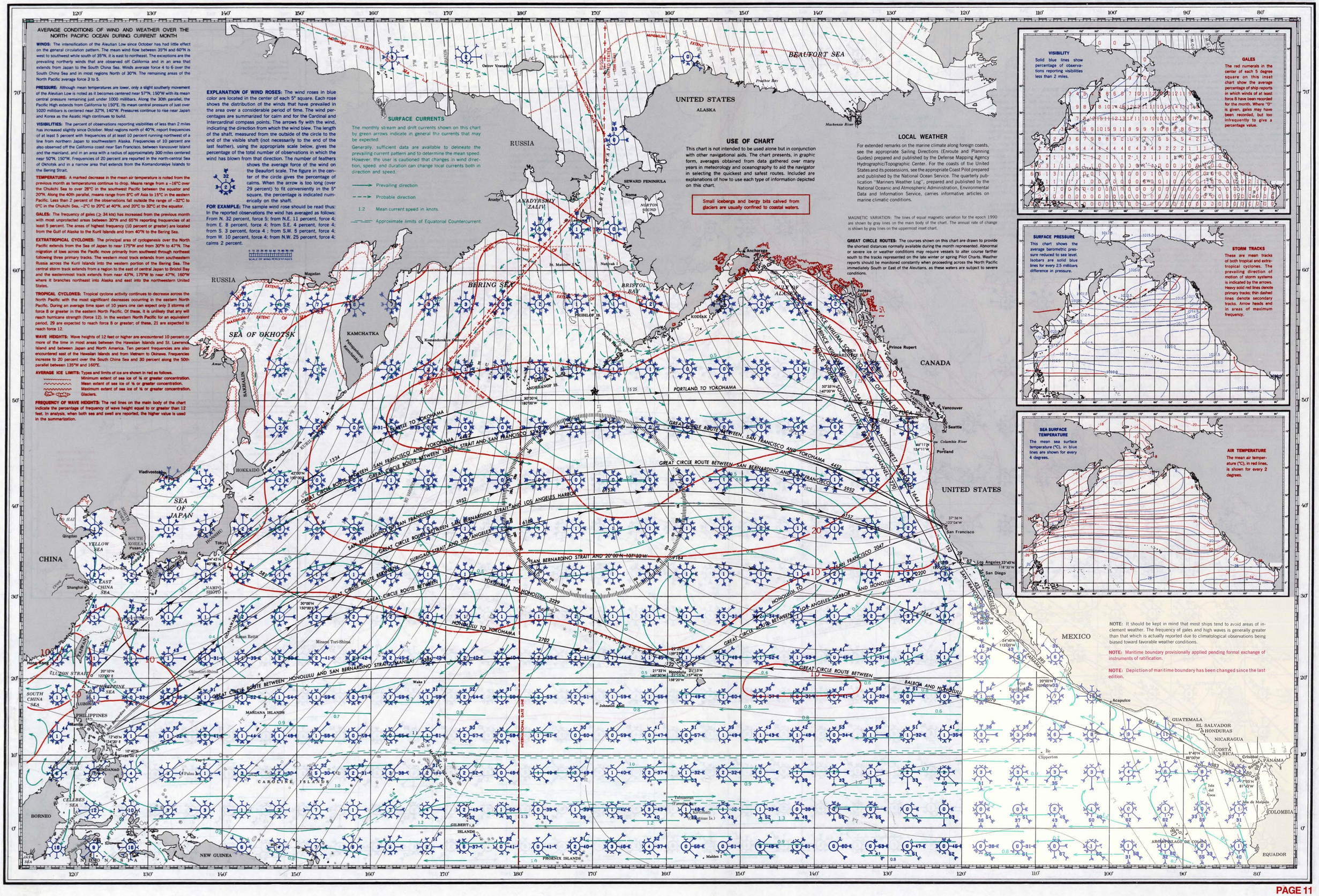
PILOT CHART OF THE NORTH PACIFIC OCEAN



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

WINDS: The intensification of the Aleutian Low since October has had little effect on the general circulation pattern. The mean wind flow between 35°N and 60°N is west to southwest while south of 35°N, it is east to northeast. The exceptions are the prevailing northerly winds that are observed off California and in an area that extends from Japan to the South China Sea. Winds average force 4 to 6 over the South China Sea and in most regions North of 30°N. The remaining areas of the North Pacific average force 3 to 5.

PRESSURE: Although mean temperatures are lower, only a slight southerly movement of the Aleutian Low is noted as it becomes centered near 57°N, 150°W with its mean central pressure remaining just under 1000 millibars. Along the 30th parallel, the Pacific High extends from California to 150°E. Its mean central pressure of just over 1020 millibars is centered near 32°N, 140°W. Pressures continue to rise near Japan and Korea as the Asiatic High continues to build.

VISIBILITIES: The percent of observations reporting visibilities of less than 2 miles has increased slightly since October. Most regions north of 40°N, report frequencies of at least 5 percent with frequencies of at least 10 percent running northwest of a line from northern Japan to southwestern Alaska. Frequencies of 10 percent are also observed off the California coast near San Francisco, between Vancouver Island and the mainland, and in an area with a radius of approximately 300 miles centered near 50°N, 150°W. Frequencies of 20 percent are reported in the north-central Sea of Okhotsk and in a narrow area that extends from the Komandorskiye Islands to the Bering Strait.

TEMPERATURE: A marked decrease in the mean air temperature is noted from the previous month as temperatures continue to drop. Means range from a –16°C over the Chukchi Sea to over 28°C in the southwest Pacific between the equator and 20°N. Along the 40th parallel, means range from 8°C off Asia to 15°C in the eastern Pacific. Less than 2 percent of the observations fall outside the range of –32°C to 0°C in the Chukchi Sea, –2°C to 20°C at 40°N, and 20°C to 32°C at the equator.

GALES: The frequency of gales (≥ 34 kts) has increased from the previous month with most unprotected areas between 30°N and 65°N reporting frequencies of at least 5 percent. The areas of highest frequency (10 percent or greater) are located from the Gulf of Alaska to the Kuril Islands and from 40°N to the Bering Sea.

EXTRATROPICAL CYCLONES: The principal area of cyclogenesis over the North Pacific extends from the Sea of Japan to near 175°W and from 30°N to 47°N. The migration of lows across the Pacific move primarily from southwest through northeast following three primary tracks. The western most track extends from southeastern Russia across the Kuril Islands into the western portion of the Bering Sea. The central storm track extends from a region to the east of central Japan to Bristol Bay and the easternmost track extends from near 43°N, 175°W to near 47°N, 160°W where it branches northeast into Alaska and east into the northwestern United States.

TROPICAL CYCLONES: Tropical cyclone activity continues to decrease across the North Pacific with the most significant decreases occurring in the eastern North Pacific. During an average time span of 10 years one can expect only 3 storms of force 8 or greater in the eastern North Pacific. Of these, it is unlikely that any will reach hurricane strength (force 12). In the western North Pacific for an equivalent period, 29 are expected to reach force 8 or greater; of these, 21 are expected to reach force 12.

WAVE HEIGHTS: Wave heights of 12 feet or higher are encountered 10 percent or more of the time in most areas between the Hawaiian Islands and St. Lawrence Island and between Japan and North America. Ten percent frequencies are also encountered east of the Hawaiian Islands and from Vietnam to Okinawa. Frequencies increase to 20 percent over the South China Sea and 30 percent along the 50th parallel between 135°W and 160°E.

AVERAGE ICE LIMITS: Types and limits of ice are shown in red as follows.

- Minimum extent of sea ice of ¼ or greater concentration.
- Mean extent of sea ice of ¼ or greater concentration.
- Maximum extent of sea ice of ¼ 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. 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.

SCALE OF WIND PERCENTAGES

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.

VISIBILITY
Solid blue lines show percentage of observations reporting visibilities less than 2 miles.

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.

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.

STORM TRACKS
These are mean tracks of both tropical and extra-tropical cyclones. The prevailing direction of motion of storm systems is indicated by the arrows. Heavy solid red lines denote primary tracks; thin dashed lines denote secondary tracks. Arrow heads and in areas of maximum frequency.

SEA SURFACE TEMPERATURE
The mean sea surface temperature (°C), in blue lines are shown for every 4 degrees.

AIR TEMPERATURE
The mean air temperature (°C), in red lines, is shown for every 2 degrees.

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.