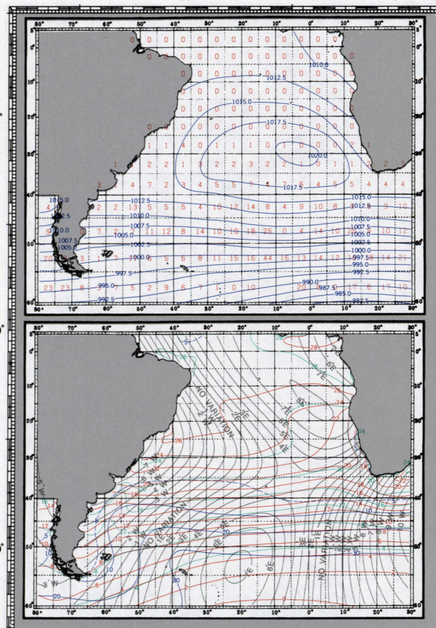
# PILOT CHART OF THE SOUTH ATLANTIC OCEAN

MARCH



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. In cases where the observation count is low the gale frequency may be nonrepresentative and therefore different from the values used in the text. 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.

AIR TEMPERATURE

The mean air temperature (°C) in red lines is shown for every 2 degrees. All weather narratives refer to air temperature.

VISIBILITY

Blue lines show percentage of observations reporting visibility less than 2 miles.

SEA SURFACE TEMPERATURE

The mean sea surface temperature (°C), in green lines, is shown for every 4 degrees.

OCEAN CURRENTS

Solid arrows indicate the prevailing direction and numerals the average speed of the currents expressed in knots as determined from ships' logs. Dashed arrows are approximations of the prevailing current directions which were determined from other sources when ship log information was unavailable or inadequate.

Values given may be regarded as the probable drift a ship might experience in a particular area. They do not represent the maximum current speed which may occur.

The subtropical convergence is a zone of converging currents and sinking water. Horizontal water movements are either nonexistent or of low speed and variable direction in this zone.

LOCAL WEATHER

For extended remarks on the marine climate along foreign coasts, see the appropriate Sailing Directions and Planning Guides prepared and published by the Defense 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 quarterly publication "Mariners Weather Log" prepared and published by National Oceanic and Atmospheric Administration, Environmental Data and Information Service, carries informative articles on marine climatic conditions and tropical cyclone information for the Southern Hemisphere.

EXPLANATION OF WIND ROSES

PREVAILING WINDS AND CALMS.—The wind rose in blue color is located in the center of each 5° square where there was sufficient data. The rose shows the distribution of the winds that have prevailed in the area over a considerable period. The wind percentages are summarized for the eight points and calm. 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 using the scale below, gives the percent 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 to fit conveniently in the 5° square, anything over 29 percent, the shaft is broken and the percentage is indicated by numerals.

FOR EXAMPLE.—The sample wind rose should be read thus: In the reported observations the wind has averaged as follows: From N. 3 percent, force 3; N.E. 1 percent, force 3; E. 4 percent, force 4; S.E. 24 percent, force 5; S. 37 percent, force 4; S.W. 13 percent, force 3; W. 7 percent, force 3; N.W. 6 percent, force 3; calms 5 percent.

0 10 20 30 40 50 60 70 80 90 100
SCALE OF WIND PERCENTAGES

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.

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.

ICE LIMITS

- Extreme limit of glacier ice since 1772.
- Extreme limit of pack ice of 1/10 concentration or greater for period 1966-1980.
- Mean limit of pack ice of 1/10 concentration or greater during eight recent years.

Definition: Concentration is the ratio of the sea surface actually covered by ice to the total area of sea surface, both ice covered and ice free, at a specific location or over a defined area.

MAGNETIC VARIATION

The lines of equal magnetic variation for the epoch 1995 are shown by gray lines on the main body of the chart. The annual rate of change is shown by gray lines on the lower inset chart

MARCH

PRESSURE—In March the South Atlantic subtropical high continues to predominate from southern Africa to South America and from 10°S to 40°S. The mean central pressure has shifted slightly northwest since February. Now centered near 30°S, 5°W, it continues to support a mean central pressure over 1020 millibars. Little change is noted in the mean pressure pattern south of 40°S where the strong zonal pressure gradient continues. The mean pressure over the Gulf of Guinea decreases to its lowest for any month. This contributes to making March the most influential month for the equatorial trough and congruently the intertropical convergence zone. The influence of the equatorial trough extends from 5°N to 10°S; the intertropical convergence zone is centered along the equator from the coast of Africa to 10°W and just north of the equator from 10°W to the coast of South America.

TEMPERATURE—From the Gulf of Guinea to Horn of Brazil the vast majority (98 percent) of temperature observations fall between 24°C and 32°C. The highest means occur over the Gulf of Guinea where they average just above 28°C. At 60°S, means run as low as 0°C, with only 1 percent of the temperatures falling below −1°C or above 4°C. Along the 30°S parallel, means range from 24°C off South America to less than 18°C off Africa; 98 percent of the temperatures fall between 20°C and 28°C off Brazil and between 16°C and 24°C off South Africa.

WINDS—The circulation around the quasi-permanent subtropical high produces prevailing winds out of the south (southeast through southwest) along the west coast of Africa. Along the upper left quadrant of the high the winds become easterly before turning northerly along the east coast of South America between 20°S and 40°S. Winds of force 3 to 5 are average along the axis of the Benguela current, the Agulhas current, and the northeast trades. Most other regions north of 40°S produce average winds of force 2 to 4. South of 40°S, winds average force 4 to 6 and are predominately out of the west.

GALES—Winds of force 8 or higher generally occur south of 35°S. Frequencies of 10 percent or more are observed mainly east of the Falkland Islands and south of 40°S, whereas frequencies of 20 percent are observed between 30°W and 30°E between the latitudes of 45°S and 60°S.

VISIBILITY—Visibilities less than 2 miles are observed more than 5 percent of the time only in a few areas north of 40°S. Frequencies of 10 percent or higher are observed predominately east of the Falkland Islands and south of 42°S. Occurrences of poor visibilities (less than 2 miles) increase to 30 percent across the South Atlantic east of 40°W and south of 50°S.

WAVE HEIGHTS—Nearly all regions south of 35°S report wave heights of at least 12 feet 10 percent or more of the time. The only area north of 35°S to report frequencies of 10 percent or more lies along the axis of the Benguela current. Frequencies reach as high as 20 percent between 27°S and 32°S. Wave heights of this magnitude are most often encountered south of 50°S and east of 5°W where frequencies reach 50 percent.