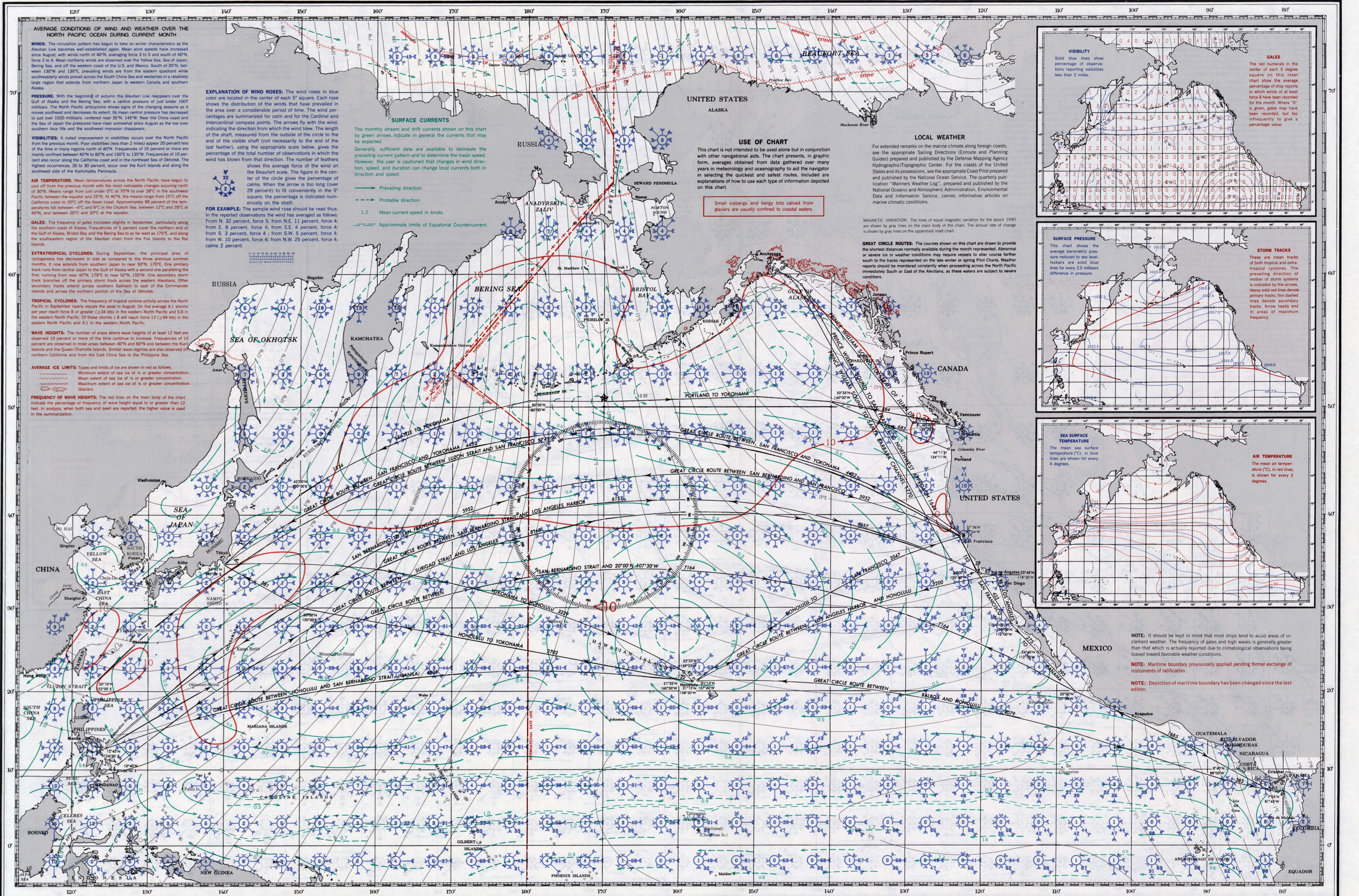




# PILOT CHART OF THE NORTH PACIFIC OCEAN

SEPTEMBER



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

**WINDS:** The circulation pattern has begun to take on winter characteristics as the Aleutian Low becomes well-established again. Mean wind speeds have increased since August, with winds north of 40°N, averaging force 3 to 5 and south of 40°N, force 2 to 4. Mean northerly winds are observed over the Yellow Sea, Sea of Japan, Bering Sea, and off the western coast of the U.S. and Mexico. South of 35°N, between 130°W and 130°E, prevailing winds are from the eastern quadrant while southwesterly winds prevail across the South China Sea and westerlies in a relatively large region that extends from northern Japan to western Canada and southern Alaska.

**PRESSURE:** With the beginning of autumn the Aleutian Low reappears over the Gulf of Alaska and the Bering Sea, with a central pressure of just under 1007 millibars. The North Pacific anticyclone shows signs of the changing seasons as it moves southeast and decreases its extent. Its mean central pressure has decreased to just over 1020 millibars, centered near 35°N, 145°W. Near the China coast and the Sea of Japan the pressures have risen somewhat since August as the low over southern Asia fills and the southwest monsoon disappears.

**VISIBILITIES:** A noted improvement in visibilities occurs over the North Pacific from the previous month. Poor visibilities (less than 2 miles) appear 20 percent less of the time in many regions north of 40°N. Frequencies of 10 percent or more are mainly confined between 40°N and 60°N and 150°E to 135°W. Frequencies of 10 percent also occur along the California coast and in the northern Sea of Okhotsk. The highest occurrences, 20 to 30 percent, occur over the Kuril Islands and along the southern side of the Kamchatka Peninsula.

**AIR TEMPERATURE:** Mean temperatures across the North Pacific have begun to cool off from the previous month with the most noticeable changes occurring north of 30°N. Means range from just under 60°C at 70°N to over 28°C in the southwest Pacific between the equator and 25°N. At 40°N, the means range from 15°C off the California coast to 20°C off the Asian coast. Approximately 98 percent of the temperatures fall between -4°C and 8°C in the Chukchi Sea, between 12°C and 28°C at 40°N, and between 20°C and 32°C at the equator.

**GALES:** The frequency of gales increases slightly in September, particularly along the southern coast of Alaska. Frequencies of 5 percent occur north of the Gulf of Alaska, Bristol Bay and the Bering Sea to as far west as 175°E, and along the southeastern region of the Aleutian chain from the Fox Islands to the Rat Islands.

**EXTRATROPICAL CYCLONES:** During September, the principal area of cyclogenesis has decreased in size as compared to the three previous summer months. It now extends from southern Japan to near 50°N, 170°E. One primary track runs from central Japan to the Gulf of Alaska with a second one paralleling the first, running from near 42°N, 155°E to near 50°N, 155°W. One secondary storm track branches off the primary storm track across the western Aleutians. Other secondary tracks extend across northern Sakhalin to east of the Commander Islands and across the northern portion of the Sea of Okhotsk.

**TROPICAL CYCLONES:** The frequency of tropical cyclone activity across the North Pacific in September nearly equals the peak in August. On the average 4.1 storms per year reach force 8 or greater (24 kts) in the eastern North Pacific and 5.5 in the western North Pacific. Of these storms 1.8 will reach force 12 (26 kts) in the eastern North Pacific and 4.1 in the western North Pacific.

**WAVE HEIGHTS:** The number of areas where wave heights of at least 12 feet are observed 10 percent or more of the time continue to increase. Frequencies of 10 percent are observed in most areas between 40°N and 60°N and between the Kuril Islands and the Queen Charlotte Islands. Similar wave regimes are also observed in northern California and from the East China Sea to the Philippine Sea.

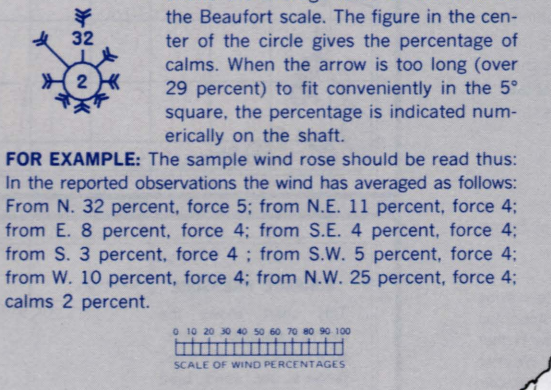
**AVERAGE ICE LIMITS:** Types and limits of ice are shown in red as follows:  
Maximum extent of sea ice of 1/4 or greater concentration.  
Mean extent of sea ice of 1/4 or greater concentration.  
Maximum extent of sea ice of 1/8 or greater concentration.  
Glaciers.

**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 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 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.

**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.

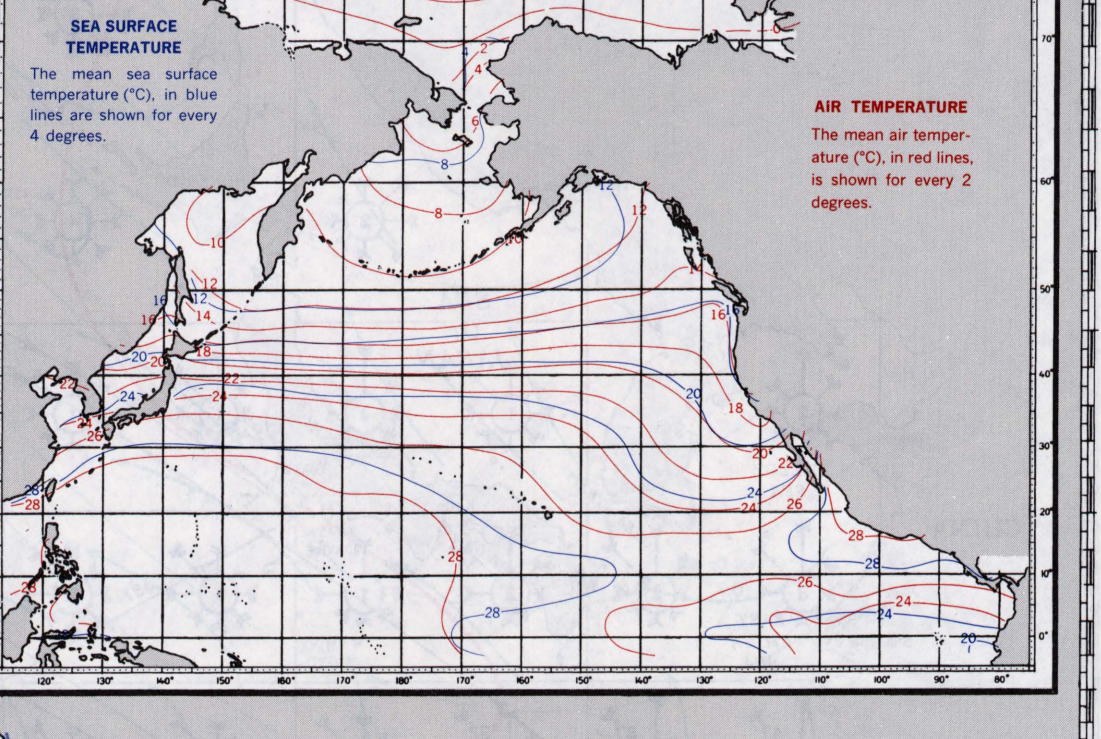
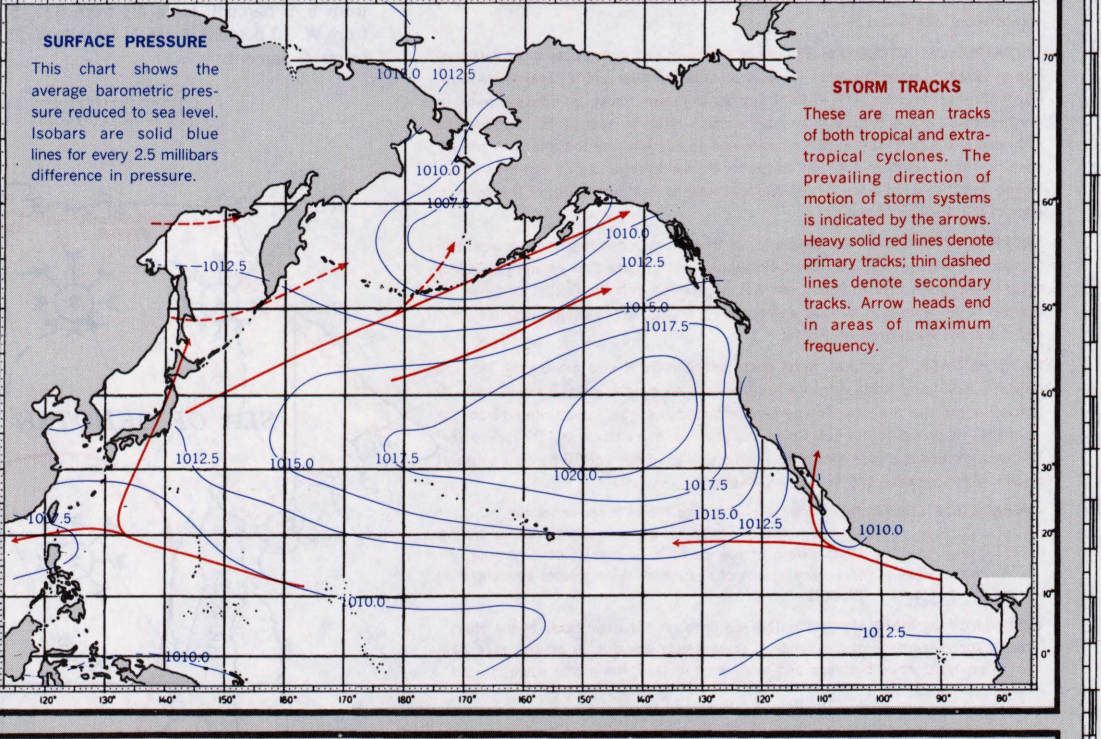
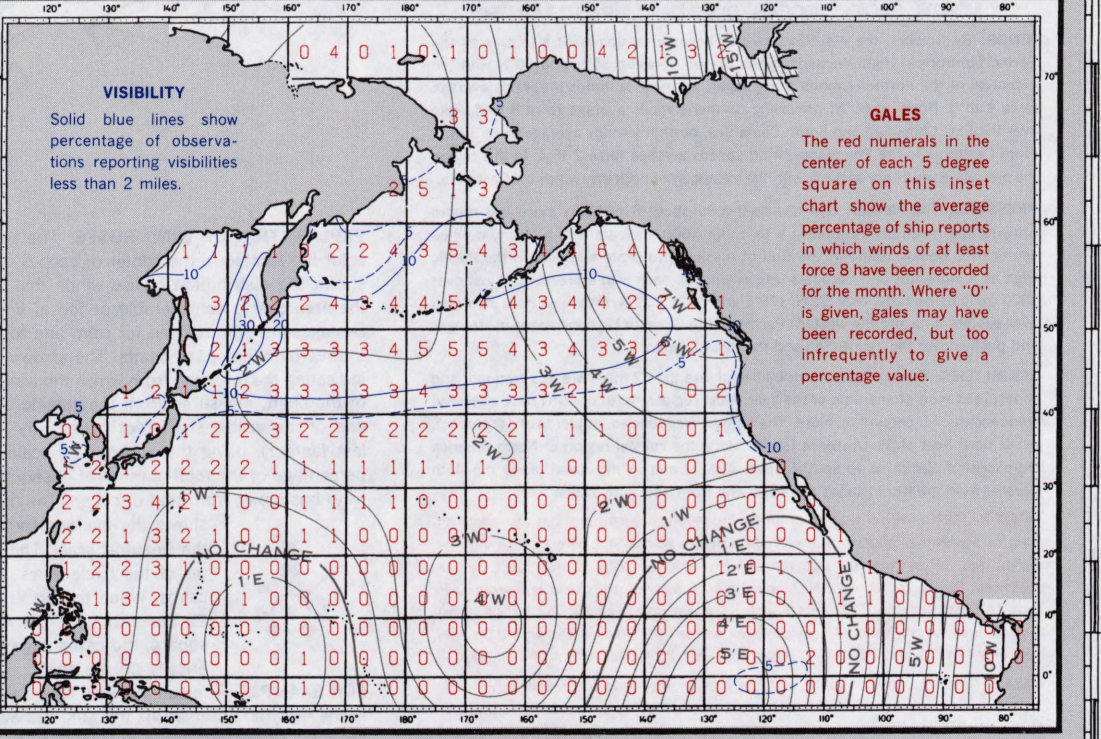
Small icebergs and bergy bits calved from glaciers are usually confined to coastal waters.

### 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 further 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.