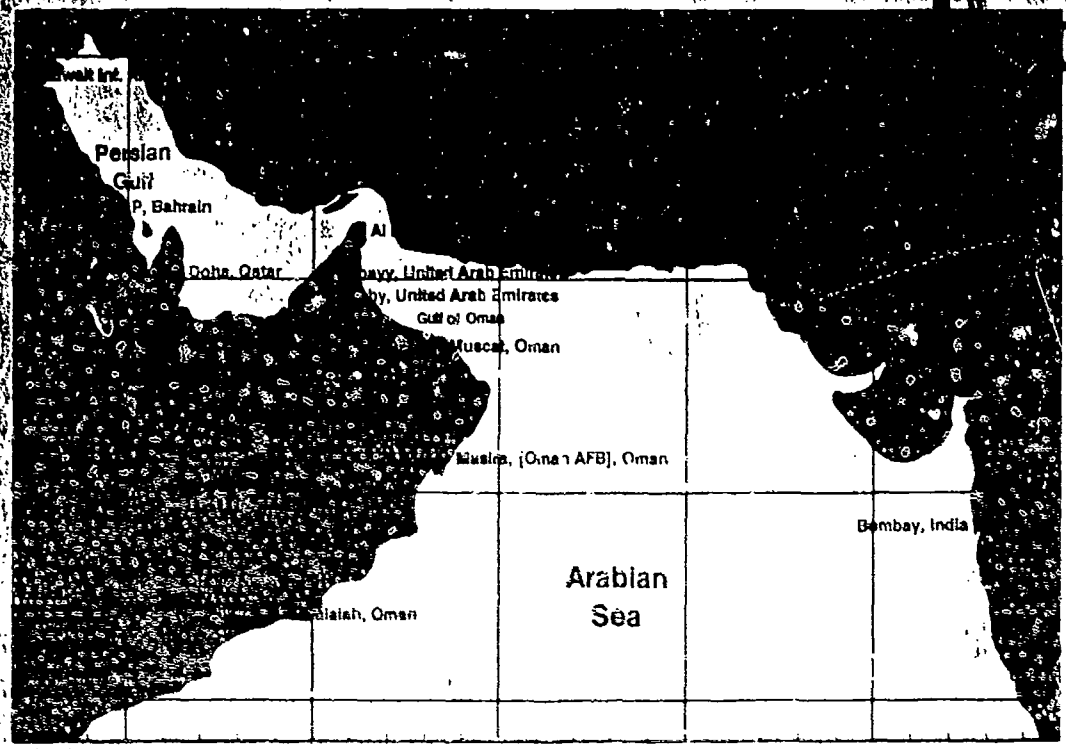
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U.S. NAVY REGIONAL CLIMATIC STUDY OF THE PERSIAN GULF AND THE NORTHERN ARABIAN SEA

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JULY, 1992



PREPARED BY
NAVAL OCEANOGRAPHY COMMAND DETACHMENT
ASHEVILLE, NC

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This climatic study of The Persian Gulf and The Northern Arabian Sea consists of monthly isopleth charts and/or tables of (1) clouds, (2) precipitation, (3) visibility, (4) mid and low range ceiling and visibilities, (5) wind-visibility-cloudiness, (6) mean scalar wind speed, (7) wind speed less than 11 knots and greater or equal to 34 knots, (8) wind speed 11-21 knots and 22-33 knots, (9) surface wind roses, (10) air and sea surface temperature, (11) wave height, (12) surface currents and (13) station climate summaries.

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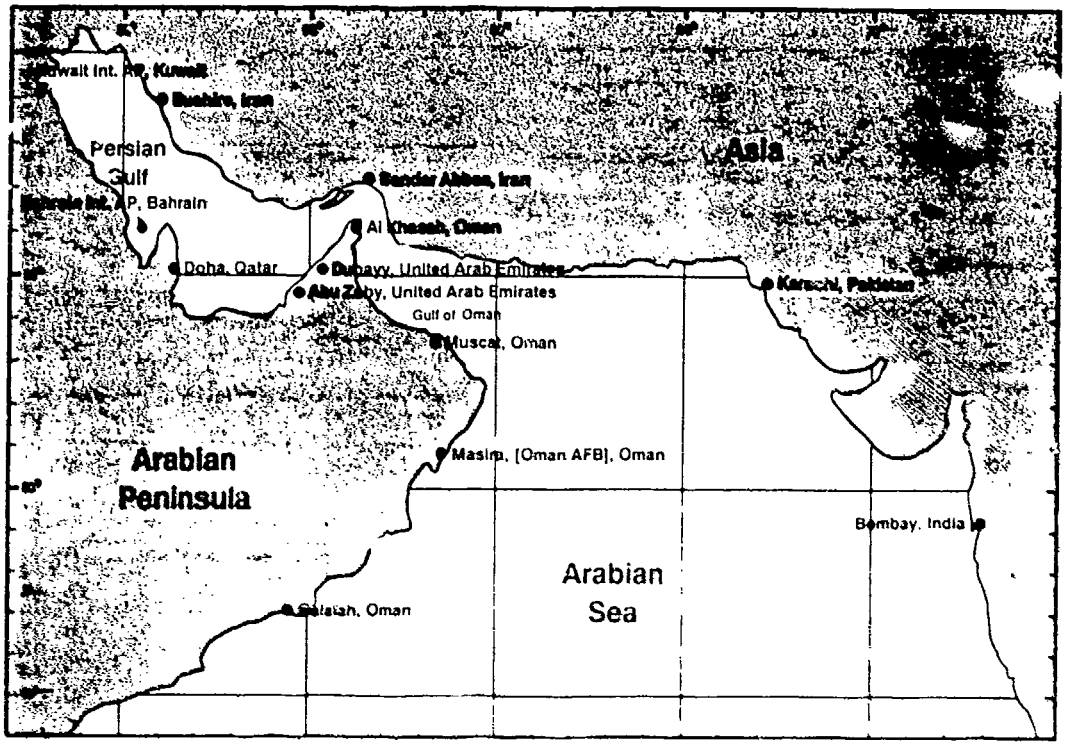
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U.S. NAVY REGIONAL CLIMATIC STUDY OF THE PERSIAN GULF AND THE NORTHERN ARABIAN SEA

The U.S. Navy Regional Climatic Study of The Persian Gulf and The Northern Arabian Sea was prepared for the Commander, Naval Oceanography Command (CNOC) by the Officer in Charge, Naval Oceanography Command Detachment, Asheville, North Carolina. The work was performed in Asheville at the National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC). The surface marine and coastal station statistics presented in this study were made possible through programs designed at the NCDC and funded primarily by CNOC in support of the U.S. Navy's continuing marine climatology requirements.

Special acknowledgement is given to the following meteorologists of the NCDC's Global Climate Laboratory (GCL): William A. Brower, Jr., for serving as project leader and climatic analyst; Phala L. Franks, for performing the computer processing and editing of marine data; M. Lawrence Nicodemus and William O. Brown, for production of the Station Climatic Summaries; and Michael J. Changery, for performing an editorial evaluation of the text, isopleth analyses, and graphics products. Specific acknowledgment is also made to the GCL's Ronald G. Baldwin, computer programmer/analyst, for production of the computer-generated graphic presentations; and to meteorological technicians Charles W. Thomason for editing the isopleth analyses, and Michael G. Burgin and Scott J. Miller of GCL, and David A. McKittrick of General Electric Contract Services, for their drafting skills in preparation of this publication for printing.

Geographical Coverage

This climatic study covers the Persian Gulf and the Northern Arabian Sea located within 14° and 31° north latitudes and 47°and 75° east longitudes. Figure 1 shows the marine area and 13 coastal stations for which climatic statistics are presented. This study area is the first of three areas to be published based on a single analysis effort of a much larger marine area which includes the Red Sea, Gulf of Aden, Persian Gulf, Gulf of Oman, Arabian Sea, and Western Indian Ocean waters north of Madagascar. The total marine analysis area is bounded by 10° south and 35° north latitudes and 25° and 75° east longitudes (excluding 10S-10N, 65-75E). An analysis was performed on the entire marine area to permit continuity between the three study areas.

Climatic Data and Summaries

Surface marine statistics are presented on monthly charts in the form of isopleths, tables, and roses. Statistics include the monthly means or percent frequency of occurrence of threshold values for wind, visibility, clouds, precipitation, air and sea surface temperatures, ocean waves, and surface currents. The marine statistics for the total analysis area, except for ocean currents, are based on approximately 3.8 million hourly observations taken from the NCDC's Tape Data Family (TDF) 1129. These observations were collected by ships of various registry frequenting the marine area over the period 1854-1990.

Many of the ships' observations are presently transmitted over the Global Telecommunications System, captured and archived. Other observations are digitized from ship log forms by various participating members of the World Meteorological Organization, and exchanged under international agreement among the various maritime nations of the world. Although data for this study date from 1854, most of the observations have been collected in the past 40 years, which is significant because recent observations contain more elements than pre-1949 reports. The density of observations within the analysis area is greatest along major shipping routes along the near-coastal waters of the Arabian Peninsula, and the Indian Ocean route between the Gulf of Aden and southern tip of India.

The TDF-1129 data were subjected to thorough computer and visual quality control to eliminate duplicate observations and exclude questionable elements detected during internal consistency and extreme value checks. The edited data were computer summarized and plotted by one-degree quadrangles and

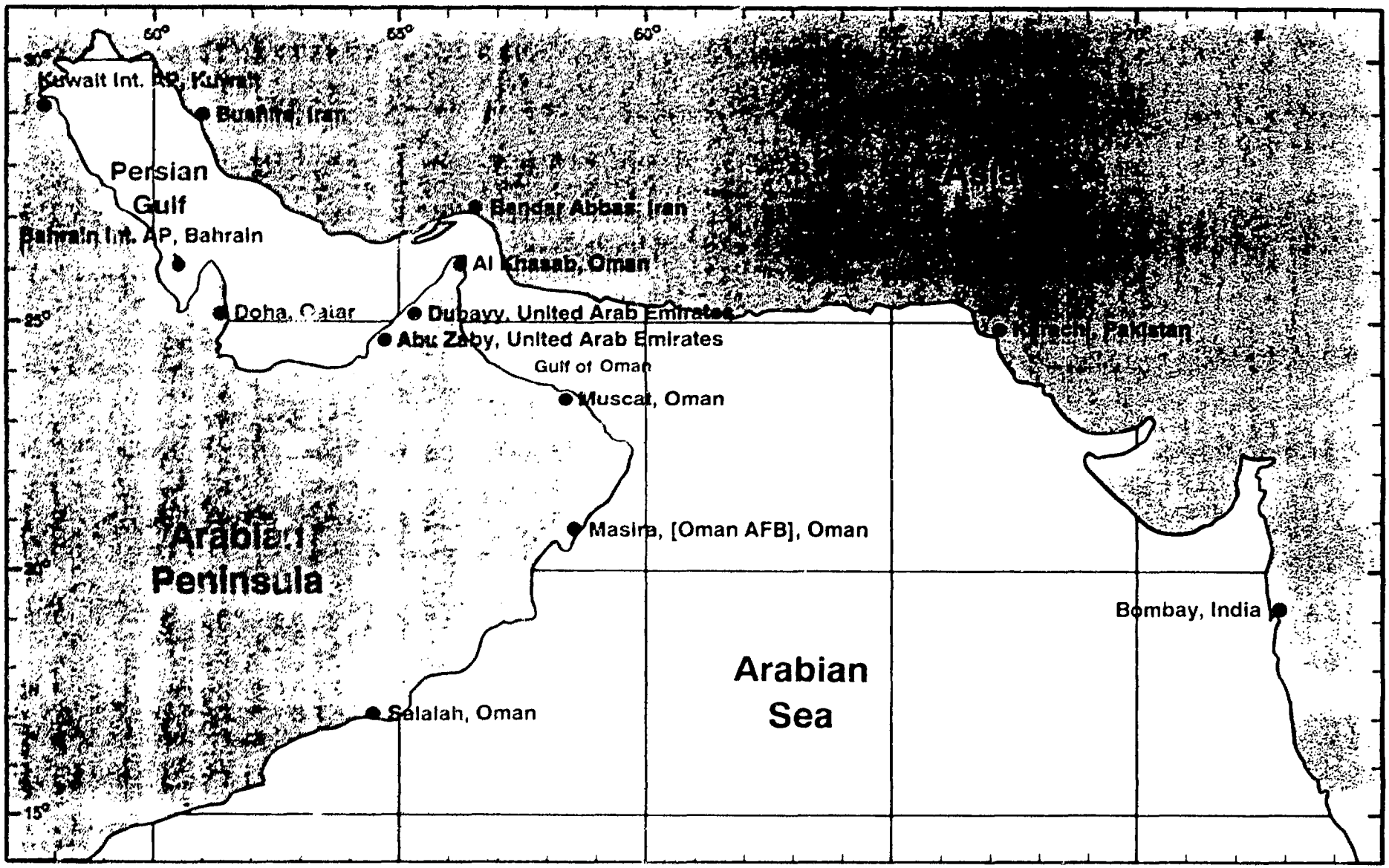


Figure 1. Station location and geographical coverage

subjectively analyzed by meteorologists to produce isopleth maps. Subjective adjustments were made to the analyses when data biases or insufficient observations were evident. Consistency checks were also made in the sets of monthly patterns for each element and among elements, as well as comparative checks with other marine atlases and publications.

Computer graphics tables of visibility and wave heights, and roses of winds and ocean currents are also presented by one-degree quadrangles on monthly charts. The legends on the charts contain detailed instructions on how to read the graphics. The graphics represent the objective compilation of available data. These data were not adjusted for suspected biases (low observation count, heavy weighting of observations taken during relatively short time intervals, biases in coding of observations from various source decks, etc.); hence, differences may be found when comparing the graphical data with the isopleth analyses. The total number of observations for a given quadrangle should always be considered when interpreting the data because there may not be a sufficient number for the calculation of climatically representative statistics.

Station Climatic Summaries (SCS) are presented in tables for the 13 coastal stations shown in Figure 1 and Table 1. Hourly (telecommunications) data for the years 1973-90 were processed for each of the stations. The SCS tables for these 13 stations were taken from the April 1992 version of the International Station Meteorological Climate Summary (ISMCS) file containing 900 stations. The ISMCS file, which is presently being updated and is to contain about 1,400 stations, is a joint production by the Naval Oceanography Command Detachment (NOCD), the United States Air Force Environmental Technical Applications Center (ETAC), and the National Climatic Data Center (NCDC) located at the Federal Climate Complex in Asheville, NC. The summaries for the 13 stations are based on data from the edited digital files of the ETAC.

TABLE 1. Climatic Summary Stations

WMO NO.	STATION NAME	LATITUDE	LONGITUDE
40582	Kuwait Intl AP, Kuwait	29-13N	47-59E
40858	Bushire, Iran	28-59N	50-50E
40875	Bandar Abbas, Iran	27-13N	56-22E
41150	Bahrain Intl AP, Bahrain	26-16N	50-39E
41170	Doha, Qatar	25-15N	51-34E
41194	Dubayy, United Arab Emirates	25-15N	55-20E
41217	Abu Zaby, United Arab Emirates	24-26N	54-39E
41240	Al Khasab, Oman	26-13N	56-14E
41256	Muscat, Oman	23-35N	58-17E
41288	Masira (Oman AFB), Oman	20-40N	58-54E
41316	Salalah, Oman	17-02N	54-05E
41780	Karachi, Pakistan	24-54N	67-08E
43003	Bombay, India	19-07N	72-51E

A word of caution. The intent of this atlas presentation is to gather and present existing data on climatological conditions within the marine and near coastal areas of the Persian Gulf and North Arabian Sea. The data are presented without discussion and interpretation. Given the information presented in the introductory text, legend descriptions on all charts, and numbers of observations displayed with the graphics presentations, the user should be able to assess the degree of statistical confidence in the presented climatology for a given month and location. The climatological statistics for the 13 coastal stations are presented to afford a better climatological picture of the coastal area. Differences, however, may be found when comparing the station tabular data with the marine statistics.

PHYSICAL FEATURES

The waters in this marine climatic study of the Persian Gulf and the Northern Arabian Sea within 14°-31°N and 47°-75°E touch the shores of 11 countries: Yemen, Oman, United Arab Emirates, Qatar, Saudi Arabia, Bahrain,

Kuwait, Iraq, Iran, Pakistan, and India. (All but India are within the Moslem world.) The influence of these waters upon the adjacent lands is restricted by the prevailing pressure patterns and the mountainous topography of the surrounding lands so that aridity and continentality characterize most of the study area.

The Persian Gulf-Gulf of Oman waters are a northwestern extension of the Arabian Sea. The Persian Gulf itself forms a great 530 nautical mile (nm) concave curve running southeasterly from the mouth of Iraq's Euphrates River Delta to the Strait of Hormuz, and averages about 130-150nm wide and 65-200 feet deep. The Persian Gulf, on entering the Strait at Dubayy, quickly narrows to less than 30nm and deepens to a maximum depth of 300 feet. Here, the Gulf of Oman begins and extends southeastward beyond the Strait some 280nm as it rapidly increases in width to 200nm with depths greater than 6,000 feet before joining the Arabian Sea. The generally accepted boundary between the Gulf of Oman and the Arabian Sea is an imaginary line drawn from the Iran-Pakistan border to the eastern most point of Oman at Ras al Hadd. Figure 2 provides some general bathymetry information.

Narrow coastal plains bordering the marine study area are surrounded by vast deserts and wastelands to the west and south and by Iran's Zagros Mountains to the north. Salt marshes at the northwestern end of the Persian Gulf extend from Kuwait to the Iranian coast near 30°N, 50°E, and inland from 15 to 70nm. Desert lies beyond the salt marshes. The southern shore is nearly flat from Iraq southeastward to the Oman Peninsula. Terrain in Saudi Arabia inland of the shoreline is a mixture of sand dunes, wadis (dry washes), and low gravel ridges. Sand dune fields are concentrated within 50NM of the coast from Kuwait to Az Zahran near 26°N, 50°E; south of Az Zahran these fields extend inland from 75 to 200nm. Elevations rise slowly inland to about 1,700 feet. South of Abu Zaby, and extending southwest to the mountains of extreme eastern Yemen, is the "Empty Quarter," an area of sand dunes and ridges with almost no permanent human inhabitants. Sand ridges mix with the sand dune fields from the Oman Peninsula south and eastward to within 50 to 75nm of the mountain range along the Gulf of Oman-Arabian Sea coast. Salt flats are common within 15nm of the coast along the entire southern gulf shore. A range of mountains runs along the coast the length of Oman from the Strait of Hormuz to 20nm west of Ras al Hadd. Elevations range from 5,000 to nearly 10,000 feet along the ridge, with elevations dropping to less than 1,700 west of this mountainous spine. A narrow coastal plain backed by hilly, sometimes mountainous, terrain runs along the entire Oman-Arabian Sea coast. Maximum elevations reach 2,500 feet.

Terrain on the Iranian, or northern, shore of the Persian Gulf is in sharp contrast to the rest of the region. Numerous mountain ranges, oriented parallel to the Persian Gulf-Gulf of Oman, front a narrow (20 to 40nm) coastal plain from the Tigris-Euphrates delta southeastward for 105nm to just southeast of Bushire. Southeast and east of this point to the Strait of Hormuz, the major ranges rise almost immediately inland from the coast. The highest mountains are inland of the northwestern half of the Gulf, with peaks ranging from 11,000 to more than 14,000 feet. Southwestward from the Strait of Hormuz to the Iran-Pakistan border, mountain ranges form the coast and rise rapidly, exceeding 5,000 feet within 40nm of the coast and 10,000 feet within 90nm. Figure 3 provides some general topography information.

GENERAL CIRCULATION AND CLIMATE

The climate of the marine study area is one of sharp contrasts between marine and continental controls. As a result of the seasonal variation in incoming solar radiation and the differential heating and cooling of Asia to the north, Africa to the west, and the Indian Ocean to the south, a winter to summer reversal in pressure systems and winds creates a monsoon climate over Southern Asia and the Arabian Sea. Solar radiation and the low heat capacity of the Asian land mass results in the fall formation and spring decay of the extensive cold Siberian High centered near 50°N, 95°E, and the spring formation and fall decay of the warm Pakistani Low centered near 30°N, 65°E. The mean sea level pressure charts for January and July in Figure 4 illustrate the general monsoon circulation.

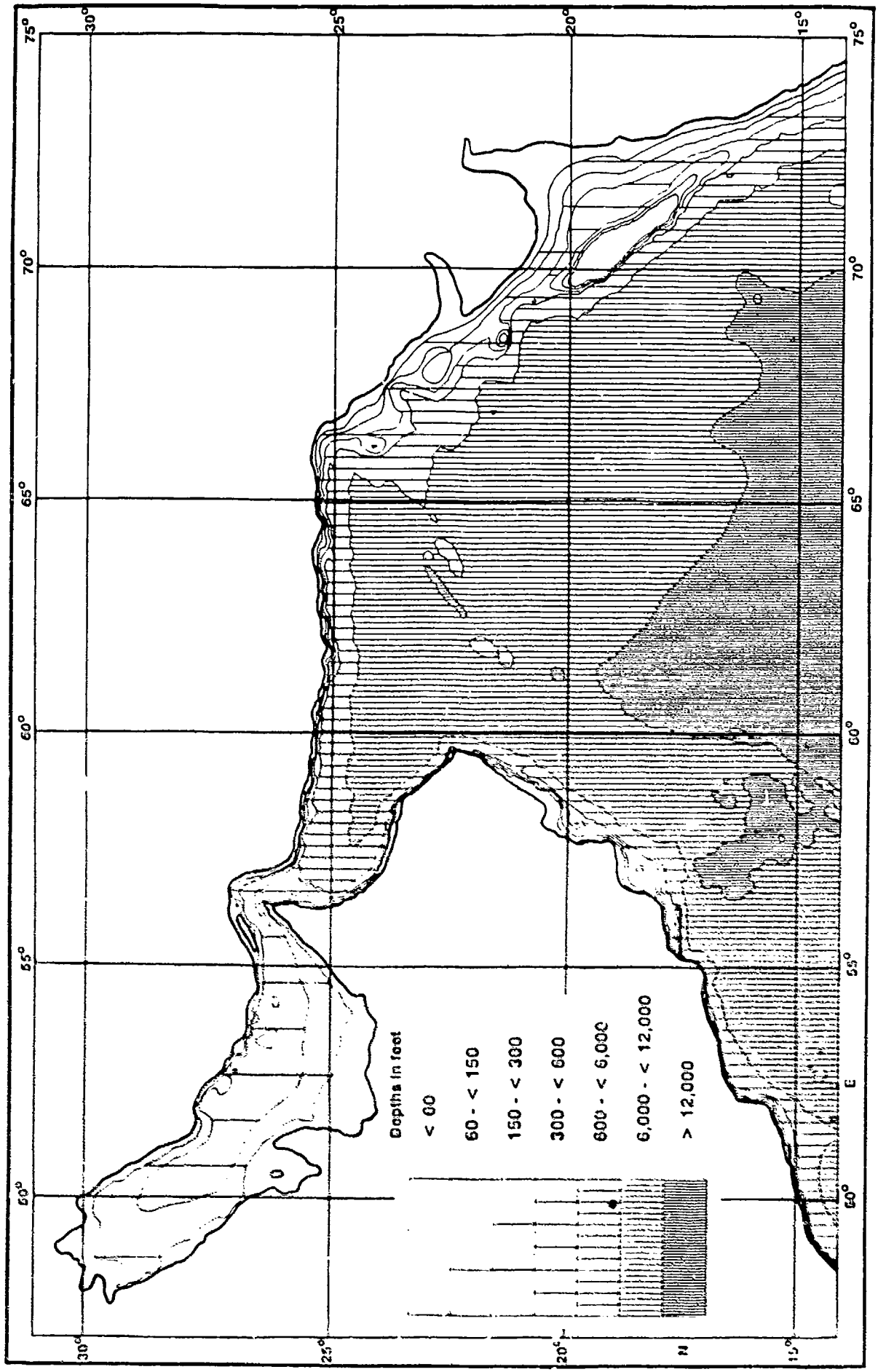


Figure 2. Bathymetry

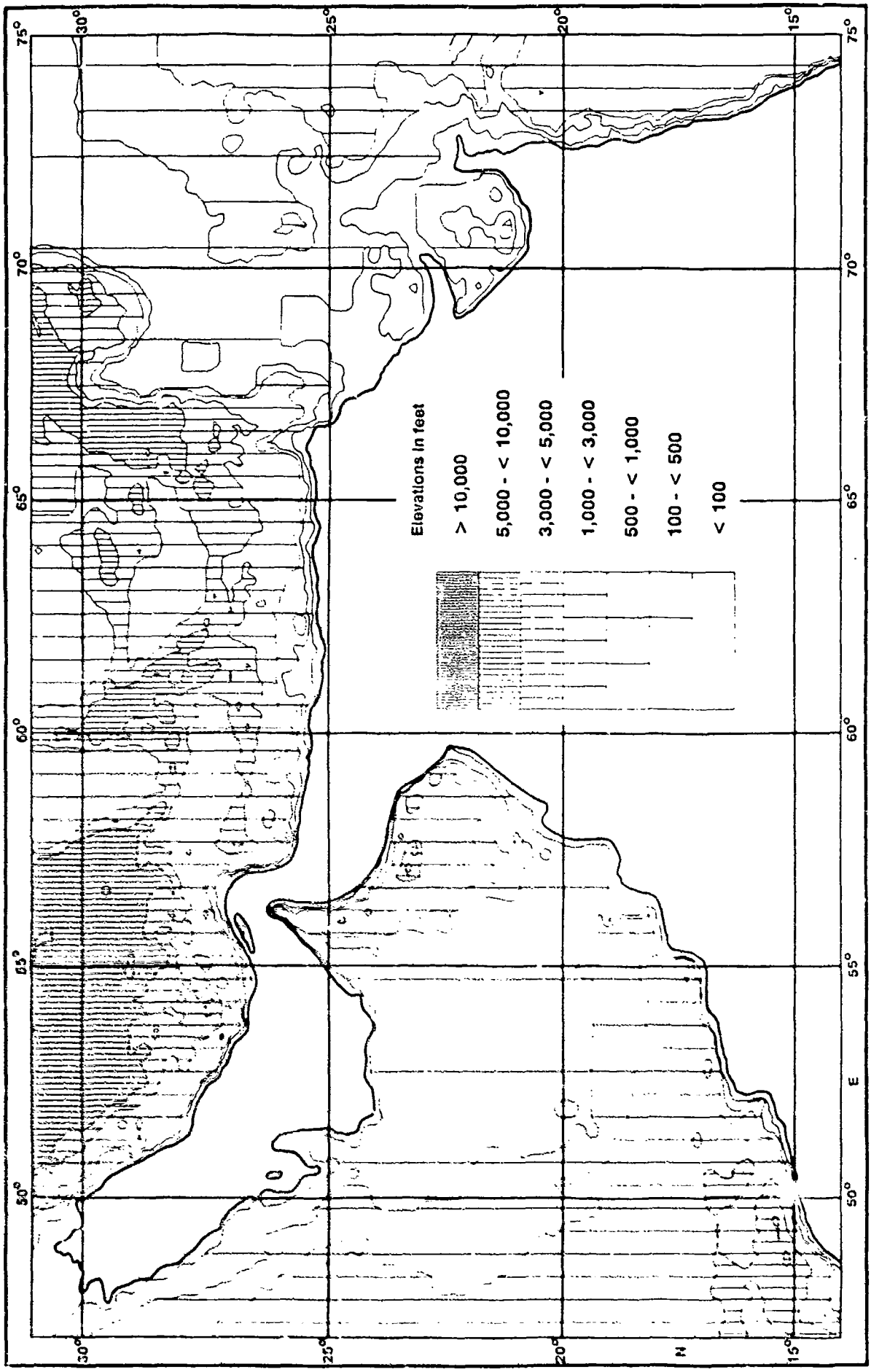
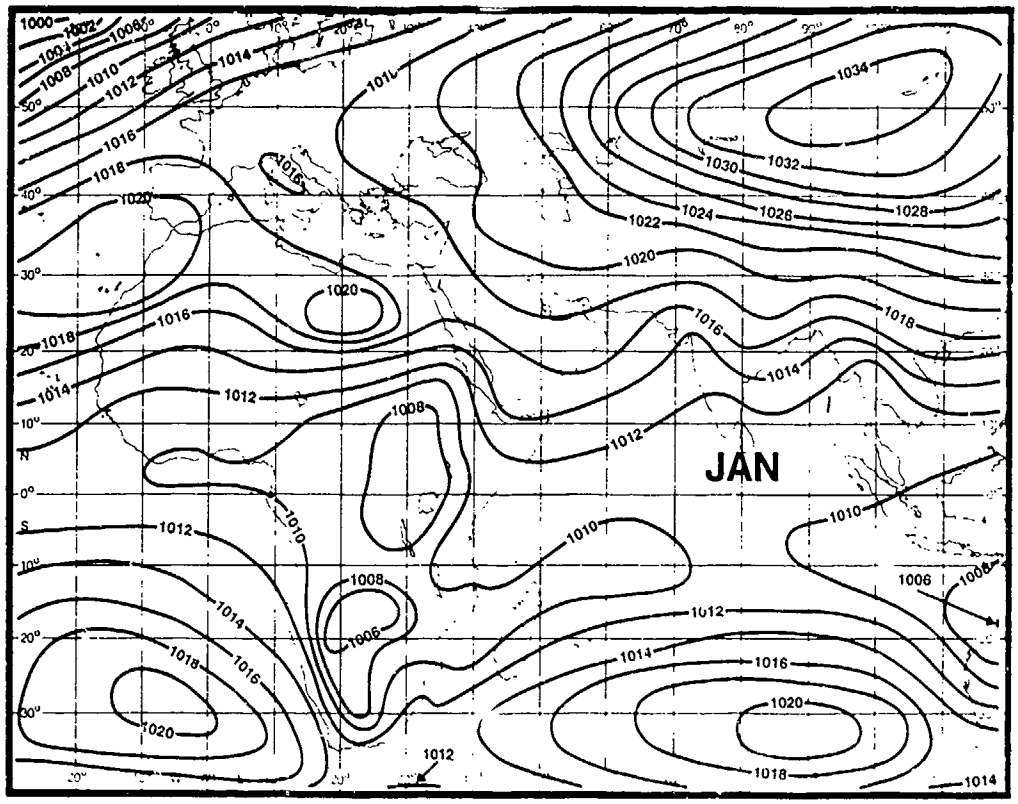


Figure 3. Topography



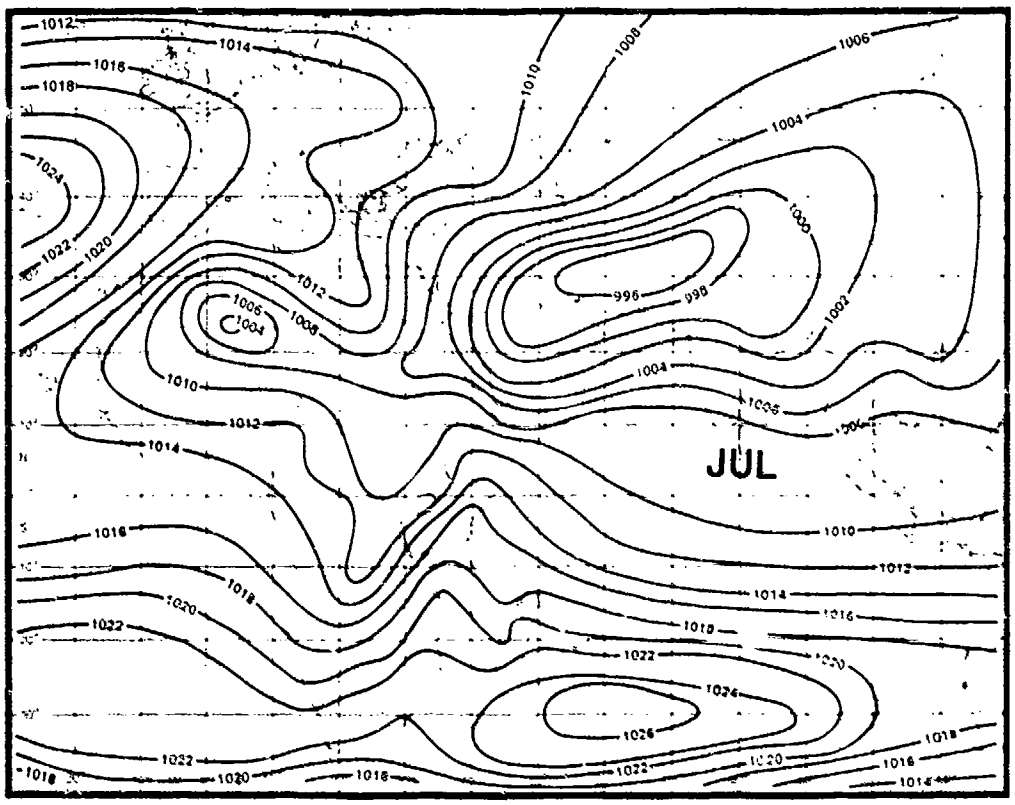


Figure 4. Sea-level pressure (millibars)

This monsoon climate is characterized by two distinct monsoon seasons separated by two short (30-45 day) transition periods. The winter northeast monsoon, present from November through March, is dominated by northeasterly low-level flow controlled by the Siberian High and a deep thermal low over Australia. In April and May this northeasterly circulation rapidly breaks down and, during May to September, is replaced by the Pakistani Low and its associated secondary lows in Saudi Arabia and Saharan Africa. The Intertropical Convergence Zone (ITCZ) moves rapidly north into the intensifying heat lows and the southern hemisphere southeasterly trade winds cross the Equator, recurve to reinforce the summer southwest monsoon flow across the Arabian Sea into India. During this time, the Indian Ocean High moves northwestward and intensifies. In October and November, the Pakistani Low collapses as days become shorter. Cooling over Siberian Russia reestablishes the Siberian High, and the ITCZ migrates southward once again. Low-level northeasterly flow is reestablished over Southern Asia and the Arabian Sea and the cycle repeats itself.

The continental influence is strengthened by the tropical latitudes of southern Asia as well as by the height and extent of the massive east to west continental mountain systems. The peninsula extensions of Asia into the latitudes of the subtropical anticyclonic belt are a factor in the intensity of the summer heating and hence the strength of the southwest monsoon, whereas the zonally oriented mountain systems reduce the strength of the northeast monsoon by largely containing the Siberian High in winter. Other continental features favoring the monsoon flow are the northeast to southwest orientation and the generally high elevations of the coasts of Arabia and East Africa; these features tend to channel the summer monsoon toward the Pakistani Low and the winter monsoon toward the African Equatorial Low.

Within the study area, the Persian Gulf, Gulf of Oman, and western Arabian Sea experience predominantly continental airflow resulting in relatively low humidities and large temperature contrasts throughout the year. Because of the landlocked nature of the Persian Gulf (and Red Sea), the influx of hot, dry air from the surrounding deserts, and the high incidence of solar radiation with few clouds, these waters constitute the hottest sea surfaces in the world. Continental influences are also important in the northern and eastern Arabian Sea, just off the Asiatic mainland, under the influence of the cool, dry offshore airflow of the Northern Hemisphere winter. During summer, however, maritime influences are dominant in this area of the Arabian Sea.

The winter northeast monsoon prevails in the Arabian Sea to slightly south of the equator. Never as vigorous as the monsoon of summer, the winter monsoon is strongest and most constant over the central and western Arabian Sea south of 20°N. The main source of relatively cooler air arrives over the area from Europe by way of the Mediterranean Sea and Persian Gulf. However, the lowest temperatures occur when cold, continental air flows out of the wintertime Siberian High through the western passes of the Hindu Kush Mountains (35°N, 71°E). The warming of the polar continental air as it moves southward soon transforms into tropical continental over the peninsulas and tropical maritime over the Arabian Sea. Weather in this air is generally fine, with clear skies, low humidities, and minimal rainfall. North of 20°N, and especially in the Persian and Oman Gulfs, clear, sunny weather is less likely. The wind variability at the head of the Arabian Sea and in the Gulf of Oman and the Persian Gulf reflects the continental influence of land and sea breezes, topographic channelling, and the movement of western depressions through the Persian Gulf and along the southern Iran-Pakistani coast. The frequent eastward passage of weak lows along the mountainous coasts cause variable winds, increased cloudiness, and sometimes rain. Squalls, dust storms, or occasional thunderstorms may accompany the deeper depressions or rapidly moving cold fronts.

The summer southwest monsoon is much stronger and deeper, and chiefly of Southern Hemisphere maritime origin rather than Northern Hemisphere continental origin. This airflow is one of the most persistent in the world. Since the southwest monsoon has a long trajectory over water, it brings an abundance of moisture to the continent. Southwesterly flow has a direct affect on the Arabian Sea coast of Oman, the Gulf of Oman, the Arabian Sea coast of Iran, southern Pakistan, and India. It is accompanied by more remarkable weather events, including strong winds, exceptional rainfall

amounts, and, on rare occasions, tropical storms. As this humid, unstable air stream develops in June, cloud and rainfall amounts increase rapidly. Where onshore winds encounter mountainous terrain, as along the west coast of India, the onset of cloud buildup and resultant rainfall has a dramatic suddenness. As the season progresses, cloud and rainfall frequencies remain high, but spells of fair weather intervene between monsoon surges. Strong upwelling along and just off the Oman Arabian coast assists in the maintenance of the Southwest Monsoon.

Intense extratropical cyclones rarely occur in the Arabian Sea, although depressions from the eastern Mediterranean, and some originating in the Sahara and western Arabia, do pass through the Persian Gulf during the Northern Hemisphere winter, retaining much of their original strength. They are frequently accompanied by gales, and thunderstorms are sometimes associated with their cold fronts.

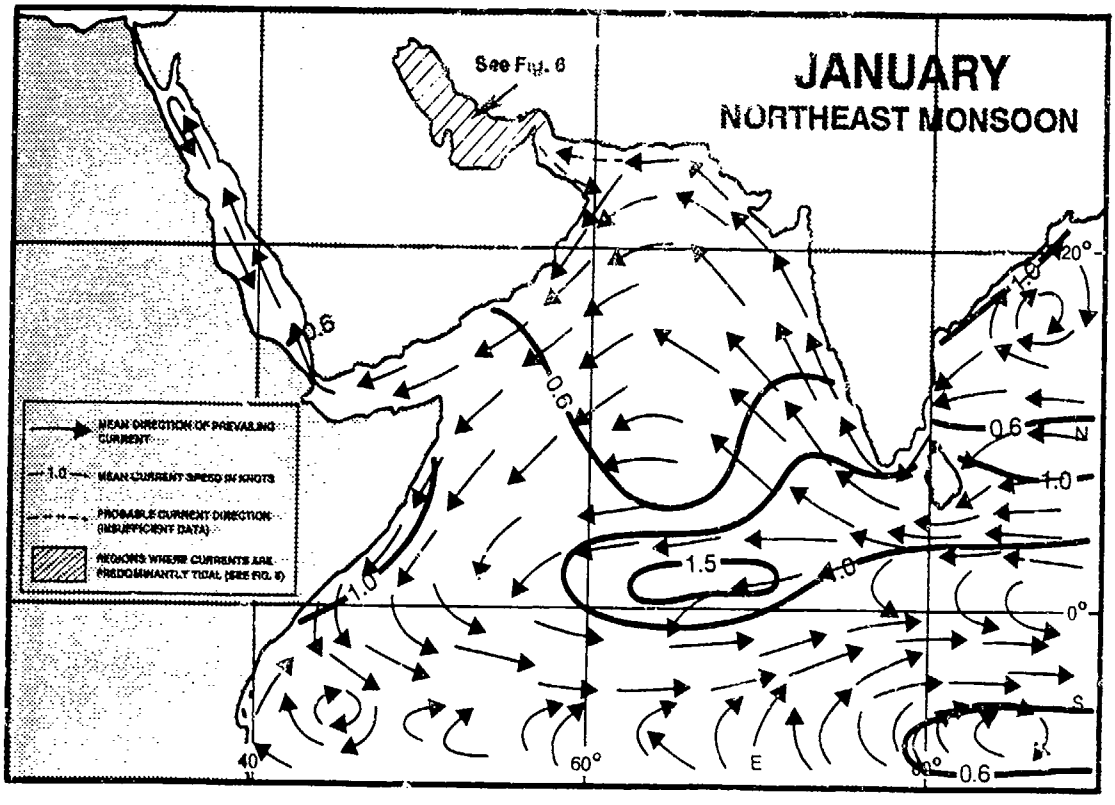
The normal winter pressure gradient is slight over the Persian Gulf which lies between the Siberian High and the extension of the Atlantic High. The comparatively warm temperature of the water causes a shallow low pressure to be apparent over the gulf. Over most of the gulf, northwesterly winds are most frequent, but near the Strait of Hormuz where the gulf is oriented northeast to southwest, the winds are often westerly and southwesterly. This prevailing northwesterly gulf wind, known as the Shamal, occurs in the Persian Gulf and over its immediate land areas following passage of cold fronts southeastward. The strong summer Shamal is rarely associated with storms but is brought about by a deepening of the Pakistani Low. Unlike the winter Shamal, the changes in speed of the summer Shamal are gradual and more predictable. The Shamal is strongest and most persistent from early June until mid-July. During this period, sometimes called the 40-day Shamal or great Shamal, winds may occasionally reach gale force and bring clouds of dust and sand from the desert to the gulf. During August, there is a marked decrease in speed of the Shamal, but it continues as the dominant wind. During periods of strong Shamal the air is usually hot and dry, and the sky is cloudless. The Shamal produces the most widespread hazardous weather known to the Persian Gulf region.

The winds of the Gulf of Oman are distinct from those of the Persian Gulf. Instead of being dominated by the Shamal, the winds are variable and generally light during winter, and mostly under the influence of the southwest monsoon in summer. Southwesterly winds are most prominent at the eastern end of the gulf, but at the center of the gulf they are deflected to the south or southeast, and at the western end the winds are variable.

Over the Arabian Sea as a whole, gales are rare and generally occur less than 1% of the time. However, strong local winds may be encountered in some coastal areas, the most notable example being the Belat which blows off the southern Arabian coast during the northeast monsoon. The Belat is a well-developed northerly land breeze which may reach gale force for periods of a few minutes or several hours. This wind generally begins and ends quite abruptly and is frequently associated with sandstorms over land. It may persist for several days.

Tropical storms, occasionally of hurricane intensity, usually form in the eastern Arabian Sea within 10-15°N, 70-75°E and migrate slowly northwestward. All tropical storms that enter the study area disintegrate over land or before reaching the 50th meridian. Such storms occur at an average of one per year, during the transitional seasons of autumn and spring.

The ocean surface currents in the Arabian Sea are driven primarily by the seasonal winter northeast monsoon and summer southwest winds. However, because of oceanographic and physiographic factors, the exact monthly extent of the seasonal current patterns varies somewhat at different locations. The configuration of India's coastline sets the currents in the eastern Arabian Sea northwest in winter and southeast in summer during the monsoon seasons. Figure 5 shows the January and July general surface current pattern for the Arabian Sea during the peak of the winter northeast and summer southwest monsoon winds. The surface current pattern for the transitional months is variable or a weakened version of one of the monsoonal patterns. Currents in the Persian Gulf and the Gulf of Oman set westward and northwestward along



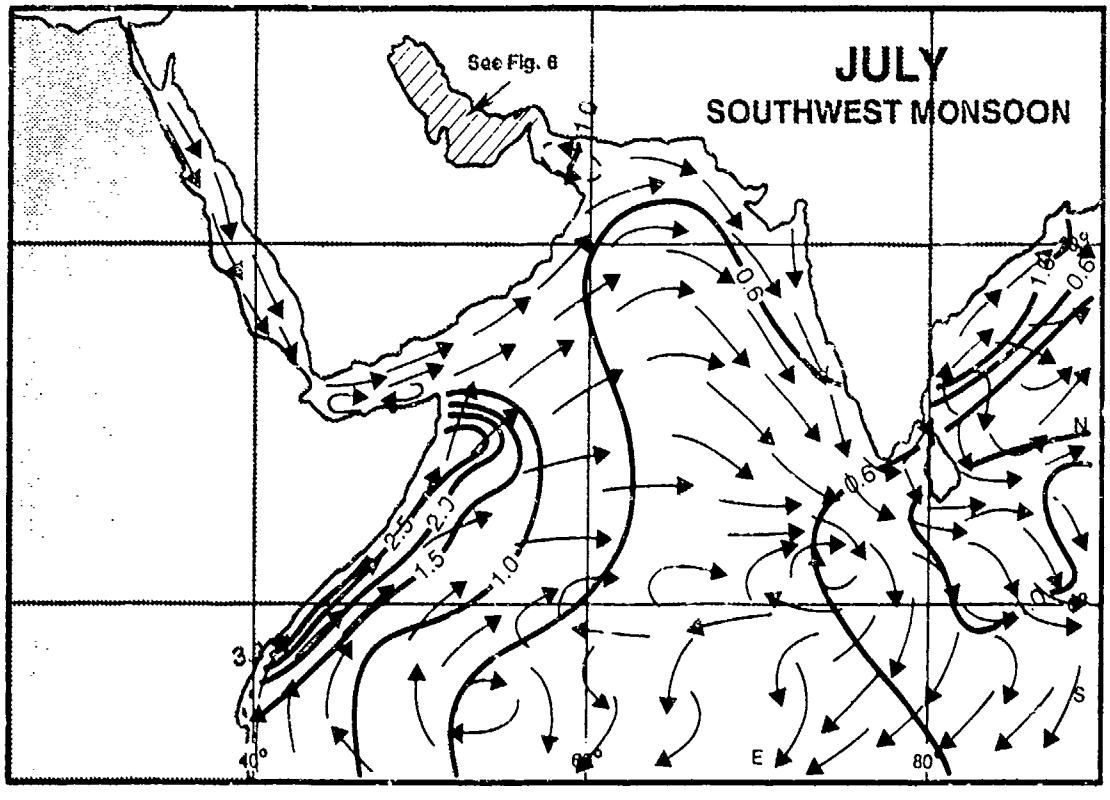


Figure 5. Surface currents

the north shores and southeastward along the south shores. Tidal influences cause considerable variability in the currents in the Persian Gulf and in the Strait of Hormuz. Figure 6 shows the flood and ebb tidal currents for the gulf and strait.

Marine Climatological Elements

Precipitation

Of the elements recorded in the marine data base, precipitation is the one most subject to error in both the way it is observed and the way it is interpreted. For example, it is often inferred in the literature that ships often try to avoid foul weather and thereby bias the data towards fair weather with fewer precipitation observations. Elms (1986) compared the Volunteer Observing Ship (VOS) and buoys, finding little evidence that "fair weather bias" is a serious problem for most applications of marine climatic data. With the introduction, in 1982, of a present weather indicator (i_x) to the International Ship Synoptic code FM13-VII, users have to be careful not to bias the data, especially that from between January 1982 and March 1985 when the indicator was inadvertently left out of the international data exchange format.

Assessing oceanic precipitation is always a major problem because transit ships are unable to take quantitative measurements. A number of studies have been conducted in an effort to predict precipitation amounts, or rates of fall based on estimates derived from readings from satellites (Rao, et al., 1976). For the monthly isopleth presentations of percent frequency of precipitation, the present weather codes 20-27 (precipitation within the past hour) were included with codes 50 through 99 to compute the percent frequency of precipitation in an effort to correct an apparent observational bias. This brings the frequencies more in line with results obtained from ocean weather station observations, the most reliable bench-mark for the open ocean.

Air Temperature

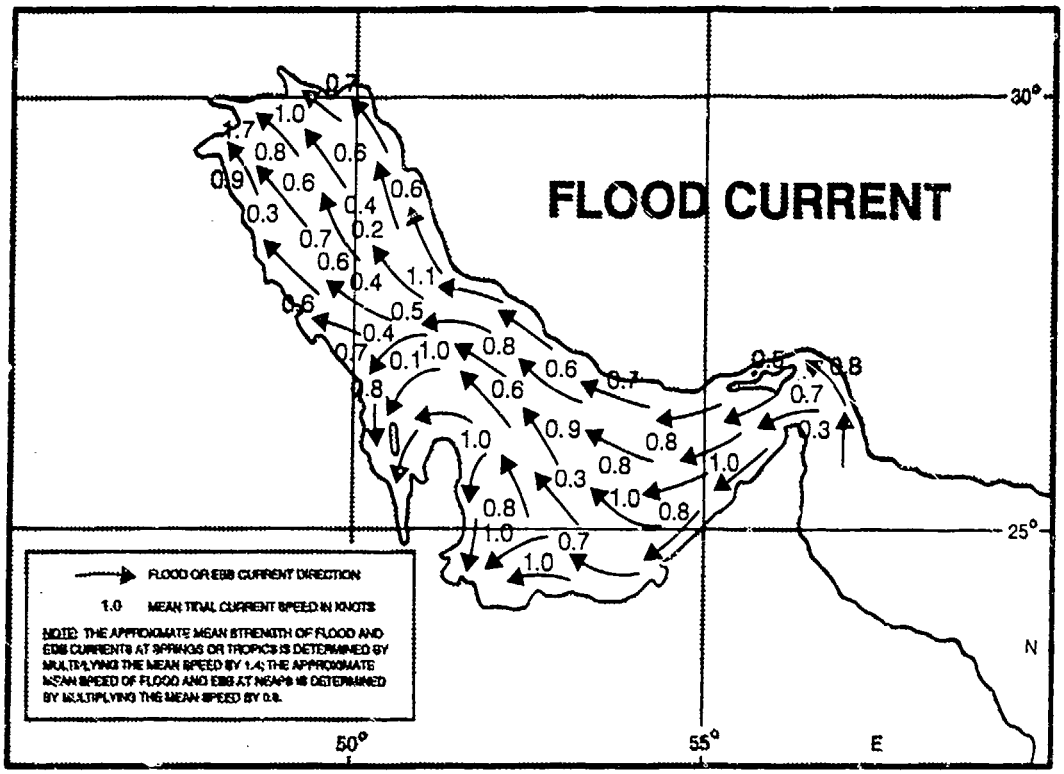
Air temperature is one of the elements most frequently observed by mariners. It should be noted that on many ships the heating effect of the ship's structure has a tendency to produce higher than actual ambient air temperature readings because of instrument exposure (Folland, et al.,1984; Wright, 1986). This is especially true under calm, sunny conditions. Therefore, some ship temperature observations have a warm bias; however, the aggregate is relatively representative after erroneous outliers have been eliminated and the numerous nighttime observations and unbiased daytime observations are included. Also, true extremes are rarely captured since continuous observations are not made at most ocean locations. It is highly unlikely that a ship-of-opportunity would be taking its synoptic weather observations at the exact time that an extreme was occurring. Monthly isopleths of mean air temperature are presented.

Sea-Surface Temperature

Sea-surface temperatures are recorded with fairly high frequency in marine observations. The principle methods for sampling are with ship water-intake thermometers and by reading the temperature of sea water retrieved with buckets. Even though the two methods can produce slightly different results (Barnett, 1984), the data can be used with considerable confidence when examining the long-term means. Monthly isopleths of mean sea-surface temperature are presented.

Surface Winds

Surface wind is one of the most commonly observed elements. Many of the observations from the NCDC data base are visual observations based on the roughness of the sea. In recent years, more ships acquired anemometers and reported measured winds. Prior to 1963, many observed wind speeds were recorded in the Beaufort scale; such estimates have proven to be quite reliable and can be used with a high degree of confidence. Five sets of



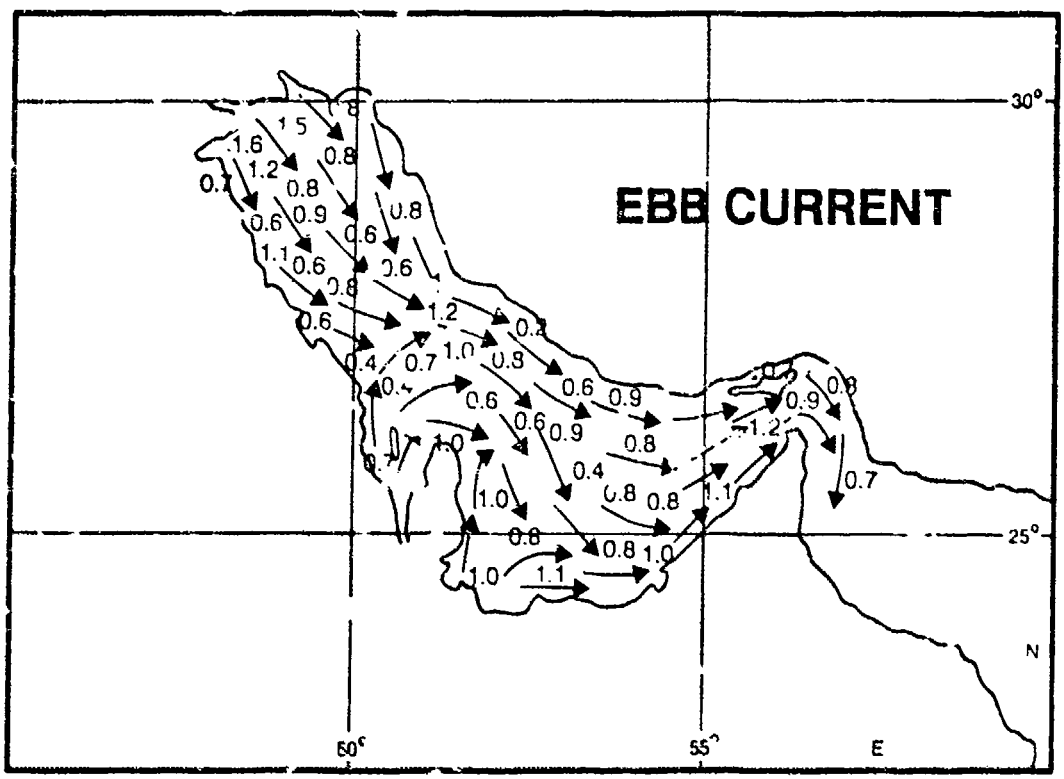


Figure 6. Tidal currents - Persian Gulf

monthly wind speed isopleths are presented: the scalar mean speed and the percent frequency of winds less than 11 knots, from 11 to 21 knots, from 22 to 33 knots, and greater than or equal to 34 knots. Also given are monthly wind roses for one degree quadrangles.

Visibility

Visibilities are difficult to measure at sea because of the lack of distance reference points. Climatically, many low visibility observations are probably missed because the observer is too busy with other duties (a contrasting form of fair weather bias). However, the coarseness of visibility (code) intervals helps to minimize the problem, thereby permitting the summarized monthly tabulations of visibility data presented by one-degree quadrangles to be relatively consistent.

Clouds

A survey of the cloud data (total and low cloud amount) from the surface marine observations data base shows that the number of total cloud reports are significantly greater than that of low cloud amounts. This is because many of the early marine observations contain only total cloud amount. For the two monthly presentations (total cloud amount less than/equal to 2/8, and low cloud amount greater than/equal to 5/8), only those observations reporting both total and low cloud amounts were summarized. This helps eliminate problems introduced as a result of different size data sets (n-count). The use of satellite data helps to bolster confidence in the total cloud analyses because they show fairly close agreement with those observed from the surface (U.S. Department of Commerce and United States Air Force, 1971).

Ceiling and Visibility

Aircraft-type ceilings are not available from marine observations. The ceilings are estimated from the height of the lowest cloud when low clouds cover more than half the sky. When the sky is totally obscured by rain, fog, dust, or other phenomena, the total obscuration is considered a ceiling with a height of zero. Monthly percent frequency isopleth charts are presented for mid-range ceiling and visibility (ceiling less than 1000 feet and/or visibility less than 5 nautical miles; ceiling less than 8000 feet and/or visibility less than 10 nautical miles) and low-range ceiling and visibility (ceiling less than 300 feet and/or visibility less than 1 nautical mile; ceiling less that 600 feet and/or visibility less than 2 nautical miles).

Wave-Heights

Wave-heights have been recorded in consistent quantitative code since the late 1940's. The reluctance of many observers to take wave observations in the earlier years and the difficulty in estimating waves, especially in confused seas, make wave observations one of the least commonly observed elements. The observations are also subject to biases. Generally, the heights are too low, the periods too short, and the sea-swell discrimination poor (Quayle, 1980). The data in this study have not been adjusted for the suspected biases, but were processed through a quality control procedure wherein an internal check was made between wind speed and sea-height. The data were also matrix-arrayed and apparent erroneous outlier data values were deleted from both the sea and swell data. Wave-height presentations include isopleth maps showing percent frequencies of wave-heights greater than or equal to 3 feet and greater than or equal to 8 feet. In addition, wave-height tables by quadrangle show frequencies by six wave-height categories. In these presentations, the higher of the sea or swell was selected for summarization. If heights are equal, the wave with the longer period was selected.

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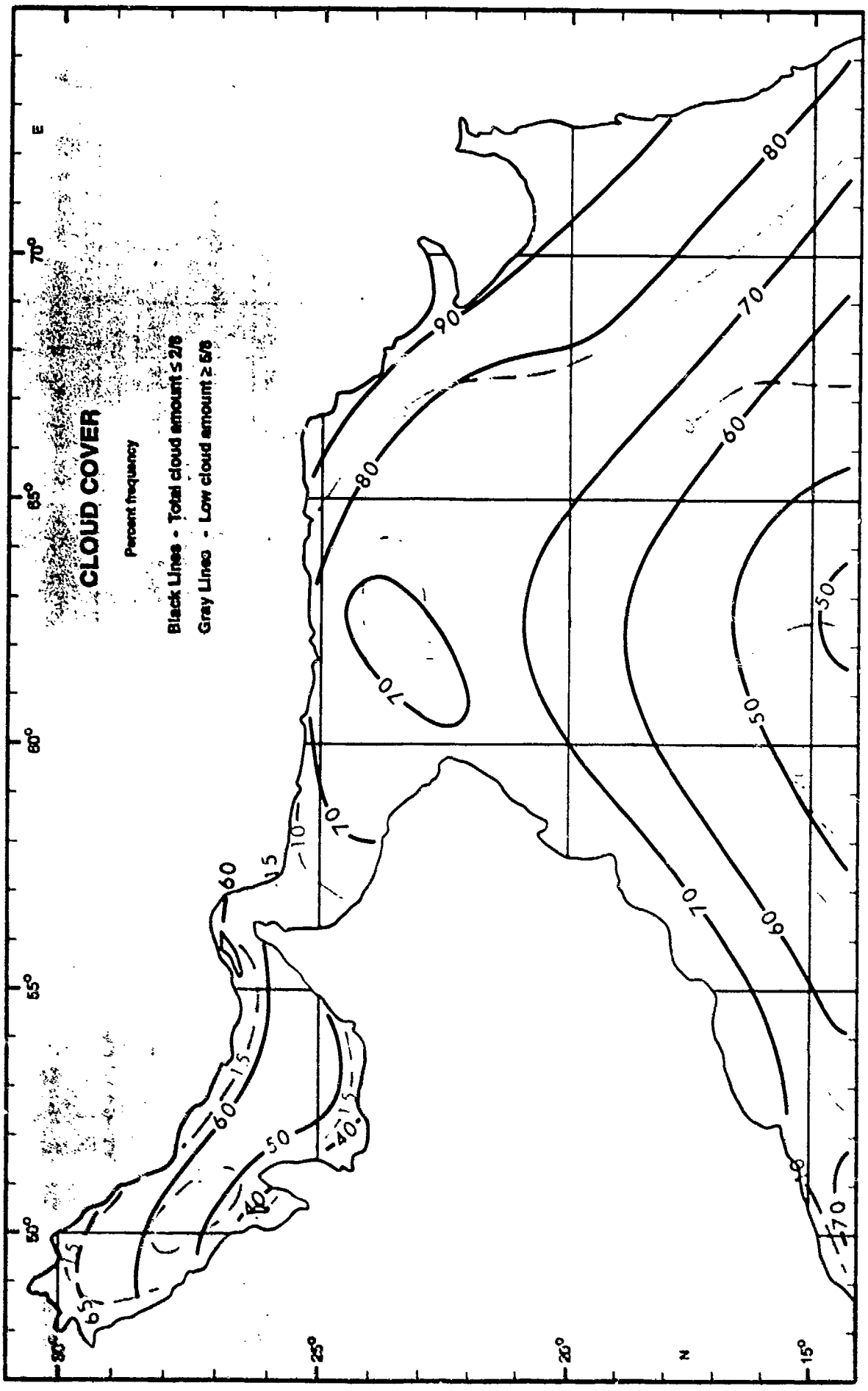
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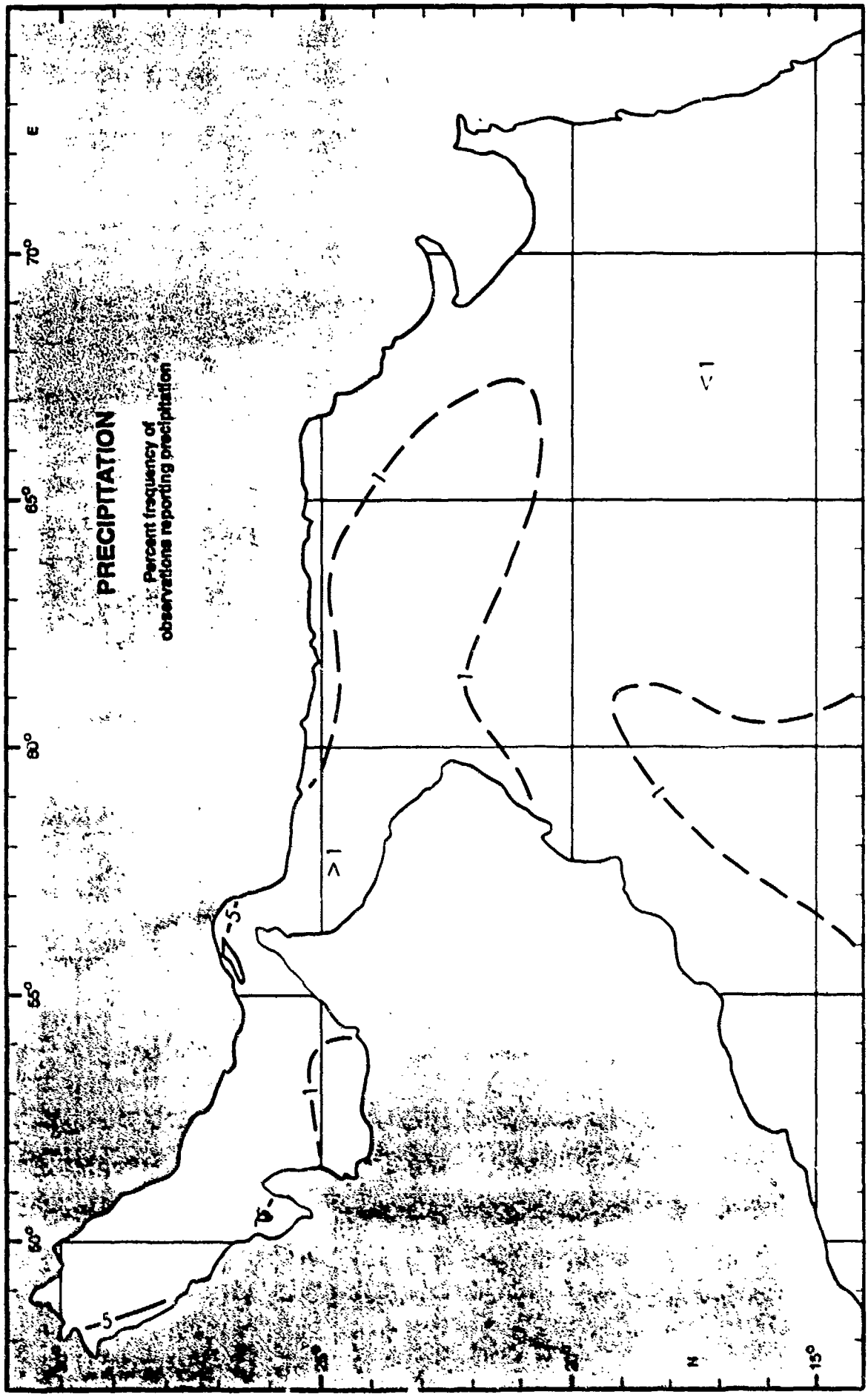
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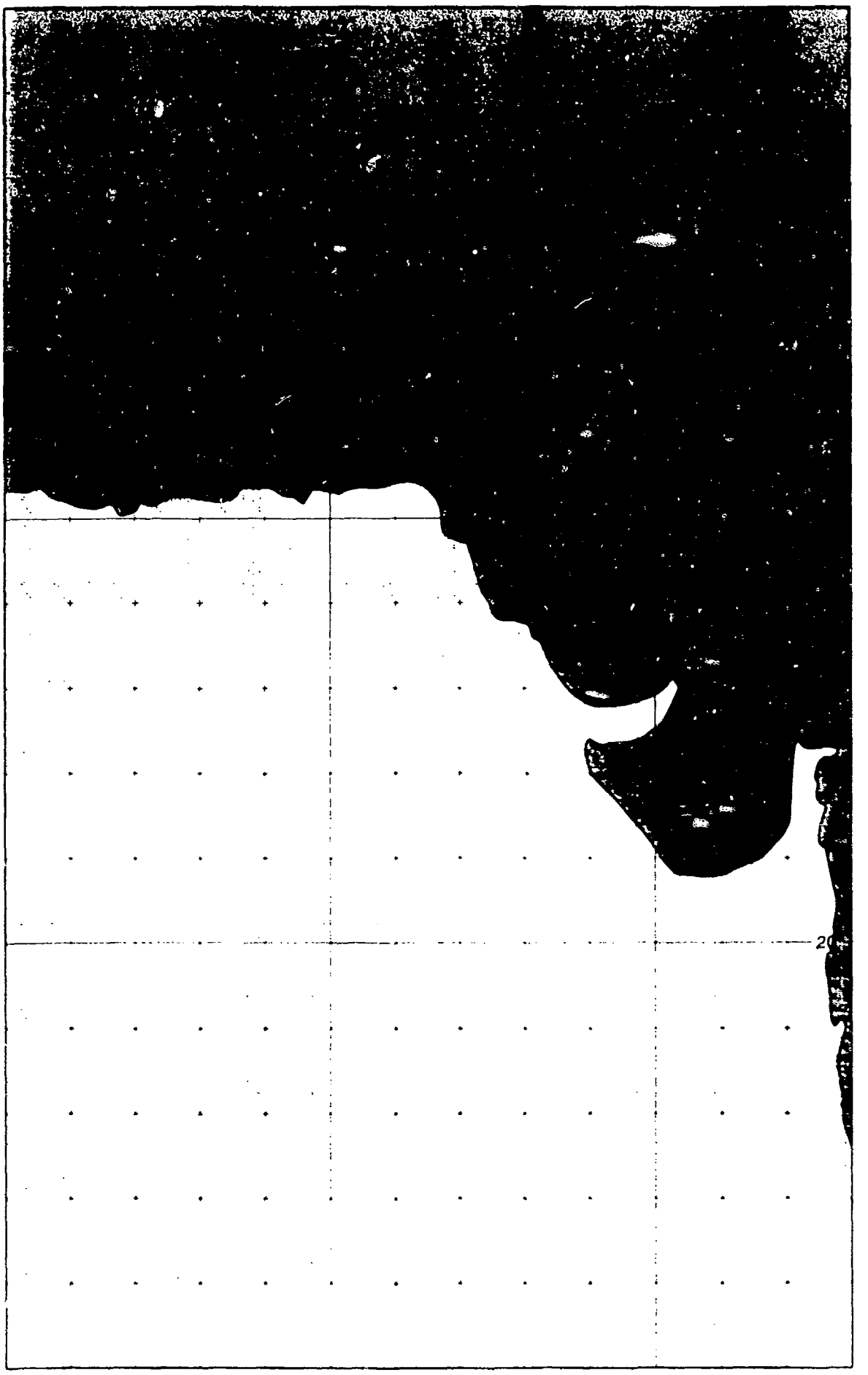
PAGE INDEX

ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Clouds	2	22	42	62	82	102	122	142	162	182	202	222
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CLOUD COVER
Percent frequency
Black Lines - Total cloud amount ≤ 2/8
Gray Lines - Low cloud amount ≥ 5/8
90°
85°
80°
75°
70°
E
55°
50°
25°
20°
N
15°
80
70
60
50
40
10
15
5

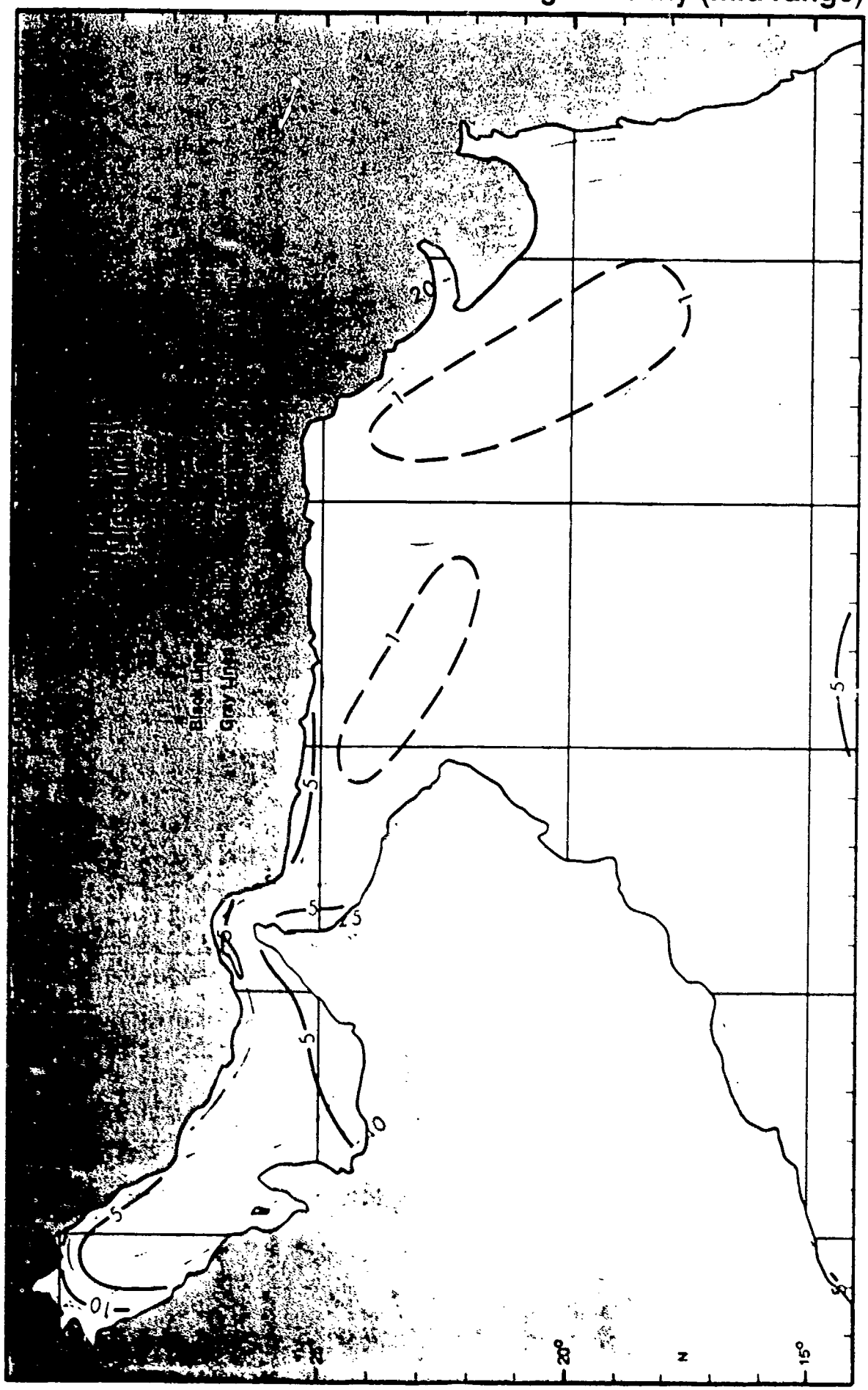

PRECIPITATION
Percent frequency of observations reporting precipitation
70°
65°
60°
55°
50°
25°
15°
E
N
>1
1
5





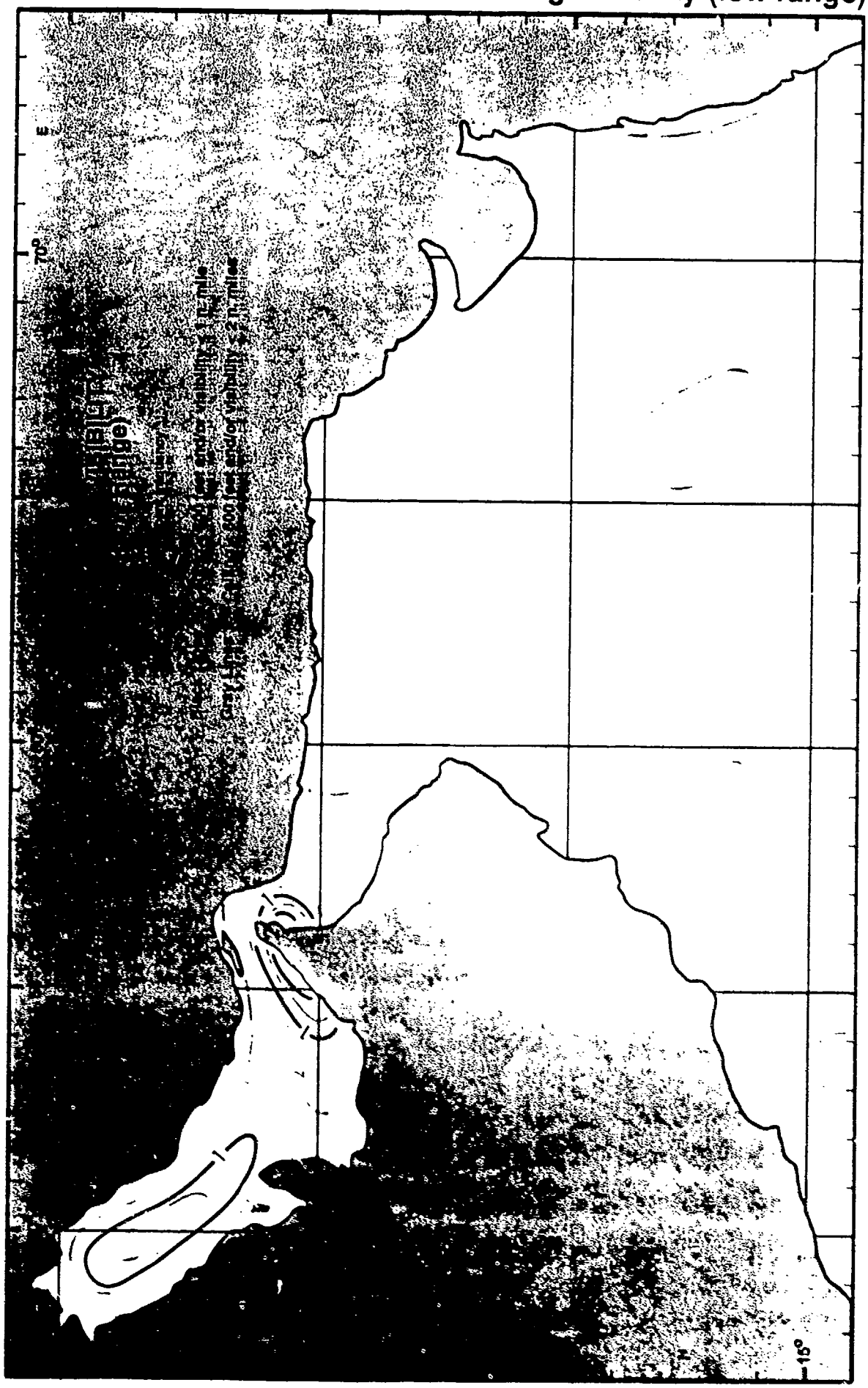
January

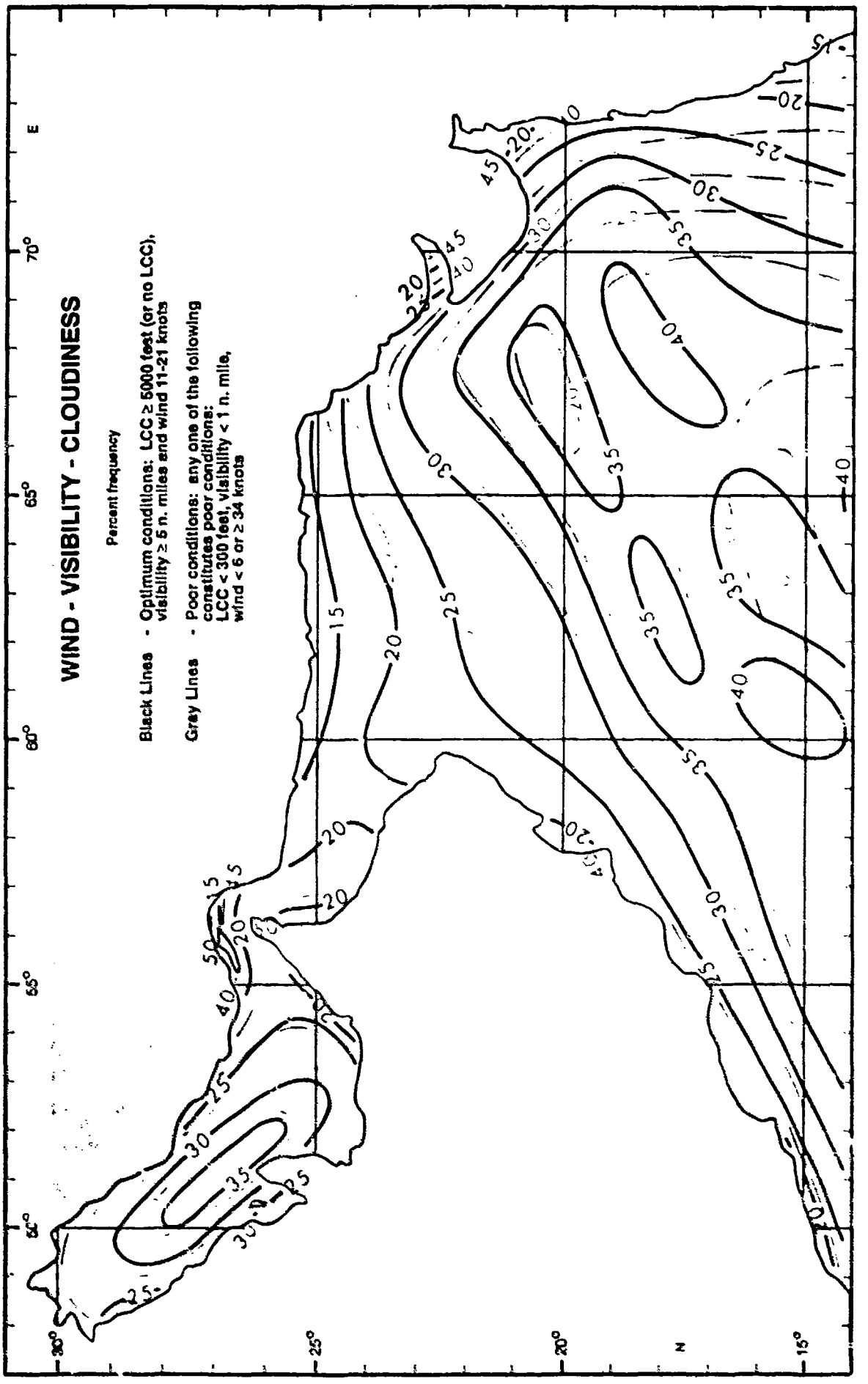
Ceiling-Visibility (mid range)



January

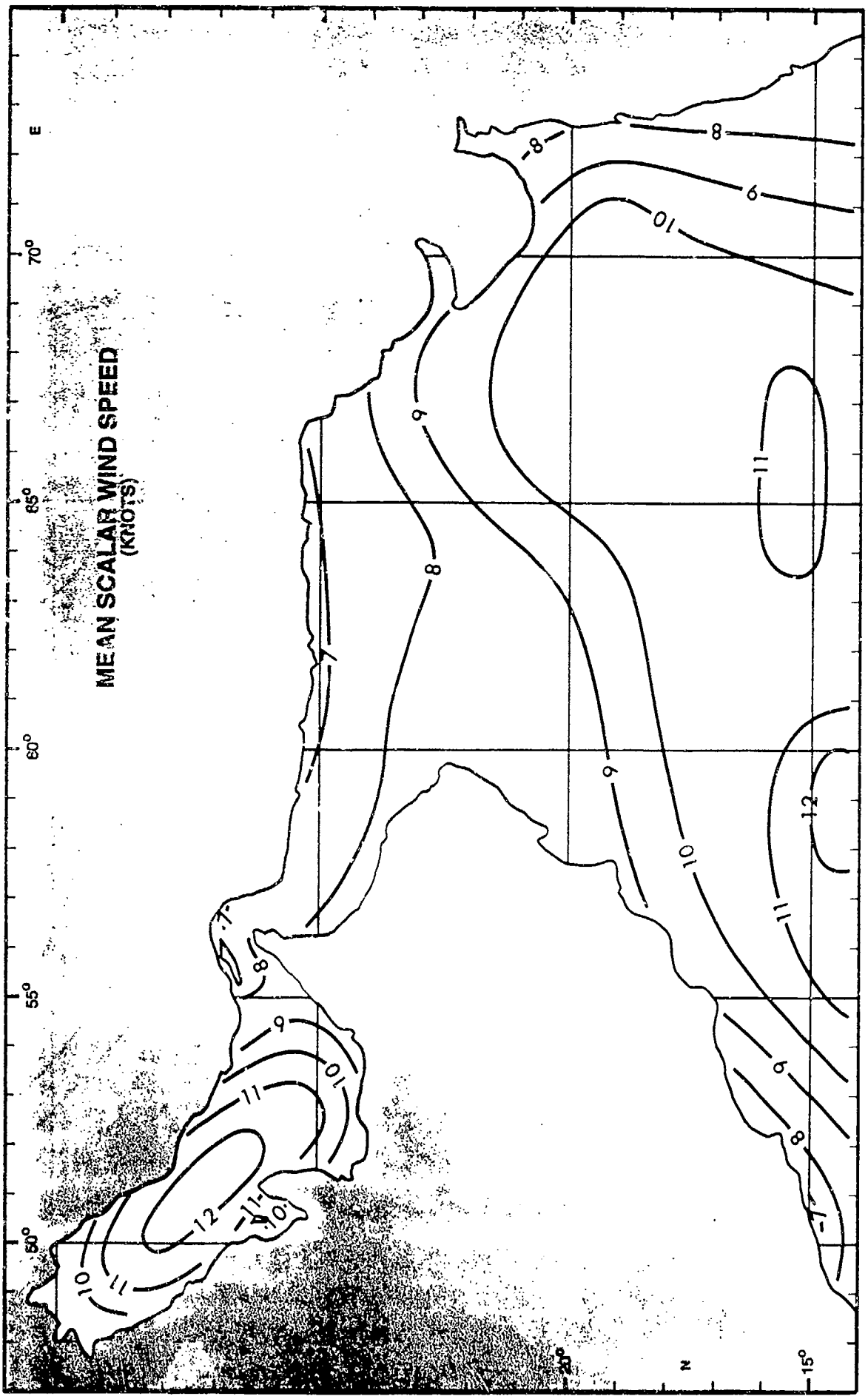
Ceiling-Visibility (low range)




WIND - VISIBILITY - CLOUDINESS
Percent frequency
Black Lines - Optimum conditions: LCC ≥ 5000 feet (or no LCC), visibility ≥ 5 n. miles and wind 11-21 knots
Gray Lines - Poor conditions: any one of the following constitutes poor conditions: LCC < 300 feet, visibility < 1 n. mile, wind < 6 or ≥ 34 knots
80°
70°
65°
60°
55°
50°
45°
40°
35°
30°
25°
20°
15°
E
N

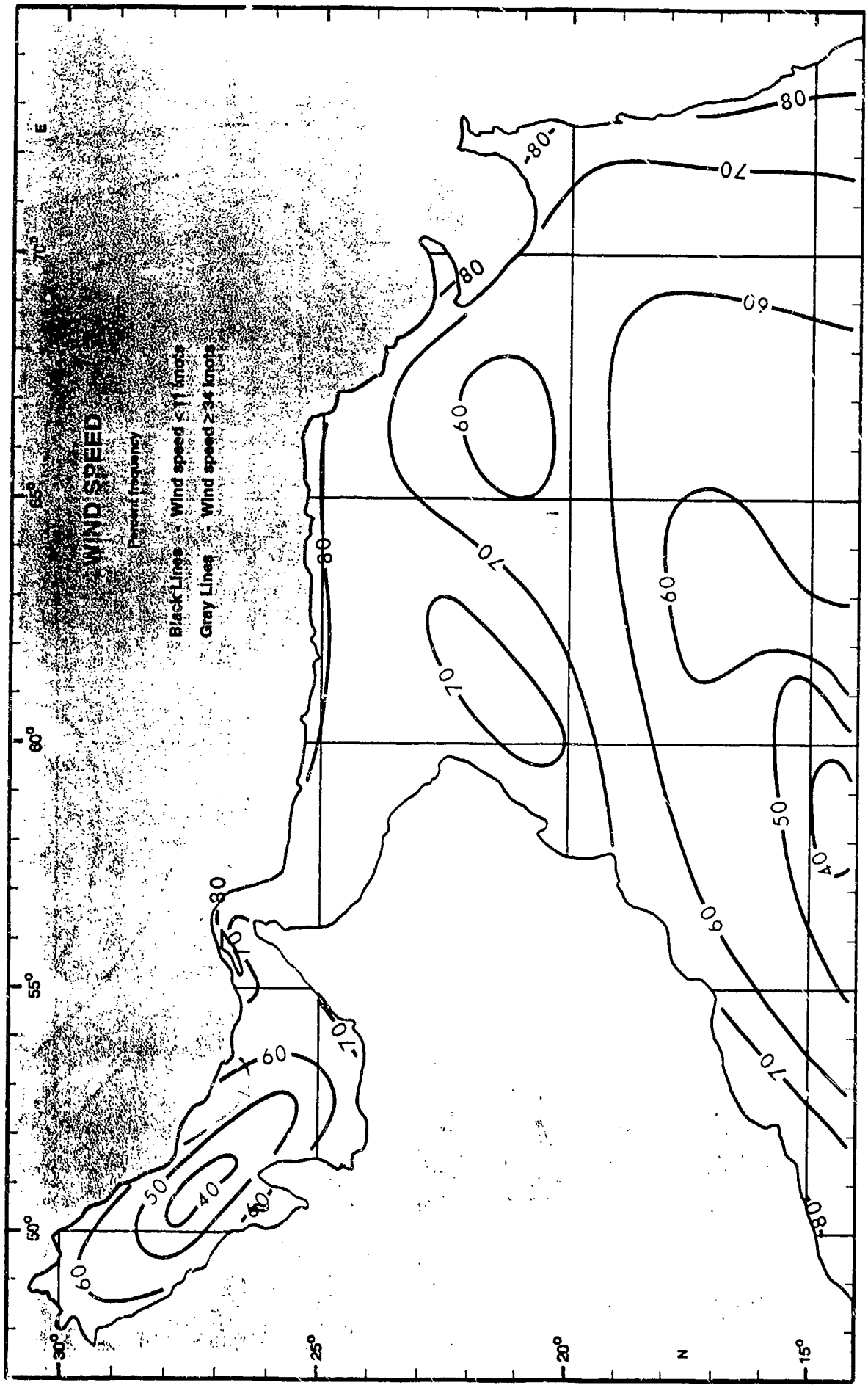
January

Mean Scalar Wind Speed



January

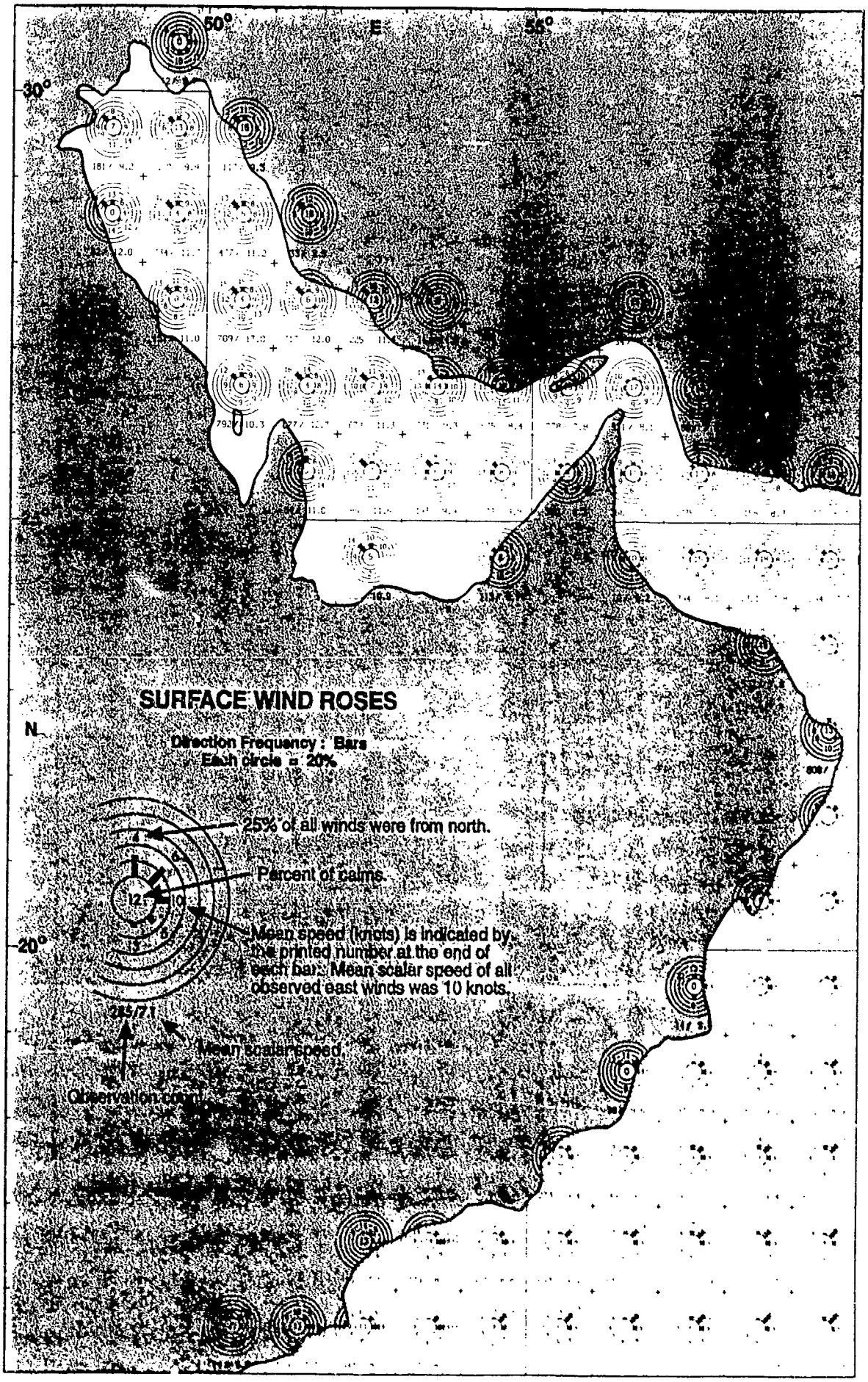
Wind Speed < 11 and ≥ 34 Knots

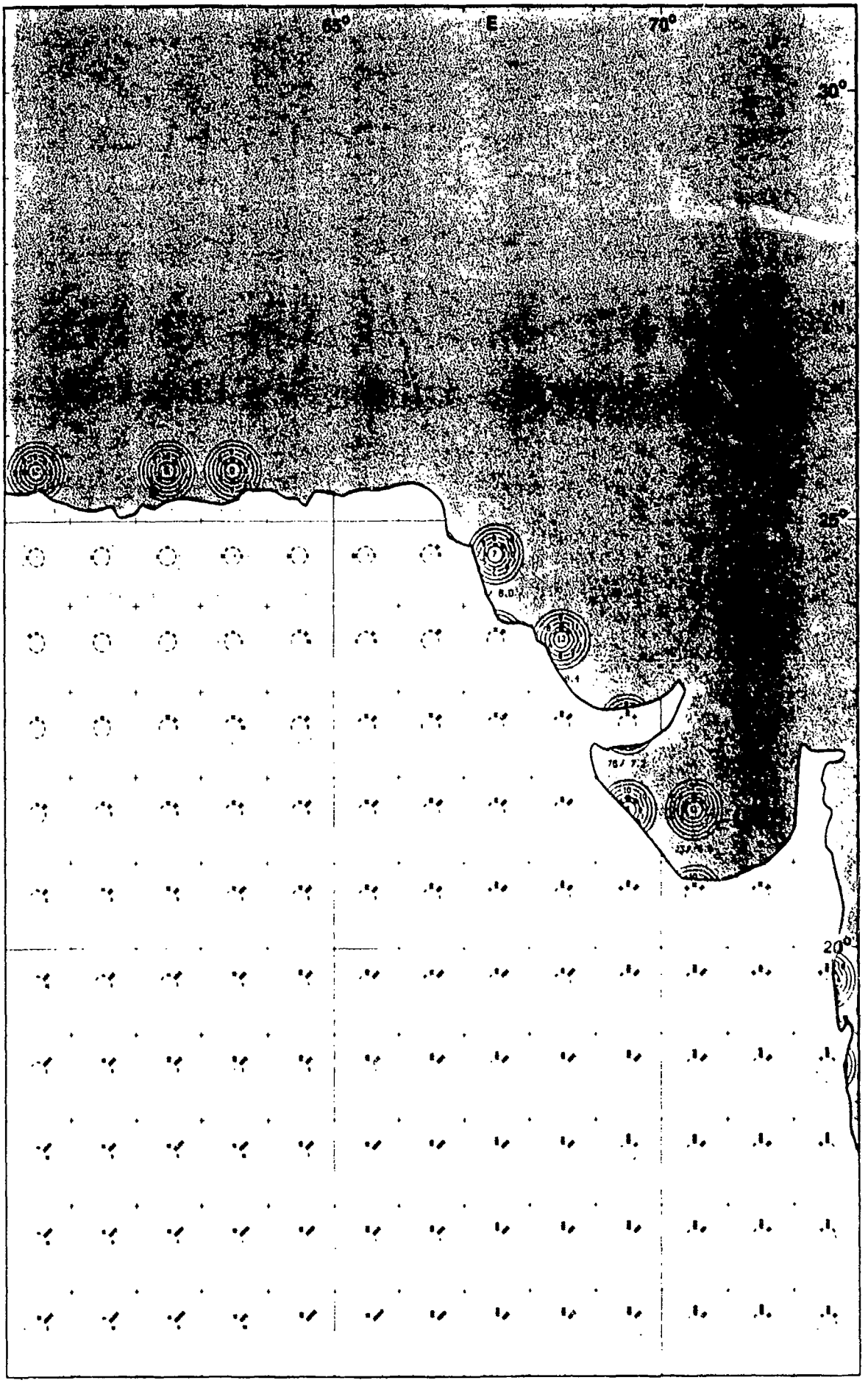


January

Wind Speed 11-21 and 22-33 Knots


20
30
40
20
30
40
30
40
30
40
20
20
30
40
30
40
20
20
30
40
30
40
20
20


50°
E
55°
30°
20°
SURFACE WIND ROSES
N
Direction Frequency : Bars
Each circle = 20%
25% of all winds were from north.
Percent of calms.
Mean speed (knots) is indicated by the printed number at the end of each bar. Mean scalar speed of all observed east winds was 10 knots.
285/7.1
Mean scalar speed.
Observation count.

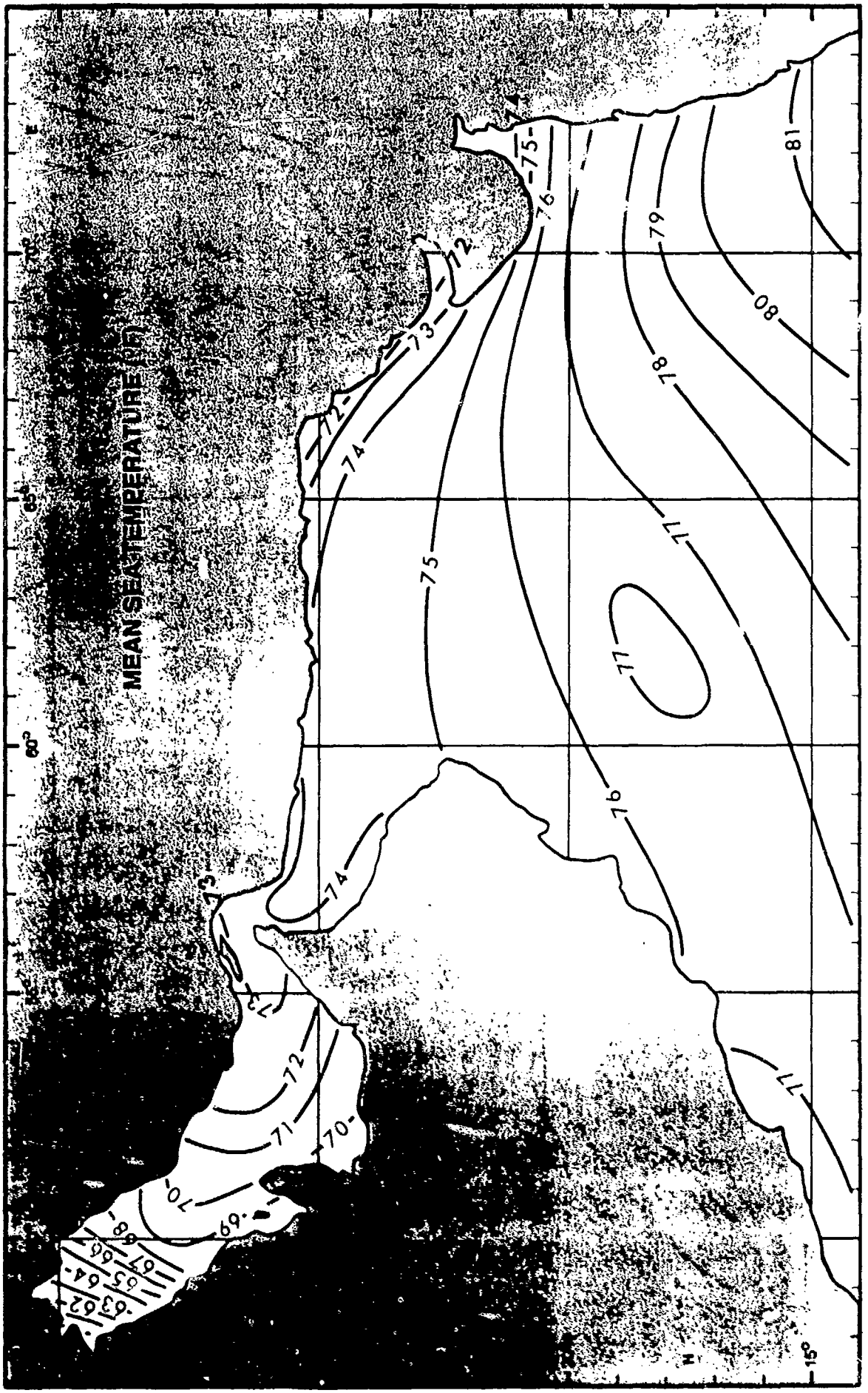

65°
E
70°
30°
25°
20°
8.0

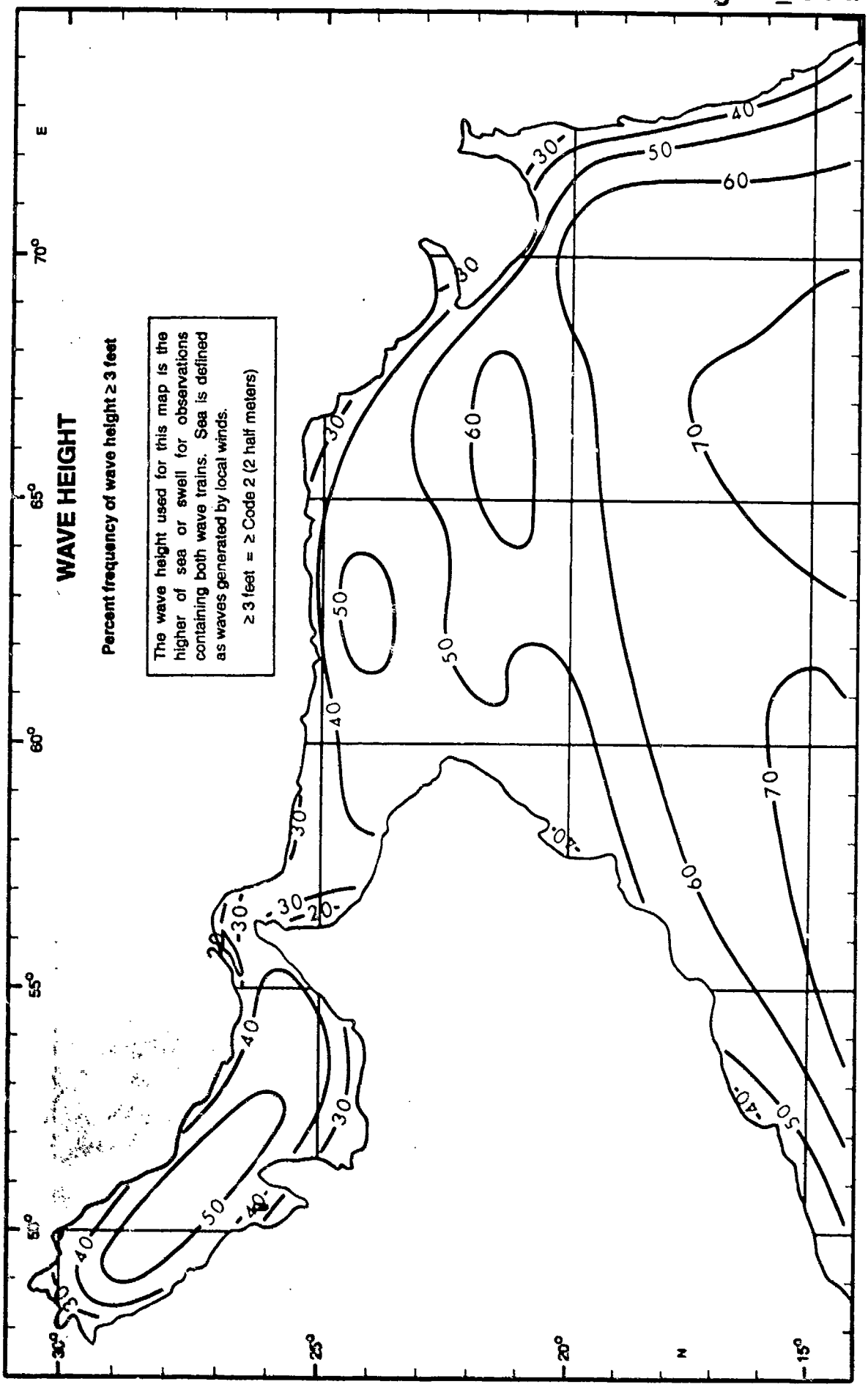
January

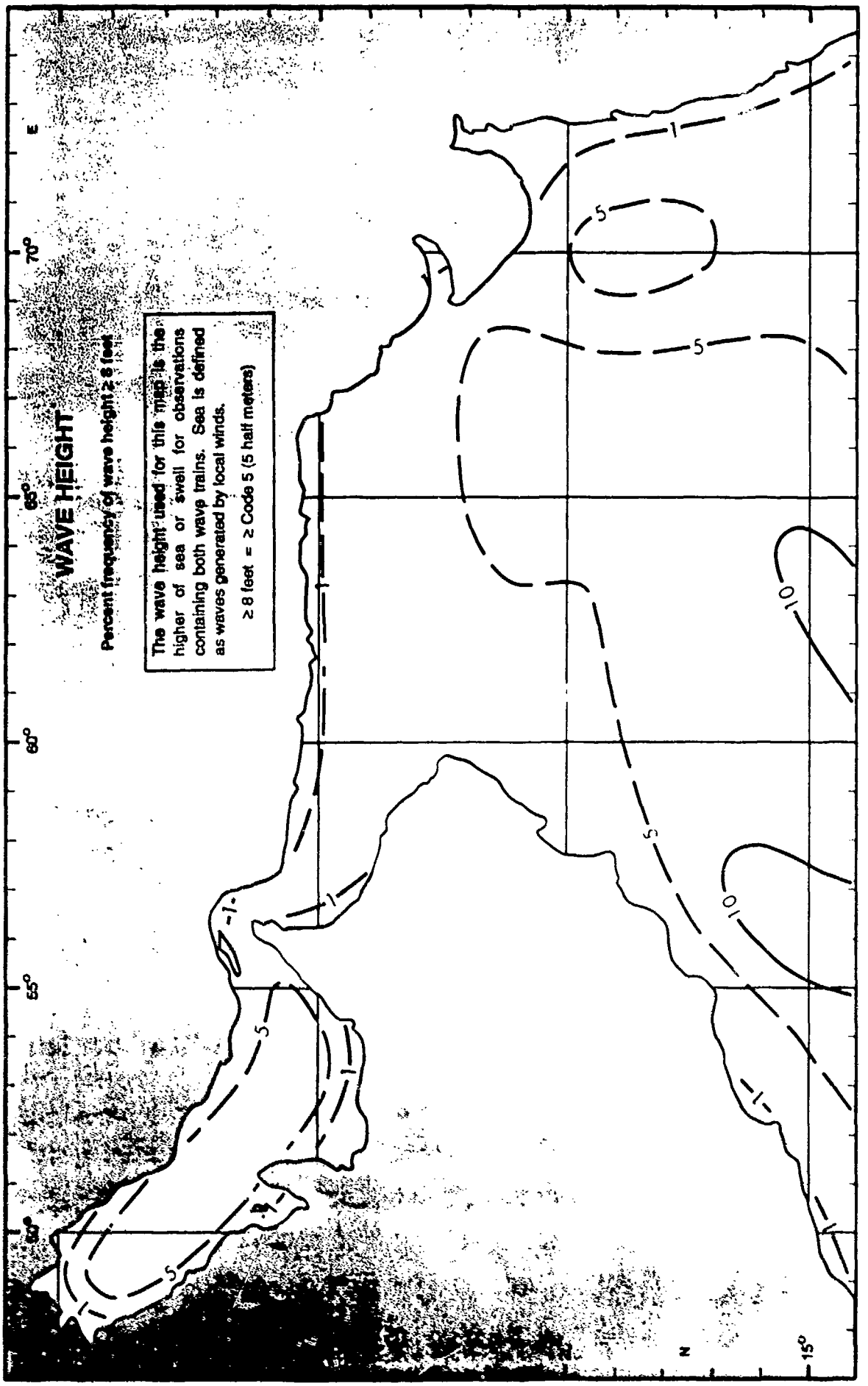
Mean Air Temperature



January Mean Sea Surface Temperature



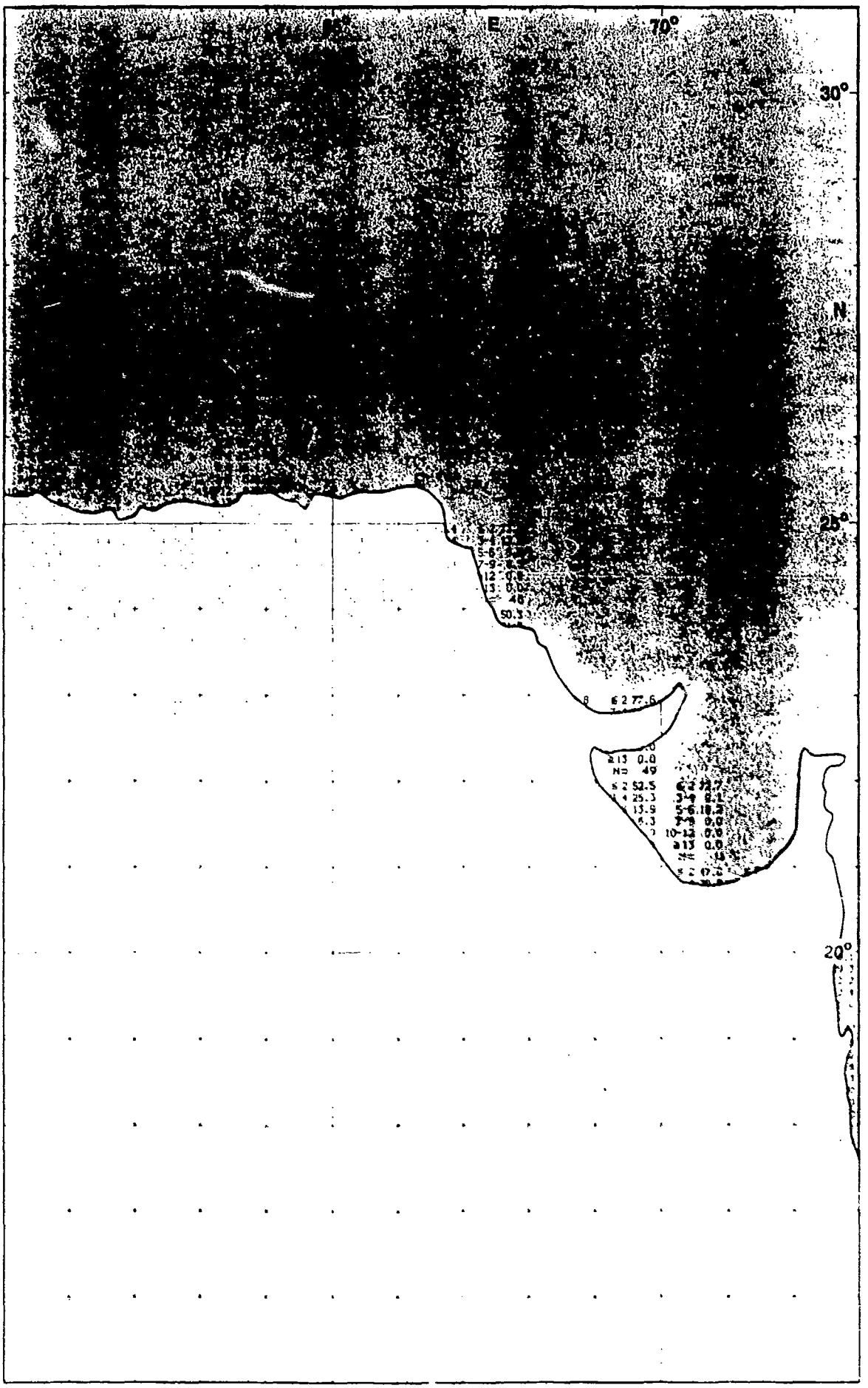

WAVE HEIGHT
Percent frequency of wave height ≥ 3 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 3 feet = ≥ Code 2 (2 half meters)
70°
65°
60°
55°
50°
30°
25°
20°
15°
E
N
10
20
30
40
50
60
70

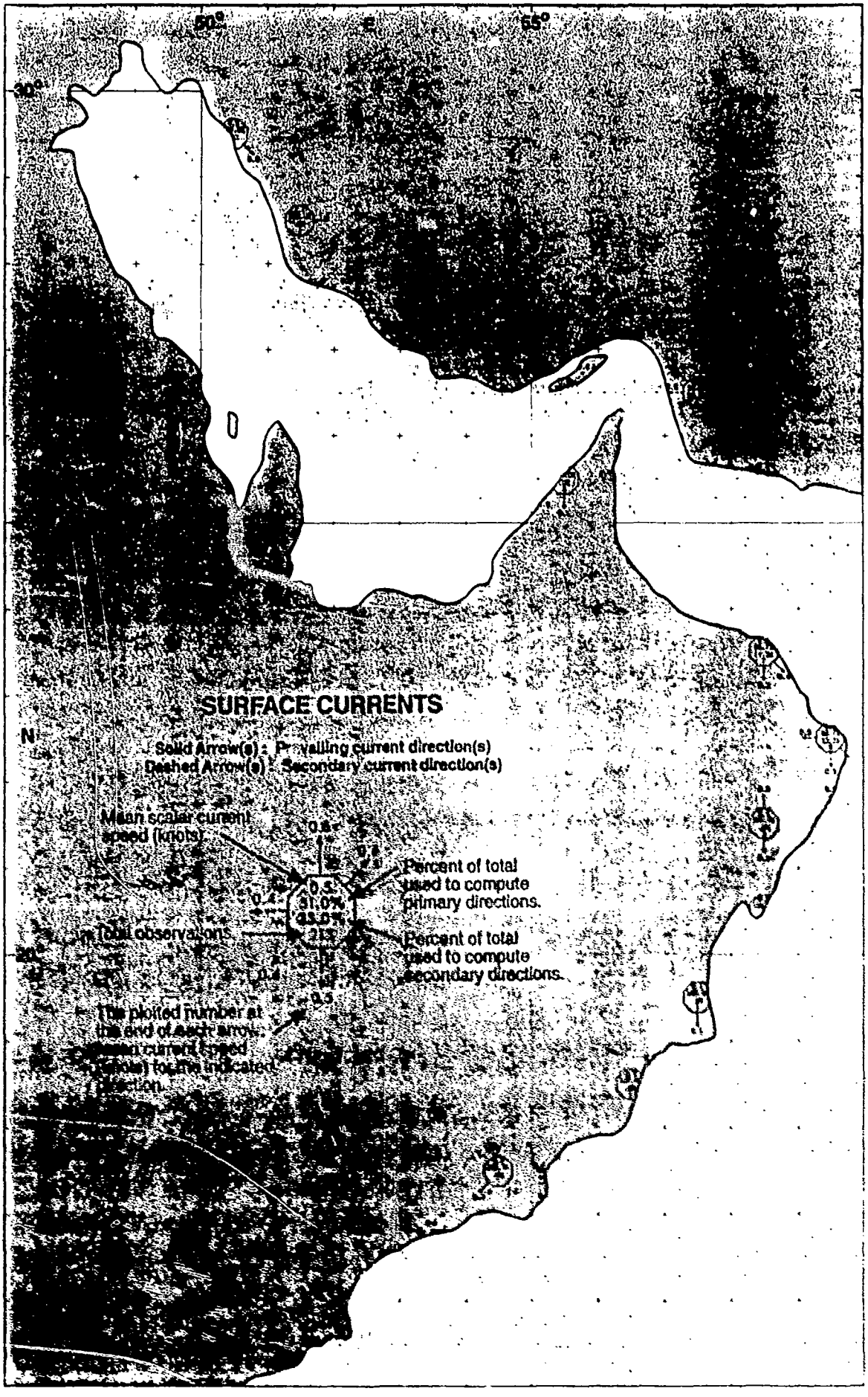

WAVE HEIGHT
Percent frequency of wave height ≥ 8 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 8 feet = ≥ Code 5 (5 half meters)
70°
65°
60°
55°
50°
E
N
15°
1
5
10

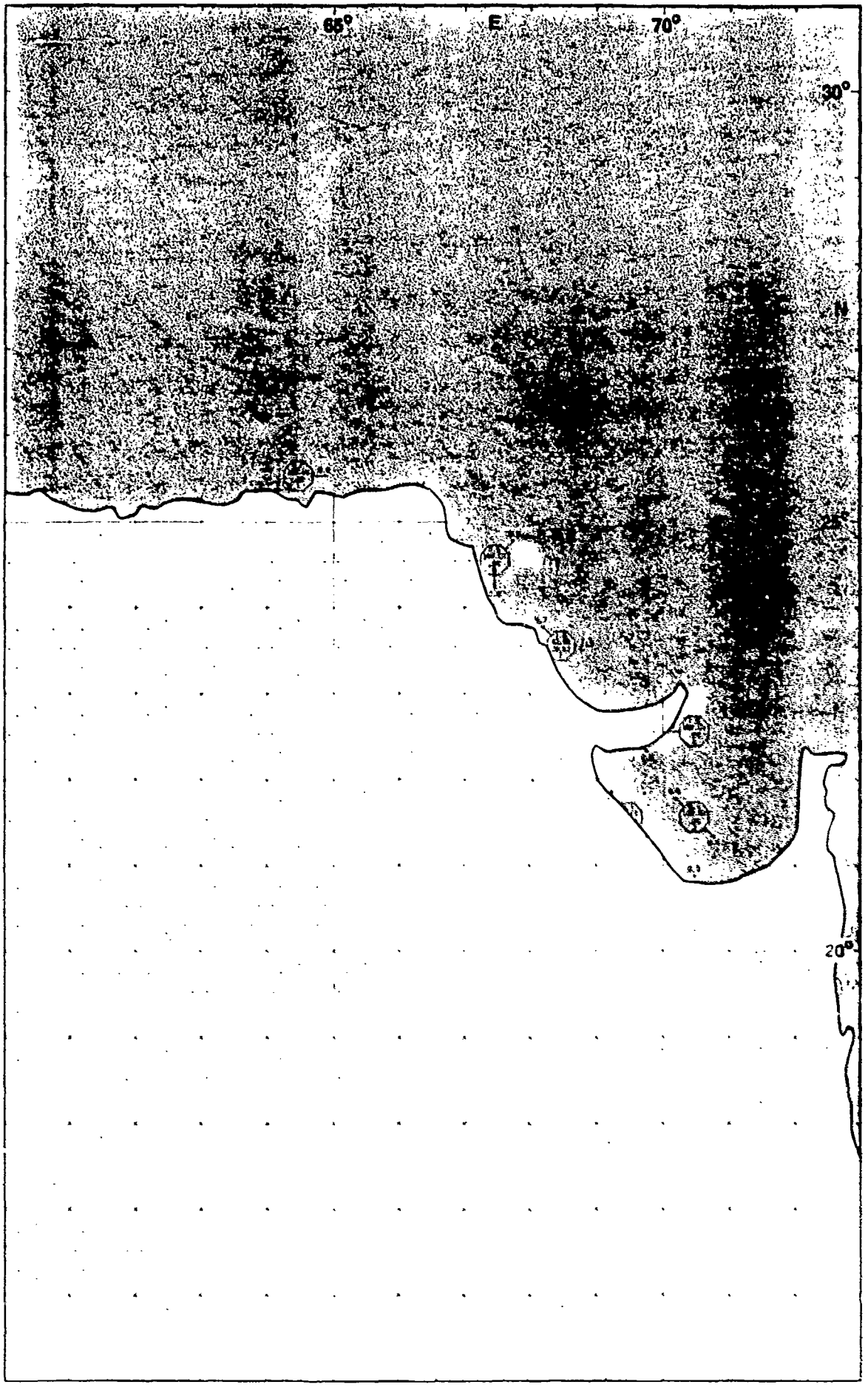

WAVE HEIGHT
Percent frequency of various ranges within 1° x 1° quadrangles
HEIGHT PERCENT
EXAMPLE:
30.0% of all wave heights were in the range 5 - 6 feet.
N = Observation count
Wave data for these tables were
30°
20
N

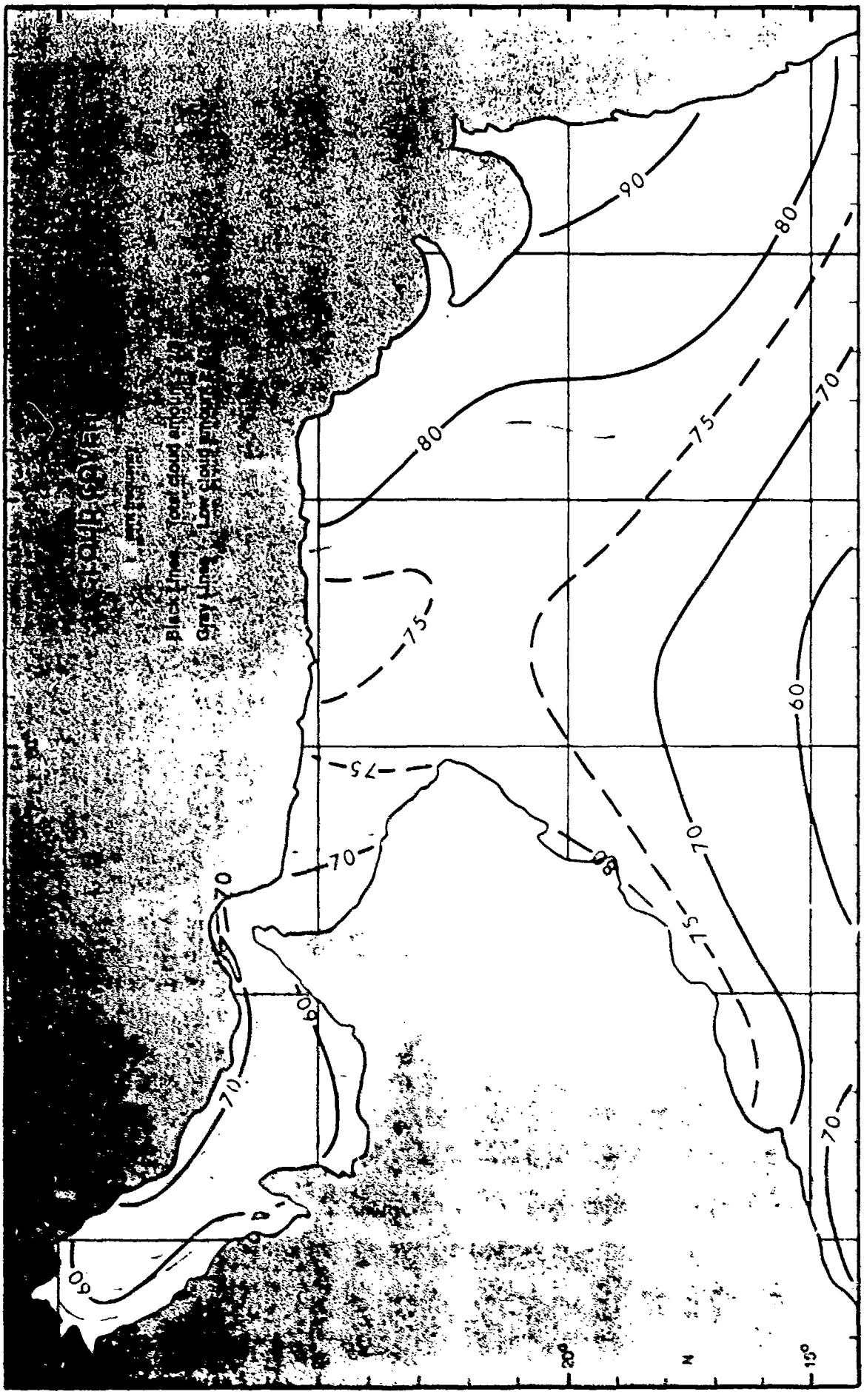
January

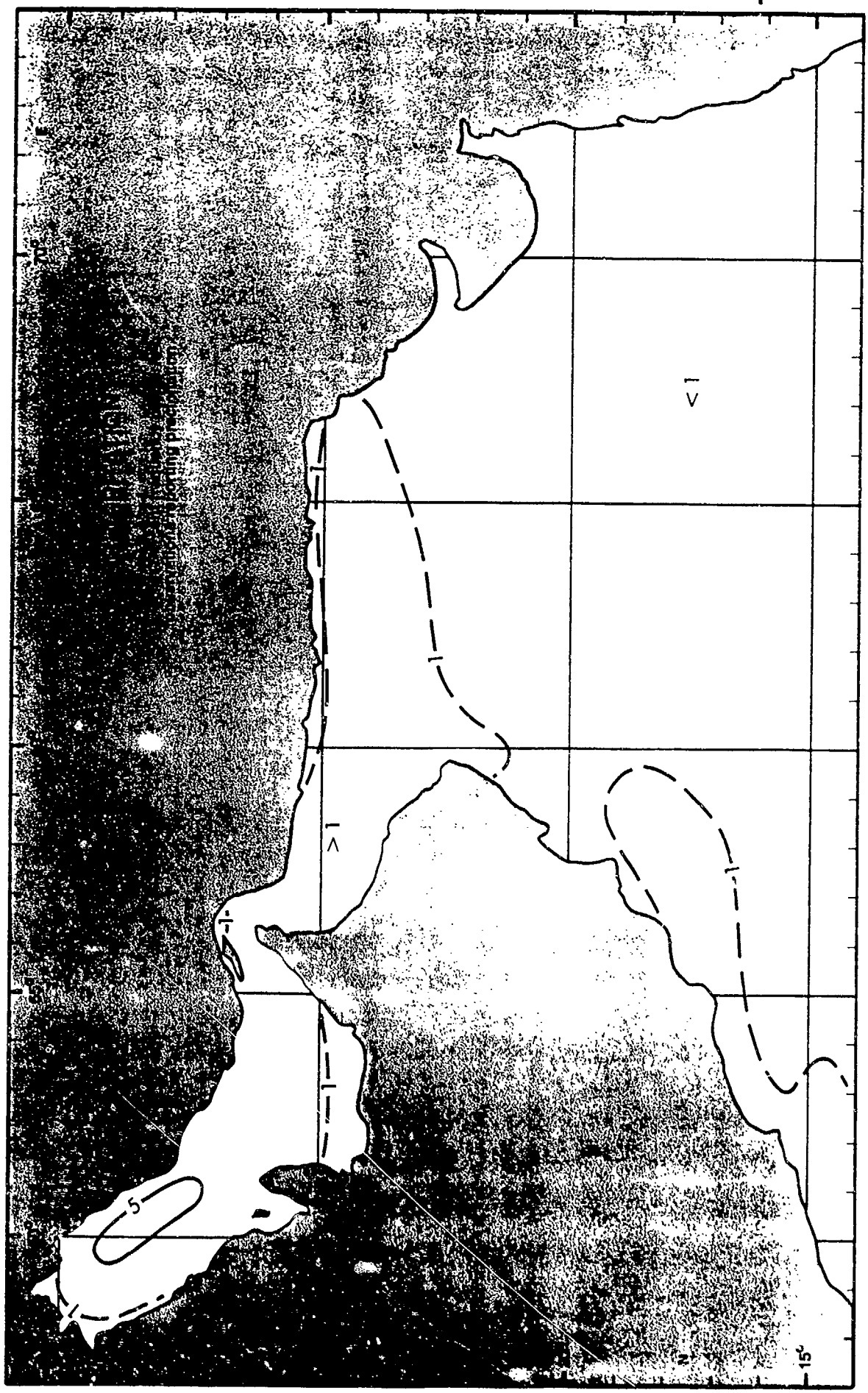
Wave Height

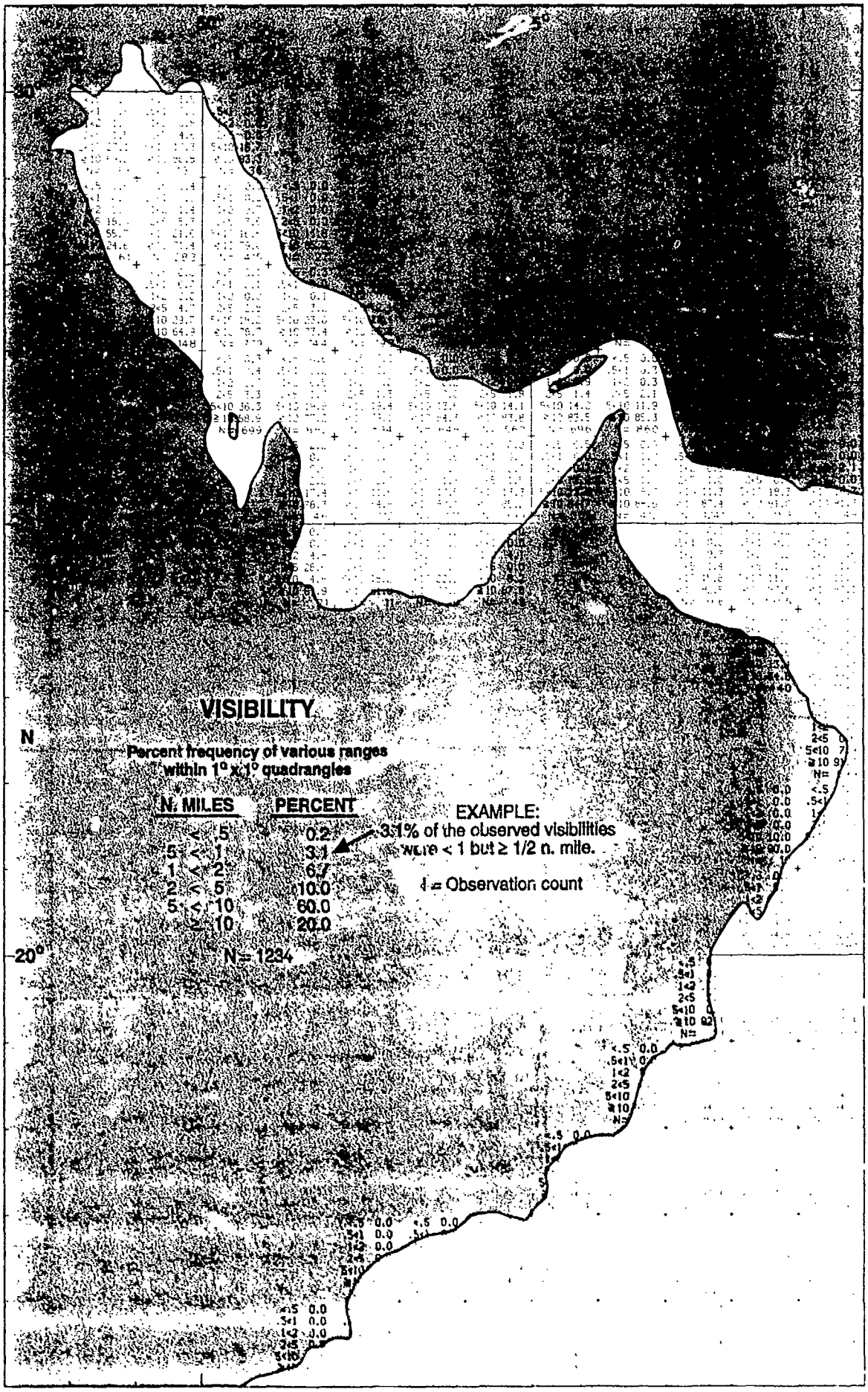


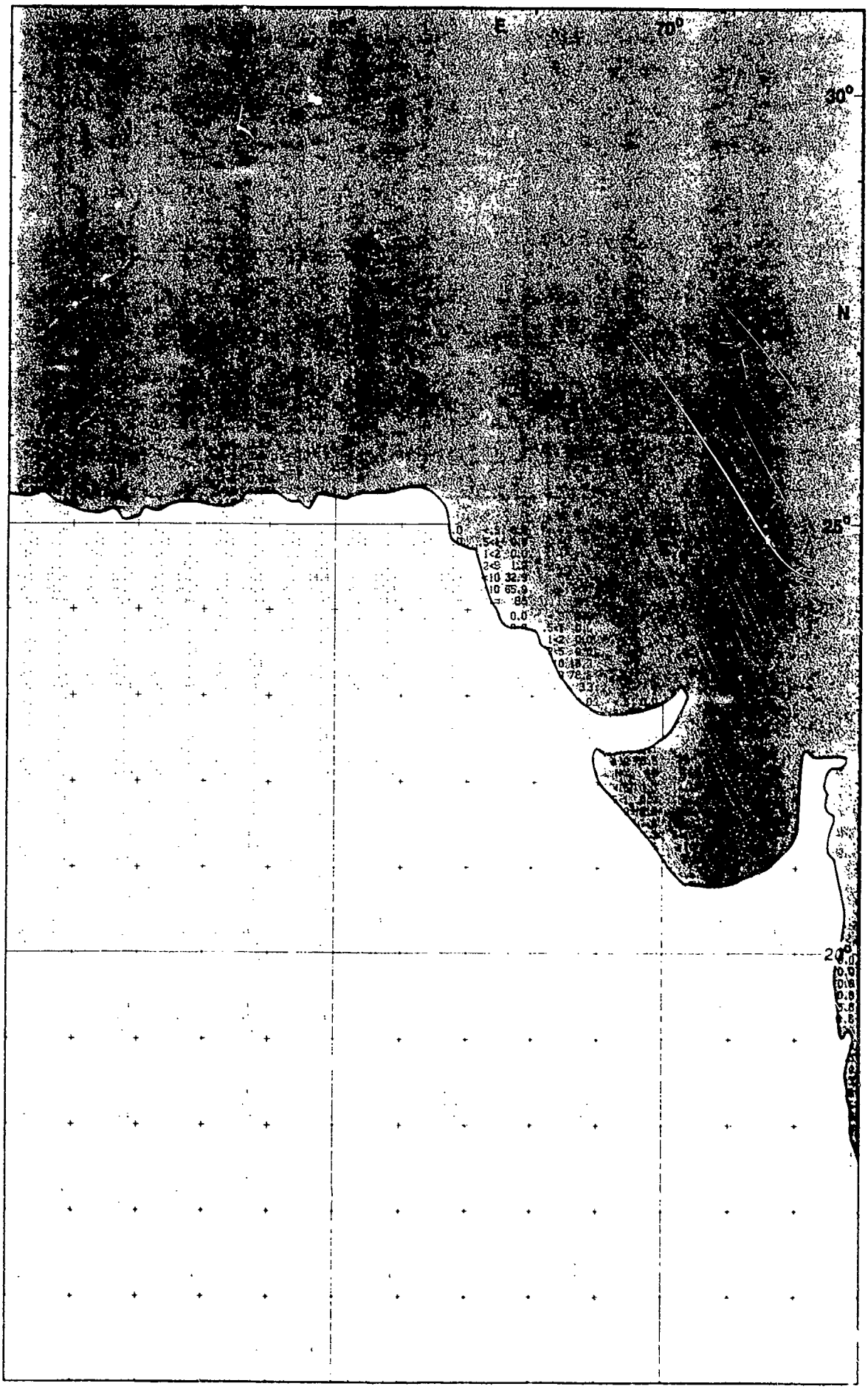

60°
65°
30°
SURFACE CURRENTS
N
Solid Arrow(s): Prevailing current direction(s)
Dashed Arrow(s): Secondary current direction(s)
Mean scalar current speed (knots)
Percent of total used to compute primary directions.
Total observations
Percent of total used to compute secondary directions.
The plotted number at the end of each arrow...
...current (speed ...) for the indicated ...direction.

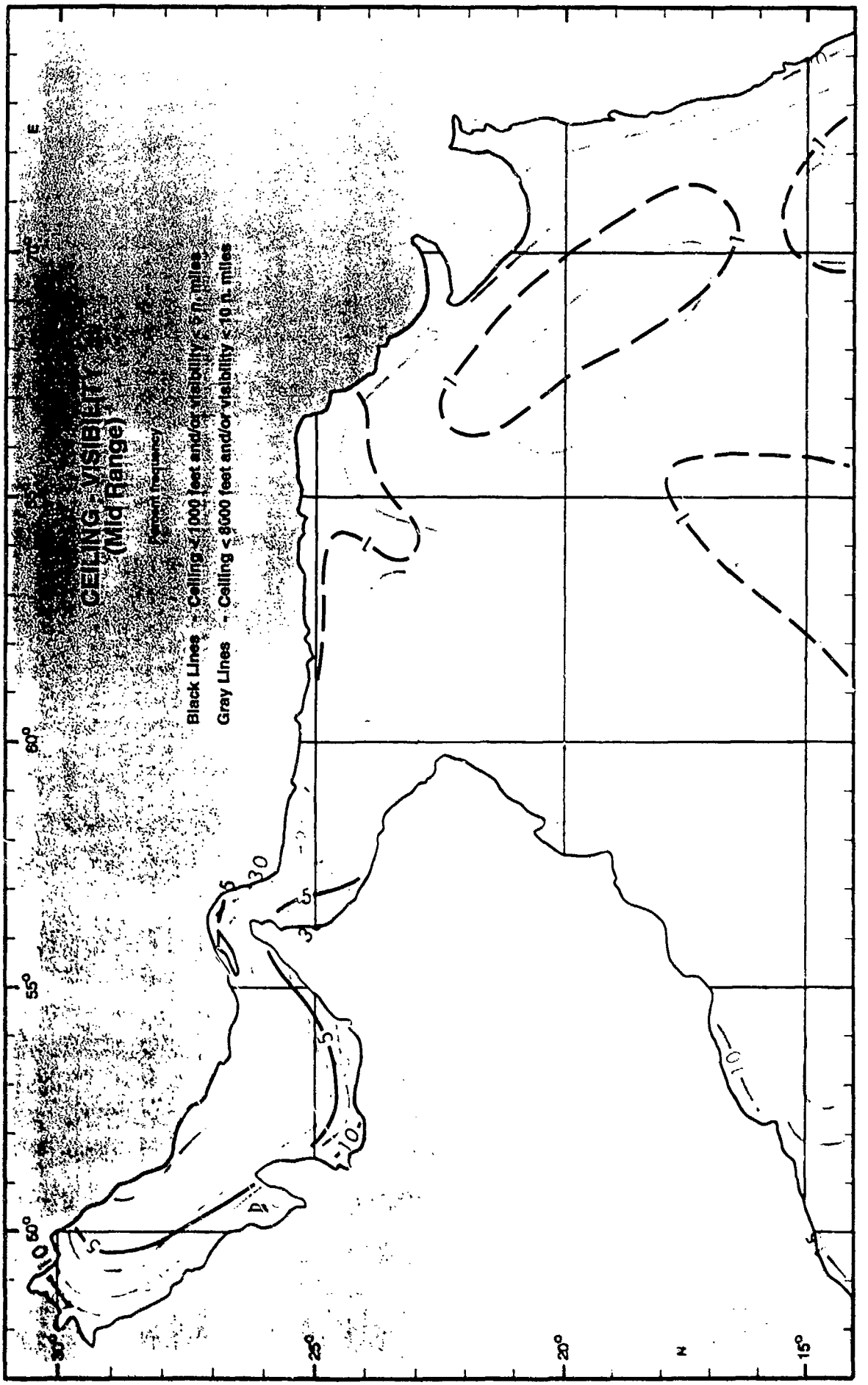

65°
E
70°
30°
N
20°

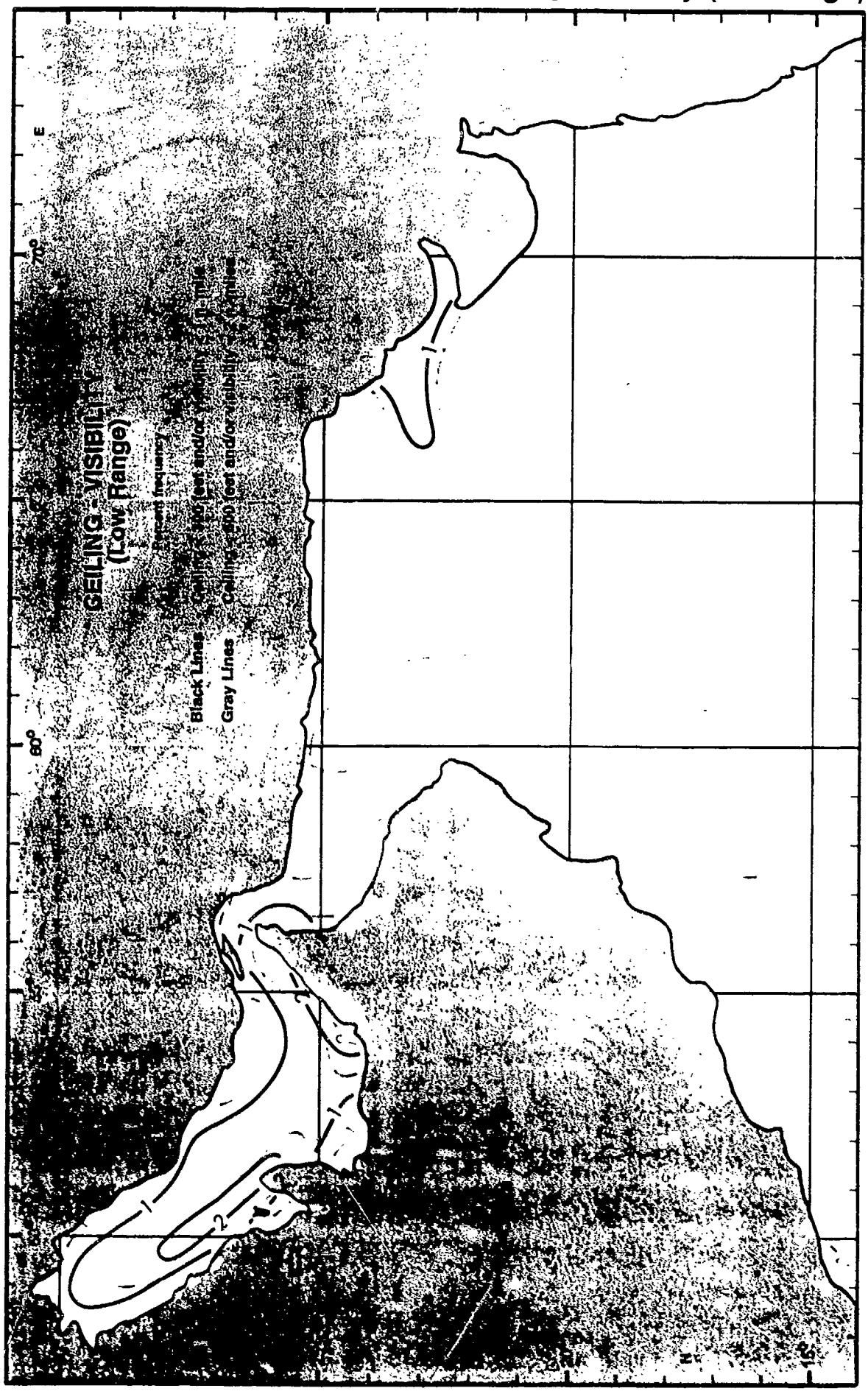

Black Lines - Total cloud amount (%)
Gray Lines - Low cloud amount (%)
90
80
75
70
60
20°
15°
N

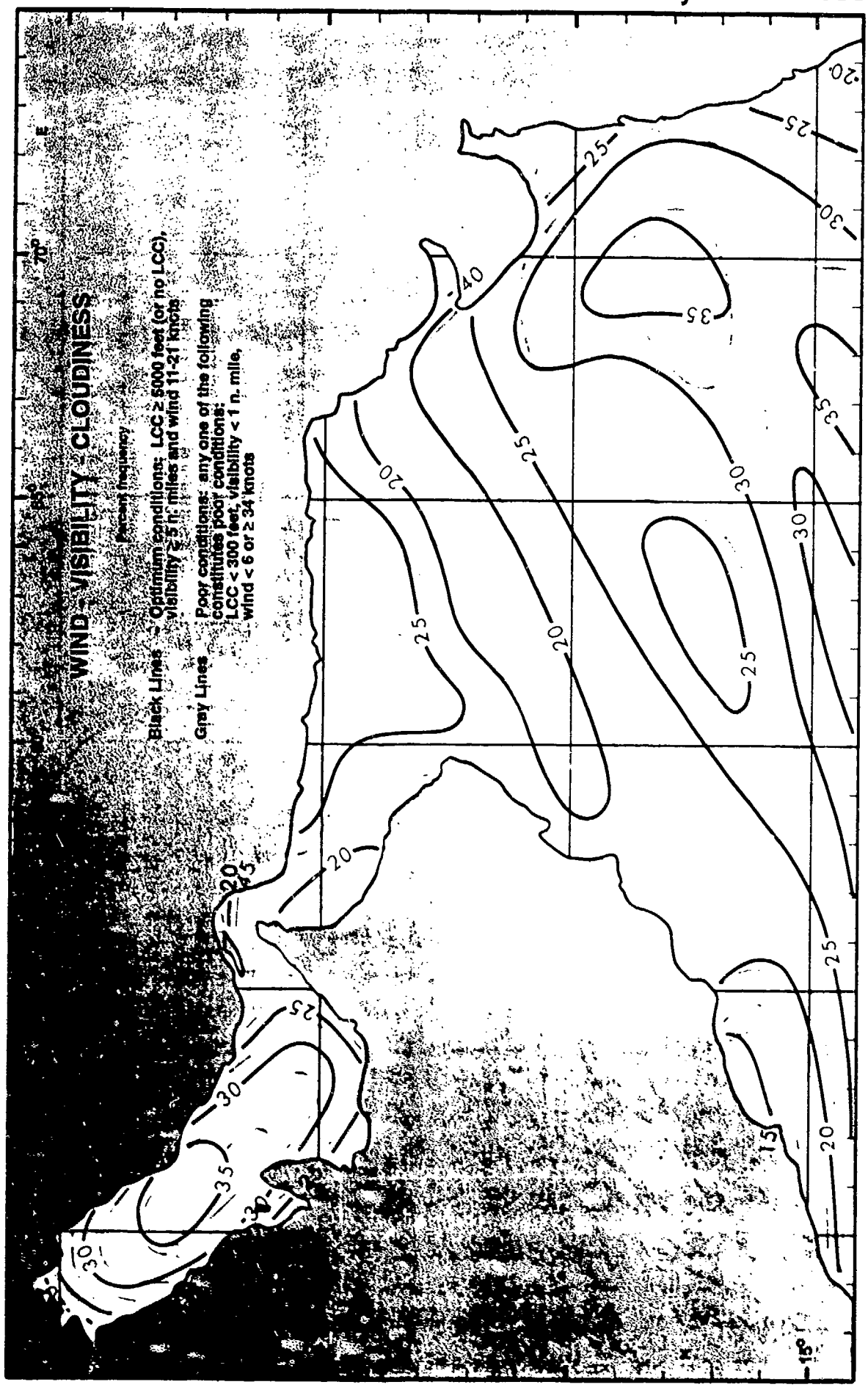

5
15°


VISIBILITY
Percent frequency of various ranges within 1° x 1° quadrangles
N. MILES
PERCENT
< .5
0.2
.5 < 1
3.1
1 < 2
6.7
2 < 5
10.0
5 < 10
60.0
≥ 10
20.0
N = 1234
EXAMPLE:
3.1% of the observed visibilities were < 1 but ≥ 1/2 n. mile.
N = Observation count
N
50°
20°

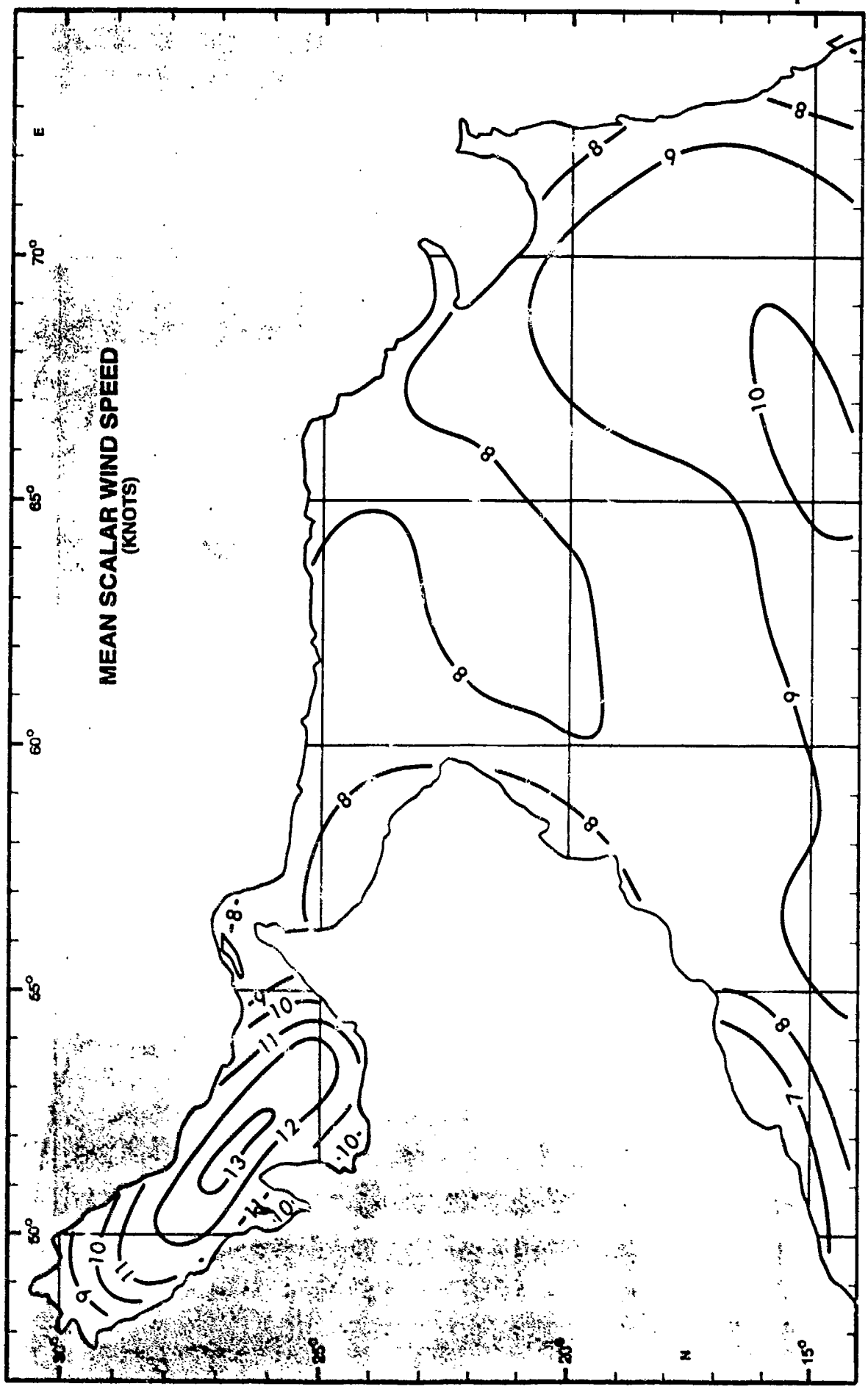

E
70°
30°
N
25°
20°


CEILING - VISIBILITY
(Mid Range)
Percent Frequency
Black Lines - Ceiling < 1000 feet and/or visibility < 3 n. miles
Gray Lines - Ceiling < 8000 feet and/or visibility < 10 n. miles
70°
60°
55°
50°
30°
25°
20°
15°
E
N
30
5
3
5
10
10
5
5


GEILING - VISIBILITY
(Low Range)
Percent frequency
Black Lines
Gray Lines
70°
80°
E
1
2


WIND - VISIBILITY - CLOUDINESS
Percent frequency
Black Lines - Optimum conditions: LCC ≥ 5000 feet (or no LCC), visibility ≥ 5 n. miles and wind 11-21 knots
Gray Lines - Poor conditions: any one of the following constitutes poor conditions: LCC < 300 feet, visibility < 1 n. mile, wind < 6 or ≥ 34 knots
70°
15°

Mean Scalar Wind Speed



February

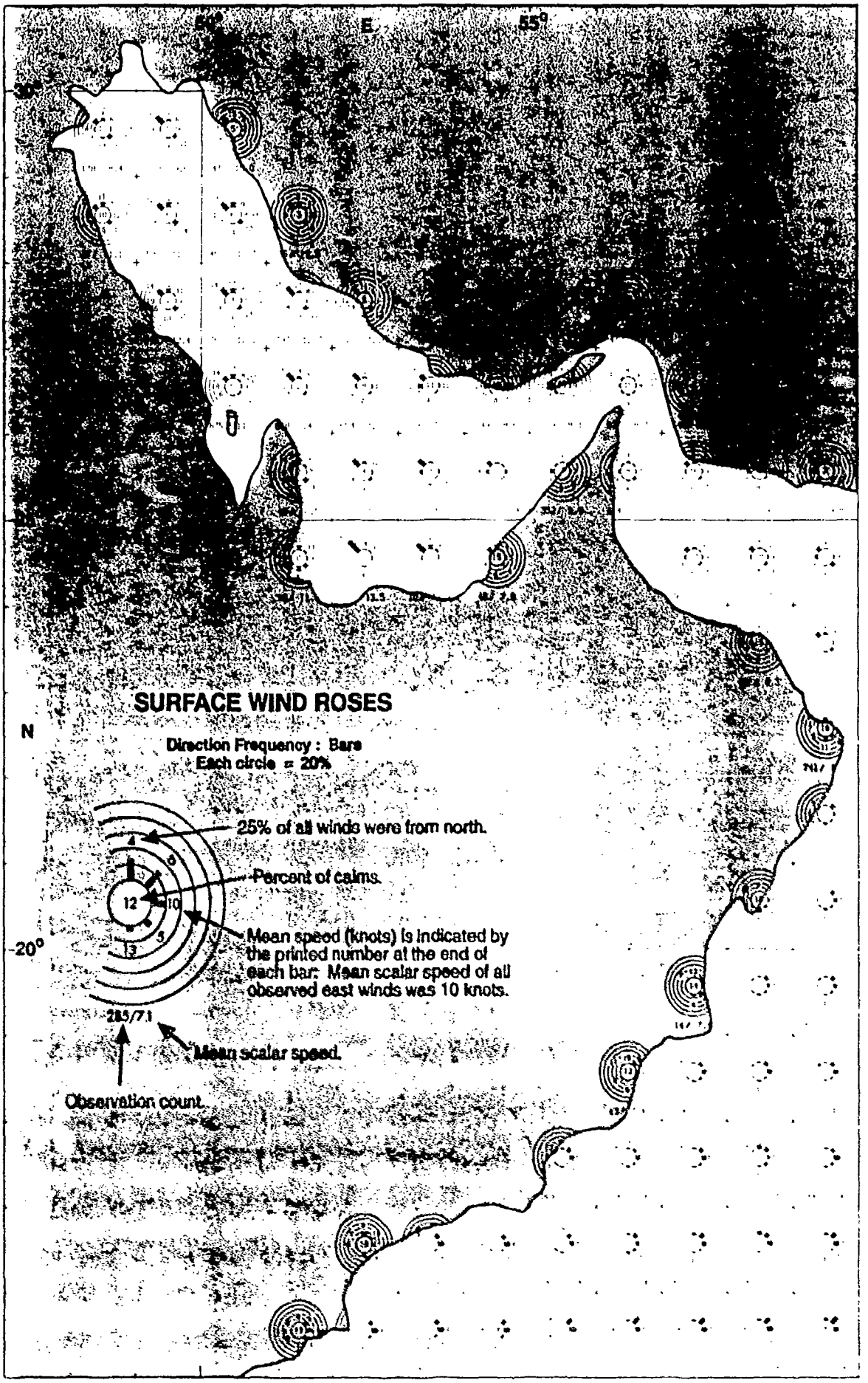
Wind Speed <11 and ≥34 Knots

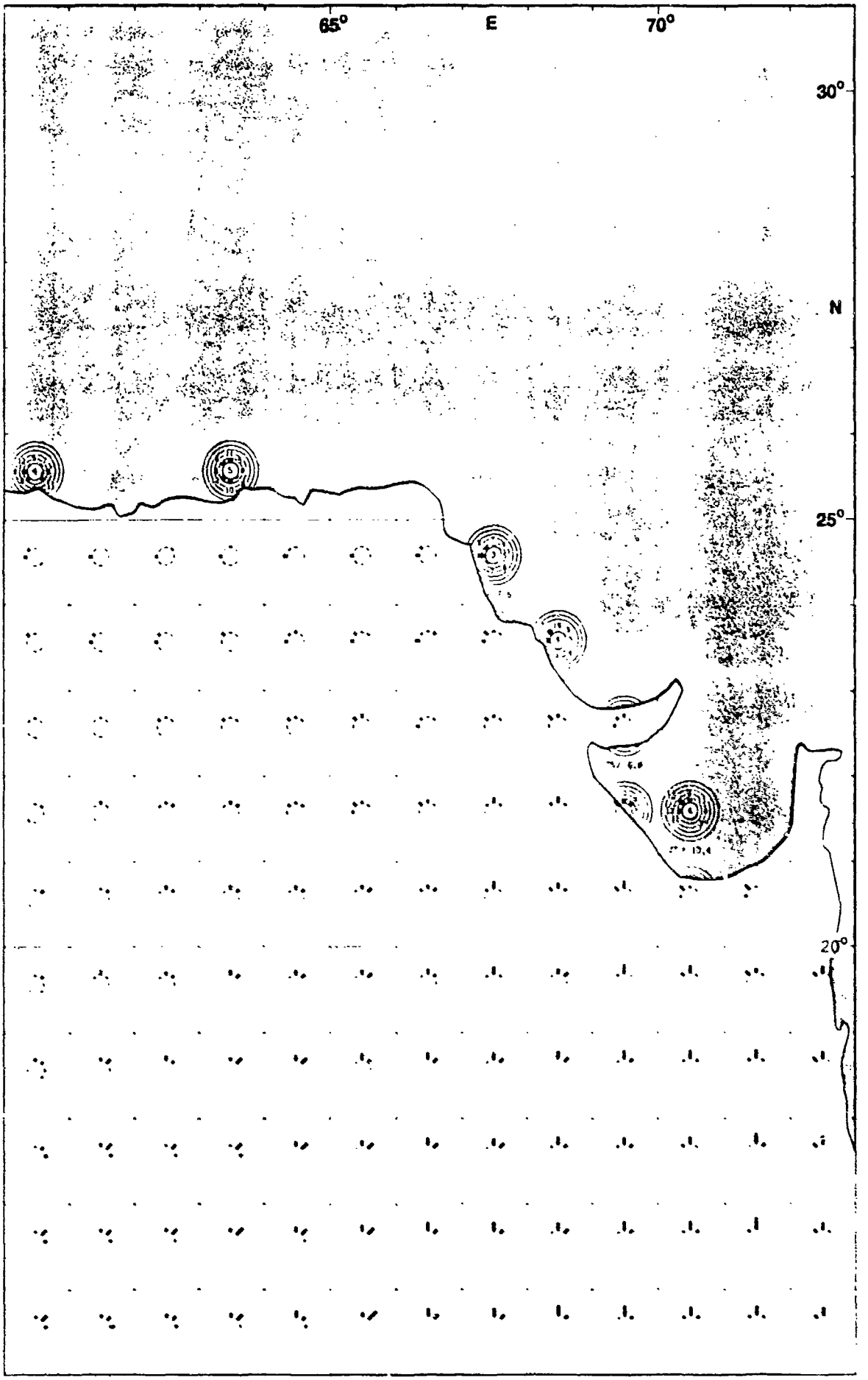


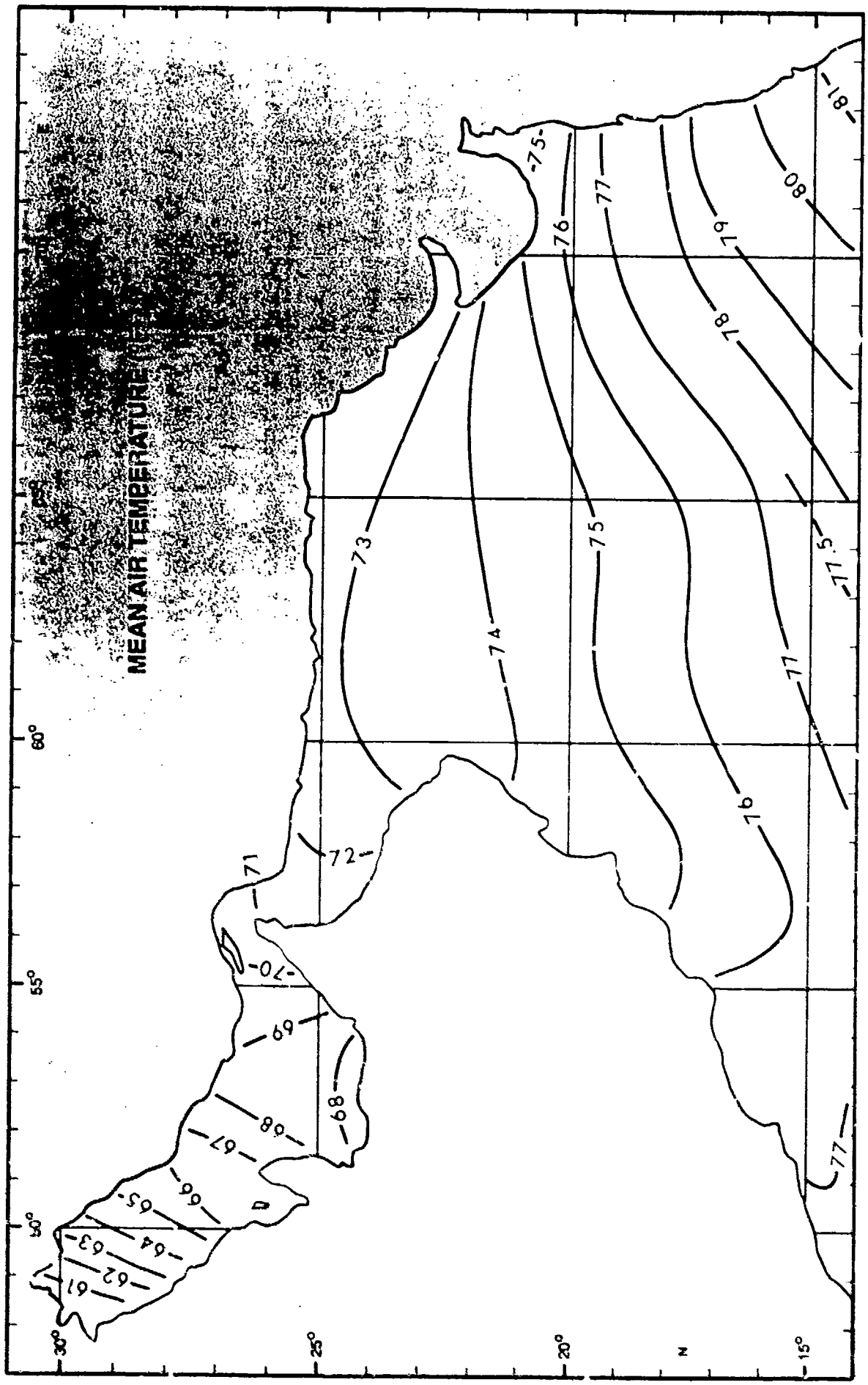
February

Wind Speed 11-21 and 22-33 Knots

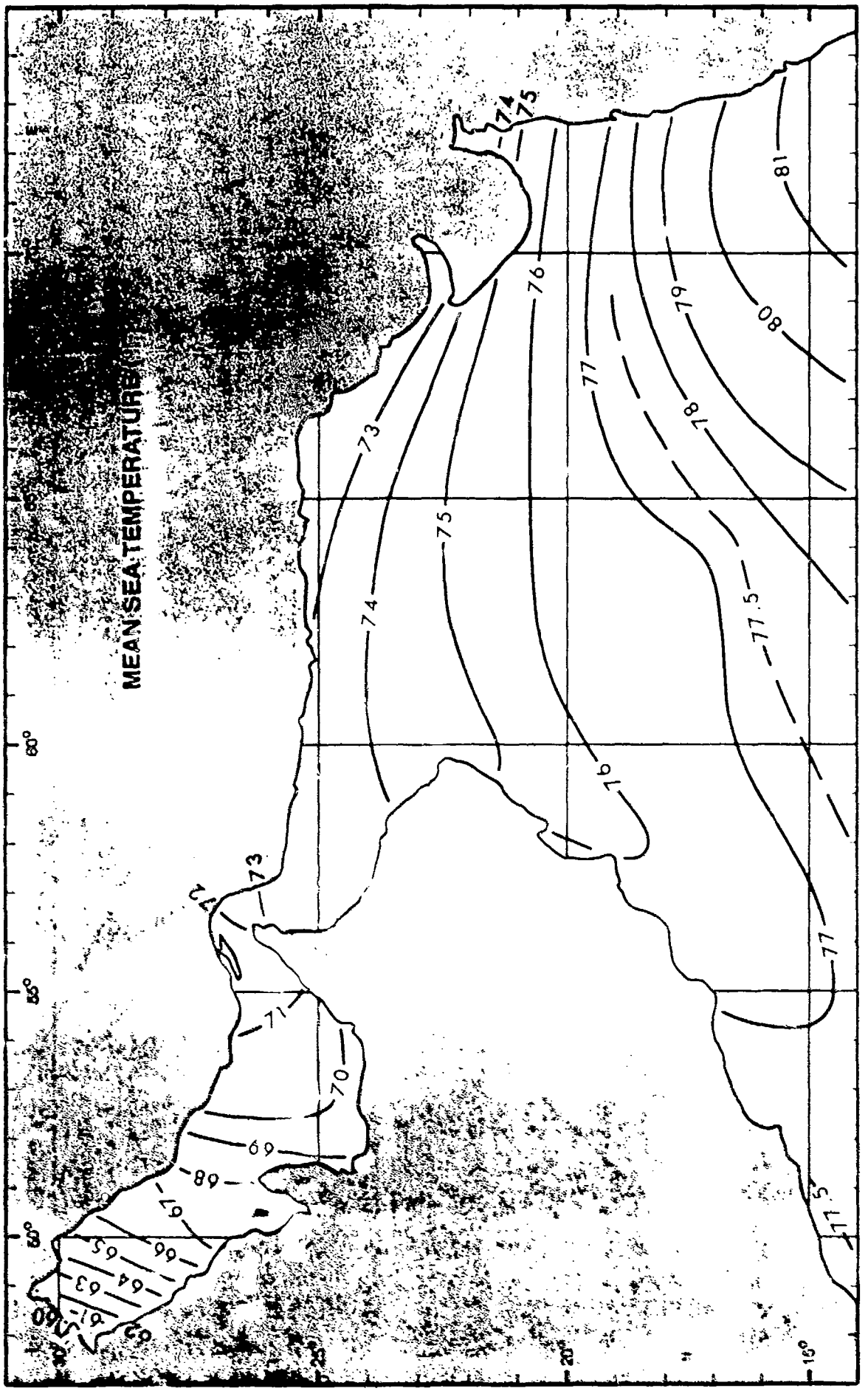



SURFACE WIND ROSES
Direction Frequency : Bars
Each circle = 20%
25% of all winds were from north.
Percent of calms.
Mean speed (knots) is indicated by the printed number at the end of each bar. Mean scalar speed of all observed east winds was 10 knots.
285/7.1
Mean scalar speed.
Observation count.
N
-20°
55°

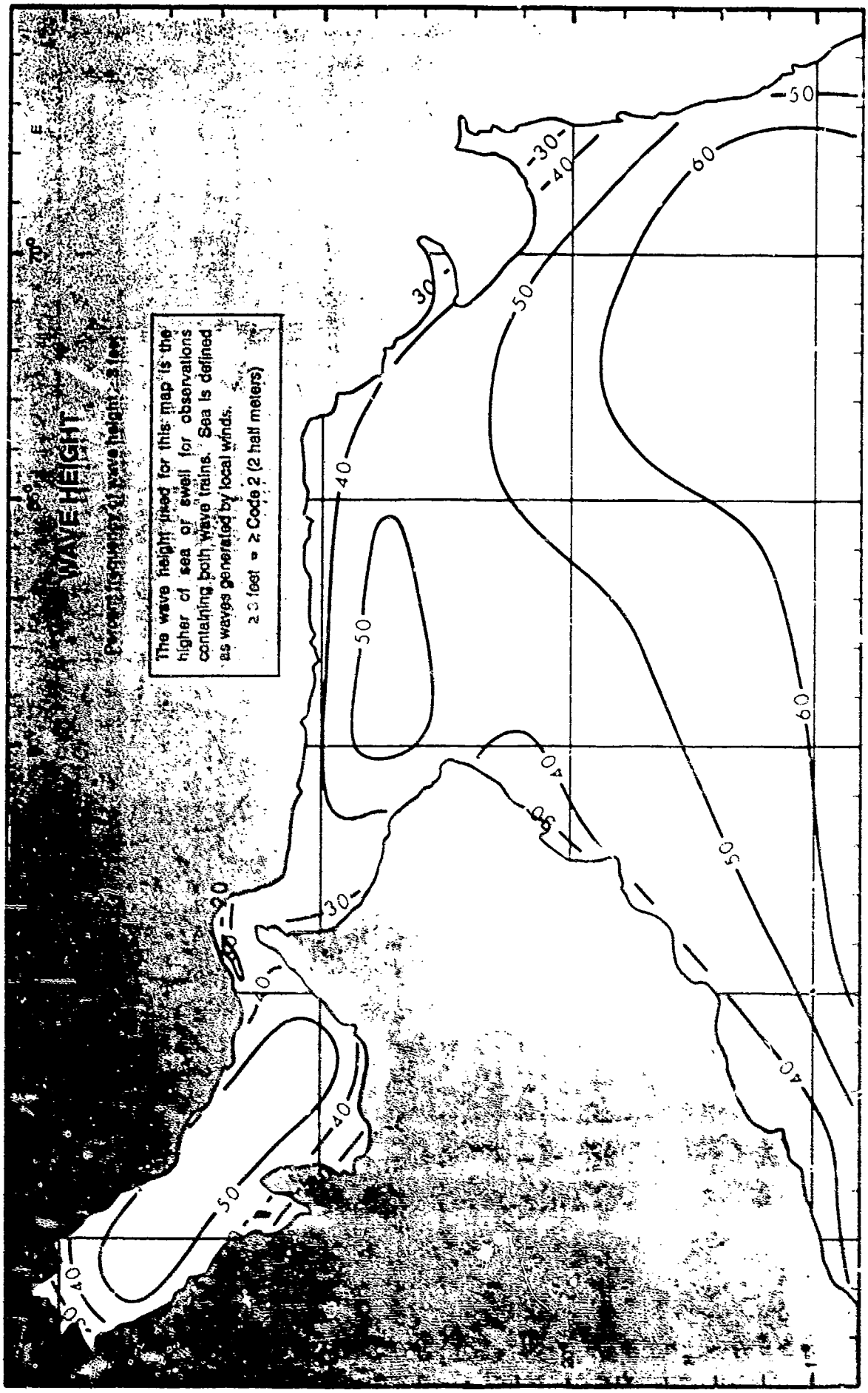

65°
E
70°
30°
N
25°
20°

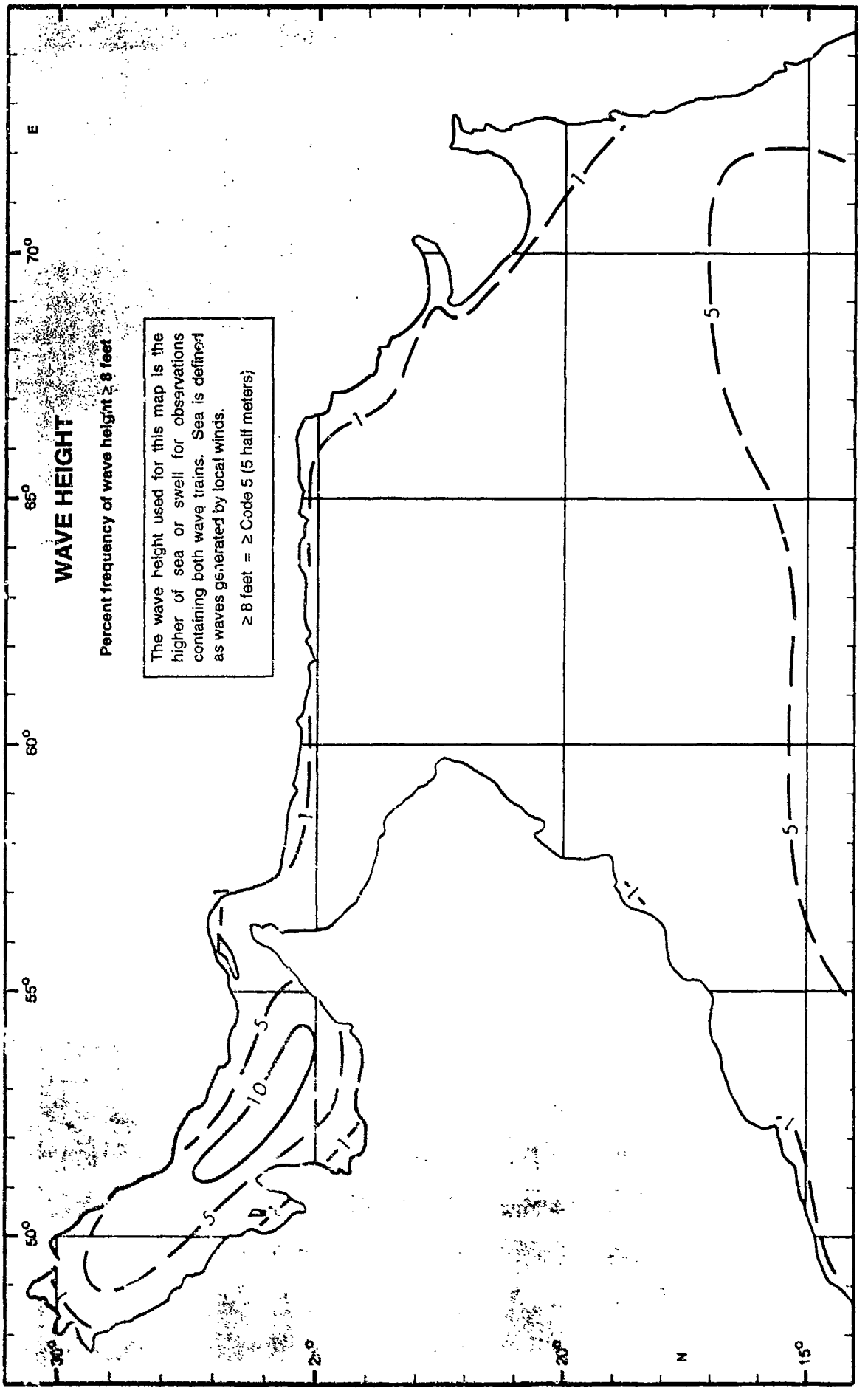

MEAN AIR TEMPERATURE
81
80
79
78
77
76
75
74
73
72
71
70
69
68
67
66
65
64
63
62
61
60°
55°
50°
30°
25°
20°
15°
N

February Mean Sea Surface Temperature

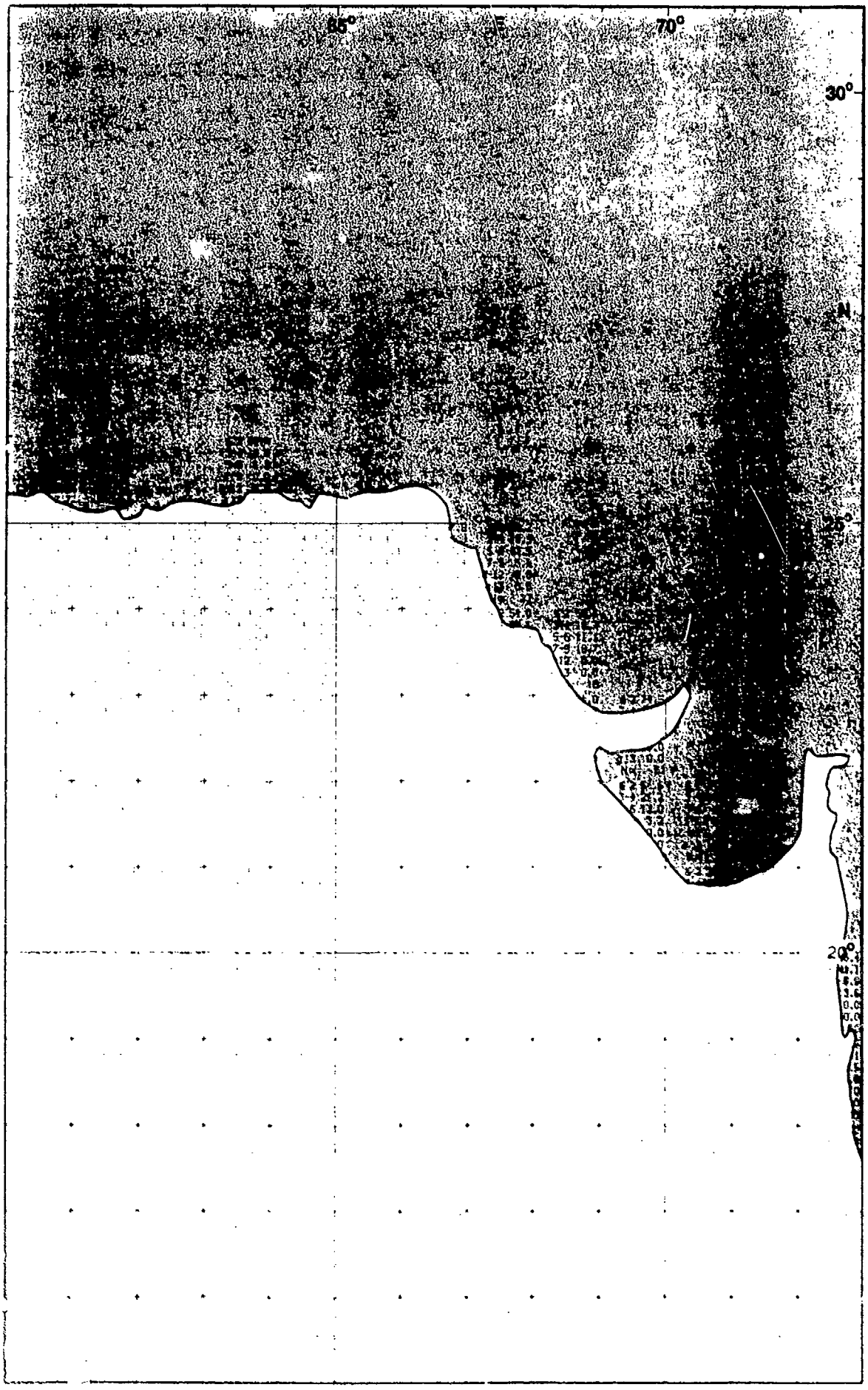


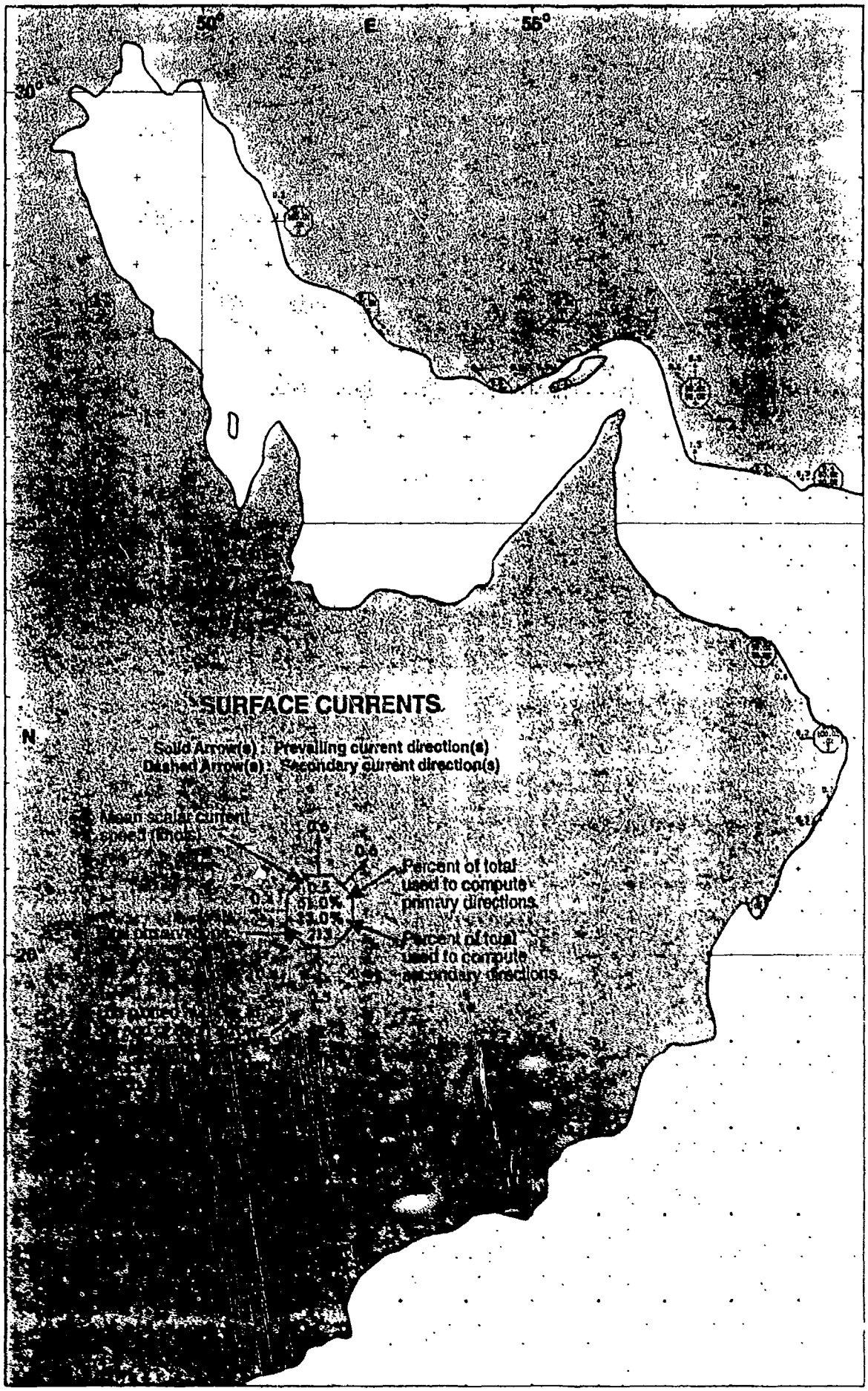
Wave Height ≥ 3 Ft.

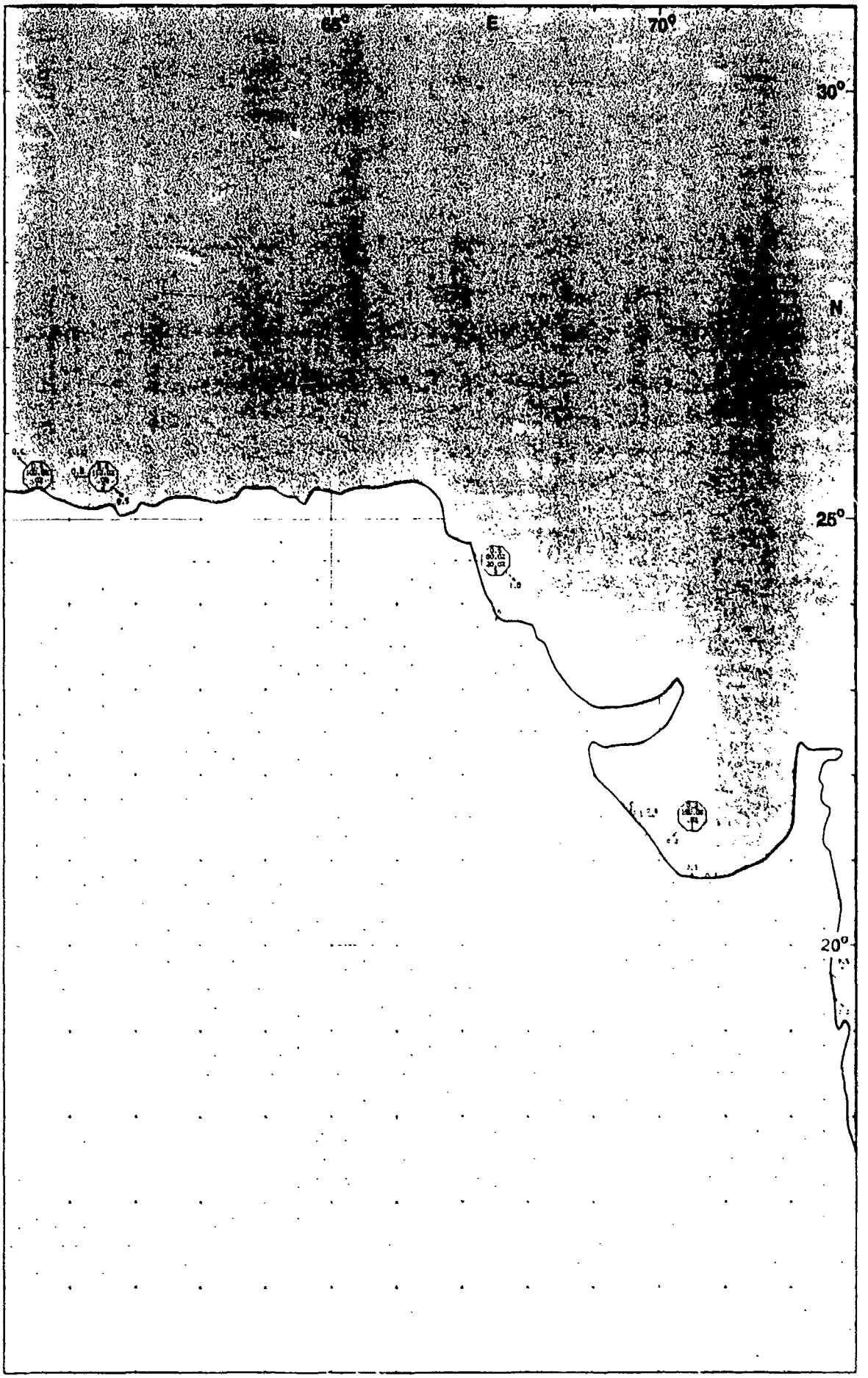


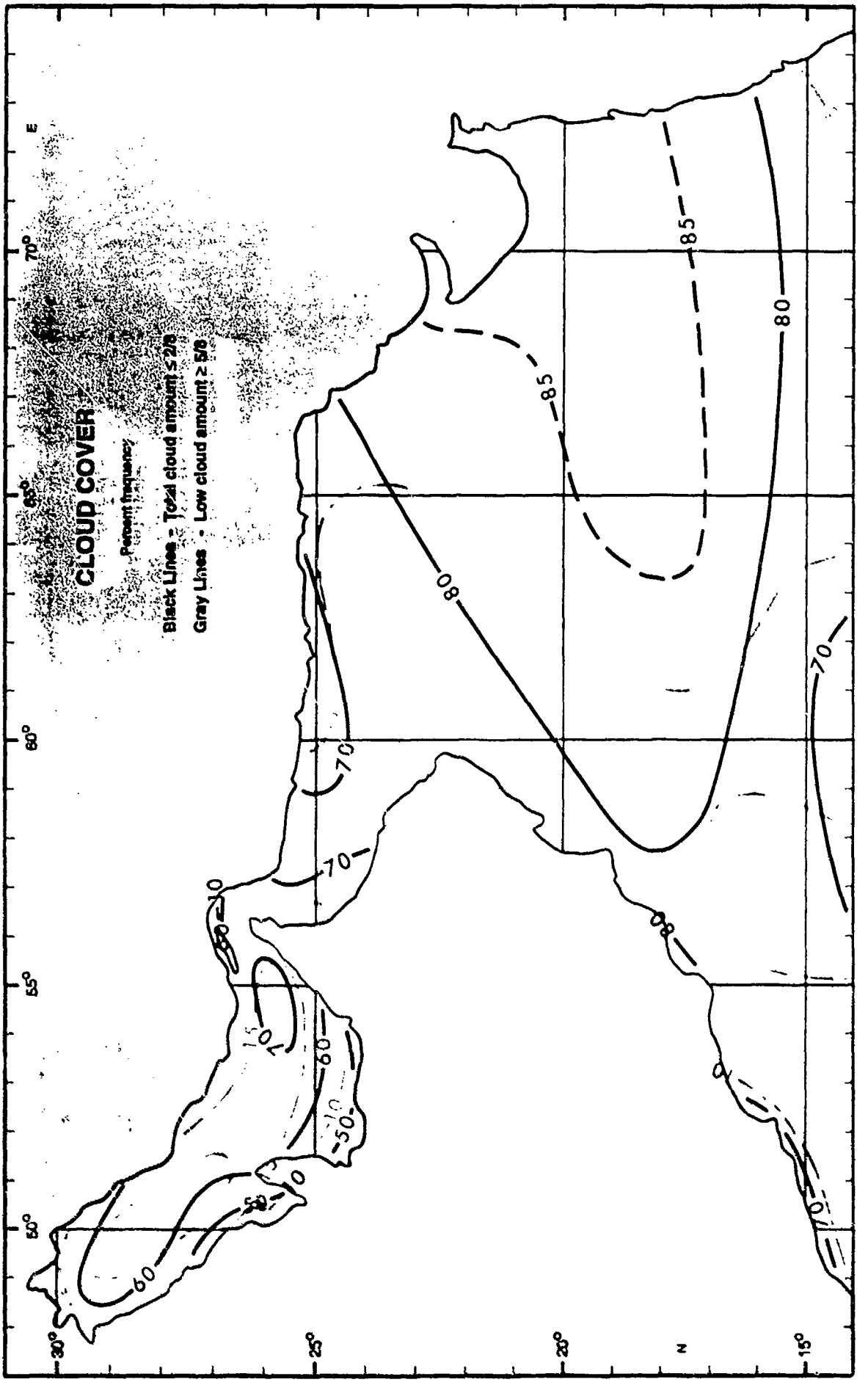

WAVE HEIGHT
Percent frequency of wave height ≥ 8 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 8 feet = ≥ Code 5 (5 half meters)
70°
65°
60°
55°
50°
30°
20°
15°
E
N
1
5
10

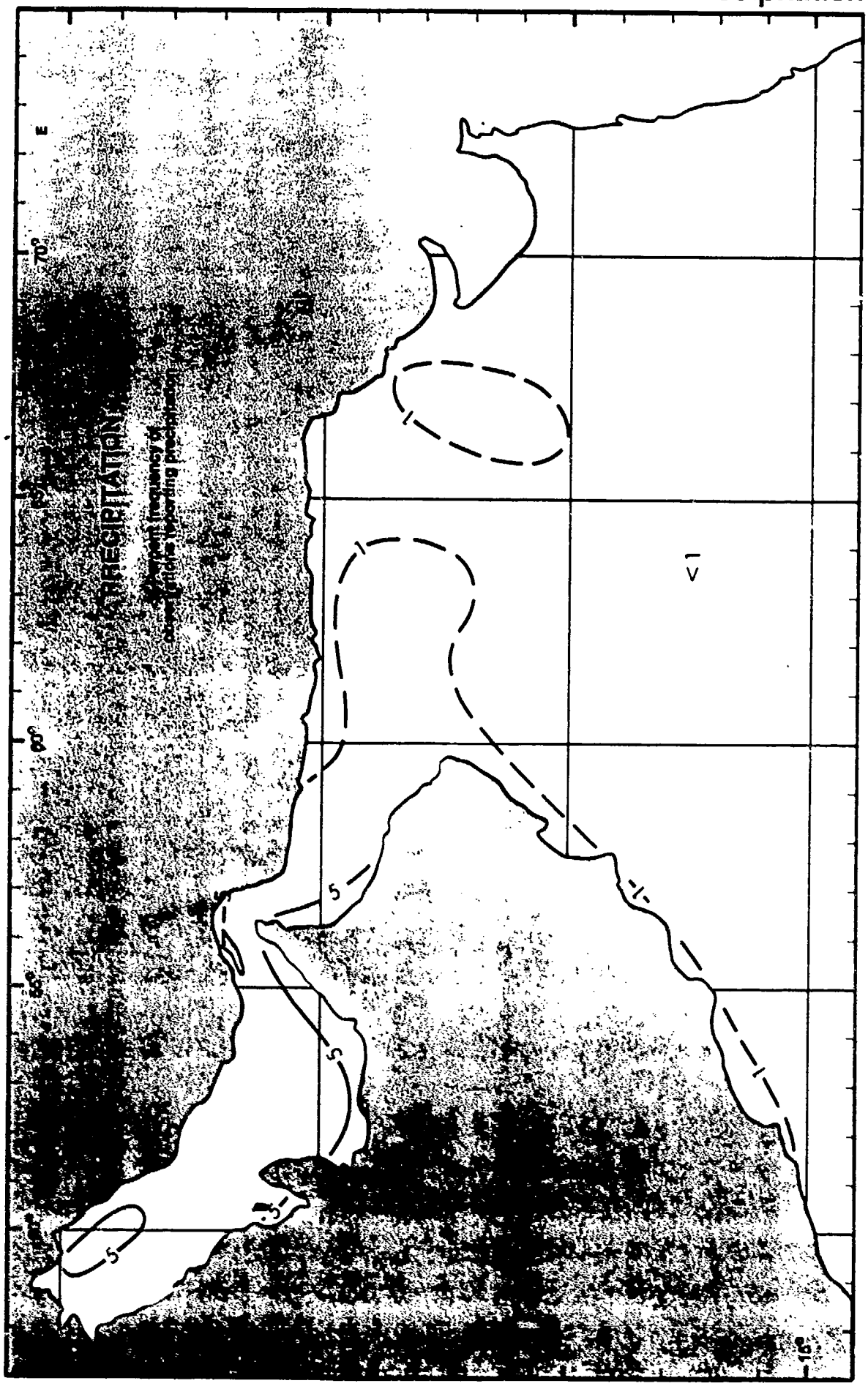

WAVE HEIGHT
EXAMPLE:

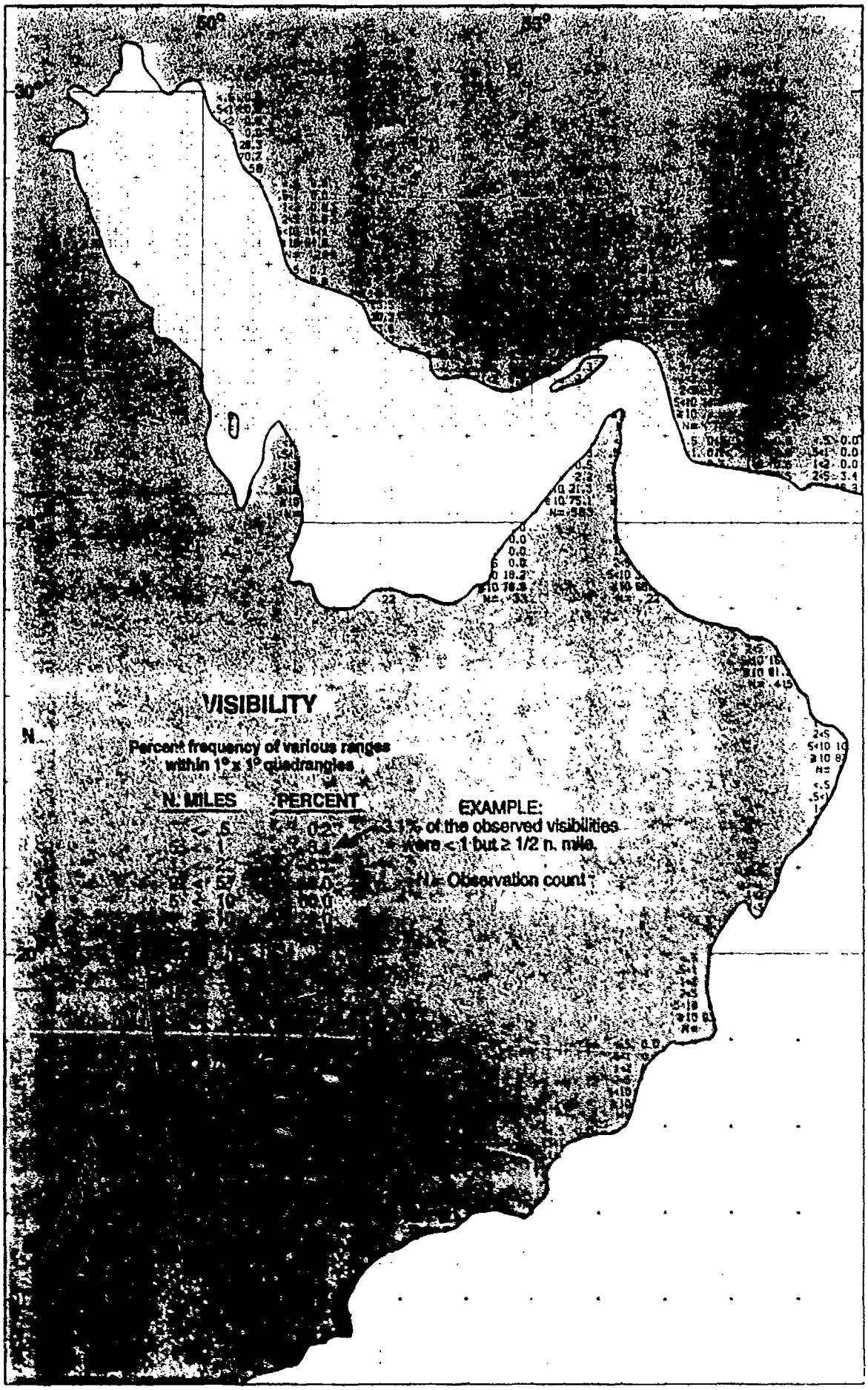

65°
70°
30°
N
25°
20°

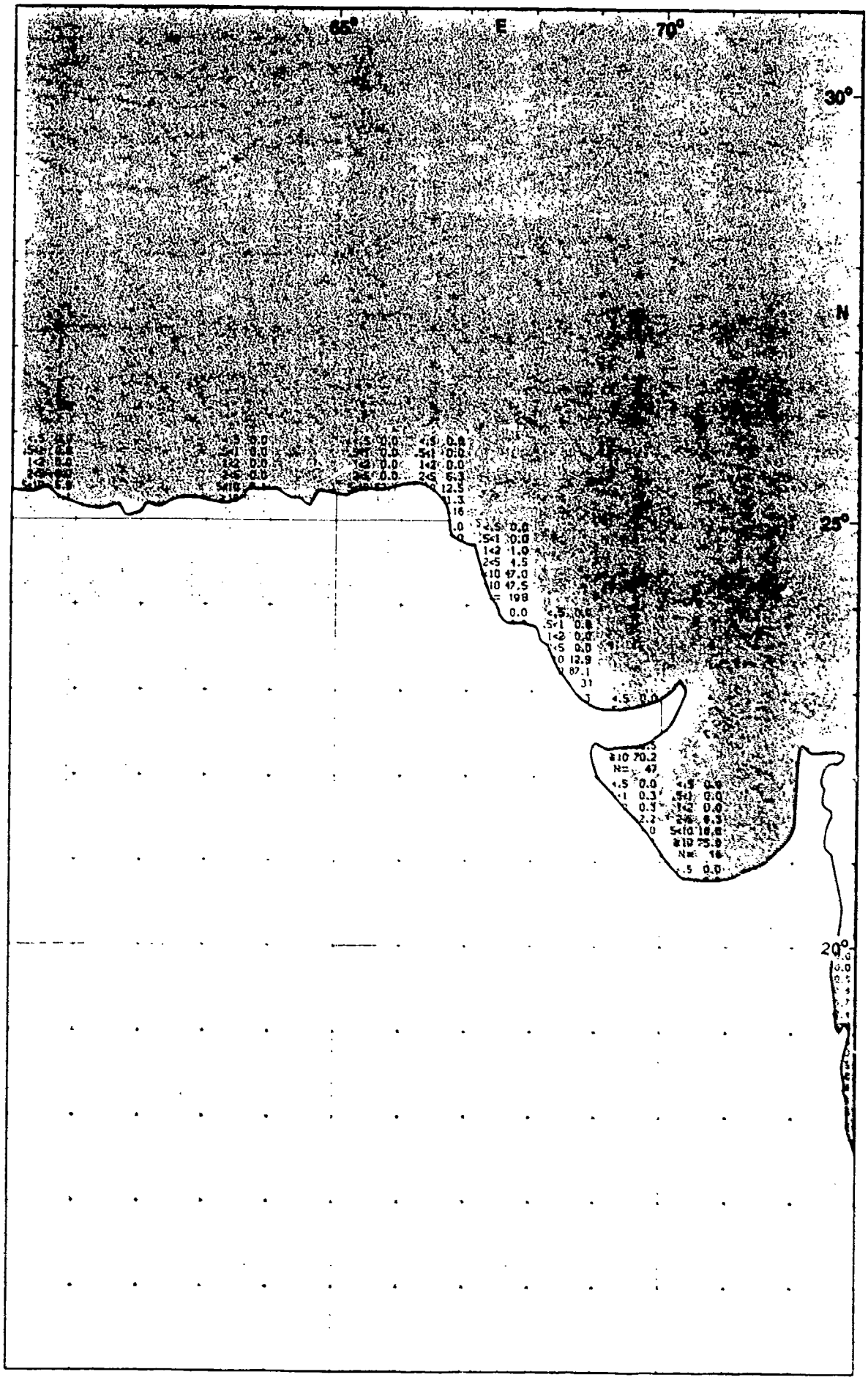

50°
E
55°
30°
20°
N
SURFACE CURRENTS
Solid Arrow(s) : Prevailing current direction(s)
Dashed Arrow(s) : Secondary current direction(s)
Mean scalar current speed (knots)
Percent of total used to compute primary directions
Percent of total used to compute secondary directions

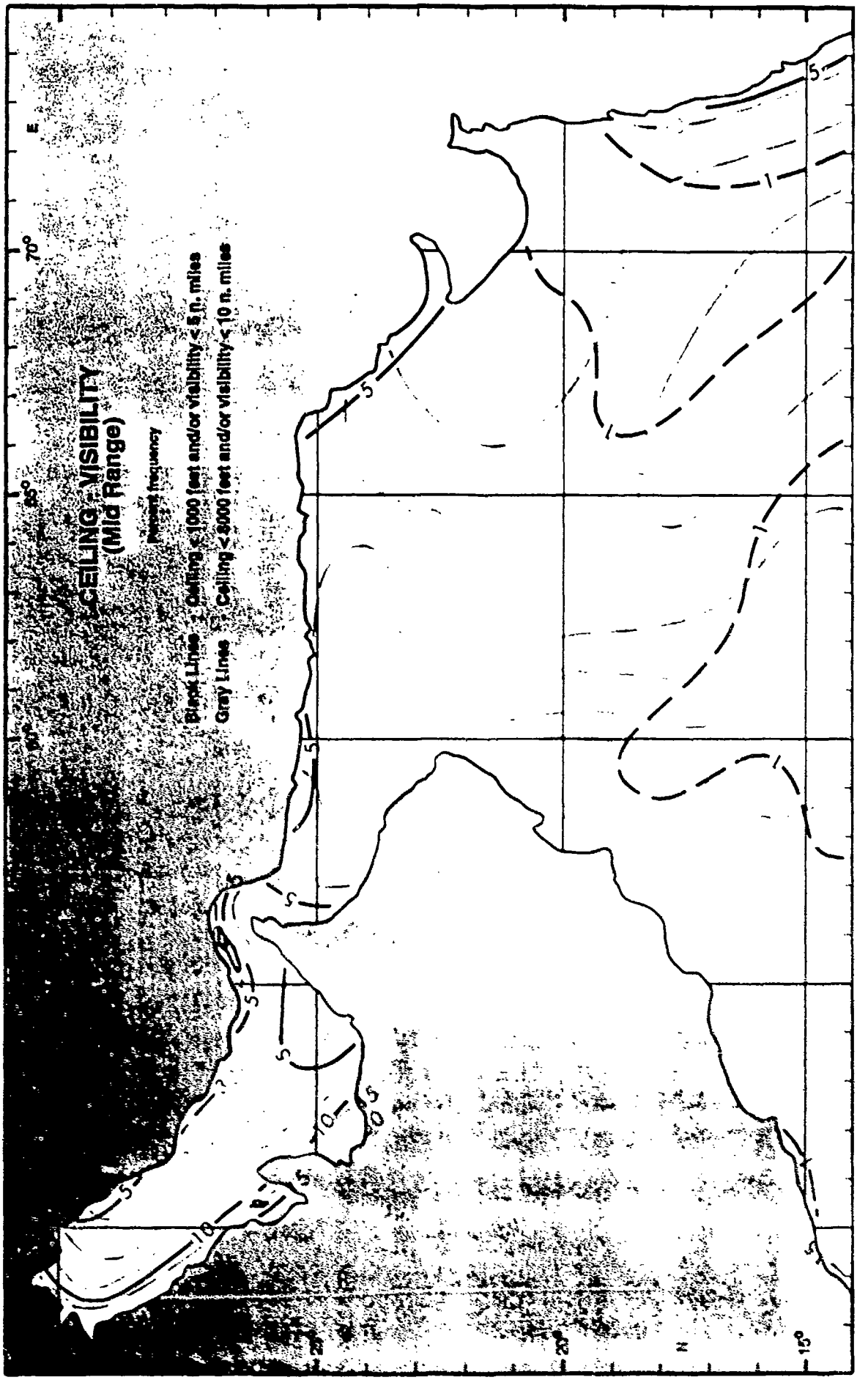

65°
E
70°
30°
N
25°
20°


CLOUD COVER
Percent frequency
Black Lines - Total cloud amount ≥ 2/8
Gray Lines - Low cloud amount ≥ 5/8
70°
65°
60°
55°
50°
30°
25°
20°
15°
E
N
85
80
85
80
70
70
70
70
60
60
50
50
60

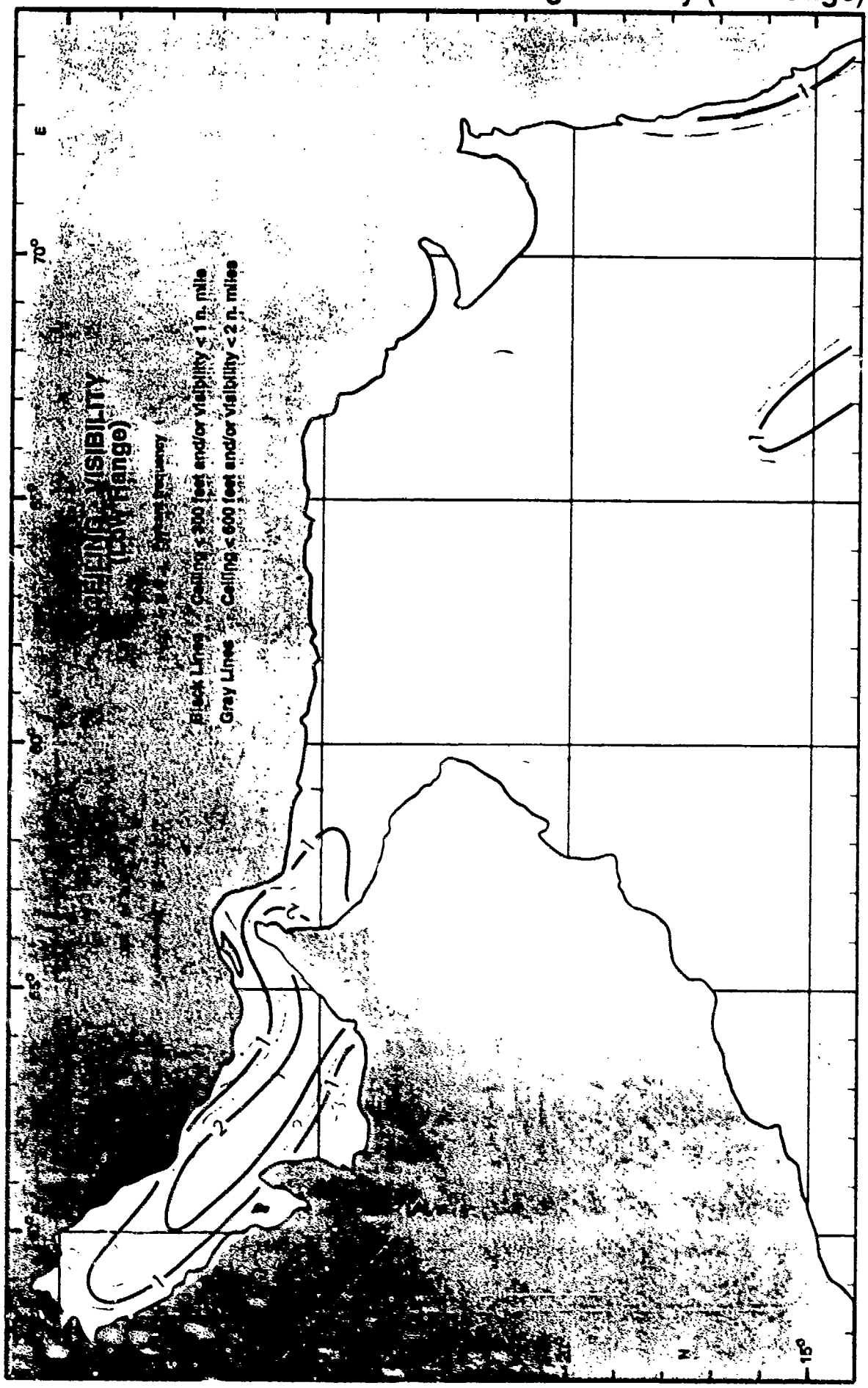

PRECIPITATION
70°
60°
50°
5
1

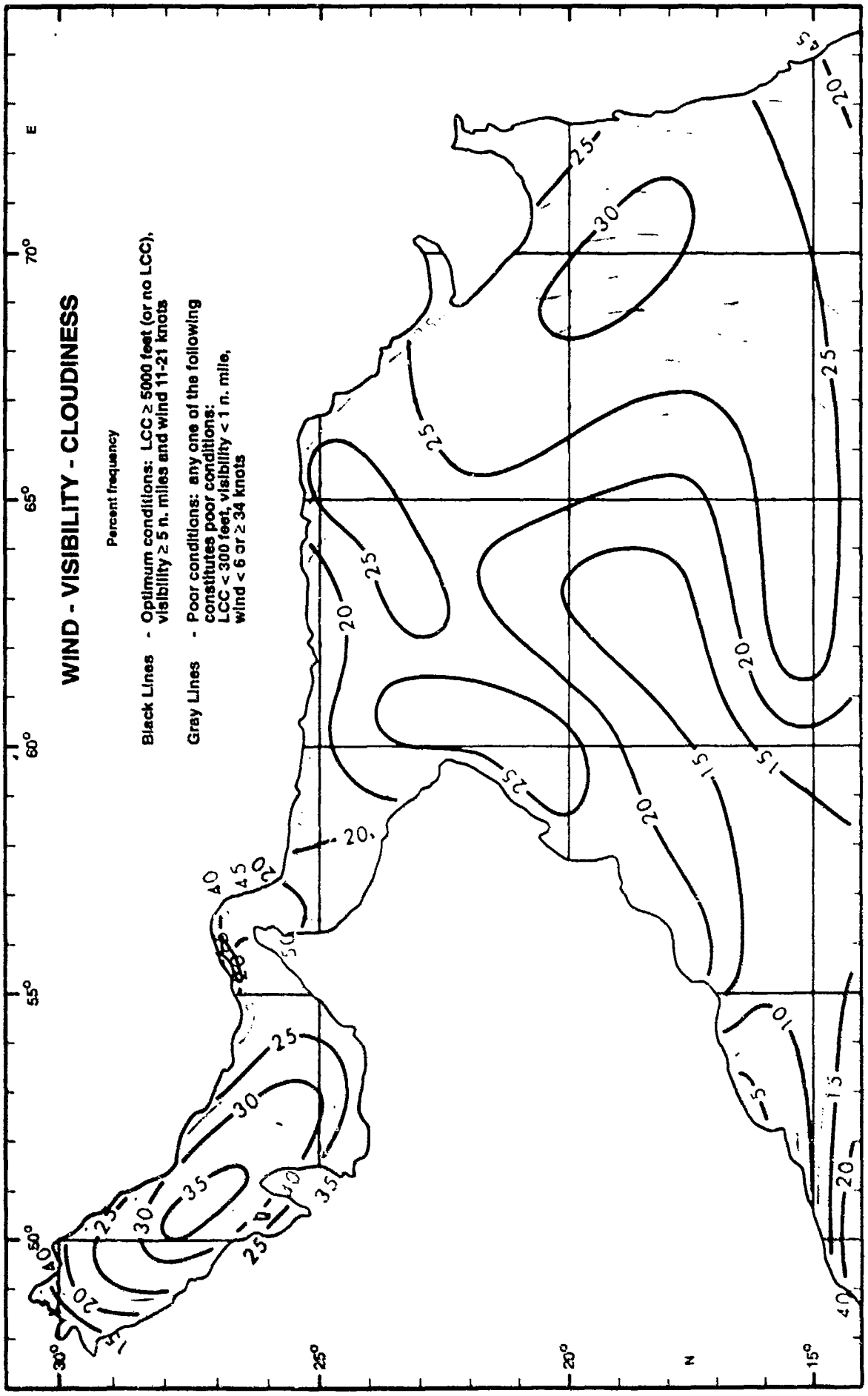

60°
55°
30°
VISIBILITY
Percent frequency of various ranges within 1° x 1° quadrangles
N. MILES
PERCENT
EXAMPLE:
3.1% of the observed visibilities were < 1 but ≥ 1/2 n. mile.
N = Observation count


65°
E
70°
30°
N
25°
20°

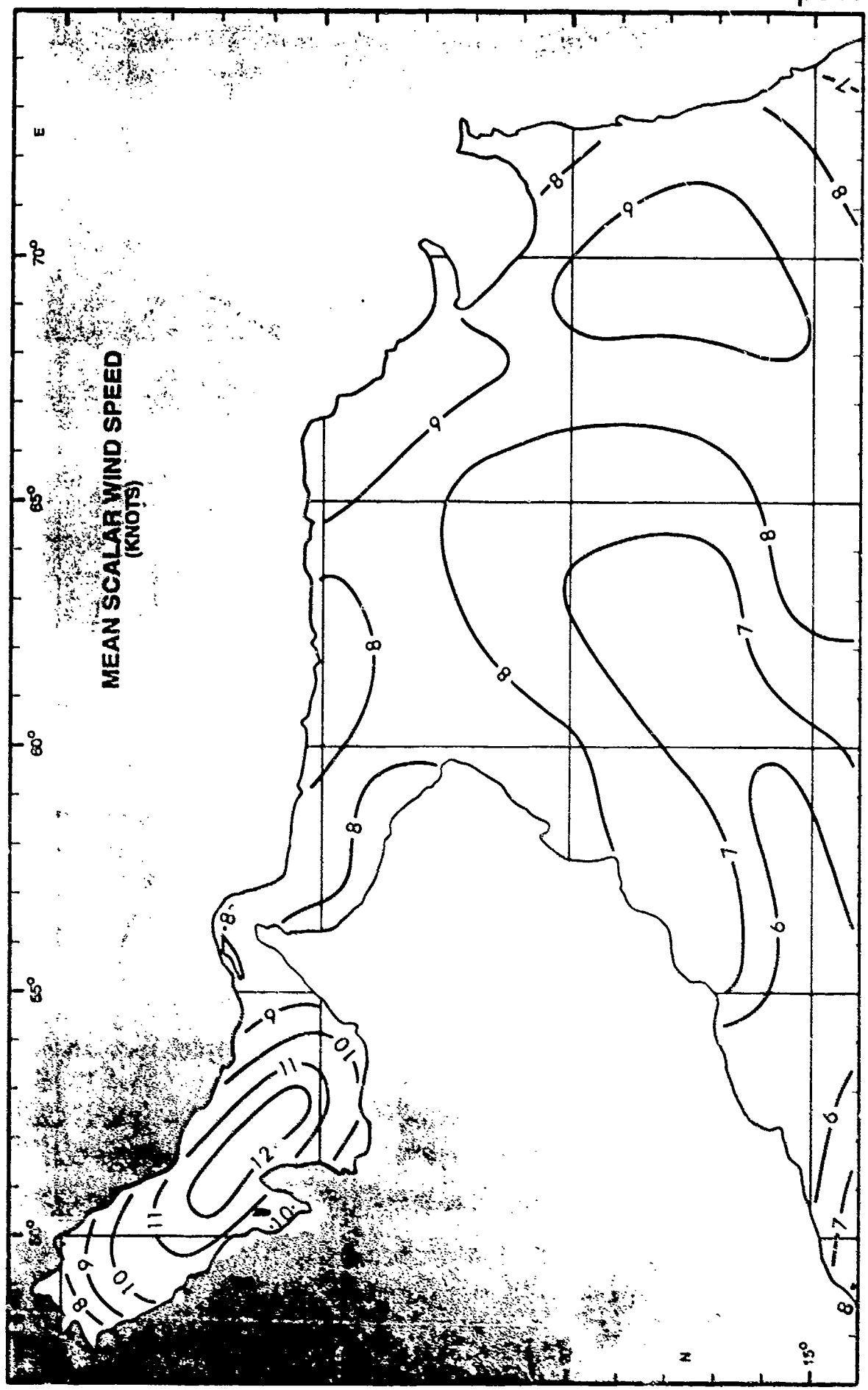

CEILING - VISIBILITY
(Mid Range)
Percent frequency
Black Lines — Ceiling < 1000 feet and/or visibility < 5 n. miles
Gray Lines — Ceiling < 3000 feet and/or visibility < 10 n. miles
80°
70°
E
N
5
1
10
20
30

Ceiling-Visibility (low range)

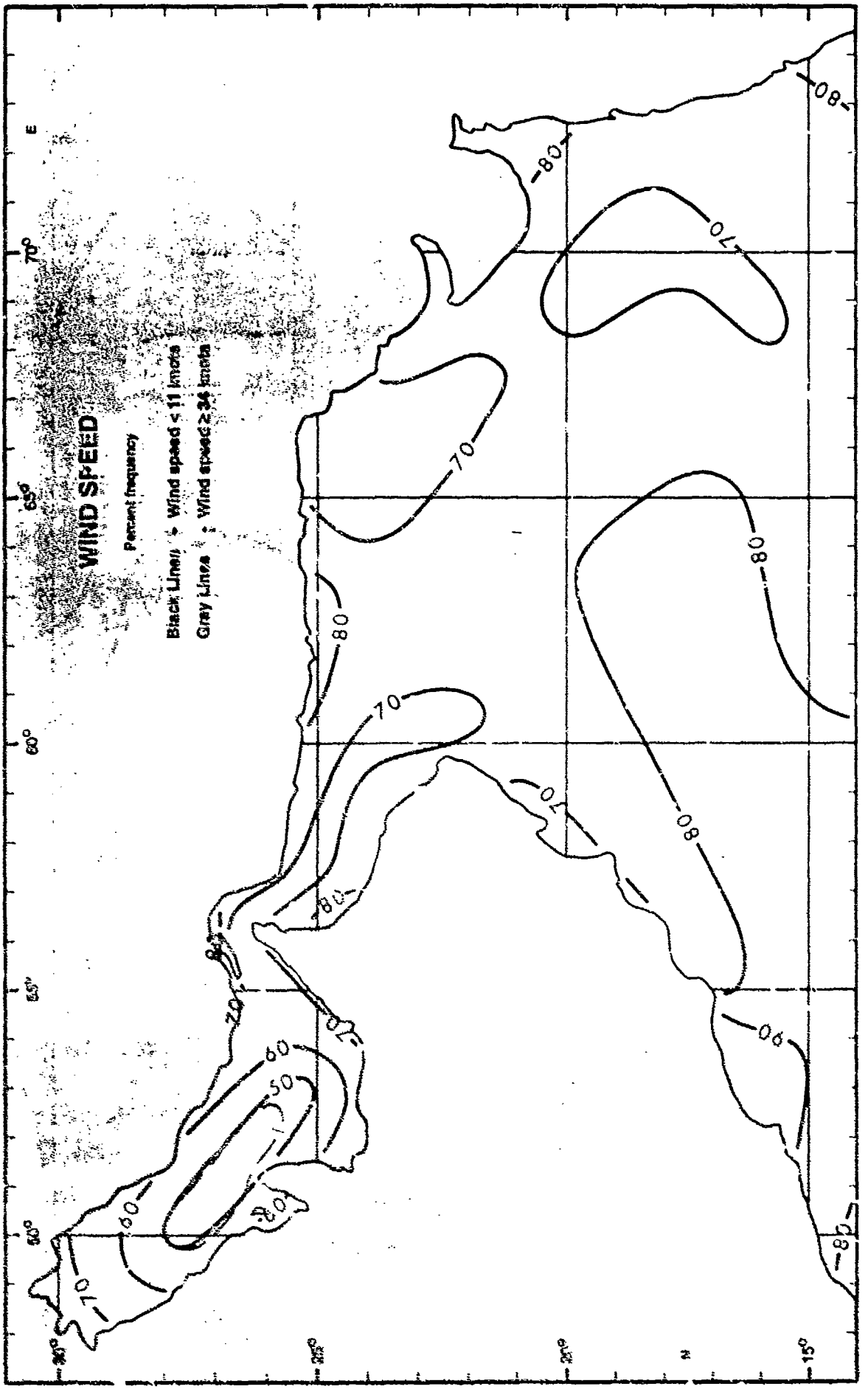



WIND - VISIBILITY - CLOUDINESS
Percent frequency
Black Lines - Optimum conditions: LCC ≥ 5000 feet (or no LCC), visibility ≥ 5 n. miles and wind 11-21 knots
Gray Lines - Poor conditions: any one of the following constitutes poor conditions: LCC < 300 feet, visibility < 1 n. mile, wind < 6 or ≥ 34 knots
70° E
65°
60°
55°
50°
30°
25°
20°
15° N

Mean Scalar Wind Speed

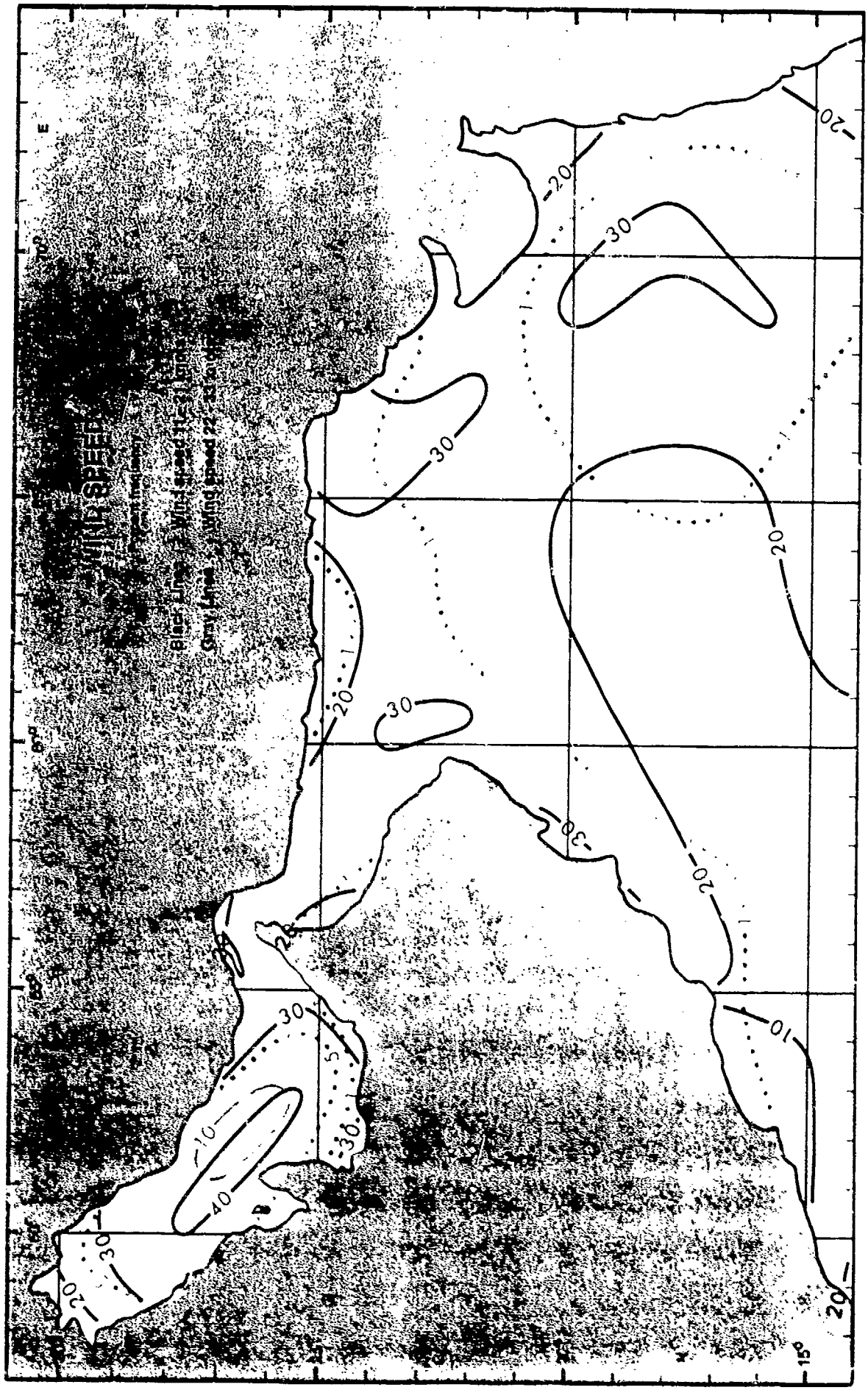


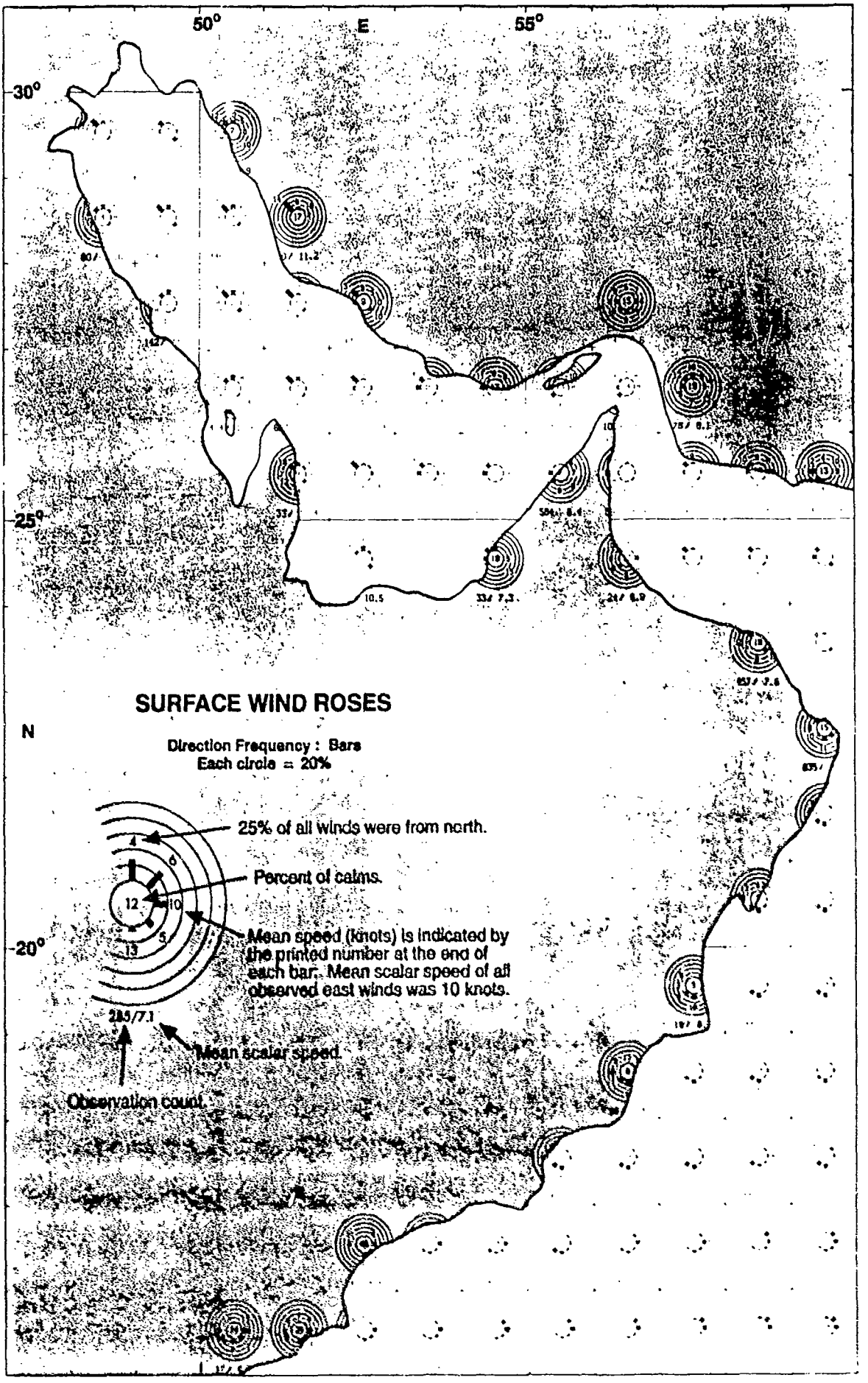
Wind Speed <11 and ≥34 Knots

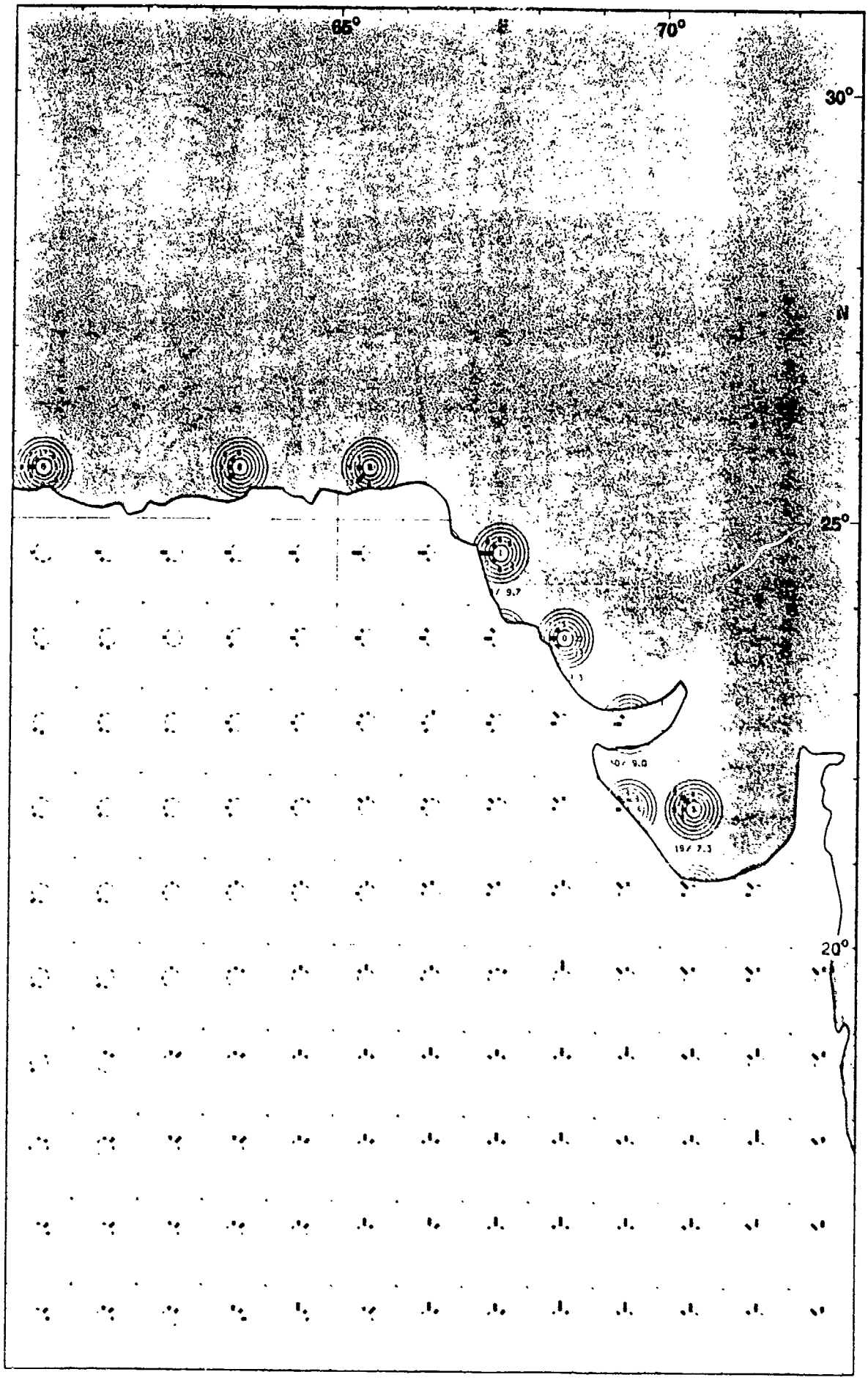


March

Wind Speed 11-21 and 22-33 Knots




50° E 55°
30°
25°
20°
SURFACE WIND ROSES
N
Direction Frequency : Bars
Each circle = 20%
25% of all winds were from north.
Percent of calms.
Mean speed (knots) is indicated by the printed number at the end of each bar. Mean scalar speed of all observed east winds was 10 knots.
285/7.1
Mean scalar speed.
Observation count.


65°
E
70°
30°
N
25°
20°

March

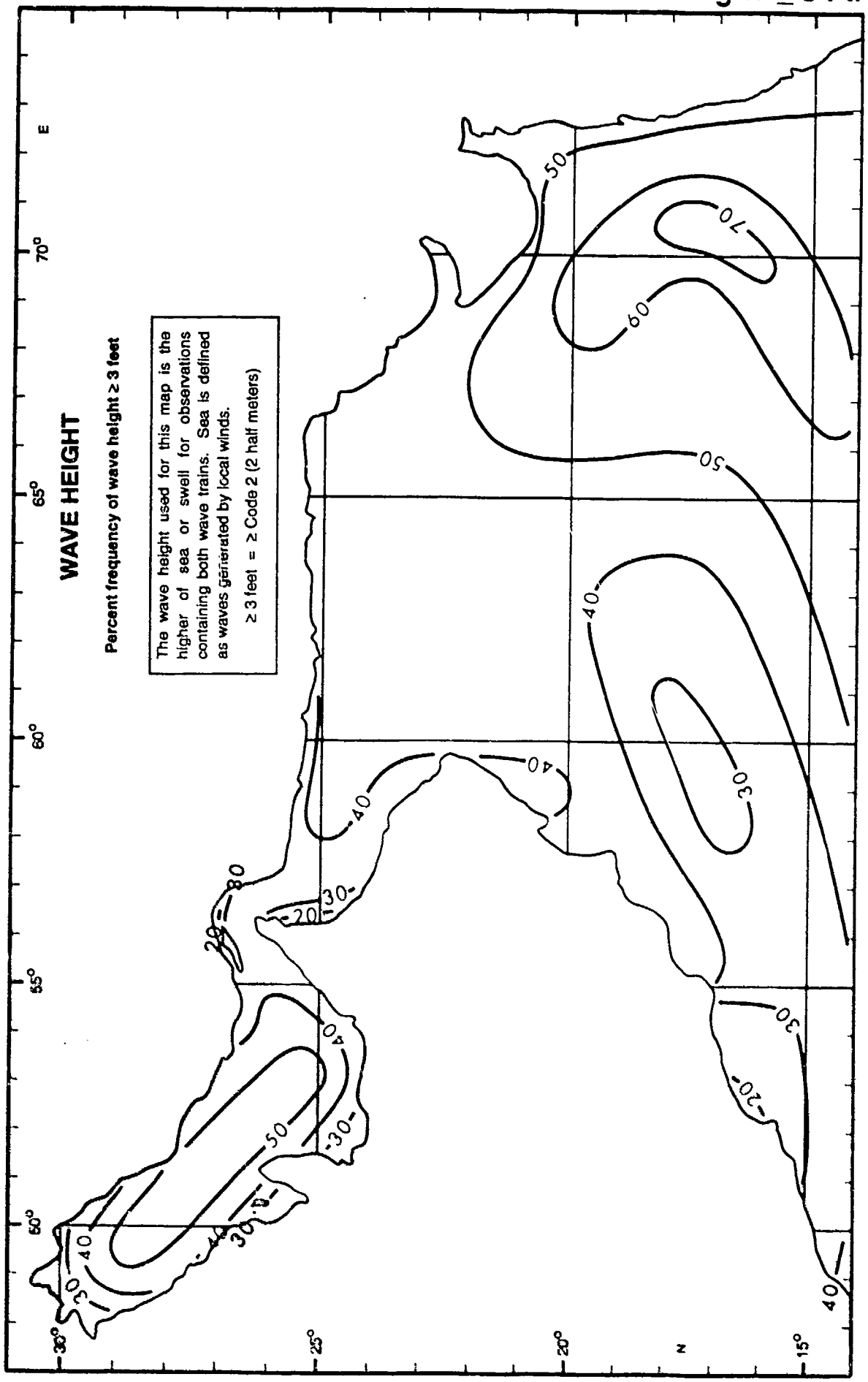
Mean Air Temperature



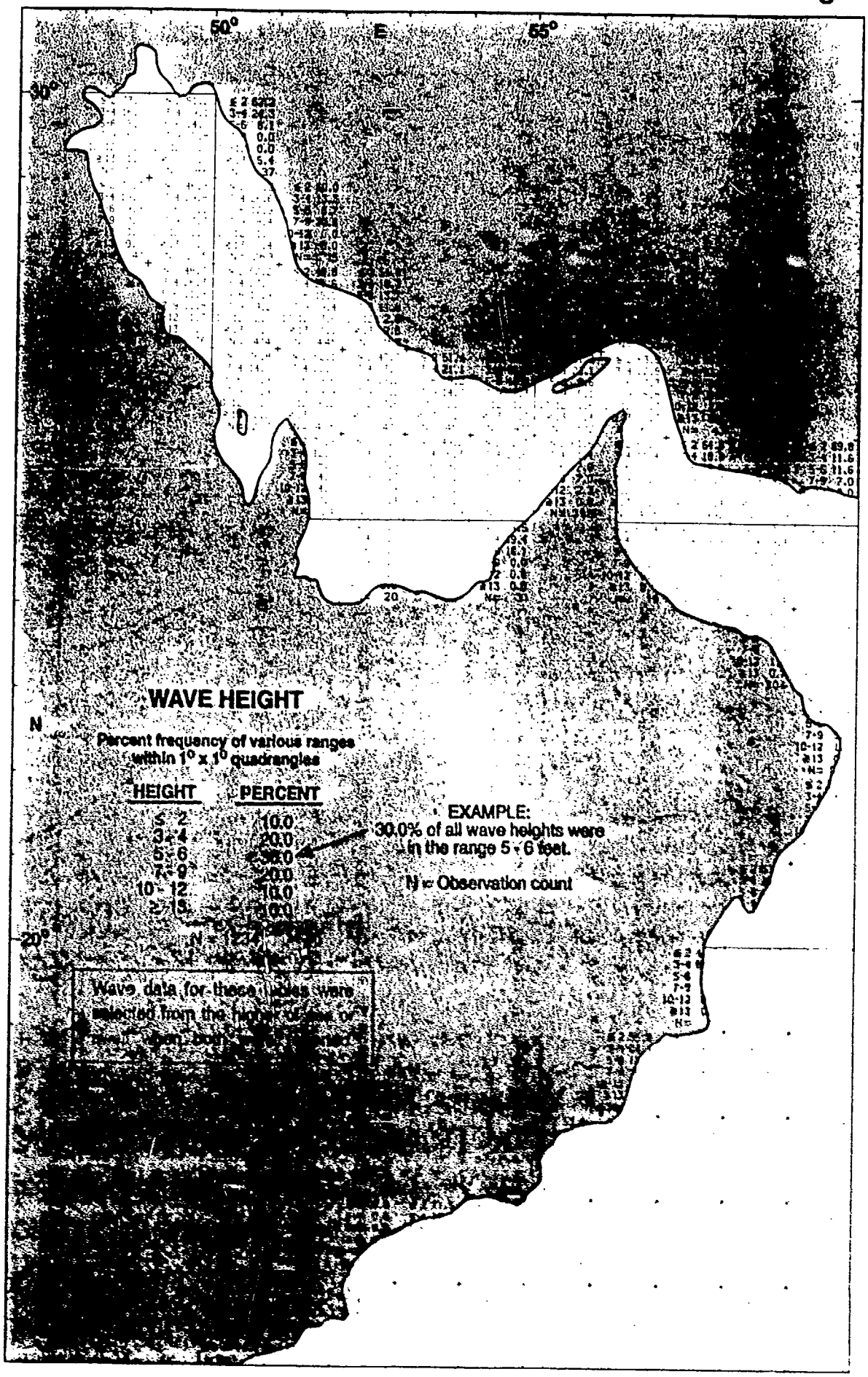
Mean Sea Surface Temperature

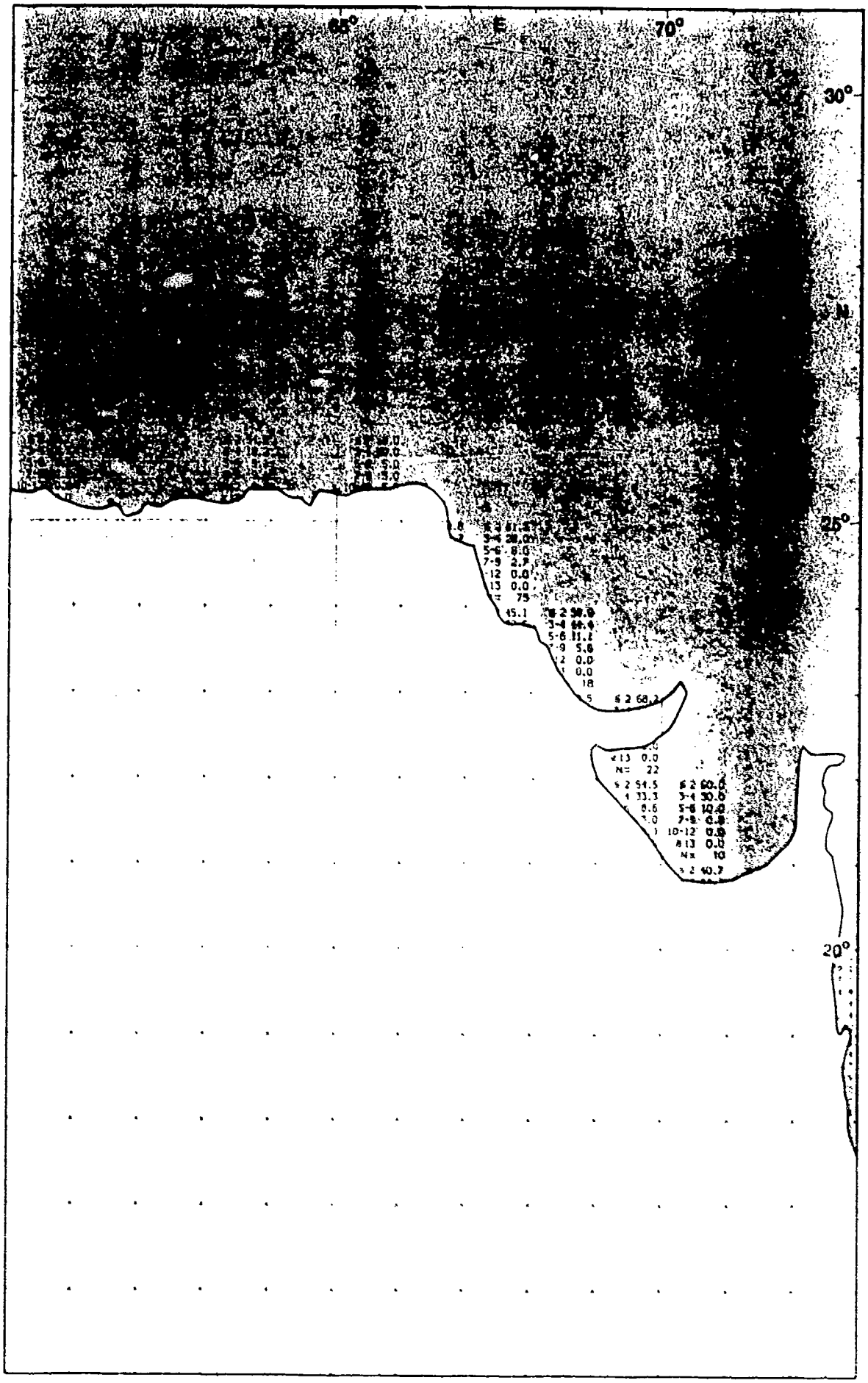


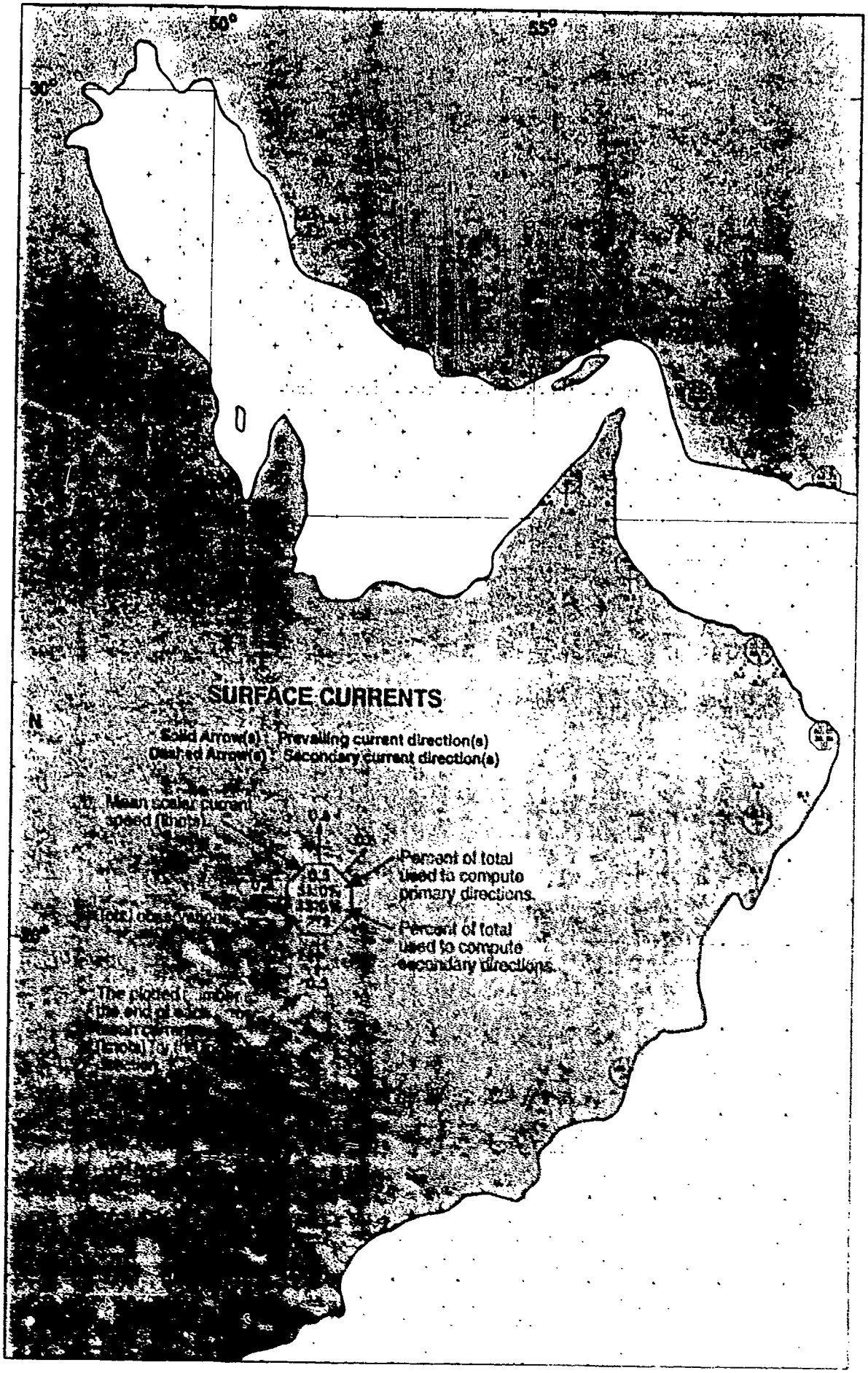
Wave Height ≥ 3 Ft.

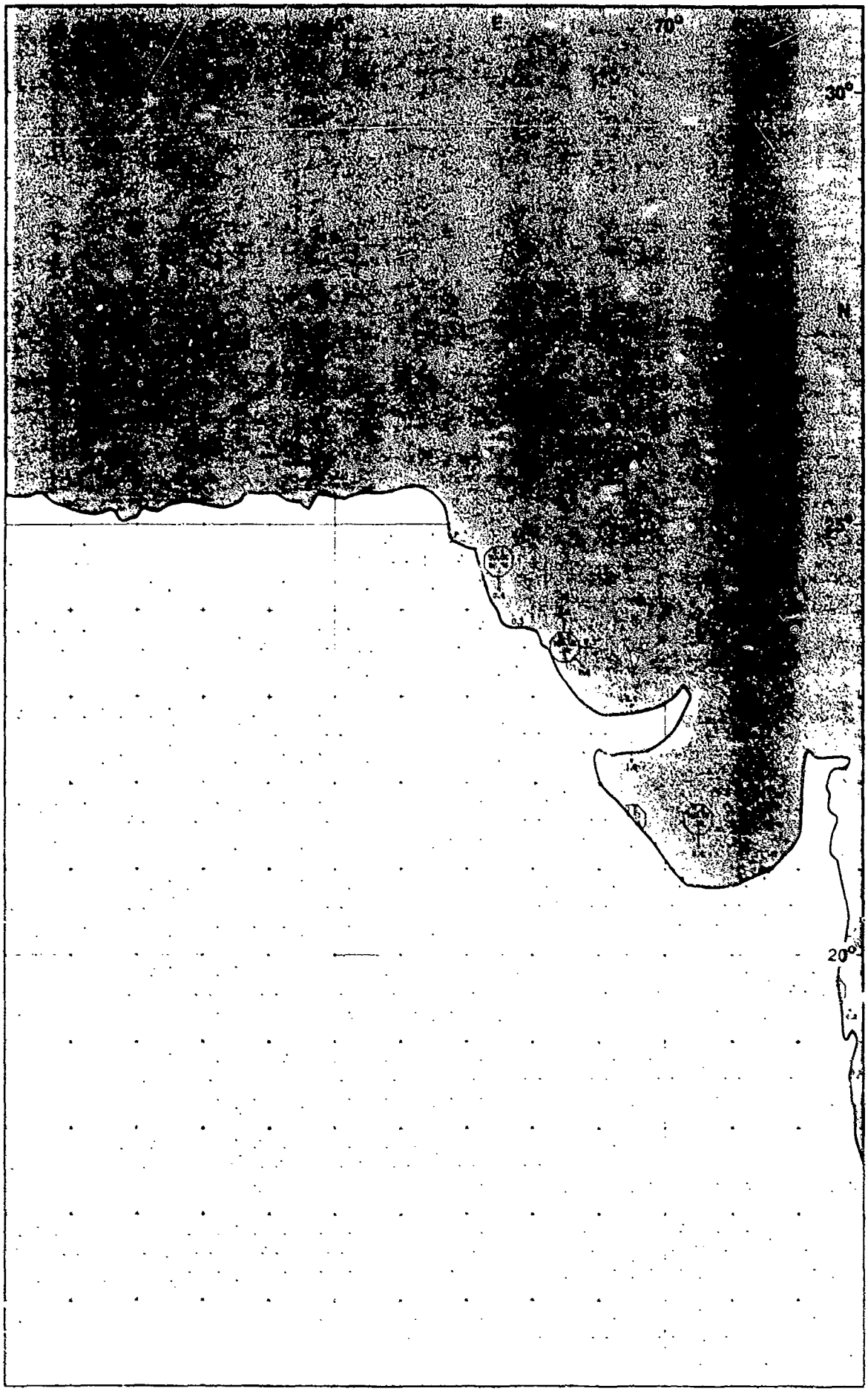


Wave Height ≥ 8 Ft.

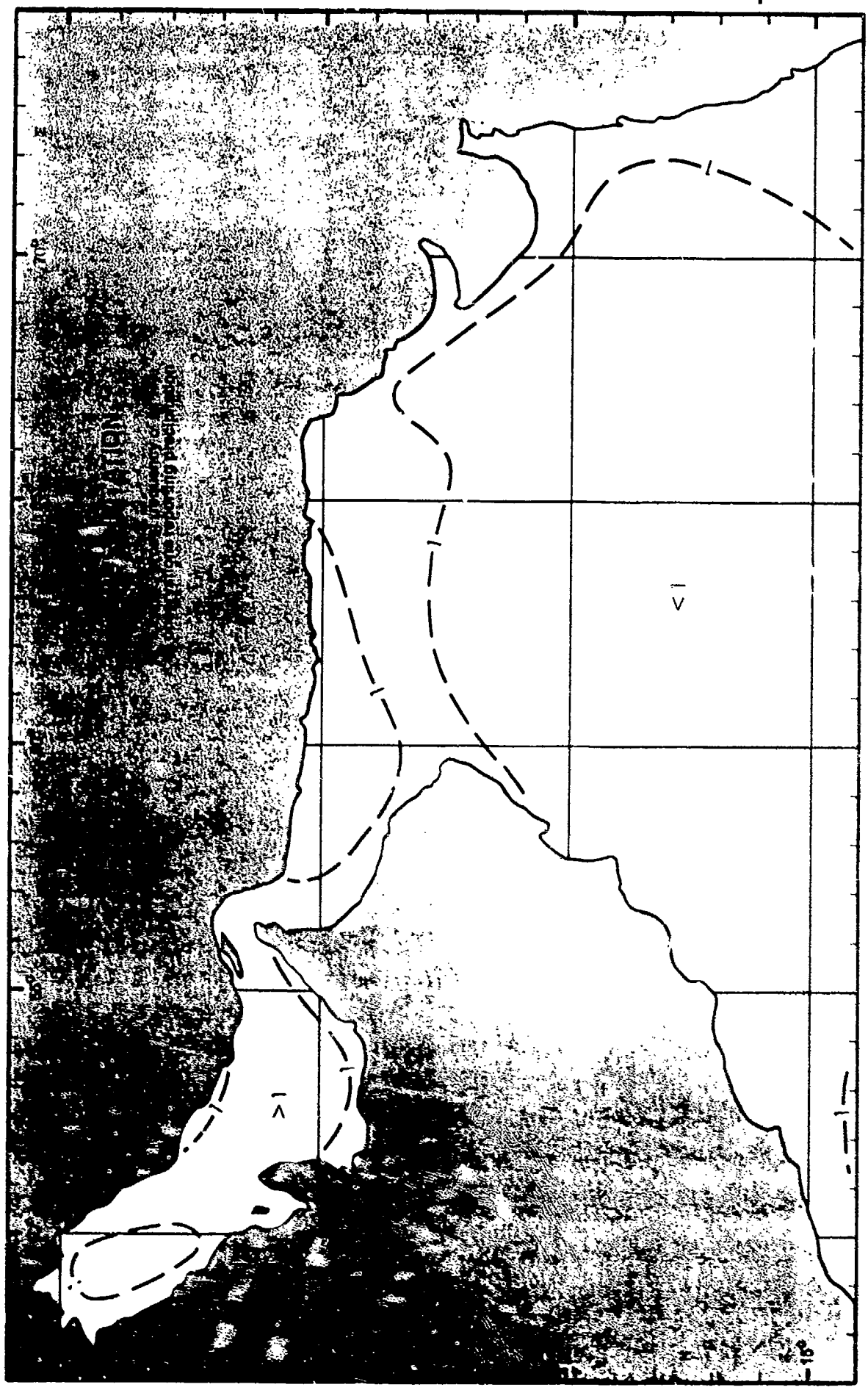

50°
E
55°
30°
20°
N
WAVE HEIGHT
Percent frequency of various ranges within 1° x 1° quadrangles
HEIGHT
PERCENT
≤ 2
10.0
3 - 4
20.0
5 - 6
30.0
7 - 9
20.0
10 - 12
10.0
≥ 13
10.0
N = 274
EXAMPLE:
30.0% of all wave heights were in the range 5 - 6 feet.
N = Observation count
Wave data for these tables were

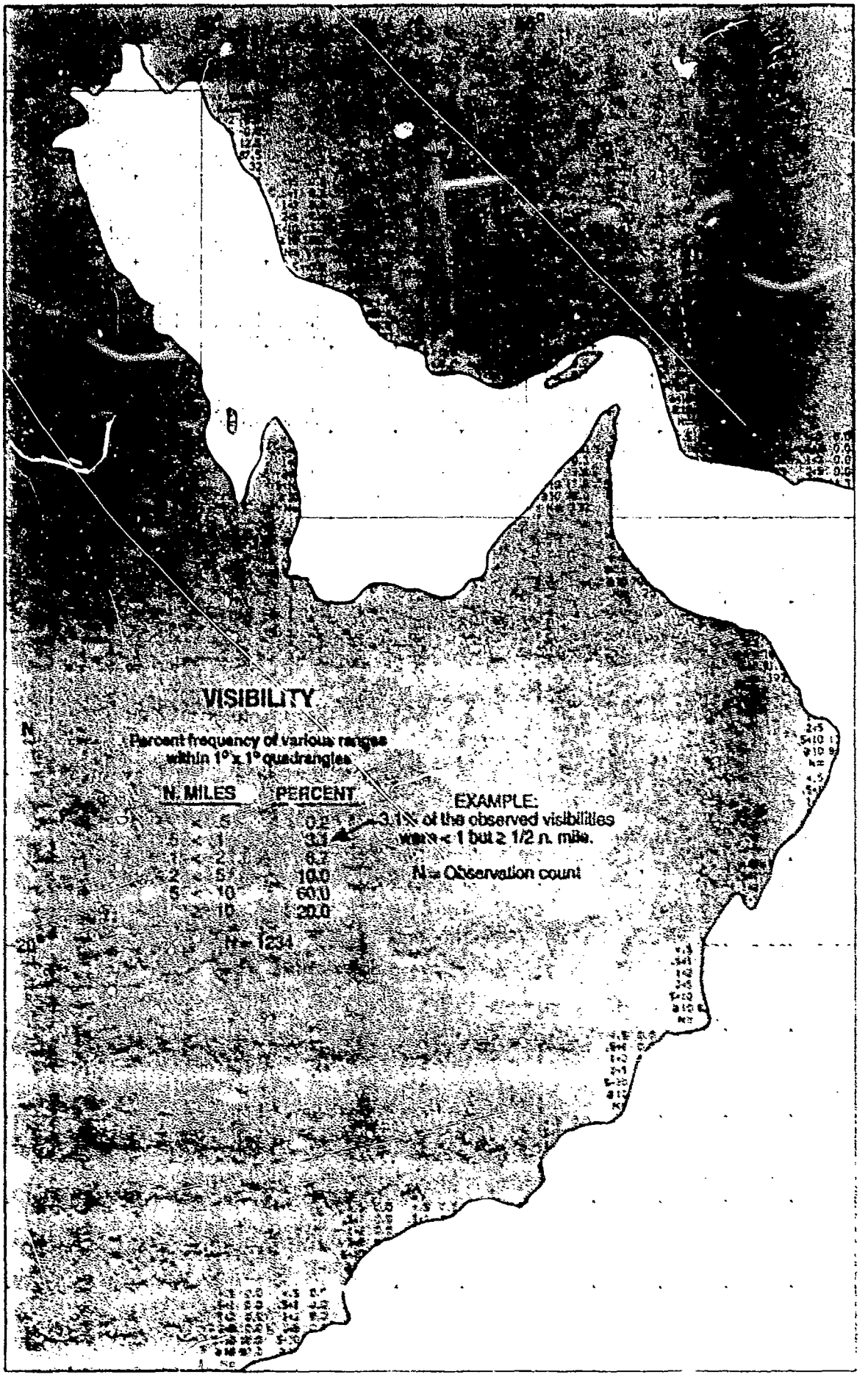

65°
E
70°
30°
N
25°
20°

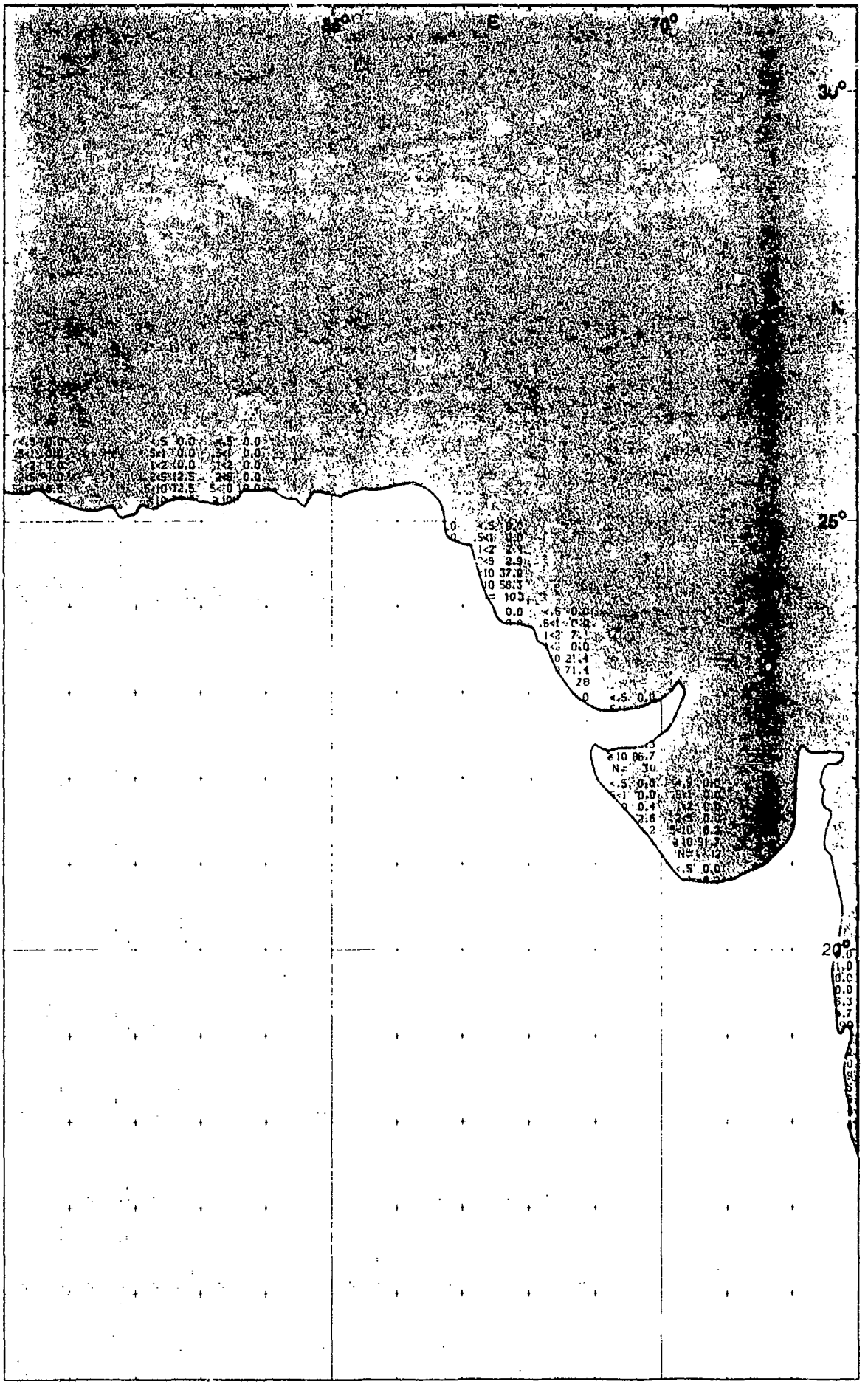

50°
55°
30°
SURFACE CURRENTS
N
Solid Arrow(s): Prevailing current direction(s)
Dashed Arrow(s): Secondary current direction(s)
Mean scalar current speed (knots)
Percent of total used to compute primary directions.
Percent of total used to compute secondary directions.

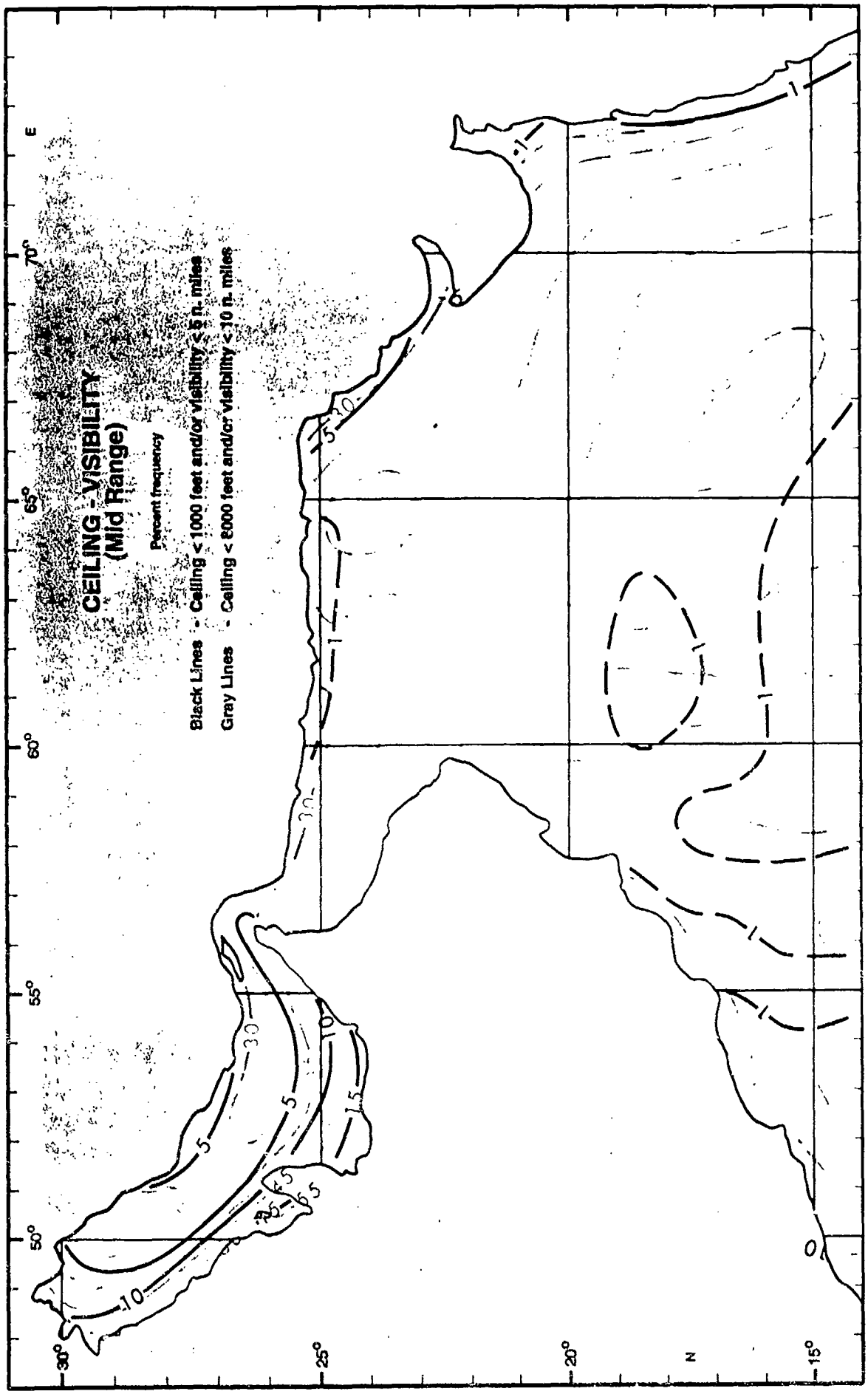

70°
30°
N
20°

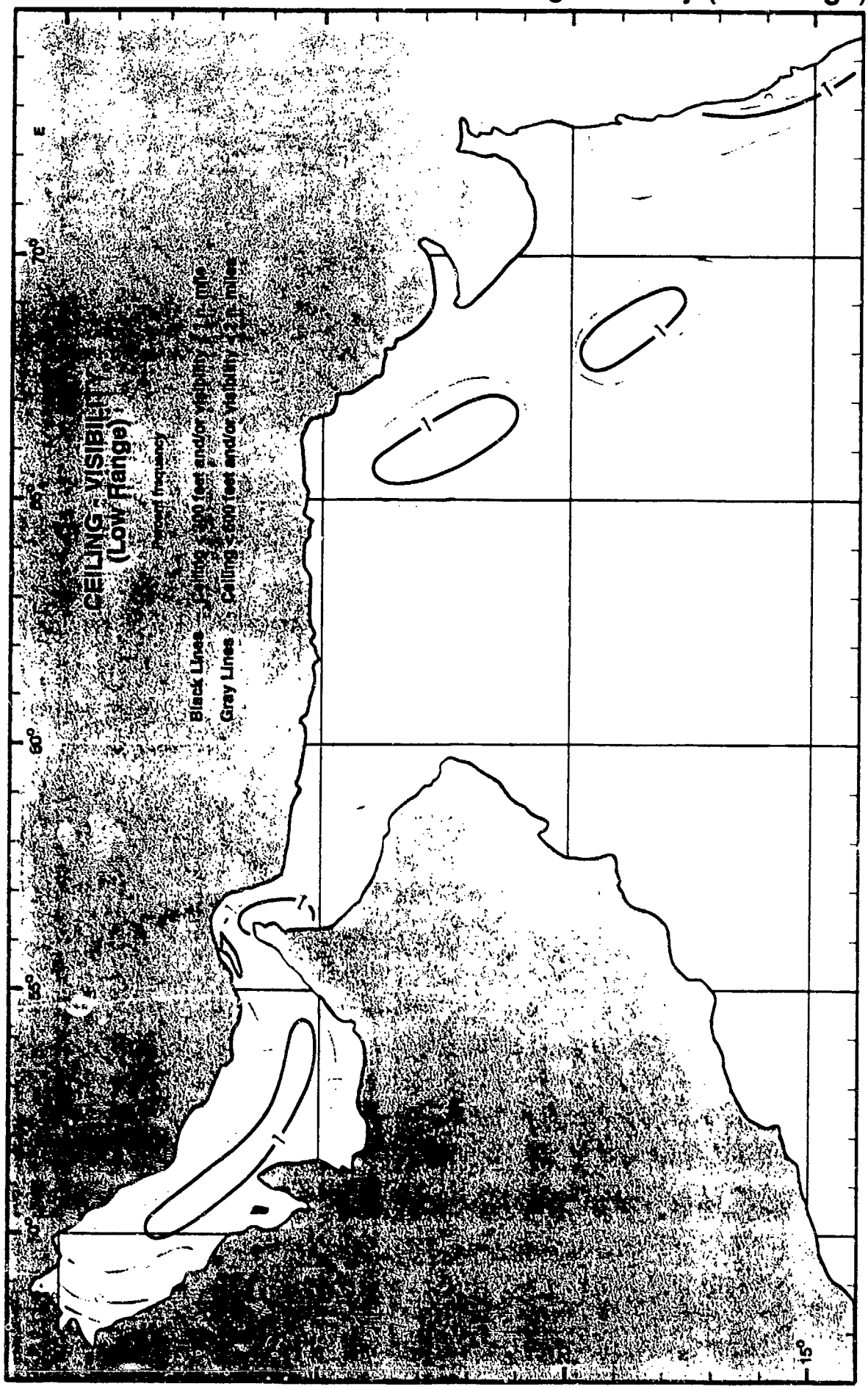

CLOUD COVER
Grey Lines - Low cloud amount
Black Lines - Total cloud amount
95
90
85
80
75
70
60
N
20°
15°

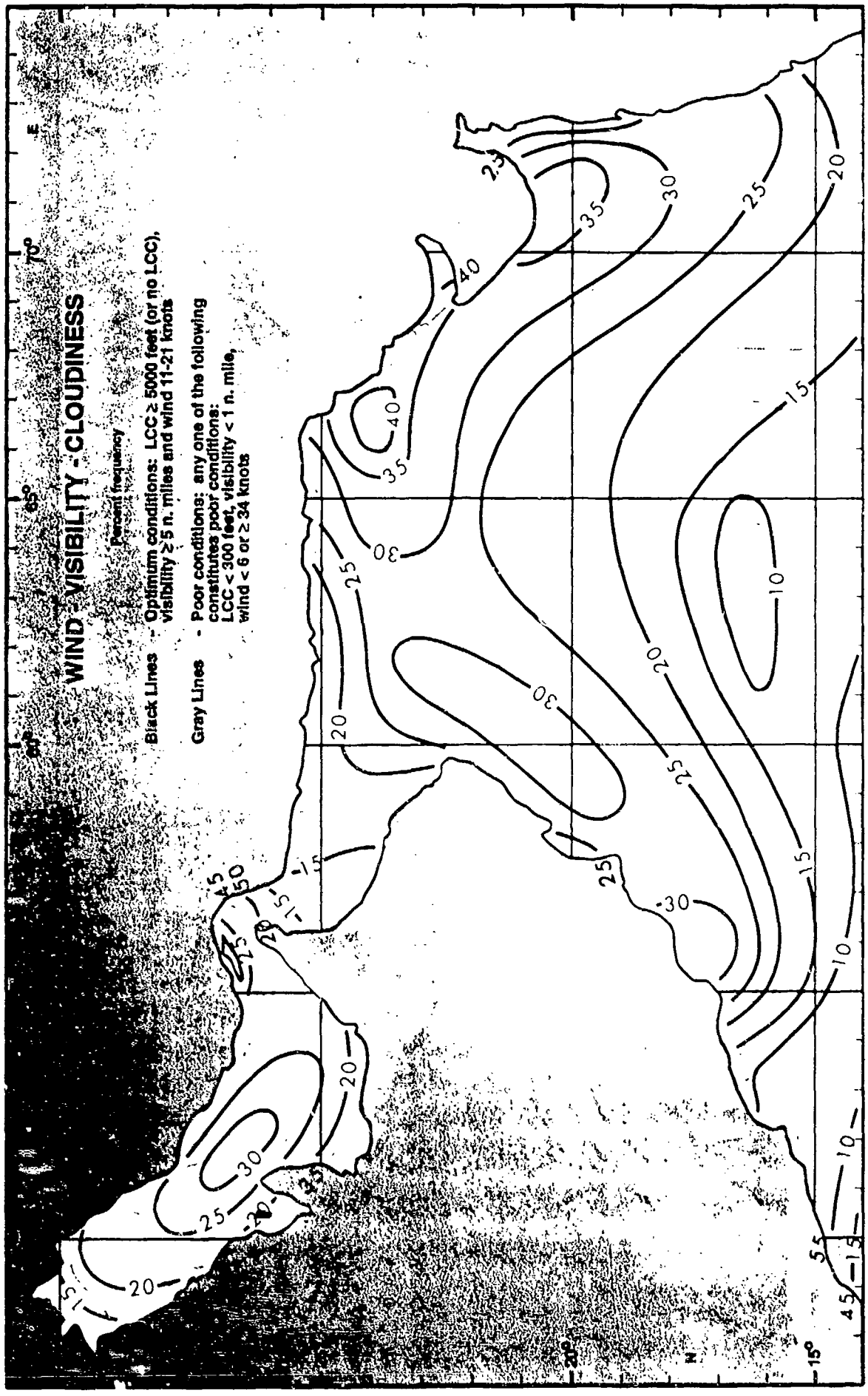



VISIBILITY
Percent frequency of various ranges within 1° x 1° quadrangles
N. MILES
PERCENT
< .5
0.2
.5 < 1
3.1
1 < 2
6.2
2 < 5
10.0
5 < 10
60.0
≥ 10
20.0
N= 1234
EXAMPLE:
3.1% of the observed visibilities were < 1 but ≥ 1/2 n. mile.
N = Observation count

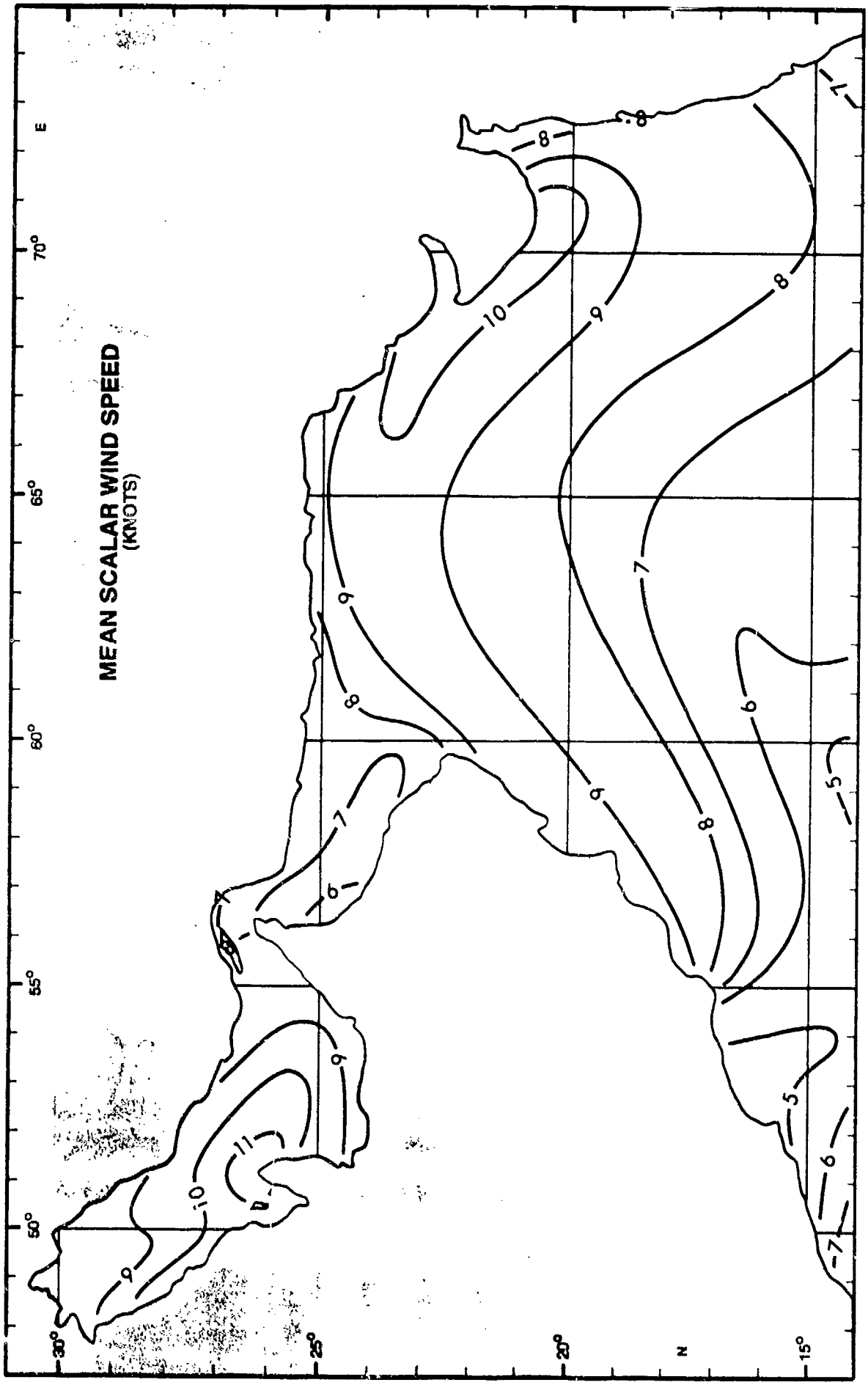

E
70°
30°
25°
20°
N


CEILING - VISIBILITY
(Mid Range)
Percent frequency
Black Lines - Ceiling < 1000 feet and/or visibility < 5 n. miles
Gray Lines - Ceiling < 2000 feet and/or visibility < 10 n. miles
70°
65°
60°
55°
50°
30°
25°
20°
15°
E
N
30
5
10
15
20
25
1
0


CEILING - VISIBILITY
(Low Range)
Black Lines — Ceiling by 1,000 feet and/or visibility 1 n. mile
Gray Lines — Ceiling 500 feet and/or visibility 2 n. miles
Coastline
70°
60°
50°
40°
30°
20°
10°
0°
E
15°


WIND - VISIBILITY - CLOUDINESS
Percent frequency
Black Lines - Optimum conditions: LCC ≥ 5000 feet (or no LCC), visibility ≥ 5 n. miles and wind 11-21 knots
Gray Lines - Poor conditions: any one of the following constitutes poor conditions: LCC < 300 feet, visibility < 1 n. mile, wind < 6 or ≥ 34 knots
65°
70°
E
N
20°
15°

Mean Scalar Wind Speed

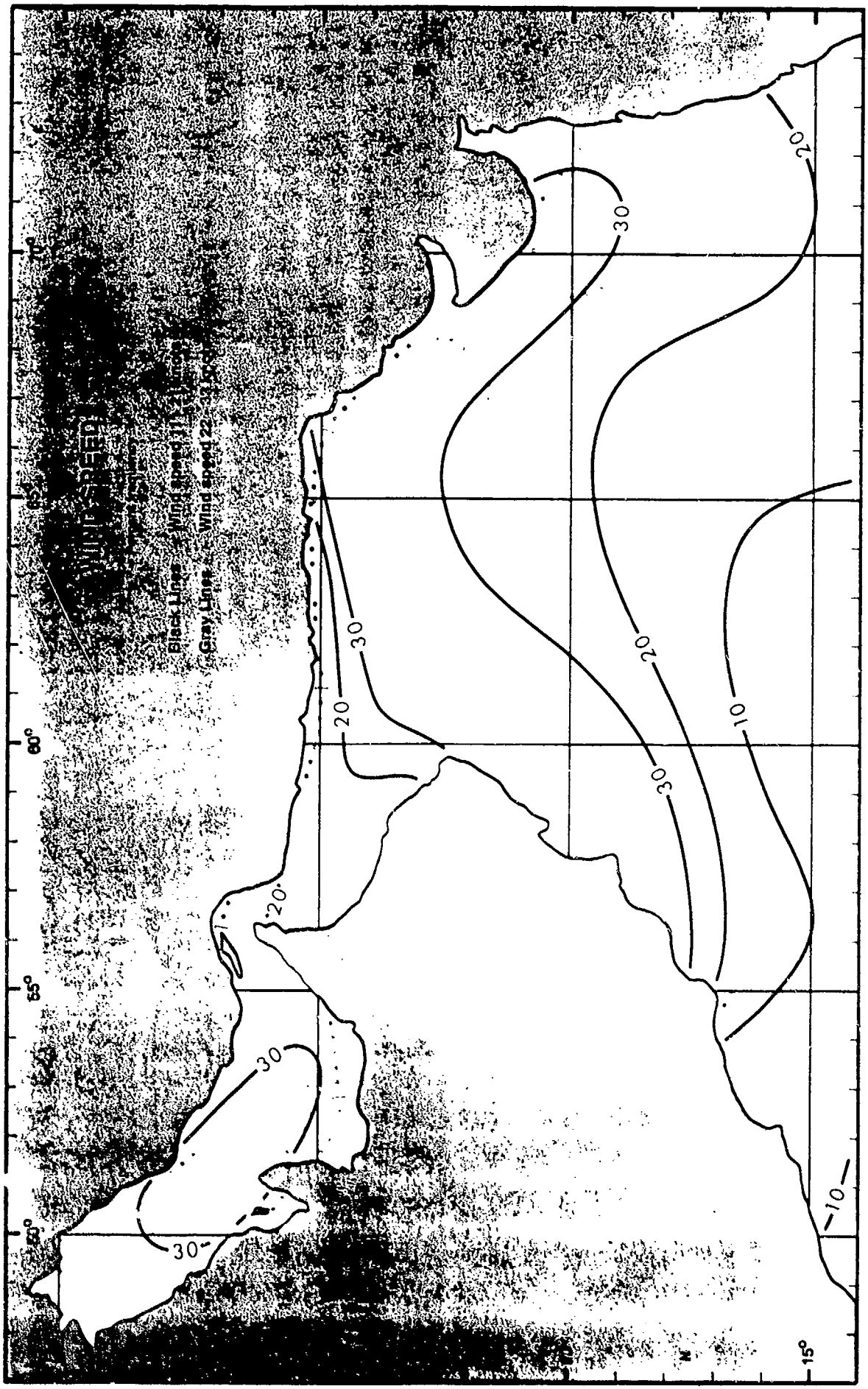


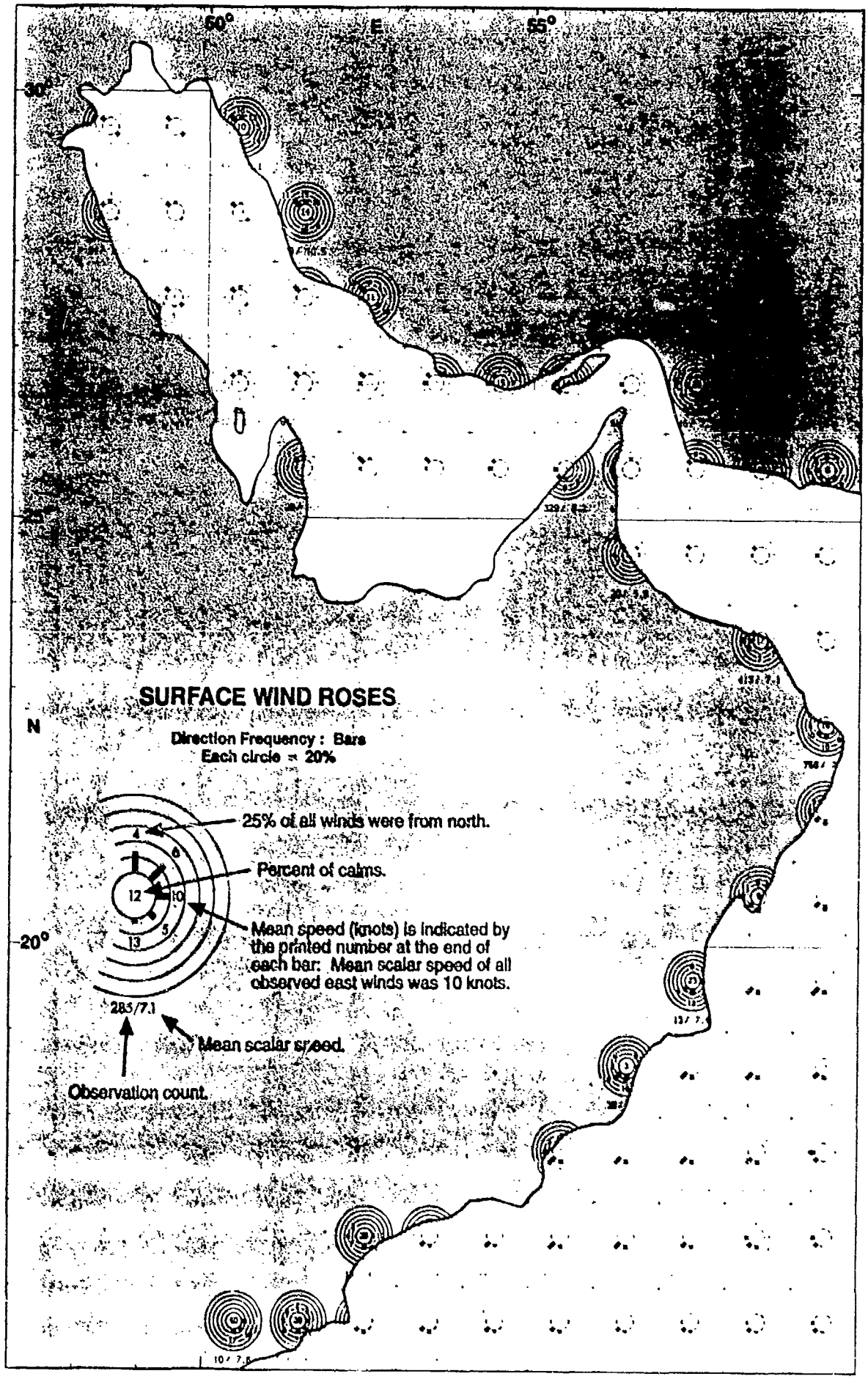
April **Wind Speed < 11 and ≥ 34 Knots**

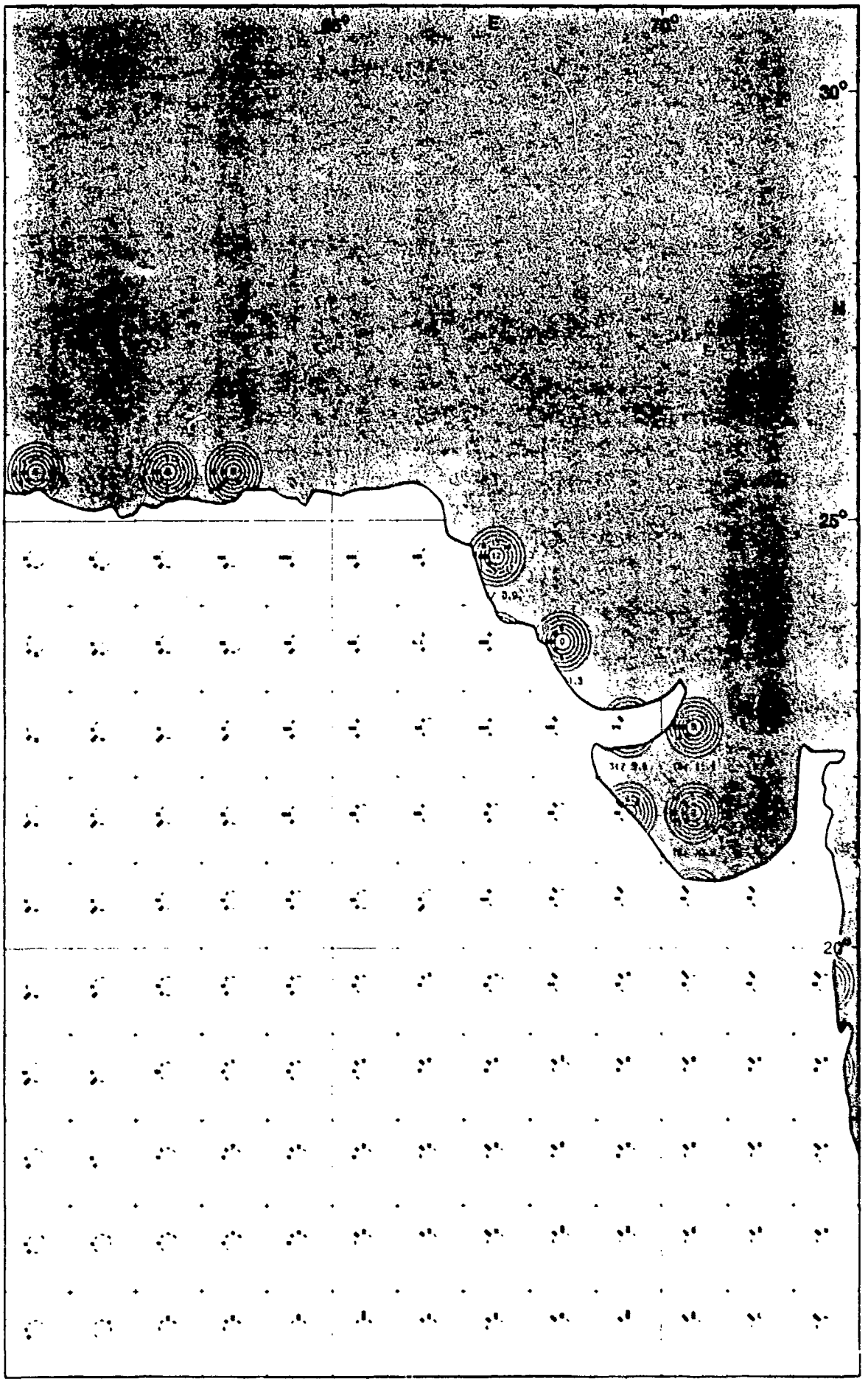


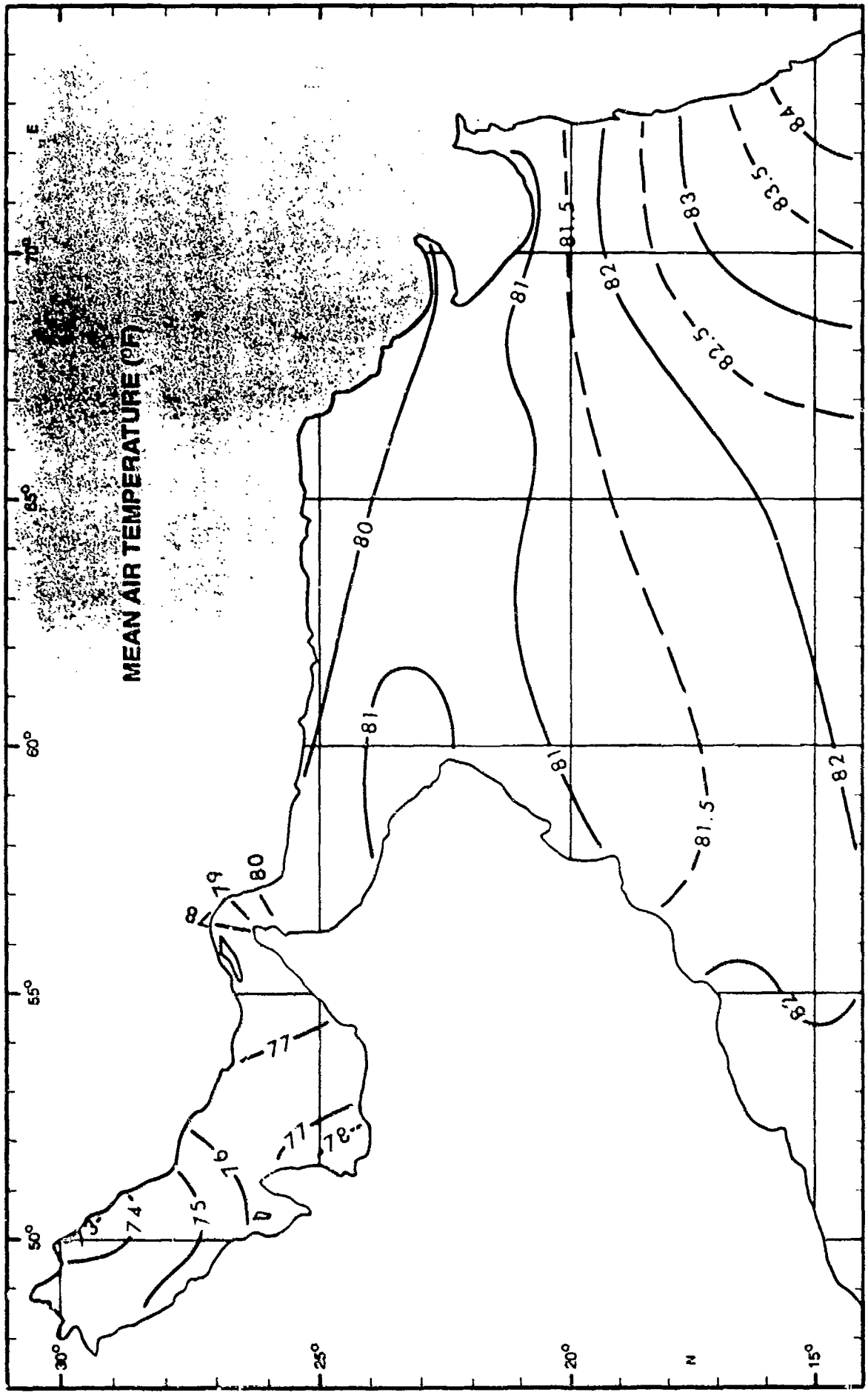
April

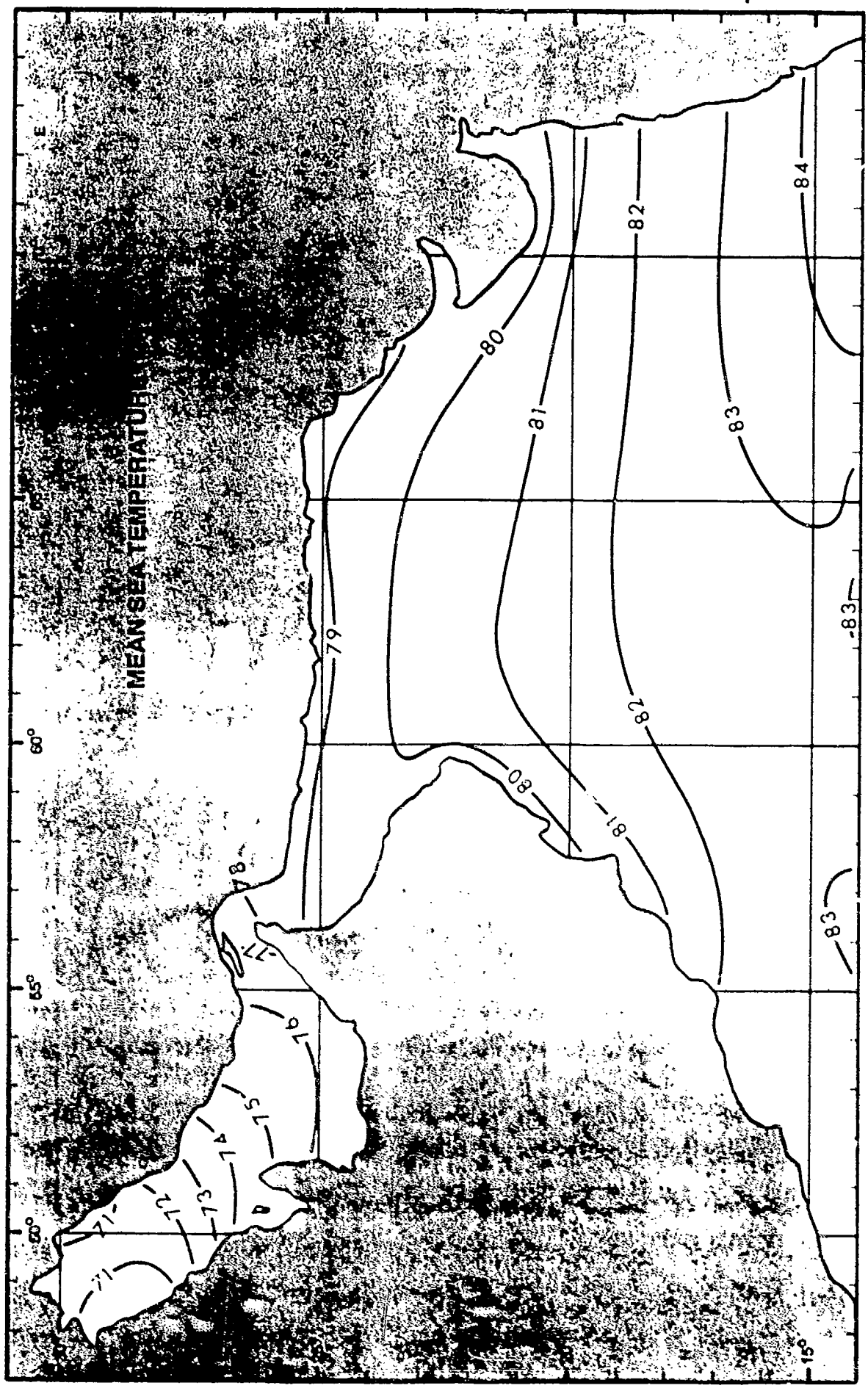
Wind Speed 11-21 and 22-33 Knots

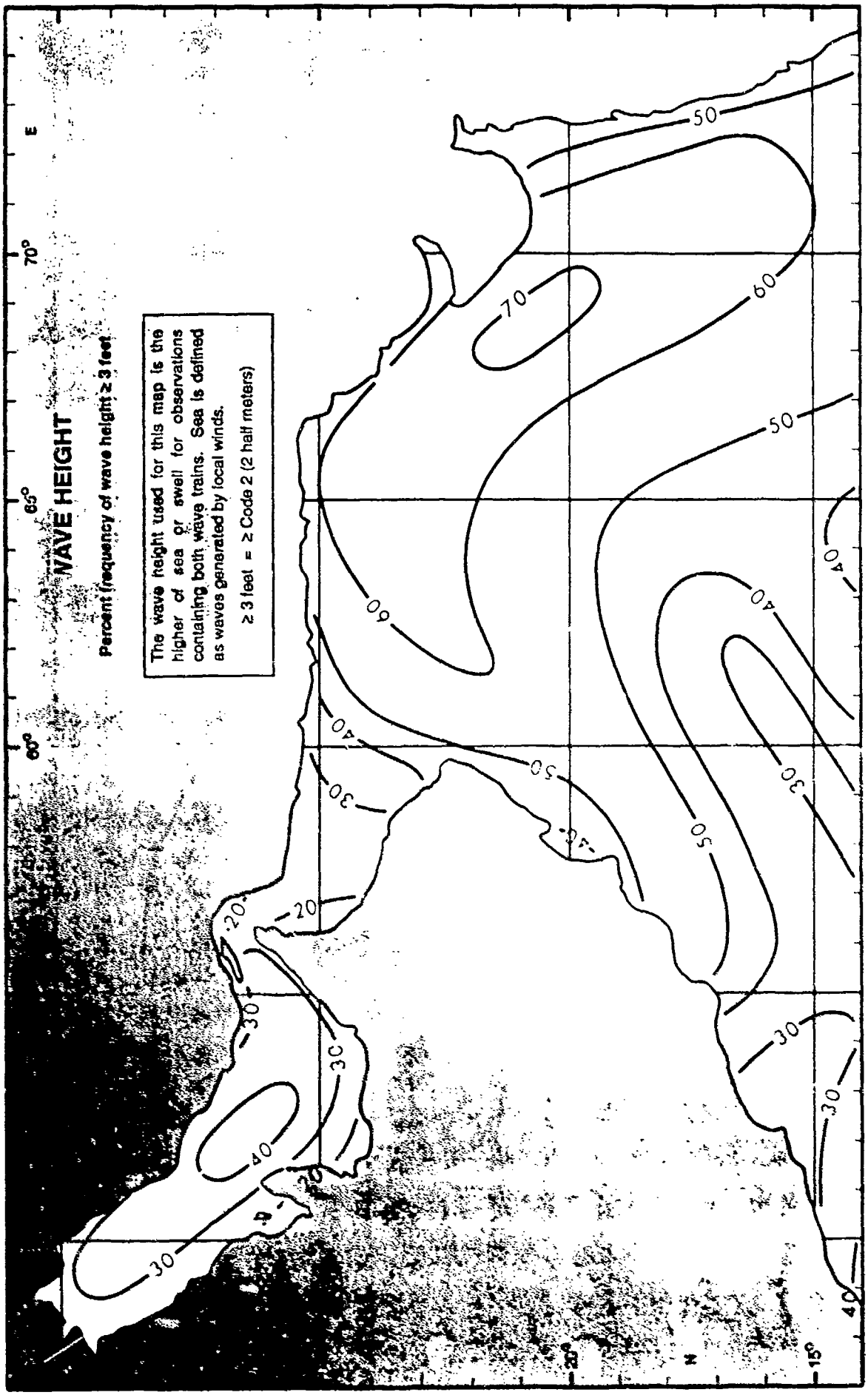



60° E
55°
30°
20°
N
SURFACE WIND ROSES
Direction Frequency : Bars
Each circle = 20%
25% of all winds were from north.
4
6
12
10
5
13
Percent of calms.
Mean speed (knots) is indicated by the printed number at the end of each bar: Mean scalar speed of all observed east winds was 10 knots.
285/7.1
Mean scalar speed.
Observation count.

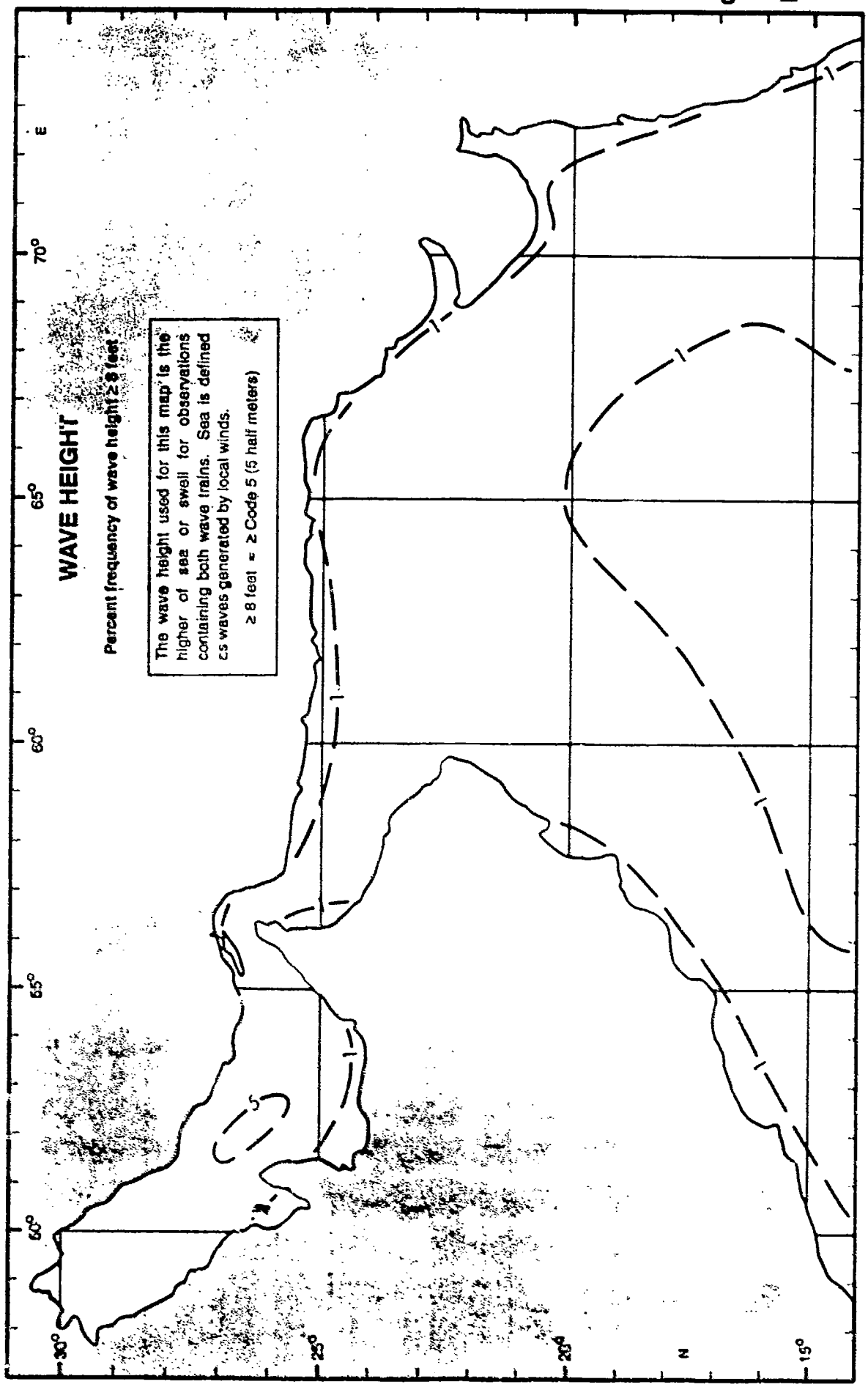

E
30°
25°
20°

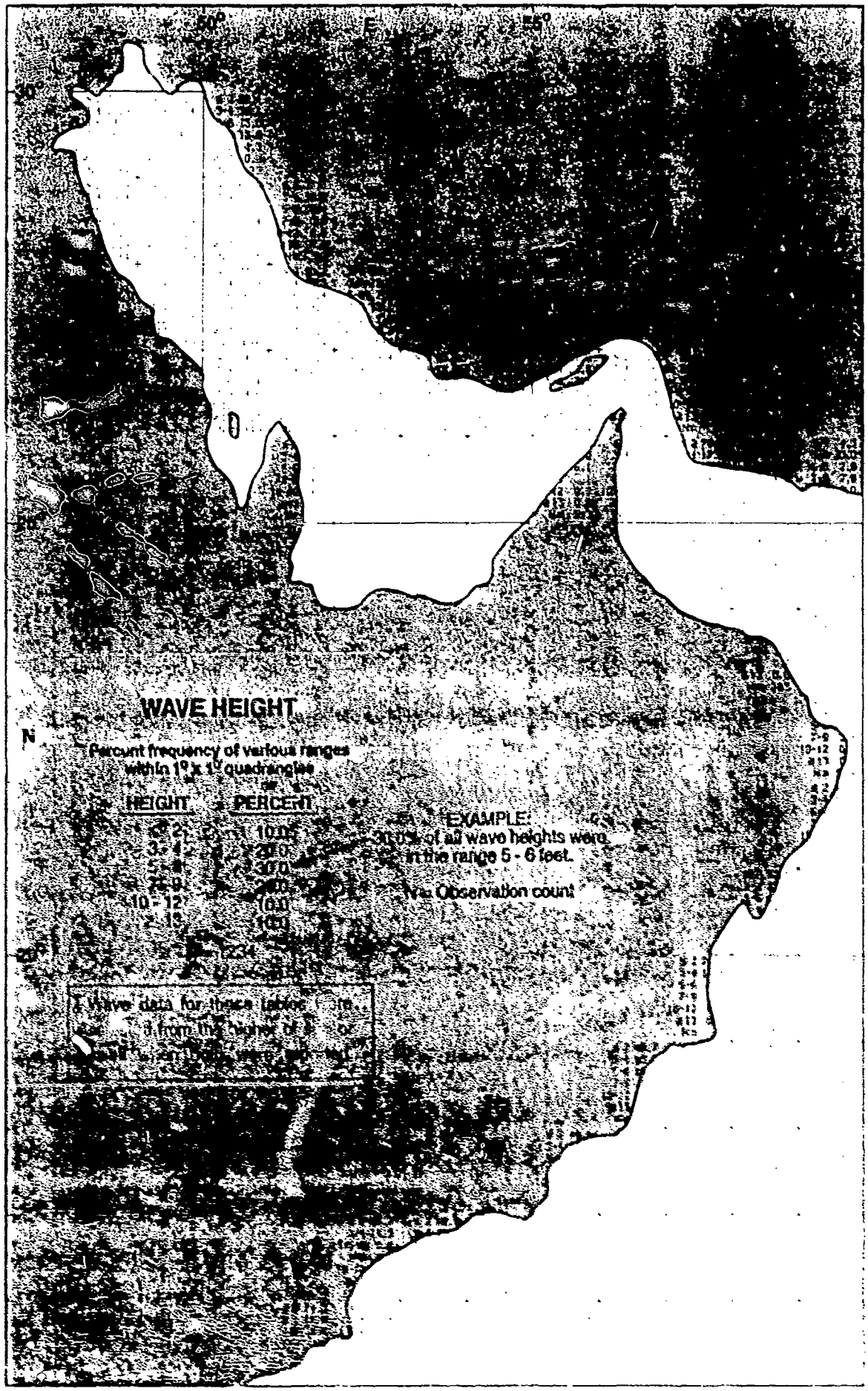

MEAN AIR TEMPERATURE (°F)
84
83.5
83
82.5
82
81.5
81
80
79
78
77
76
75
74
73
E
70°
65°
60°
55°
50°
30°
25°
20°
N
15°

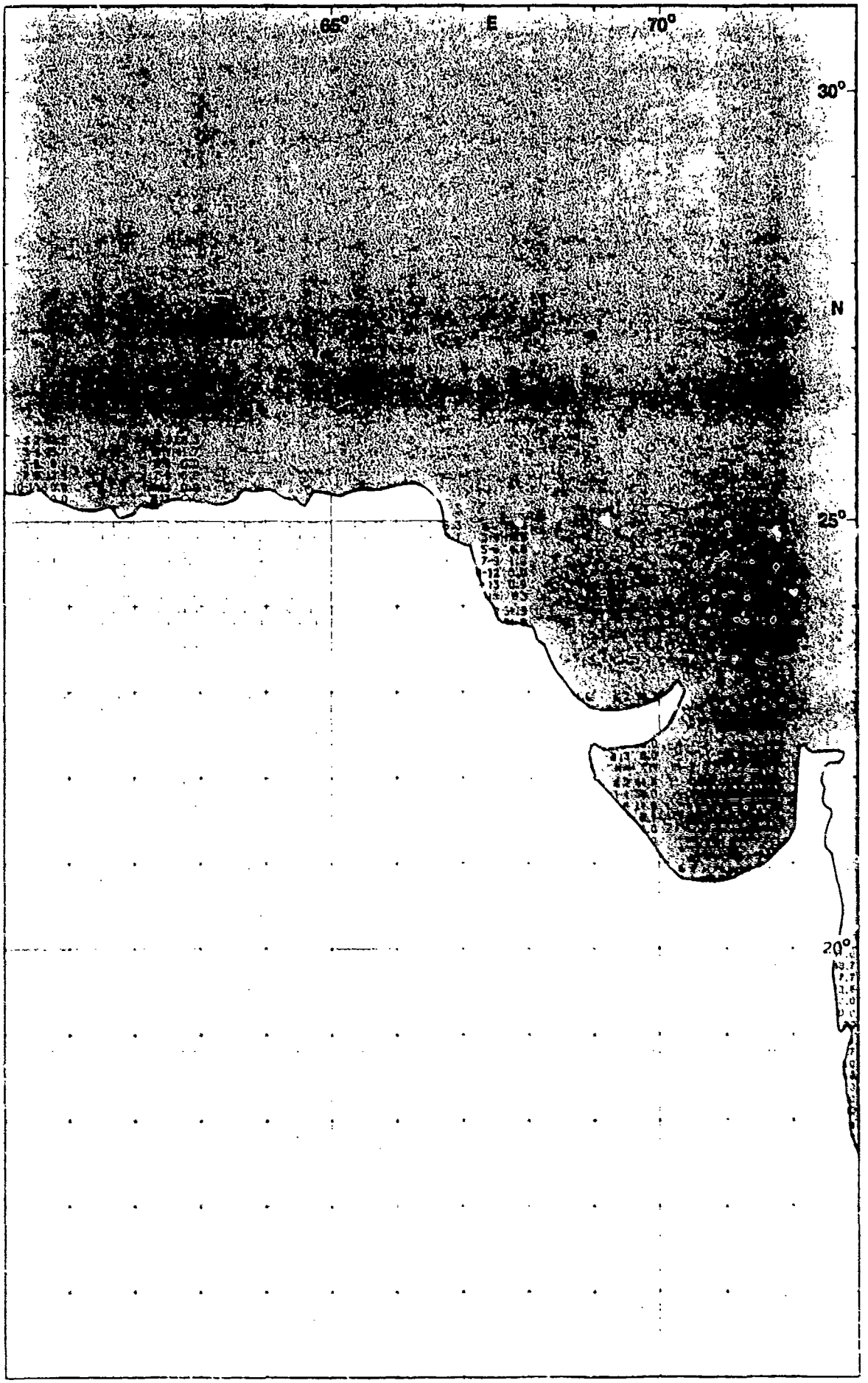

MEAN SEA TEMPERATURE
80°
65°
60°
15°
79
80
81
82
83
84
77
76
75
74
73
72
71


WAVE HEIGHT
Percent frequency of wave height ≥ 3 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 3 feet = ≥ Code 2 (2 half meters)
60°
65°
70°
E
N
15°
20°
10
20
30
40
50
60
70

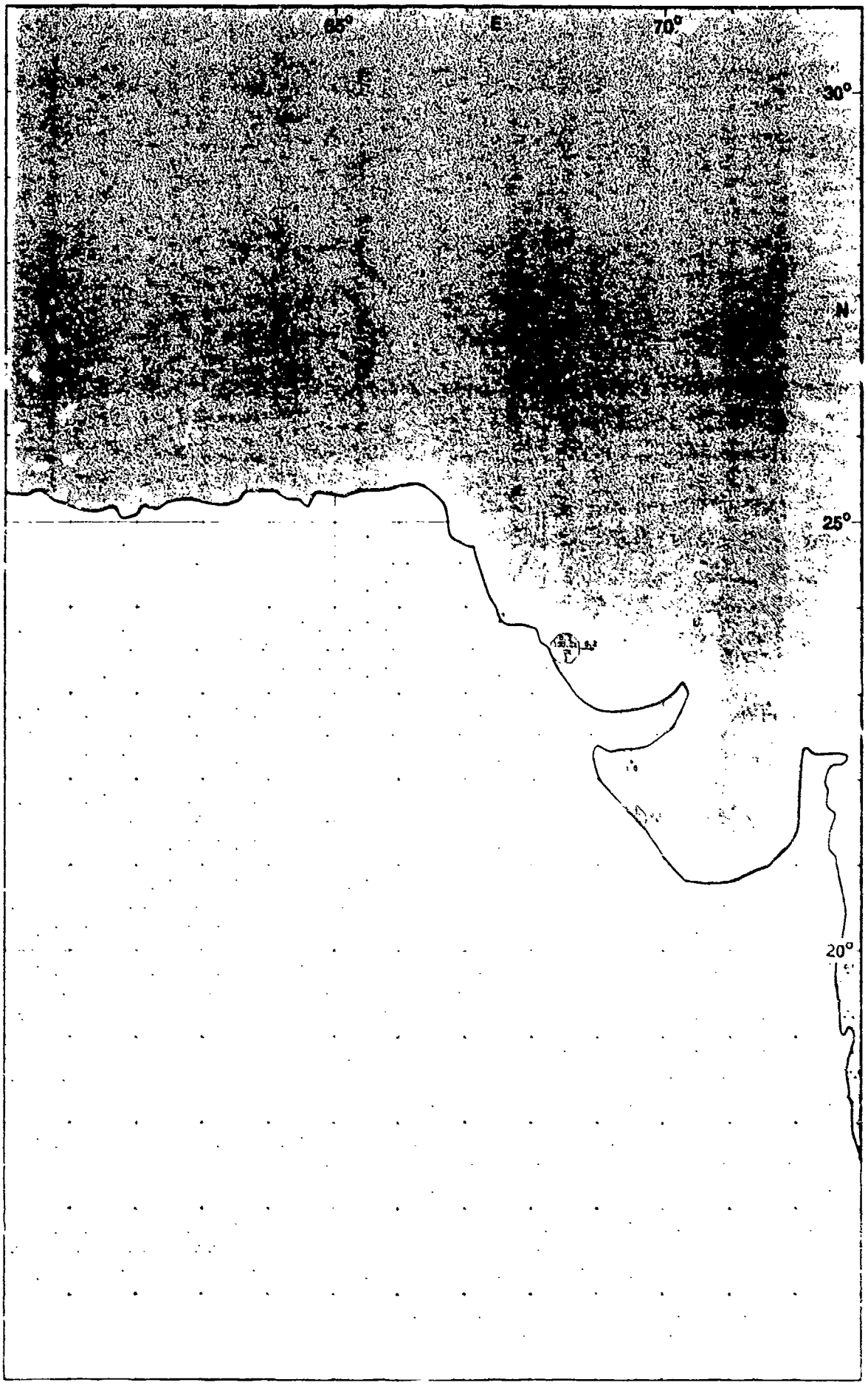
Wave Height ≥ 8 Ft.

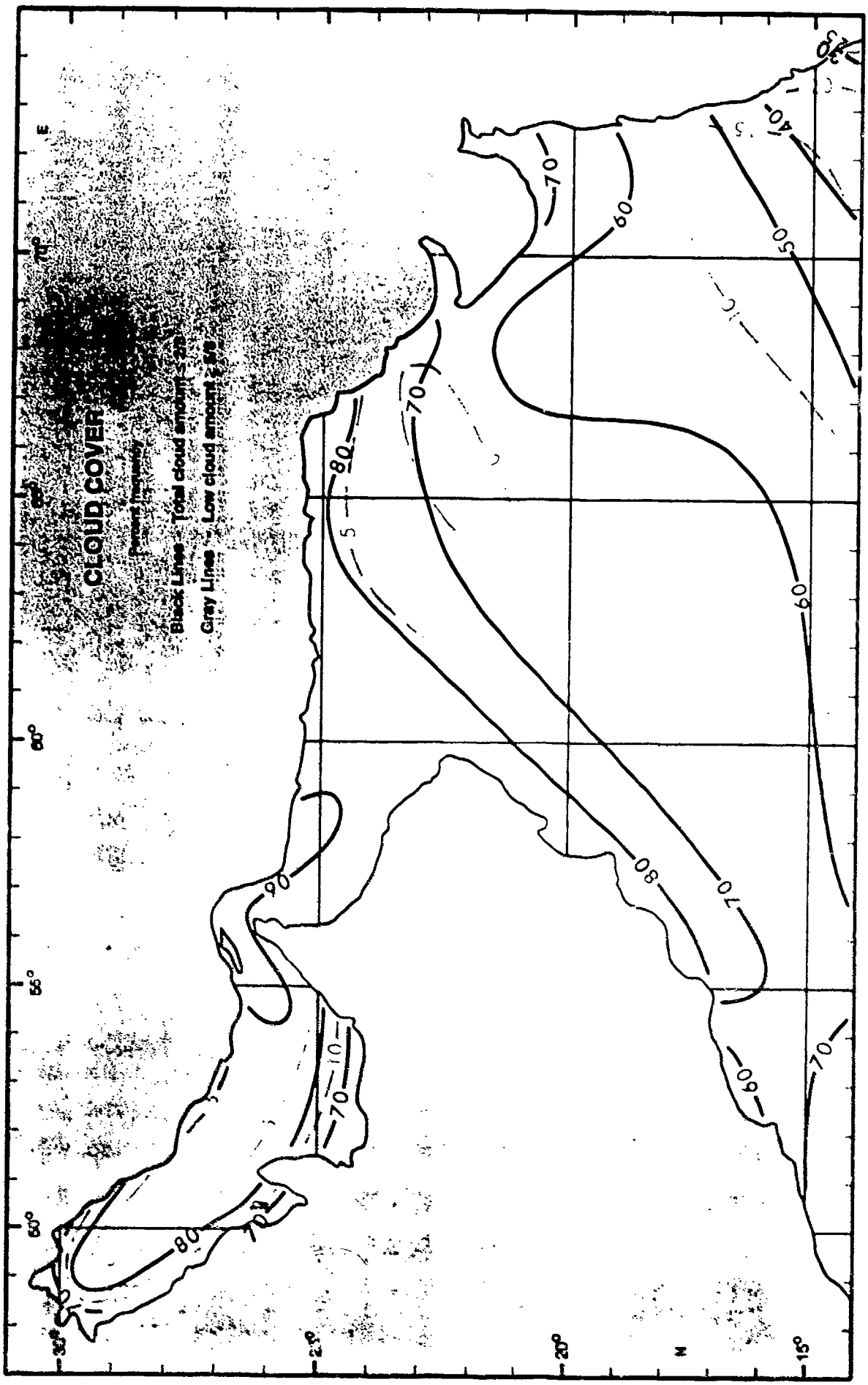


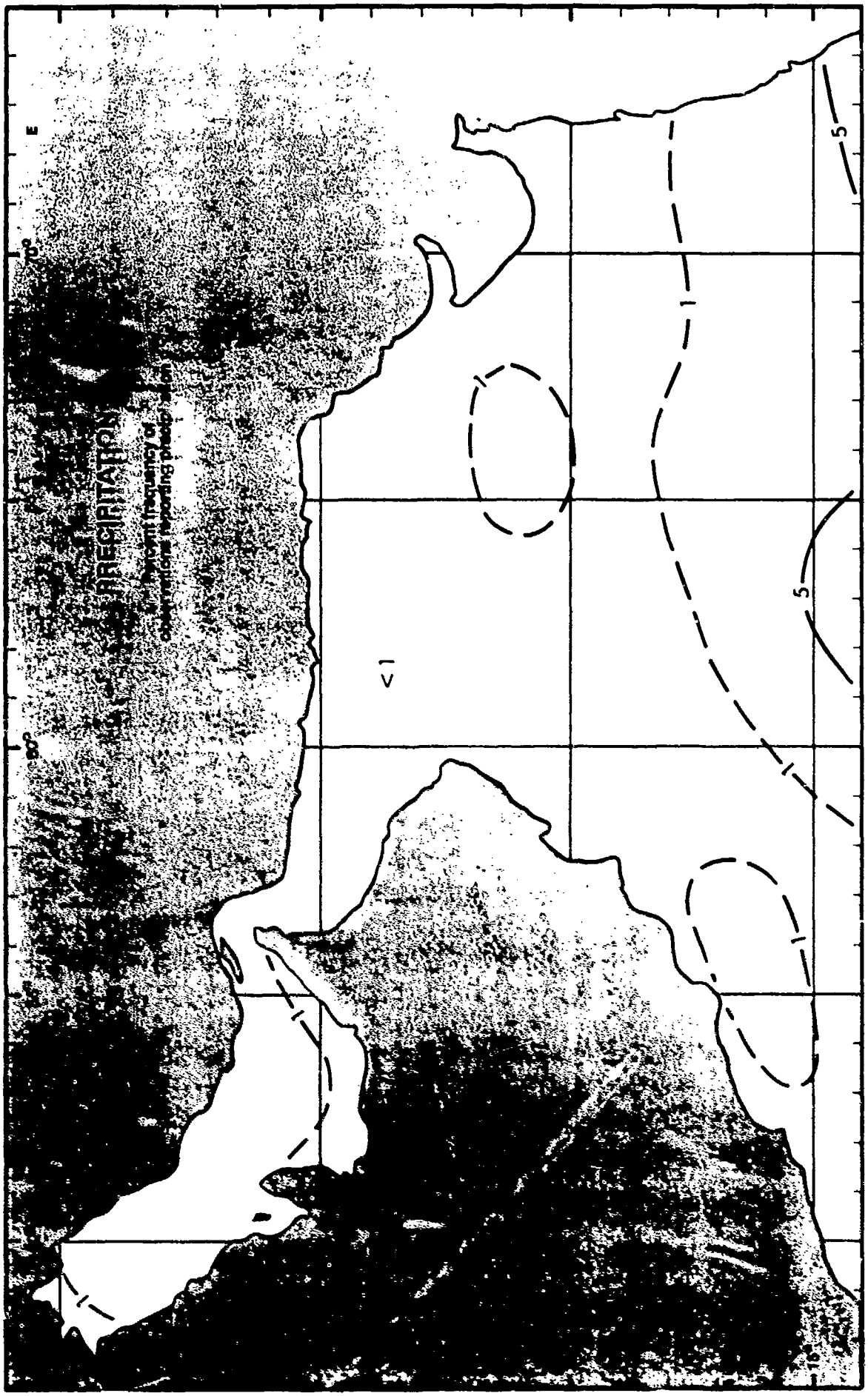

WAVE HEIGHT
Percent frequency of various ranges within 1° x 1° quadrangles
HEIGHT PERCENT
EXAMPLE:
30.0% of all wave heights were in the range 5 - 6 feet.
N= Observation count

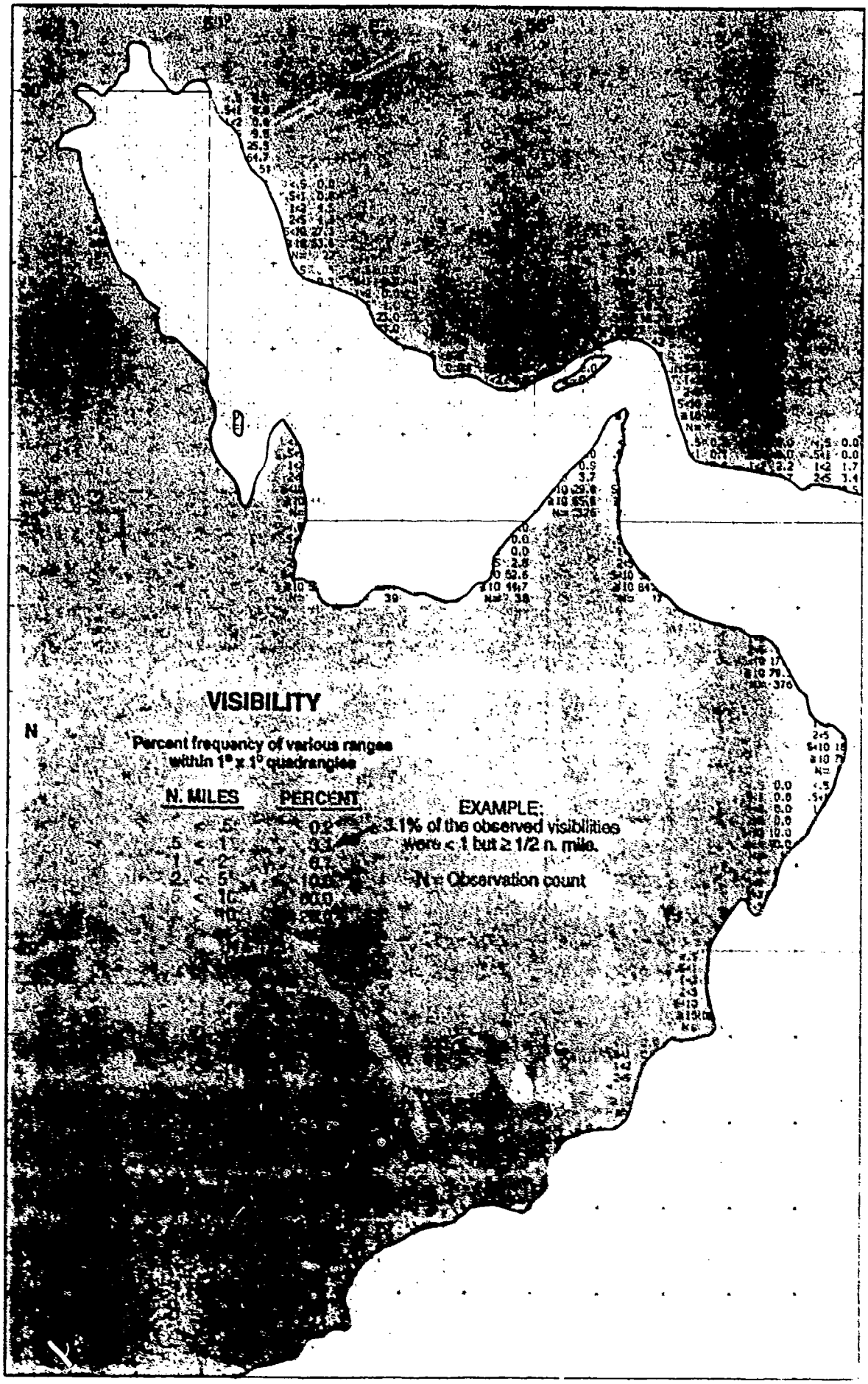

65°
E
70°
30°
N
25°
20°


SURFACE CURRENTS
Solid Arrow(s) - Prevailing current direction(s)
Dashed Arrow(s) - Secondary current direction(s)

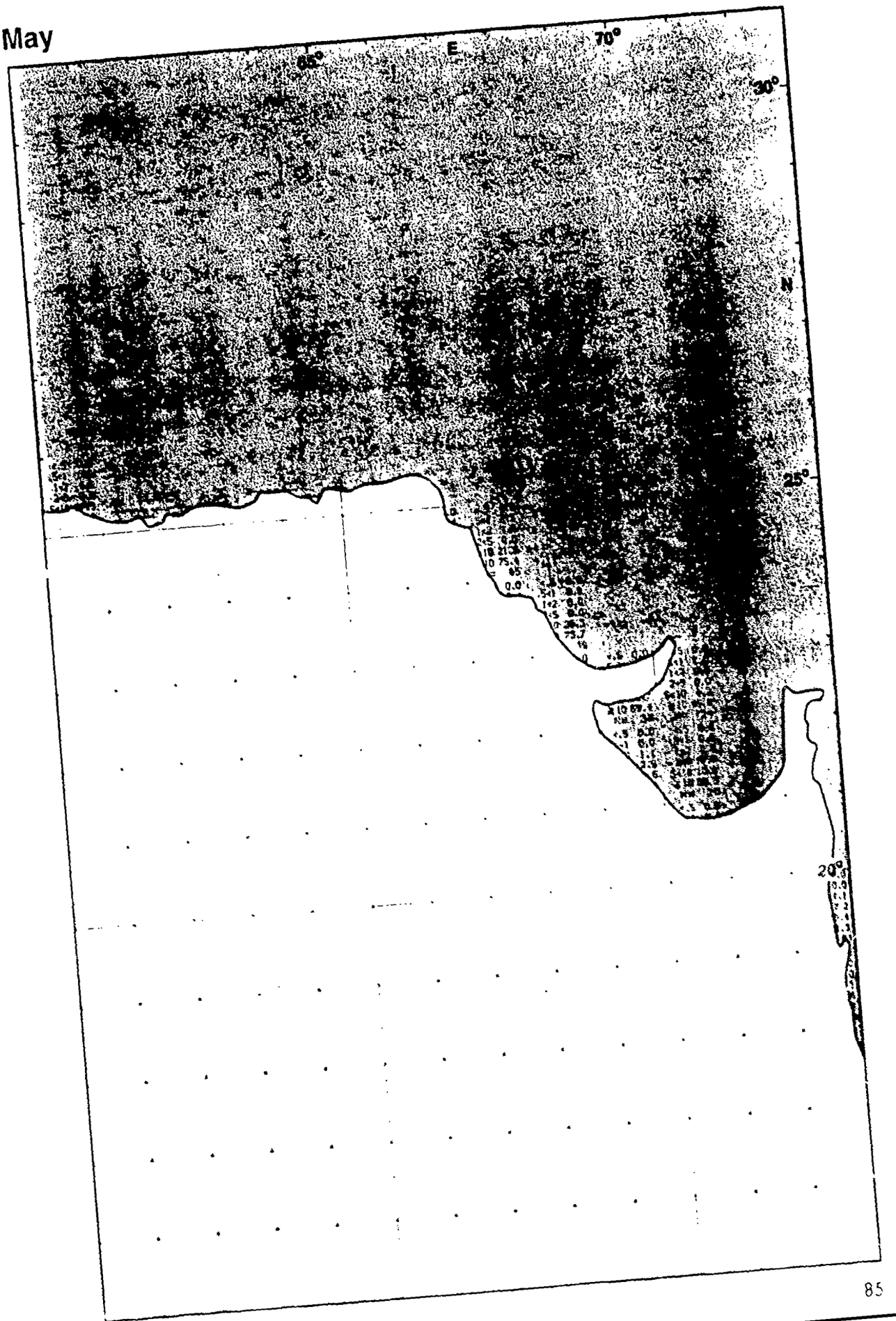

65°
E
70°
30°
N
25°
20°


CLOUD COVER
Black Lines — Total cloud amount
Gray Lines — Low cloud amount
70
60
50
40
80
90
10
5
35°
30°
25°
20°
15°
N
60°
55°
50°
45°
E

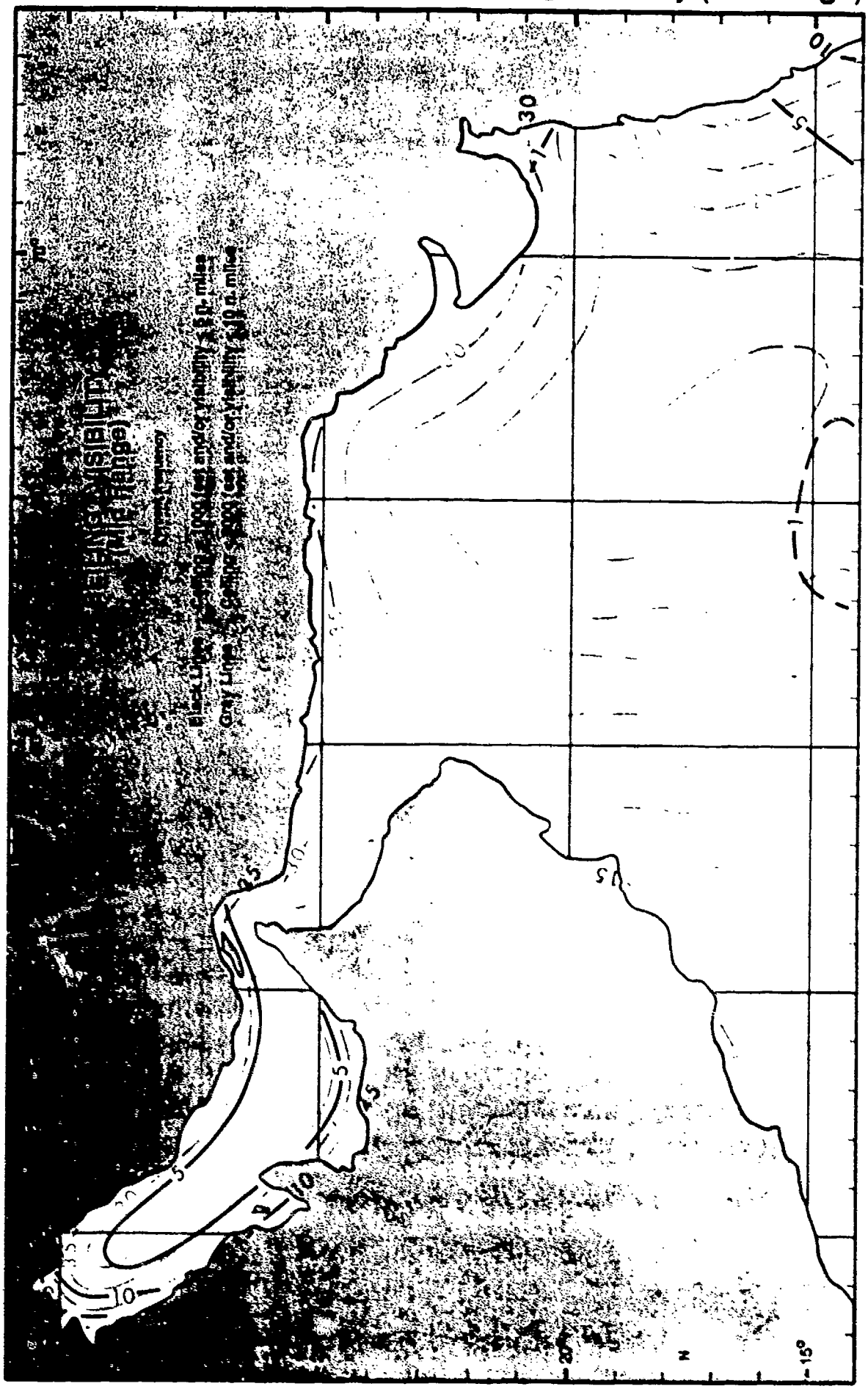

PRECIPITATION
Percent frequency of
observations reporting precipitation
80°
E
<1
1
5
5
1


VISIBILITY
Percent frequency of various ranges within 1° x 1° quadrangles
N. MILES
PERCENT
EXAMPLE:
3.1% of the observed visibilities were < 1 but ≥ 1/2 n. mile.
N = Observation count

May

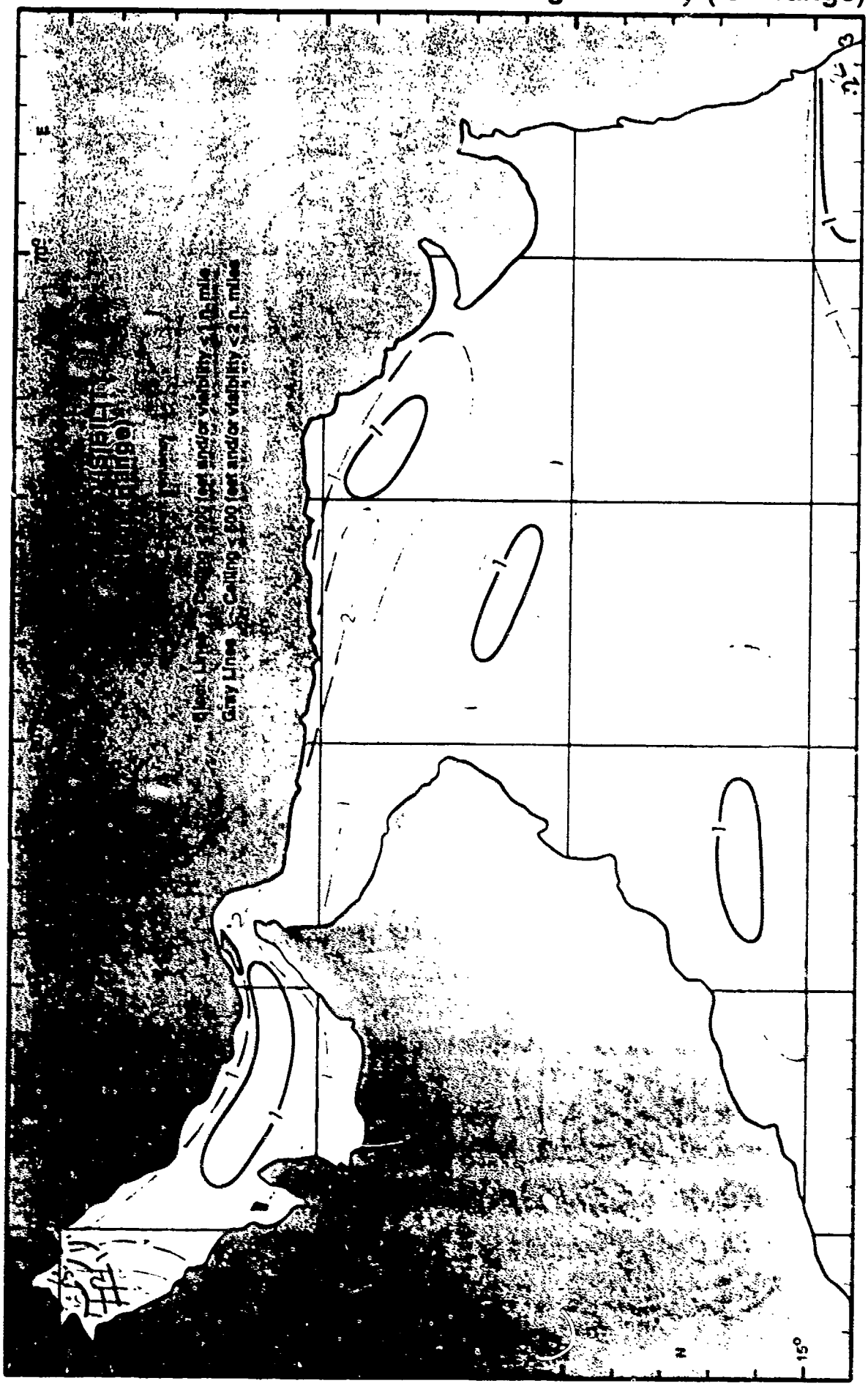


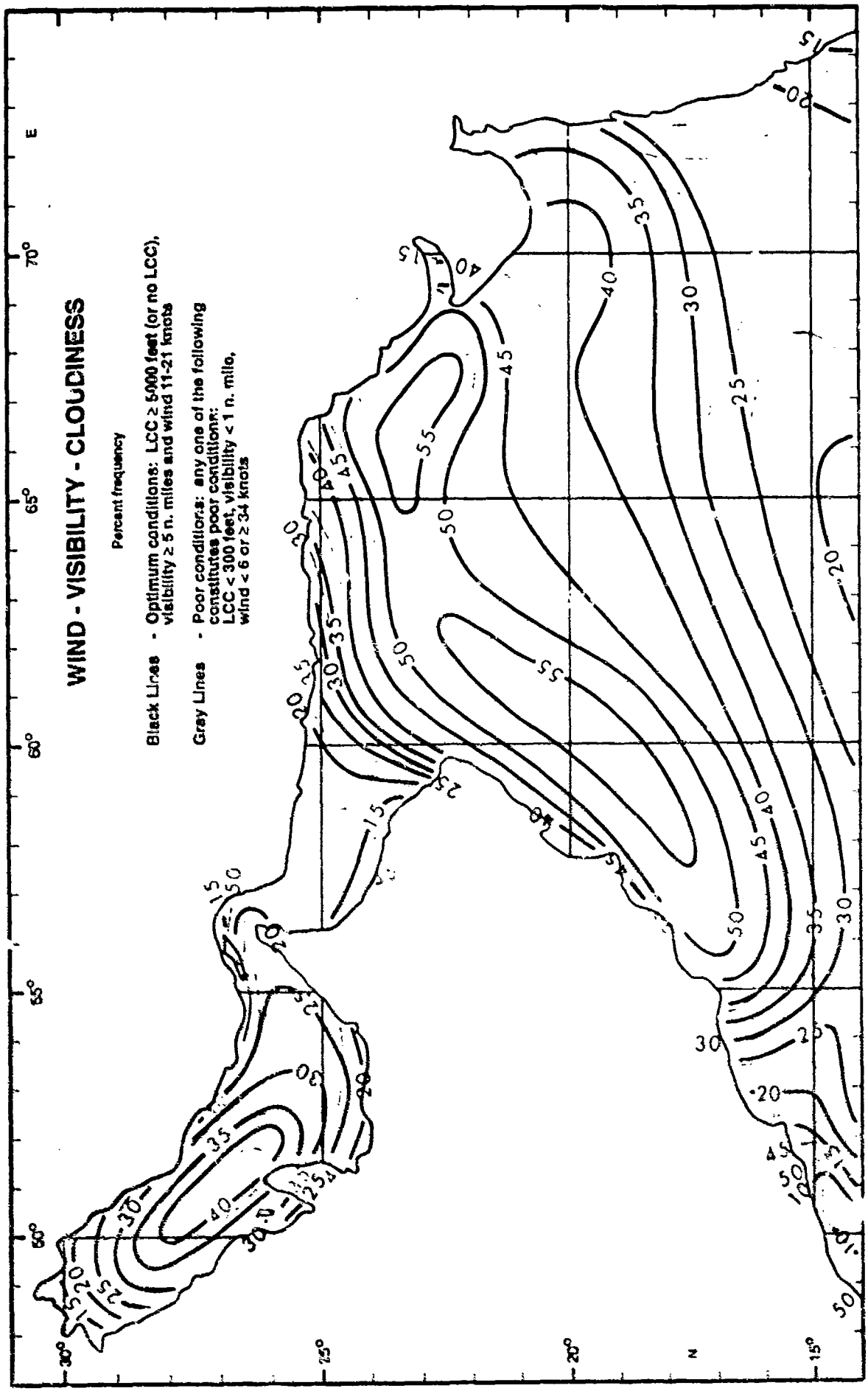
Ceiling-Visibility (mid range)



May

Ceiling-Visibility (low range)

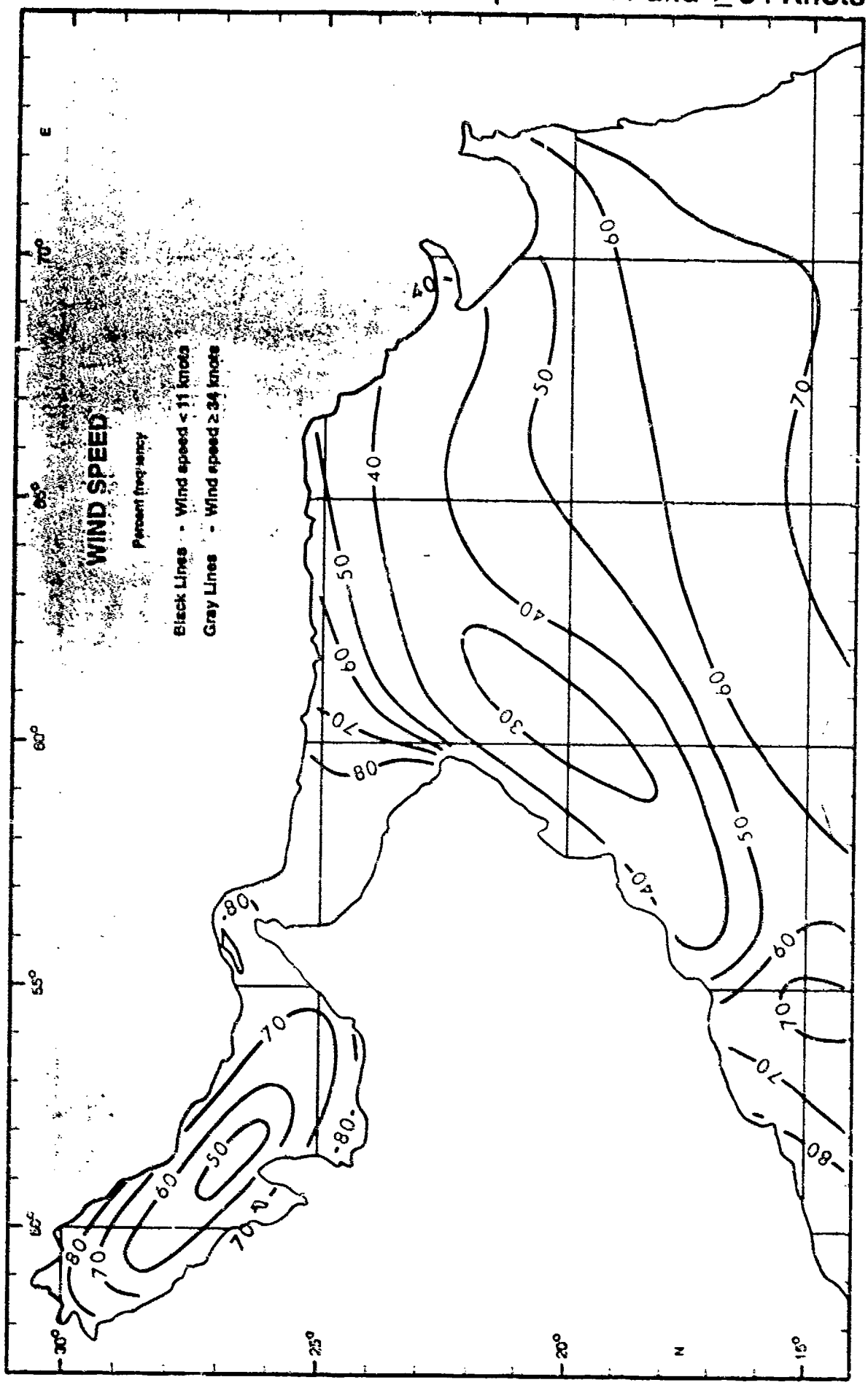



WIND - VISIBILITY - CLOUDINESS
Percent frequency
Black Lines - Optimum conditions: LCC ≥ 5000 feet (or no LCC), visibility ≥ 5 n. miles and wind 11-21 knots
Gray Lines - Poor conditions: any one of the following constitutes poor conditions: LCC < 300 feet, visibility < 1 n. mile, wind < 6 or ≥ 34 knots
70° E
65°
60°
55°
50°
30°
25°
20°
15° N

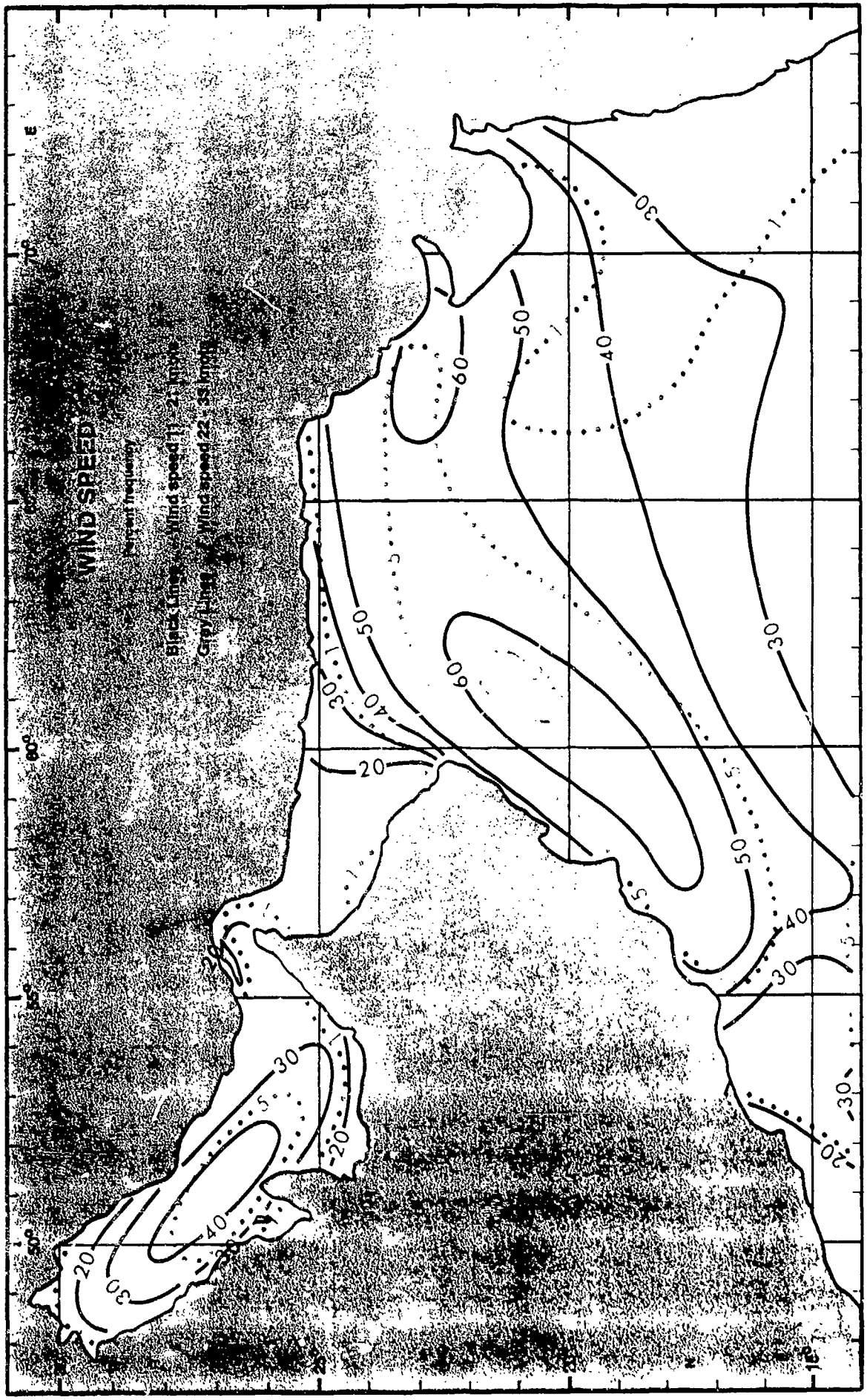
May

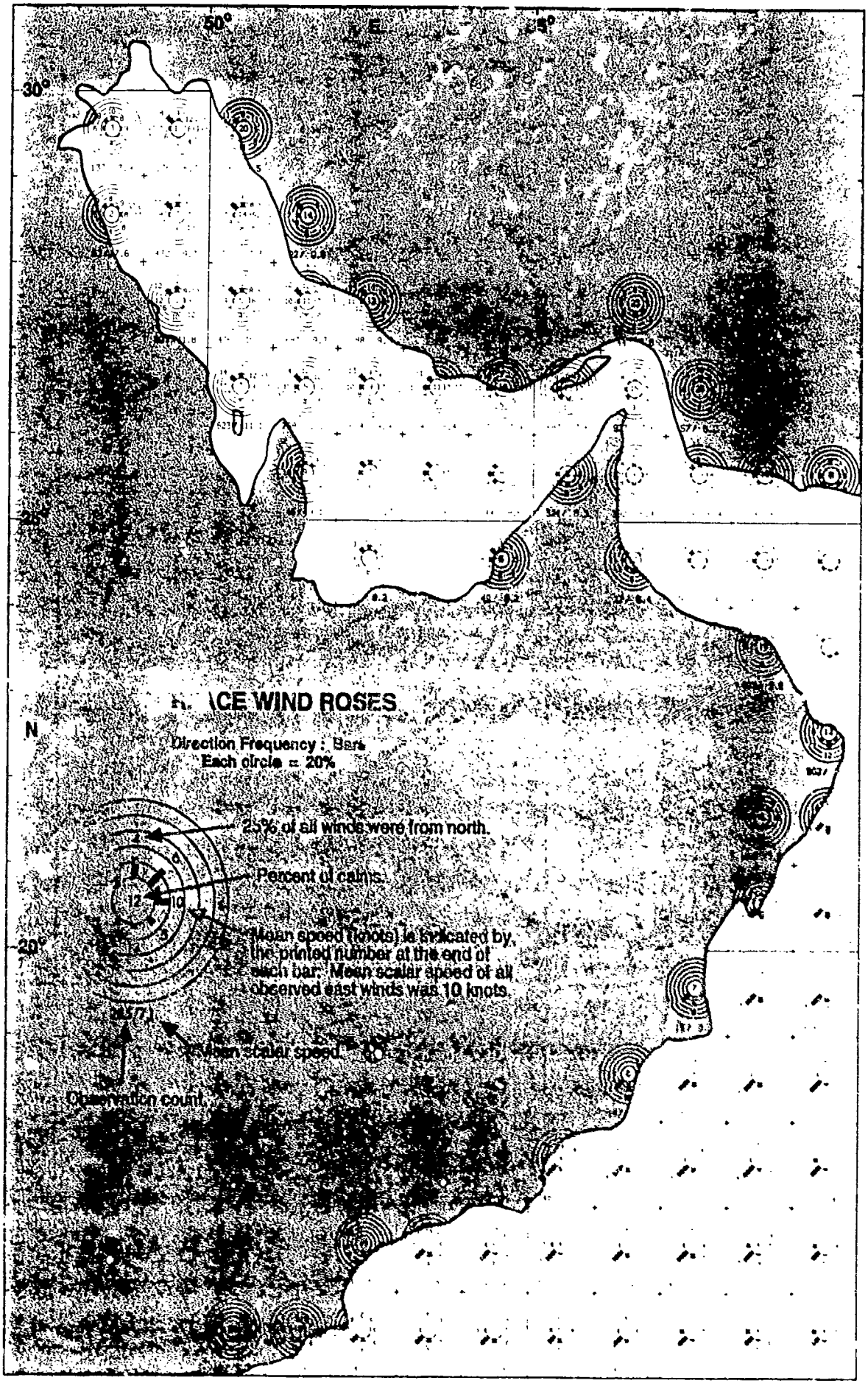
Mean Scalar Wind Speed

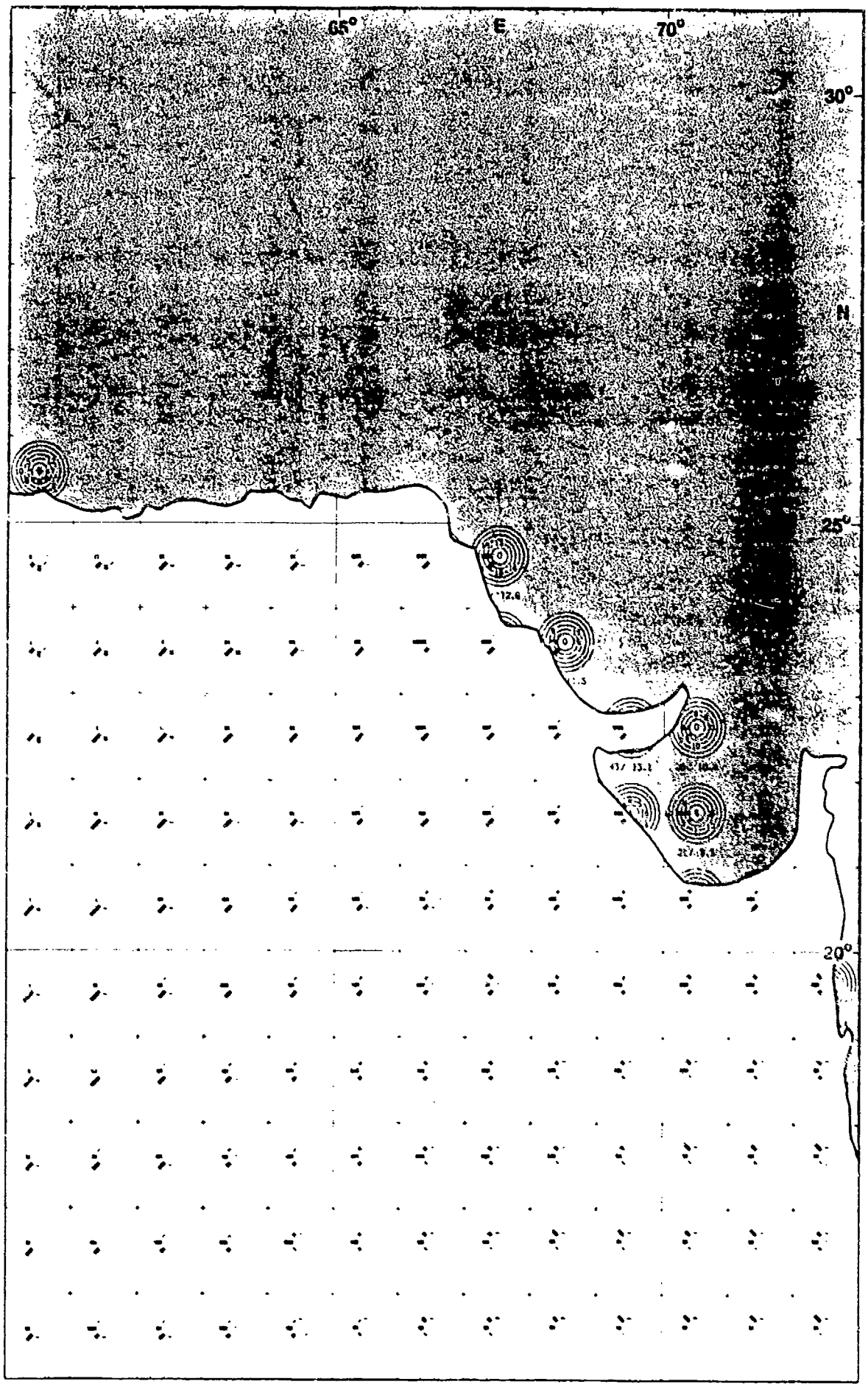
Wind Speed < 11 and ≥ 34 Knots



Wind Speed 11-21 and 22-33 Knots

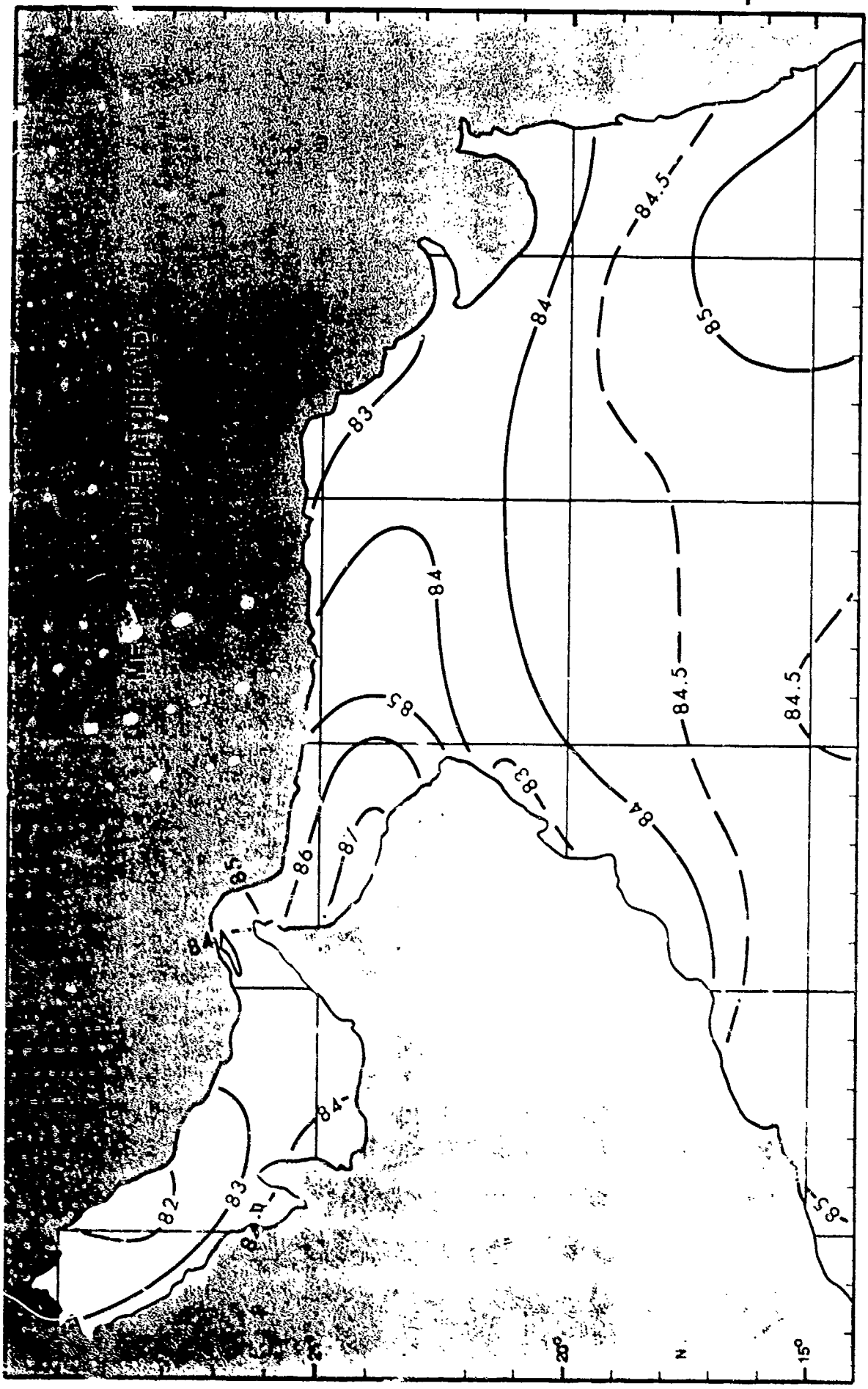



50°
E
45°
30°
25°
20°
N
ICE WIND ROSES
Direction Frequency : Bars
Each circle = 20%
25% of all winds were from north.
Percent of calms.
Mean speed (knots) is indicated by the printed number at the end of each bar. Mean scalar speed of all observed east winds was 10 knots.
Mean scalar speed.
Observation count.

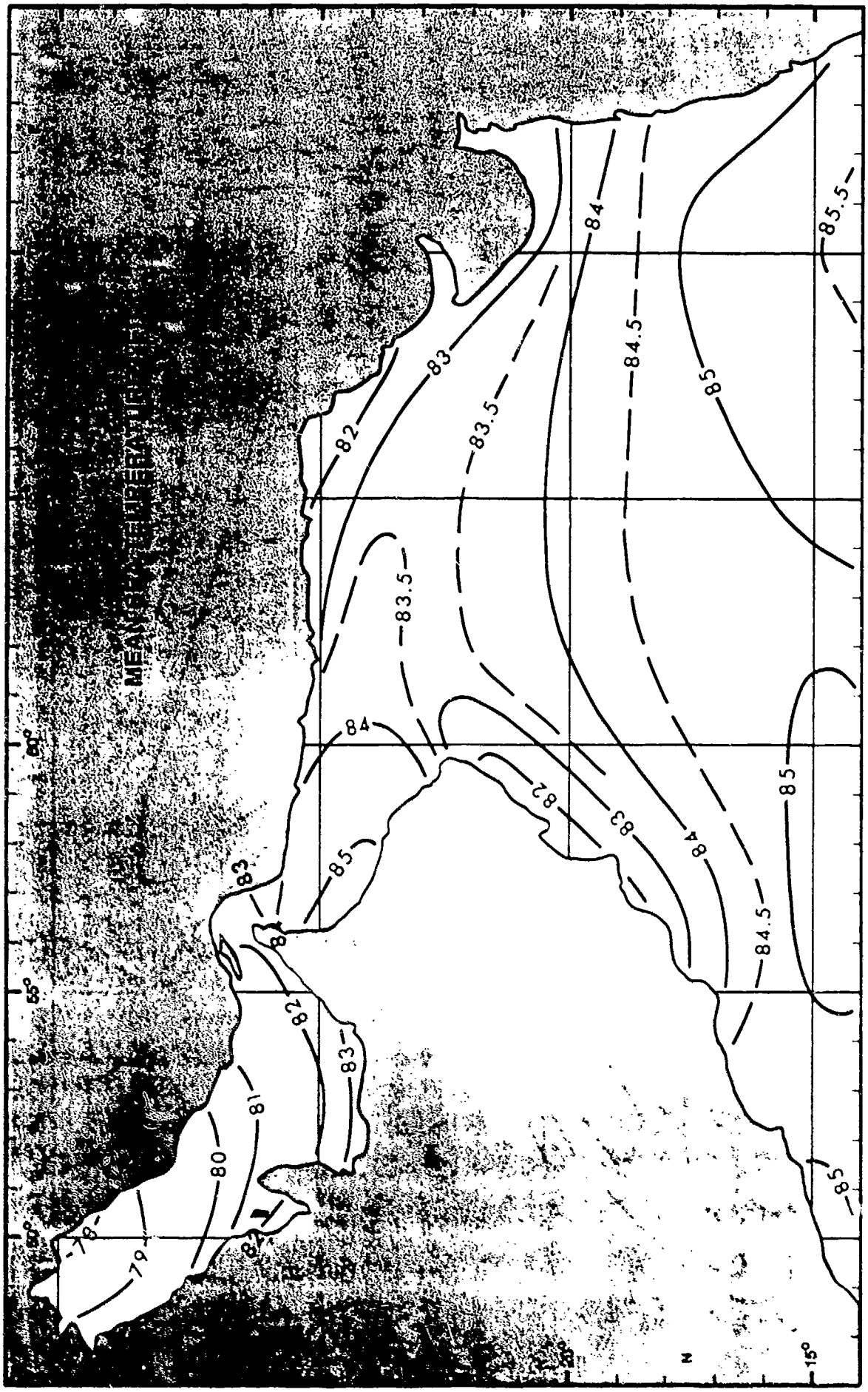

65°
E
70°
30°
N
25°
20°

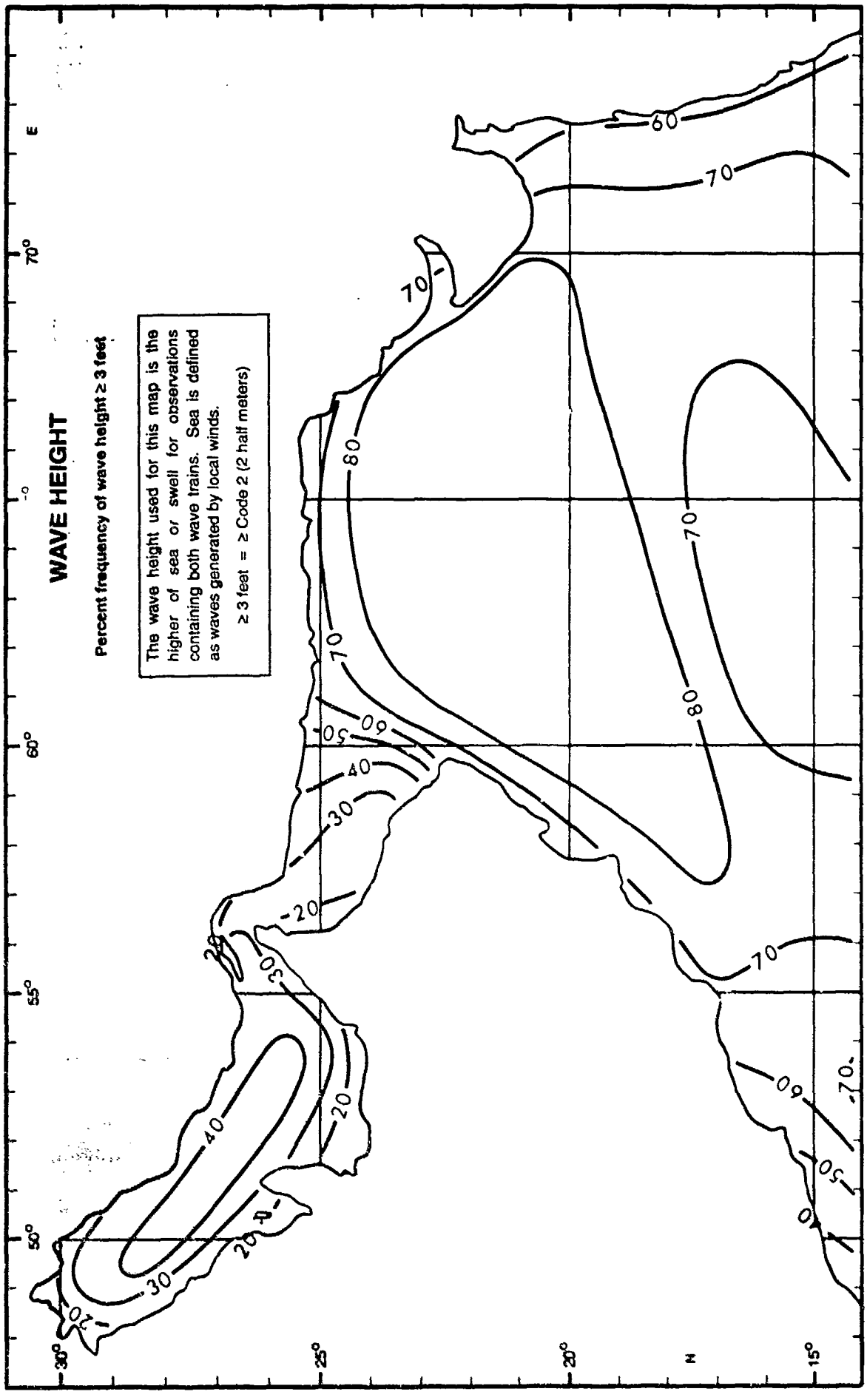
May

Mean Air Temperature

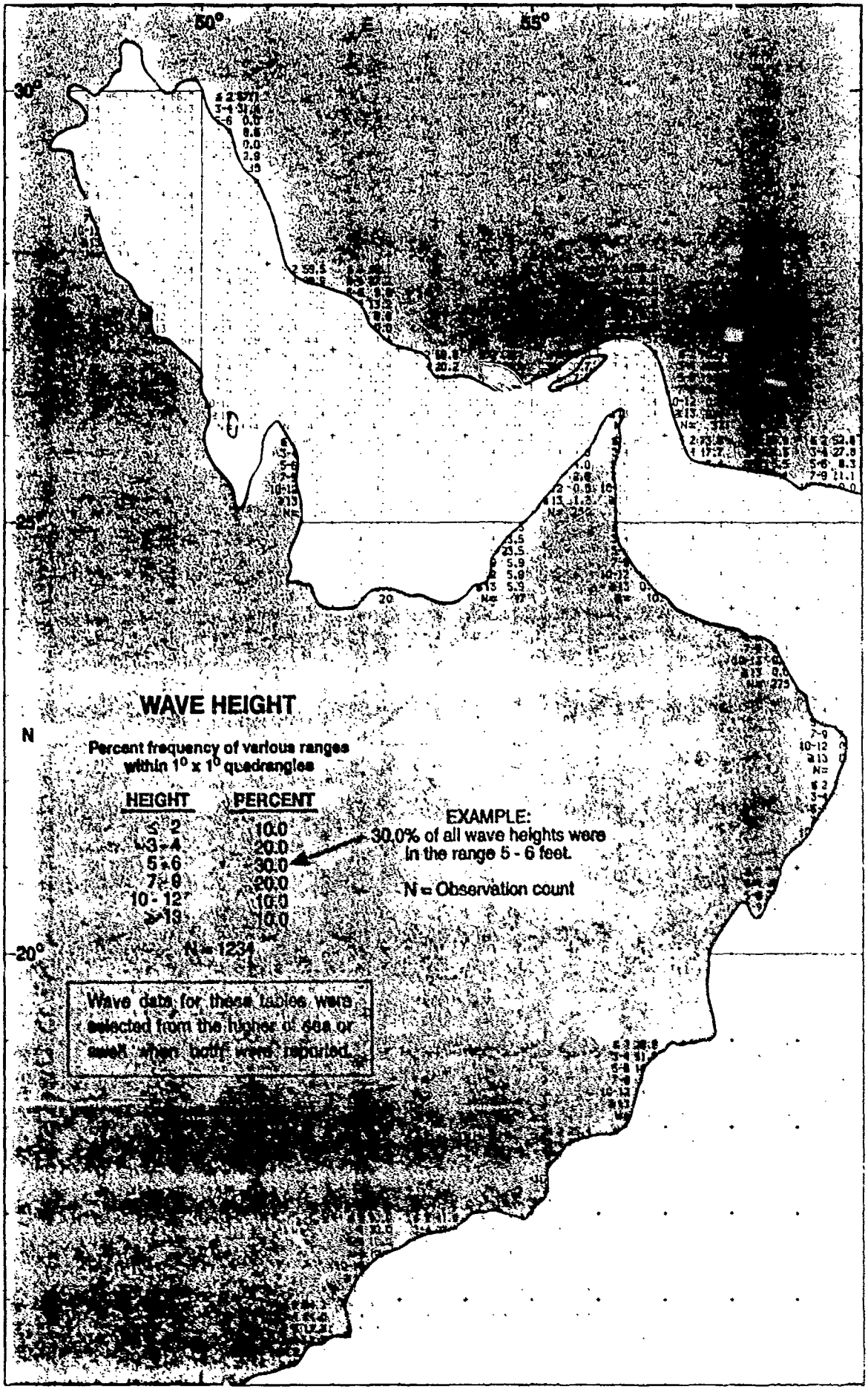


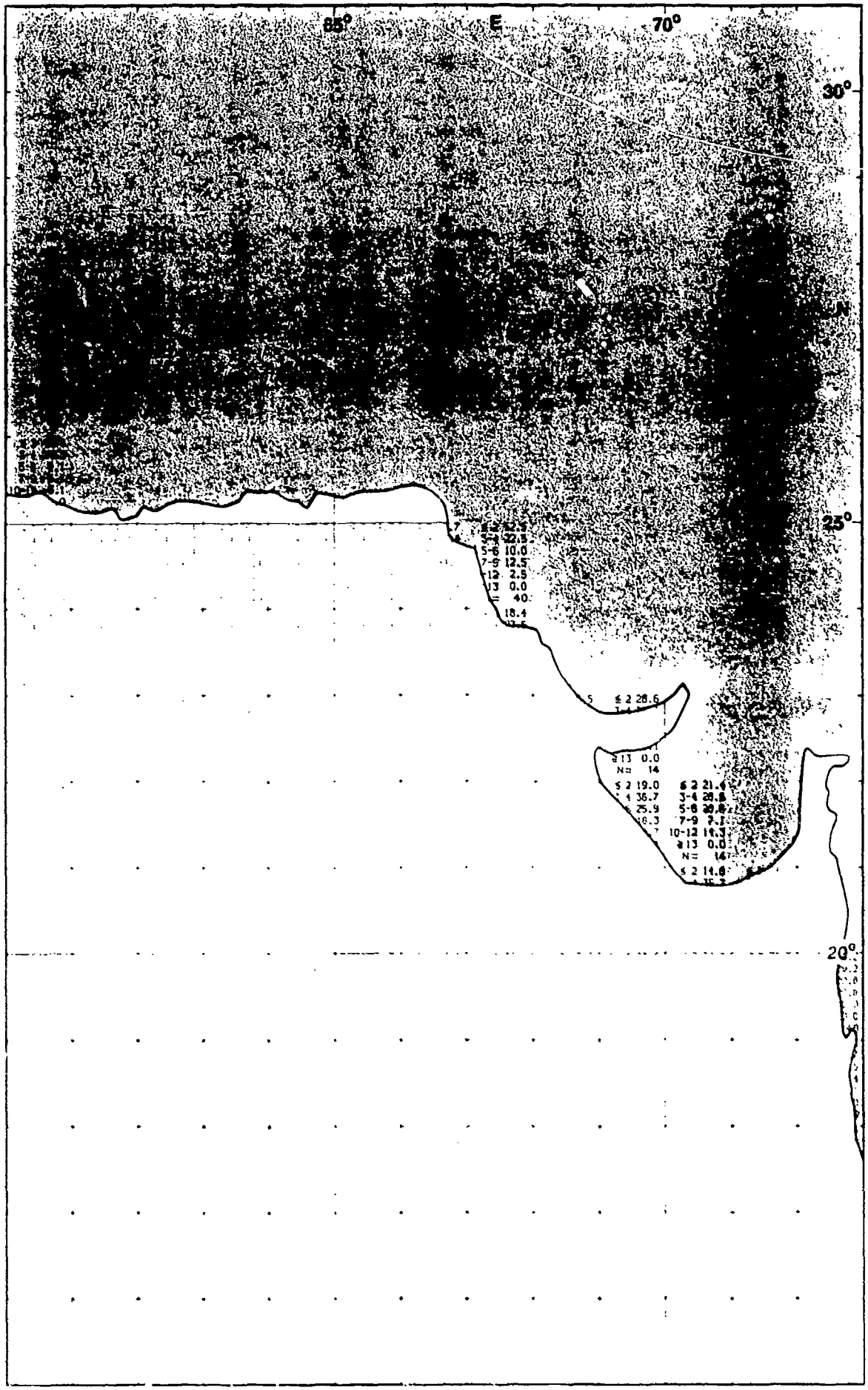
Mean Sea Surface Temperature

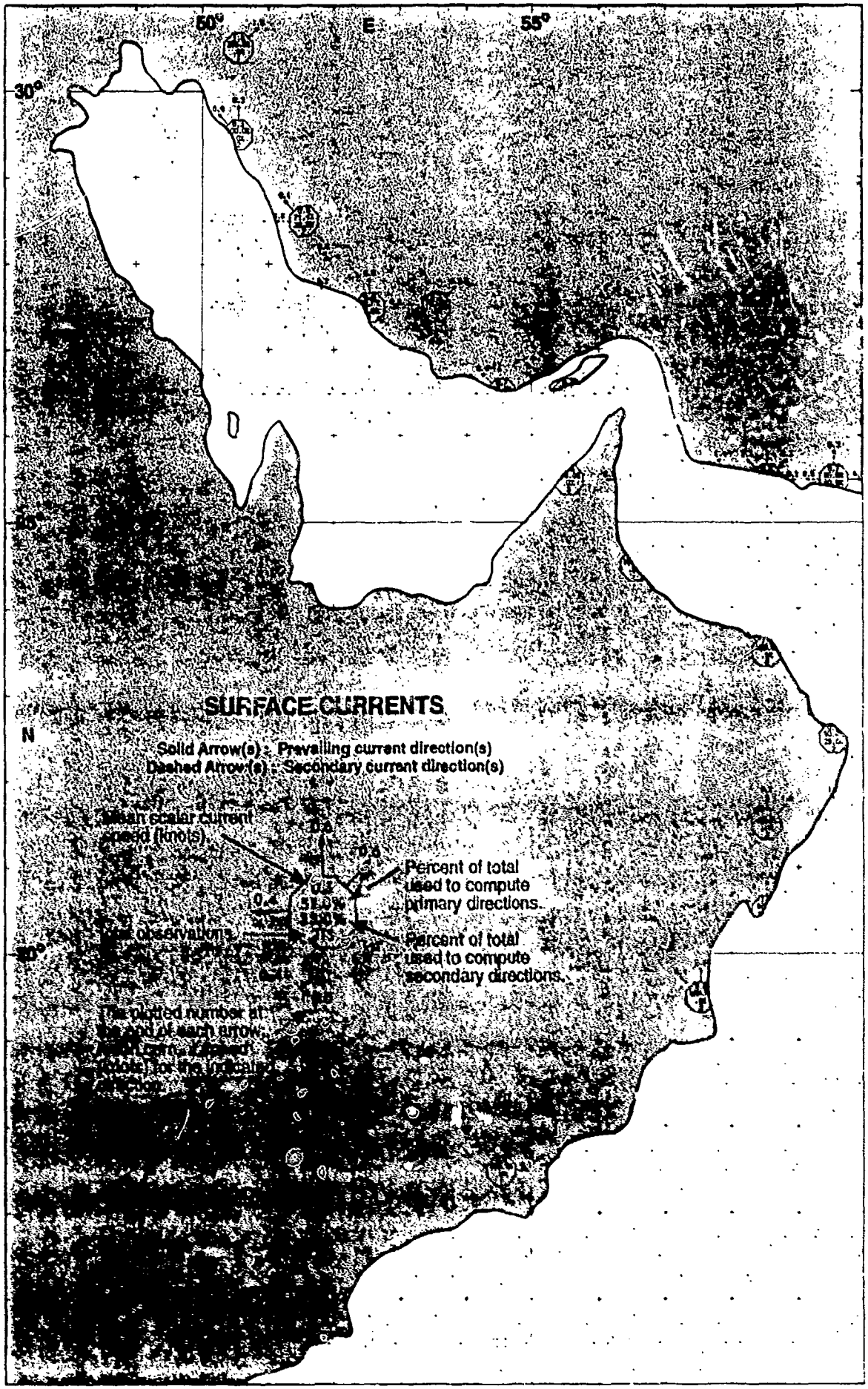


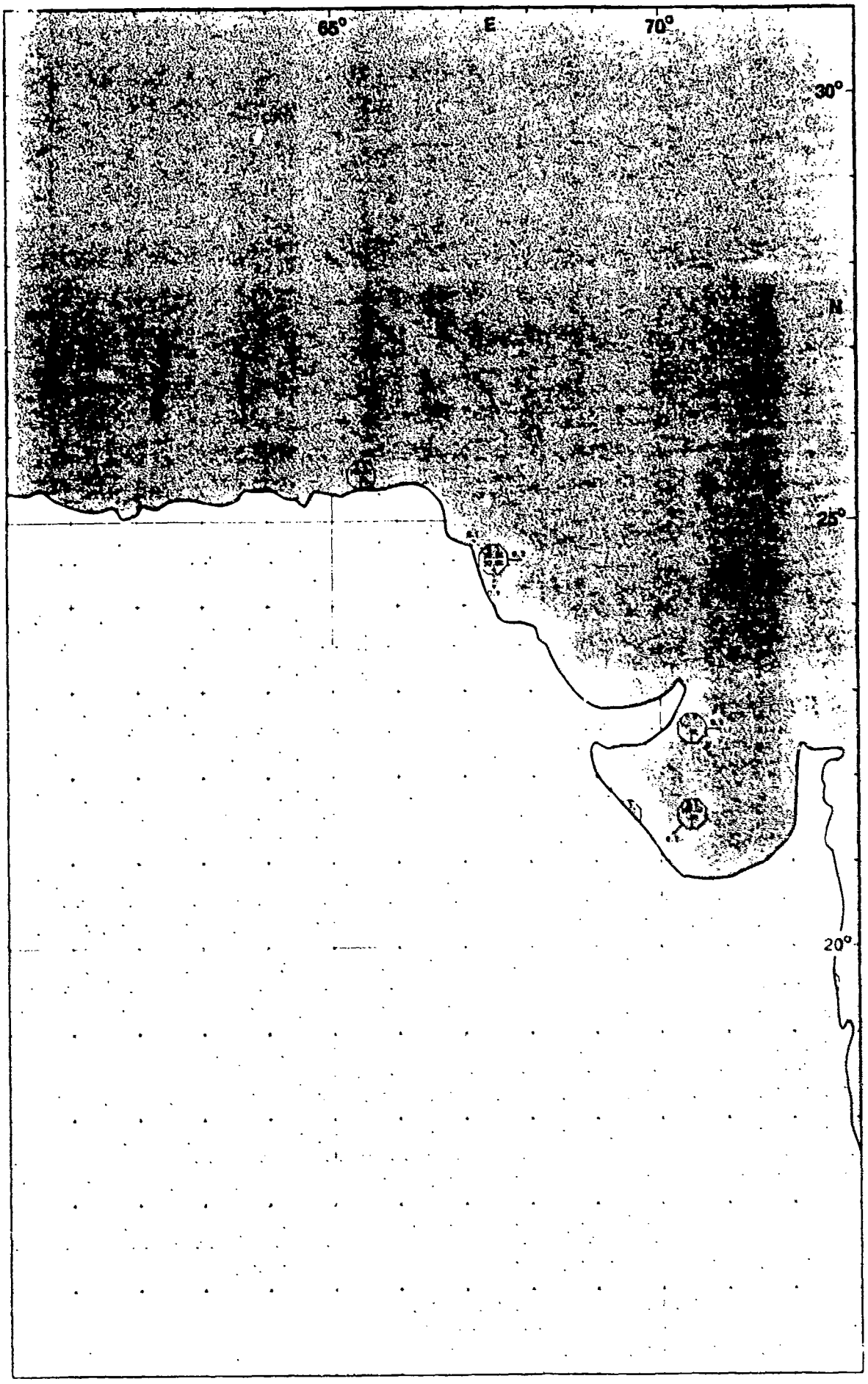

WAVE HEIGHT
Percent frequency of wave height ≥ 3 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 3 feet = ≥ Code 2 (2 half meters)
70°
60°
55°
50°
30°
25°
20°
15°
E
N
60
70
80
50
40
30
20
10
0

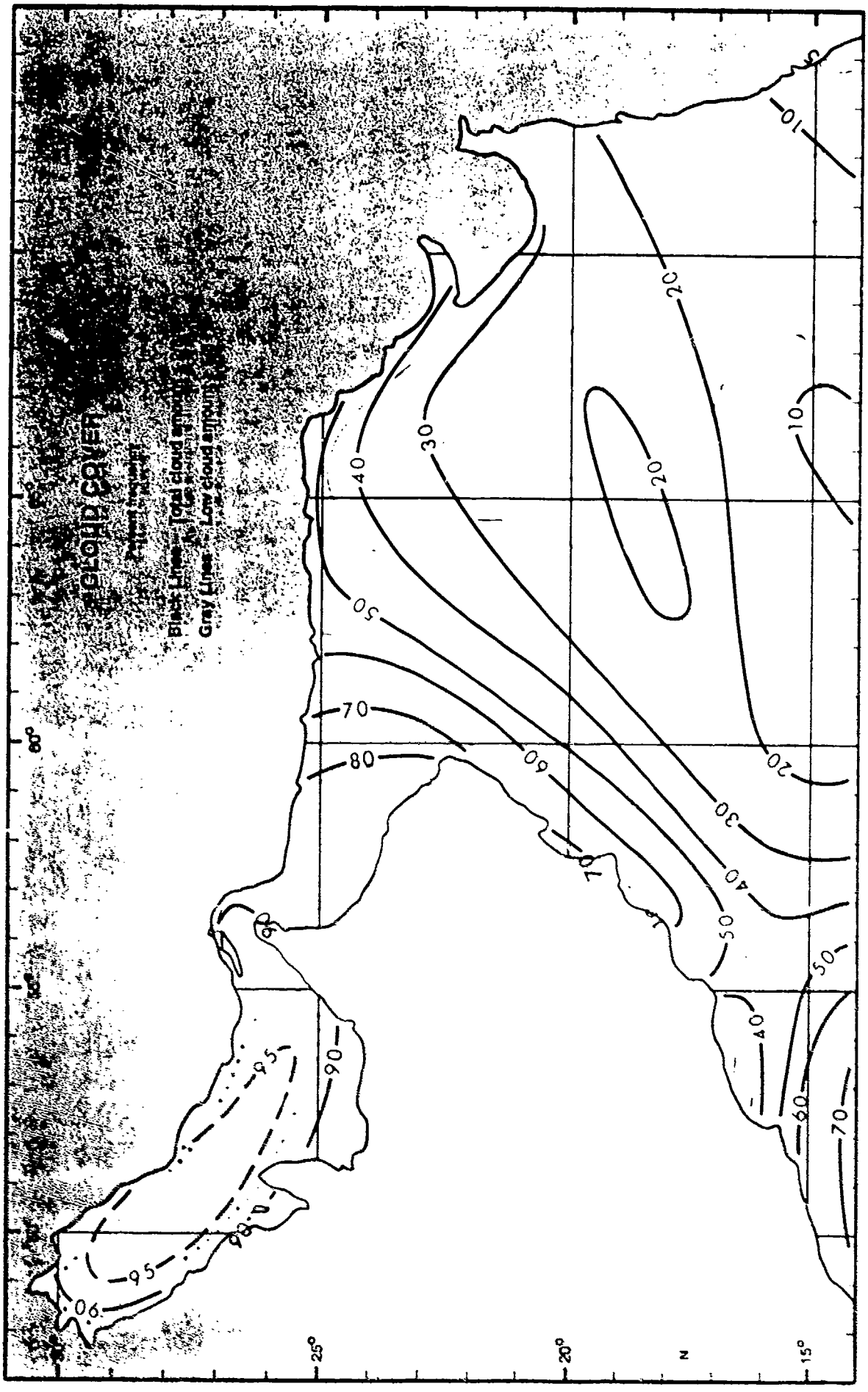
WAVE HEIGHT
Percent frequency of wave height ≥ 8 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 8 feet = ≥ Code 5 (5 half meters)
70°
65°
60°
55°
50°
E
1
5
10
10
5
1
1
5
10
15
5
1

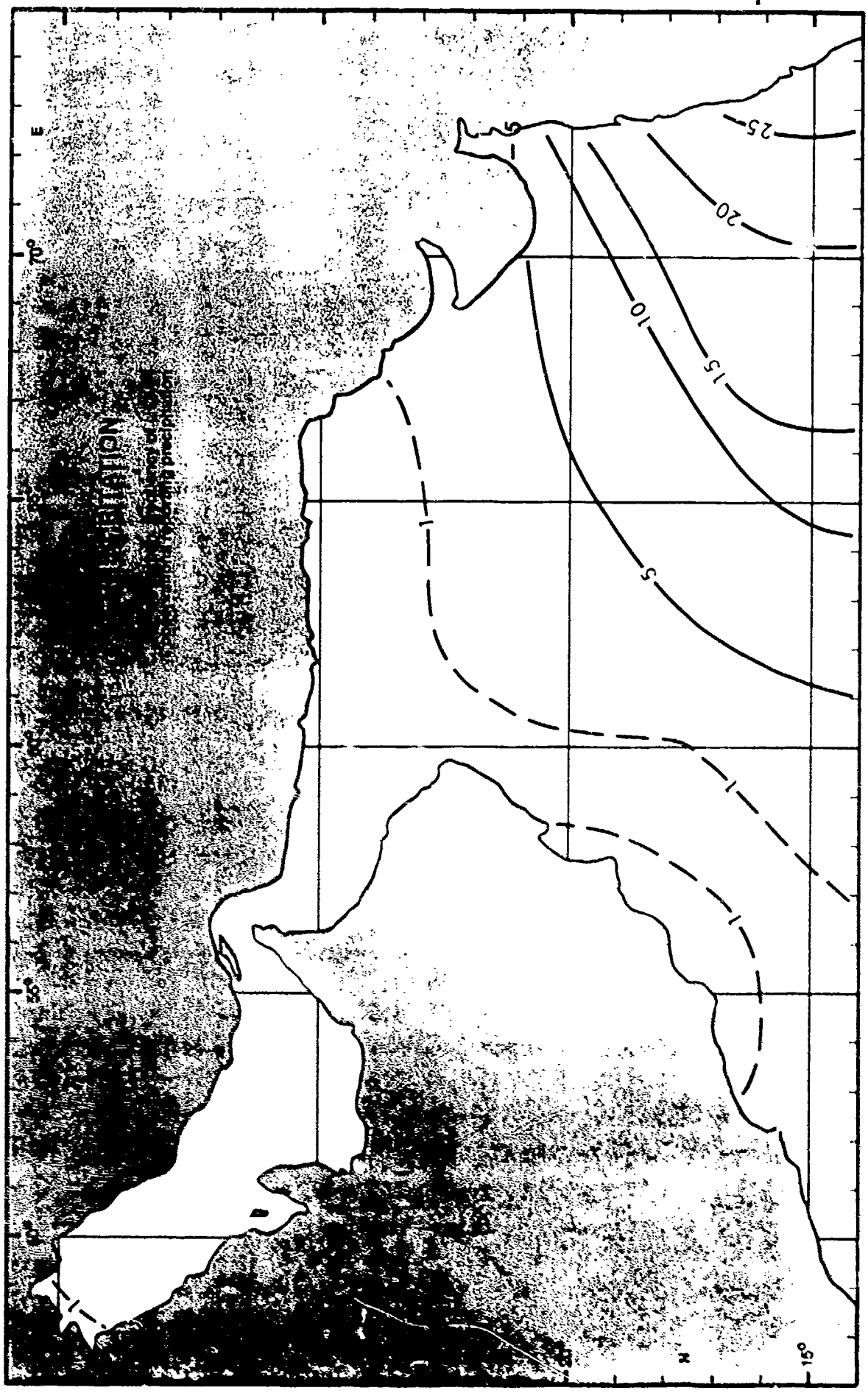

50°
55°
30°
25°
20°
N
WAVE HEIGHT
Percent frequency of various ranges within 1° x 1° quadrangles
HEIGHT PERCENT
≤ 2 10.0
3 - 4 20.0
5 - 6 30.0
7 - 9 20.0
10 - 12 10.0
≥ 13 10.0
N = 1234
EXAMPLE:
30.0% of all wave heights were in the range 5 - 6 feet.
N = Observation count
Wave data for these tables were selected from the higher of sea or swell when both were reported.

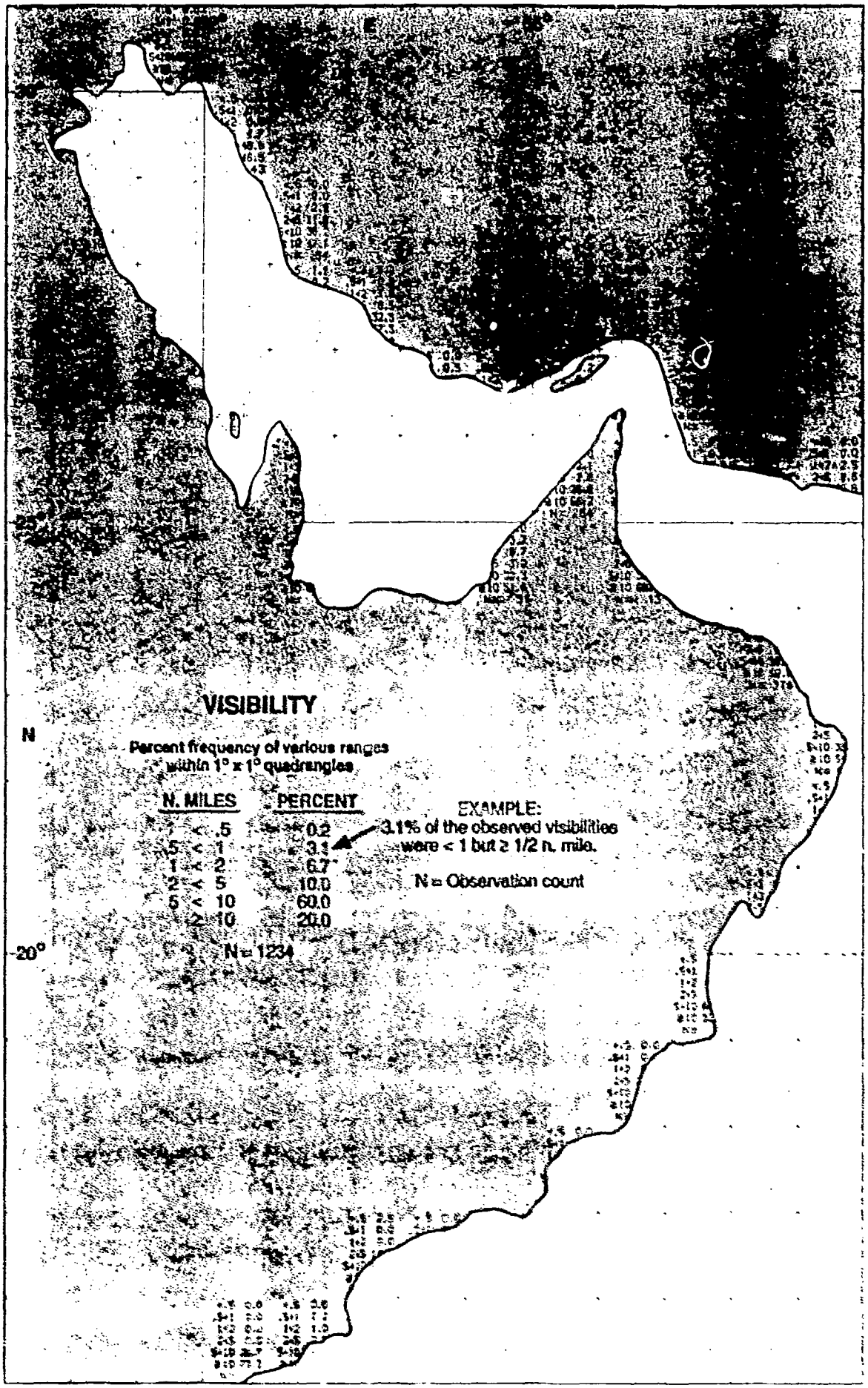

85° E
70°
30°
25°
20°

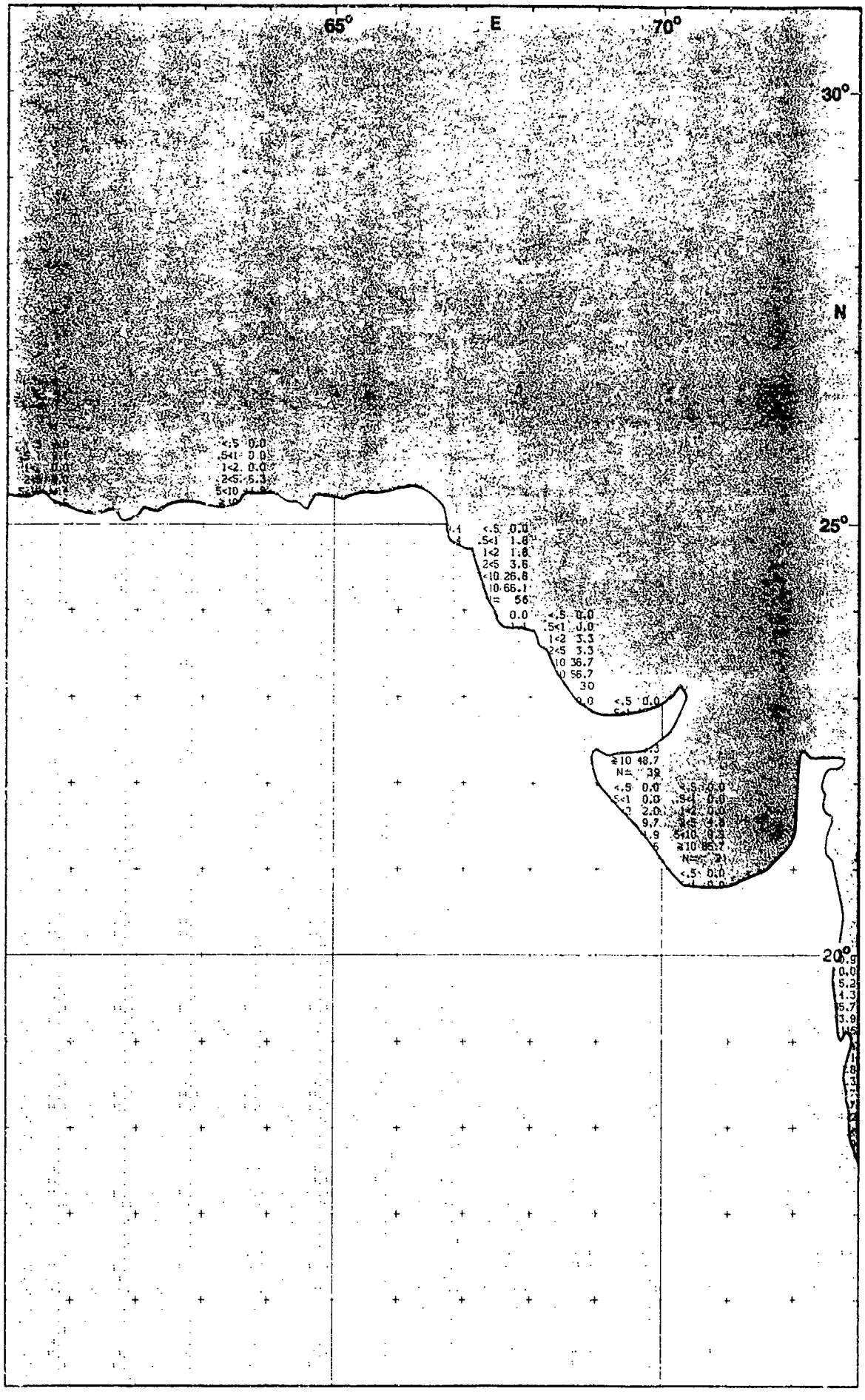

50°
E
55°
30°
25°
20°
N
SURFACE CURRENTS
Solid Arrow(s) : Prevailing current direction(s)
Dashed Arrow(s) : Secondary current direction(s)
Mean scalar current speed (knots)
Percent of total used to compute primary directions.
Percent of total used to compute secondary directions.
The plotted number at the end of each arrow


65°
E
70°
30°
N
25°
20°

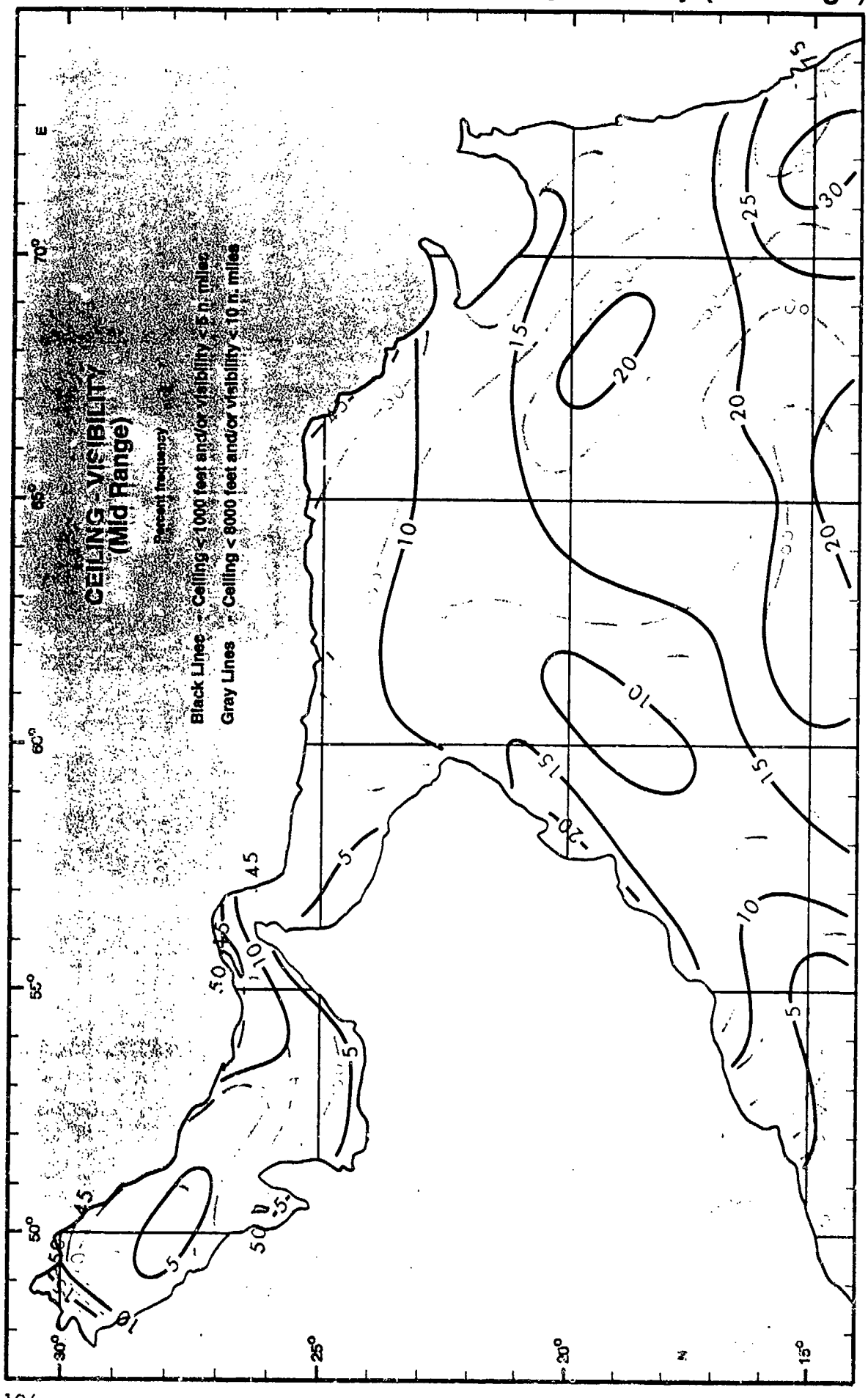

CLOUD COVER
Black Lines - Total cloud amount
Gray Lines - Low cloud amount
80°
25°
20°
N
15°
5
10
20
30
40
50
70
80
90
95
10
20
30
40
50
70
40
60
70
95
90

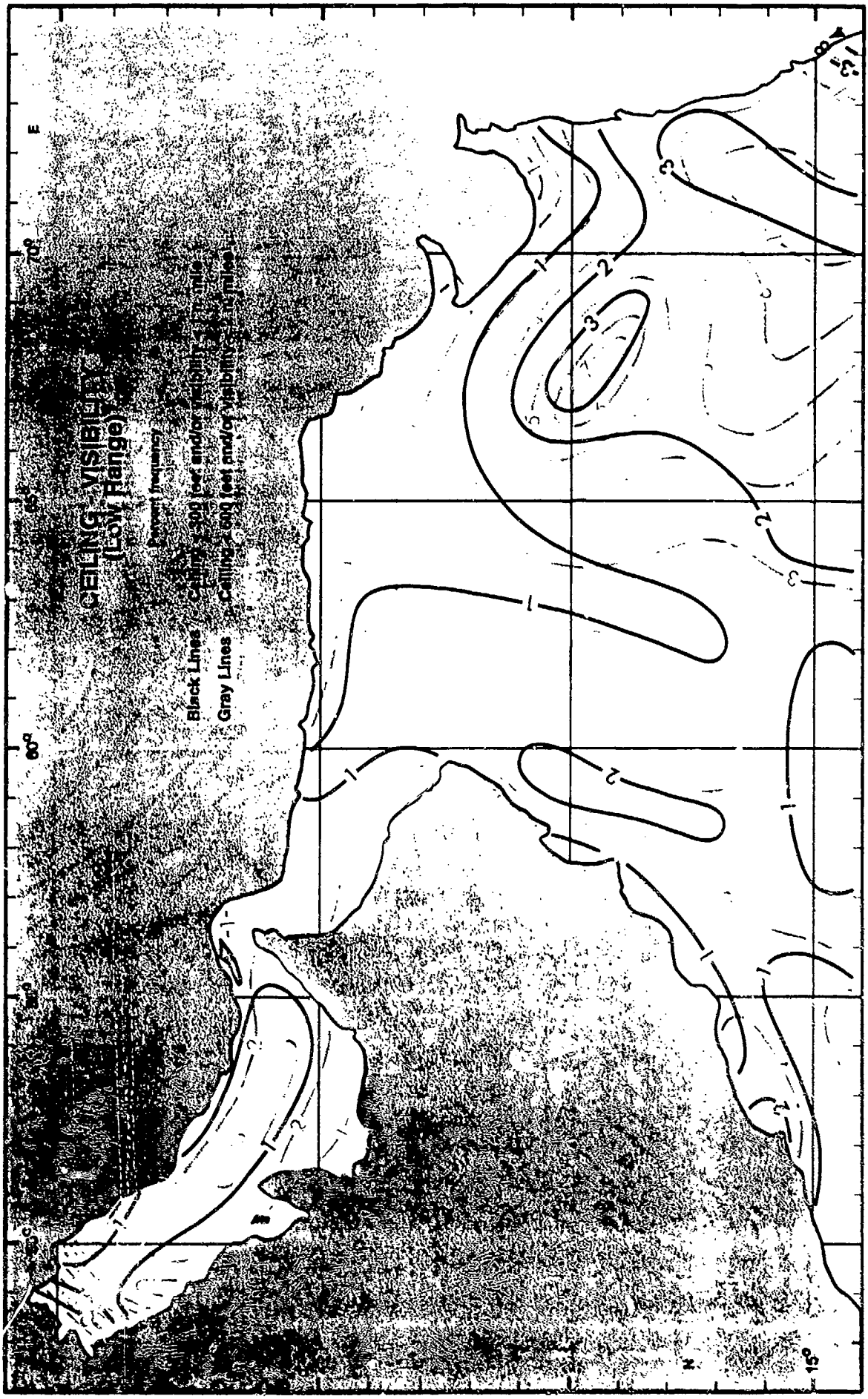

25
20
15
10
5
1
1
1
80°
E
16°
N

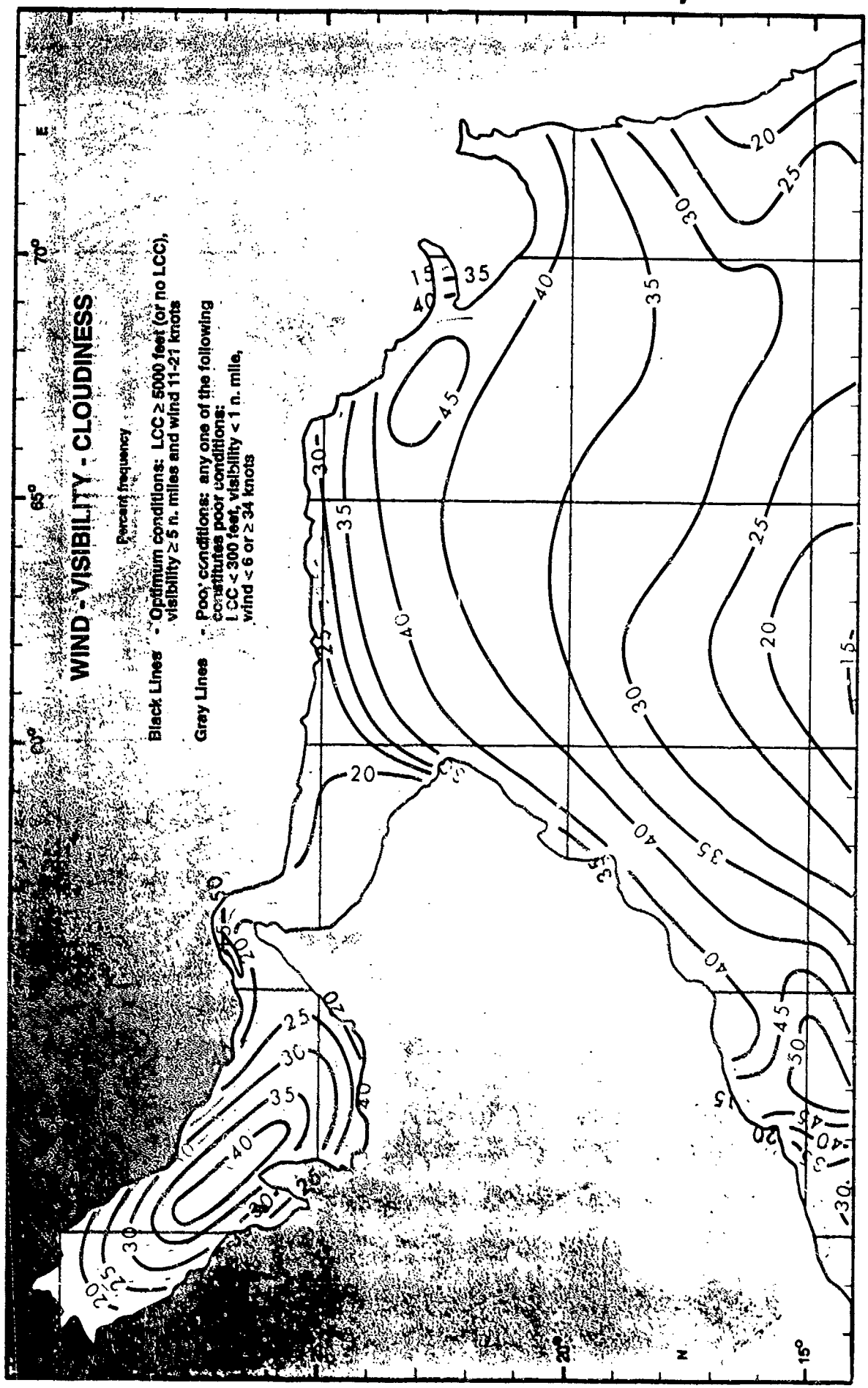

VISIBILITY
Percent frequency of various ranges within 1° x 1° quadrangles
N. MILES
PERCENT
< .5
0.2
.5 < 1
3.1
1 < 2
6.7
2 < 5
10.0
5 < 10
60.0
≥ 10
20.0
N = 1234
EXAMPLE:
3.1% of the observed visibilities were < 1 but ≥ 1/2 n. mile.
N = Observation count
N
20°

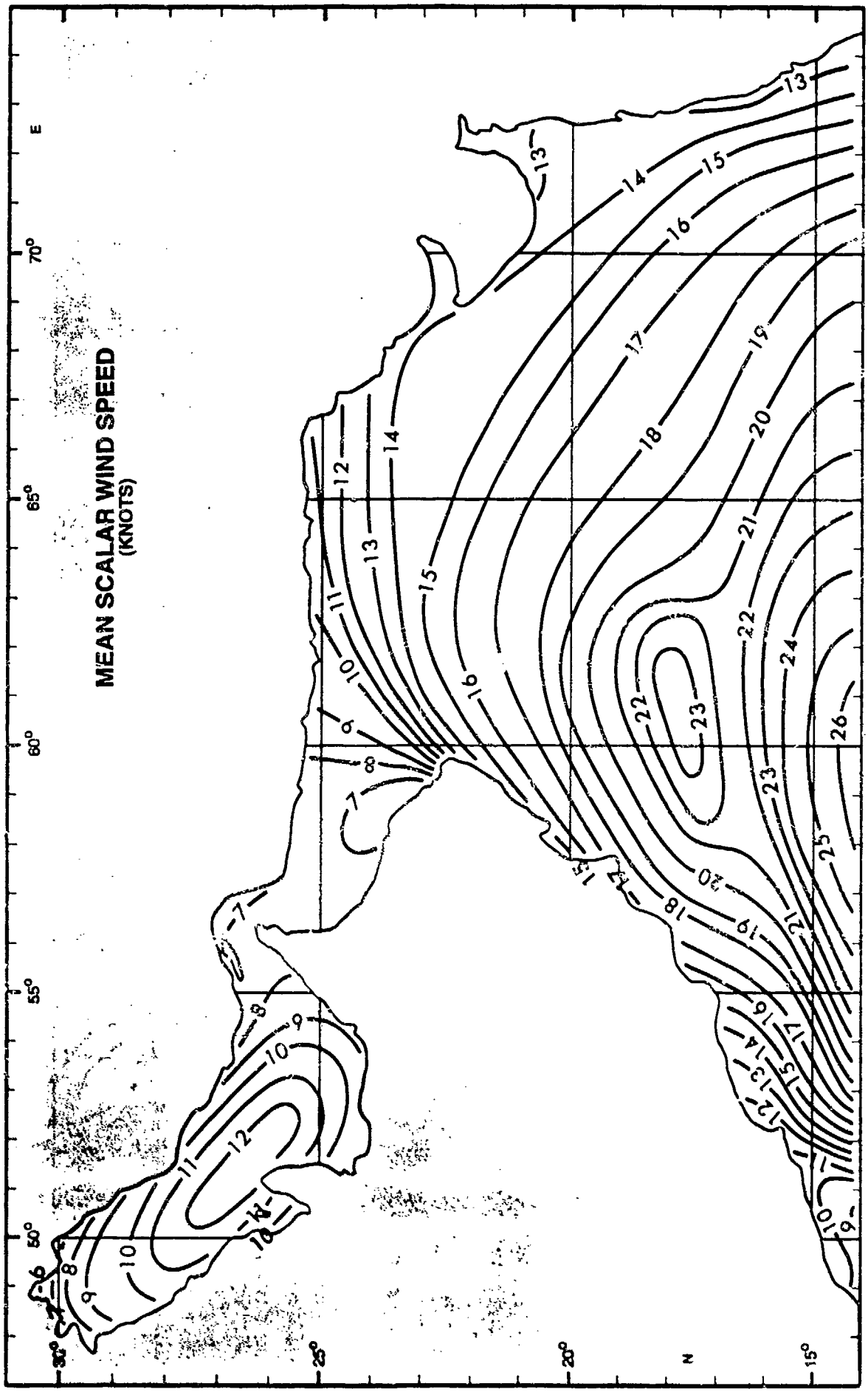

65° E
70°
30°
N
25°
20°

Ceiling-Visibility (mid range)

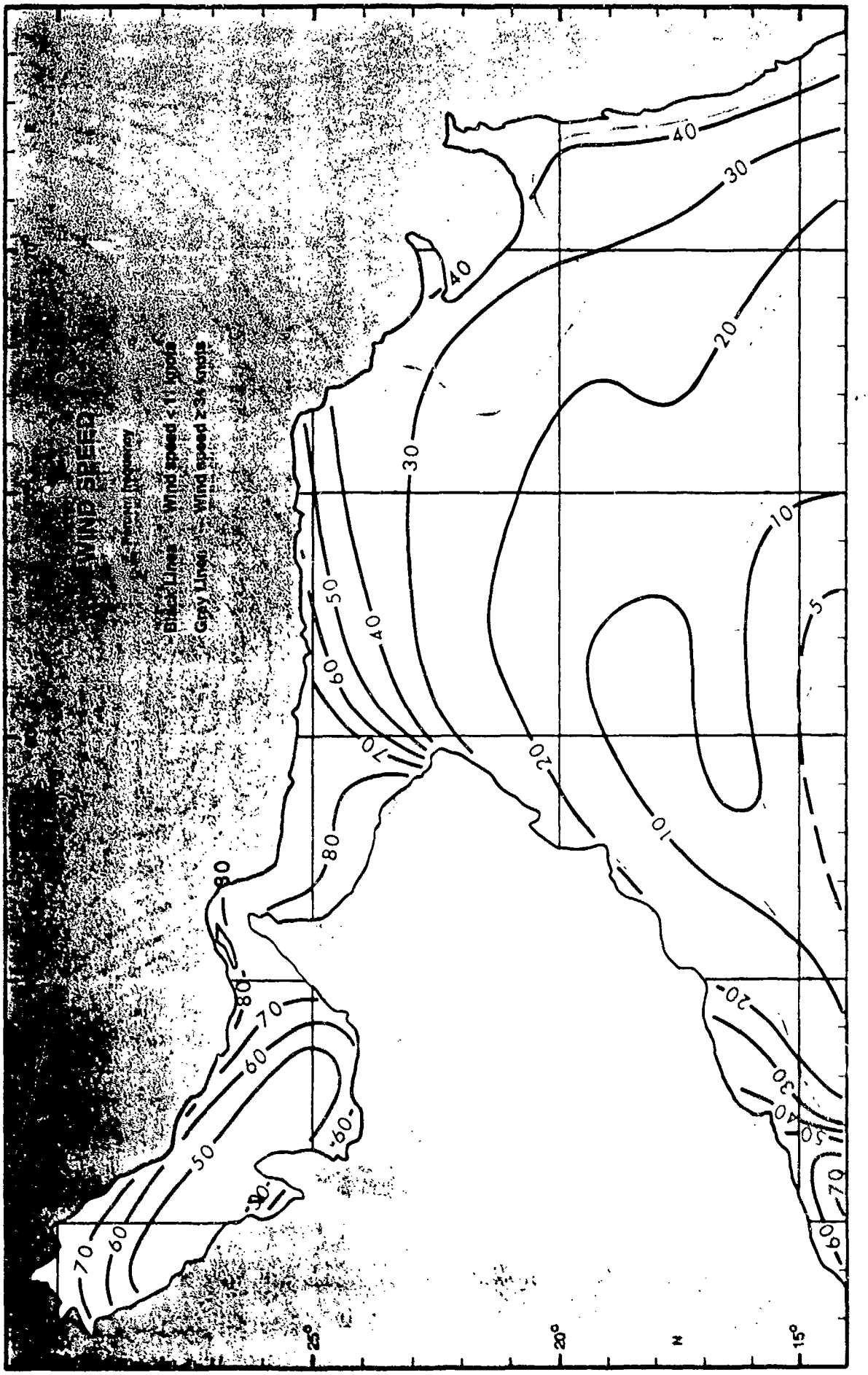



CEILING-VISIBILITY
(Low Range)
Percent frequency
Black Lines — Ceiling 200 feet and/or visibility ½ mile
Gray Lines — Ceiling 600 feet and/or visibility 1 mile
60°
70°
80°
E
N


WIND - VISIBILITY - CLOUDINESS
Percent frequency
Black Lines - Optimum conditions: LCC ≥ 5000 feet (or no LCC), visibility ≥ 5 n. miles and wind 11-21 knots
Gray Lines - Poor conditions: any one of the following constitutes poor conditions: LCC < 300 feet, visibility < 1 n. mile, wind < 6 or ≥ 34 knots
60°
65°
70°
N
20°
15°


MEAN SCALAR WIND SPEED
(KNOTS)
70°
65°
60°
55°
50°
25°
20°
15°
N
E

Wind Speed <11 and ≥34 Knots

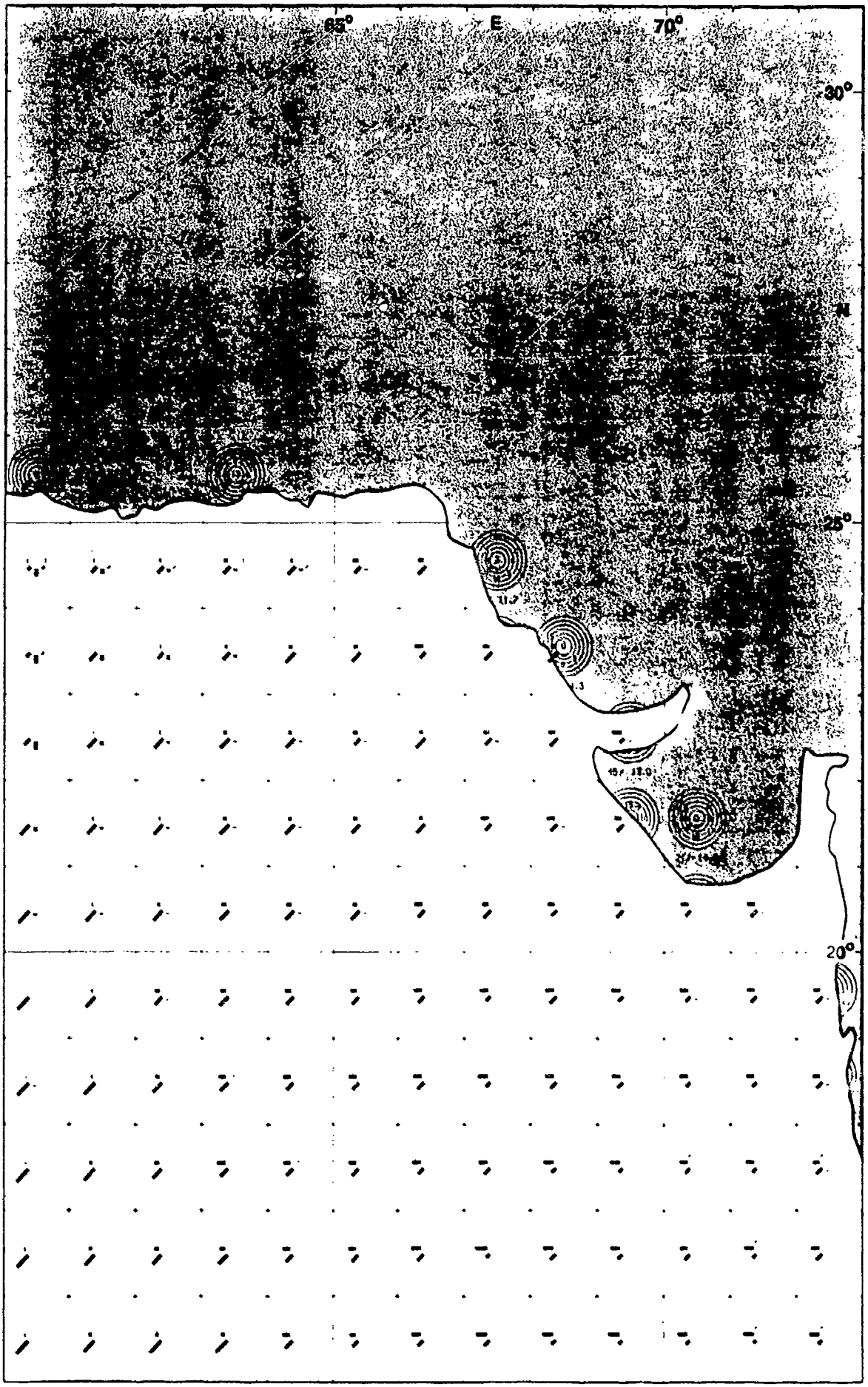


June

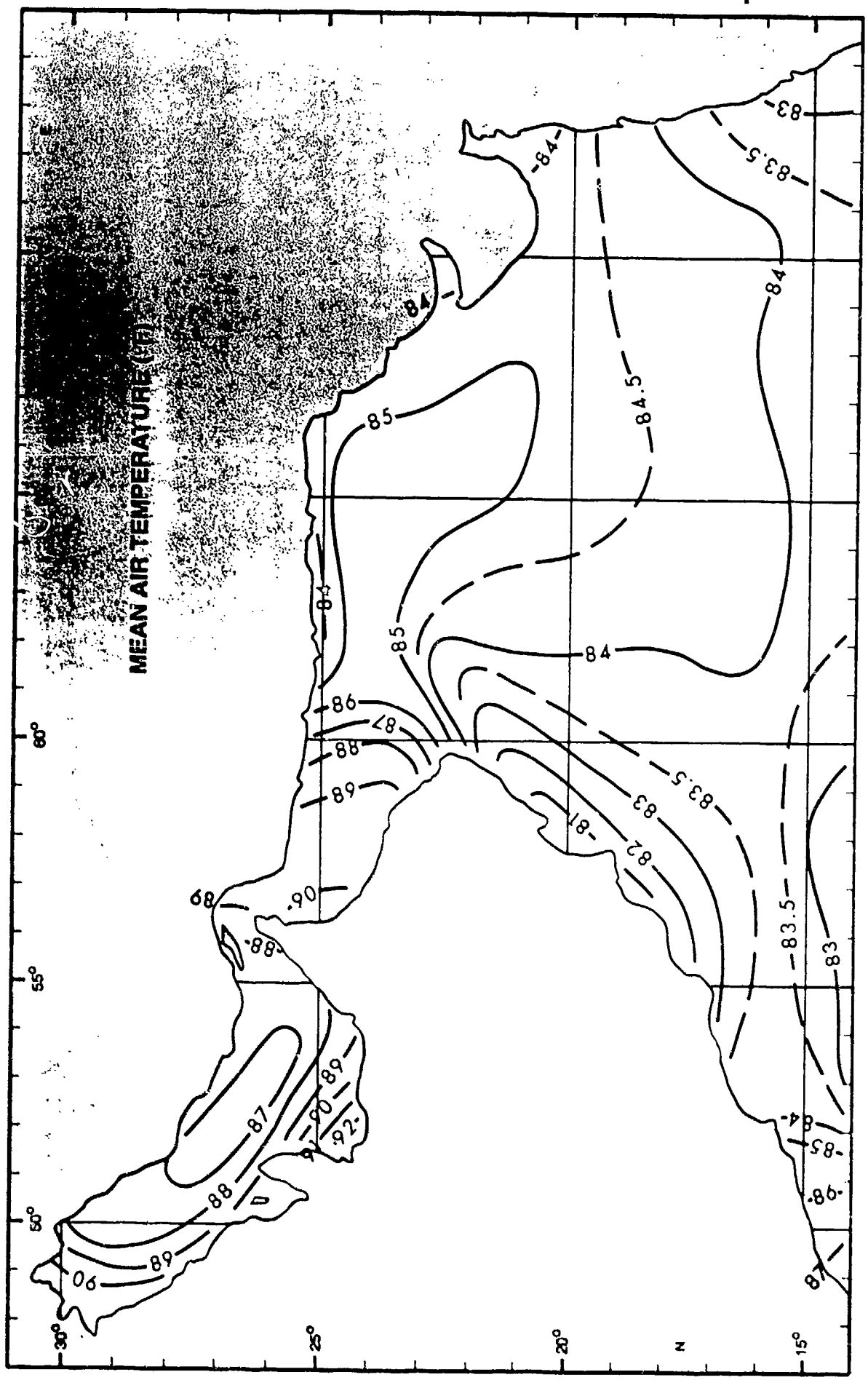
Wind Speed 11-21 and 22-33 Knots

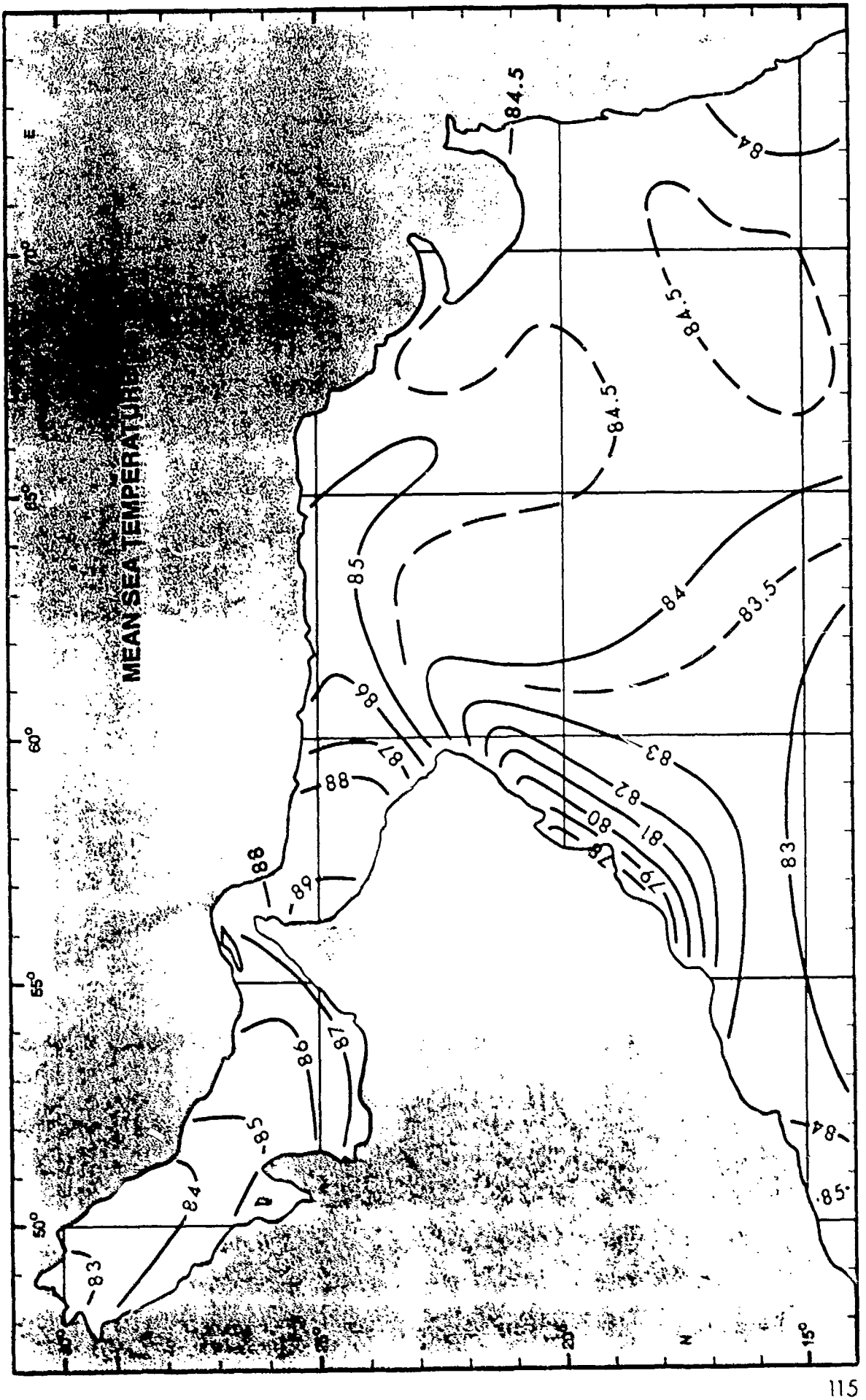



SURFACE WIND ROSES
N
Direction Frequency : Bars
Each circle = 20%
25% of all winds were from north.
Percent of calms.
Mean speed (knots) is indicated by the printed number at the end of each bar. Mean scalar speed of all observed east winds was 10 knots.
20°
285/7.1
Mean scalar speed.
Observation count.

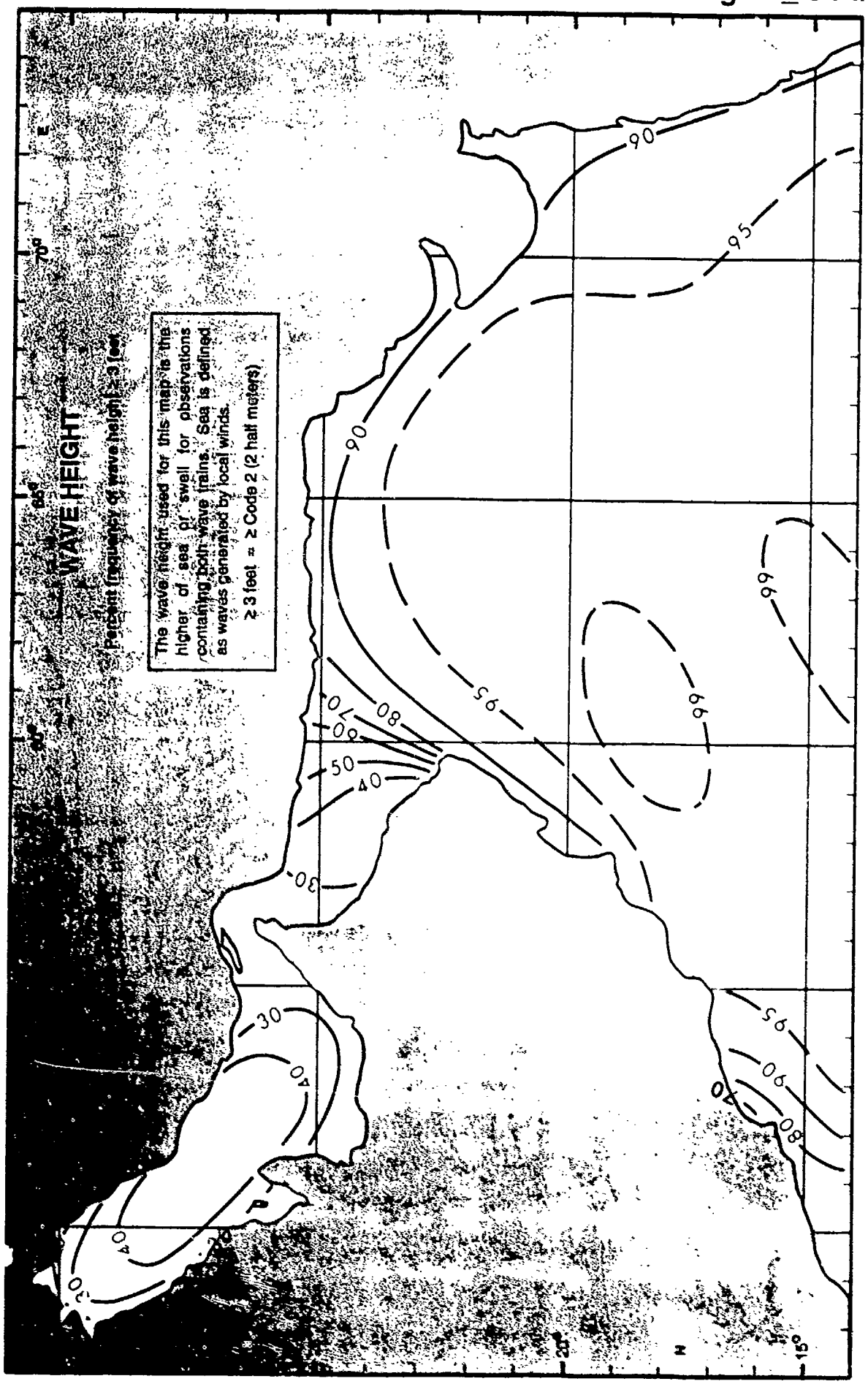

65°
E
70°
30°
25°
20°

Mean Air Temperature

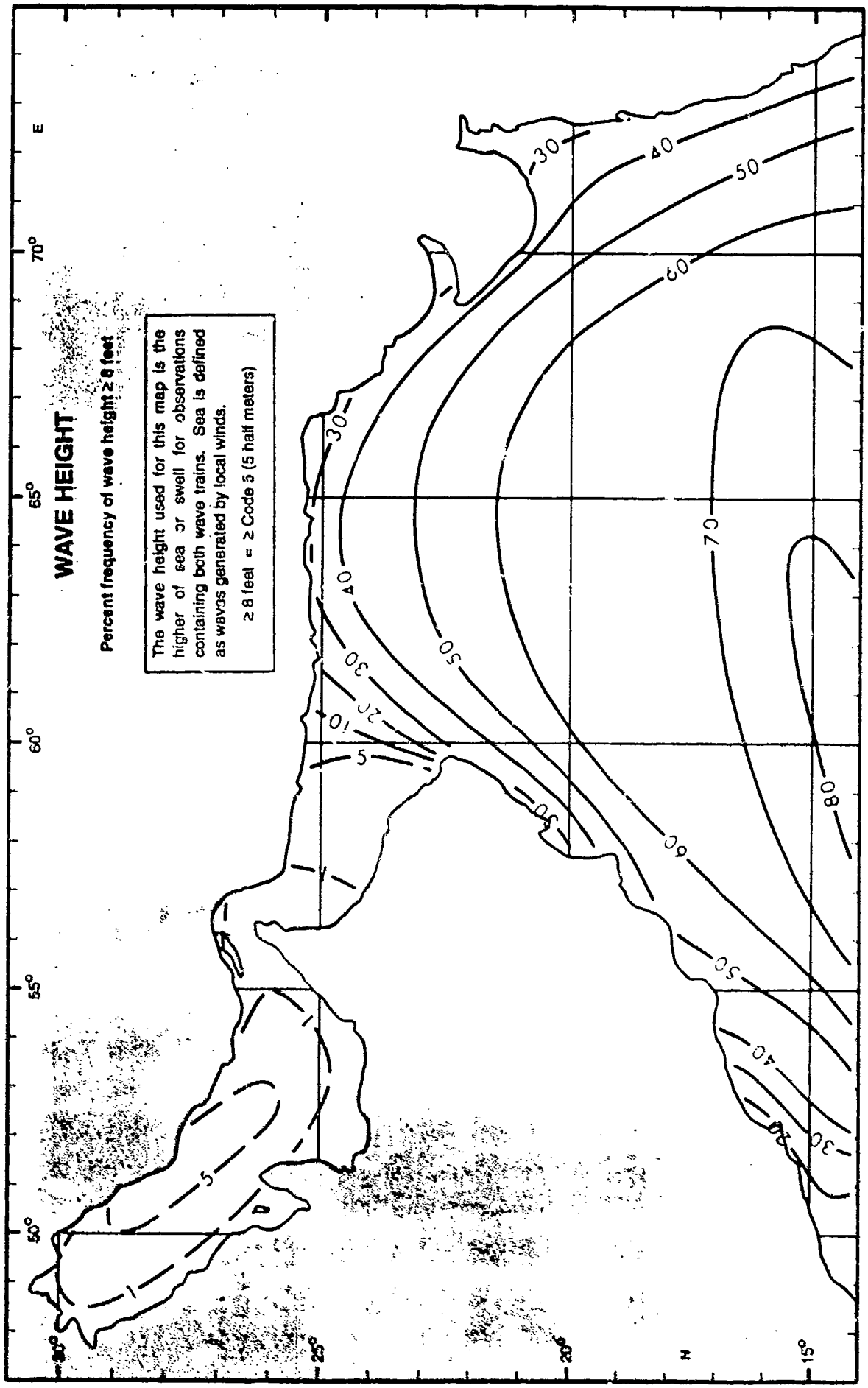



MEAN SEA TEMPERATURE
84.5
84
84.5
84.5
85
84
83.5
86
87
88
83
82
81
80
79
78
88
89
86
87
85
84
83
84
85
70°
65°
60°
55°
50°
45°
40°
35°
30°
25°
20°
15°
N

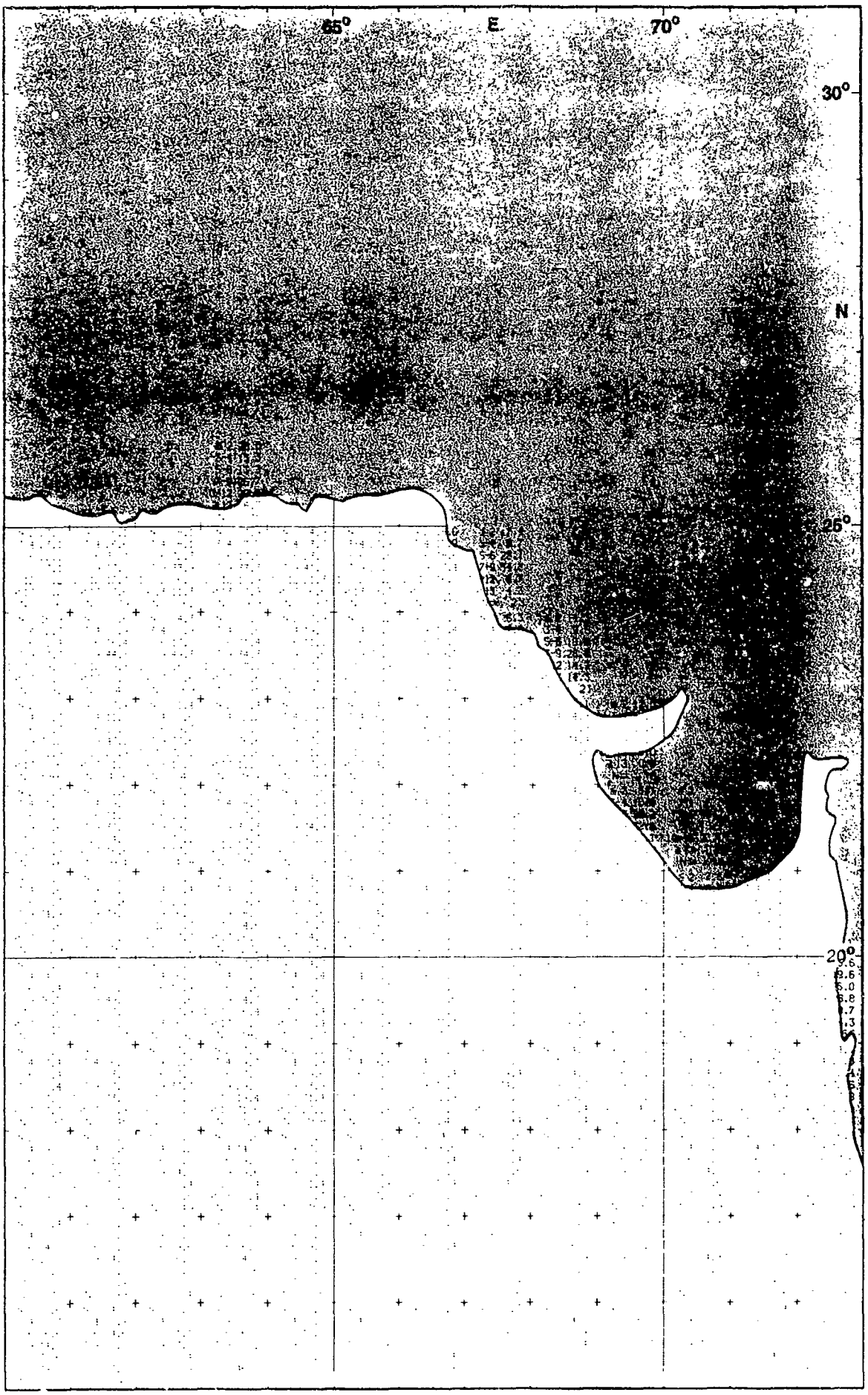
Wave Height ≥ 3 Ft.

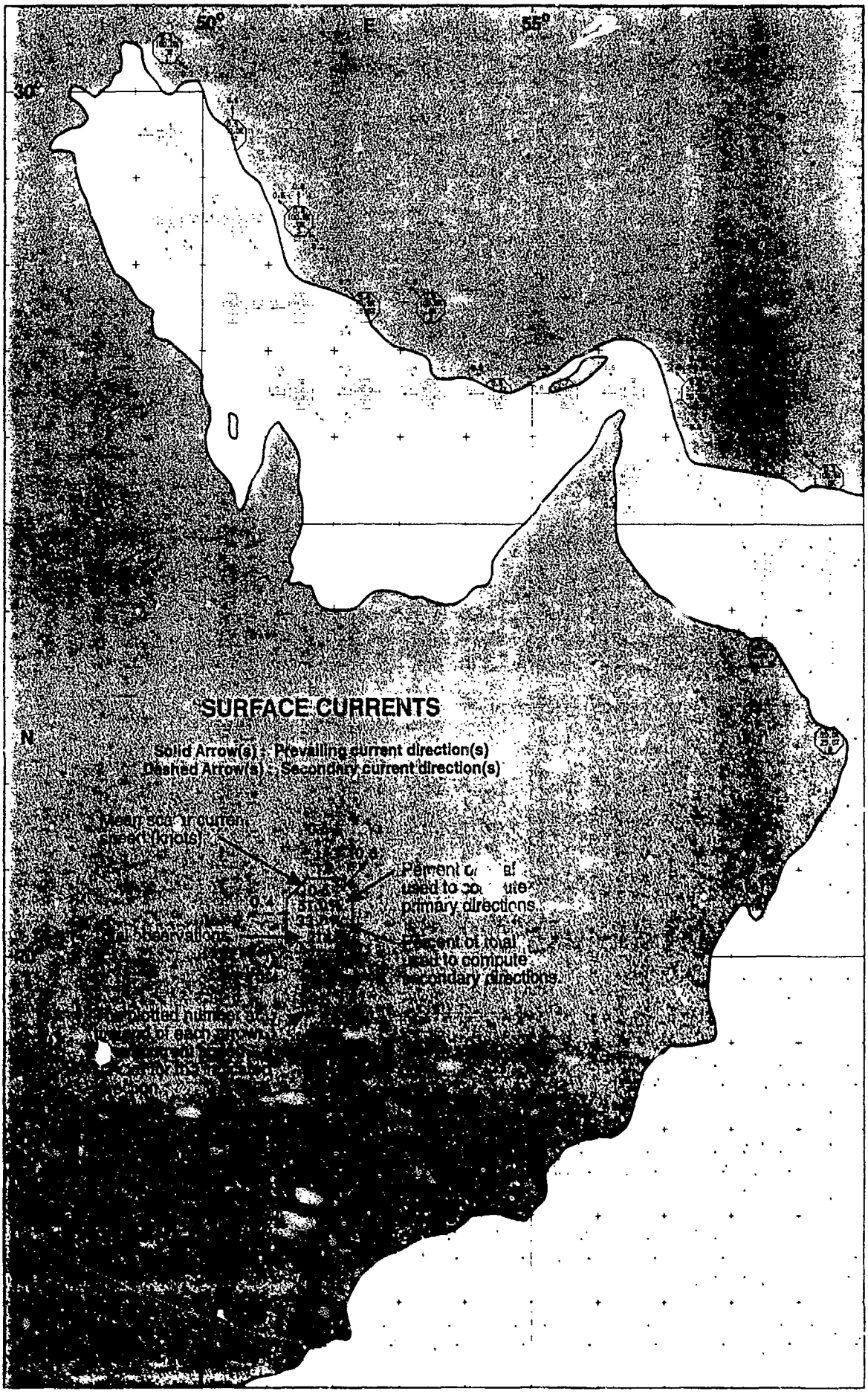


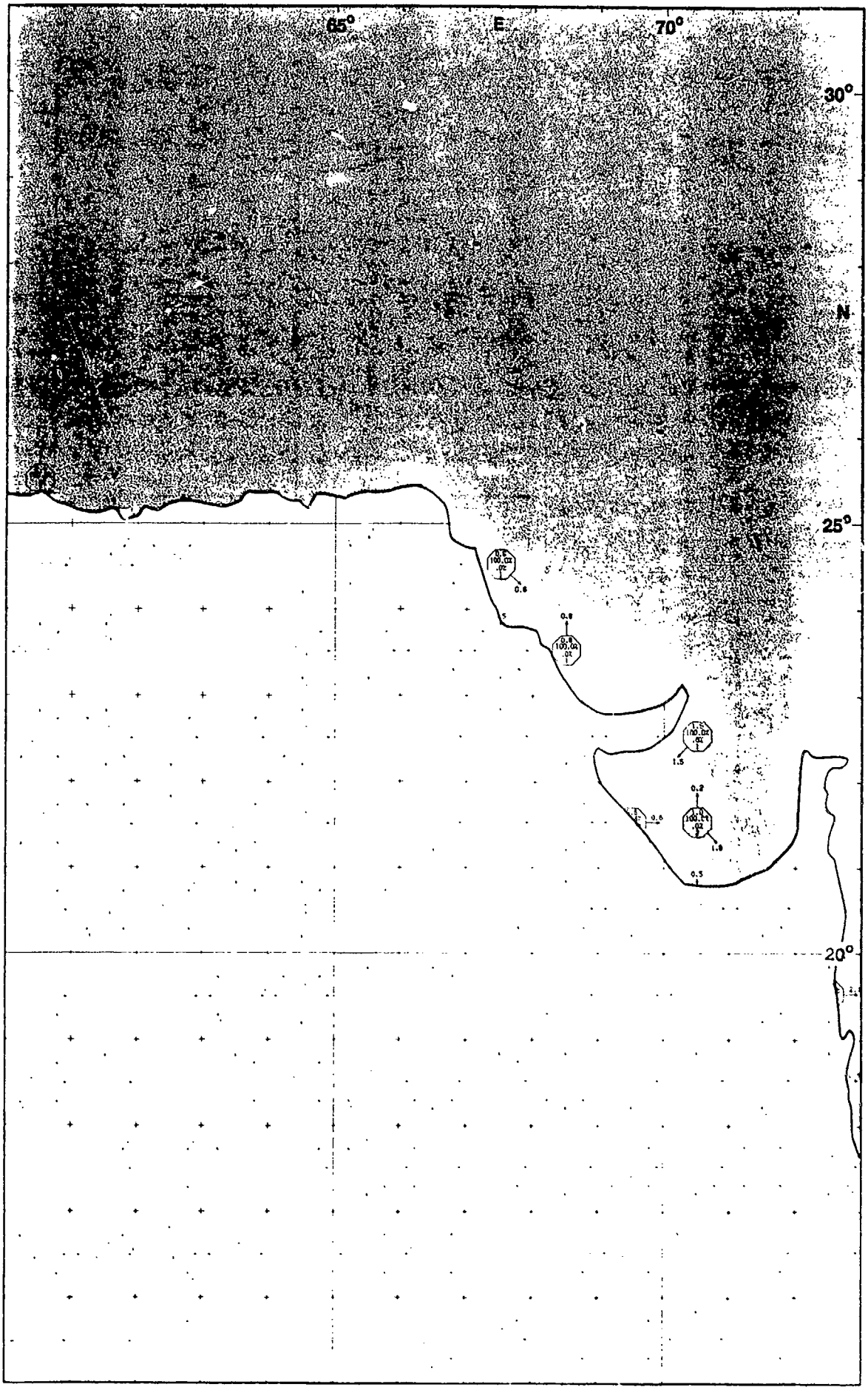
Wave Height ≥ 8 Ft.

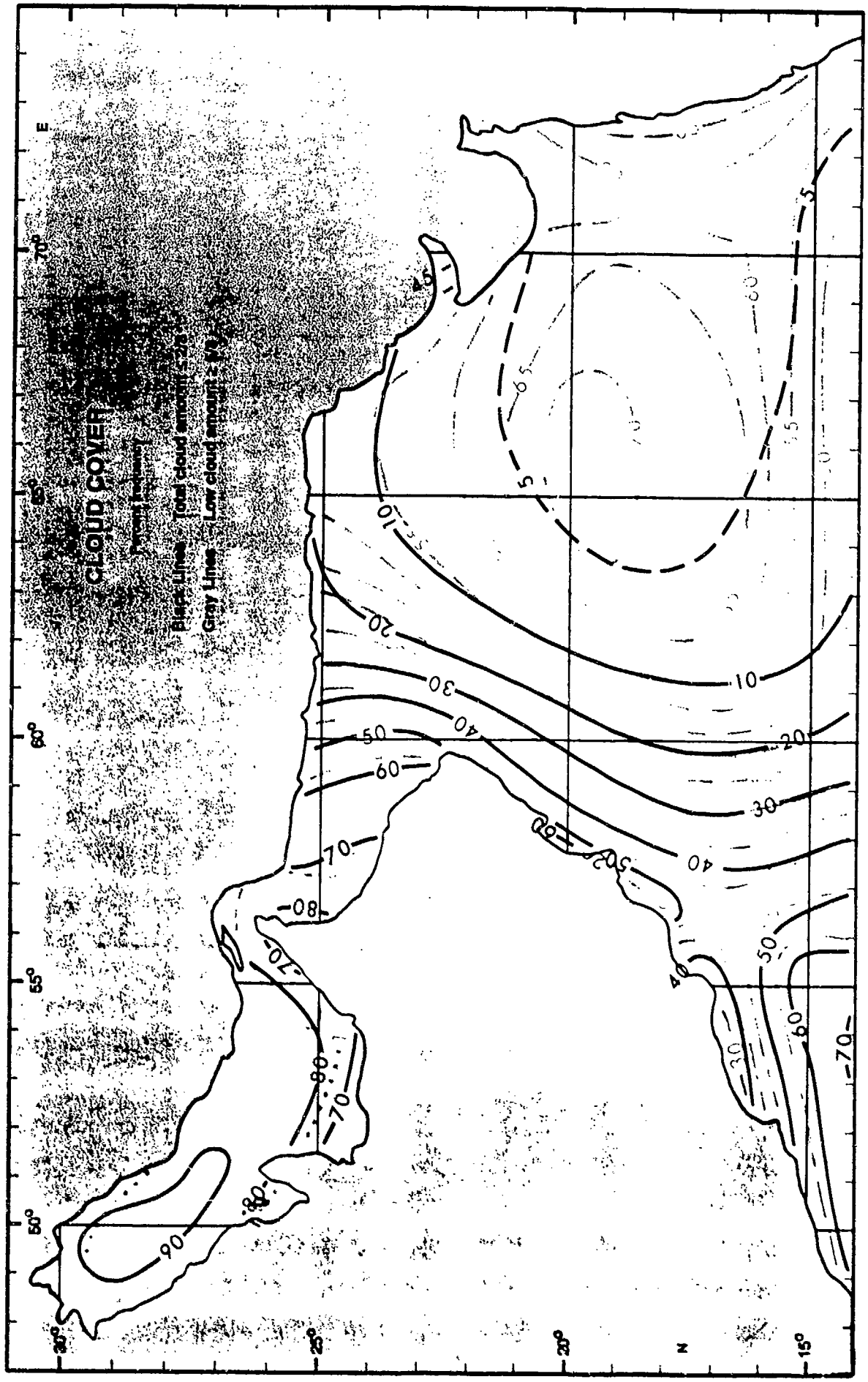


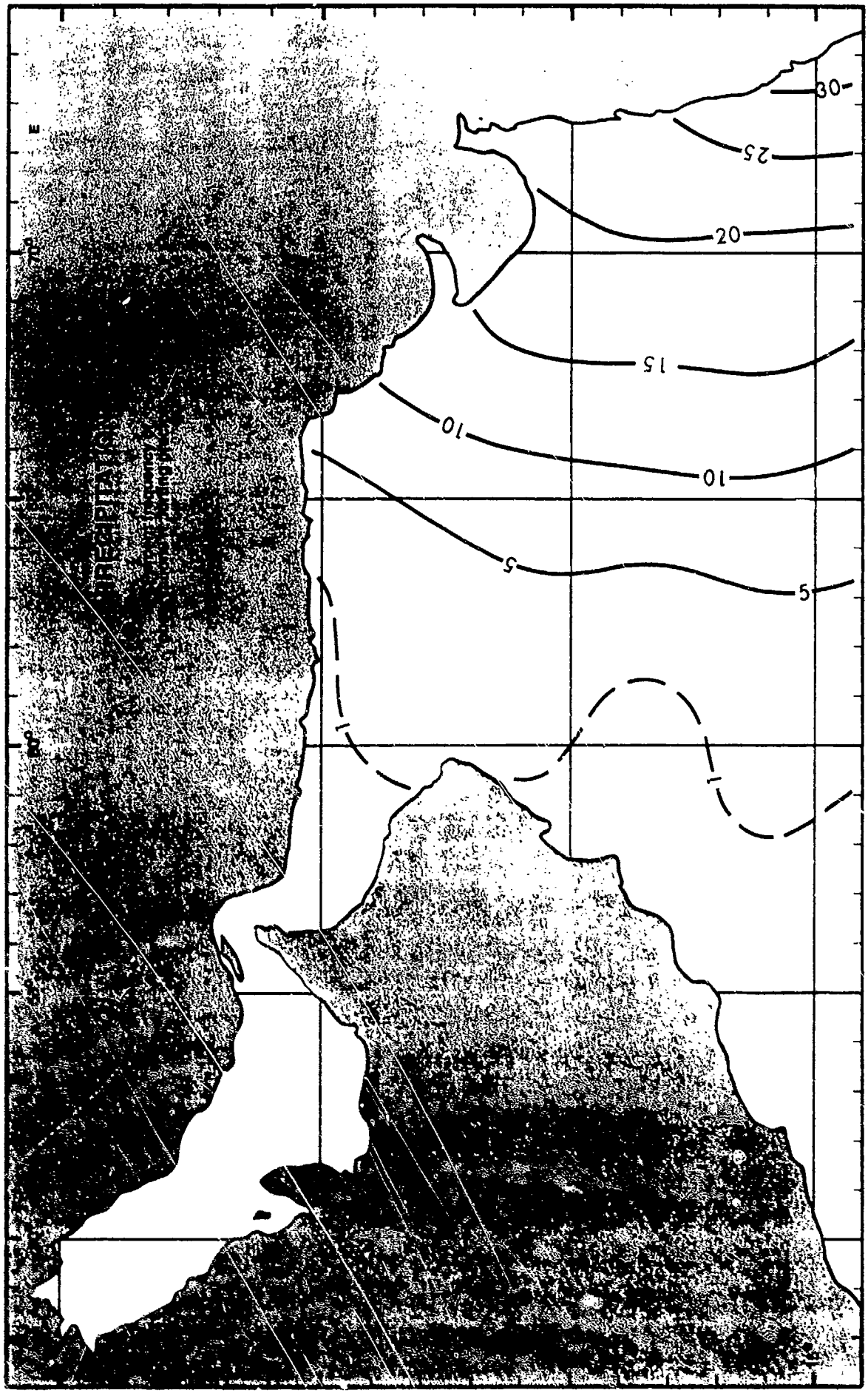

WAVE HEIGHT
Percent frequency of various ranges
HEIGHT
PERCENT
EXAMPLE:
of all wave heights were
in the range 5 - 6 feet.
N = Observation count

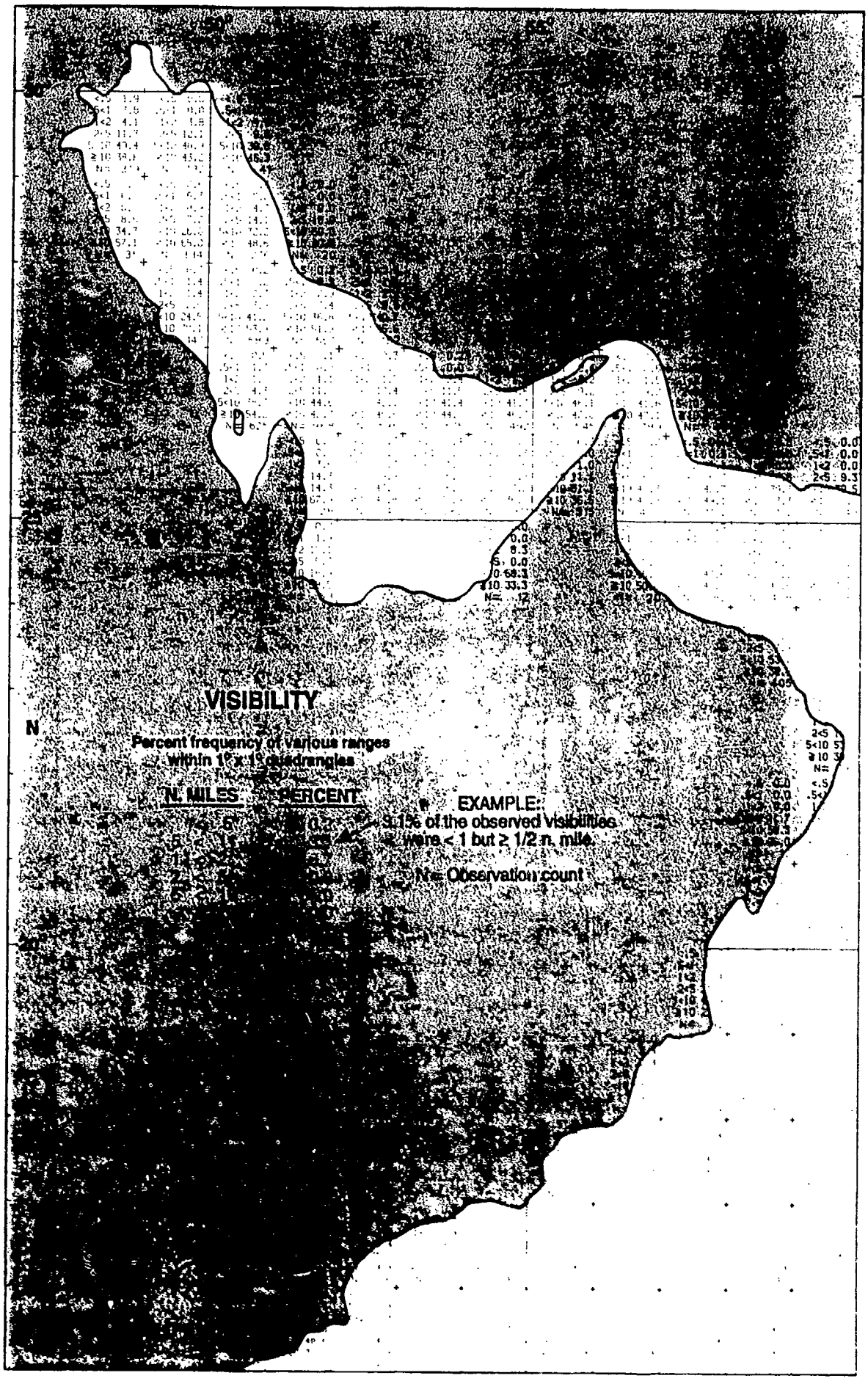

65°
E
70°
30°
N
25°
20°

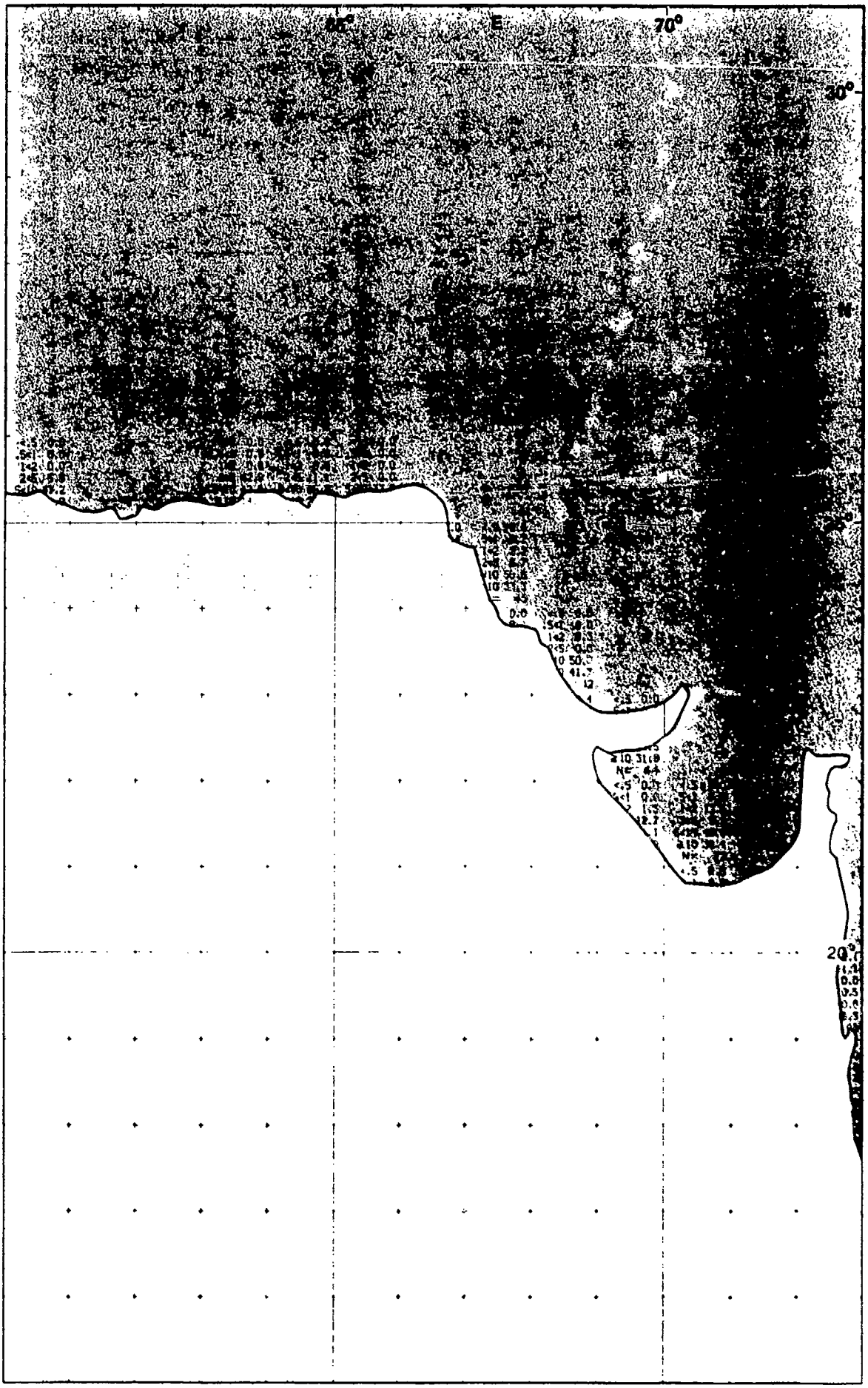

50°
E
55°
30°
SURFACE CURRENTS
N
Solid Arrow(s) - Prevailing current direction(s)
Dashed Arrow(s) - Secondary current direction(s)
Mean scalar current speed (knots)
Percent of total used to compute primary directions
Percent of total used to compute secondary directions
Total observations
Encircled number(s) at tail of each arrow


65°
E
70°
30°
N
25°
20°


CLOUD COVER
Black Lines - Total cloud amount in tenths
Gray Lines - Low cloud amount in tenths
70°
60°
55°
50°
30°
25°
20°
15°
E
N

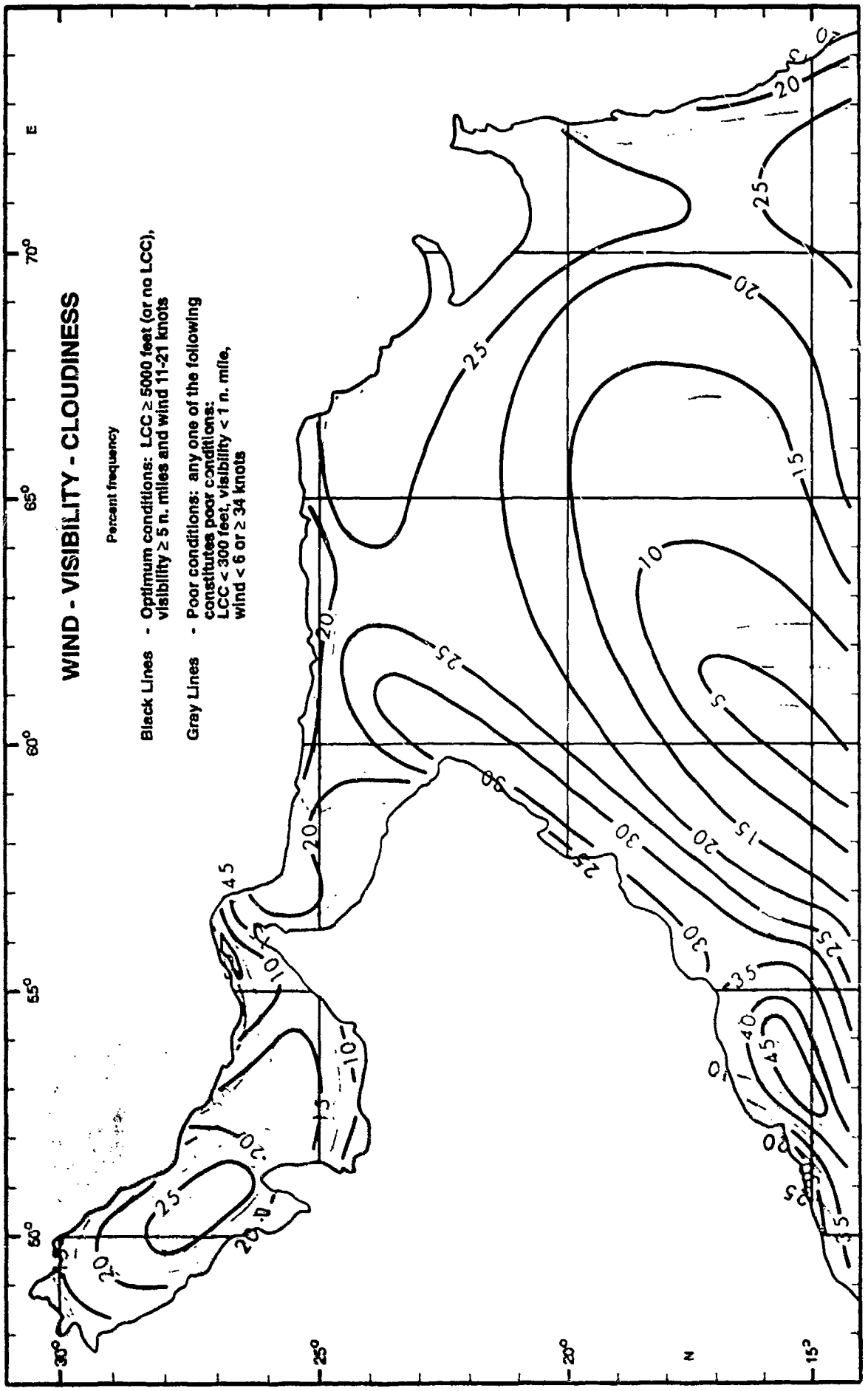

30
25
20
15
10
10
5
5
70°
60°

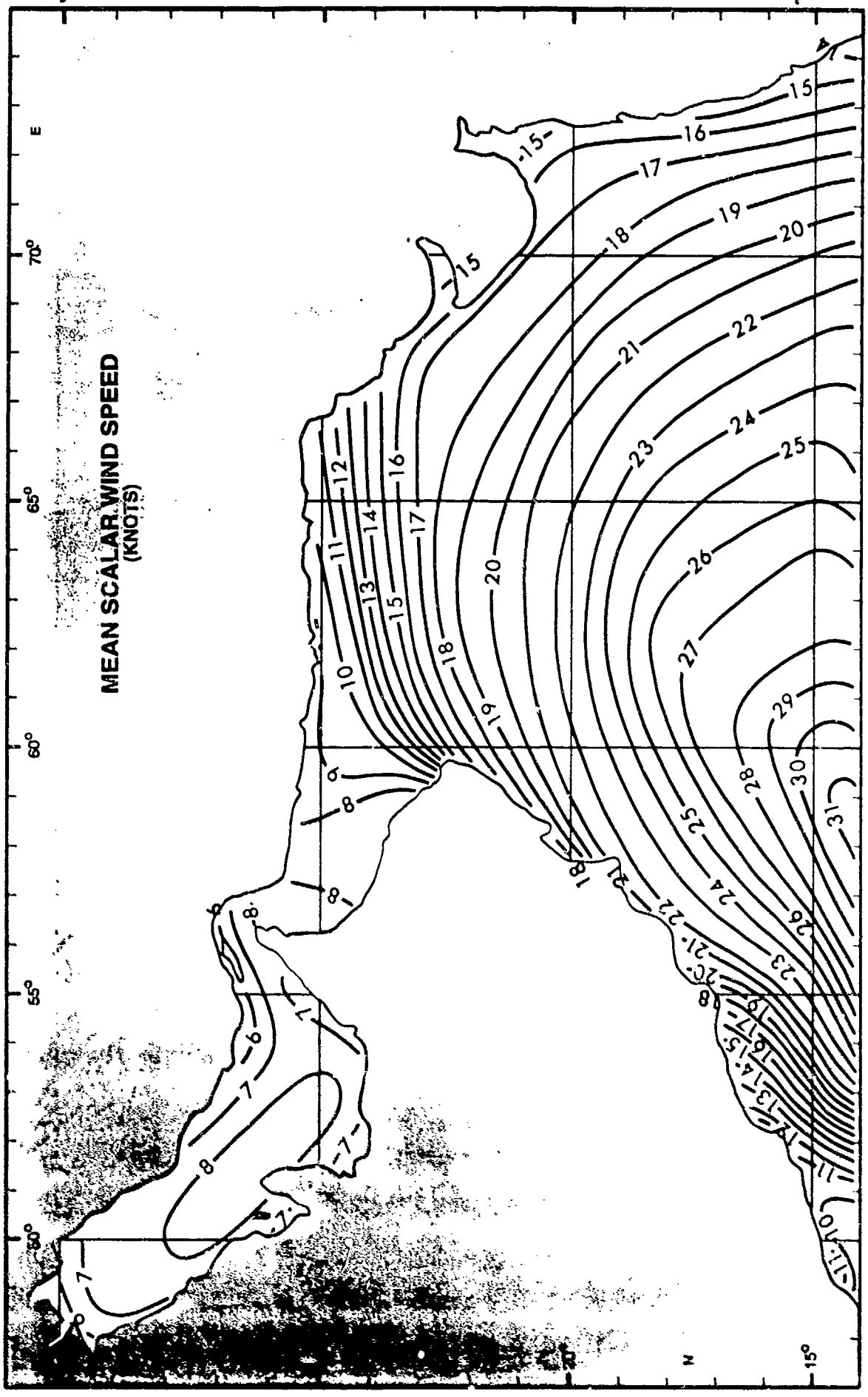

VISIBILITY
Percent frequency of various ranges within 1° x 1° quadrangles
N. MILES
PERCENT
EXAMPLE:
3.1% of the observed visibilities were < 1 but ≥ 1/2 n. mile.
N= Observation count
N


65°
E
70°
30°
20°

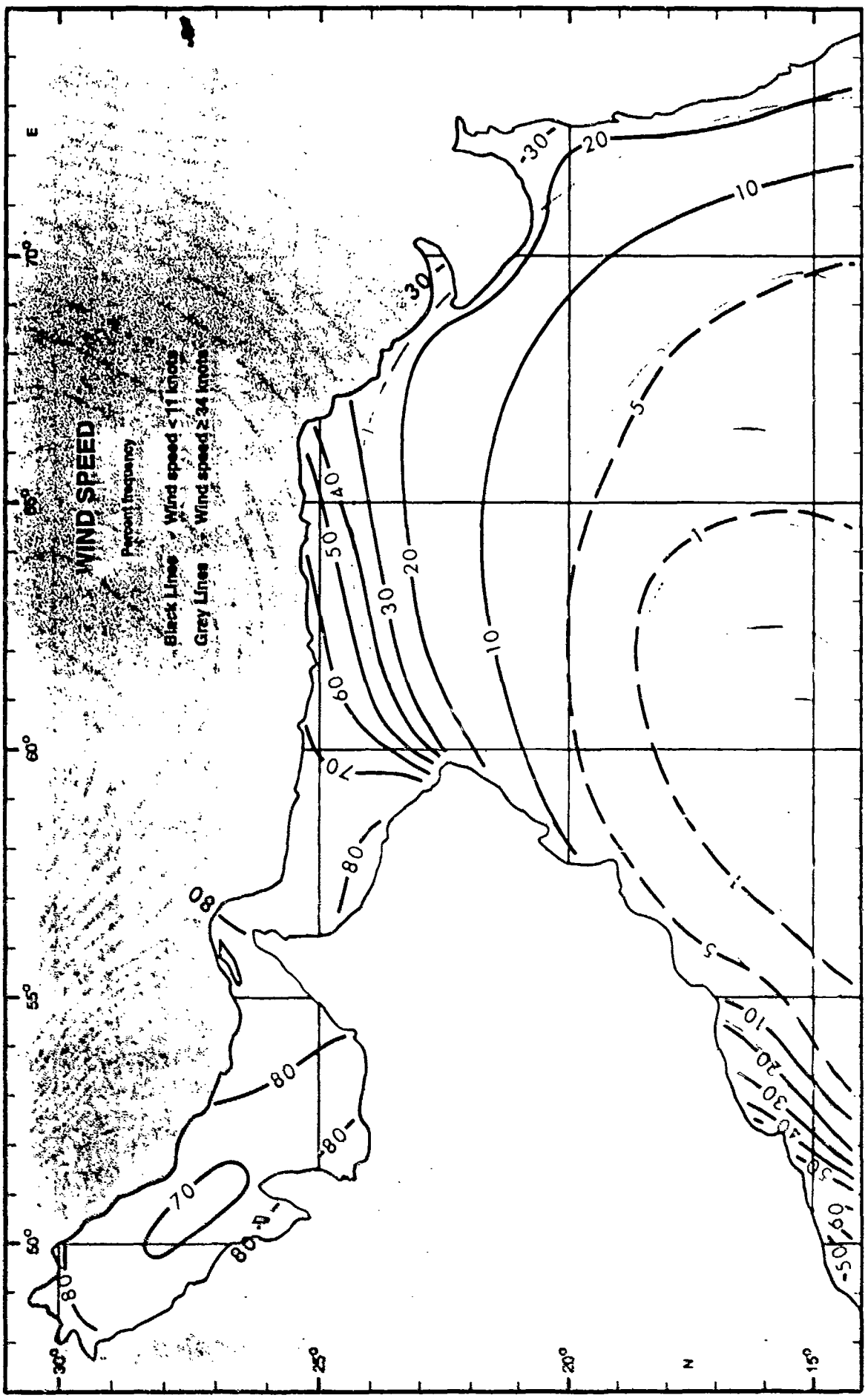

30
25
25
20
15
30
20
25
10
30
25
15
10
10
5
0
-5
-5
-10
-15


CEILING/VISIBILITY
Gray Lines
-5
5
4
3
2
1
70°
180°

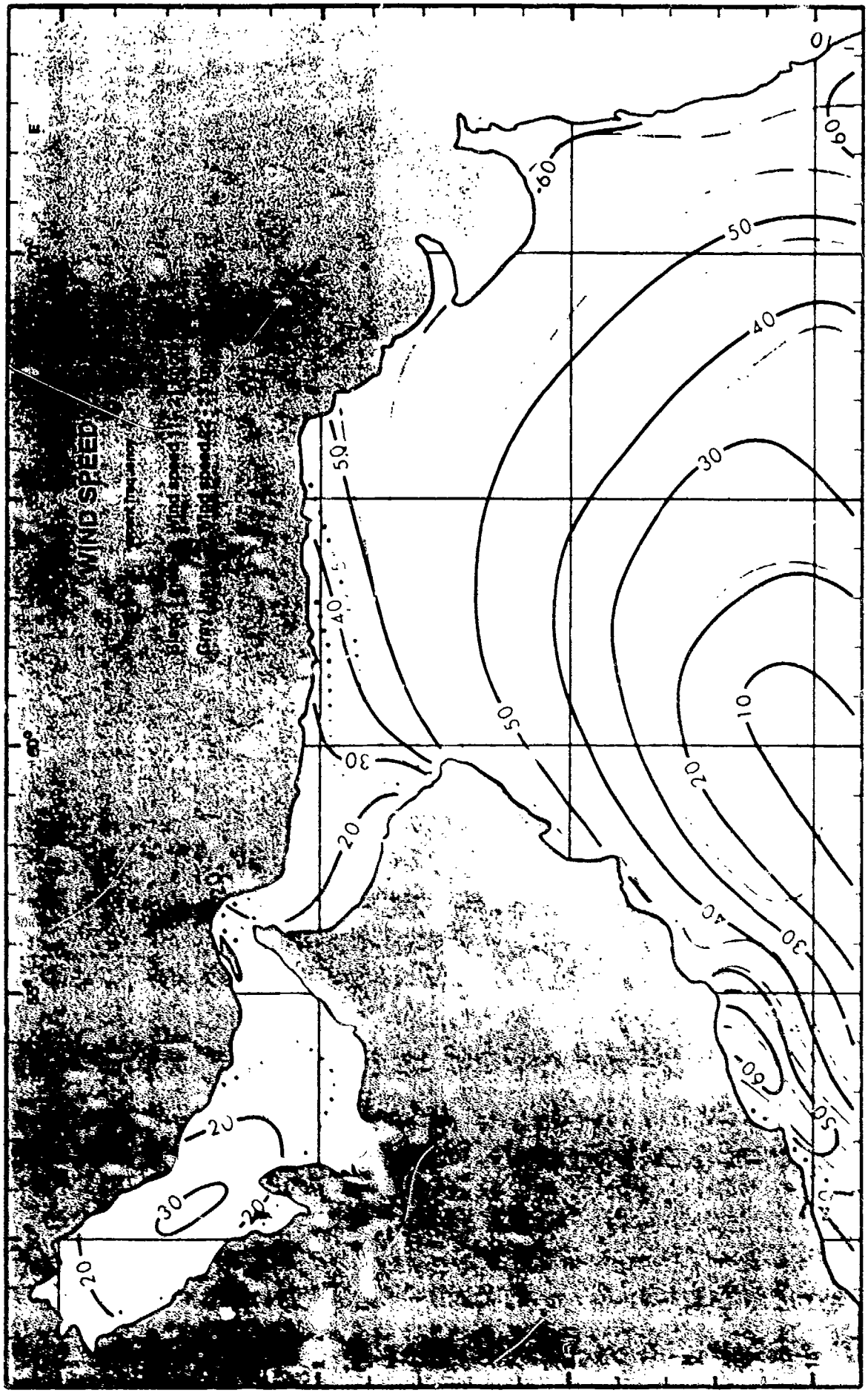

WIND - VISIBILITY - CLOUDINESS
Percent frequency
Black Lines - Optimum conditions: LCC ≥ 5000 feet (or no LCC), visibility ≥ 5 n. miles and wind 11-21 knots
Gray Lines - Poor conditions: any one of the following constitutes poor conditions: LCC < 300 feet, visibility < 1 n. mile, wind < 6 or ≥ 34 knots
70°
65°
60°
55°
50°
30°
25°
20°
15°
E
N


MEAN SCALAR WIND SPEED
(KNOTS)
70°
65°
60°
55°
50°
45°
E
N

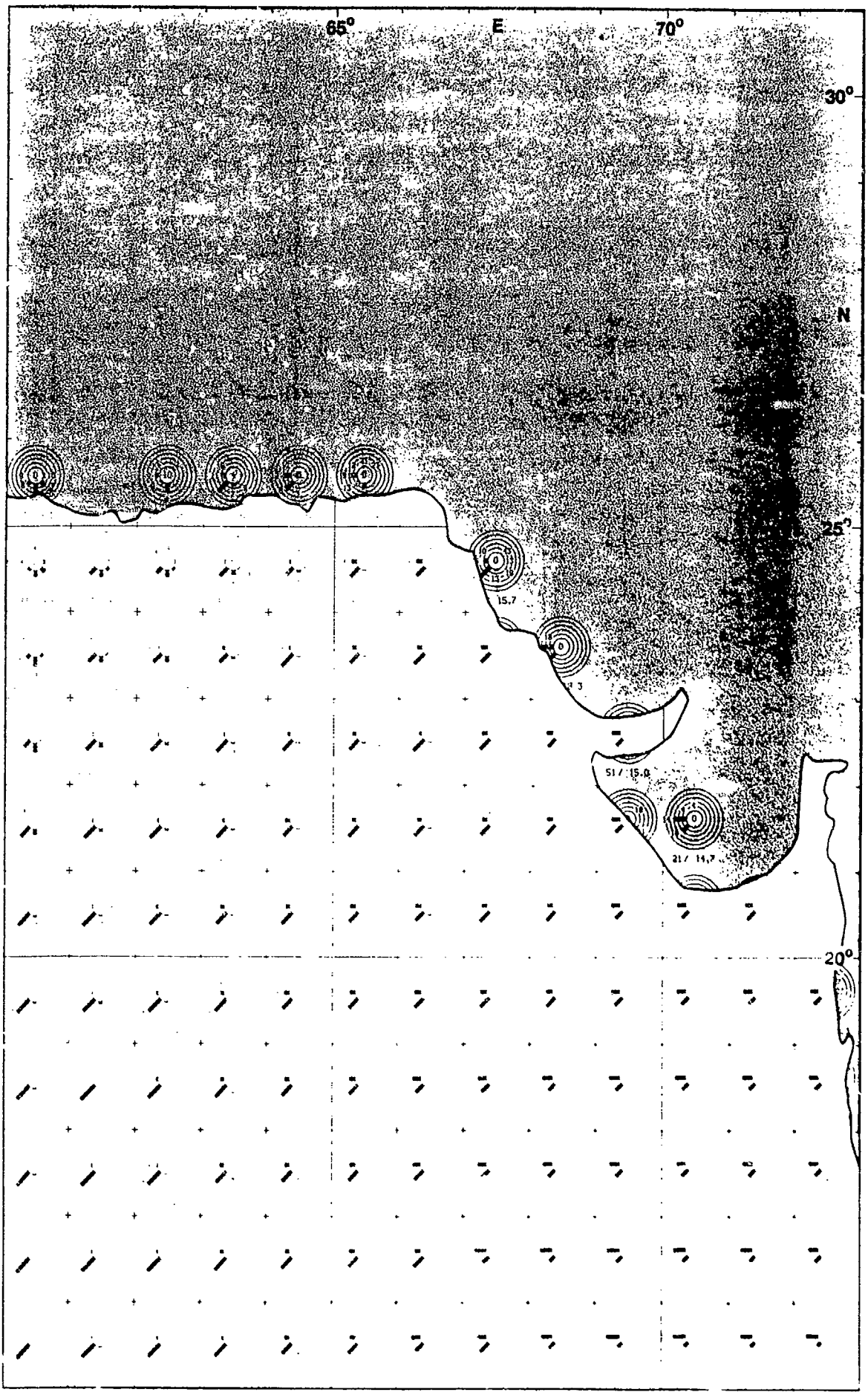
Wind Speed <11 and ≥34 Knots

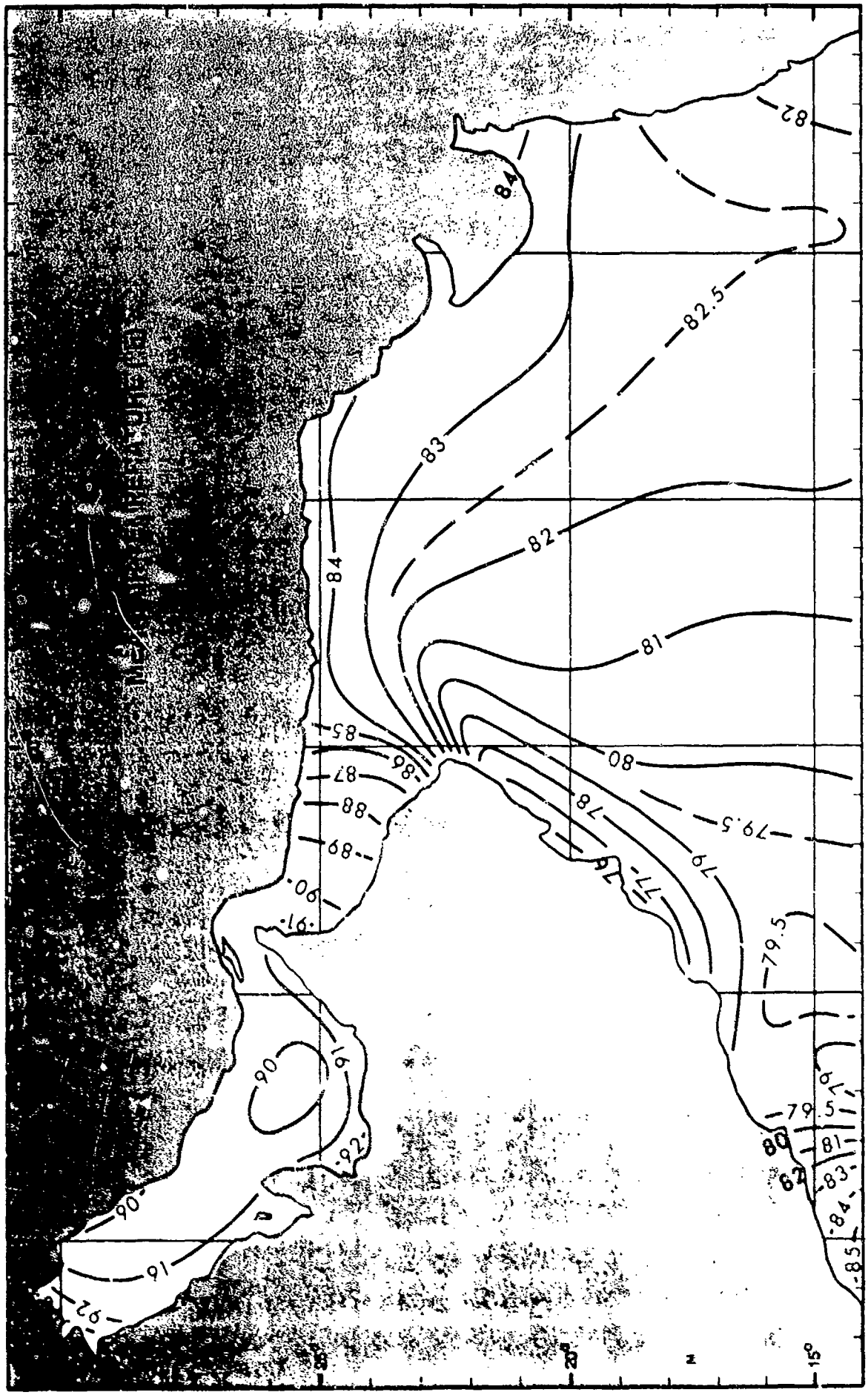


Wind Speed 11-21 and 22-33 Knots

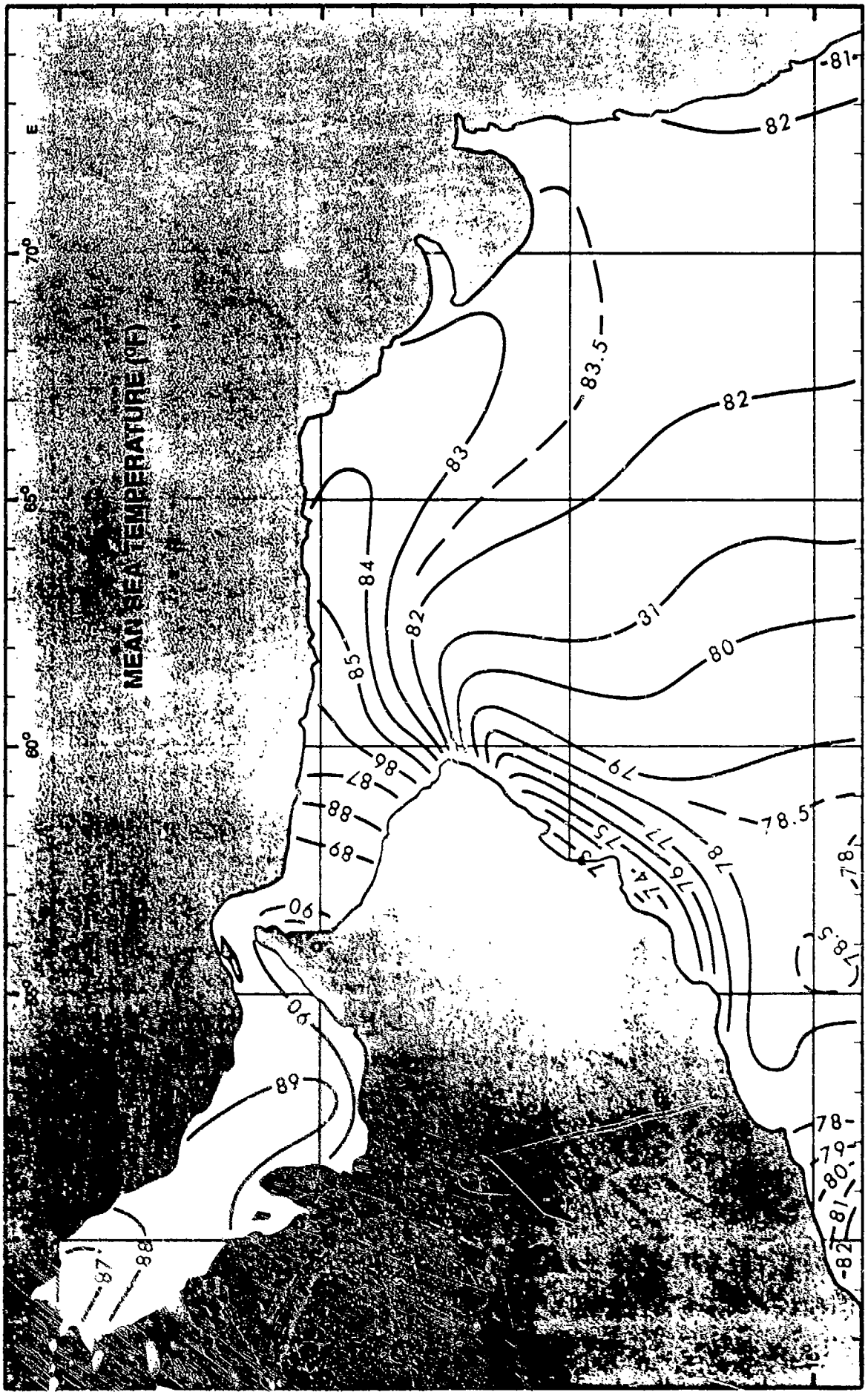


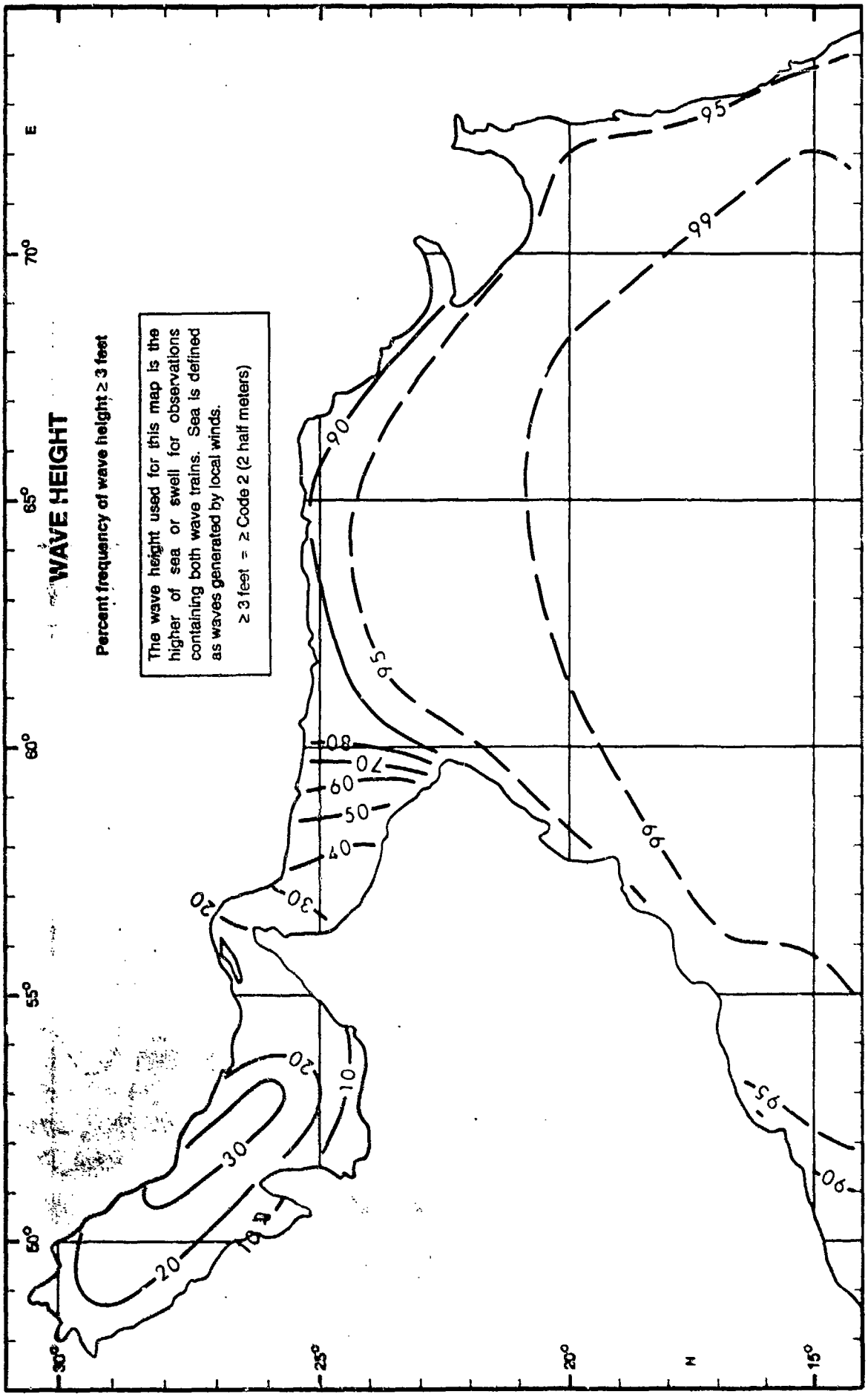

50°
E
55°
30°
SURFACE WIND ROSES
N
Direction Frequency : Bars
Each circle = 20%
25% of all winds were from north.
Percent of calms.
20°

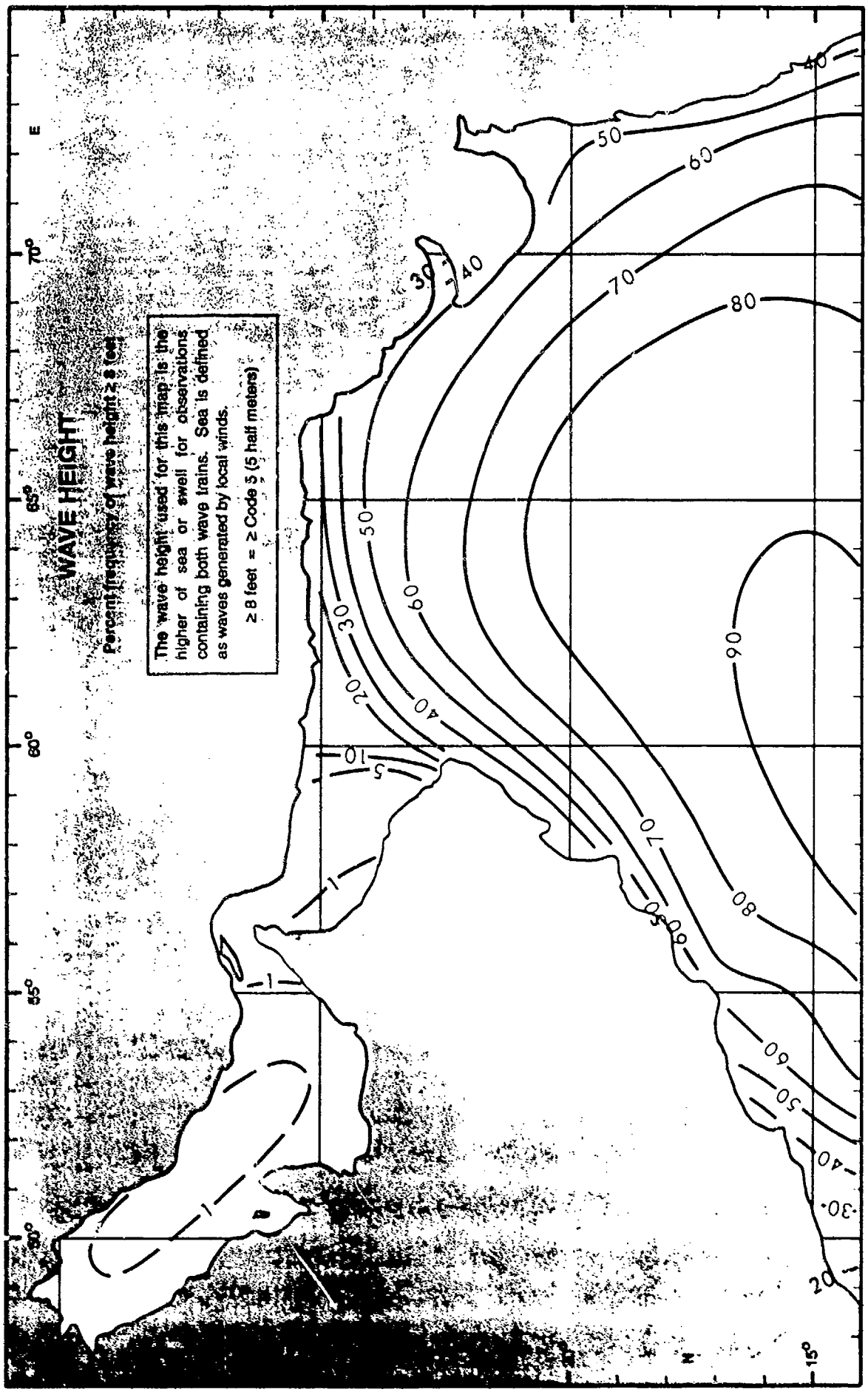

65°
E
70°
30°
N
25°
20°
15.7
51 / 15.0
21 / 14.7


82
84
82.5
83
82
84
81
85
86
87
88
89
90
91
80
78
79.5
79
77
79.5
79.5
80
81
82
83
84
85
90
91
92
90
92
15°

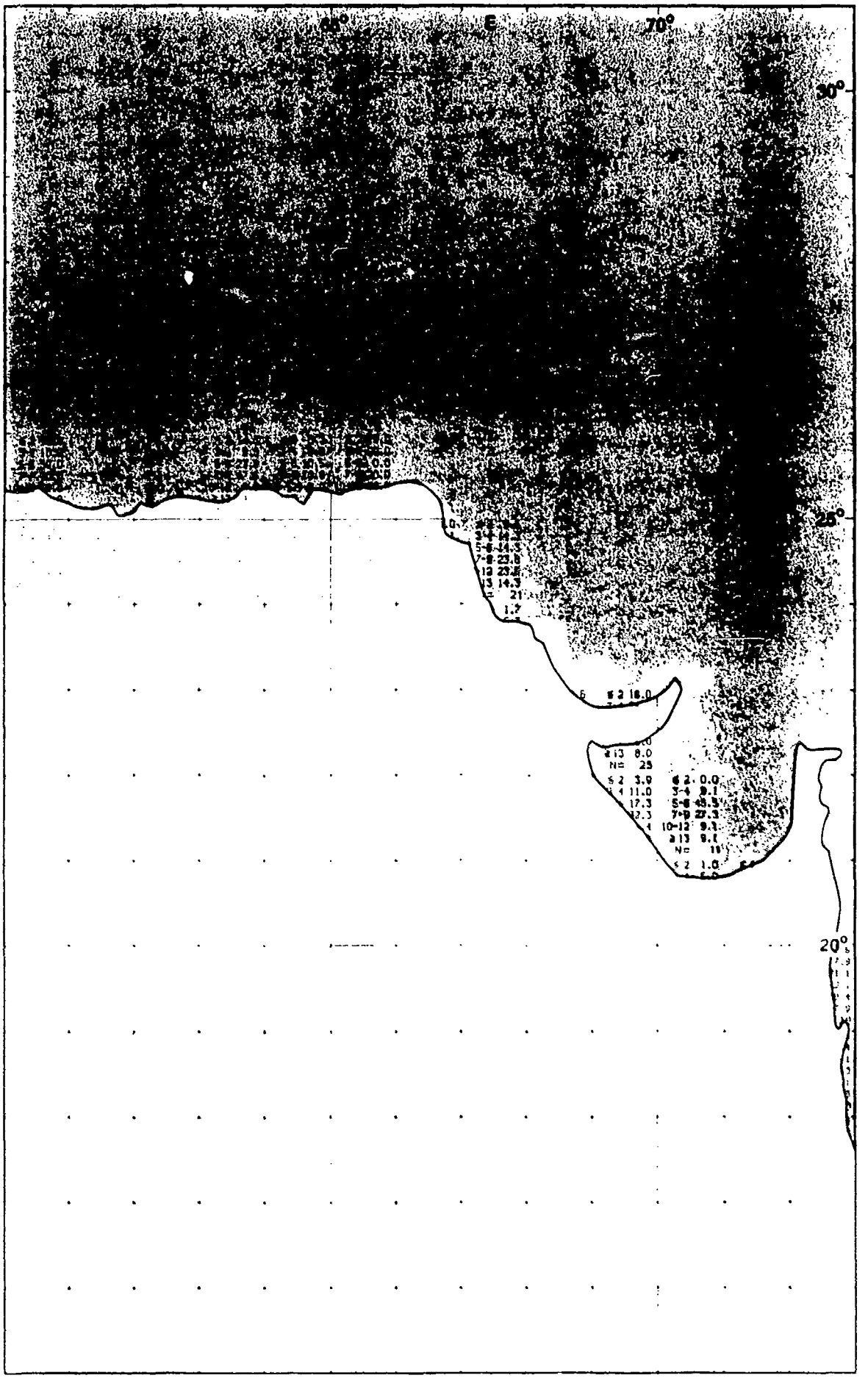
Mean Sea Surface Temperature

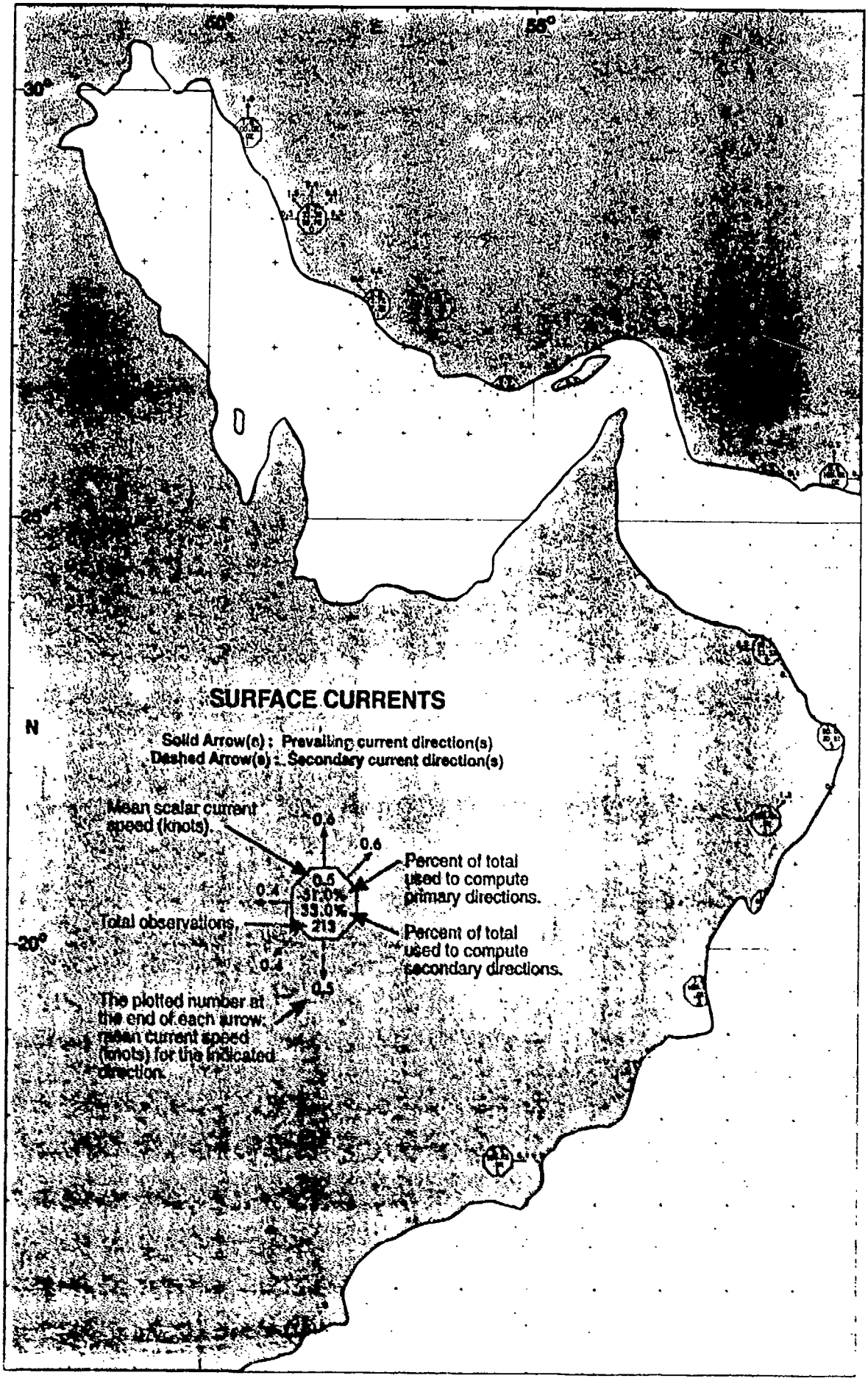



WAVE HEIGHT
Percent frequency of wave height ≥ 3 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 3 feet = ≥ Code 2 (2 half meters)
70°
65°
60°
55°
50°
30°
25°
20°
15°
E
N
95
99
90
95
80
70
60
50
40
30
20
99
95
90
20
10
30
20
10

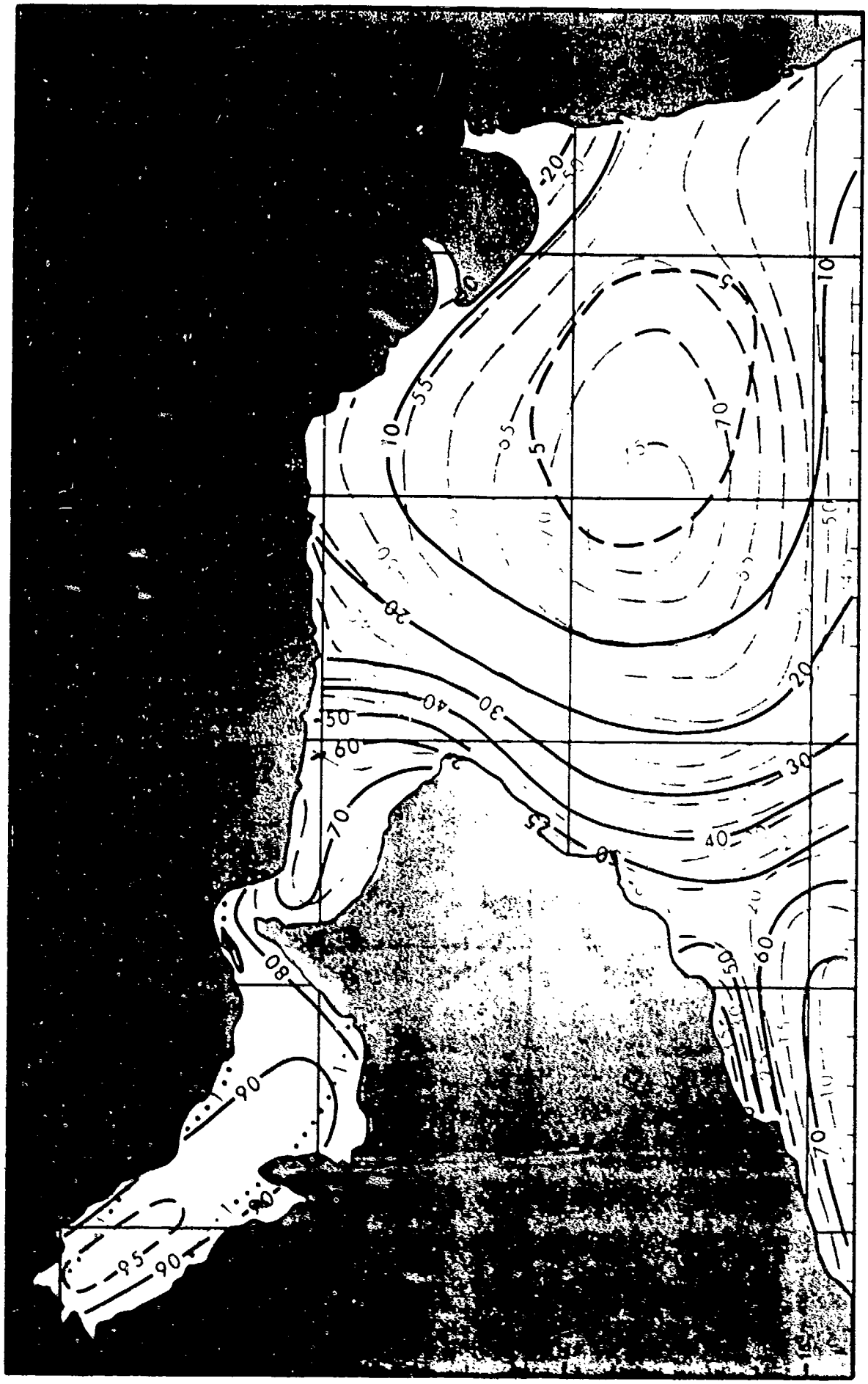

WAVE HEIGHT
Percent frequency of wave height ≥ 8 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 8 feet = ≥ Code 5 (5 half meters)
E
70°
65°
60°
55°
50°
15°
N
40
50
60
70
80
90
30
20
10
5
1


WAVE HEIGHT
Percent frequency of various ranges within 1° x 1° quadrangles
HEIGHT PERCENT
≤ 2 10.0
3 - 4 20.0
5 - 6 30.0
7 - 9 20.0
10 - 12 10.0
≥ 13 10.0
N = 1234
EXAMPLE:
30.0% of all wave heights were in the range 5 - 6 feet.
N = Observation count
Wave data for these tables were extracted from the historical Sea and Swell Wave Climate
N
20


65°
E
70°
30°
25°
20°

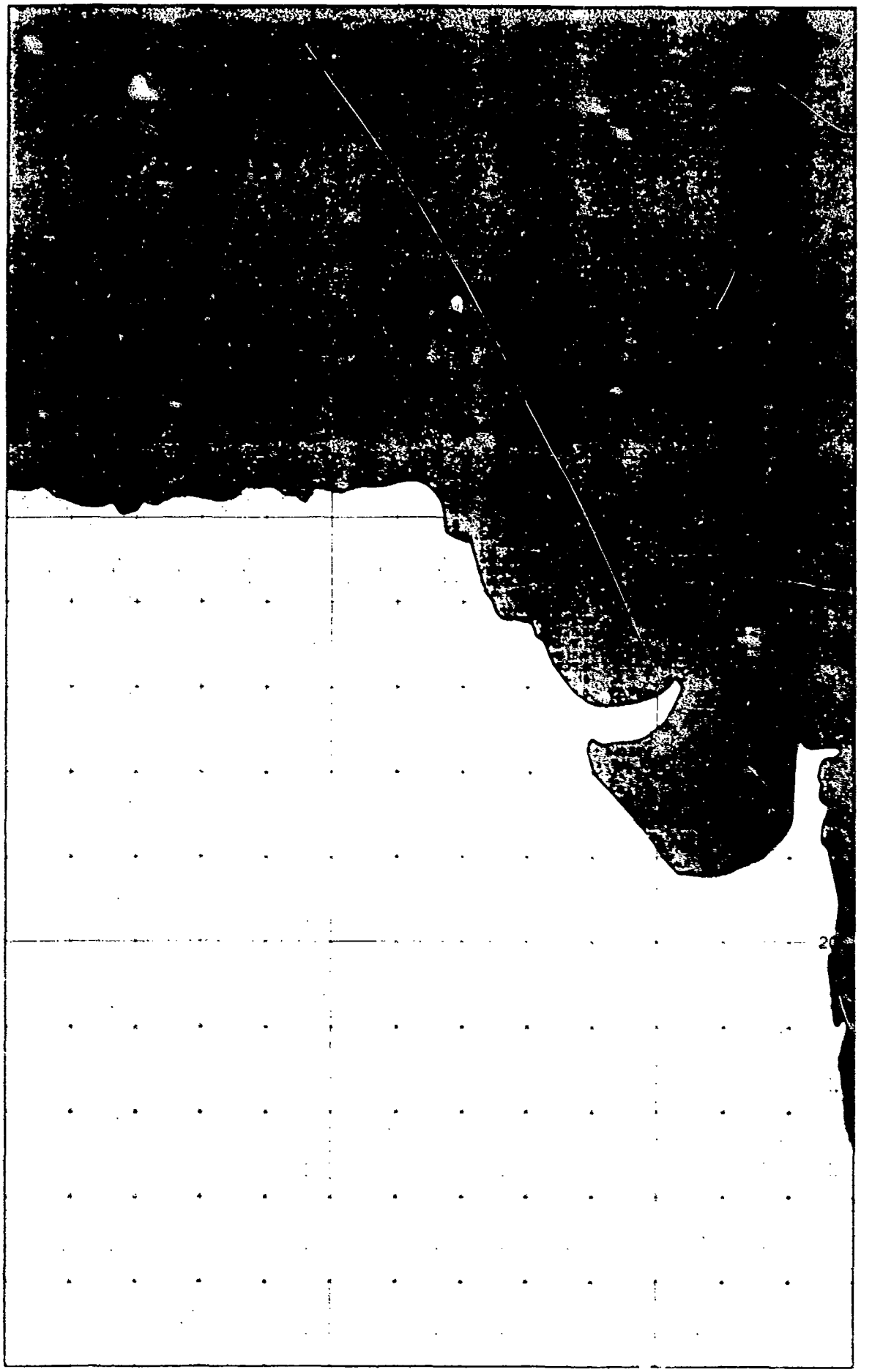

50°
55°
30°
25°
20°
N
SURFACE CURRENTS
Solid Arrow(s): Prevailing current direction(s)
Dashed Arrow(s): Secondary current direction(s)
Mean scalar current speed (knots)
0.6
0.6
0.5
0.4
31.0%
33.0%
213
0.4
0.5
Percent of total used to compute primary directions.
Total observations
Percent of total used to compute secondary directions.
The plotted number at the end of each arrow: mean current speed (knots) for the indicated direction.



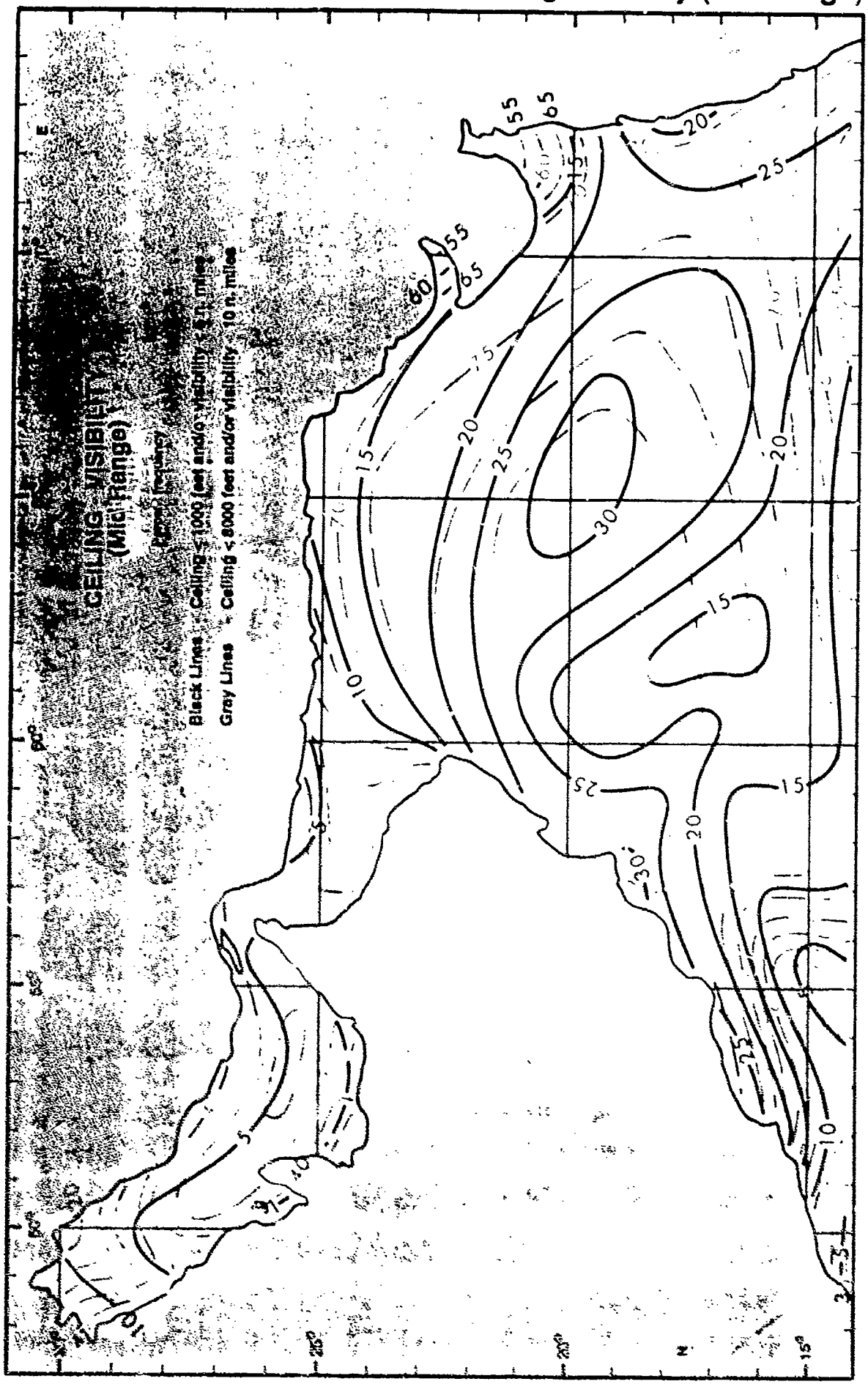

20
50
0
10
55
5
70
15
30
40
50
60
70
80
90
95

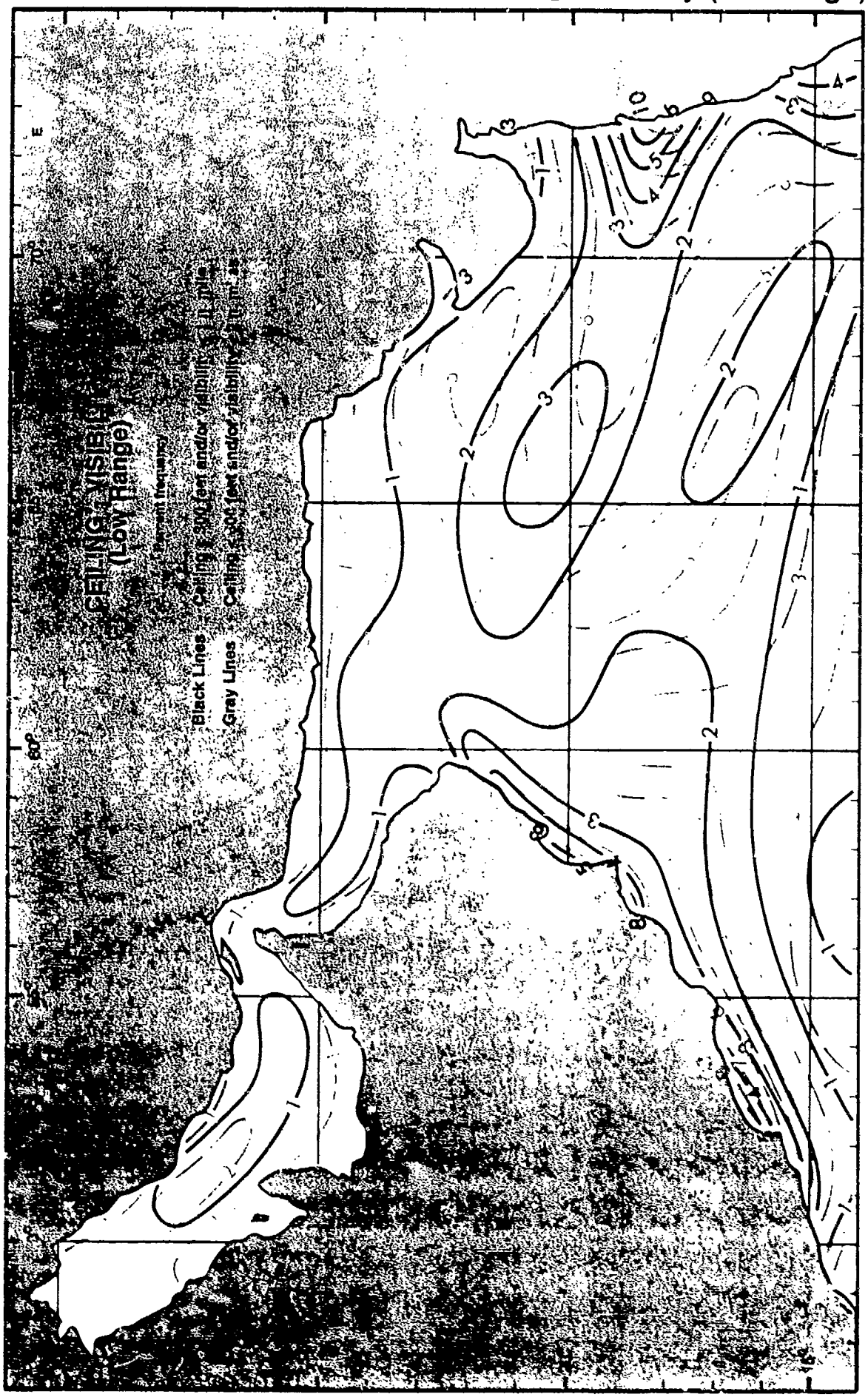

25
20
20
15
10
5
1
5
1
1
1


VISIBILITY
Percent frequency of various ranges within 1° x 1° quadrangles
N. MILES
PERCENT
EXAMPLE
N = Observation count

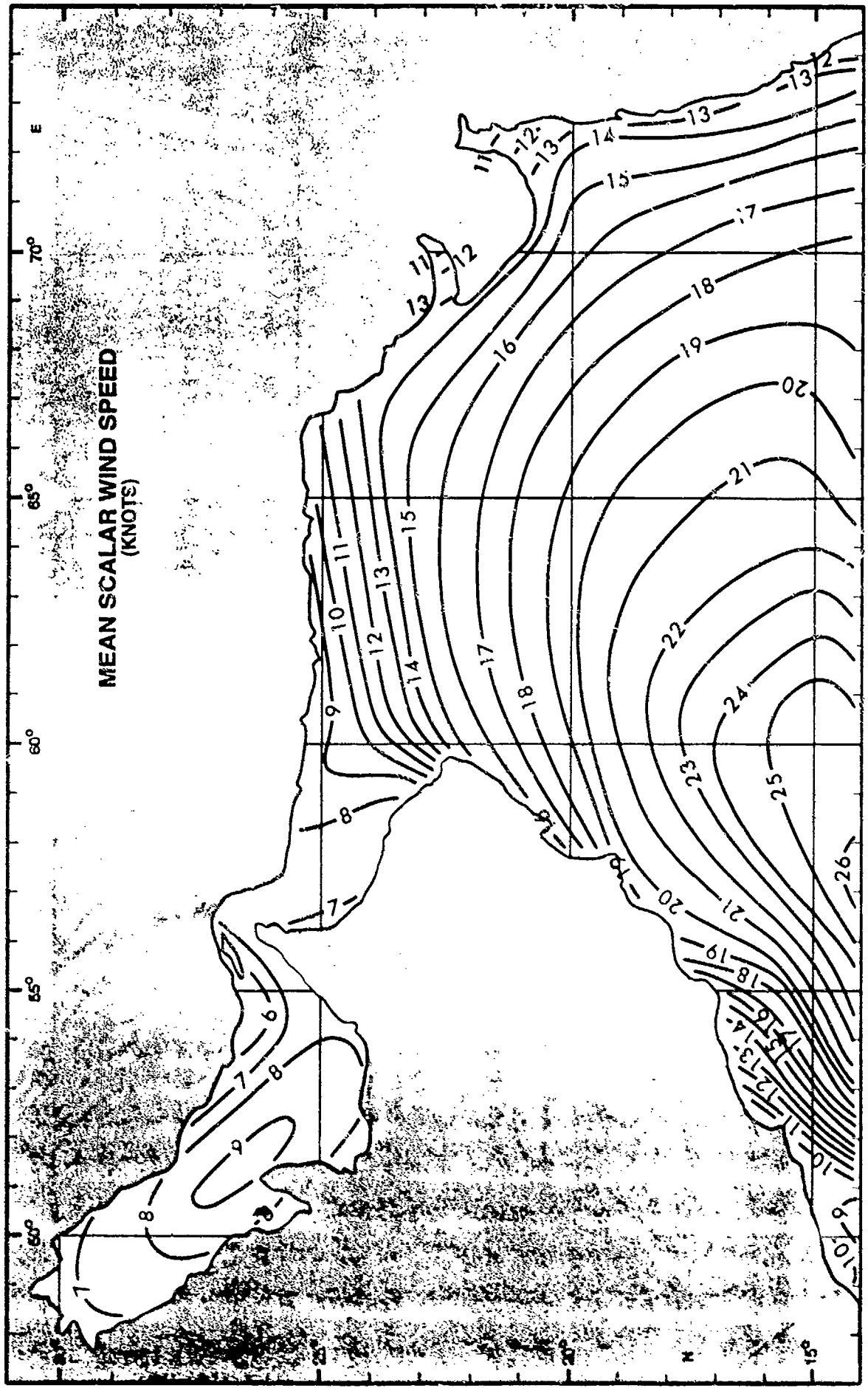


Ceiling-Visibility (mid range)

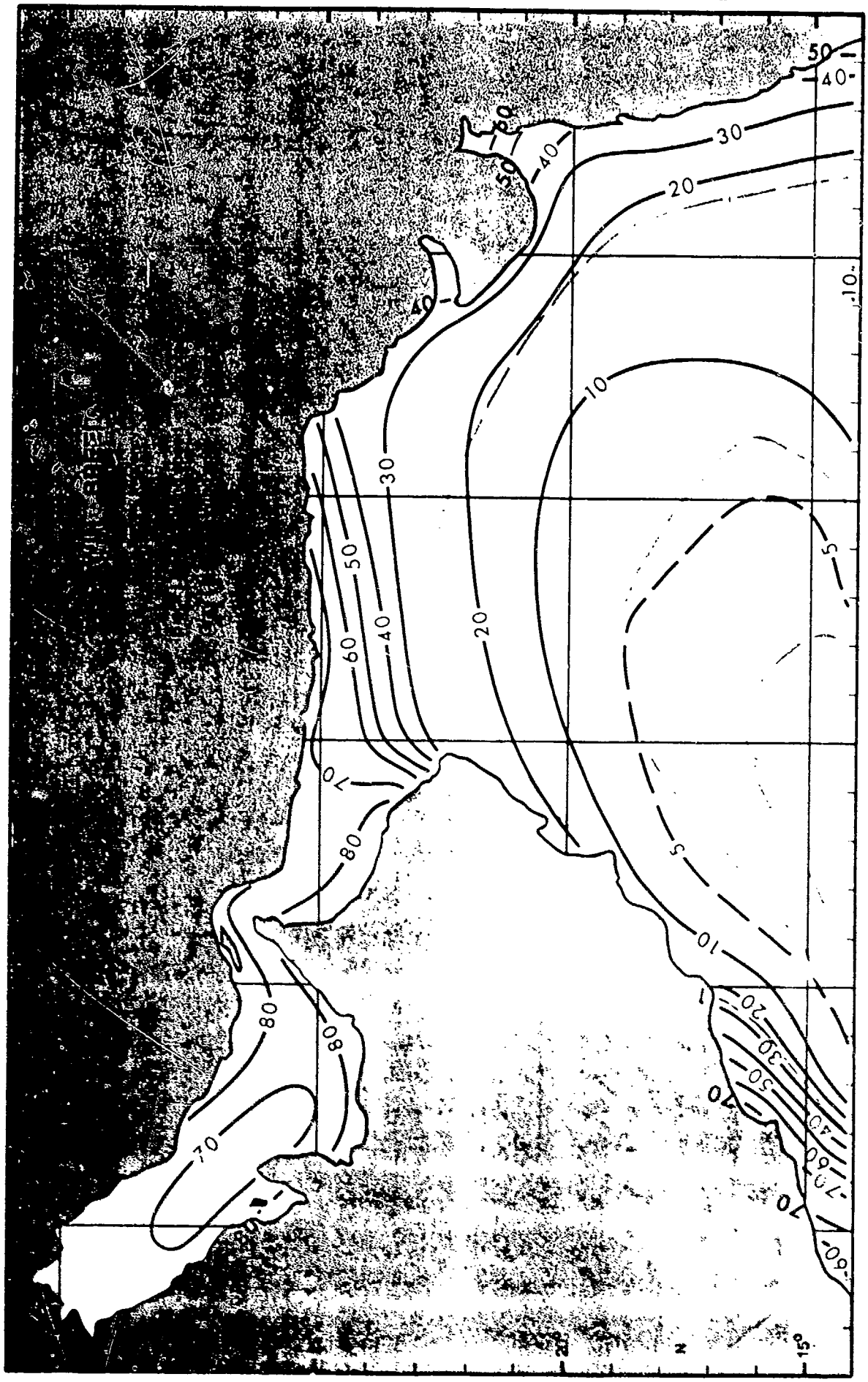



CEILING-VISIBILITY
(Low Range)
Black Lines
Gray Lines
60°
70°
E


5
10
15
20
25
30
35
40

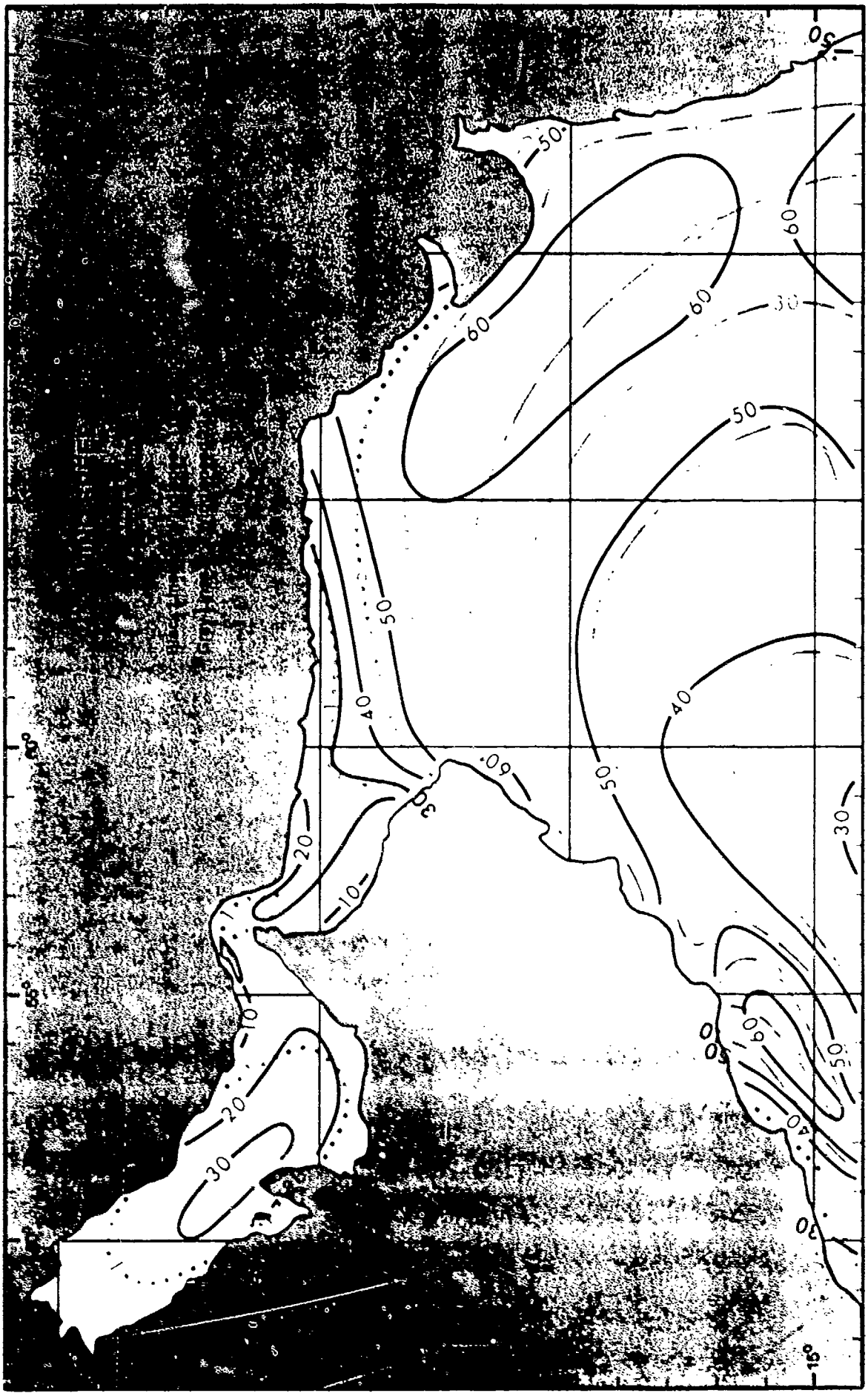

MEAN SCALAR WIND SPEED
(KNOTS)
70°
65°
60°
55°
50°
25°
20°
15°
E
N

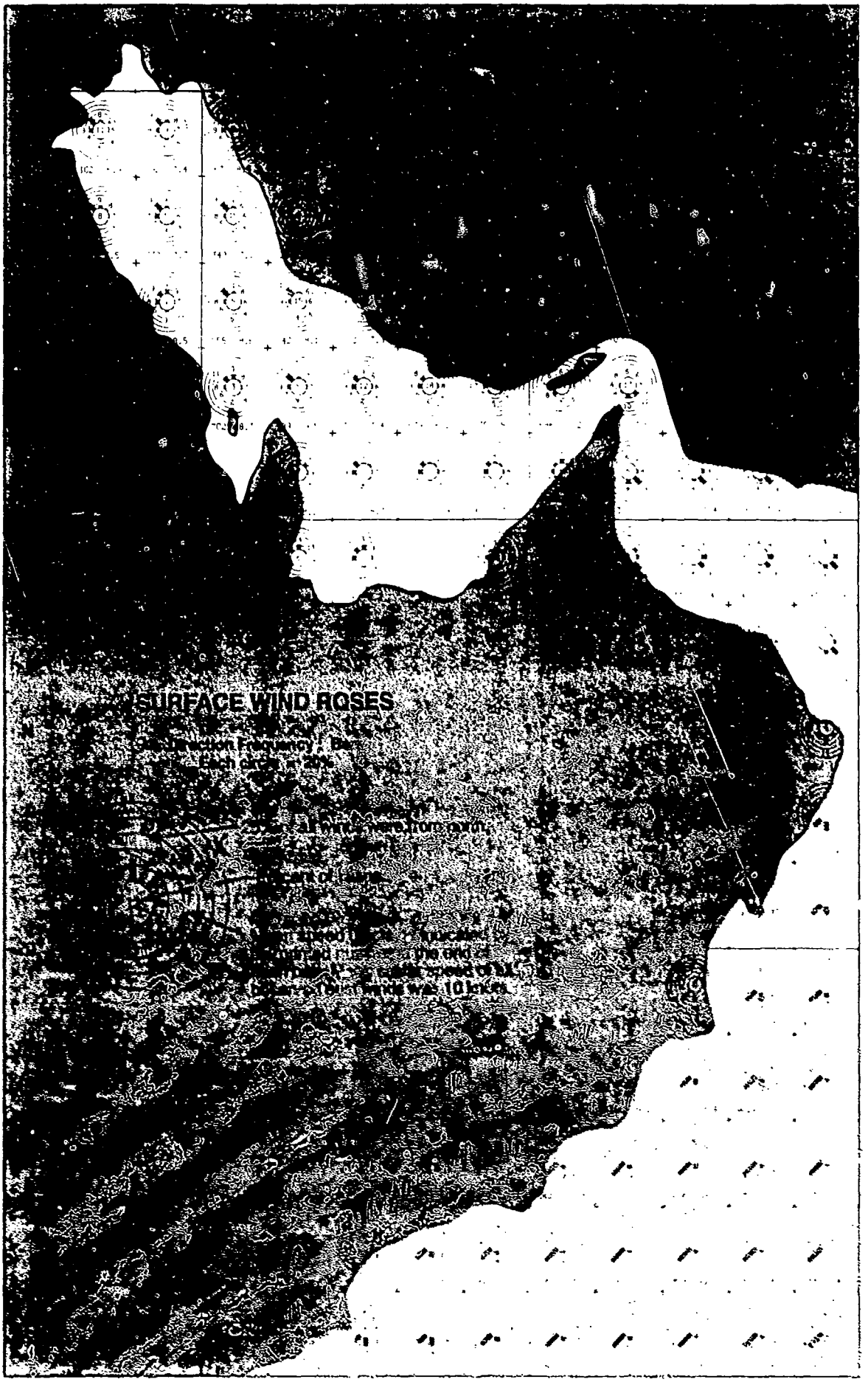
Wind Speed <11 and ≥ 34 Knots

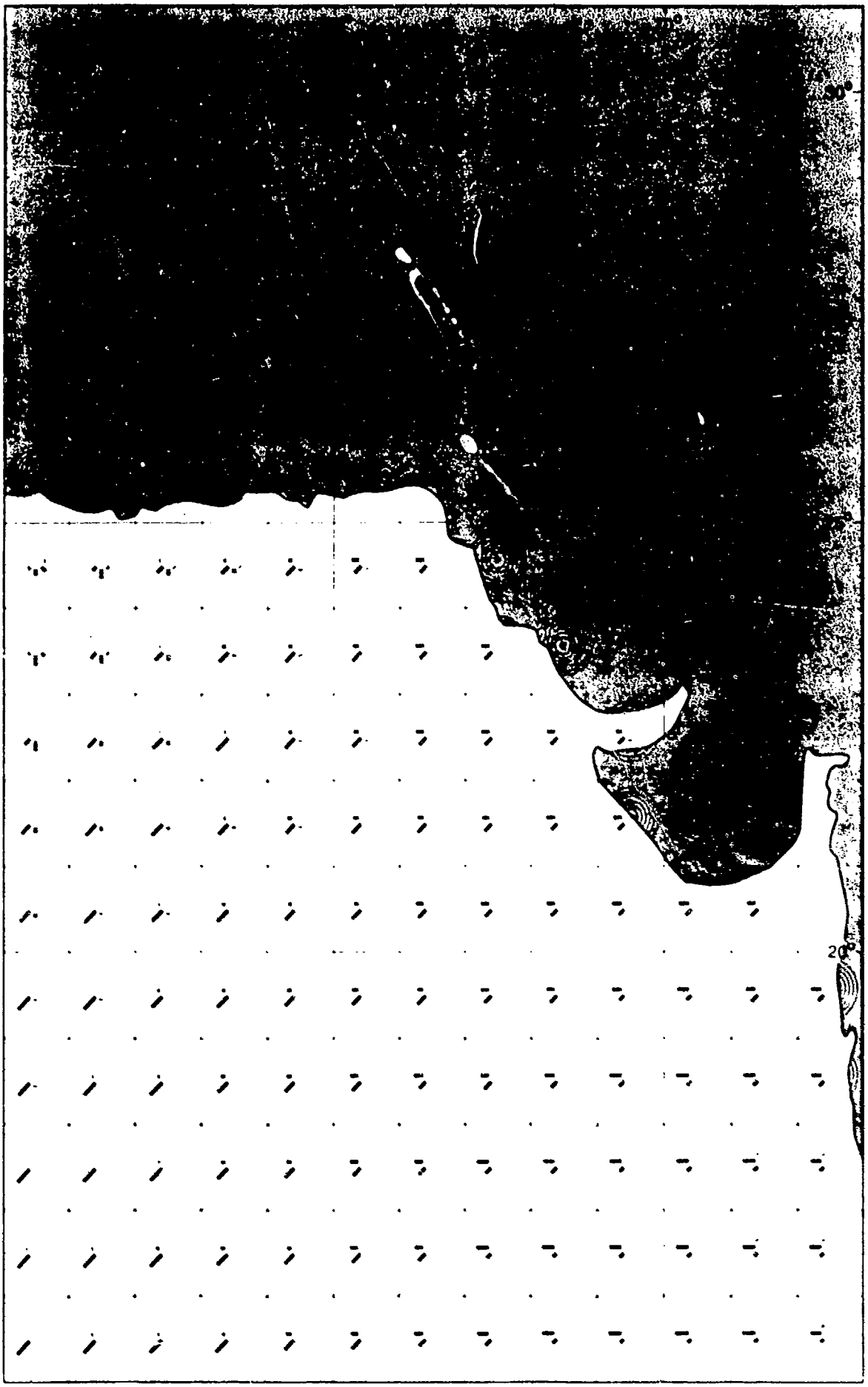


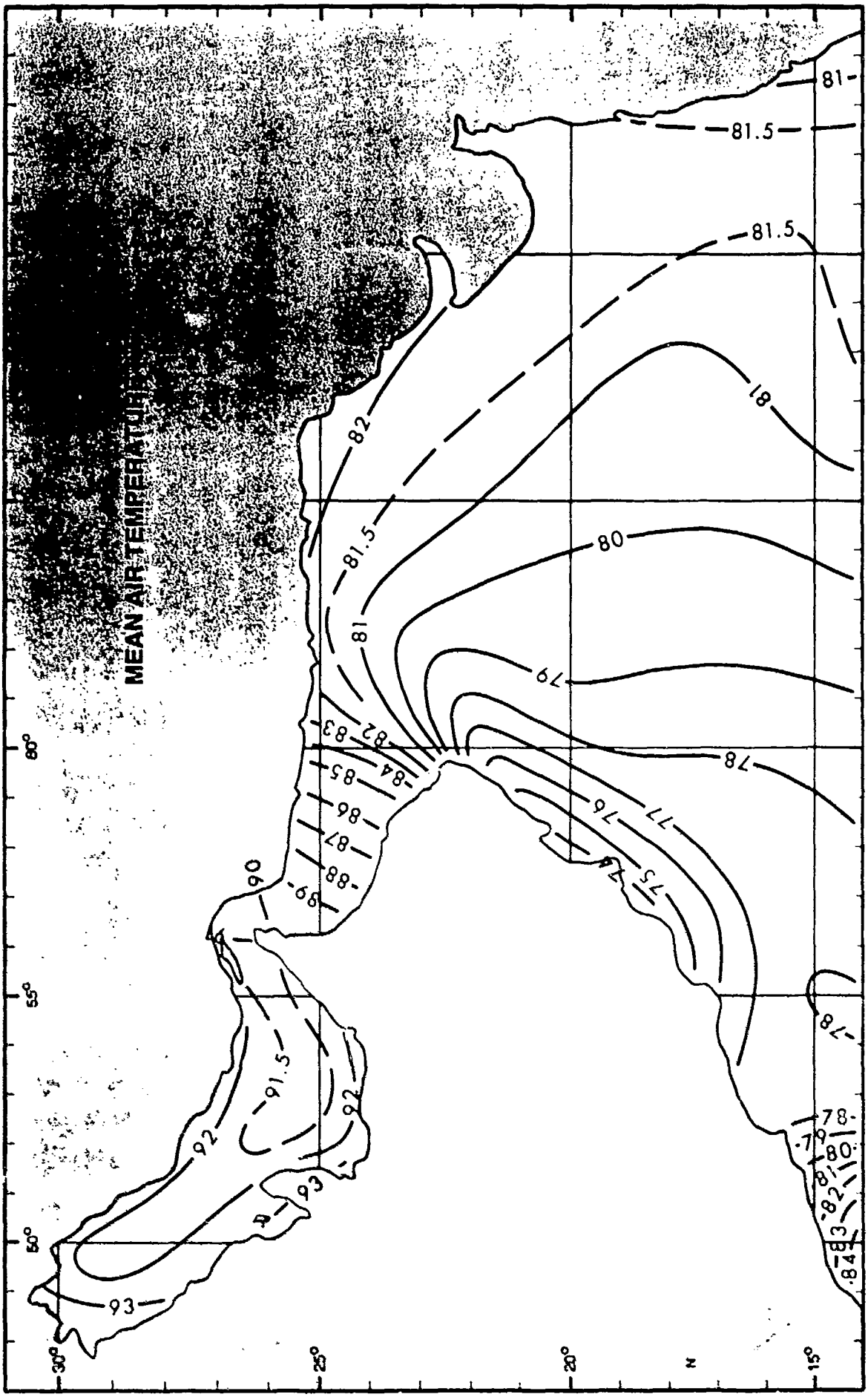
August

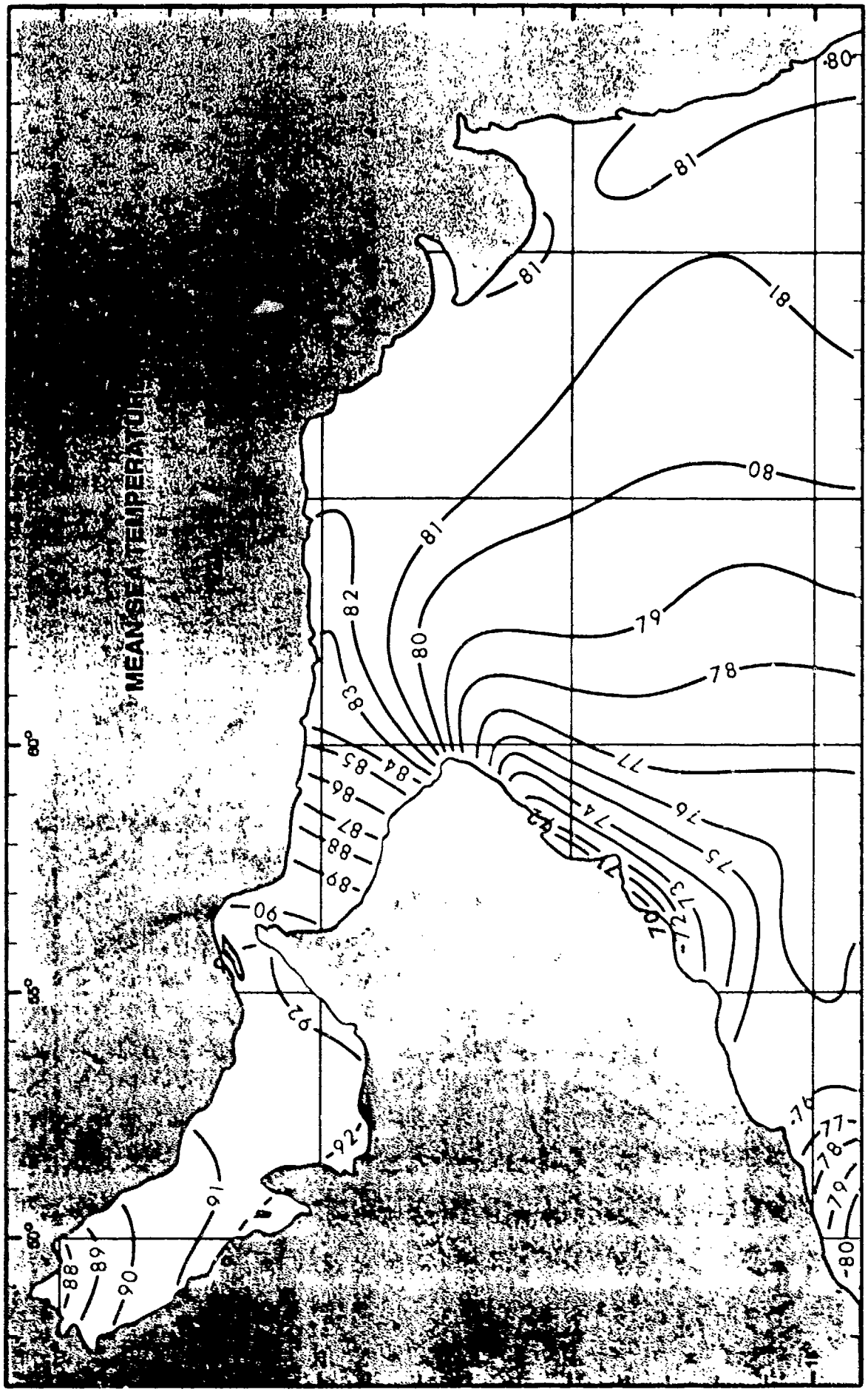
Wind Speed 11-21 and 22-33 Knots



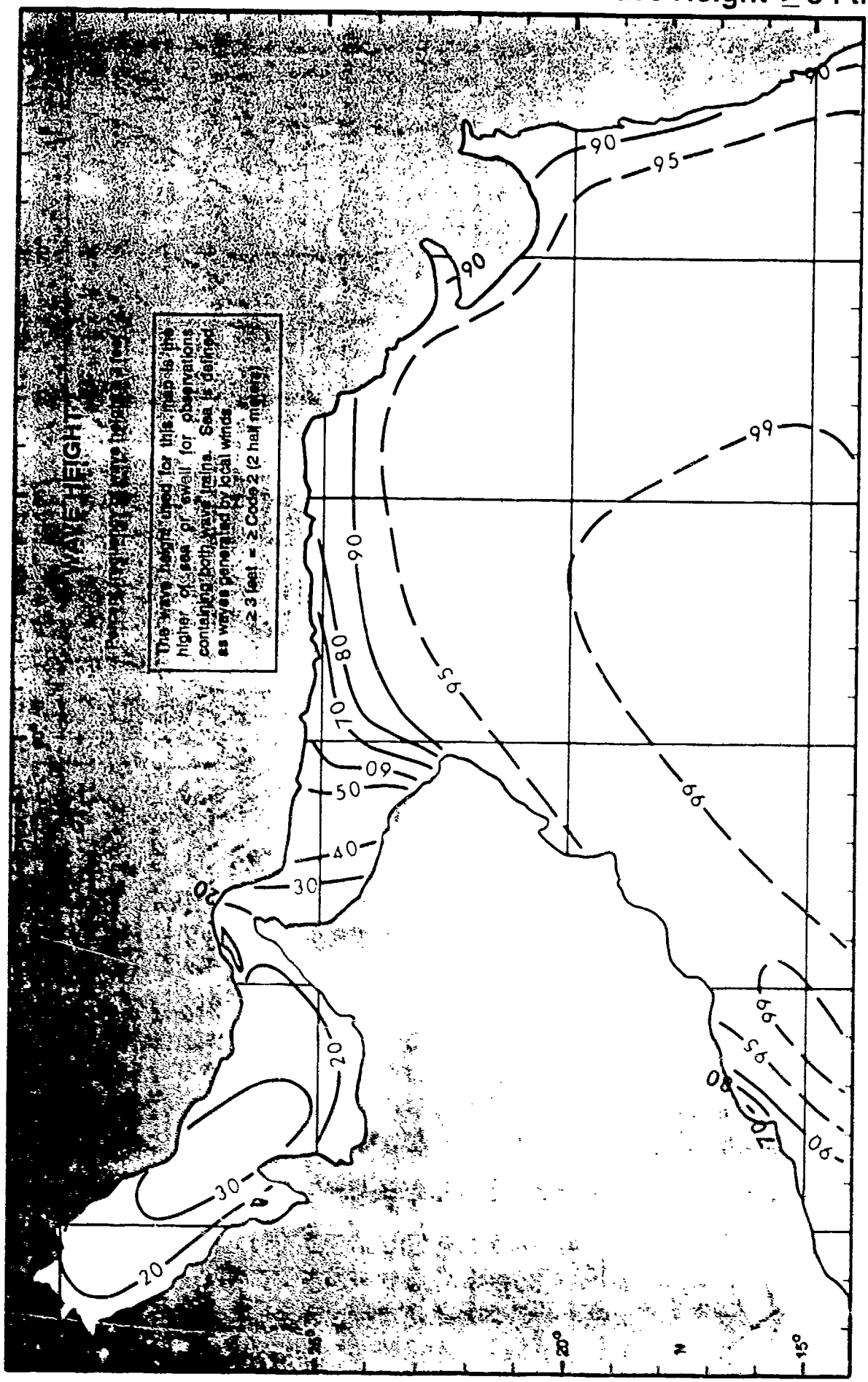

SURFACE WIND ROSES

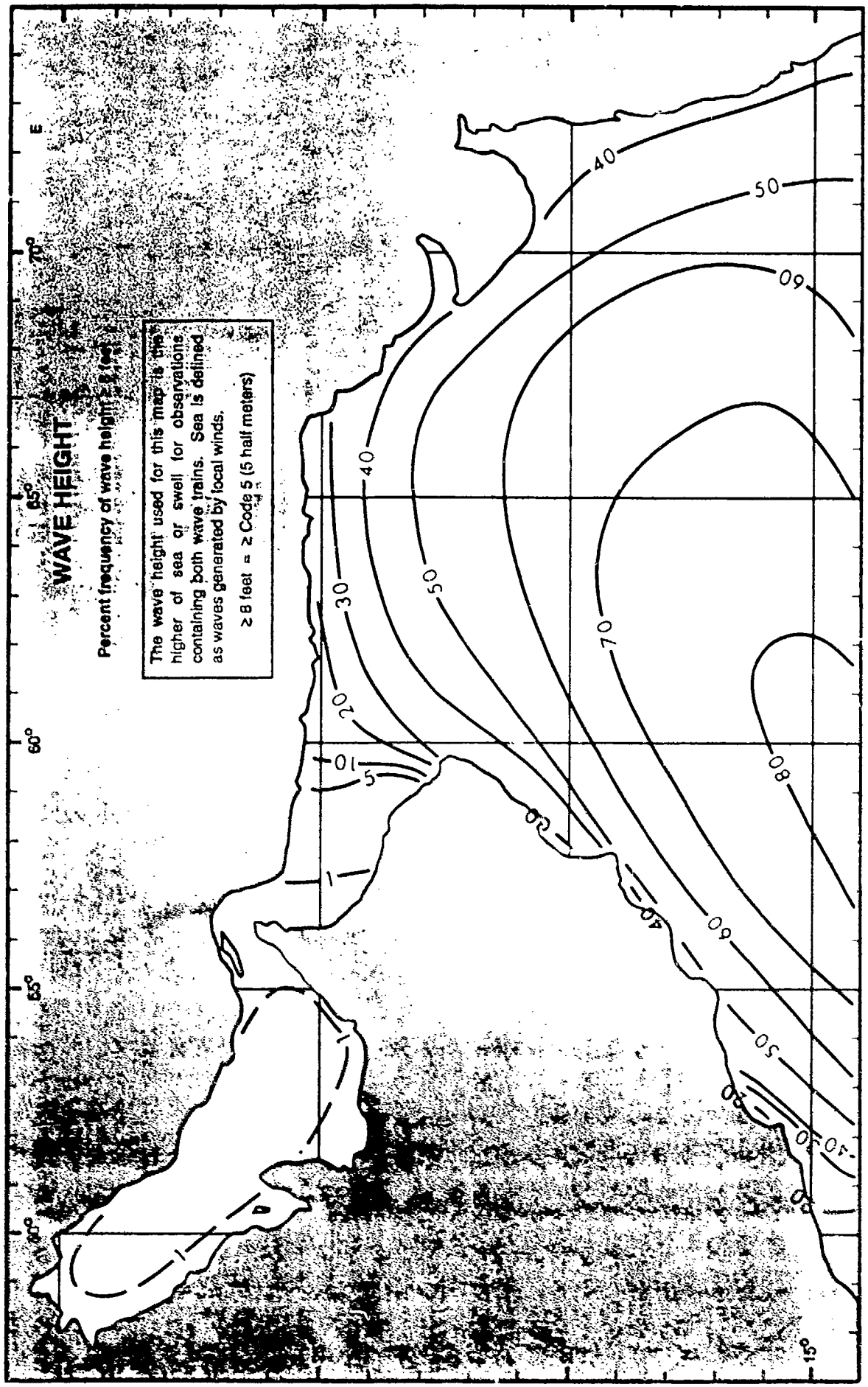



MEAN AIR TEMPERATURE
81
81.5
81.5
82
81.5
81
80
79
78
77
76
75
74
90
91.5
92
92
93
93
80°
55°
50°
30°
25°
20°
15°
N

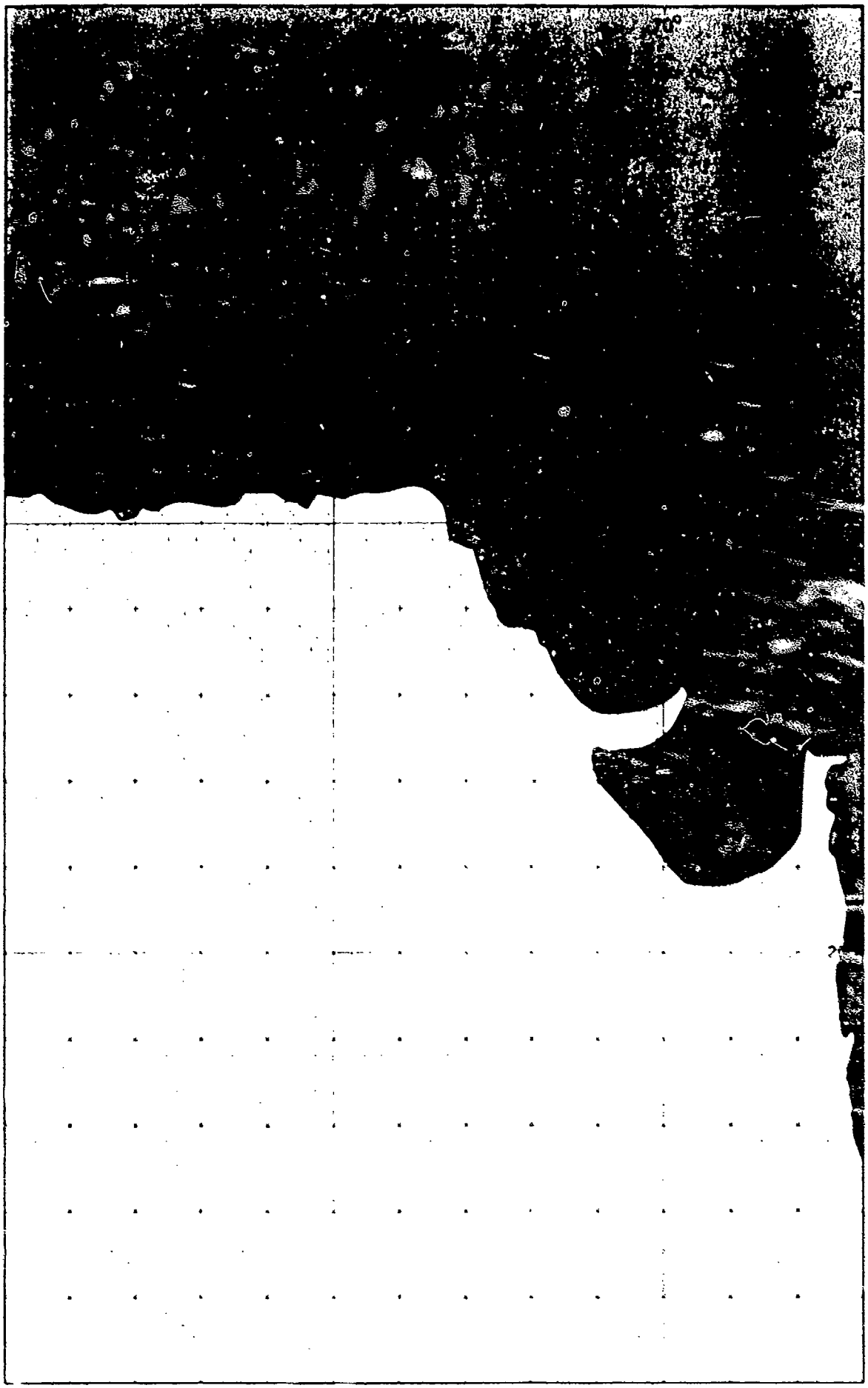

MEAN SEA TEMPERATURE
80
81
81
81
80
79
78
82
83
84
85
86
87
88
89
90
92
77
76
75
74
73
72
70
80
79
78
77
76
60°
55°
50°

Wave Height ≥ 3 Ft.

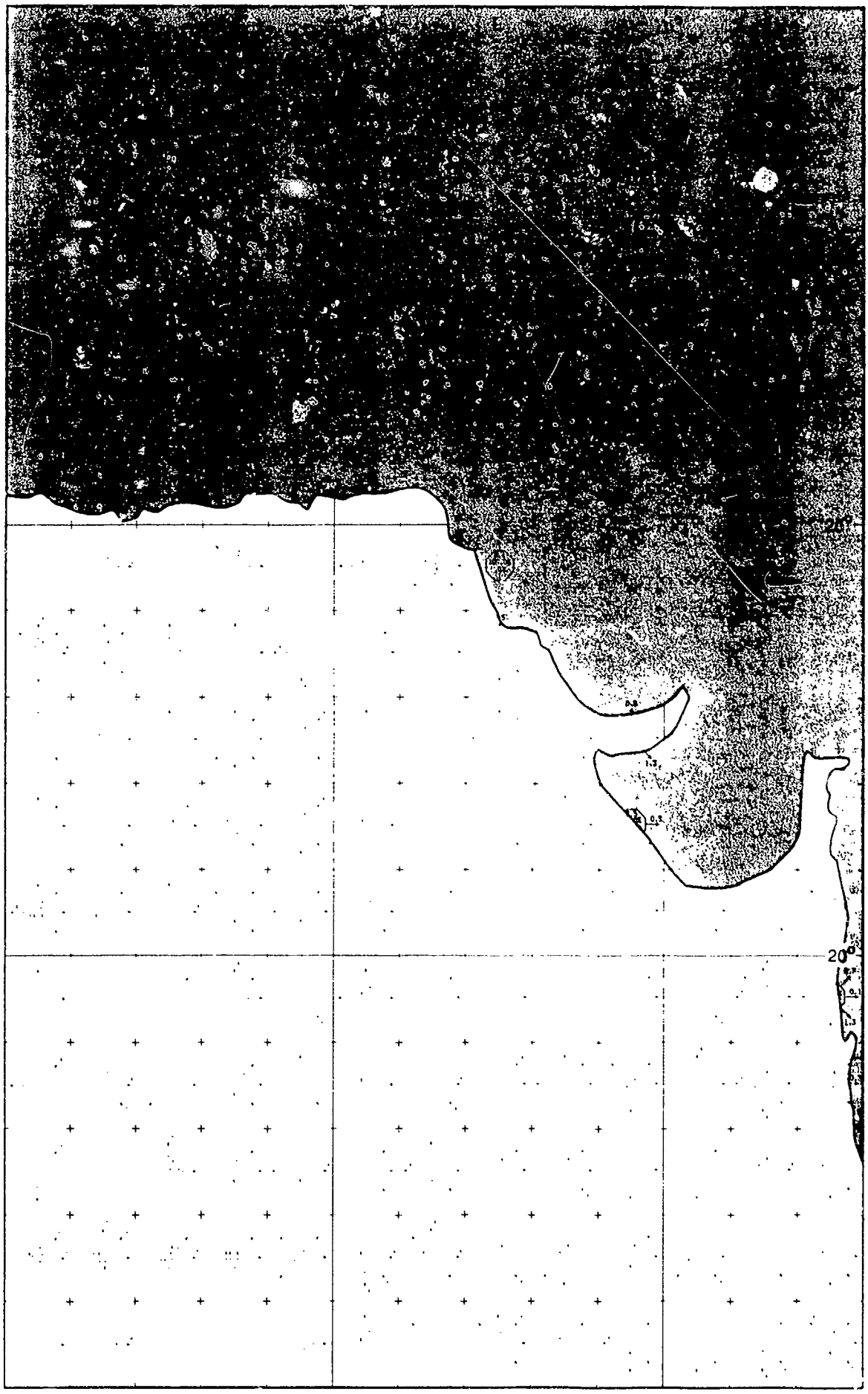


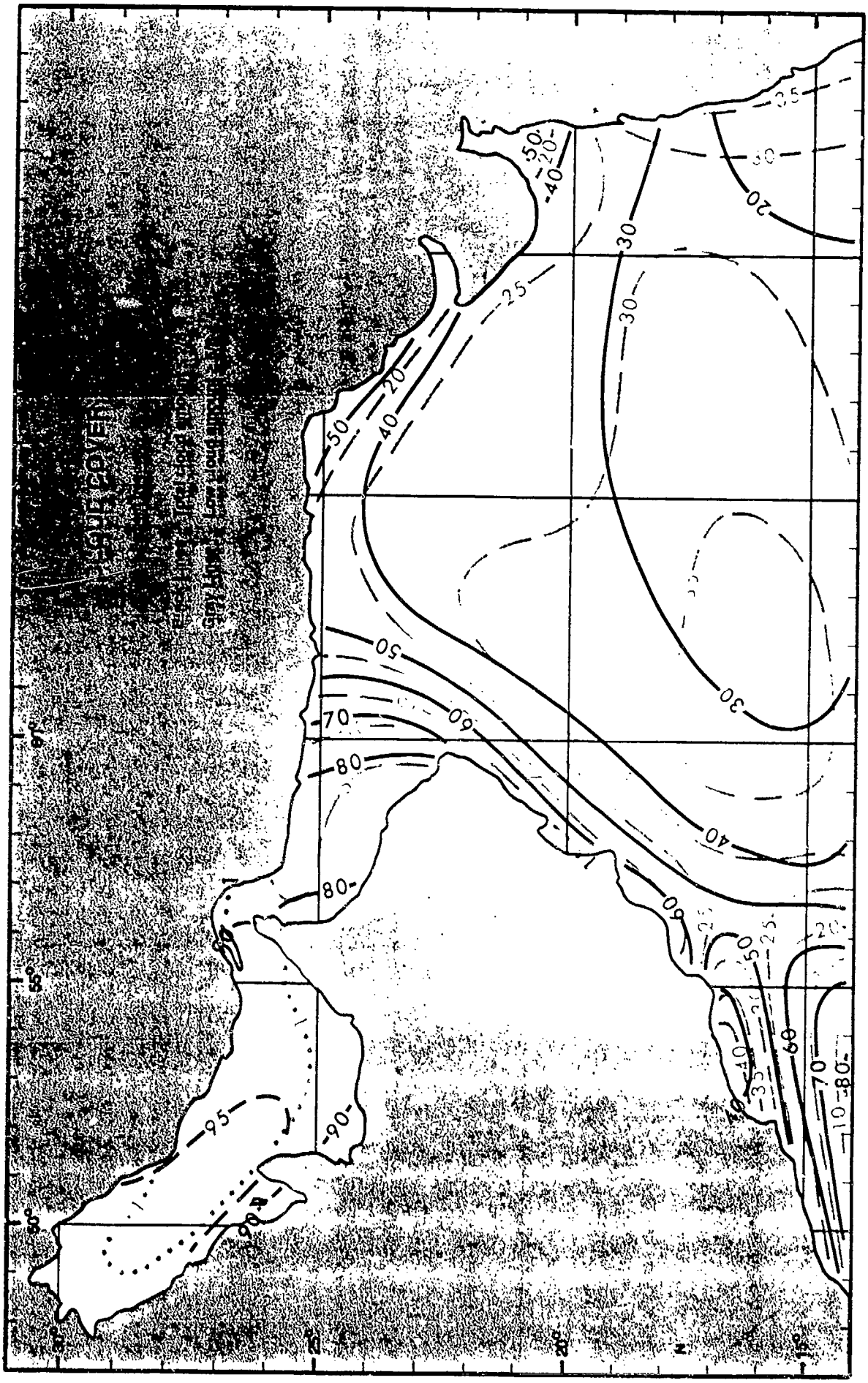

WAVE HEIGHT
Percent frequency of wave height ≥ 8 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 8 feet = ≥ Code 5 (5 half meters)
70°
65°
60°
55°
40°
150
40
50
60
30
20
10
5
1
70
80

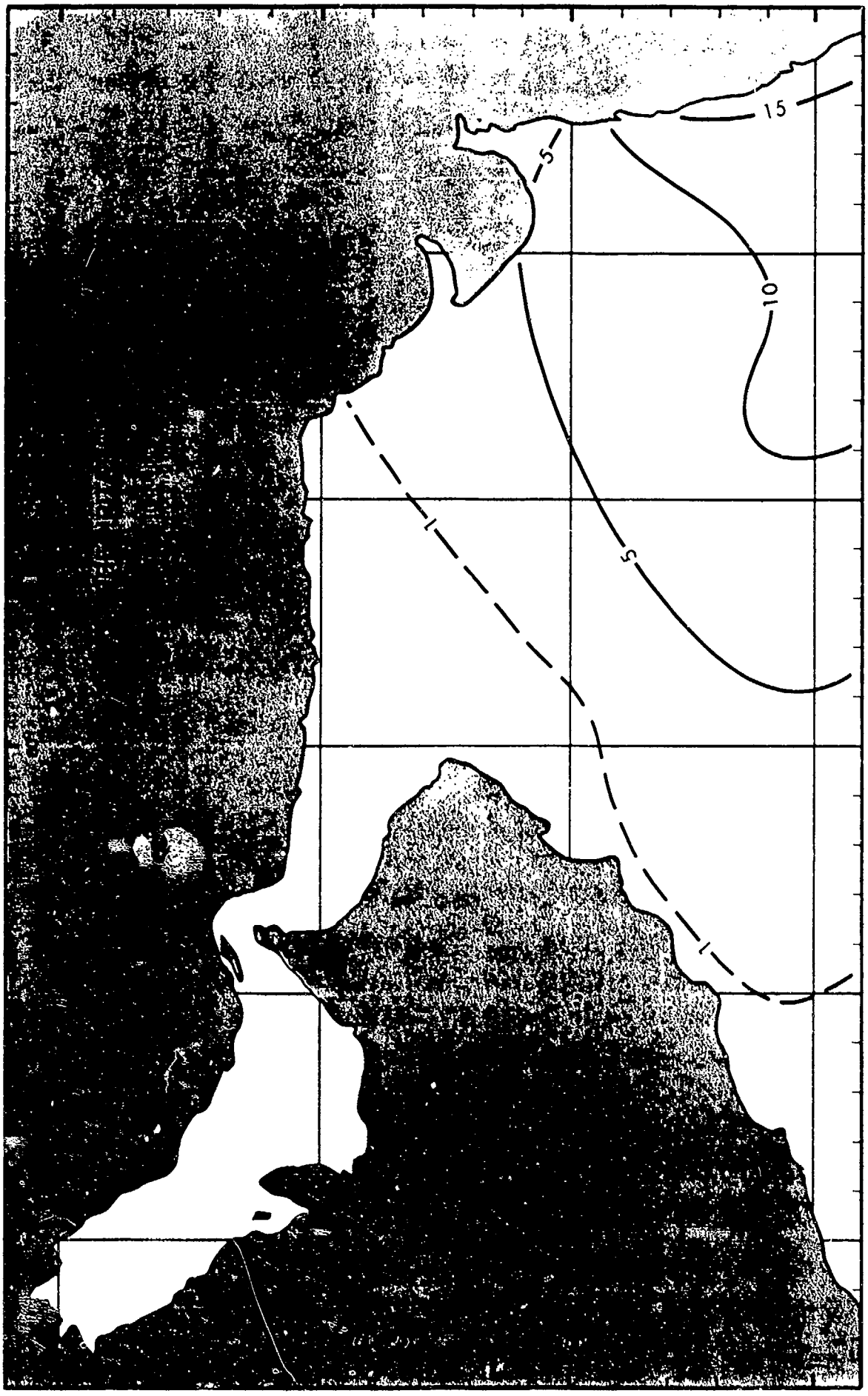





CURRENTS




LIGHT COVER
60°
50°
40°
20
10
0
10
20
30
40
50
60
70
80
90
95


15
5
10
5
1
1

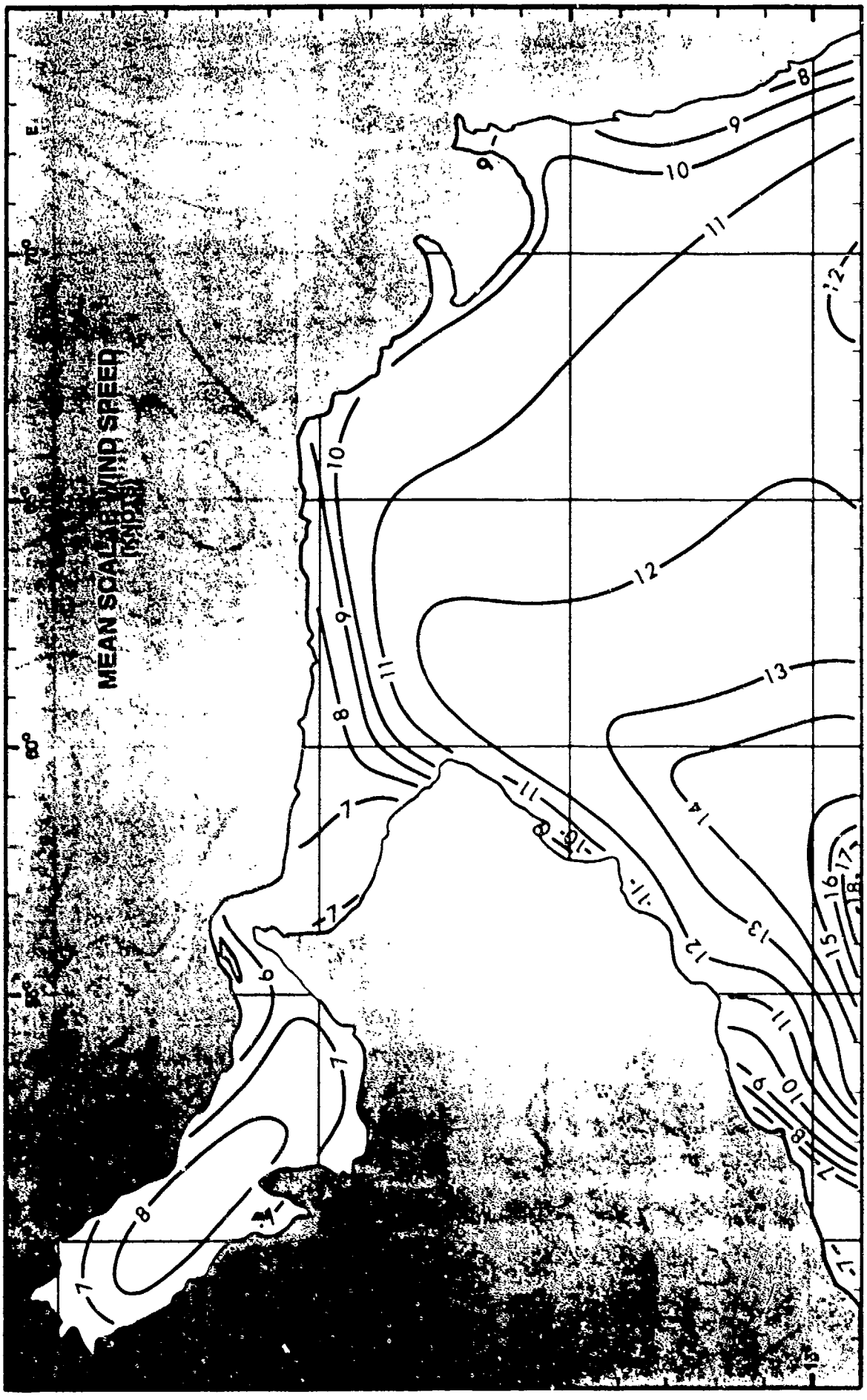





15
10
25
35
30
10
5
5
10
55
10
5
15
25



WIND - VISIBILITY - CLOUDINESS
Percent frequency
Black Lines - Optimum conditions: LCC ≥ 5000 feet (or no LCC), visibility ≥ 5 n. miles and wind 11-21 knots
Gray Lines - Poor conditions: any one of the following constitutes poor conditions: LCC < 300 feet, visibility < 1 n. mile, wind < 6 or ≥ 34 knots
80°
70°
60°
50°
40°
30°
20°
10°
E
N


MEAN SCALAR WIND SPEED
(KNOTS)
E
70°
60°
50°
80°

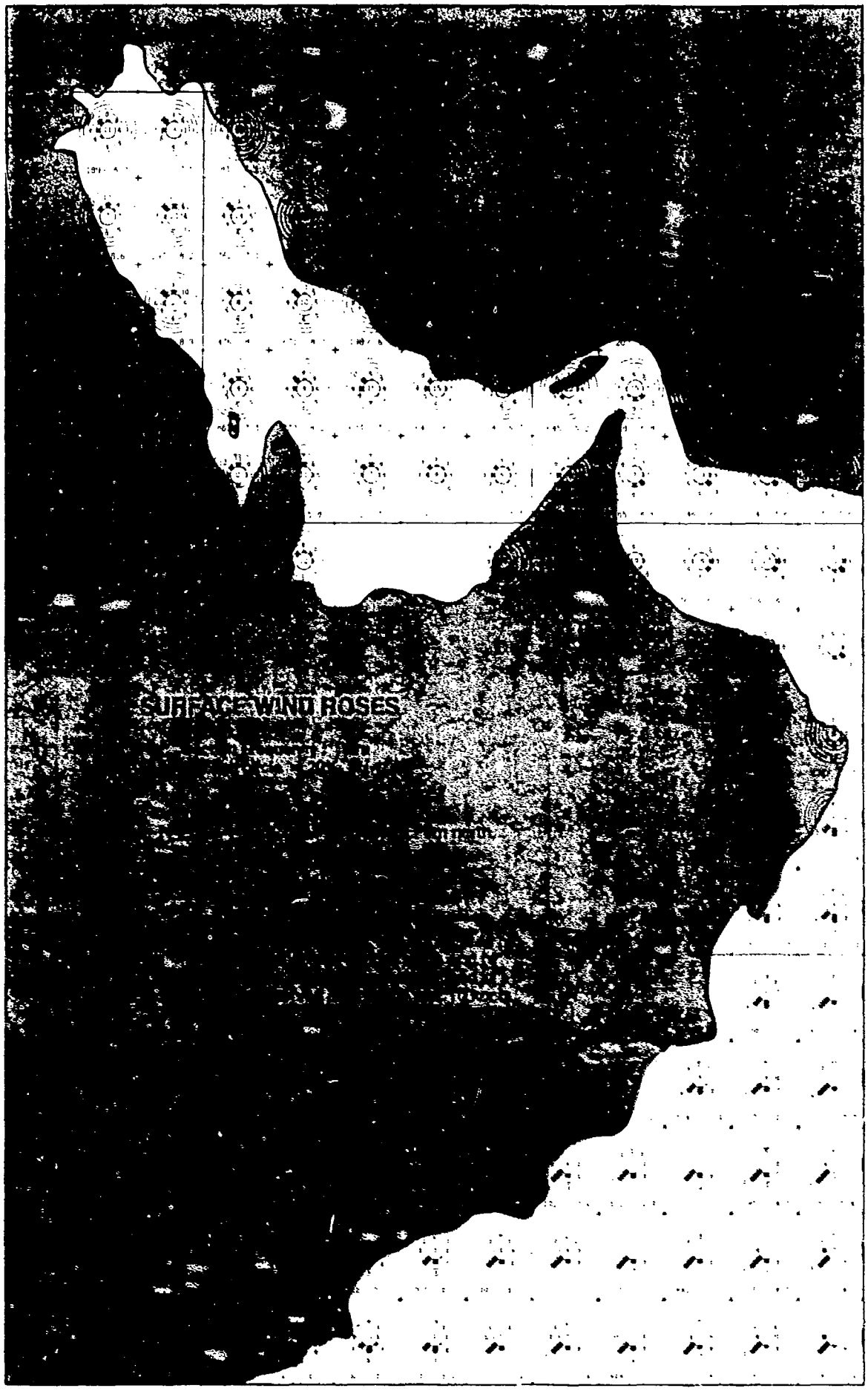
September **Wind Speed < 11 and ≥ 34 Knots**

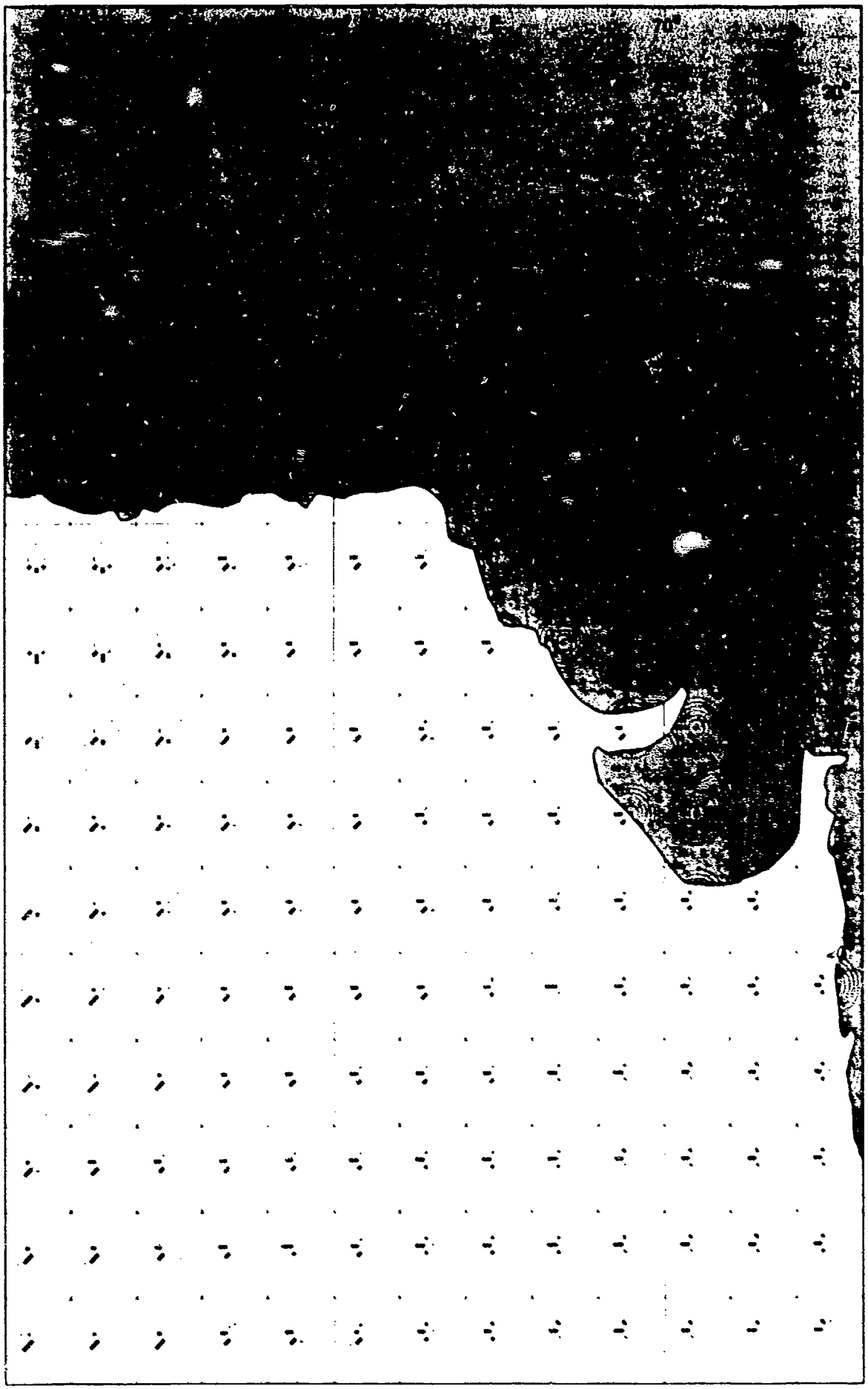


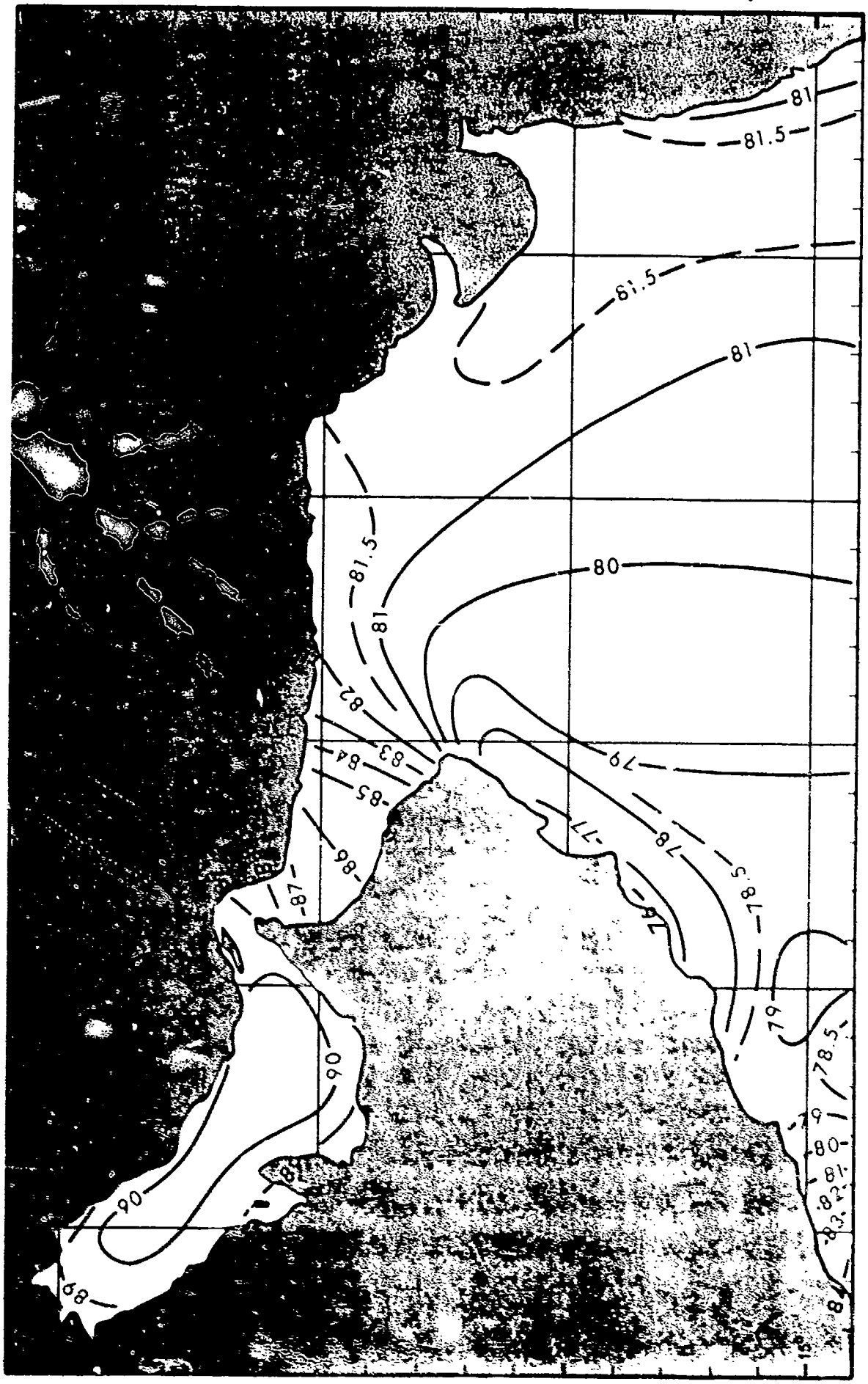
September

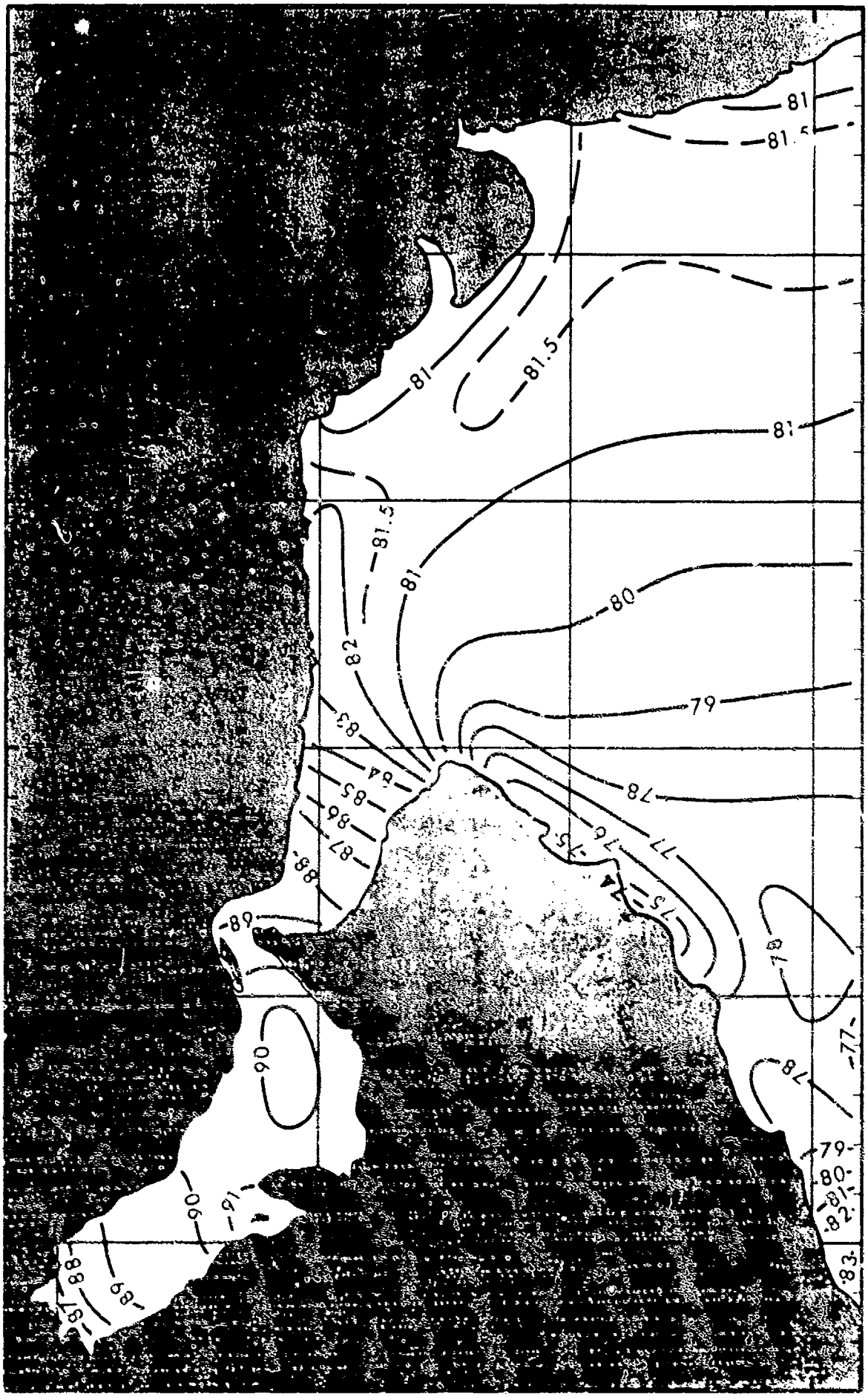
Wind Speed 11-21 and 22-33 Knots

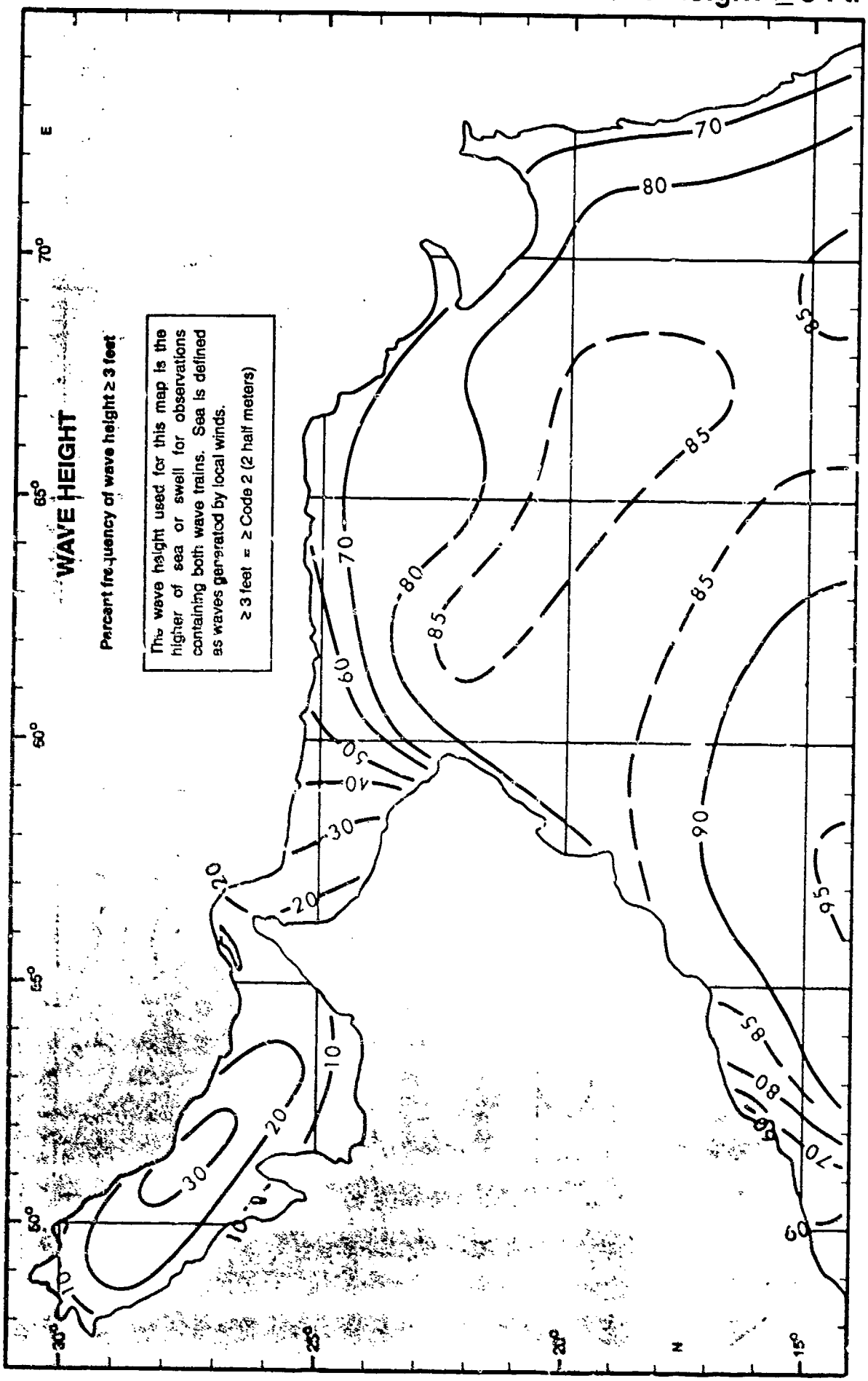


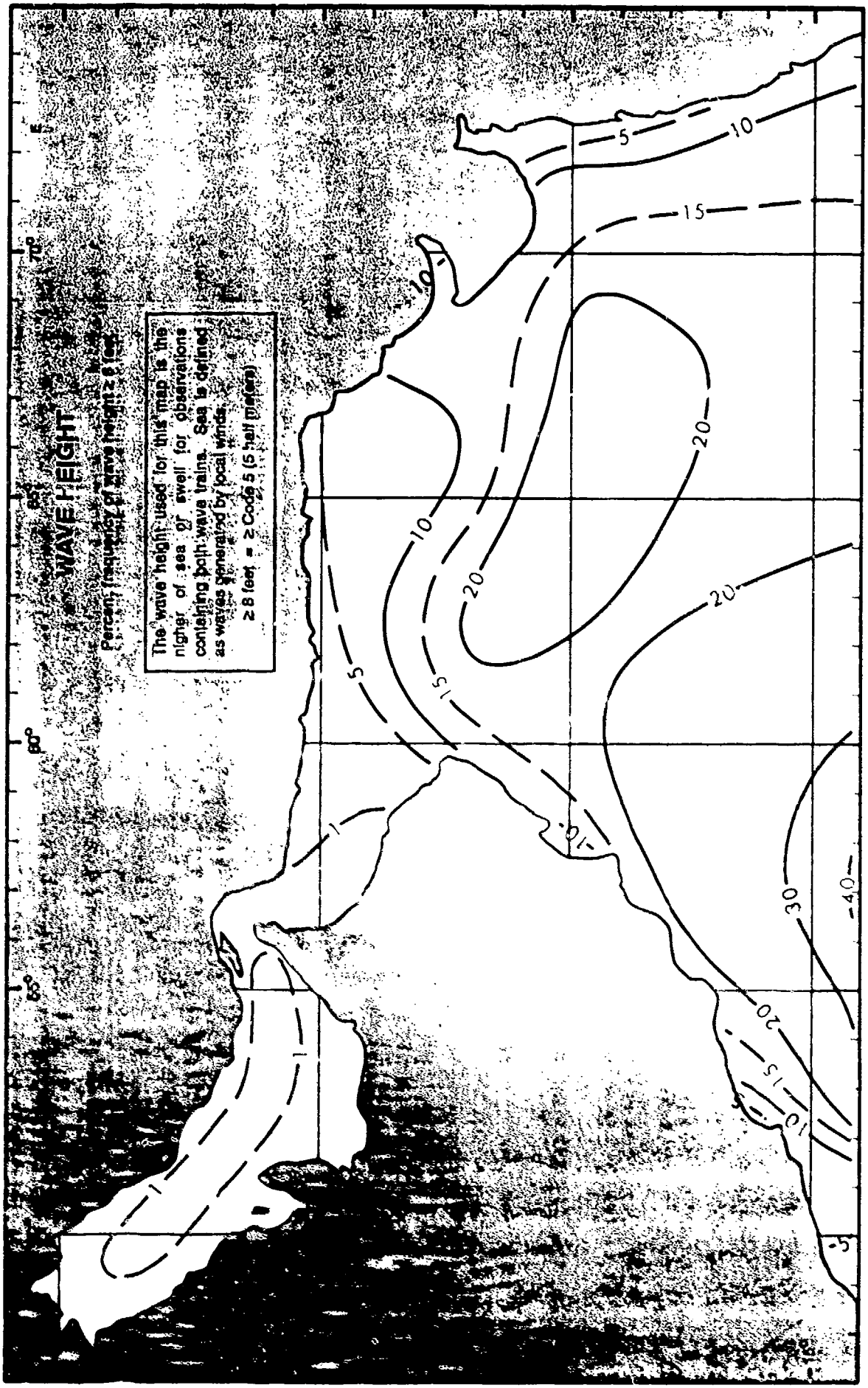

SURFACE WIND ROSES



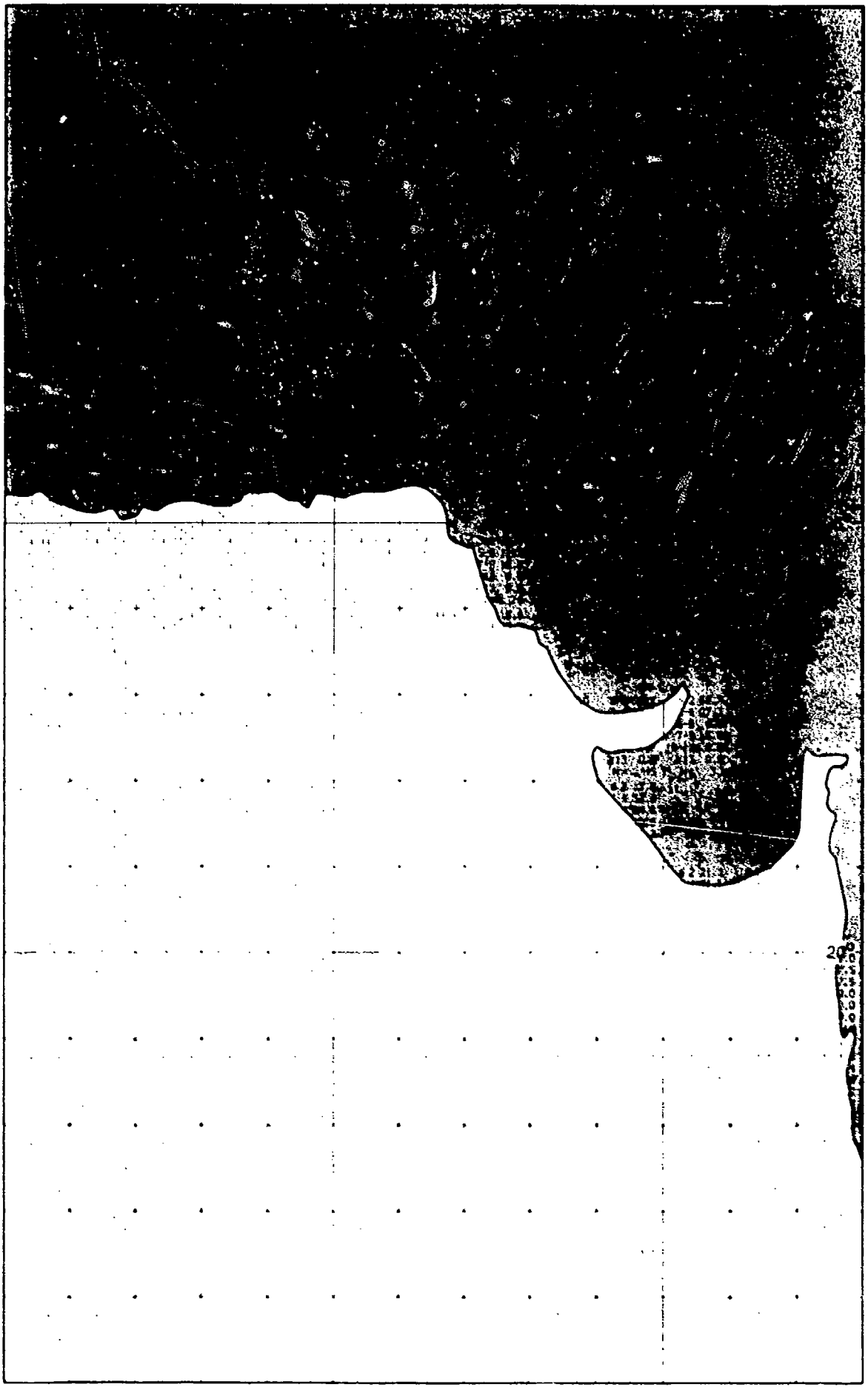

81
81.5
81.5
81
81.5
80
81
82
83
84
85
86
87
79
77
78
78.5
79
90
89
81
79
78.5
79
80
81
82
83
84
15°


81
81.5
81
81.5
81
81.5
81
80
82
79
83
84
85
86
87
88
78
77
76
75
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90
89
88
87

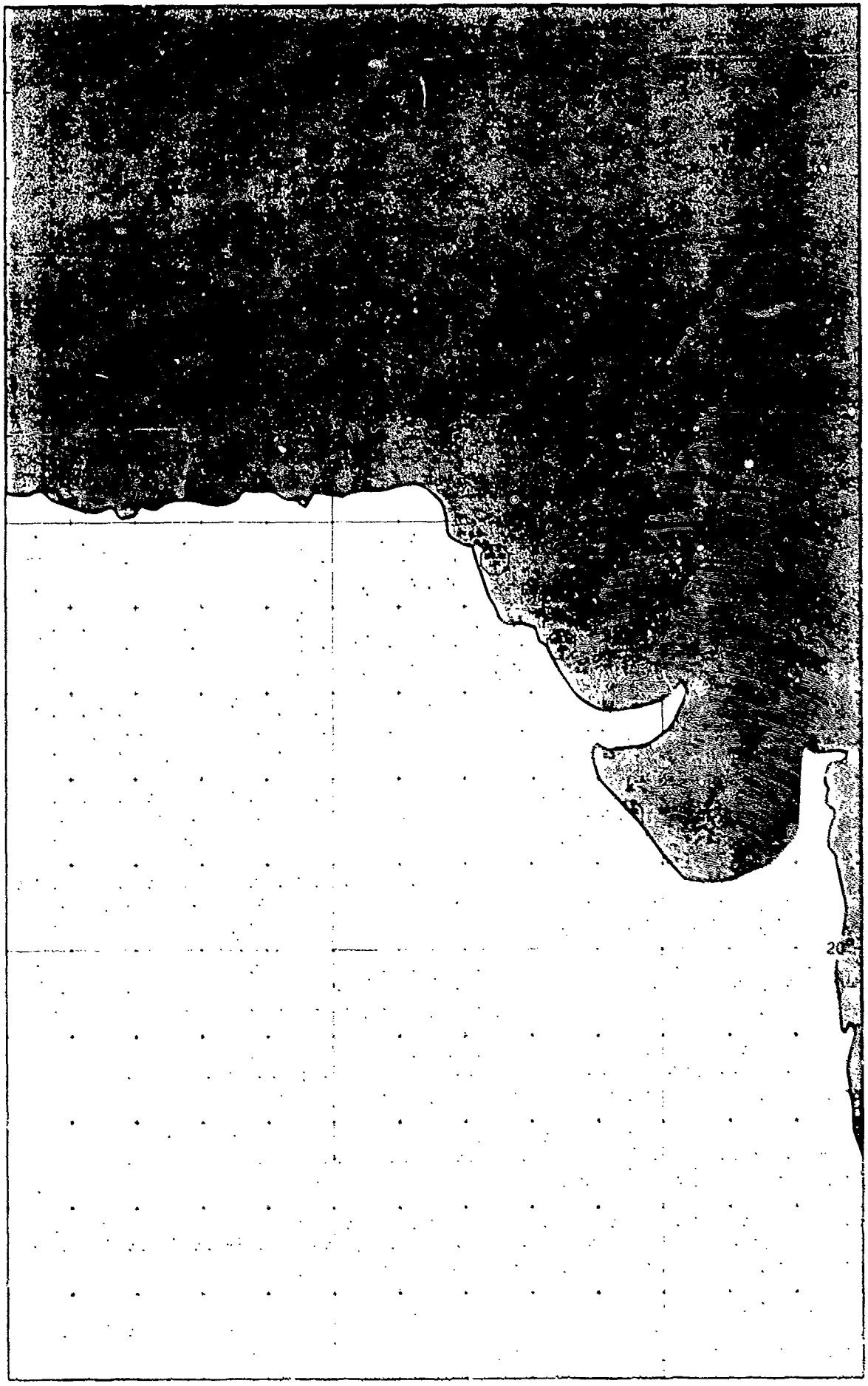

WAVE HEIGHT
Percent frequency of wave height ≥ 3 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 3 feet = ≥ Code 2 (2 half meters)
70°
65°
60°
55°
50°
45°
30°
25°
20°
15°
E
N

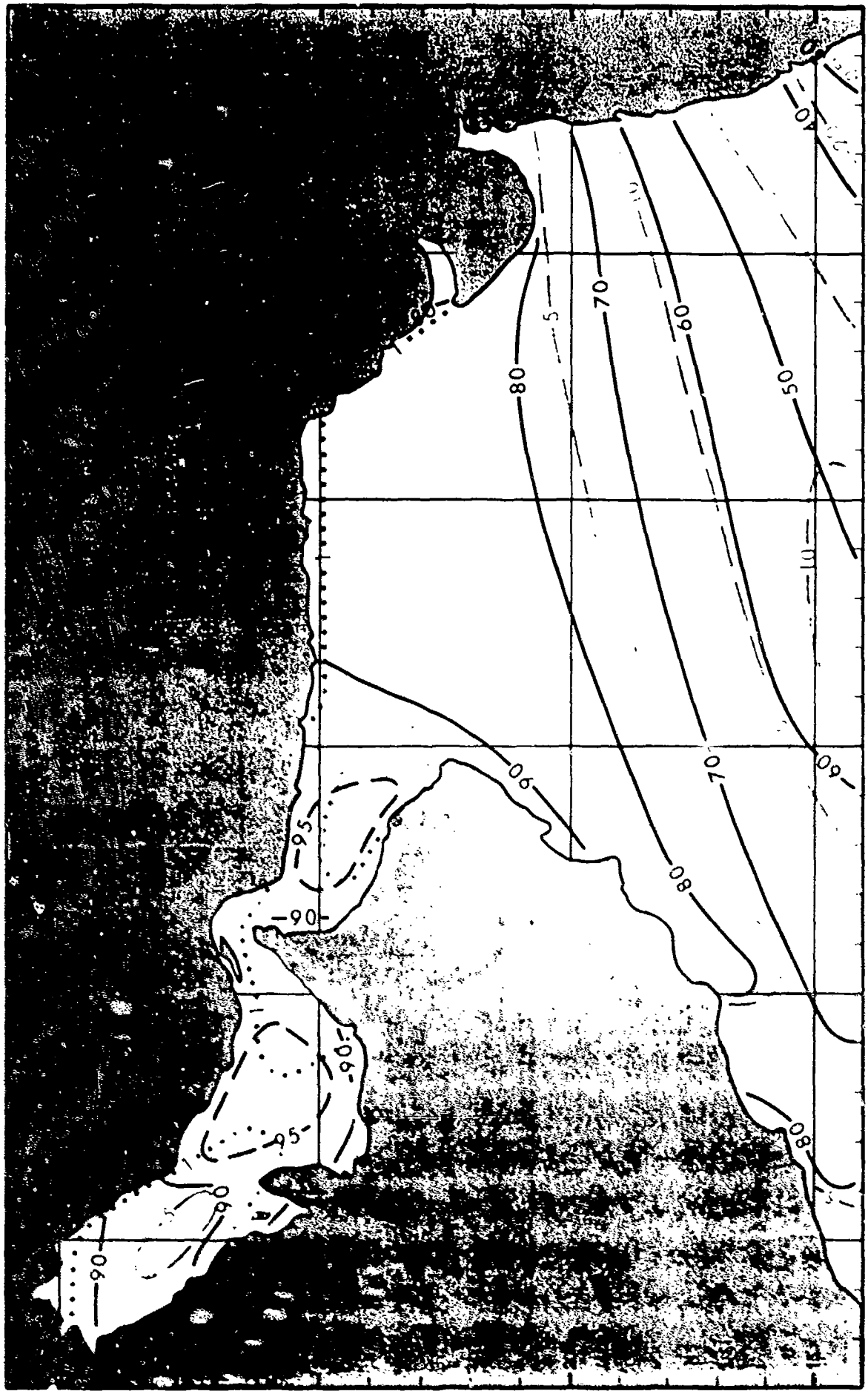

WAVE HEIGHT
Percent frequency of wave height ≥ 8 feet
The wave height used for this map is the highest of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 8 feet = ≥ Code 5 (5 half meters)
80°
75°
70°
65°
5
10
15
20
1
30
40

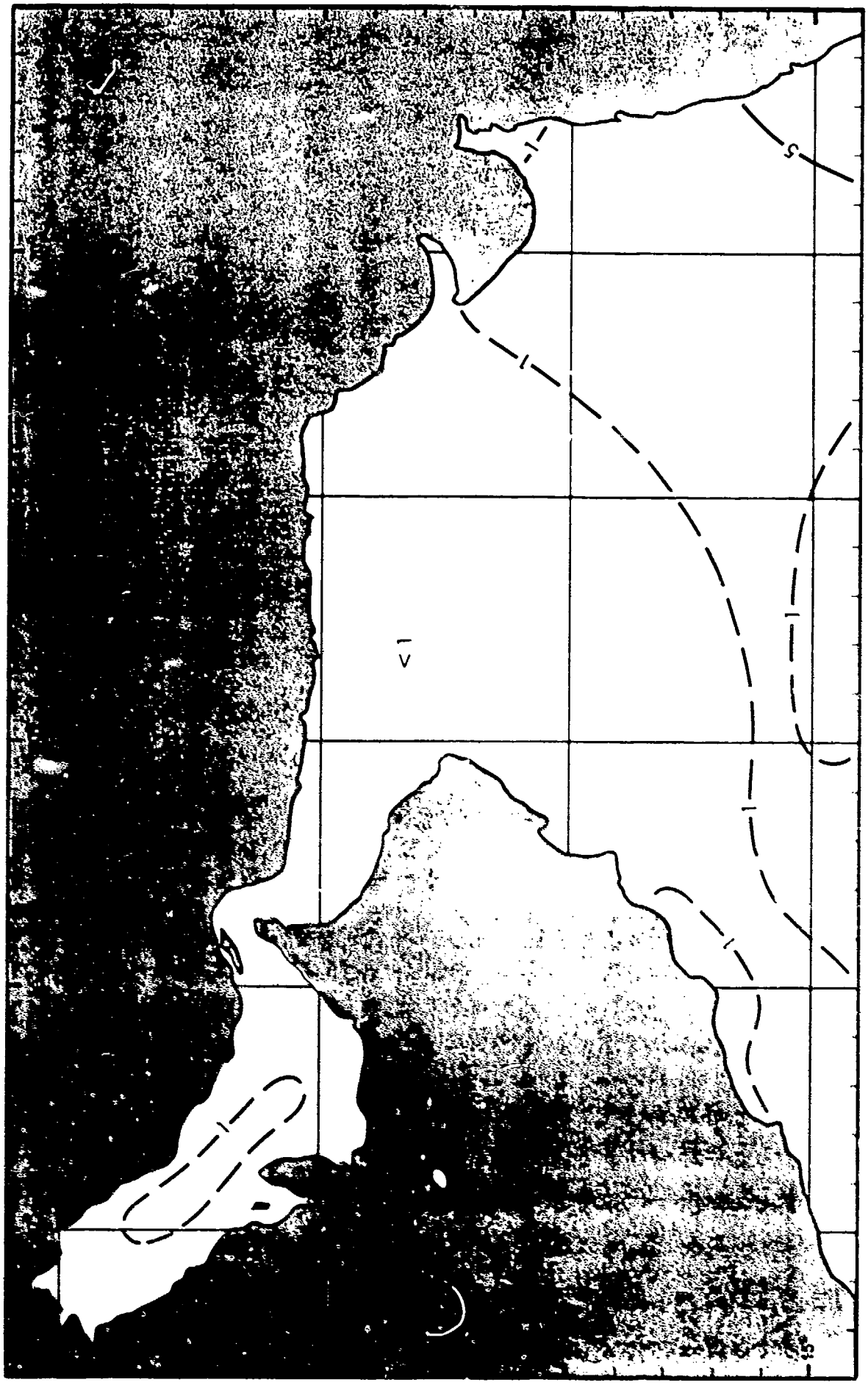



20

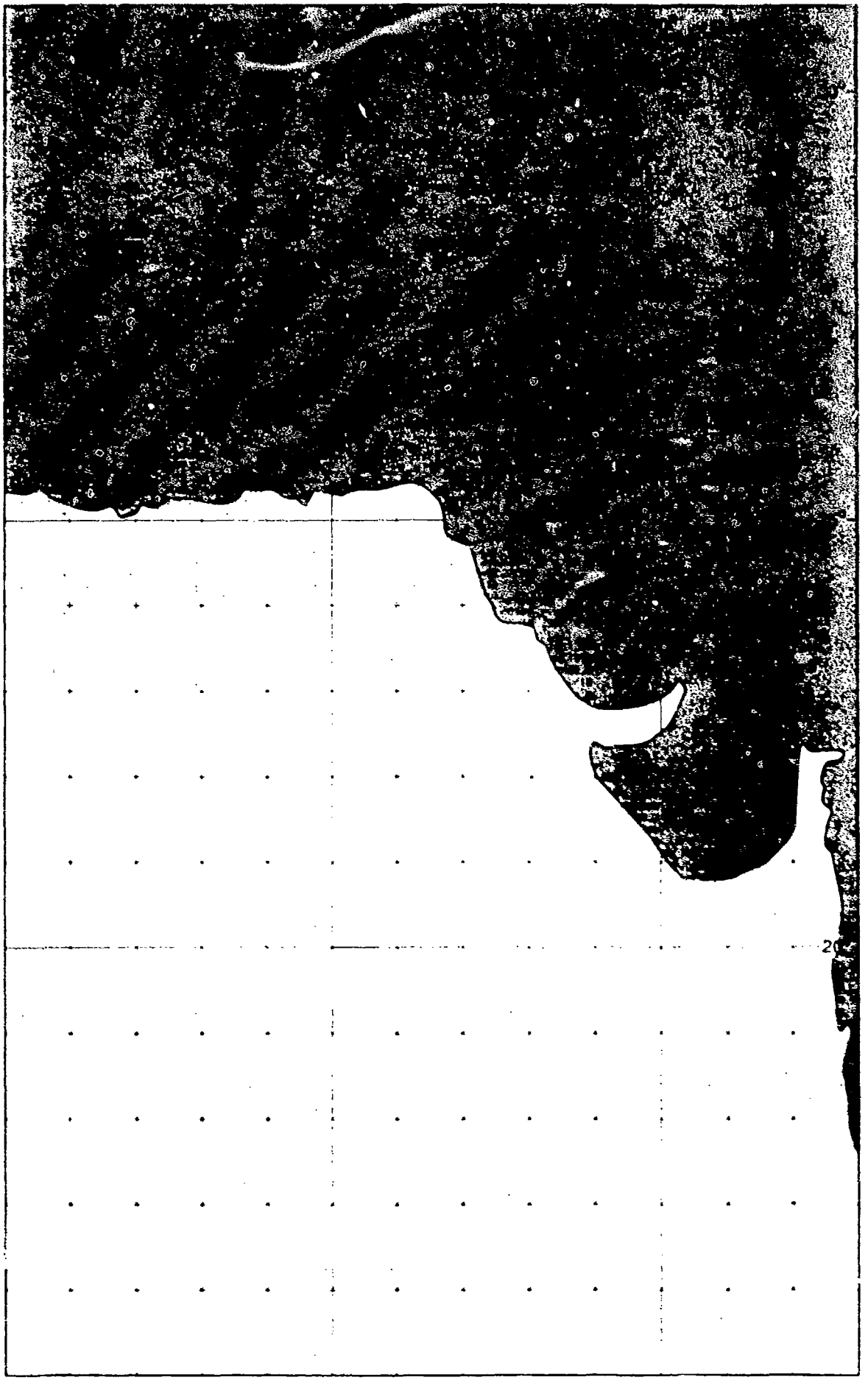


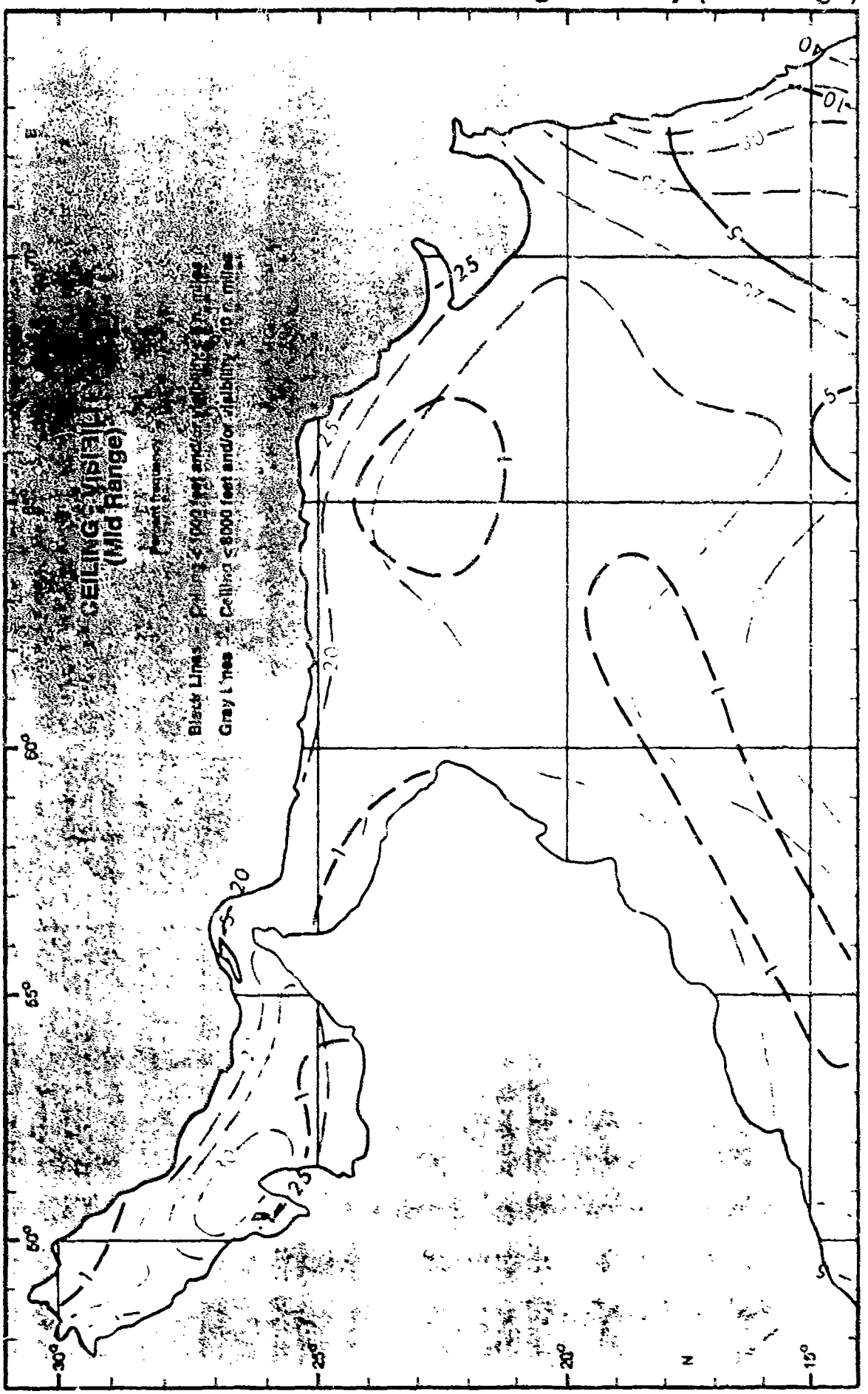



80
70
60
50
70
80
90
95
90
95
90
80

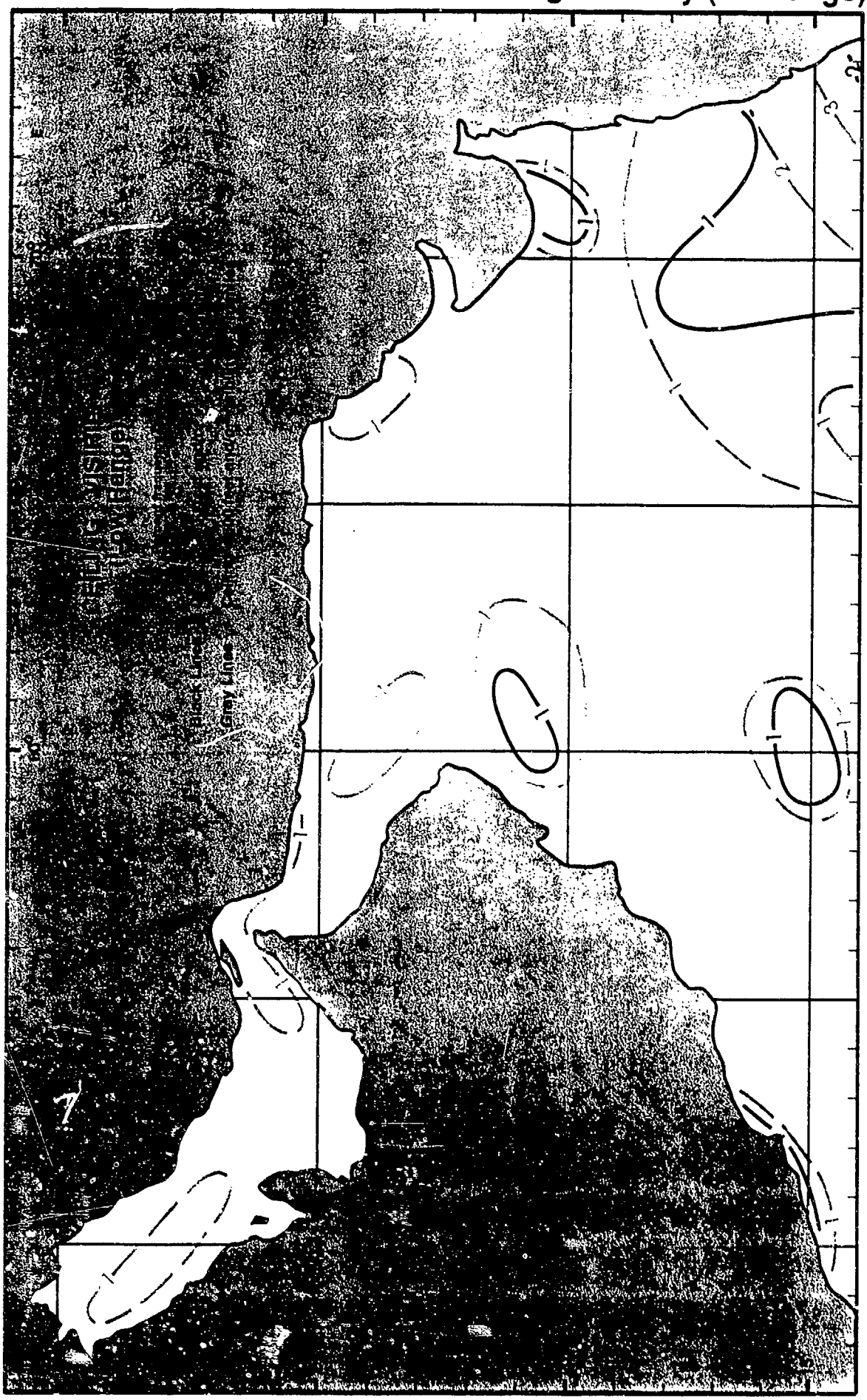




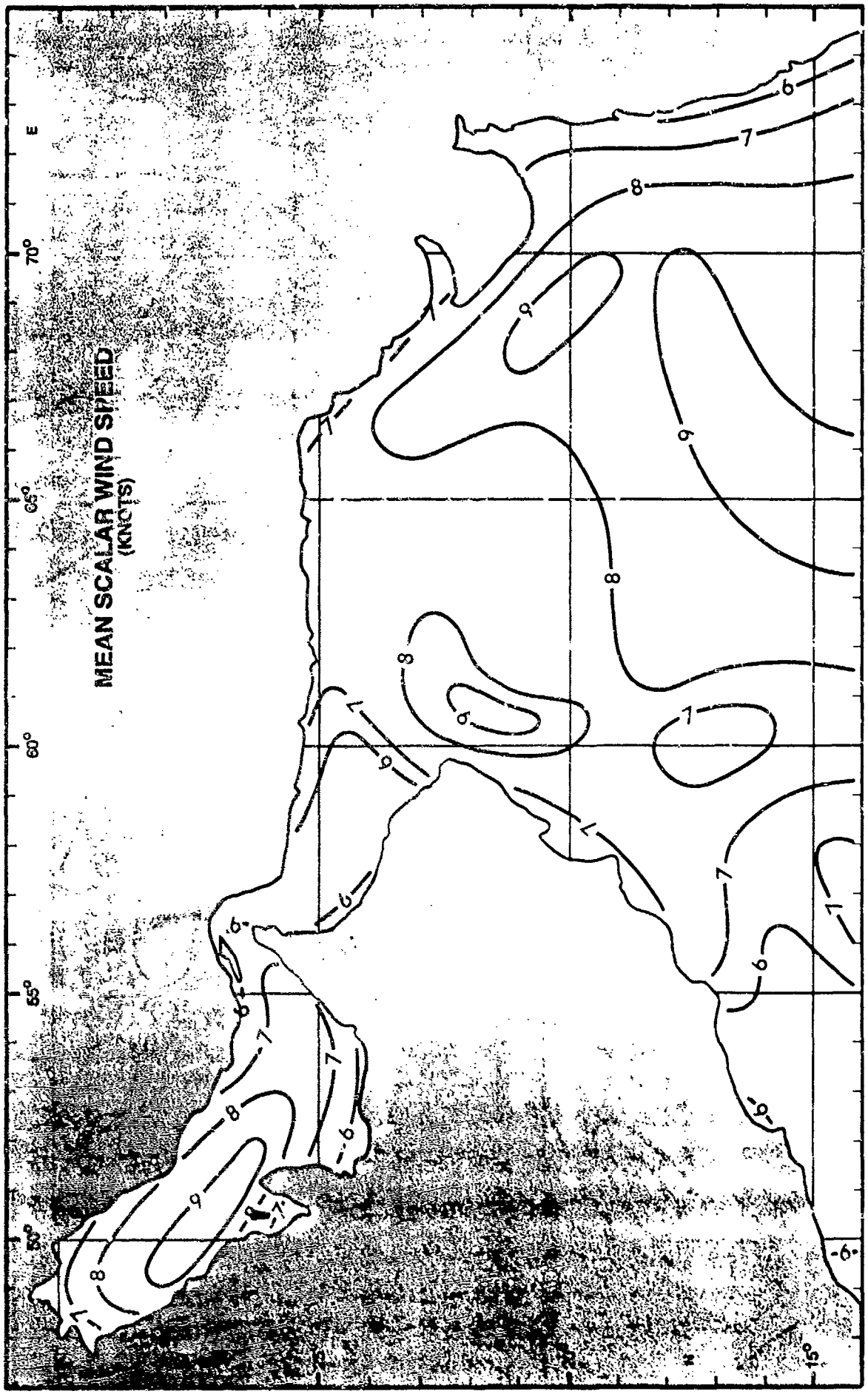



CEILING-VISIBILITY
(Mid Range)
Black Lines
Gray Lines
60°
50°
40°
30°
20°
10°
N

Ceiling-Visibility (low range)




WIND (knots)
VISIBILITY (miles)
CLOUDINESS (tenths)


MEAN SCALAR WIND SPEED
(KNOTS)
70°
65°
60°
55°
50°
E

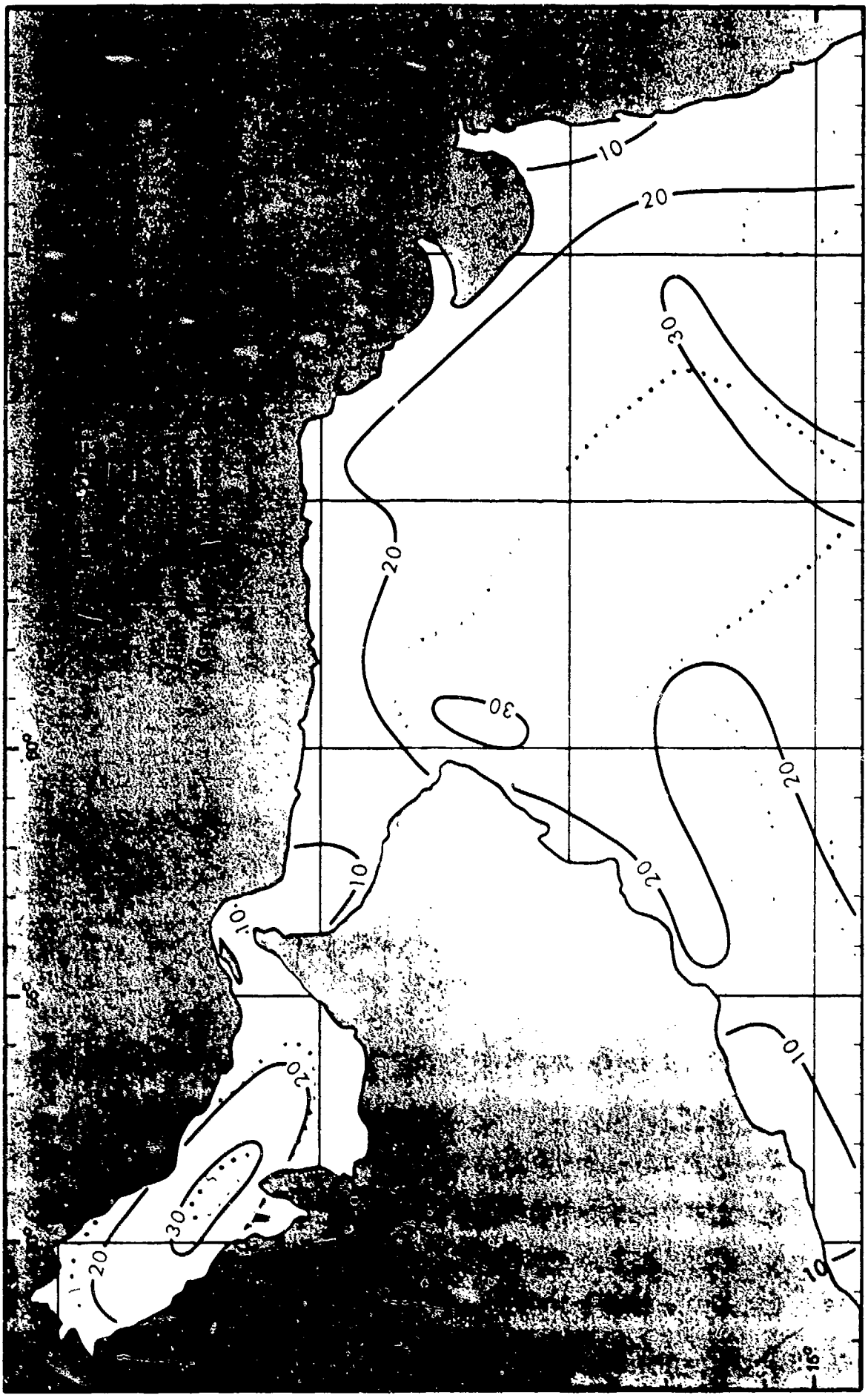
October

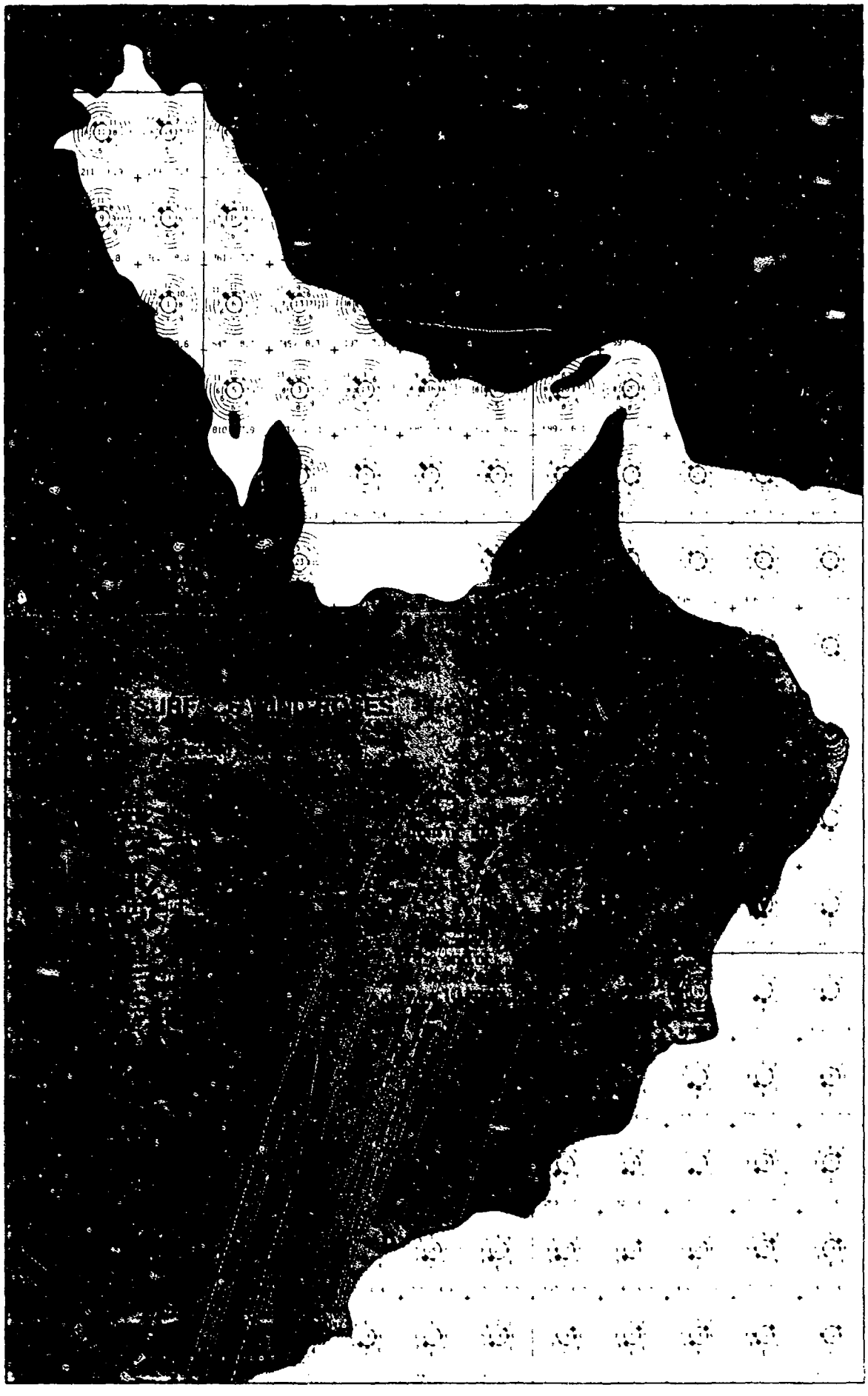
Wind Speed <11 and ≥ 34 Knots



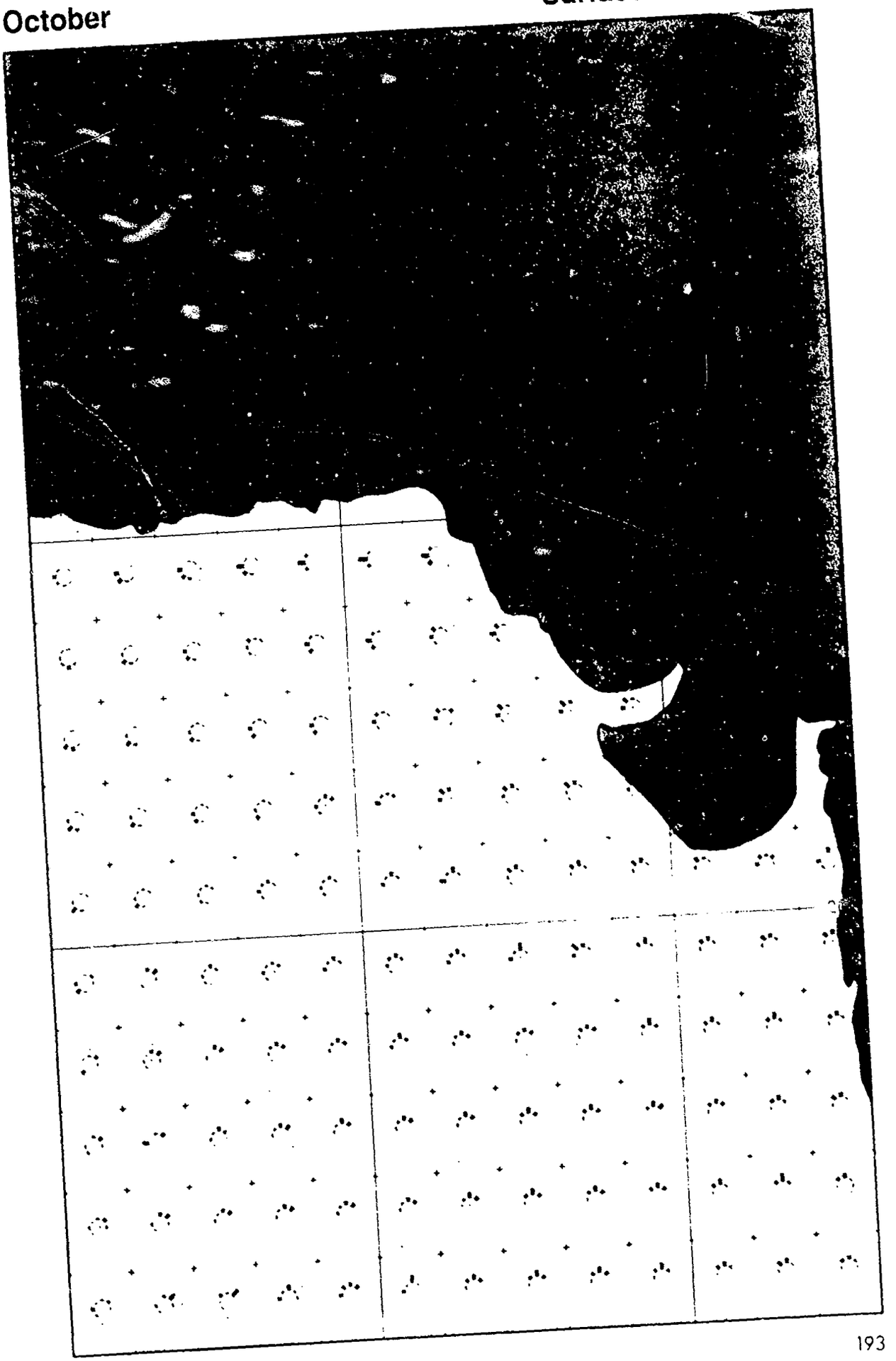
October

Wind Speed 11-21 and 22-33 Knots



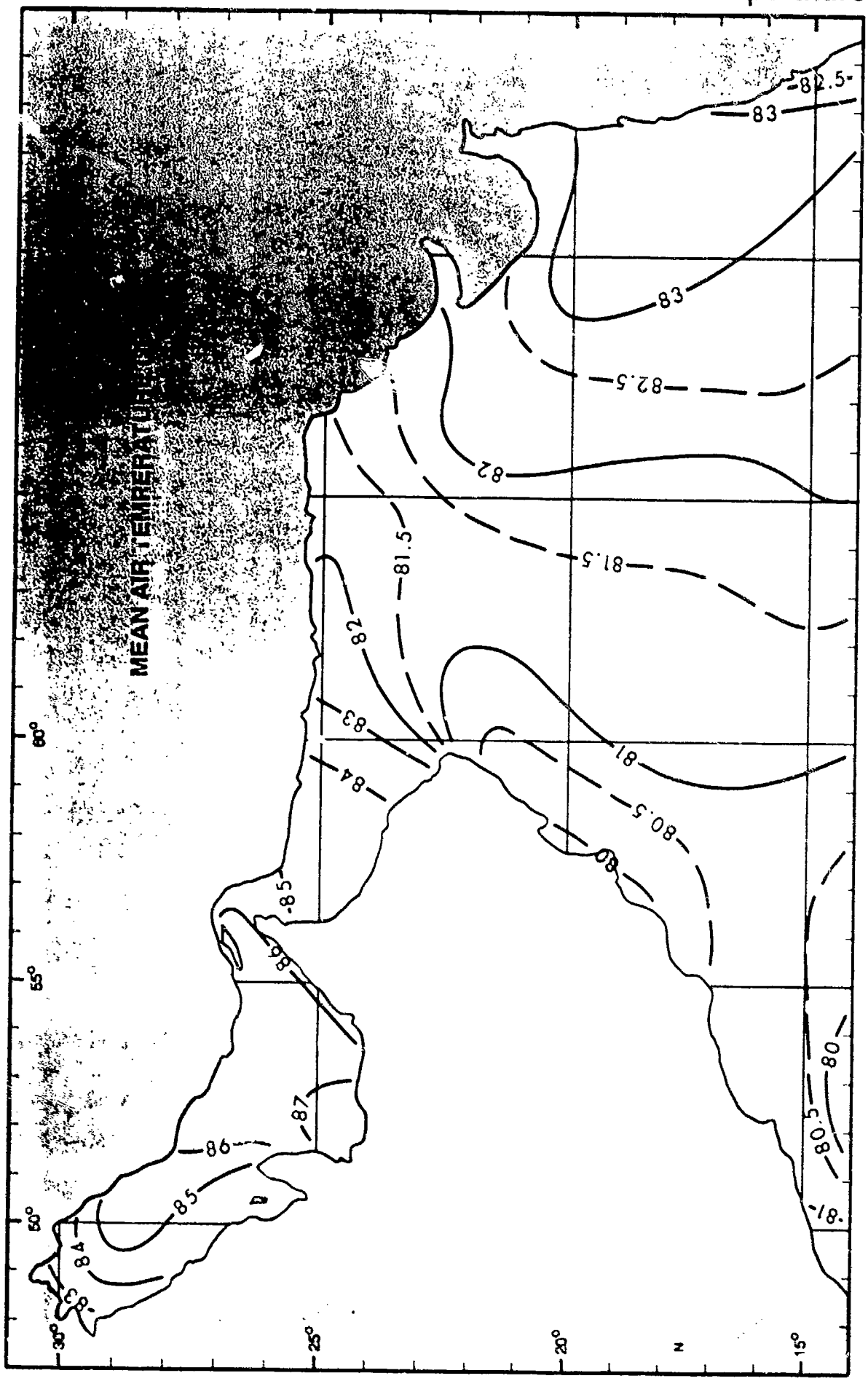


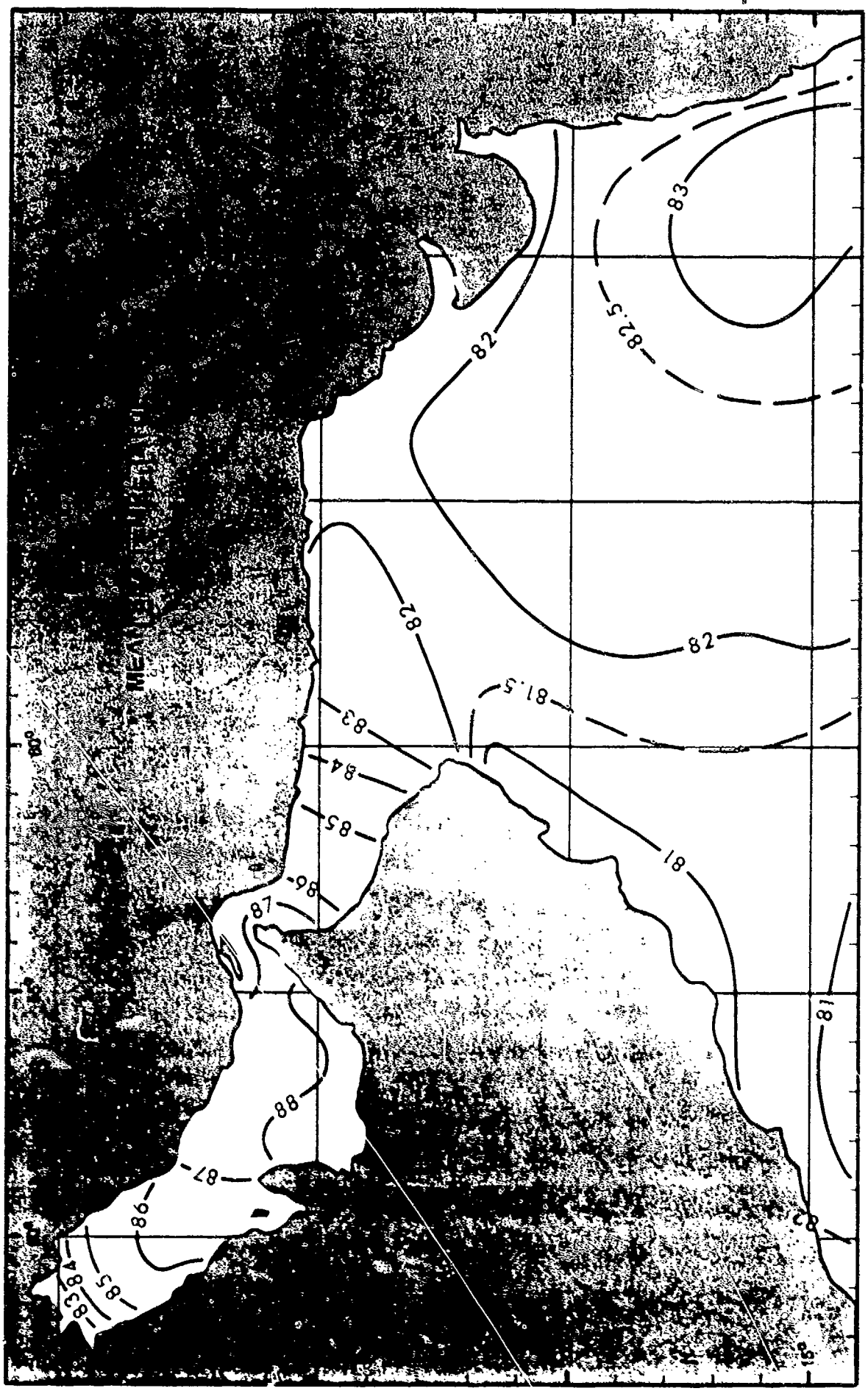
October



October

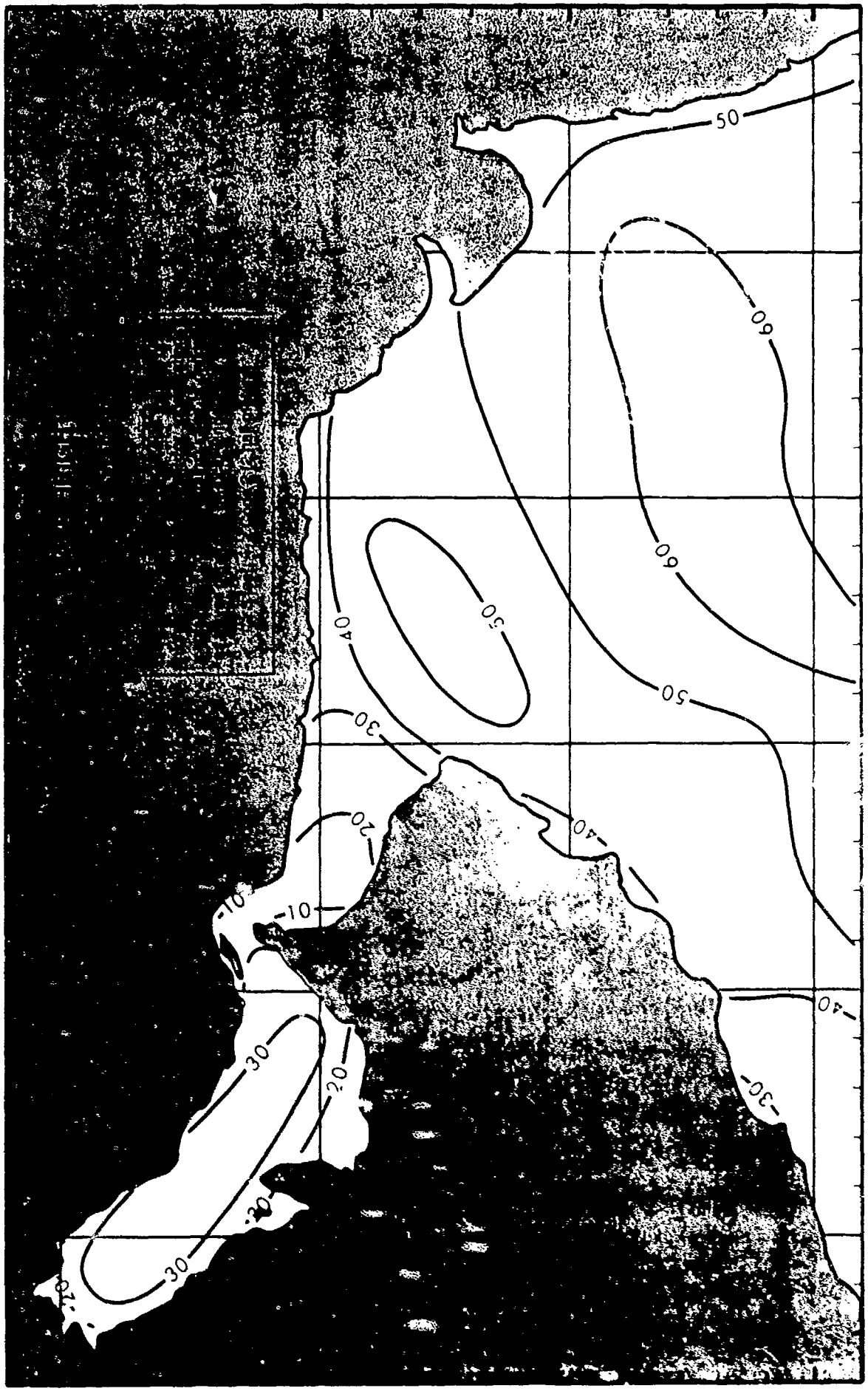
Mean Air Temperature

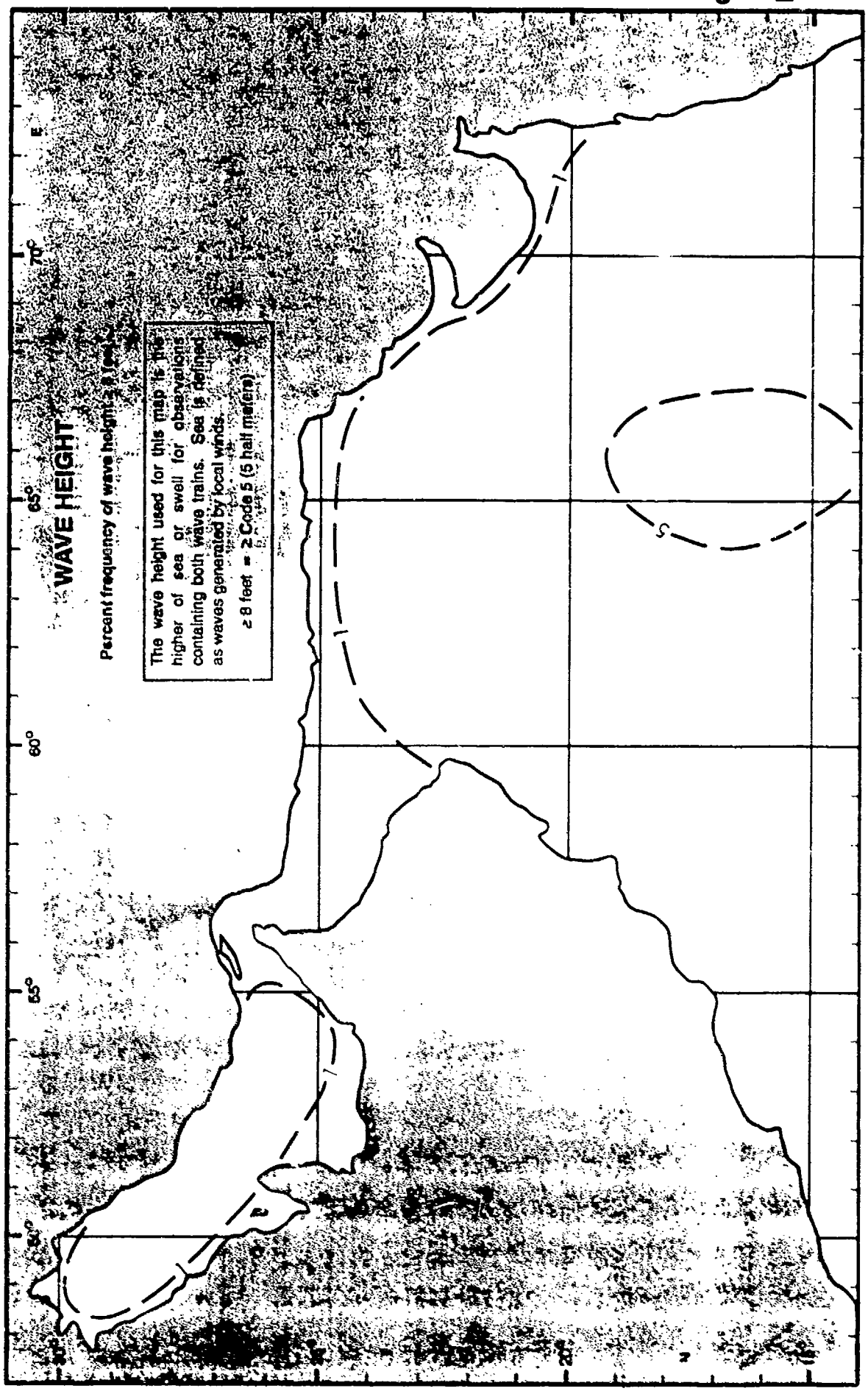



MEAN
80°
82
82.5
83
82
82
81.5
83
84
85
86
87
88
87
86
85
83.4
81
81
82
180

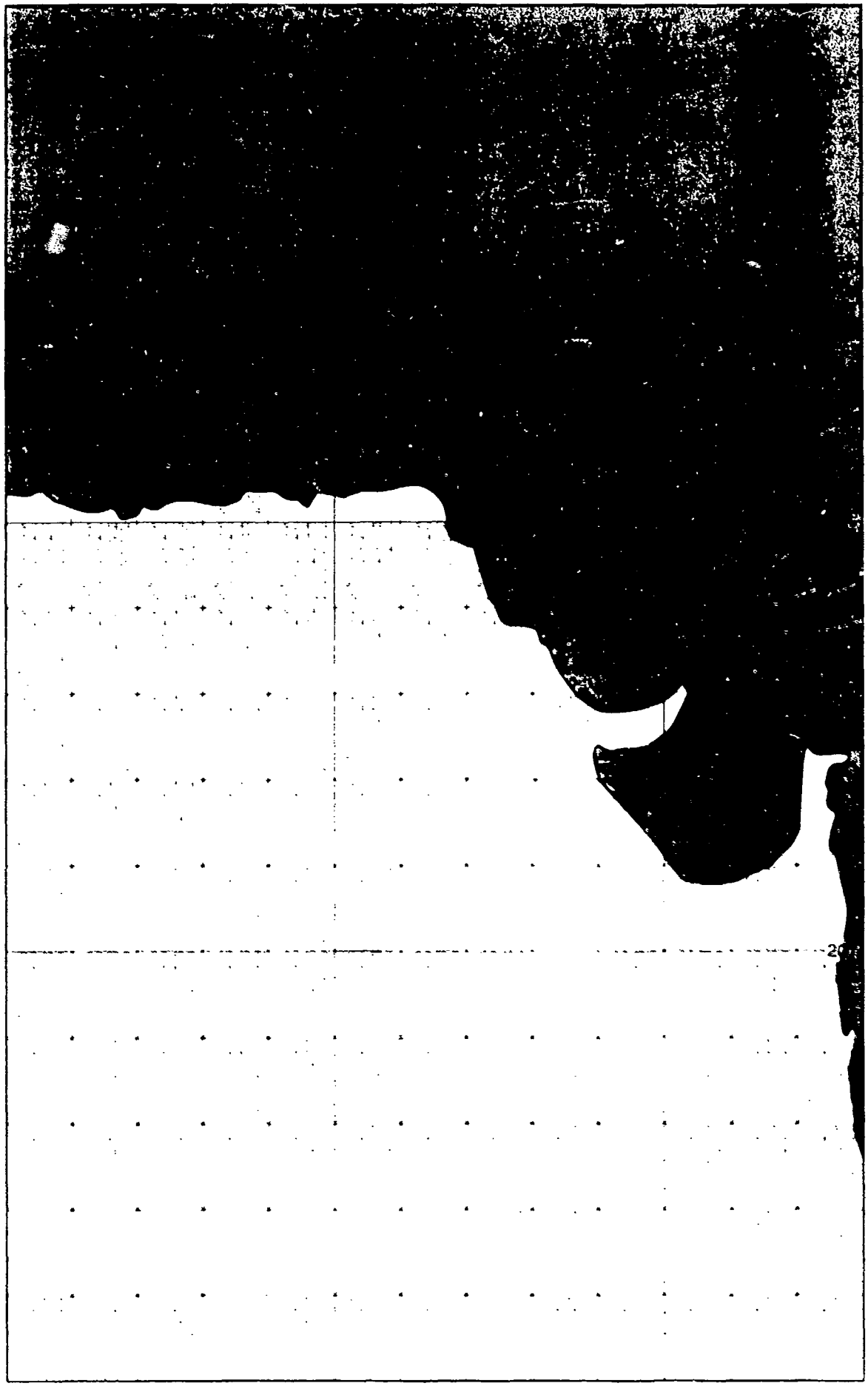
October

Wave Height ≥ 3 Ft.

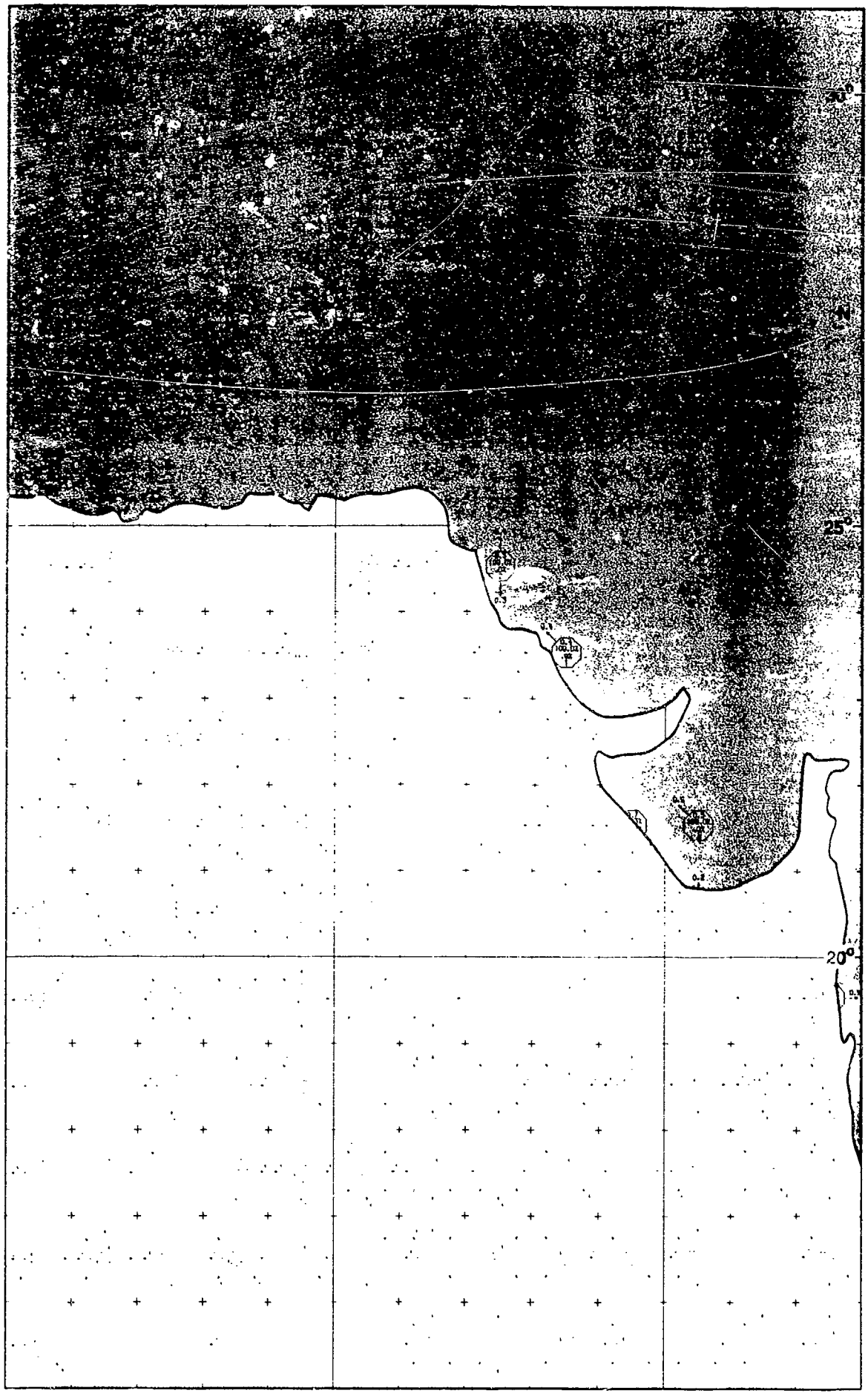



WAVE HEIGHT
Percent frequency of wave height ≥ 8 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 8 feet = ≥ Code 5 (5 half meters)
80°
75°
65°
60°
55°
50°
20°
10°
E

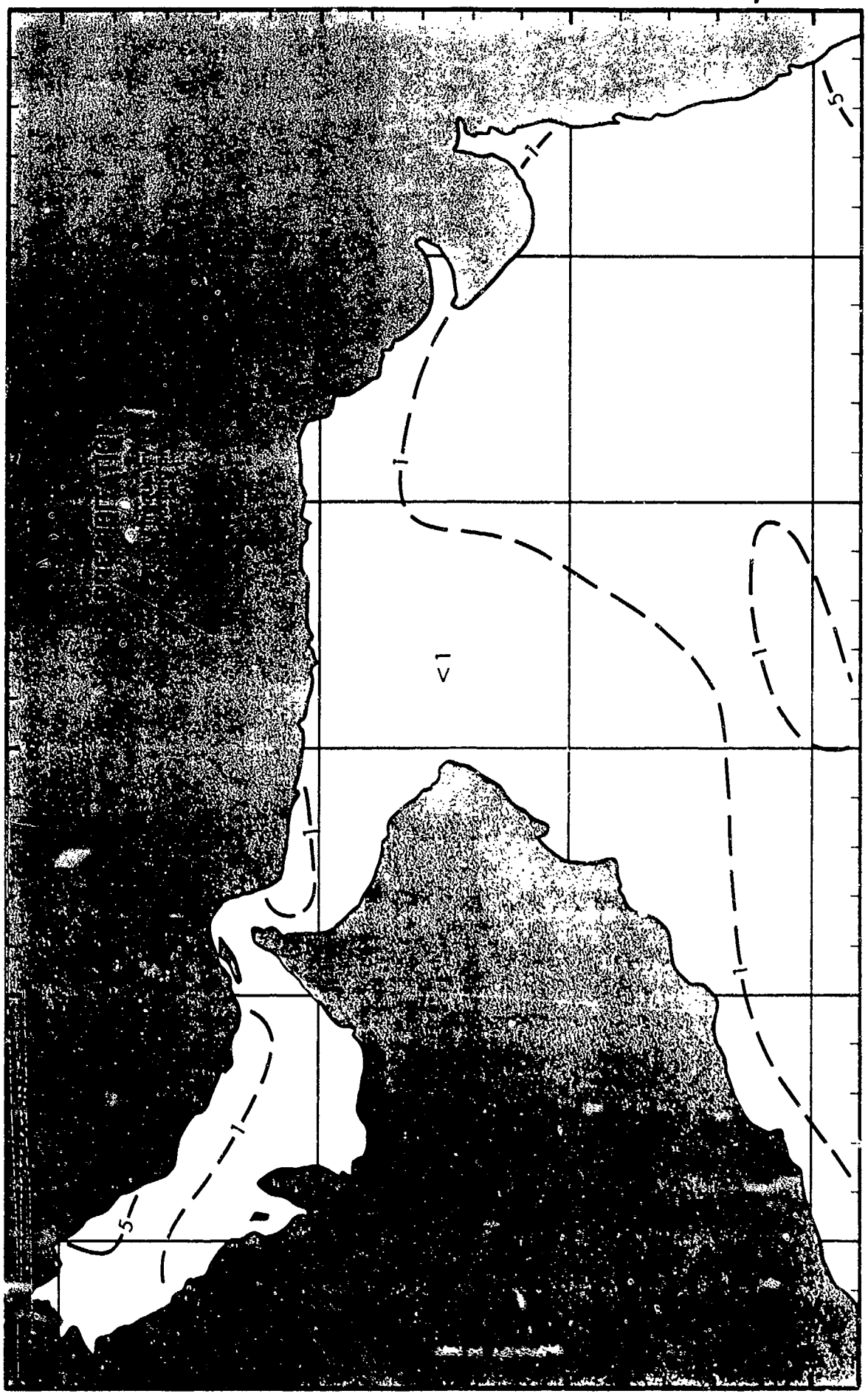




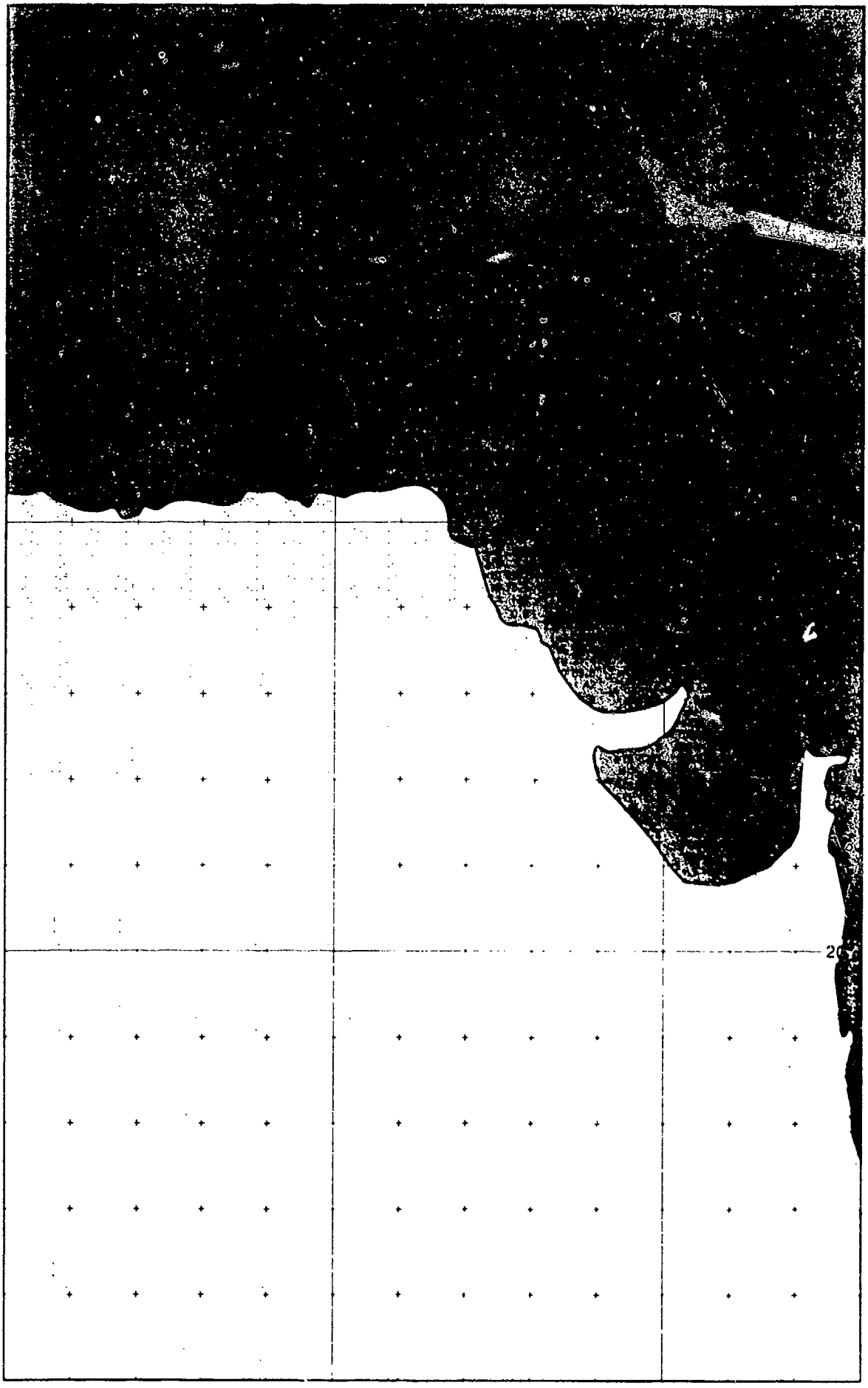

SURFACE CURRENTS


30°
25°
20°

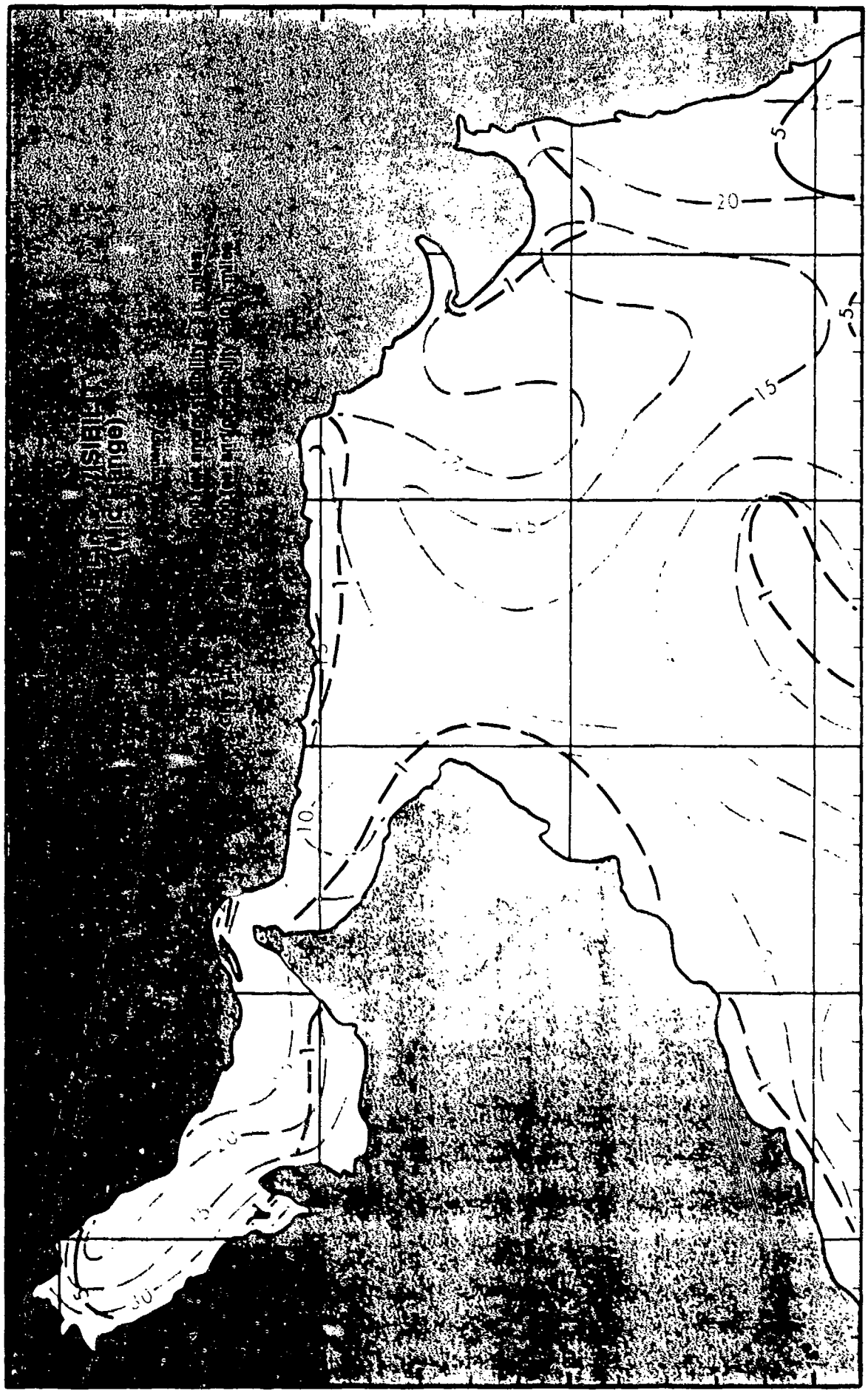

CLOUD COVER
Gray Lines Show Total Cloud Cover
Black Lines Show Low Cloud Cover
5
10
15
50
60
70
80
90
80°
55°
60°
30°
25°
20°
15°
N


5
1
1
V
1
1
5

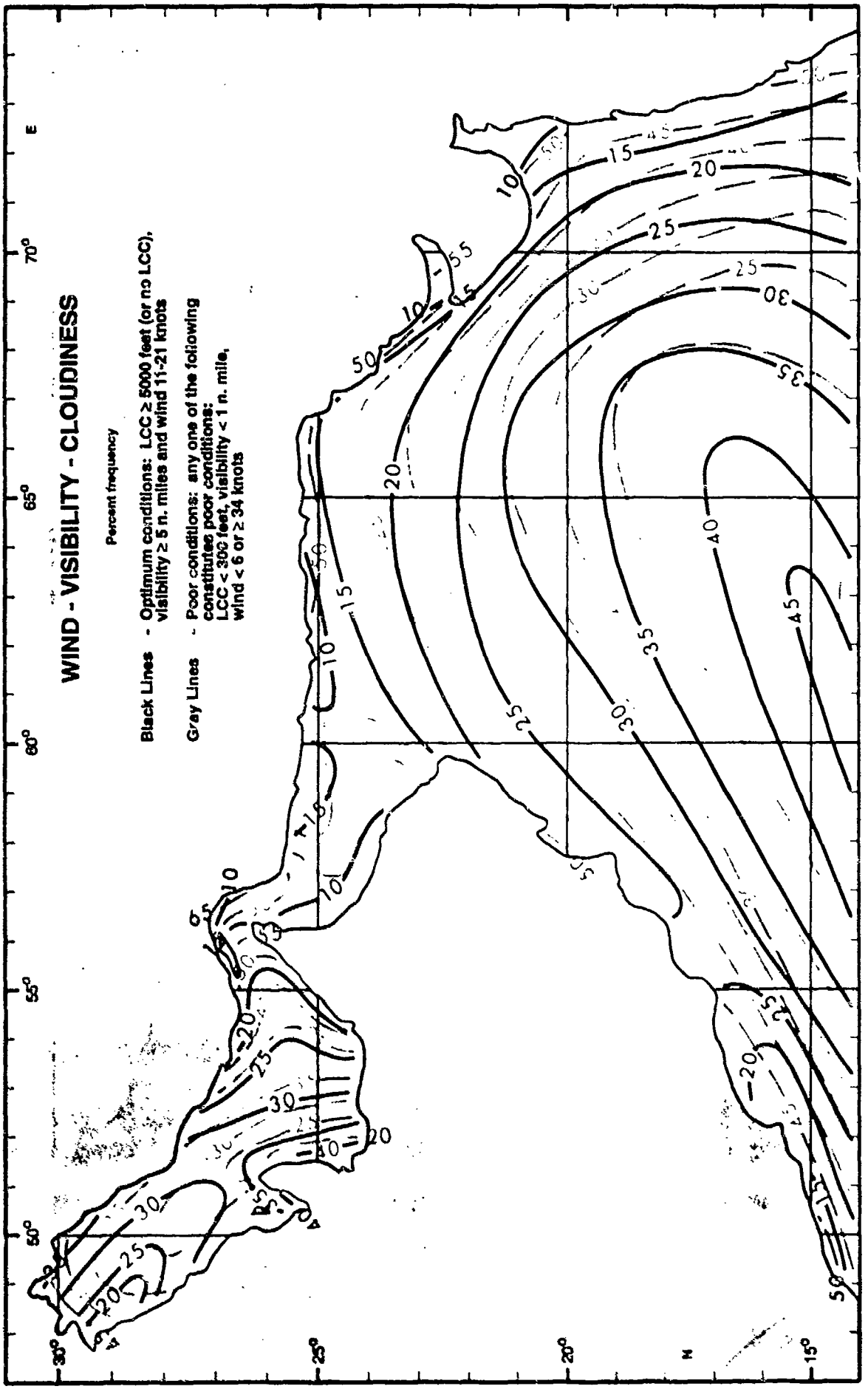




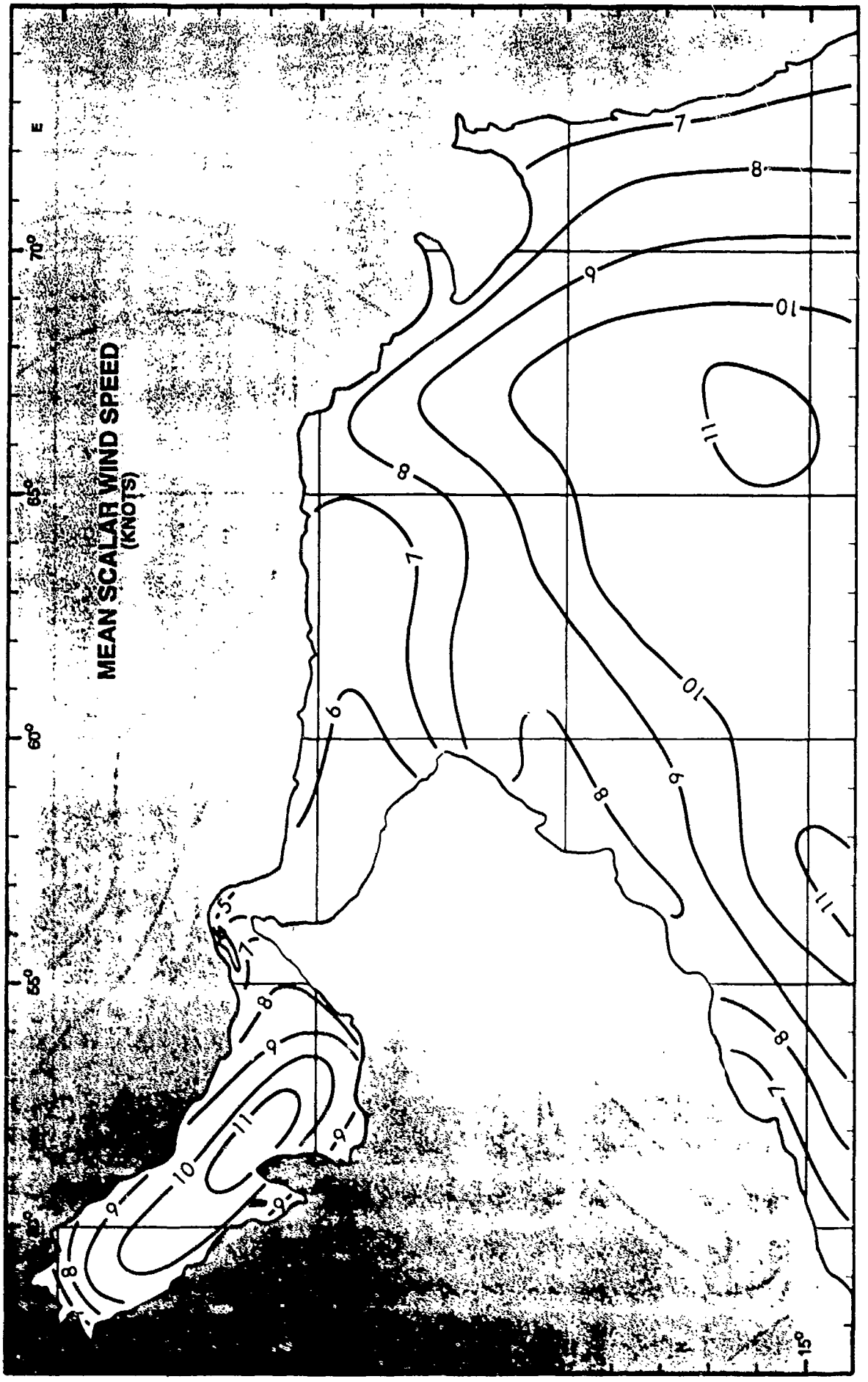
Ceiling-Visibility (mid range)




3
2

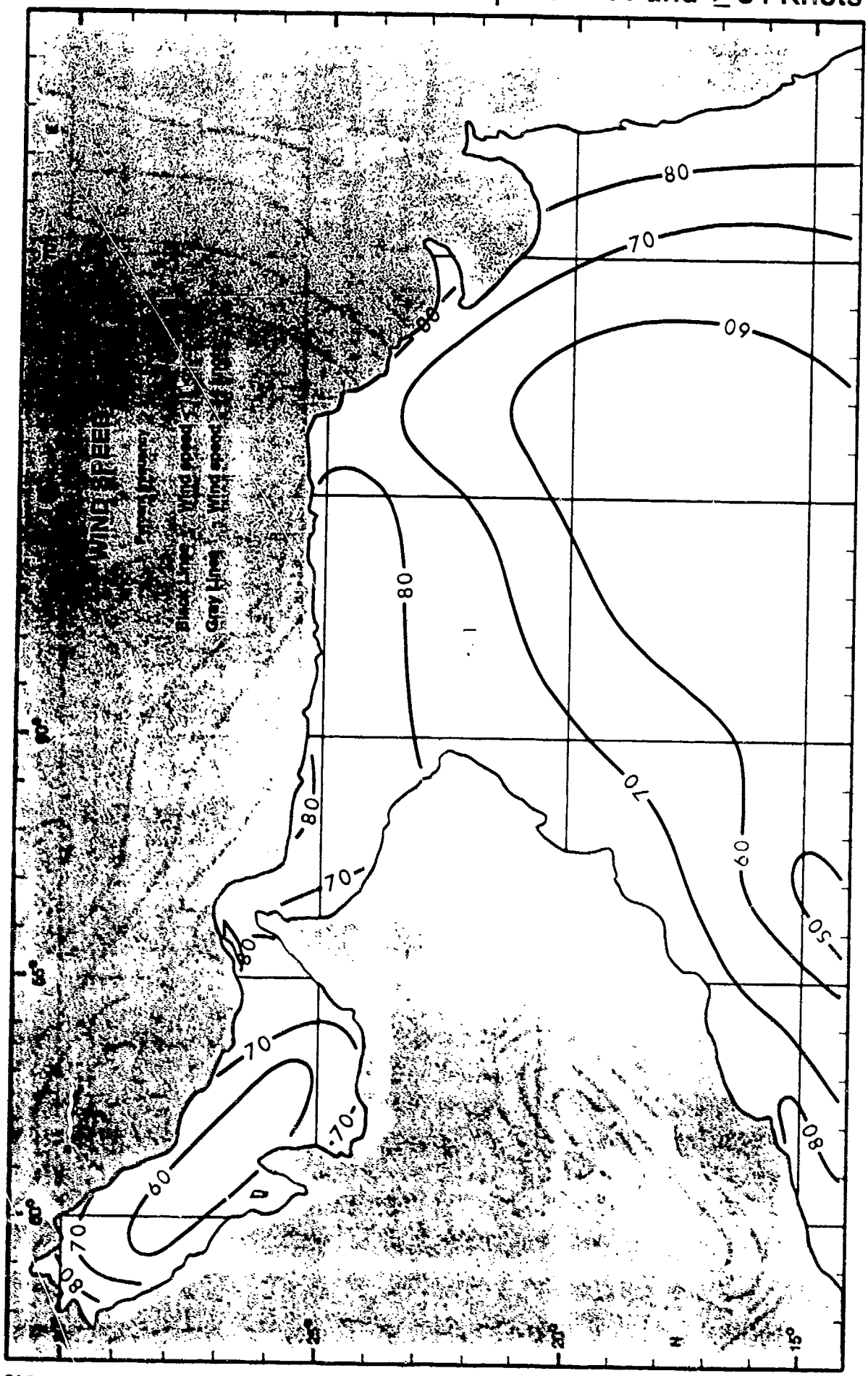

WIND - VISIBILITY - CLOUDINESS
Percent frequency
Black Lines - Optimum conditions: LCC ≥ 5000 feet (or no LCC), visibility ≥ 5 n. miles and wind 11-21 knots
Gray Lines - Poor conditions: any one of the following constitutes poor conditions: LCC < 300 feet, visibility < 1 n. mile, wind < 6 or ≥ 34 knots
70°
65°
60°
55°
50°
30°
25°
20°
15°
E
N

Mean Scalar Wind Speed



November

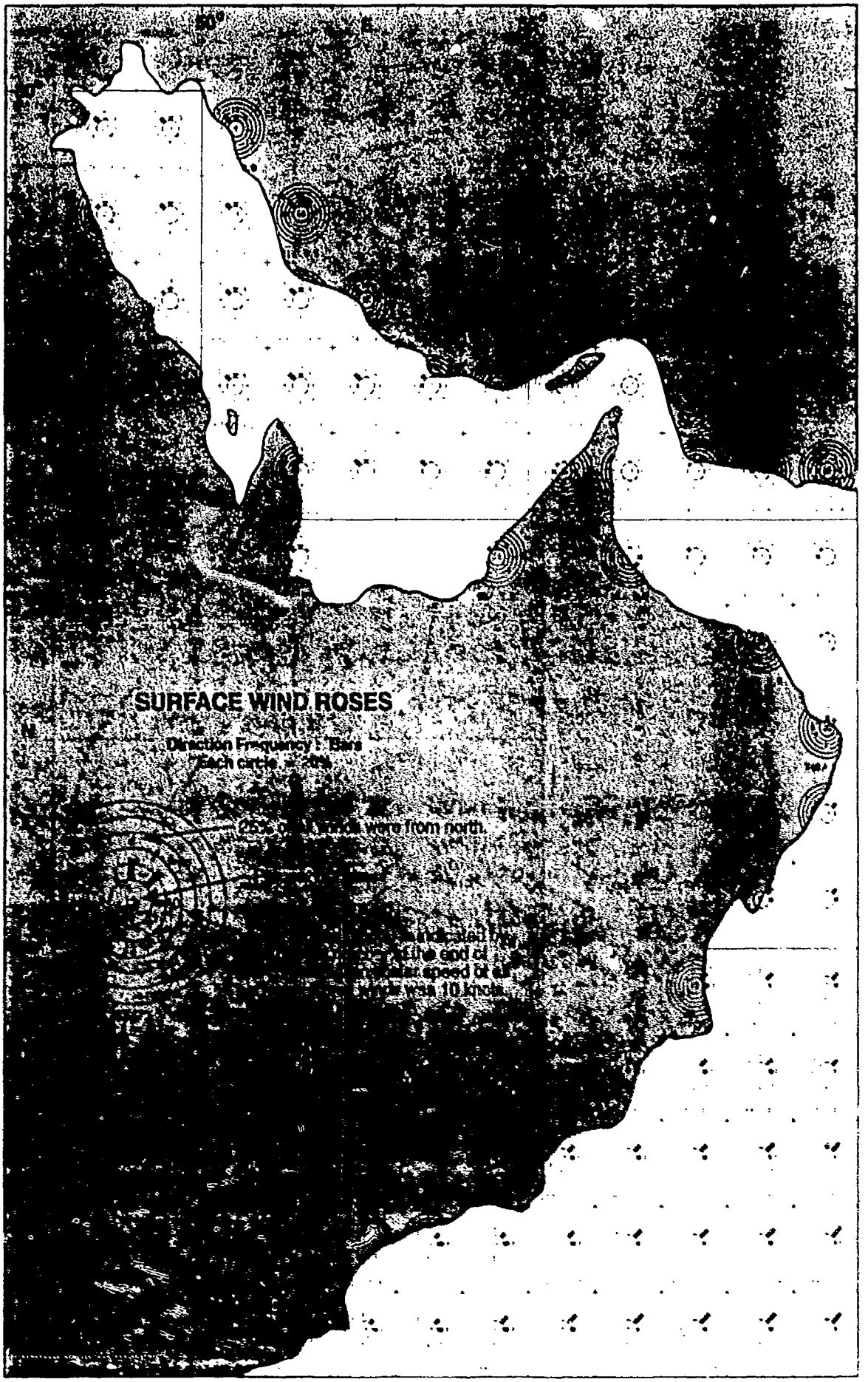
Wind Speed <11 and ≥34 Knots

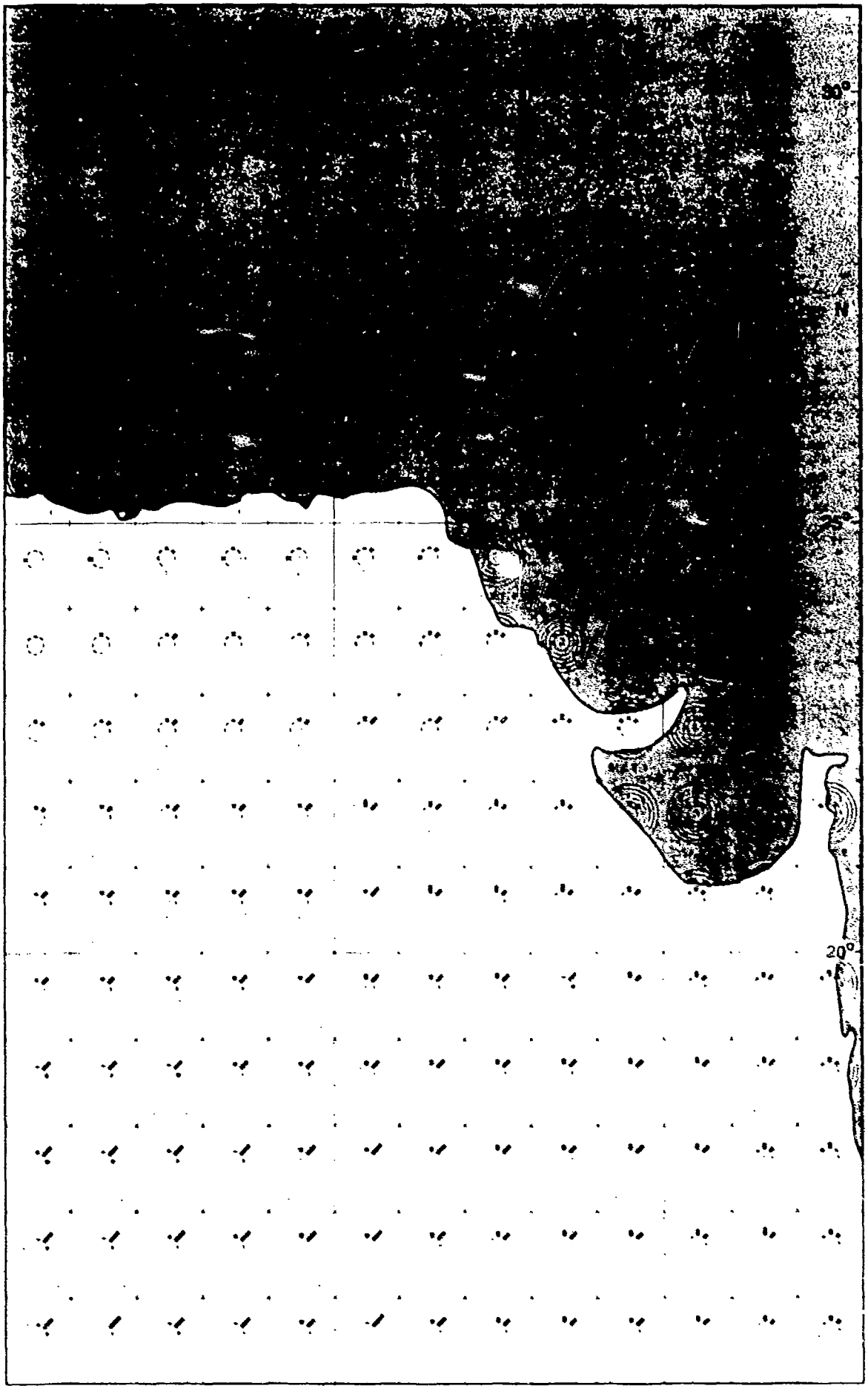


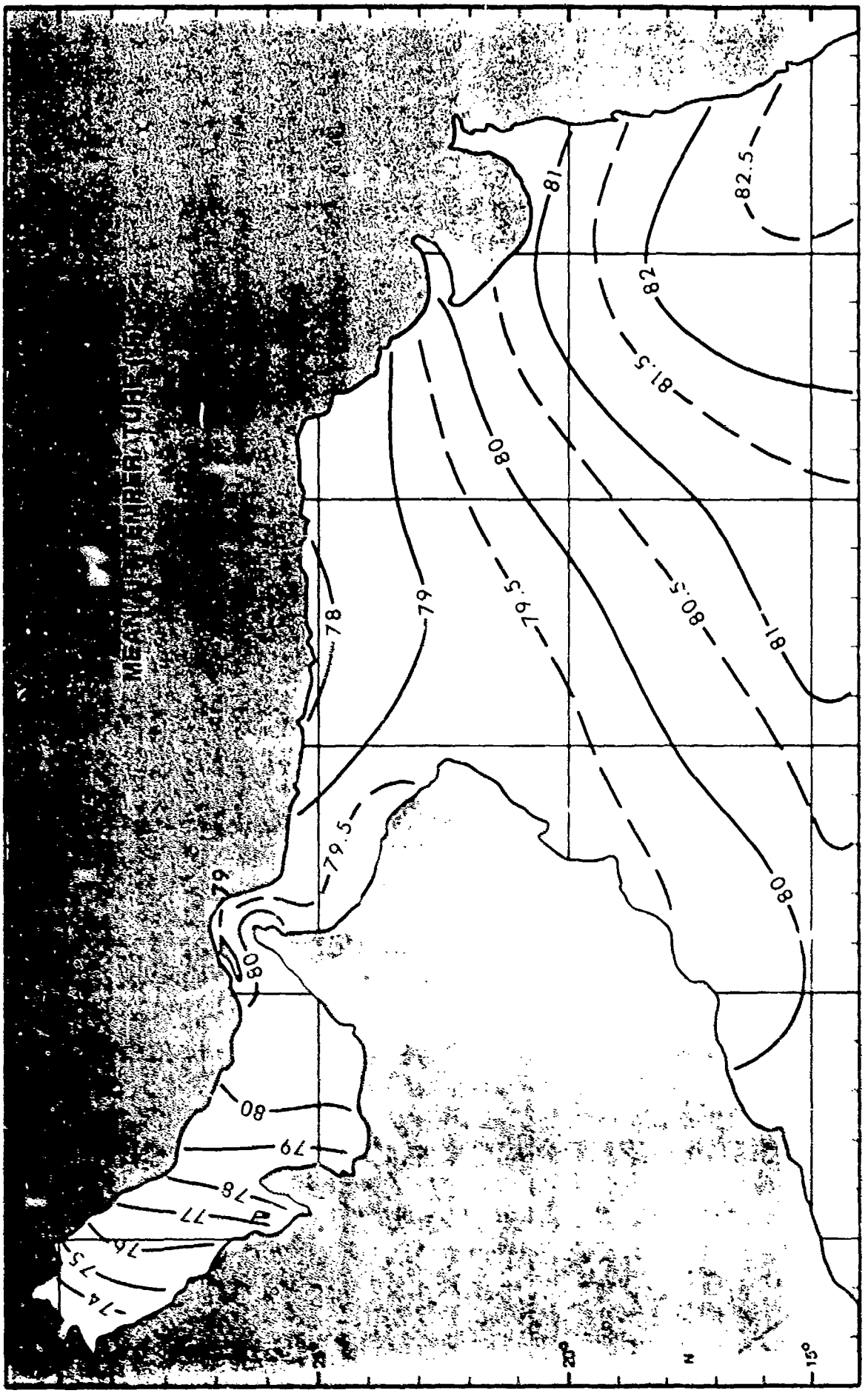
November

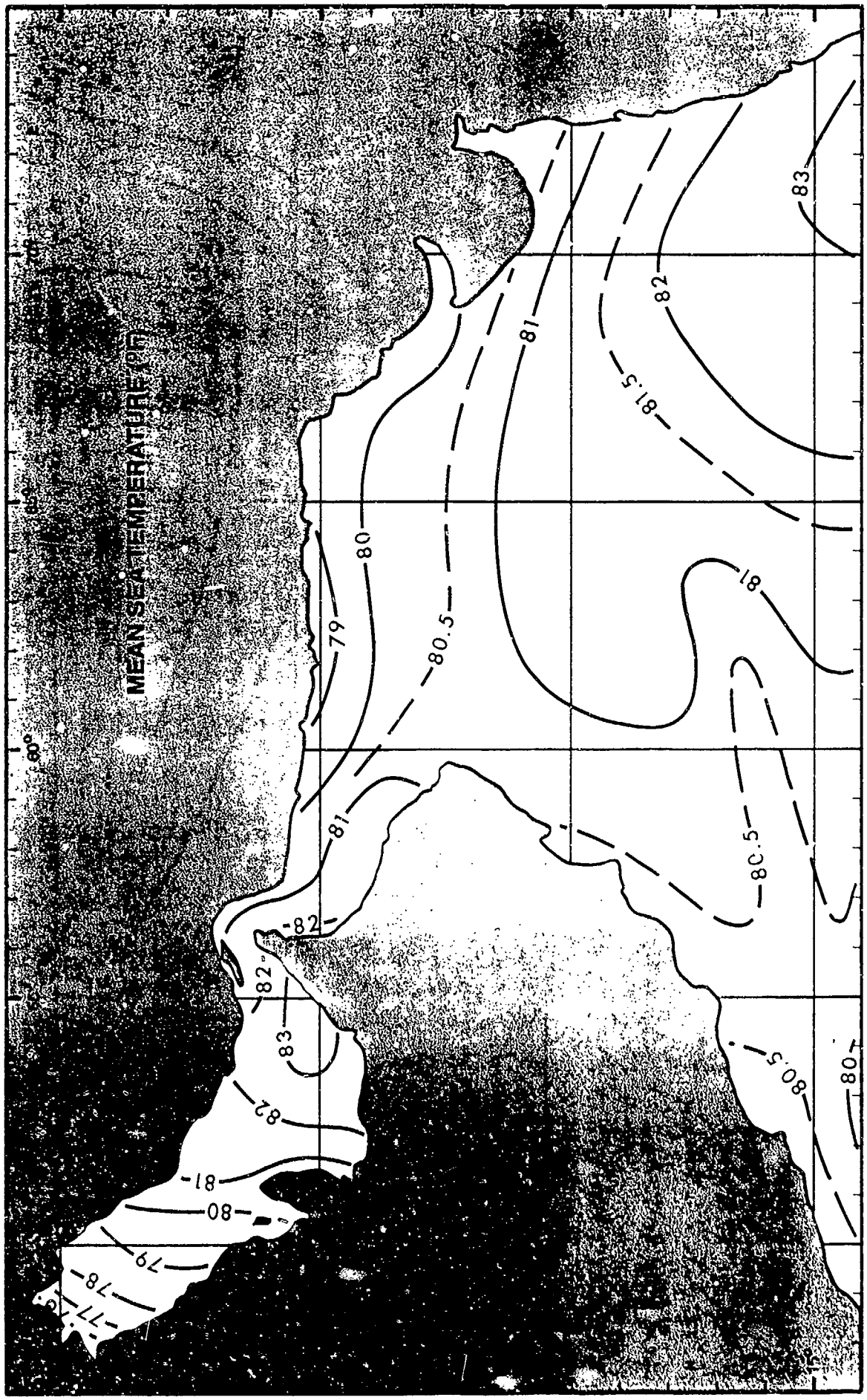
Wind Speed 11-21 and 22-33 Knots

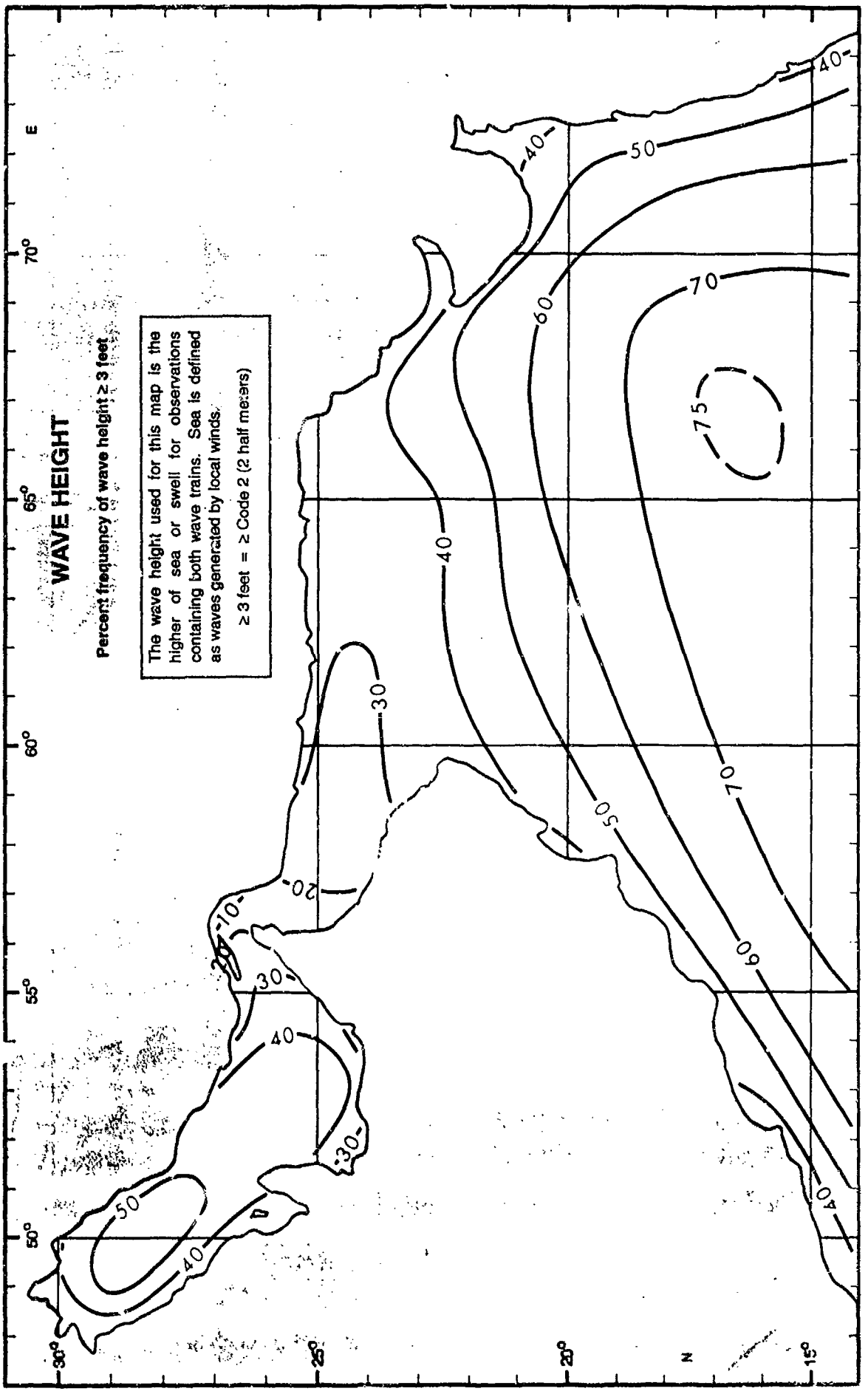



SURFACE WIND ROSES
Direction Frequency : Bars
Each circle = 20%

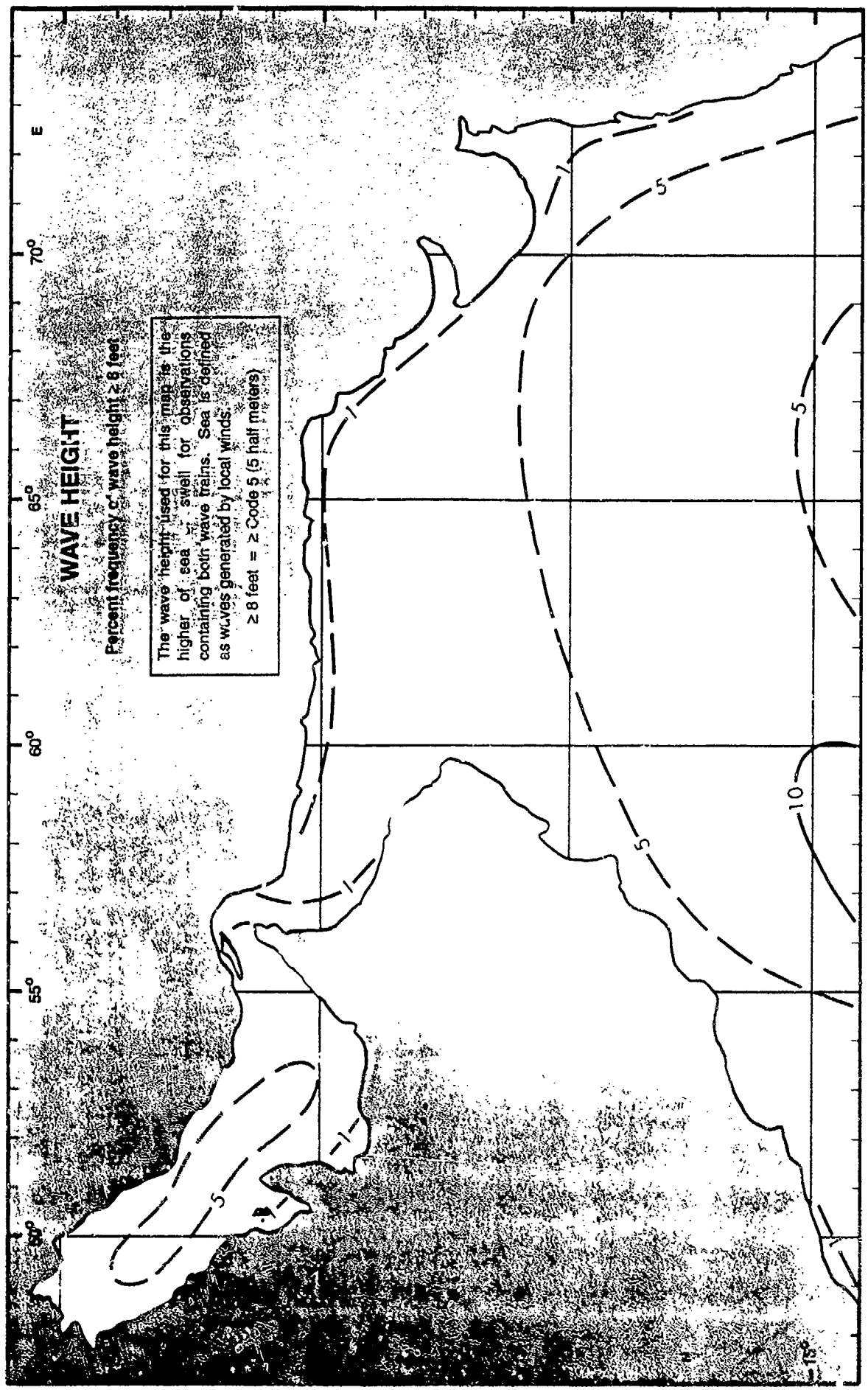

30°
N
20°


MEAN AIR TEMPERATURE (°F)
82.5
82
81.5
81
80.5
80
79.5
79
78
77
76
75
74
25
20
15
N

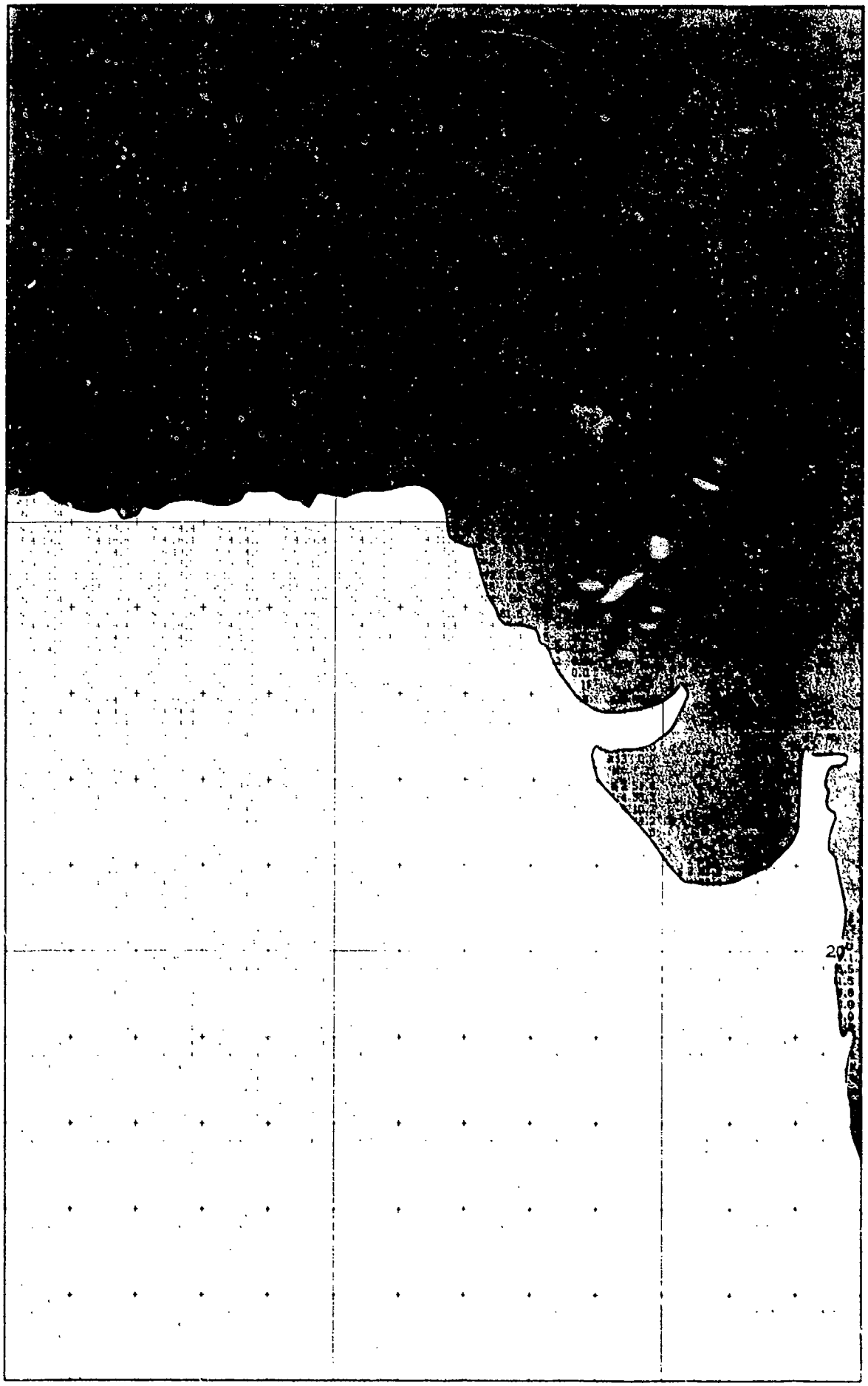

MEAN SEA TEMPERATURE (°F)
60°
83
82
81
81.5
80
80.5
79
18
82
83
82
81
80
79
78
77


WAVE HEIGHT
Percent frequency of wave height ≥ 3 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 3 feet = ≥ Code 2 (2 half meters)
70°
65°
60°
55°
50°
30°
25°
20°
15°
E
N
10
20
30
40
50
60
70
75

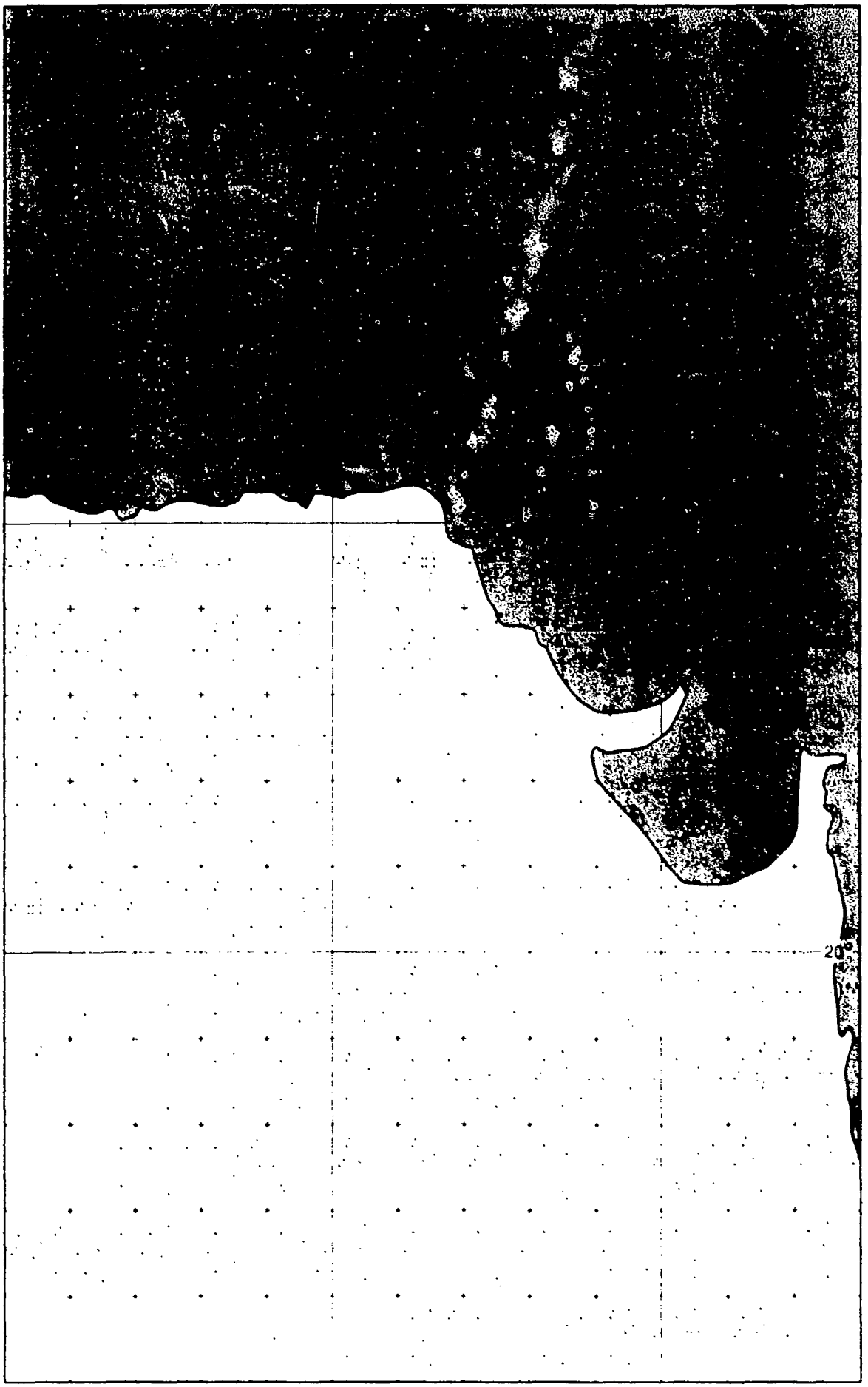
Wave Height ≥ 8 Ft.

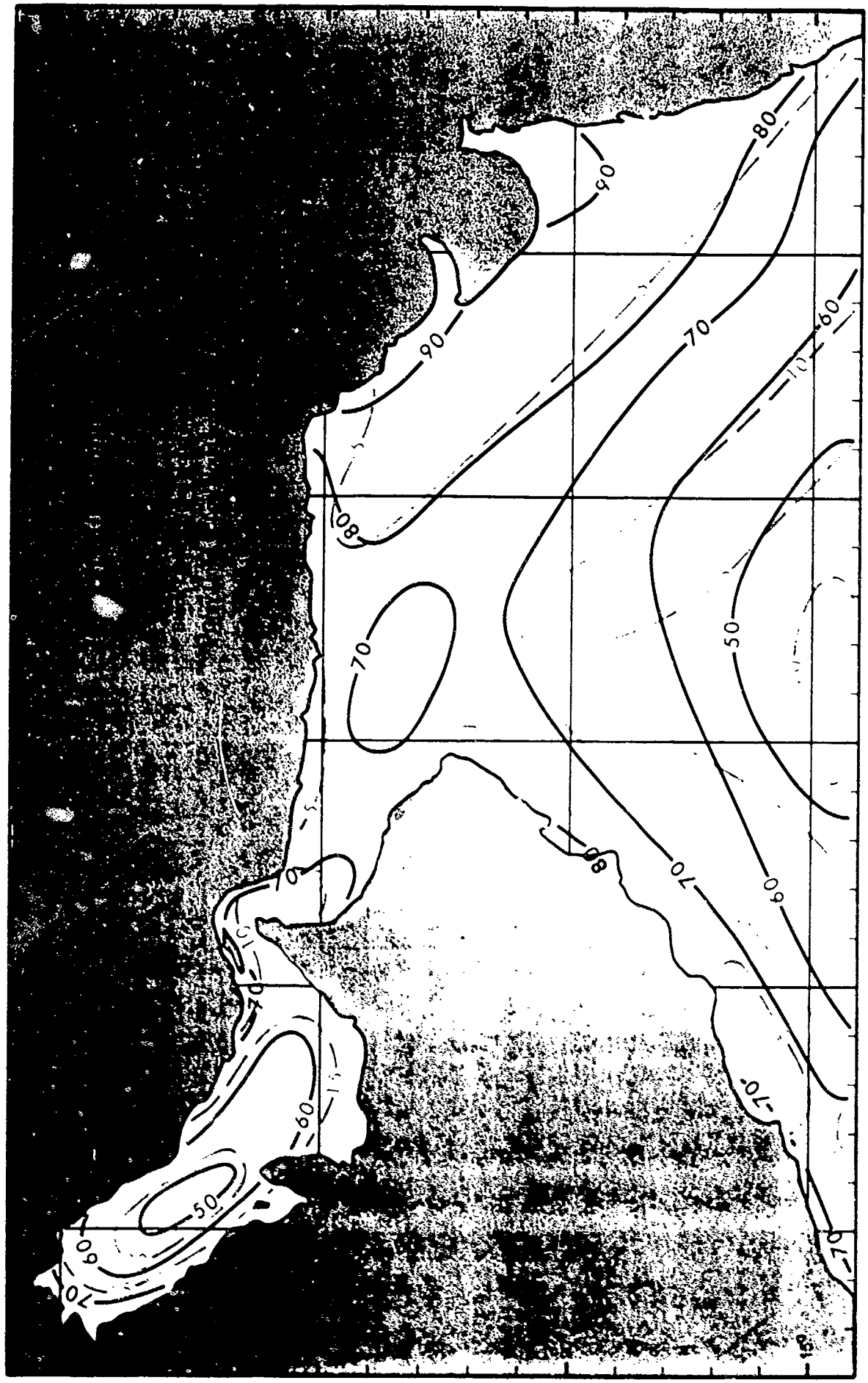


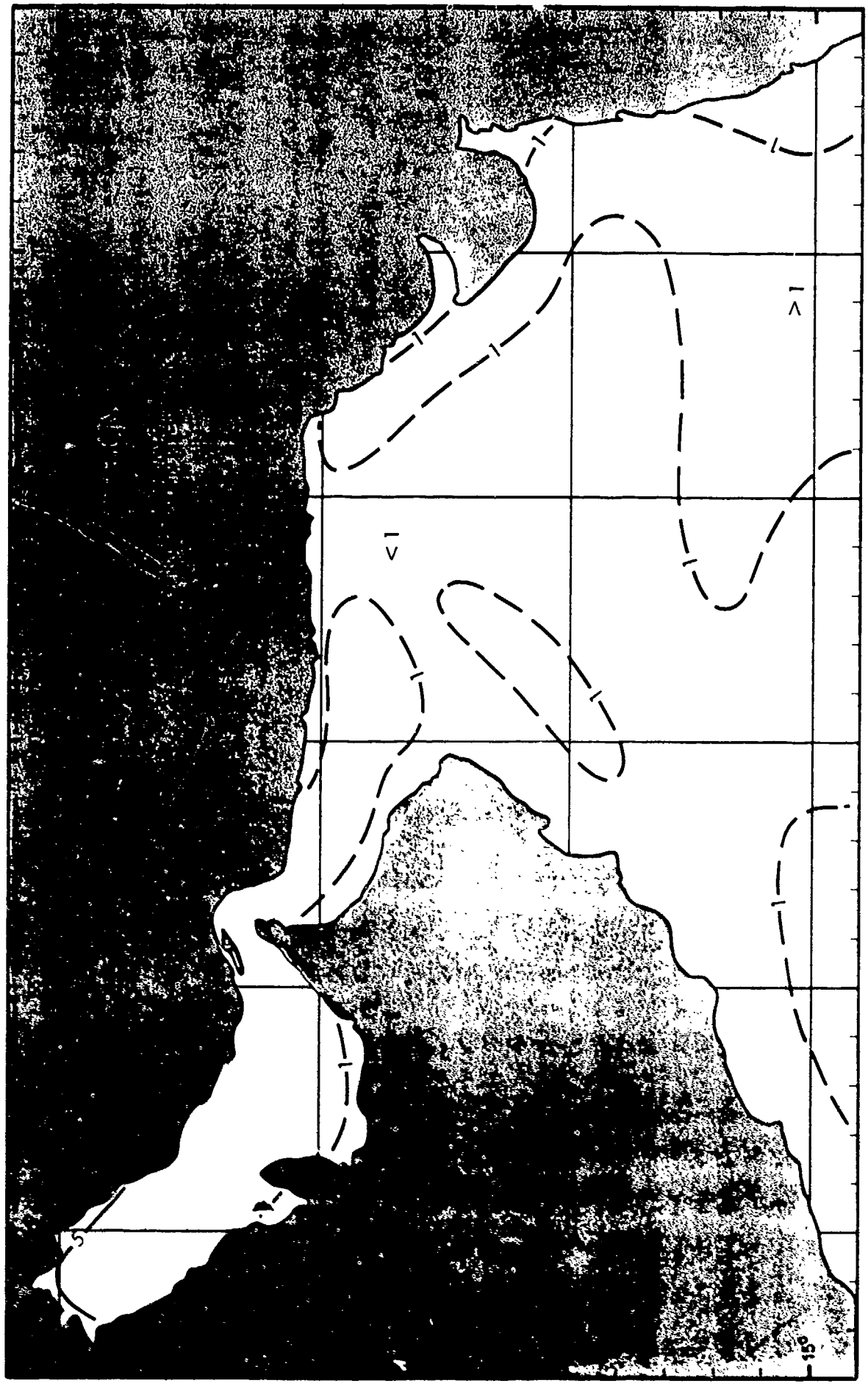

WAVE HEIGHT
EXAMPLE:



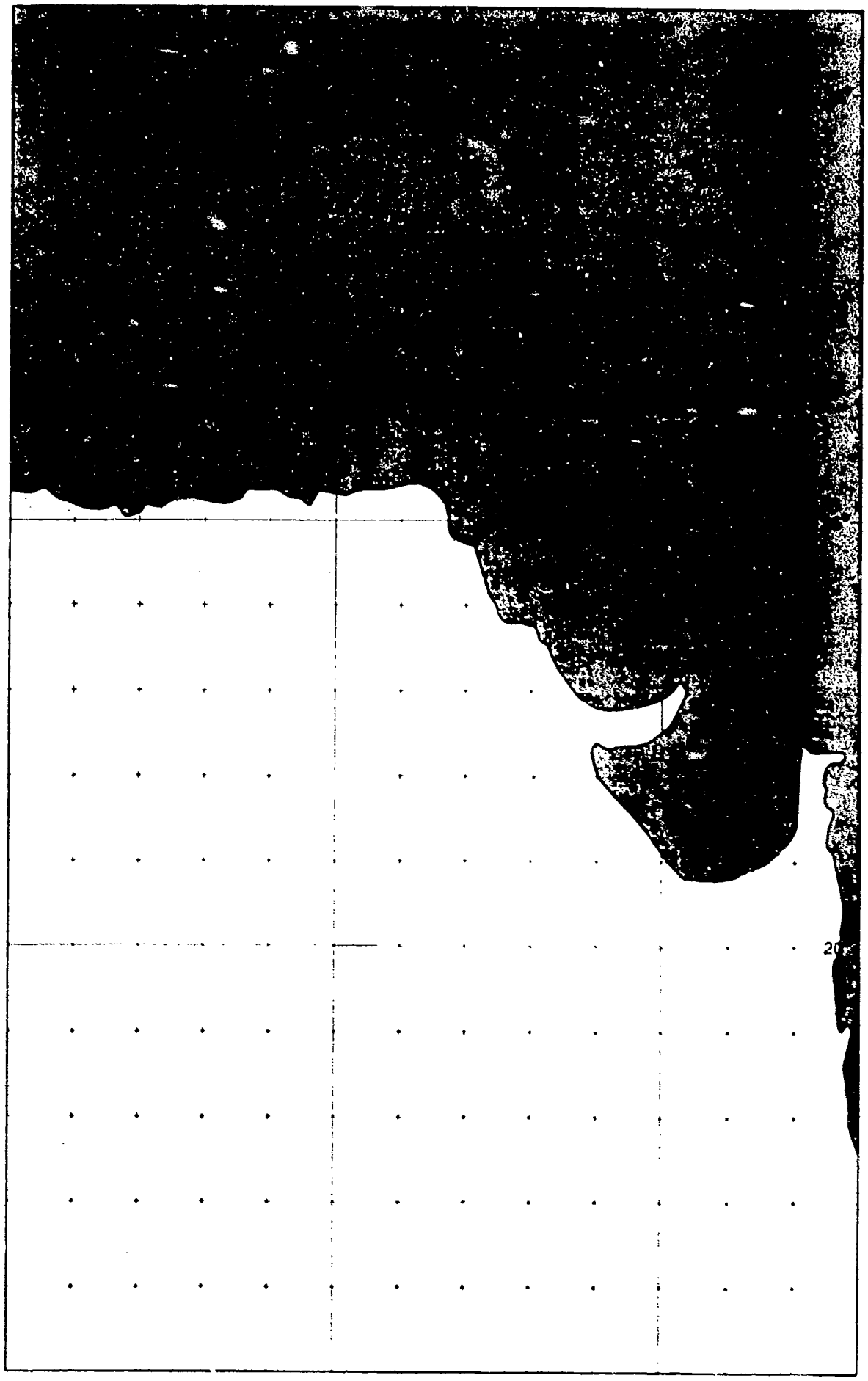

SURFACE CURRENTS
Percent of total used to compute primary directions.
Percent of total used to compute secondary directions.

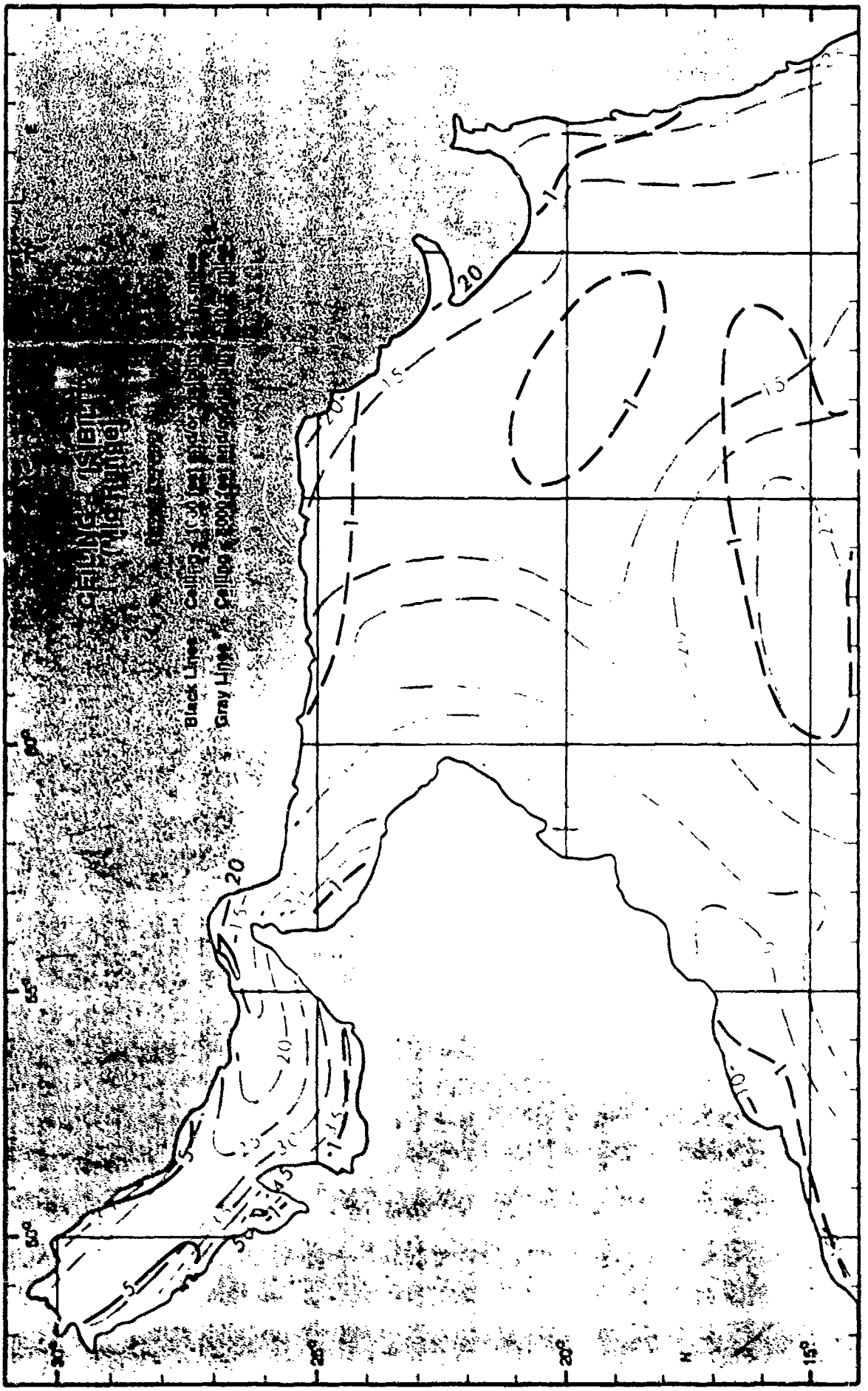

20

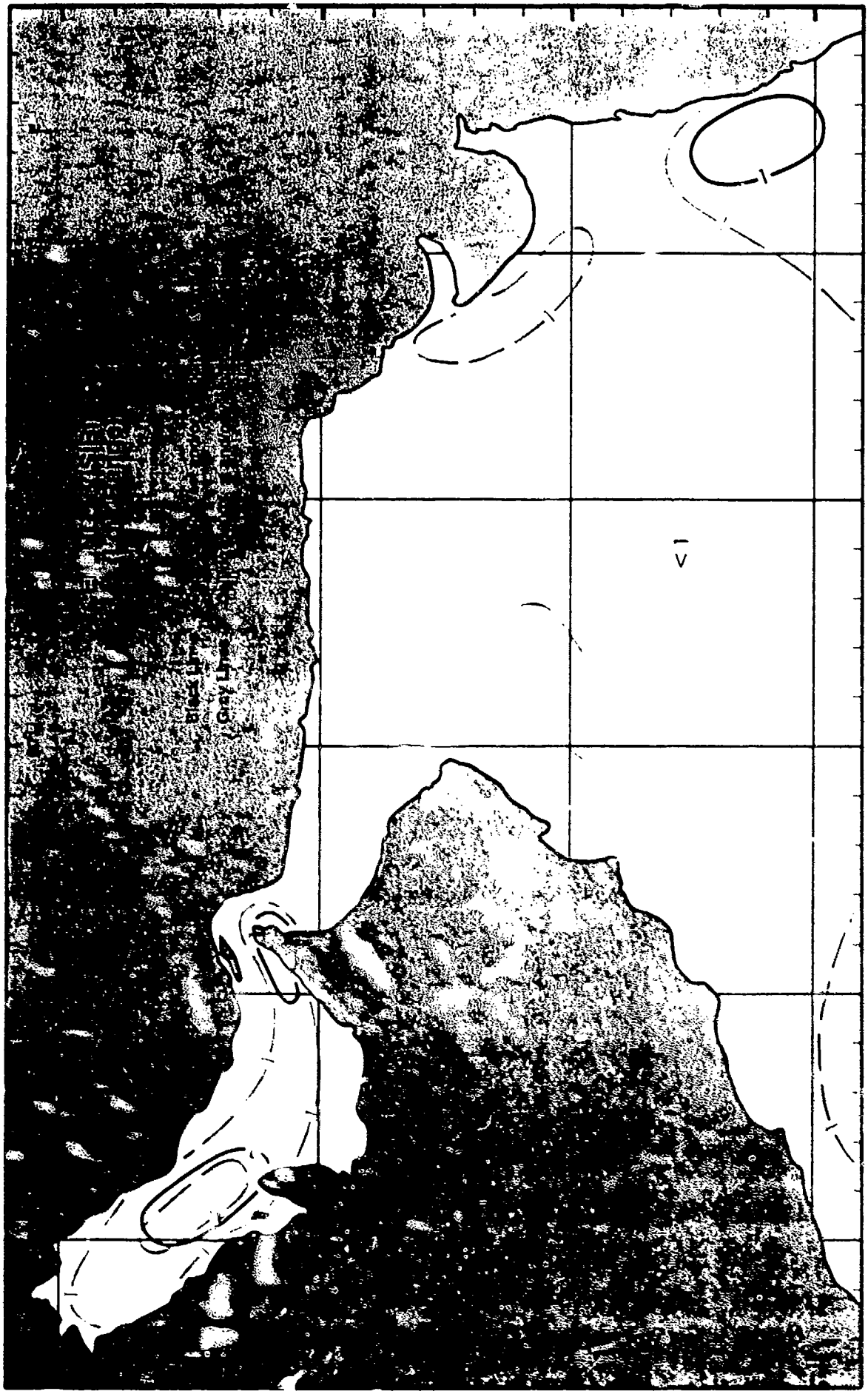

80
90
70
60
50
70
80
70
60
70
50
60
70




EXAMPLE:

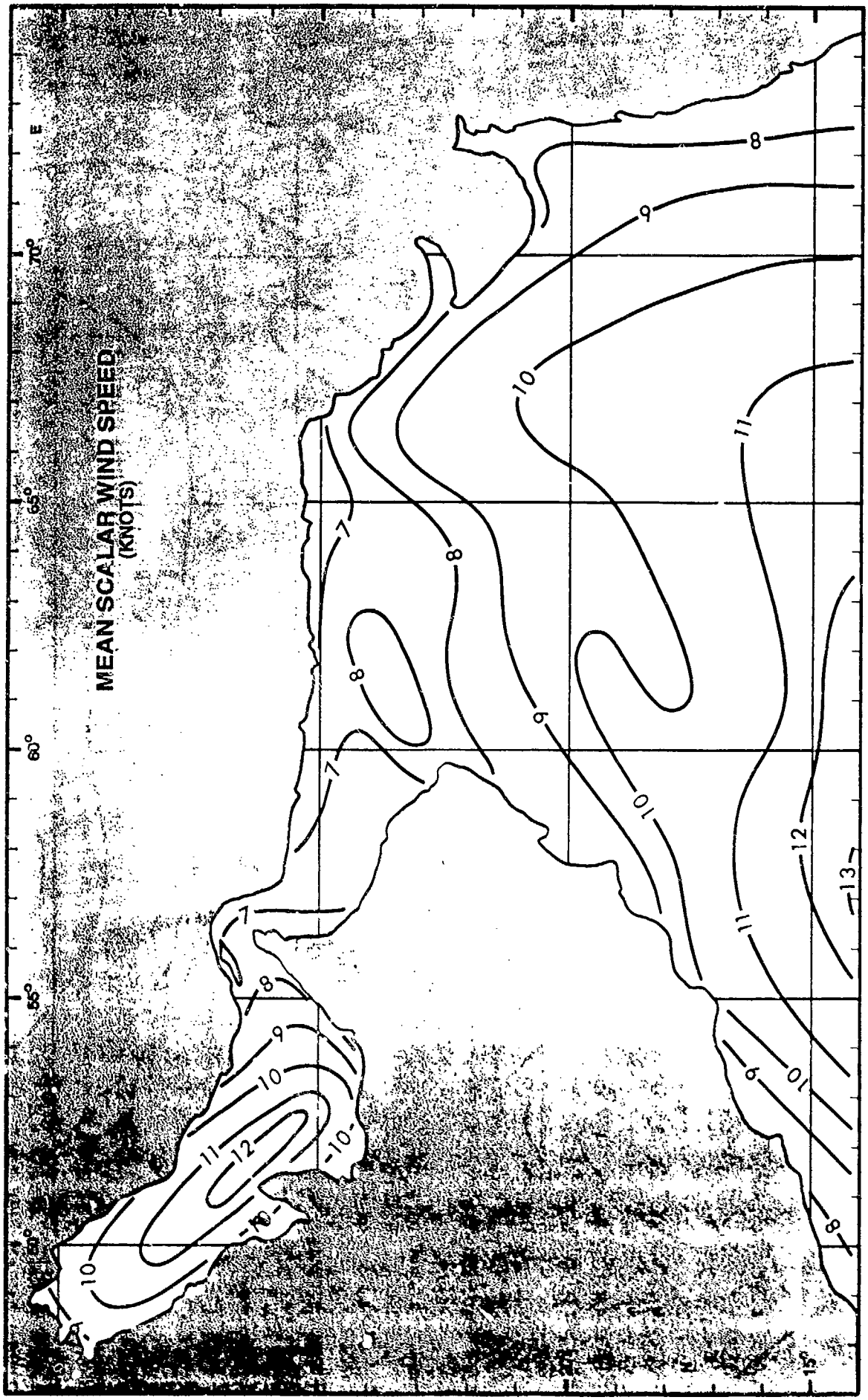



CEILING (ft) (BLACK)
VISIBILITY (statute miles)
Black Lines
Gray Lines
80°
55°
50°
30°
25°
20°
15°
20
15
10
5
3
2
1


V

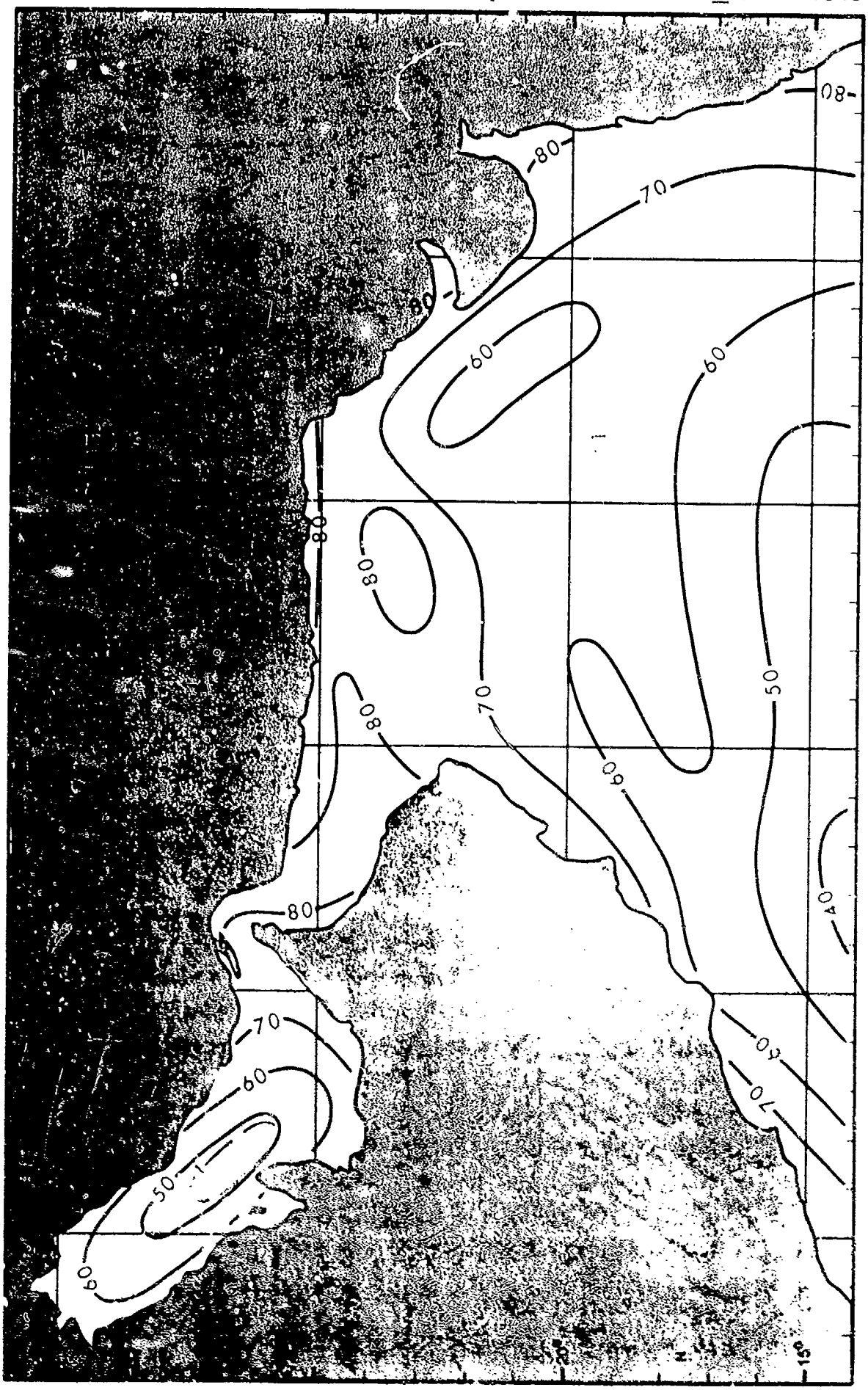

WIND-VISIBILITY-CLOUDINESS
Poor conditions: any one of the following conditions poor or less:
LCC ≤ 500 feet, Visibility < 1 n. mile,
Wind ≥ 6 or ≥ 22 knots
15
20
25
30
35
40
45

Mean Scalar Wind Speed

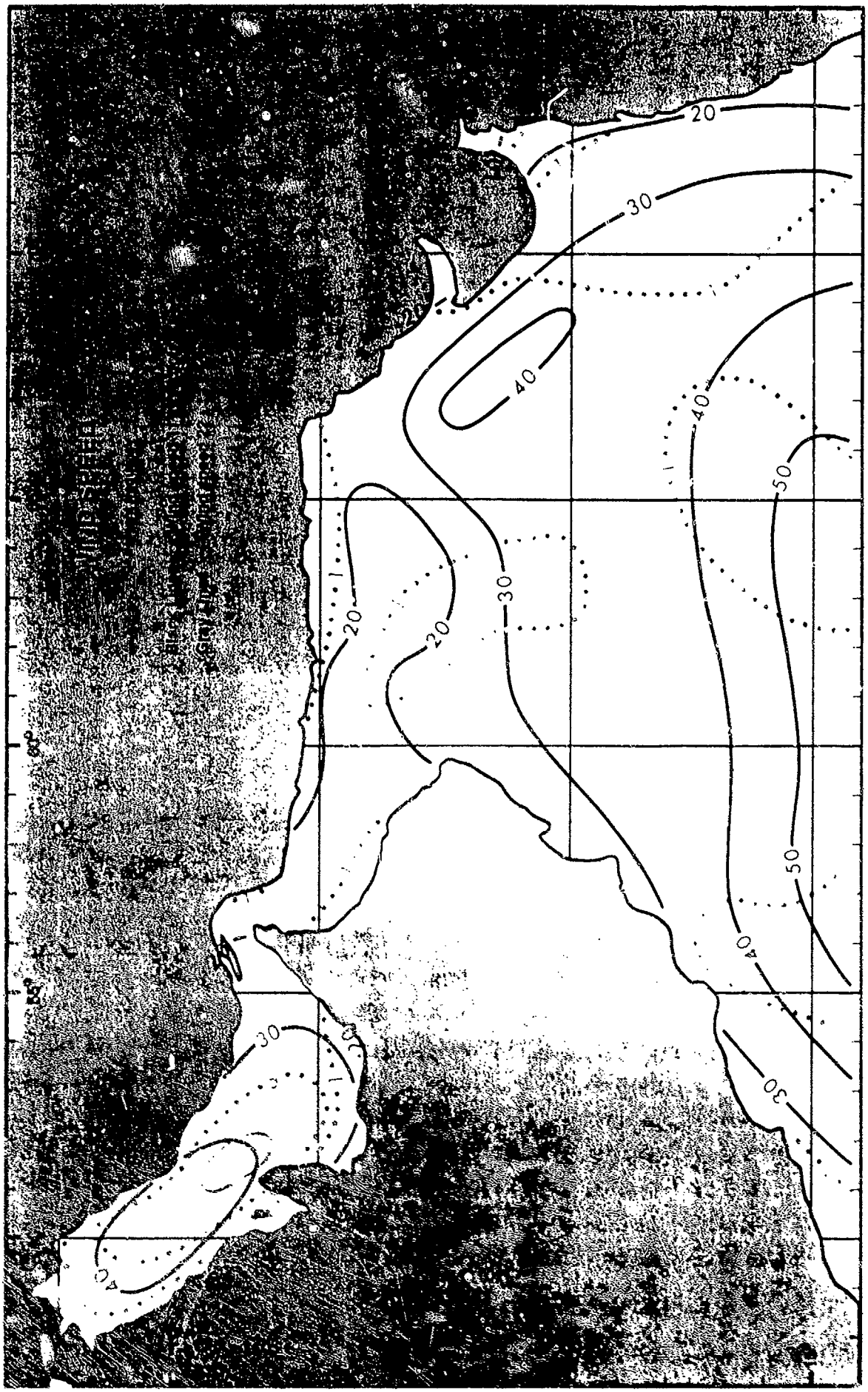


December

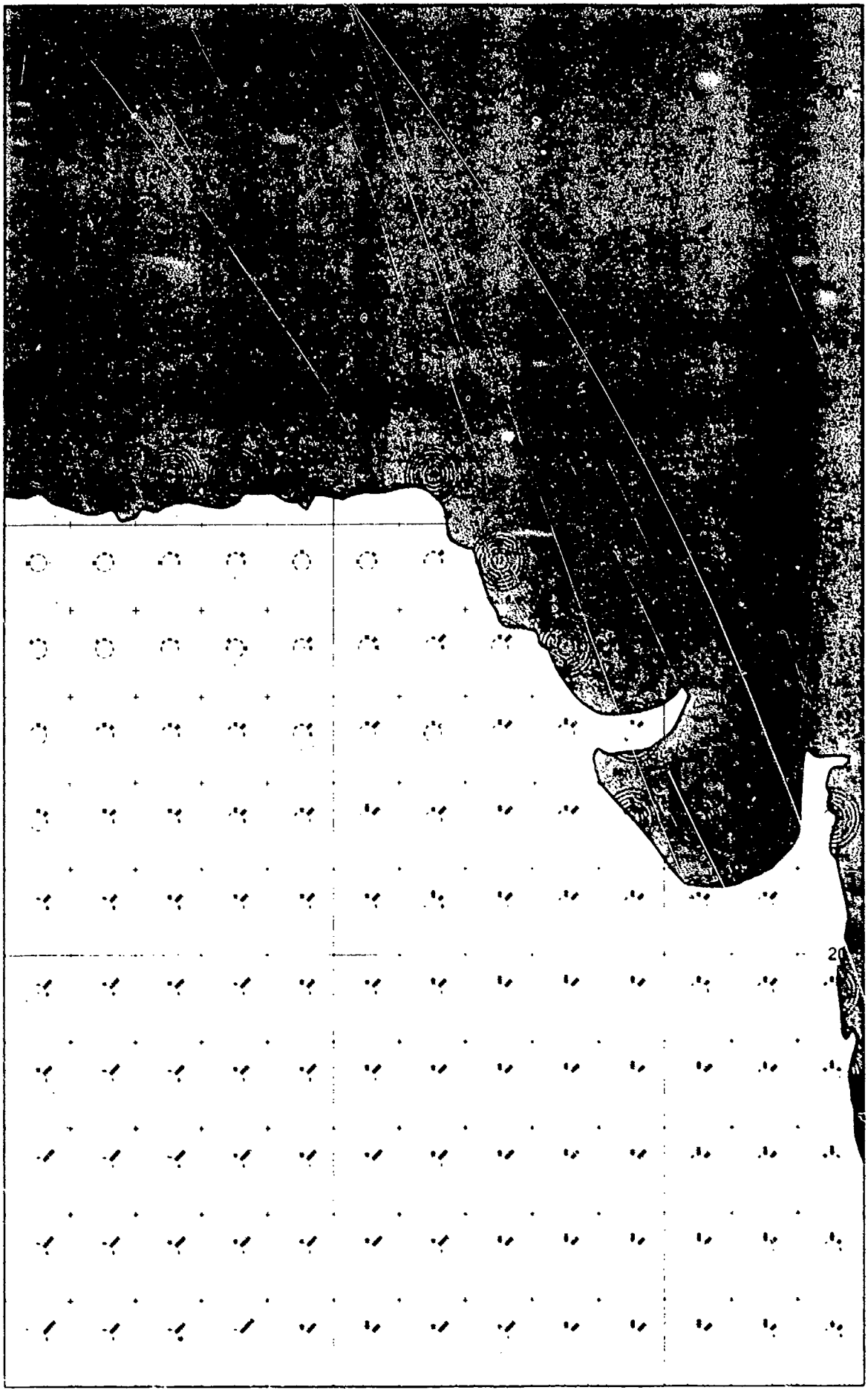
Wind Speed <11 and ≥ 34 Knots

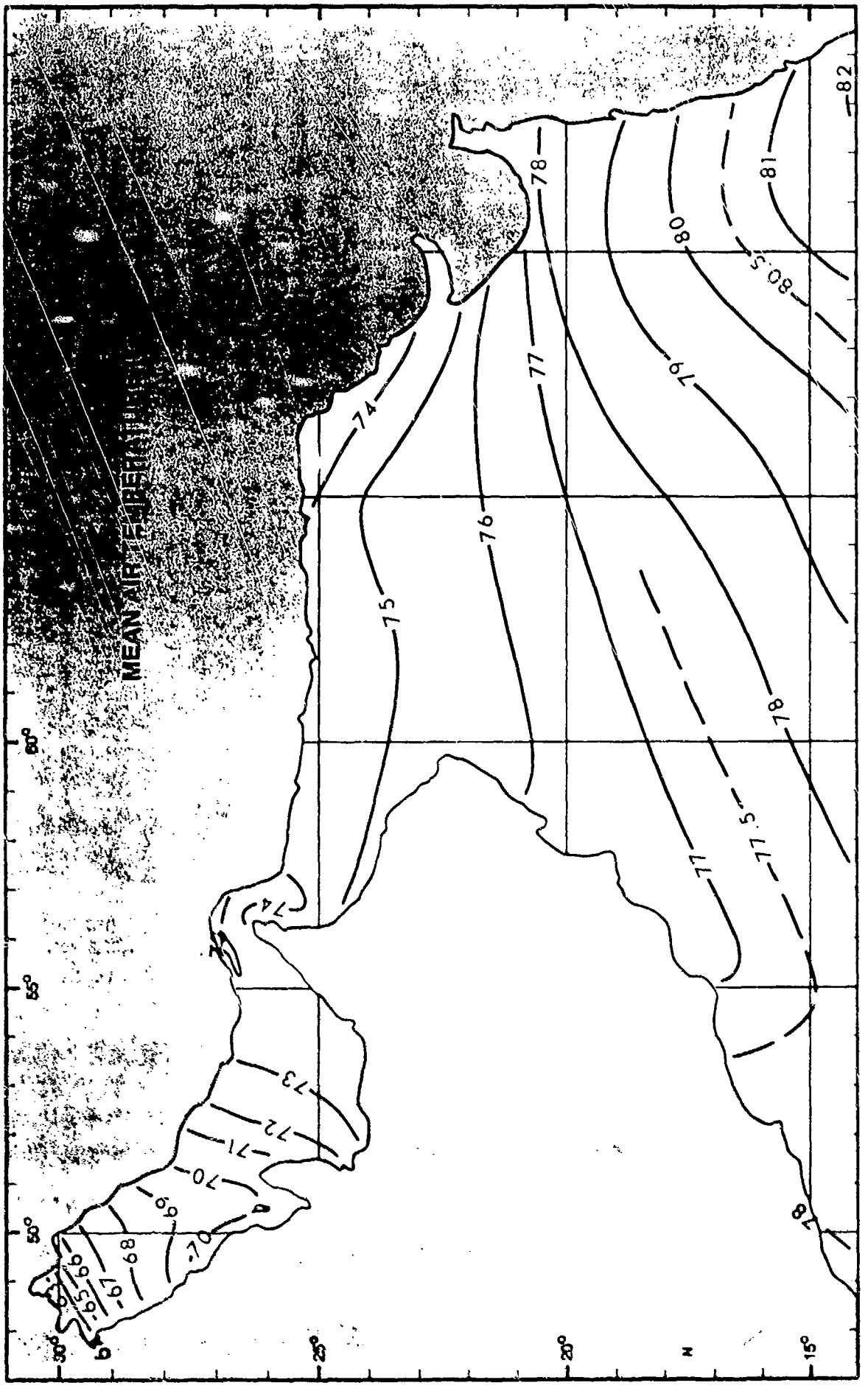


Wind Speed 11-21 and 22-33 Knots

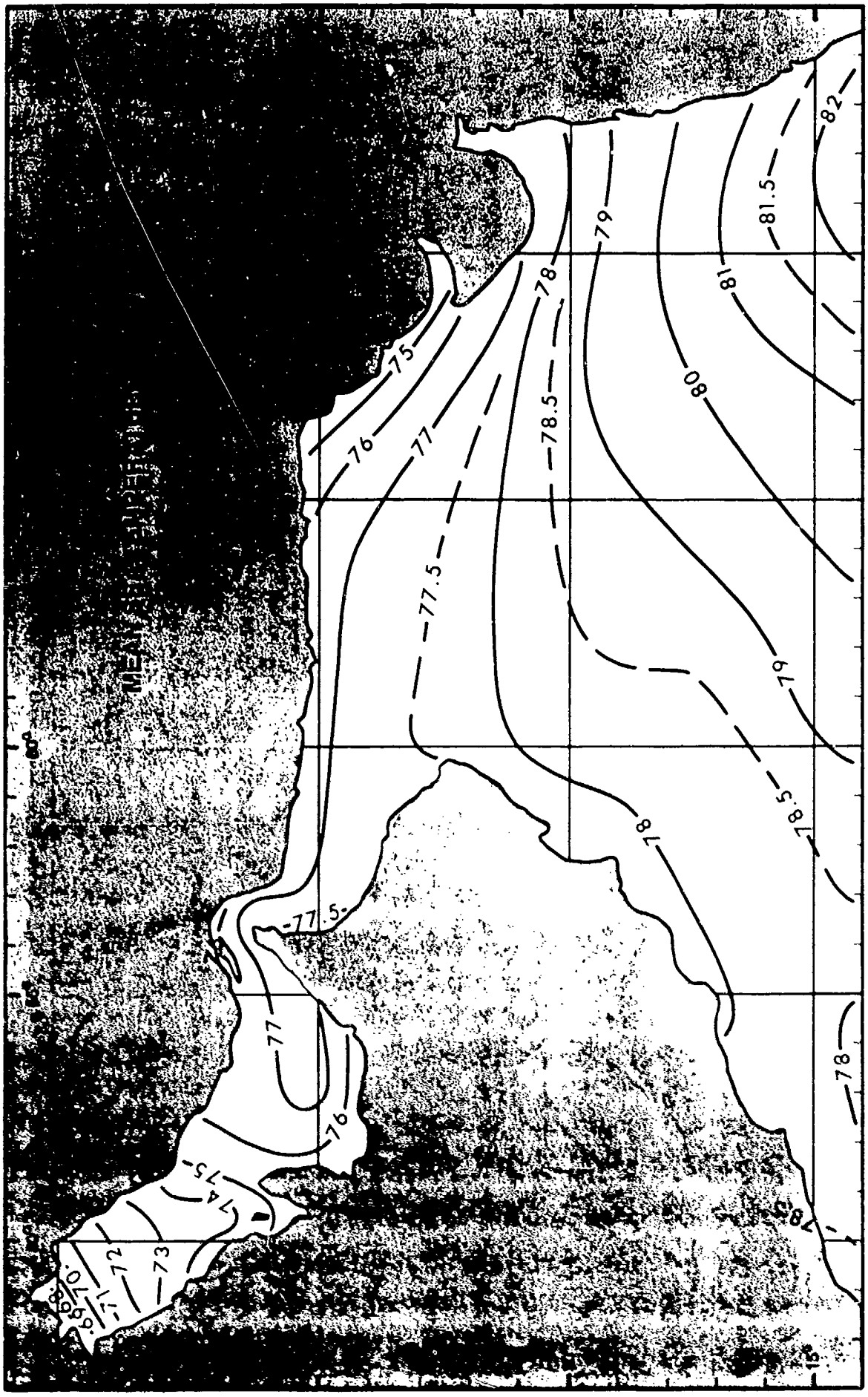


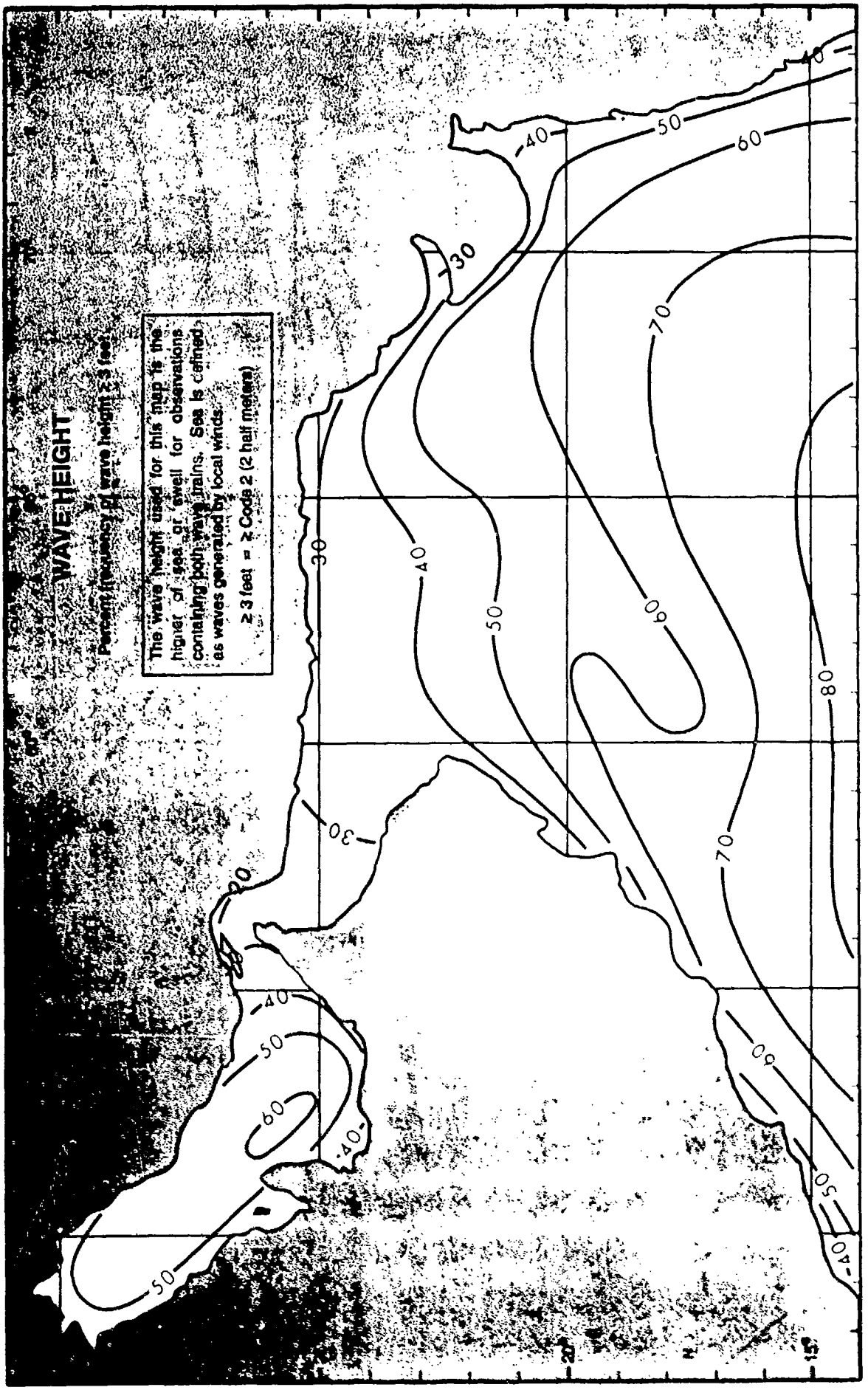

SURFACE WIND ROSES

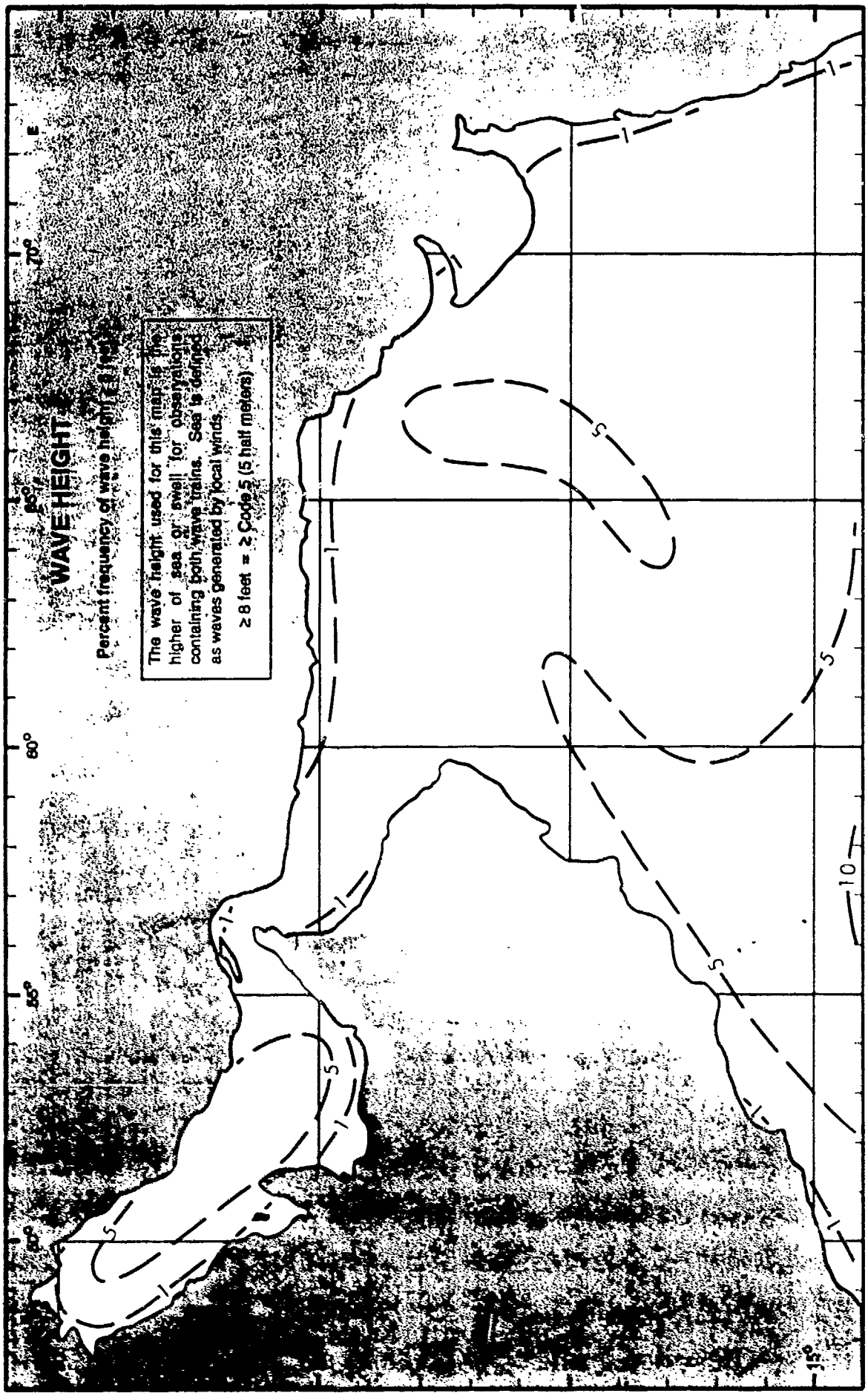



MEAN AIR TEMPERATURE
82
81
80.5
80
79
78
77
76
75
74
77.5
73
72
71
70
69
68
67
66
65
60°
55°
50°
30°
25°
20°
15°
N

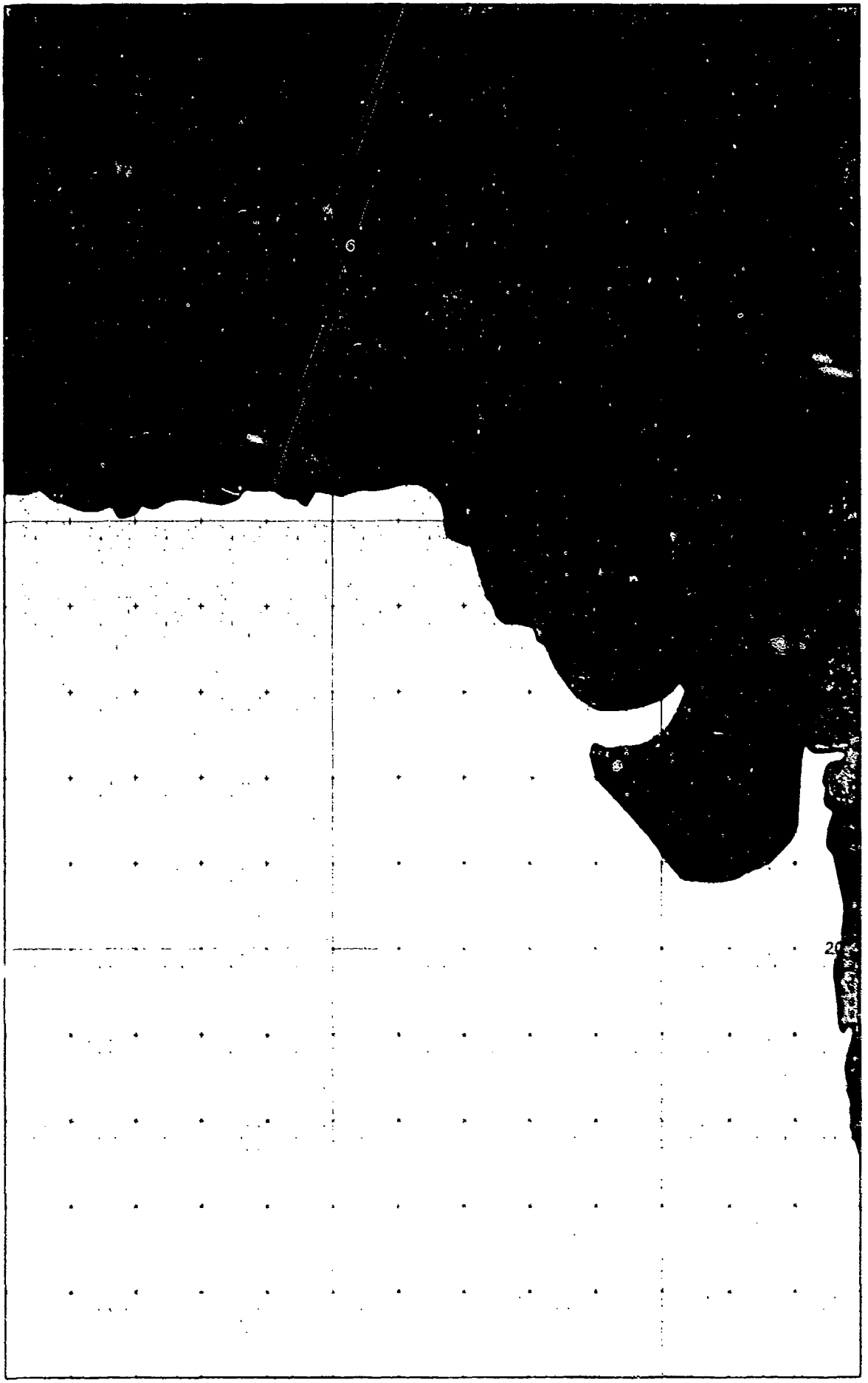
December Mean Sea Surface Temperature



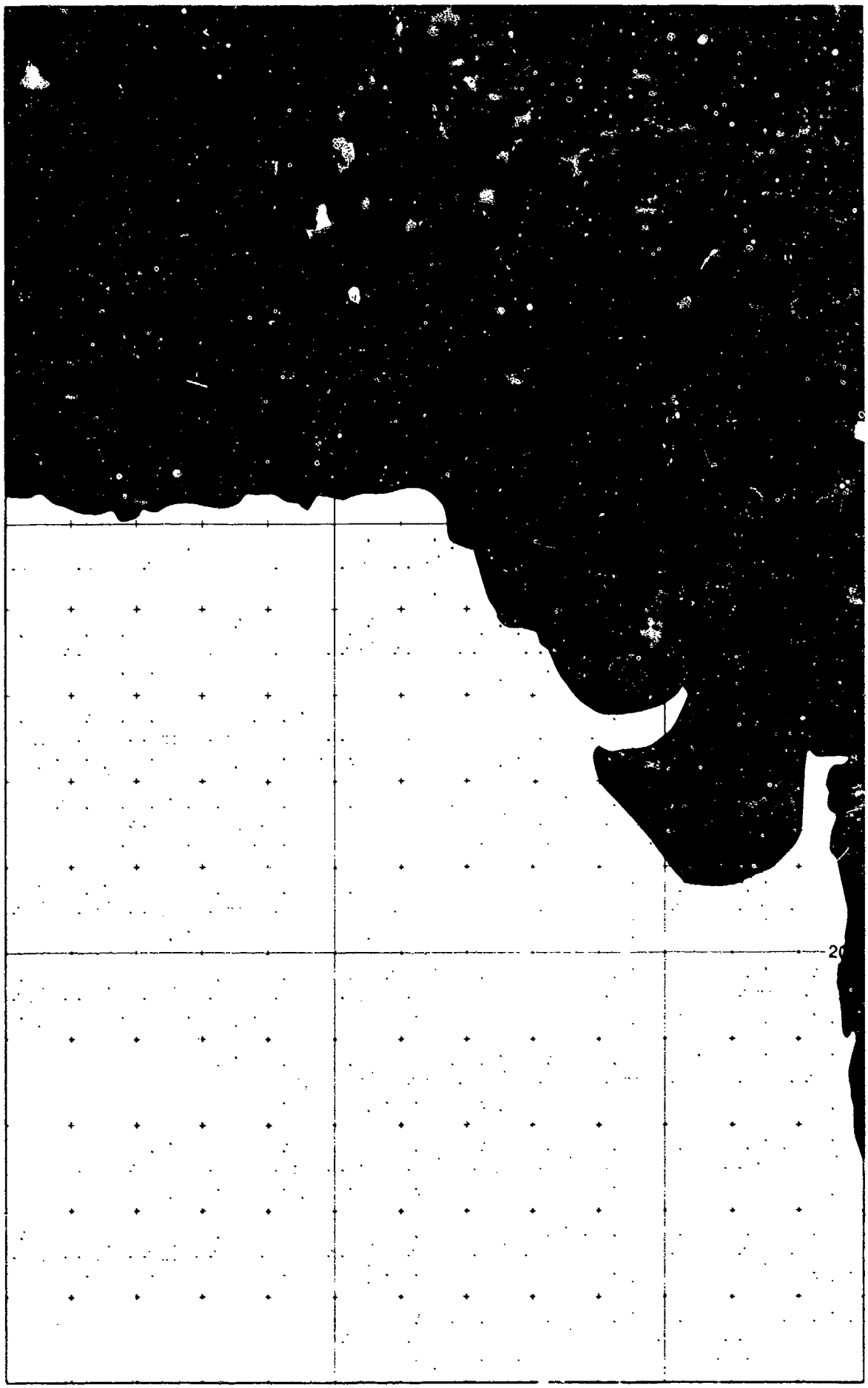

WAVE HEIGHT
Percent frequency of wave height ≥ 3 feet
This wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 3 feet = ≥ Code 2 (2 half meters)
10
20
30
40
50
60
70
80


WAVE HEIGHT
Percent frequency of wave height ≥ 8 feet
The wave height used for this map is the higher of sea or swell for observations containing both wave trains. Sea is defined as waves generated by local winds.
≥ 8 feet = ≥ Code 5 (5 half meters)
90°
80°
70°
60°
55°
50°
15°
E
1
5
10




6
20





STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 41217: Abu Zaby, United Arab Emirates LAT: 24°26'N LON: 54°39'E ELEV: 89Ft

Period of record (hourly): 1973 - 1989 Period of record (daily): 1973 -1989

	TEMPERATURE (DEG F) MEANS MAX	MIN	AVG	EXTREME MAX	MIN	PRECIPITATION PERCENTAGE (%) 07LST	13LST	MEAN SEA LEVEL PRESSURE (MB) AM	PM	MEAN WIND SPEED (KTS) & PREVAIL DIR 13LST	SPD	MAX	MAX GUST DIR	SKY COVER 13LST	TEMP (DEG F) MAX >=90	MAX <=32	MIN <=32	MIN <=0	MEAN NO. OF DAYS WITH (C) PRECIPITATION FRZ RN	FRZ DZ	HAIL	TH	FOG	OBSTR TO VISION SNOW	BLOW SNOW	DUST SAND	OBSC VIS
JAN	73	59	66	90	46	81	52	1021	1017	15	NW	30	27	CLR	0	3	0	0	2	0	0	0	2	0	4	9	0	6	24
FEB	75	60	68	97	48	80	51	1020	1016	25	NW	33	31	CLR	1	6	0	0	4	0	0	0	4	1	3	7	0	7	33
MAR	81	66	74	105	50	74	49	1016	1012	35	NW	33	02	CLR	6	16	0	0	4	0	0	0	4	1	3	6	0	10	45
APR	88	73	80	108	59	69	39	1011	1007	40	NW	33	32	CLR	13	25	0	0	1	0	0	0	1	1	2	4	0	2	11
MAY	97	79	88	115	68	67	35	1008	1004	50	NNW	33	27	CLR	26	30	0	0	1	0	0	0	1	0	1	6	0	6	42
JUN	99	82	91	115	66	71	42	1007	1003	65	WNW	33	30	CLR	28	30	0	0	0	0	0	0	0	0	2	9	0	15	26
JUL	103	86	95	117	73	69	42	1004	1000	70	NW	33	31	CLR	30	31	0	0	0	0	0	0	0	0	2	10	0	19	22
AUG	102	87	95	115	75	71	46	1008	1005	65	NNW	32	28	CLR	30	31	0	0	1	0	0	0	0	1	0	1	10	0	16	20
SEP	99	82	91	115	66	76	42	1010	1007	55	NNW	33	27	CLR	29	30	0	0	0	0	0	0	0	0	0	4	11	0	9	17
OCT	93	75	84	108	61	78	45	1013	1009	30	NNW	30	72	CLR	25	30	0	0	0	0	0	0	0	0	0	4	10	0	4	12
NOV	84	68	76	99	55	78	46	1015	1012	20	NNW	29	52	CLR	5	25	0	0	0	0	0	0	0	0	0	2	6	0	3	9
DEC	76	62	70	90	48	81	52	1018	1015	15	NW	29	70	CLR	0	7	0	0	3	0	0	0	3	0	2	7	0	4	11
ANN	90	73	82	117	48	74	45	1012	1008	85	NW	33	72	CLR	193	264	0	0	18	0	0	0	29	3	31	95	0	108	375
POR	15	15	15	15	15	11	12	12	12	8	12	12	17	9	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15

T = TRACE AMOUNTS (< .05", < .5 INCHES).
0 = MEAN NO. DAYS < .5 DAYS.
4 = PRESSURE ALTITUDE IN TENS OF FEET (I.E., 50 = 500 FEET).
# = NAVY STATIONS REPORTED HAIL AS SNOWFALL.
NWS STATIONS REPORTED HAIL AS SNOWFALL FOR THE PERIOD JULY 1948-DECEMBER 1955.
* = THE PREDOMINANT SKY CONDITION, OR PRECIPITATION IN EXCESS OF THE INDICATED AMOUNT.
@ = VISIBILITY IS NOT CONSIDERED , MIST INCLUDED WHEN REPORTED.
& = ANNUAL TOTALS MAY DIFFER FROM THE SUM OF THE MONTHLY VALUES BECAUSE OF ROUNDING.
^ = 24 HOUR MAXIMUM PRECIPITATION AND SNOWFALL ARE DAILY TOTAL VALUES (MID-NIGHT TO MID-NIGHT TOTALS).
***** = INDICATES DATA NOT AVAILABLE.
I = INSUFFICIENT NUMBER OF AVAILABLE OBSERVATIONS FOR COMPUTATION.

FLYING WEATHER - PERCENT OF HOURS

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
PERCENT OF HOURS WITH CEILING LESS THAN 5000 FEET &/OR VISIBILITY LESS THAN 5.00 MILES														
01	9	10	9	5	5	12	17	12	11	7	5	7	9	17
04	16	12	14	7	6	17	21	14	22	14	9	8	13	17
07	30	27	27	23	19	36	44	39	40	28	19	19	29	17
10	27	27	23	11	11	23	35	29	16	12	9	10	20	17
13	16	16	15	11	9	23	28	20	6	7	5	13	14	17
16	12	16	15	10	9	24	28	21	7	4	3	9	13	17
19	8	12	13	5	5	19	26	23	10	4	1	6	11	17
22	5	6	6	4	3	13	17	16	9	4	2	4	7	17
ALL	16	16	15	9	8	20	27	22	15	10	6	10	14	17
PERCENT OF HOURS WITH CEILING LESS THAN 3000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
01	5	6	5	2	1	6	8	4	3	2	2	3	4	17
04	8	7	8	3	2	9	9	5	11	7	5	5	7	17
07	15	15	16	11	5	19	21	17	24	17	9	8	15	17
10	12	14	10	4	4	10	15	11	6	5	4	6	8	17
13	5	7	7	3	2	12	13	7	3	3	1	4	5	17
16	5	6	7	3	2	12	14	9	3	3	1	4	6	17
19	2	5	6	2	1	8	12	11	3	3	1	1	4	17
22	1	3	3	*	0	6	7	6	2	1	1	1	2	17
ALL	7	8	8	3	3	10	12	9	6	4	3	4	6	17
PERCENT OF HOURS WITH CEILING LESS THAN 1000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
01	5	5	4	2	1	6	8	4	3	2	2	3	4	17
04	8	6	7	3	3	9	5	5	10	7	5	5	6	17
07	14	12	13	11	5	18	20	17	24	17	9	8	14	17
10	10	12	10	4	3	10	15	11	6	4	4	5	8	17
13	4	6	7	3	3	12	13	7	3	3	1	4	5	17
16	4	5	7	3	4	12	14	9	3	3	1	3	5	17
19	2	4	6	2	1	8	12	11	3	3	1	1	4	17
22	1	3	3	*	0	6	7	6	2	1	1	1	2	17
ALL	6	7	7	3	3	10	12	9	6	4	3	4	6	17
PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 1.00 MILES														
01	2	2	2	*	*	2	2	1	*	*	1	1	1	17
04	5	5	3	1	1	3	2	1	5	4	2	3	3	17
07	7	7	6	5	2	7	4	4	10	9	4	4	5	17
10	2	3	2	1	0	1	1	*	2	1	1	2	1	17
13	1	2	1	*	*	1	1	1	0	0	0	1	1	17
16	1	1	2	*	1	2	1	1	*	0	*	1	1	17
19	*	1	1	*	0	1	1	1	0	0	0	0	*	17
22	1	1	0	*	0	1	*	1	0	*	*	*	*	17
ALL	2	3	2	1	1	2	1	1	2	2	1	1	2	17
PERCENT OF HOURS WITH CEILING LESS THAN 200 FEET &/OR VISIBILITY LESS THAN 1/4 MILES														
01	2	2	1	*	*	1	1	*	0	*	1	1	1	17
04	5	4	3	1	1	2	2	1	5	4	2	3	3	17
07	6	7	6	4	2	2	3	3	9	8	3	4	5	17
10	1	2	2	*	0	*	1	0	1	1	1	1	1	17
13	1	1	1	*	*	1	1	0	0	0	0	*	*	17
16	0	*	2	*	1	1	1	1	0	0	0	*	*	17
19	0	1	1	*	0	1	1	1	0	0	0	0	*	17
22	*	1	0	0	0	*	*	*	0	*	*	0	*	17
ALL	2	2	2	1	1	1	1	1	2	2	1	1	1	17

* = VALUE > 0 AND < 0.5 PERCENT

STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 41240: Al Khasab, Oman LAT: 26°13'N LON: 56°14'E ELEV: 10Ft

Period of record (hourly): 1979 - 1989 Period of record (daily): 1979 -1989

	TEMPERATURE (DEG F) MEANS			EXTREME		PRECIPITATION (IN.)			PR	WIND (KTS)			TOT	MEAN NO. OF DAYS WITH (E) PRECIPITATION															
	MAX	MIN	AVG	MAX	MIN	AMT	PCT	HI	ALT (100 FT)	PREVAIL	MAX 5 SEC	MAX 1 MIN	SKY (TENTHS)	TEMP (DEG F) MAX 90	MAX 80	MIN 32	MIN 0	FOG	HAIL	THN	FOG	SNOW	BLOW	DUST	OBSC VIS
JAN	74	66	71	86	45	1	57	.44	56	15	SSE	7	40	CLR	0	2	#	0	1	0	0	0	1	#	0	3	0	3	5
FEB	75	68	72	104	55	1	56	.46	57	25	N	9	61	CLR	#	4	0	0	1	0	0	0	1	0	#	3	0	3	6
MAR	80	72	76	98	56	00	55	.32	69	35	N	6	43	CLR	2	16	0	0	1	0	0	0	1	#	0	5	0	6	12
APR	89	80	85	108	68	02	49	.57	63	45	N	9	35	CLR	15	27	0	0	1	0	0	0	1	#	0	5	0	6	8
MAY	98	88	93	115	75	59	45	.66	67	50	N	9	56	CLR	28	31	0	0	#	0	0	0	#	0	0	6	0	6	20
JUN	100	91	95	118	69	67	51	.86	75	75	N	8	40	CLR	30	30	0	0	0	0	0	0	0	0	0	10	0	7	27
JUL	101	92	96	117	70	69	54	.99	79	70	N	8	65	CLR	31	31	0	0	#	0	0	0	#	0	#	12	0	10	26
AUG	99	92	96	122	73	69	56	1.0	79	60	N	8	57	CLR	31	31	0	0	#	0	0	0	#	0	0	9	0	7	23
SEP	97	88	93	111	70	73	57	.93	77	55	N	8	50	CLR	29	30	0	0	#	0	0	0	#	0	0	6	0	3	7
OCT	92	83	88	105	59	69	55	.75	70	35	N	8	46	CLR	23	30	0	0	#	0	0	0	2	0	#	6	0	#	5
NOV	84	75	80	95	49	65	57	.61	64	25	N	6	51	CLR	5	28	0	0	1	0	0	0	1	0	#	1	0	1	2
DEC	76	69	73	86	54	71	54	.59	59	15	SSE	7	41	CLR	0	7	0	0	2	0	0	0	2	0	#	2	0	1	3
ANN	89	81	85	122	45	67	54	.68	69	55	N	8	65	CLR	200	272	#	0	11	0	0	0	11	1	2	68	0	57	148
POR	10	10	10	10	10	4	4	6	6	4	6	6	11	4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

T = TRACE AMOUNTS (< .05, < .5 INCHES).
# = MEAN NO. DAYS < .5 DAYS.
$ = PRESSURE ALTITUDE IN TENS OF FEET (I.E., 50 = 500 FEET).
@ = NAVY STATIONS REPORTED HAIL AS SNOWFALL.
NWS STATIONS REPORTED HAIL AS SNOWFALL FOR THE PERIOD JULY 1948-DECEMBER 1955.
* = THE PREDOMINANT SKY CONDITION, OR PRECIPITATION IN EXCESS OF THE INDICATED AMOUNT.
@ = VISIBILITY IS NOT CONSIDERED , MIST INCLUDED WHEN REPORTED.
E = ANNUAL TOTALS MAY DIFFER FROM THE SUM OF THE MONTHLY VALUES BECAUSE OF ROUNDING.
~ = 24 HOUR MAXIMUM PRECIPITATION AND SNOWFALL ARE DAILY TOTAL VALUES (MID-NIGHT TO MID-NIGHT TOTALS).
***** = INDICATES DATA NOT AVAILABLE.
I = INSUFFICIENT NUMBER OF AVAILABLE OBSERVATIONS FOR COMPUTATION.

FLYING WEATHER - PERCENT OF HOURS

PERCENT OF HOURS WITH CEILING LESS THAN 5000 FEET &/OR VISIBILITY LESS THAN 5.00 MILES

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
01	6	9	11	5	4	18	22	13	5	7	1	4	10	11
04	#	#	4	#	1	16	#	#	#	#	#	#	4	11
07	#	#	14	3	5	12	21	13	6	4	1	9	9	11
10	14	17	19	4	6	14	14	9	4	7	3	14	10	11
13	11	15	17	9	6	10	13	10	7	10	8	11	11	11
16	10	14	17	7	9	12	15	8	5	9	5	10	11	11
19	9	14	14	7	7	12	14	10	2	7	2	11	9	11
22	2	9	11	5	7	20	17	13	5	4	2	10	10	11
ALL	9	11	17	7	6	13	16	10	4	6	4	13	10	11

PERCENT OF HOURS WITH CEILING LESS THAN 3000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
01	4	1	4	2	0	3	12	4	2	1	1	3	4	11
04	#	#	2	#	1	0	#	#	#	#	#	#	#	11
07	#	#	14	2	2	3	11	3	1	1	1	6	4	11
10	4	6	9	1	2	2	7	2	1	1	1	6	3	11
13	3	5	8	2	1	2	6	1	1	1	1	7	3	11
16	4	7	7	1	1	2	7	2	#	1	2	7	3	11
19	3	5	7	1	1	2	7	1	#	0	1	7	2	11
22	0	4	10	0	1	1	10	3	1	0	1	6	2	11
ALL	2	4	7	1	1	2	7	2	1	1	1	4	3	11

PERCENT OF HOURS WITH CEILING LESS THAN 1000 FEET &/OR VISIBILITY LESS THAN 1.00 MILES

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
01	1	2	3	1	0	1	12	4	1	1	0	0	2	11
04	#	#	#	#	1	0	#	#	0	#	#	#	#	11
07	#	#	4	0	2	1	11	2	0	#	1	1	2	11
10	#	1	1	#	#	2	6	1	#	#	#	1	1	11
13	1	#	2	#	#	2	6	1	#	1	#	1	1	11
16	1	1	1	0	#	2	7	2	#	0	#	1	1	11
19	0	0	1	#	#	1	7	1	#	0	0	0	1	11
22	0	1	4	0	0	1	9	2	#	0	1	1	1	11
ALL	1	1	2	#	1	2	7	2	#	#	#	1	1	11

PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 1.00 MILES

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
01	1	0	1	0	0	1	0	0	0	0	0	0	#	11
04	#	#	#	#	1	0	#	#	0	#	#	#	#	11
07	#	#	0	2	2	0	0	0	0	0	0	1	#	11
10	0	#	0	0	#	0	0	0	0	0	#	0	#	11
13	0	#	0	#	#	0	0	0	0	0	#	0	#	11
16	#	#	0	0	#	0	#	0	#	0	#	0	#	11
19	0	0	0	0	#	1	0	0	0	0	0	0	#	11
22	0	0	0	0	0	0	0	0	0	0	0	1	#	11
ALL	#	#	#	#	#	#	#	0	#	0	#	#	#	11

PERCENT OF HOURS WITH CEILING LESS THAN 200 FEET &/OR VISIBILITY LESS THAN 1/4 MILES

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
01	1	0	1	0	0	1	0	0	0	0	0	0	#	11
04	#	#	#	#	1	0	#	#	0	#	#	#	#	11
07	#	#	1	0	0	0	0	0	0	0	0	0	#	11
10	0	#	0	0	#	0	0	0	0	0	#	0	#	11
13	0	#	0	#	#	0	0	0	0	0	#	0	#	11
16	#	#	0	0	#	0	#	0	#	0	#	0	#	11
19	0	0	0	0	#	0	0	0	0	0	0	0	#	11
22	0	0	0	0	0	0	0	0	0	0	0	0	#	11
ALL	#	#	#	#	#	#	#	0	#	0	#	#	#	11

= VALUE > 0 AND < 0.5 PERCENT
@ = INSUFFICIENT NUMBER OF OBSERVATIONS

STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 41150: Bahrain Intl AP, Bahrain LAT: 26°16'N LON: 50°39'E ELEV: 7Ft

Period of record (hourly): 1973 - 1989 Period of record (daily): 1973 -1989

	TEMPERATURE (DEG F)					RL HUM		VAP	DEW	PR	WIND (KTS)			TOT	MEAN NO. OF DAYS WITH (G)															
	MEANS			EXTREME		PERCENT		PR	PT.	ALT				SKY	TEMP (DEG F)					PRECIPITATION							CEILING LESS THAN				VISIBILITY LESS THAN	
	MAX	MIN	AVG	MAX	MIN	AM	PM	HG.		FT.	PREVAIL	MAX	CVR	MAX	MAX	MIN	MIN	.01 IN.	.10 IN.	.50 IN.	1.00 IN.	SNOW	SLT	THDR	500 FT	1000 FT	3000 FT	5000 FT	1 MI	3 MI
															>=90	>=80	<=45	<=32													
JAN	67	58	63	82	46	82	63	.41	54	25	WNW	17	107	CLR	0	#	0	0	6	0	0	0	6	1	5	16		*		
FEB	69	60	65	93	48	82	62	.43	55	35	NNW	13	57	CLR	#	1	0	0	6	0	0	0	6	1	5	13		6		
MAR	75	65	70	95	50	77	57	.48	57	45	NNW	14	52	CLR	1	7	0	0	8	0	0	0	8	2	1	12		7		
APR	84	72	78	102	57	73	51	.57	63	50	N	11	46	CLR	*	22	0	0	6	0	0	0	6	1	#	10		8		
MAY	93	81	87	109	66	67	47	.71	69	55	NNW	13	52	CLR	23	31	0	0	3	0	0	0	3	1	#	10		8		
JUN	97	85	91	115	73	65	47	.80	72	70	NNW	15	50	CLR	30	30	0	0	#	0	0	0	#	0	#	12		14		
JUL	99	88	94	113	81	68	50	.92	77	75	NNW	13	54	CLR	31	31	0	0	1	0	0	0	1	0	1	16		13		
AUG	99	88	94	111	81	71	53	.98	78	70	NNW	12	44	CLR	31	31	0	0	#	0	0	0	#	0	#	16		11		
SEP	97	85	91	109	75	78	52	.93	77	60	N	9	56	CLR	30	30	0	0	#	0	0	0	#	0	1	17		5		
OCT	91	79	85	106	61	79	54	.78	72	40	NNW	11	40	CLR	20	31	0	0	1	0	0	0	1	0	#	13		*		
NOV	81	71	76	92	55	79	59	.61	65	30	NNW	12	33	CLR	1	19	0	0	3	0	0	0	#	3	#	2	13		3		
DEC	72	63	67	91	50	81	63	.48	57	25	WNW	12	53	CLR	#	2	0	0	6	0	0	0	6	1	3	16		*		
ANN	85	75	80	115	46	75	55	.65	66	90	NNW	12	107	CLR	173	235	0	0	40	0	0	0	40	7	15	164		67		
POR	17	17	17	17	17	14	16	15	15	15	17	15	17	9	17	17	17	17	16	16	16	16	16	17	17	16	16	16	16	16

T = TRACE AMOUNTS (< .05, < .5 INCHES).
# = MEAN NO. DAYS < .5 DAYS.
$ = PRESSURE ALTITUDE IN TENS OF FEET (I.E., 50 = 500 FEET).
@ = NAVY STATIONS REPORTED HAIL AS SNOWFALL.
NWS STATIONS REPORTED HAIL AS SNOWFALL FOR THE PERIOD JULY 1948-DECEMBER 1955.
* = THE PREDOMINANT SKY CONDITION, OR PRECIPITATION IN EXCESS OF THE INDICATED AMOUNT.
@ = VISIBILITY IS NOT CONSIDERED , MIST INCLUDED WHEN REPORTED.
Σ = ANNUAL TOTALS MAY DIFFER FROM THE SUM OF THE MONTHLY VALUES BECAUSE OF ROUNDING.
^ = 24 HOUR MAXIMUM PRECIPITATION AND SNOWFALL ARE DAILY TOTAL VALUES (MID-NIGHT TO MID-NIGHT TOTALS).
***** = INDICATES DATA NOT AVAILABLE.
I = INSUFFICIENT NUMBER OF AVAILABLE OBSERVATIONS FOR COMPUTATION.

FLYING WEATHER - PERCENT OF HOURS

PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 5.00 MILES

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
00	12	15	13	8	8	24	21	18	12	9	7	12	13	17
03	14	14	11	6	7	27	24	23	15	9	11	16	15	17
06	20	20	15	11	9	35	38	35	25	22	17	22	22	17
09	24	21	15	9	8	29	30	27	17	17	--	20	19	17
12	18	15	12	11	*	--	--	20	15	13	11	15	15	17
15	13	--	11	10	6	17	20	19	8	9	9	12	12	17
18	11	16	14	12	*	20	21	17	11	10	6	10	13	--
21	11	12	10	8	6	20	19	15	8	7	5	*	11	17
ALL	16	16	13	9	*	24	25	21	14	12	9	14	15	17

PERCENT OF HOURS WITH CEILING LESS THAN 3000 FEET &/OR VISIBILITY LESS THAN 5.00 MILES

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
00	5	7	5	1	3	9	6	5	2	1	1	*	*	17
03	5	7	5	2	1	12	10	8	5	*	*	*	5	17
06	8	8	7	4	2	20	16	14	6	8	6	9	9	17
09	9	10	5	4	2	14	9	9	6	4	3	7	7	17
12	6	7	5	5	2	8	6	7	3	3	1	4	5	17
15	5	6	4	5	2	6	5	5	1	1	1	*	4	17
18	2	7	4	4	2	8	7	4	2	1	1	*	3	17
21	3	5	3	3	2	7	6	3	1	2	1	*	3	17
ALL	5	7	5	3	2	10	9	7	3	3	2	4	5	17

PERCENT OF HOURS WITH CEILING LESS THAN 1000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
00	4	6	4	1	2	9	9	5	2	1	1	*	*	17
03	3	6	4	1	1	12	10	8	5	2	*	2	5	17
06	8	7	6	3	2	20	18	14	6	8	6	8	9	17
09	8	9	3	4	2	14	9	9	5	3	3	5	6	17
12	5	6	5	4	2	8	6	7	3	3	1	2	4	17
15	3	4	4	5	2	6	5	5	1	1	1	2	3	17
18	2	5	3	4	2	8	7	4	2	1	1	2	4	17
21	2	5	3	3	2	7	5	3	1	2	1	2	3	17
ALL	4	6	4	3	2	10	9	7	3	3	2	4	5	17

PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 1.00 MILES

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
00	1	1	1	0	0	1	1	1	0	0	1	1	1	17
03	1	2	1	*	0	1	2	1	0	*	1	1	1	17
06	2	2	1	1	1	2	3	1	*	1	2	2	1	17
09	3	3	*	1	*	1	*	1	*	0	*	2	1	17
12	*	2	1	1	*	1	0	0	*	*	0	1	1	17
15	1	*	*	0	*	1	*	0	0	0	0	*	*	17
18	*	1	1	0	1	2	1	0	*	*	*	1	1	17
21	*	1	1	0	0	1	1	*	0	1	0	0	*	17
ALL	1	2	1	*	*	1	1	*	*	*	*	1	1	17

PERCENT OF HOURS WITH CEILING LESS THAN 200 FEET &/OR VISIBILITY LESS THAN 3/4 MILES

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
00	1	1	*	0	0	1	1	1	0	0	1	1	*	17
03	1	2	0	*	0	1	1	*	0	*	1	*	1	17
06	1	2	1	1	1	1	2	1	*	*	1	2	1	17
09	2	2	*	1	*	0	*	1	*	0	0	1	1	17
12	*	1	*	1	*	*	0	0	*	*	0	*	*	17
15	*	0	*	0	*	*	*	0	0	0	0	*	*	17
18	*	1	1	0	1	*	*	0	*	*	*	1	*	17
21	0	1	1	0	0	0	1	0	0	1	0	0	*	17
ALL	1	1	*	*	*	*	1	*	*	*	*	1	*	17

* = VALUE > 0 AND < 0.5 PERCENT

STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 40875: Bandar Abbas, Iran LAT: 27°13'N LON: 56°22'E ELEV. 33Ft

Period of record (hourly): 1973 - 1980 Period of record (daily): 1973 -1980

	TEMPERATURE (DEG F) MEANS			EXTREMES		PRECIPITATION (IN.)				PK WIND (KTS)		STDY SKY	MEAN NO. OF DAYS WITH (E)															
	MAX	MIN	AVG	MAX	MIN	MEAN	MAX MO	MAX 24HR	SNOW MEAN	SNOW MAX	SPD	DIR	CLR	MAX	MIN	MAX	MIN	PRECIP .01 OR MORE	THUNDER	HAIL	FOG	SNOW OR ICE	SMOKE OR HAZE	BLOWING SNOW	DUSTOR SAND	OBSTN TO VISION 6 MI OR LESS
JAN	70	57	64	82	36	0.2	0.7	0.56	0.0	0.0	7	32	CLR	7	1	2	0	1	0	1	#	1	1	#	1	0	2	4
FEB	74	62	68	90	45	0.1	0.5	0.49	0.0	0.0	15	25	CLR	#	3	0	0	1	0	0	0	1	0	1	0	0	1	10
MAR	80	69	75	93	48	0.0	0.0	0.00	0.0	0.0	10	28	CLR	2	15	0	0	1	0	0	0	1	#	1	1	0	#	14
APR	87	76	81	104	65	0.0	0.2	0.08	0.0	0.0	11	31	CLR	17	26	0	0	1	0	0	0	1	1	1	0	0	0	14
MAY	98	84	89	113	70	0.0	0.1	0.03	0.0	0.0	12	28	CLR	26	30	0	0	#	0	0	0	#	#	1	1	0	0	20
JUN	99	88	94	111	77	0.0	0.0	0.00	0.0	0.0	11	30	CLR	30	30	0	0	1	0	0	0	1	0	0	0	0	0	15
JUL	98	90	94	111	81	0.1	0.2	1.00	0.0	0.0	11	25	CLR	31	31	0	0	#	0	0	0	#	#	10	14	0	12	24
AUG	97	90	94	111	81	0.1	0.2	1.00	0.0	0.0	11	24	CLR	29	30	0	0	1	0	0	0	1	#	#	14	0	7	19
SEP	96	86	91	111	70	0.1	0.6	2.02	0.0	0.0	11	20	CLR	26	28	0	0	#	0	0	0	#	#	#	8	0	3	11
OCT	92	81	87	104	61	0.2	0.6	1.00	0.0	0.0	10	25	CLR	24	29	0	0	#	0	0	0	#	1	1	9	0	1	13
NOV	85	71	78	100	45	0.4	0.7	1.45	0.0	0.0	9	30	CLR	6	24	#	0	1	0	0	0	1	0	1	4	0	1	9
DEC	76	64	70	88	49	0.1	0.3	0.41	0.0	0.0	7	30	CLR	0	7	#	0	2	0	0	0	2	1	#	#	0	2	8
ANN	88	77	83	113	36	0.2	0.7	2.02	0.0	0.0	10	32	CLR	188	257	3	0	15	0	0	0	#	15	#	65	98	0	99	152
FOR	7	7	7	7	7	7	6*	5	3	3	*	*	8	2	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7

T = TRACE AMOUNTS (< .05", < .5" INCHES).
# = MEAN NO. DAYS < .5 DAYS.
$ = PRESSURE ALTITUDE IN TENS OF FEET (I.E., 1 = 500 FEET).
@ = NAVY STATIONS REPORTED HAIL AS SNOWFALL.
NWS STATIONS REPORTED HAIL AS SNOWFALL FOR THE PERIOD JULY 1948-DECEMBER 1956.
* = THE PREDOMINANT SKY CONDITION, OR PRECIPITATION IN EXCESS OF THE INDICATED AMOUNT.
@ = VISIBILITY IS NOT CONSIDERED , MIST INCLUDED WHEN REPORTED.
& = ANNUAL TOTALS MAY DIFFER FROM THE SUM OF THE MONTHLY VALUES BECAUSE OF ROUNDING.
~ = 24 HOUR MAXIMUM PRECIPITATION AND SNOWFALL ARE DAILY TOTAL VALUES (MID-NIGHT TO MID-NIGHT TOTALS).
***** = INDICATES DATA NOT AVAILABLE.
I = INSUFFICIENT NUMBER OF AVAILABLE OBSERVATIONS FOR COMPUTATION.

FLYING WEATHER - PERCENT OF HOURS

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
PERCENT OF HOURS WITH CEILING LESS THAN 5000 FEET &/OR VISIBILITY LESS THAN 5.00 MILES														
00	#	#	#	#	#	#	#	#	#	#	#	#	#	8
03	#	#	#	#	#	#	#	#	#	#	#	#	#	8
06	15	24	26	28	21	34	55	47	30	33	22	#	31	8
09	23	33	32	21	14	33	45	43	30	17	12	18	26	8
12	19	24	19	17	10	24	40	30	13	17	10	14	20	8
15	21	26	17	14	15	28	37	22	8	13	9	13	17	8
18	9	22	11	16	16	21	25	21	8	19	14	10	16	8
21	11	15	12	#	14	#	29	13	10	#	#	#	11	8
ALL	14	25	16	17	16	26	37	28	16	16	10	10	20	8
PERCENT OF HOURS WITH CEILING LESS THAN 3000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
00	#	#	6	#	#	#	#	#	#	#	#	#	#	8
03	#	#	5	#	#	#	#	#	#	#	#	#	#	8
06	6	18	6	#	7	13	17	13	12	22	11	#	12	8
09	9	18		4	2	10	10	7	11	4	8	7	8	8
12	12	15	5	5	4	7	6	4	3	5	3	7	7	8
15	3	11	2	3	4	8	4	5	4	3	2	3	5	8
18	5	11	2	11	6	8	6	4	2	5	9	2	6	8
21	4	10	2	#	5	#	3	2	1	#	#	#	3	8
ALL	6	14	4	5	4	8	7	6	6	6	5	4	7	8
PERCENT OF HOURS WITH CEILING LESS THAN 1000 FEET &/OR VISIBILITY LESS THAN 1.00 MILES														
00	#	#	#	#	#	#	#	#	#	#	#	#	#	8
03	#	#	#	#	#	#	#	#	#	#	#	#	#	8
06	6	15	7	7	5	11	13	12	7	21	10	8	10	8
09	7	15	4	4	2	9	6	5	4	7	7	4	7	8
12	6	12	2	3	3	7	5	3	2	4	2	6	5	8
15	2	7	2	2	2	8	4	4	4	3	2	2	4	8
18	4	9	2	10	6	8	5	5	2	5	8	2	6	8
21	2	6	2	#	5	8	3	2	1	8	8	0	5	8
ALL	4	10	3	4	4	8	6	4	3	5	4	3	5	8
PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 1.00 MILES														
00	#	#	#	#	#	#	#	#	#	#	#	#	#	8
03	#	#	#	#	#	#	#	#	#	#	#	#	#	8
06	3	5	2	1	1	3	3	2	0	7	3	#	2	8
09	1	4	1	0	1	1	2	1	0	3	0	2	1	8
12	2	2	1	0	0	2	1	1	0	0	0	1	1	8
15	1	1	1	0	1	2	1	1	0	1	0	0	1	8
18	0	2	1	1	2	1	1	0	0	1	2	1	1	8
21	0	1	1	#	0	#	0	0	0	#	#	#	0	8
ALL	1	2	1	#	1	2	1	1	#	1	1	1	1	8
PERCENT OF HOURS WITH CEILING LESS THAN 200 FEET &/OR VISIBILITY LESS THAN 3/4 MILES														
00	#	#	#	#	#	#	#	#	#	#	#	#	#	8
03	#	#	#	#	#	#	#	#	#	#	#	#	#	8
06	3	3	1	1	1	2	2	1	0	3	2	#	2	8
09	1	2	1	0	1	1	1	0	0	0	2	2	1	8
12	2	2	1	0	0	2	1	1	0	0	0	1	1	8
15	0	1	1	0	0	2	1	1	0	1	0	0	#	8
18	0	2	1	1	1	1	0	0	0	1	1	1	1	8
21	0	1	1	#	0	#	0	0	0	#	#	#	0	8
ALL	1	2	#	#	1	1	1	#	#	1	1	1	1	8

# = VALUE > 0 AND < 0.5 PERCENT
8 = INSUFFICIENT NUMBER OF OBSERVATIONS

STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 43003: Bombay, India LAT: 19°07'N LON: 72°51'E ELEV: 46Ft

Period of record (hourly): 1973 - 1989 Period of record (daily): 1973 -1989

	TEMPERATURE (DEG F) MEANS MAX	MIN	AVG	EXTREME MAX	MIN	REL HUM PCT (LST) AM	PM	VAPOR PRESS IN. HG. AM	PM	DEW PT. AVG	PR ALT FT.	WIND (KTS) PREVAIL DIR	SPD	MAX SPD	SKY COVR	TOT TEMP (DEG F) MAX >=95	MAX >=85	MIN <=75	MIN <=65	MEAN NO. OF DAYS WITH (E) PRECIPITATION FRZ RAIN/DZ	RAIN/DZ	SNOW	SLT	HAIL	ITH	OBSTR TO VISION FOG	SMOKE	BLOWING SAND	DUST	CB'S
JAN	84	65	75	95	55	75	51	.49	58	20	NW	6	25	CLR	#	14	31	15	#	0	0	0	#	0	1	7	0	0	#
FEB	86	67	77	102	50	72	47	.49	58	25	NW	7	95	CLR	1	16	28	10	#	0	0	0	#	0	1	*	0	#	*
MAR	89	72	81	103	61	78	51	.61	64	30	NW	7	85	CLR	4	26	26	1	1	0	0	0	1	0	1	*	0	#	*
APR	90	77	84	106	68	84	60	.78	72	35	NW	7	53	CLR	3	30	10	0	1	0	0	0	1	#	#	3	0	#	*
MAY	91	81	86	104	70	81	65	.87	75	40	W	6	65	I	2	31	1	0	1	0	0	#	1	#	#	1	0	#	*
JUN	88	81	85	102	68	85	75	.93	77	50	W	7	89	BRK	1	25	1	0	18	0	0	#	18	4	#	4	0	#	*
JUL	85	79	82	102	68	89	83	.93	77	50	W	8	90	BRK	#	18	2	0	26	0	0	#	26	2	#	7	0	#	*
AUG	84	78	81	91	68	90	82	.90	76	45	W	7	89	BRK	0	12	3	0	26	0	0	0	26	1	#	7	0	#	*
SEP	86	77	82	99	68	91	77	.88	75	40	W	6	43	BRK	#	21	5	0	16	0	0	#	16	5	1	10	0	#	*
OCT	90	76	84	100	67	85	65	.79	72	35	NW	5	39	CLR	5	29	12	0	4	0	0	#	4	3	1	8	0	#	*
NOV	90	72	81	97	59	75	56	.61	64	30	NW	5	50	CLR	2	28	23	3	3	0	0	#	3	1	#	4	0	#	*
DEC	87	68	78	95	50	73	53	.52	60	20	NW	5	94	CLR	#	23	31	8	1	0	0	0	1	#	#	6	0	#	*
ANN	88	75	81	106	50	81	64	.72	69	50	W	6	95	CLR	19	273	171	36	97	0	0	#	97	16	5	65	0	3	22
POR	17	17	17	17	17	15	16	14	14	14	14	14	17	10	17	17	17	17	16	16	16	16	16	16	16	16	16	16	16

T = TRACE AMOUNTS (< .05, < .5 INCHES).
# = MEAN NO. DAYS < .5 DAYS.
$ = PRESSURE ALTITUDE IN TENS OF FEET (I.E., 50 = 500 FEET).
@ = NAVY STATIONS REPORTED HAIL AS SNOWFALL.
NWS STATIONS REPORTED HAIL AS SNOWFALL FOR THE PERIOD JULY 1948-DECEMBER 1955.
+ = THE PREDOMINANT SKY CONDITION, OR PRECIPITATION IN EXCESS OF THE INDICATED AMOUNT.
* = VISIBILITY IS NOT CONSIDERED , MIST INCLUDED WHEN REPORTED.
& = ANNUAL TOTALS MAY DIFFER FROM THE SUM OF THE MONTHLY VALUES BECAUSE OF ROUNDING.
~ = 24 HOUR MAXIMUM PRECIPITATION AND SNOWFALL ARE DAILY TOTAL VALUES (MID-NIGHT TO MID-NIGHT TOTALS).
***** = INDICATES DATA NOT AVAILABLE.
I = INSUFFICIENT NUMBER OF AVAILABLE OBSERVATIONS FOR COMPUTATION.

FLYING WEATHER - PERCENT OF HOURS

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
PERCENT OF HOURS WITH CEILING LESS THAN 5000 FEET &/OR VISIBILITY LESS THAN 5.00 MILES														
02	100	99	99	100	100	98	100	100	99	99	100	100	100	17
05	100	99	100	100	100	99	100	100	99	99	100	100	100	17
08	98	98	97	92	76	80	89	88	85	89	91	96	90	17
11	81	79	71	65	48	74	86	82	78	53	54	68	70	17
14	52	44	36	33	35	64	81	79	60	33	35	44	49	17
17	48	31	31	35	40	70	81	82	59	34	42	49	50	17
20	98	98	98	98	99	98	99	100	96	98	99	99	98	17
23	99	99	99	99	100	99	100	100	99	100	99	100	99	17
ALL	84	80	78	77	74	85	92	91	84	75	76	81	81	17
PERCENT OF HOURS WITH CEILING LESS THAN 3000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
02	100	99	99	100	100	98	100	100	99	99	100	100	99	17
05	99	99	99	100	100	99	100	100	99	99	100	100	99	17
08	98	98	96	91	68	74	86	84	80	88	91	95	87	17
11	81	79	70	65	45	65	82	77	63	47	52	68	66	17
14	52	42	35	33	32	56	74	72	49	29	34	43	46	17
17	47	30	31	34	35	63	75	74	52	32	41	49	47	17
20	98	98	98	98	98	98	98	99	98	97	99	98	98	17
23	99	99	99	99	99	99	100	100	99	100	99	100	99	17
ALL	84	79	78	77	71	81	89	88	79	77	76	81	79	17
PERCENT OF HOURS WITH CEILING LESS THAN 1000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
02	100	99	99	100	100	98	99	99	99	99	100	100	99	17
05	99	99	99	100	99	99	100	100	99	99	99	100	99	17
08	98	98	96	90	63	65	76	76	75	87	91	95	84	17
11	81	76	69	65	41	51	67	61	46	44	50	68	60	17
14	52	43	35	32	25	43	55	52	32	26	32	43	39	17
17	47	30	30	32	26	50	58	58	36	28	40	49	41	17
20	98	98	98	98	98	98	98	99	97	97	98	98	98	17
23	99	99	99	98	99	99	100	100	99	99	99	100	99	17
ALL	83	79	77	76	68	74	81	80	72	72	75	81	76	17
PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 1.00 MILES														
02	9	3	3	1	1	2	6	*	1	1	3	*	3	17
05	7	3	4	1	*	3	5	5	*	3	3	5	3	17
08	28	20	15	5	1	6	6	5	5	7	8	12	10	17
11	2	2	1	1	0	*	*	*	2	1	1	2	2	17
14	0	1	0	1	*	3	2	2	*	*	1	*	1	17
17	*	*	1	*	1	2	*	2	1	*	*	*	1	17
20	1	1	*	0	*	2	3	3	*	1	1	2	1	17
23	5	1	1	0	0	3	3	2	1	2	3	*	2	17
ALL	7	*	3	1	*	3	*	3	1	2	2	*	3	17
PERCENT OF HOURS WITH CEILING LESS THAN 200 FEET &/OR VISIBILITY LESS THAN 3/4 MILES														
02	9	3	3	1	1	2	6	*	1	1	3	*	3	17
05	7	3	3	1	*	3	5	5	0	3	3	5	3	17
08	28	20	15	5	1	6	6	*	*	7	8	12	10	17
11	2	2	1	1	0	*	3	*	2	1	1	2	2	17
14	0	1	0	*	*	2	2	2	*	*	1	*	1	17
17	*	*	1	*	*	2	*	2	1	*	*	0	1	17
20	1	1	*	0	*	2	3	3	*	1	1	2	1	17
23	5	1	1	0	0	3	3	2	1	2	3	*	2	17
ALL	7	*	3	1	*	3	*	3	1	2	2	*	3	17

* = VALUE > 0 AND < 0.5 PERCENT

STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 40858: Bushire, Iran LAT: 28°59'N LON: 50°50'E ELEV: 62Ft

Period of record (hourly): 1975 - 1989 Period of record (daily): 1975 -1989

	TEMPERATURE (DEG F) MEANS			EXTREME		PRECENTILES		RH	VAPOR	DEW PT	PR ALT	WIND (MPH)		TOT SKY	MEAN NO. OF DAYS WITH (L) TEMP (DEG F)				PRECIPITATION					OBSTR TO VISION				
	MAX	MIN	AVG	MAX	MIN	1ST	3RD	PCT	PRES	MEAN	FT.	PREVAIL DIR	MEAN SPD	PCT	MAX >=90	MAX <=32	MIN <=32	MIN <=0	.01 IN OR MORE	1.0 IN OR MORE	SNOW, ICE PLTS	HAIL	FOG	FOG <1/2 MILE	THDR	SNOW, ICE	SAND, DUST	GUST SPD
JAN	61	54	58	77	41	1	62	1	1	1	1	1	30	CLR	0	0	4	0	5	0	0	0	5	1	15	2	0	1	17
FEB	65	55	61	79	32	1	60	.38	51	.25	NNW	9	20	CLR	0	0	1	#	4	2	0	0	4	1	15	4	0	1	12
MAR	72	63	68	97	41	1	75	.42	58	30	NNW	10	22	CLR	1	0	0	0	3	0	0	0	3	1	4	4	0	1	10
APR	81	71	76	97	57	1	48	.50	59	35	W	10	24	CLR	0	0	0	0	2	0	0	0	2	#	3	0	0	0	11
MAY	90	79	84	104	61	1	48	.62	65	49	W	9	25	CLR	16	29	0	0	1	0	0	0	1	#	2	0	0	0	8
JUN	93	85	89	108	70	1	50	I	I	I	W	10	62	CLR	24	28	0	0	#	0	0	0	#	0	2	0	0	1	13
JUL	95	88	92	115	68	1	53	.86	74	70	W	10	33	CLR	31	31	0	0	#	0	0	0	#	0	4	10	0	1	16
AUG	95	87	91	104	77	1	55	.90	76	70	W	10	30	CLR	31	31	0	0	1	0	0	0	1	0	3	10	0	1	17
SEP	94	86	89	111	70	1	55	.85	74	55	W	10	20	CLR	28	28	0	0	0	0	0	0	0	0	10	4	0	1	15
OCT	87	77	82	100	54	1	55	I	I	I	W	1	30	CLR	17	31	0	0	2	0	0	0	2	#	5	8	0	2	13
NOV	77	66	72	97	45	1	55	I	I	I	W	1	34	CLR	1	11	#	0	3	0	0	0	3	1	6	7	0	1	11
DEC	68	60	64	79	46	1	63	I	I	I	W	1	22	CLR	0	0	0	0	3	0	0	0	3	1	11	4	0	2	14
ANN	82	73	78	115	32	1	55	I	I	I	W	1	62	CLR	152	212	5	#	34	0	1	0	34	5	74	73	0	42	152
POR	*	*	*	*	5	1	4	2	1	2	2	2	15	2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

T = TRACE AMOUNTS (< .05, < .5 INCHES).
# = MEAN NO. DAYS < .5 WAYS.
1 = PRESSURE ALTITUDE IN TENS OF FEET (I.E., 50 = 500 FEET).
2 = NAVY STATIONS REPORTED HAIL AS SNOWFALL.
  4&5 STATIONS REPORTED HAIL AS SNOWFALL FOR THE PERIOD JULY 1948-DECEMBER 1956.
* = THE PREDOMINANT SKY CONDITION, OR PRECIPITATION IN EXCESS OF THE INDICATED AMOUNT.
* = VISIBILITY IS NOT CONSIDERED , MIST INCLUDED WHEN REPORTED.
C = ANNUAL TOTALS MAY DIFFER FROM THE SUM OF THE MONTHLY VALUES BECAUSE OF ROUNDING.
^ = 24 HOUR MAXIMUM PRECIPITATION AND SNOWFALL ARE DAILY TOTAL VALUES (MID-NIGHT TO MID-NIGHT TOTALS).
***** = INDICATES DATA NOT AVAILABLE.
I = INSUFFICIENT NUMBER OF AVAILABLE OBSERVATIONS FOR COMPUTATION.

FLYING WEATHER - PERCENT OF HOURS

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
PERCENT OF HOURS WITH CEILING LESS THAN 5000 FEET &/OR VISIBILITY LESS THAN 5.00 MILES														
01	#	29	6	#	#	#	#	<	#	#	#	#	#	15
04	#	<	#	#	#	#	#	#	#	#	#	#	#	15
07	#	<	#	#	#	#	<	#	#	#	#	#	#	15
10	32	27	15	10	9	12	16	15	22	13	18	29	18	15
13	#	11	#	#	10	#	10	9	#	#	#	#	#	15
16	20	20	24	20	14	15	19	19	15	15	11	21	17	15
19	#	<	#	12	12	8	14	16	10	#	#	#	#	15
22	12	14	12	19	10	14	26	17	21	17	9	#	17	15
ALL	#	17	9	11	9	9	17	16	12	#	#	#	9	15
PERCENT OF HOURS WITH CEILING LESS THAN 3000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
01	#	11	#	#	#	#	#	#	#	#	#	#	#	15
04	#	<	#	#	#	#	#	#	#	#	#	#	#	15
07	#	<	#	<	<	#	<	<	#	#	<	<	#	15
10	8	7	5	<	<	4	9	4	6	5	5	<	<	14
13	#	4	#	<	0	#	7	3	4	#	#	#	#	15
16	13	<	5	4	<	4	4	<	1	5	3	#	2	15
19	#	<	#	4	<	#	7	4	1	#	#	#	#	15
22	14	<	1	0	1	<	6	<	<	3	1	#	4	15
ALL	#	<	<	3	<	<	5	3	2	#	<	#	2	15
PERCENT OF HOURS WITH CEILING LESS THAN 1000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
01	#	<	#	#	#	#	#	3	#	#	#	#	#	15
04	#	<	#	#	#	#	<	#	#	#	<	#	#	15
07	#	#	#	#	#	#	#	#	#	#	#	#	#	15
10	7	4	4	4	4	4	9	4	4	4	3	<	<	15
13	#	4	#	#	0	#	3	#	<	#	#	#	#	15
16	2	<	2	4	4	4	4	0	1	1	0	2	3	15
19	#	#	#	3	4	#	7	4	1	#	<	<	#	15
22	1	<	1	4	1	2	5	2	2	1	0	#	2	15
ALL	#	<	1	3	2	2	4	1	1	#	#	#	2	15
PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 1.00 MILES														
01	#	2	#	#	#	#	#	#	#	#	#	#	#	15
04	#	<	#	#	#	#	#	#	#	#	#	#	#	15
07	#	<	#	#	#	#	#	#	#	#	#	#	#	15
10	2	0	2	0	2	0	1	0	1	2	1	1	1	15
13	#	1	#	#	0	#	0	#	#	#	#	#	#	15
16	0	1	1	0	2	0	0	0	0	0	0	1	*	15
19	#	#	#	0	1	#	0	1	0	#	#	#	#	15
22	0	0	1	0	1	0	0	0	0	0	0	#	*	15
ALL	#	1	1	0	1	0	*	*	*	#	#	#	*	15
PERCENT OF HOURS WITH CEILING LESS THAN 200 FEET &/OR VISIBILITY LESS THAN 3/4 MILES														
01	#	0	#	#	#	#	#	#	#	#	#	#	#	15
04	#	#	#	#	#	#	#	#	#	#	#	#	#	15
07	#	<	#	#	#	#	#	#	#	#	#	#	#	15
10	2	0	2	0	2	0	1	0	1	2	1	1	1	15
13	#	1	#	#	0	#	0	#	#	#	#	#	#	15
16	0	1	1	0	2	0	0	0	0	0	0	1	*	15
19	#	#	#	0	1	#	0	1	0	#	#	#	#	15
22	0	0	1	0	1	0	0	0	0	1	0	#	*	15
ALL	#	*	1	0	1	0	*	*	*	#	#	#	*	15

* = VALUE > 0 AND < 0.5 PERCENT
# = INSUFFICIENT NUMBER OF OBSERVATIONS

STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 41170: Doha, Qatar LAT: 25°15'N LON: 51°34'E ELEV: 33Ft

Period of record (hourly): 1973 - 1989 Period of record (daily): 1973 -1989

	TEMPERATURE (DEG F) MEANS MAX	MIN	AV	EXTREMES MAX	MIN	DEW POINT (DEG F) AM	PM	PRESSURE (MB) AM	PM	PRECIP (IN.)	WIND (MPH) PREVAIL	MAX	VR	TEMP (DEG F) MAX	MIN	MEAN NO. OF DAYS WITH (.) PRECIPITATION >=.01	>=.10	>=.50	>=1.00	HAIL	THUNDER	FOG	SNOW	ICE	OBSTN TO VISION SMOKE	BLOWING	DUST	OBST VIS
JAN	70	57	64	90	43	43	54	1020	1020	1.5	NW	16	21	CLR	#	1	#	0	3	0	0	0	2	#	6	12	0	5	16
FEB	71	59	65	93	45	42	51	1019	1018	2.5	NNW	12	40	CLR	#	2	#	0	4	0	0	#	4	1	1	11	0	6	15
MAR	78	64	71	102	48	36	46	1017	1016	.5	NNW	13	40	CLR	2	12	0	0	4	0	0	#	4	1	1	9	0	4	15
APR	88	73	80	108	59	47	57	1013	1012	.4	N	13	32	CLR	13	26	0	0	3	0	0	0	3	1	1	5	0	2	15
MAY	99	80	90	117	69	56	63	1010	1009	.1	NW	9	33	CLR	28	51	0	0	1	0	0	#	1	#	1	5	0	13	15
JUN	104	94	99	118	76	62	70	1006	1005	0.0	NNW	15	54	CLR	29	30	0	0	0	0	0	0	0	#	1	6	0	19	14
JUL	104	96	99	117	77	61	70	1006	1005	0.0	N	11	60	CLR	31	31	0	0	0	0	0	0	0	#	0	2	12	0	18	13
AUG	103	87	95	118	73	67	71	1006	1005	0.0	NNW	12	60	CLR	30	31	0	0	0	0	0	0	0	#	0	1	12	0	16	21
SEP	99	83	91	115	71	72	76	1007	1006	0.0	S	8	25	CLR	29	29	0	0	0	0	0	0	0	#	0	1	16	0	9	19
OCT	93	77	85	108	63	72	74	1009	1008	0.0	NNW	9	27	CLR	25	31	0	0	1	0	0	0	1	#	#	1	11	0	6	17
NOV	83	69	76	99	54	60	66	1013	1012	0.0	NNW	10	40	CLR	4	23	0	0	1	0	0	0	1	#	#	3	10	0	4	13
DEC	75	61	68	90	45	51	59	1016	1015	0.0	NW	9	40	CLR	#	4	#	0	0	0	0	0	0	#	#	7	13	0	6	16
ANN	89	73	81	118	43	71	63	1015	1014	0.0	NNW	11	60	CLR	192	250	#	0	23	0	0	#	23	5	37	122	0	130	203
POR	17	16	16	17	16	17	14	13	13	13	15	13	17	9	17	16	16	16	16	16	16	16	16	17	17	16	16	16	16

T = TRACE AMOUNTS (< .05, < .5 INCHES).
# = MEAN NO. DAYS < .5 DAYS.
$ = PRESSURE ALTITUDE IN TENS OF FEET (I.E., 5 = 50 FEET).
@ = NAVY STATIONS REPORTED HAIL AS SNOWFALL.
NWS STATIONS REPORTED HAIL AS SNOWFALL FOR THE PERIOD JULY 1948-DECEMBER 1955.
+ = THE PREDOMINANT SKY CONDITION, OR PRECIPITATION IN EXCESS OF THE INDICATED AMOUNT.
* = VISIBILITY IS NOT CONSIDERED , MIST INCLUDED WHEN REPORTED.
& = ANNUAL TOTALS MAY DIFFER FROM THE SUM OF THE MONTHLY VALUES BECAUSE OF ROUNDING.
^ = 24 HOUR MAXIMUM PRECIPITATION AND SNOWFALL ARE DAILY TOTAL VALUES (MID-NIGHT TO MID-NIGHT TOTALS).
***** = INDICATES DATA NOT AVAILABLE.
I = INSUFFICIENT NUMBER OF AVAILABLE OBSERVATIONS FOR COMPUTATION.

FLYING WEATHER - PERCENT OF HOURS

PERCENT OF HOURS WITH CEILING LESS THAN 5000 FEET &/OR VISIBILITY LESS THAN 5.00 MILES

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
01	10	15	*	4	*	17	27	12	12	5	5	10	11	17
04	16	19	14	5	6	15	27	20	15	9	9	19	15	17
07	29	26	21	15	18	43	49	44	38	26	23	28	30	17
10	19	16	14	8	9	39	37	29	13	10	11	19	19	17
13	10	11	12	6	10	32	32	26	14	6	5	5	14	17
16	8	10	11	5	10	29	26	21	11	4	3	*	12	17
19	10	12	14	7	8	21	25	21	17	4	2	7	13	17
22	7	11	7	4	5	16	21	12	6	3	2	7	8	17
ALL	14	15	12	7	9	29	31	23	16	8	8	12	15	17

PERCENT OF HOURS WITH CEILING LESS THAN 3000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES

01	3	6	*	2	*	6	7	*	1	1	1	*	*	17
04	7	11	5	1	1	12	11	5	2	2	3	4	6	17
07	13	15	*	4	4	22	21	22	13	7	9	14	13	17
10	9	9	*	3	2	22	17	14	4	3	4	7	8	17
13	3	5	*	4	3	14	12	10	2	1	2	2	4	17
16	3	4	5	2	3	15	11	6	1	*	1	*	4	17
19	2	3	6	2	2	7	10	4	3	1	0	1	4	17
22	1	*	*	2	1	3	4	2	1	*	*	*	2	17
ALL	5	7	4	2	2	13	12	9	3	2	2	5	6	17

PERCENT OF HOURS WITH CEILING LESS THAN 1000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES

01	3	4	*	2	*	6	7	5	1	1	1	3	3	17
04	7	10	5	1	1	12	11	5	2	2	2	9	6	17
07	13	13	7	4	4	22	21	22	13	7	9	13	12	17
10	6	8	4	3	2	22	17	14	4	3	4	6	8	17
13	2	3	4	4	3	14	12	10	2	1	2	1	5	17
16	3	4	4	2	3	15	11	6	1	*	1	2	4	17
19	2	3	4	3	2	7	10	4	3	1	0	1	3	17
22	1	3	2	2	1	3	5	2	*	0	*	1	2	17
ALL	5	6	4	3	2	13	12	9	3	2	2	5	5	17

PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 1.00 MILES

01	1	2	*	2	0	*	1	*	0	0	*	1	1	17
04	5	6	1	*	*	1	1	1	*	*	1	4	2	17
07	8	6	2	1	1	4	4	3	4	2	3	6	4	17
10	3	2	1	*	1	2	2	1	0	*	1	1	1	17
13	*	1	1	0	1	1	2	1	0	0	*	0	1	17
16	1	*	*	*	*	2	1	1	*	0	*	0	*	17
19	*	1	1	*	0	1	1	0	0	0	0	0	*	17
22	1	2	1	*	0	0	1	0	0	0	*	*	*	17
ALL	2	2	1	*	*	1	2	1	1	*	1	2	1	17

PERCENT OF HOURS WITH CEILING LESS THAN 200 FEET &/OR VISIBILITY LESS THAN 3/4 MILES

01	1	2	*	0	0	*	*	*	0	0	0	1	*	17
04	5	4	1	0	*	*	1	1	*	*	1	4	2	17
07	8	6	2	1	1	2	3	2	4	2	3	6	3	17
10	2	2	*	*	1	1	2	1	0	0	1	1	1	17
13	0	*	*	0	1	1	1	*	0	0	*	0	*	17
16	1	0	*	*	*	1	1	*	0	0	0	0	*	17
19	*	1	*	*	0	0	1	0	0	0	0	0	*	17
22	*	1	*	*	0	0	1	0	0	0	*	*	*	17
ALL	2	2	1	*	*	1	1	1	1	*	1	2	1	17

* = VALUE > 0 AND < 0.5 PERCENT

STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 41194: Dubayy, United Arab Emirates LAT: 25°15'N LON: 55°20'E ELEV: 16Ft

Period of record (hourly): 1973 - 1989 Period of record (daily): 1973 -1989

	TEMPERATURE (DEG F) MEANS MAX	MIN	AVG	EXTREMES MAX	MIN	DEW PT (DEG F) MEAN	WET BULB (DEG F) MEAN	HUM (%) MEAN	VAPOR PRES (IN.) MEAN	ALT (FT.) PRES (IN.)	PRE VAIL (10THS)	WIND (KTS) SPD	MAX	SKY (CVR)	TEMP (DEG F) MAX	MAX	MIN	MIN	MEAN NO. OF DAYS WITH (EC) PRECIPITATION (.01 IN OR MORE) RAIN/DZL	SNOW/SLT	ICE PLTS	HAIL	TSTM	FOG (VIS 1/4 MI OR LESS)	SMOKE/HAZE	BLOWING SNOW	DUST/SAND	SUNSHINE (PCT OF POSS)
															>=90	>=80	<=45	<=32										
JAN	73	54	64	88	46	55	60	80	.37	12	15	8	10	31	CLR	0	3	0	0	3	0	0	#	1	#	2	5	0	5	71
FEB	74	60	67	91	46	57	64	81	.41	14	30	8	11	65	CLR	#	5	0	0	5	0	0	1	1	#	1	5	0	5	70
MAR	80	65	73	100	48	59	67	82	.47	7	191	8	10	61	CLR	4	14	0	0	5	0	0	0	1	#	1	6	0	9	77
APR	87	70	79	106	48	66	74	69	.62	67	35	5	6	54	CLR	12	24	0	0	2	0	0	0	2	1	2	5	0	8	82
MAY	96	77	86	113	61	69	77	64	.65	5	6	6	8	60	CLR	26	30	0	0	1	0	0	0	1	#	2	3	0	9	82
JUN	99	81	90	122	72	68	77	58	.74	71	65	5	7	65	CLR	29	30	0	0	#	0	0	0	#	#	3	9	0	13	79
JUL	102	86	94	117	75	69	79	58	.75	74	65	5	6	66	CLR	31	31	0	0	1	0	0	0	1	0	1	7	0	18	81
AUG	102	86	94	120	73	69	80	65	.77	74	65	5	6	54	CLR	31	31	0	0	#	0	0	0	#	#	1	7	0	15	78
SEP	99	81	90	111	72	71	81	68	.80	72	50	5	6	62	CLR	30	30	0	0	#	0	0	0	#	#	1	10	0	9	85
OCT	93	75	84	104	54	71	81	68	.80	67	30	5	6	56	CLR	27	31	0	0	#	0	0	0	#	0	1	8	0	6	82
NOV	85	67	76	106	50	70	80	83	.83	63	20	5	5	55	CLR	6	27	0	0	1	0	0	0	1	#	1	4	0	2	86
DEC	77	62	69	91	46	58	66	85	.65	56	10	5	6	43	CLR	#	9	0	0	3	0	0	0	#	#	1	6	0	3	81
ANN	89	73	81	122	46	71	79	69	.69	64	75	5	7	65	CLR	195	266	0	0	21	0	0	0	21	3	25	76	0	102	154
POR	16	16	16	16	16	16	17	17	17	13	13	13	17	9	16	16	16	16	15	15	15	15	15	16	16	15	15	15	15	

T = TRACE AMOUNTS (< .05, < .5 INCHES P.
# = MEAN NO. DAYS < .5 DAYS.
$ = PRESSURE ALTITUDE IN TENS OF FEET (I.E., 5 = 500 FEET).
@ = NAVY STATIONS REPORTED HAIL AS SNOWFALL.
NWS STATIONS REPORTED HAIL AS SNOWFALL FOR THE PERIOD JULY 1948-DECEMBER 1955.
* = THE PREDOMINANT SKY CONDITION, OR PRECIPITATION IN EXCESS OF THE INDICATED AMOUNT.
@ = VISIBILITY IS NOT CONSIDERED , MIST INCLUDED WHEN REPORTED.
E = ANNUAL TOTALS MAY DIFFER FROM THE SUM OF THE MONTHLY VALUES BECAUSE OF ROUNDING.
= 24 HOUR MAXIMUM PRECIPITATION AND SNOWFALL ARE DAILY TOTAL VALUES (MID-NIGHT TO MID-NIGHT TOTALS).
***** = INDICATES DATA NOT AVAILABLE.
I = INSUFFICIENT NUMBER OF AVAILABLE OBSERVATIONS FOR COMPUTATION.

FLYING WEATHER - PERCENT OF HOURS

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
PERCENT OF HOURS WITH CEILING LESS THAN 5000 FEET &/OR VISIBILITY LESS THAN 5.00 MILES														
01	10	6	9	7	6	19	17	9	8	7	2	6	9	17
04	10	12	13	5	4	21	20	10	16	11	5	7	12	17
07	17	23	23	14	6	22	34	28	32	25	11	14	22	17
10	14	16	14	10	6	16	22	18	9	6	4	9	12	17
13	10	11	10	11	10	21	24	18	6	4	2	9	12	17
16	10	12	13	7	8	22	31	21	8	6	2	9	12	17
19	5	7	10	6	6	22	23	16	11	6	2	6	10	17
22	6	7	9	4	4	16	17	9	6	3	1	3	7	17
ALL	10	10	14	8	7	21	27	16	12	9	4	8	12	17
PERCENT OF HOURS WITH CEILING LESS THAN 3000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
01	6	5	6	3	2	8	6	2	3	2	1	3	3	17
04	6	7	9	6	4	10	8	4	10	7	2	5	6	17
07	9	13	13	9	6	15	16	11	17	14	4	7	11	17
10	5	5	7	6	5	6	6	6	6	5	1	3	5	17
13	5	6	6	5	3	9	7	6	7	3	1	4	4	17
16	3	6	5	3	3	10	6	6	6	5	1	3	5	17
19	1	3	4	2	2	11	6	7	5	3	1	2	4	17
22	2	4	3	1	1	7	4	2	3	1	1	1	2	17
ALL	5	6	7	5	3	9	8	6	6	4	1	3	5	17
PERCENT OF HOURS WITH CEILING LESS THAN 1000 FEET &/OR VISIBILITY LESS THAN 1.00 MILES														
01	5	5	7	3	1	8	6	2	3	2	1	1	3	17
04	4	6	7	6	4	10	8	4	10	6	2	2	5	17
07	7	9	12	7	6	15	17	11	16	12	4	5	10	17
10	5	5	6	5	3	6	6	6	5	4	1	3	4	17
13	4	4	7	4	1	9	7	6	6	1	1	2	4	17
16	3	4	7	3	3	10	6	6	6	3	1	1	4	17
19	1	3	4	3	2	11	6	7	5	2	1	1	3	17
22	2	1	3	1	1	7	4	2	3	1	1	0	2	17
ALL	4	4	6	4	2	9	8	6	6	4	1	2	4	17
PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 1.00 MILES														
01	2	2	3	1	1	1	1	0	*	*	*	1	1	17
04	3	4	5	2	2	4	2	2	4	4	2	1	3	17
07	3	4	6	3	4	6	3	1	7	5	2	1	4	17
10	1	1	2	1	*	1	1	0	0	*	*	*	1	17
13	1	1	2	0	*	*	*	*	0	0	0	1	*	17
16	1	1	1	1	1	1	1	*	*	*	0	0	1	17
19	0	0	*	*	0	1	1	0	*	0	0	0	*	17
22	1	1	*	0	*	1	1	0	0	0	0	0	*	17
ALL	1	2	2	1	1	2	1	*	1	1	*	*	1	17
PERCENT OF HOURS WITH CEILING LESS THAN 200 FEET &/OR VISIBILITY LESS THAN 1/4 MILES														
01	2	2	3	*	*	1	1	0	0	*	*	1	1	17
04	3	4	5	2	2	3	2	1	3	4	2	1	3	17
07	3	4	6	3	3	5	3	1	6	5	1	1	3	17
10	1	1	1	1	0	1	1	0	0	*	*	*	*	17
13	1	1	1	0	0	0	*	*	0	0	0	1	*	17
16	*	1	1	*	1	0	1	*	0	*	0	0	*	17
19	0	0	0	*	0	1	1	0	*	0	0	0	*	17
22	1	*	*	0	0	1	1	0	0	0	0	0	*	17
ALL	1	2	2	1	1	1	1	*	1	1	*	*	1	17

* = VALUE > 0 AND < 0.5 PERCENT

STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 41780: Karachi, Pakistan LAT: 24°54'N LON: 67°08'E ELEV: 72Ft

Period of record (hourly): 1973 - 1990 Period of record (daily): 1973 -1988

	TEMPERATURE (DEG F)												MEAN NO. OF DAYS WITH (FT)												
	MEANS			EXTREMES			PERCENTILES						PRECIPITATION												
	MAX	MIN	AVG	MAX	MIN																				
JAN	76	55	66	95	39																				
FEB	74	60	70	94	43																				
MAR	80	68	77	100	48																				
APR	91	76	84	104	55																				
MAY	93	81	87	109	64																				
JUN	93	84	89	109	72																				
JUL	89	83	86	106	68																				
AUG	87	81	84	110	70																				
SEP	89	83	85	109	68																				
OCT	92	74	83	105	59																				
NOV	86	65	76	102	48																				
DEC	79	57	68	95	41																				
ANN	87	72	80	110	39																				
POR	17	17	17	17	17																				

T = TRACE AMOUNTS (< .05, < .5 INCHES),
# = MEAN NO. DAYS < .05 DAYS.
$ = PRESSURE ALTITUDE IN TENS OF FEET (I.E., 5 = 500 FEET).
@ = NAVY STATIONS REPORTED HAIL AS SNOWFALL.
NWS STATIONS REPORTED HAIL AS SNOWFALL FOR THE PERIOD JULY 1948-DECEMBER 1955.
+ = THE PREDOMINANT SKY CONDITION, OR PRECIPITATION IN EXCESS OF THE INDICATED AMOUNT.
* = VISIBILITY IS NOT CONSIDERED , MIST INCLUDED WHEN REPORTED.
L = ANNUAL TOTALS MAY DIFFER FROM THE SUM OF THE MONTHLY VALUES BECAUSE OF ROUNDING.
~ = 24 HOUR MAXIMUM PRECIPITATION AND SNOWFALL ARE DAILY TOTAL VALUES (MID-NIGHT TO MID-NIGHT TOTALS).
***** = INDICATES DATA NOT AVAILABLE.
I = INSUFFICIENT NUMBER OF AVAILABLE OBSERVATIONS FOR COMPUTATION.

FLYING WEATHER - PERCENT OF HOURS

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
PERCENT OF HOURS WITH CEILING LESS THAN 5000 FEET &/OR VISIBILITY LESS THAN 5.00 MILES														
02	#	#	#	#	#	#	#	#	#	#	#	#	#	18
05	#	#	#	#	#	#	#	#	#	#	#	#	#	18
08	94	94	92	95	96	96	97	97	92	90	89	91	93	18
11	85	85	84	87	88	93	96	95	84	76	79	79	86	18
14	80	84	82	85	89	92	98	92	89	72	75	77	84	18
17	80	81	82	87	88	91	95	94	81	77	76	81	84	18
20	#	#	#	#	#	#	#	#	#	#	#	#	#	18
23	#	#	#	#	#	#	#	#	#	#	#	#	#	18
ALL	82	82	81	84	87	89	92	90	81	76	78	80	87	18
PERCENT OF HOURS WITH CEILING LESS THAN 3000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
02	#	#	#	#	#	#	#	#	#	#	#	#	#	18
05	#	#	#	#	#	#	#	#	#	#	#	#	#	18
08	94	94	92	95	96	94	96	97	92	89	88	91	93	18
11	85	84	85	86	87	91	93	95	83	75	79	79	85	18
14	80	82	79	85	89	91	97	91	84	72	75	77	83	18
17	80	80	80	82	87	90	93	93	80	77	76	81	83	18
20	#	#	#	#	#	#	#	#	#	#	#	#	#	18
23	#	#	#	#	#	#	#	#	#	#	#	#	#	18
ALL	82	81	81	84	87	87	91	90	82	75	78	80	83	18
PERCENT OF HOURS WITH CEILING LESS THAN 1000 FEET &/OR VISIBILITY LESS THAN 1.00 MILES														
02	#	#	#	#	#	#	#	#	#	#	#	#	#	18
05	#	#	#	#	#	#	#	#	#	#	#	#	#	18
08	94	94	92	94	93	91	94	95	86	88	88	90	92	18
11	85	83	84	86	85	85	91	90	79	75	78	79	83	18
14	80	82	79	85	88	89	96	89	82	72	74	77	83	18
17	80	80	80	86	86	88	89	89	79	76	75	80	82	18
20	#	#	#	#	#	#	#	#	#	#	#	#	#	18
23	#	#	#	#	#	#	#	#	#	#	#	#	#	18
ALL	82	81	81	84	85	86	88	87	77	75	78	79	82	18
PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 1.00 MILES														
02	#	#	#	#	#	#	#	#	#	#	#	#	#	18
05	#	#	#	#	#	#	#	#	#	#	#	#	#	18
08	1	1	1	2	2	2	3	1	1	5	3	1	2	18
11	*	1	1	1	1	1	1	2	1	1	1	C	1	18
14	1	1	1	3	2	1	2	2	*	2	*	1	2	18
17	1	1	1	2	*	1	3	1	1	*	1	*	1	18
20	#	#	#	#	#	#	#	#	#	#	#	#	#	18
23	#	#	#	#	#	#	#	#	#	#	#	#	#	18
ALL	1	1	1	2	1	1	2	2	1	2	1	1	1	18
PERCENT OF HOURS WITH CEILING LESS THAN 200 FEET &/OR VISIBILITY LESS THAN 1/4 MILES														
02	#	#	#	#	#	#	#	#	#	#	#	#	#	18
05	#	#	#	#	#	#	#	#	#	#	#	#	#	18
08	1	1	1	2	2	2	2	1	1	3	1	1	2	18
11	*	1	1	1	1	1	1	1	1	1	1	C	1	18
14	1	1	1	1	2	1	2	1	*	2	*	1	1	18
17	1	1	1	2	1	1	2	1	1	*	1	*	1	18
20	#	#	#	#	#	#	#	#	#	#	#	#	#	18
23	#	#	#	#	#	#	#	#	#	#	#	#	#	18
ALL	1	1	1	2	1	1	2	1	1	2	1	1	1	18

* = VALUE > 0 AND < 0.5 PERCENT
# = INSUFFICIENT NUMBER OF OBSERVATIONS

STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 40582: Kuwait Intl AP, Kuwait LAT: 29°13'N LON: 47°59'E ELEV: 180Ft

Period of record (hourly): 1973 - 1990 Period of record (daily): 1973 -1990

	TEMPERATURE (DEG F) MEANS		EXTREMES		PRECIPITATION (IN.)				PR ALT.	WIND (KTS)			TCTC (SKY)	TEMP (DEG F)				MEAN NO. OF DAYS WITH (.) PRECIPITATION											
	MAX	MIN	AVG	MAX	MIN	AM	PM	MEAN	HIGH	FT.	PREVAIL DIR	MAX SPD	CVR %	MAX	MAX 90	MIN 75	MIN 45	MIN 32	1 MAZ	DZ	HAIL	ITH	FOG	SMOKE	FEELG	WIDST	CBSTN	TO VISIBY	
JAN	65	46	55	80	31	90	44	.27	41	30	NW	10	36	CLR	0	1	15	1	7	0	0	#	7	1	12	6	0	*	14
FEB	70	51	59	88	30	74	36	.29	41	35	NNW	10	33	CLR	0	4	7	#	6	0	0	#	6	1	7	6	0	11	18
MAR	76	57	67	102	33	84	50	.26	43	45	NNW	10	34	CLR	1	20	2	0	8	0	0	#	8	3	5	9	0	14	19
APR	86	67	78	113	45	87	63	.30	45	45	NNW	11	36	CLR	14	29	#	0	5	0	0	0	5	2	1	9	0	15	19
MAY	101	77	89	118	57	98	74	.30	45	50	NNW	12	34	CLR	30	31	0	0	4	0	0	0	4	2	#	12	0	18	23
JUN	107	83	95	120	72	99	81	.22	38	70	NW	16	35	CLR	30	30	0	0	#	0	0	0	#	#	#	12	0	21	24
JUL	112	87	100	124	75	104	86	.26	41	75	NW	14	32	CLR	31	31	0	0	#	0	0	0	#	#	1	12	0	19	22
AUG	111	85	98	122	72	100	81	.29	44	70	NW	13	30	CLR	31	31	0	0	#	0	0	0	#	#	2	11	0	17	21
SEP	107	79	93	118	61	96	72	.31	46	55	NNW	11	30	CLR	30	30	0	0	#	0	0	0	#	0	2	11	0	13	16
OCT	93	70	82	111	45	90	62	.34	48	40	NW	11	30	CLR	23	30	#	0	2	0	0	0	2	1	5	9	0	12	16
NOV	73	59	66	99	39	67	53	.32	47	30	NNW	10	29	CLR	2	21	2	0	4	0	0	#	4	1	#	6	0	10	14
DEC	67	49	58	90	28	80	44	.29	44	25	NW	10	30	CLR	#	5	10	#	8	0	0	#	8	2	11	6	0	8	17
ANN	90	67	79	124	28	92	24	.28	48	90	NW	12	36	CLR	152	263	36	1	44	0	0	#	44	13	90	109	0	167	226
FOR	17	17	17	17	17	14	14	14	14	14	14	14	17	9	17	17	17	17	16	16	16	16	16	17	17	16	16	16	16

T = TRACE AMOUNTS (< .005, < .5 INCHES).
# = MEAN NO. DAYS < .5 DAYS.
1 = PRESSURE ALTITUDE IN TENS OF FEET (I.E., 5C = 500 FEET).
2 = NAVY STATIONS REPORTED HAIL AS SNOWFALL.
NWS STATIONS REPORTED HAIL AS SNOWFALL FOR THE PERIOD JULY 1948-DECEMBER 1955.
* = THE PREDOMINANT SKY CONDITION, OR PRECIPITATION IN EXCESS OF THE INDICATED AMOUNT.
@ = VISIBILITY IS NOT CONSIDERED , MIST INCLUDED WHEN REPORTED.
3 = ANNUAL TOTALS MAY DIFFER FROM THE SUM OF THE MONTHLY VALUES BECAUSE OF ROUNDING.
4 = 24 HOUR MAXIMUM PRECIPITATION AND SNOWFALL ARE DAILY TOTAL VALUES (MID-NIGHT TO MID-NIGHT TOTALS).
***** = INDICATES DATA NOT AVAILABLE.
I = INSUFFICIENT NUMBER OF AVAILABLE OBSERVATIONS FOR COMPUTATION.

FLYING WEATHER - PERCENT OF HOURS

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
PERCENT OF HOURS WITH CEILING LESS THAN 5000 FEET &/OR VISIBILITY LESS THAN 5.00 MILES														
00	19	9	10	10	11	26	22	16	8	8	10	17	14	18
03	16	10	11	10	8	9	6	6	6	9	8	16	10	18
06	20	17	24	34	35	40	37	25	26	28	14	18	27	18
09	42	40	39	41	44	53	49	39	37	37	32	36	41	18
12	30	35	33	35	39	56	51	43	28	27	22	29	35	18
15	29	30	32	33	39	54	49	38	40	19	18	26	32	18
18	20	26	31	32	38	56	50	45	21	17	15	15	32	18
21	16	11	12	12	14	38	26	22	9	6	10	12	16	18
ALL	25	24	25	27	29	42	37	30	21	20	17	22	26	18
PERCENT OF HOURS WITH CEILING LESS THAN 3000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
00	10	5	5	4	4	14	11	3	4	4	5	7	7	18
03	8	6	6	4	4	3	2	2	4	6	4	9	5	18
06	10	4	9	14	16	13	13	9	10	12	7	10	11	18
09	20	12	16	15	16	24	23	14	10	12	10	16	17	18
12	17	14	15	14	16	37	29	24	10	11	7	12	17	18
15	15	15	16	13	15	39	31	24	9	10	8	11	17	18
18	11	12	14	13	15	42	34	29	12	6	6	7	17	18
21	6	6	4	5	5	24	17	14	3	2	4	4	8	18
ALL	12	10	11	11	12	25	20	16	8	8	6	10	13	18
PERCENT OF HOURS WITH CEILING LESS THAN 1000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
00	9	4	5	4	4	14	11	3	4	3	5	6	6	18
03	8	5	6	5	4	3	2	2	4	6	4	9	5	18
06	9	7	9	14	16	13	13	9	10	12	7	10	11	18
09	20	18	15	15	15	24	23	14	10	12	9	18	16	18
12	15	15	14	14	16	37	29	24	10	11	6	12	17	18
15	12	13	15	13	15	39	31	24	9	10	6	10	16	18
18	10	11	14	13	15	42	34	29	12	6	5	6	16	18
21	6	5	4	5	5	24	17	14	3	2	4	4	8	18
ALL	11	10	11	10	12	25	20	16	8	8	6	9	12	18
PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 1.00 MILES														
00	4	*	1	1	2	3	3	1	*	1	3	2	2	18
03	4	2	2	2	2	2	1	0	2	3	3	3	2	18
06	4	3	3	4	3	2	2	1	3	4	4	4	3	18
09	3	4	3	3	3	5	3	1	*	1	3	3	3	18
12	3	2	3	1	4	12	11	9	1	3	1	2	4	18
15	1	2	3	2	3	15	14	10	2	3	1	2	5	18
18	2	2	3	2	3	16	13	7	2	1	1	1	4	18
21	2	1	1	1	1	8	4	1	1	1	1	1	2	18
ALL	3	2	2	2	2	8	6	4	1	2	2	2	3	18
PERCENT OF HOURS WITH CEILING LESS THAN 200 FEET &/OR VISIBILITY LESS THAN 3/4 MILES														
00	3	*	1	1	2	2	2	1	*	1	3	1	1	18
03	4	2	2	2	2	2	1	0	2	3	3	3	2	18
06	4	2	2	3	1	2	2	1	2	3	4	4	2	18
09	3	4	2	2	2	4	3	1	*	1	2	3	2	18
12	1	2	3	1	2	11	10	7	1	3	1	1	4	18
15	1	2	3	1	3	13	11	7	1	2	*	2	4	18
18	2	1	2	1	2	13	10	5	1	1	1	1	3	18
21	2	1	1	1	1	4	4	1	1	*	1	1	1	18
ALL	2	2	2	2	2	7	5	3	1	2	2	2	3	18

* = VALUE > 0 AND < 0.5 PERCENT

STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 41288: Masira (Oman AFB), Oman LAT: 20°40'N LON: 58°54'E ELEV: 62Ft

Period of record (hourly): 1973 - 1989 Period of record (daily): 1973 -1989

	TEMPERATURE (DEG F) MEANS MAX	MIN	AVG	EXTREMES MAX(YR)	MIN(YR)	PRECIPITATION (PTS) MEAN AM	PM	MAX 24HR	YR	MEAN SNOW (PTS)	MEAN ALT (KTS)	PRVLG DIR	SPD	SKY COVER (TENTHS) CLR	SCT	BKN	OVC	MEAN TEMP (DEG F) 1 AM 90%	2 AM 80%	3 AM 50%	4 AM 20%	MEAN NO. OF DAYS WITH (.01 INCH OR MORE) PRECIPITATION FRZ	TSTM	HAIL	FOG (1/4 MILE OR LESS)	HVY FOG (1/8 MILE OR LESS)	SFC WND (34 KTS OR MORE)	DUST/SAND STORM	MEAN NO. OF DAYS WITH VSBY (3 MILES OR LESS) FOG	SNOW	SAND/DUST
JAN	77	67	72	99	54	.71	.55	1.51	79	20	7	S	51	CLR	8	5	0	0	1	0	1	0	1	0	1	1	0	1	0	1	1
FEB	79	68	74	91	52	.50	.56	1.59	74	29	7	S	72	CLR	8	12	0	0	1	0	0	0	1	0	1	1	0	1	0	2	6
MAR	84	72	78	100	57	.87	.74	1.87	75	35	55M	S	75	CLR	5	24	0	0	1	0	0	0	1	0	1	1	0	2	0	4	6
APR	91	77	84	109	69	.8	.46	1.71	69	40	55M	11	71	CLR	14	30	0	0	1	0	0	0	1	0	1	1	0	2	0	2	5
MAY	99	81	88	108	73	.8	.49	1.84	74	50	5M	15	87	CLR	26	31	0	0	0	0	0	0	0	0	0	0	0	2	0	5	6
JUN	93	83	87	113	67	.85	.55	1.86	75	70	55M	16	75	CLR	27	30	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3	0	16	22
JUL	87	77	82	106	72	.88	.63	1.91	73	70	55M	18	64	CLR	4	30	0	0	0	0	0	0	0	0	0	0	0	2	0	1	5	0	22	25
AUG	85	74	80	108	68	.96	.64	1.77	71	65	55M	15	50	CLR	4	29	0	0	0	0	0	0	0	0	0	0	0	3	0	1	10	0	15	24
SEP	86	75	81	102	70	.89	.64	1.79	72	50	55M	17	81	CLR	4	26	0	0	2	0	0	0	0	0	0	0	1	2	0	1	7	0	2	6
OCT	89	75	82	100	64	.97	.52	1.71	69	35	5M	11	24	CLR	11	29	0	0	0	0	0	0	0	0	0	0	0	-	0	*	1	0	1	3
NOV	85	73	79	100	64	.80	.59	1.64	66	25	T	8	77	CLR	7	30	0	0	1	0	0	0	0	0	1	0	0	1	0	1	2	0	2	2
DEC	80	69	75	95	57	.77	.56	1.55	62	20	ENC	11	99	CLR	0	18	0	0	2	0	0	0	0	0	2	0	0	1	0	1	2	0	2	2
ANN	86	74	80	117	52	.83	.56	1.69	69	80	55M	12	99	CLR	105	298	0	0	17	0	0	0	1	0	17	4	10	16	0	85	117
POR	15	15	15	15	15	12	15	12	12	12	12	12	17	9	15	15	15	15	14	14	14	14	14	15	15	14	14	14	14	14	14

T = TRACE AMOUNTS (< .005, < .5 INCHES).
# = MEAN NO. DAYS < .5 DAYS.
$ = PRESSURE ALTITUDE IN TENS OF FEET (I.E., 50 = 500 FEET).
@ = NAVY STATIONS REPORTED HAIL AS SNOWFALL.
NWS STATIONS REPORTED HAIL AS SNOWFALL FOR THE PERIOD JULY 1948-DECEMBER 1955.
* = THE PREDOMINANT SKY CONDITION, OR PRECIPITATION IN EXCESS OF THE INDICATED AMOUNT.
@ = VISIBILITY IS NOT CONSIDERED , MIST INCLUDED WHEN REPORTED.
Σ = ANNUAL TOTALS MAY DIFFER FROM THE SUM OF THE MONTHLY VALUES BECAUSE OF ROUNDING.
~ = 24 HOUR MAXIMUM PRECIPITATION AND SNOWFALL ARE DAILY TOTAL VALUES (MID-NIGHT TO MID-NIGHT TOTALS).
***** = INDICATES DATA NOT AVAILABLE.
I = INSUFFICIENT NUMBER OF AVAILABLE OBSERVATIONS FOR COMPUTATION.

FLYING WEATHER - PERCENT OF HOURS

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
PERCENT OF HOURS WITH CEILING LESS THAN 5000 FEET &/OR VISIBILITY LESS THAN 5.00 MILES														
01	7	10	7	6	4	42	64	56	24	7	2	4	16	17
04	9	11	6	5	7	49	74	65	27	6	2	4	23	17
07	13	16	14	17	20	60	89	81	46	12	8	11	32	17
10	12	14	11	6	6	37	64	51	17	6	5	11	20	17
13	10	12	7	7	5	28	48	28	5	3	3	9	14	17
16	9	9	6	6	5	29	56	23	5	5	3	7	12	17
19	7	10	5	6	7	34	63	33	8	2	3	5	14	17
22	8	10	6	6	7	38	60	44	9	2	4	5	16	17
ALL	10	12	8	8	8	39	61	47	16	5	4	7	18	17
PERCENT OF HOURS WITH CEILING LESS THAN 3000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
01	4	5	3	4	2	17	32	28	10	2	*	3	9	17
04	4	5	4	5	5	25	46	43	24	5	*	3	15	17
07	9	11	11	8	16	38	65	63	42	9	4	8	24	17
10	8	8	6	3	3	19	42	34	16	5	3	6	13	17
13	7	8	4	4	2	13	16	12	3	2	1	5	7	17
16	5	4	3	3	1	13	15	10	3	3	2	5	6	17
19	5	7	3	4	1	16	20	13	3	2	1	4	6	17
22	4	7	3	2	1	18	23	17	4	2	1	3	7	17
ALL	6	7	4	4	4	19	32	27	11	4	2	5	11	17
PERCENT OF HOURS WITH CEILING LESS THAN 1000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
01	4	3	3	2	*	16	27	22	8	2	*	2	7	17
04	2	4	3	3	2	21	36	36	17	4	0	1	13	17
07	3	5	5	4	4	29	53	52	29	6	2	2	16	17
10	5	3	2	2	1	15	27	20	6	2	1	1	7	17
13	4	4	4	3	1	12	15	9	2	1	1	2	5	17
16	3	2	2	2	1	12	12	8	2	3	2	2	4	17
19	4	5	2	2	1	14	17	11	3	2	1	2	5	17
22	3	5	2	2	*	14	20	13	3	2	1	1	5	17
ALL	3	4	3	3	1	17	26	21	9	3	1	2	8	17
PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 1.00 MILES														
01	0	0	1	0	0	*	1	1	1	0	0	*	*	17
04	0	*	*	*	0	2	1	2	*	1	0	0	1	17
07	1	1	1	*	*	2	3	4	3	3	1	*	2	17
10	1	1	1	1	*	1	2	1	1	*	*	*	1	17
13	1	1	1	*	*	2	1	0	*	1	*	1	1	17
16	1	1	*	*	0	1	2	1	1	1	*	*	1	17
19	0	1	1	1	1	1	2	1	1	*	0	*	1	17
22	0	1	*	1	0	1	1	2	*	0	*	0	*	17
ALL	1	1	1	*	*	1	2	2	1	1	*	*	1	17
PERCENT OF HOURS WITH CEILING LESS THAN 200 FEET &/OR VISIBILITY LESS THAN 1/4 MILES														
01	0	0	*	0	0	0	1	0	1	0	0	*	*	17
04	0	0	*	0	0	1	0	1	*	1	0	0	*	17
07	1	1	1	*	*	1	1	1	1	2	1	*	1	17
10	1	1	1	*	*	1	2	1	1	*	*	0	1	17
13	1	1	1	*	*	1	1	0	*	0	*	1	*	17
16	*	1	*	*	0	*	1	1	*	*	*	*	*	17
19	0	*	1	1	1	*	2	*	1	0	0	*	*	17
22	0	*	*	1	0	1	1	1	*	0	*	0	*	17
ALL	*	*	1	*	*	1	1	1	*	1	*	*	*	17

* = VALUE > 0 AND < 0.5 PERCENT

STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 41256: Muscat, Oman LAT: 23°35'N LON: 58°17'E ELEV: 49Ft

Period of record (hourly): 1974 - 1990 Period of record (daily): 1974 -1990

| | TEMPERATURE (DEG F) | | | | | RELATIVE HUMIDITY (PCT) | | | PRESSURE (MB) | | WIND (KTS) | | TOTAL SKY COVER (TENTHS) | | MEAN NO. OF DAYS WITH (C) | | | | |

STATION CLIMATIC SUMMARY

(Derived from hourly data)

WMO NO. 41316: Salalah, Oman LAT: 17°02'N LON: 54°05'E ELEV: 66Ft

Period of record (hourly): 1973 - 1990 Period of record (daily): 1973 -1990

	TEMPERATURE (DEG F)					REL HUM	VAP	DEW PT	WIND (KTS)			TOT	MEAN NO. OF DAYS WITH (C)												
	MEANS			EXTREMES		PERCENT	PR	PT.	ALT			SKY	TEMP (DEG F)				PRECIPITATION				OBSTR TO VISION				
						(LST)	IN.		FT.	PREVAIL	MAX	COVR	MAX	MAX	MIN	MIN		FRZ		HAIL	TH	FOG	SMOK	BLOW	DUST	GUST
	MAX	MIN	AVG	MAX	MIN	AM	PM	HG.		%	DIR	SPD	SPD	>= 95	>= 85	<= 75	<= 65	RN	DZ	IR	SNOW	SL	T	PRCP	STM	*	HAZE	SNOW	SAND	VIS
JAN	80	68	74	100	46	96	96	.39	52	20	N	10	63	CLR	#	1	29	11	2	0	0	0	2	#	#	2	0	10	32
FEB	81	70	76	91	54	92	52	.47	57	25	S	7	33	CLR	0	3	25	5	4	0	0	#	4	1	#	3	0	11	22
MAR	84	71	79	97	57	66	55	.57	63	30	S	8	81	CLR	#	11	22	1	3	0	0	#	3	1	1	5	0	9	15
APR	88	77	83	108	63	71	60	.73	70	35	SSW	9	82	CLR	2	26	12	#	2	0	0	#	4	1	1	4	0	9	11
MAY	89	81	85	107	55	79	67	.88	75	50	SSW	9	86	CLR	1	31	1	#	3	0	0	1	3	1	1	8	0	7	12
JUN	88	82	85	100	61	85	74	.95	78	60	SSW	10	30	RNK	1	25	#	#	7	0	0	0	7	#	4	21	0	11	28
JUL	82	78	80	97	64	94	82	.89	76	60	S	6	70	OVR	#	2	8	#	22	0	0	0	22	#	12	24	0	4	29
AUG	80	75	78	97	59	95	84	.84	74	55	SSW	8	90	OVR	#	1	22	#	24	0	0	0	24	#	15	25	0	3	29
SEP	83	77	80	97	71	86	74	.81	73	50	SSW	9	72	RRK	#	8	11	0	7	0	0	#	8	#	6	19	0	2	21
OCT	86	74	80	100	59	68	61	.67	67	30	SSW	8	55	CLR	#	20	22	#	2	0	0	#	2	#	2	2	0	1	4
NOV	86	72	79	100	61	57	50	.51	60	30	N	6	52	CLR	1	19	25	1	1	0	0	#	1	#	1	1	0	5	7
DEC	82	69	76	91	48	57	47	.43	55	20	N	9	58	CLR	0	5	28	5	2	0	0	#	3	#	1	3	0	6	8
ANN	84	75	80	108	46	73	63	.65	66	60	SSW	8	90	CLR	5	154	204	24	80	0	0	1	83	4	44	117	0	78	186
POR	16	16	16	16	16	12	13	12	12	12	12	12	18	7	16	16	16	16	9	9	9	9	9	10	10	9	9	9	9

T = TRACE AMOUNTS (< .05, < .5 INCHES).
# = MEAN NO. DAYS < .5 DAYS.
$ = PRESSURE ALTITUDE IN TENS OF FEET (I.E., 50 = 500 FEET).
@ = NAVY STATIONS REPORTED HAIL AS SNOWFALL.
NWS STATIONS REPORTED HAIL AS SNOWFALL FOR THE PERIOD JULY 1948-DECEMBER 1955.
* = THE PREDOMINANT SKY CONDITION, OR PRECIPITATION IN EXCESS OF THE INDICATED AMOUNT.
@ = VISIBILITY IS NOT CONSIDERED , MIST INCLUDED WHEN REPORTED.
C = ANNUAL TOTALS MAY DIFFER FROM THE SUM OF THE MONTHLY VALUES BECAUSE OF ROUNDING.
^ = 24 HOUR MAXIMUM PRECIPITATION AND SNOWFALL ARE DAILY TOTAL VALUES (MID-NIGHT TO MID-NIGHT TOTALS).
***** = INDICATES DATA NOT AVAILABLE.
I = INSUFFICIENT NUMBER OF AVAILABLE OBSERVATIONS FOR COMPUTATION.

FLYING WEATHER - PERCENT OF HOURS

HOUR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	# YRS
PERCENT OF HOURS WITH CEILING LESS THAN 5000 FEET &/OR VISIBILITY LESS THAN 5.00 MILES														
01	11	20	14	8	13	59	98	99	68	10	4	5	34	18
04	10	18	13	8	13	66	99	99	70	11	2	5	35	18
07	11	29	21	12	21	74	99	100	76	14	4	9	39	18
10	13	22	14	6	9	48	96	99	67	4	3	7	31	18
13	7	14	7	3	3	35	91	89	31	1	1	4	24	18
16	6	11	7	3	4	42	90	87	29	2	3	4	25	18
19	8	15	12	5	8	59	97	97	51	6	3	5	31	18
22	11	18	12	7	9	62	98	98	57	7	4	5	33	18
ALL	10	18	12	6	9	55	96	96	56	7	3	6	31	18
PERCENT OF HOURS WITH CEILING LESS THAN 3000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
01	4	12	9	7	11	38	94	96	64	8	2	3	29	18
04	3	12	8	6	11	49	97	97	67	8	1	3	31	18
07	7	20	14	9	16	55	95	99	71	13	2	6	34	18
10	7	13	8	4	3	29	89	96	50	3	1	4	26	18
13	3	8	3	2	2	17	80	84	26	1	1	2	19	18
16	2	6	2	2	3	18	71	79	31	1	1	2	18	18
19	4	9	7	3	5	35	86	91	45	5	1	4	25	18
22	5	11	8	4	8	39	91	94	50	5	3	3	27	18
ALL	4	11	7	4	7	34	87	92	50	5	1	3	26	18
PERCENT OF HOURS WITH CEILING LESS THAN 1000 FEET &/OR VISIBILITY LESS THAN 3.00 MILES														
01	*	1	1	0	*	4	46	59	11	1	*	*	10	18
04	1	1	*	*	1	4	60	70	11	0	0	*	13	18
07	1	1	2	1	1	14	76	84	12	1	1	2	17	18
10	3	2	2	1	*	5	61	67	9	1	*	2	13	18
13	2	3	1	*	1	2	39	39	7	*	*	1	8	18
16	2	2	*	*	1	2	29	33	6	*	0	*	6	18
19	1	1	1	1	0	5	48	53	9	1	0	1	10	18
22	1	*	1	0	0	2	42	48	8	*	1	*	9	18
ALL	1	2	1	*	1	5	50	56	9	1	*	1	11	18
PERCENT OF HOURS WITH CEILING LESS THAN 500 FEET &/OR VISIBILITY LESS THAN 1.00 MILES														
01	0	0	1	0	0	1	7	13	3	*	*	0	2	18
04	*	1	0	0	0	1	12	19	4	0	0	0	3	18
07	0	0	0	*	*	1	28	41	3	1	*	1	6	18
10	2	*	1	*	0	*	20	25	4	*	0	*	4	18
13	1	1	*	0	*	*	7	10	3	*	*	*	2	18
16	1	*	0	*	*	*	7	7	2	0	0	0	1	18
19	*	1	0	*	0	*	11	12	3	1	0	0	2	18
22	0	*	0	0	0	0	7	8	2	0	1	0	2	18
ALL	1	*	*	*	*	1	13	17	3	*	*	*	3	18
PERCENT OF HOURS WITH CEILING LESS THAN 200 FEET &/OR VISIBILITY LESS THAN 3/4 MILES														
01	0	0	*	0	0	1	0	2	1	*	*	0	*	18
04	0	*	0	0	0	0	1	4	1	0	0	0	1	18
07	0	0	0	*	*	1	6	14	2	1	*	*	2	18
10	1	*	1	*	0	0	3	4	1	0	0	*	1	18
13	1	*	*	0	*	0	1	2	*	*	0	*	*	18
16	*	*	0	*	*	*	2	1	*	0	0	0	*	18
19	0	1	0	*	0	*	3	6	1	1	0	0	1	18
22	0	0	0	0	0	0	1	1	0	0	1	0	*	18
ALL	*	*	*	*	*	*	2	4	1	*	*	*	1	18

* = VALUE > 0 AND < 0.5 PERCENT