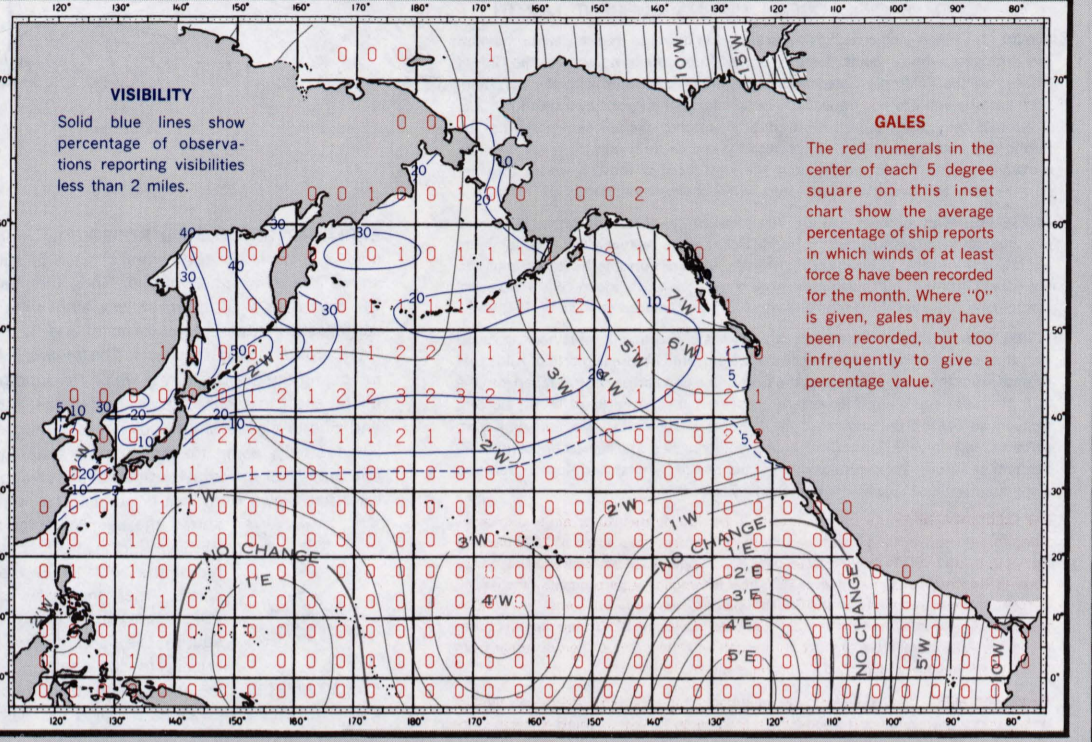
Small icebergs and bergy bits calved from glaciers are usually confined to coastal waters.

### 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 Oceanic and Atmospheric Administration. 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 required due to climatological observations being based 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.