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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

This is the sixth volume of the set of U.S. Navy Marine Climatic Atlases of the World. This set has had world-wide acceptance as an authoritative reference for large scale operational planning and applied research. This volume presents meteorological information for the surface and upper air over the Arctic Ocean and its adjacent coasts and seas. The weather elements are presented in isopleth analyses, graphs, tables, and multiple distribution of elements in order to provide the widest possible facility for use.

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Printing Office, Washington 25, D.C.

1 FEBRUARY 1963

FOREWORD

In the U.S. Navy Marine Climatic Atlas of the World, Volume VI, the U.S. Navy presents meteorological information for the surface and upper air over the South Pacific Ocean in a modern manner suitable for wide use and adaptation. The complete and generous presentation of the data in the atlas precluded publication in a single volume of charts covering all the oceans of the world. Volume VI, Arctic Ocean, is the sixth of a set which when completed will include all the oceans of the world. Volume I, North Atlantic Ocean, was published in November 1955, Volume II, North Pacific Ocean, was published in February 1957. Volume III, Indian Ocean, was published in February 1958. Volume IV, South Atlantic Ocean, was published in September 1958. Volume V, South Pacific Ocean, was published in November 1959. Development of the atlas began with the original objective of providing as much meteorological information in analyzed form as practicable from existing raw data comprised of individual weather observations over the oceans.

The limitations and difficulties in preparing comprehensive meteorological atlases of the oceans are very real. A lack of data over the oceans, especially by standards of availability over land, is a difficulty which can be overcome only by additional observations or by unique treatments of existing data. The lack of continuous observations at fixed points in the oceans has in the past placed insuperable obstacles in the path of those who desire to measure duration and persistence of weather elements at a point. With some real measure of effectiveness these obstacles have been overcome in the U.S. Navy Marine Climatic Atlas of the World.

The meteorological observations over the oceans which were available for use in this Atlas have been treated so that the greatest possible facility for its use is presented. For those users interested in the classic presentation, each surface weather element has been presented with simplicity by isopleths, though with increased accuracy and definition because of better data coverage than in other atlases. For those users who need processed data in greater complexity and detail, the weather elements have been presented so that mean values, as well as measures of maxima and minima and other statistical measures, are available. By employing isopleths, graphics, tables, and the more modern presentation of a multiple distribution of elements, an atlas of varied usefulness has been derived. It serves as a ready reference for determining the normal weather at tomorrow's destination, for example, and also as an encyclopedia of processed data for the research scientist.

To meet the needs and facilities of the great number of users, an atlas size convenient for desk-top use was selected, even though this size required presentation of graphic and tabular data in an inconveniently small size. For those who frequently refer to the graphs and tables, it is recommended that some type of reading aid to magnify the extremely small figures in the graphs and tables be employed.

The U.S. Navy Marine Climatic Atlas of the World is offered to the meteorologist and other research scientists with the hope that it will be found a beneficial tool, not only for operational use but for the furtherance of all branches of geophysical research, and a contribution to scientific literature.

ACKNOWLEDGMENT

The U.S. Navy Marine Climatic Atlas of the World, Volume VI, was prepared under the supervision of the Naval Weather Service Division of the Office of the Chief of Naval Operations, on contracted basis, by the Department of Commerce, U.S. Weather Bureau. Within the U.S. Weather Bureau, the Navy is indebted especially to the Director of the National Weather Records Center, Asheville, N.C., and the members of his staff, without whose full cooperation the project could not have been completed. The Navy is further indebted to many other individuals within the Navy and within the Weather Bureau who contributed in the development, the writing, and the production of this Atlas.

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INTRODUCTION

Volume VI of the U.S. Navy Marine Climatic Atlas of the World deals with the Arctic Ocean and its adjacent coasts and seas. It is the largest of the series, in terms of the number of: (a) charts presented, and (b) aerological observations processed. This volume offers the first summarization of several years of dropsonde observations, i.e. radiosondes dropped from aircraft.

Ship observations are, of course, available in lesser number than for any previous volume. However, in combination with observations from USA and USSR drift stations (ice islands), it is possible to display surface element summaries for 30 selected ocean areas.

The chart series in this volume reflect results of a review of those in previous volumes. Several new or changed presentations are offered in consideration of (a) polar region climate characteristics, and (b) greater utility for the reader with operational planning responsibilities.

GENERAL CHARACTERISTICS OF THE CHARTS

The climatic data in this Atlas are presented by graphs, tables and isopleths. Compilations of surface and upper air weather observations are presented in separate sections. The surface section contains nine annual charts and twelve series of monthly charts. Twelve series make up the upper air section. The basic elements used from surface weather observations are wind, visibility, cloudiness, precipitation, air temperature, and pressure. From upper air balloon soundings, observations of wind, temperature, pressure, and relative humidity are also used.

Except where an arrow connects a graph with a location, each graph (or table) is arranged to overprint or touch the pertinent station circle or ocean area polygon delineated on the base charts. The open circles and polygons refer to graphs (or tables) printed to the right of the base charts. However, on several of the charts in the surface series, as many as five ocean area graphs may touch adjacent pairs of polygons. These pairs are identified in the next section of text, "The surface Graphs and Tables."

Cumulative percentage frequency distributions for several individual elements are shown by bar graphs or ogive curves. These make possible reasonable estimates of the empirical probability of the occurrence of the given elements above or below selected threshold values. In addition, several combinations of two or three of the basic elements are given in various graphs and tables.

The element most frequently used in combination with elements is wind direction. In certain of the chart series bas surface weather observations, two general categories of preci tion types and selected intervals of visibility, low cloud am wind force, and air temperature are all arrayed in combin with wind direction as a measure of air mass climatology. G showing diurnal variations are not included.

"Point statistics" for fixed or nearly fixed island and coasta tions are necessarily compiled here in greater number than fo previous volume. Comparable "fixed points" at sea are lim to ocean station networks established through the cooperati several maritime nations. Three stations (A, B, and M) o North Atlantic Ocean Station (NAOS) network are used a in this volume. The present summaries are based in large pa observations acquired since preparation of Volume I, North lantic Ocean.

Elsewhere, observations from ice islands, research ships breakers, and other transient merchant and naval vessels pro the only source of detailed knowledge for large areas of the A Ocean.

Weather observations from the Arctic have varied greatl quality. Some were obtained on special scientific expedit Others were made by less experienced personnel. In many stances, pronounced orographic effects in the vicinity of th serving site limit the representativeness of the observations.

Ocean areas herein denote most of the small regions of data centration. It was impracticable to consider climatic regions in selecting ocean areas for this volume.

THE SURFACE GRAPHS AND TABL

The graphic forms in this volume are rectangular graphs an contingency tables. (One exception: prevailing direction winds aloft-upper air section.)

Rectangular contingency tables are used alone in two su chart series. One table (WIND VISIBILITY-CLOUDINESS) be of special interest to those responsible for certain aspects of erational planning. Percentage frequencies of various comb tions of wind, visibility, and cloud data are given. The comb tions and limits of the weather elements were arbitrarily sele yet they represent a selection of combinations found useful by erational planners.

INTRODUCTION

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On the rectangular graphs, the scales are marked with equal class intervals, a notable exception being the VISIBILITY charts, where the visibility scale fits the present international synoptic code for horizontal visibility as used by ships' officers throughout the world. Cumulative percentage frequency (ogive) curves, presented on some of the rectangular graphs, are generally cut off at the 5-percent and 95-percent points due to uncertainty as to accuracy of tabulated marine data beyond those points in the outer limits of each frequency distribution. Where bars are used on charts 2 through 9, distributions extend from 2½ percent to 97½ percent points as practicable.

Each appropriate chart legend shows how to read cumulative percentage frequency bars or curves. Either may be read two ways. For example, if a curve indicates the air temperature to be equal to or less than 75° F. in 90 percent of the observations, then obviously the air temperature has been reported to be greater than 75° F. in 10 percent of the observations.

From each station or area, for each month, and for each weather element, there is a definite number of observations, some of which indicate a particular occurrence or interval. For example, of a grand total of 600 observations of temperature for a certain area and month, there might be no observation below 65° F., 24 observations of 65° F. and 30 observations of 66° F. This means that, of all the temperature observations under consideration, 4 percent of the observations showed 65° F., 5 percent of the observations showed 66° F., and 9 percent of the observations showed temperatures equal to or less than 66° F. In this manner cumulative percentage frequencies were computed, and are presented on many of the graphs in the Atlas.

In all graphs showing surface wind as a variable, "calm" winds are those of Beaufort forces 0 and 1 combined.

Sampling error is, of course, present to a greater or lesser degree in any frequency or mean that is read from any graph, table or isopleth in this atlas. Graphs or tables were left incomplete or were entirely omitted where observations were few and sampling error was obviously excessive. Usually observations numbered less than 10 in such cases, but often graphs or tables based on 10 to 40 observations were equally unrepresentative. The actual number of observations is shown on each monthly graph so that interpretation of the percentage frequency distributions can proceed with appropriate caution.

Some graphs shown on the charts have distributions that are implausible to the experienced meteorologist. In such cases a greater degree of plausibility may be obtainable by averaging corresponding values for the preceding and following months, thus smoothing the "annual march" of an element distribution that is open to question.

Ocean areas are delineated on the surface charts with a pertinent graph or table generally touching and referring to a single area as before. *In this volume, however, there are five adjacent pairs of areas where an overprinted graph or table applies to one but not both of the areas.* The following table identifies these pairs by approximate central location and indicates the months summarized for each single area.

Pair No.	*Latitude*	*Longitude*	*Months*
1	80° N	160° W	Jan.[1], Feb.
	77° N	167° W	Apr. thru Dec. (also Jan. for CLOUDINESS AND WIND-VISIBILITY-CLOUDINESS)
2	86° N	10° E	Feb., Mar., Nov.
	82° N	13° E	June, July, Aug.
3	86° N	80° W	Jan. thru Apr., Nov., Dec.
	83° N	92° W	May through Sept.
4	83° N	168° W	Jan., Feb., May thru Aug., Dec. Mar., Sept., Oct., Nov.
5	86° N	112° E	Sept. thru Dec.[2]
	84° N	78° E	May thru August

[1] Except CLOUDINESS and WIND-VISIBILITY-CLOUDINESS; neither member of pair shown for January VISIBILITY.

[2] All four months omitted for WIND-CHILL, INDEX, SURFACE WIND, AIR TEMPERATURE vs. WIND SPEED, and WIND-VISIBILITY-CLOUDINESS.

THE SURFACE ISOPLETHS

To supplement the graphs, isopleths (lines connecting points of equal magnitude) are shown on several of the chart series. The isopleths of surface elements are based on all pertinent ships' observations summarized for the period of record available in tabular form, as well as upon the stations and areas for which graphs are shown.

Isopleth intervals vary between chart series but a standard interval suggested by the data was selected and maintained for all months within each individual chart series. Supplementary or intervening isopleths necessary to show the pattern are shown by broken lines.

The values of surface isopleths within 1° of latitude or longitude of coastlines or ice limits (61) must be interpreted with particular caution. The discontinuity of the underlying surface and the resulting intense gradients of averages or frequencies of weather elements along those boundaries requires special and detailed climatological studies beyond the scope of this atlas. A at present, the number of ships' observations from points within of the coasts are inadequate except where commonly used t routes approach or closely parallel coastlines.

Occasional differences will be noted between isopleth va and those for graphs in the same area. Most discrepancies re from smoothing or are induced by the fact that ocean areas w larger than the units for which ocean-wide data were summari thereby admitting data gradient influence into the Ocean A summaries. Also contributing is the fact that an Ocean Ar data centroid may not correspond exactly with its geograph center.

In this and the subsequent volume, changes in isopleth patt may be noticed in areas also shown in previous volumes. Wh such changes are evident, it may be assumed correctly that analysis is based on additional data available for the more re volume.

THE UPPER AIR CHARTS

It is believed that the twelve series of monthly charts based once-daily winds aloft, radiosonde, and dro} onde observati represent the most extensive effort to date to present, in one p lication, the upper air period of record in the form of clim logical frequency distributions for this ocean basin.

As on the surface charts, the actual number of observation shown on each graph. (The number refers to the lowest le shown.) Similarly, upper air graphs or tables generally omitted where sampling error was obviously excessive.

Most upper air graph formats have been changed substanti from those in previous volumes. The new formats attempt include monthly data for several additional pressure levels wh only slightly increasing the total number of charts per volume

Graphs summarizing dropsonde observations, presented for seven most commonly used sounding areas offer some new cl about the tropospheric climate above the central Arctic Oce Balloon soundings released from ice islands offer still more undoubtedly better information, but these are generally insu cient in quantity and regularity for multiple ocean area clim summarization at this time. Preliminary analysis of dropso observations is reported by W. G. Poage in (65).

Forty-four island or coastal sites (and 3 ocean stations) are u herein and some winds aloft information is presented for all 2 stations (Coppermine, N.W.T., and Thorshaven, Faeroe Islan The graphs of upper wind (including aid and retard) are b entirely on observed data. These data underwent some qua review and correction by interpolation or reference to pertin synoptic constant pressure maps. In general, however, neit "scaling" of gradient wind nor other vertical extrapolation attempted.

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The WIND (950 to 300 mb.) and WIND (300 to 20 mb.) charts present graphs separately indicating prevailing direction and the distribution of scalar wind speed. References (14) and (25) include Arctic seasonal isopleth analyses of several statistical parameter estimates in terms of wind as a vector quantity.

Radiosonde observations of temperature, pressure, and relative humidity were the source for 8 of the 12 series of upper air series. The Arctic Ocean has become so well encircled by radiosonde stations that space limitations preclude presentation of several. Further details about the stations summarized are given below.

THE OBSERVATIONS AND THEIR PROCESSING

This volume's surface and upper air observations, summarized for island and coastal stations, were made by the meterological services of Canada, Denmark, Norway, USA, and USSR. These same services and others, notable those of Germany and United Kingdom, originally collected the ships' weather observations compiled herein. As indicated above, drifting stations (ice islands) were operated by the USA and USSR. While this atlas obviously was made possible only through the cooperation of mariners and weather services of several nations, the extensive assistance provided by the Climatology and other Divisions of the Meteorological Service of Canada is worthy of special note.

The construction of each chart in this atlas began with the selection and tabulation of large numbers of observations on punched cards by means of electronic data processing machines. In some cases, additional data had to be extracted from original records or copies thereof, coded, and punched into cards before machine processing could begin.

THE SURFACE OBSERVATIONS

Variations in definitions, codes and units of measure used by maritime nations during the past century for recording and punching merchant ships' weather observations resulted in eleven separate and unique forms (or "decks") of punched cards at hand and appropriate for combined use in preparing marine tabulations for the Surface Charts in Volume VI of this atlas series. The obstacles presented by these variations and innumerable additional minor ones are not hurdled easily or quickly. Rapid development and application of more advanced electronic data processing and computing machine has added greatly to the efficiency of data processing for this volume, and gives promise of steadily increasing efficiency in overcoming such problems which, in themselves, have hindered progress in the field of climatology.

The punched card files at the National Weather Records Center now contain slightly over 1,300,000 weather observations for the

oceans and seas shown on the charts. Most of these were available in summarized form for the drawing of the surface isopleths. For the selected ocean areas, about 60,000 observations were available. Thirty-six percent of these ship and ice island observations came from USA observers; German and Soviet operations each originated about 28 percent of the material. Other nations cited above introduced the remainder.

Prior to preparation of Volume I of this atlas, several tests were made to insure that neither marked diurnal nor decadel bias existed in the bulk of the punched marine observations. These tests gave reasonable assurance that the observations were relatively well distributed throughout the past century and were well distributed diurnally at intervals of at least four to six hours. In Volume VI, scanning of observational listings verified that similar diurnal balance prevails. However, Arctic meteorological activity can be described as intermittent until recent decades. Thus newer observations greatly outnumber the old with peak activity realized during the International Geophysical Year.

Locations of 27 coastal (or island) stations selected to supplement Ocean Areas on the surface charts, are identified on Chart 1. None duplicates the coastal stations summarized in the overlapping northern regions of Volumes I and II. (Graphs for repeated North Atlantic Ocean Stations A, B, and M are now based on more than 10 years of record.) A table listing the surface land stations follows:

SURFACE COAS

Station
NORTH AMERICA
Alaska
Barrow
Barter I.
Canada
Alert, N.W.T.*
Chesterfield, N.W.T.
Churchill, Man.
Eureka, N.W.T.*
Isachsen, N.W.T.*
Mould Bay, N.W.T.*
Port Harrison, Que.
Resolute, N.W.T.*
GREENLAND
Danmarkshaven*
Nord*
Thule*
Tobin, Kap
EURASIA
Norway
Isfjord Radio, Svalbard
Jan Mayen*
USSR
Belyy, Ostrov
Chelyuskin, Mys
Chetyrekhstolbovoy, Ostrov
Erkegor, Ostrov
Golomyannyy, Mys
Kanin Nos
Malyye Karmakuly
Novaya Sibir', Ostrov
Tegetkhof, Mys/Gallya, Ostro
Uelen, Mys
Vrangelya, Ostrov*

*Graphs placed to right of each chart (
Pole).

SURFACE COASTAL AND ISLAND STATIONS

Station	*Latitude*	*Longitude*	*Period*
MERICA			
row	71°18′ N	156°47′ W	July 1948–May 1961
ter I.	70°08′ N	143°38′ W	Jan. 1949–Apr. 1961
t, N.W.T.*	82°30′ N	62°20′ W	Jan. 1951–Dec. 1959
sterfield, N.W.T.	63°20′ N	90°43′ W	Jan. 1950–Dec. 1959
rchill, Man.	58°45′ N	94°04′ W	Jan. 1950–Dec. 1958
eka, N.W.T.*	80°00′ N	85°56′ W	Jan. 1951–Dec. 1959
hsen, N.W.T.*	78°47′ N	103°32′ W	Jan. 1950–Dec. 1959
uld Bay, N.W.T.*	76°14′ N	119°20′ W	Jan. 1950–Dec. 1959
t Harrison, Que.	58°27′ N	78°08′ W	Jan. 1950–Dec. 1959
olute, N.W.T.*	74°43′ N	94°59′ W	Jan. 1950–Dec. 1959
ND			
kshaven*	76°46′ N	18°46′ W	Jan. 1949–July 1953; Jan. 1955–Dec. 1958
	81°36′ N	16°40′ W	May 1952–Dec. 1959
	76°32′ N	68°45′ W	Sept. 1951–Apr. 1961
Kap	70°25′ N	21°50′ W	Aug. 1951–Dec. 1955; July 1957–Dec. 1958
ord Radio, Svalbard	78°04′ N	13°38′ E	Jan. 1955–Dec. 1958
Mayen*	71°01′ N	08°28′ W	Jan. 1955–Dec. 1958
lyy, Ostrov	73°20′ N	70°02′ E	Jan. 1948–Dec. 1958
elyuskin, Mys	77°43′ N	104°17′ E	Jan. 1948–Dec. 1958
etyrekhstolbovoy, Ostrov	70°38′ N	162°24′ E	Jan. 1948–Dec. 1958
egor, Ostrov	73°47′ N	123°52′ E	Mar. 1955–Dec. 1958
lomyannyy, Mys	79°33′ N	90°37′ E	Jan. 1948–Dec. 1958
nin Nos	68°39′ N	43°18′ E	Jan. 1946–Dec. 1958
lyye Karmakuly	72°23′ N	52°44′ E	Jan. 1948–Dec. 1958
vaya Sibir', Ostrov	74°57′ N	147°52′ E	Mar. 1955–Oct. 1958
getkhof, Mys/Gallya, Ostrov	80°05′ N	57°45′ E	Mar. 1955–Dec. 1958
len, Mys	66°10′ N	169°50′ W	Jan. 1946–Dec. 1958
angelya, Ostrov*	70°58′ N	178°32′ E	Jan. 1948–Dec. 1958

placed to right of each chart (along with those for Ocean Station M and Ocean Area centered at North

THE UPPER AIR OBSERVATIONS

Prior to summarization for this volume, essentially routine verification was applied to aerological observations recorded by the 3 "updated" Ocean Stations, 15 North American coastal stations, and 1 Greenland station (Thule). Data source for the remaining 28 coastal or island stations was principally teletypewriter relays of radio broadcasts of the observations in synoptic codes. The period July 1957 to late 1959 was a notable exception. Then international exchange of aerological data on established forms was a most useful result of the International Geophysical Year.

A concerted effort was made to rid the pre-IGY Eurasian (and Greenland) observations of errors attributable to difficult reception of radio broadcasts, garbled teletype relays, and other causes. Meteorological technicians, aided by especially programmed electronic computers, were thereby able to salvage many observations containing impossible combinations of coded data.

The one-a-day observations used for the upper air graphs are those released at or near 0300 GMT (0000 GMT beginning June 1957). All dropsonde observations available for the selected positions were used. A great majority were released within 2 hours of 0300 (or 0000) GMT.

A table listing the upper air stations follows:

Station	*Latitude*
NORTH AMERICA	
Alaska	
Barrow*	71°18′ N
Barter I.	70°08′ N
Nome	64°30′ N
St. Paul I.	57°09′ N
Canada	
Alert, N.W.T.*	82°30′ N
Churchill, Man.	58°45′ N
Clyde, N.W.T.	70°27′ N
Coppermine, N.W.T.	67°49′ N
Coral Harbor, N.W.T.	64°12′ N
Eureka, N.W.T.*	80°00′ N
Frobisher, N.W.T.	63°45′ N
Isachsen, N.W.T.*	78°47′ N
Mould Bay, N.W.T.	76°14′ N
Port Harrison, Que.	58°27′ N
Resolute, N.W.T.	74°43′ N
GREENLAND	
Egminsinde	68°42′ N
Nord*	81°36′ N
Thule	76°33′ N
Tobin, Kap	70°25′ N
NORTH ATLANTIC OCEAN	
Ocean Station A	62°00′ N
Ocean Station B	56°30′ N
Ocean Station M	66°00′ N
Thorshavn, Faeroe Is.	62°03′ N

*Graphs placed to right of each chart.

UPPER AIR STATIONS

ıtitude	*Longitude*	*Period*	*Remarks*
°18′ N	156°47′ W	June 1952–Dec. 1959	Winds aloft period begins Oct. 1950
°08′ N	143°38′ W	Dec. 1956–Dec. 1959	Winds aloft period begins Apr. 1953
°30′ N	165°24′ W	July 1950–Dec. 1959	Winds aloft period begins July 1951
°09′ N	170°13′ W	July 1952–Nov. 1960	Winds aloft period begins Oct. 1950
°30′ N	62°20′ W	Sept. 1950–Dec. 1959	Winds aloft period begins Oct. 1950
°45′ N	94°04′ W	Jan. 1950–Dec. 1959	Winds aloft period begins Aug. 1954
°27′ N	68°33′ W	Jan. 1950–Dec. 1959	Winds aloft period begins July 1955
°49′ N	115°05′ W	Jan. 1950–Dec. 1959	Winds aloft data inadequate
°12′ N	83°22′ W	Aug. 1950–Dec. 1959	Winds aloft period begins July 1955
°00′ N	85°56′ W	Jan. 1950–Dec. 1959	
°45′ N	68°33′ W	Sept. 1950–Dec. 1959	Winds aloft period begins Nov. 1955
°47′ N	103°32′ W	Jan. 1950–Dec. 1959	Winds aloft period begins May 1954
°14′ N	119°20′ W	Jan. 1950–Dec. 1959	Winds aloft period begins Sept. 1953
°27′ N	78°08′ W	Jan. 1950–Dec. 1959	Winds aloft period begins Oct. 1954
°43′ N	94°59′ W	Jan. 1950–Dec. 1959	Winds aloft period begins July 1949
°42′ N	52°52′ W	Mar. 1950–Nov. 1959	
°36′ N	16°40′ W	Jan. 1955–Nov. 1959	Winds aloft period begins Oct. 1953
°33′ N	68°43′ W	Aug. 1952–Aug. 1960	
°25′ N	21°50′ W	Oct. 1949–Dec. 1957	
°00′ N	33°00′ W	July 1952–Dec. 1959	
°30′ N	51°00′ W	Jan. 1950–Dec. 1959	
°00′ N	02°00′ E	Aug. 1949–July 1959	
°03′ N	06°45′ W	July 1952–June 1959	Winds aloft data inadequate

Station	*Latitude*	*Longitude*	*Period*	*Remark*
EURASIAN				
Norway				
Bjornoya	74° 31′ N	19° 01′ E	Jan. 1957–Feb. 1961	
Isfjord Radio, Svalbard	78° 04′ N	13° 38′ E	Sept. 1957–Feb. 1961	Winds aloft from Murc
Jan Mayen*	71° 01′ N	08° 28′ W	June 1949–May 1959	
Tromso/Skattora	69° 42′ N	19° 01′ E	May 1949–June 1959	
USSR				
Amderma*	69° 46′ N	61° 41′ E	Feb. 1953–Sept. 1959	
Anadry'	64° 47′ N	177° 34′ E	Mar. 1955–Dec. 1959	
Arkhangel'sk	64° 35′ N	40° 30′ E	Feb. 1953–Dec. 1959	
Chelyuskin, Mys	77° 43′ N	104° 17′ E	Feb. 1953–Oct. 1959	
Chetyrekhstolbovoy, Ostrov	70° 38′ N	162° 24′ E	Feb. 1953–Oct. 1959	
Dikson, Ostrov	73° 30′ N	80° 14′ E	Feb. 1953–Oct. 1959	
Kamennyy, Mys	68° 28′ N	73° 36′ E	Mar. 1955–Oct. 1959	
Khatanga	71° 59′ N	102° 28′ E	Jan. 1955–Oct. 1959	Winds aloft period beg
Korf/Tilichiki	60° 21′ N	166° 00′ E	May 1953–Dec. 1959	
Kotel'nyy, Ostrov	76° 00′ N	137° 54′ E	Apr. 1955–Oct. 1959	
Malyye Karmakuly*	72° 23′ N	52° 44′ E	Feb. 1953–Oct. 1959	
Murmansk	68° 58′ N	33° 03′E	Feb. 1953–June 1959	
Nar' Yan-Mar	67° 39′ N	53° 01′ E	Feb. 1953–Dec. 1959	
Shmidta, Mys	68° 55′ N	179° 29′ W	Mar. 1955–Oct. 1959	
Tallinn (Estonian SSR)	59° 25′ N	24° 48′ E	Feb. 1953–Sept. 1959	
Tikhaya, Bukhta	80° 19′ N	52° 48′ E	Jan. 1955–Oct. 1959	All data from Kheisa, C beginning Jan. 1958.
Tiksi, Bukhta	71° 35′ N	128° 55′ E	Feb. 1953–Oct. 1959	
Vize, Ostrov	79° 30′ N	76° 59′ E	Nov. 1955–Oct. 1959	
Vrangelya, Ostrov*	70° 58′ N	178° 32′ E	Jan. 1957–Oct. 1959	Winds aloft period begi
Zhelaniya, Mys	76° 57′ N	68° 35′ E	Mar. 1955–Sept. 1959	
ARCTIC OCEAN				
Dropsonde Station 1	75° 00′ N	141° 30′ W		Radiosonde "drops" tc
Dropsonde Station 2	75° 30′ N	158° 00′ W		larly at the seven loca
Dropsonde Station 3	76° 00′ N	165° 00′ W		Nov. 1959. "Station
Dropsonde Station 4	80° 30′ N	160° 00′ W		arbitrarily assigned a
Dropsonde Station 5	80° 00′ N	179° 00′ W		designations.
Dropsonde Station 6	84° 00′ N	109° 30′ W		
Dropsonde Station 7	85° 30′ N	163° 00′ W		

*Graphs placed to right of each chart.

	Remarks
. 1961	
b. 1961	Winds aloft from Murchinson Bay
ıy 1959	
ıe 1959	
ıt. 1959	
:c. 1959	
c. 1959	
t. 1959	
t. 1959	
t. 1959	
ct. 1959	
t. 1959	Winds aloft period begins Feb. 1953
c. 1959	
:t. 1959	
't. 1959	
ıe 1959	
c. 1959	
ct. 1959	
pt. 1959	
t. 1959	All data from Kheisa, Ostrov (5° to east) beginning Jan. 1958.
:t. 1959	
ct. 1959	
't. 1959	Winds aloft period begins July 1954
:pt. 1959	
	Radiosonde "drops" took place irregularly at the seven locations June 1951–Nov. 1959. "Station" numbers were arbitrarily assigned and are *not* official designations.

THE INDIVIDUAL CHARTS

The legend in the upper right hand corner of each chart page is designed to explain chart content—the graphs, or isopleths, or both. Detailed instructions telling how to read the graphs are given, and explanatory notes are included as far as practicable. The following paragraphs contain additional remarks likely to be of interest to those called upon to interpret the charts and provide answers to specific questions of an operational nature.

SURFACE ANNUAL CHARTS

Eight charts following the surface station location map (Chart 1) are used to graphically summarize the annual march of monthly distributions for several climatic elements. Supplementary graphs (on Chart 10) give the approximate duration of daylight, civil twilight (a.m. plus p.m. total), and darkness at 5° latitude intervals for the 1st and 15th of each month (63). Graphs from lower left to upper right are for latitudes ending in 5; graphs from lower right to upper left are similarly placed on latitudes ending in zero.

Four of the annual charts present data in bar graphs of cumulative percentage frequency distributions. Several percentage points are specified by the chart legends; however, differences between values of 2½ percent and 5 percent points, and/or 95 percent and 97½ percent, sometimes are essentially indistinguishable. In such cases, a value for either percentile read from the end of a bar will be accurate within reading and sampling errors characteristic of all volumes of this Atlas series.

Chart 4, WIND-CHILL INDEX, isopleths and graphs, uses a formula empirically derived in (41). The isopleths are transcribed from the map appended to (18) because significant isopleth adjustments suggested by the graphed data are relatively few in number. However, the newly summarized Ocean Area data fails to confirm existence of a closed 20 (2,000 kg Cals/M²/Hr.) isopleth over the central Arctic Ocean, as hypothesized in the source analysis.

Some station-months on the WIND-CHILL INDEX graphs display distributions markedly shewed from a Gaussian normal distribution. Investigation showed that wind speeds were the pri-

mary cause. Wind speed, of course, is not normally distributed. Further marked aberrations are caused by necessarily poor anemometer exposures and/or pronounced orographic effects as mentioned above.

On Chart 7, SNOW COVER, several sources of previously summarized data were used to compile the graphs, therefore, the period of record given above in the list of surface coastal and island stations does not necessarily apply to this particular chart.

The graphs on Chart 9, LOW VISIBILITY, show percentage frequency of visibility less than 2 nautical miles due to (a) precipitation including blowing or drifting snow, or (b) obstruction to vision other than blowing or drifting snow. Where both categories were reported, occurrence was credited to the precipitation group. Arctic low visibility essentially due to fog alone is provided by such grouping.

SURFACE MONTHLY CHARTS

Monthly graphs of surface elements other than wind and precipitation generally follow formats established in previous volumes. A few single element distributions are removed for display on the "annual" charts. Specific reference is given below in such cases. Persistence graphs are of simpler form than that used in previous volumes.

SURFACE WIND

Wind distributions are presented by means of a combination of two graphic forms—the bar graph and the rectangular contingency table. The vertical grid lines serve in two separate and distinct ways: (1) as a scale marked at increments of 10 percent facilitating immediate reading of wind direction frequency as represented by the length of each bar; (2) as lines separating the selected class intervals of Beaufort Force within which the percentage frequency for each direction and class interval of wind force is actually printed.

If percentage frequency of one of the classes of wind force, irrespective of direction, is desired, it may be obtained by merely adding the numbers down the appropriate column.

The number of observations, on which each graph is based, is printed in one corner. This permits estimation of statistical measures of reliability. This practice is followed on all monthly chart series.

A condensed table of Beaufort equivalents follows:

Beaufort force number:	*Speed in k*
0	0
1	1–3
2	4–6
3	7–10
4	11–16
5	17–21
6	22–27
7	28–33
8	34–40
9	41–47
10	48–55
11	56–63
12	64 and ab

AIR TEMPERATURE BY WIND DIRECTION

The temperature scales on these graphs necessarily vary be stations or ocean areas. It is particularly important on these to note the temperature scale each time data is read from a

Air temperature distribution, all wind directions combi shown on Chart 2.

AIR TEMPERATURE vs. WIND SPE

Tables of simultaneous occurrence by selected class interv shown for the entire range of each element. Together tempe and wind speed bear directly on the "cooling power" atmosphere.

An empirical combination of the two elements is us Chart 4.

PRECIPITATION BY WIND DIRECTI

Procedures which have been used in the various countries t data preparatory to punching such data into cards have Too, in some countries, it has been impossible to maintain sistent program. Inevitably, difficulties in decoding and co ing such data have been created. Such difficulties have re

ollows:

Speed in knots
0
1–3
4–6
7–10
11–16
17–21
22–27
28–33
34–40
41–47
48–55
56–63
64 and above

Y WIND

essarily vary between
ortant on these charts
is read from a graph.
rections combined, is

/IND SPEED

ted class intervals are
Together temperature
oling power" of the

elements is used for

DIRECTION

ious countries to code
to cards have varied.
le to maintain a con-
lecoding and combin-
ficulties have reached

their peak in the analysis of precipitation data. Hence, percentage frequencies indicated should be interpreted with particular caution.

In the Arctic, coding limitations are compounded by observer problems in precisely classifying hydrometeors—for example, determining whether snow is falling or simply blowing. Ice crystals were here considered as precipitation but blowing or drifting snow was not so considered either in this chart series or on Chart 6. Precipitation incidence for all wind directions, subdivided by frozen or liquid type, is shown on Chart 6.

CLOUDINESS

Until the adoption of the 1949 International Synoptic Code, total cloud amount was usually measured in terms of tenths of sky covered. As reporting in terms of eights is the present international practice, the scale of total cloud amount for reading cumulative percentage frequency is marked in eighths.

Replacing arbitrary conversion of tenths of total cloud amount to eighths as in Volumes I and II, observations in each unit were tabulated separately and appropriately graphed on a scale marked in terms of both tenths and eighths. Thus the cumulative percentage frequency curves accurately reflect the observed data while remaining free of irregularities caused by arbitrary conversion practices.

Low cloud amount, a relatively recent addition to reporting codes, is the least commonly recorded element in weather records presently held.

Where inclusion is possible, the histogram portion of the graphs (the bars) show the percentage frequency of low cloud amount greater than five-eighths and seven-eighths with each wind direction. Even in Ocean Areas with some observations of low cloud amount, careful study of the histogram by experienced weather personnel is appropriate to determine the suitability of the available data in the light of a specific problem at hand.

Those interpreting the limited "low" cloud data, should also recall that low cloud amount (N_h) underwent a specification change with adoption of the 1955 synoptic code. However, it is believed that the polar region's greater incidence of apparent low cloud types, compared with middle clouds, generally justifies interpretation without major change.

The form of unpublished but previously summarized data for the seas adjoining the Arctic Ocean dictated definition of isopleths of total cloud amount in tenths. As far as can be determined by inspection of similar or related types of publications, this atlas is the first in which low cloud amount data is presented or its analysis attempted for entire ocean basins.

LOW VISIBILITY BY WIND DIRECTION

The bars show the percentage frequency of visibility less than 2 nautical miles when, and only when, each specified wind direction was observed. Bars (or zeros) are omitted whenever the simultaneous observations are so few as to create large sampling error.

Graphs on Chart 9 show the occurrence of low visibility subdivided as to cause (precipitation or obstruction to vision) rather than by wind direction.

Charts of LOW VISIBILITY PERSISTENCE are described below.

VISIBILITY

The cumulative percentage frequency of horizontal visibility is by class intervals corresponding to visibility codes "90" through "98" as specified for ships' observers by the 1949 International Synoptic Code. As described above, the percentage frequency of visibility observed to be 25 nautical miles or more (Code "99") at the coastal stations may be calculated by simply subtracting from 100 percent the cumulative percentage frequency at the point "<25" on each graph. Such a calculation from the graphs for ocean areas should be interpreted with caution because of the impossibility of actually seeing a distance of 25 miles from the bridge of most ships unless high peaks are observed from nearby land masses. The same precaution applies to small, isolated island locations.

Graphed cumulative percentage frequency curves terminate at a value of 15 miles for a few stations. These occur where "15+" is the maximum visibility recorded on a U.S. agency station's aviation weather reports.

All inherent limitations of horizontal visibility estimates are aggravated in polar regions by long winter darkness and the common absence of prominent objects at known distances.

The isopleths showing percentage frequency of all visibility observations in which the visibility was reported to be less than 5 nautical miles, represents, in effect, the relative frequency of occurrence of any "obstruction to vision" as defined by aviation weather codes in the United States and Canada.

WIND—VISIBILITY—CLOUDINESS

These tables are designed to condense information on measures of elements of common operational significance. With the requirement that wind force, visibility, total cloud amount, and low cloud amount all be recorded simultaneously, slight deviations between a percentage given in the first line of each table in this chart series and an equivalent class in the same station-month's surface wind graph may be noted. In such a case, it can be seen that the latter is based on a greater number of observations.

Low cloud amount equal to or greater than six-tenths (or five-eighths is used as the best available measure of the occurrence of low cloud in amounts sufficient to form a ceiling.

STORM TRACKS

The storm tracks are based on all available data for sea level systems from 1866 to 1954. The prevailing direction of motion is indicated by the arrows. Heavy solid lines denote primary tracks—those which are most frequent and clearly defined; thin dashed lines denote secondary less frequent, and less well defined tracks. In areas of maximum frequency, the arrow heads end, and the tracks may cross, branch, or merge.

The storm tracks are transcribed from (31). This reference should be consulted where necessary to determine origin or termination of short segments appearing at edges of charts in this atlas.

A detailed legend for the storm tracks follows.

An area of frequent genesis is indicated where one of the following occurs:

Example (all motion from left to right)

1. A secondary track begins
2. A primary track begins
3. A single secondary track changes to a single primary track
4. Two secondary tracks merge to form a primary track, with a break between dashed and solid lines



"Genesis" is *not* indicated where:

1. Two secondary tracks merge to form a primary track, without a break between dashed and solid lines
2. A secondary track merges with a primary track, without a break between dashed and solid lines
3. Two secondary tracks merge to form another secondary track
4. Two primary tracks merge
5. A primary track decreases in frequency to a secondary track
6. A secondary track branches off from a primary track
7. A primary track splits into two primary branches
8. A secondary track splits into two secondary branches

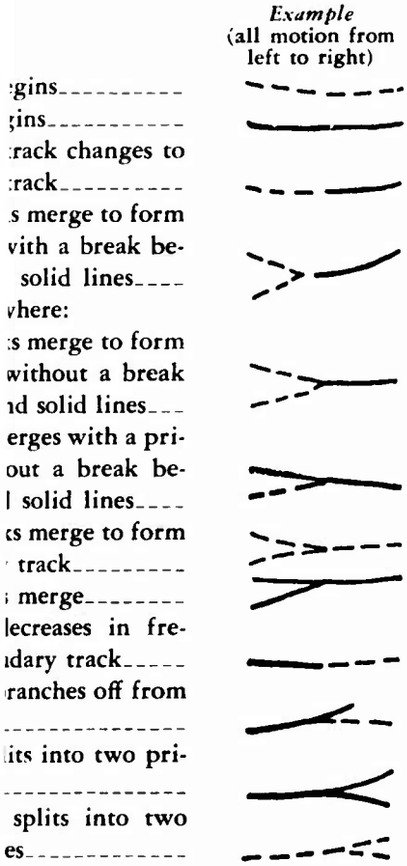


in the first line of each table in this
nt class in the same station-month's
noted. In such a case, it can be seen
greater number of observations.
to or greater than six-tenths (or five-
vailable measure of the occurrence of
ent to form a ceiling.

M TRACKS

ed on all available data for sea level
The prevailing direction of motion
Heavy solid lines denote primary
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ry less frequent, and less well defined
n frequency, the arrow heads end, and
, or merge.
nscribed from (31). This reference
necessary to determine origin or ter-
appearing at edges of charts in this

torm tracks follows.
sis is indicated where one of the fol-



GALE PERSISTENCE

The graphs on these charts indicate percentage frequency of duration of winds equal to or greater than 34 knots. Graphs are shows for the months of January through April and September through December. Gales are generally too infrequent and/or short-lived for effective summarization of late spring and summer months.

These and the other persistence graphs that follow are presented, as data permits, for the ocean, coastal, and island stations with their quasi-continuous record of 3-hourly or 6-hourly observations.

LOW TEMPERATURE PERSISTENCE

Duration percentage frequencies are here shown for occurrences of air temperature equal to or less than −20° F. Under this criterion, it is possible to display graphs for the months of January through April, November, and December.

LOW VISIBILITY PERSISTENCE

As in other low visibility graphs, visibility less than 2 nautical miles is the class used for this series of 12 monthly charts.

UPPER AIR MONTHLY CHARTS

The four chart series based on winds aloft observations are paired so as to display lower and upper levels on facing pages. Graphs pertaining to pressure levels up to the 300-millibar level appear on a left-hand page while higher stratospheric levels for the same element and month are placed on the right. Charts of height and temperature (4 of the 8 radiosonde series) are similarly arranged.

The highest pressure level treated is 20 millibars. The number of observations for this level is small. At many stations, soundings typically have failed to reach this level.

Proper interpretation of all charts in this atlas is aided by a general knowledge of (1) weather observing techniques and (2) weather instrumental and observational accuracy. This is especially true in the case of a requirement for detailed interpretation of one or more of the eight series of charts based on radiosonde data. Observational hour for all stations is either 0300 GMT or 0000 GMT, as indicated above.

Because of the high incidence of transmission errors, variations in radiosonde instruments, differing observational practices and codes, and similar problems, all foreign radiosonde data were subjected to special manual and computer checks prior to being summarized. The hydrostatic equation was used in the computer checking procedures to verify height and temperature data within reasonable tolerances. These tolerances were more liberal above 500 millibars than at lower levels.

WIND

The 950- to 300-millibar and 300- to 20-millibar graphs show five percentiles of the distribution of scalar wind speed. The prevailing wind direction (to 16 points) is given in a polar coordinate form along the right hand edge of each graph.

As mentioned above, statistical parameter estimates of wind as a vector quantity are treated extensively in (14).

WIND AID AND RETARD

Graph format in this second pair of winds aloft chart series is also revised from previous atlas volumes. The present format is a graphical adaptation of the tabular presentations in (59), a publication which explains this derived element in some detail.

Precision dictates the use of aircraft air speed in all computations of wind aid and wind retard. In this atlas, wind aid and wind retard frequencies at 850- and 700-millibar levels, computed for an aircraft speed of 300 knots, may be used for 200- to 600-knot aircraft; those at 300 and 200 millibars, computed for aircraft speed of 600 knots, may be used for 300- to 1,000-knot aircraft. The maximum error in both cases, is about 5 percent.

HEIGHT

Average height at a number of standard pressure surfaces is shown on these pairs of charts. Variability of the average values is also indicated. Generally, data are omitted for levels having less than 10 observations. A similar criterion applies to the upper air TEMPERATURE charts.

TEMPERATURE

The summarized one-a-day radiosonde observations of temperature are graphed using a format similar to that for height of pressure surfaces. The graphic summaries should help in meeting some of the many and varied developing applications of upper air temperature data.

The reader concerned with solar radiation corrections to stratospheric temperatures is referred to (42).

INVERSIONS

An inversion (for definition purposes in this atlas) means any change in temperature with height that is not a decrease. In other words, all layers exactly isothermal, or with increasing temperature upward and at least 5 millibars (about 150 feet) thick, are classed as inversions on these charts. Three class intervals of inversion intensity are shown on the graphs for inversions with bases up to 700 millibars. Distributions of inversion thickness are not shown.

The "reading" of data by machines required the es of numerous rules in addition to the basic "definitio version described above. The more complex of these r cerned selection of a predominant or overall inversion several, usually thin, inversion layers of varying int very general terms, an inversion above another invers considered unless it was of greater intensity than that inversion. But special interpretation was given to i strong intensity based at the surface and showing a di change to lesser intensity (though still an inversion) at bars above the surface. Here, an inversion was consi based in each of the lower two levels and the appropri was assigned to each.

Temperature inversions inhibit or may prevent particles such as smoke particles into the upper atmosp graphs of inversions represent a rough guide to the inversions which may be expected at each station, if in terms of local time.

HEIGHT OF TROPOPAUS

The cumulative percentage frequency curves on t generally represent the distributions of the height o lowest tropopause as determined from radiosonde obs temperature. The location of the tropopause on each s determined from the characteristics of the temperatu accordance with the rules outlined in (64).

In general, the boundary of the transition zone troposphere and the stratosphere, known as the tropo the form of an inversion, isothermal layer or combina at a height which varies with latitude, season, and th cyclones and anticyclones. The effect of passage o sometimes reflected in the increased slope of the lo cumulative frequency curve.

HUMIDITY

The sensors used on radiosonde instruments to mea humidity are imperfect. They are particularly inac low temperatures encountered in polar regions.

As in previous volumes, relative humidity summa not attempted above the 500-millibar level. Also a "motorboating," missing, or particularly doubtful da sidered to be less than 30 percent.

The bar graphs of this volume show the incidenc humidity measurements of 30 percent or greater su 3 class intervals. Portrayal of relative humidity by sn ture classes is discontinued for the polar regions.

Data for North American stations were generally terms of relative humidity "over water." The orig

achines required the establishment to the basic "definition" of an inore complex of these rules all conant or overall inversion layer from layers of varying intensities. In n above another inversion was not ter intensity than that of the lower etation was given to inversions of rface and showing a discontinuous gh still an inversion) at least 5 millian inversion was considered to be evels and the appropriate intensity

ibit or may prevent diffusion of into the upper atmosphere. These a rough guide to the incidence of ed at each station, if interpreted in

TROPOPAUSE

frequency curves on these graphs itions of the height of the first or d from radiosonde observations of ne tropopause on each sounding was istics of the temperature profile in ned in (64).

the transition zone between the re, known as the tropopause, takes rmal layer or combination of both atitude, season, and the passage of ne effect of passage of cyclones is eased slope of the lower end of a

MIDITY

de instruments to measure relative are particularly inaccurate at the in polar regions.

tive humidity summarization was nillibar level. Also as before, all rticularly doubtful data were conent.

me show the incidence of relative percent or greater subdivided into elative humidity by small tempera- the polar regions.

ations were generally available in er water." The original observations, not converted for these graphed summaries, apparently were on an "over ice" basis prior to July 1953 at 5 stations: Port Harrison, Quebec and Northwest Territory stations at Clyde, Coppermine, Coral Harbor, and Frobisher.

REFRACTIVE INDEX GRADIENT

One specific application of all the weather elements measured by radiosonde instruments is in the refraction of radio waves. These are found to be even more susceptible than light waves to "bending" immediately above the earth's surface. (The bending of light waves is manifested by the various types of mirage.) Quantitative measures of the capability of the lower atmosphere to refract microwave transmissions have been developed in order to establish more effective use of radar.

Summarization of the vertical gradient of refractive index ("N" index) is introduced in this volume. Definitions follow those given in (35). The bars on each graph show the percentage frequency of superrefraction classes for each millibar stratum. Numbers along the right side of the graphs show the mean thickness of continuous superrefractive ($<-.027$) gradients *based* within the indicated millibar stratum. Typically such layers are based at or near the surface in the Arctic. Thus sample sizes are often inadequate and mean thicknesses may not be shown for superrefractive gradients based between 700 and 900 millibars.

REFERENCES

Each work listed below meets one or more of the following criteria: (a) the material elaborates upon topics mentioned above, (b) it was actively used during planning and/or compilation of this volume, (c) it appears to be pertinent to the reader with operational planning responsibilities. Many other formal and informal papers and data summaries, particularly from the Meteorological Service of Canada, were used or provided background information. The compilers of this volume also benefited from knowledge and experience generously shared by a number of polar operational and research scientists, notable examples being Dr. F. Kenneth Hare and other meteorologists of the Arctic Meteorology Research Group at McGill University.

Reference (65) below includes translations of papers by six USSR scientists. The fifth and sixth reports pertain to North Pole-1, the first Russian drift station (ice island). Other subsequent translations from works by M. M. Somov (editor), S. S. Gaigerov, and V. F. Burkhanov provided information about operations at NP-2, NP-4, NP-5, and NP-6. The three-volume Somov treatise, translated by the American Meteorological Society, is particularly compresensive; the third volume apparently includes all meteorological observations and measurements made at NP-2.

Other principal references are as follows:

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8. Canada. Department of Mines and Technical Surveys. *Atlas of Canada.* Climate Section. Ottawa: Queen's Printer. 1957.
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2												
3												
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5												
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10												
...	11	23	35	47	59	69	79	89	101	113	125	137
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...	15	27	39	51	63	73	83	93	105	117	129	141
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....	20	32	44	56				98	110	122	134	146
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....	22	34	46	58	68	78	88	100	112	124	136	148

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149												
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.....	151	163	175	187	199	211	223	235	247	259	271	283
.....	152	164	176	188	200	212	224	236	248	260	272	284
.....	153	165	177	189	201	213	225	237	249	261	273	285
.....	154	166	178	190	202	214	226	238	250	262	274	286
.....	155	167	179	191	203	215	227	239	251	263	275	287
.....	156	168	180	192	204	216	228	240	252	264	276	288
.....	157	169	181	193	205	217	229	241	253	265	277	289
.....	158	170	182	194	206	218	230	242	254	266	278	290
.....	159	171	183	195	207	219	231	243	255	267	279	291
.....	160	172	184	196	208	220	232	244	256	268	280	292
.....	161	173	185	197	209	221	233	245	257	269	281	293

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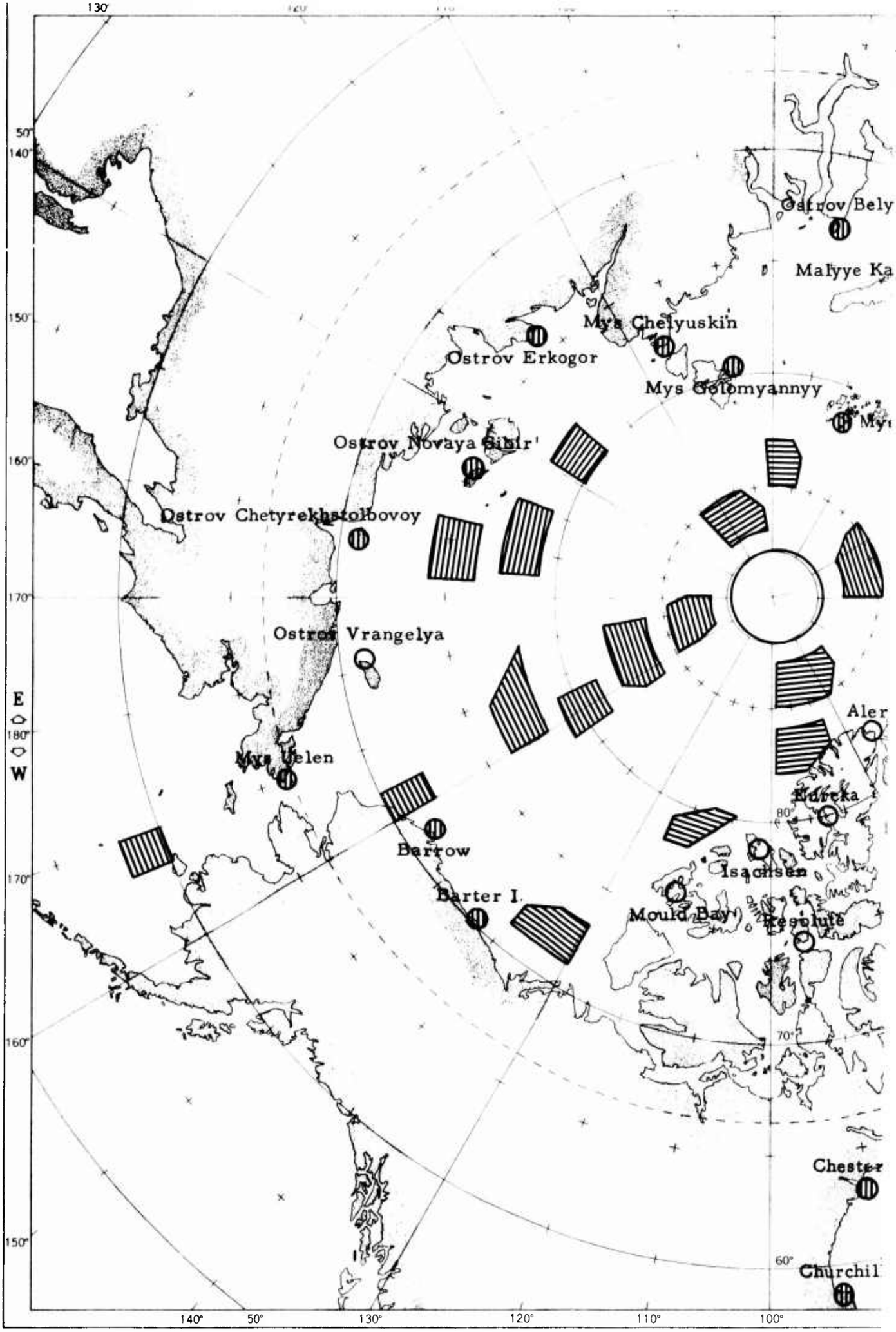
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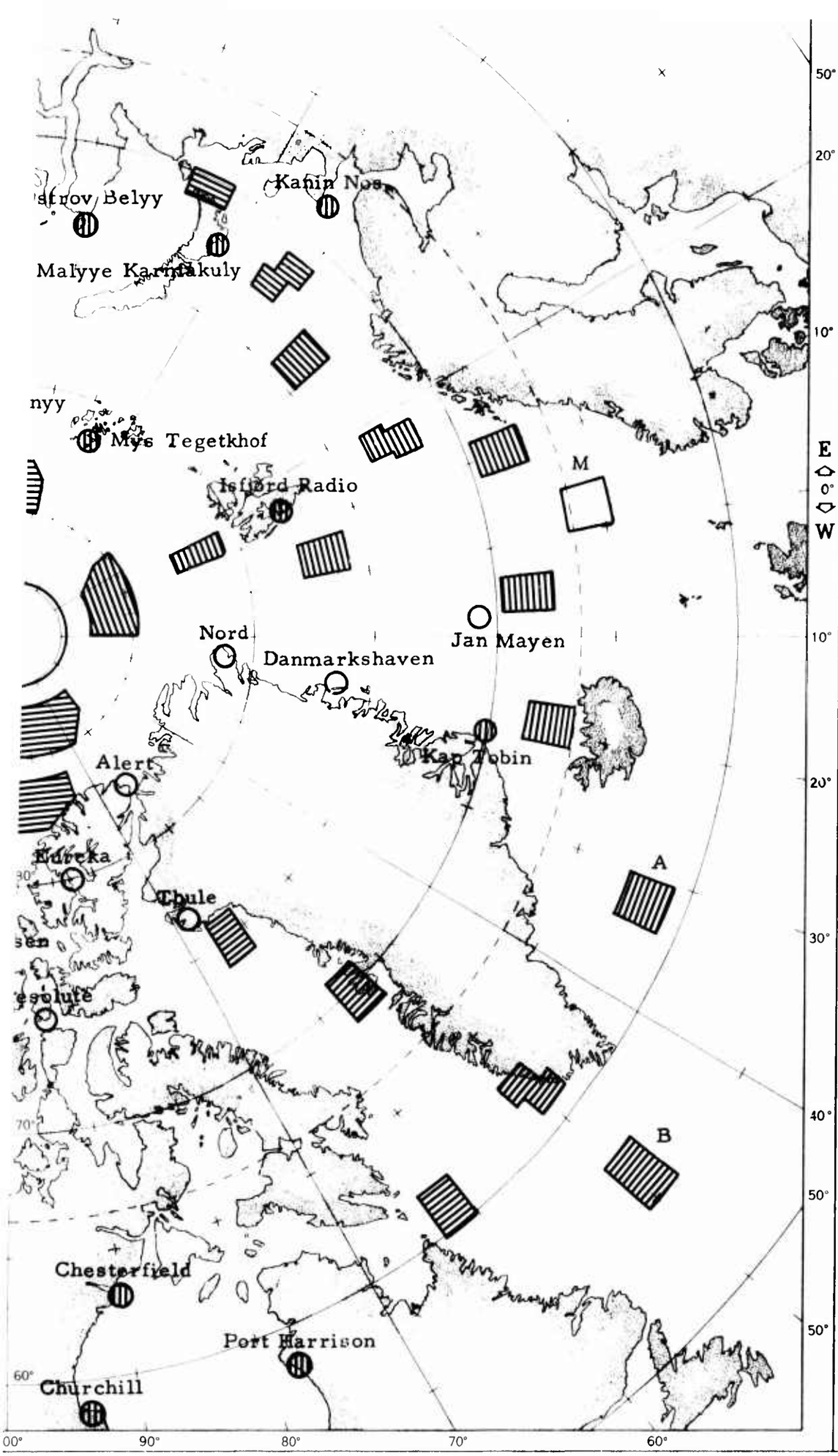
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130°
50°
140°
150°
160°
170°
E
180°
W
170°
160°
150°
Ostrov Bely
Malyye Ka
Mys Chelyuskin
Ostrov Erkogor
Mys Golomyannyy
Ostrov Novaya Sibir'
Ostrov Chetyrekhstolbovoy
Ostrov Vrangelya
Mys Yelen
Barrow
Barter I.
Aler
Eureka
80°
Isachsen
Mould Bay
Resolute
70°
Chester
60°
Churchil
140°
50°
130°
120°
110°
100°



Graphs appear on charts.

Graphs appear to right of ch

Ocean Areas (and Ocean Stations

Graphs appear on charts.

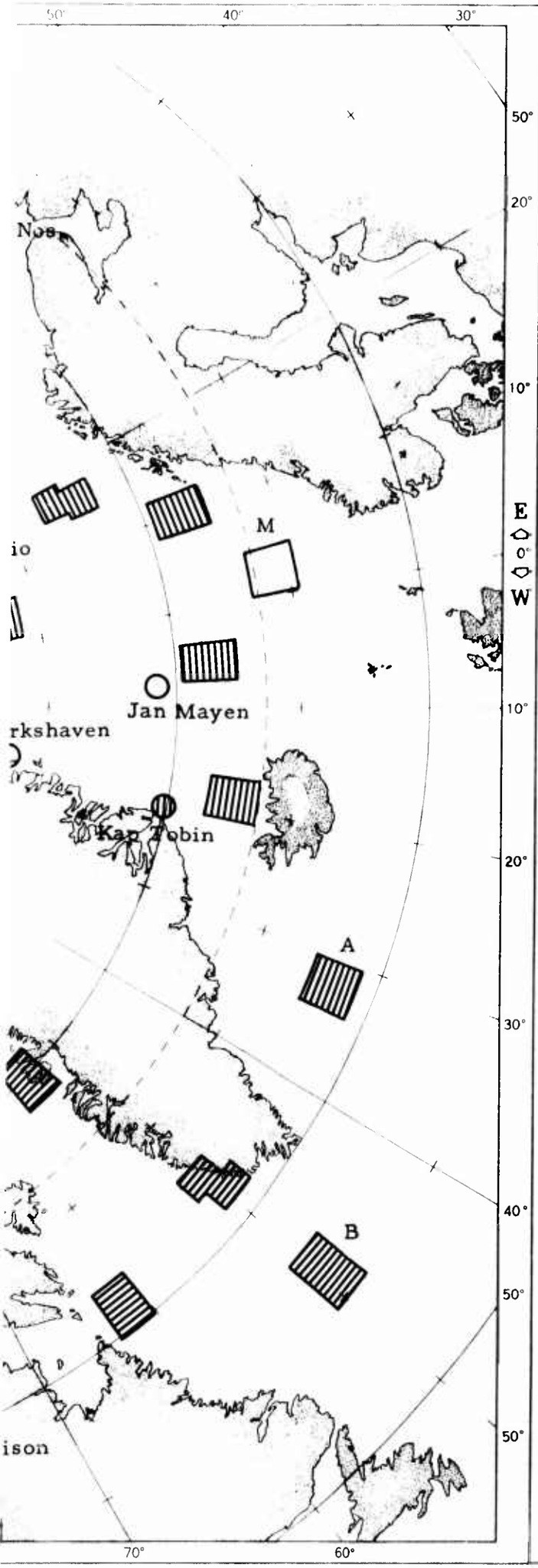
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Area centered at North Pole

Station M.)

1

2



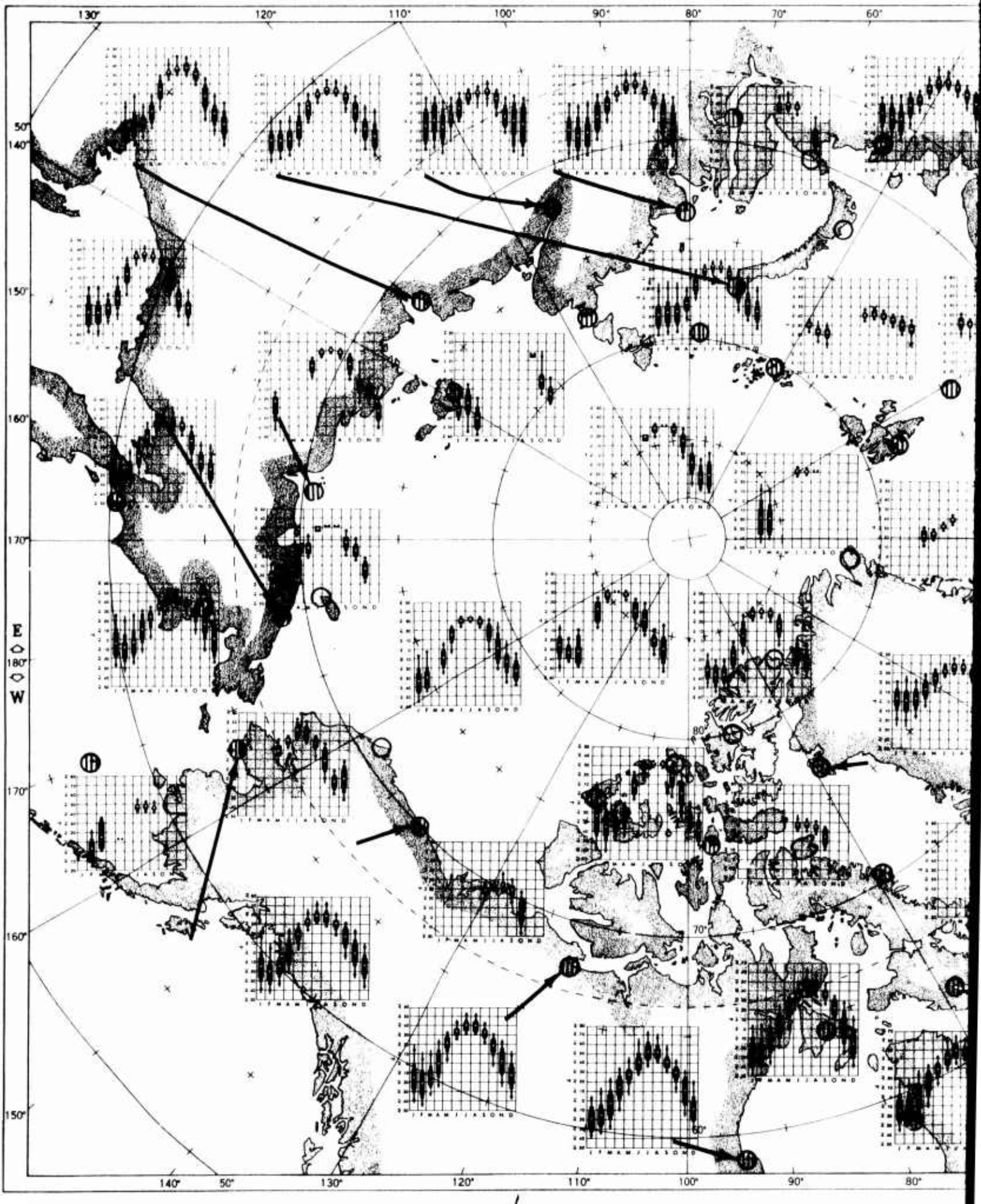
Coastal, Island Stations:

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Ocean Areas (and Ocean Stations):

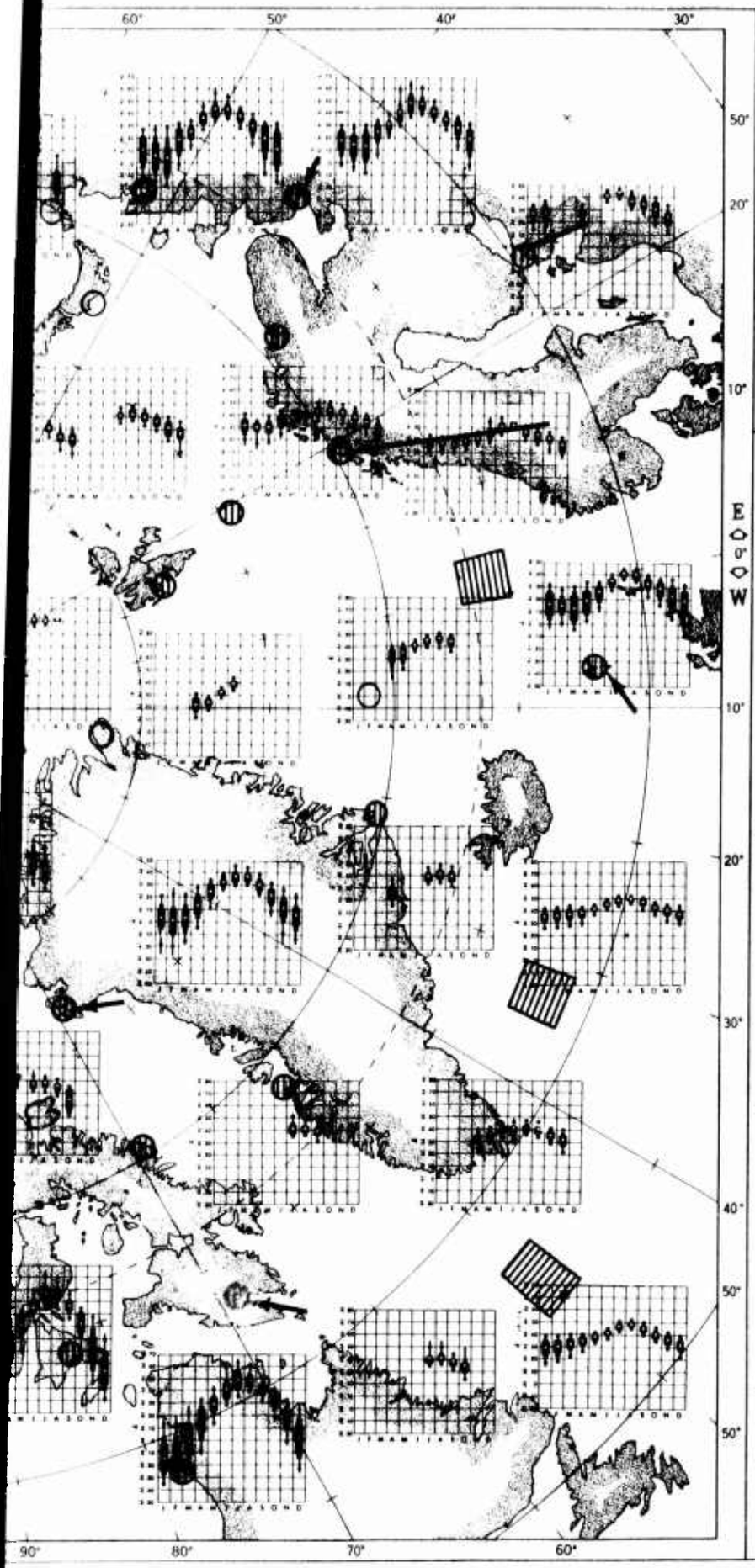
- Graphs appear on charts.
- Graphs appear to right of charts. (Ocean Area centered at North Pole and Ocean Station M.)

AIR TEMPERA


130°
120°
110°
100°
90°
80°
70°
60°
50°
140°
150°
160°
170°
E
180°
W
170°
160°
150°
140°
50°
130°
120°
110°
100°
90°
80°
J F M A M J J A S O N D

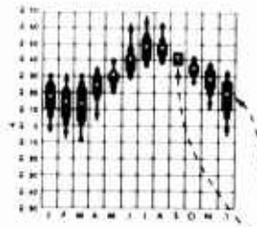
TEMPERATURE

CHART 2



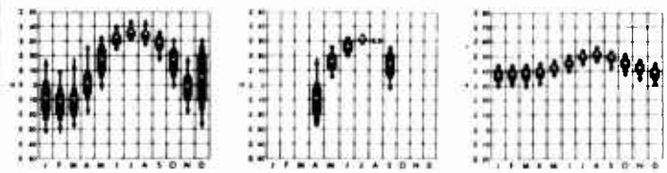
Distribution of Air Temperature by month

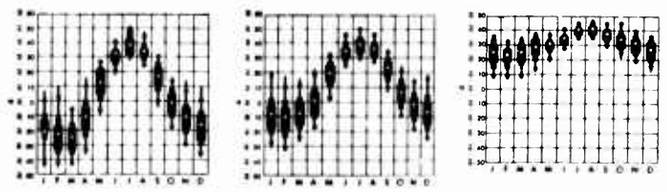
(a) Mean
(b) 97 ½%, 95%, 84%, 75%, 25%, 16%, 5%, and 2½%
were equal to or less than the temperatures indicated by



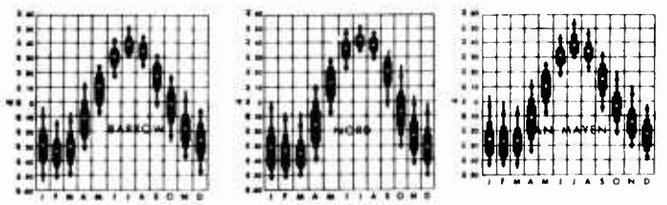
(In December the mean temperature was 20°F. 2½% of the temperatures were -6°F or less, 5% were 2°F or less, etc.)

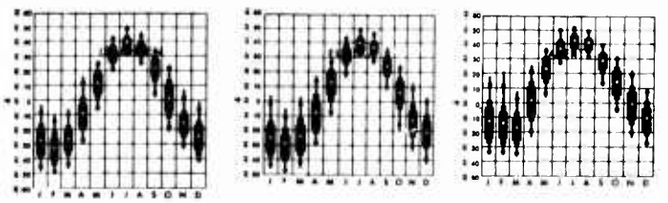
(75%, mean, and 25% point are given when the 97 ½% - 2½% range was less than 15°F.



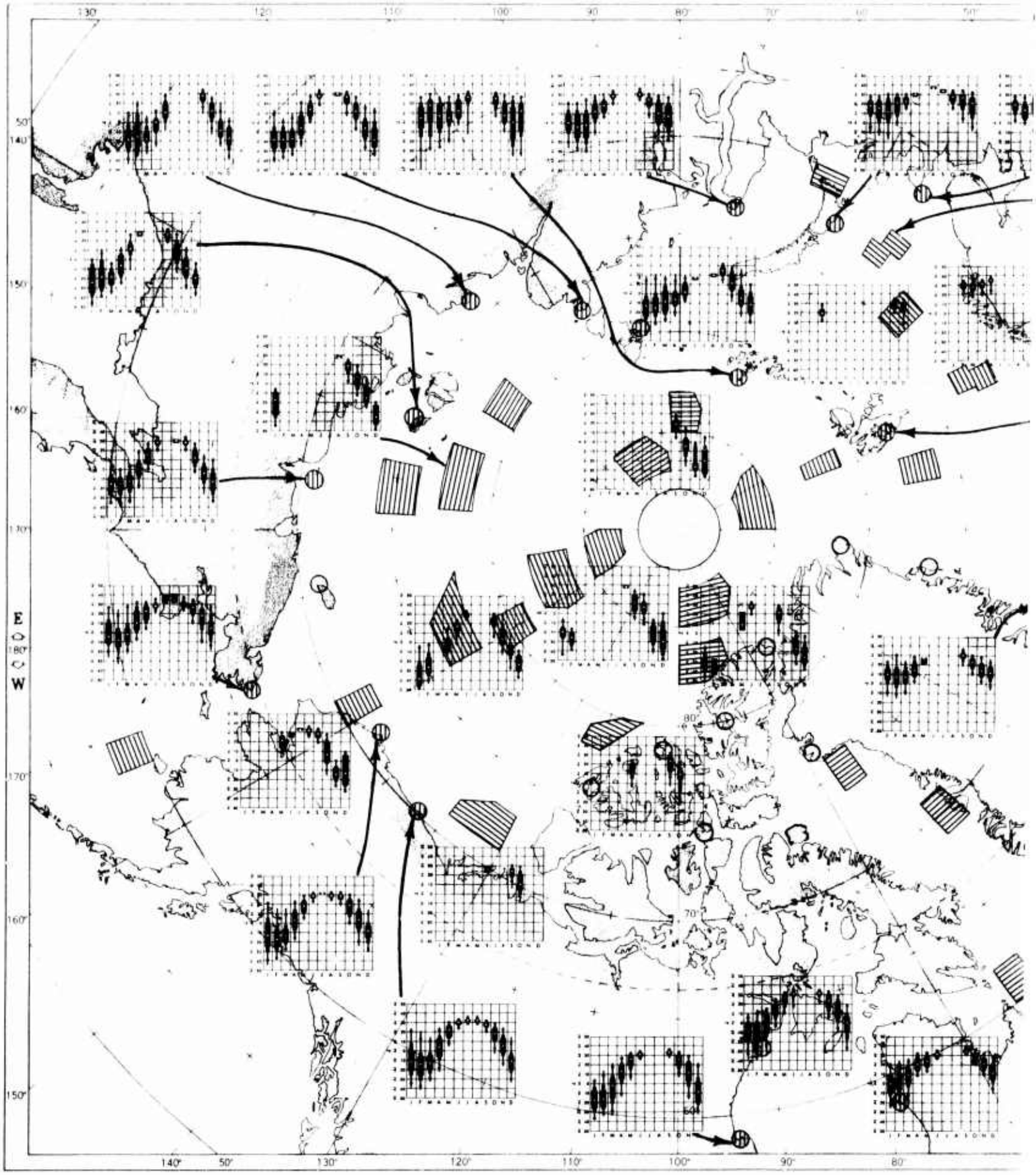


OSTROV VRANGELYA AMDERMA MALYYE KARMAKULY



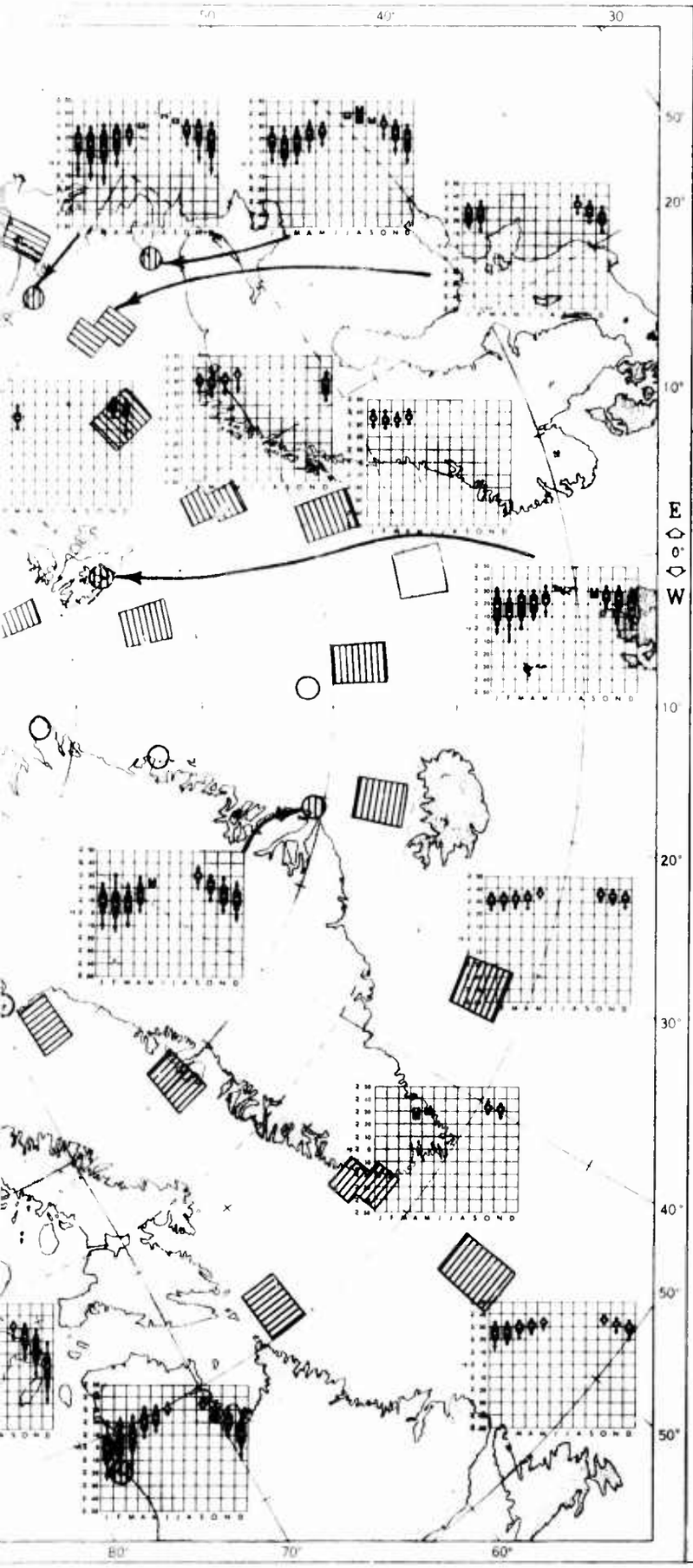


AIR TEMPERATURE DURIN



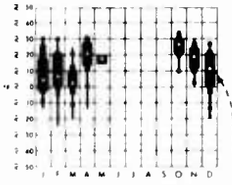
TURE DURING SNOW

CHART 3

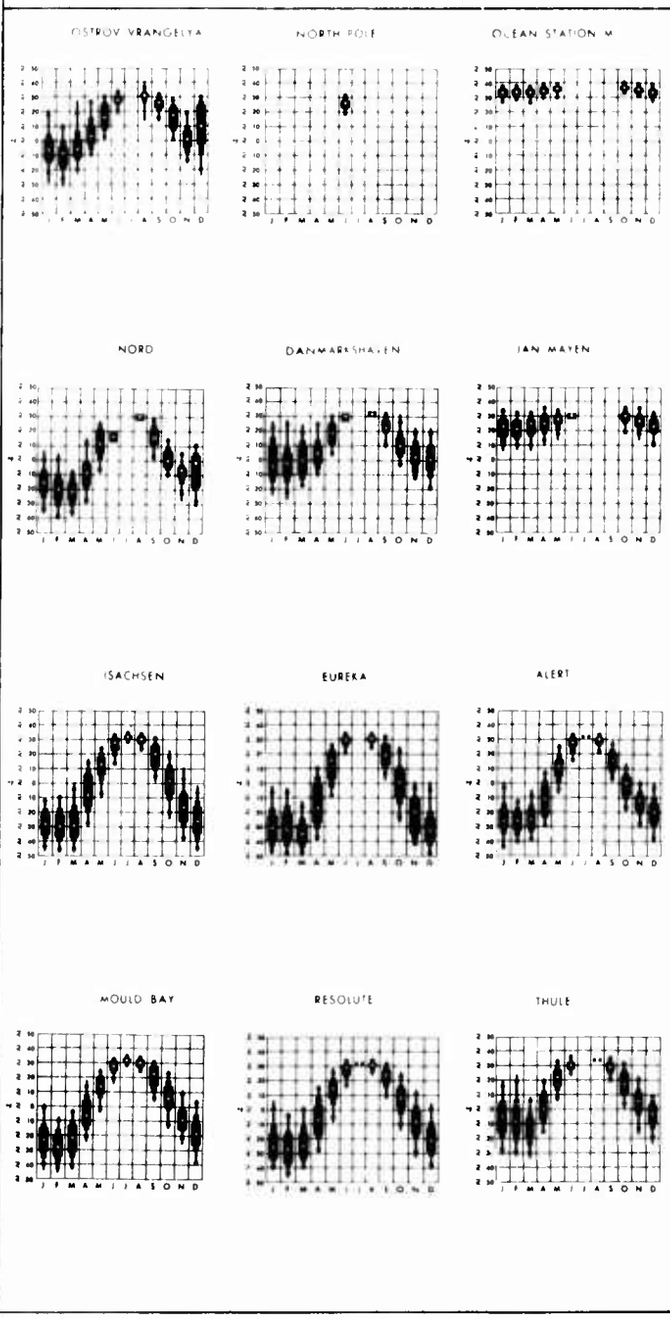


Distribution of Air Temperature observed during Snowfall

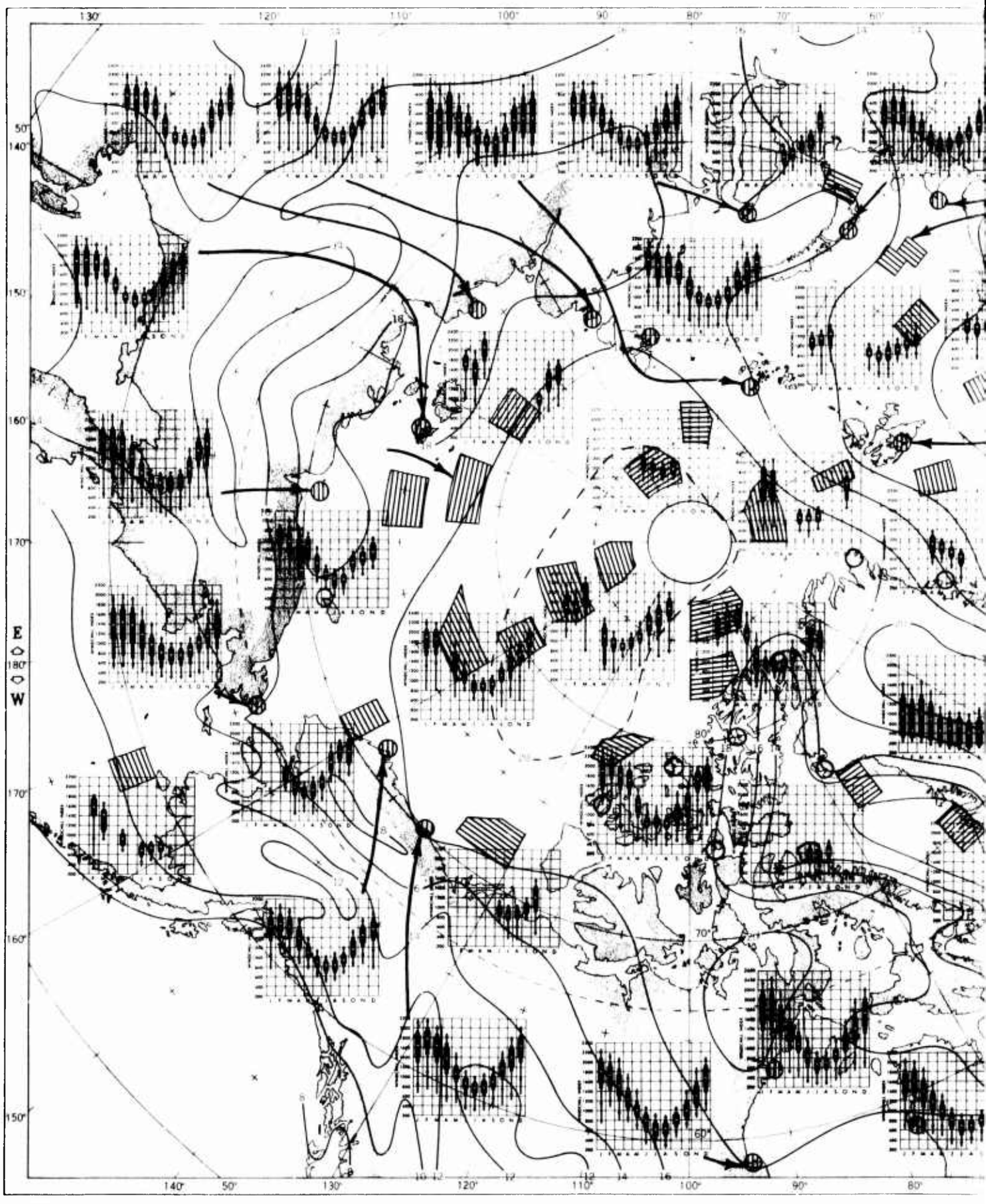
(a) Median
(b) 97 ½%, 95%, 84% 75%, 25%, 16%, 5% and 2 ½% were equal to or less than the temperatures indicated by



(In December median temperature with snow was 11°F, 2 ½% of the temperatures were 20°F or less, 5% 13°F or less, 16% 4°F or less, etc.)

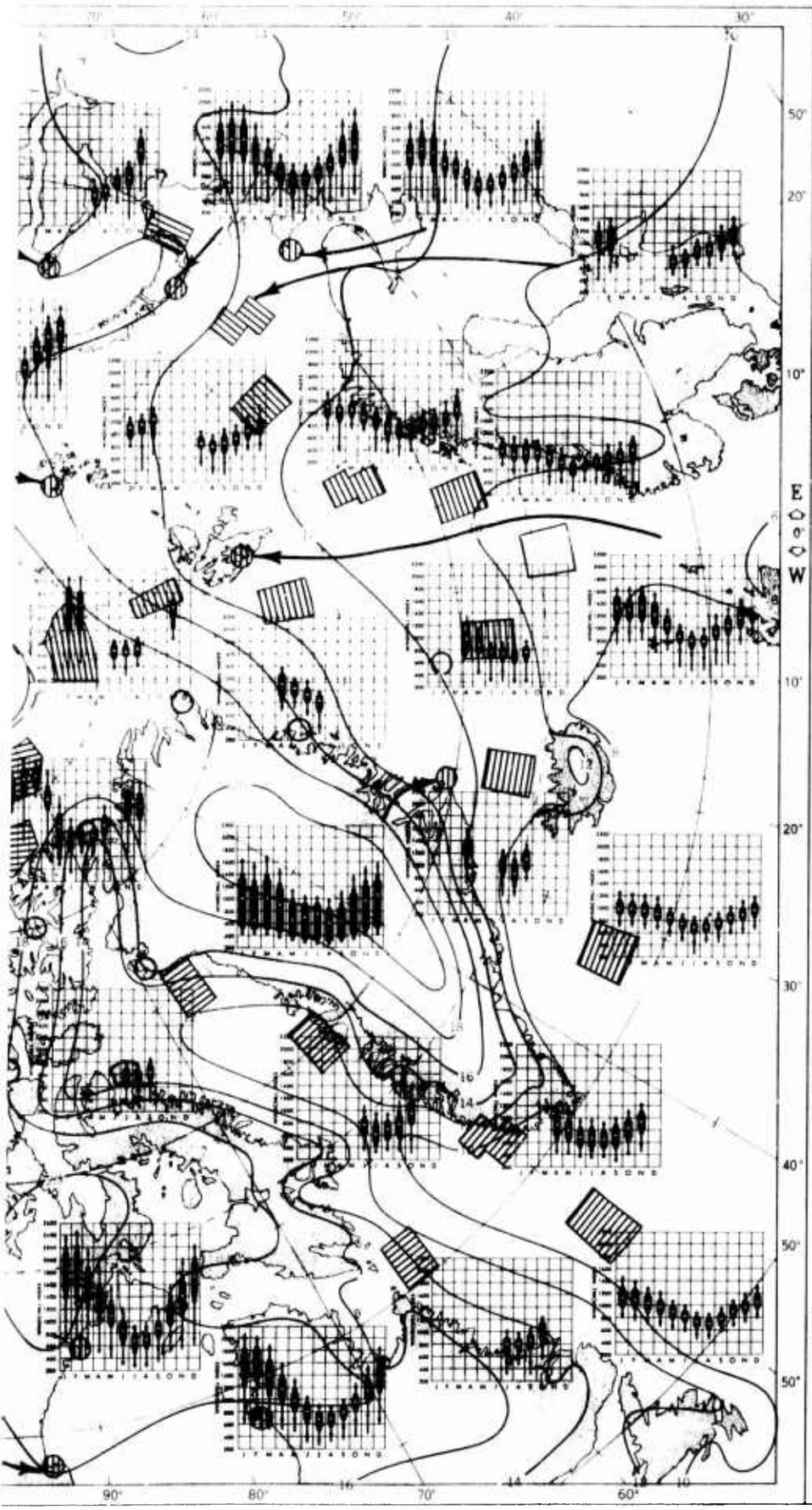


WIND-CHILL IN



WIND-CHILL INDEX

CHART 4

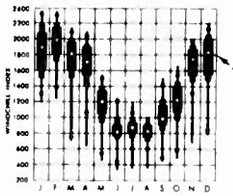


Mean Wind Chill Index (hundreds)* Coldest Month of the Year

Distribution of Wind Chill Index* by Month

(a) Median

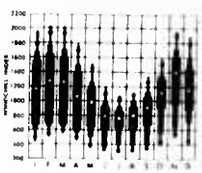
(b) 97½% 95% 84% 75% 25% 16% 5% and 2½% were equal to or less than the values indicated by



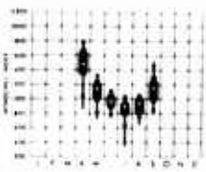
(In December the median Wind Chill Index was 1825, 2½% of the values were 780 or less, 16% were 1460 or less, etc.)

* KG CAL M² HR computed using 1965 Lyle and Pascal formula

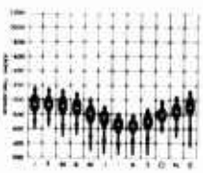
OSTROV VRANGELYA



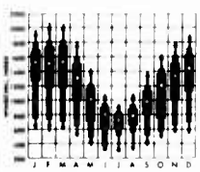
NORTH POLE



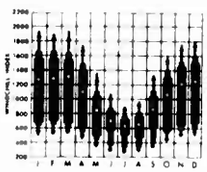
OCEAN STATION M



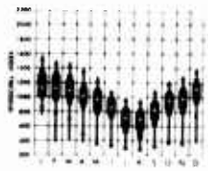
NORD



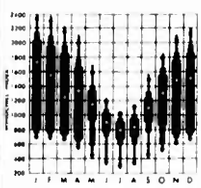
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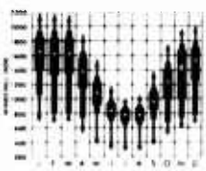
JAN MAYEN



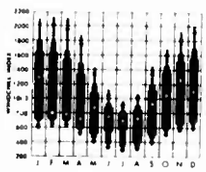
ISACHSEN



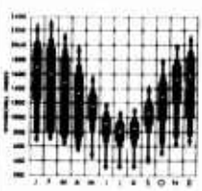
EUREKA



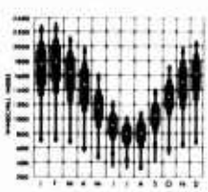
ALERT



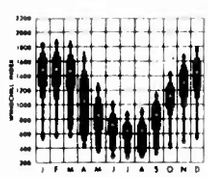
MOULD BAY



RESOLUTE



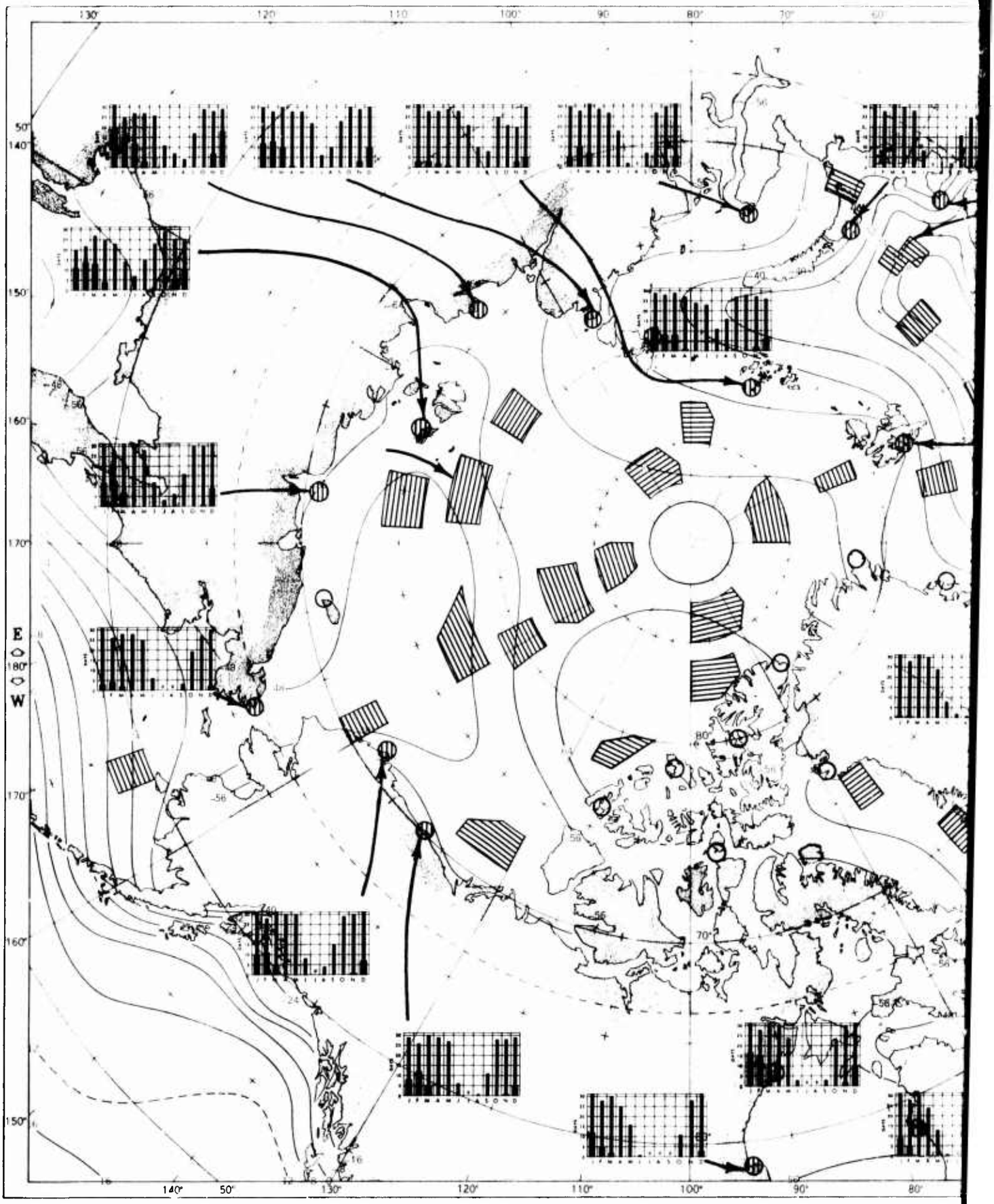
THULE



1

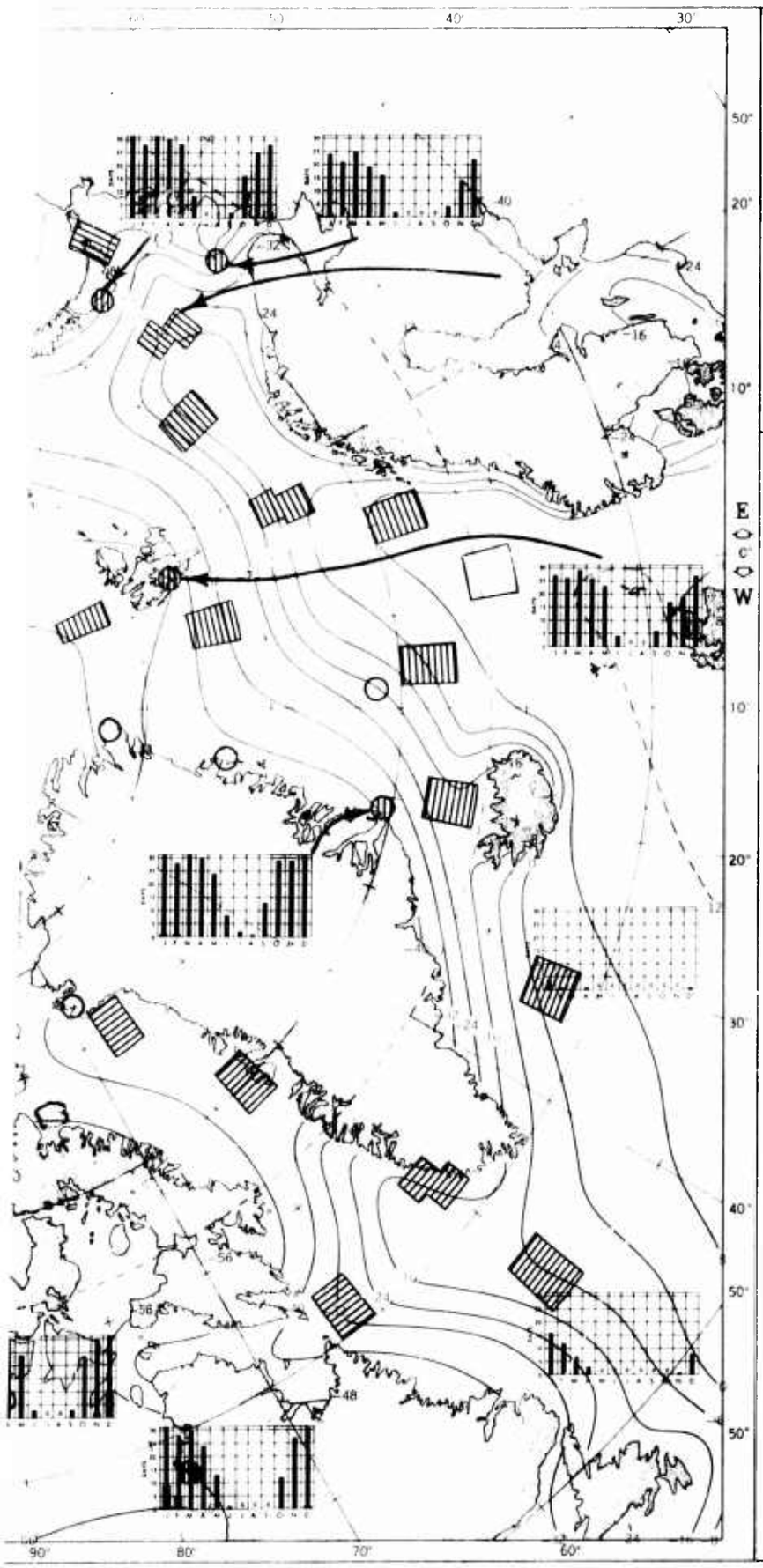
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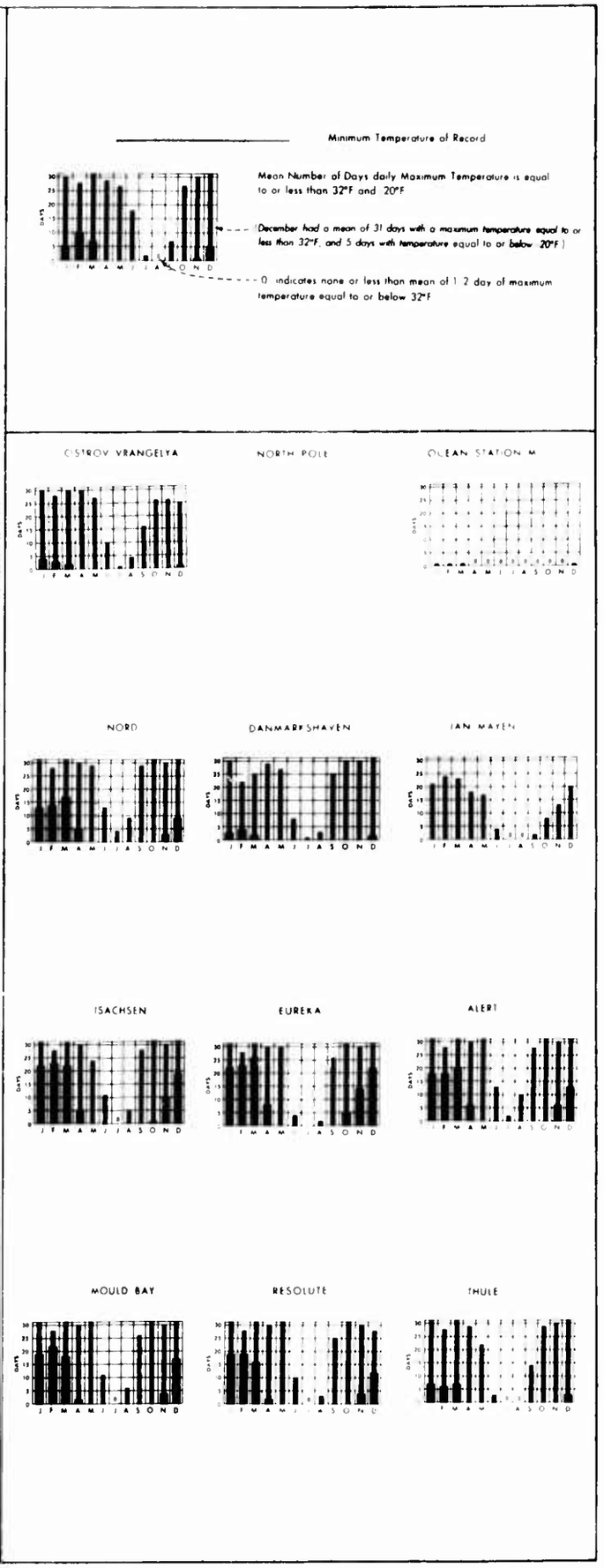
LOW AIR TEMPE



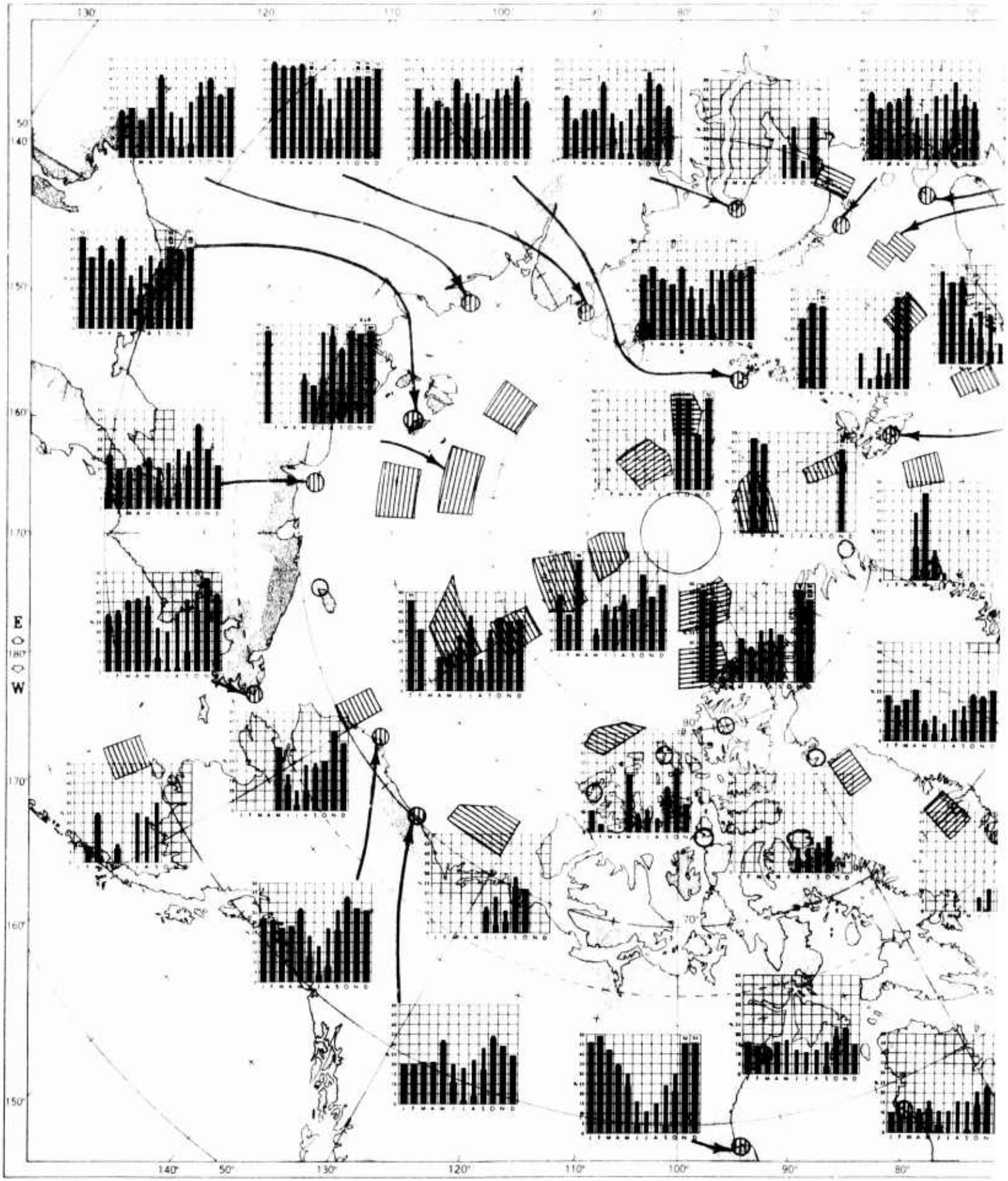
AIR TEMPERATURE

CHART 5



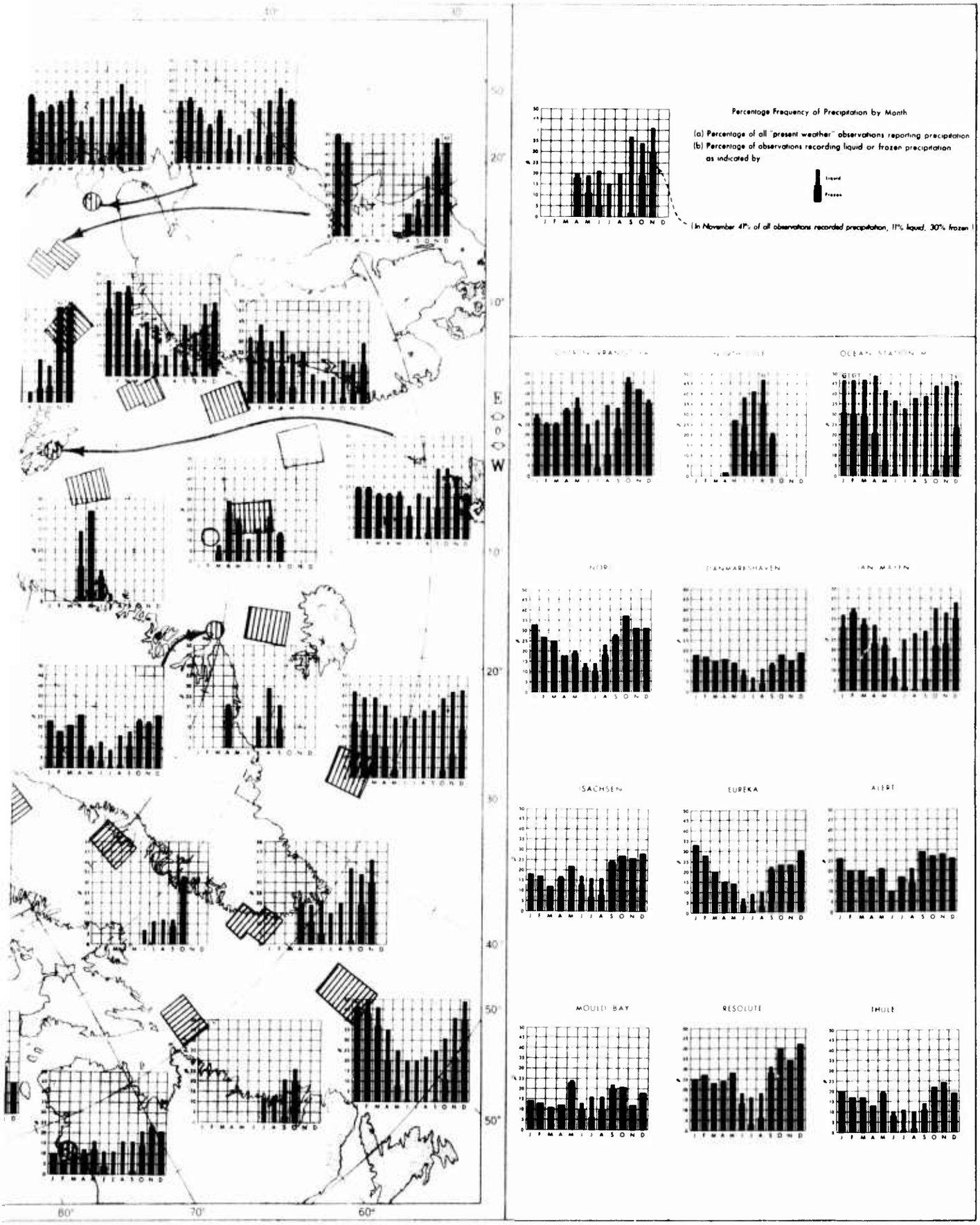


PRECIPITATIO

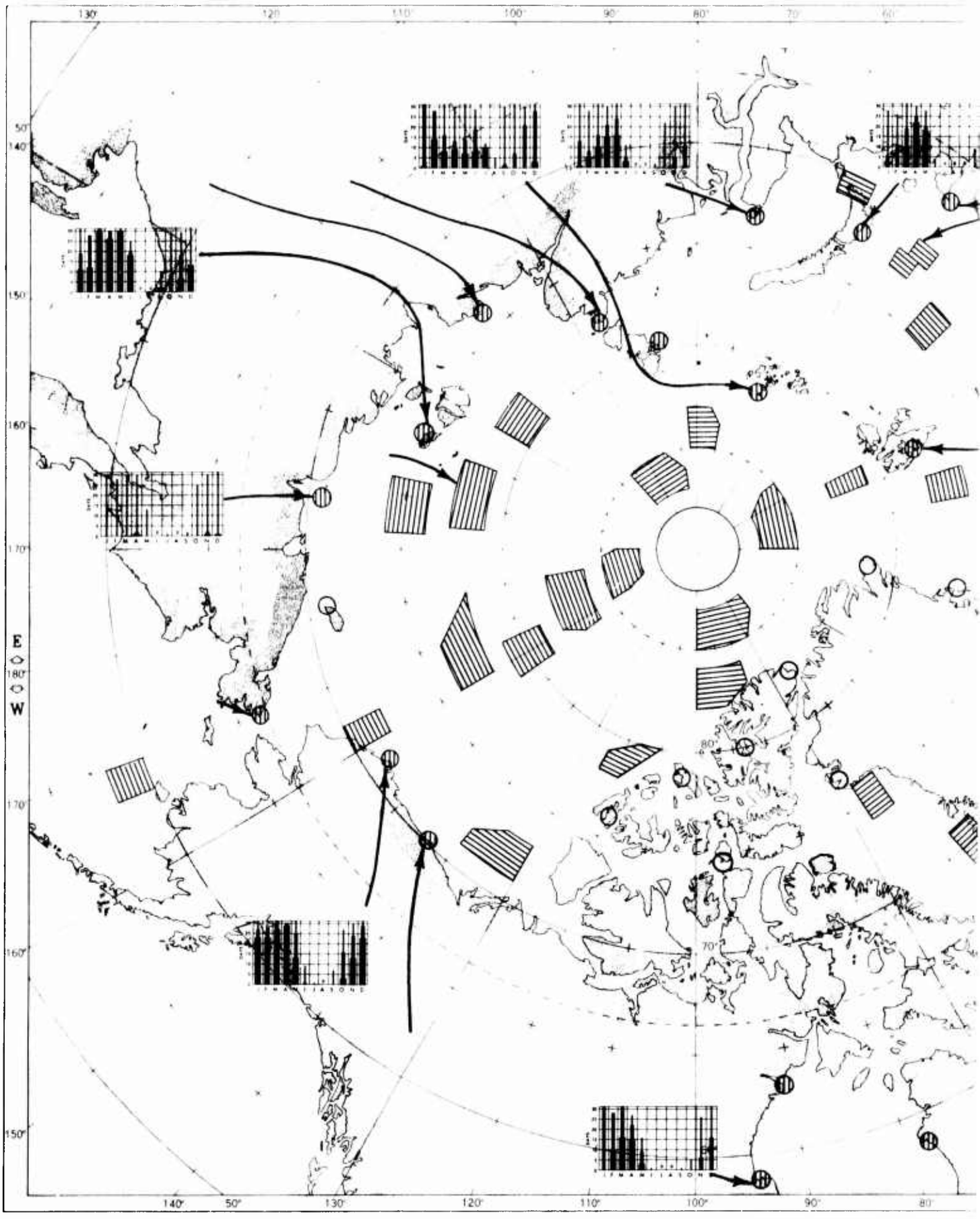


?ITATION

CHART 6

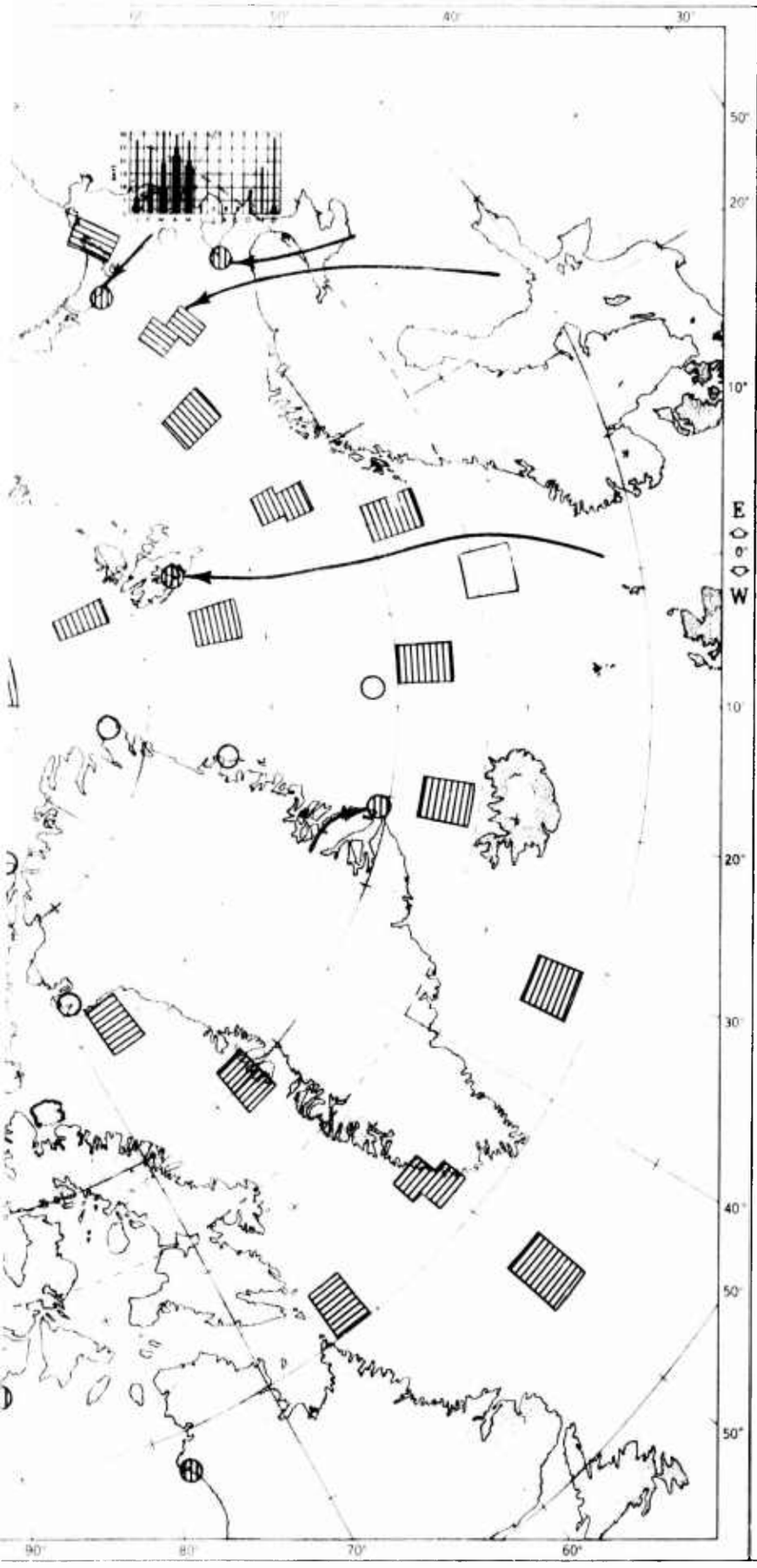


SNOW CO


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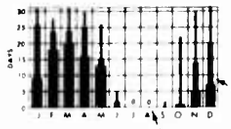
NOW COVER

CHART 7



Mean Number of Days with Snow on the Ground

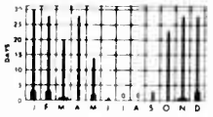
(a) Mean number of days per month when there was 1 inch or more, 6 inches or more, or 10 inches or more snow on the ground indicated by



(December had a mean of 31 days when snow cover was 1 inch or more, 20 days with 6 inches or more, and 7 days with 10 inches or more.)

0 indicates snow cover of less than 1 inch

OSTROV VRANGELYA



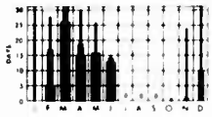
NORTH POLE

OCEAN STATION M

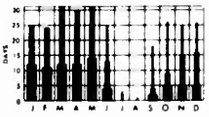
NORD

DANMARKSHAVEN

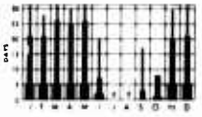
JAN MAYEN



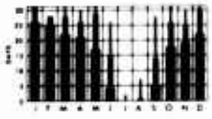
ISACHSEN



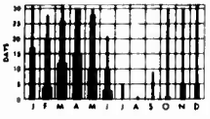
EUREKA



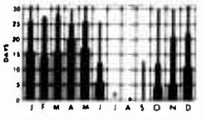
ALERT



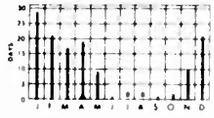
MOULD BAY



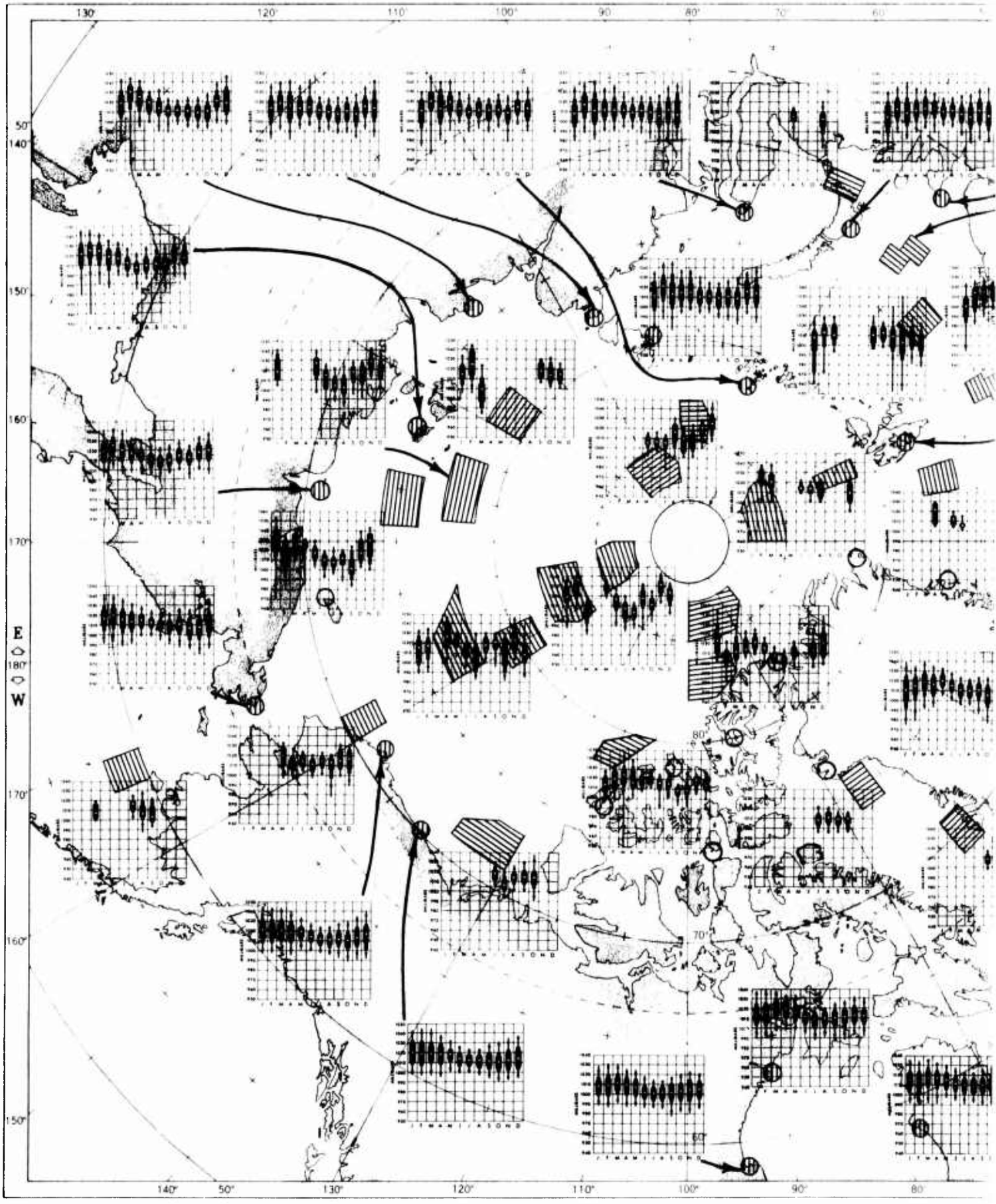
RESOLUTE



THULE



SEA LEVEL PRESS



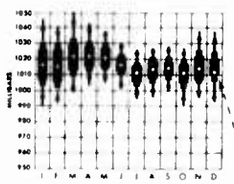
:VEL PRESSURE

CHART 8



Distribution of Sea Level Pressure by Month

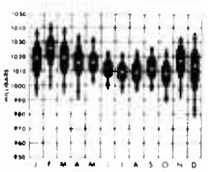
(a) Median
(b) 97 ½% 95% 84% 75% 25% 16% 5% and 2 ½% were equal to or less than the pressures indicated by



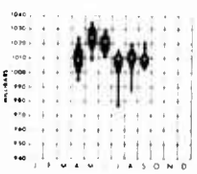


(In December the median Sea Level Pressure was 1012 millibars, 2½% of the pressures were 993 millibars or less, 5% were 996 millibars or less, 16 % were 1006 millibars or less, etc.)

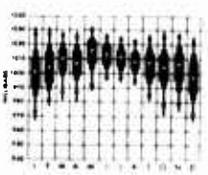
OSTROV VRANGEL'YA



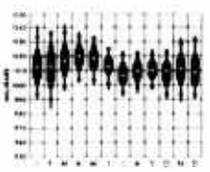
NORTH POLE



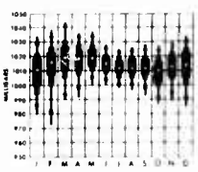
OCEAN STATION M



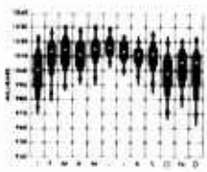
NORD



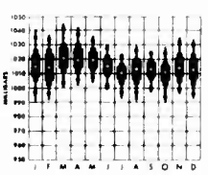
DANMARKSHAVEN



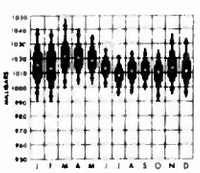
JAN MAYEN



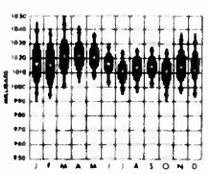
ISACHSEN



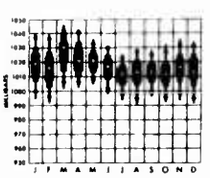
EUREKA



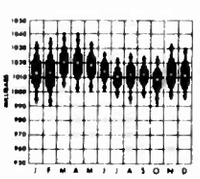
ALERT



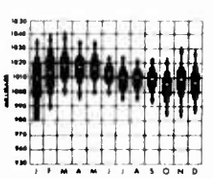
MOULD BAY



RESOLUTE



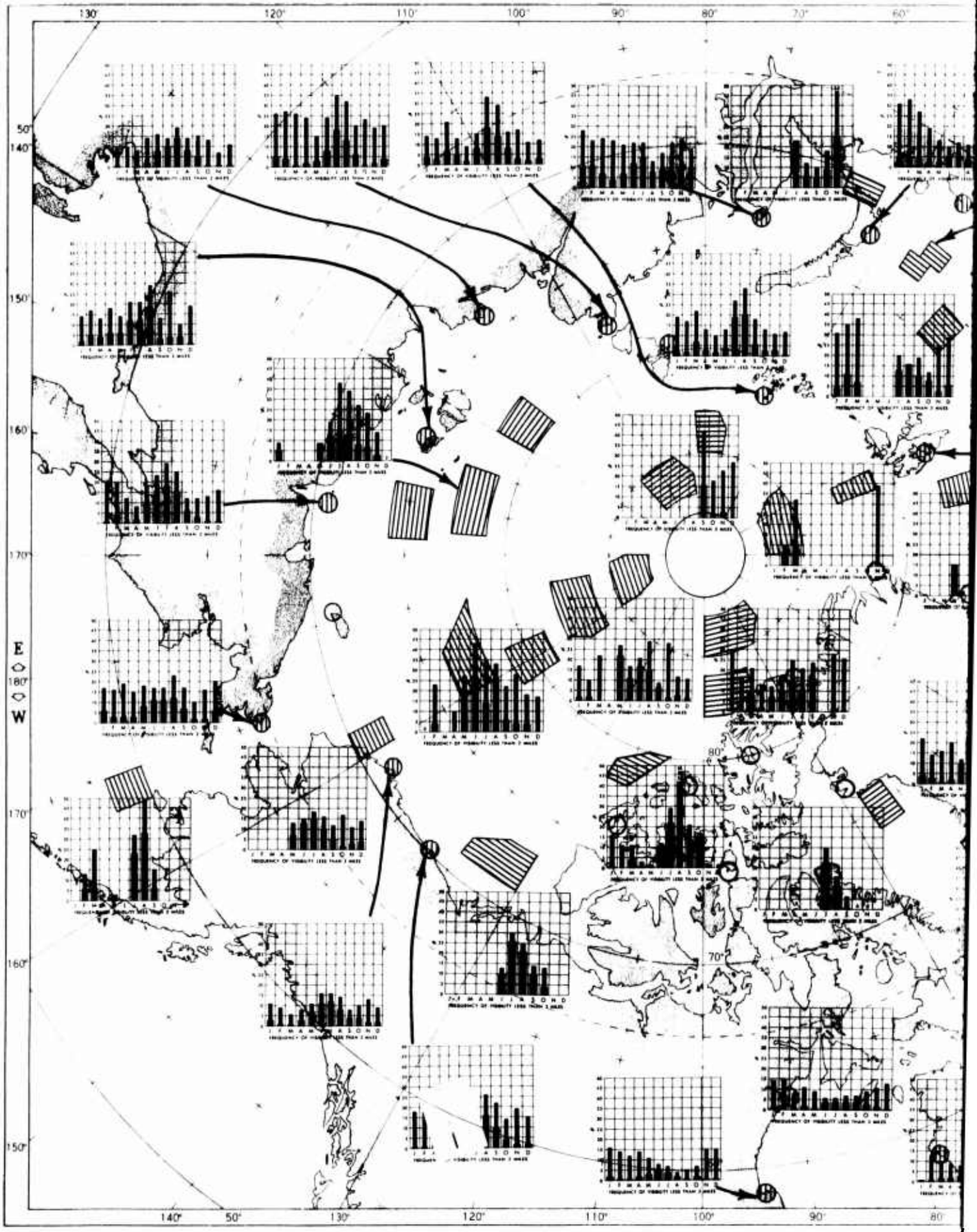
THULE



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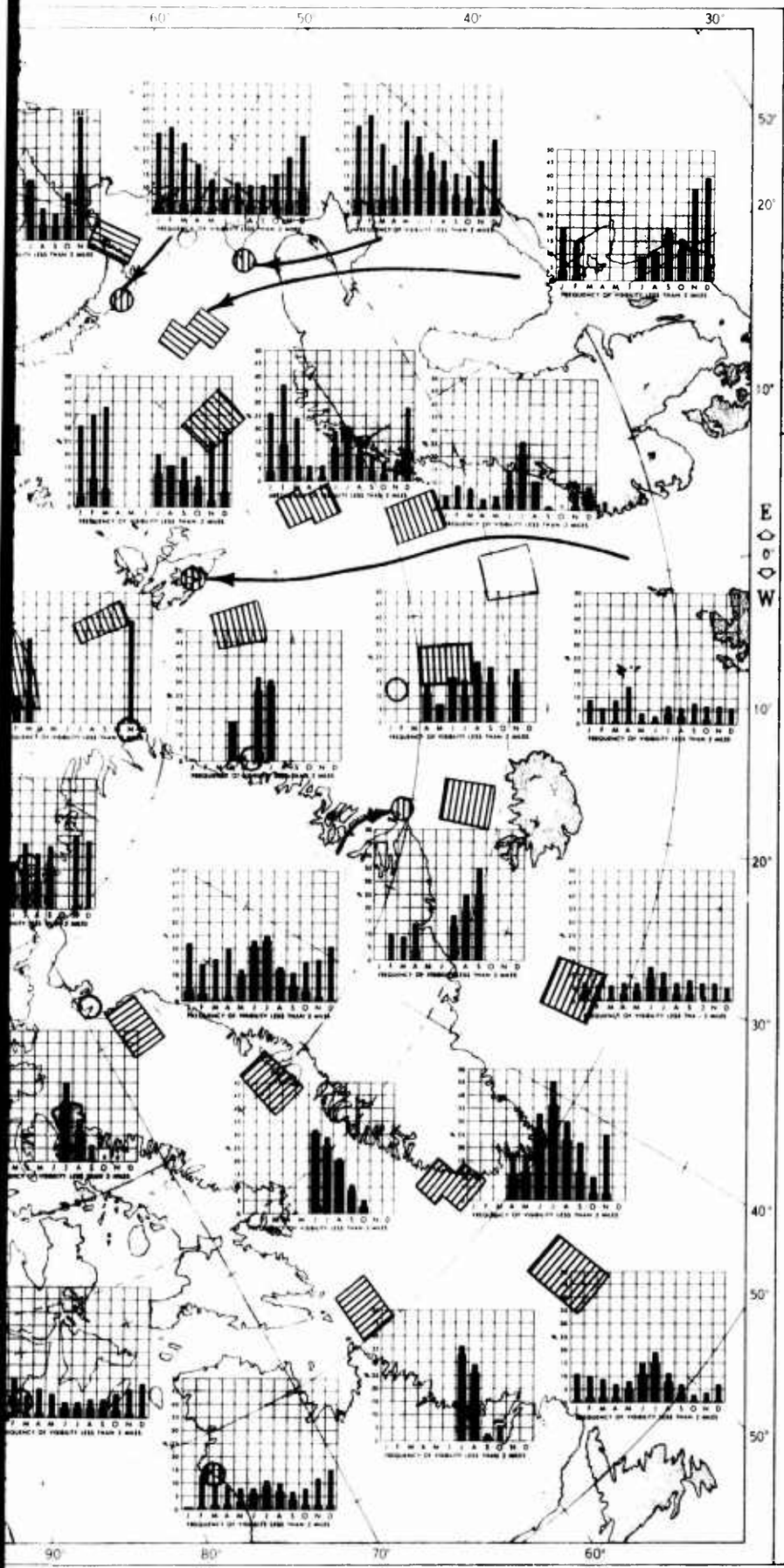
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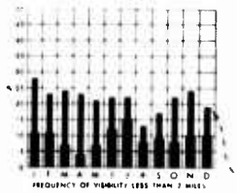
LOW VISIB


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J F M A M J J A S O N D

OW VISIBILITY

CHART 9



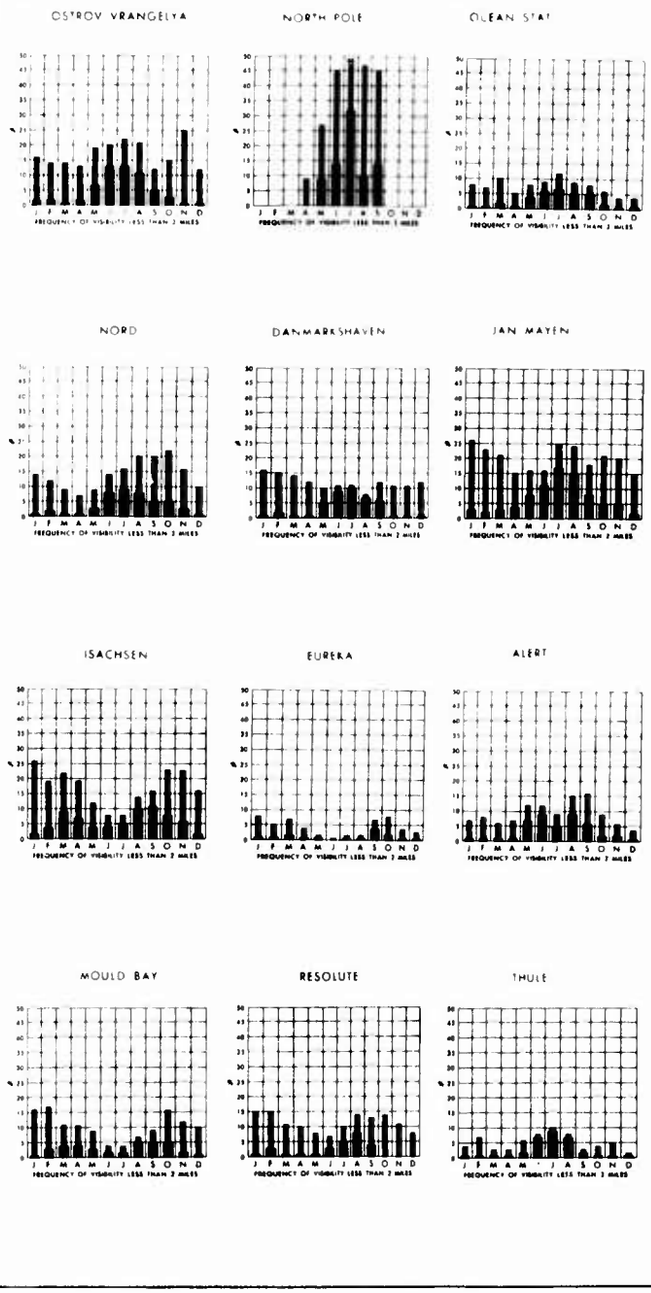


Percentage Frequency of Low Visibility by Month

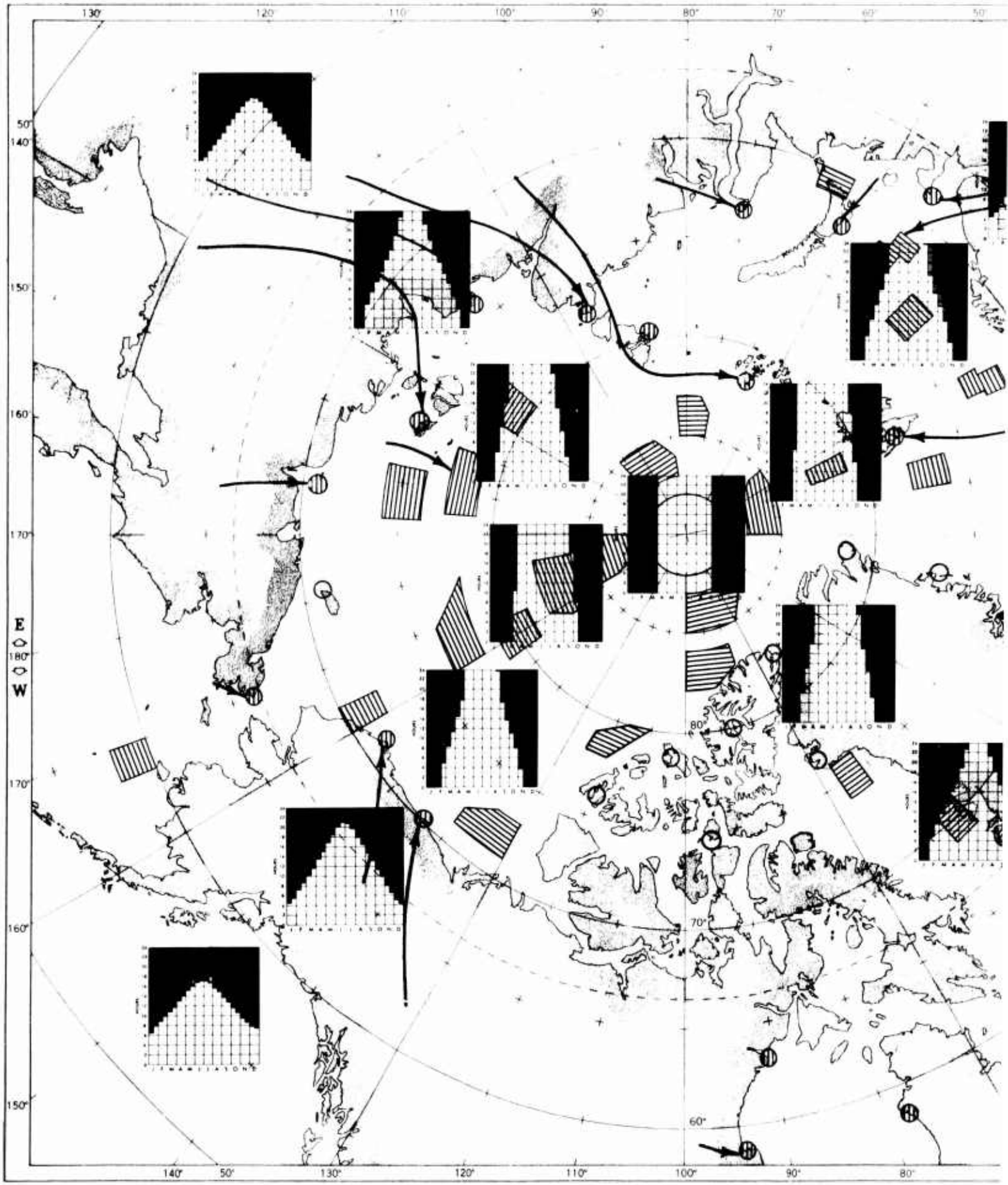
Percentage of all visibility (and present weather) observations reporting visibility less than 2 nautical miles as indicated by

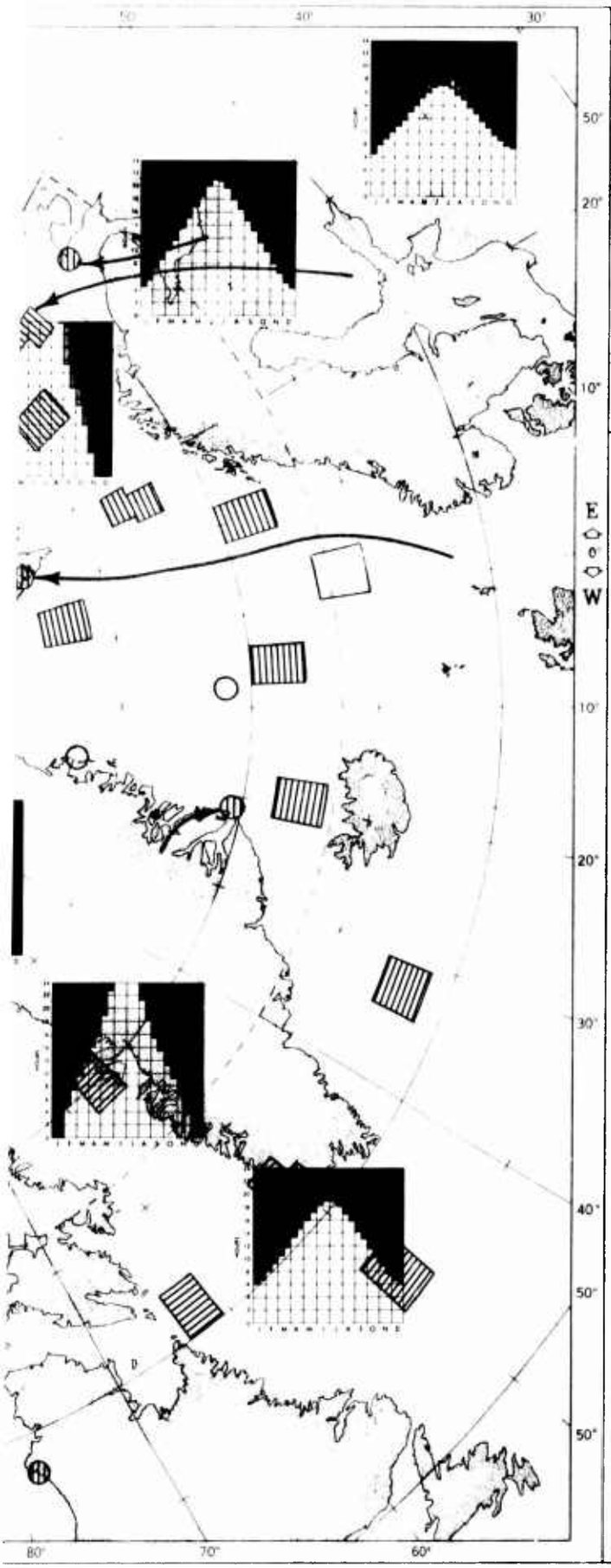


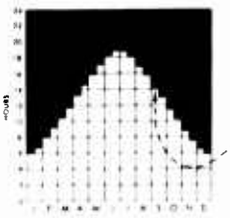
(In December 19% of all observations recorded visibility less than 2 miles, 10% accompanied by precipitation, 9% without precipitation.)



DAYLIGHT AND DA







Duration in hours of Daylight, Twilight and Darkness for the first and fifteenth day of each month at 5° latitude intervals

(At 60° N lat the 1st day of September has
14 hours, 15 minutes Duration Daylight
1 hour, 30 minutes Duration Twilight
8 hours, 15 minutes Duration Darkness)

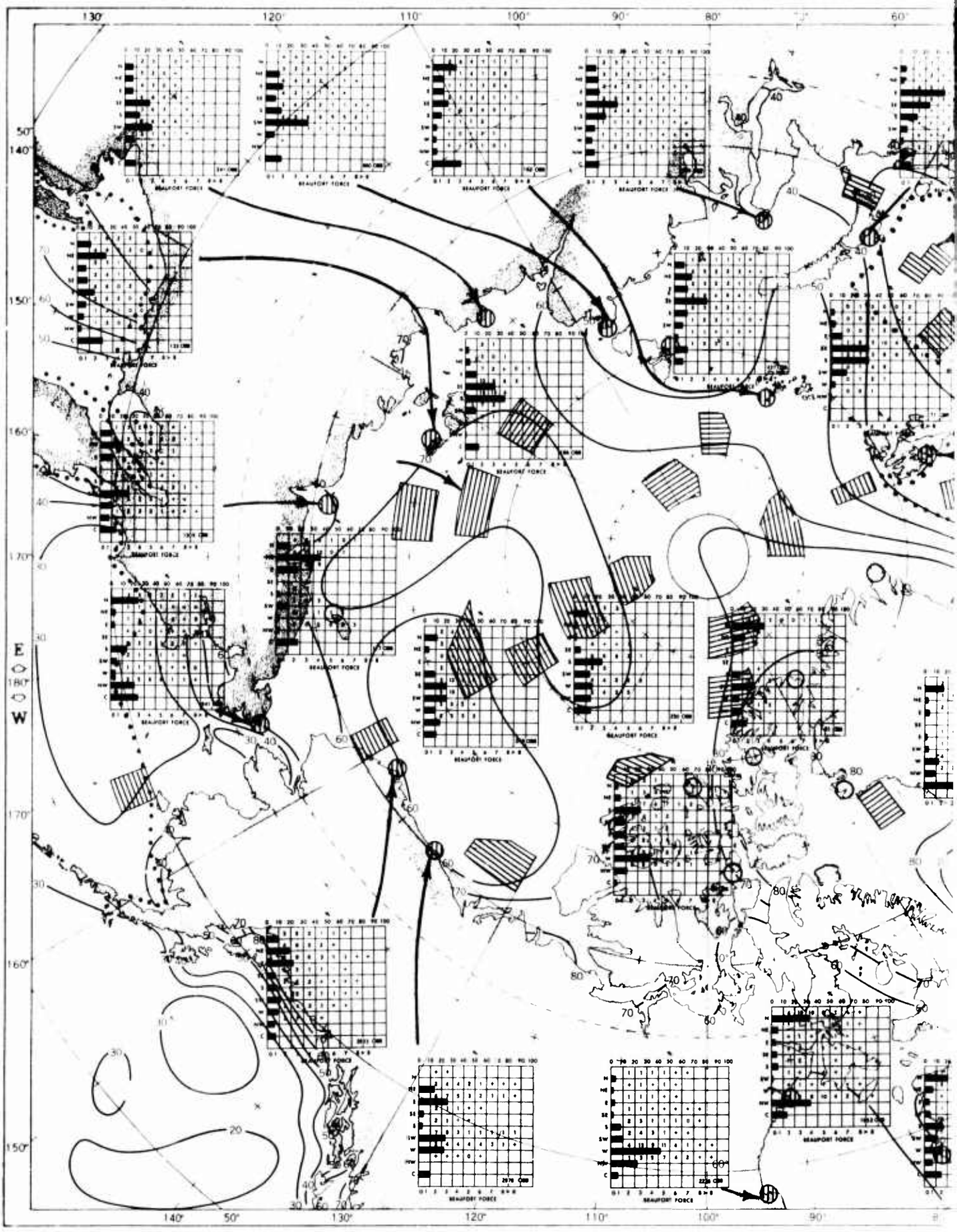
OSTROV VRANGELYA NORTH POLE OCEAN STATION M

NORD DANMARKSHAVEN JAN MAYEN

ISACHSEN EUREKA ALERT

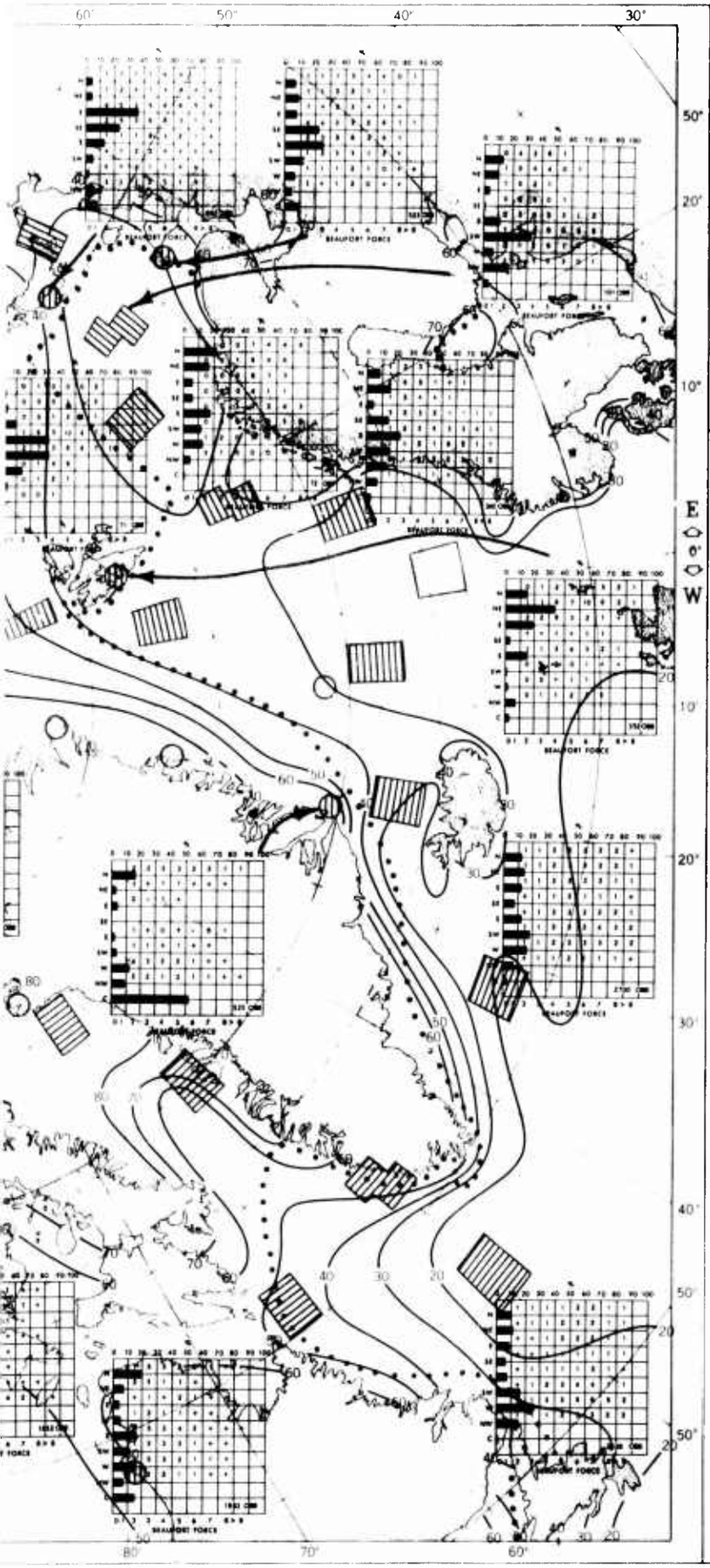
MOULD BAY RESOLUTE THULE

JANUARY SURFACE

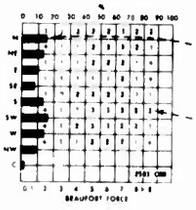


RFACE WIND

CHART 11



Percentage Frequency of Wind Speed Beaufort Force 3 or less (≤ 10 Knots)



Direction Frequency (Top Scale) Bars represent percentage frequency of wind observed from each direction (& calm)

– (14% of all winds were from N.)

Speed Frequency (Bottom Scale) percentage frequency of wind speed by Beaufort Force

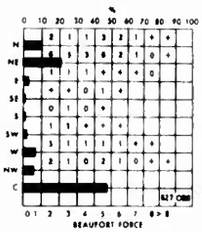
– (2% of all winds from SW were greater than Beaufort Force 8.)

All percentages rounded to nearest whole percent

Calm includes Beaufort Force 1 (0.3 knots)

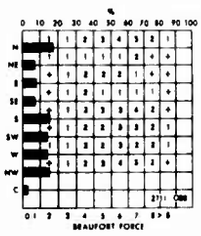
+ indicates less than 1/2 percent

OSTROV VRANGELYA

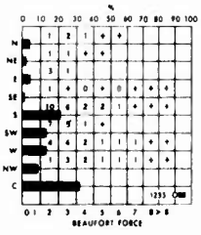


NORTH POLE

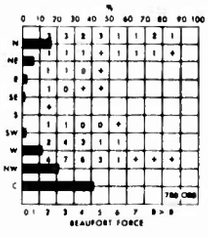
OCEAN STATION M



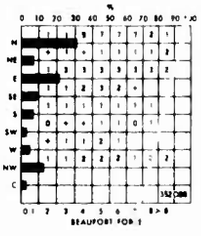
NORD



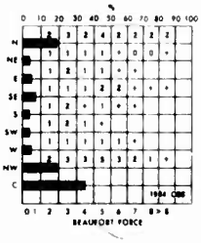
DANMARKSHAVEN



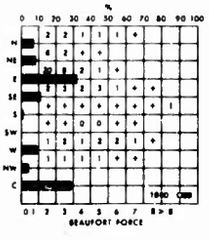
JAN MAYEN



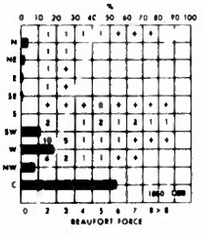
ISACHSEN



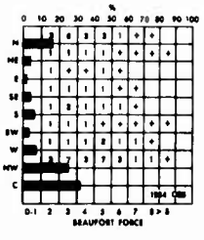
EUREKA



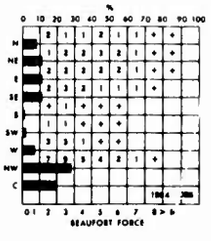
ALERT



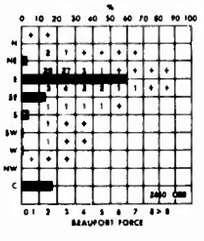
MOULD BAY



RESOLUTE



THULE



2

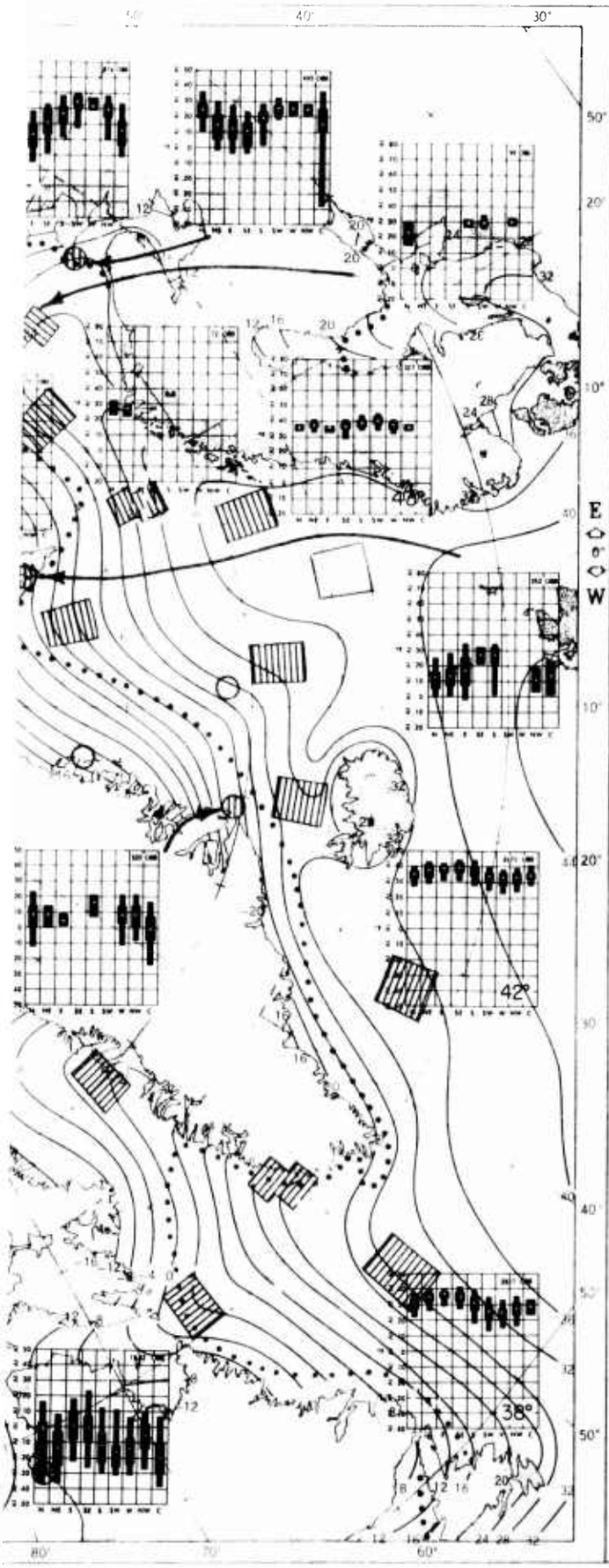
JANUARY

AIR TEMPERATURE BY WI

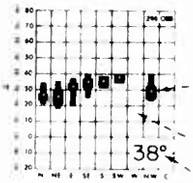


Y WIND DIRECTION

CHART 12



Mean Air Temperature °F



Distribution of Temperature Observed with each Wind Direction

(a) Mean

(b) 95%, 75% 25% and 5% of all temperatures were equal to or less than the temperatures indicated by

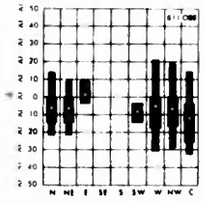
(With NW winds, the mean temperature was 29°F, 5% of the temperatures were 23°F or less, 25% were 24°F or less, etc.)

Mean temperatures and frequencies are omitted when number of observations was 10 or less

See chart 2 for temperature distribution disregarding wind direction

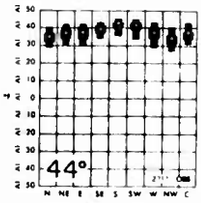
Mean Water Temperature (when data available)

OSTROV VRANGELYA

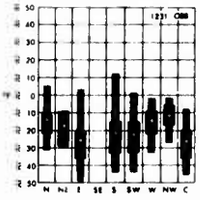


NORTH POLE

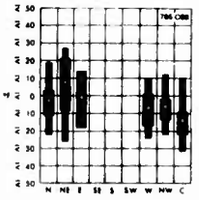
OCEAN STATION M



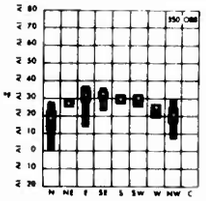
NORD



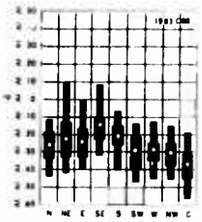
DANMARKSHAVEN



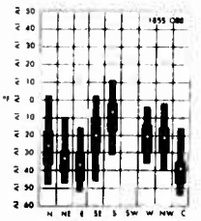
JAN MAYEN



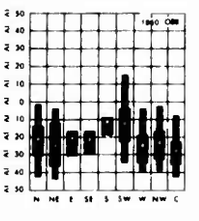
ISACHSEN



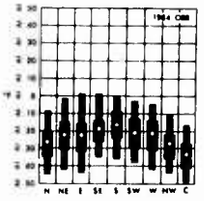
EUREKA



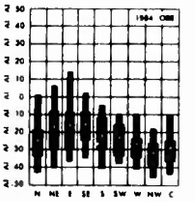
ALERT



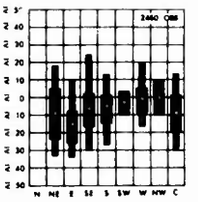
MOULD BAY



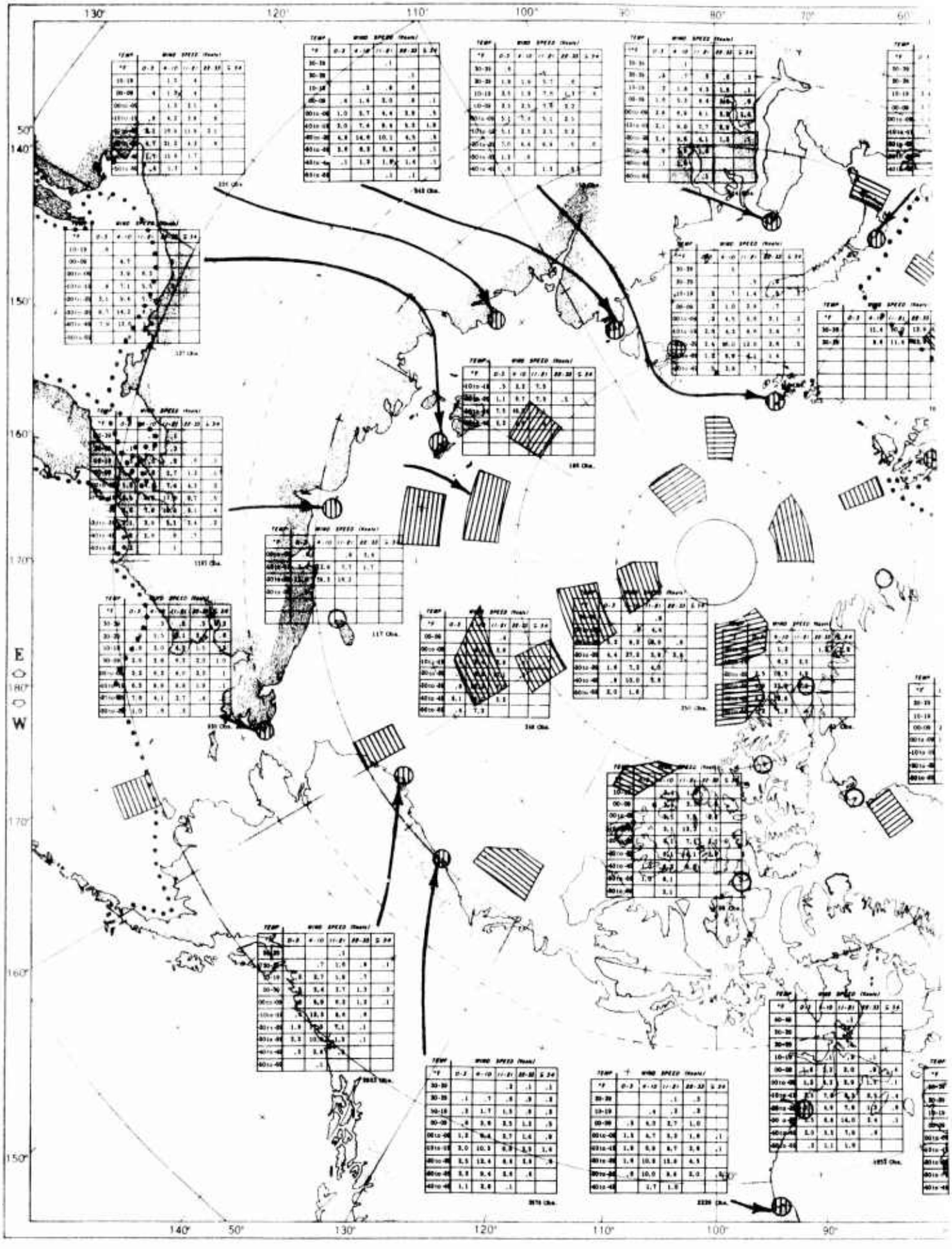
RESOLUTE



THULE

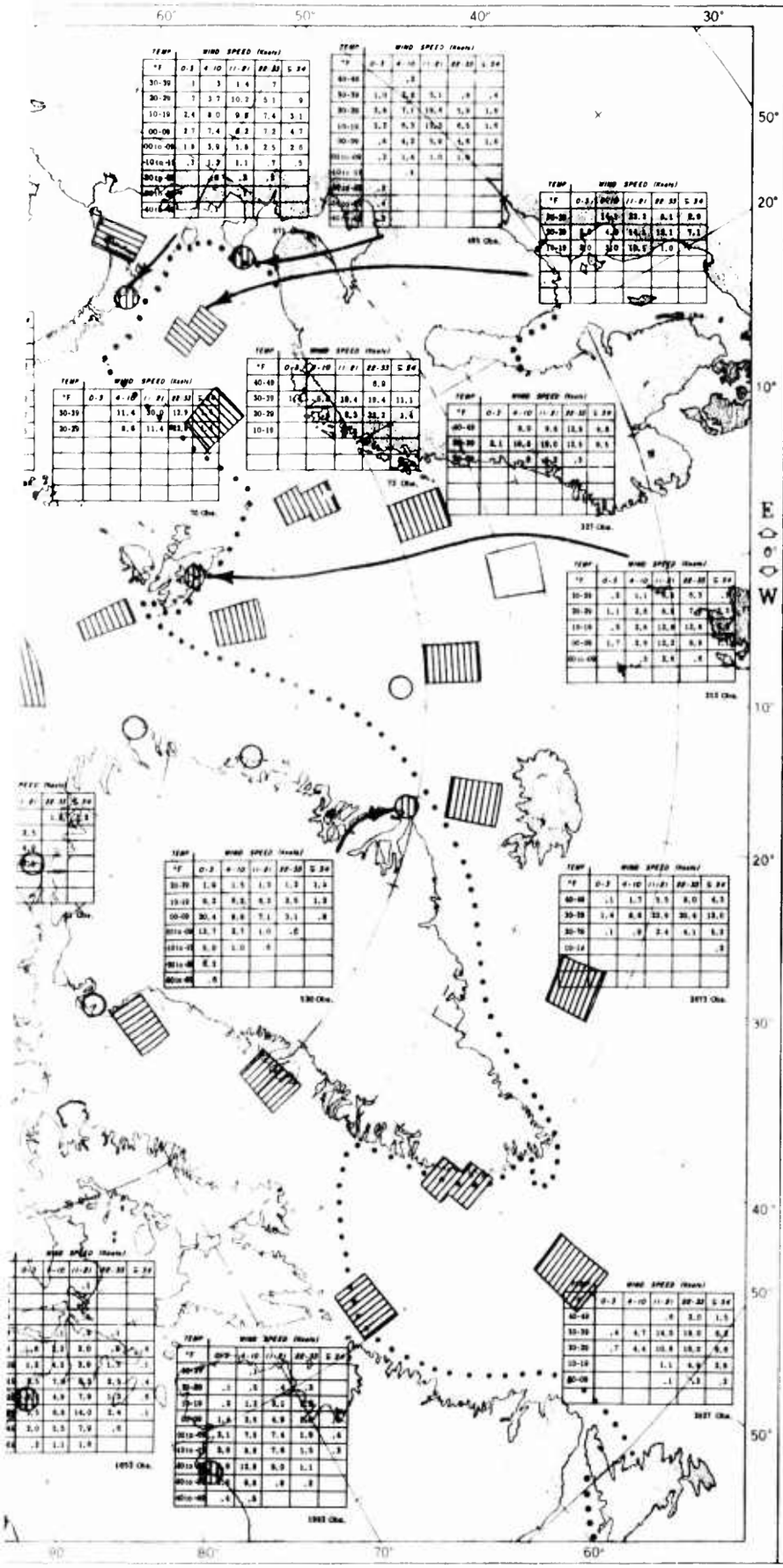


JANUARY AIR TEMPERATUR



RATURE vs. WIND SPEED

CHART 13



Percentage Frequency of simultaneous occurrence of specified Temperature groups and Wind Speed

(5% of the observations on which this tabulation was based reported wind speed 22-33 knots simultaneous with temperature from 10° through 19° F.)

OSTROV VRANGELYA

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
20-29	.5	.5	3	.2	
10-19	4.8	2.0	1.8	.5	
00-09	5.6	6.8	4.7	1.8	.2
00 to -09	7.0	5.2	8.0	2.1	.8
-10 to -19	13.6	7.2	4.9	3.4	.2
-20 to -29	12.9	3.6	.3	.3	
-30 to -39	4.2	.5	.3		

613 Obs.

NORTH POLE

OCEAN STATION M

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
40-49	.6	3.6	11.9	18.1	8.1
30-39	3.8	7.6	18.3	20.0	7.6
20-29		.2	1.0	1.6	.8

2711 Obs.

NORD

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39		.2	.1		
10-19	.2	.5	.7	.4	.2
00-09	.7	2.0	1.1	.9	.1
00 to -09	1.5	4.0	3.2	2.2	.2
-10 to -19	6.3	11.9	6.-	.9	.6
-20 to -29	10.1	16.3	2.1	.3	.1
-30 to -39	9.4	9.9	.2		
-40 to -49	3.8	3.2			
-50 to -59	.3	.4	.1		

1331 Obs.

DANMARKSHAVEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39				.3	
30-39	.4	.8	.6	1.0	.1
10-19	1.9	1.7	1.6	1.3	1.0
00-09	3.9	5.0	4.3	1.6	1.1
00 to -09	7.0	6.8	6.0	1.8	1.4
-10 to -19	19.4	10.7	3.7	.6	.0
-20 to -29	11.0	3.6	1.8		
-30 to -39	1.7	.1			
-40 to -49	.4				

786 Obs.

JAN MAYEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
40-49				.3	.3
30-39	.6	3.1	12.3	13.6	8.9
20-29	1.7	8.1	11.1	8.0	5.1
10-19	.3	1.7	10.3	8.3	4.0
00-09		.6	.3	3.1	.3

350 Obs.

ISACHSEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
20-29				.1	
10-19	.1	.1	.2	.3	.1
00-09	.1	.3	.5	.5	.3
00 to -09	.3	.4	1.0	.8	.4
-10 to -19	1.8	2.7	6.9	3.1	1.7
-20 to -29	5.8	7.7	8.1	4.5	1.8
-30 to -39	13.7	8.9	5.8	2.0	1.0
-40 to -49	8.8	3.8	2.8	.9	.1
-50 to -59	4.2	.4	.2		
-60 to -69	.5				

1884 Obs.

EUREKA

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39	.1		.1		
30-2	.3	.3	.2	.1	
10-19	.2	.3	.1	.1	
00-09		.8	.4	.3	
00 to -09	.5	1.7	2.3	.6	.0
-10 to -19	1.1	4.4	3.5	2.0	
-20 to -29	2.7	8.8	5.1	1.1	.1
-30 to -39	7.1	14.7	3.8	1.0	.1
-40 to -49	13.0	15.8	.3	.1	
-50 to -59	3.8	4.0	.1		

1855 Obs.

ALERT

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39				.1	.1
30-29	.1	.1	.2	.2	.1
10-19	.3	.4	.1	.3	
00-09	.8	.3	.4	.8	.5
00 to -09	2.4	1.9	.8	.7	1.1
-10 to -19	6.3	5.3	3.0	1.7	1.3
-20 to -29	17.6	9.1	1.5	1.1	.7
-30 to -39	11.6	11.5	.8	.4	.1
-40 to -49	5.5	2.4	.1	.1	
-50 to -59	.3				

1880 Obs.

MOULD BAY

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
10-19			.1	.1	
00-09	.2	.7	.8	.1	.1
00 to -09	.5	1.1	2.3	1.4	.1
-10 to -19	1.8	5.2	7.4	3.4	.6
-20 to -29	8.0	10.1	7.0	3.4	.5
-30 to -39	11.5	9.8	5.7	1.9	.1
-40 to -49	8.8	4.7	1.5	.5	.1
-50 to -59	.8	.1			

1984 Obs.

RESOLUTE

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39			.1	.1	.2
10-19	.1	.1	.3	.6	.4
00-09	.2	.5	1.0	.8	.5
00 to -09	.8	2.4	3.2	1.7	.6
-10 to -19	2.0	5.5	5.0	4.0	.4
-20 to -29	5.0	10.8	8.0	2.9	.1
-30 to -39	8.4	16.2	6.8	2.1	.2
-40 to -49	2.8	5.0	2.3	.3	
-50 to -59	.1	.3			

1984 Obs.

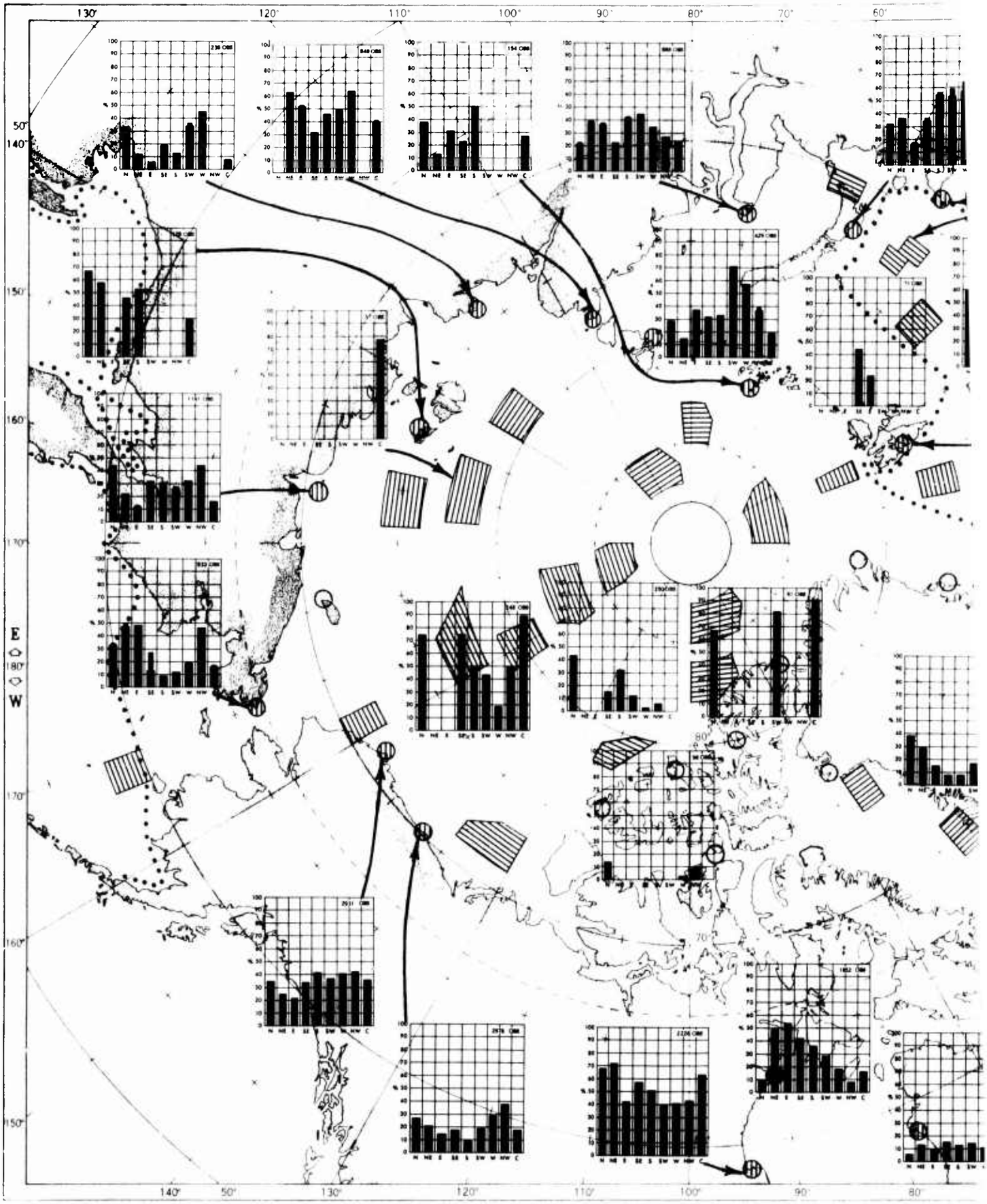
THULE

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39		.1	.2	.2	
30-29	.2	.5	.7	.3	
10-19	1.5	2.5	1.3	.3	.3
00-09	3.3	6.5	2.1	.9	.3
00 to -09	3.7	10.8	2.8	.6	.3
-10 to -19	4.4	17.9	3.4	.3	
-20 to -29	3.5	21.5	.9		
-30 to -39	.7	9.0	.2		

3480 Obs.

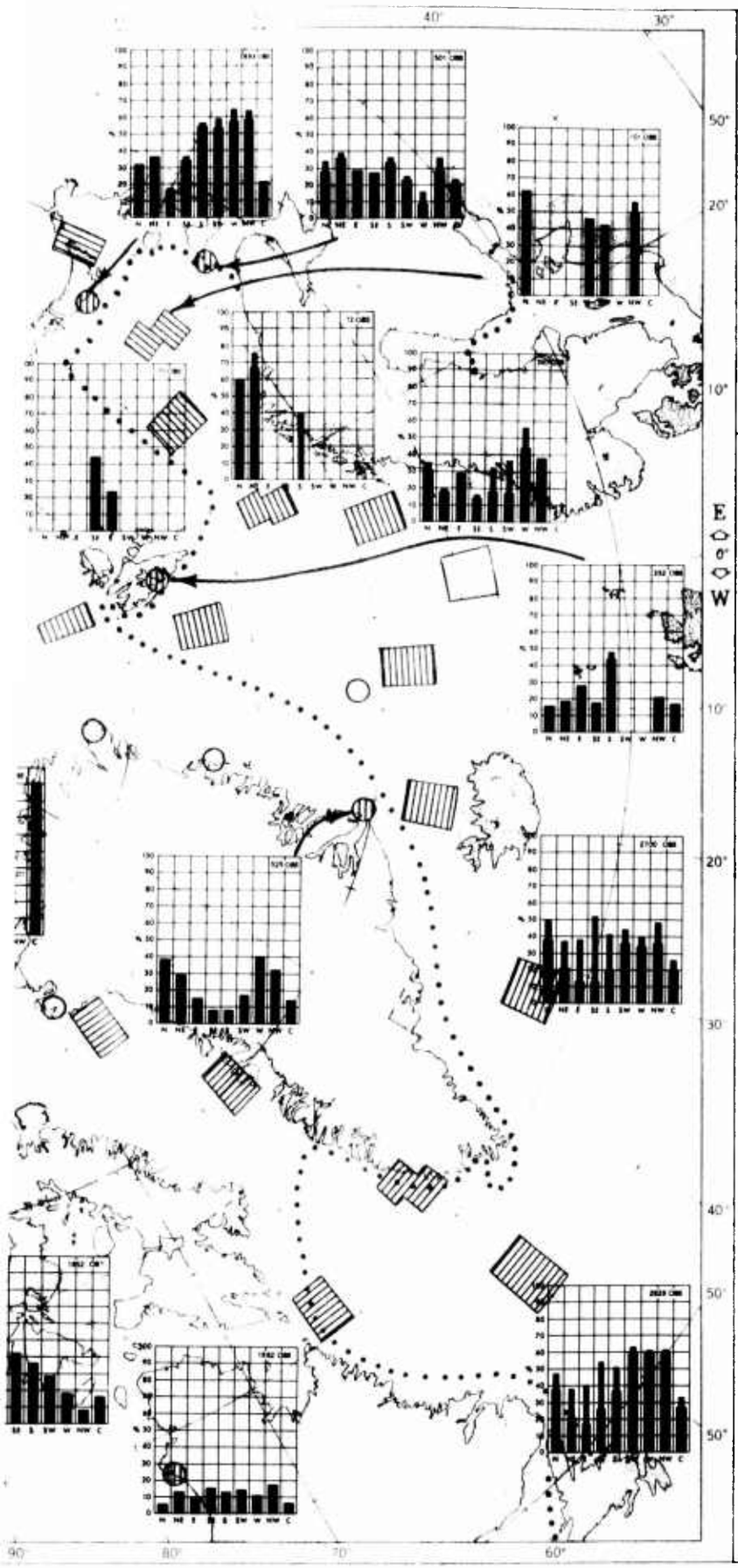
2

JANUARY PRECIPITATION BY WI



N BY WIND DIRECTION

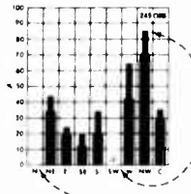
CHART 14



Percentage Frequency of Precipitation by Wind Direction

(a) Percentage of all present weather (and wind) observations reporting precipitation

(b) Percentage of observations recording liquid or frozen precipitation as indicated by

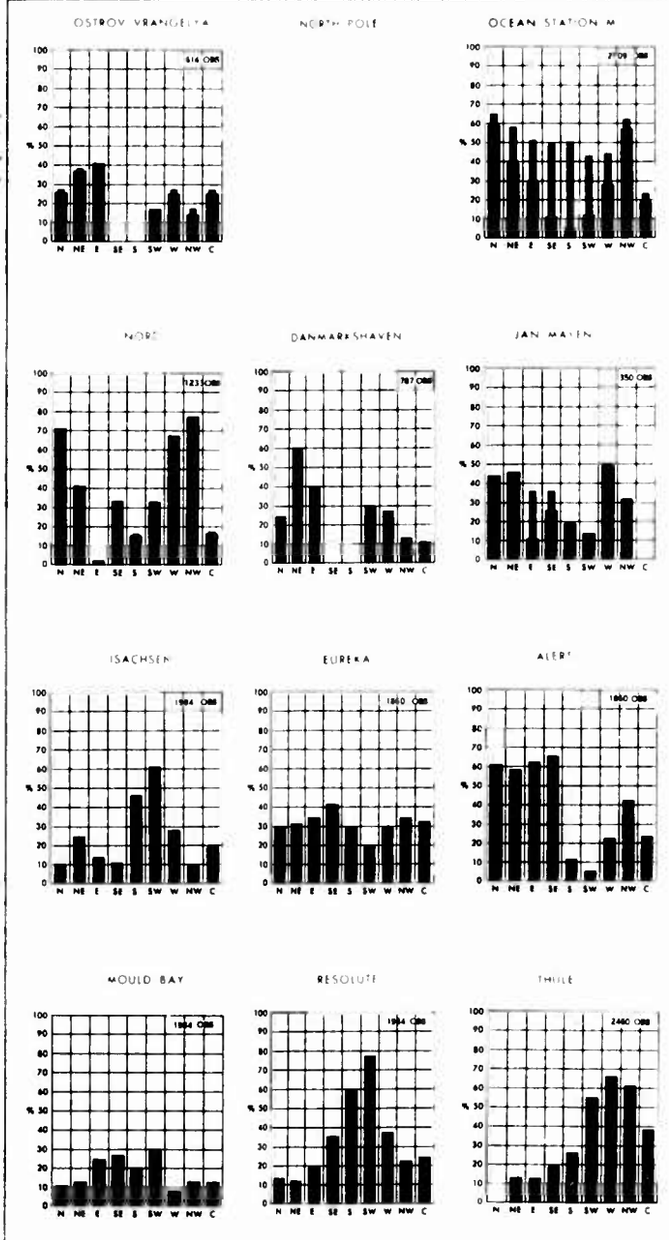


(85% of all NW winds were accompanied by precipitation 15% frozen, 70% liquid)

0 replaces bar when no precipitation was observed with winds from a direction

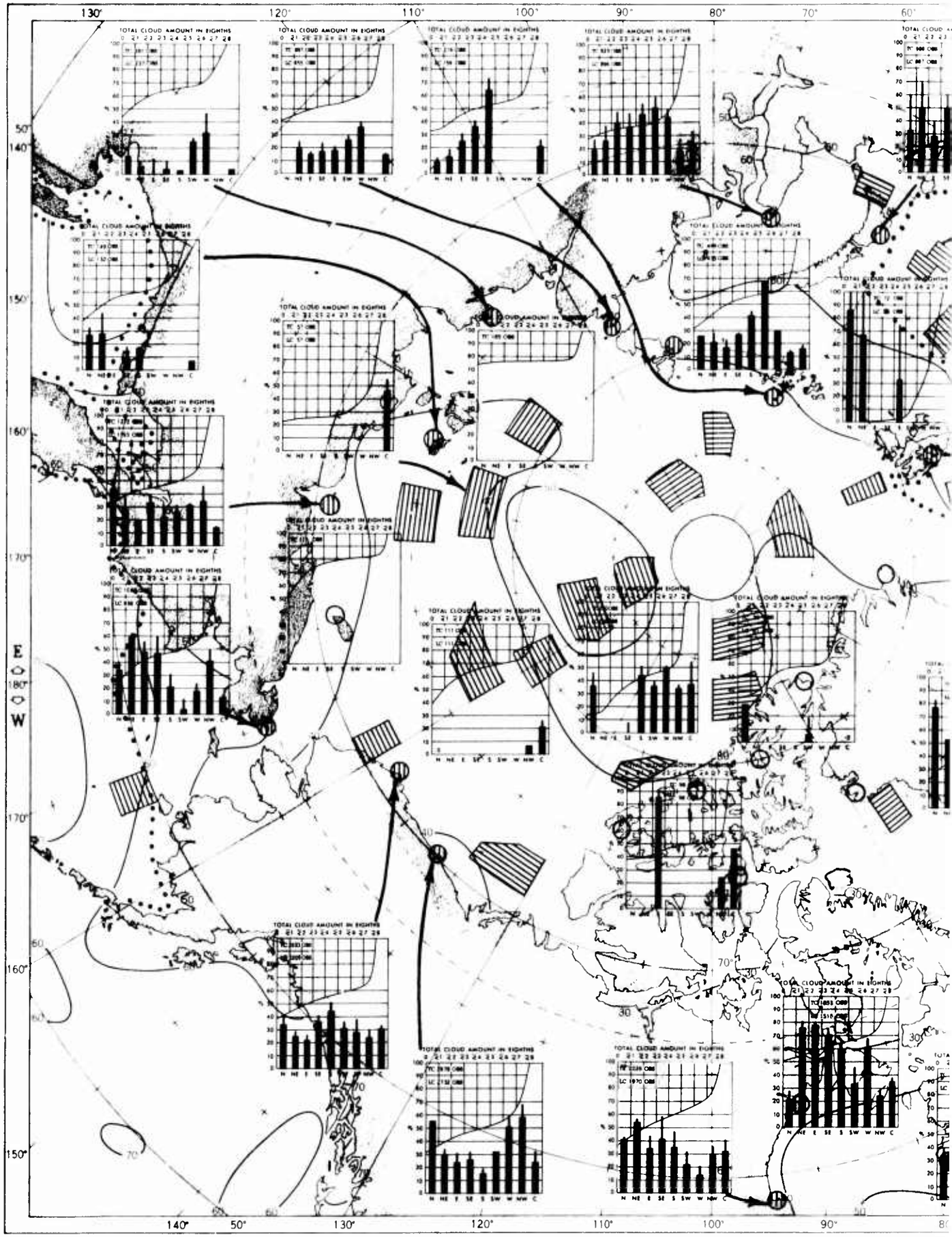
Bar or 0 omitted when number of observations was 10 or Less

See chart 6 for precipitation incidence disregarding wind direction



JANUARY

CLOUD



CLOUDINESS

CHART 15



Percentage Frequency of Total Cloud Amount 8/10 or more

Total Cloud Amount (TC) Percentage frequency of total cloud amounts equal to or less than amount intersected by the curve

(62% of all total cloud amounts were 7/8 or less)

Lower Cloud Amount (LC) Percentage proportions of winds from each direction that were accompanied by low or middle cloud amounts greater than 5/8 and greater than 7/8

(52% of all NW winds were accompanied by lower cloud amounts >5/8 and 38% by lower cloud amounts >7/8)

[>5/8 includes 6/8 8/8 and 7/10 10/10. >7/8 includes 8/8 and 9/10 10/10]

0 replaces bar when no low cloud amounts >5/8 were observed with winds from a direction

Bar for 0 is omitted when the number of observations including both wind direction and low cloud amount was ≤0 or less for a direction

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

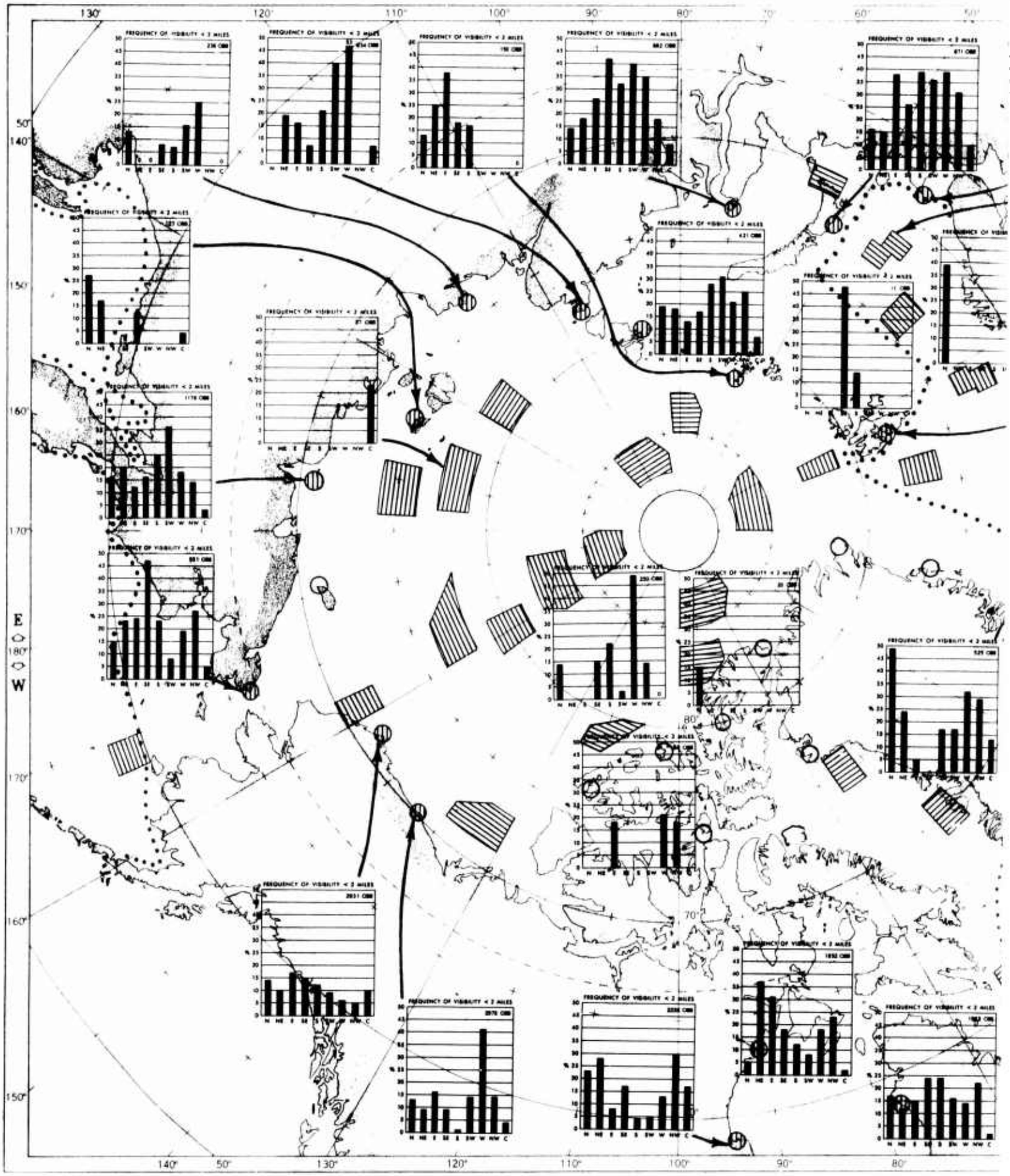
MOULD BAY

RESOLUTE

THULE

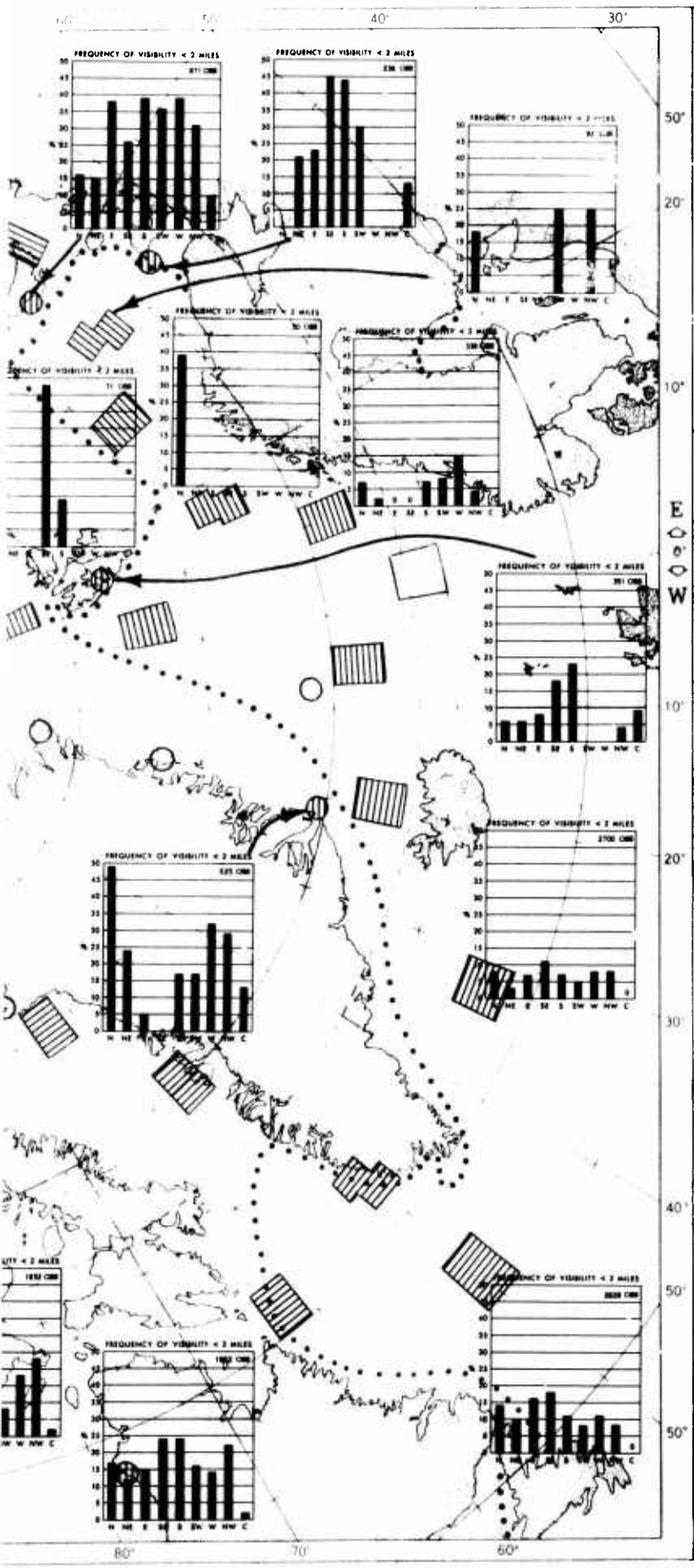
JANUARY

LOW VISIBILITY BY WIND



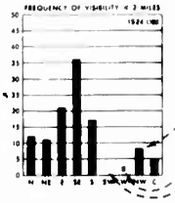
BY WIND DIRECTION

CHART 16



Percentage Frequency of Low Visibility by Wind Direction

Percentage of all visibility (and wind) observations reporting visibility less than 2 nautical miles



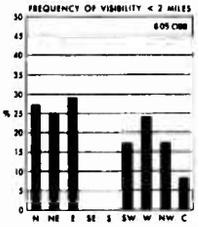
(8% of all NW winds were accompanied by visibility less than 2 miles)

'0' replaces bar when no visibilities < 2 miles were observed with winds from a direction

Bar or '0' omitted when number of observations was 10 or less

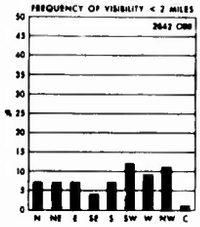
See chart 9 for low visibility incidence disregarding wind direction

OSTROV VRANGELYA

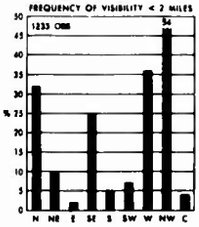


NORTH POLE

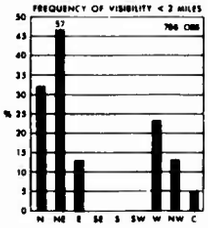
OCEAN STATION M



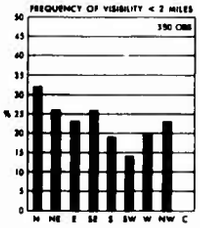
NORD



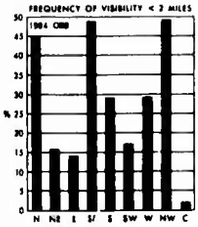
DANMARKSHAVEN



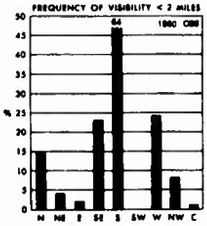
JAN MAYEN



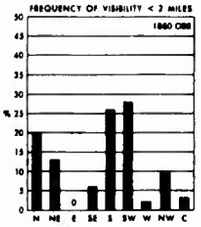
ISACHSEN



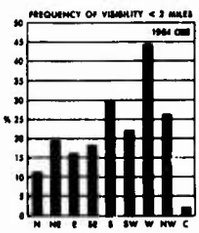
EUREKA



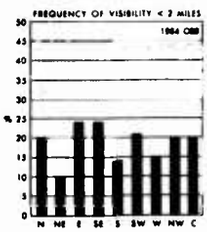
ALERT



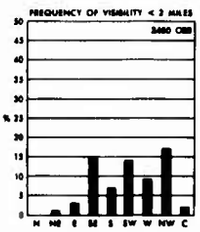
MOULD BAY



RESOLUTE

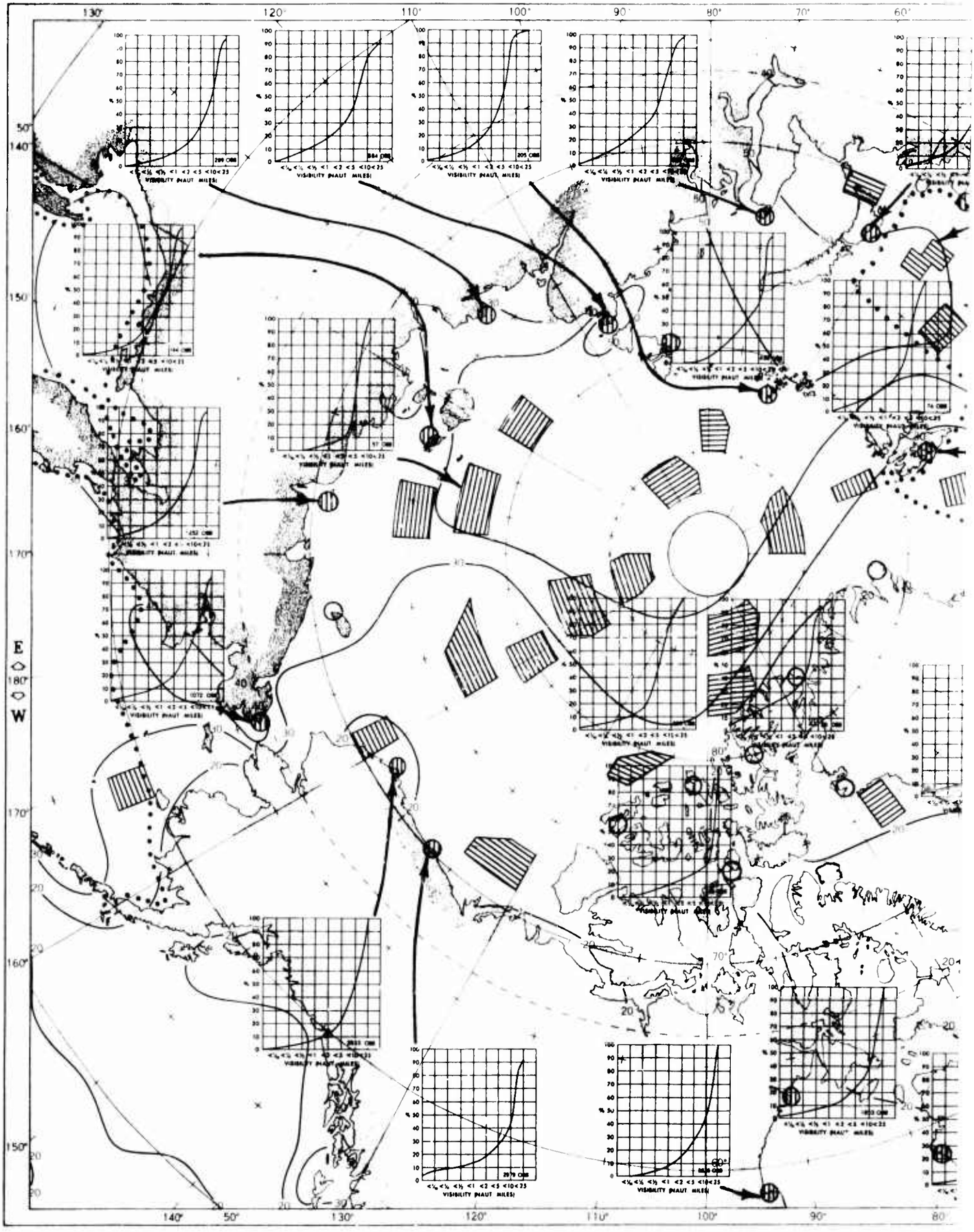


THULE



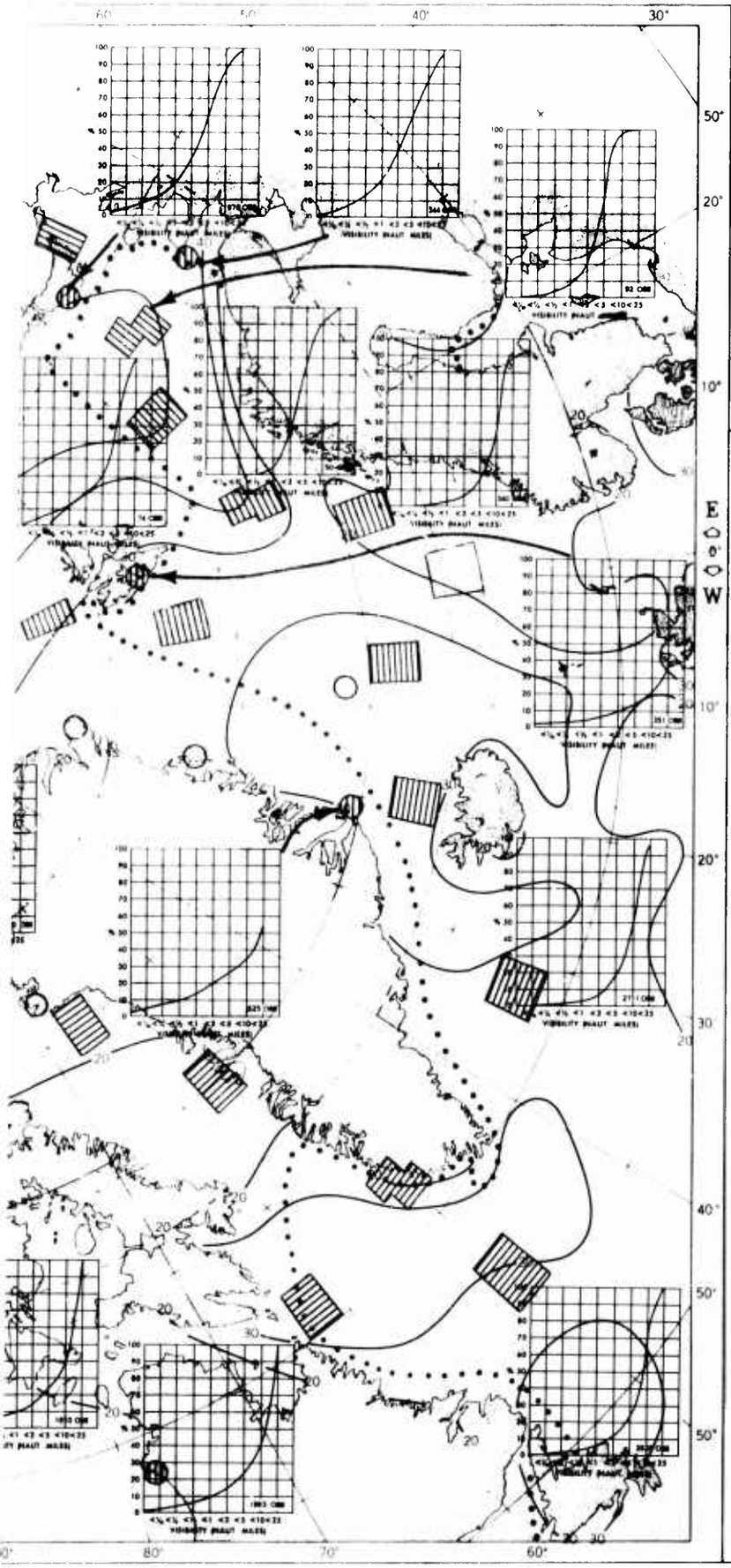
JANUARY

VISIBILI

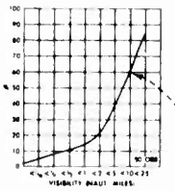


VISIBILITY

CHART 17



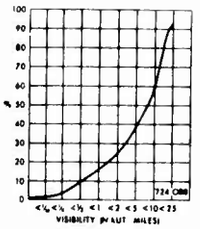
Percentage Frequency of Visibility <5 Nautical Miles



Percentage Frequency of Visibilities less than amount intersected by the curve

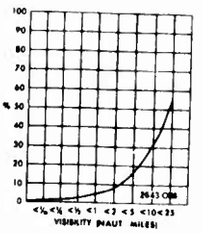
—(60% of all visibilities were 10 nautical miles or less)

OSTROV VRANGELYA

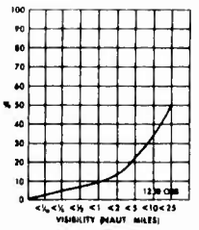


NORTH POLE

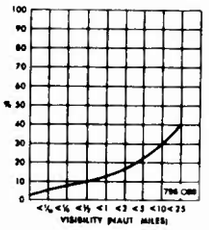
OCEAN STATION M



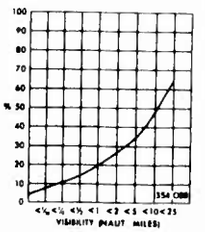
NORD



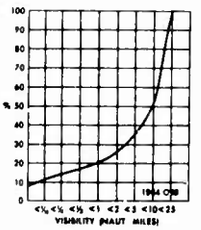
DANMARKSHAVEN



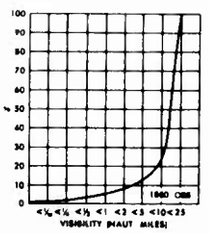
JAN MAYEN



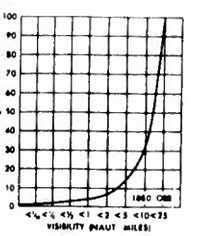
ISACHSEN



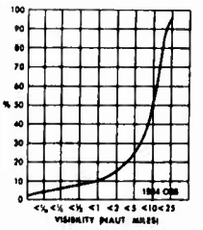
EUREKA



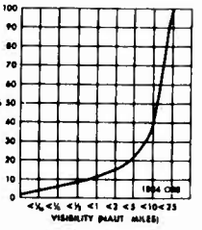
ALERT



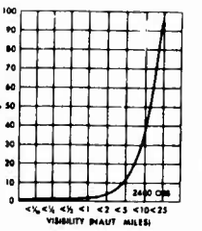
MOULD BAY



RESOLUTE

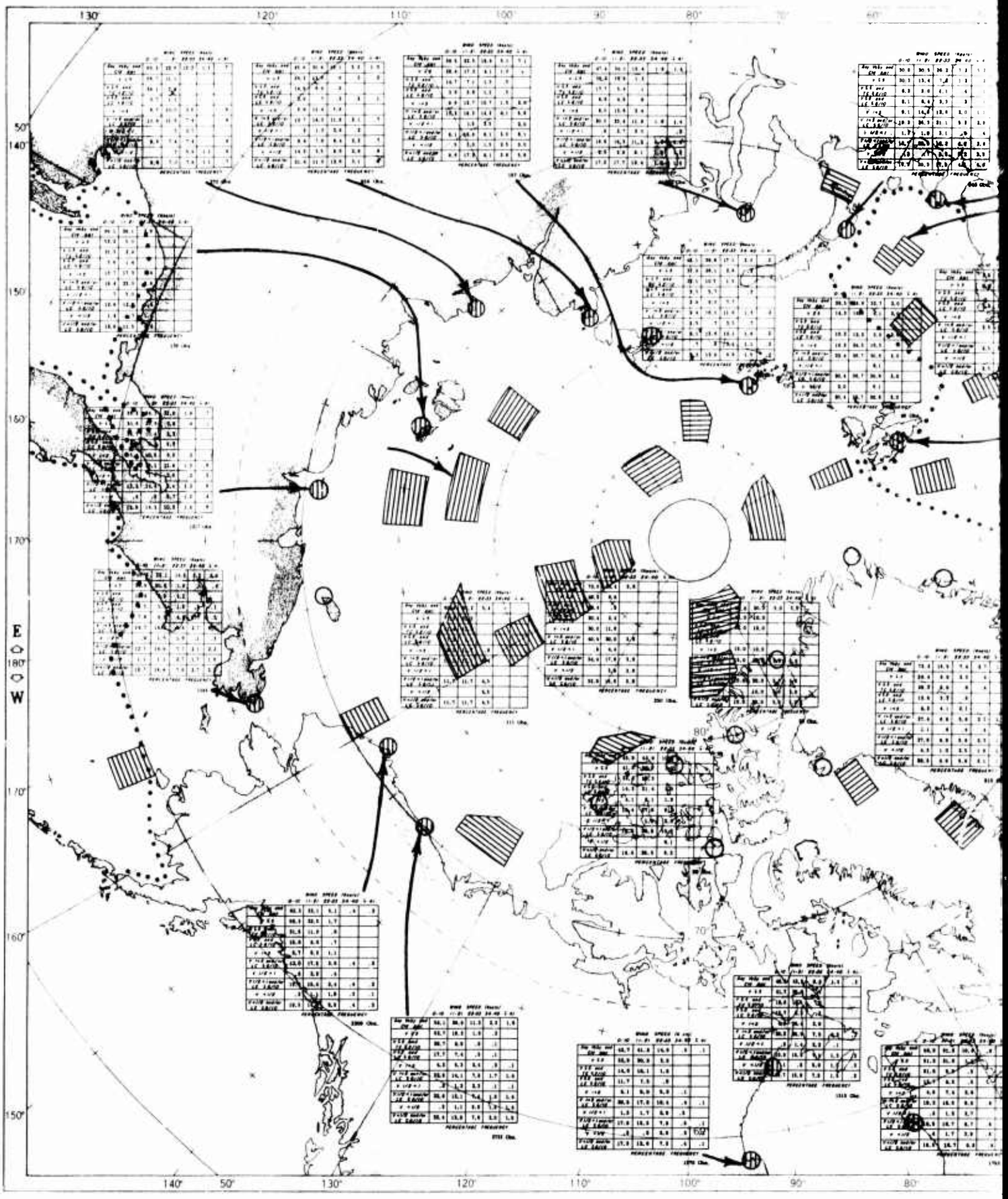


THULE



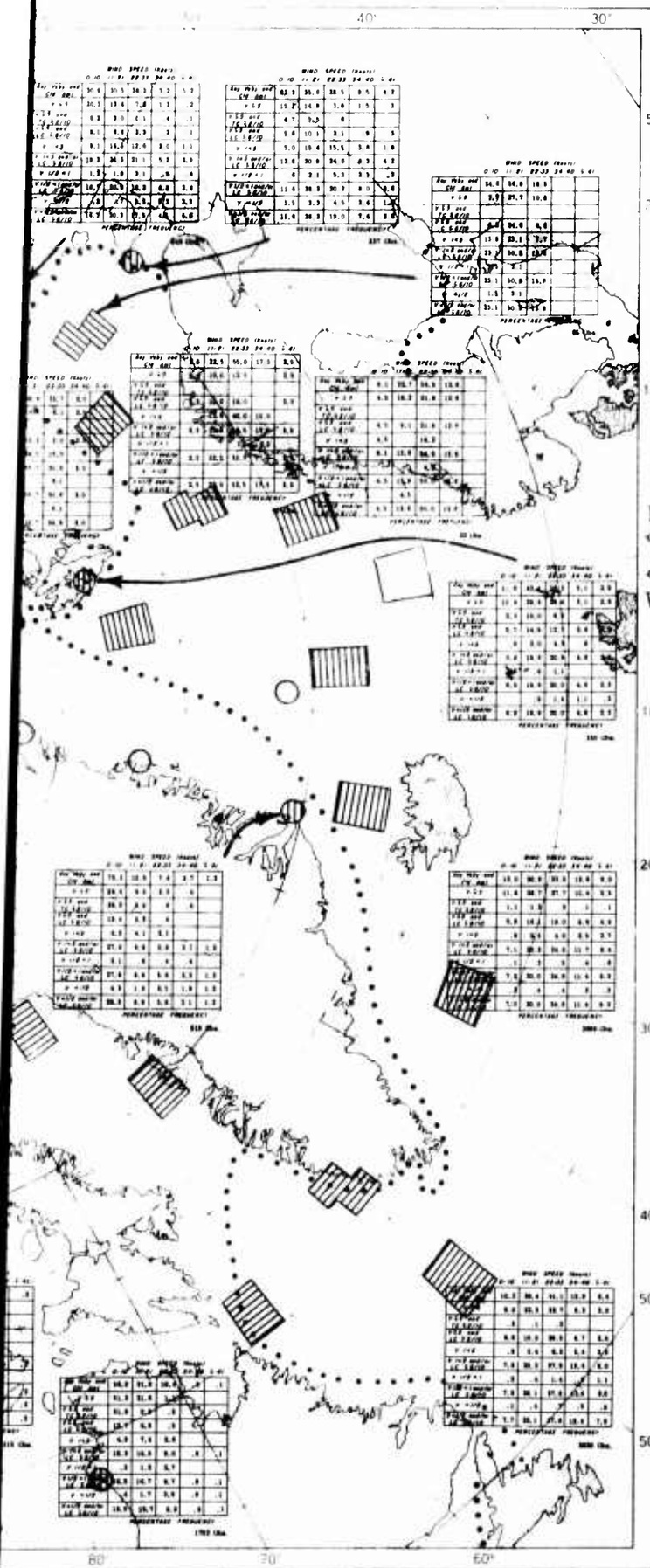
JANUARY

WIND-VISIBILITY-CLO

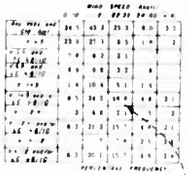


ITY-CLOUDINESS

CHART 18



Percentage Frequency of simultaneous occurrence of specified Wind, Visibility, and Cloudiness conditions (based on the number of observations which reported wind speed, visibility, total cloud amount, and low cloud amount)



Blank box indicates .00 percent

Notation

Any Vsby and Cld Amt = Simultaneous occurrence of wind speed with any visibility and cloud amount combination. This provides a percentage distribution of wind speeds for the observations used in this tabulation.

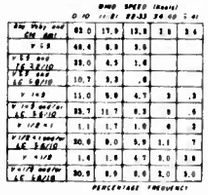
V = Visibility in Nautical Miles
1<5 indicates 1 to (but not including) 5 nautical miles

TC = Total Cloud Amount

LC = Low Cloud Amount (with base approximately 8000 feet or lower)

Ocean Area 166 % of the observations on which this tabulation was based reported speed 22-33 knots simultaneous with visibility ≤5 nautical miles and/or low cloud amount ≥ 6/10.

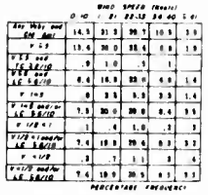
OSTROV WRANGELYA



706 Obs.

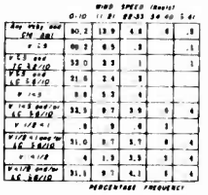
NORTH POLE

OCEAN STATION M



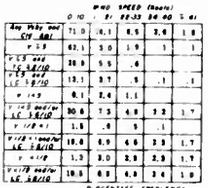
2643 Obs.

NORD



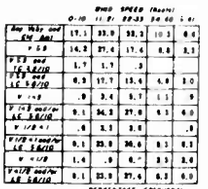
1333 Obs.

DANMARKSHAVEN



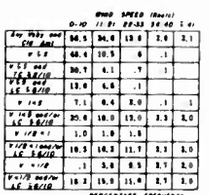
784 Obs.

JAN MAYEN



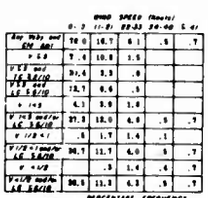
351 Obs.

ISACHSEN



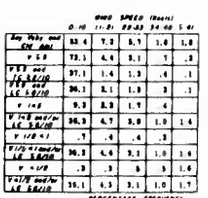
1713 Obs.

EUREKA



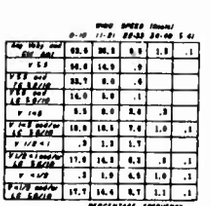
1688 Obs.

ALERT



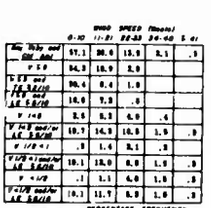
1646 Obs.

MOULD BAY



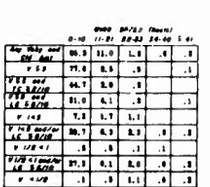
1788 Obs.

RESOLUTE



1886 Obs.

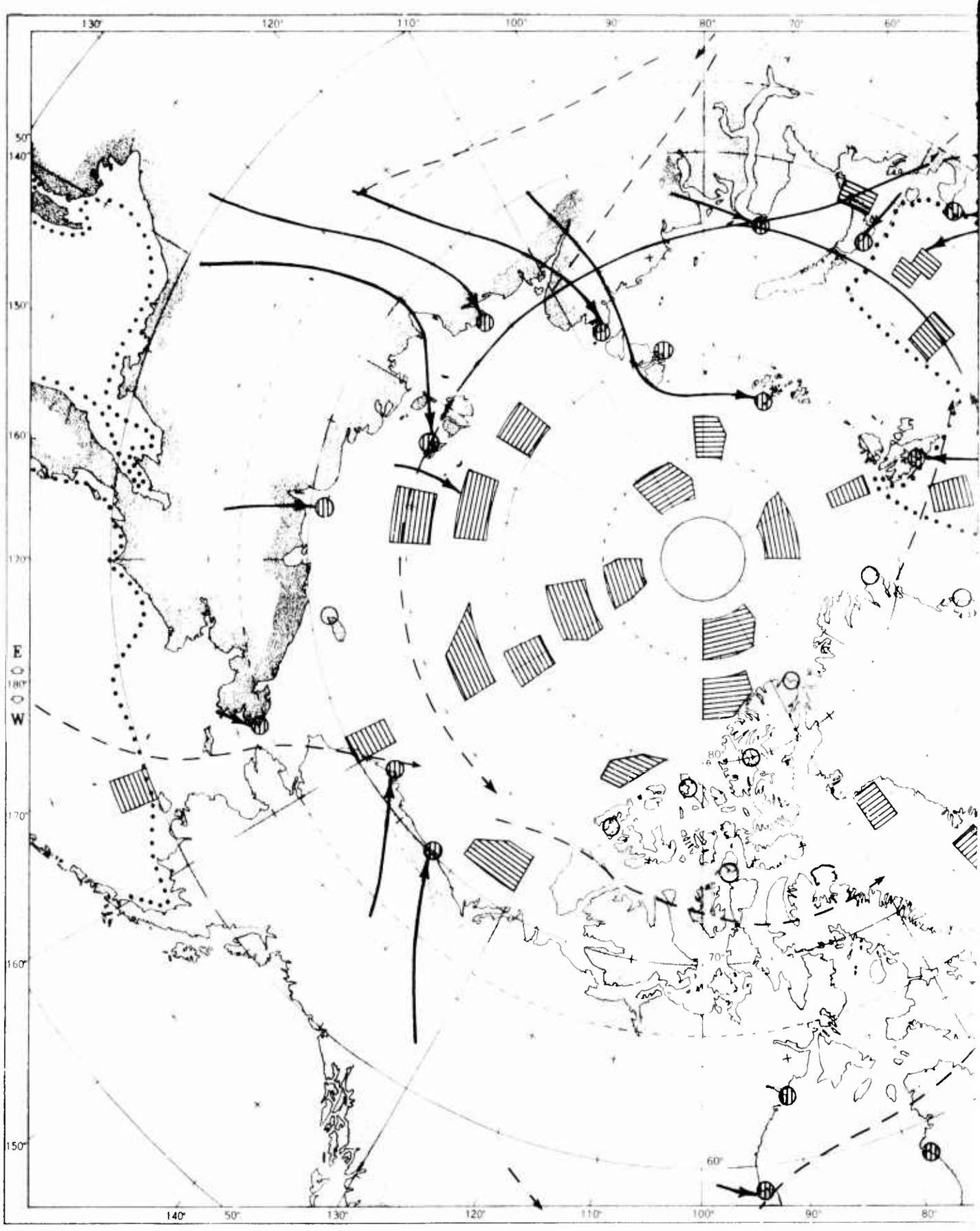
THULE



1731 Obs.

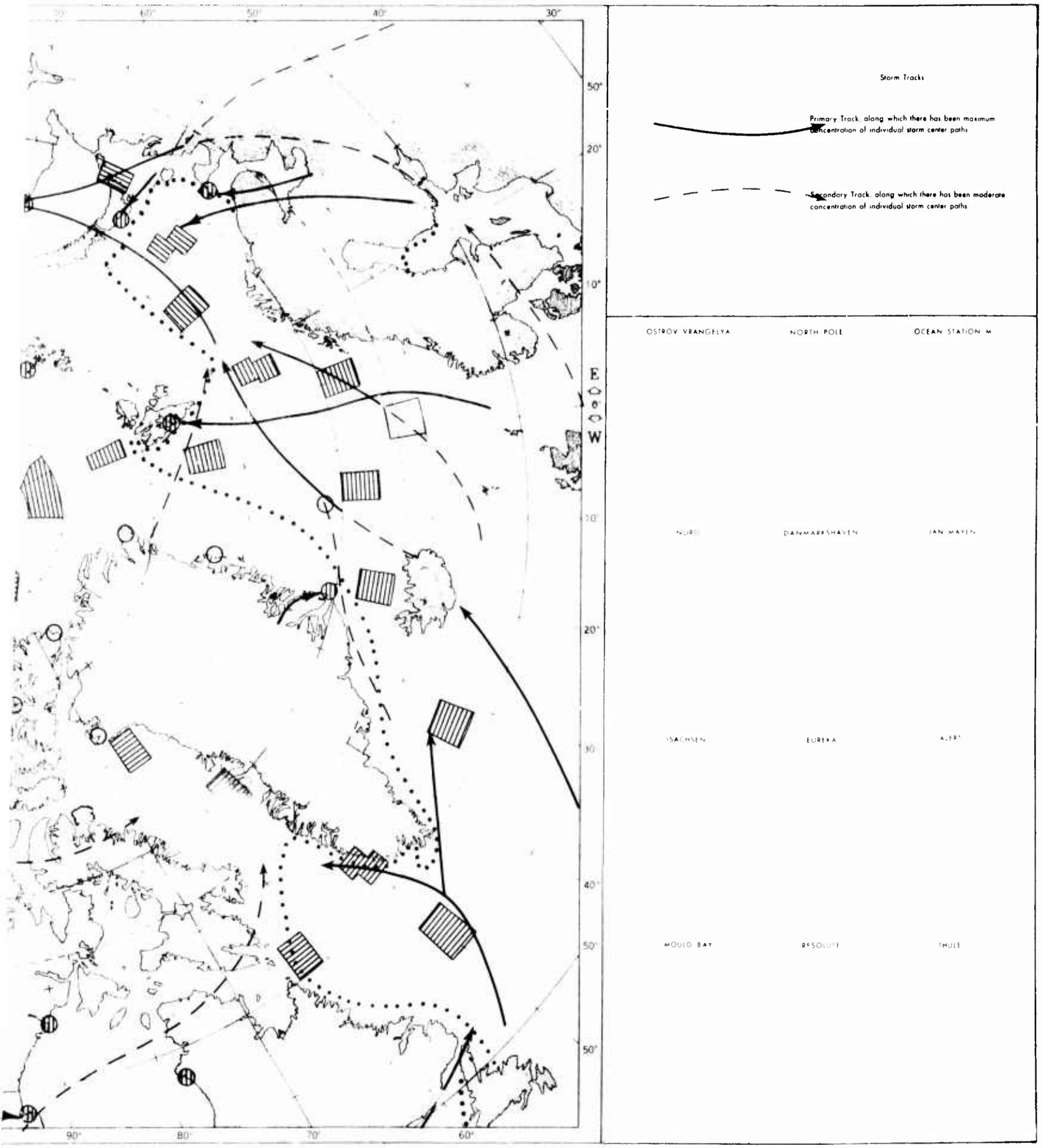
JANUARY

STORM TRA



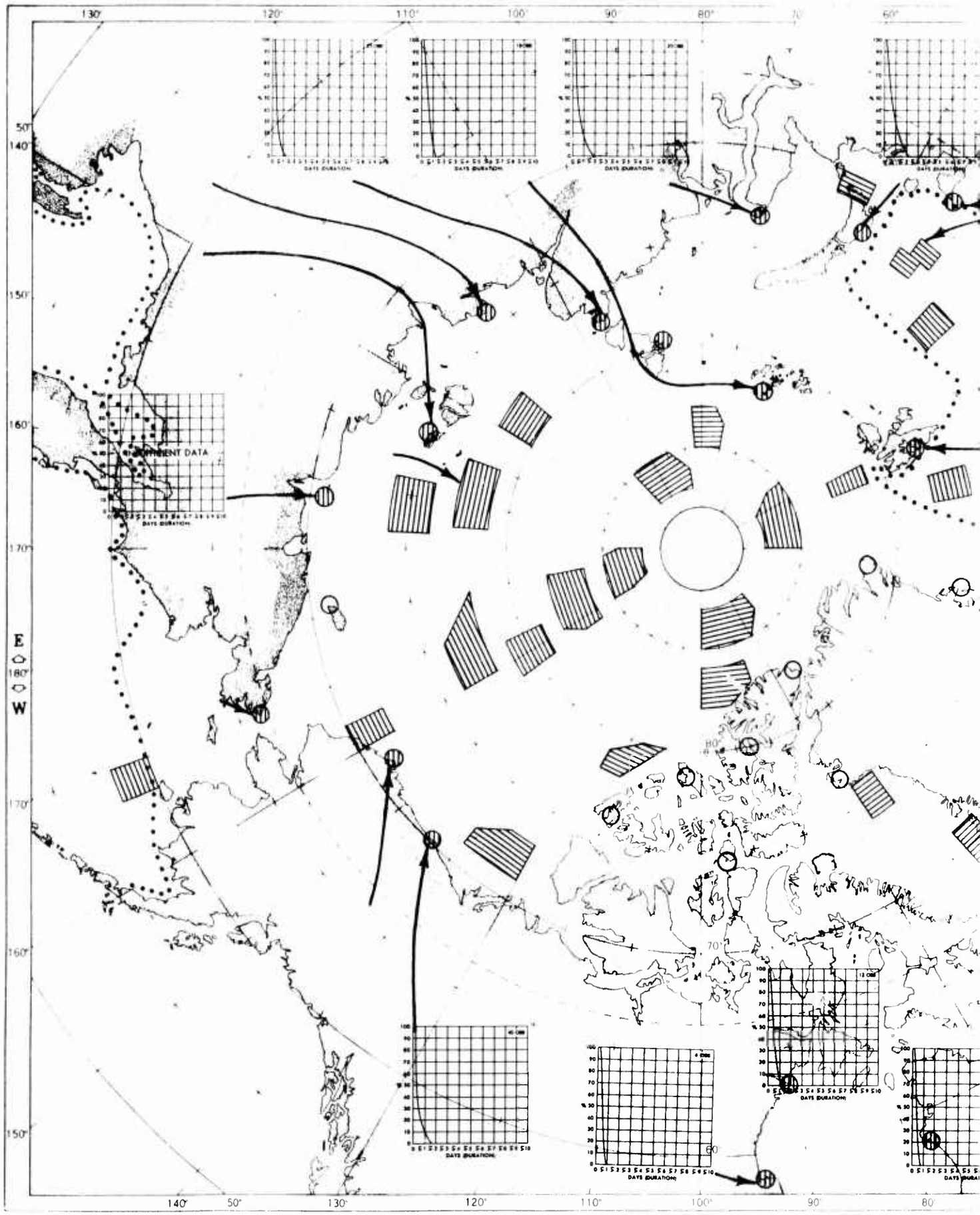
STORM TRACKS

CHART 19



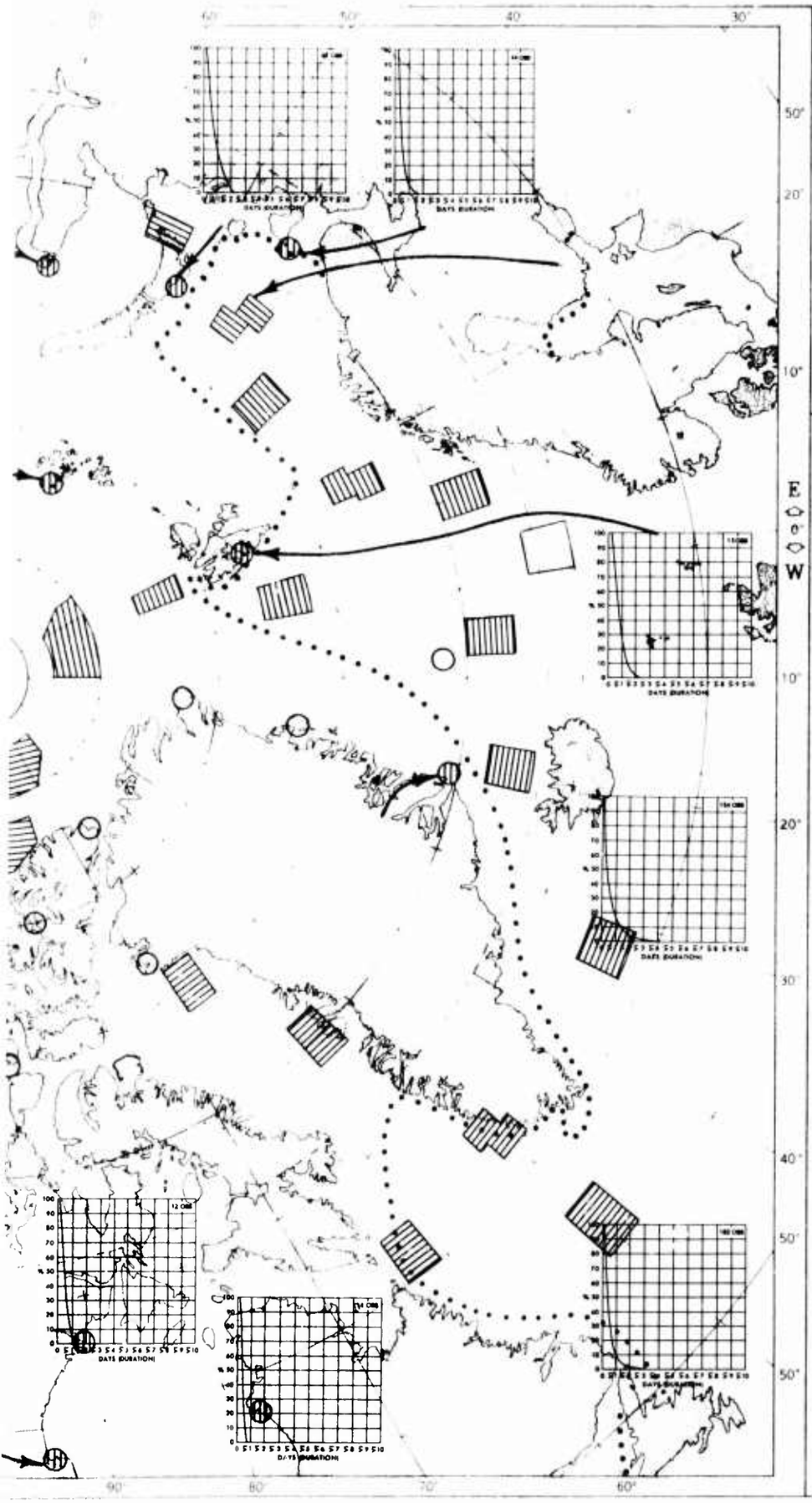
JANUARY

GALE PERSIST



GALE PERSISTENCE

CHART 20

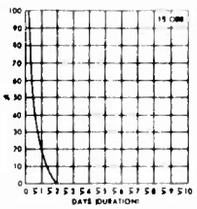




Percentage Frequency of Gales (Beaufort Force 8 or more ≥34 knots) equal to or greater than number of days intersected by the curve

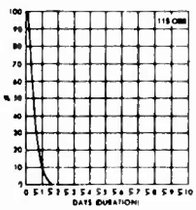
(10% of Gales (≥34 knots) persist at least one day)

OSTROV VRANGELYA



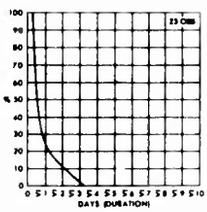
NORTH POLE

OCEAN STATION M

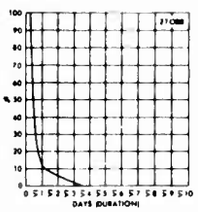


NOME

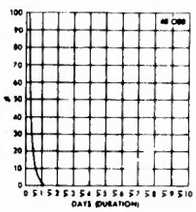
DANMARKSHAVEN



JAN MAYEN

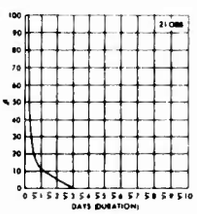


ISACHSEN

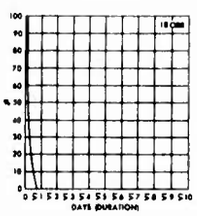


EUREKA

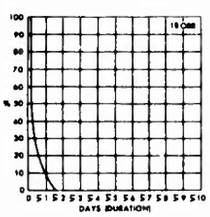
ALERT



MOULD BAY

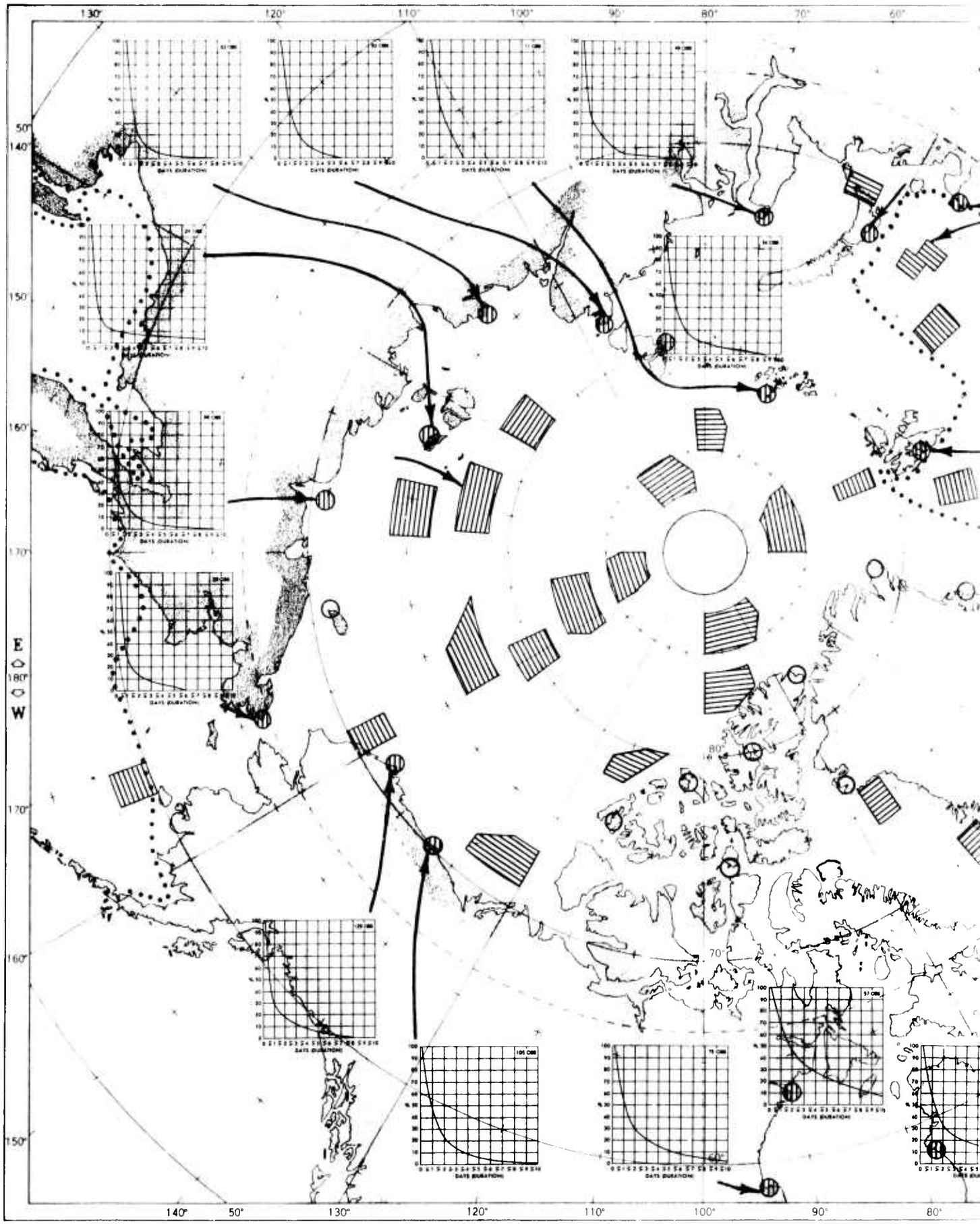


RESOLUTE



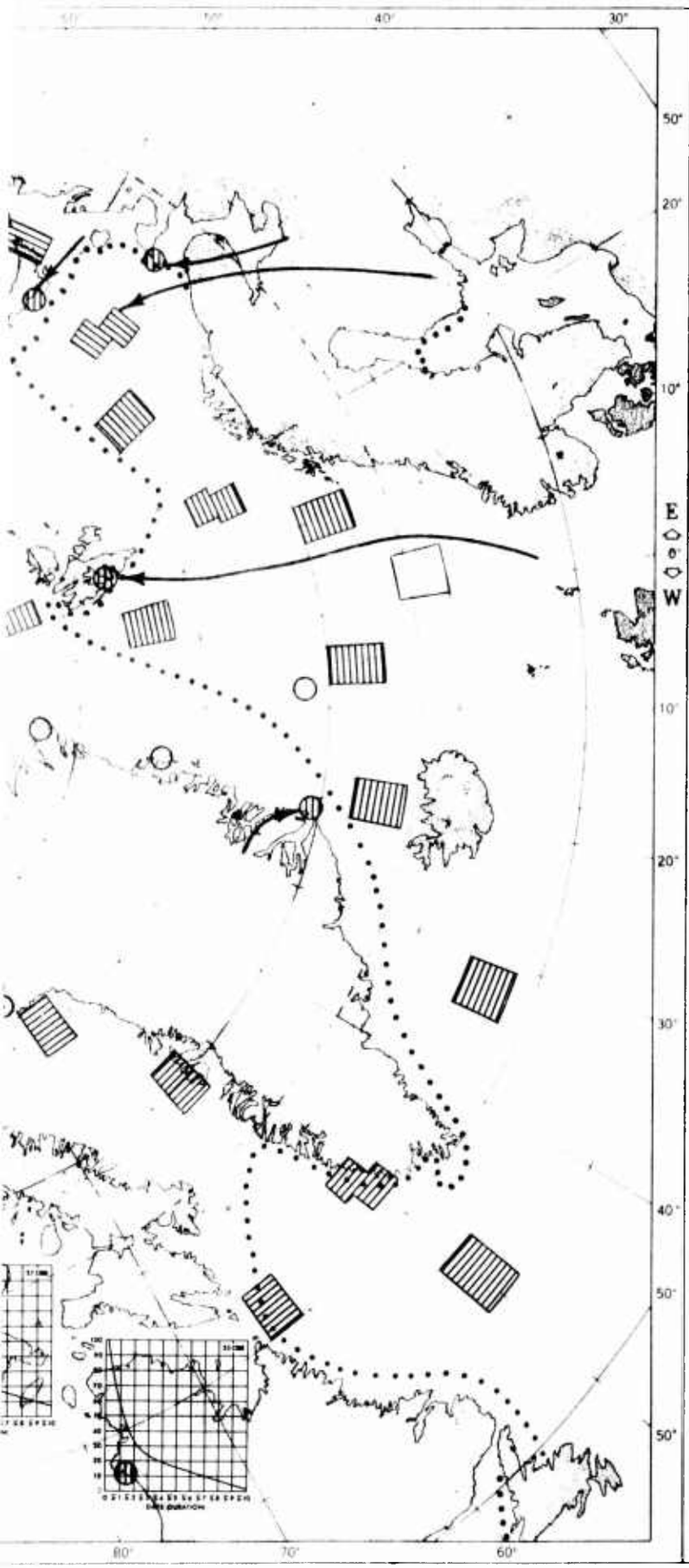
THULE

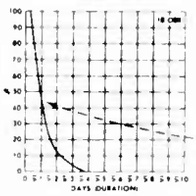
JANUARY LOW TEMPERATURE



:ATURE PERSISTENCE

CHART 21

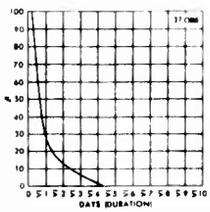




Percentage Frequency of Air Temperature (20° F or less) equal to or greater than number of days intersected by the curve

[44% of cold temperatures (≤ 20° F) persist at least one day]

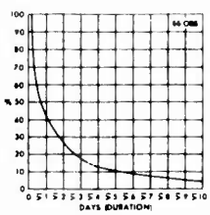
OSTROV VRANGELYA



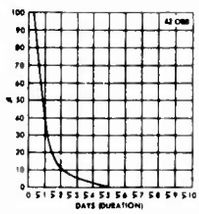
NORTH POLE

OCEAN STATION M

NORD

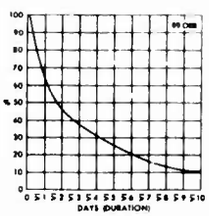


DANMARKSHAVEN

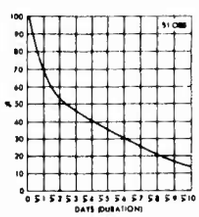


JAN MAYEN

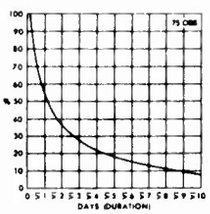
ISACHSEN



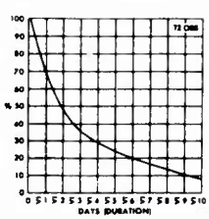
EUREKA



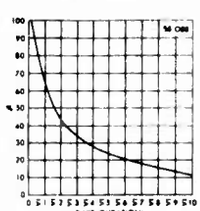
ALERT



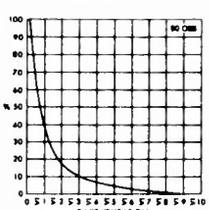
MOULD BAY



RESOLUTE

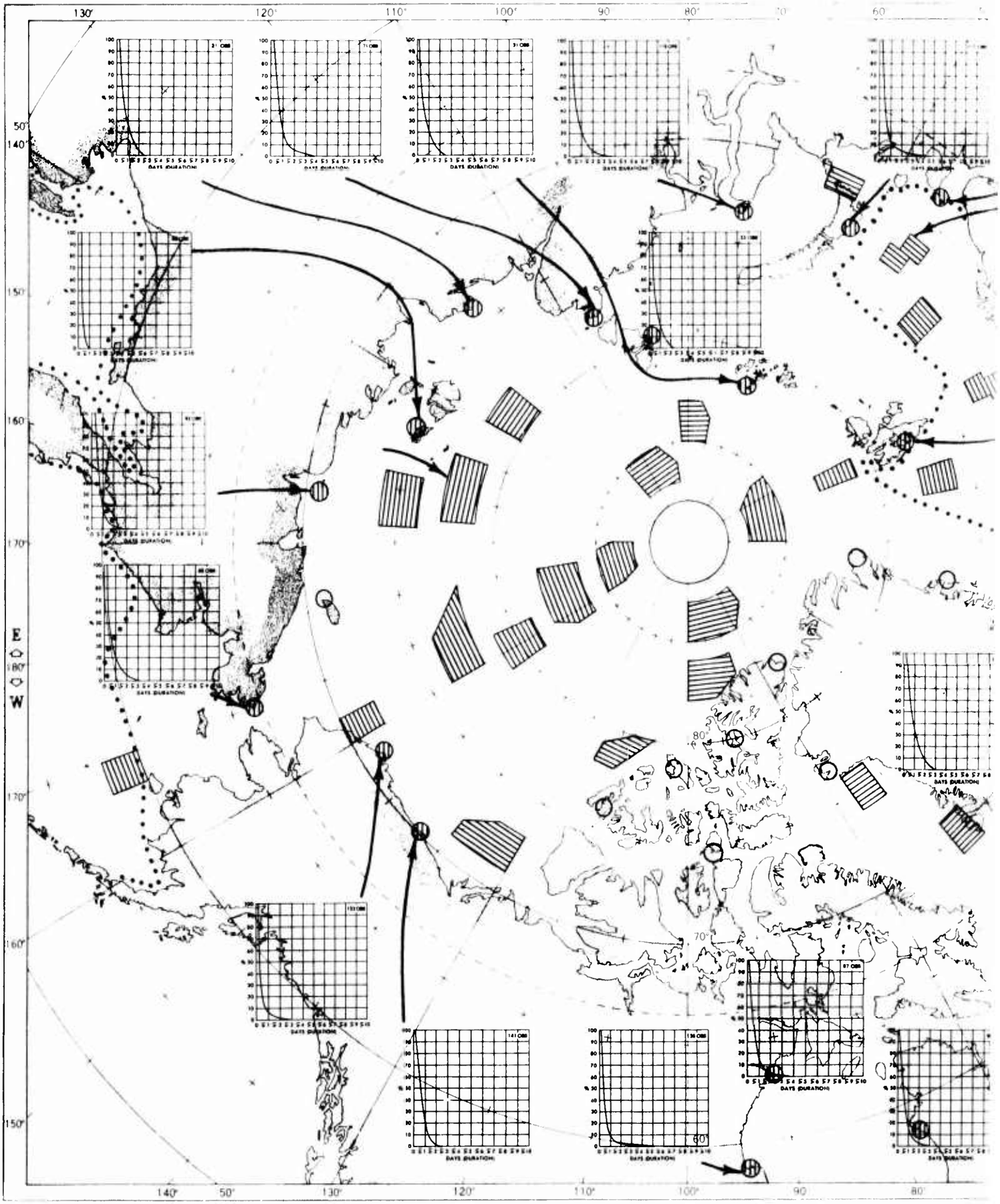


THULE



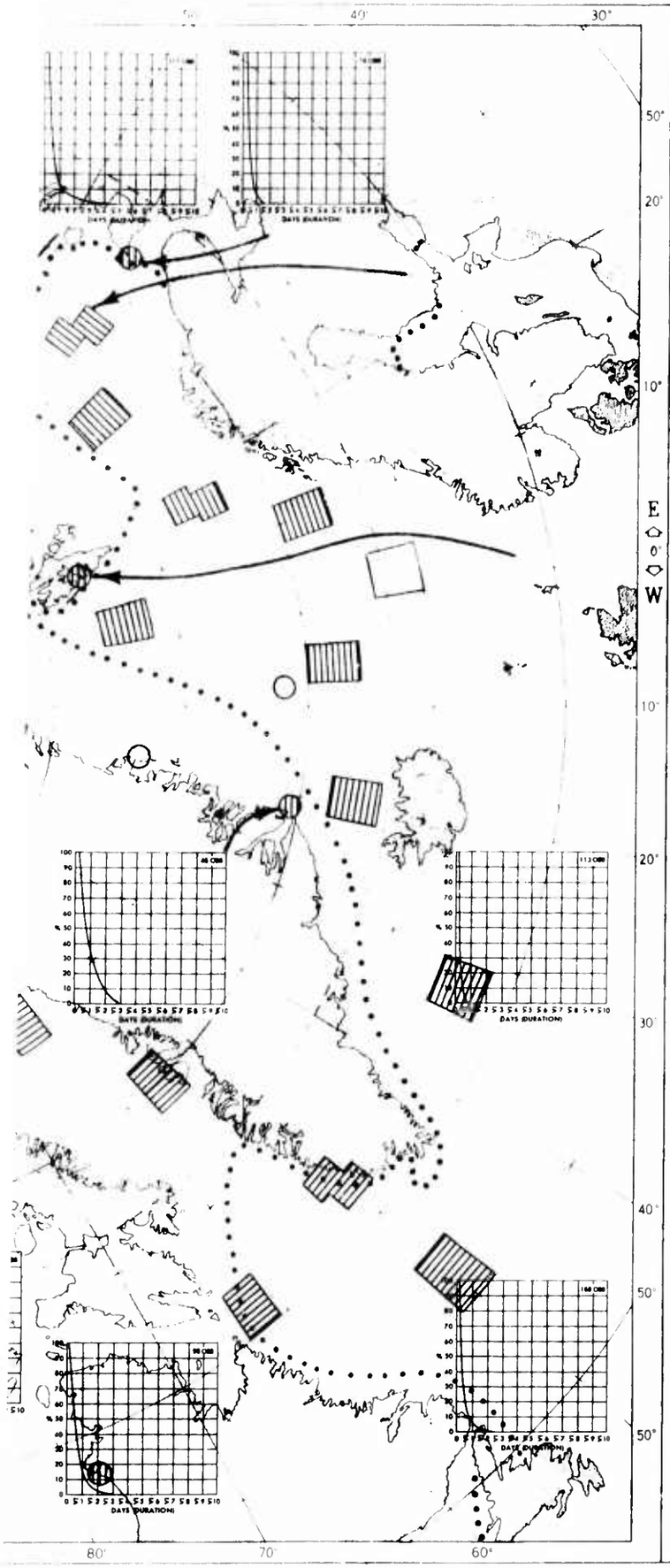
JANUARY

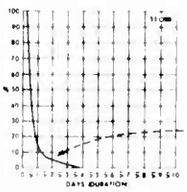
LOW VISIBILITY PER



TY PERSISTENCE

CHART 22

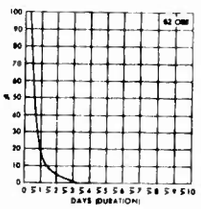




Percentage Frequency of Low Visibility (< 2 nautical miles) equal to or greater than number of days intersected by the curve

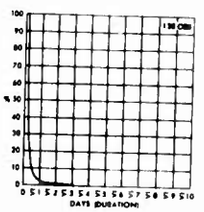
[6% of low visibilities (< 2 miles) persist at least two days]

OSTROV VRANGELYA

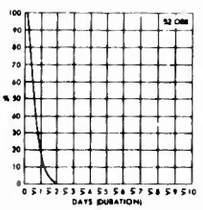


NORTH POLE

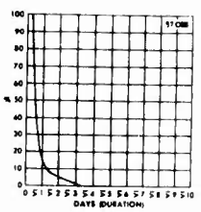
OCEAN STATION M



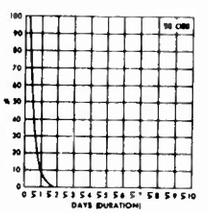
NORD



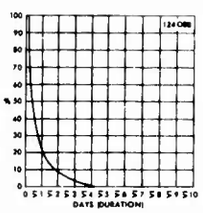
DANMARKSHAVEN



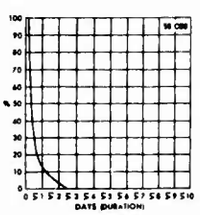
JAN MAYEN



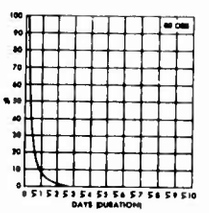
ISACHSEN



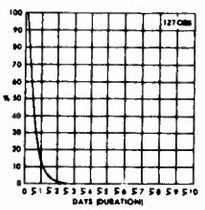
EUREKA



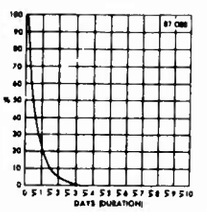
ALERT



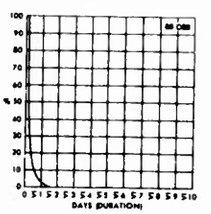
MOULD BAY



RESOLUTE



THULE



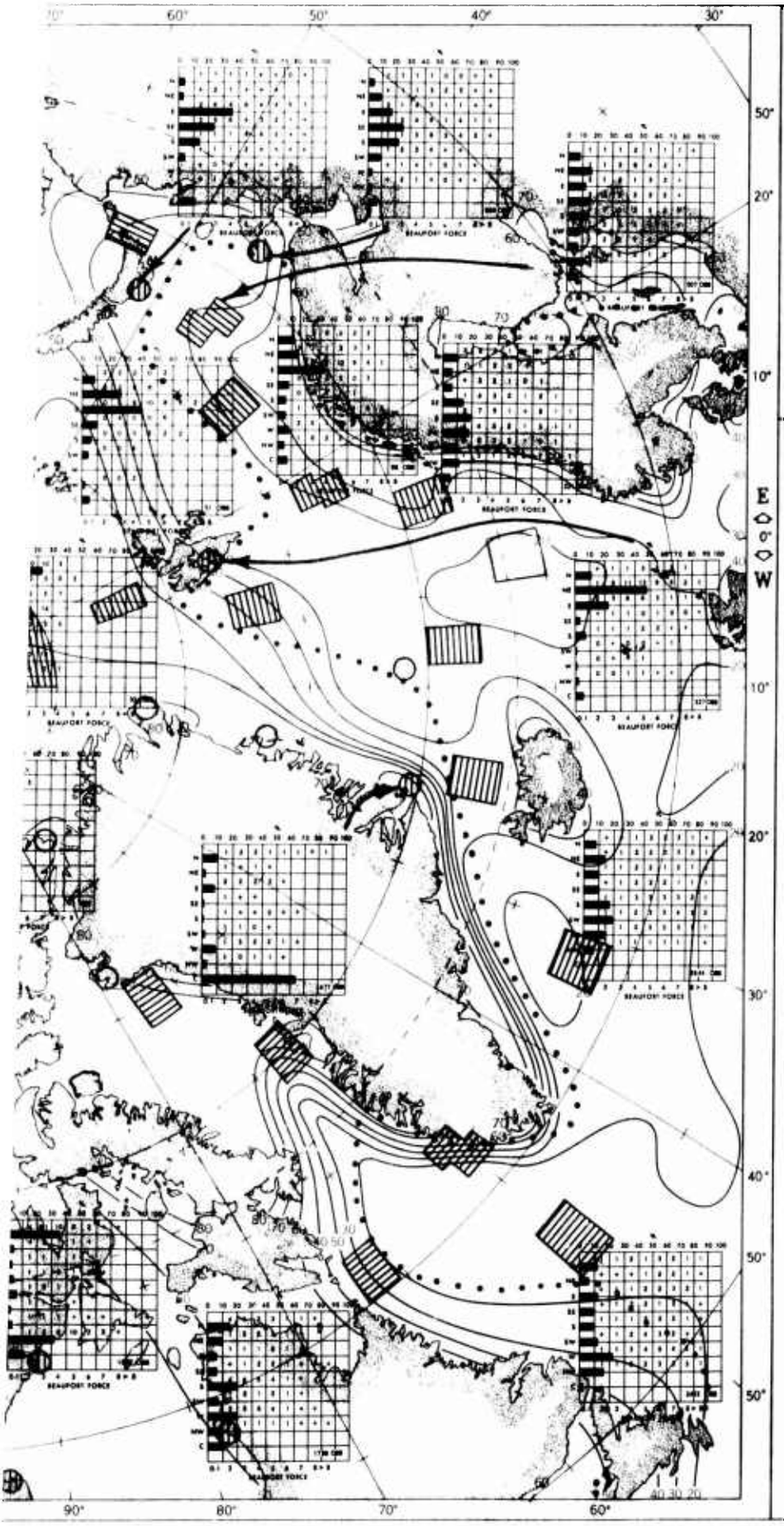
FEBRUARY

SURFACE W

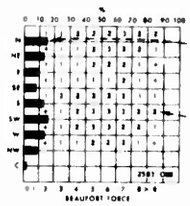


URFACE WIND

CHART 23



Percentage Frequency of Wind Speed Beaufort Force 3 or less (≤ 10 Knots)



Direction Frequency (Top Scale) Bars represent percentage frequency of wind observed from each direction (& calm)

— (14% of all winds were from N)

Speed Frequency (Bottom Scale) percentage frequency of wind speed by Beaufort Force

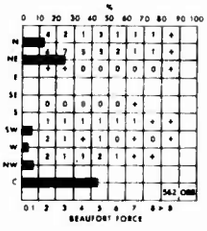
— (2% of all winds from SW were greater than Beaufort Force 8)

All percentages rounded to nearest whole percent

Calm includes Beaufort Force 1 (0-3 knots)

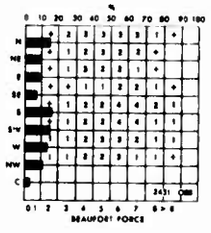
+ indicates less than 1/2 percent

OSTROV VRANGELYA

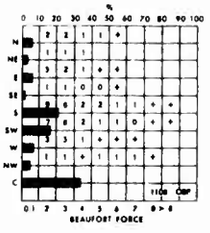


NORTH POLE

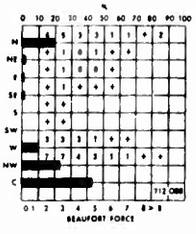
OCEAN STATION M



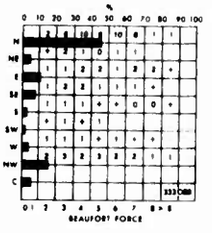
NORD



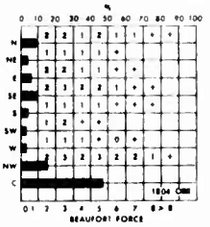
DANMARKSHAVEN



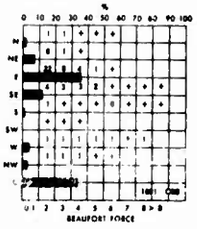
JAN MAYEN



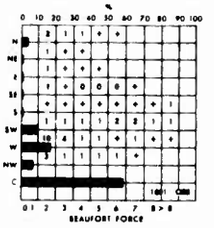
ISACHSEN



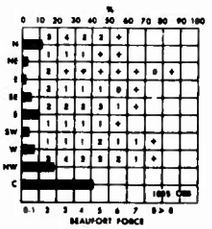
EUREKA



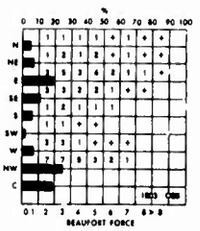
ALERT



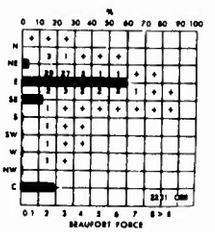
MOULD BAY



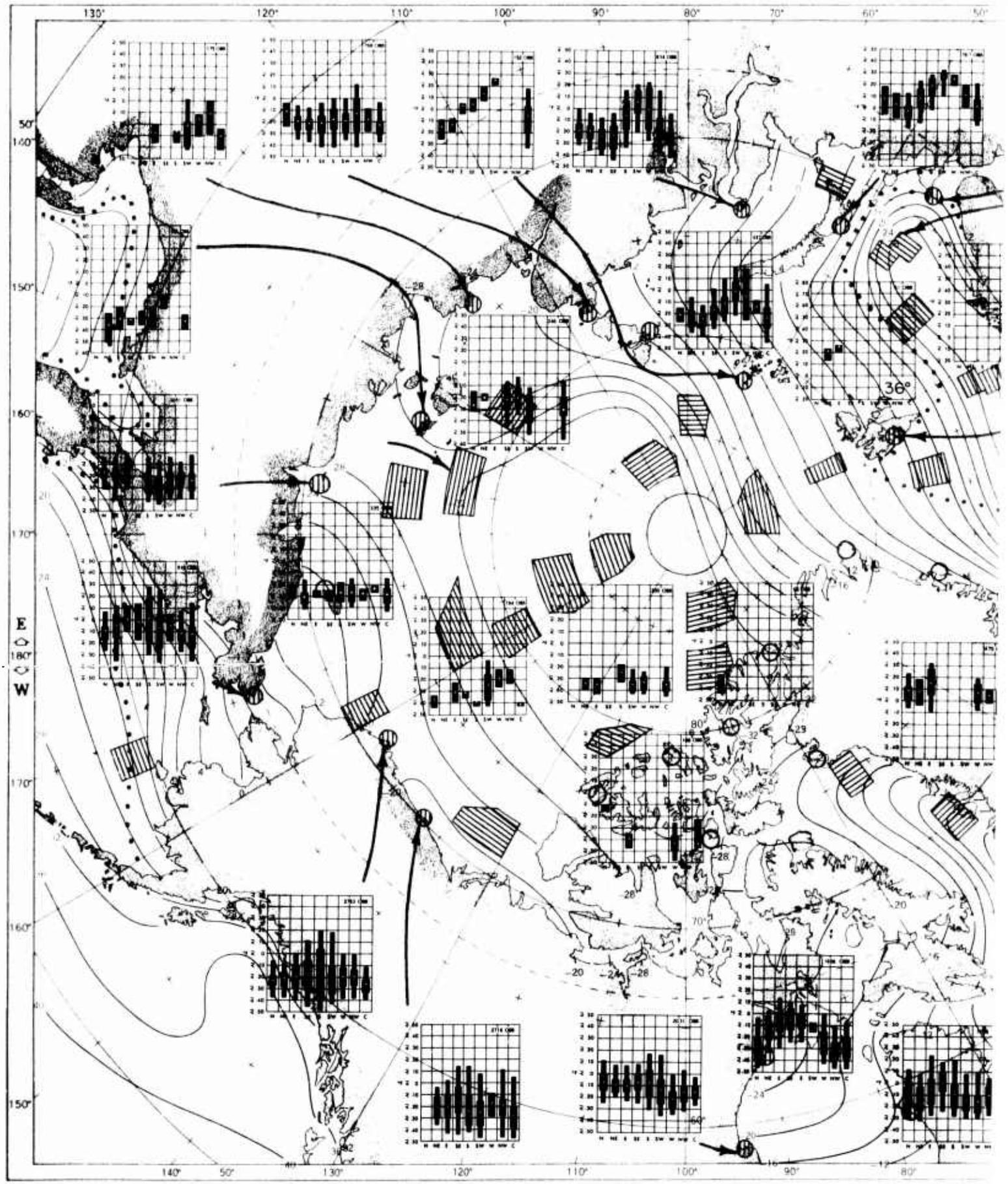
RESOLUTE



THULE

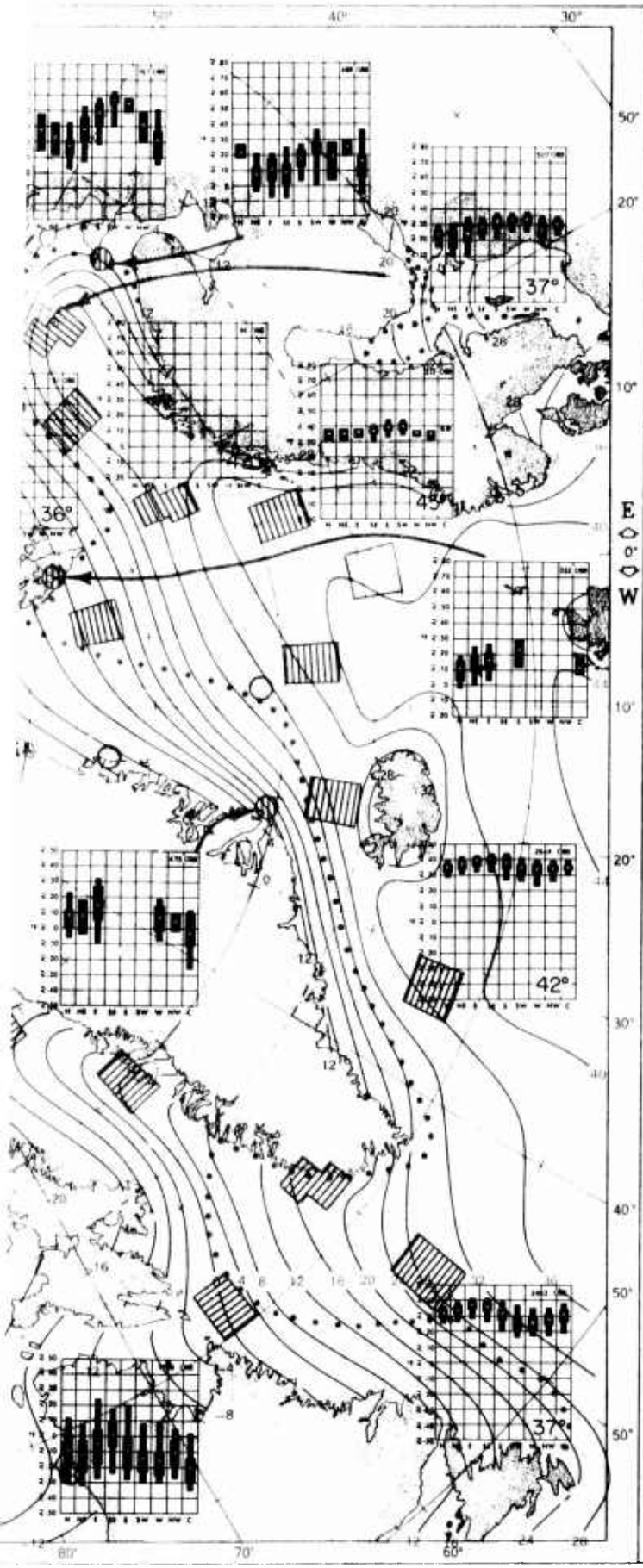


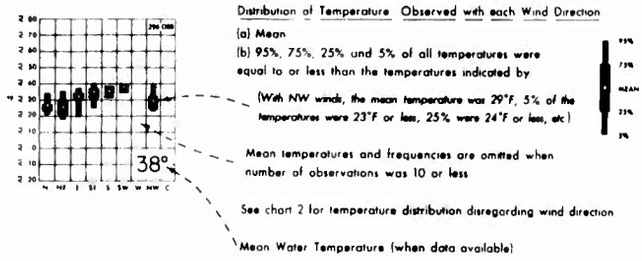
FEBRUARY AIR TEMPERATURE BY WIN

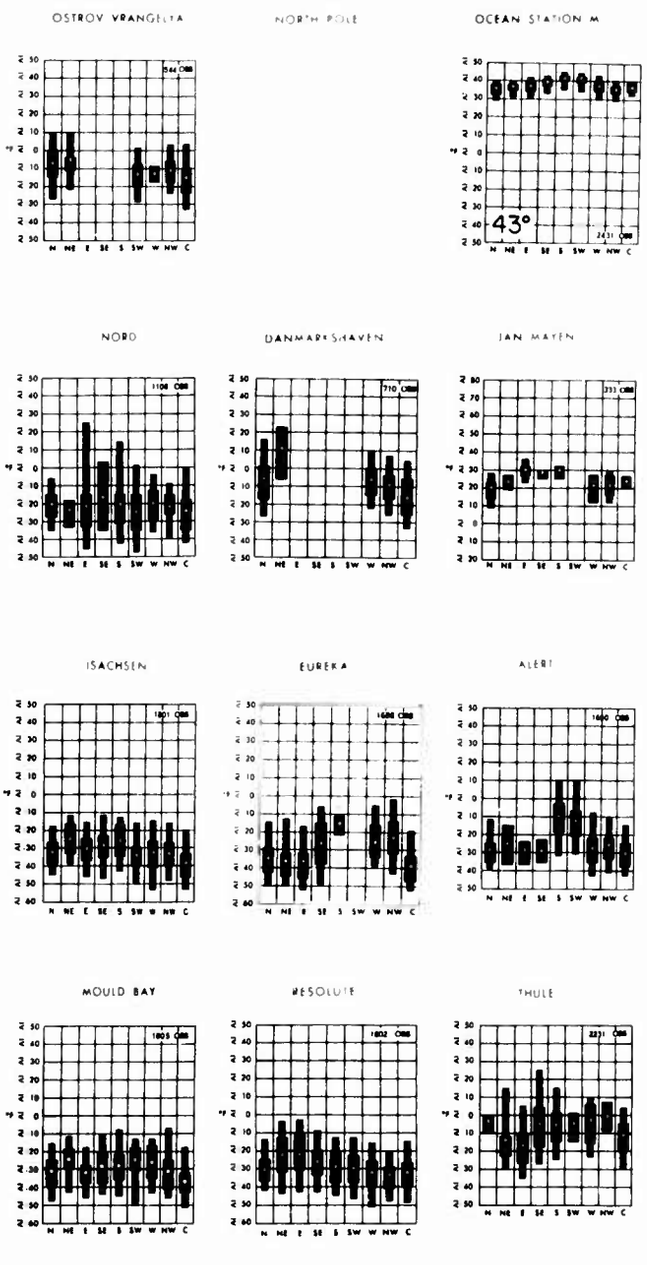


BY WIND DIRECTION

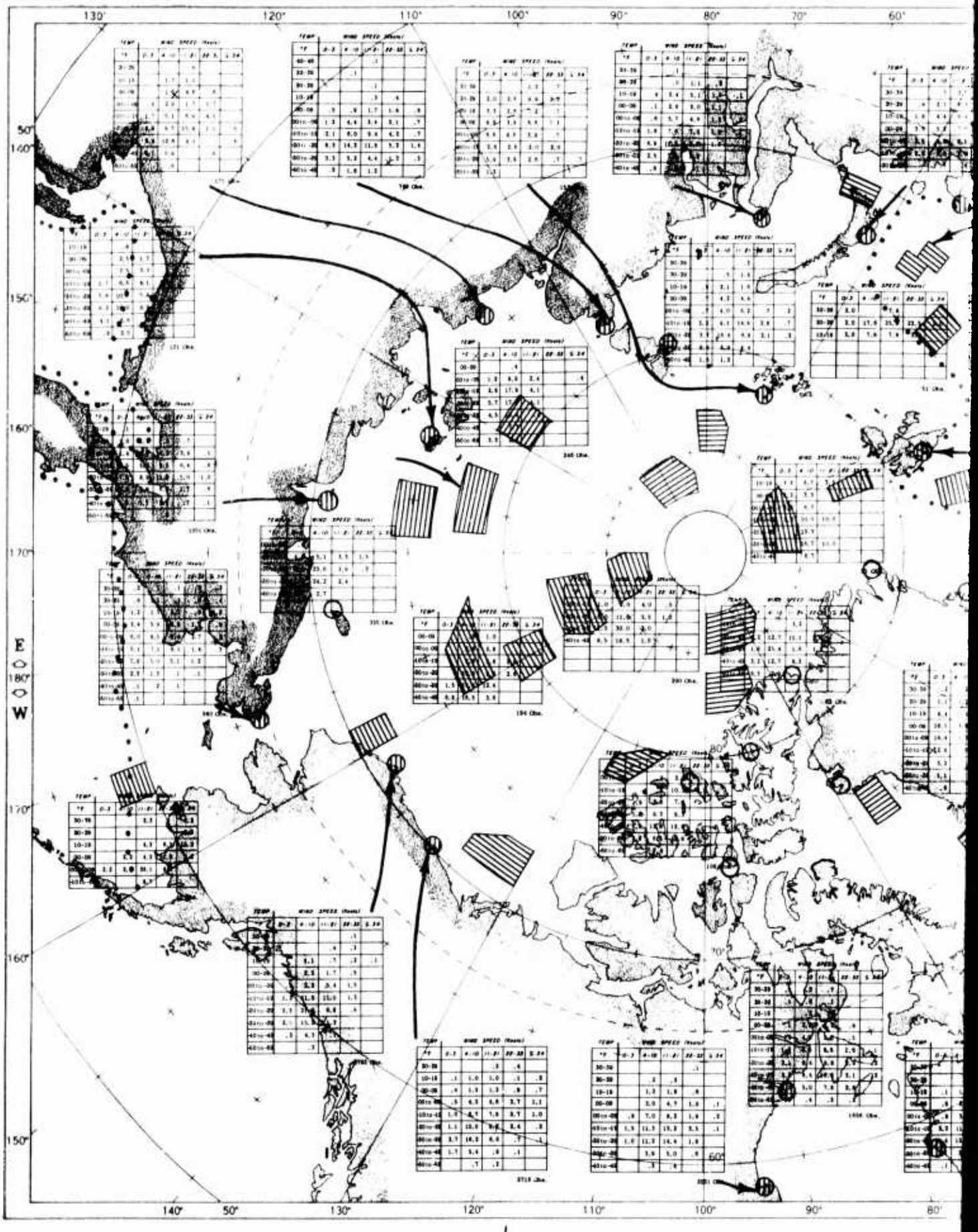
CHART 24





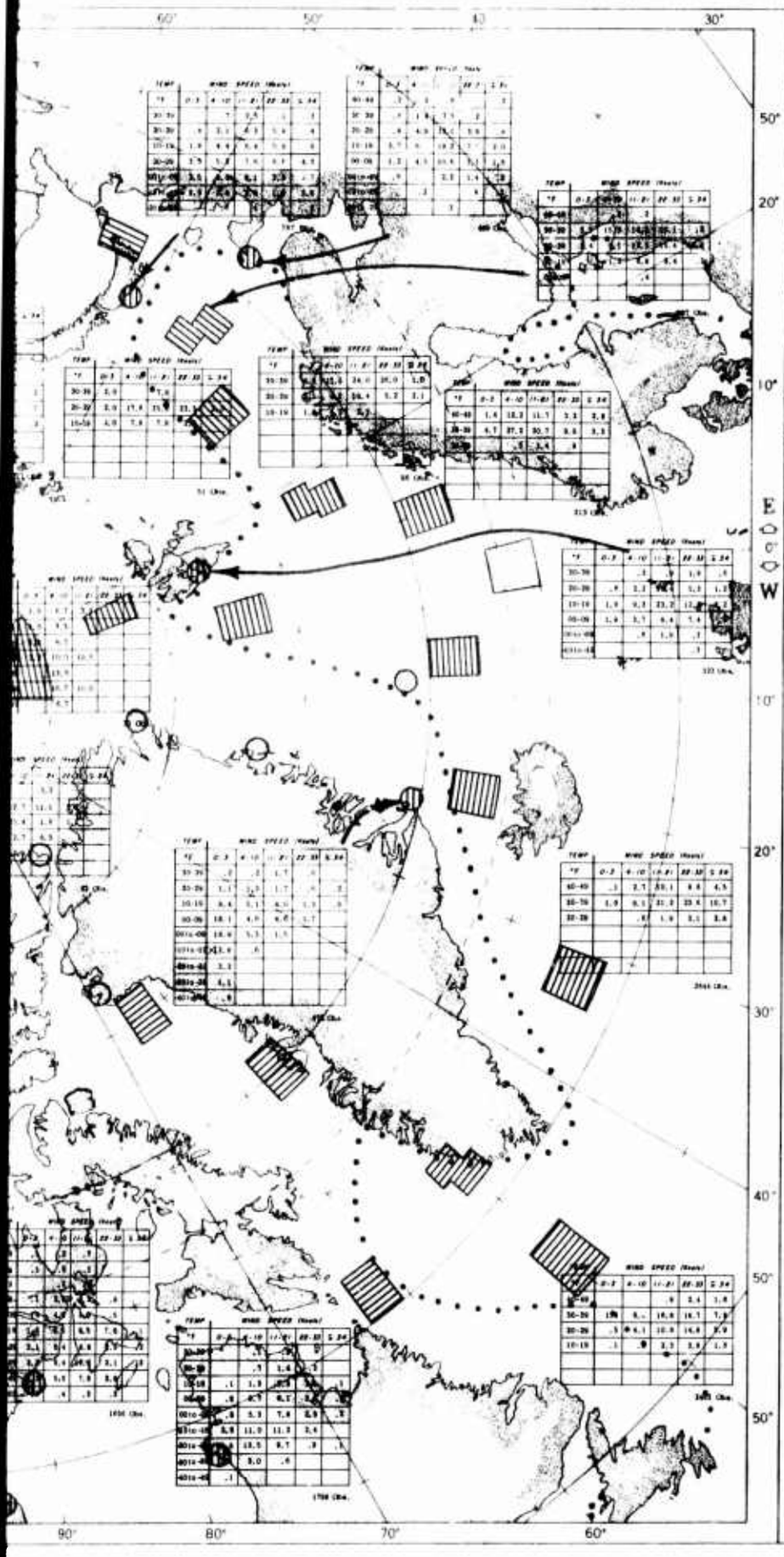


FEBRUARY AIR TEMPERATURE



ERATURE vs. WIND SPEED

CHART 25



Percentage Frequency of simultaneous occurrence of specified Temperature groups and Wind Speed

(5% of the observations on which the tabulation was based reported wind speed 22-33 knots simultaneous with temperature from 10° through 19° F.)

OSTROV WRANGELYA

°F	0-3	4-10	11-21	22-33	≥ 34
20-29		.4	.2		
10-19	1.1	.9	.7	.4	
00-09	3.5	6.2	2.9	1.1	.6
00 to -09	6.4	8.8	9.5	2.9	1.8
-10 to -19	14.7	6.4	8.1	2.4	.7
-20 to -29	16.9	3.1	1.5	.6	.4
-30 to -39	2.8	.6		.2	

545 Obs.

NORTH POLE

OCEAN STATION M

°F	0-3	4-10	11-21	22-33	≥ 34
40-49	.5	2.7	12.4	18.1	8.7
30-39	3.5	8.0	30.4	31.3	5.0
20-29		1	.8	1.2	4

3431 Obs.

NORD

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	.1		.1	.1	
20-29			.4	.3	
10-19		.3	.9	.5	.1
00-09	2.1	1.8	.4	.6	.2
00 to -09	2.4	3.5	1.6	.7	
-10 to -19	5.5	7.7	4.5	.5	.1
-30 to -39	11.7	18.5	2.0	1.1	.2
-40 to -49	9.7	11.6	1.1	.1	
-40 to -49	2.9	6.3	.5		
-50 to -59	.2	.5	.1		

1108 Obs.

DANMARKSHAVEN

°F	0-3	4-10	11-21	22-33	≥ 34
30-39			.1	.1	.1
20-29	.3	.3	.8	.4	
10-19	.6	1.8	.7	.6	.3
00-09	3.2	4.3	3.9	1.3	1.7
00 to -09	6.6	10.1	5.4	1.8	.1
-30 to -39	13.1	9.1	1.7		
-50 to -59	4.4	.1			

710 Obs.

JAN MAYEN

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	.6	4.8	7.8	3.8	2.4
20-29	3.9	13.8	15.3	13.8	2.7
10-19	1.3	5.4	9.3	11.7	.9
00-09		1.2	1.2	.9	

353 Obs.

ISACHSEN

°F	0-3	4-10	11-21	22-33	≥ 34
00 to -09	.6	.2	.4		
-10 to -19	1.8	3.9	3.3	1.8	.3
-20 to -29	9.4	7.7	4.3	2.7	.3
-30 to -39	17.7	9.9	8.7	3.7	.5
-40 to -49	10.3	5.8	2.4	.7	
-50 to -59	5.7	.9	.3	.1	

1801 Obs.

EUREKA

°F	0-3	4-10	11-21	22-33	≥ 34
00-09		.1	.5		
00 to -09	.3	1.4	1.5	.2	
-10 to -19	1.5	3.3	3.2	.5	.3
-20 to -29	4.0	7.0	3.1	.6	.1
-30 to -39	10.1	16.2	4.3	.6	
-40 to -49	14.3	10.3	.7		
-50 to -59	3.7	4.1			
-60 to -69	.1	.1			

1690 Obs.

ALERT

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	.1				
20-29				.1	
10-19	.1	.1	.1	.1	.2
00-09	.3	.4	.3	.6	.4
00 to -09	.6	.9	.5	1.4	.6
-10 to -19	6.6	5.6	1.8	1.8	1.1
-20 to -29	17.1	7.6	1.9	1.2	.7
-30 to -39	28.2	11.2	1.0	.2	
-40 to -49	8.3	2.8			
-50 to -59	.1				

1691 Obs.

MOULD BAY

°F	0-3	4-10	11-21	22-33	≥ 34
00-09		.2	.3	.1	
00 to -09	.3	.4	.7	.4	
-10 to -19	2.3	3.5	3.0	1.8	
-20 to -29	6.0	7.8	7.6	1.4	.1
-30 to -39	15.3	8.6	7.1	1.8	.1
-40 to -49	19.0	6.8	3.5	.8	
-50 to -59	3.6	.5	.3		

1806 Obs.

RESOLUTE

°F	0-3	4-10	11-21	22-33	≥ 34
00-09		.1	.7	.1	
00 to -09	.8	1.1	1.8	1.6	.9
-10 to -19	1.2	4.8	4.0	1.7	.7
-20 to -29	4.7	12.1	8.2	2.6	.2
-30 to -39	6.0	10.5	8.2	2.5	
-40 to -49	3.5	9.0	3.8	.2	
-50 to -59	.4	.8	.1		

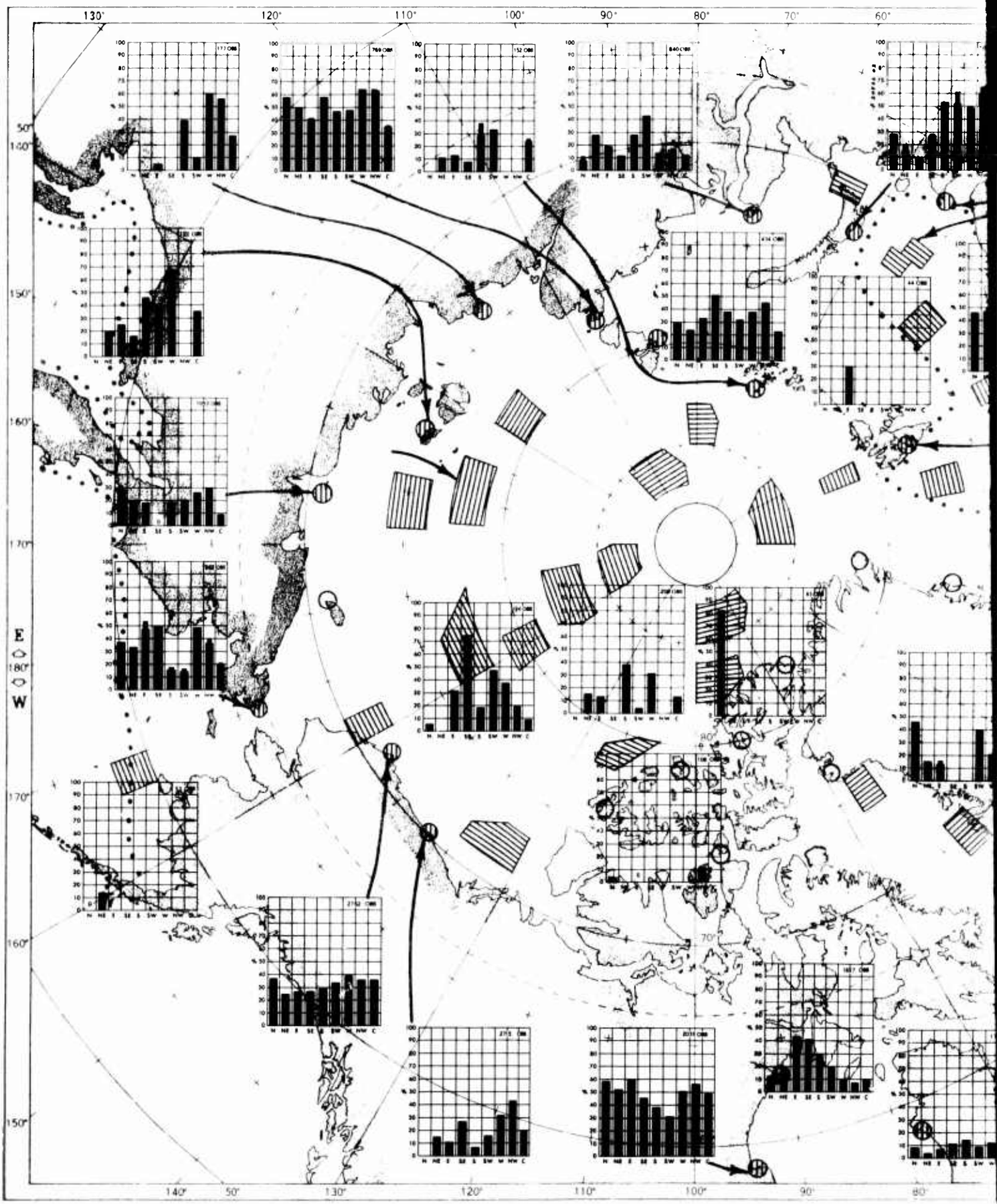
1803 Obs.

THULE

°F	0-3	4-10	11-21	22-33	≥ 34
30-39		.2	.1	.3	
20-29		.6	.7	.8	.1
10-19	.6	.9	.8	.8	.4
00-09	2.4	3.6	1.3	.9	.4
00 to -09	4.2	10.6	2.3	1.3	.1
-10 to -19	6.9	18.3	1.7	.5	
-20 to -29	3.8	22.7	1.0		
-30 to -39	.9	10.7			

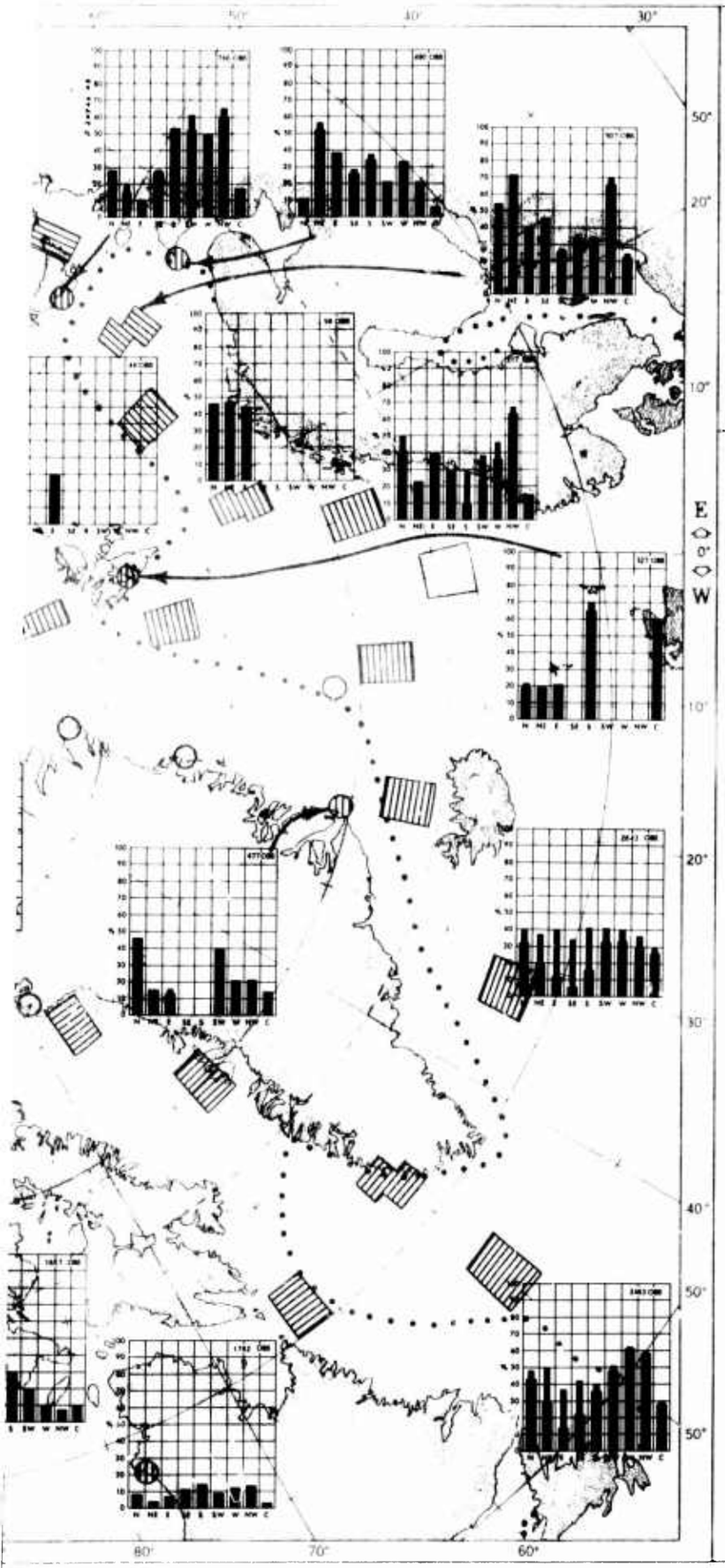
2231 Obs.

FEBRUARY PRECIPITATION BY WI



I BY WIND DIRECTION

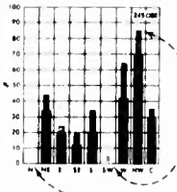
CHART 26



Percentage Frequency of Precipitation by Wind Direction

(a) Percentage of all present weather (and wind) observations reporting precipitation

(b) Percentage of observations recording liquid or frozen precipitation as indicated by

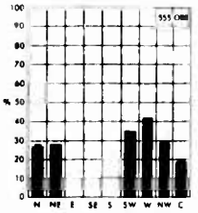


(85% of all NW winds were accompanied by precipitation, 15% frozen, 70% liquid)

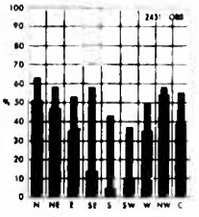
0 replaces bar when no precipitation was observed with winds from a direction

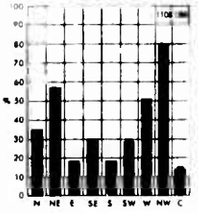
Ear or 0 omitted when number of observations was 10 or Less

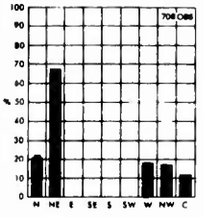
See chart 6 for precipitation incidence disregarding wind direction

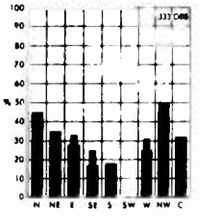


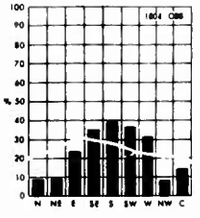
NORTH POLE

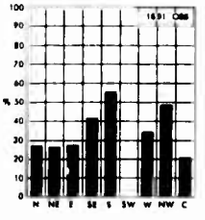


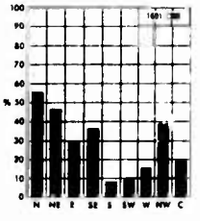


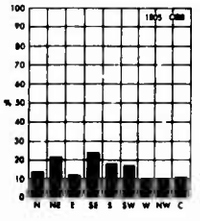


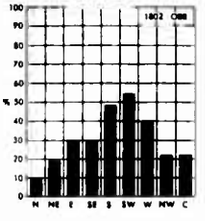


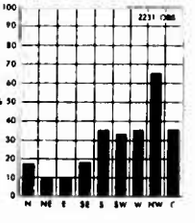












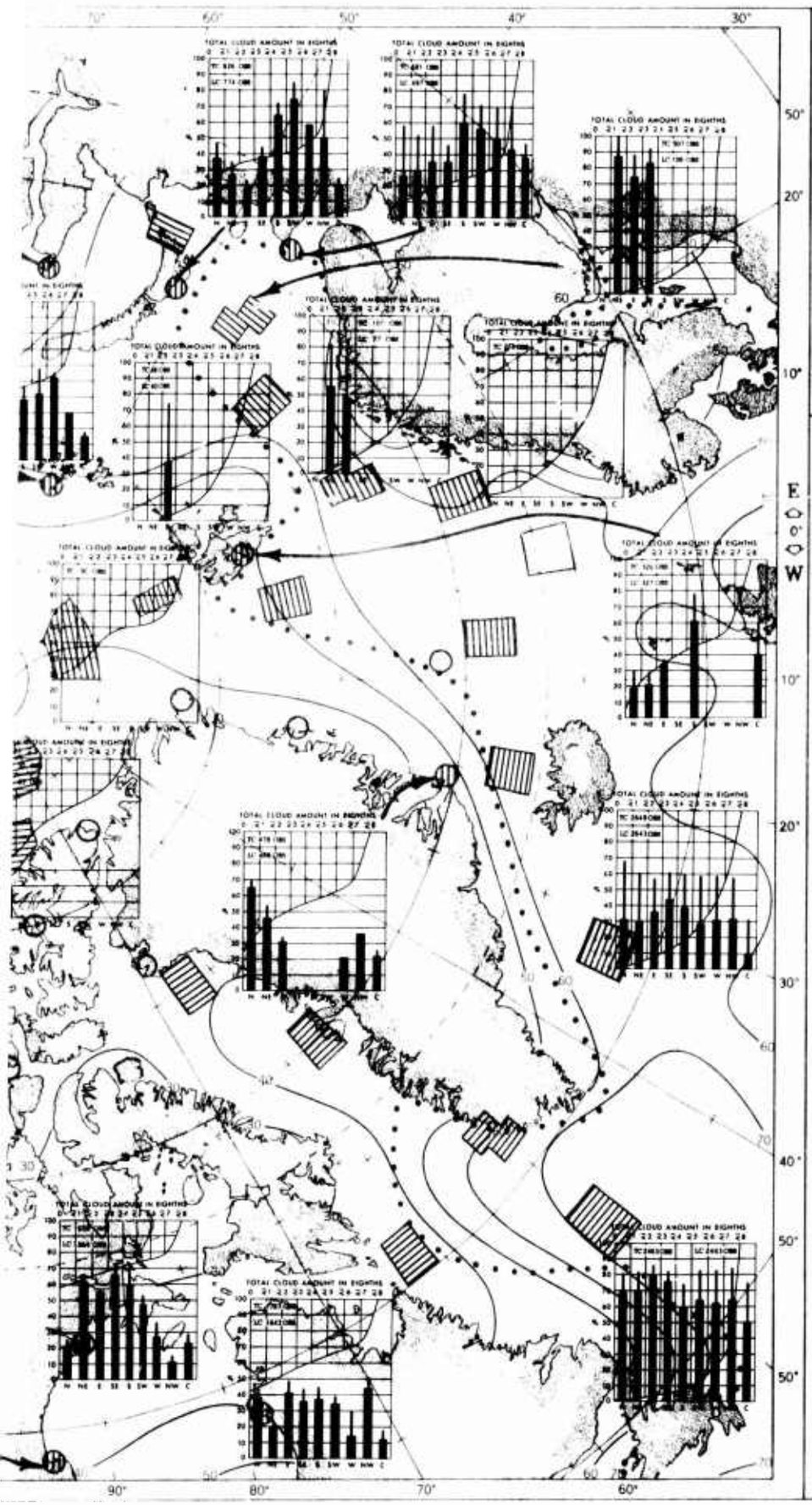
FEBRUARY

CLOUDINES



CLOUDINESS

CHART 27



Percentage Frequency of Total Cloud Amount 8/10 or more

Total Cloud Amount (TC) Percentage frequency of total cloud amounts equal to or less than amount intersected by the curve

—162% of all total cloud amounts were 7/8 or less

Lower Cloud Amount (LC) Percentage proportions of winds from each direction that were accompanied by low or middle cloud amounts greater than 5/8 and greater than 7/8

—152% of all NW winds were accompanied by lower cloud amounts >5/8 and 38% by lower cloud amounts >7/8

[>5/8 includes 6/8 8/8 and 7/10 10/10, >7/8 includes 8/8 and 9/10 10/10]

0 replaces bar when no low cloud amounts >5/8 were observed with winds from a direction

Bar (or 0) is omitted when the number of observations including both wind direction and low cloud amount was 10 or less for a direction

OS ROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

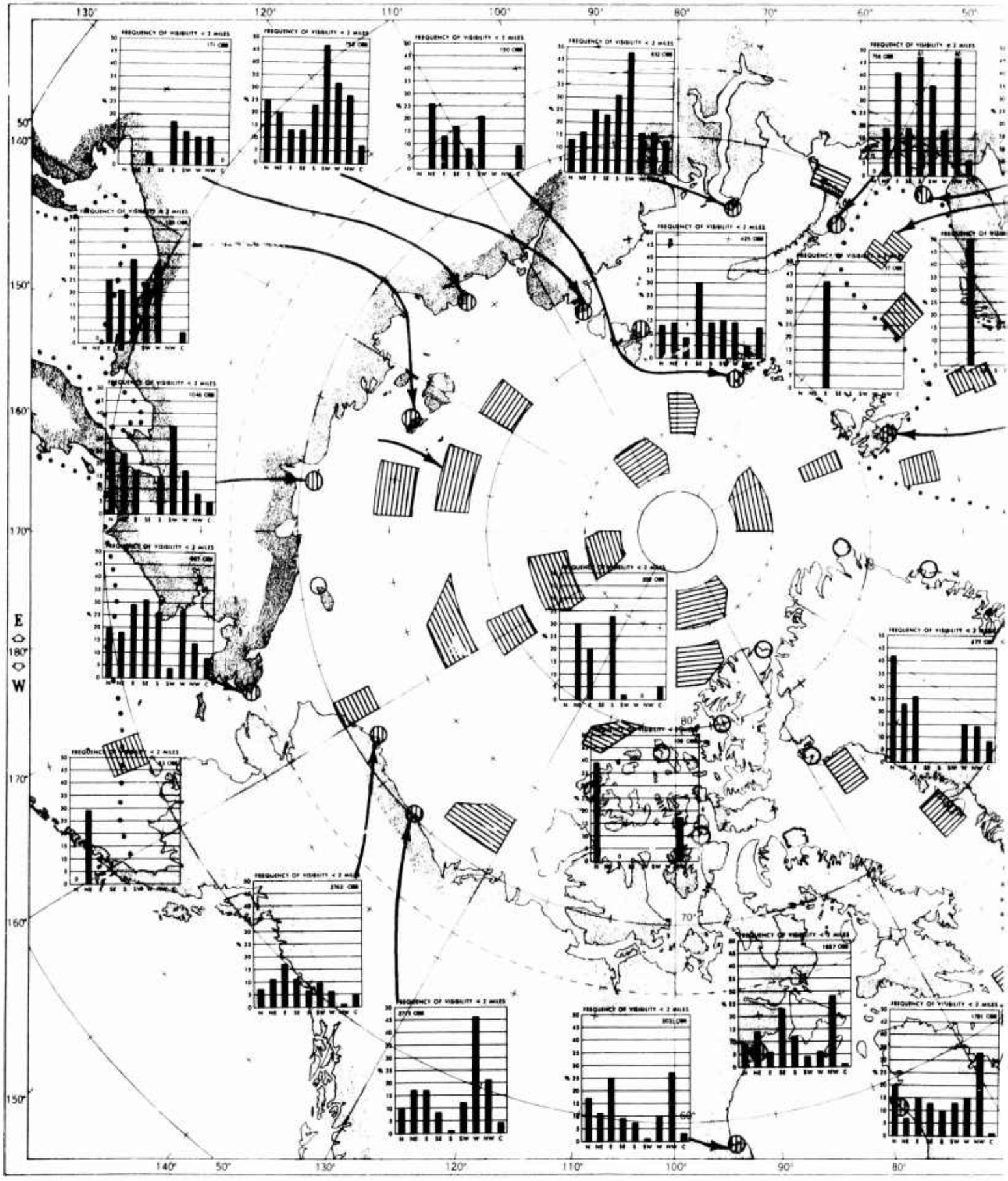
MOULD BAY

RESOLUTE

THULE

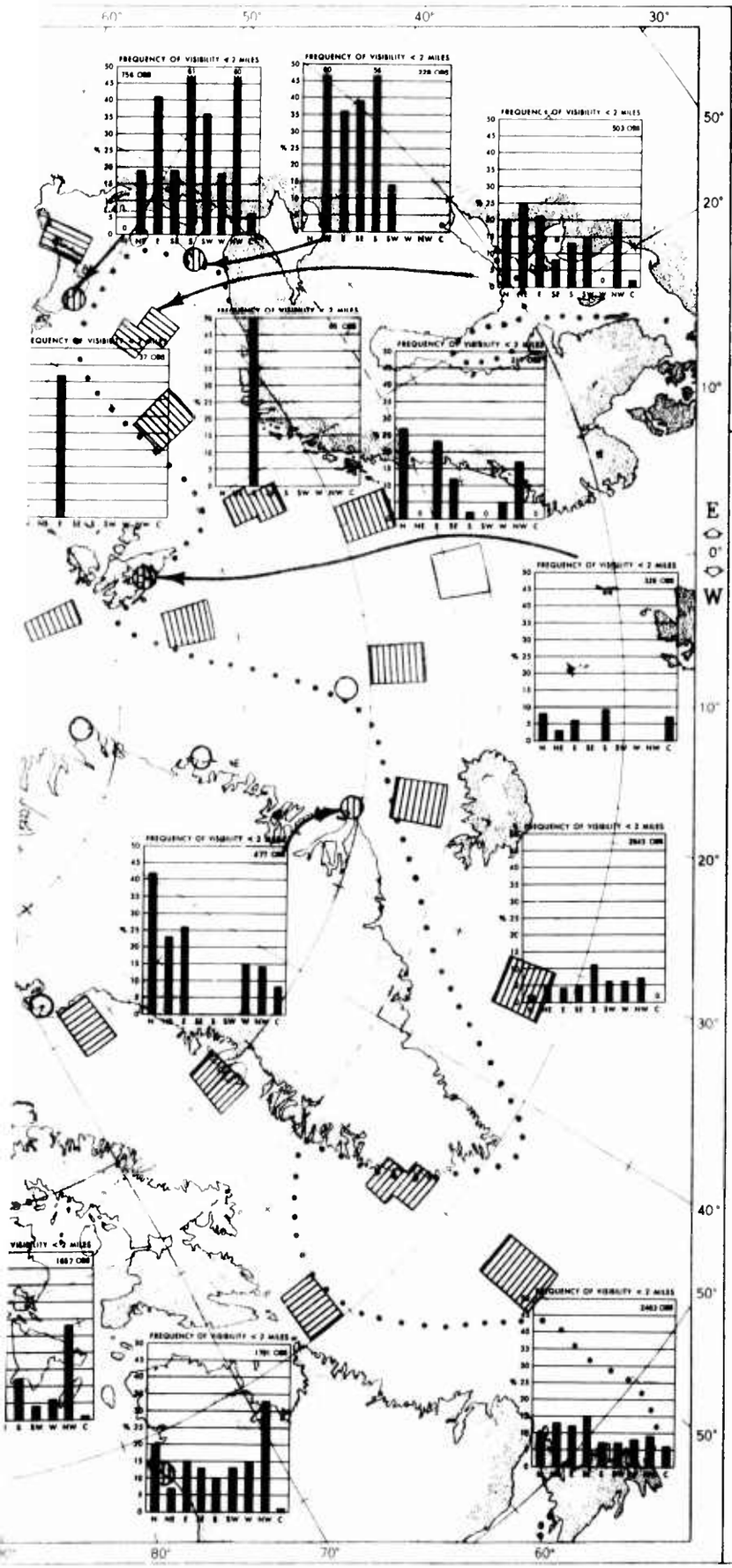
FEBRUARY

LOW VISIBILITY BY WIND



/ BY WIND DIRECTION

CHART 28



Percentage Frequency of Low Visibility by Wind Direction

Percentage of all visibility (and wind) observations reporting visibility less than 2 nautical miles

(8% of all NW winds were accompanied by visibility less than 2 miles)

0 replaces bar when no visibilities <2 miles were observed with winds from a direction

Bar or 0 omitted when number of observations was 10 or less

See chart 9 for low visibility incidence disregarding wind direction

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

MOULD BAY

RESOLUTE

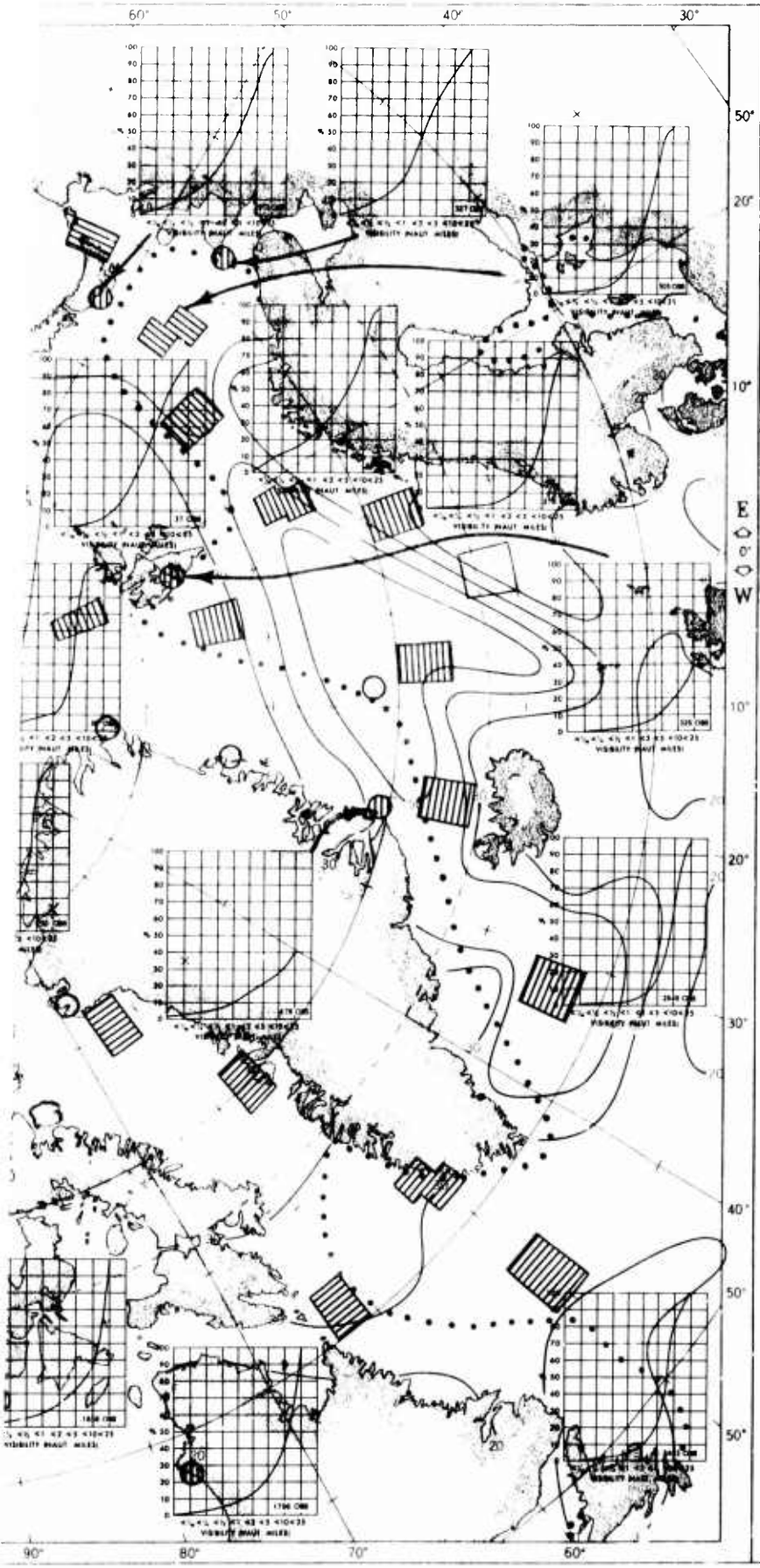
THULE

FEBRUARY VISIBILITY



VISIBILITY

CHART 29



Percentage Frequency of Visibility <5 Nautical Miles

Percentage Frequency of Visibilities less than amount intersected by the curve

(60% of all visibilities were 10 nautical miles or less)

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

MOULD BAY

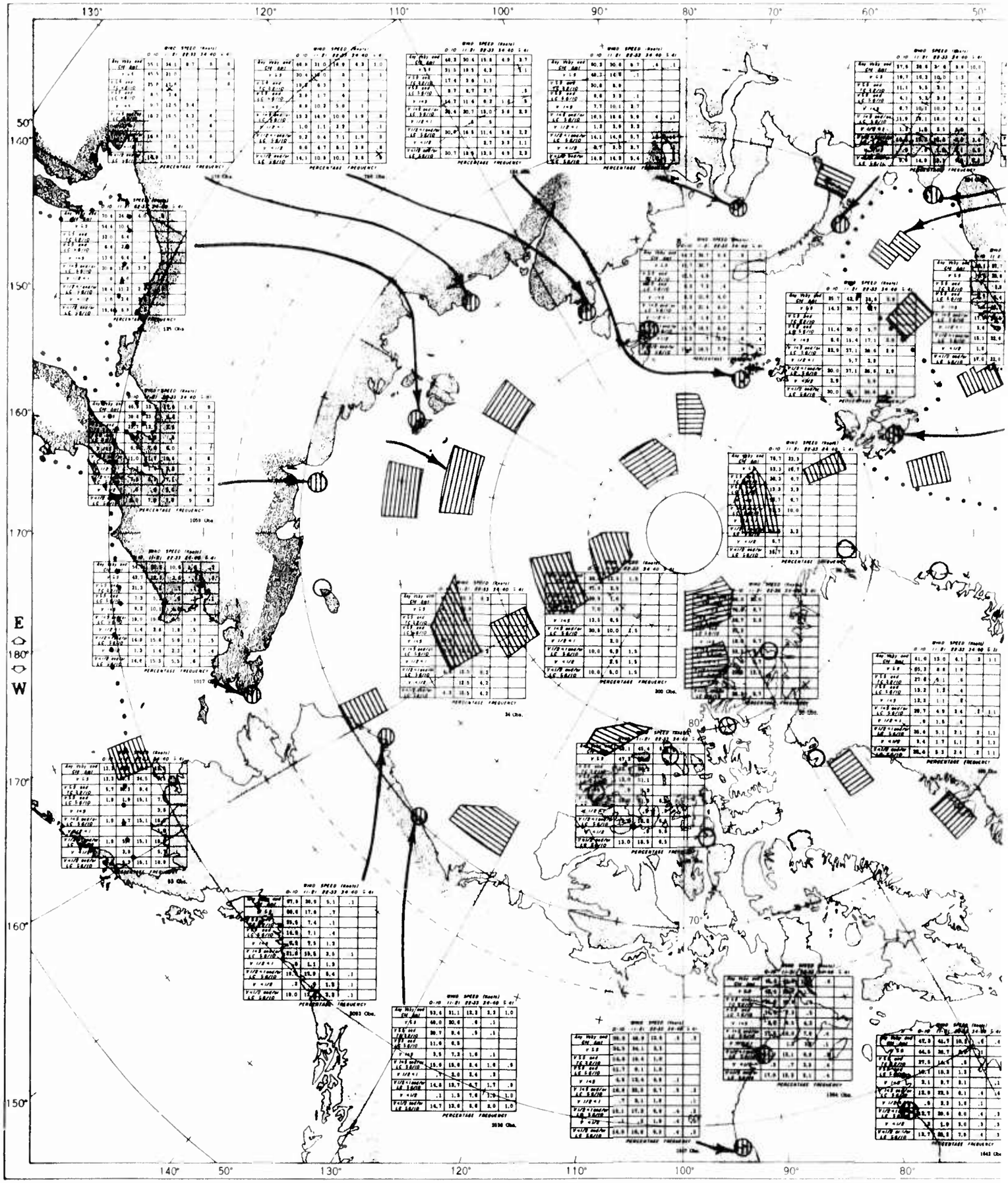
RESOLUTE

THULE

VISIBILITY (NAUT MILES)

FEBRUARY

WIND-VISIBILITY-CLO



Y-CLOUDINESS

CHART 30

Percentage Frequency of simultaneous occurrence of specified Wind, Visibility, and Cloudiness conditions (based on the number of observations which reported wind speed, visibility, total cloud amount, and low cloud amount)



Blank box indicates 0.0 percent

Notation

Any Vsby and Cld Amt = Simultaneous occurrence of wind speed with any visibility and cloud amount combination. This provides a percentage distribution of wind speeds for the observations used in this tabulation.

V = Visibility in Nautical Miles
1<5 indicates 1 to (but not including) 5 nautical miles

TC = Total Cloud Amount

LC = Low Cloud Amount (with base approximately 8000 feet or lower)

Ocean Area 16.6% of the observations on which this tabulation was based reported speed 22-33 knots simultaneous with visibility 1-5 nautical miles and/or low cloud amount = 6-10

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

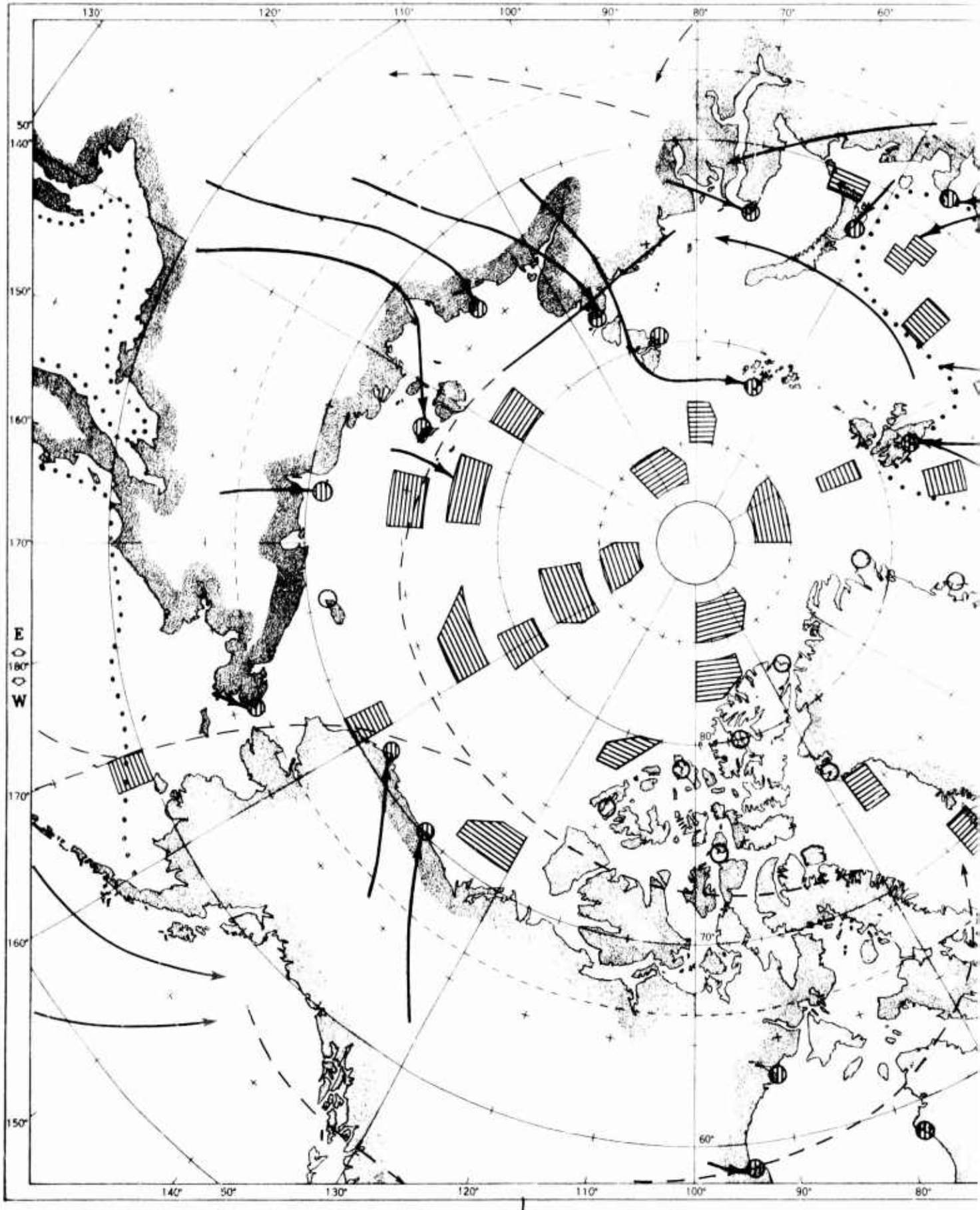
MOULD BAY

RESOLUTE

THULE

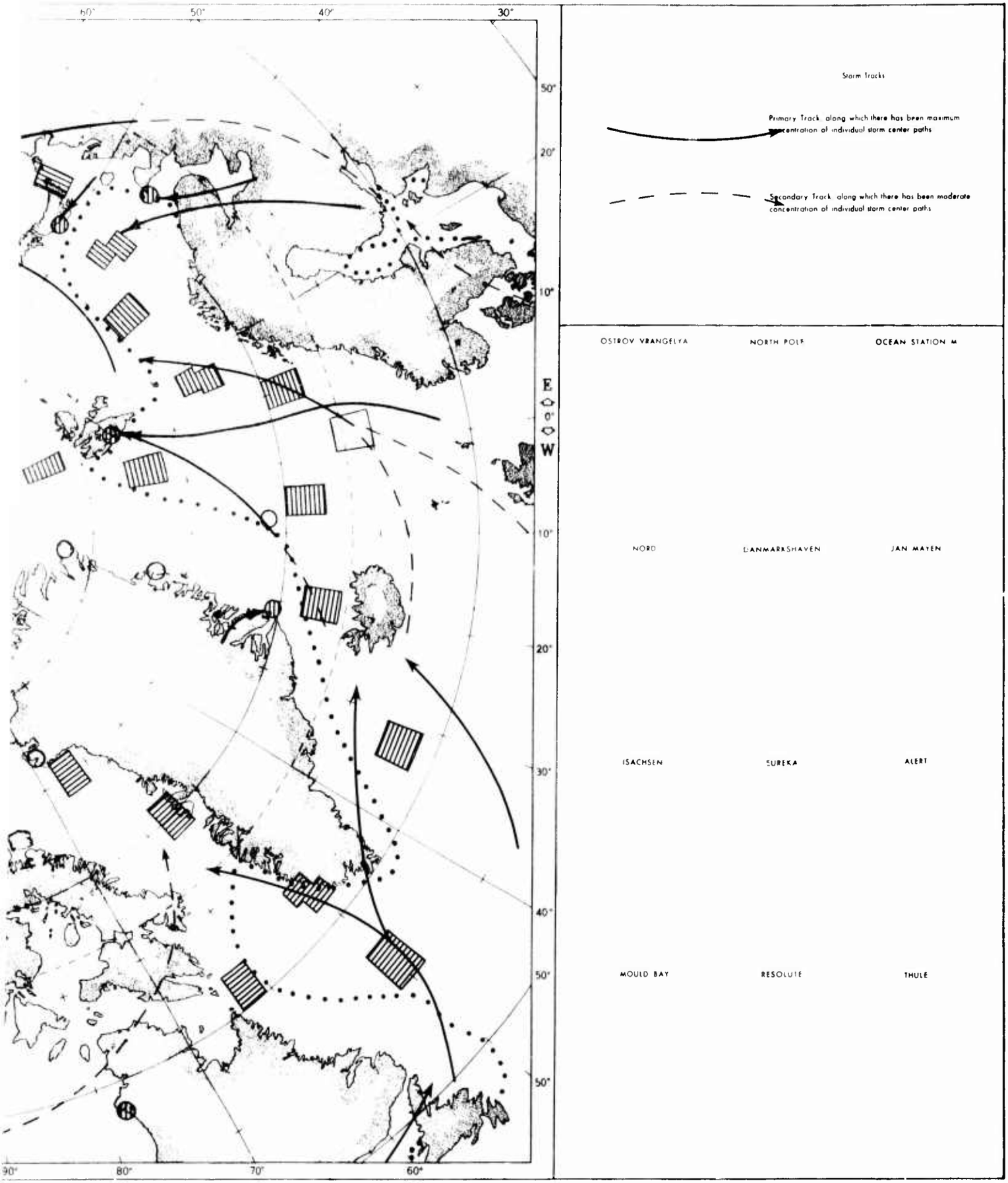
FEBRUARY

STORM TRA



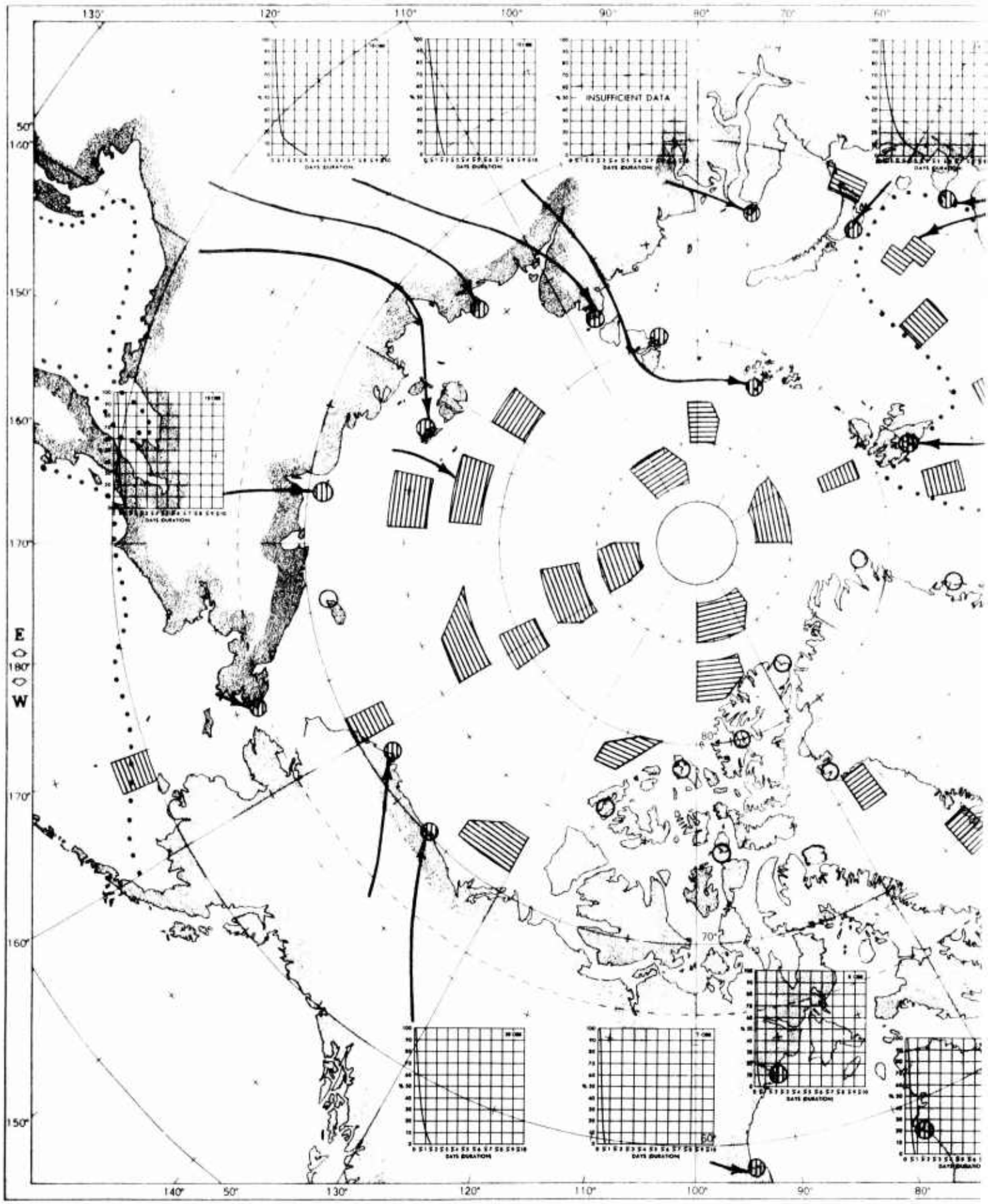
ORM TRACKS

CHART 31



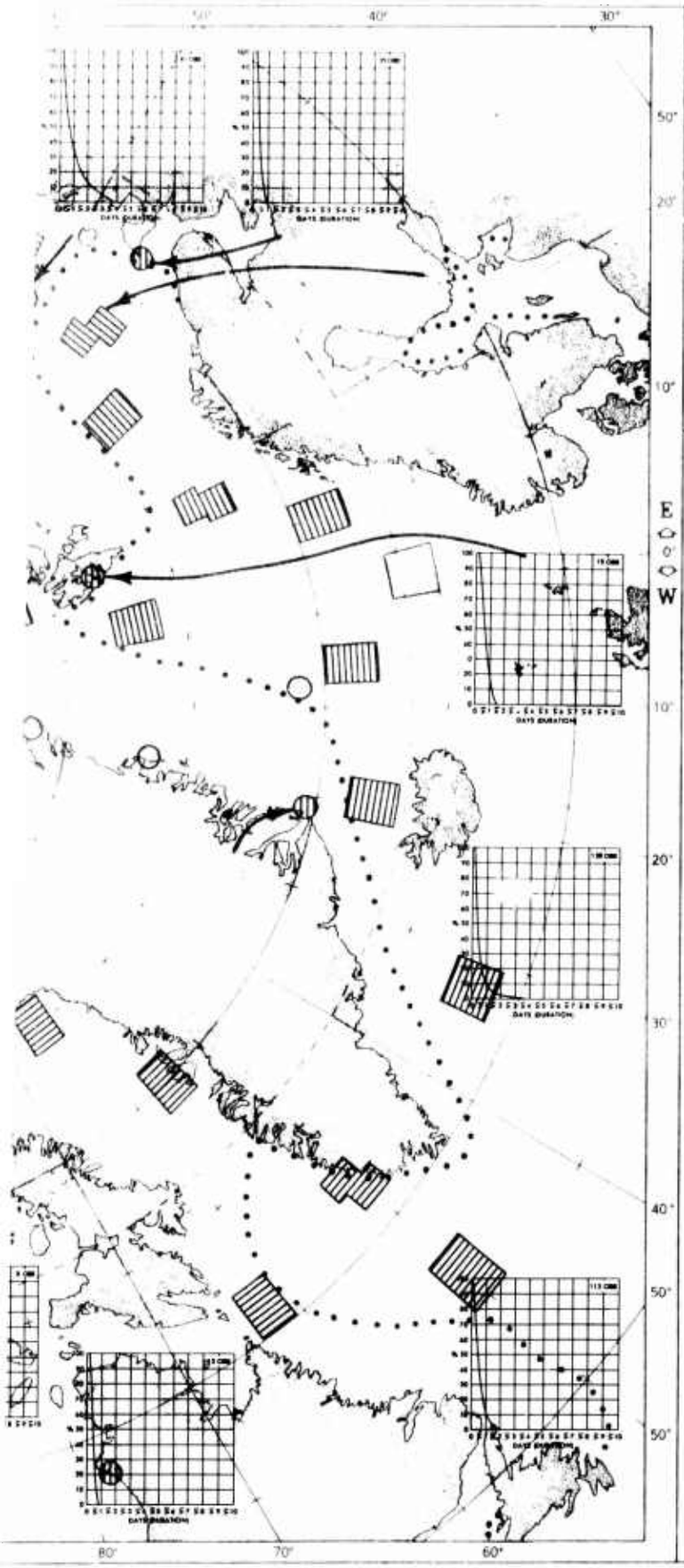
FEBRUARY

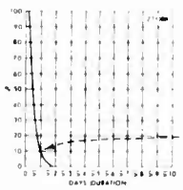
GALE PERSIST



ERSISTENCE

CHART 32

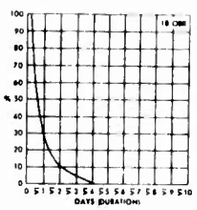




Percentage Frequency of Gales (Beaufort Force 8 or more ≥34 knots) equal to or greater than number of days intersected by the curve

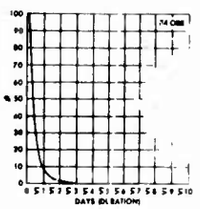
(10% of Gales (≥34 knots) persist at least one day)

OSTROV VRANGELYA



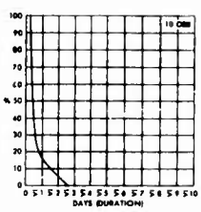
NORTH POLE

OCEAN STATION M

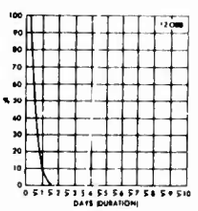


NORD

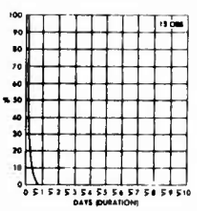
DANMARKSHAVEN



JAN MAYEN

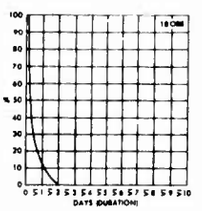


ISACHSEN

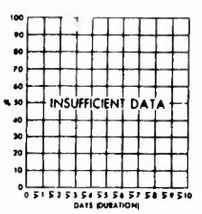


EUREKA

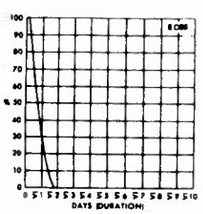
ALERT



MOULD BAY

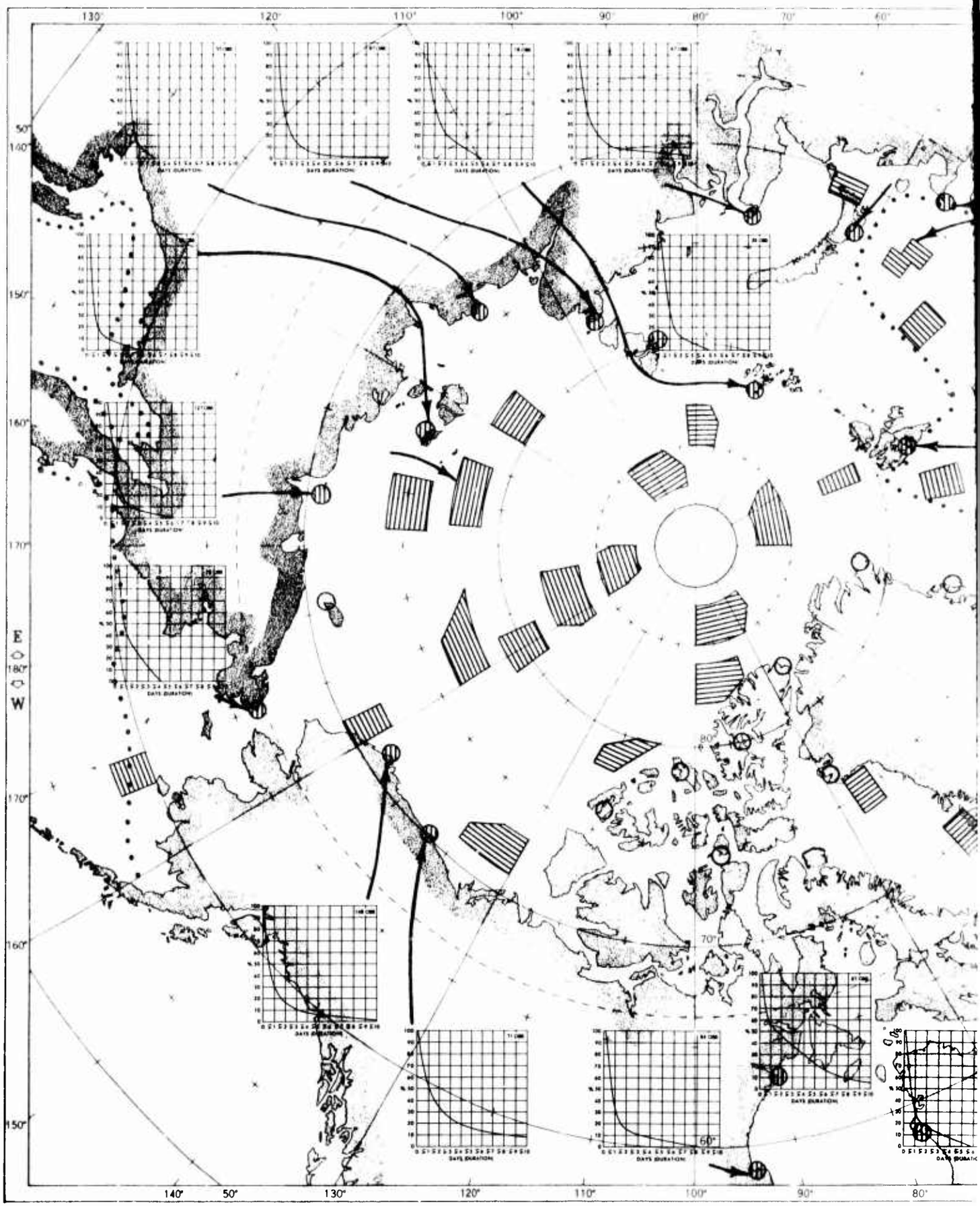


RESOLUTE



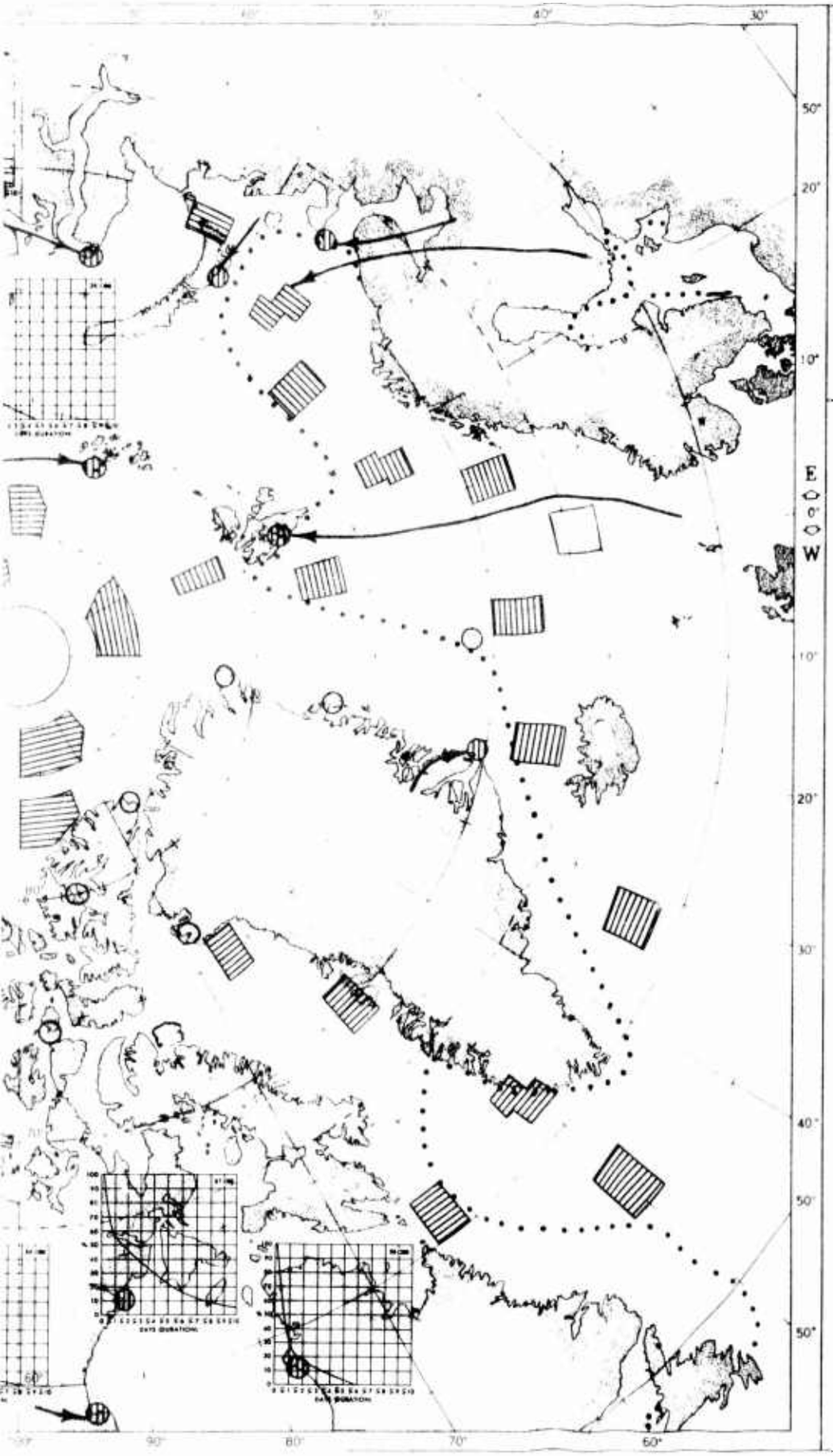
THULE

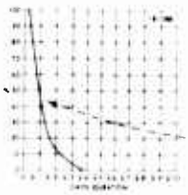
FEBRUARY LOW TEMPERATURE



TEMPERATURE PERSISTENCE

CHART 33

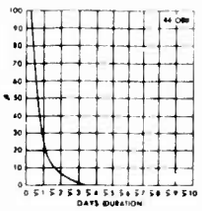




Percentage Frequency of Air Temperature (20° F or less equal to or greater than number of days intersected by the curve

[44 % of cold temperatures (20° F) persist at least one day]

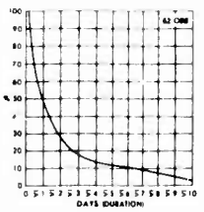
OSTROV VRANGELYA



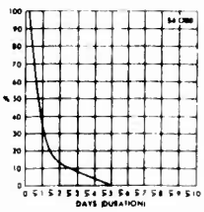
NORTH POLE

OCEAN STATION M

NORD

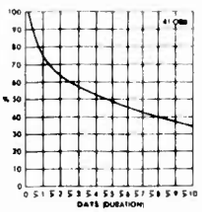


DANMARKSHAVEN

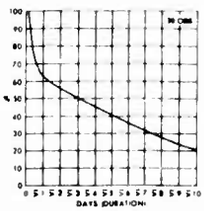


JAN MAYEN

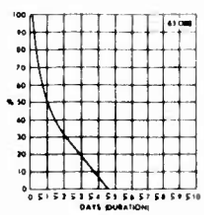
ISACHSEN



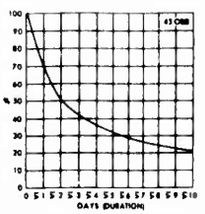
EUREKA



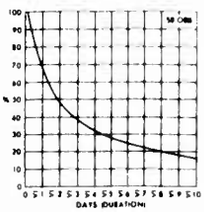
ALERT



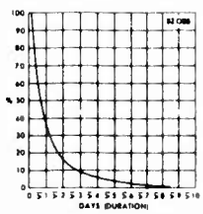
MOULD BAY



RESOLUTE



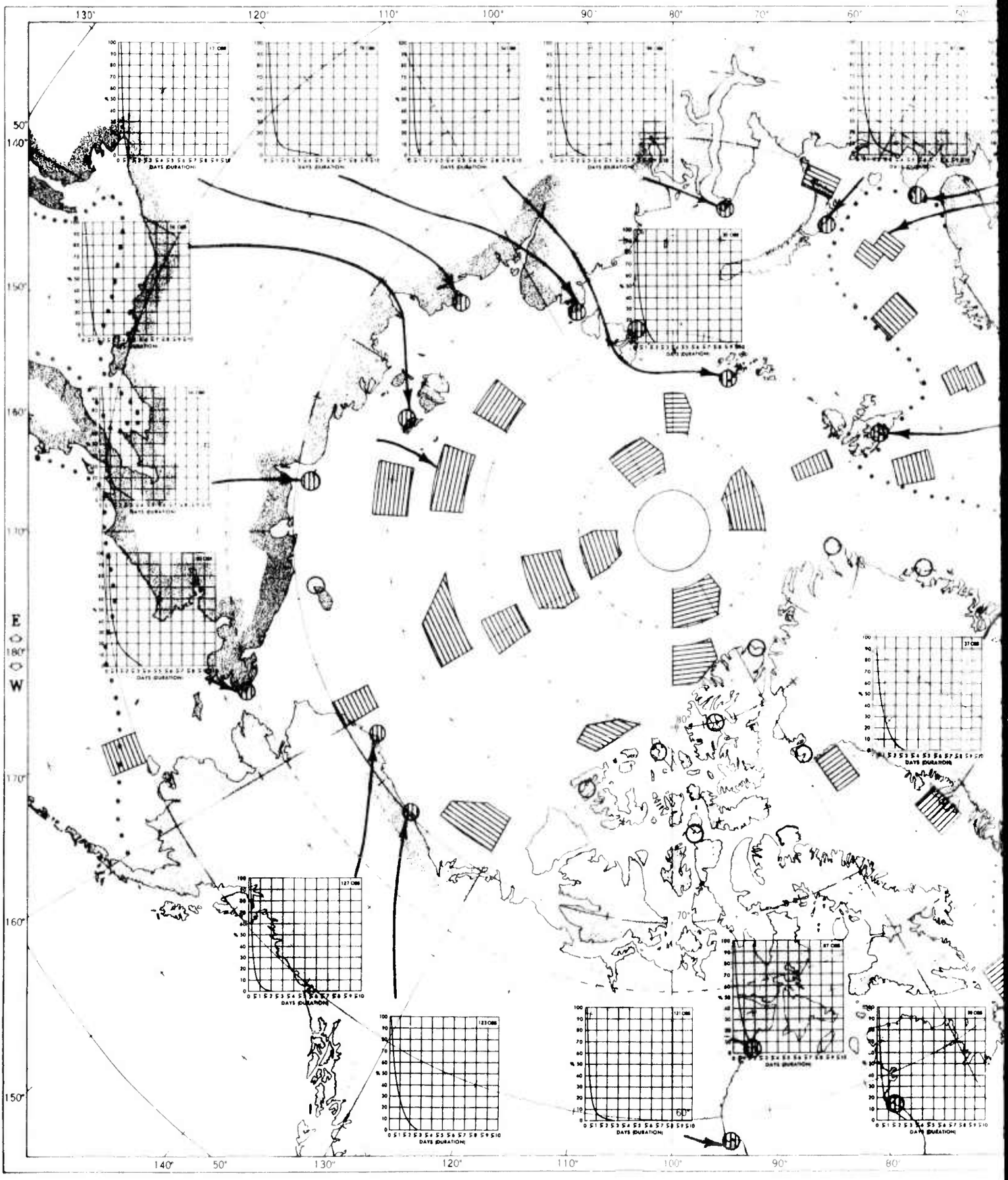
THULE



2

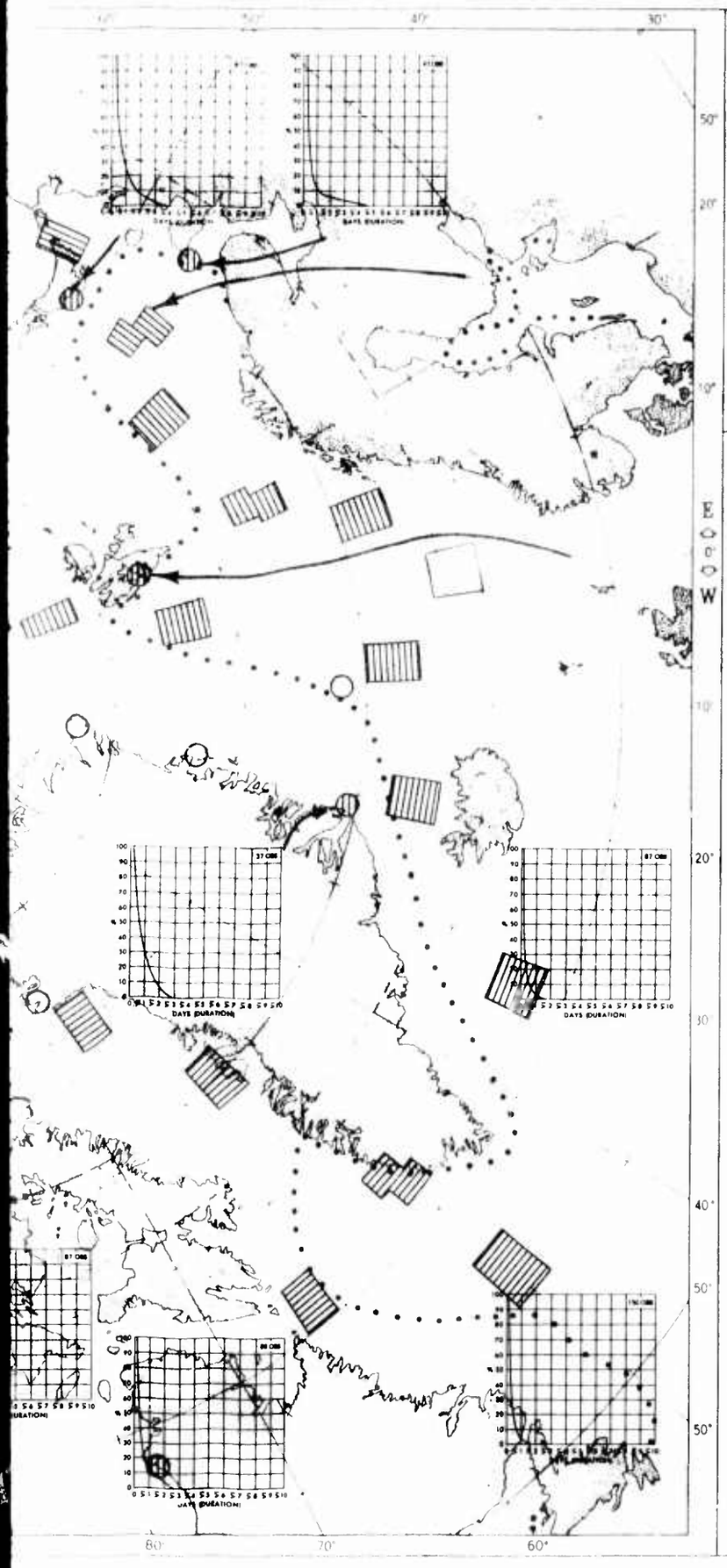
FEBRUARY

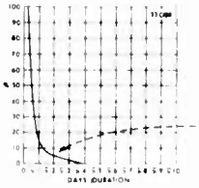
LOW VISIBILITY PERS



IBILITY PERSISTENCE

CHART 34

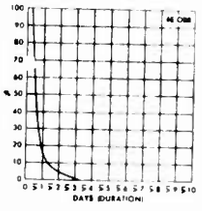




Percentage Frequency of Low Visibiley (< 2 nautical miles) equal to or greater than number of days intersected by the curve

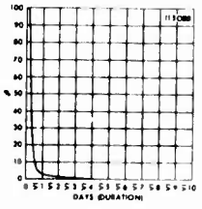
[6% of low visibilities (< 2 miles) persist at least two days]

OSTROV VRANGEL'YA

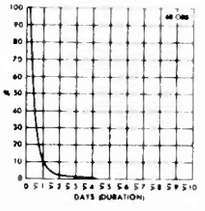


NORTH POLE

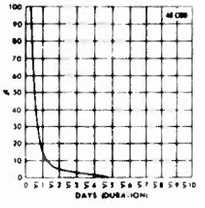
OCEAN STATION M



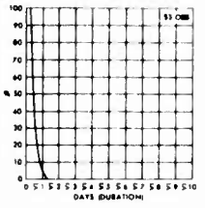
NORD



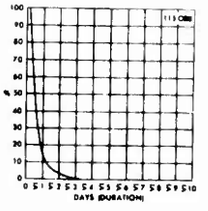
DANMARKSHAVEN



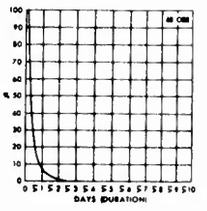
JAN MAYEN



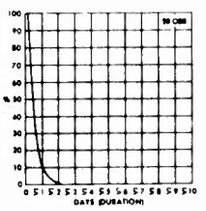
ISACHSEN



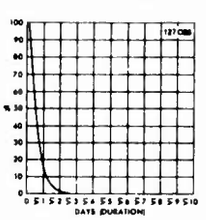
EUREKA



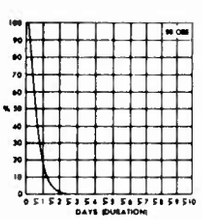
ALERT



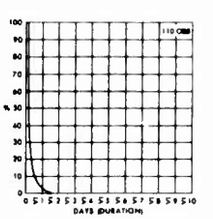
MOULD BAY



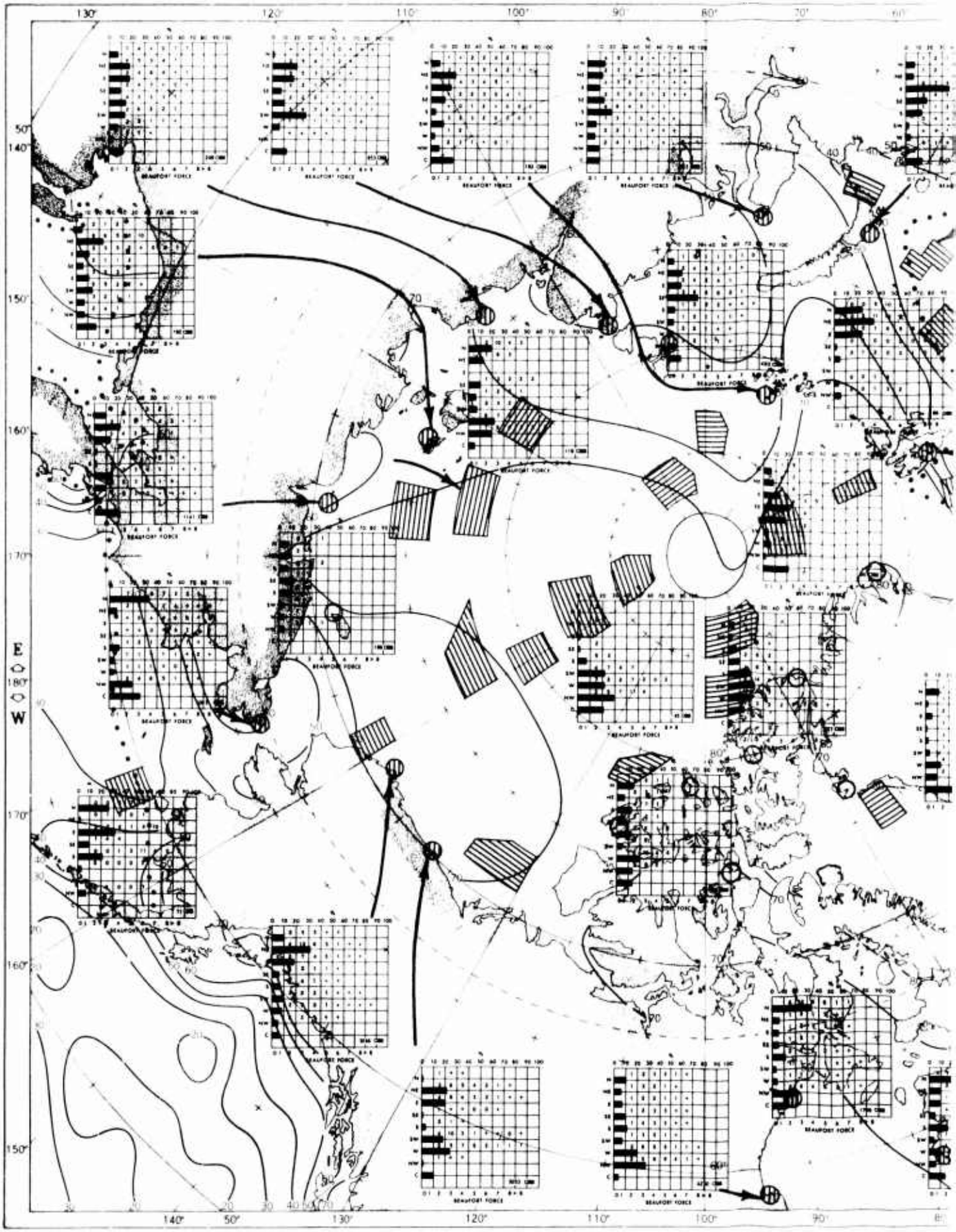
RESOLUTE



THULE

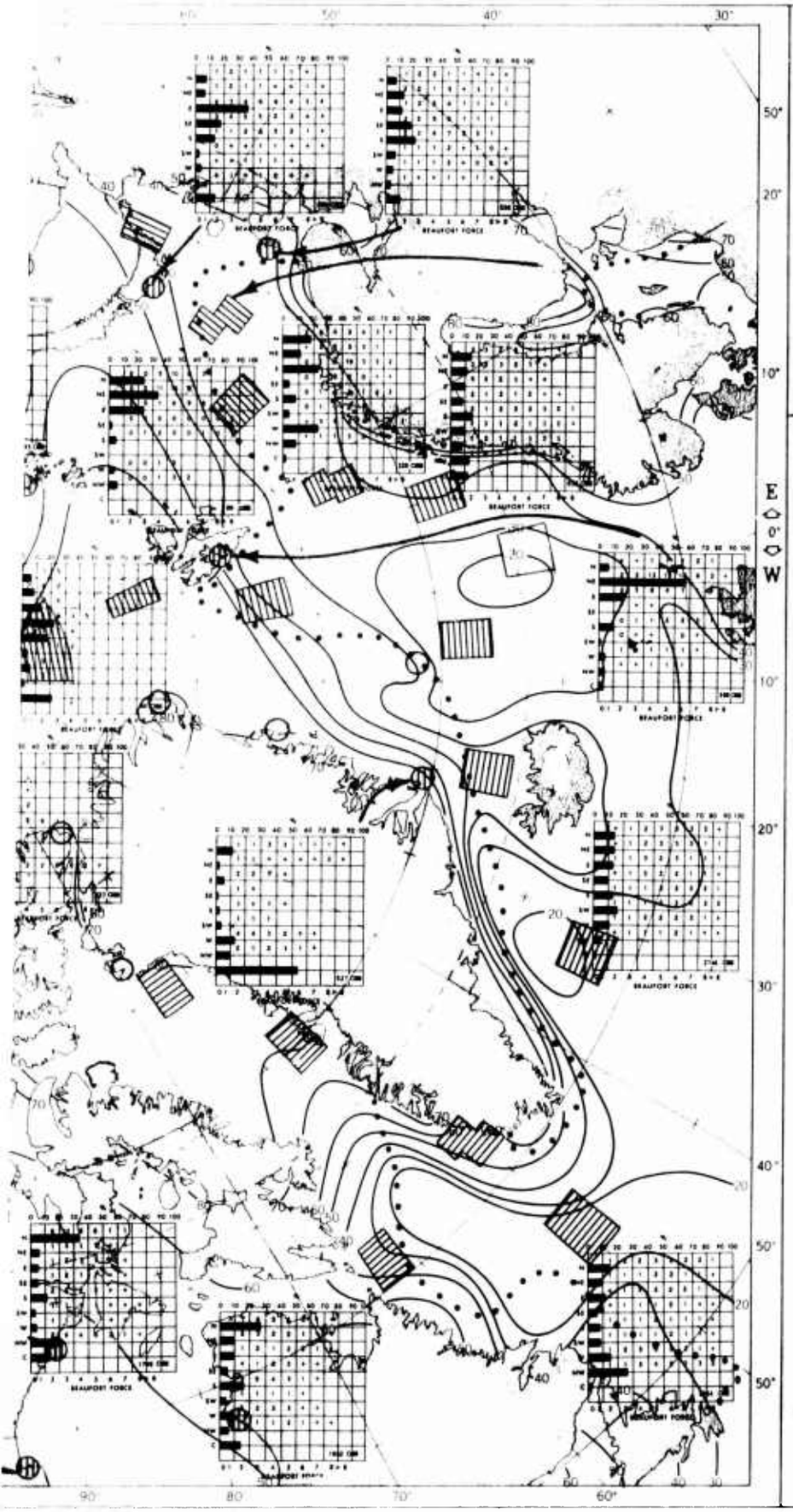


MARCH SURFACE

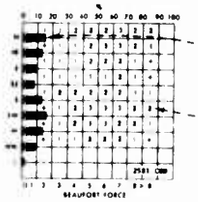


SURFACE WIND

CHART 35



Percentage Frequency of Wind Speed Beaufort Force 3 or less (≤ 10 Knots)



Direction Frequency (Top Scale) Bars represent percentage frequency of wind observed from each direction (& calm)

– (14% of all winds were from N)

Speed Frequency (Bottom Scale) percentage frequency of wind speed by Beaufort Force

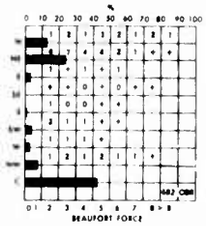
– (2% of all winds from SW were greater than Beaufort Force 8)

All percentages rounded to nearest whole percent

Calm includes Beaufort Force 1 (0-3 knots)

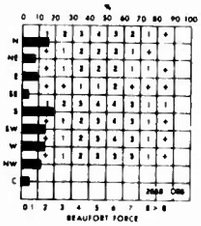
+ indicates less than 1/2 percent

OSTROV VRANGELYA

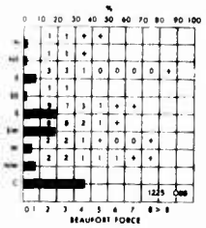


NORTH POLE

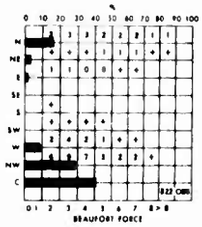
OCEAN STATION M



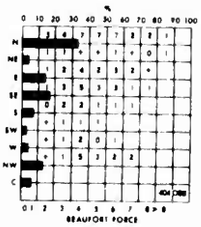
NORD



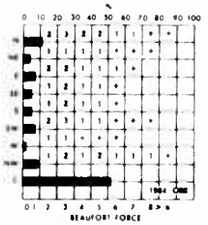
DANMARKSHAVEN



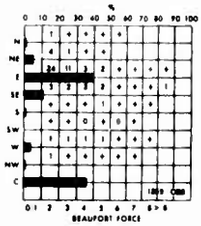
JAN MAYEN



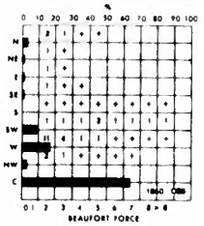
ISACHSEN



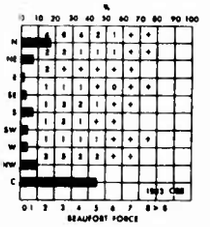
EUREKA



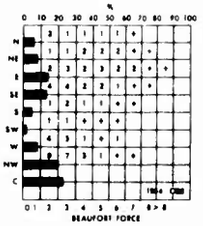
ALERT



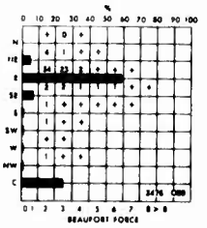
MOULD BAY



RESOLUTE

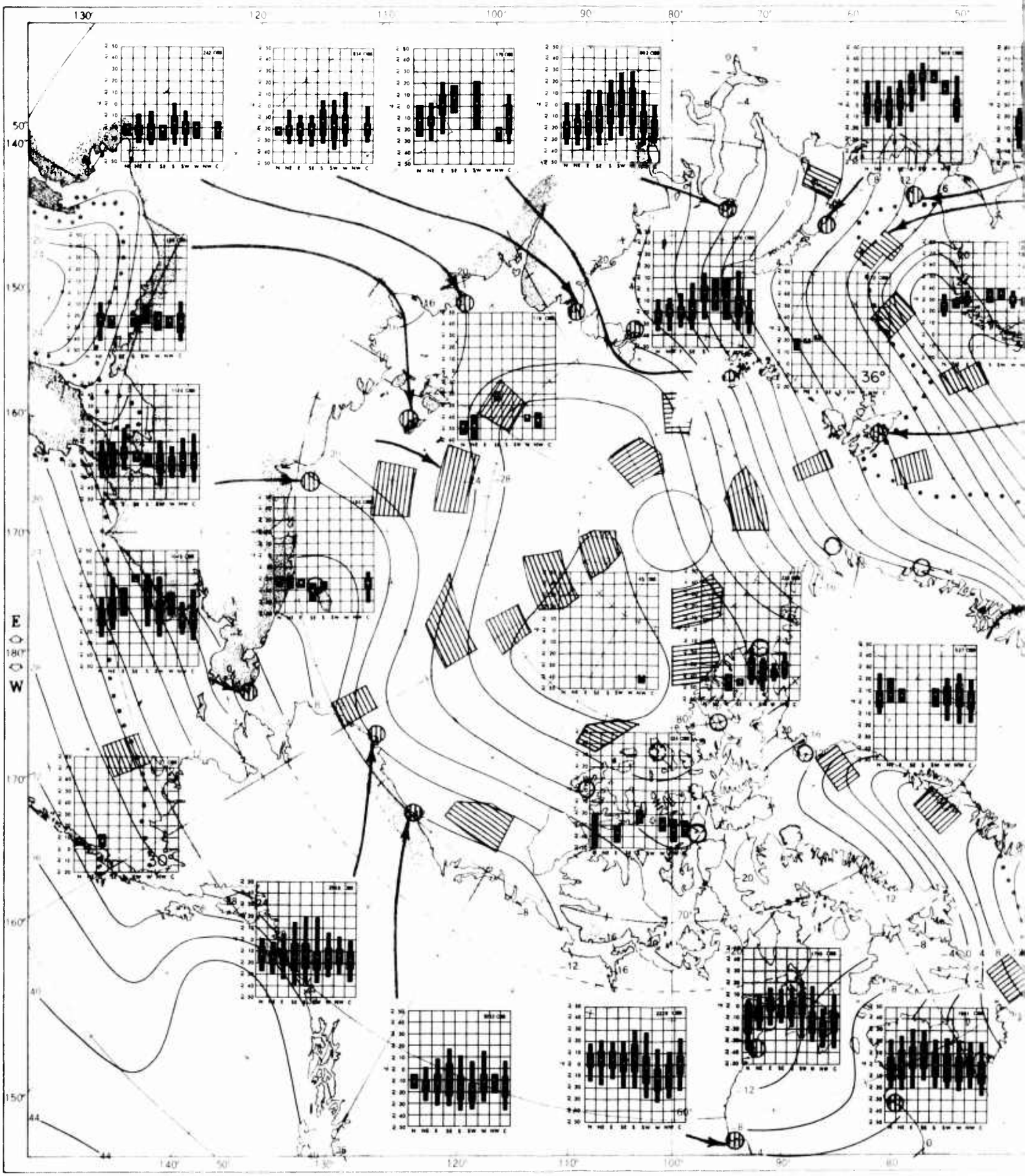


THULE



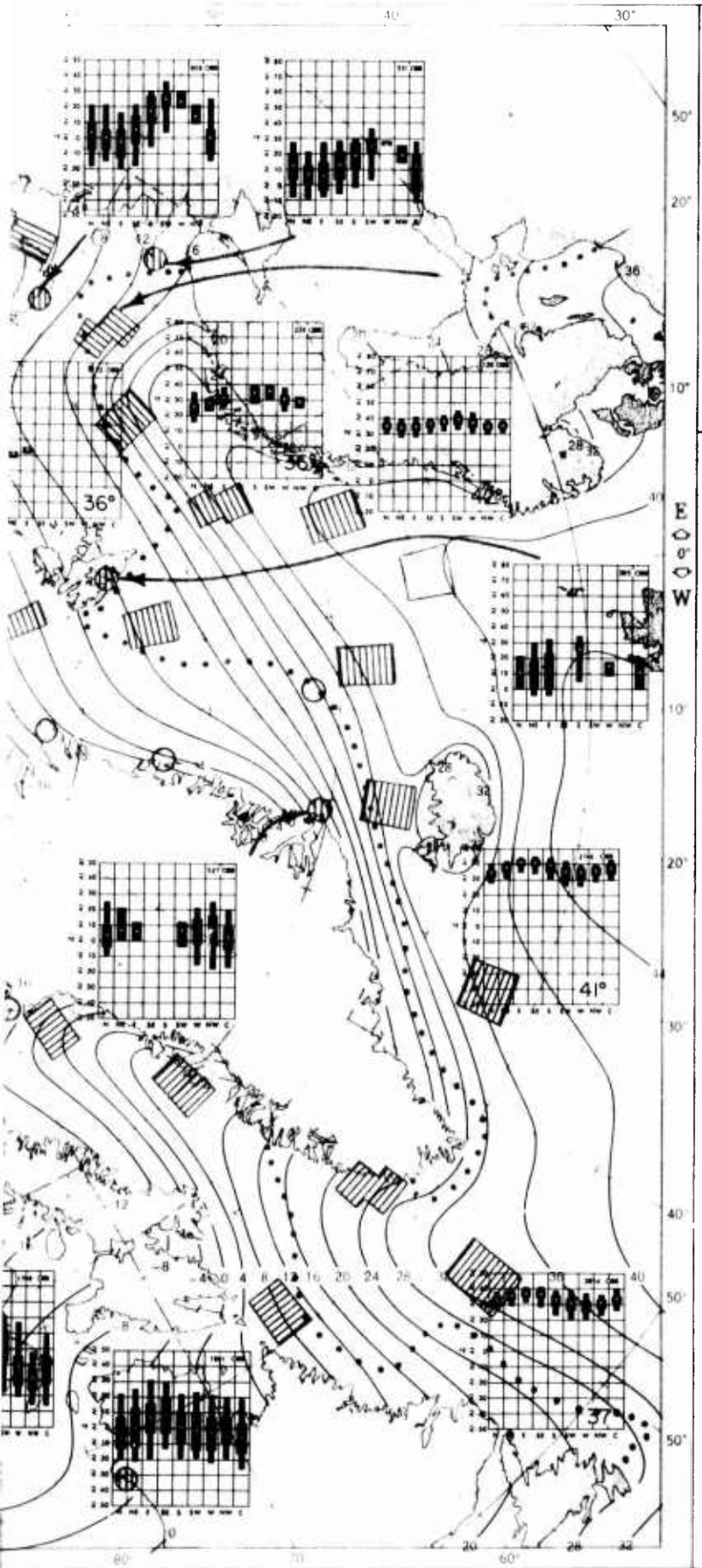
MARCH

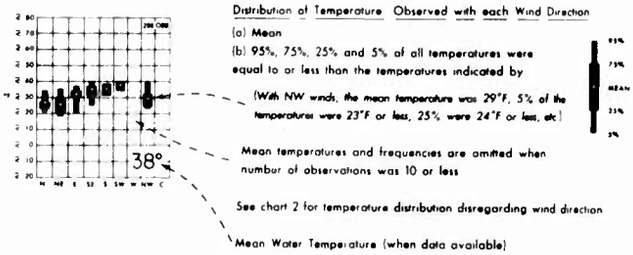
AIR TEMPERATURE BY WIND

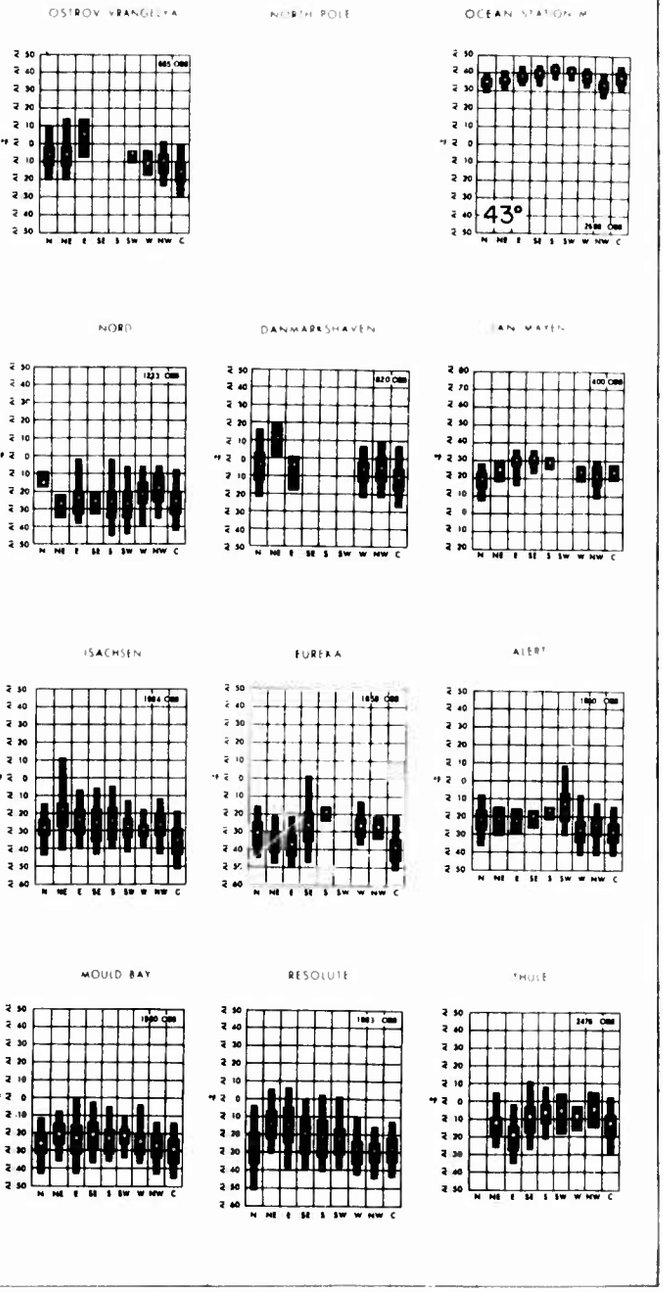


RE BY WIND DIRECTION

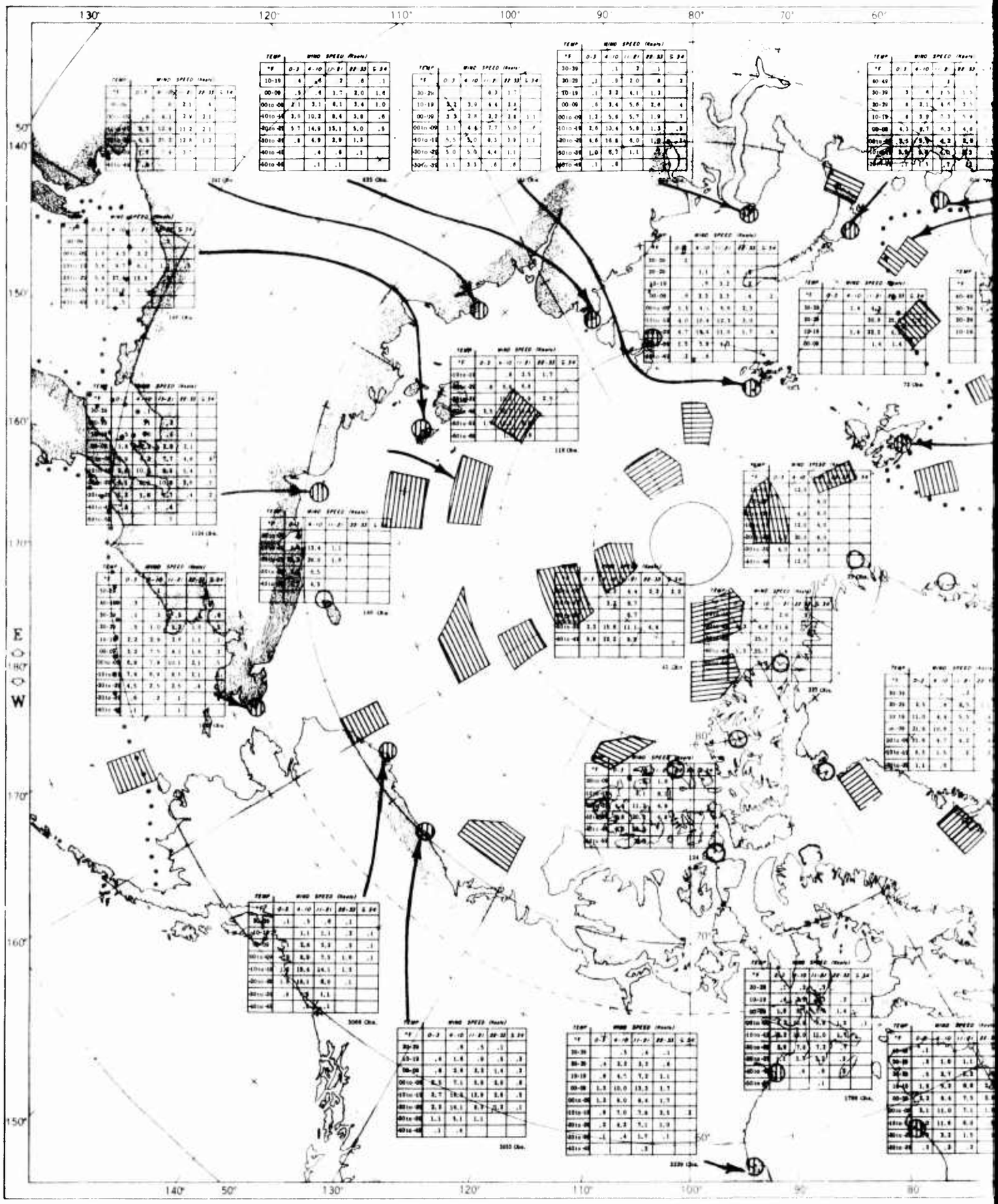
CHART 36





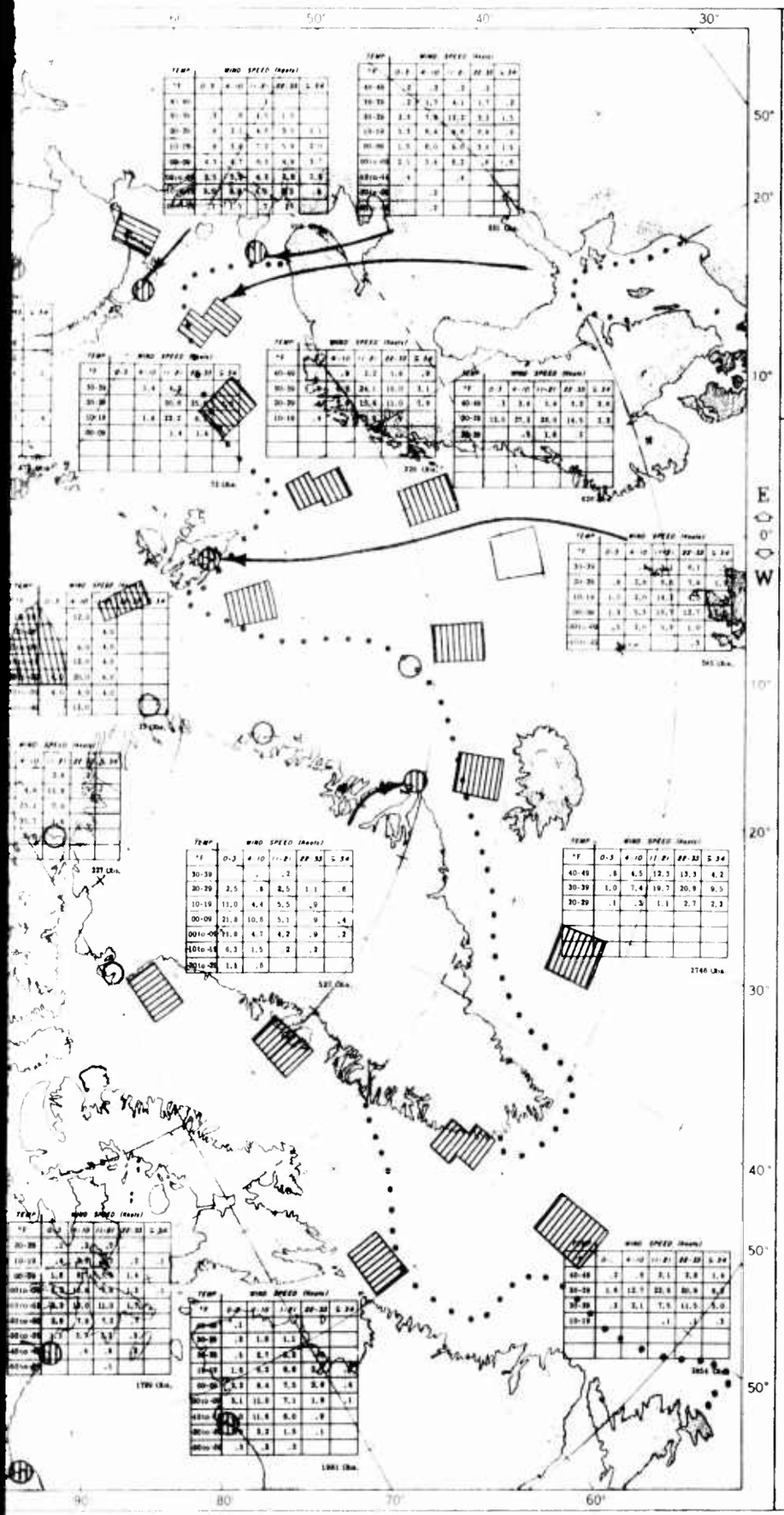


MARCH AIR TEMPERATURE vs.



PERATURE vs. WIND SPEED

CHART 37



Percentage Frequency of simultaneous occurrence of specified Temperature groups and Wind speeds

5% of the observations on which this tabulation was based reported wind speed 22-33 knots simultaneous with temperature from 10° through 19°F.

OSTROV VRANGELYA

°F	0-3	4-10	11-21	22-33	≥ 34
30-39		.2	.5	.5	
20-29		.2	.6	.2	
10-19	.6	2.1	1.5	.8	
00-09	2.0	3.2	3.0	1.4	.5
00 to -09	6.9	8.8	8.0	3.5	1.5
-10 to -19	15.7	8.7	3.9	2.7	1.2
-20 to -29	15.0	2.1	.9	.5	
-30 to -39	1.1	.2	.2		
-40 to -49	.3				

665 Obs.

NORTH POLE

OCEAN STATION M

°F	0-3	4-10	11-21	22-33	≥ 34
40-49	1.8	6.4	15.7	19.6	5.9
30-39	3.6	7.2	30.3	18.1	3.6
20-29	.1	.6	.8	1.4	.3

2688 Obs.

NOME

°F	0-3	4-10	11-21	22-33	≥ 34
10-19	.1	.1	.3	.1	
00-09	.2	.4	.5	.3	
00 to -09	3.1	5.3	.7	.4	.1
-10 to -19	8.6	7.2	3.4	.7	.2
-20 to -29	14.6	19.6	4.2		
-30 to -39	9.5	13.7	1.2		
-40 to -49	2.4	4.0	.9		
-50 to -59		.2			

1223 Obs.

DANMARKSHAVEN

°F	0-3	4-10	11-21	22-33	≥ 34
30-39		.1	.3	.7	.2
10-19	1.6	1.2	1.6	2.2	
00-09	4.0	7.2	5.4	2.2	.5
00 to -09	12.2	8.8	7.3	2.2	.6
-10 to -19	10.3	8.5	3.4	1.5	.6
-20 to -29	7.4	2.8	.9		
-30 to -39	.1				

830 Obs.

JAN MAYEN

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	1.5	7.7	14.0	10.0	.7
20-29	5.5	9.5	14.5	8.0	3.0
10-19	1.3	6.5	10.7	6.7	.7
00-09	.2	.3	2.7	.7	

401 Obs.

ISACHSEN

°F	0-3	4-10	11-21	22-33	≥ 34
10-19			.1	.2	
00-09	.1	.1	.2	.3	.1
00 to -09	.6	.9	.7	.4	
-10 to -19	2.3	2.7	3.3	1.8	.5
-20 to -29	12.4	8.3	6.7	1.8	.7
-30 to -39	18.0	9.6	3.8	.6	.3
-40 to -49	14.6	3.6	.6	.2	
-50 to -59	2.8	.3	.1		
-60 to -69	.3	.1			

1984 Obs.

EUREKA

°F	0-3	4-10	11-21	22-33	≥ 34
00-09	.1	.3	.3	.2	.1
00 to -09	.3	.5	.9	.2	.4
-10 to -19	1.2	1.9	1.3	.1	.2
-20 to -29	3.7	7.3	4.1	1.1	.3
-30 to -39	12.0	10.5	4.1	.5	
-40 to -49	16.8	10.5	.3		
-50 to -59	2.3	2.8	.1		
-60 to -69		.1			

1858 Obs.

ALERT

°F	0-3	4-10	11-21	22-33	≥ 34
20-29			.1		
10-19	.1	.1	.1	.1	.3
00-09	.3	.4	.3	.1	.4
00 to -09	1.0	1.1	.8	.7	.5
-10 to -19	8.3	4.0	1.5	.9	.3
-20 to -29	24.0	9.7	1.0	1.1	.8
-30 to -39	29.2	9.5	.4	.1	
-40 to -49	8.2	1.5	.1		
-50 to -59	.2				

1680 Obs.

MOULD BAY

°F	0-3	4-10	11-21	22-33	≥ 34
00-09	.3	.4	.1	.2	
00 to -09	.8	1.5	1.0	.5	.1
-10 to -19	8.1	5.7	4.8	1.5	.3
-20 to -29	15.5	12.6	8.5	1.3	.2
-30 to -39	15.4	8.5	5.0	.2	.1
-40 to -49	7.0	2.1	.7		
-50 to -59	.3	.3	.1		

1980 Obs.

RESOLUTE

°F	0-3	4-10	11-21	22-33	≥ 34
10-19		.2	.3	.4	
00-09	.3	1.4	1.4	.8	.2
00 to -09	.3	2.2	3.9	3.0	.3
-10 to -19	4.1	7.1	6.9	2.5	.1
-20 to -29	7.7	13.9	6.2	1.4	.1
-30 to -39	8.2	17.1	3.2	.7	
-40 to -49	2.9	6.4	.6		
-50 to -59		.5	.2		

1984 Obs.

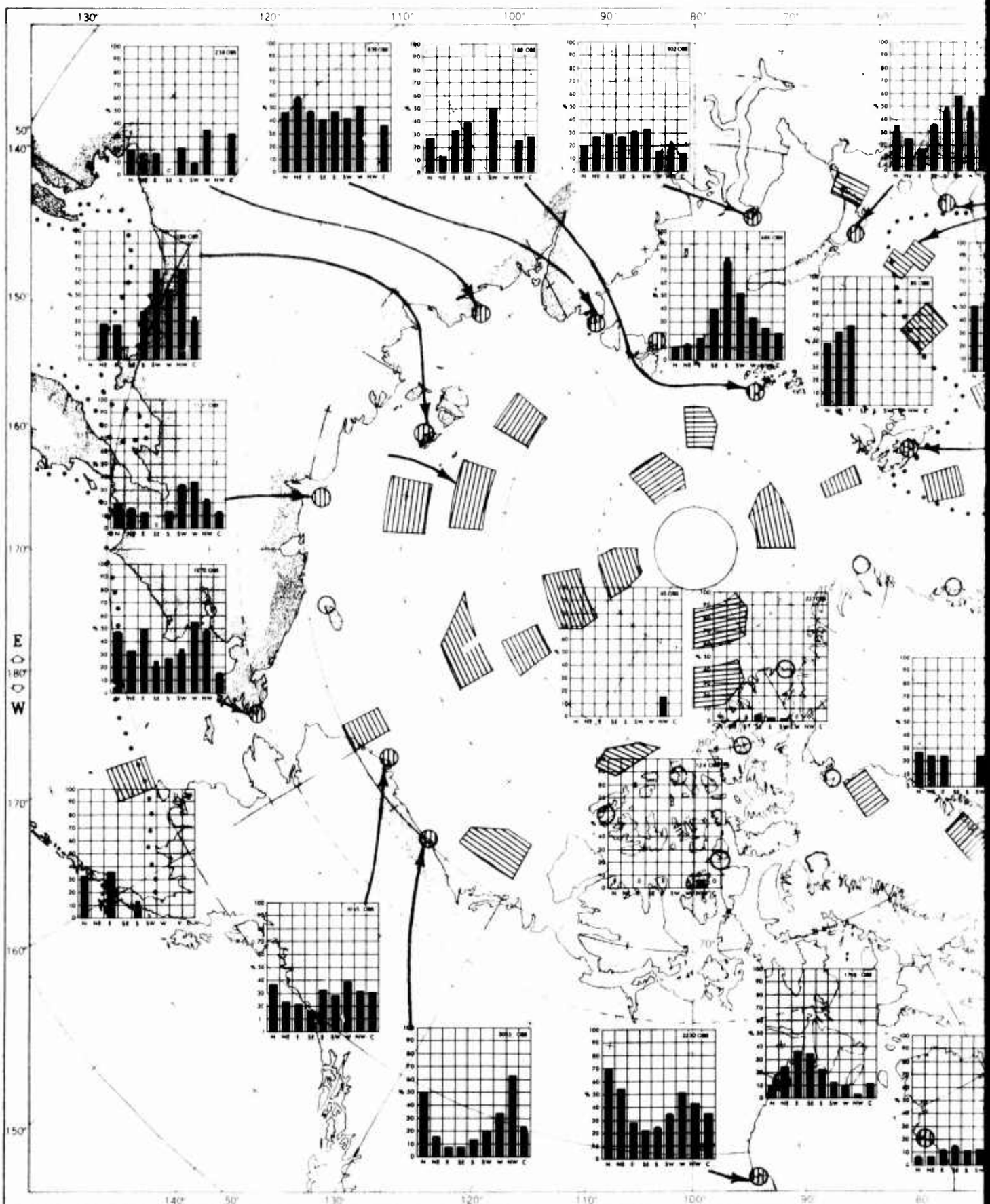
THULE

°F	0-3	4-10	11-21	22-33	≥ 34
30-39		.1	.4	.1	
10-19	.3	.5	.5	.2	.1
00-09	1.9	2.8	1.2	.3	
00 to -09	5.8	8.9	1.1	.7	.3
-10 to -19	10.4	22.3	1.1	.4	
-20 to -29	5.2	22.8	.7		
-30 to -39	1.0	10.8	.1		
-40 to -49		.3			

3676 Obs.

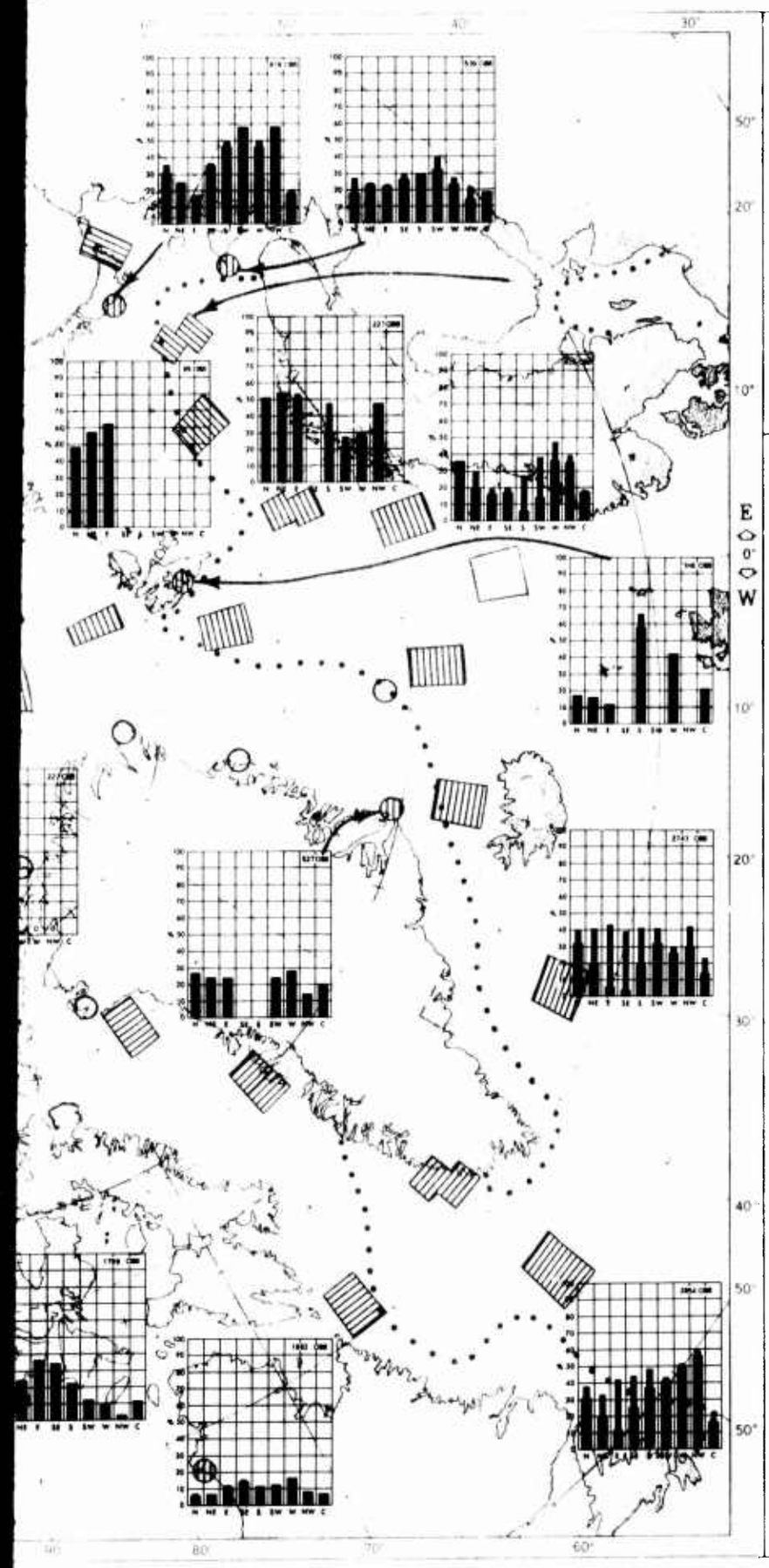
MARCH

PRECIPITATION BY WI



ON BY WIND DIRECTION

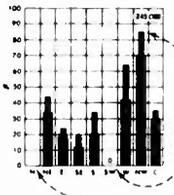
CHART 38



Percentage Frequency of Precipitation by Wind Direction

(a) Percentage of all present weather (and wind) observations reporting precipitation

(b) Percentage of observations recording liquid or frozen precipitation as indicated by



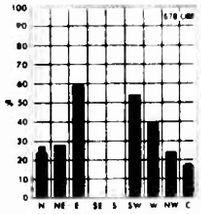
(85% of all NW winds were accompanied by precipitation 15% frozen, 70% liquid)

0 replaces bar when no precipitation was observed with winds from a direction

Bar or 0 omitted when number of observations was 10 or Less

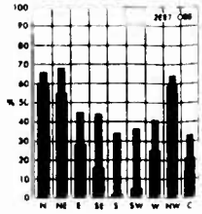
See chart 6 for precipitation incidence disregarding wind direction

OSTROV VRANGELYA

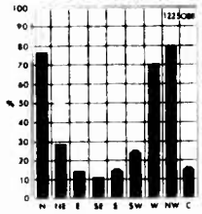


NORTH POLE

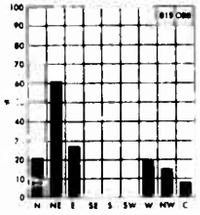
OCEAN STATION M



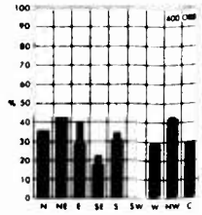
NORD



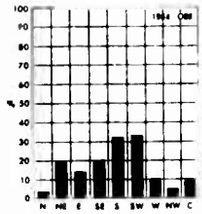
DANMARKSHAVEN



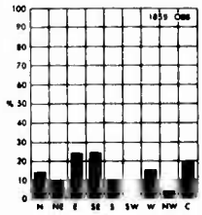
JAN MAYEN



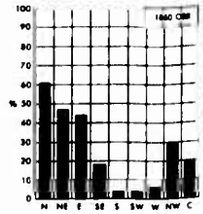
ISACHSEN



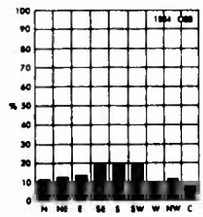
EUREKA



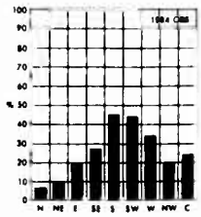
ALERT



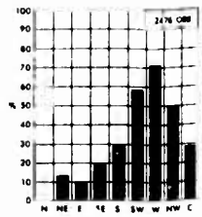
MOULD BAY



RESOLUTE



THULE



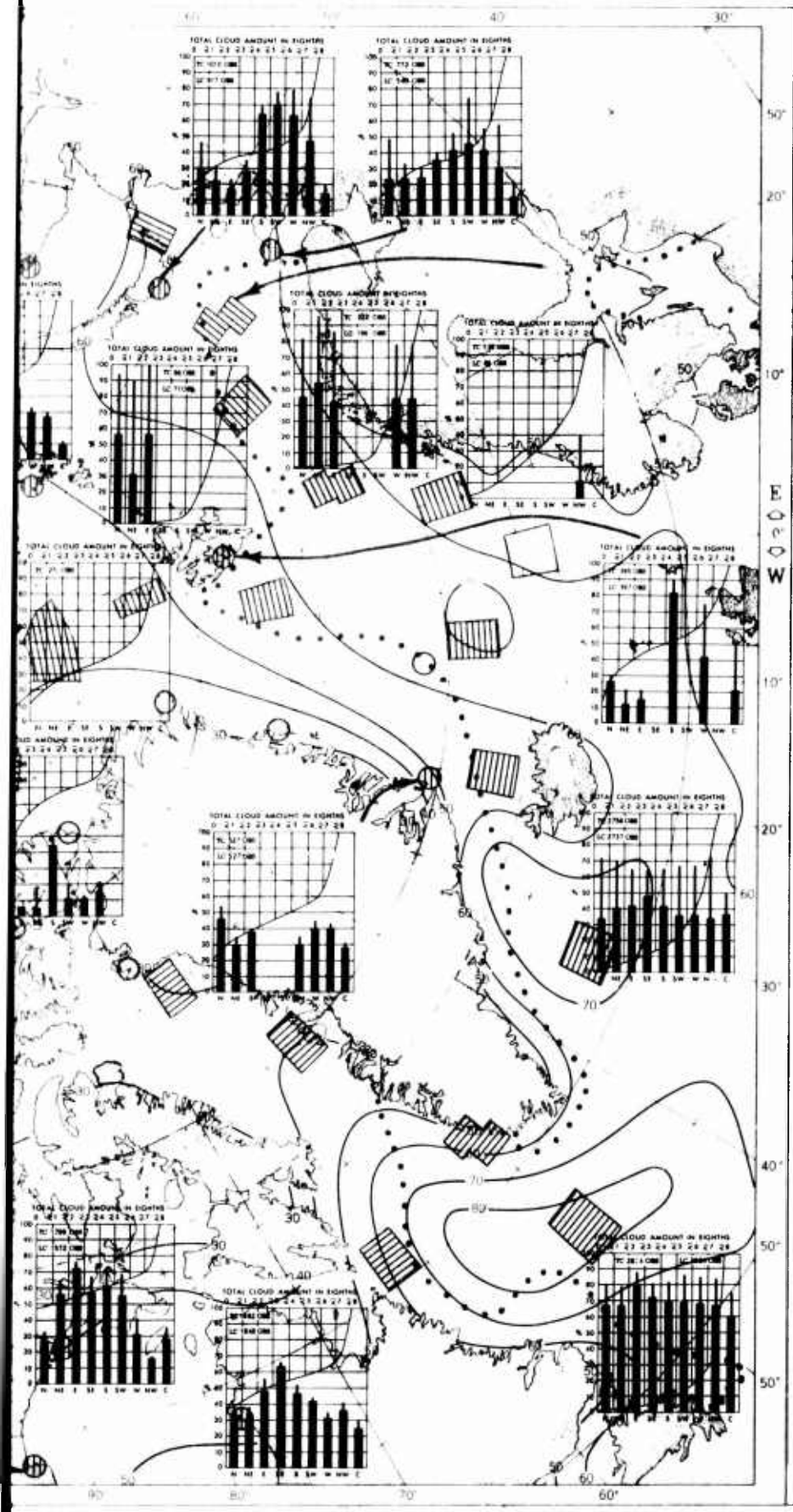
MARCH

CLOUDINE



CLOUDINESS

CHART 39



Percentage Frequency of Total Cloud Amount 8/10 or more

Total Cloud Amount (TC) Percentage frequency of total cloud amounts equal to or less than amount intersected by the curve

(62% of all total cloud amounts were 7/8 or less)

Lower Cloud Amount (LC) Percentage proportions of winds from each direction that were accompanied by low or middle cloud amounts greater than 5/8 and greater than 7/8

(52% of all NW winds were accompanied by lower cloud amounts >5/8 and, 38% by lower cloud amounts >7/8)

[>5/8 includes 6/8 8/8 and 7/10 10/10 >7/8 includes 8/8 and 9/10 10/10/10]

0 replaces bar when no low cloud amounts >5/8 were observed with winds from a direction

Bar (or 0) is omitted when the number of observations including both wind direction and low cloud amount was 10 or less for a direction

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

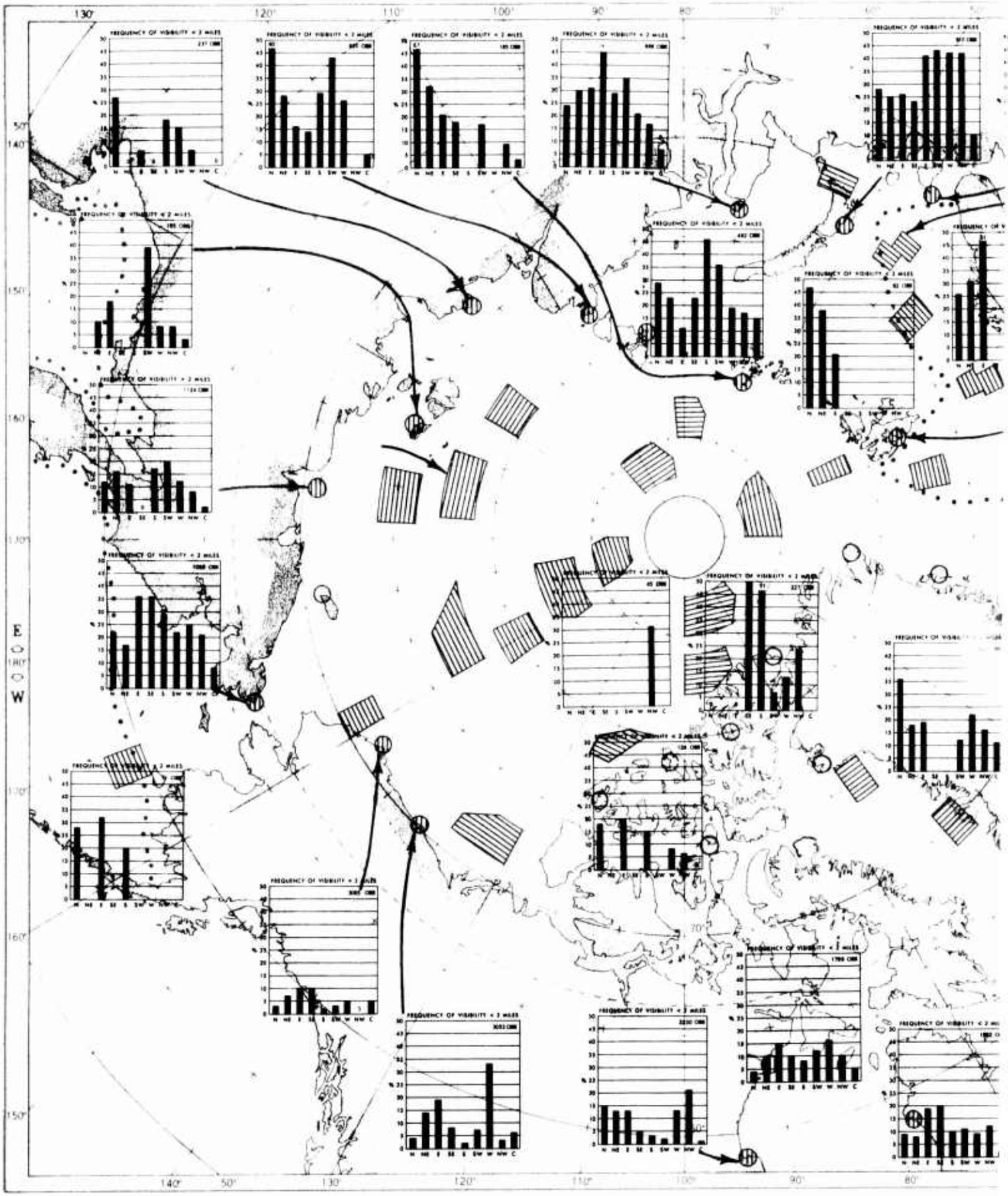
MOULD BAY

RESOLUTE

THULE

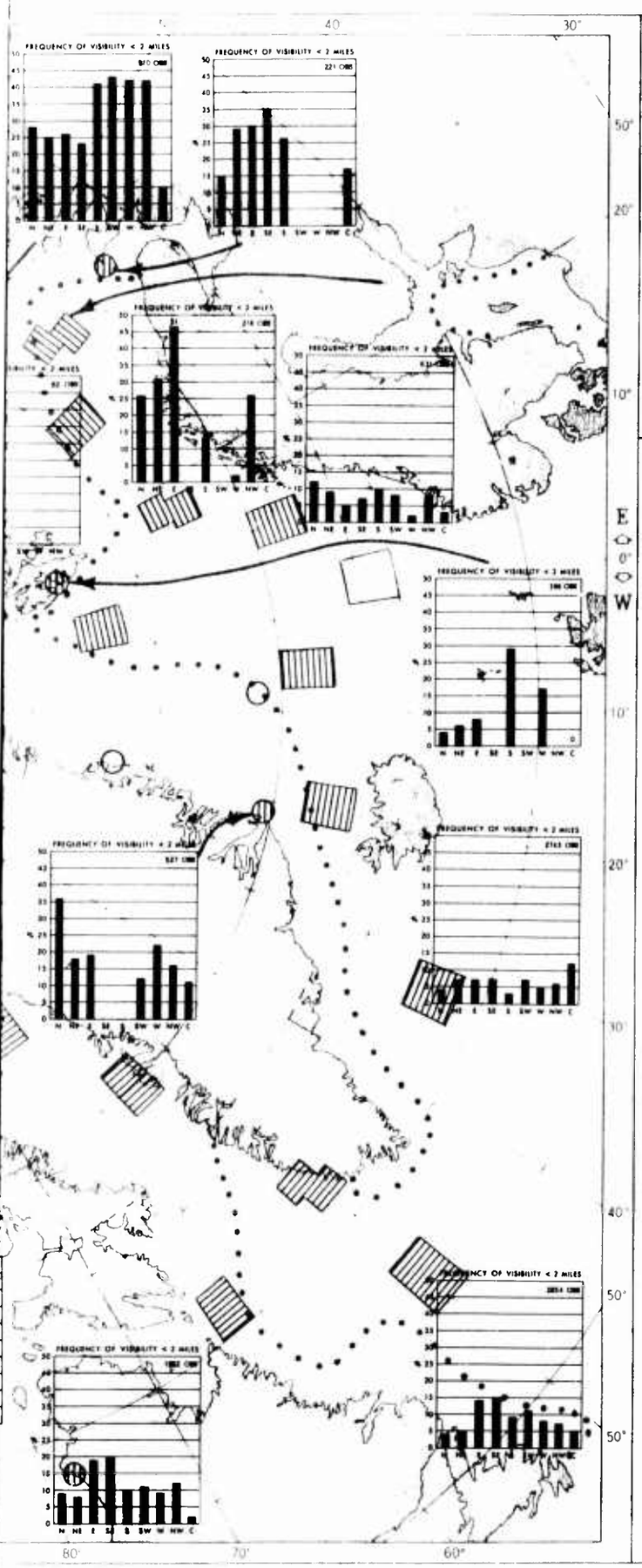
MARCH

LOW VISIBILITY BY WIND

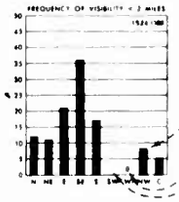


Y WIND DIRECTION

CHART 40



Percentage Frequency of Low Visibility by Wind Direction



Percentage of all visibility (and wind) observations reporting visibility less than 2 nautical miles

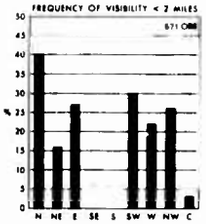
(8% of all NW winds were accompanied by visibility less than 2 miles)

'0' replaces bar when no visibilities <2 miles were observed with winds from a direction

Bar or '0' omitted when number of observations was 10 or less

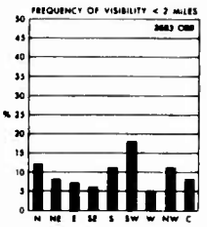
See chart 9 for low visibility incidence disregarding wind direction

OSTROV VRANGELYA

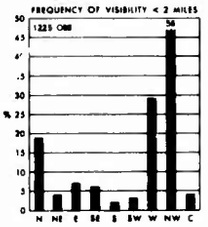


NORTH POLE

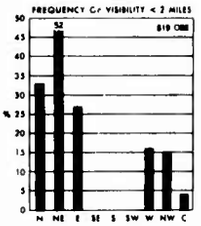
OCEAN STATION M



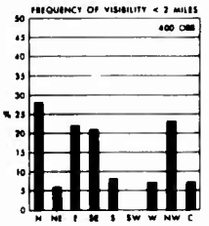
NORD



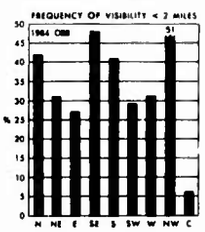
DANMARKSHAVEN



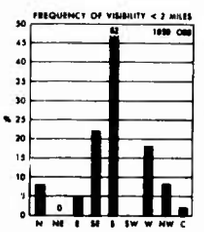
JAN MAYEN



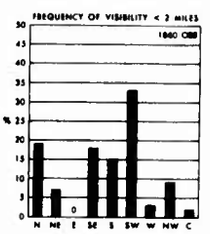
ISACHSEN



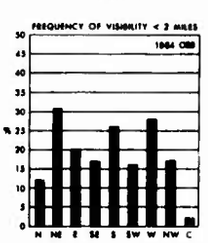
EUREKA



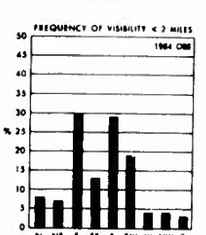
ALERT



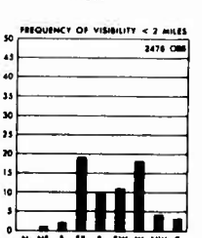
MOULD BAY



RESOLUTE



THULE



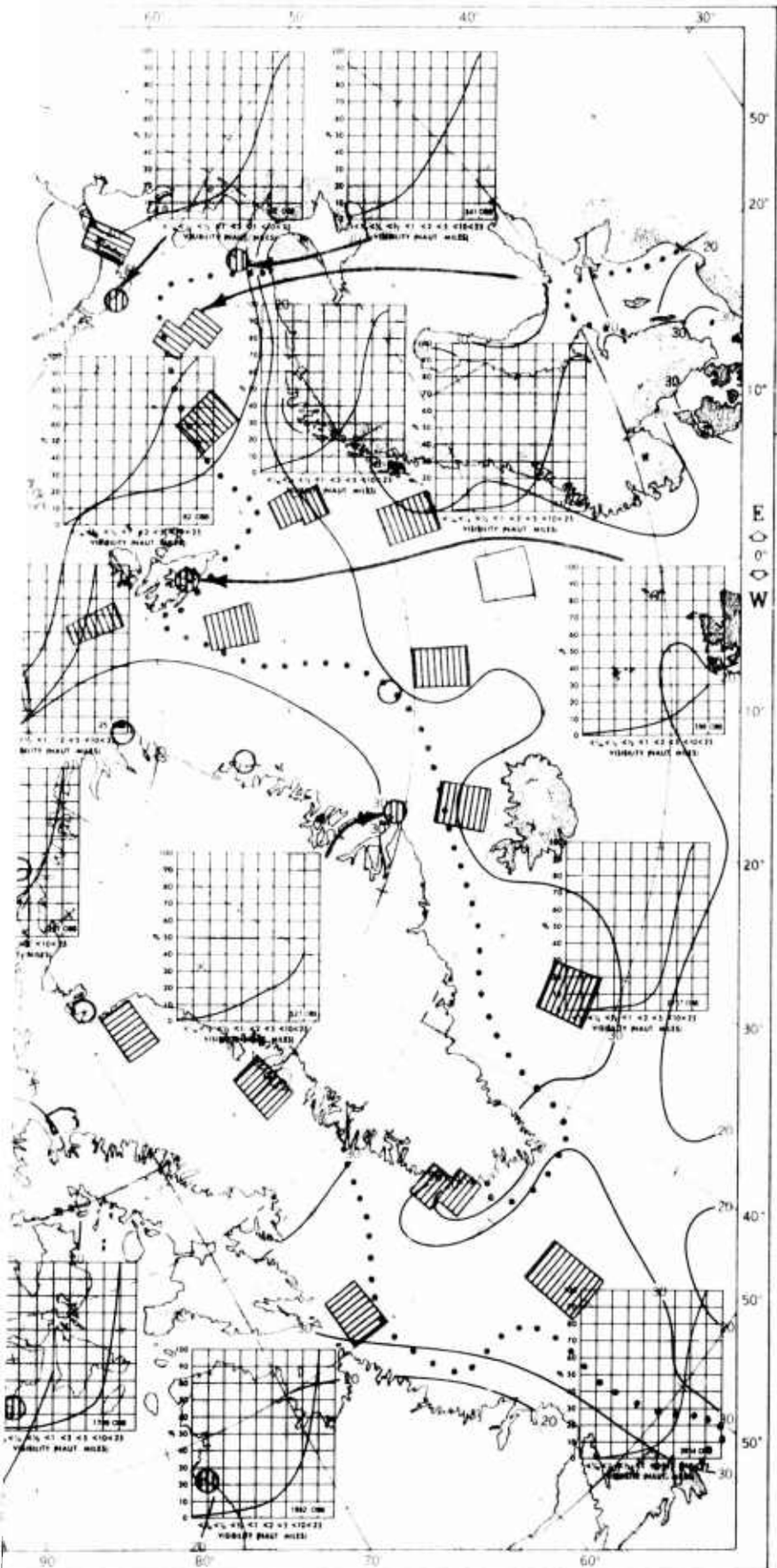
MARCH

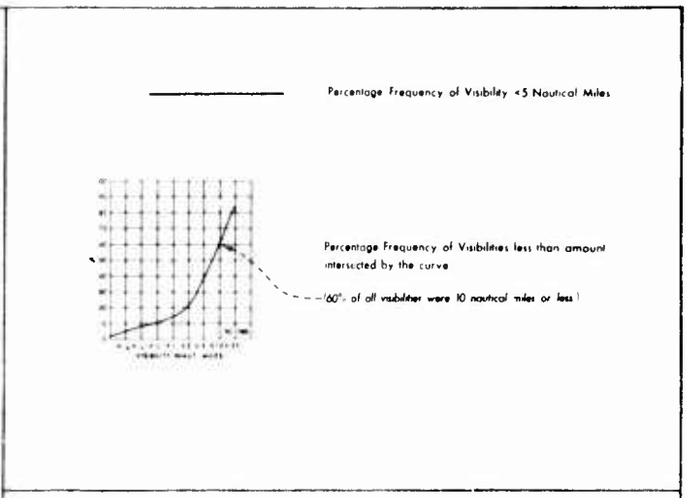
VISIBILITY

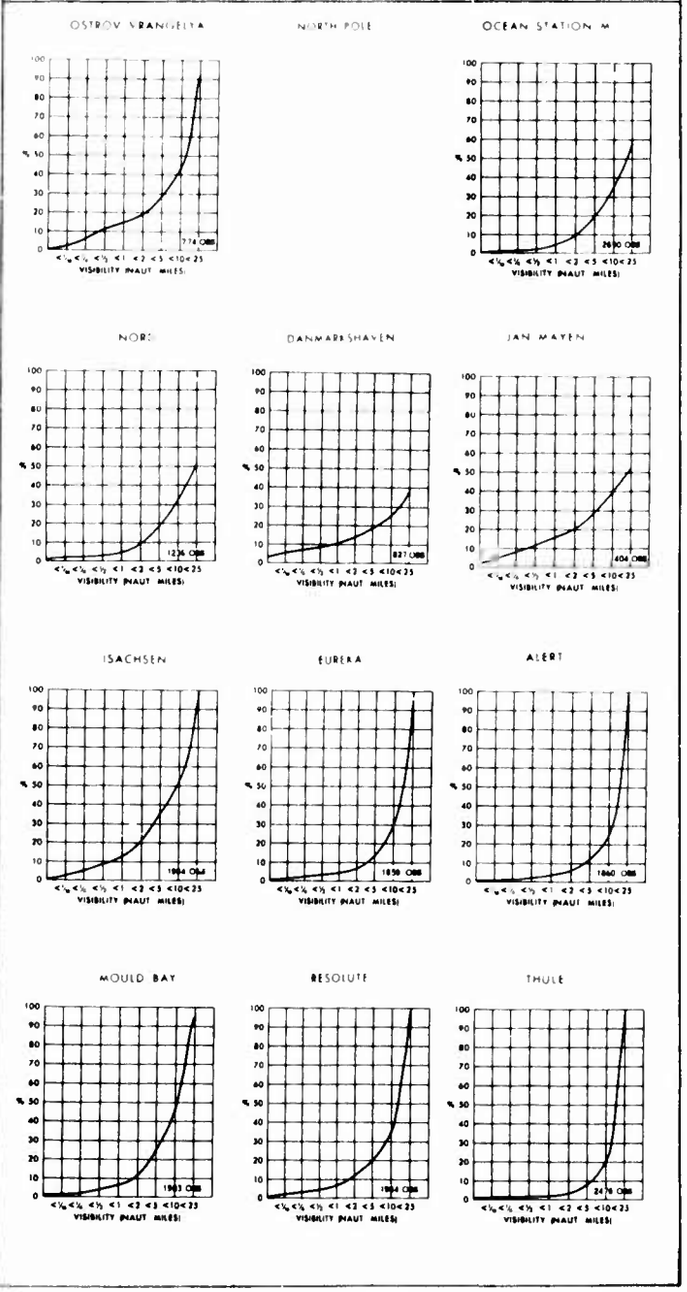


VISIBILITY

CHART 41

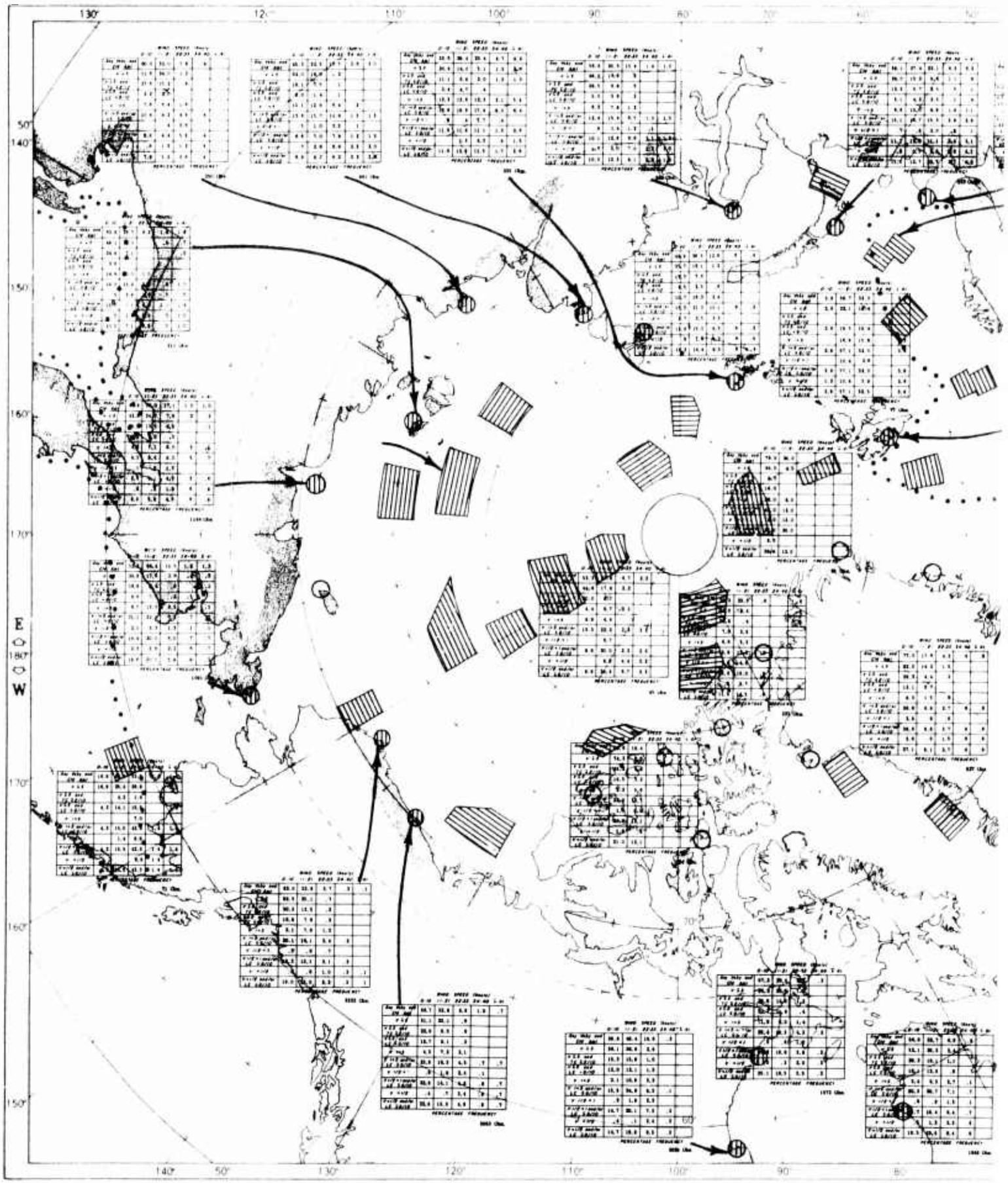






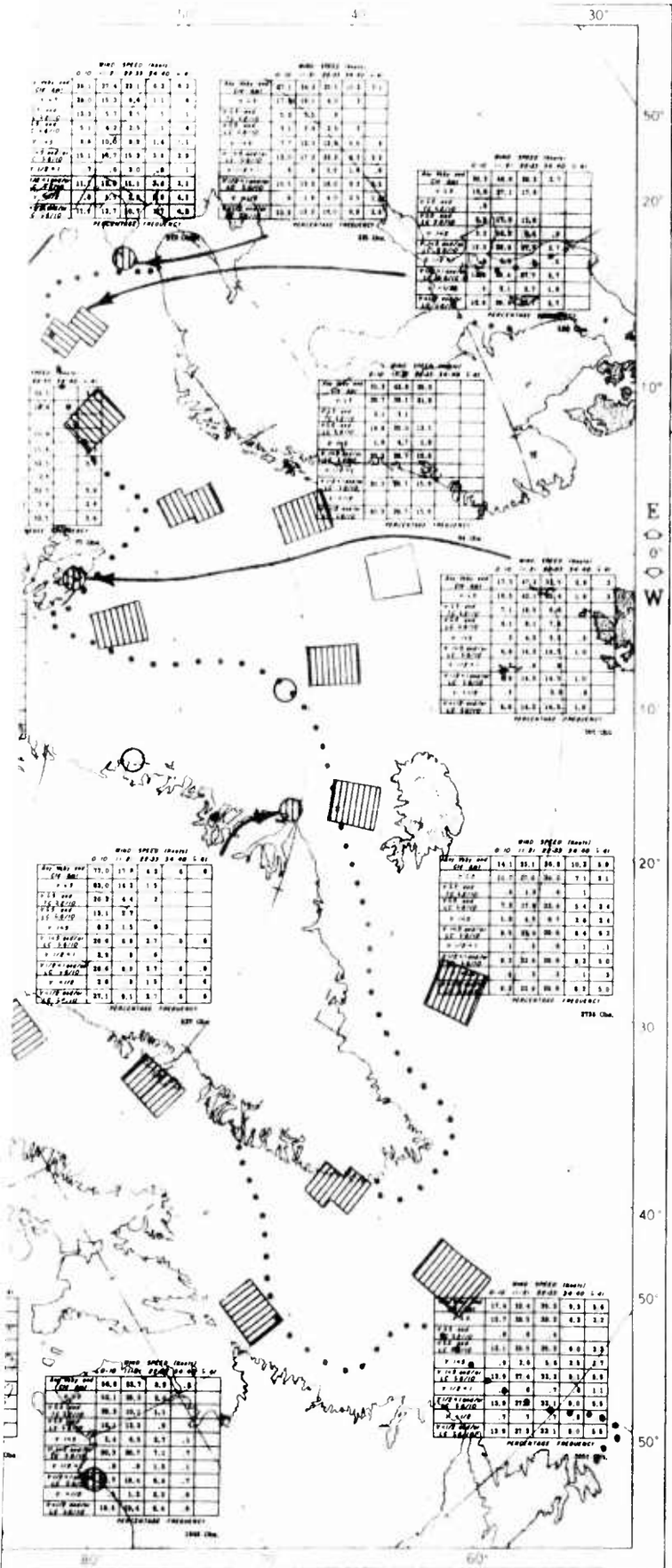
MARCH

WIND-VISIBILITY-CLOU



ITY-CLOUDINESS

CHART 42



Percentage Frequency of simultaneous occurrence of specified Wind Visibility and Cloudiness conditions based on the number of observations which reported wind speed visibility total cloud amount and low cloud amount



Notation

Any Vsby and Cld Amt = Simultaneous occurrence of wind speed with any visibility and cloud amount combination This provides a percentage distribution of wind speeds for the observations used in this tabulation

V = Visibility in Nautical Miles
1<5 indicates 1 to but not including 5 nautical miles

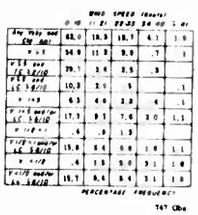
TC = Total Cloud Amount

LC = Low Cloud Amount (with base approximately 8000 feet or lower)

Blank box indicates 0.0 percent

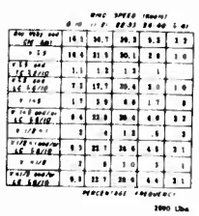
Ocean Area 16.6 of the observations on which this tabulation was based reported speed 22-33 knots simultaneous with visibility 1-5 nautical miles and/or low cloud amount 5-6-10

OSTROV VRANGELYA

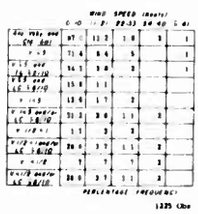


NORTH POLE

OCEAN STATION M



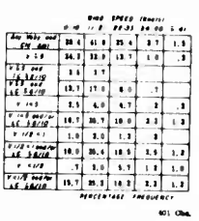
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DANMARKSHAVEN



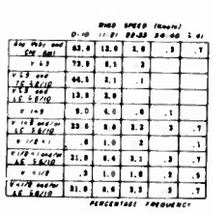
JAN MAYEN



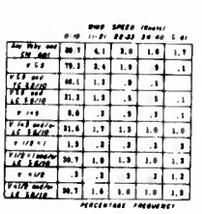
ISACHSEN



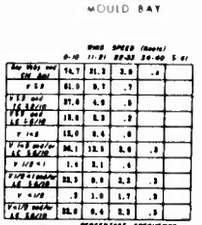
EUREKA



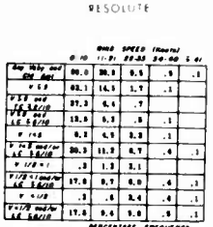
ALERT



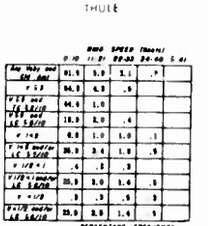
MOULD BAY



RESOLUTE

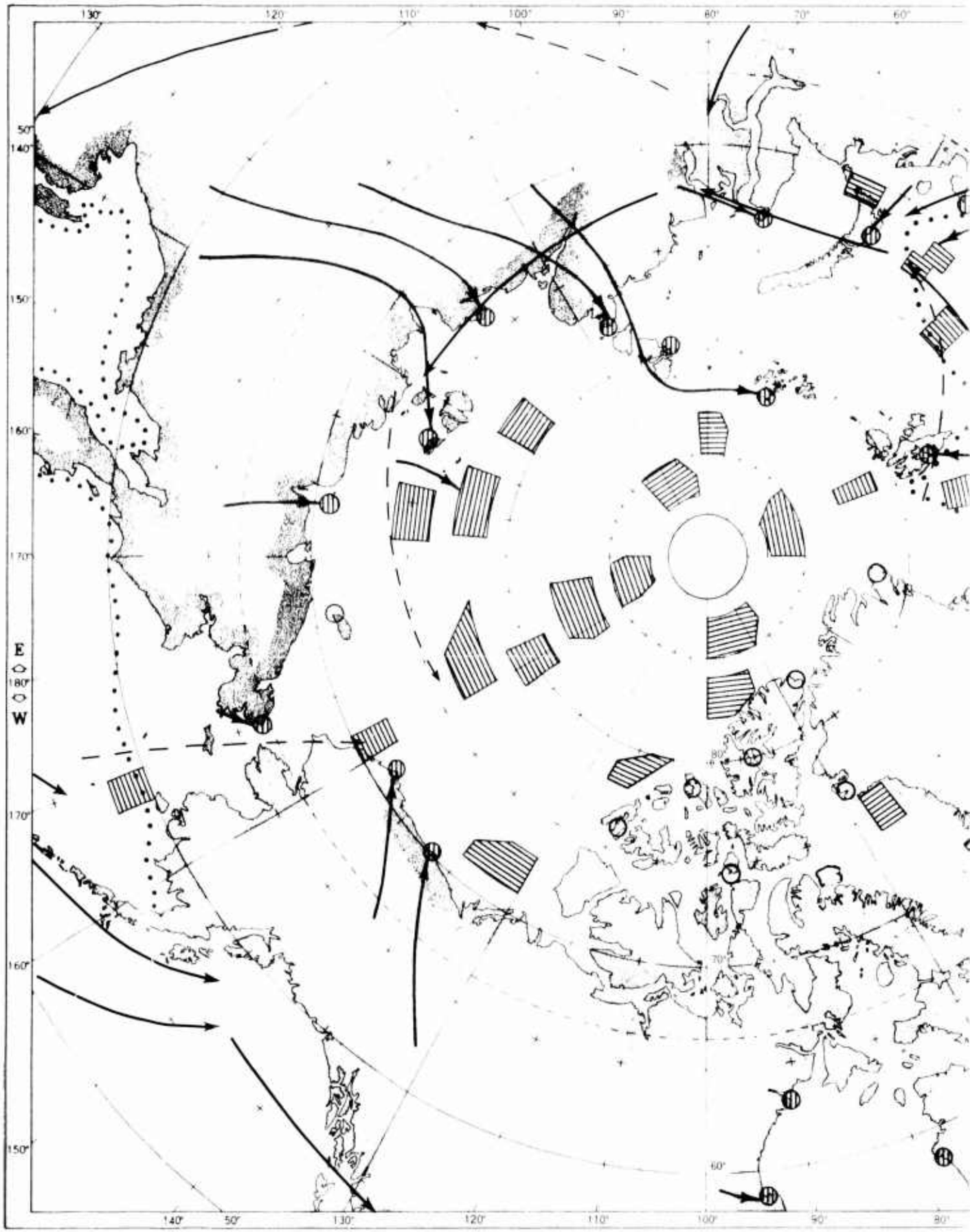


THULE



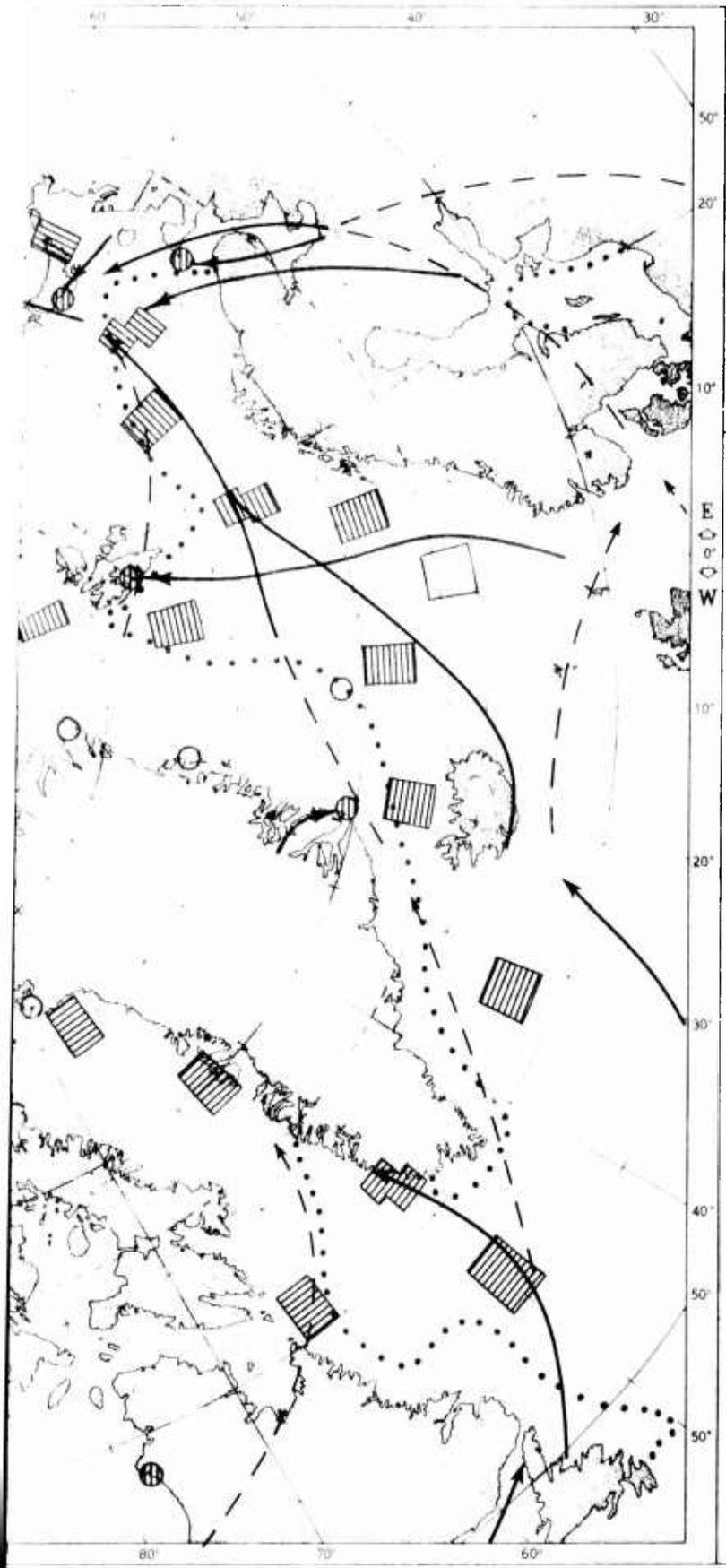
MARCH

STORM TR



)RM TRACKS

CHART 43



Storm Tracks

Primary Track along which there has been maximum concentration of individual storm center paths

Secondary Track along which there has been moderate concentration of individual storm center paths

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

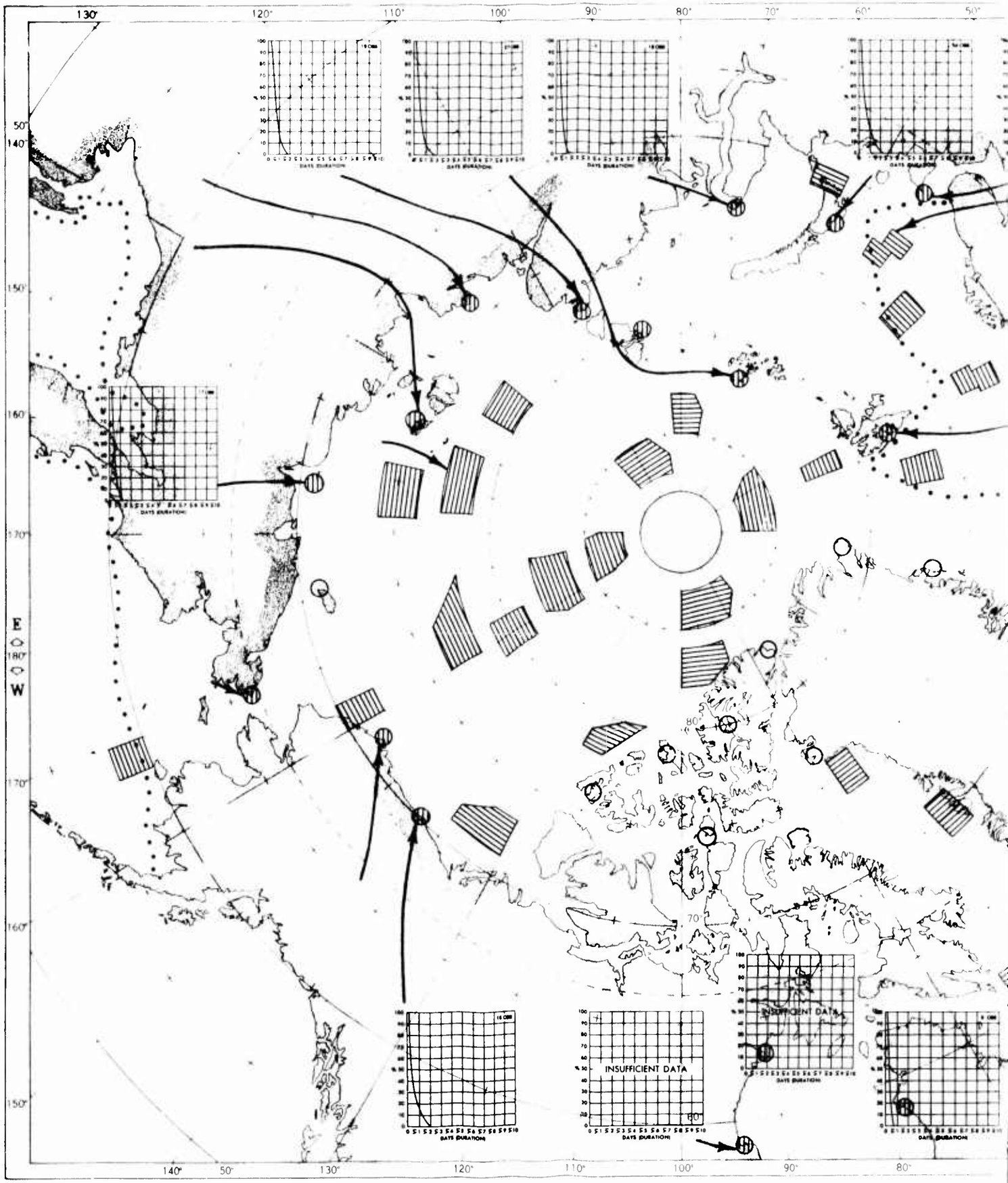
MOULD BAY

RESOLUTE

THULE

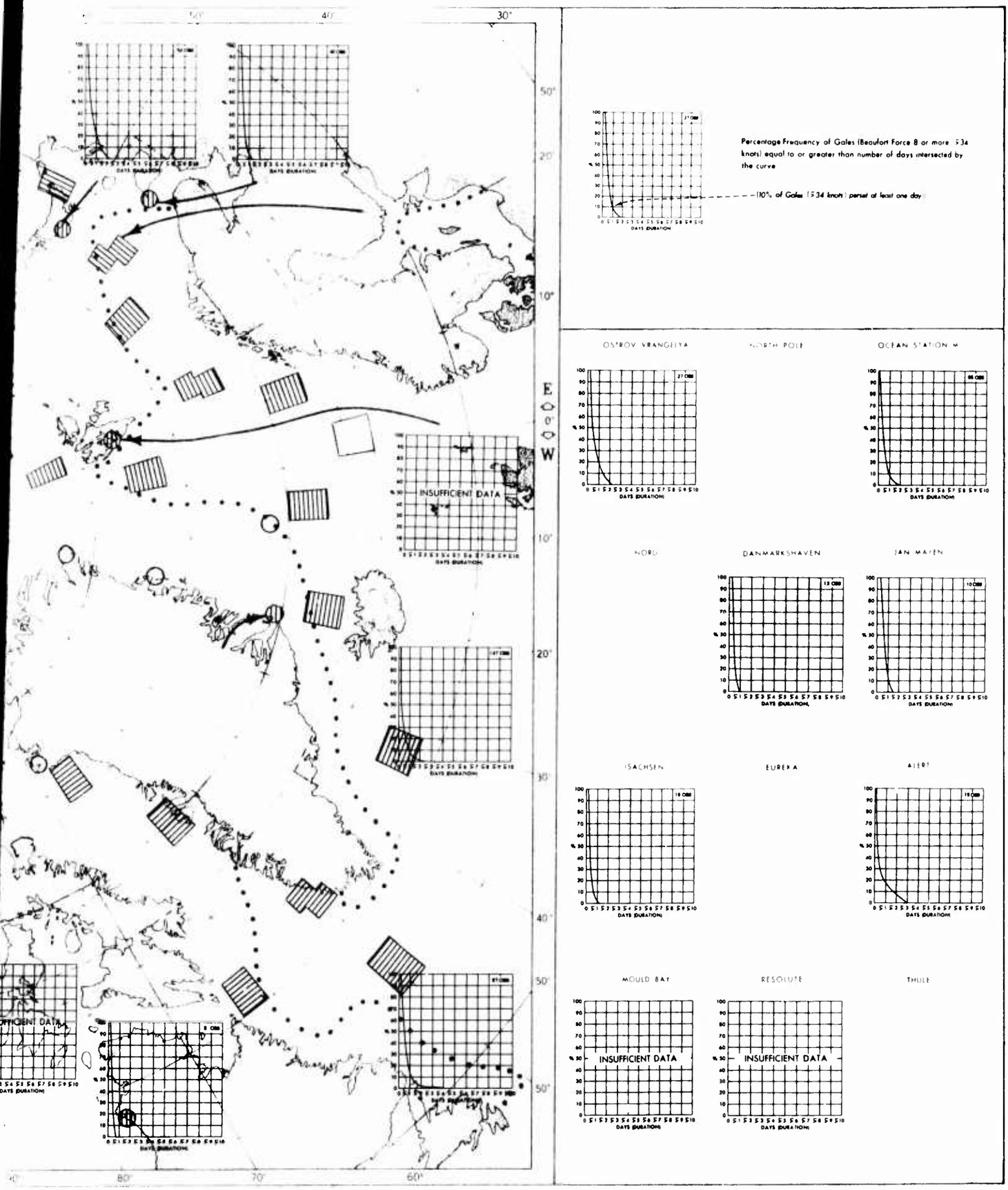
MARCH

GALE PERSISTEN



E PERSISTENCE

CHART 44



Percentage Frequency of Gales (Beaufort Force 8 or more : 34 knots) equal to or greater than number of days intersected by the curve

(10% of Gales (34 knots) persist at least one day

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

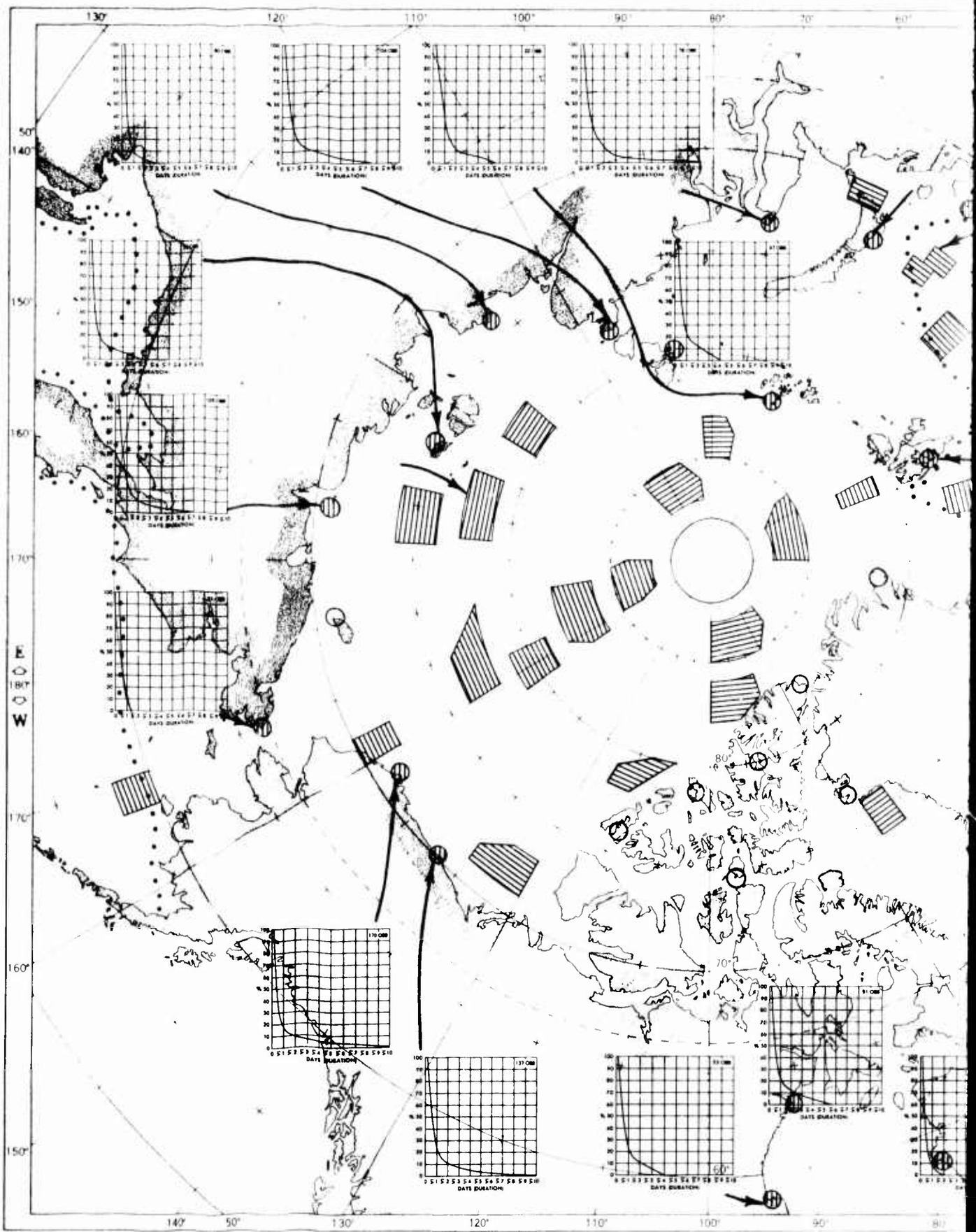
ALERT

MOULD BAY

RESOLUTE

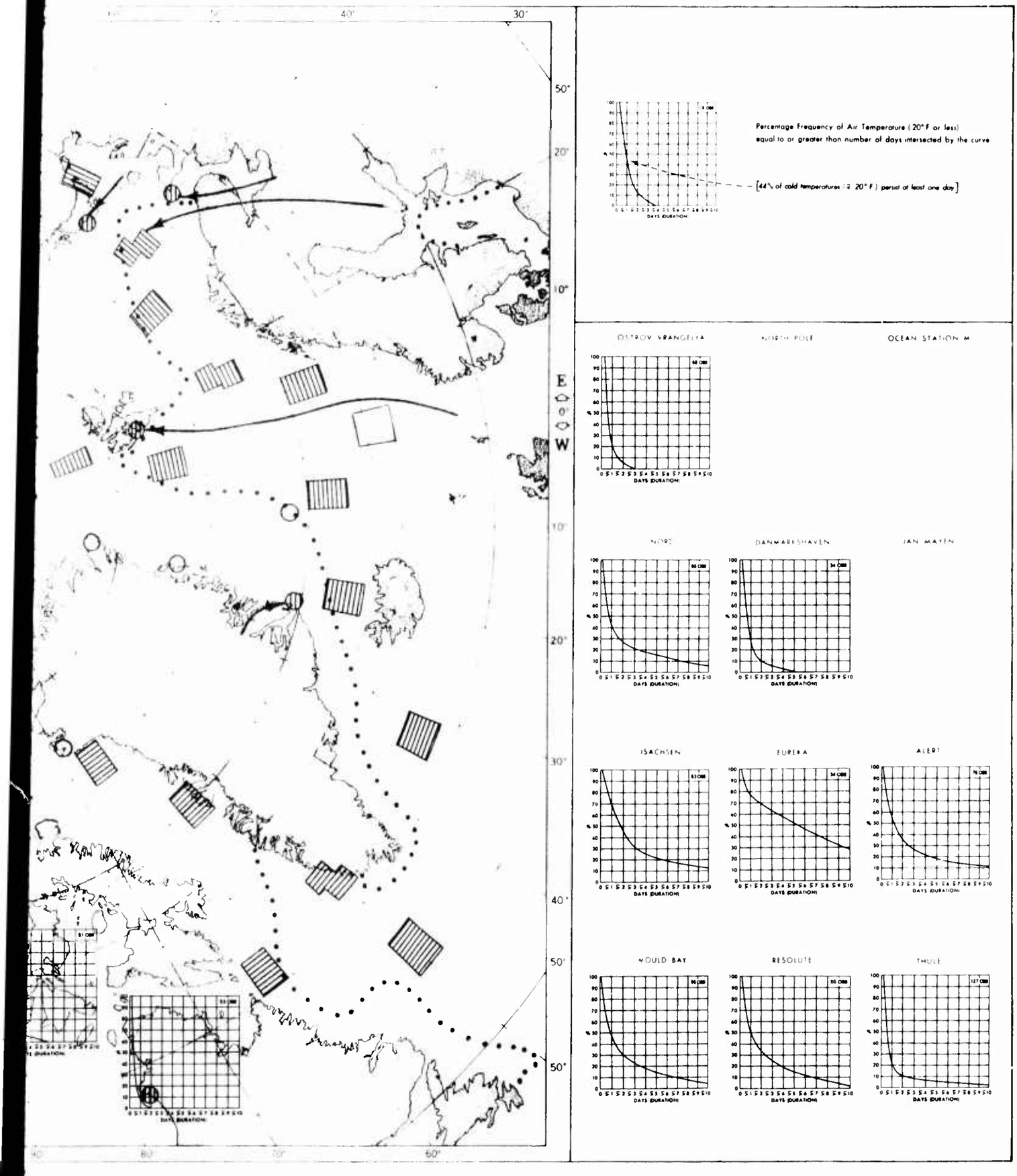
THULE

MARCH LOW TEMPERATURE



ERATURE PERSISTENCE

CHART 45



Percentage Frequency of Air Temperature (20° F or less) equal to or greater than number of days intersected by the curve

[44% of cold temperatures (20° F) persist at least one day]

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

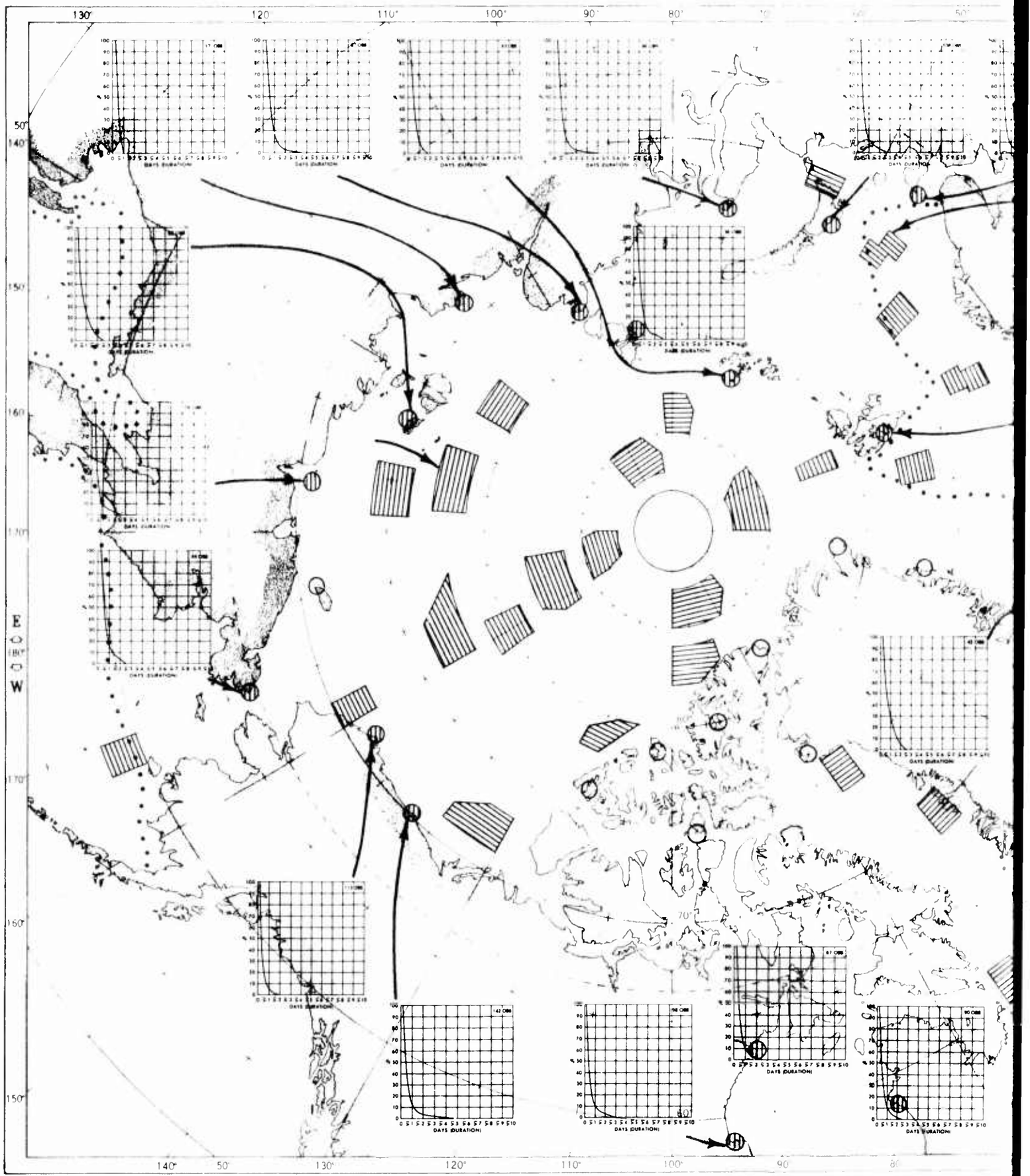
MOULD BAY

RESOLUTE

THULE

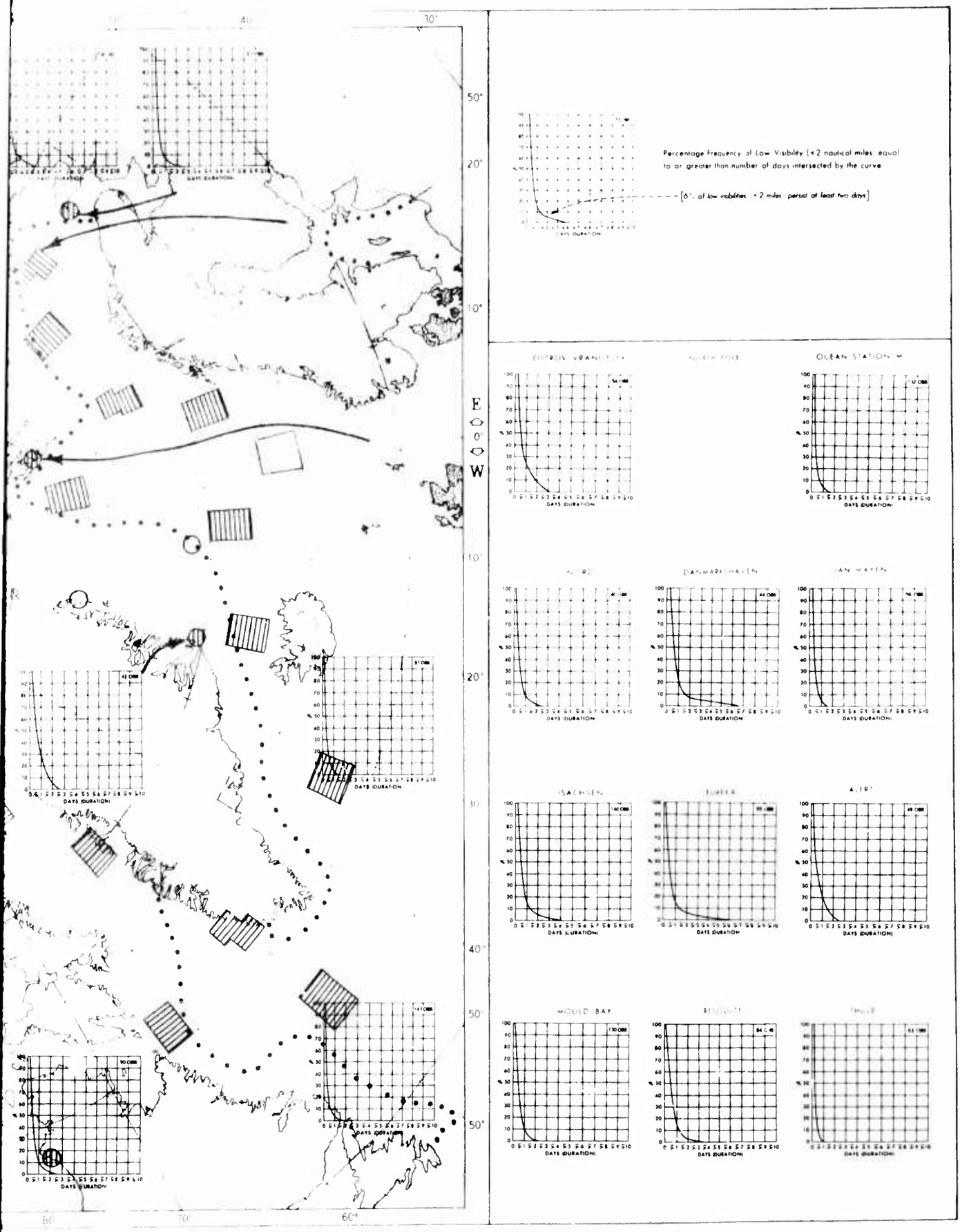
MARCH

LOW VISIBILITY PERSIS



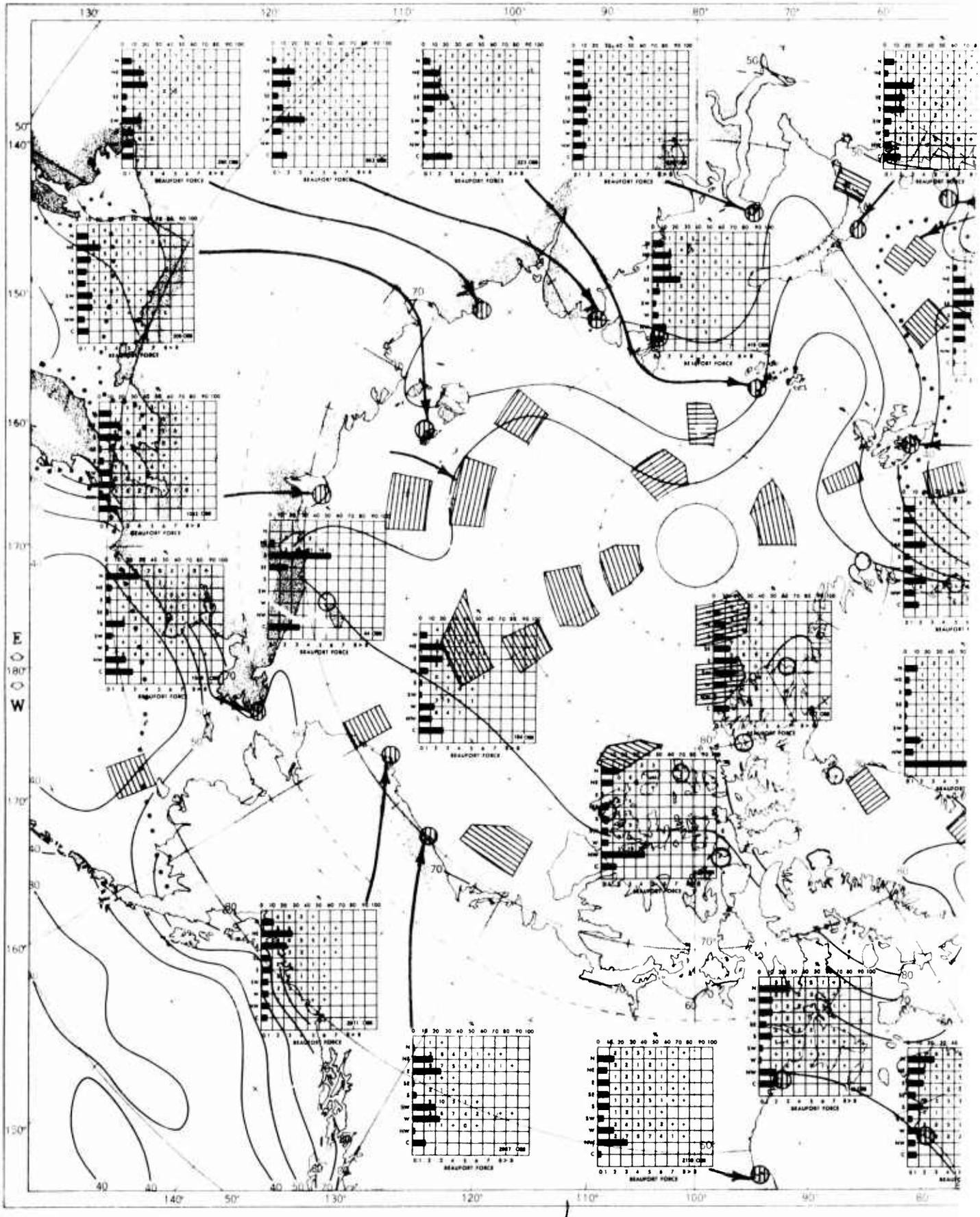
Y PERSISTENCE

CHART 46



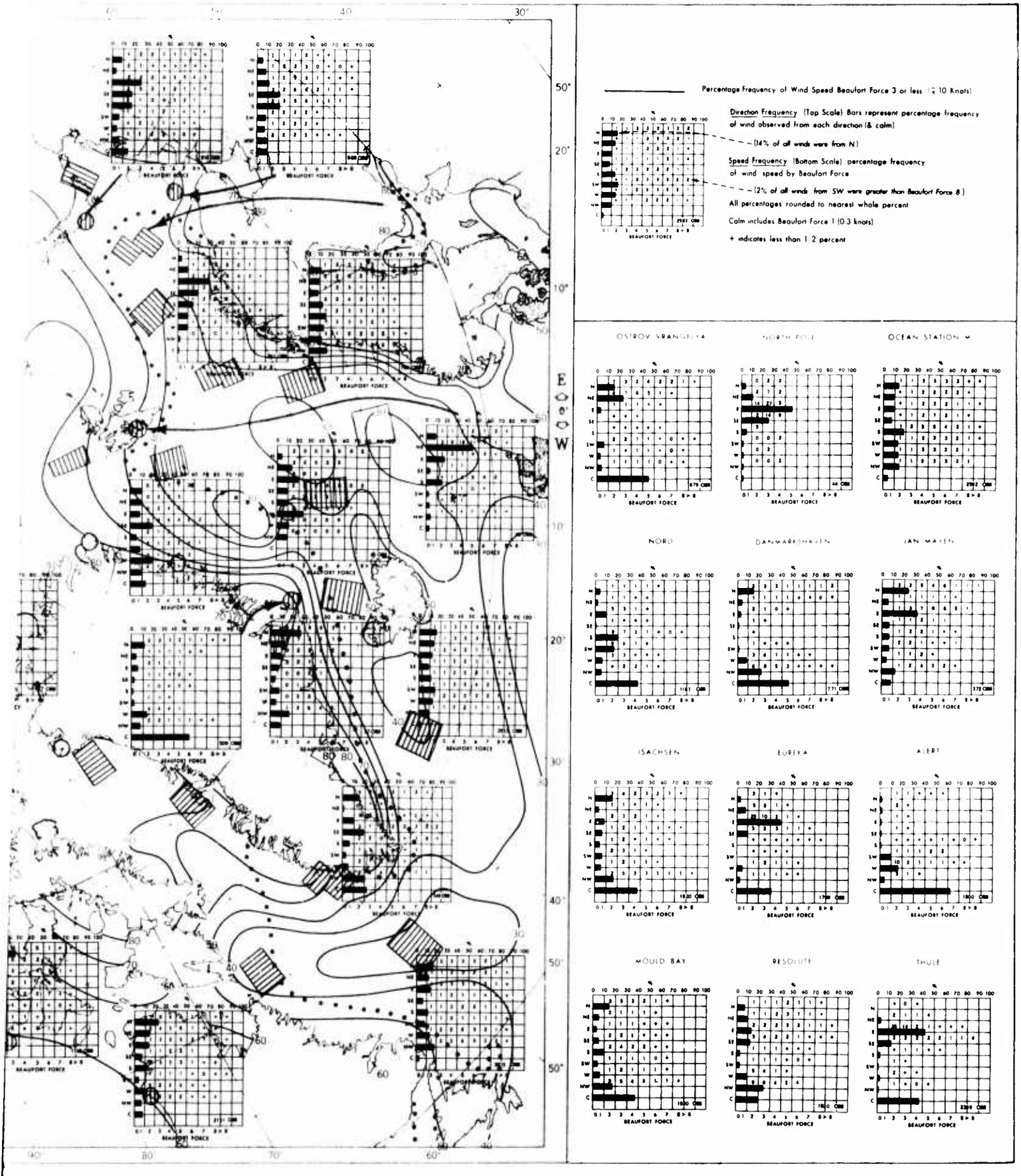
APRIL

SURFACE W



JRFACE WIND

CHART 47

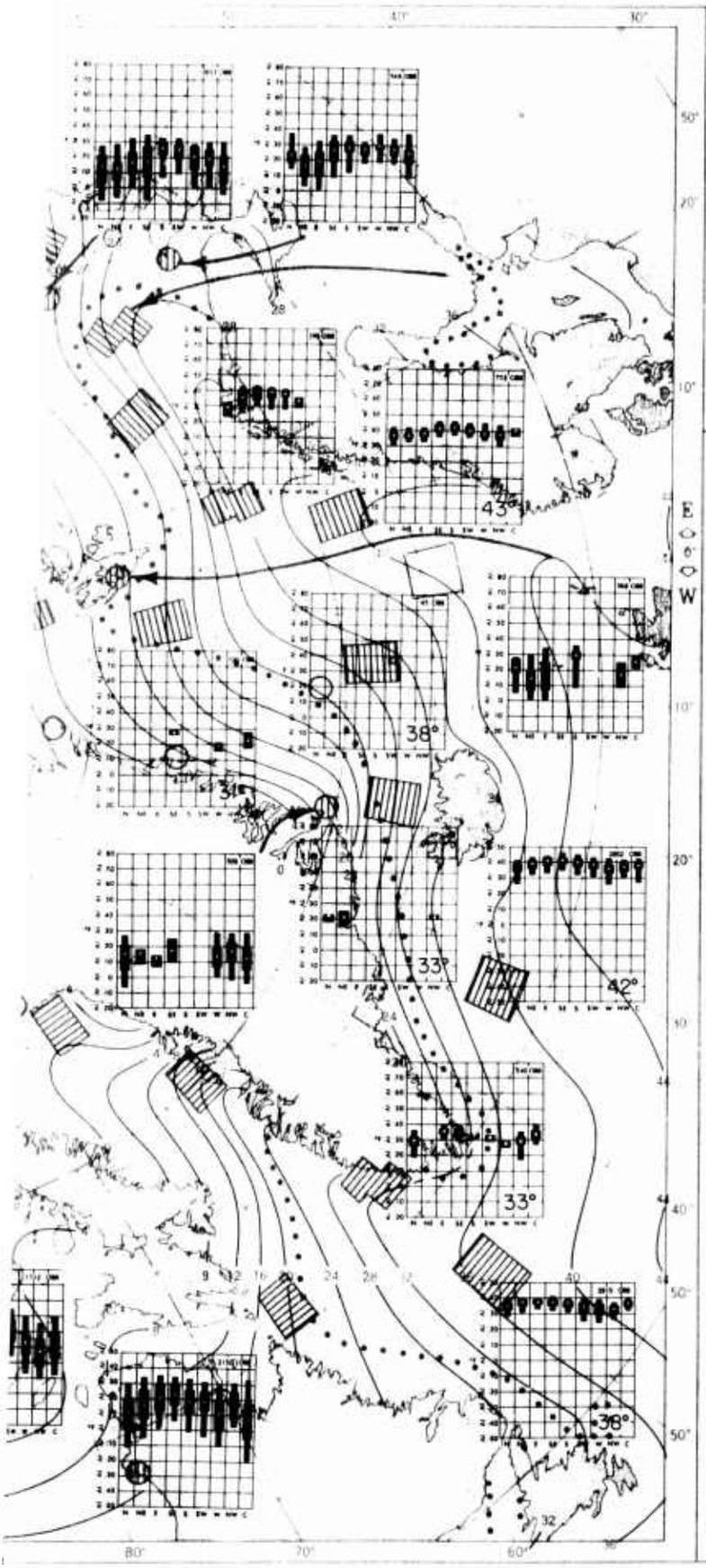


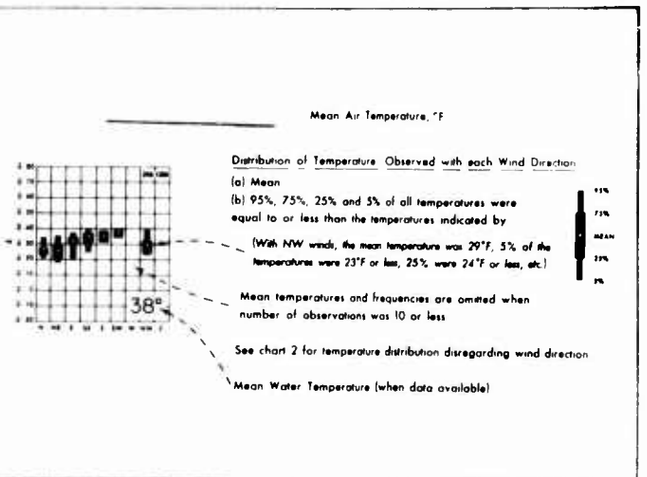
APRIL AIR TEMPERATURE BY WIN

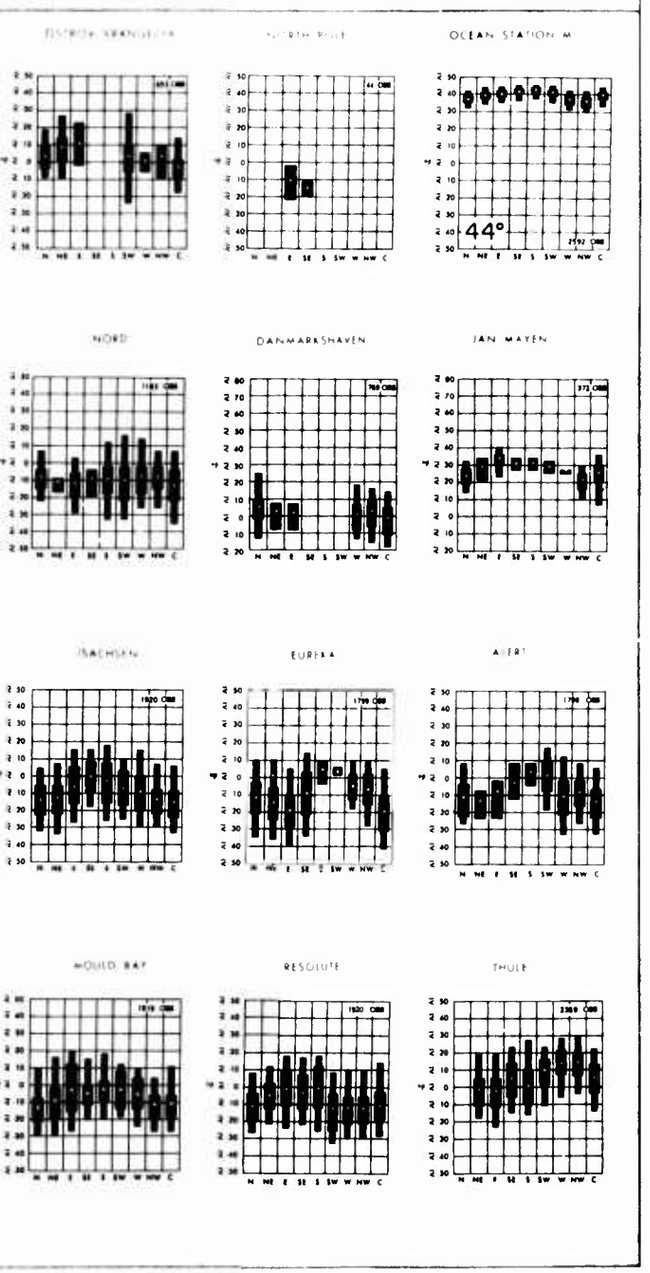


E BY WIND DIRECTION

CHART 48

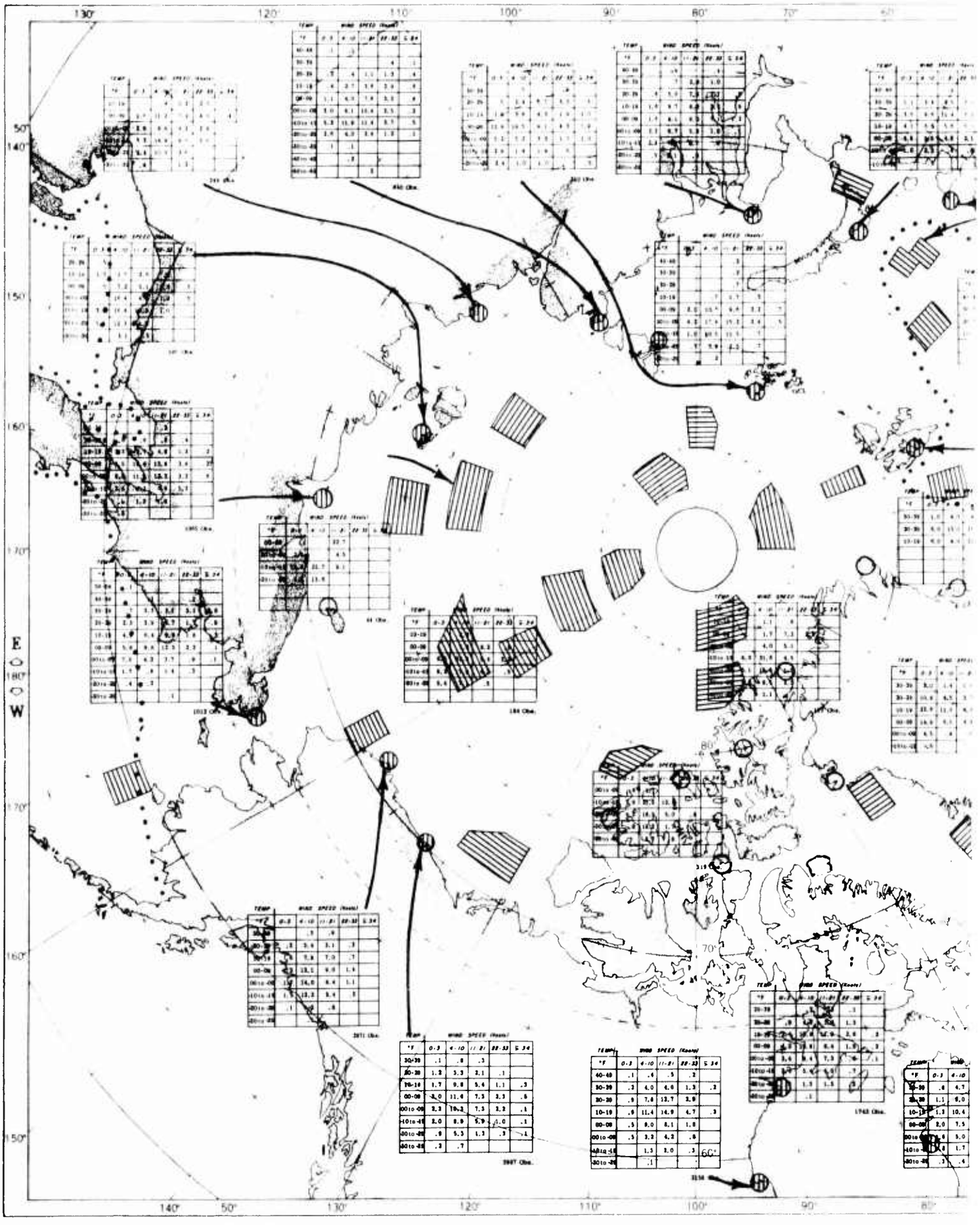






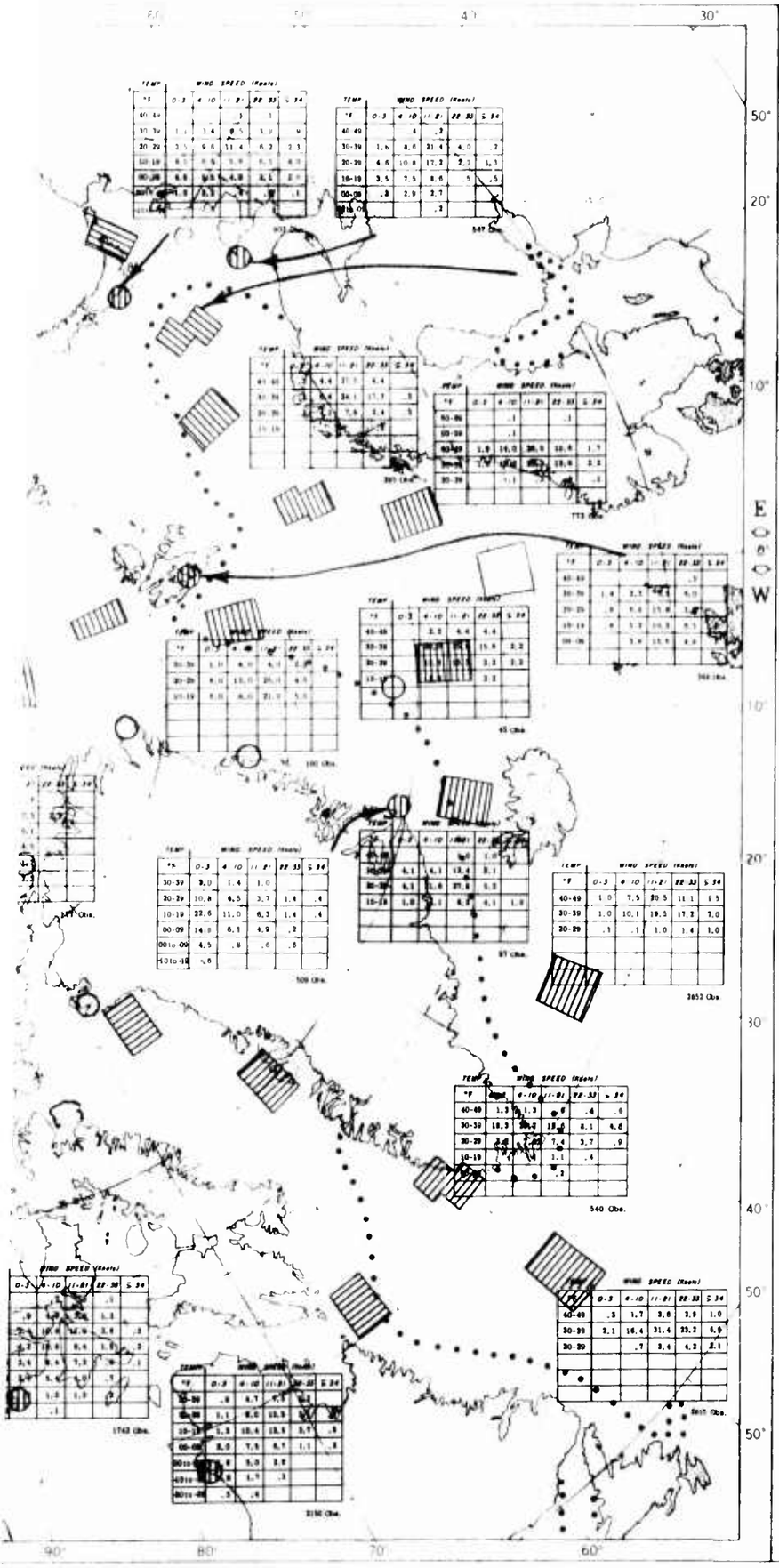
APRIL

AIR TEMPERATURE vs



RATURE vs. WIND SPEED

CHART 49



Percentage Frequency of simultaneous occurrence of specified Temperature groups and Wind Speed

(5% of the observations on which the tabulation was based reported wind speed 22-33 knots simultaneous with temperature from 10° through 19°F.)

OSTROV VRANGELYA

°F	0-3	4-10	11-21	22-33	≥ 34
40-49	.3				
30-39	.2	.5	.6		
20-29	1.5	3.2	2.1	.2	.2
10-19	2.8	3.1	6.0	.9	.5
00-09	14.7	8.0	10.1	2.8	.8
00 to -09	16.5	7.7	2.8	1.4	.6
-10 to -19	8.1	1.4	.8	.2	
-20 to -29	1.4	.5	.7		
-30 to -39	.3				

653 Obs.

NORTH POLE

°F	0-3	4-10	11-21	22-33	≥ 34
10-19	2.3	2.3	2.3		
00-09		4.5	9.1		
00 to -09		22.7			
-10 to -19		27.3	9.1		
-20 to -29		18.2	2.3		

44 Obs.

OCEAN STATION M

°F	0-3	4-10	11-21	22-33	≥ 34
40-49	2.2	6.6	22.5	19.0	3.0
30-39	1.8	7.7	18.3	15.5	1.8
20-29			.3	.3	

3592 Obs.

NORD

°F	0-3	4-10	11-21	22-33	≥ 34
20-29	.3	.3	.3		
10-19	1.3	3.0	.8	.2	.1
00-09	8.2	7.2	2.4	.2	
00 to -09	9.6	15.7	3.1	.3	
-10 to -19	9.3	14.1	2.2		
-20 to -29	8.0	9.0	.8		
-30 to -39	2.4	1.8	.3		
-40 to -49	.8	.7			

1183 Obs.

DANMARKSHAVEN

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	1.0	1.6	.8	.8	
10-19	4.8	5.8	3.4	.8	1.0
00-09	18.0	12.4	5.8	1.0	2.5
00 to -09	14.2	8.8	3.4	.4	
-10 to -19	8.8	3.5	1.4		
-20 to -29	1.0	.1	.1		

988 Obs.

JAN MAYEN

°F	0-3	4-10	11-21	22-33	≥ 34
40-49		.3	.5	.3	
30-39	3.5	10.8	19.1	14.5	1.8
20-29	3.2	8.8	16.1	4.3	.8
10-19	.8	2.7	7.0	4.3	
00-09	.8	.3		.3	

372 Obs.

ISACHSEN

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	.3	.3	.1	.3	
10-19	1.0	3.3	1.7	.2	
00-09	3.5	6.8	3.3	.7	.1
00 to -09	6.3	7.1	4.1	1.7	
-10 to -19	13.4	10.8	8.6	3.0	.5
-20 to -29	10.4	7.8	3.3	.8	.5
-30 to -39	3.4	2.3	.8		
-40 to -49	.3	.1			

1930 Obs.

EUREKA

°F	0-3	4-10	11-21	22-33	≥ 34
20-29	.1	.2	.3	.2	
10-19	.7	1.3	1.7	.4	
00-09	3.1	5.8	2.7	.8	.1
00 to -09	3.4	8.8	2.7	.2	
-10 to -19	6.5	13.5	3.0	.2	
-20 to -29	8.4	15.5	.8		
-30 to -39	6.9	8.7	.3		
-40 to -49	2.1	2.1	.1		

1799 Obs.

ALERT

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	.1	.2	.4	.3	
10-19	1.3	1.3	1.4	1.3	.4
00-09	7.7	4.2	1.4	1.1	.4
00 to -09	13.3	5.8	1.4	1.0	.8
-10 to -19	10.6	6.0	.7	.9	.1
-20 to -29	13.6	4.8	.4	.1	.1
-30 to -39	7.3	2.1			
-40 to -49	.4	.2			

1799 Obs.

MOULD BAY

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	.3	.0	.3	.2	
10-19	3.3	3.4	1.7	.2	
00-09	3.9	4.9	3.6	.6	.1
00 to -09	7.8	9.7	5.3	1.9	.1
-10 to -19	14.3	12.8	7.0	1.9	.1
-20 to -29	7.3	5.3	3.5	.3	
-30 to -39	.9	.7	.8	.2	
-40 to -49	.1				

1819 Obs.

RESOLUTE

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	.3	.4	.4	.3	.1
10-19	1.0	2.9	3.3	1.6	.3
00-09	2.4	4.6	4.7	1.9	1.2
00 to -09	5.4	9.7	8.0	2.2	.4
-10 to -19	6.5	14.3	7.0	1.8	
-20 to -29	4.0	9.6	3.5	.8	.1
-30 to -39	.6	1.7	.4		

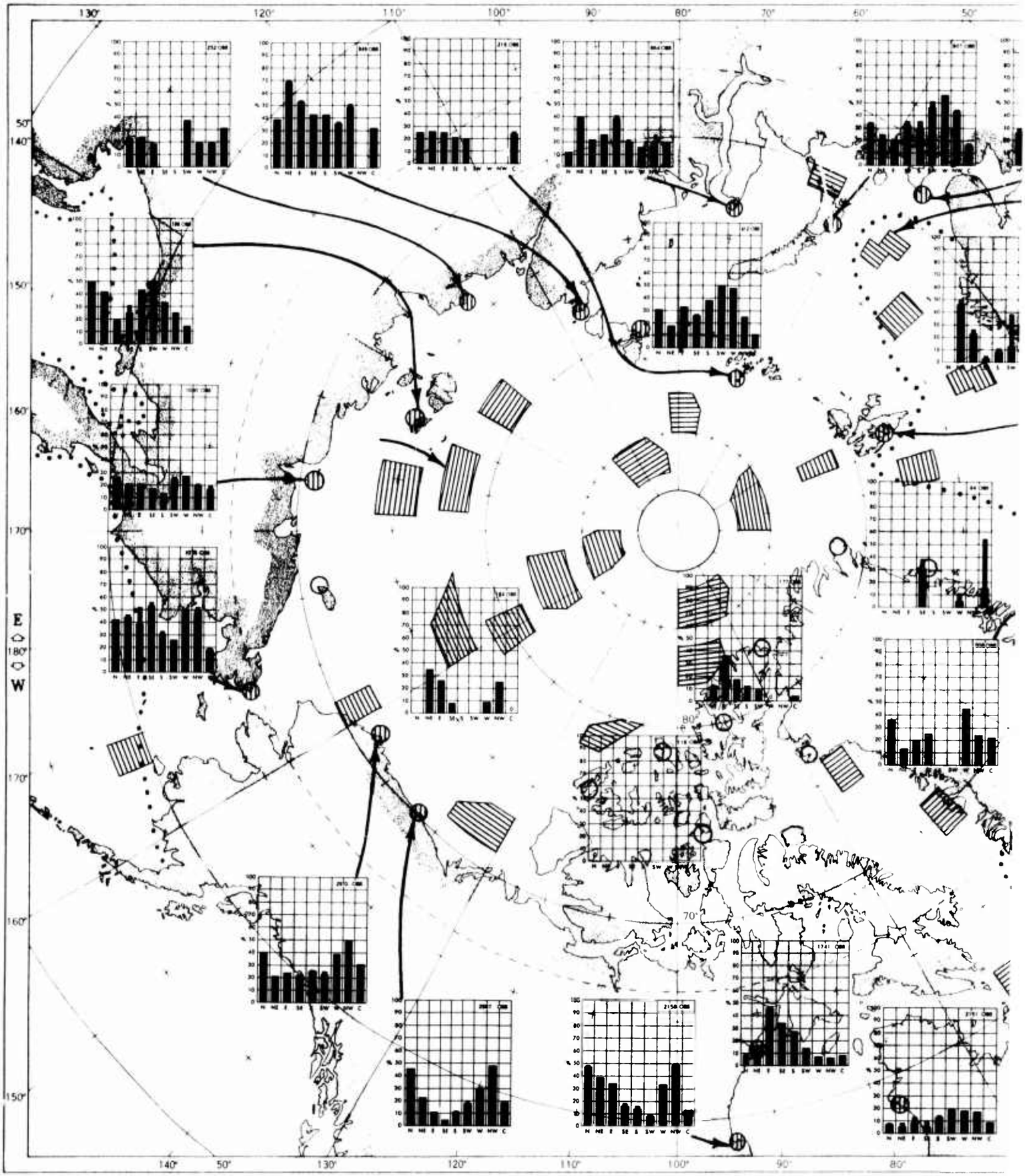
1930 Obs.

THULE

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	.5	.0	.1		
20-29	3.1	3.1	.7	.0	.2
10-19	9.6	7.7	1.5	.9	.2
00-09	13.1	11.8	2.3	.6	
00 to -09	8.2	13.5	1.8	.7	.2
-10 to -19	3.5	11.3	1.0	.2	.1
-20 to -29	.9	3.3			
-30 to -39		.2			

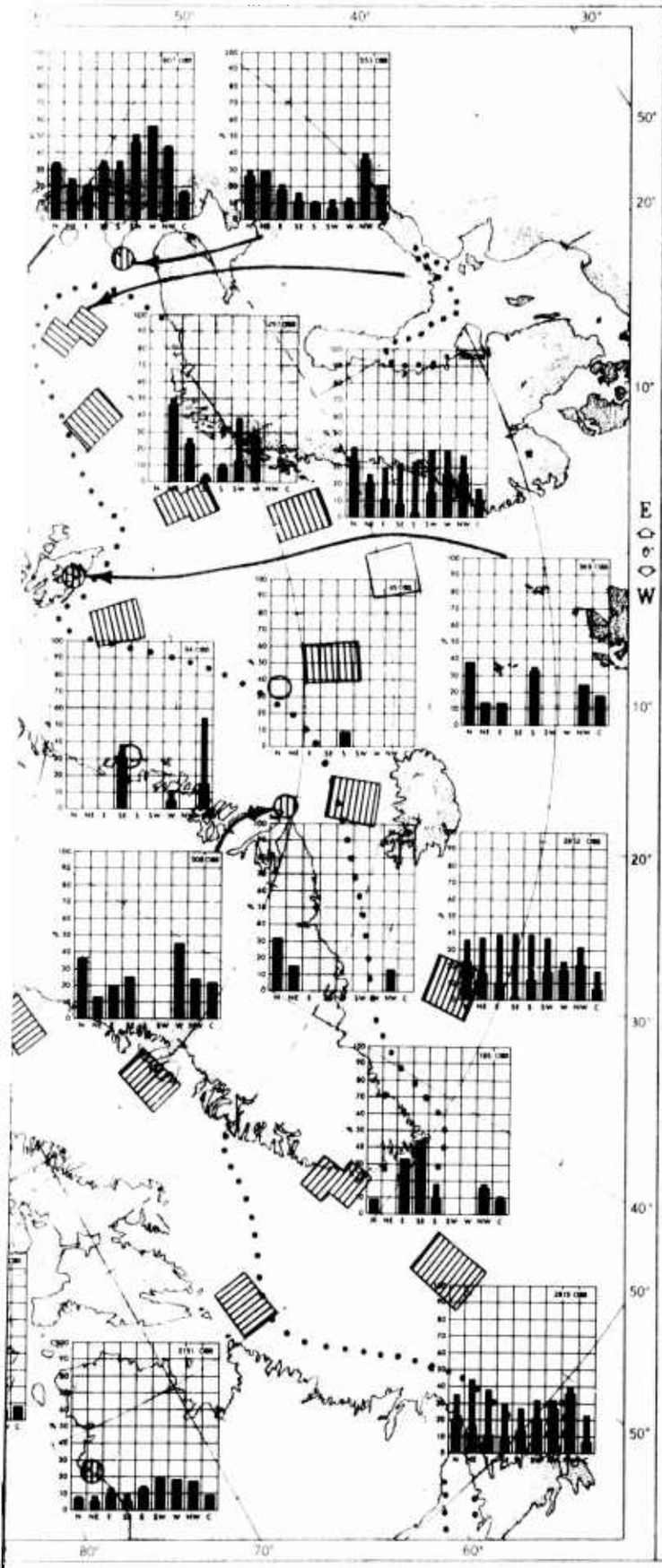
2299 Obs.

APRIL PRECIPITATION BY WIND



BY WIND DIRECTION

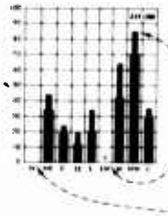
CHART 50



Percentage Frequency of Precipitation by Wind Direction

(a) Percentage of all present weather (and wind) observations reporting precipitation

(b) Percentage of observations recording liquid or frozen precipitation as indicated by

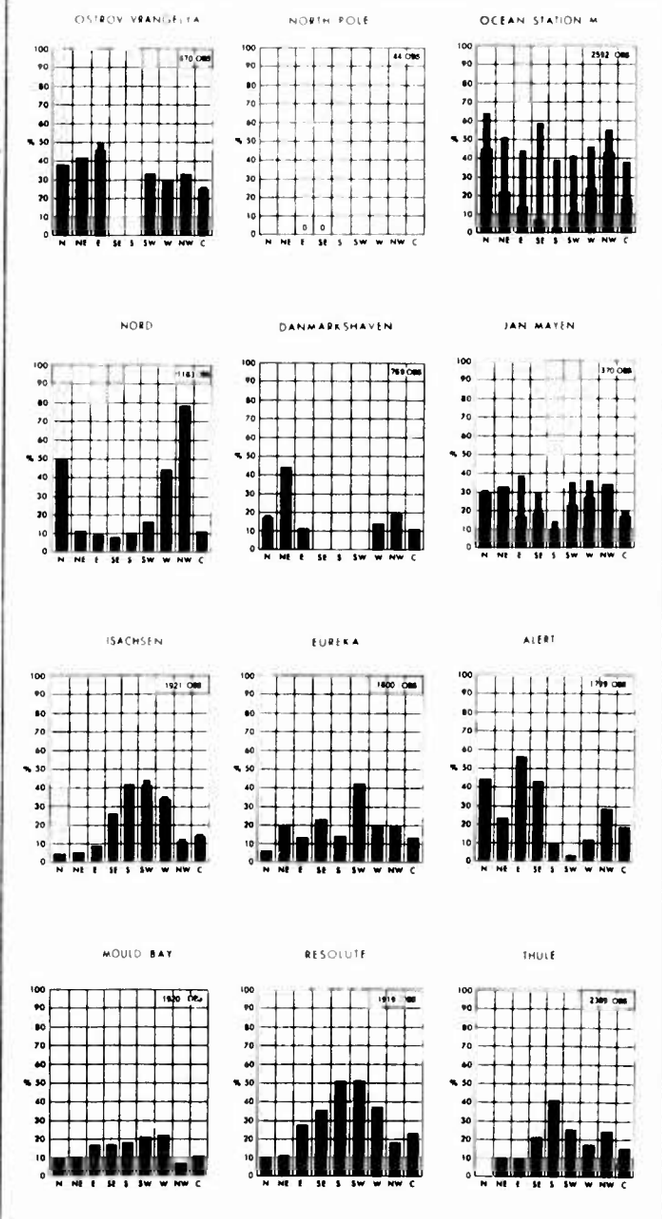


(85% of all NW winds were accompanied by precipitation 15% frozen, 70% liquid)

0 replaces bar when no precipitation was observed with winds from a direction

Bar or 0 omitted when number of observations was 10 or Less

See chart 6 for precipitation incidence disregarding wind direction



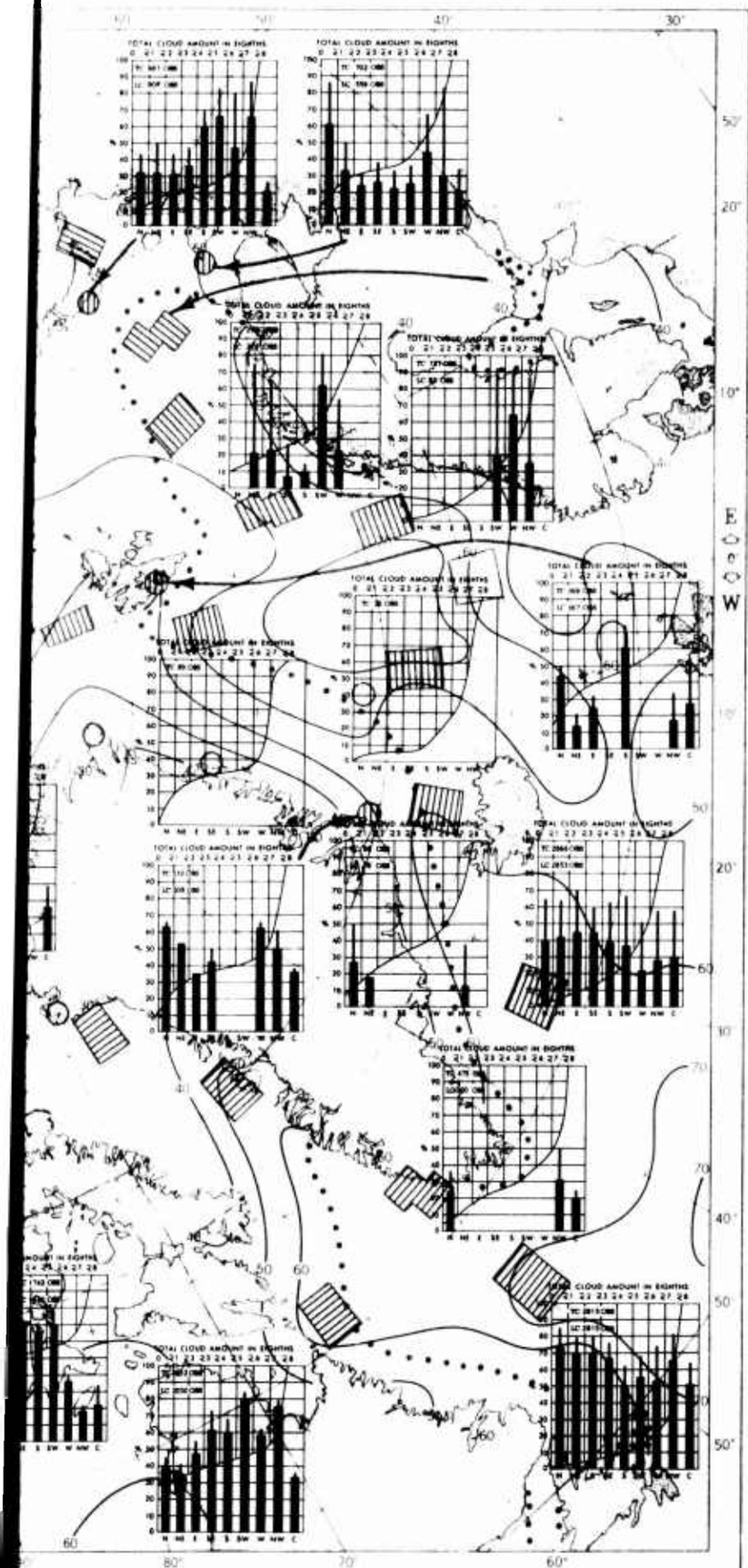
APRIL

CLOUDINES



LOUDINESS

CHART 51



Percentage Frequency of Total Cloud Amount 8/10 or more

Total Cloud Amount (TC) Percentage frequency of total cloud amounts equal to or less than amount intersected by the curve

(62% of all total cloud amounts were 7/8 or less

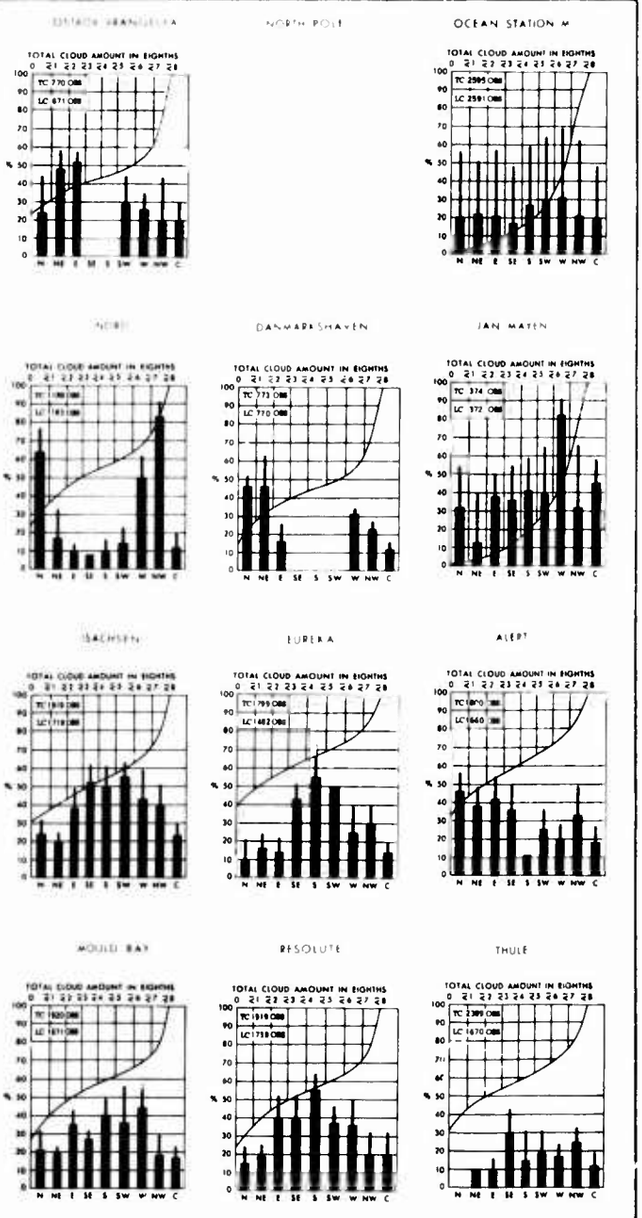
Lower Cloud Amount (LC) Percentage proportions of winds from each direction that were accompanied by low or middle cloud amounts greater than 5/8 and greater than 7/8

(52% of all NW winds were accompanied by low or cloud amounts >5/8 and 38% by lower cloud amounts >7/8)

[>5/8 includes 6/8 8/8 and 7/10 10/10 >7/8 includes 8/8 and 9/10 10/10]

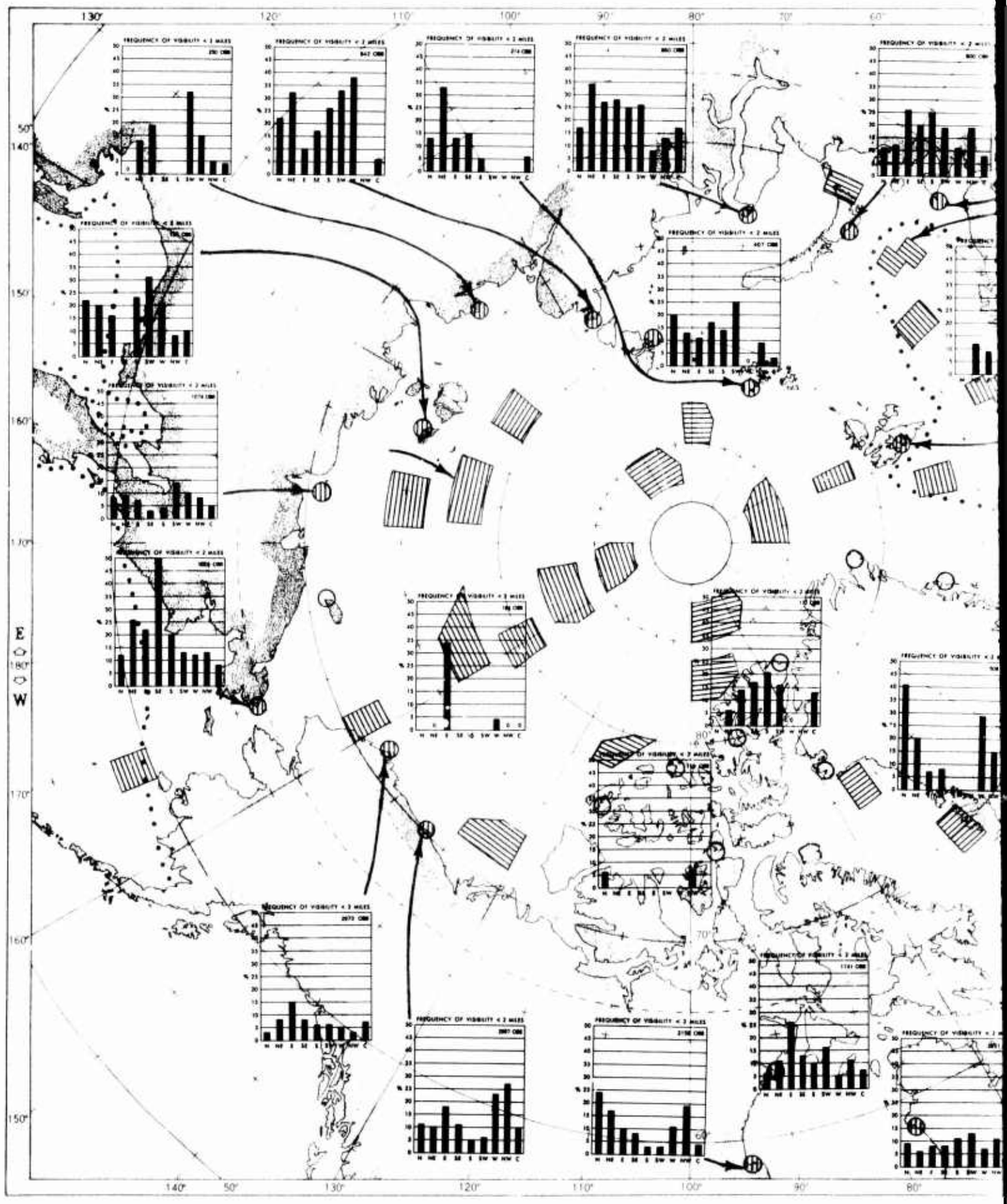
0 replaces bar when no low cloud amounts >5/8 were observed with winds from a direction

Bar for 0 is omitted when the number of observations including both wind direction and low cloud amount was 10 or less for a direction



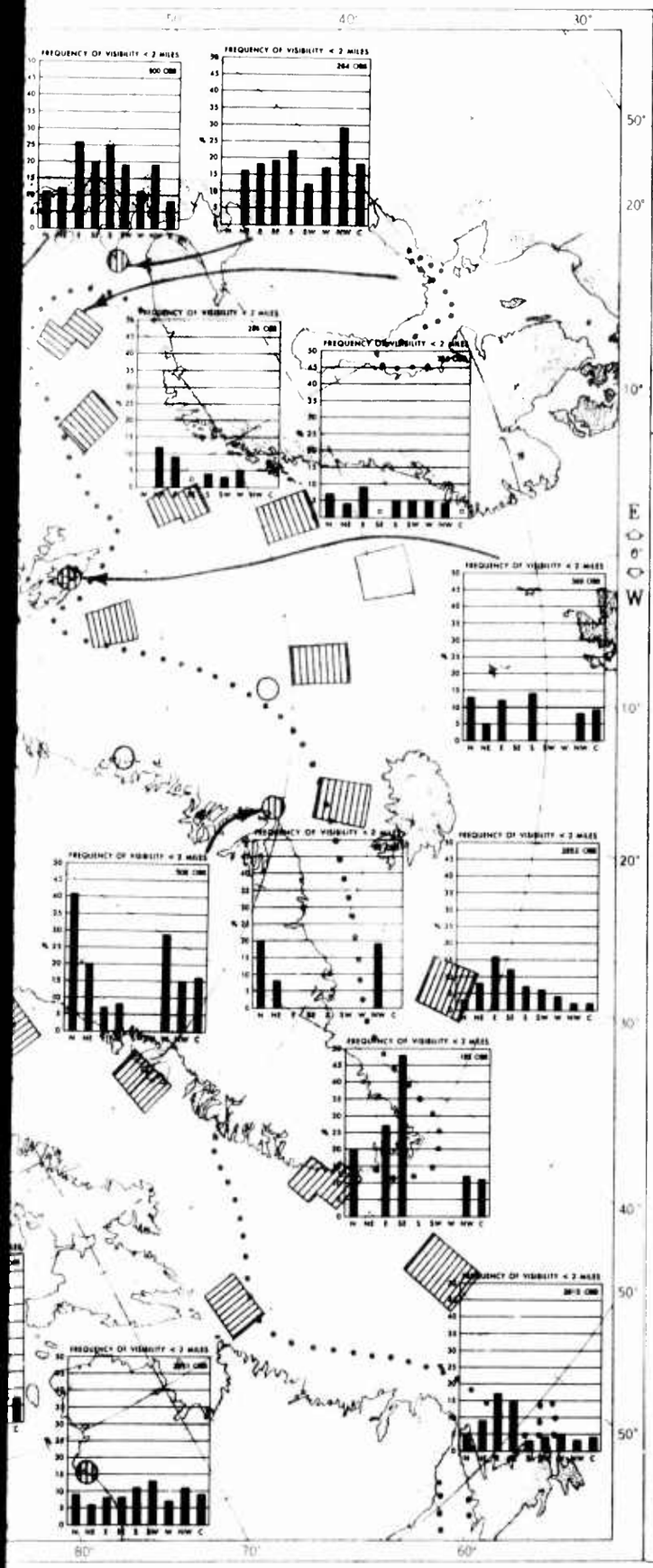
APRIL

LOW VISIBILITY BY WIN



Y WIND DIRECTION

CHART 52



Percentage Frequency of Low Visibility by Wind Direction

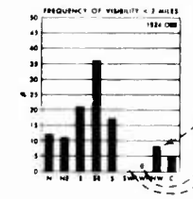
Percentage of all visibility (and wind) observations reporting visibility less than 2 nautical miles

(8% of all NW winds were accompanied by visibility less than 2 miles)

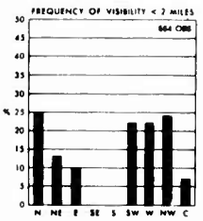
0 replaces bar when no visibilities < 2 miles were observed with winds from a direction

Bar or 0 omitted when number of observations was 10 or less

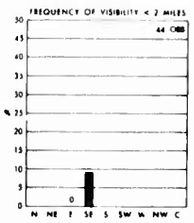
See chart 9 for low visibility incidence disregarding wind direction



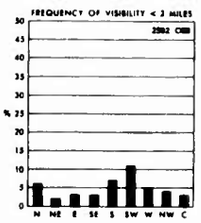
OSTROV VRANGELYA



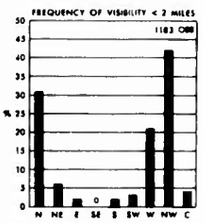
NORTH POLE



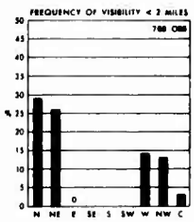
OCEAN STATION M



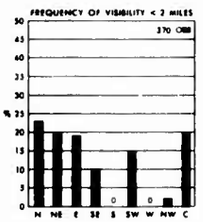
NORD



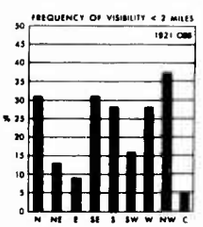
DANMARKSHAVEN



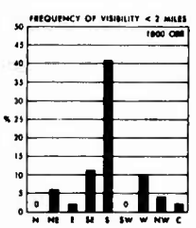
JAN MAYEN



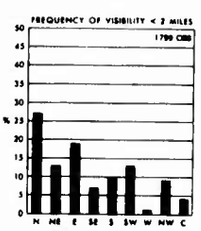
ISACHSEN



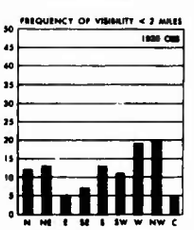
EUREKA



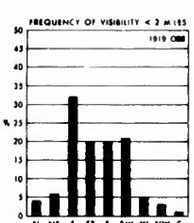
ALERT



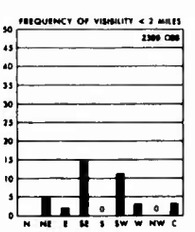
MOULD BAY



RESOLUTE



THULE



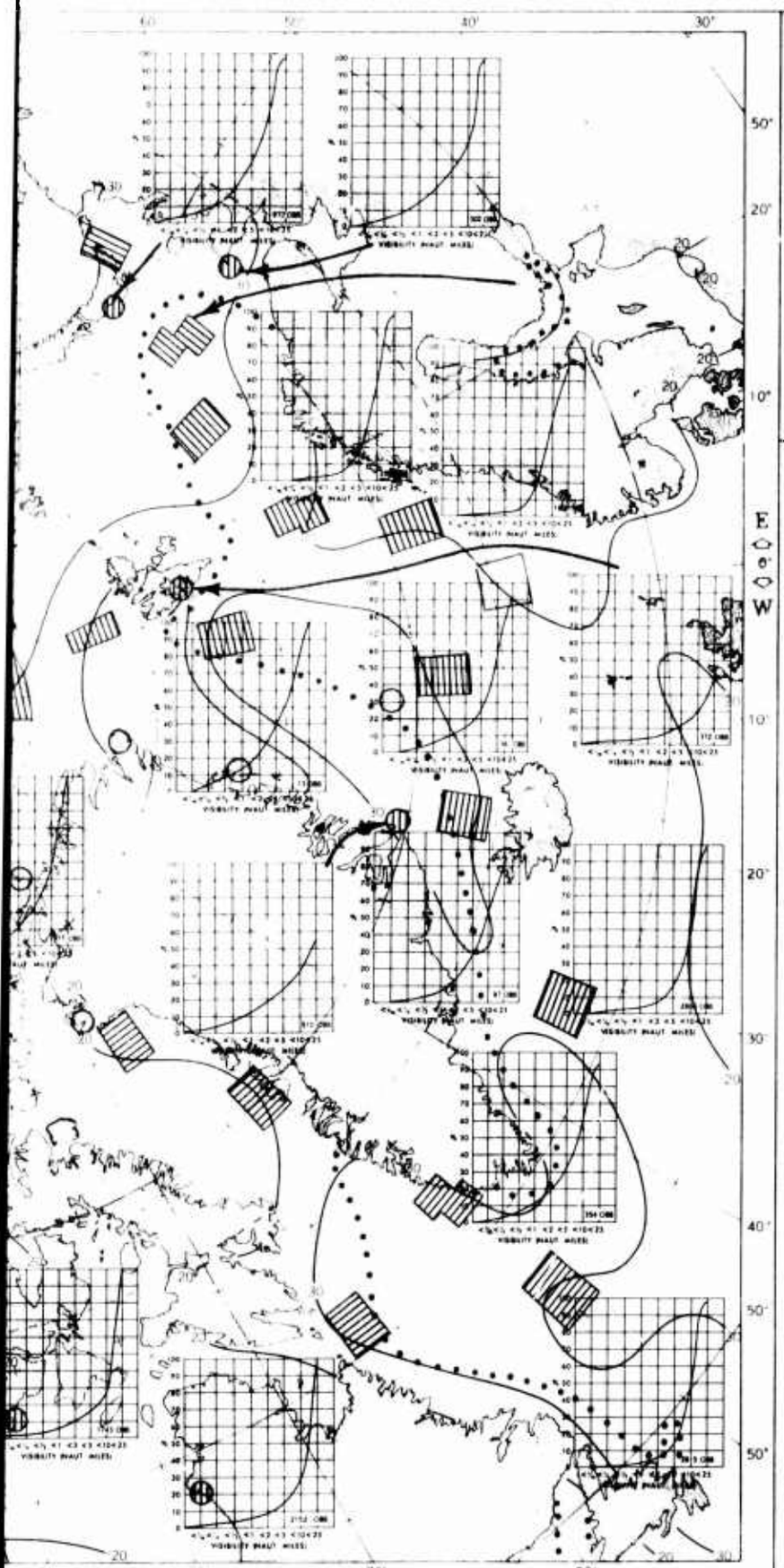
APRIL

VISIBIL

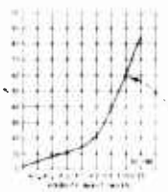


VISIBILITY

CHART 53



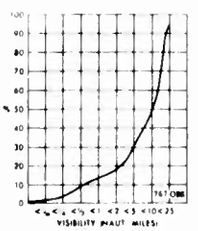
Percentage Frequency of Visibility <5 Nautical Miles



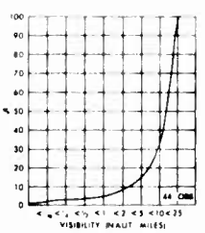
Percentage Frequency of Visibilities less than amount intersected by the curve

— 60% of all visibilities were 10 nautical miles or less

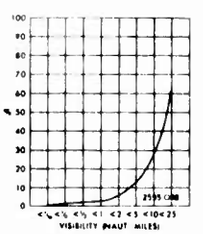
OSTROV VRANGELYA



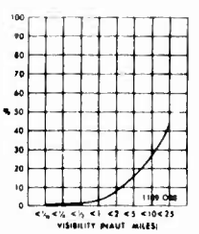
NORTH POLE



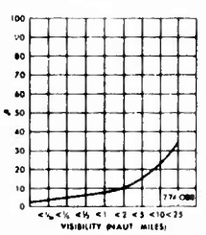
OCEAN STATION M



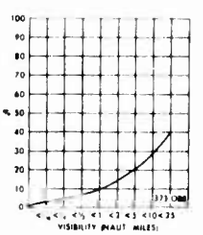
NORD



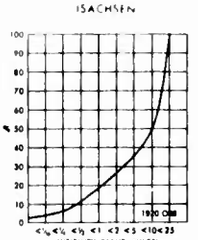
DANMARKSHAVEN



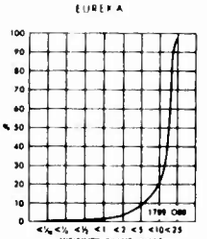
JAN MAYEN



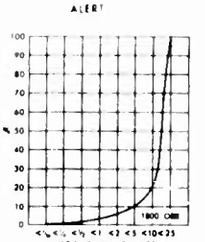
ISACHSEN



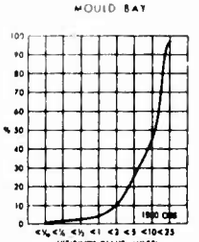
EUREKA



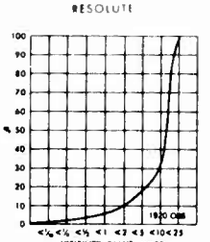
ALERT



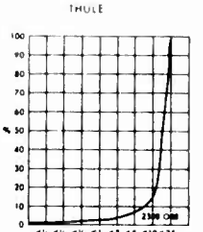
MOULD BAY



RESOLUTE

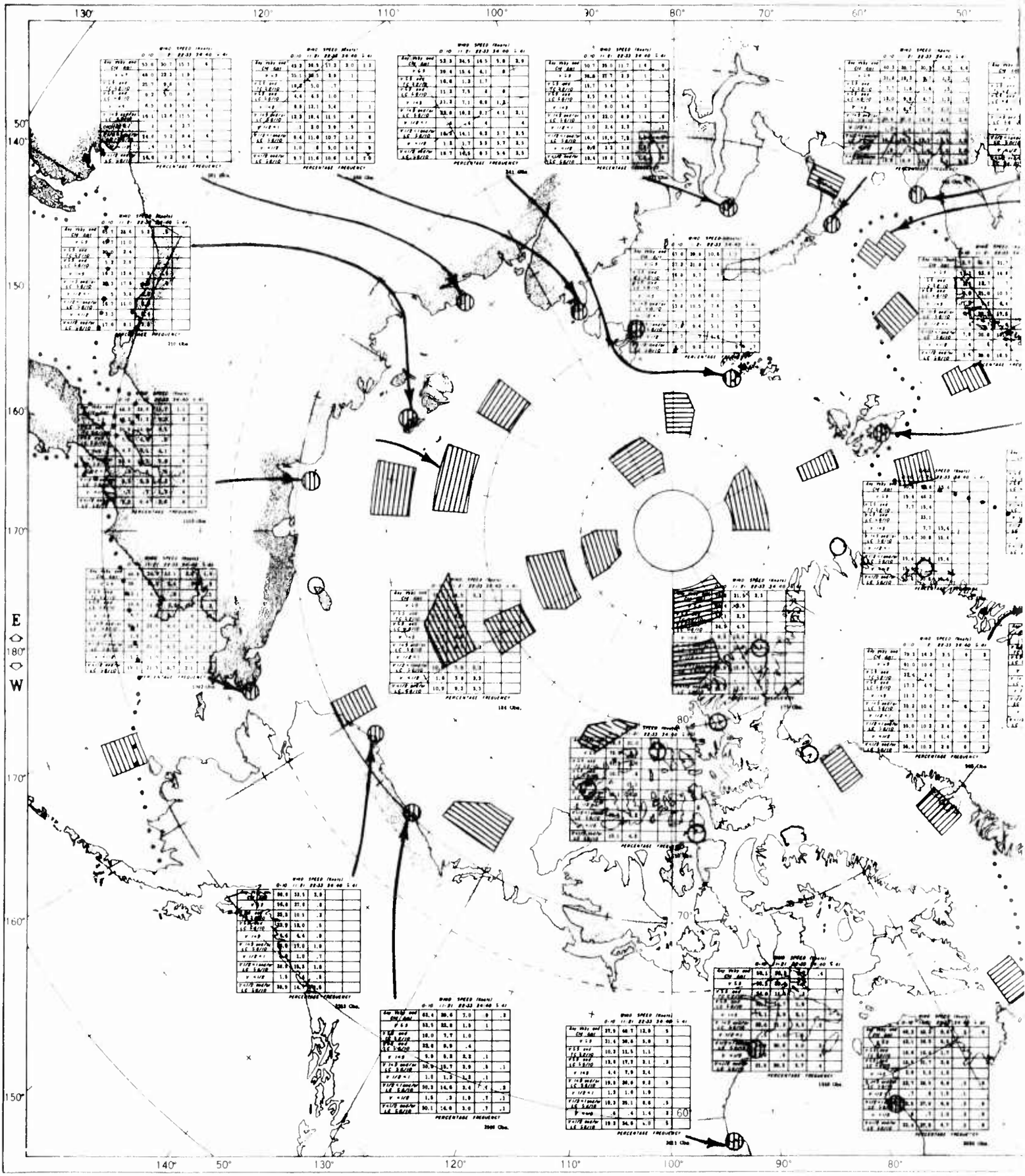


THULE



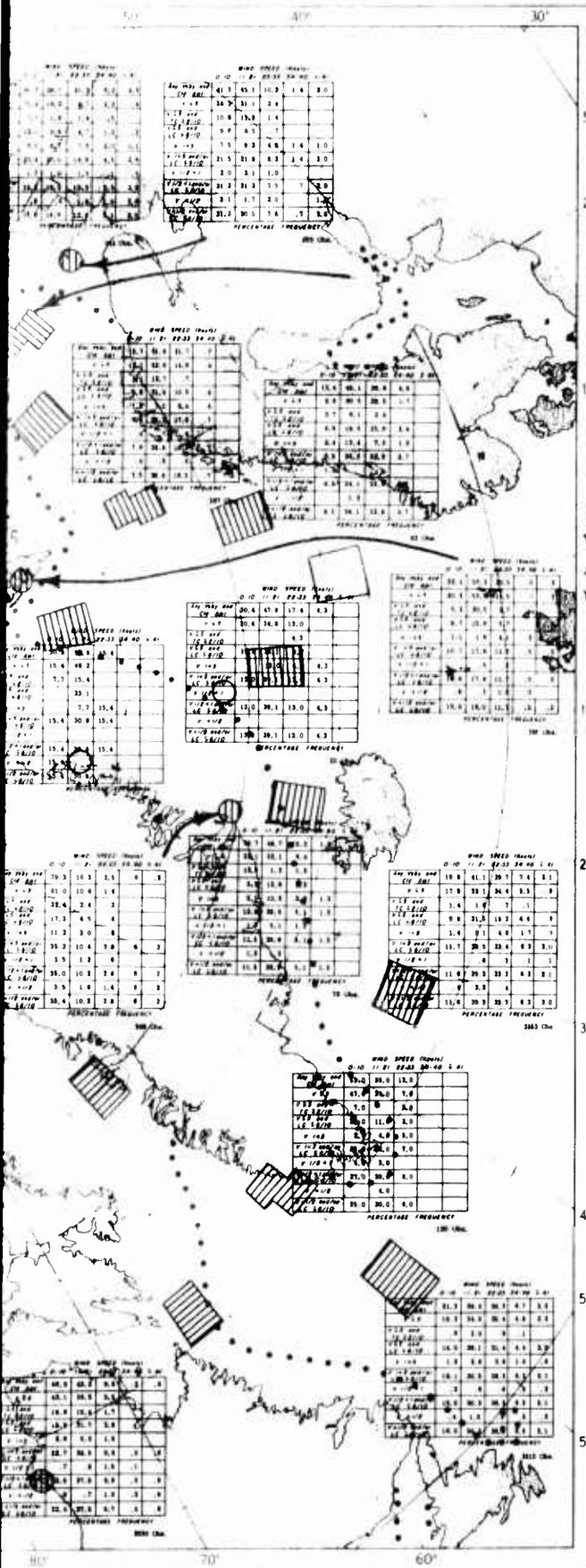
APRIL

WIND-VISIBILITY-CLOU

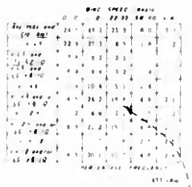


Y-CLOUDINESS

CHART 54



Percentage Frequency of simultaneous occurrence of specified Wind, Visibility, and Cloudiness conditions based on the number of observations which reported wind speed, visibility, total cloud amount and low cloud amount



Blank box indicates 0.0 percent

Notation

Any Vsby and Cld Amt = Simultaneous occurrence of wind speed with any visibility and cloud amount combination. This provides a percentage distribution of wind speeds for the observations used in this tabulation.

V = Visibility in Nautical Miles
1<5 indicates 1 to but not including 5 nautical miles

TC = Total Cloud Amount

LC = Low Cloud Amount with base approximately 8000 feet or lower

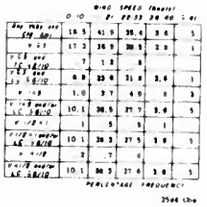
Ocean Area 166 of the observations on which this tabulation was based reported speed 22-33 knots simultaneous with visibility 1-5 nautical miles and/or low cloud amount 6-10

OSTROV VRANGELYA



NORTH POLE

OCEAN STATION M



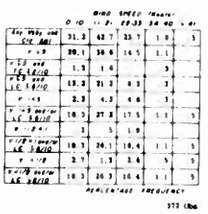
NORD



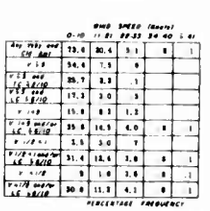
DANMARKSHAVEN



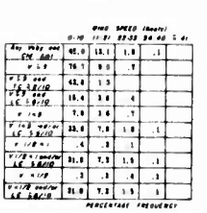
JAN MAYEN



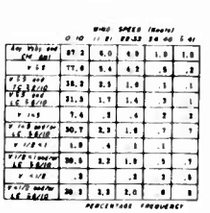
ISACHSEN



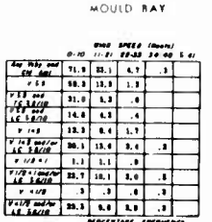
EUREKA



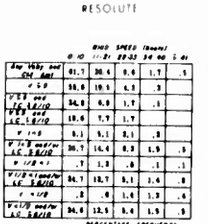
ALERT



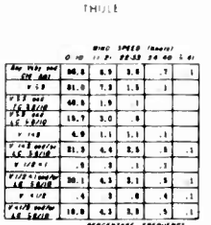
MOULD BAY



RESOLUTE

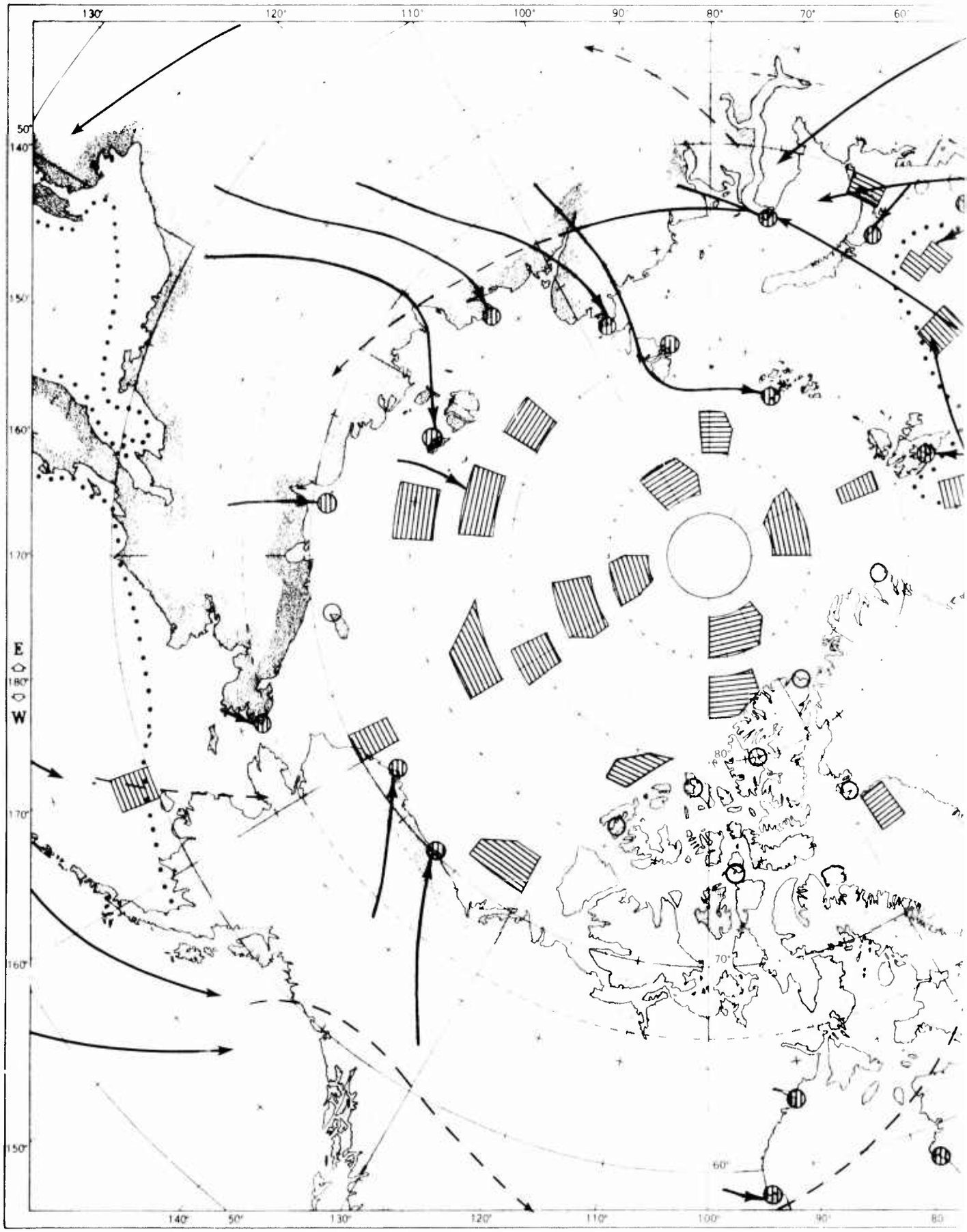


THULE



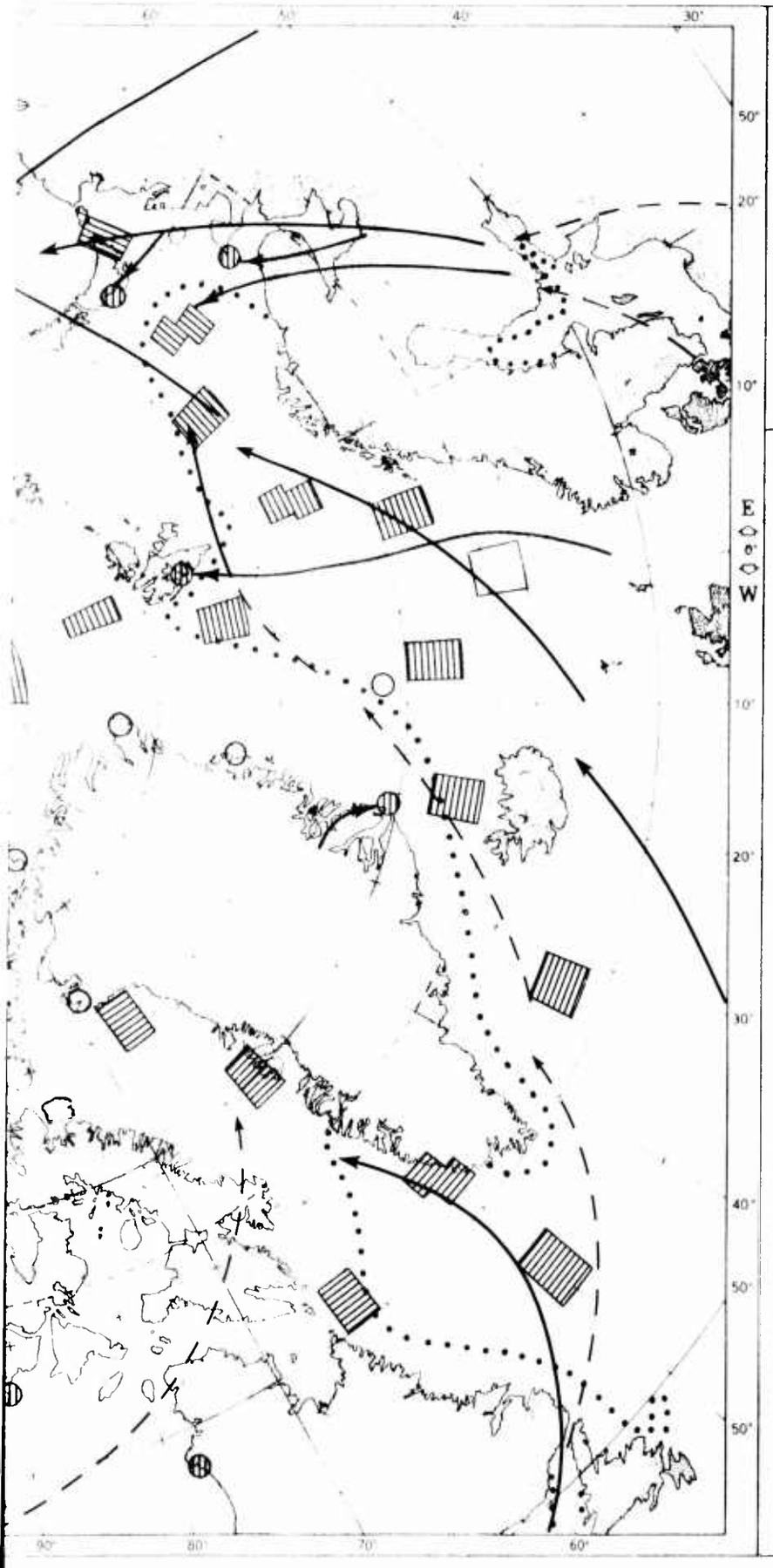
APRIL

STORM TR



TORM TRACKS

CHART 55



Storm Tracks

Primary Track along which there has been maximum concentration of individual storm center paths

Secondary Track along which there has been moderate concentration of individual storm center paths

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

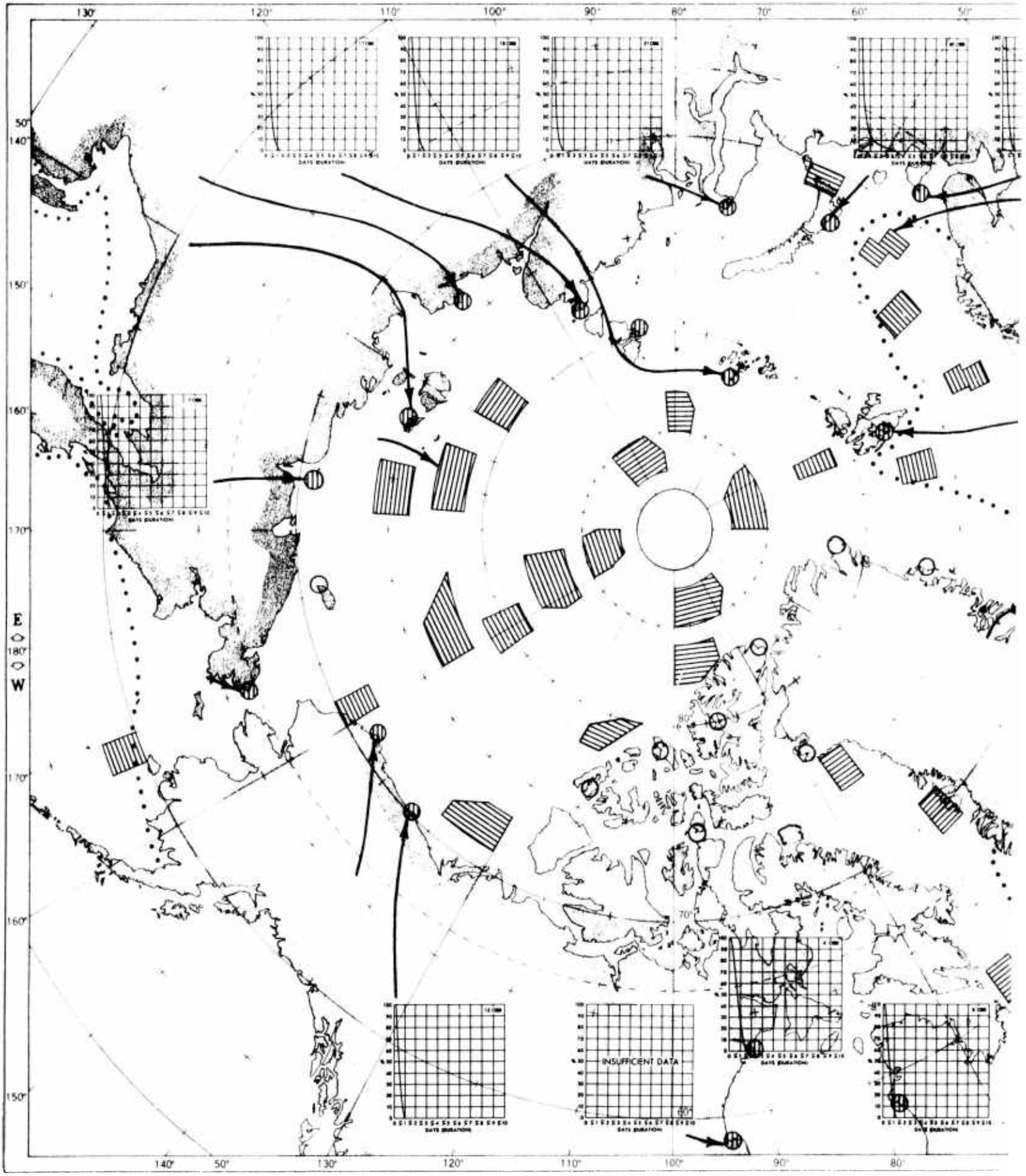
MOULD BAY

RESOLUTE

THULE

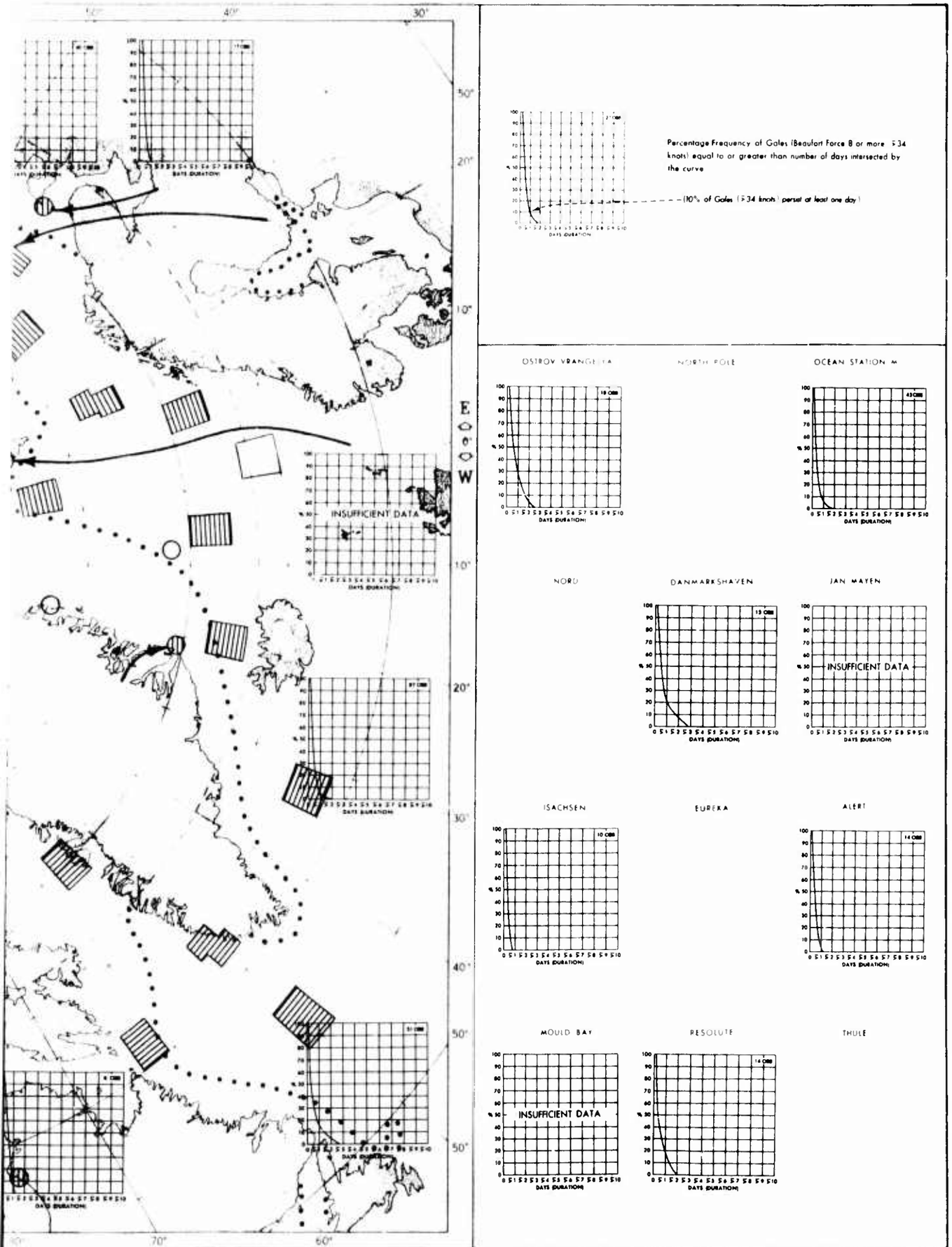
APRIL

GALE PERSISTENC



SISTENCE

CHART 56



Percentage Frequency of Gales (Beaufort Force 8 or more 34 knots) equal to or greater than number of days intersected by the curve

(10% of Gales (34 knots) persist at least one day)

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

MOULD BAY

RESOLUTE

THULE

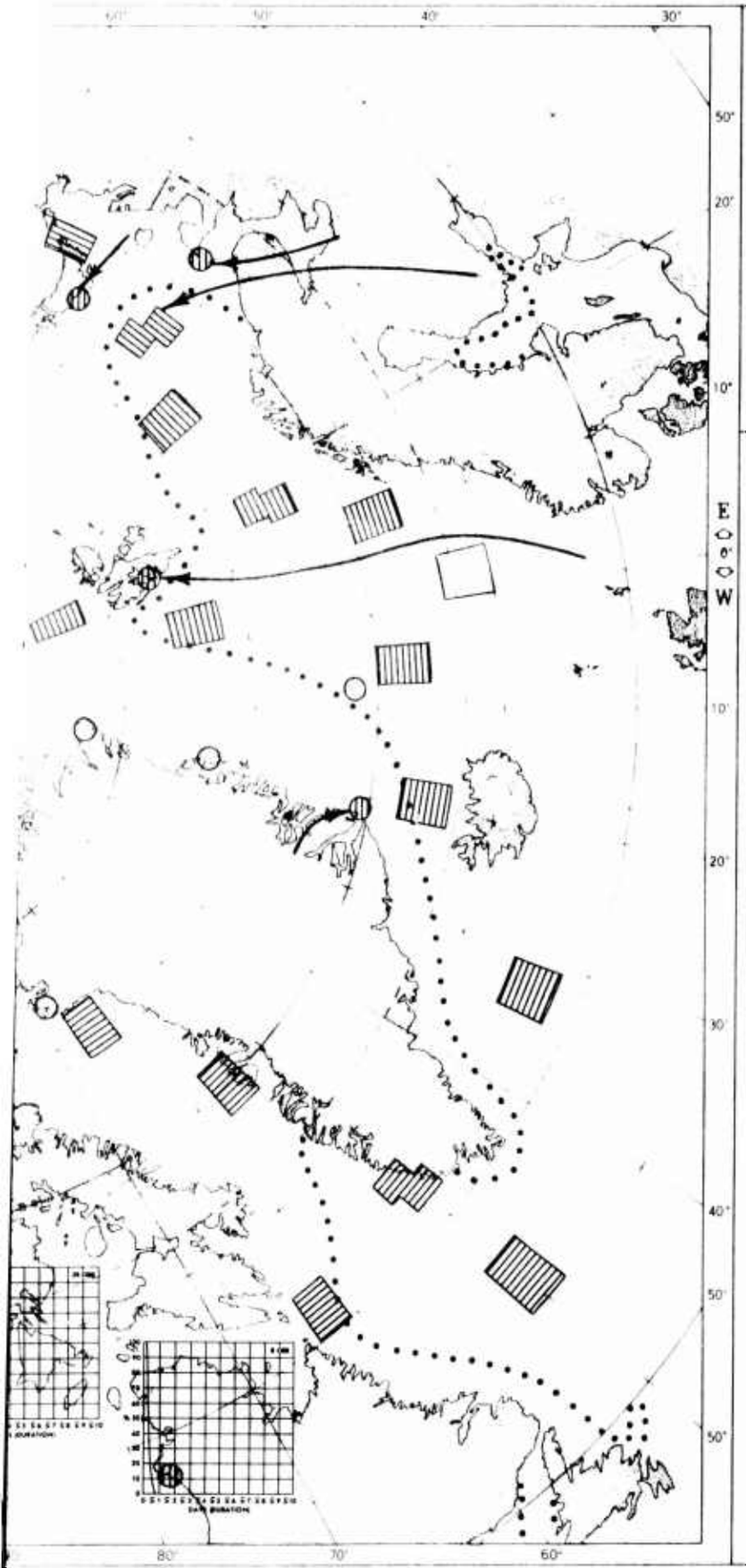
APRIL

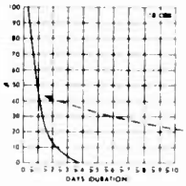
LOW TEMPERATURE



RATURE PERSISTENCE

CHART 57

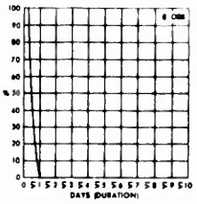




Percentage Frequency of Air Temperature (20° F or less equal to or greater than number of days intersected by the curve

[44% of cold temperatures (20° F) persist at least one day]

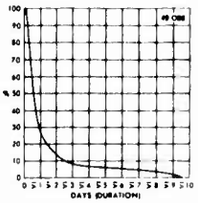
OSTROV VRANGELYA



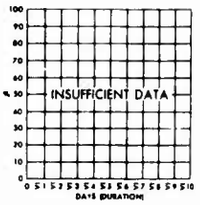
NORTH POLE

OCEAN STATION M

NORD

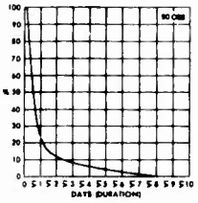


DANMARKSHAVEN

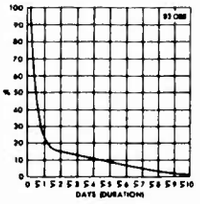


JAN MAYEN

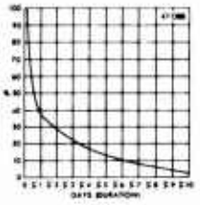
ISACHSEN



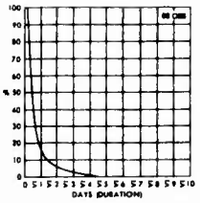
EUREKA



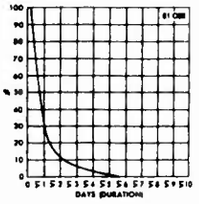
ALERT



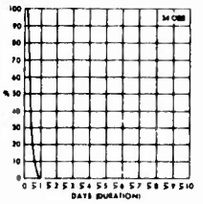
MOULD BAY



RESOLUTE

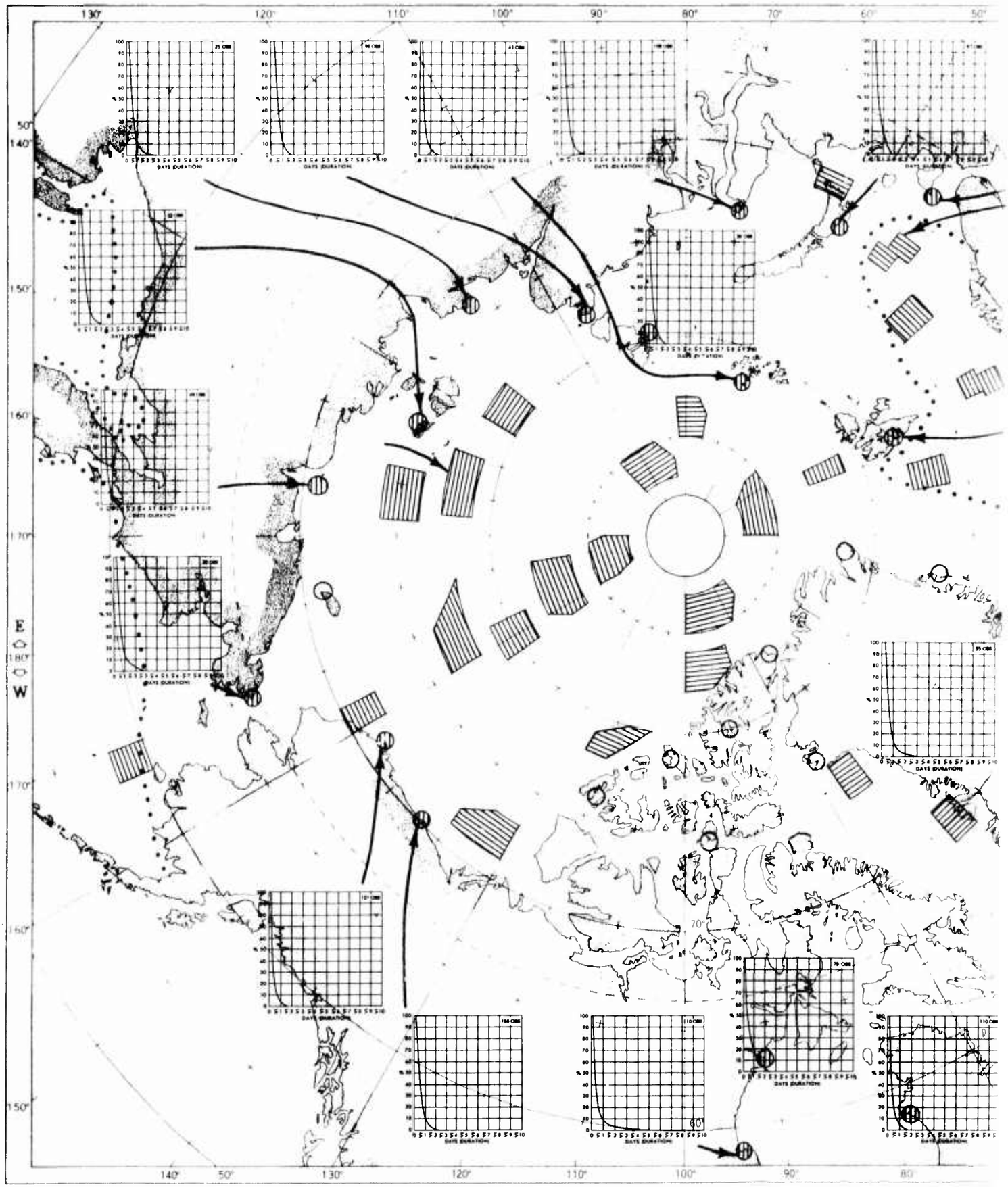


THULE



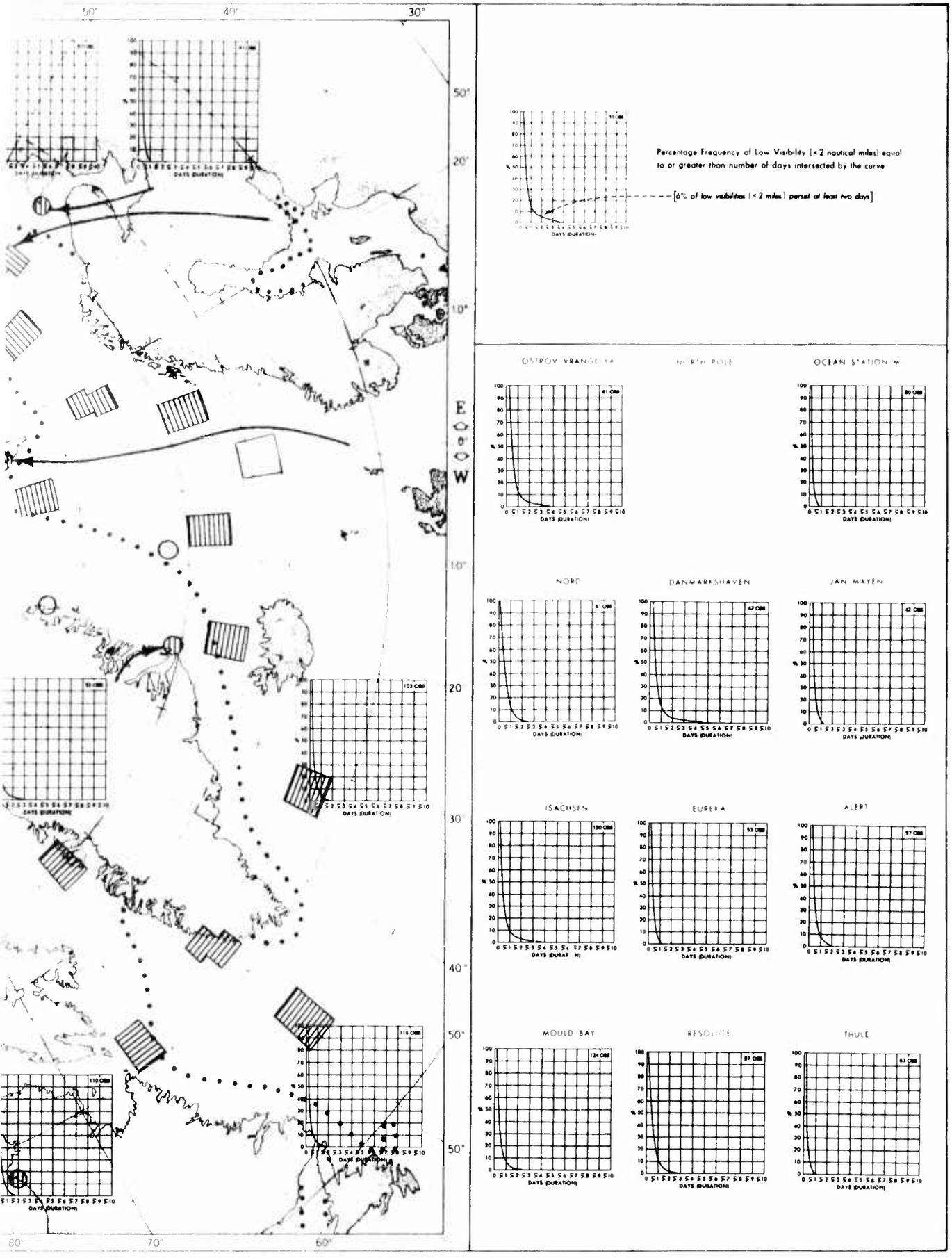
APRIL

LOW VISIBILITY PERS



' PERSISTENCE

CHART 58



Percentage Frequency of Low Visibility (< 2 nautical miles) equal to or greater than number of days intersected by the curve

[6% of low visibilities (< 2 miles) persist at least two days]

OSTROV VRANGEL I.A

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

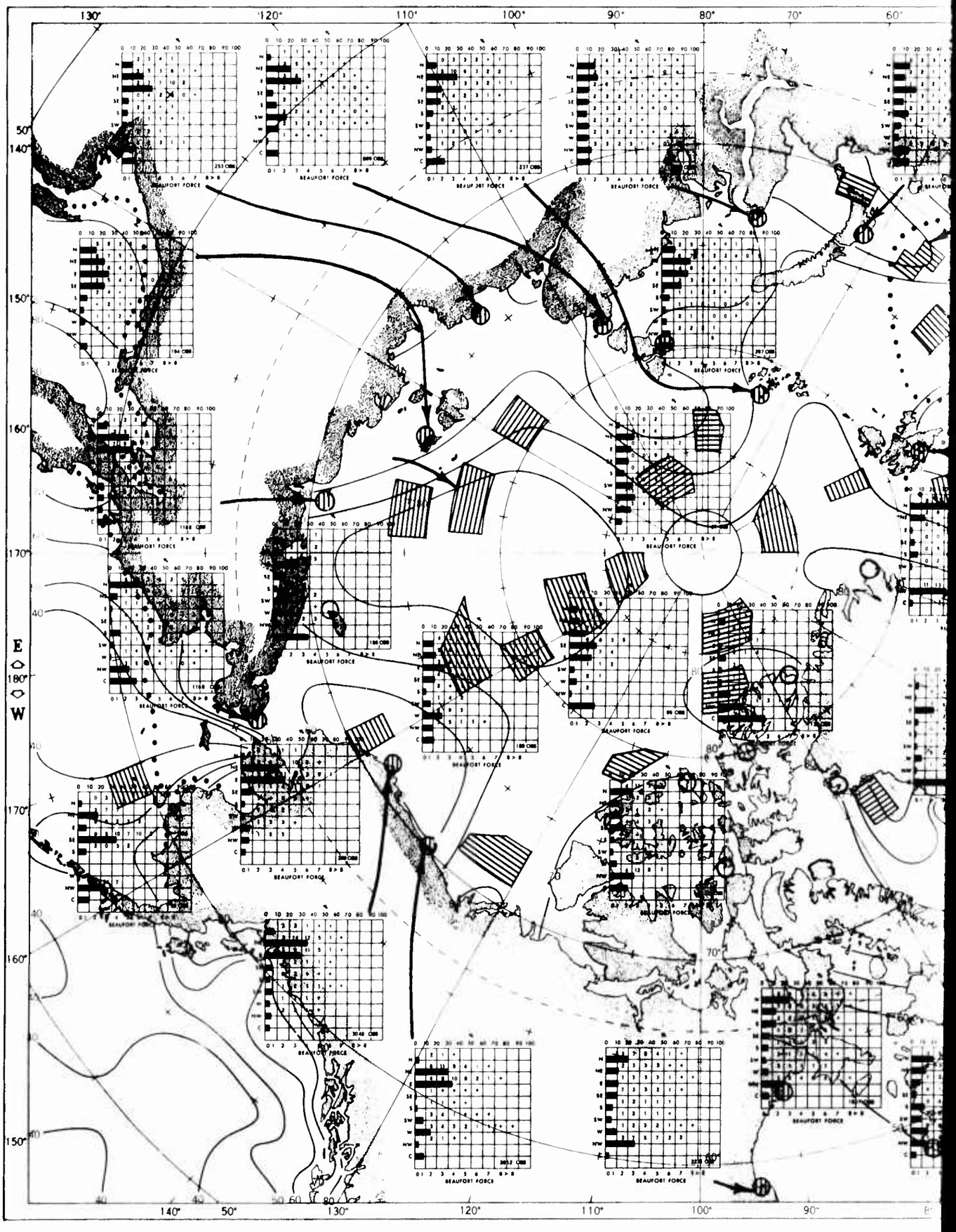
MOULD BAY

RESOLUTE

THULE

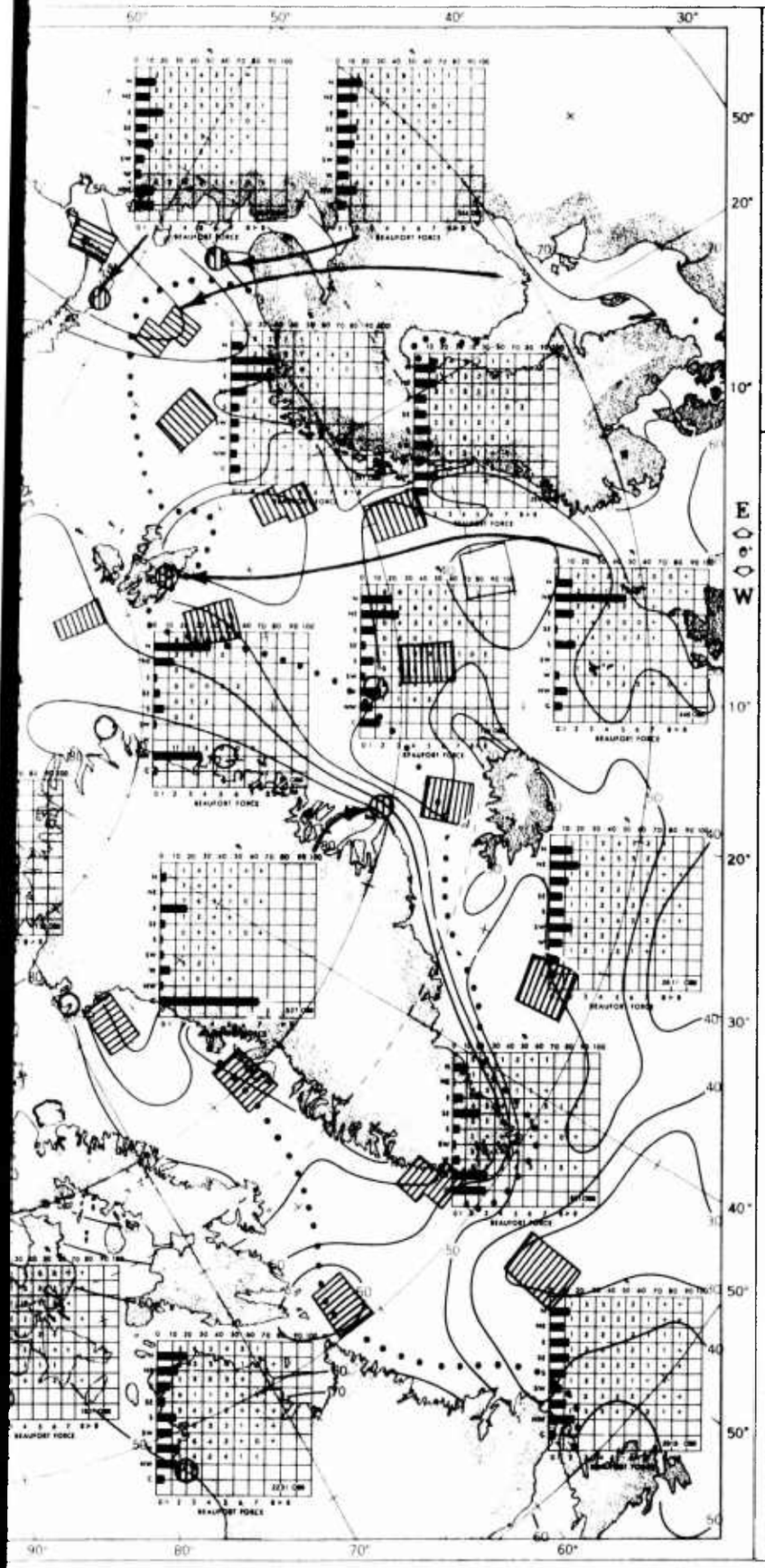
MAY

SURFACE

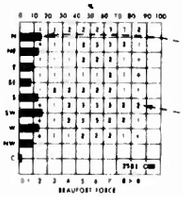

130°
120°
110°
100°
90°
80°
70°
60°
50°
140°
150°
160°
170°
E
180°
W
170°
160°
150°
140°
50°
130°
120°
110°
100°
90°
BEAUFORT FORCE

URFACE WIND

CHART 59



Percentage Frequency of Wind Speed Beaufort Force 3 or less (≤ 10 Knots)



Direction Frequency (Top Scale) Bars represent percentage frequency of wind observed from each direction (& calm)

– (14% of all winds were from N)

Speed Frequency (Bottom Scale) percentage frequency of wind speed by Beaufort Force

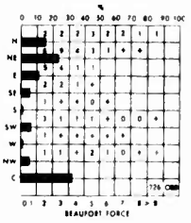
– (2% of all winds from SW were greater than Beaufort Force 8)

All percentages rounded to nearest whole percent

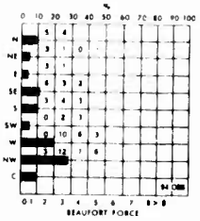
Calm includes Beaufort Force 1 (0-3 knots)

+ indicates less than 1/2 percent

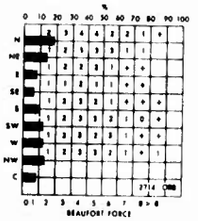
OSTROV VRANGELYA



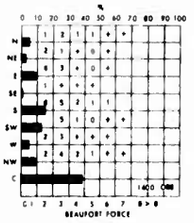
NORTH POLE



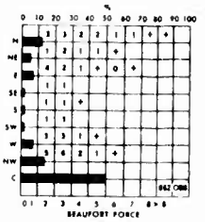
OCEAN STATION M



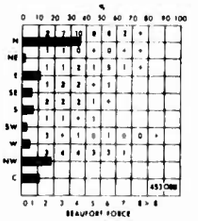
NORD



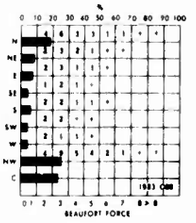
DANMARKSHAVEN



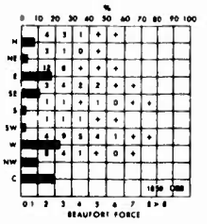
JAN MAYEN



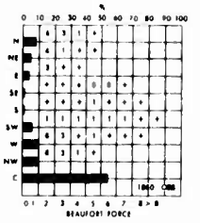
ISACHSEN



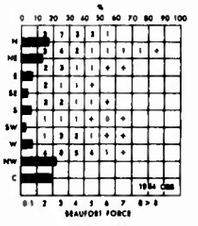
EUREKA



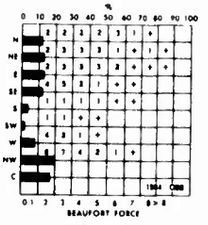
ALERT



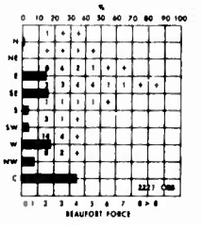
MOULD BAY



RESOLUTE



THULE



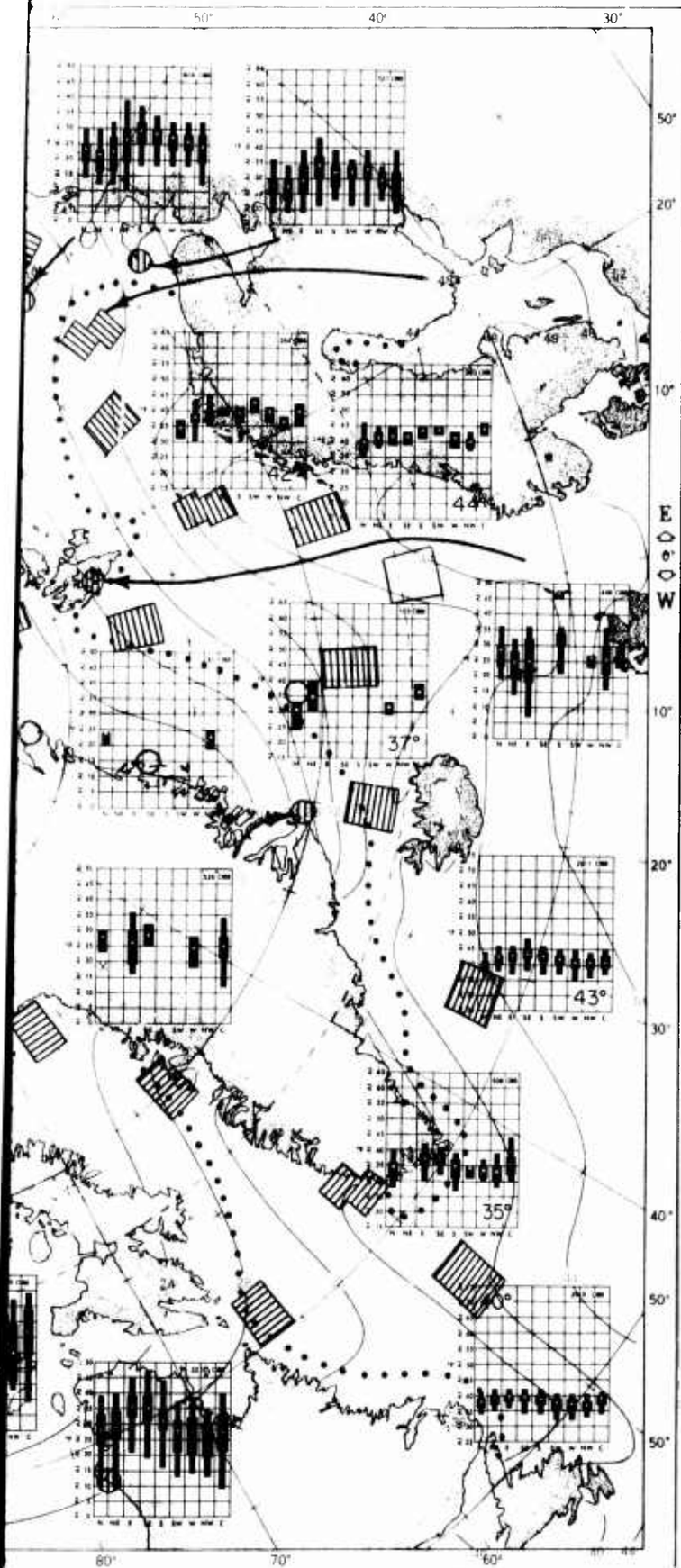
MAY

AIR TEMPERATURE BY WIND



E BY WIND DIRECTION

CHART 60



Mean Air Temperature °F

Distribution of Temperature Observed with each Wind Direction

(a) Mean

(b) 95%, 75%, 25% and 5% of all temperatures were equal to or less than the temperatures indicated by

(With NW winds, the mean temperature was 29°F. 5% of the temperatures were 23°F or less, 25% were 24°F or less, etc.)

Mean temperatures and frequencies are omitted when number of observations was 10 or less

See chart 2 for temperature distribution disregarding wind direction

Mean Water Temperature when data available

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

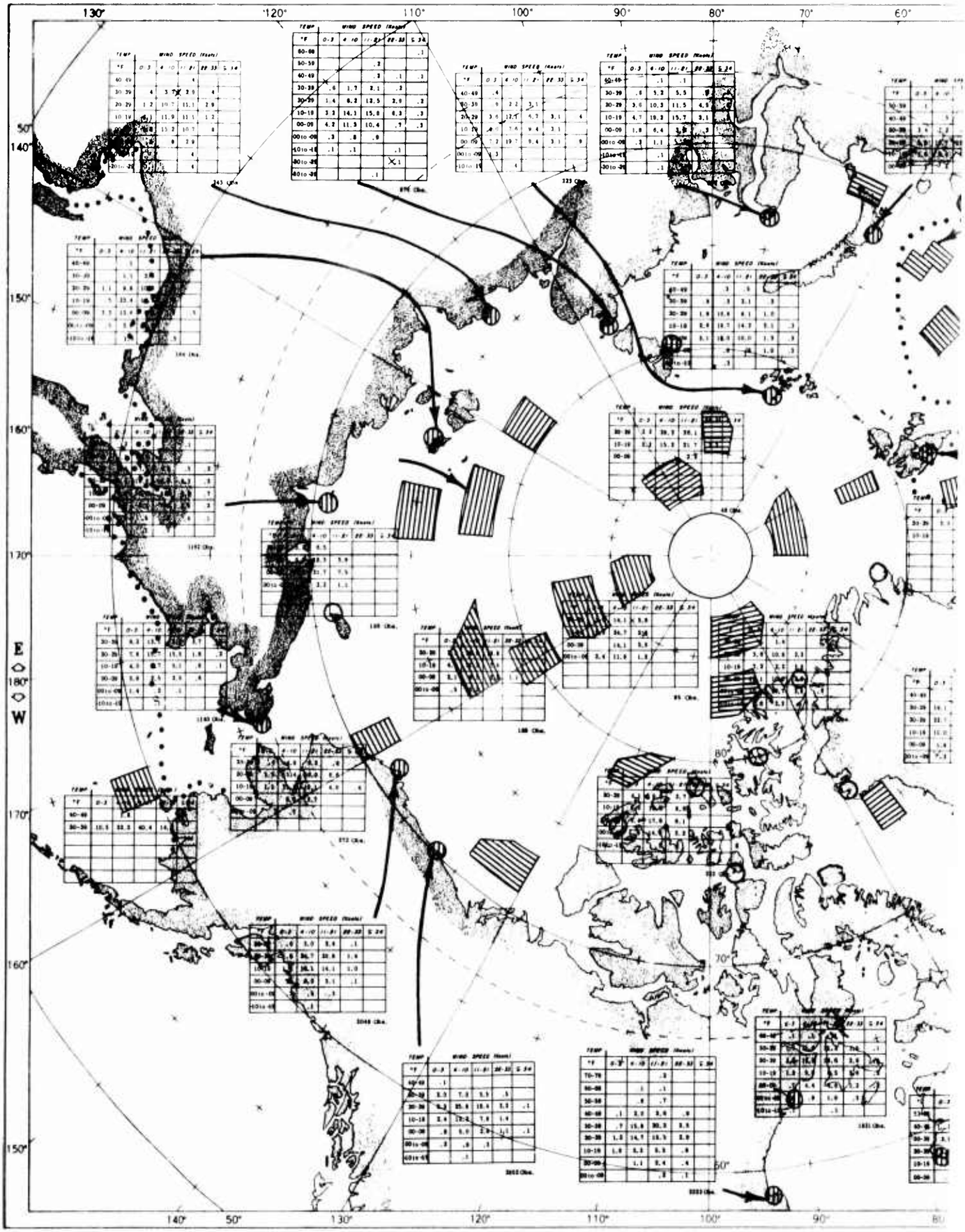
MOULD BAY

RESOLUTE

THULE

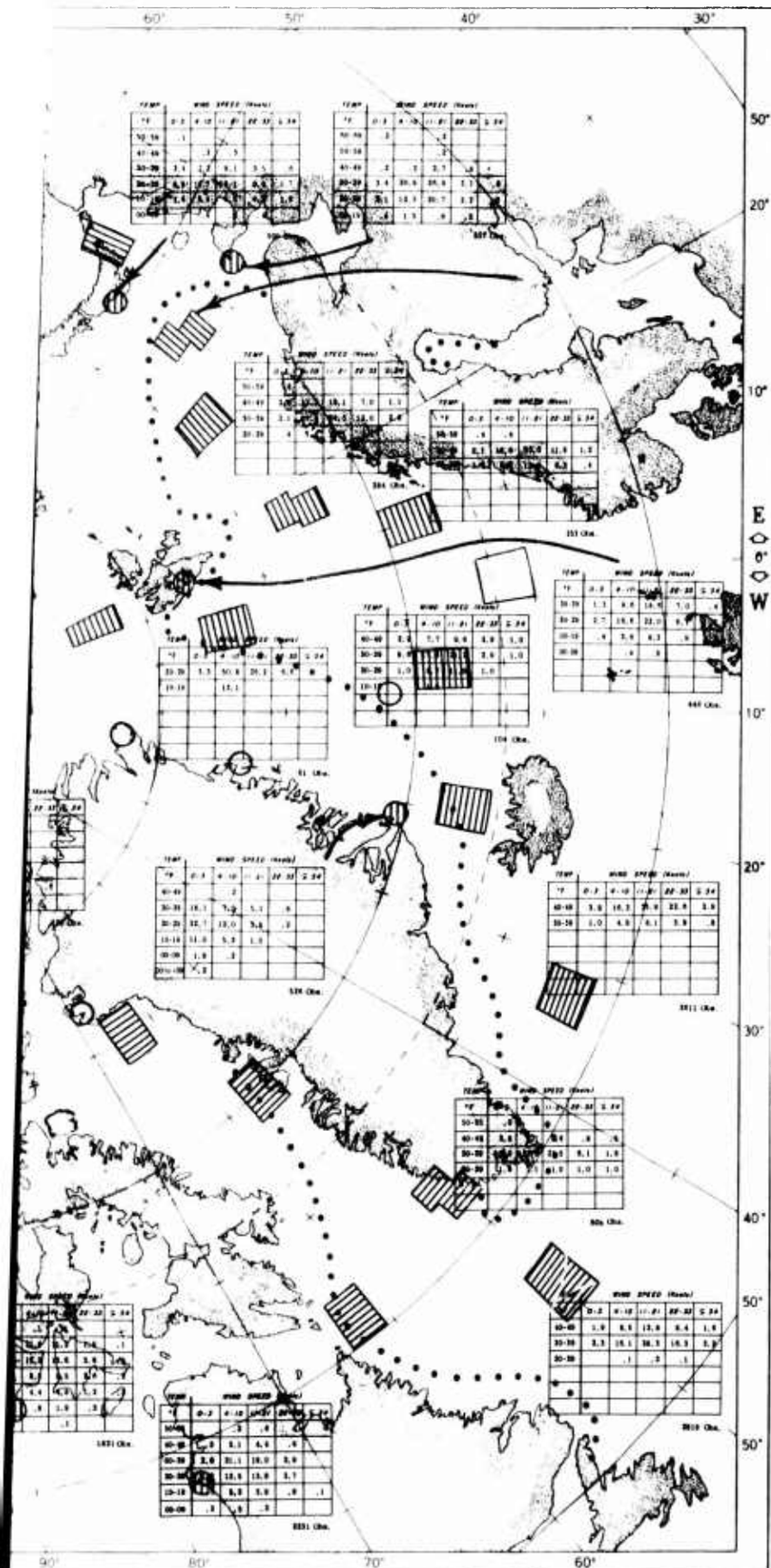
MAY

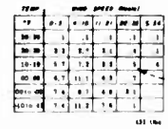
AIR TEMPERATURE



ATURE vs. WIND SPEED

CHART 61





Percentage Frequency of simultaneous occurrence of specified Temperature groups and Wind Speed

5% of the observations on which this tabulation was based reported wind speed 22 33 knots simultaneous with temperature from 10° through 19° F.

OSTROV VRANGELYA

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
60-69		.5	.1		.1
50-59	3.4	6.2	3.1	.3	
30-39	8.4	14.6	7.2	1.7	
10-19	8.2	11.2	6.2	3.4	1.6
00-09	7.9	7.9	2.7	.6	.3
00 to -09	1.9	.4	.1		.1
-10 to -19	1.0				

890 Obs.

NORTH POLE

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39	1.1				
30-29	2.1	17.0	11.7		
10-19	5.3	33.0	19.1		
00-09	1.1	9.6			

96 Obs.

OCEAN STATION M

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-59	.1	.4	.8		
60-69	7.1	31.6	38.1	18.4	1.3
50-39	.8	3.2	9.8	3.9	1.0
30-29			.1	.1	

2714 Obs.

NORD

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39	.9	.8	.4	.1	
30-29	8.4	12.6	4.9	1.8	
10-19	13.6	15.1	3.4	.4	
00-09	10.8	15.5	1.7	.1	
00 to -09	4.6	5.0	.1		
-10 to -19	.4	.5			
-20 to -29		.1			

1400 Obs.

DANMARKSHAVEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
60-69			.1		
30-39	5.1	5.8	2.3	.8	.3
30-30	18.0	13.8	5.0	.9	.1
10-19	19.5	12.9	2.5	.6	.1
00-09	7.2	3.9	.9	.1	
00 to -09	.9	.1			

856 Obs.

JAN MAYEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
60-69	.3	1.1	.2	.7	
50-39	8.4	22.0	17.5	10.6	.4
30-29	1.8	9.8	18.0	5.3	.4
10-19	.3	.3	1.1	2.0	

451 Obs.

ISACHSEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39	.1	.4	.2		
30-29	3.8	10.2	3.5	.2	
10-19	7.3	17.4	12.0	3.5	.2
00-09	8.0	11.6	5.3	1.0	.7
00 to -09	3.0	6.3	2.1	.5	.4
-10 to -19	1.0	.9	.1	.2	

1883 Obs.

EUREKA

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39	1.0	1.5	.7		
30-29	5.1	17.0	8.2	.5	.1
10-19	5.9	16.4	8.3	.3	.1
00-09	5.1	14.8	3.9	.4	
00 to -09	2.5	7.2	.9		
-10 to -19	.5	1.5	.1		
-20 to -29	.1				

1858 Obs.

ALERT

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-39	.3	.2	.2	.1	
30-30	7.5	9.8	3.3	1.0	.3
10-19	16.9	19.1	2.6	.8	.8
00-09	19.8	9.8	1.0	.3	
00 to -09	10.4	3.0	.1		
-10 to -19	1.9	.8			

1859 Obs.

MOULD BAY

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39	.4	.8	.4		
30-29	2.9	9.9	8.0	1.8	.4
10-19	8.3	20.9	13.4	1.7	.2
00-09	8.1	12.0	8.7	1.0	
00 to -09	3.5	4.3	1.8		
-10 to -19	.5	.4	.2		

1983 Obs.

RESOLUTE

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39	.2	1.1	.8	.1	.1
30-29	6.1	11.2	9.4	2.0	.1
10-19	6.5	15.7	11.2	3.1	.3
00-09	3.8	10.3	6.8	1.6	.4
00 to -09	2.4	6.4	2.5	.6	.2
-10 to -19	1.2	1.9	.2		

1984 Obs.

THULE

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
60-69	.5	1.0	.4		
50-39	8.7	14.1	3.9	1.2	.3
30-30	15.5	18.8	5.8	1.3	.2
10-19	9.7	10.3	2.3	.1	
00-09	2.8	3.6	.5	.1	
00 to -09		.5			

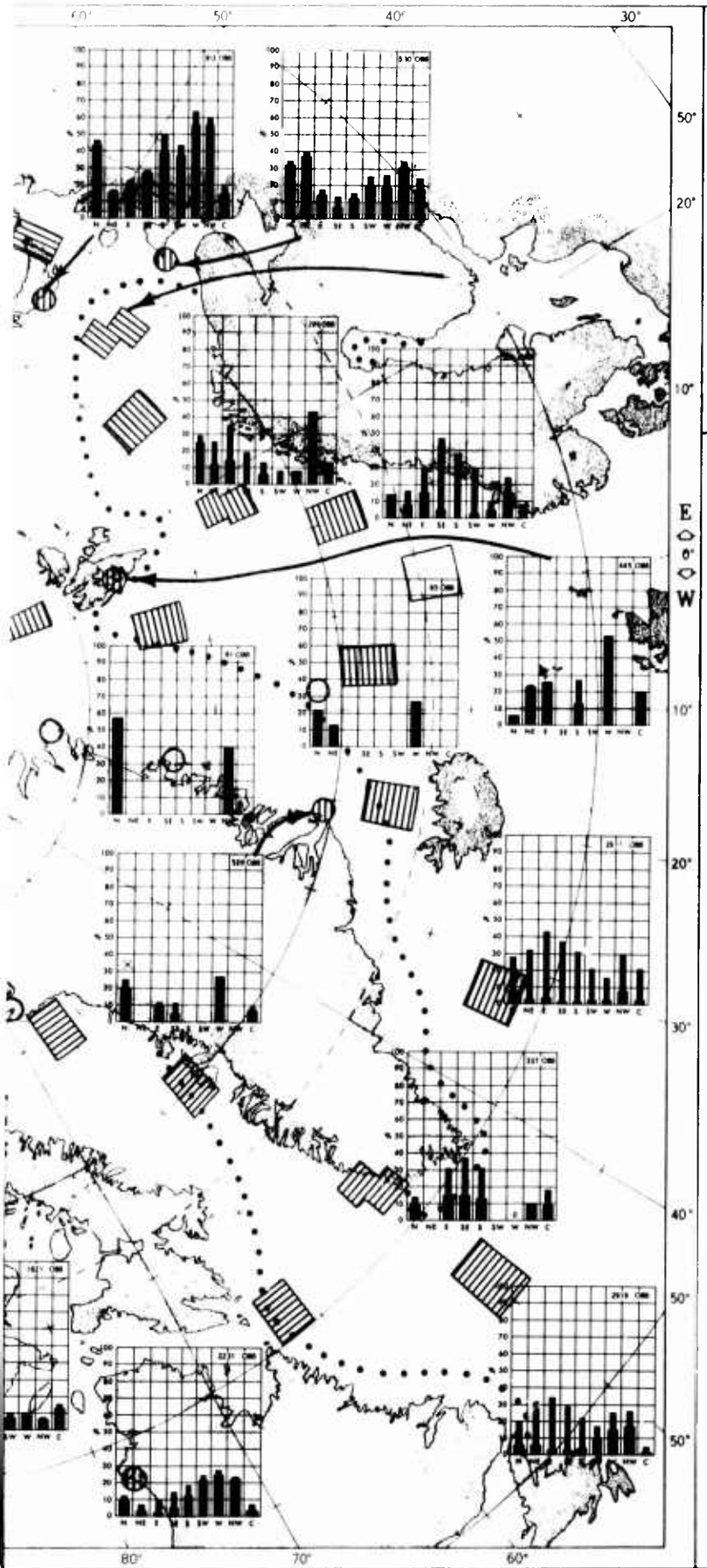
2227 Obs.

MAY PRECIPITATION BY WIN



J BY WIND DIRECTION

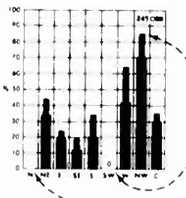
CHART 62



Percentage Frequency of Precipitation by Wind Direction

(a) Percentage of all present weather (and wind) observations reporting precipitation

(b) Percentage of observations recording liquid or frozen precipitation as indicated by

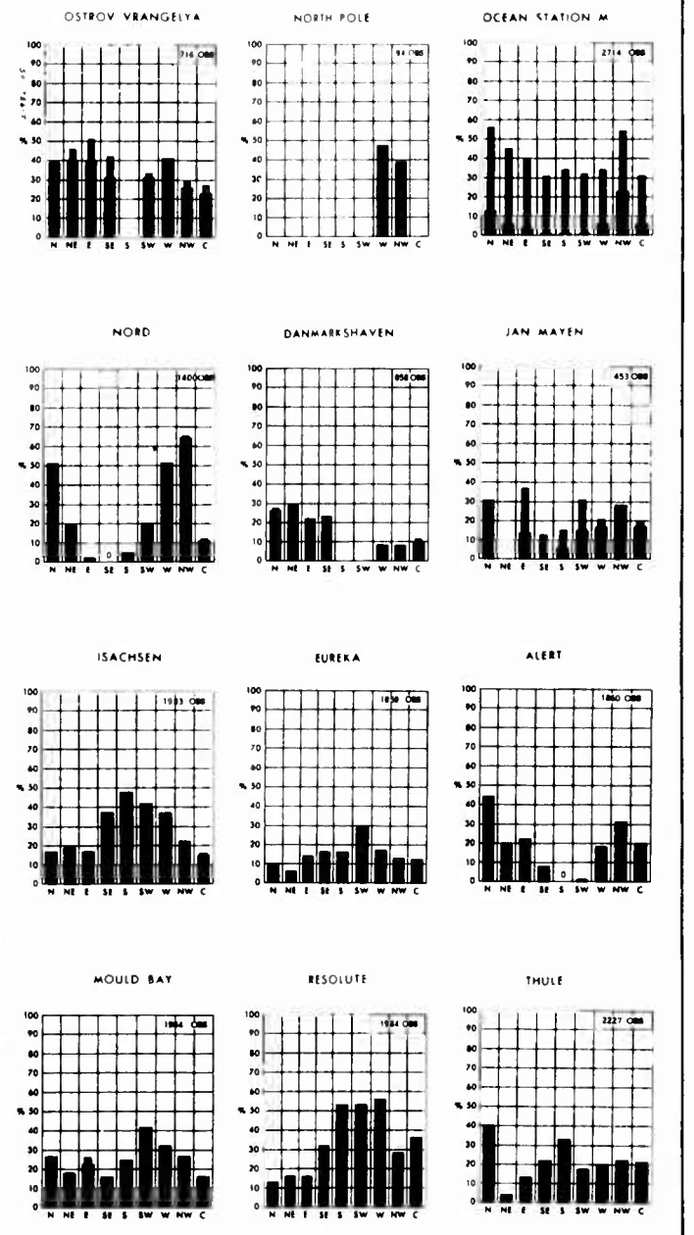


(85% of all NW winds were accompanied by precipitation 15% frozen, 70% liquid)

0 replaces bar when no precipitation was observed with winds from a direction

Bar or 0 omitted when number of observations was 10 or less

See chart 6 for precipitation incidence disregarding wind direction



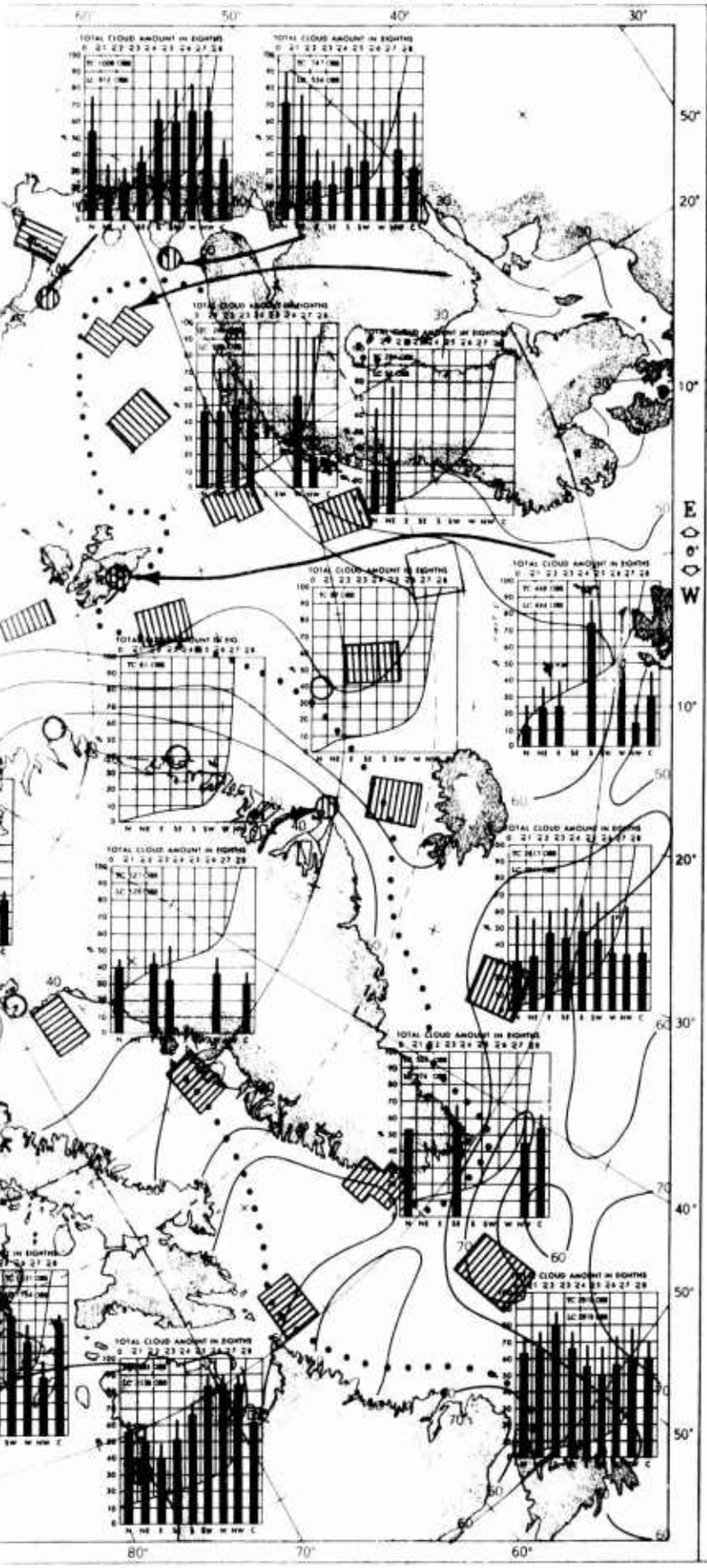
MAY

CLOUDINE



_OUDINESS

CHART 63



Percentage Frequency of Total Cloud Amount 8/10 or more

Total Cloud Amount (TC) Percentage frequency of total cloud amounts equal to or less than amount intersected by the curve

(62% of all total cloud amounts were 7/8 or less)

Lower Cloud Amount (LC) Percentage proportions of winds from each direction that were accompanied by low or middle cloud amounts greater than 5/8 and greater than 7/8

(52% of all NW winds were accompanied by lower cloud amounts >5/8 and 38% by lower cloud amounts >7/8)

[>5/8 includes 6/8 8/8 and 7/10 10/10, >7/8 includes 8/8 and 9/10 10/10]

0 replaces bar when no low cloud amounts >5/8 were observed with winds from a direction

Bar (or 0) is omitted when the number of observations including both wind direction and low cloud amount was 10 or less for a direction

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

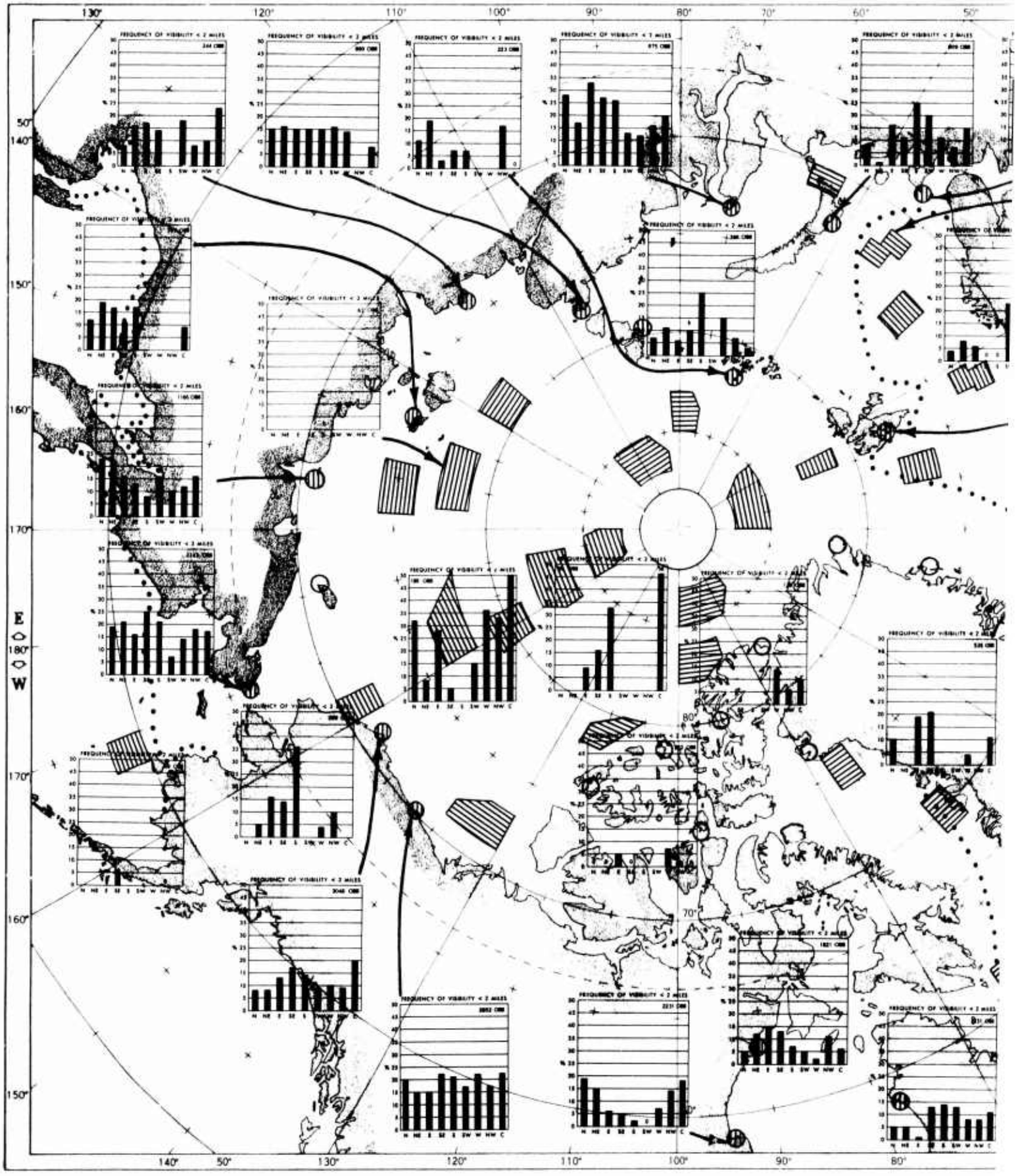
MOULD BAY

RESOLUTE

THULE

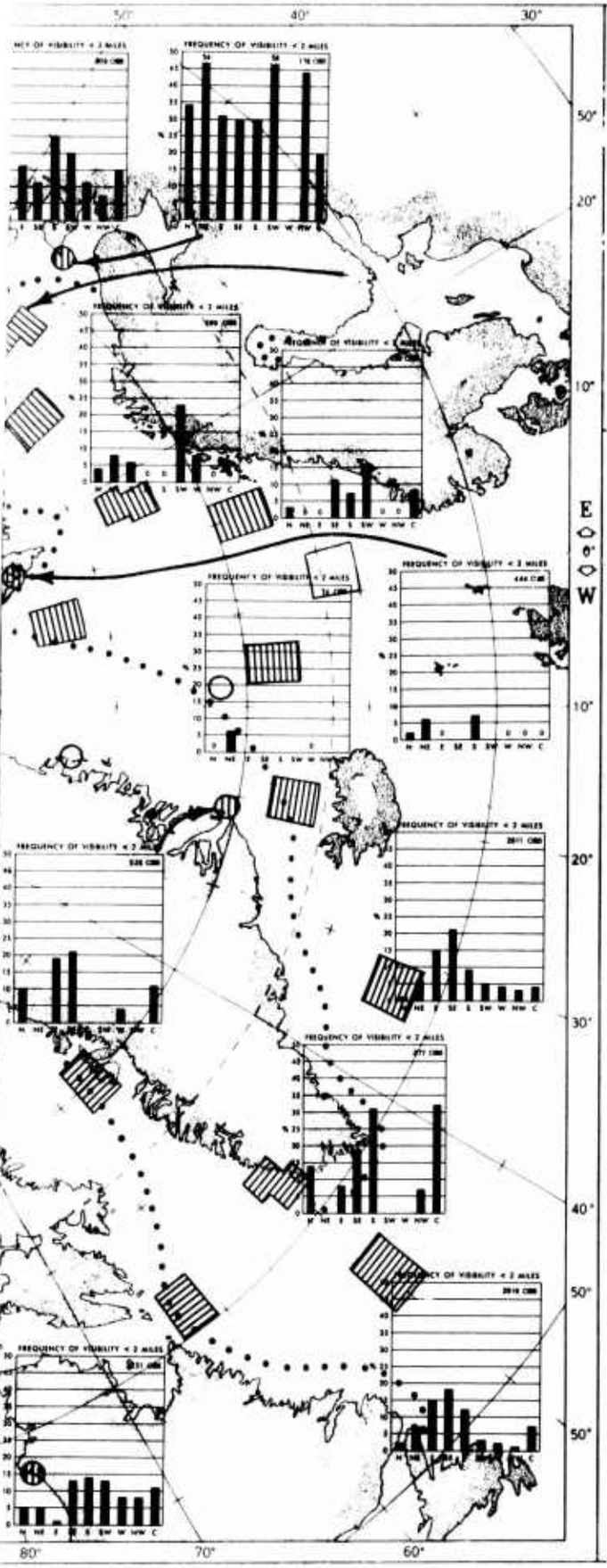
MAY

LOW VISIBILITY BY WIND

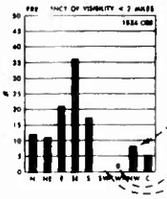


WIND DIRECTION

CHART 64



Percentage Frequency of Low Visibility by Wind Direction



Percentage of all visibility (and wind) observations reporting visibility less than 2 nautical miles.

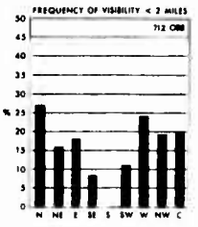
(8% of all NW winds were accompanied by visibility less than 2 miles.)

"0" replaces bar when no visibilities < 2 miles were observed with winds from a direction

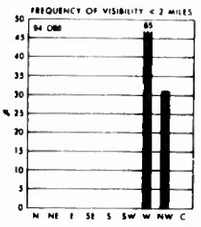
Bar or "0" omitted when number of observations was 10 or less

See chart 9 for low visibility incidence disregarding wind direction

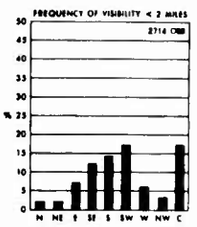
OSTROV VRANGELYA



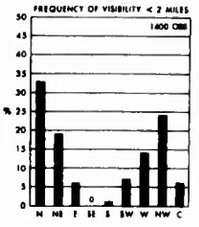
NORTH POLE



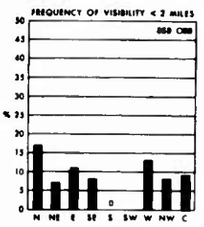
OCEAN STATION M



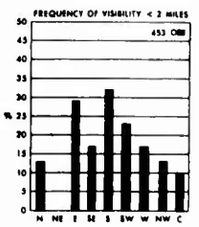
NORD



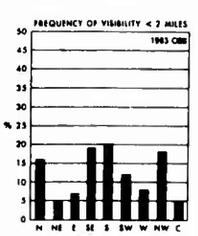
DANMARKSHAVEN



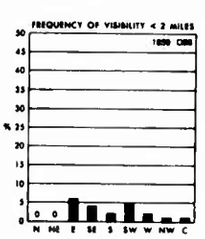
JAN MAYEN



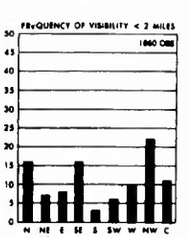
ISACHSEN



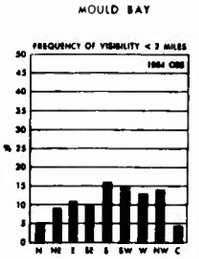
EUREKA



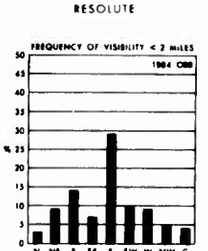
ALERT



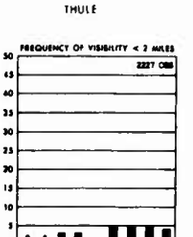
MOULD BAY



RESOLUTE



THULE



MAY

VISIBIL

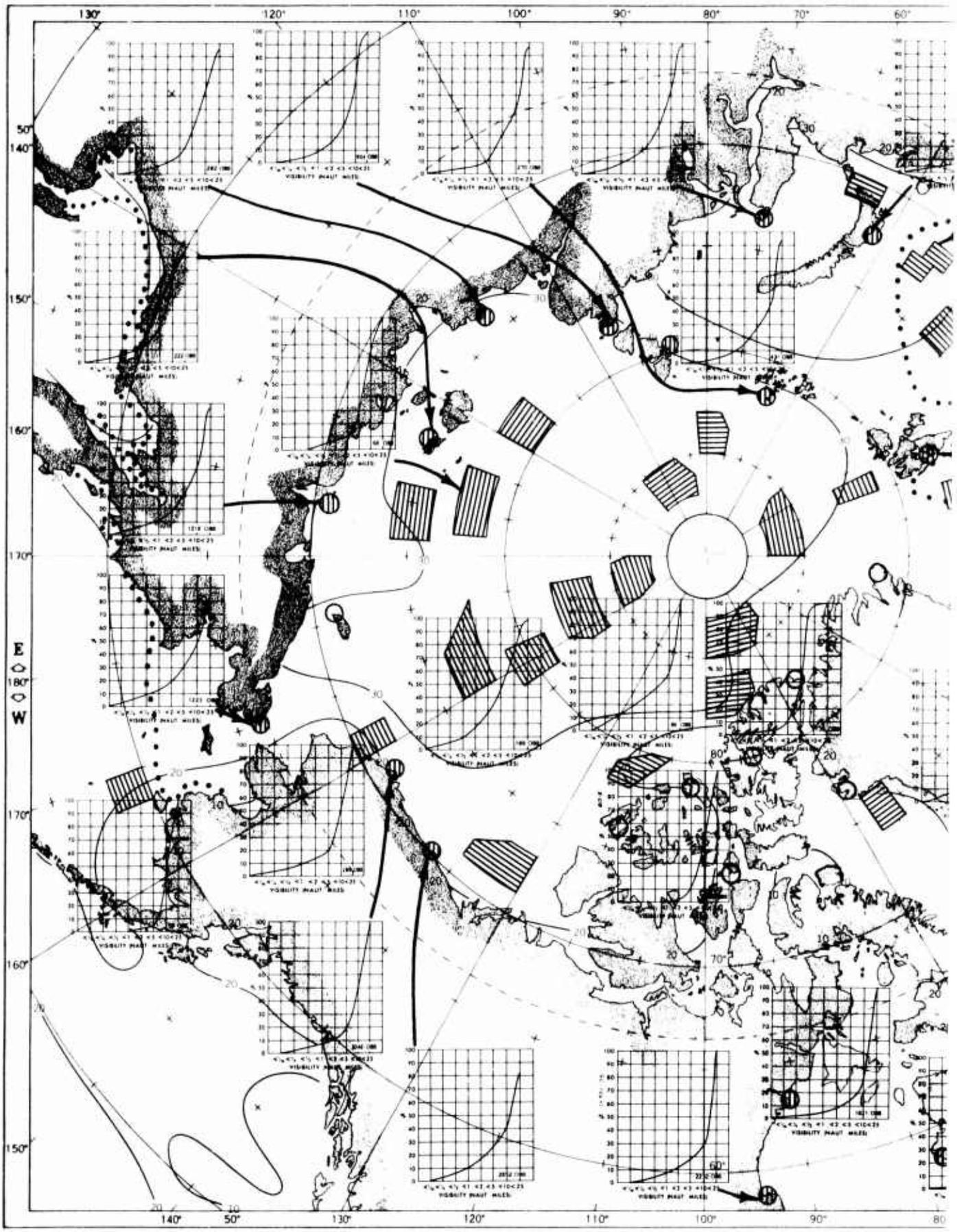
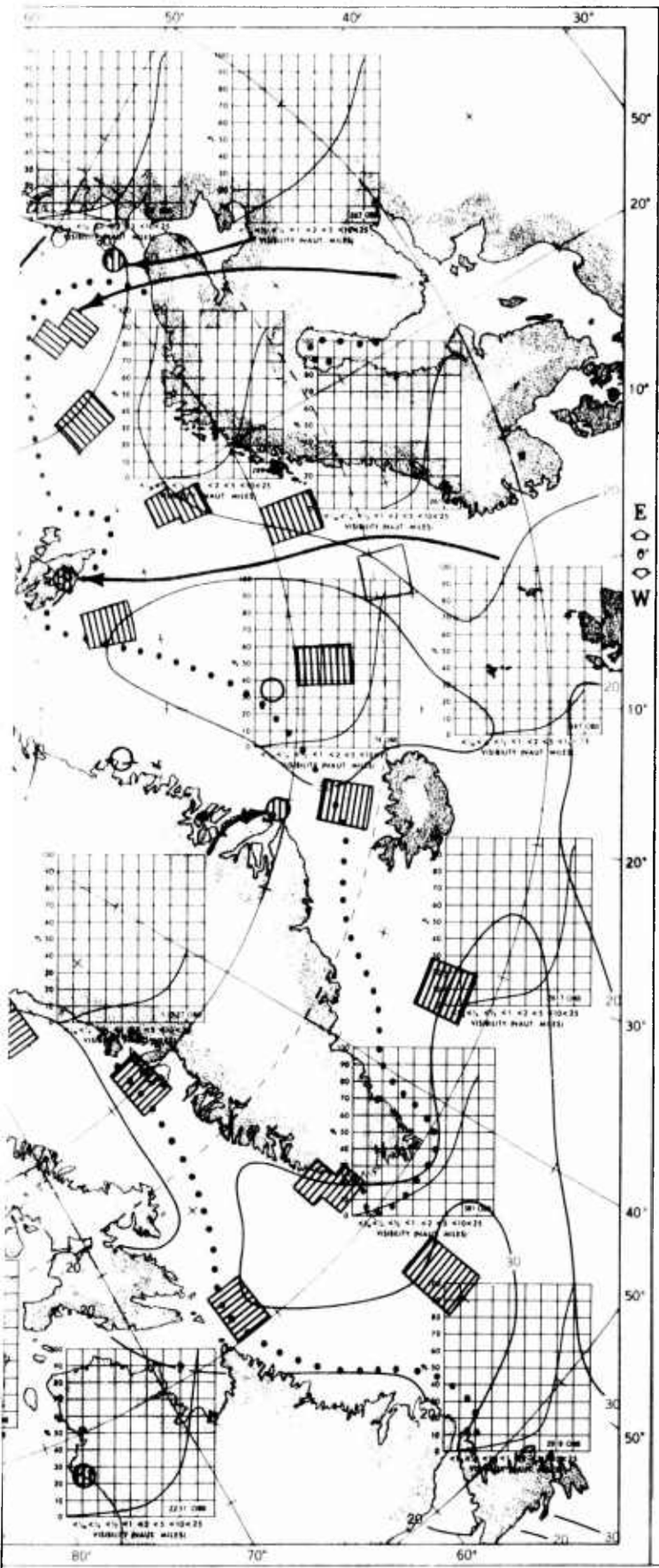
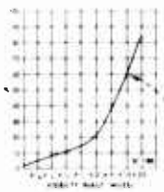

130°
120°
110°
100°
90°
80°
70°
60°
50°
140°
150°
160°
170°
E
180°
W
170°
160°
150°
140°
50°
130°
120°
110°
100°
90°
80°

CHART 65

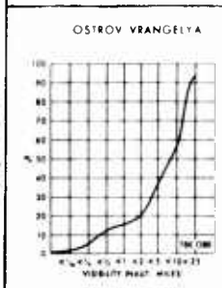


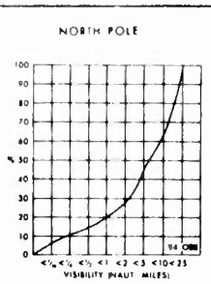
Percentage Frequency of Visibility <5 Nautical Miles

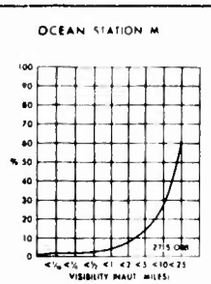


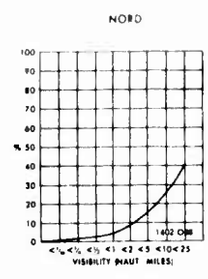
Percentage Frequency of Visibilities less than amount intersected by the curve

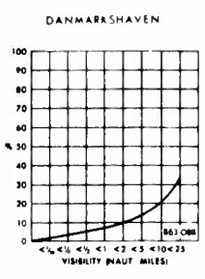
—60%- of all visibilities were 10 nautical miles or less—

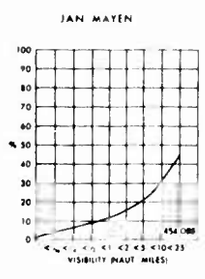


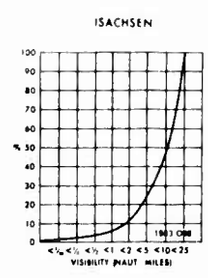


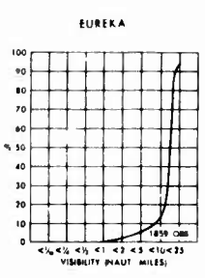


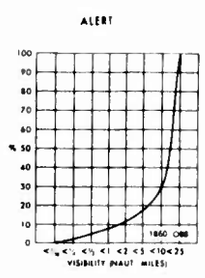


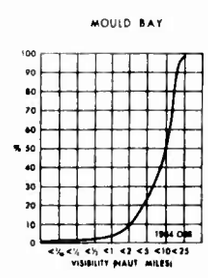


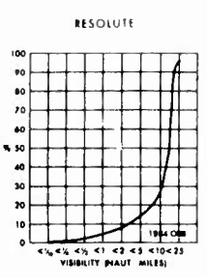


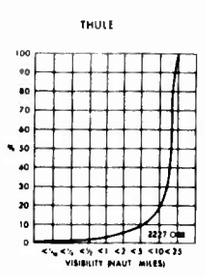






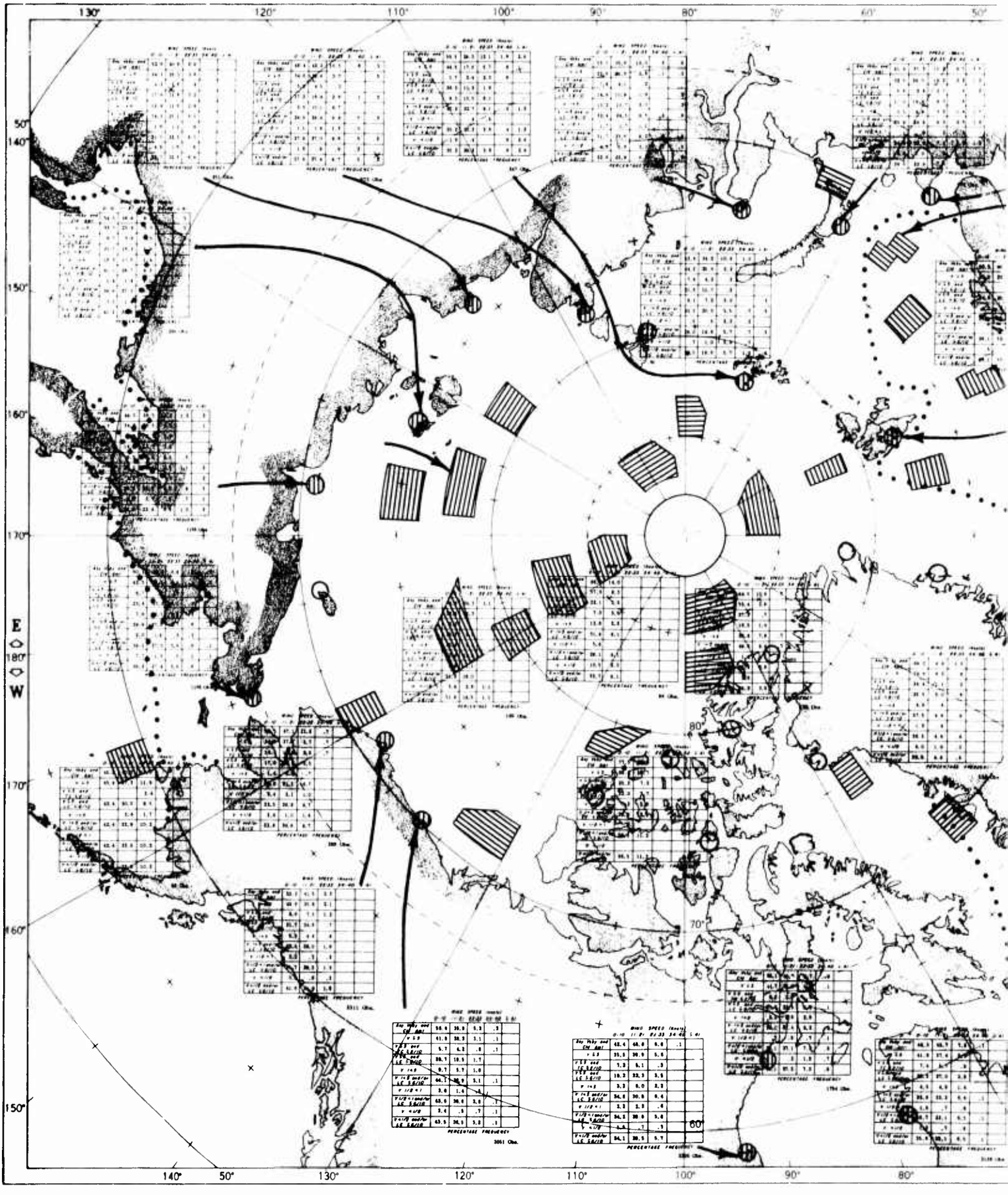






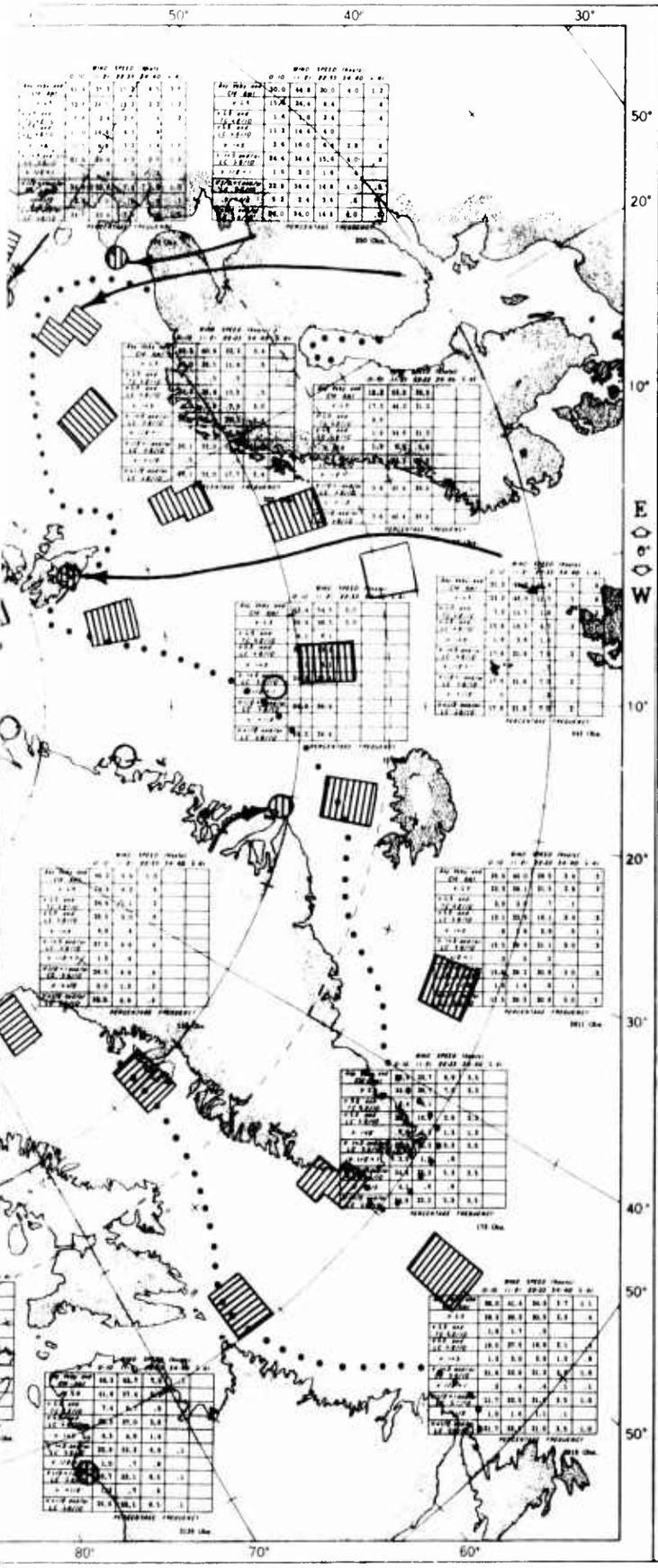
MAY

WIND-VISIBILITY-CLO

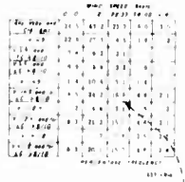


..ITY-CLOUDINESS

CHART 66



Percentage Frequency of simultaneous occurrence of specified Wind Visibility and Cloudiness conditions (based on the number of observations which reported wind speed visibility total cloud amount and low cloud amount



Blank box indicates 0.0 percent

Notation

Any Vsby and Cld Amt = Simultaneous occurrence of wind speed with any visibility and cloud amount combination This provides a percentage distribution of wind speeds for the observations used in this tabulation

V = Visibility in Nautical Miles
1<5 indicates 1 to (but not including) 5 nautical miles

TC = Total Cloud Amount

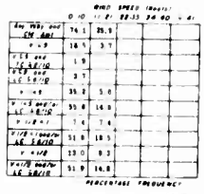
LC = Low Cloud Amount (with base approximately 8000 feet or lower

Ocean Area 166 of the observations on which this tabulation was based reported speed 22-33 knots simultaneous with visibility 1-5 nautical miles and/or low cloud amount 5-6 10

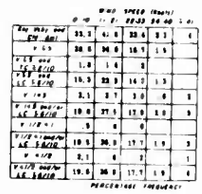
OSTROV VRANGELYA



NORTH POLE



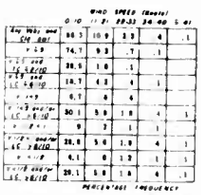
OCEAN STATION M



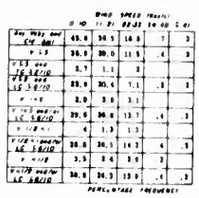
NORD



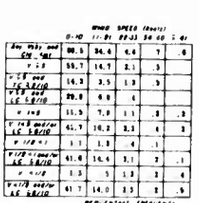
DANMARKSHAVEN



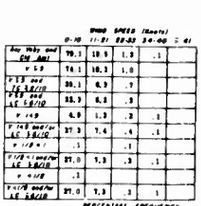
JAN MAYEN



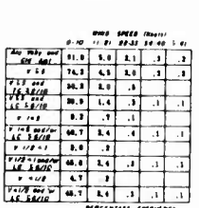
ISACHSEN



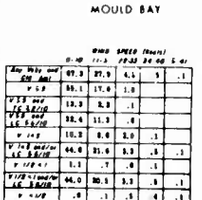
EUREKA



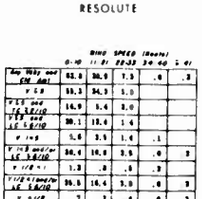
ALERT



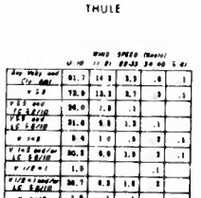
MOULD BAY



RESOLUTE

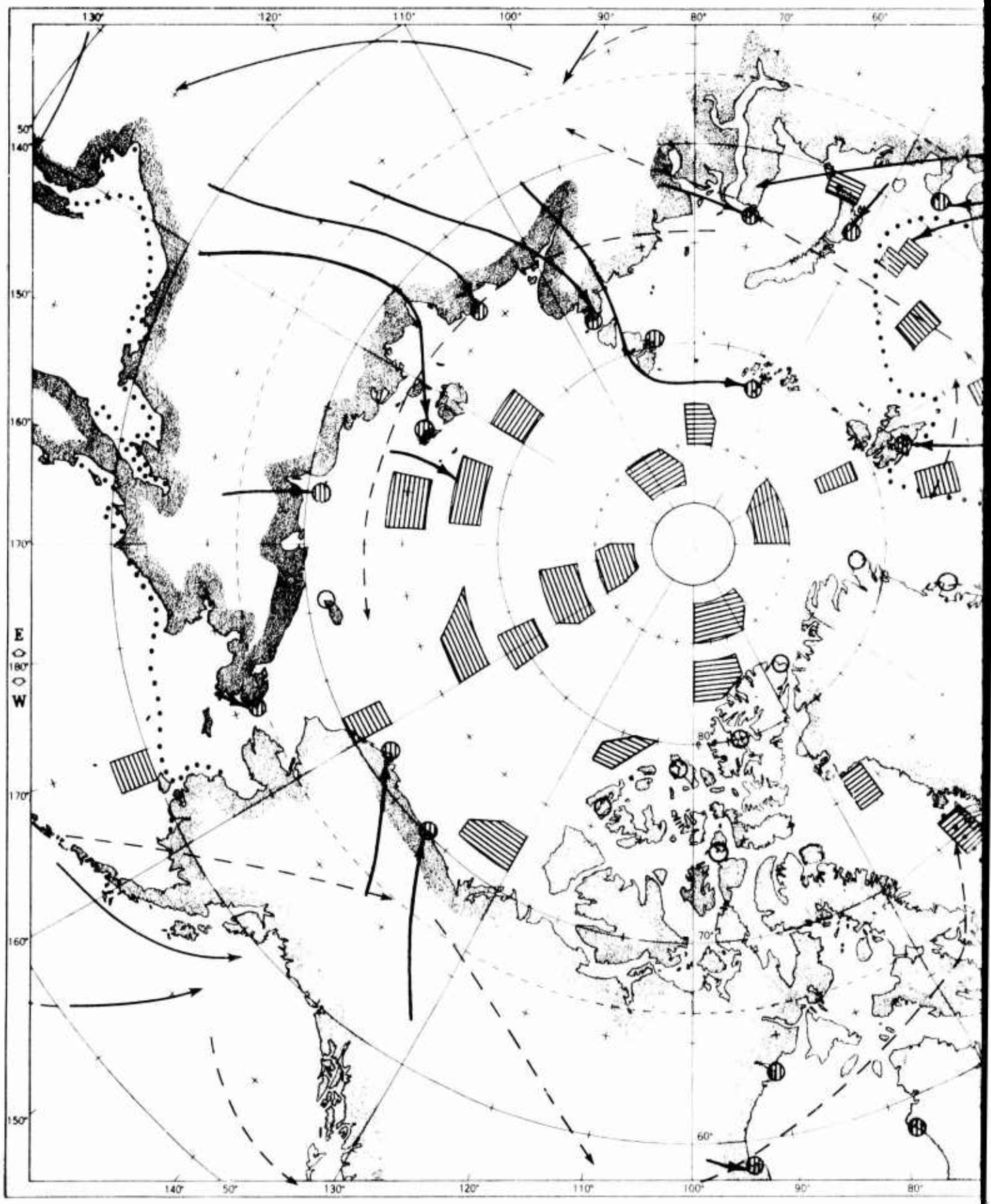


THULE



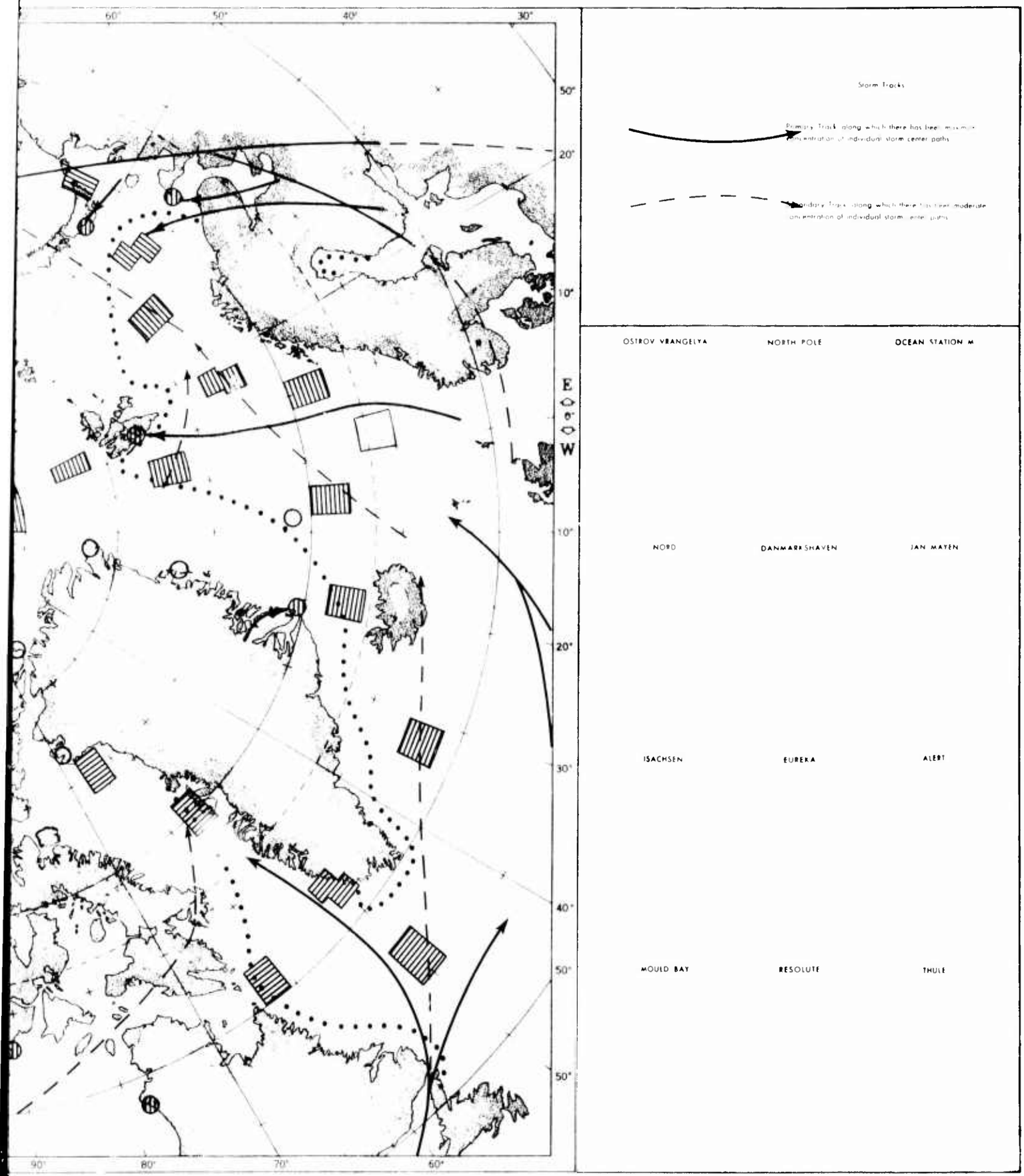
MAY

STORM TRA



TORM TRACKS

CHART 67



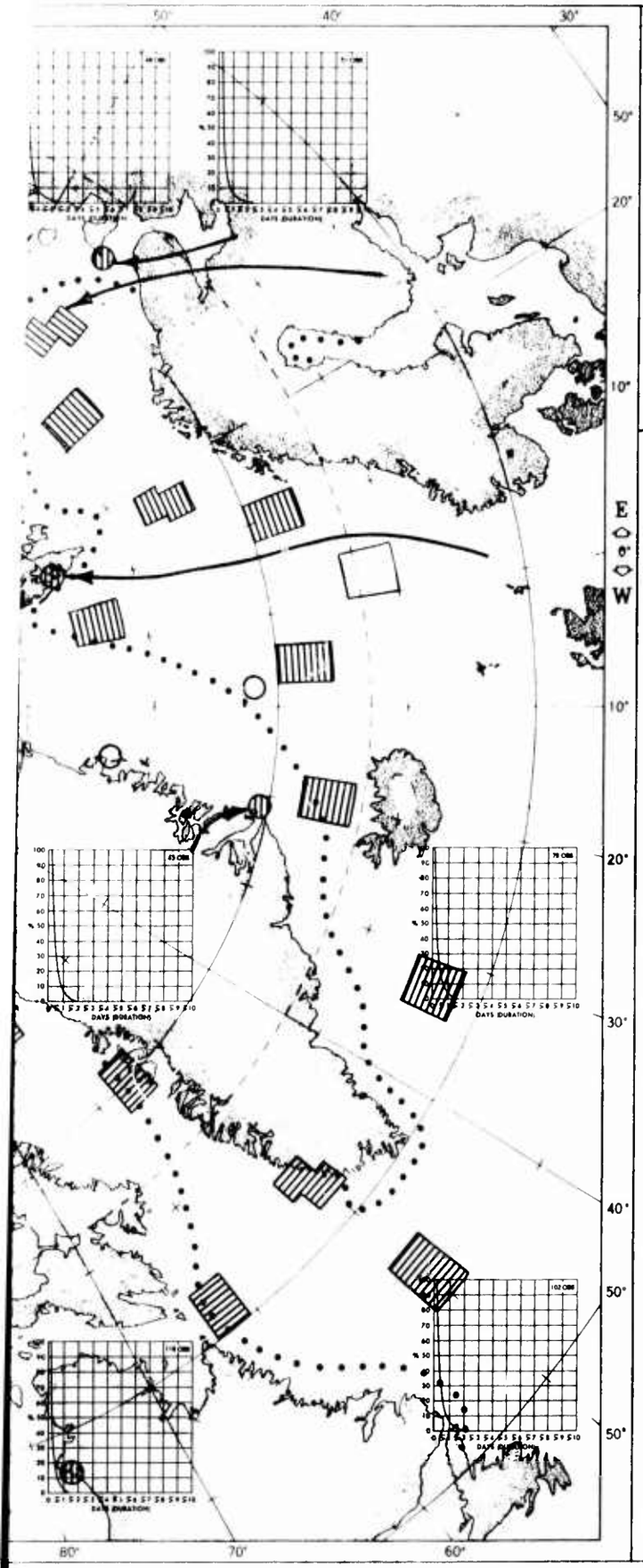
MAY

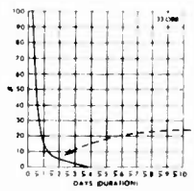
LOW VISIBILITY PERS



Y PERSISTENCE

CHART 68

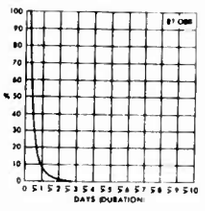




Percentage Frequency of Low Visibility (< 2 nautical miles) equal to or greater than number of days intersected by the curve

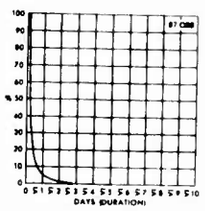
[6% of low visibilities (< 2 miles) persist at least two days]

OSTROV VRANGELYA

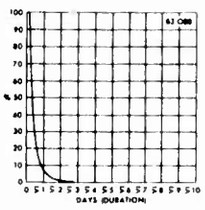


NORTH POLE

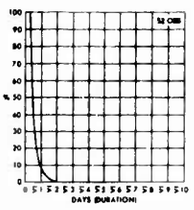
OCEAN STATION M



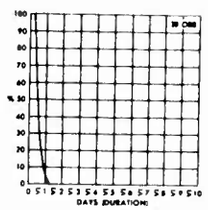
NORD



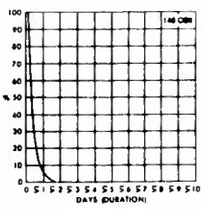
DANMARKSHAVEN



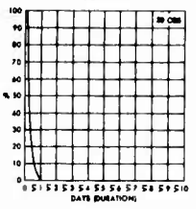
JAN MAYEN



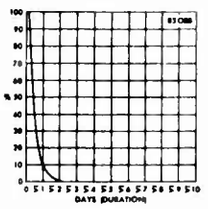
ISACHSEN



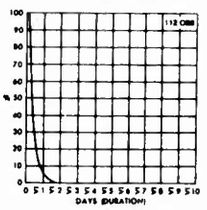
EUREKA



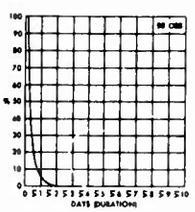
ALERT



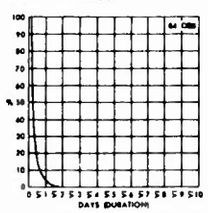
MOULD BAY



RESOLUTE

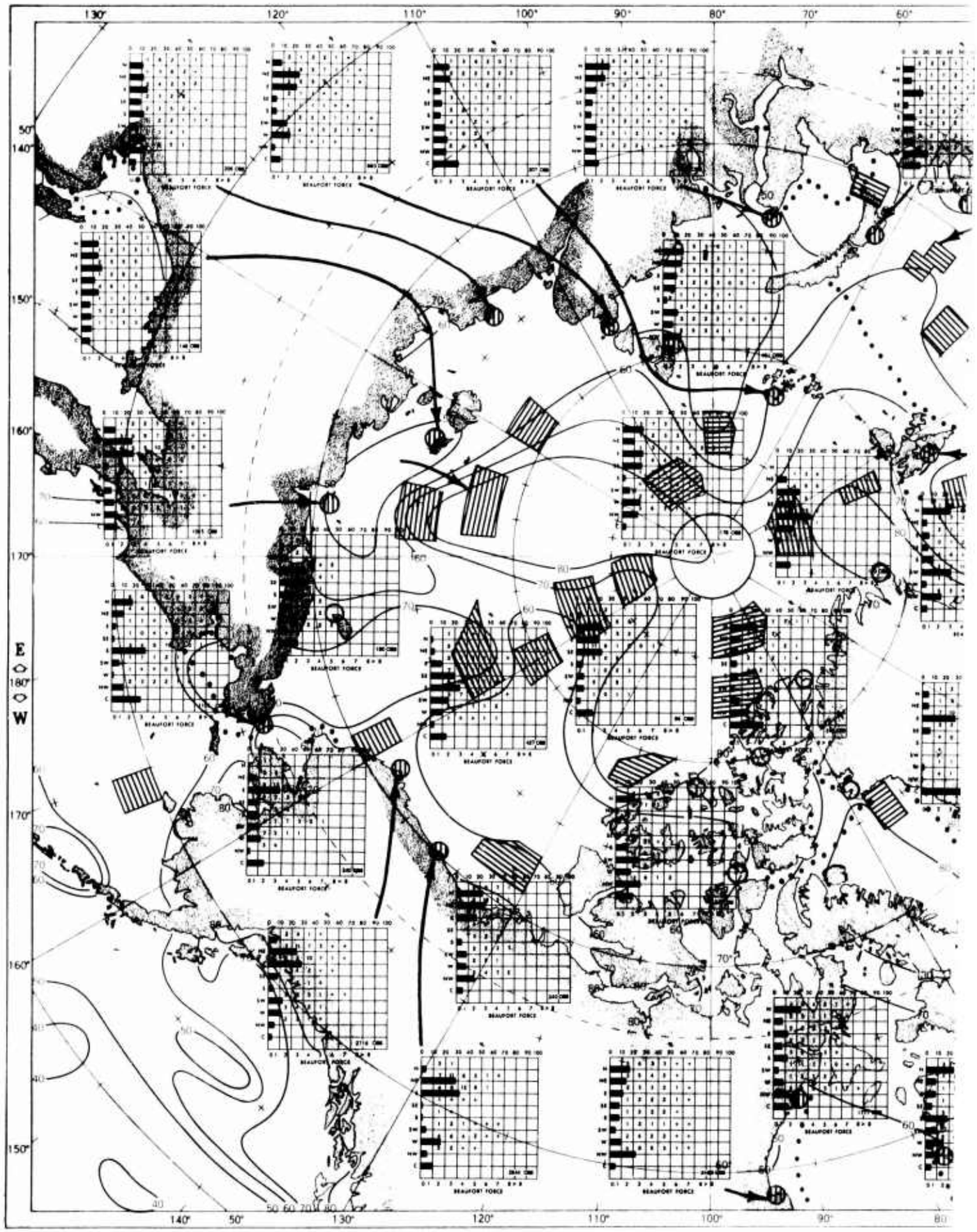


THULE



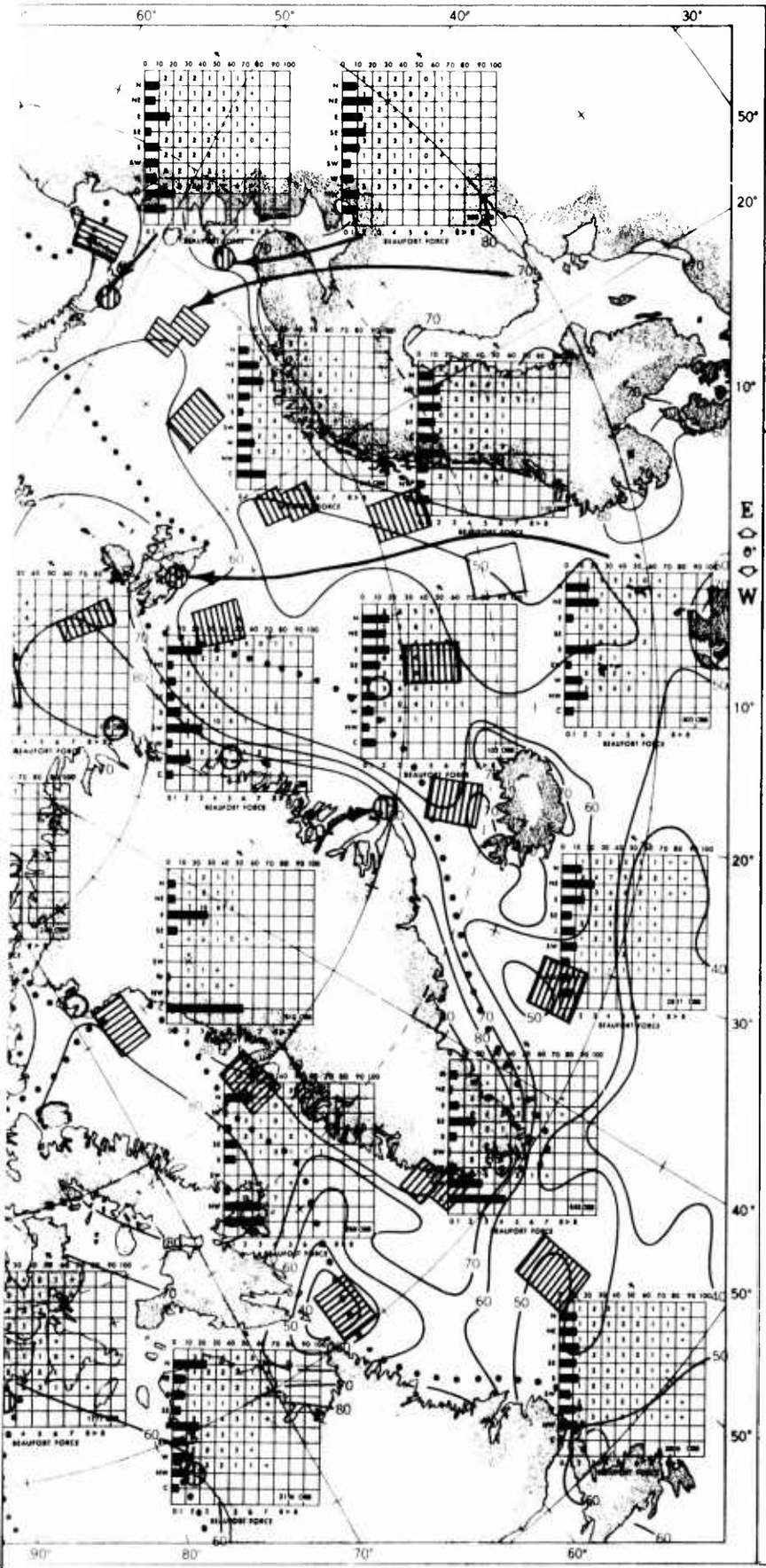
JUNE

SURFACE

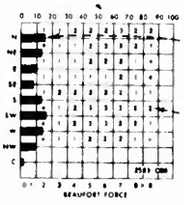


URFACE WIND

CHART 69



Percentage Frequency of Wind Speed Beaufort Force 3 or less (≤ 10 Knots)



Direction Frequency (Top Scale) Bars represent percentage frequency of wind observed from each direction (& calm)

– (14% of all winds were from N.)

Speed Frequency (Bottom Scale) percentage frequency of wind speed by Beaufort Force

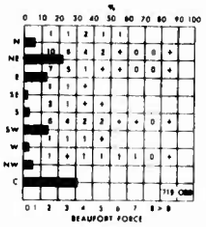
– (2% of all winds from SW were greater than Beaufort Force 8.)

All percentages rounded to nearest whole percent

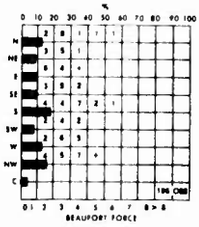
Calm includes Beaufort Force 1 (0-3 knots)

+ indicates less than 1/2 percent

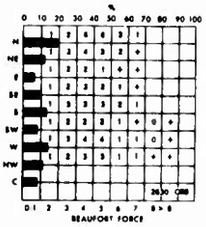
OSTROV VRANGELYA



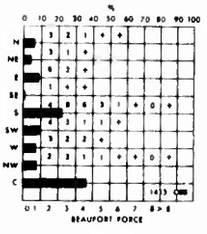
NORTH POLE



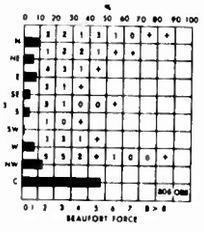
OCEAN STATION M



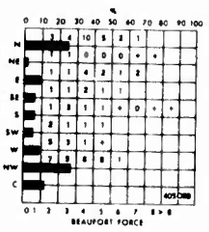
NORD



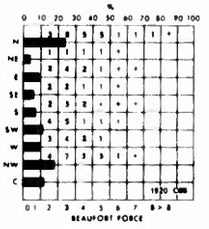
DANMARKSHAVEN



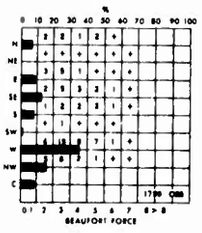
JAN MAYEN



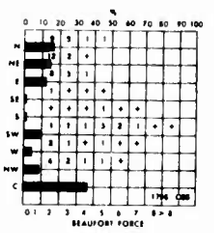
ISACHSEN



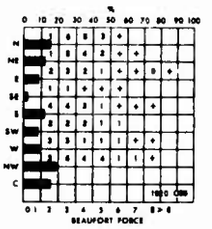
EUREKA



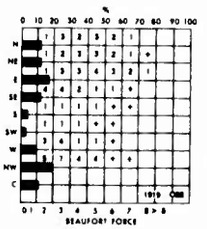
ALERT



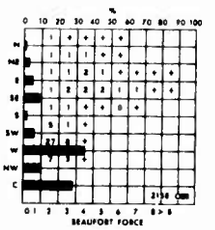
MOULD BAY



RESOLUTE



THULE

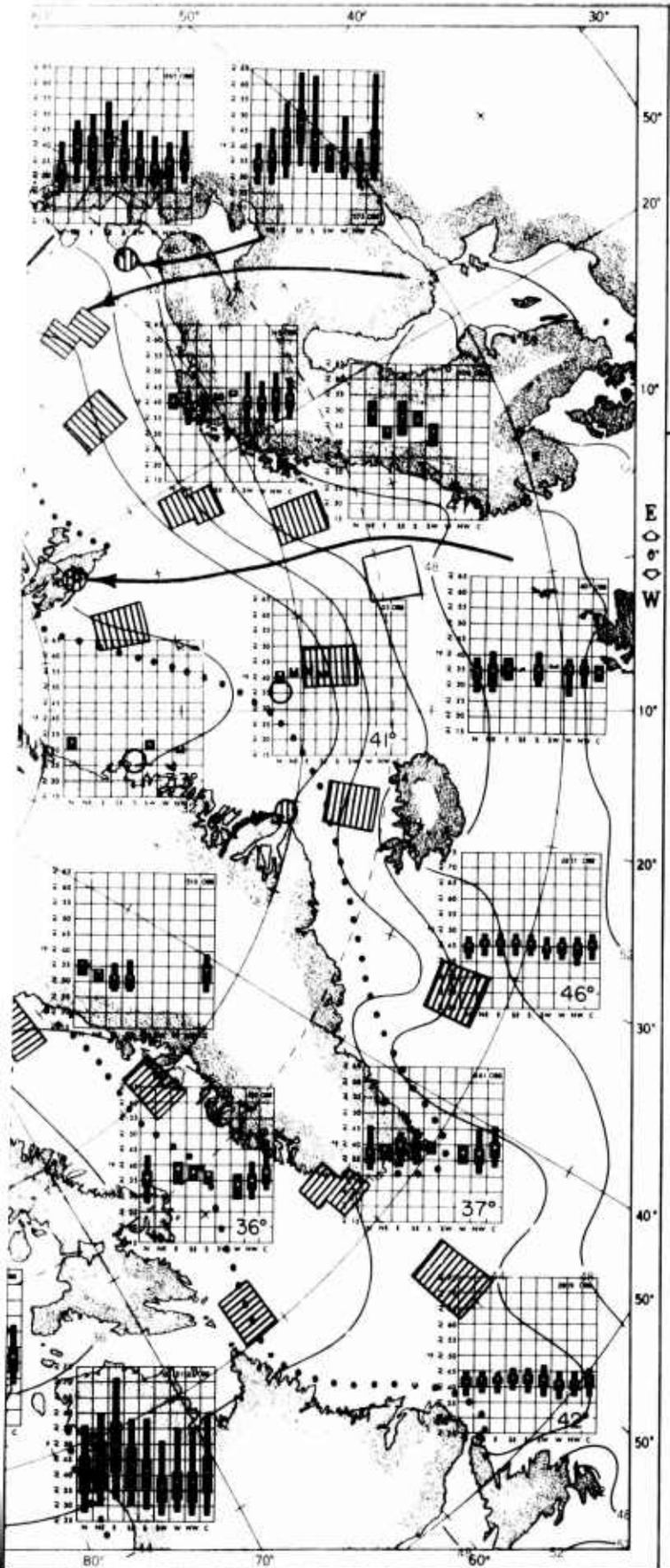


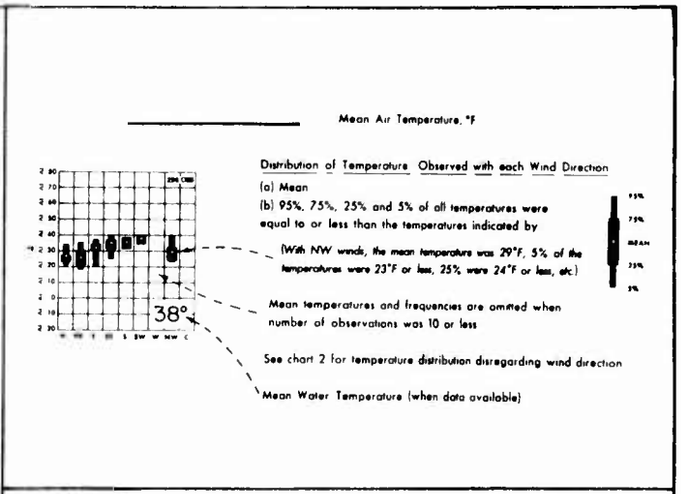
JUNE AIR TEMPERATURE BY

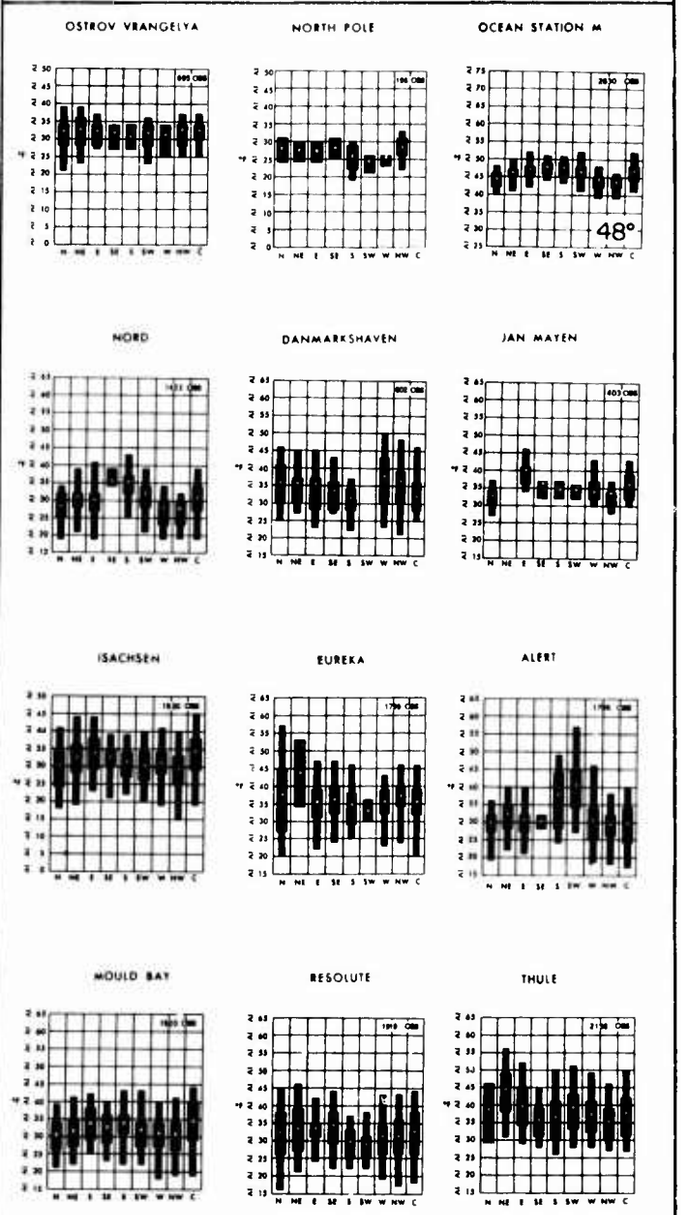


BY WIND DIRECTION

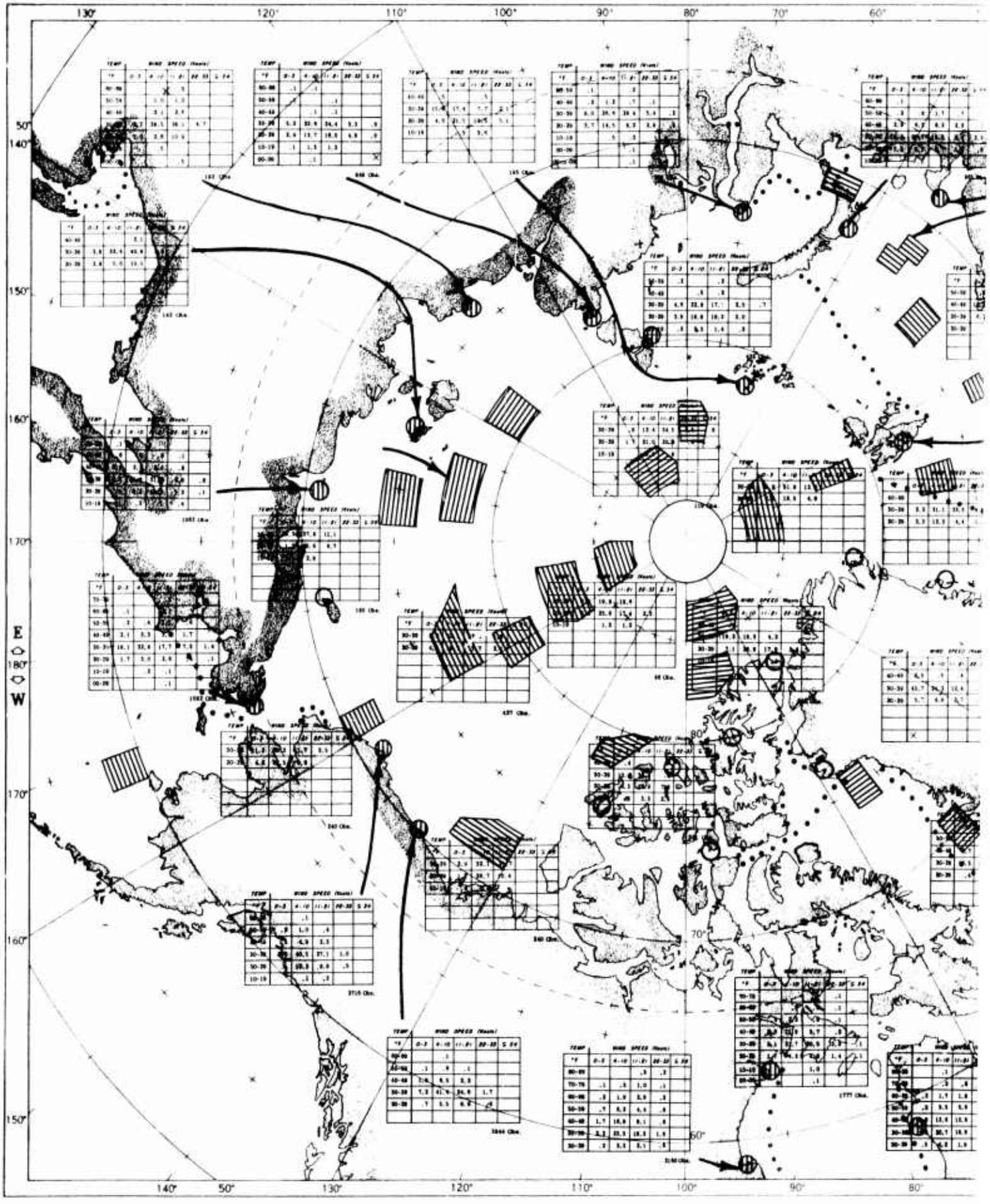
CHART 70





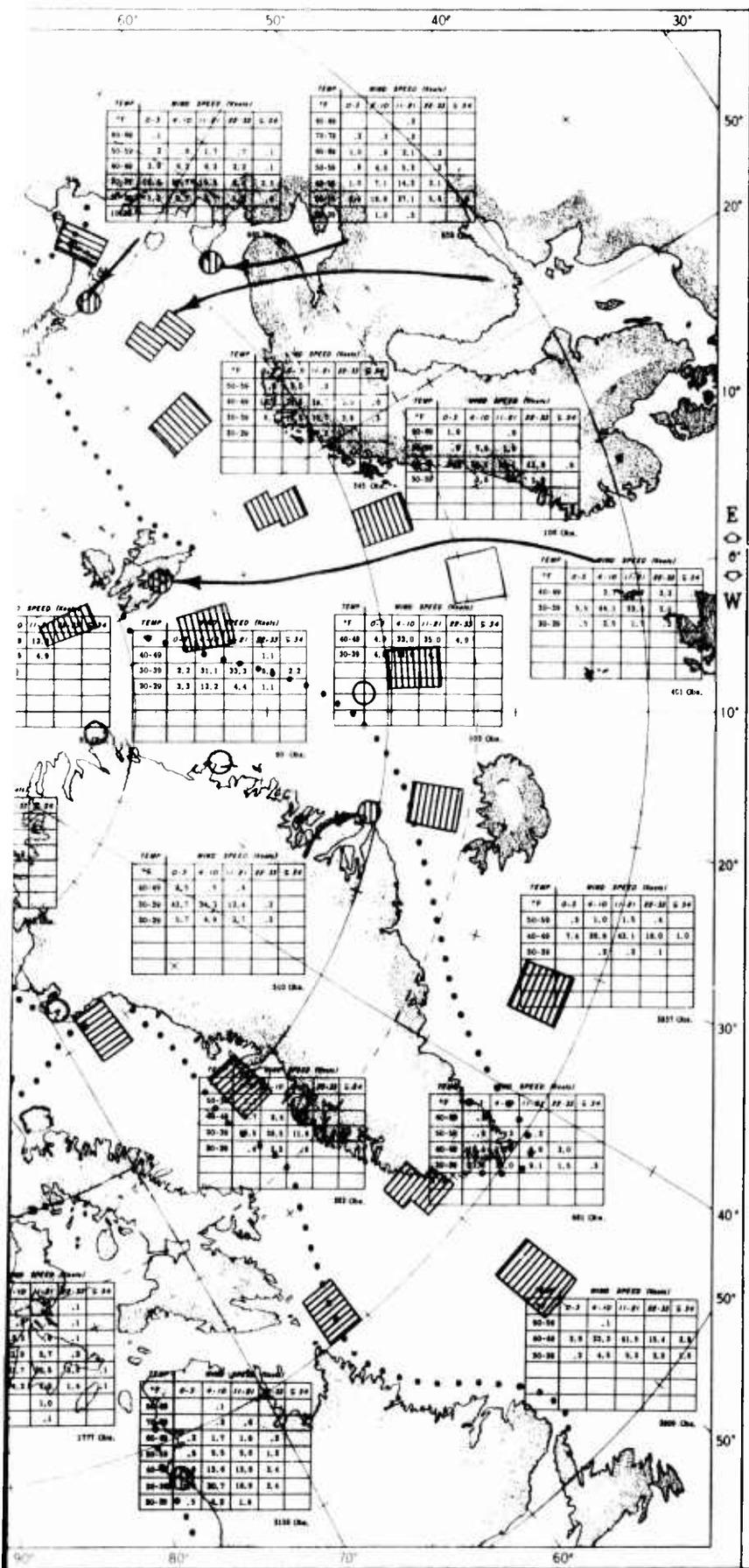


JUNE AIR TEMPERATURE vs.



ATURE vs. WIND SPEED

CHART 71



Percentage Frequency of simultaneous occurrence of specified Temperature groups and Wind Speed

(.5% of the observations on which the tabulation was based reported wind speed 22 33 knots simultaneous with temperature from 10° through 19° F.)

OSTROV VRANGELYA

°F	0-3	4-10	11-21	22-33	≥ 34
50-59		.1			
40-49	.7	1.7	.6		
30-39	24.7	35.6	12.9	3.0	.3
20-29	5.0	9.6	3.3	1.3	
10-19	.1	.1	.7	.1	
00-09			.3		
Below 00	.1				

885 Obs.

NORTH POLE

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	5	19.4	8.3	1.0	
20-29	3.8	43.4	19.9		
10-19		3.1			

196 Obs.

OCEAN STATION M

°F	0-3	4-10	11-21	22-33	≥ 34
50-59	1.3	3.7	3.8	1.1	
40-49	6.4	22.3	46.7	13.9	.3
30-39		.5	1.1	.1	

2830 Obs.

NORD

°F	0-3	4-10	11-21	22-33	≥ 34
50-59	.1	.3	.2		
40-49	1.9	3.7	1.1		
30-39	21.5	36.8	11.4	1.5	.1
20-29	10.9	16.1	2.7	.1	
10-19	1.7	1.5	.3		

1433 Obs.

DANMARKSHAVEN

°F	0-3	4-10	11-21	22-33	≥ 34
50-59	.9	1.2	.4		
40-49	6.2	8.8	2.4	.4	
30-39	38.9	33.7	6.9	1.0	.3
20-29	10.1	6.8	1.9	.2	.3
10-19	.6	.1			

803 Obs.

JAN MAYEN

°F	0-3	4-10	11-21	22-33	≥ 34
40-49	2.5	3.0	5.2	.7	.2
30-39	10.1	30.4	35.4	4.2	.2
20-29		1.5	3.2		

404 Obs.

ISACHSEN

°F	0-3	4-10	11-21	22-33	≥ 34
50-59	.3	.2	.1		
40-49	2.3	4.7	1.6	.3	.1
30-39	6.6	32.0	19.0	1.7	.4
20-29	3.3	16.8	10.3	1.4	
10-19	.6	2.7	1.6	.4	.1
00-09		.1			

1930 Obs.

EUREKA

°F	0-3	4-10	11-21	22-33	≥ 34
50-59		.1	.3		
40-49	.1	1.1	1.1	.2	
30-39	2.9	13.0	9.6	.8	
20-29	6.6	31.7	17.3	1.4	
10-19	1.1	8.5	4.3	1.4	
00-09	.3	.4	.5	.5	

1796 Obs.

ALERT

°F	0-3	4-10	11-21	22-33	≥ 34
50-59			.1	.3	
40-49		.2	.3	.8	.1
30-39	3.1	3.7	3.1	1.3	.2
20-29	17.3	25.8	5.2	1.3	
10-19	13.0	18.6	1.8	.7	.1
00-09	2.9	1.7	.1		

1796 Obs.

MOULD BAY

°F	0-3	4-10	11-21	22-33	≥ 34
50-59		.3	.1		
40-49	4.3	5.8	1.5	.1	.1
30-39	7.4	35.8	20.5	1.8	.1
20-29	2.9	13.3	12.0	2.2	.1
10-19	.7	1.5	.7		

1930 Obs.

RESOLUTE

°F	0-3	4-10	11-21	22-33	≥ 34
50-59		.3	.2	.1	
40-49	2.5	7.2	6.4	1.7	.2
30-39	9.1	22.1	18.4	6.1	.5
20-29	2.6	12.5	6.7	2.9	
10-19	.9	1.8	1.7	.3	
00-09			.1		

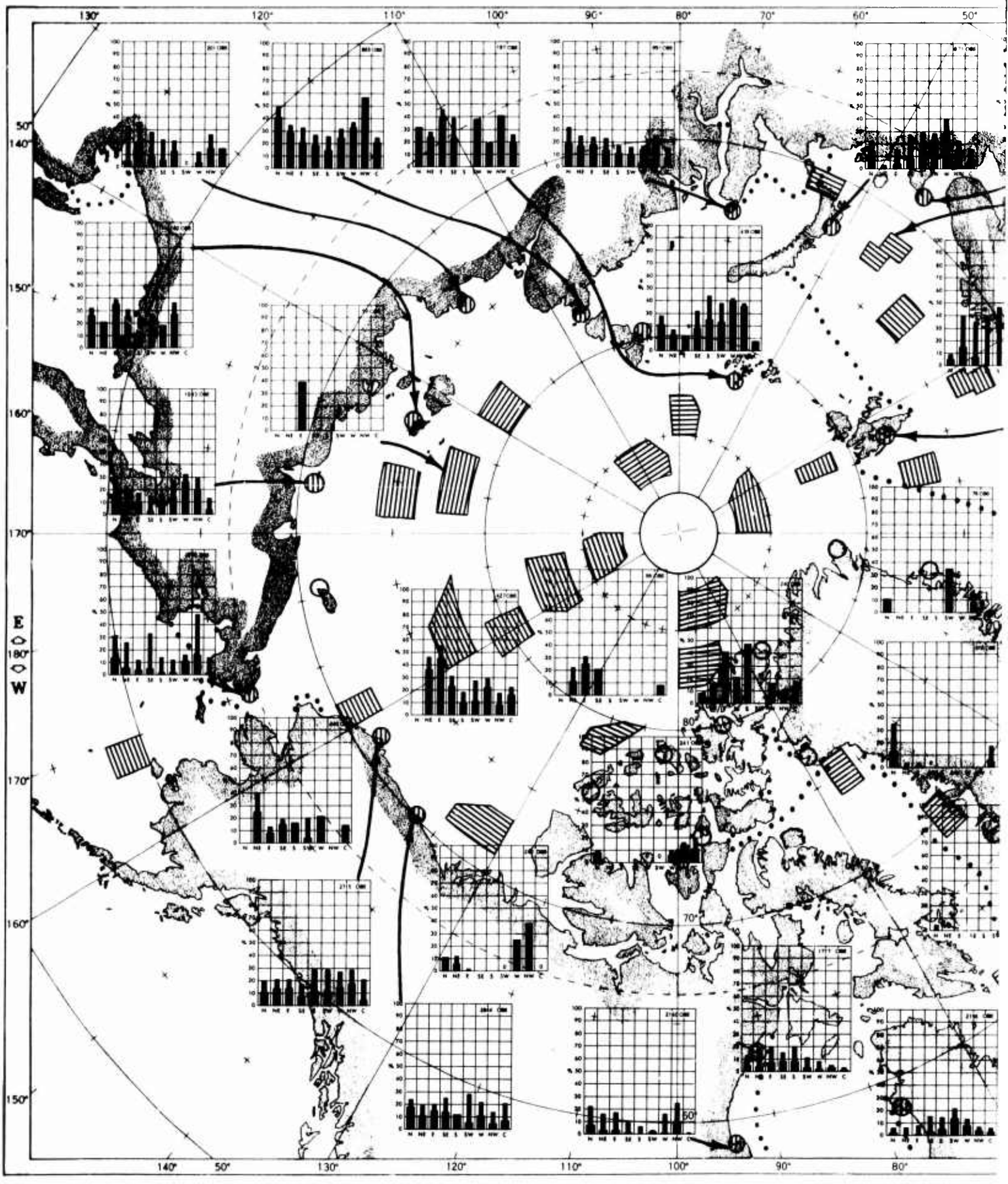
1910 Obs.

THULE

°F	0-3	4-10	11-21	22-33	≥ 34
60-69	.1	.1			
50-59	1.0	2.9	1.0		
40-49	8.8	17.3	2.5	1.0	.2
30-39	13.0	32.9	9.5	2.0	.1
20-29	2.5	5.6	.6		

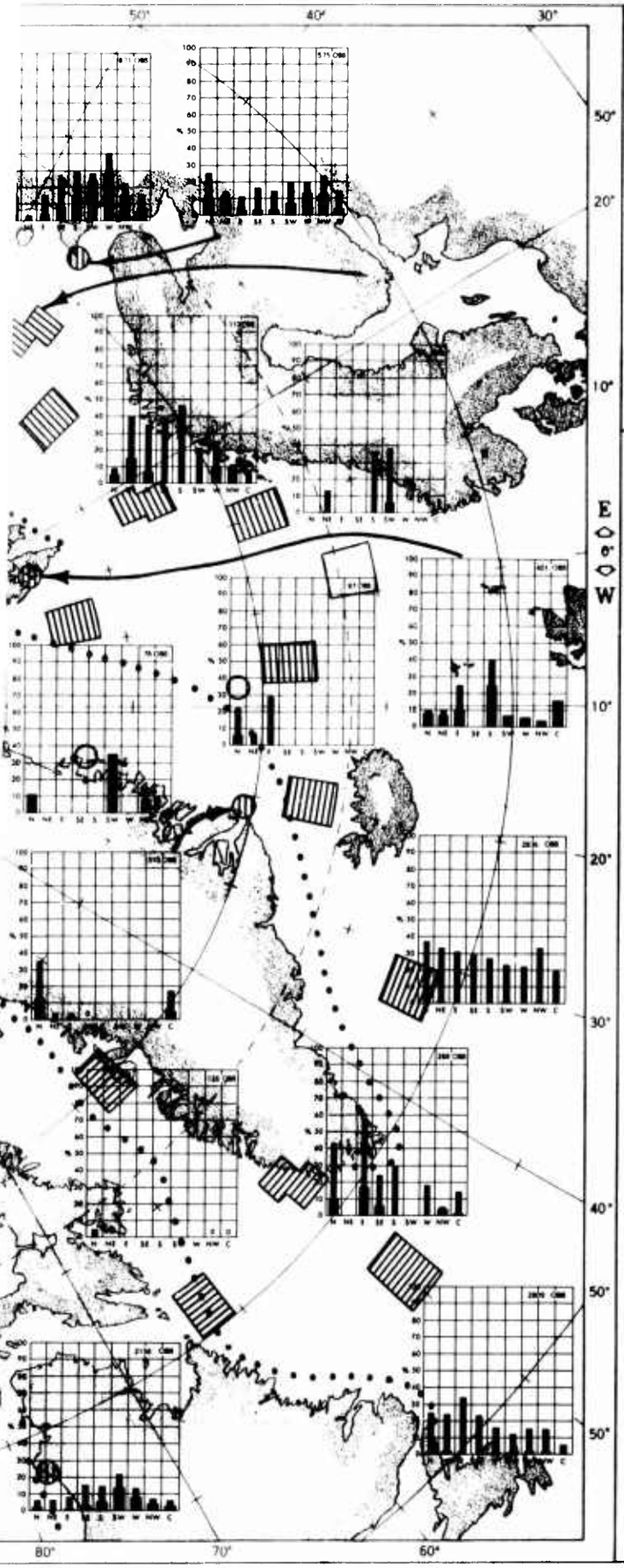
2158 Obs.

JUNE PRECIPITATION BY WIND



' WIND DIRECTION

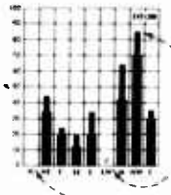
CHART 72



Percentage Frequency of Precipitation by Wind Direction

(a) Percentage of all present weather (and wind) observations reporting precipitation

(b) Percentage of observations recording liquid or frozen precipitation as indicated by



FROZEN

LIQUID

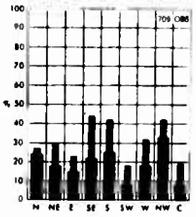
(85% of all NW winds were accompanied by precipitation, 15% frozen, 70% liquid)

0 replaces bar when no precipitation was observed with winds from a direction

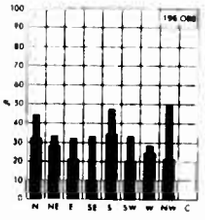
Bar or '0' omitted when number of observations was 10 or Less

See chart 6 for precipitation incidence disregarding wind direction

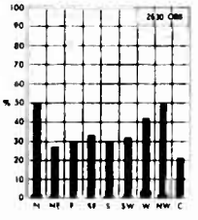
OSTROV VRANGELYA



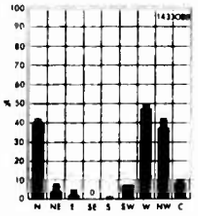
NORTH POLE



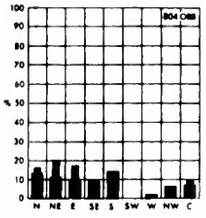
OCEAN STATION M



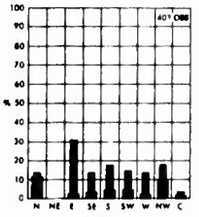
NORD



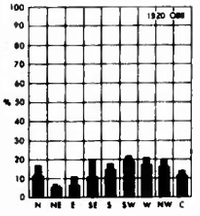
DANMARKSHAVEN



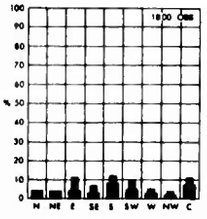
JAN MAYEN



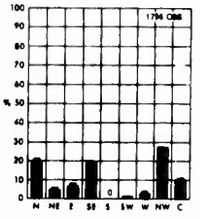
ISACHSEN



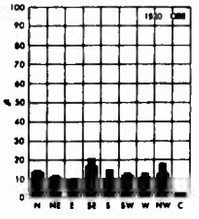
EUREKA



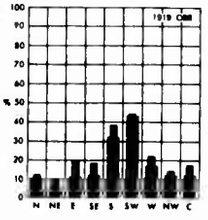
ALERT



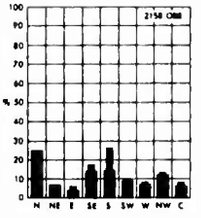
MOULD BAY



RESOLUTE

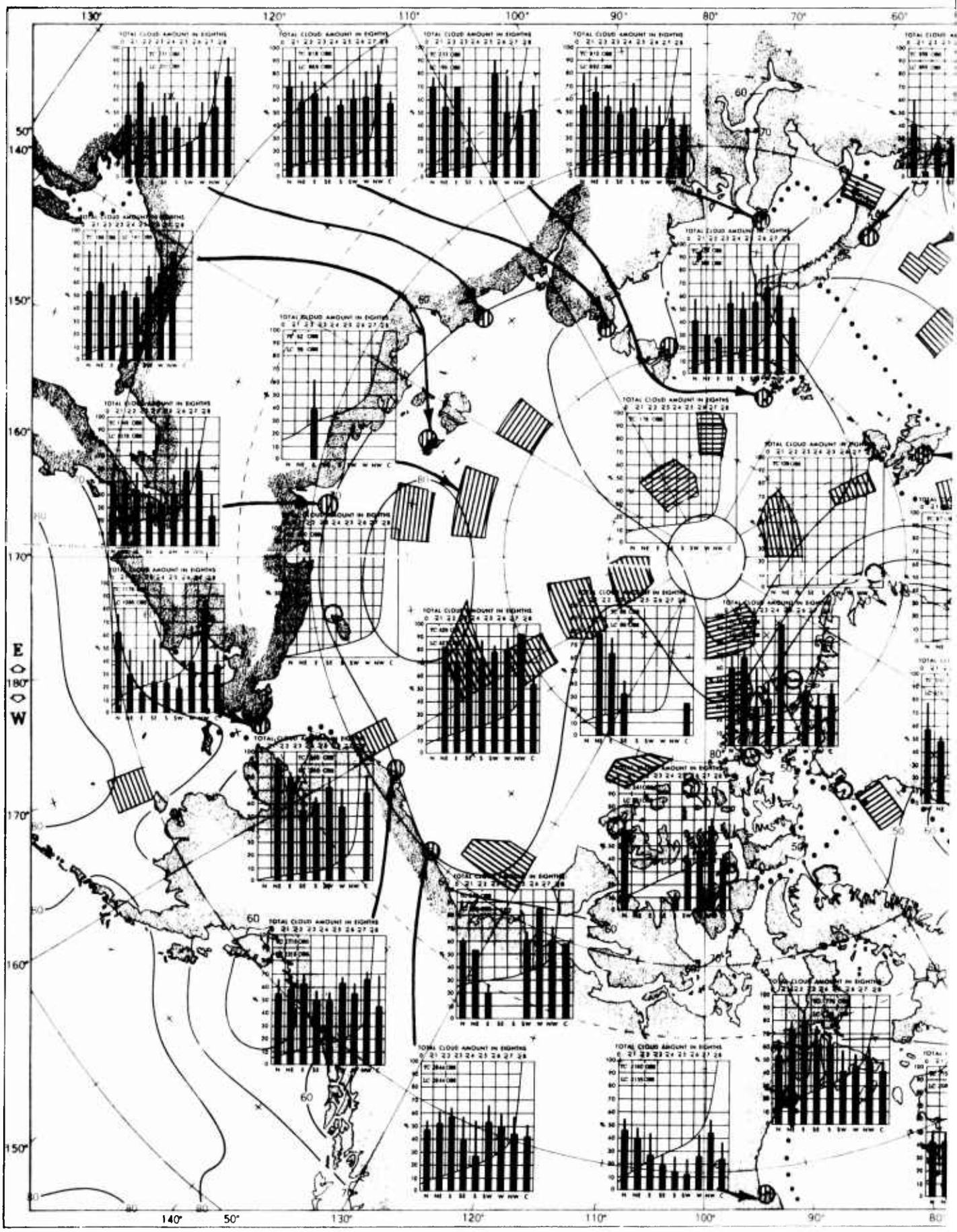


THULE



JUNE

CLOUDI


130°
120°
110°
100°
90°
80°
70°
60°
50°
140°
150°
160°
170°
E
180°
W
170°
160°
150°
140°
50°
130°
120°
110°
100°
90°
80°

.OUDINESS

CHART 73



Percentage Frequency of Total Cloud Amount 8/10 or more

Total Cloud Amount (TC) Percentage frequency of total cloud amounts equal to or less than amount intersected by the curve

(62% of all total cloud amounts were 7/8 or less)

Lower Cloud Amount (LC) Percentage proportions of winds from each direction that were accompanied by low or middle cloud amounts greater than 5/8 and greater than 7/8

(52% of all NW winds were accompanied by lower cloud amounts >5/8 and 38% by lower cloud amounts >7/8)

[>5/8 includes 6/8 8/8 and 7/10 10/10. >7/8 includes 8/8 and 9/10 10/10]

0 replaces bar when no low cloud amounts >5/8 were observed with winds from a direction

Bar (or 0) is omitted when the number of observations including both wind direction and low cloud amount was 10 or less for a direction

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

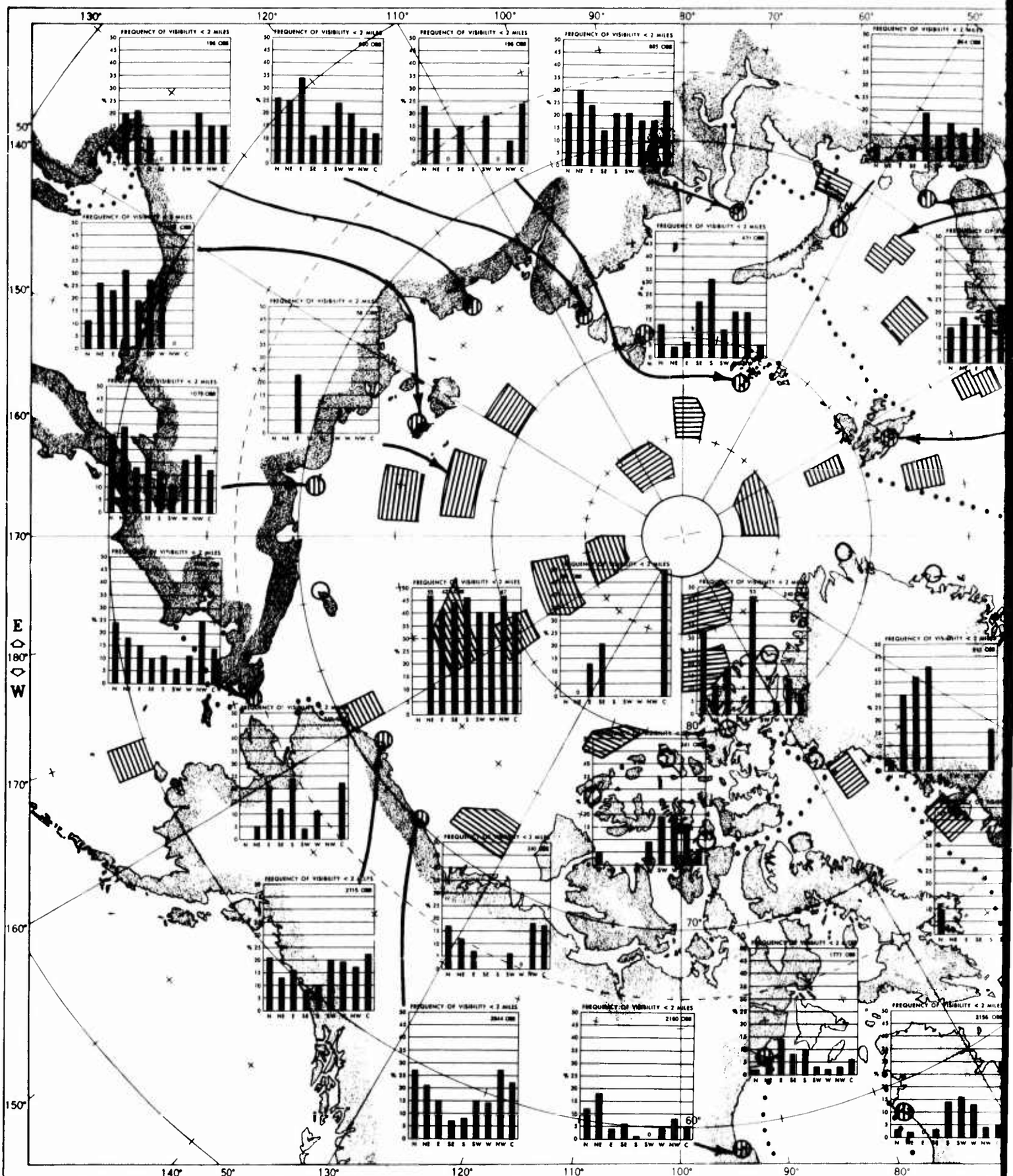
MOULD BAY

RESOLUTE

THULE

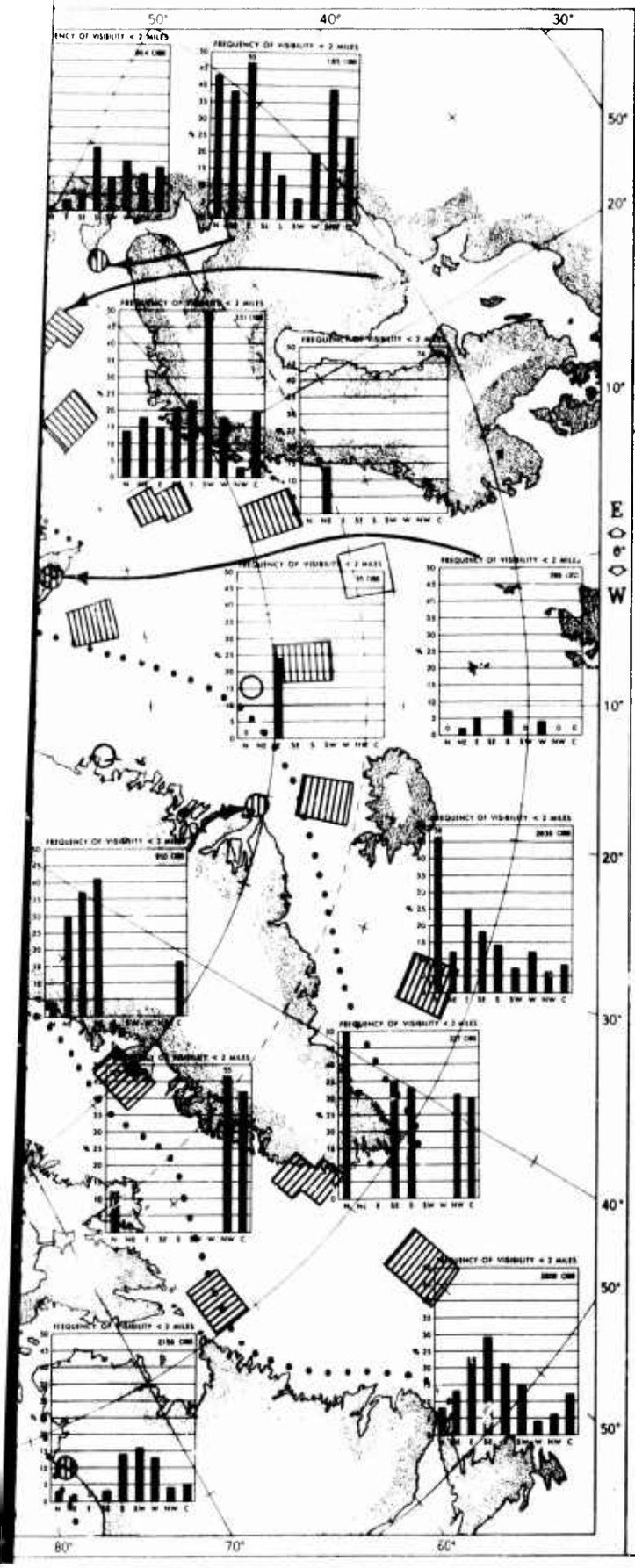
JUNE

LOW VISIBILITY BY WIND

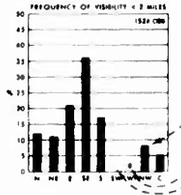


WIND DIRECTION

CHART 74



Percentage Frequency of Low Visibility by Wind Direction



Percentage of all visibility (and wind) observations reporting visibility less than 2 nautical miles

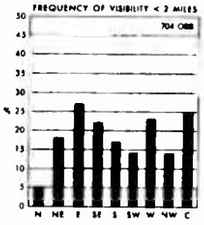
(8% of all NW winds were accompanied by vis. bility less than 2 miles)

'0' replaces bar when no visibilities <2 miles were observed with winds from a direction

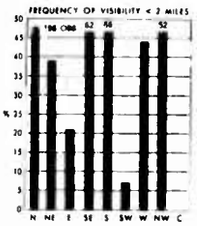
Bar or '0' omitted when number of observations was 10 or less

See chart 9 for low visibility incidence disregarding wind direction

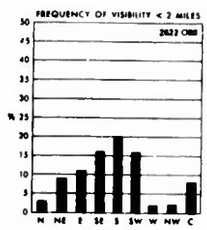
OSTROV VRANGELYA



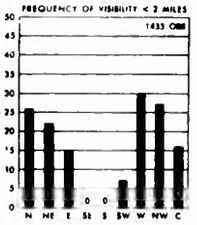
NORTH POLE



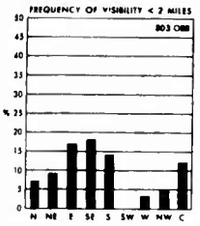
OCEAN STATION M



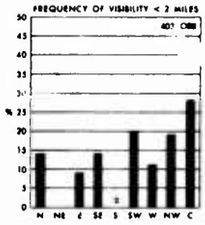
NORD



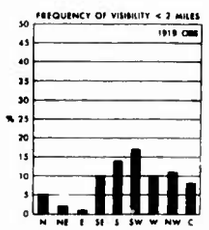
DANMARKSHAVEN



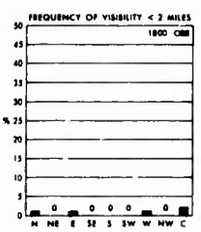
JAN MAYEN



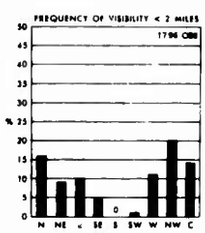
ISACHSEN



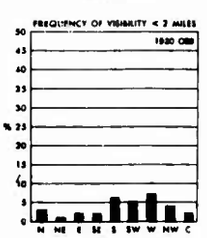
EUREKA



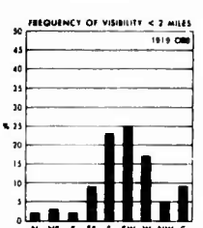
ALERT



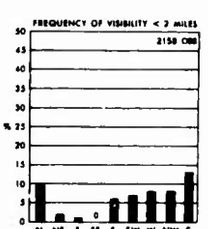
MOULD BAY



RESOLUTE



THULE



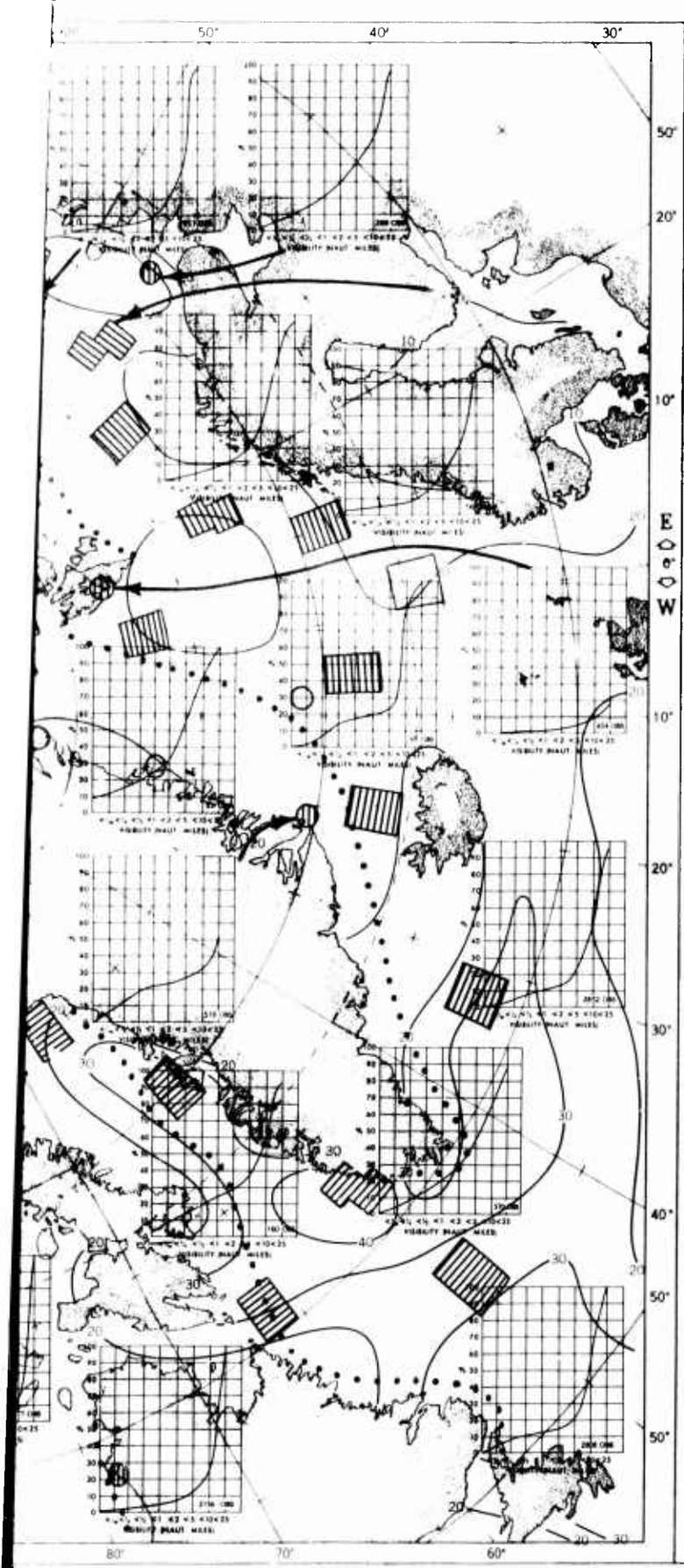
JUNE

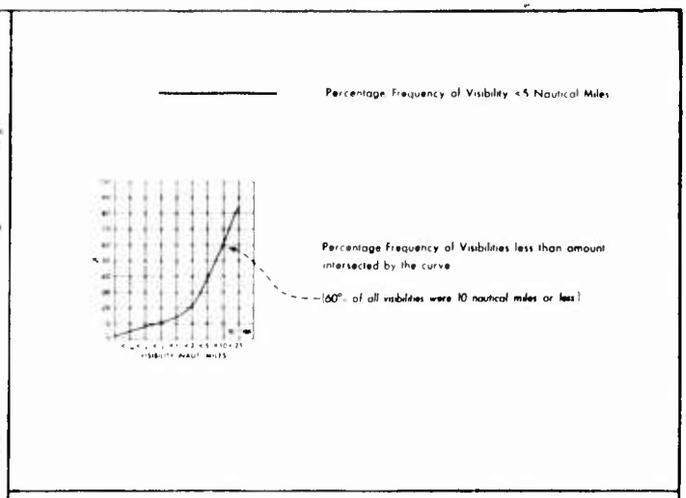
VISIBILI

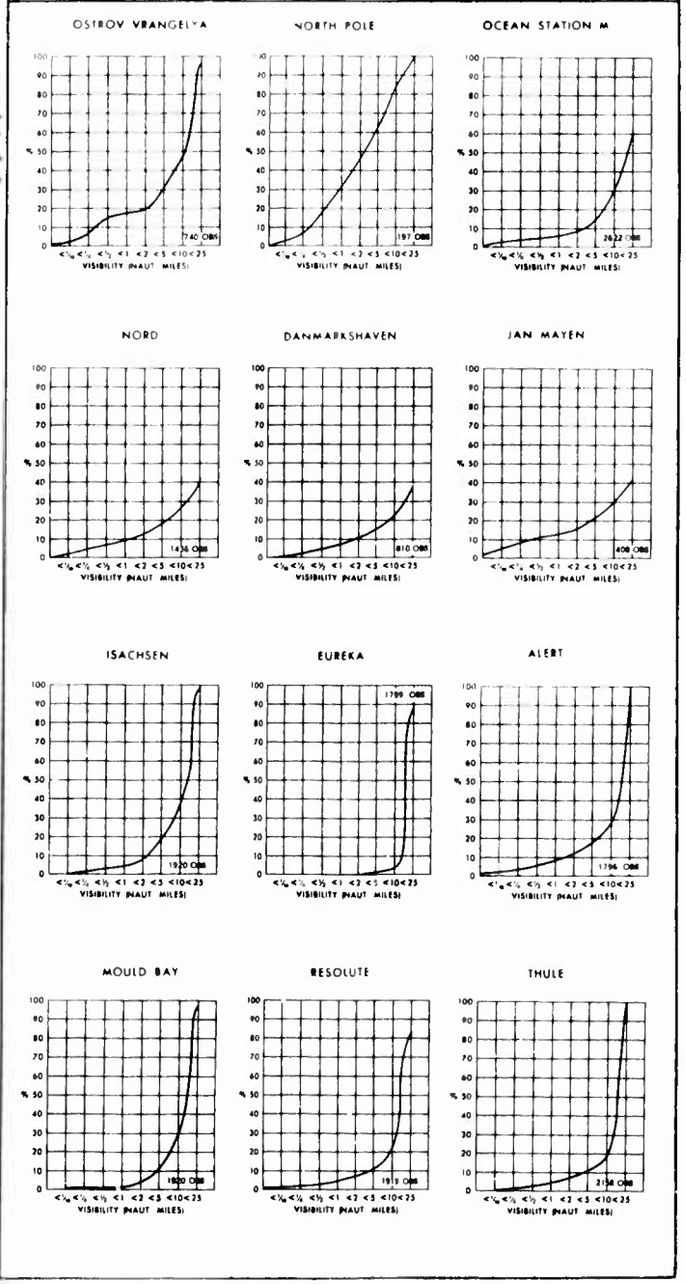


SIBILITY

CHART 75

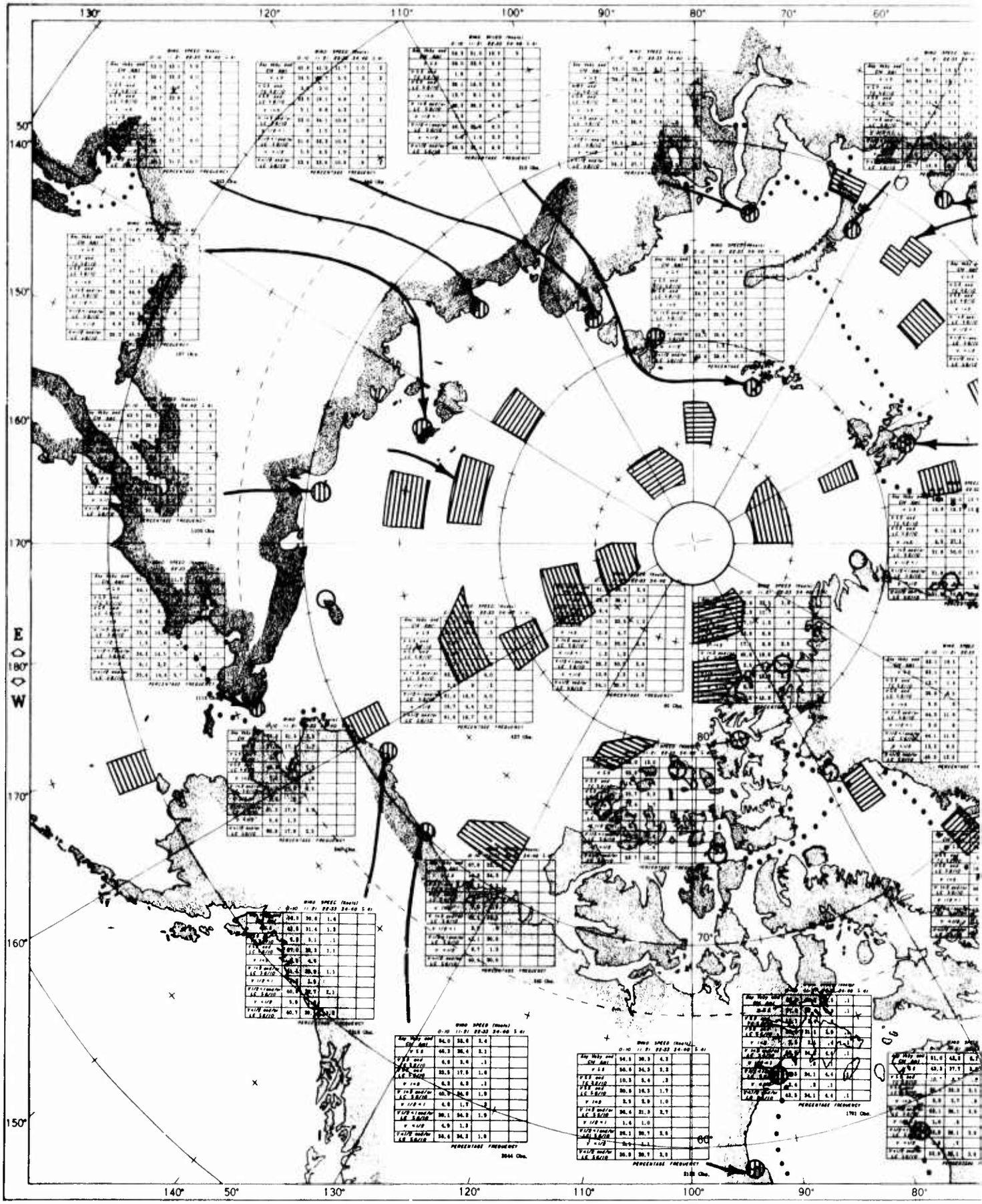






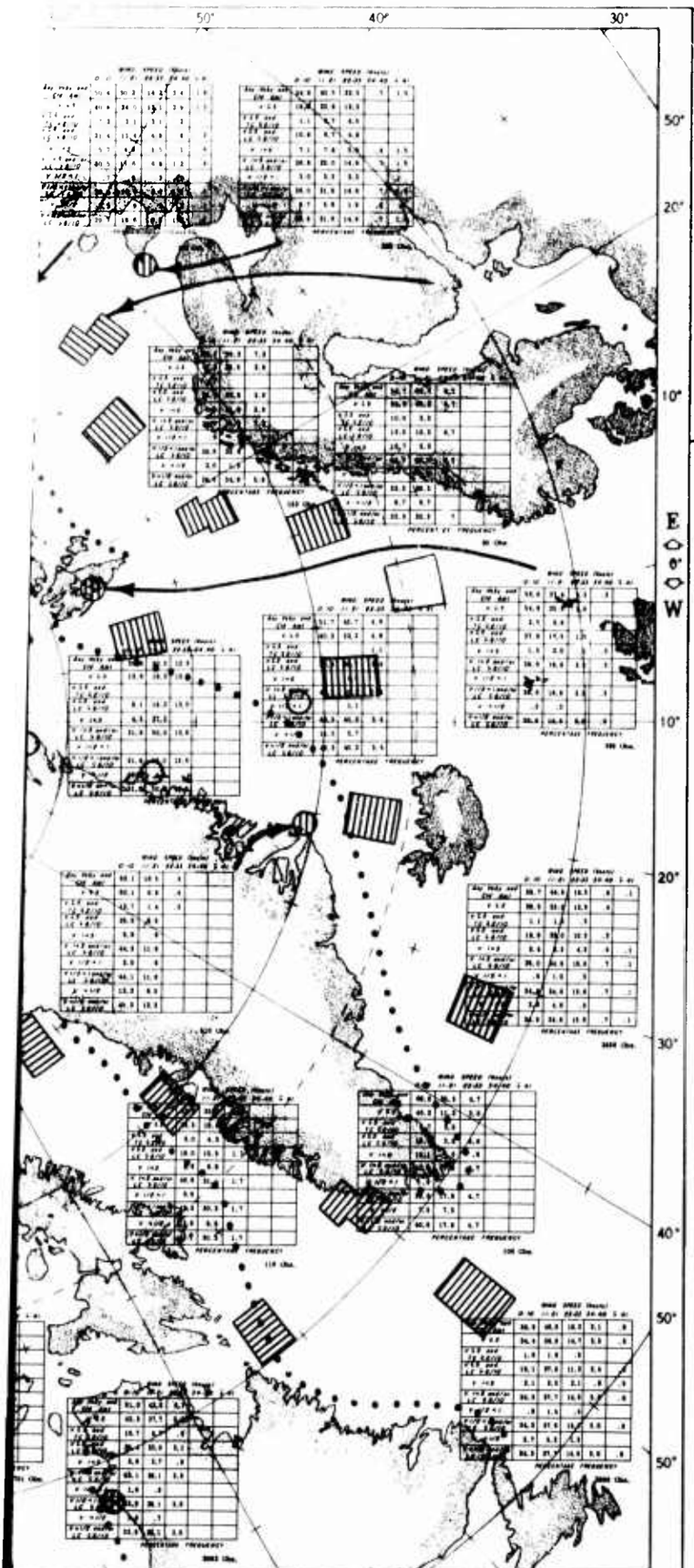
JUNE

WIND-VISIBILITY-CL



ITY-CLOUDINESS

CHART 76



Percentage Frequency of simultaneous occurrence of specified Wind, Visibility, and Cloudiness conditions (based on the number of observations which reported wind speed, visibility, total cloud amount, and low cloud amount)



Blank box indicates 0.0 percent

Notation

Any Vsby and Cld Amt = Simultaneous occurrence of wind speed with any visibility and cloud amount combination. This provides a percentage distribution of wind speeds for the observations used in this tabulation.

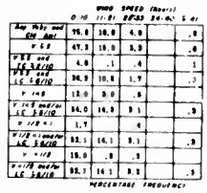
V = Visibility in Nautical Miles
1<5 indicates 1 to (but not including) 5 nautical miles

TC = Total Cloud Amount

LC = Low Cloud Amount (with base approximately 8000 feet or lower)

Ocean Area 166% of the observations on which this tabulation was based reported speed 22-33 knots simultaneous with visibility 1-5 nautical miles and/or low cloud amount 7-8 (0)

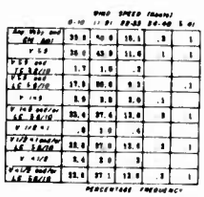
OSTROV VRANGELYA



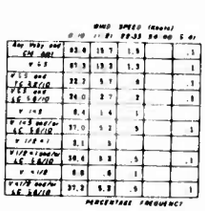
NORTH POLE



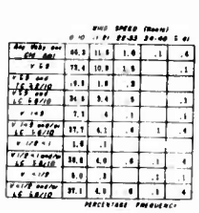
OCEAN STATION M



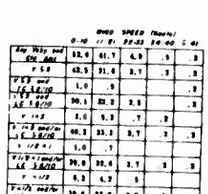
NORD



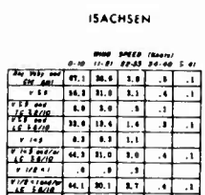
DANMARKSHAVEN



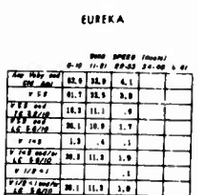
JAN MAYEN



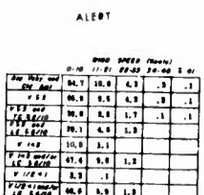
ISACHSEN



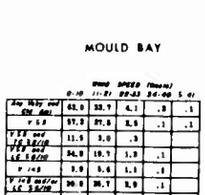
EUREKA



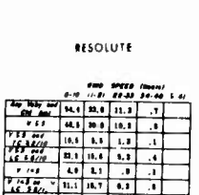
ALERT



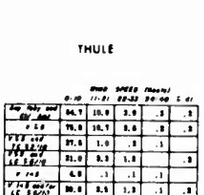
MOULD BAY



RESOLUTE



THULE



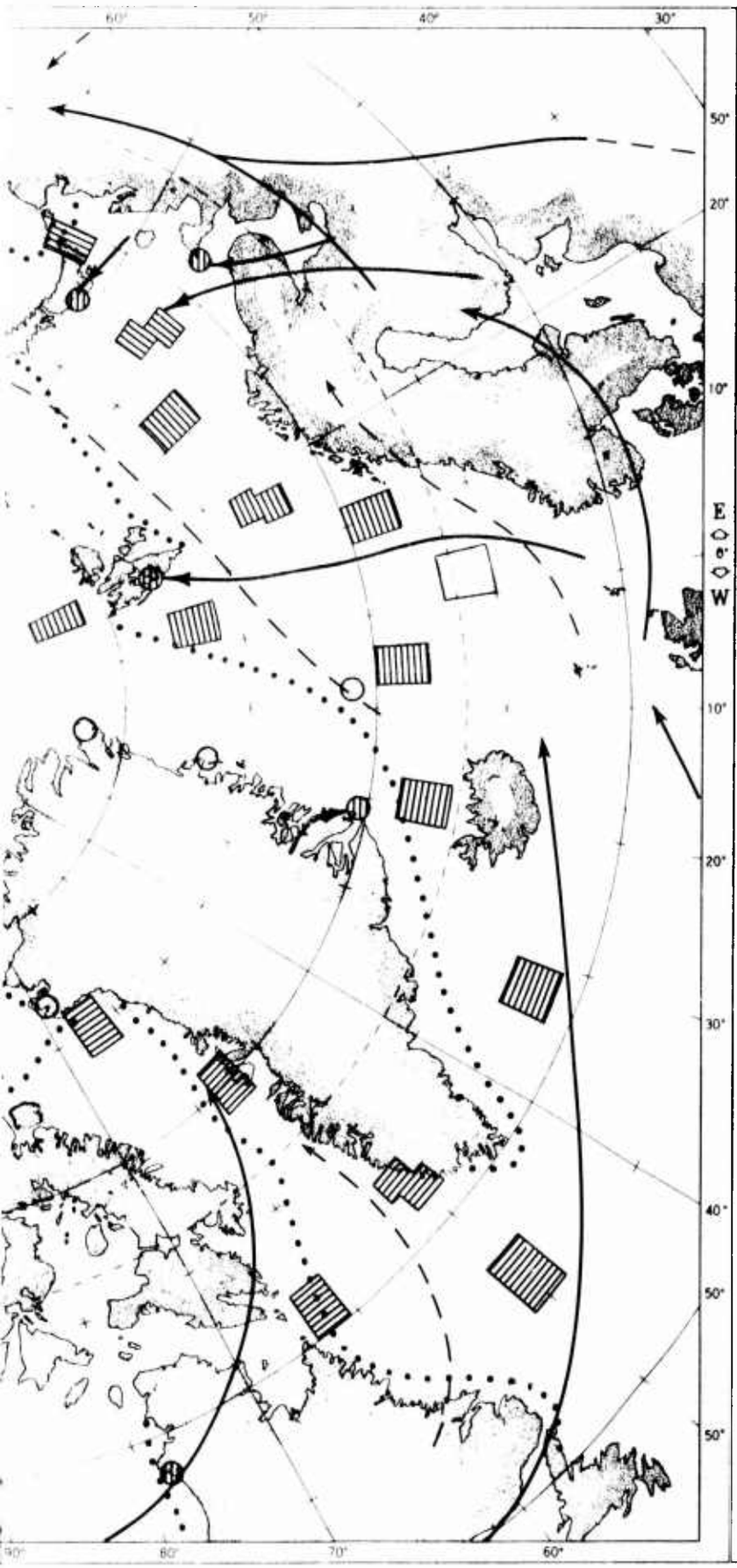
JUNE

STORM TR



ORM TRACKS

CHART 77



Storm Tracks

Primary Track, along which there has been maximum concentration of individual storm center paths

Secondary Track, along which there has been moderate concentration of individual storm center paths

OSTROV VRANGELYA | NORTH POLE | OCEAN STATION M

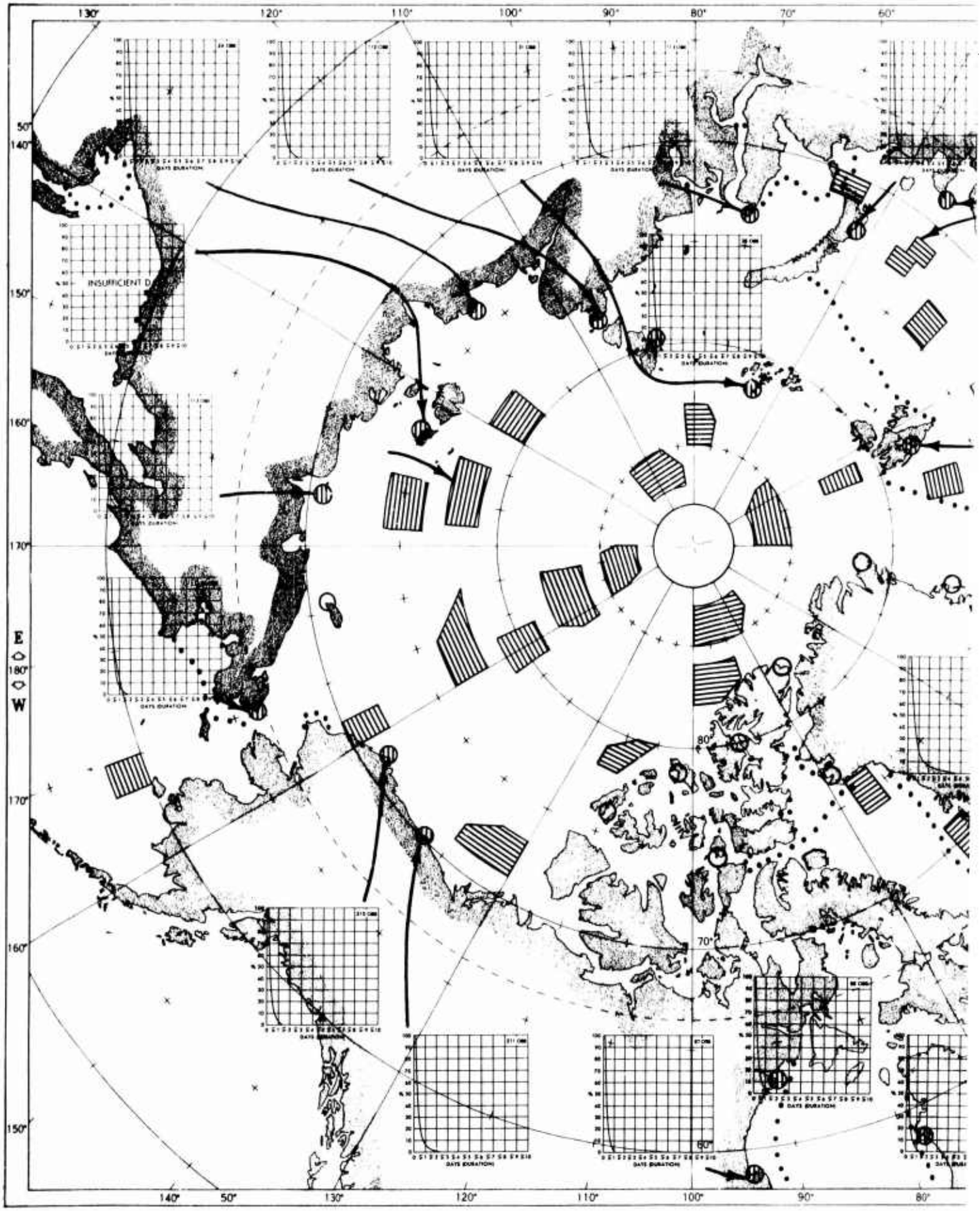
NORD | DANMARKSHAVEN | JAN MAYEN

ISACHSEN | EUREKA | ALERT

MOULD BAY | RESOLUTE | THULE

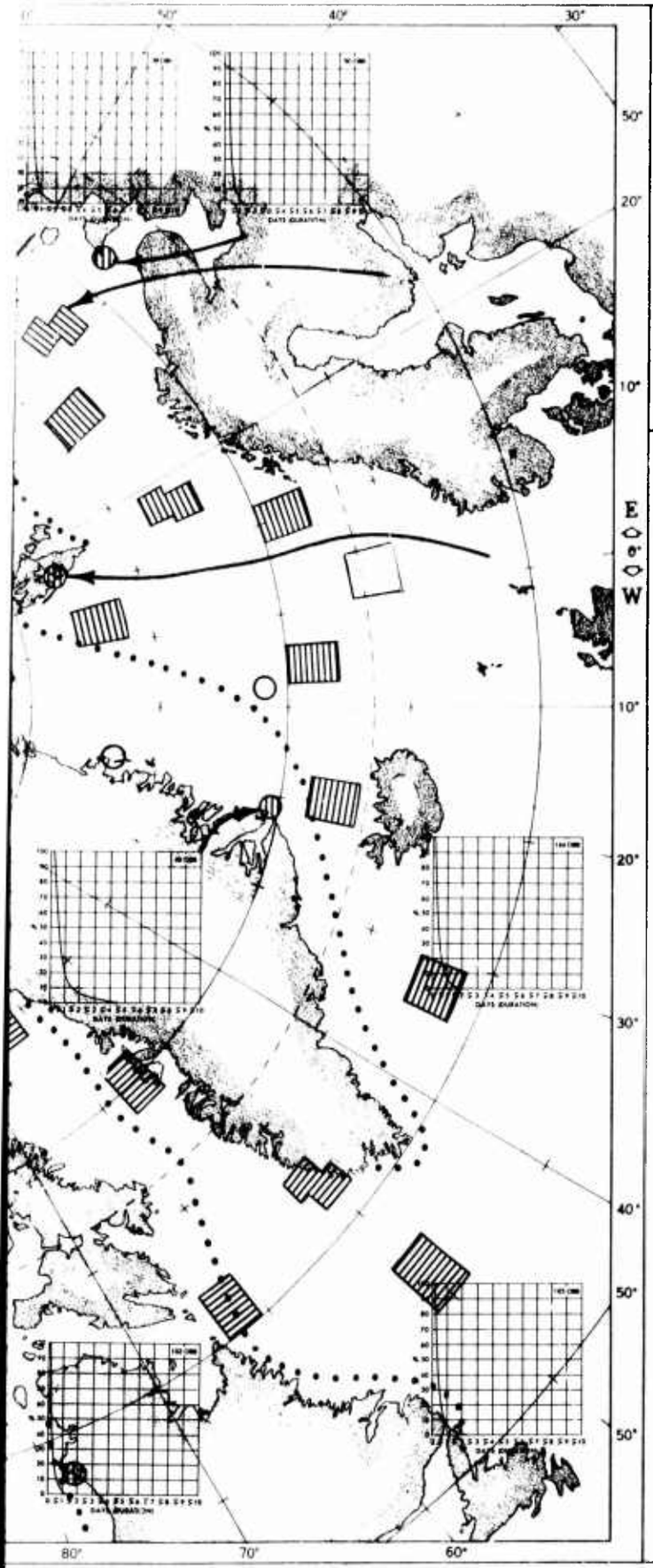
JUNE

LOW VISIBILITY PE



TY PERSISTENCE

CHART 78

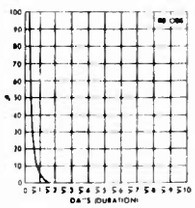




Percentage Frequency of Low Visibility (<2 nautical miles) equal to or greater than number of days intersected by the curve

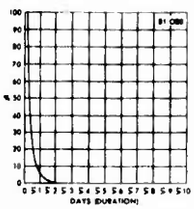
[6% of low visibilities (< 2 miles) persist at least two days]

OSTROV VRANGELYA

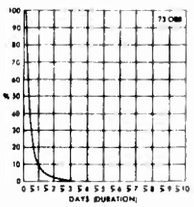


NORTH POLE

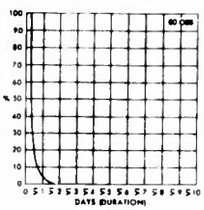
OCEAN STATION M



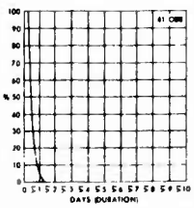
NORD



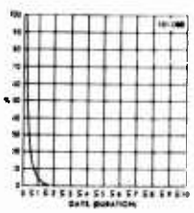
DANMARKSHAVEN



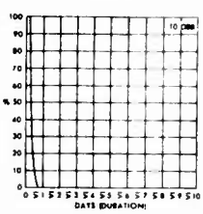
JAN MAYEN



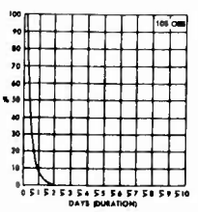
ISACHSEN



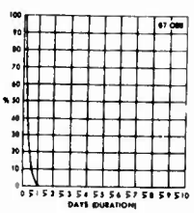
EUREKA



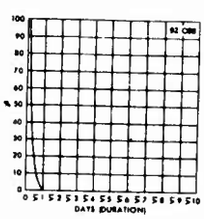
ALERT



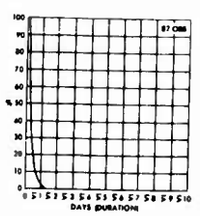
MOULD BAY



RESOLUTE



THULE

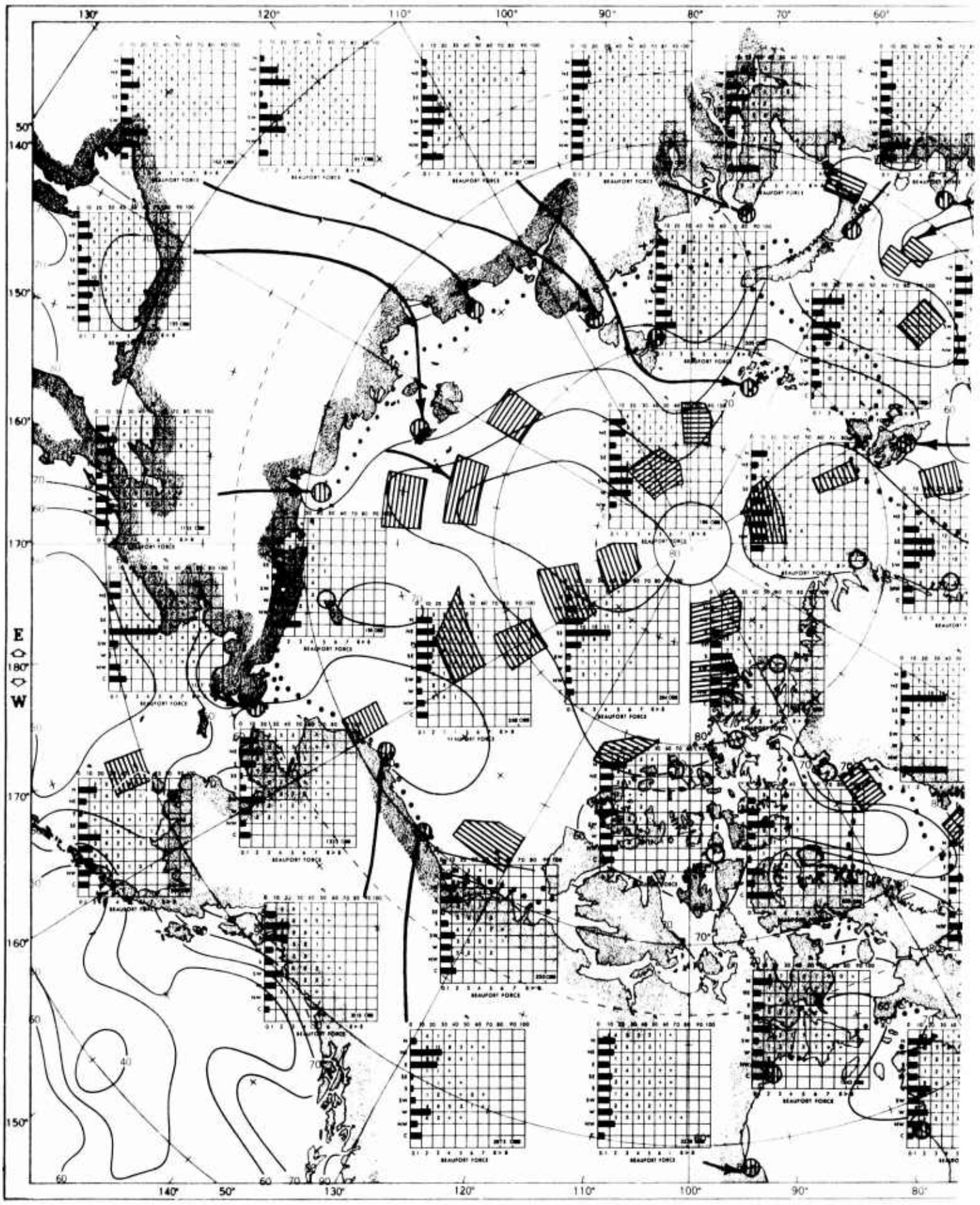


1

2

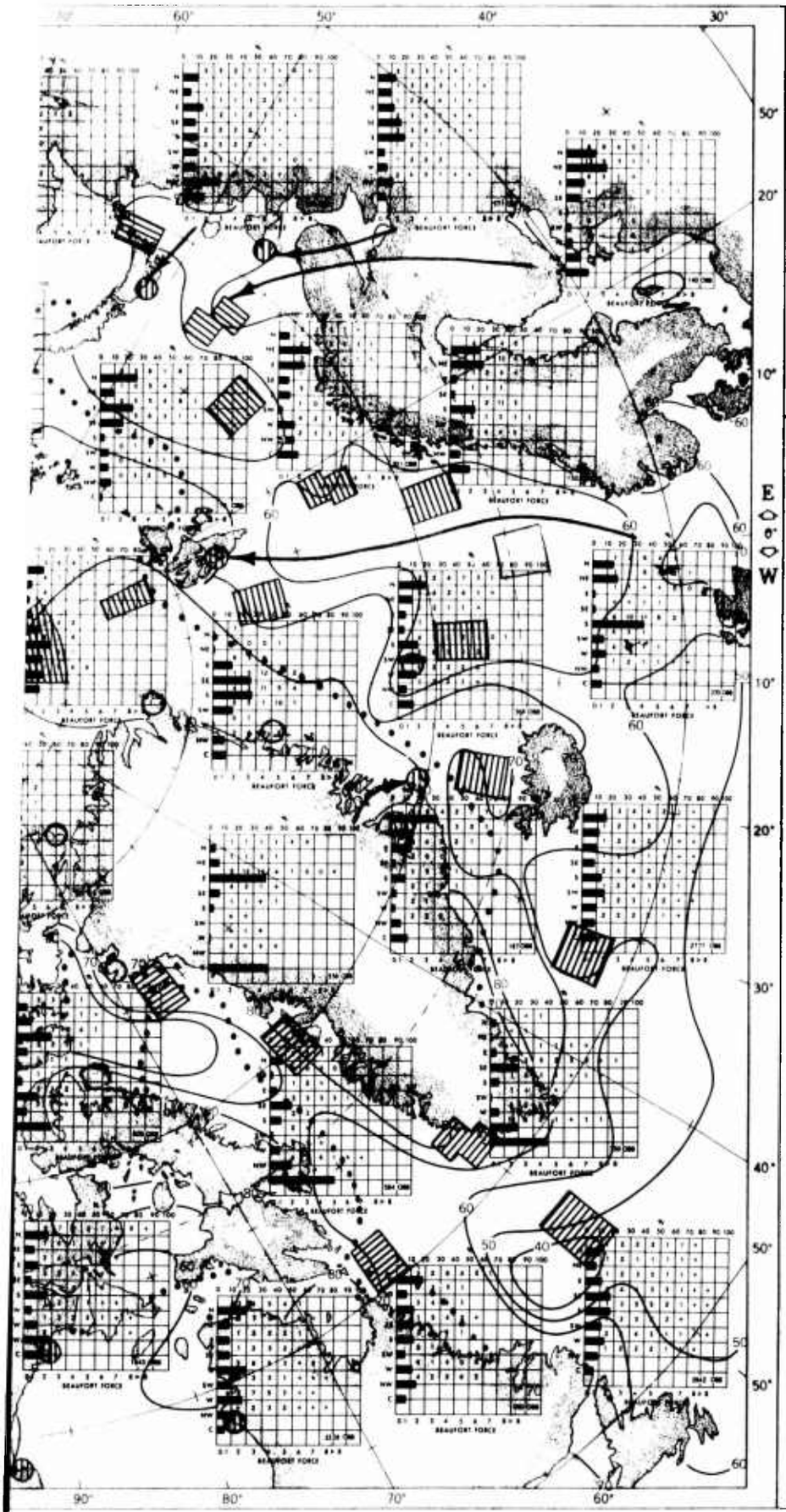
JULY

SURFACE W

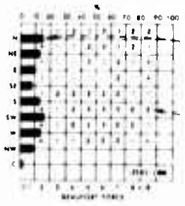


SURFACE WIND

CHART 79



Percentage Frequency of Wind Speed Beaufort Force 3 or less (≤ 10 Knots)



Direction Frequency (Top Scale) Bars represent percentage frequency of wind observed from each direction (& calm)

– (14% of all winds were from N.)

Speed Frequency (Bottom Scale) percentage frequency of wind speed by Beaufort Force

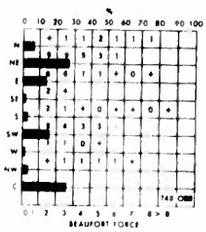
– (2% of all winds from SW were greater than Beaufort Force 8.)

All percentages rounded to nearest whole percent

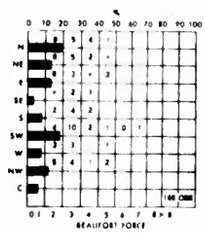
Calm includes Beaufort Force 1 (0-3 knots)

+ indicates less than 1/2 percent

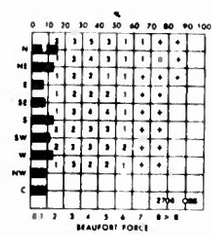
OSTROV VRANGELYA



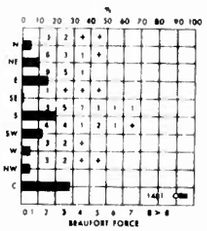
NORTH POLE



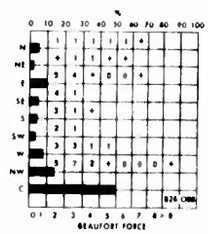
OCEAN STATION M



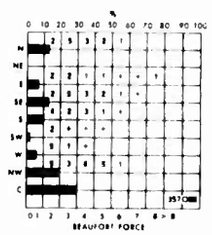
NORD



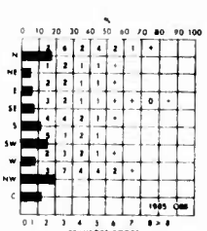
DANMARKSHAVEN



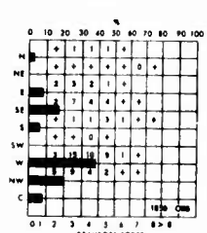
JAN MAYEN



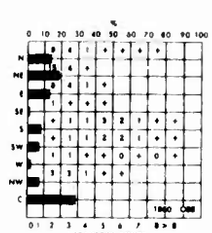
ISACHSEN



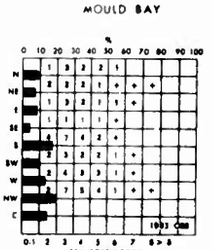
EUREKA



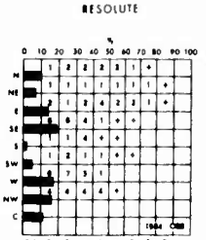
ALERT



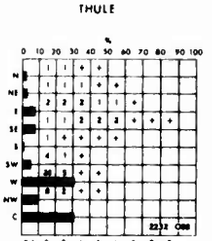
MOULD BAY



RESOLUTE



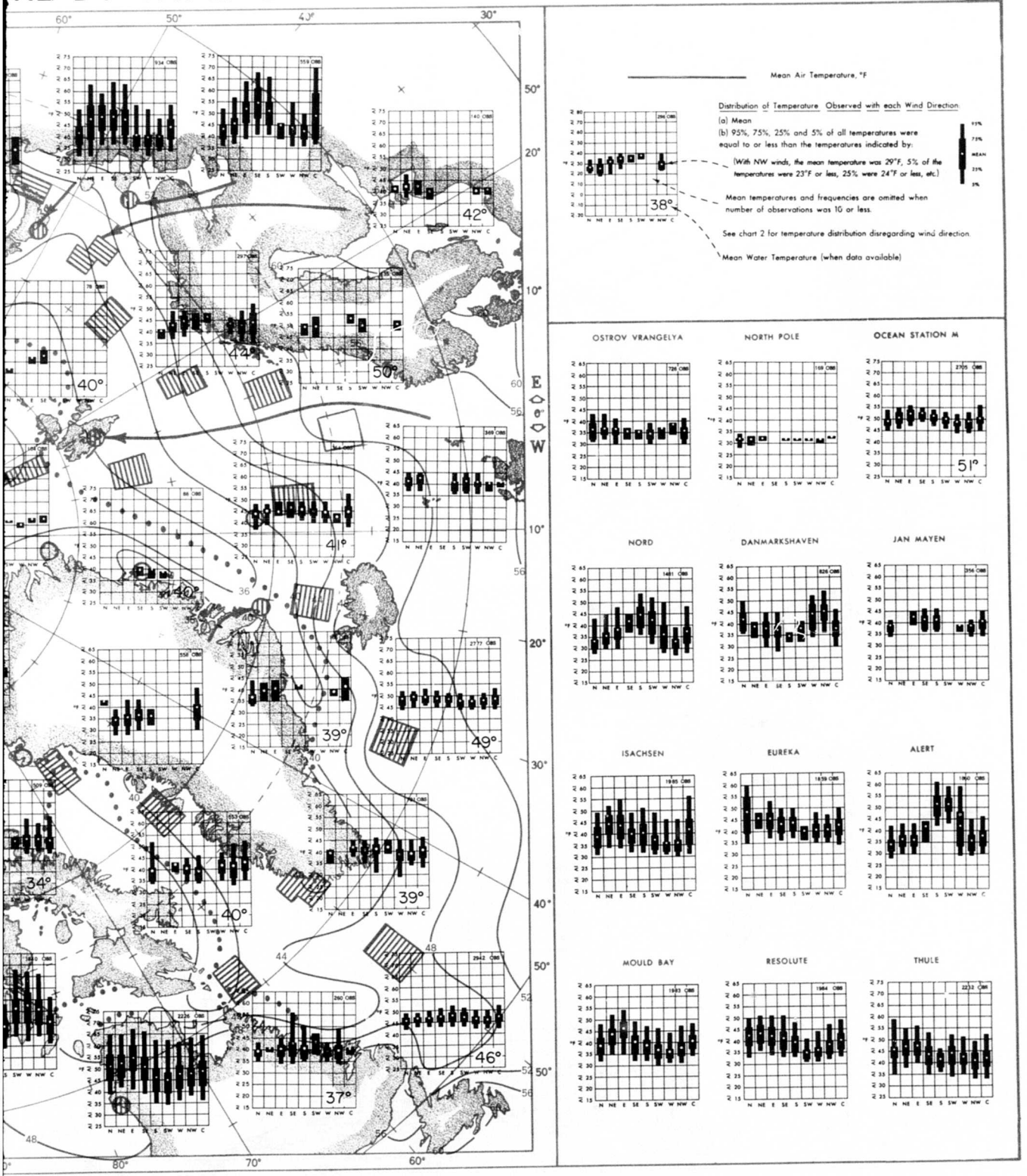
THULE



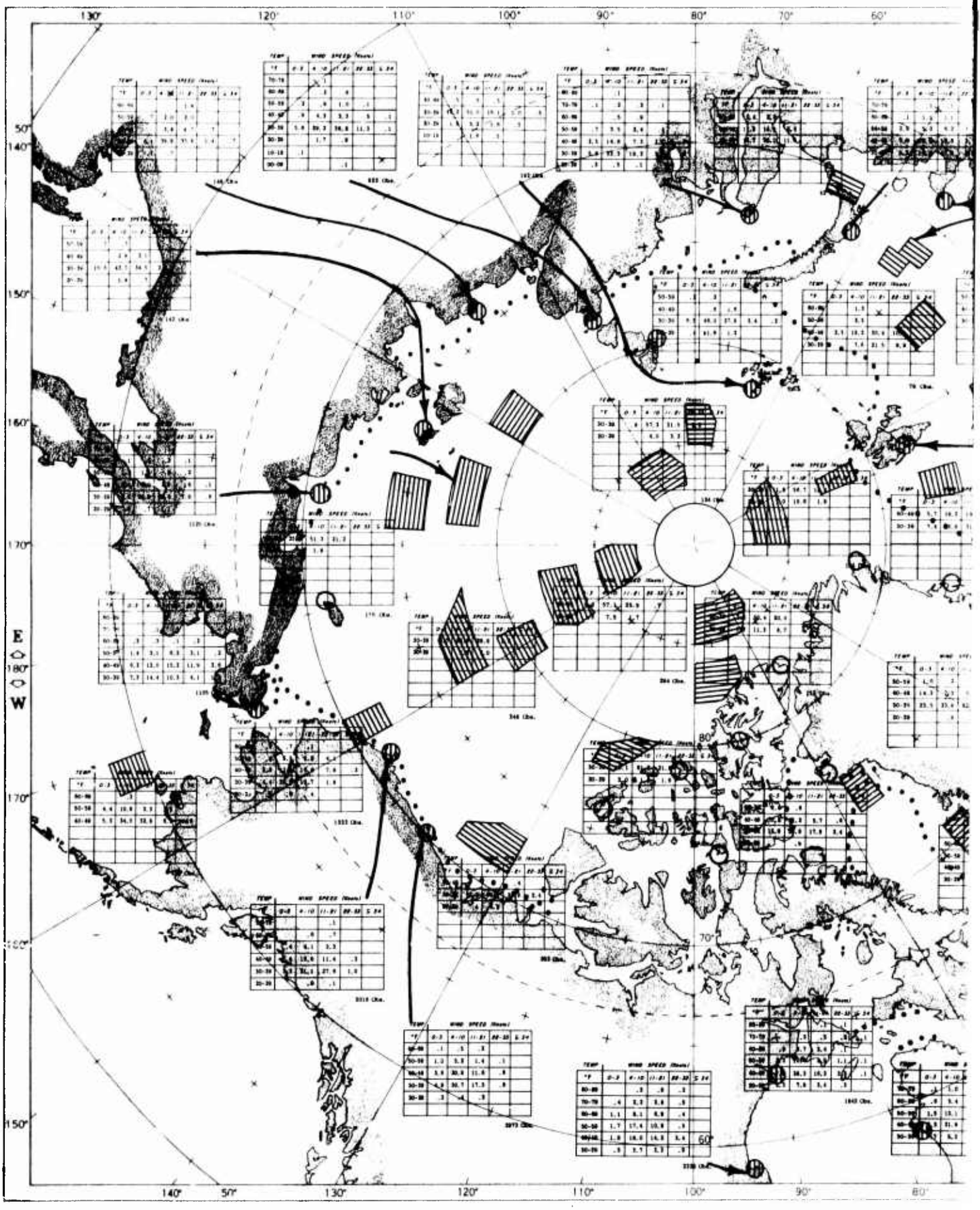
JULY AIR TEMPERATURE BY

RE BY WIND DIRECTION

CHART 80

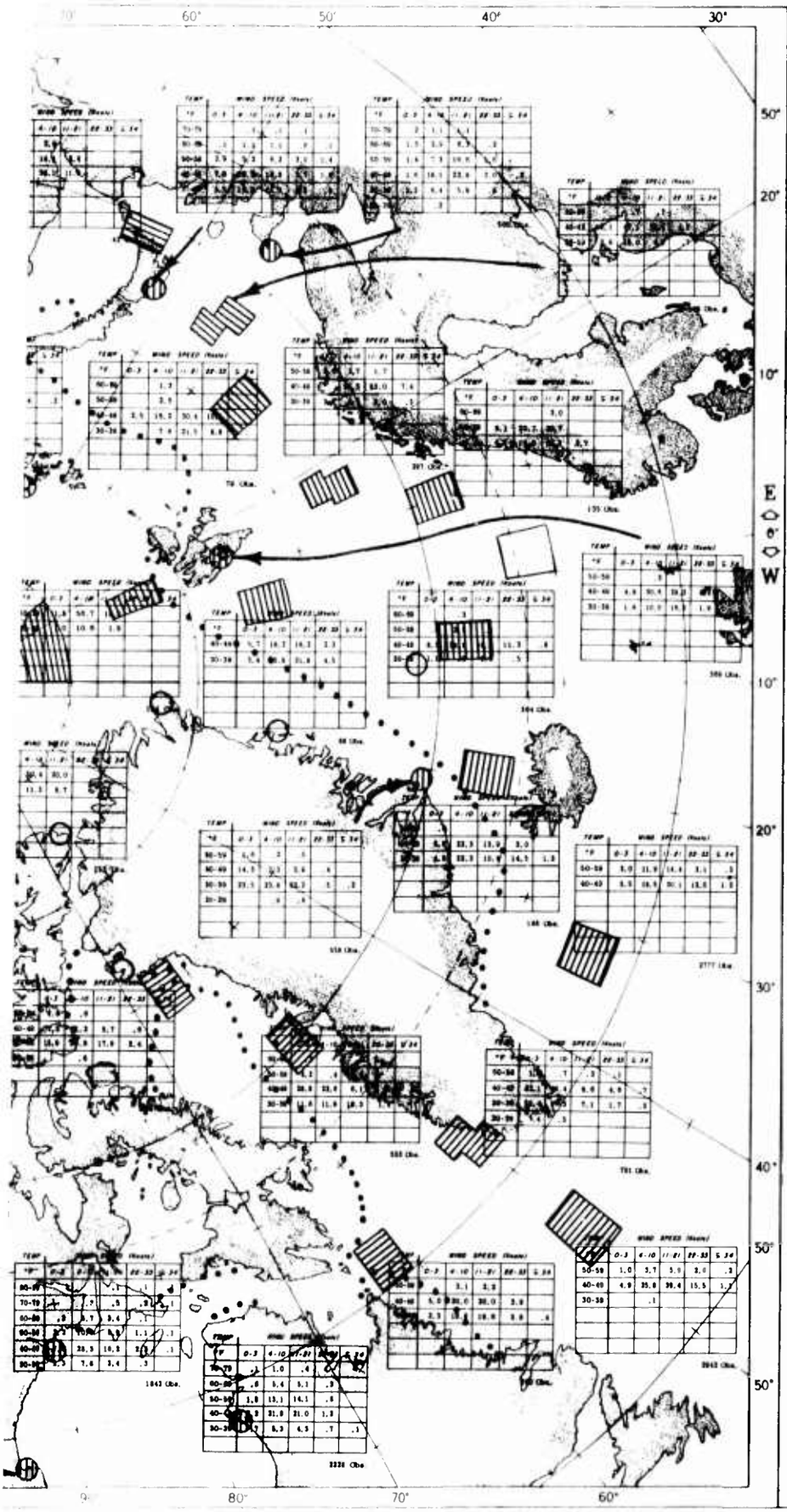


JULY AIR TEMPERATURE vs



ERATURE vs. WIND SPEED

CHART 81



TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
50-59	.1		.1		
40-49	2.5	5.2	3.9	1.1	
30-39	22.9	43.5	16.4	5.3	.8
20-29	.8		.4		

433 Obs.

Percentage Frequency of simultaneous occurrence of specified Temperature groups and Wind Speed

(5% of the observations on which this tabulation was based reported wind speed 22-33 knots simultaneous with temperature from 10° through 19° F.)

OSTROV VRANGELYA

TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
50-59	.1		.1		
40-49	2.5	5.2	3.9	1.1	
30-39	22.9	43.5	16.4	5.3	.8
20-29	.8		.4		

726 Obs.

NORTH POLE

TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
30-39	6.5	87.5	17.8	.6	
20-29		5.9	1.8		

169 Obs.

OCEAN STATION M

TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
60-69	.1				
50-59	5.0	17.1	27.8	7.0	.3
40-49	9.0	14.6	18.3	4.3	.4

2705 Obs.

NORD

TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
50-59			.1		
50-59	1.0	3.6	6.4	.6	
40-49	6.1	12.6	6.8	2.0	
30-39	18.6	35.7	4.9		
20-29	.7	1.0			

1481 Obs.

DANMARKSHAVEN

TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
50-59	1.3	4.7	1.3	.1	
40-49	14.3	18.7	3.4	.3	.1
30-39	34.5	19.1	2.8	.5	
20-29	.8	.3			

828 Obs.

JAN MAYEN

TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
50-59				.6	
40-49	17.1	17.1	10.7	1.4	.6
30-39	13.8	32.5	15.4	1.7	

356 Obs.

ISACHSEN

TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
60-69	.3				
50-59	1.8	3.9	1.3	.2	
40-49	4.8	17.0	8.7	1.2	
30-39	5.8	34.3	18.3	3.2	.3
20-29	.1	.4	.3	.1	

1985 Obs.

EUREKA

TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
60-69		.1	.2		
50-59	.7	4.1	2.6	.1	
40-49	4.5	27.8	22.3	1.8	.1
30-39	2.5	18.5	15.4	1.6	

1858 Obs.

ALERT

TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
60-69	.3	.1	.6	.4	
50-59	.6	1.3	4.0	3.4	.5
40-49	8.1	8.4	2.3	2.5	.3
30-39	20.3	40.1	2.8	.2	.1
20-29	.5	2.3	.1		

1850 Obs.

MOULD BAY

TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
50-59	.4	2.5	1.7	.1	
40-49	7.9	18.0	10.0	1.1	.1
30-39	6.0	25.1	21.6	4.0	.1
20-29	.1	.5	.3	.1	

1983 Obs.

RESOLUTE

TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
60-69				.1	
50-59	.5	1.5	3.1	.6	.1
40-49	5.6	16.0	12.0	4.9	.7
30-39	5.5	38.4	15.9	9.4	.6

1984 Obs.

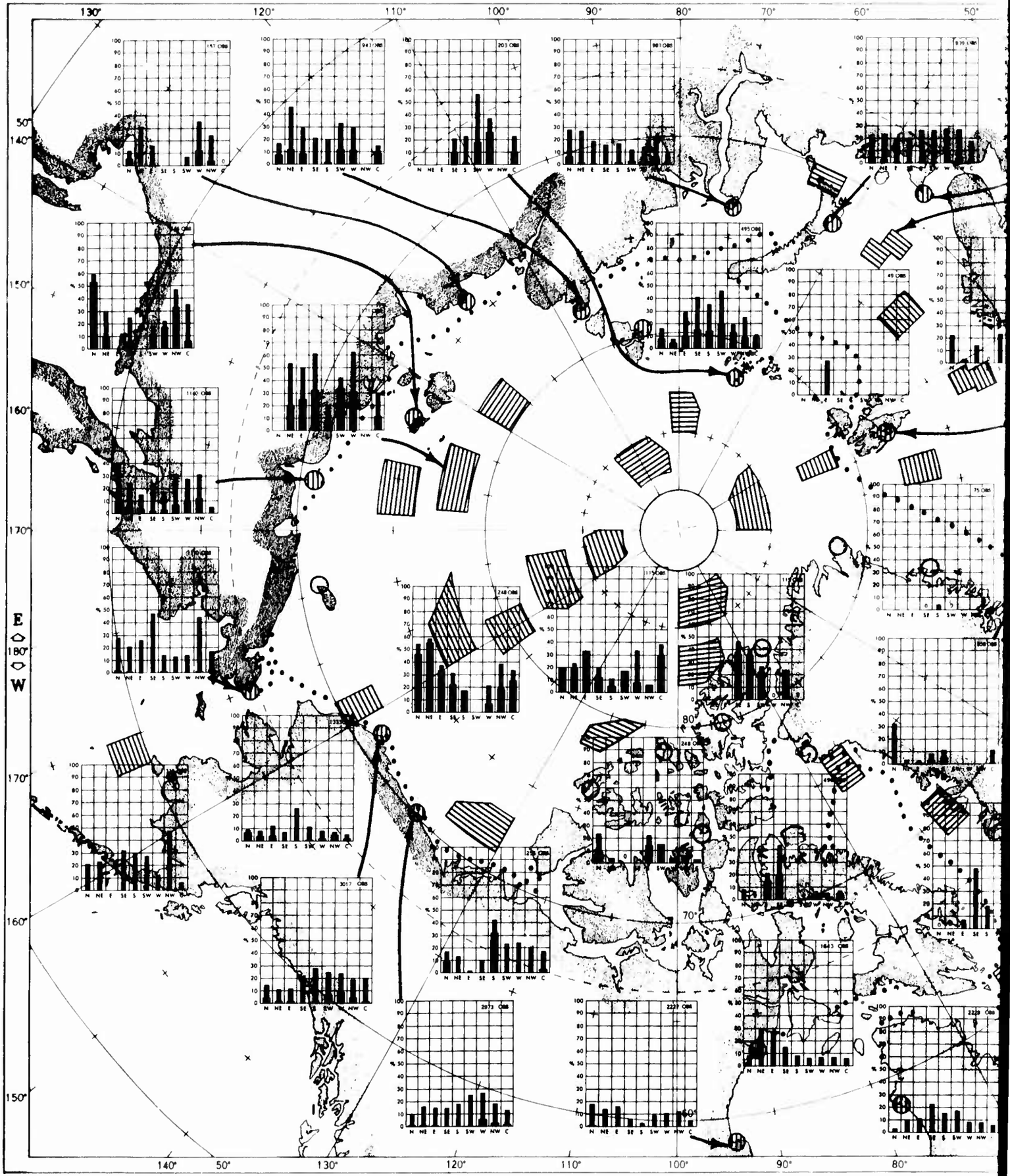
THULE

TEMP	WIND SPEED (Knots)				
°F	0-3	4-10	11-21	22-33	≥ 34
60-69		.2	.2		
50-59	3.2	5.7	1.7	.4	
40-49	18.4	34.3	6.1	2.4	
30-39	11.1	19.0	1.8	.8	.1

2232 Obs.

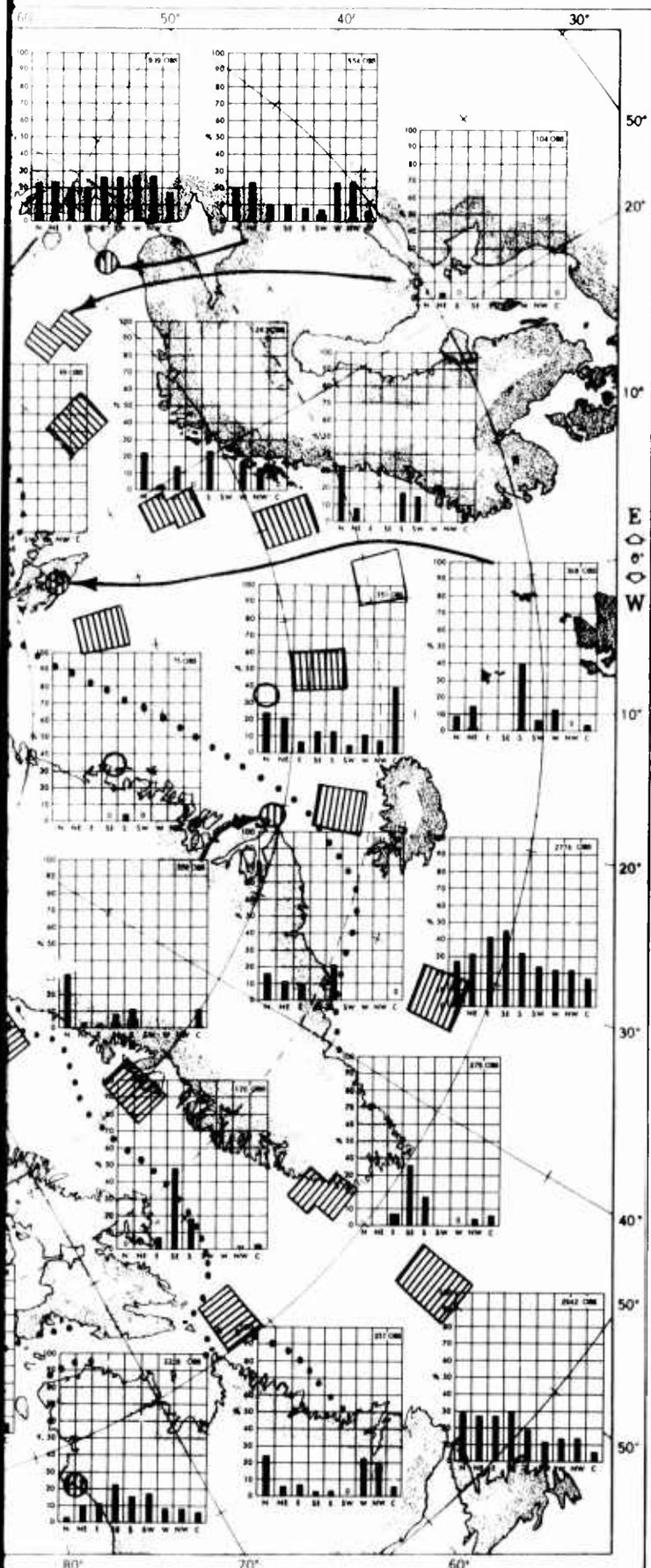
JULY

PRECIPITATION BY WIND



BY WIND DIRECTION

CHART 82



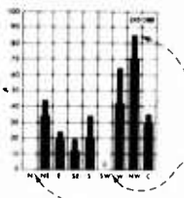
Percentage Frequency of Precipitation by Wind Direction

(a) Percentage of all present weather (and wind) observations reporting precipitation

(b) Percentage of observations recording liquid or frozen precipitation as indicated by

FROZEN

LIQUID



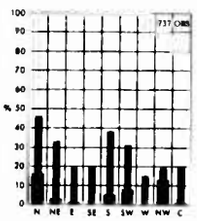
(85% of all NW winds were accompanied by precipitation 15% frozen, 70% liquid)

0 replaces bar when no precipitation was observed with winds from a direction

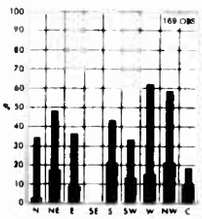
Bar or 0 omitted when number of observations was 10 or Less

See chart 6 for precipitation incidence disregarding wind direction

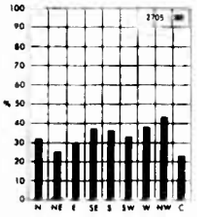
OSTROV VRANGELYA



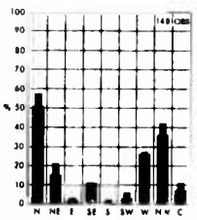
NORTH POLE



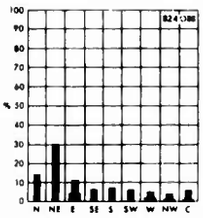
OCEAN STATION M



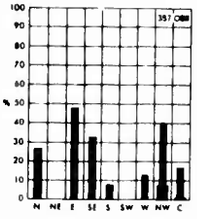
NORD



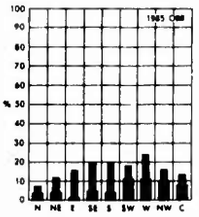
DANMARKSHAVEN



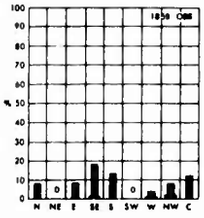
JAN MAYEN



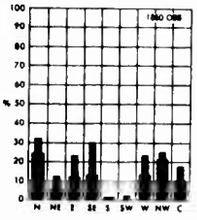
ISACHSEN



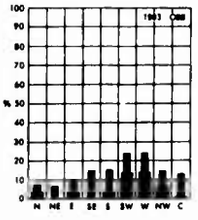
EUREKA



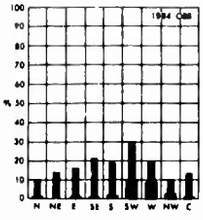
ALERT



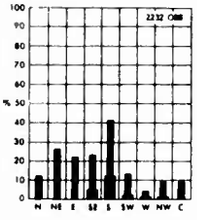
MOULD BAY



RESOLUTE



THULE



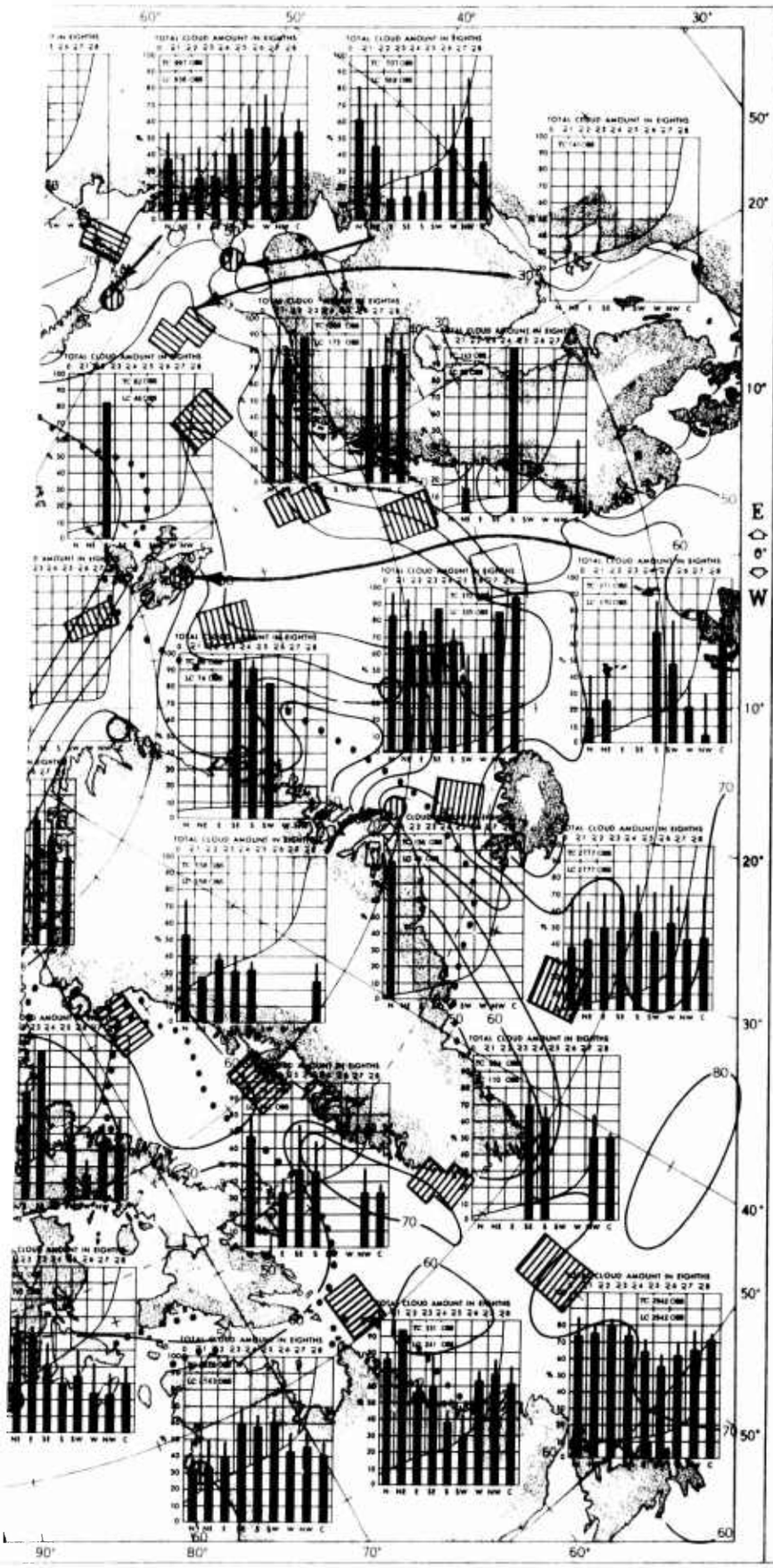
JULY

CLOUDIN



CLOUDINESS

CHART 83



Percentage Frequency of Total Cloud Amount 8/10 or more

Total Cloud Amount (TC) Percentage frequency of total cloud amounts equal to or less than amount intersected by the curve

(62% of all total cloud amounts were 7/8 or less)

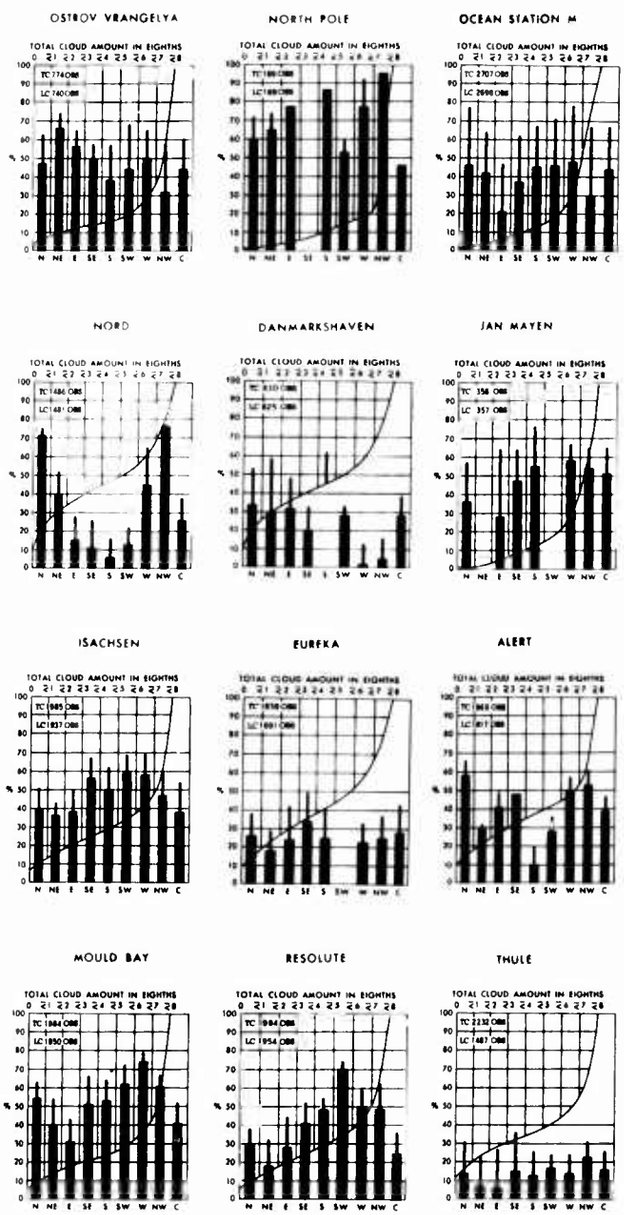
Lower Cloud Amount (LC) Percentage proportions of winds from each direction that were accompanied by low or middle cloud amounts greater than 5/8 and greater than 7/8

(52% of all NW winds were accompanied by lower cloud amounts >5/8 and 38% by lower cloud amounts >7/8)

[>5/8 includes 6/8 8/8 and 7/10 10/10, >7/8 includes 8/8 and 9/10 10/10]

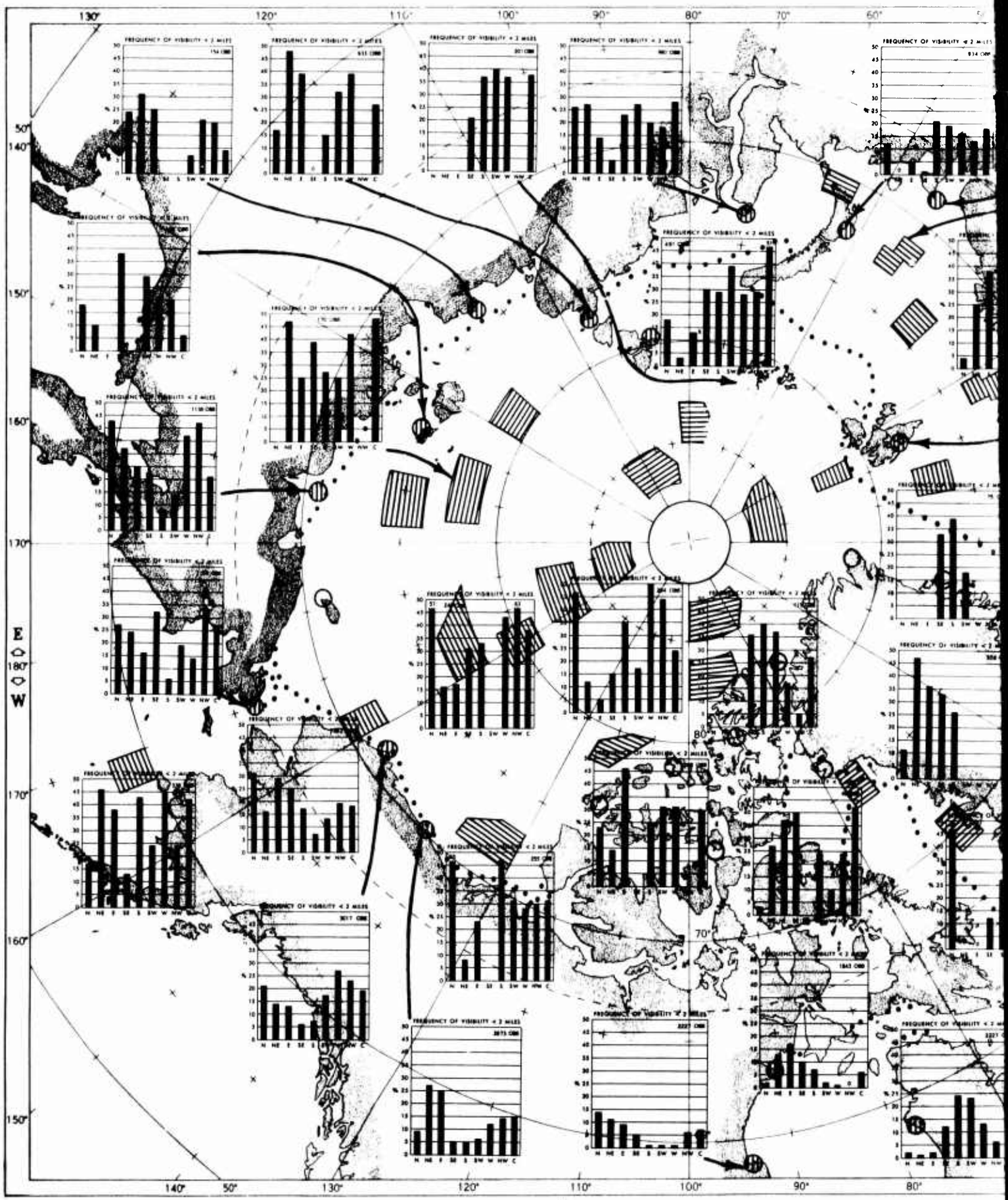
0 replaces bar when no low cloud amounts >5/8 were observed with winds from a direction

Bar (or 0) is omitted when the number of observations including both wind direction and low cloud amount was 10 or less for a direction



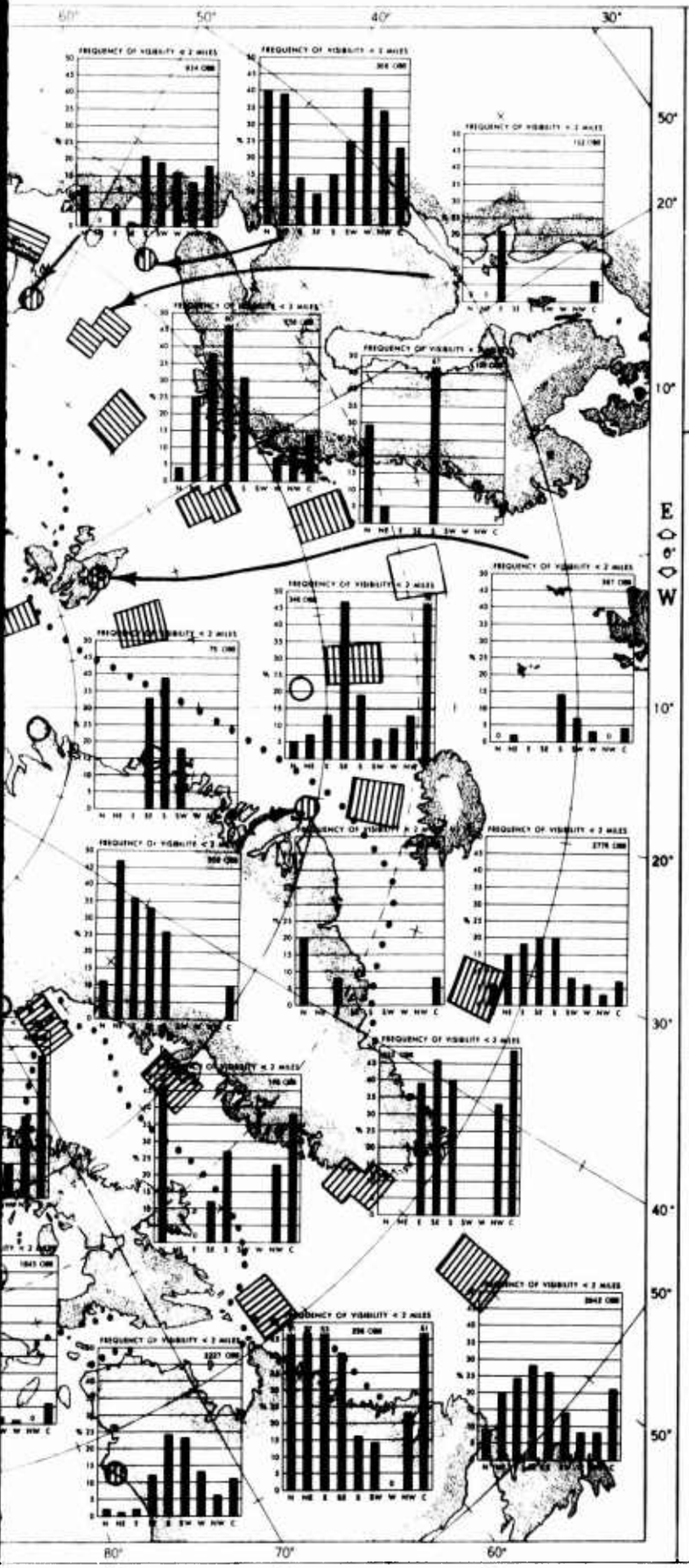
JULY

LOW VISIBILITY BY WIN

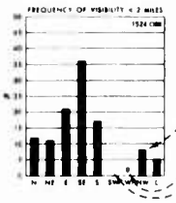


BY WIND DIRECTION

CHART 84



Percentage Frequency of Low Visibility by Wind Direction



Percentage of all visibility (and wind) observations reporting visibility less than 2 nautical miles

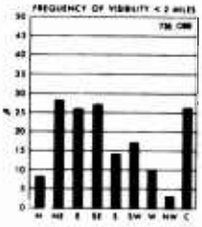
(8% of all NW winds were accompanied by visibility less than 2 miles)

"0" replaces bar when no visibilities < 2 miles were observed with winds from a direction

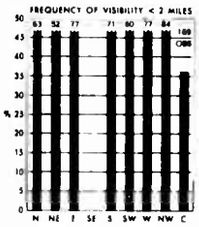
Bar or 0 omitted when number of observations was 10 or less

See chart 9 for low visibility incidence disregarding wind direction

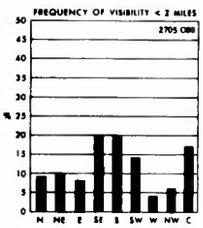
OSTROV VRANGELYA



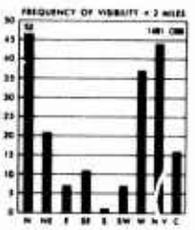
NORTH POLE



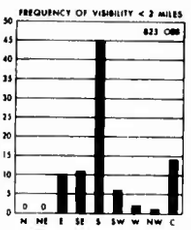
OCEAN STATION M



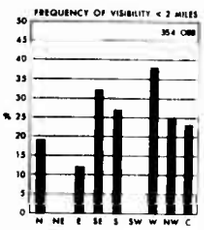
NORD



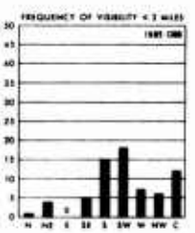
DANMARKSHAVEN



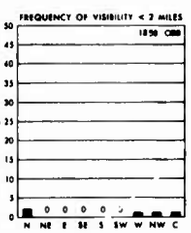
JAN MAYEN



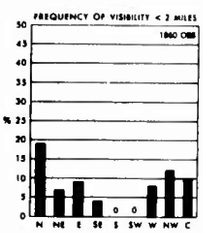
ISACHSEN



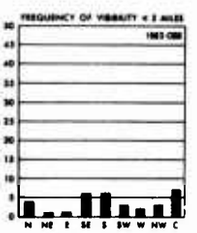
EUREKA



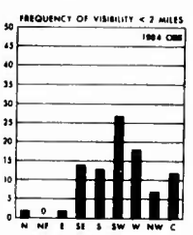
ALERT



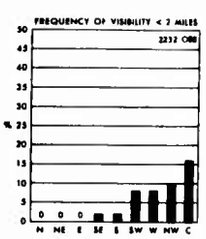
MOULD BAY



RESOLUTE



THULE



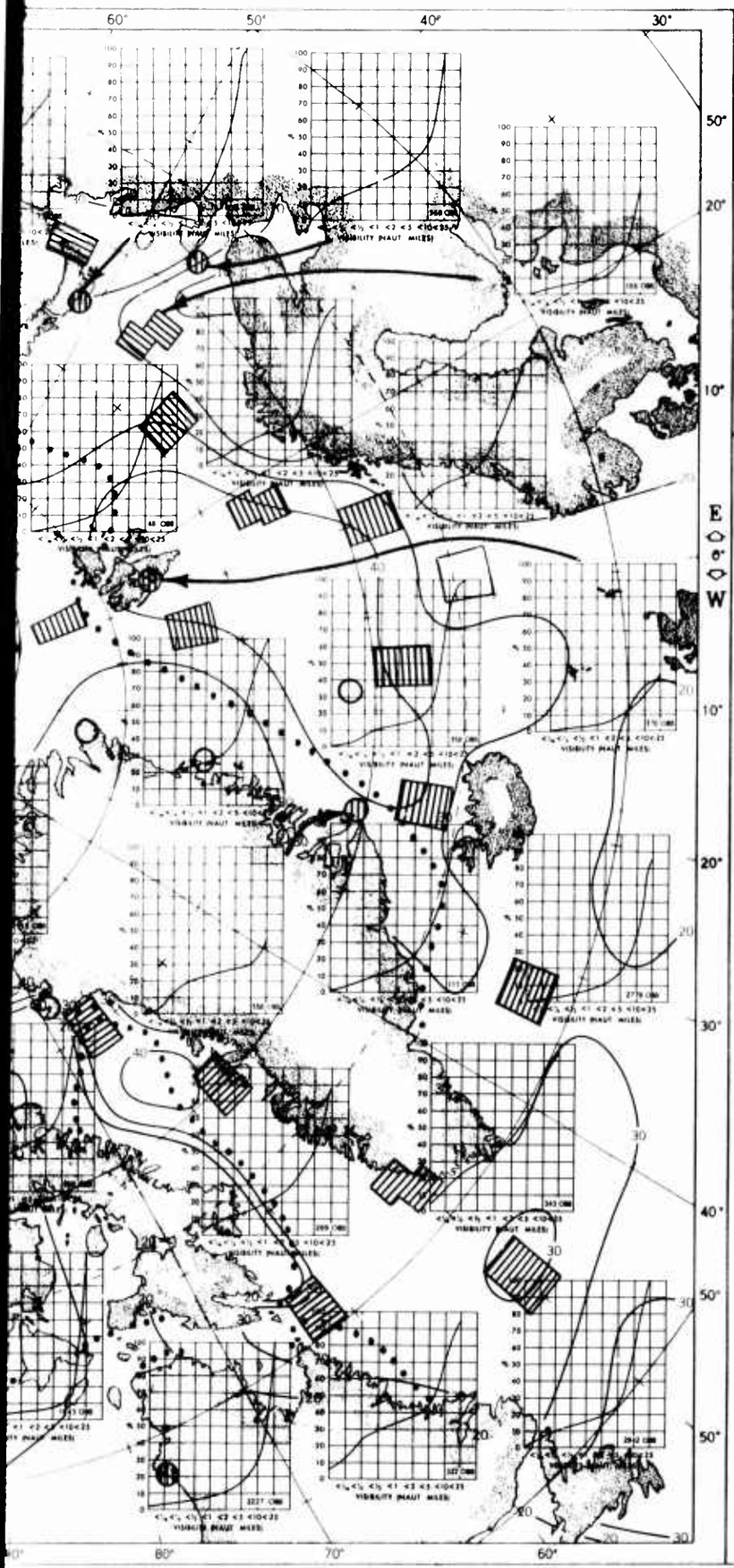
JULY

VISIBIL

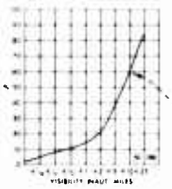


VISIBILITY

CHART 85



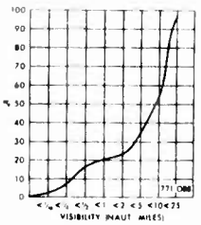
Percentage Frequency of Visibility <5 Nautical Miles



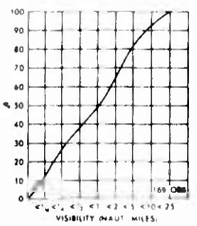
Percentage Frequency of Visibilities less than amount intersected by the curve

(60% of all visibilities were 10 nautical miles or less)

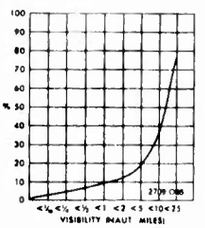
OSTROV VRANGELYA



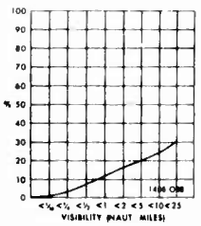
NORTH POLE



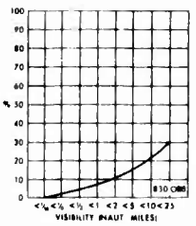
OCEAN STATION M



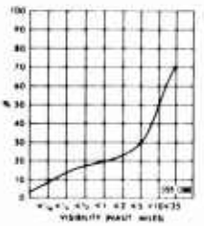
NORD



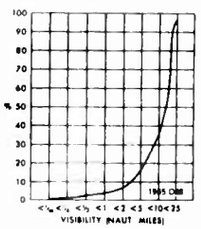
DANMARKSHAVEN



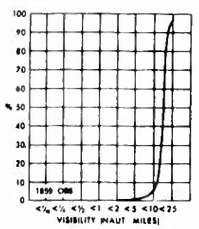
JAN MAYEN



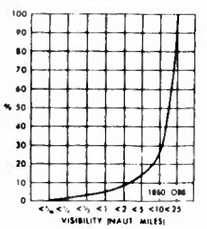
ISACHSEN



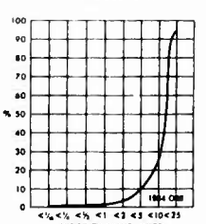
EUREKA



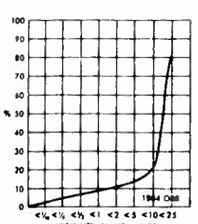
ALERT



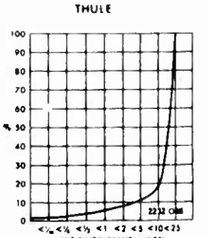
MOULD BAY



RESOLUTE

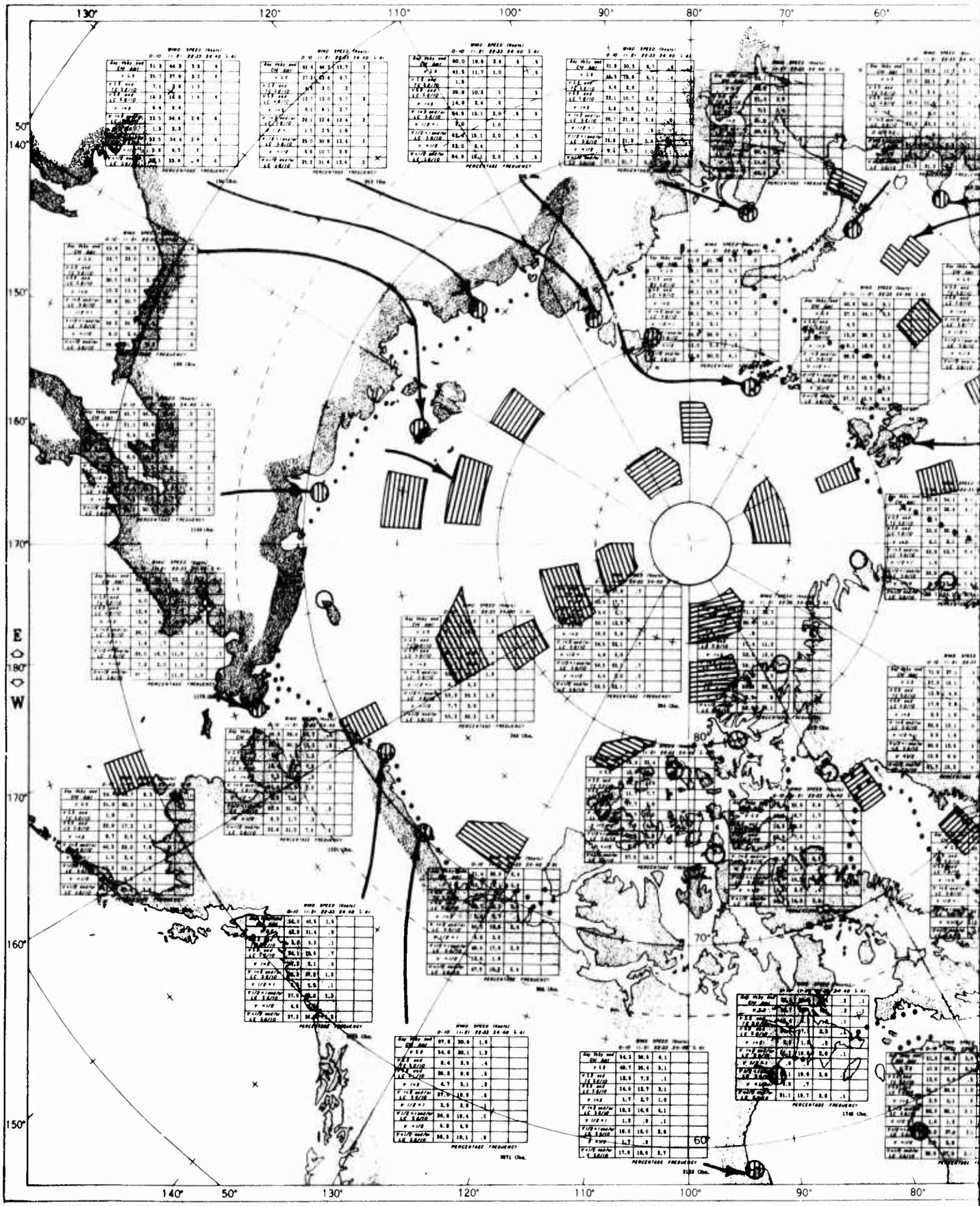


THULE



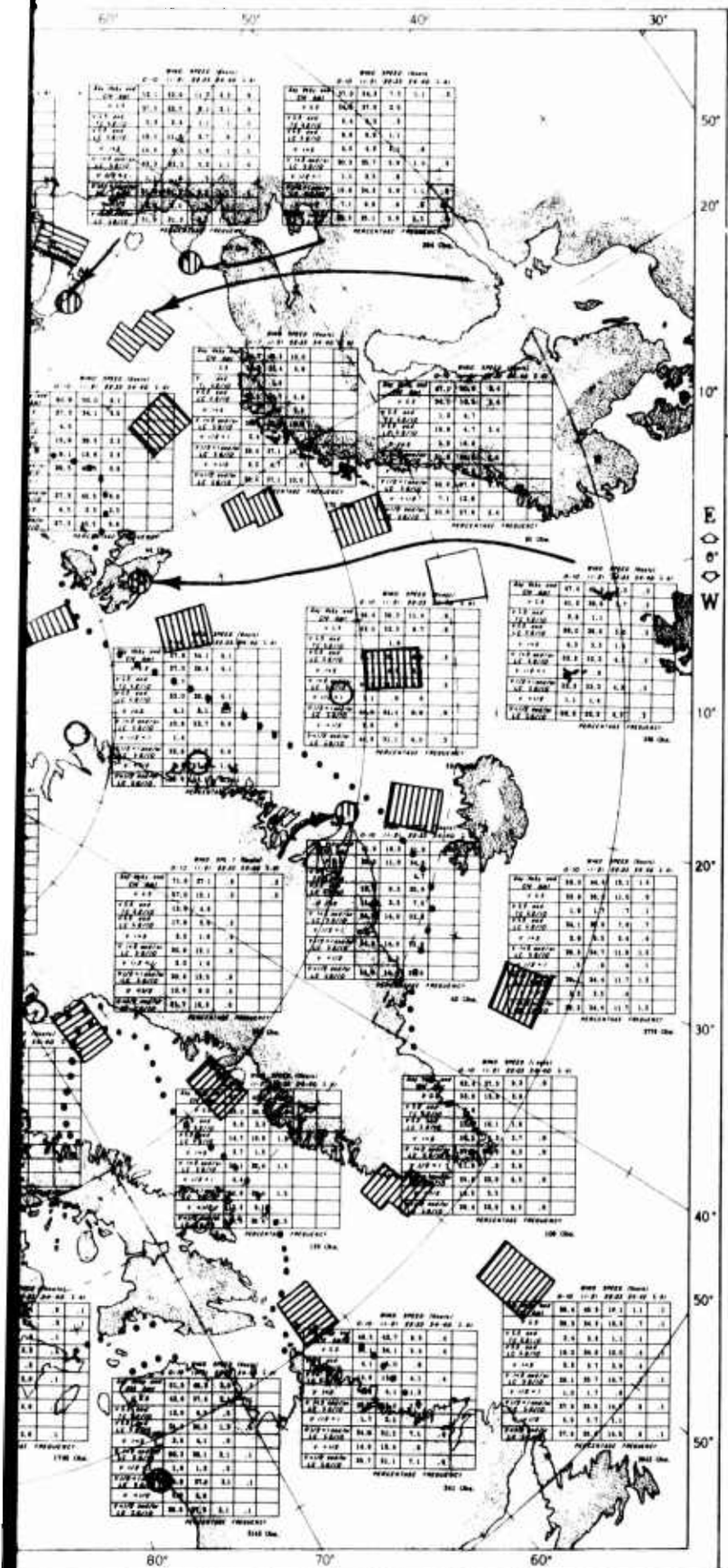
JULY

WIND-VISIBILITY-CL



BILITY-CLOUDINESS

CHART 86



Percentage Frequency of simultaneous occurrence of specified Wind, Visibility and Cloudiness conditions (based on the number of observations which reported wind speed visibility total cloud amount and low cloud amount)



Blank box indicates 0.0 percent

Notation

Any Vsby and Cld Amt = Simultaneous occurrence of wind speed with any visibility and cloud amount combination This provides a percentage distribution of wind speeds for the observations used in this tabulation

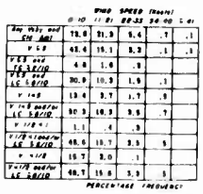
V = Visibility in Nautical Miles
1<5 indicates 1 to (but not including) 5 nautical miles

TC = Total Cloud Amount

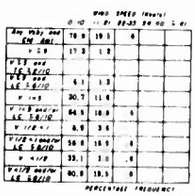
LC = Low Cloud Amount (with base approximately 8000 feet or lower)

Ocean Area 166% of the observations on which this tabulation was based reported speed 22-33 knots simultaneous with visibility 1-5 nautical miles and/or low cloud amount 5-6-10)

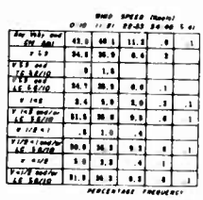
OSTROV VRANGELYA



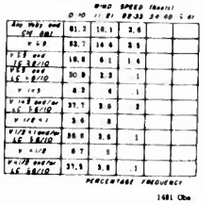
NORTH POLE



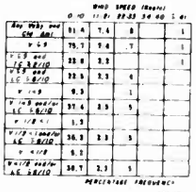
OCEAN STATION M



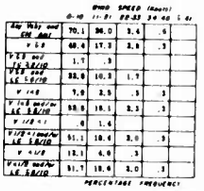
NORD



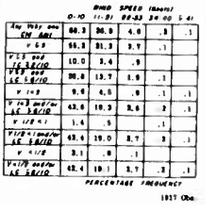
DANMARKSHAVEN



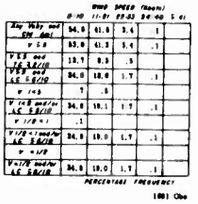
JAN MAYEN



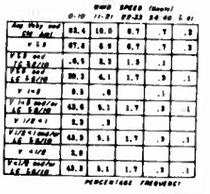
ISACHSEN



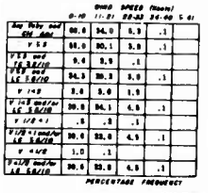
EUREKA



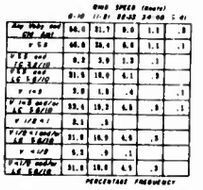
ALERT



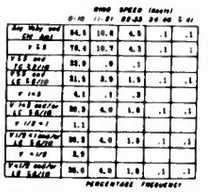
MOULD BAY



RESOLUTE



THULE



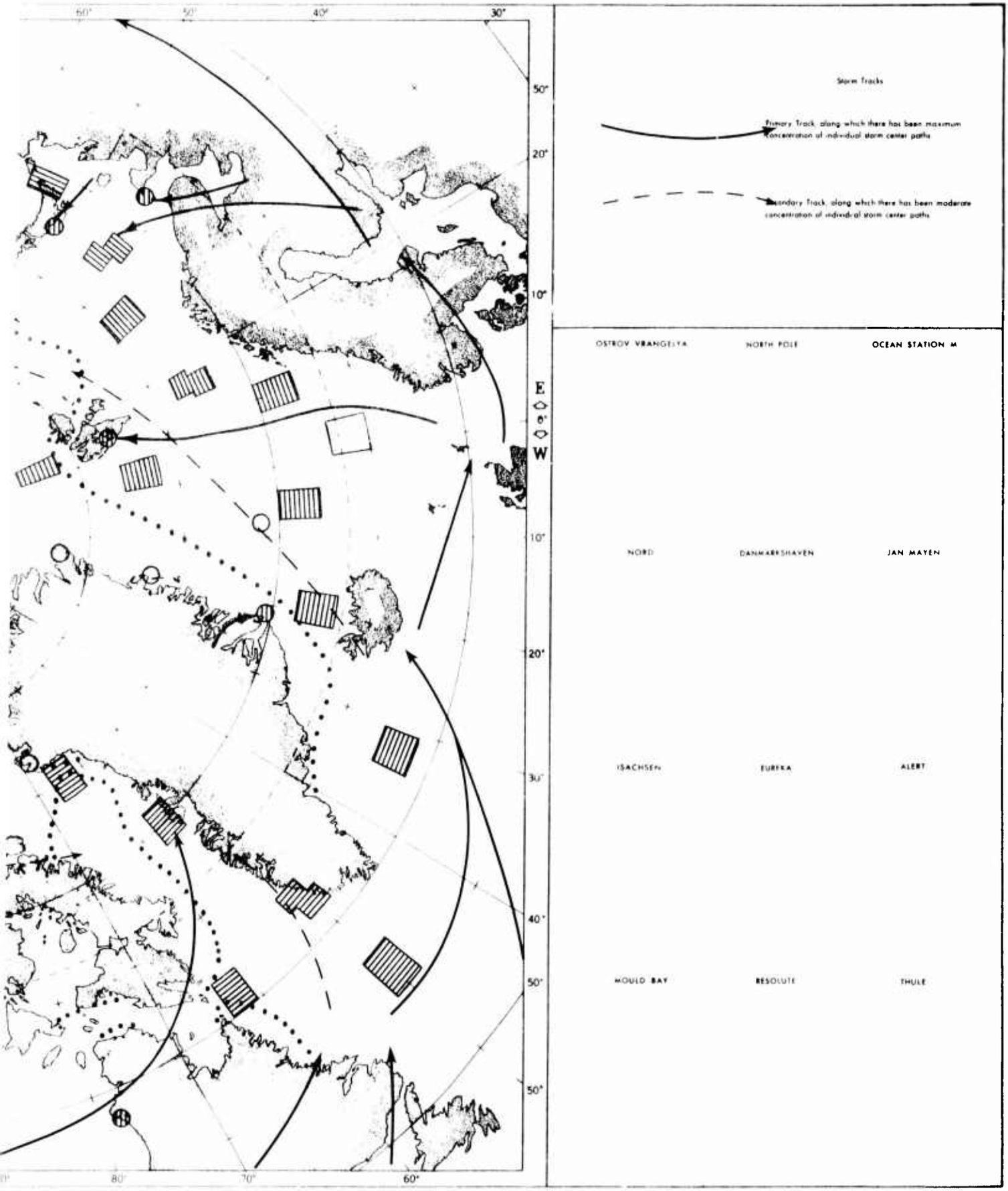
JULY

STORM TR



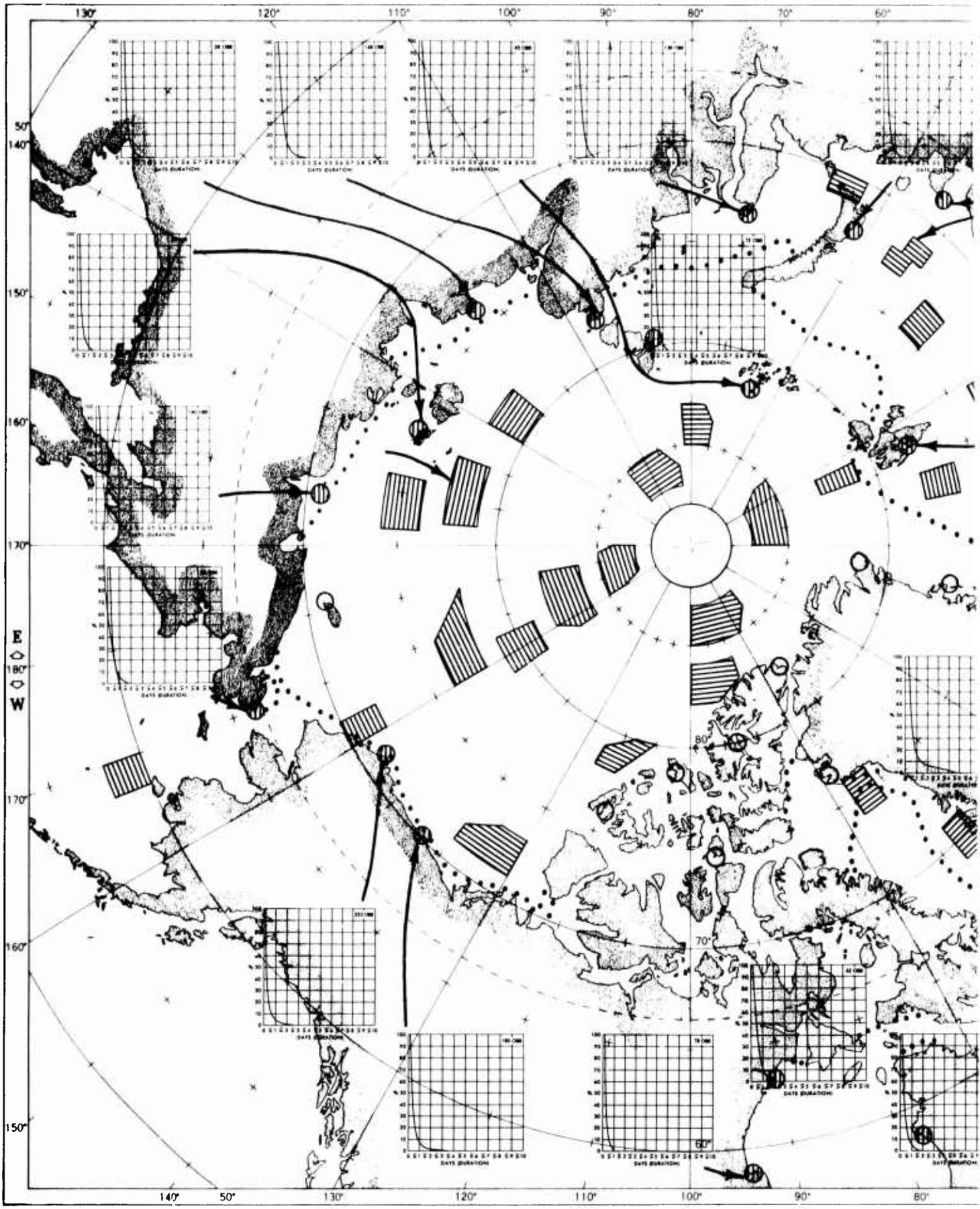
)RM TRACKS

CHART 87



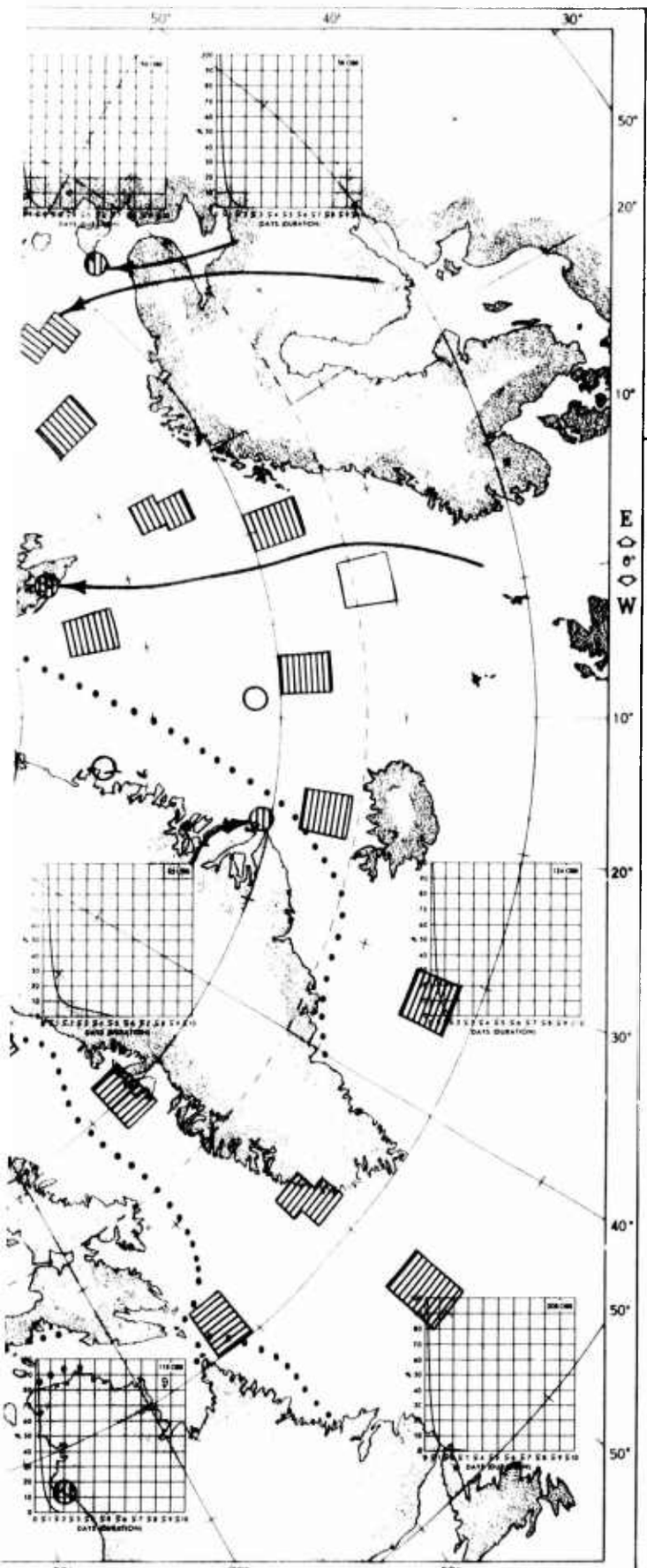
JULY

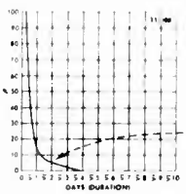
LOW VISIBILITY PE



Y PERSISTENCE

CHART 88

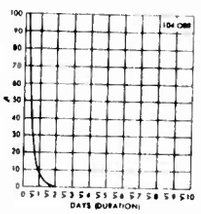




Percentage Frequency of Low Visibility (< 2 nautical miles) equal to or greater than number of days intersected by the curve

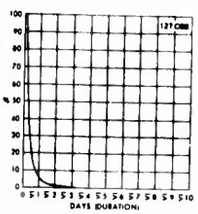
[6% of low visibilities (< 2 miles) persist at least two days]

OSTROV VRANGELYA

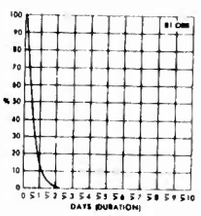


NORTH POLE

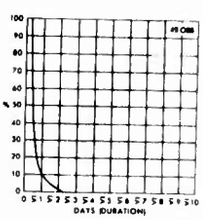
OCEAN STATION M



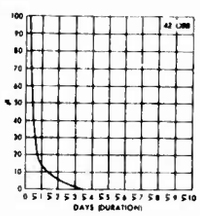
NORD



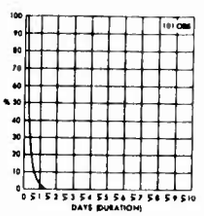
DANMARKSHAVEN



JAN MAYEN



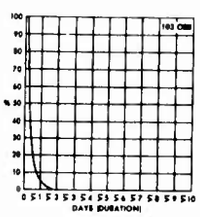
ISACHSEN



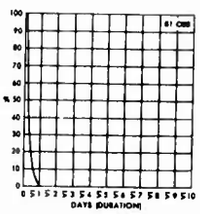
EUREKA

INSUFFICIENT DATA

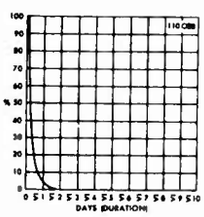
ALERT



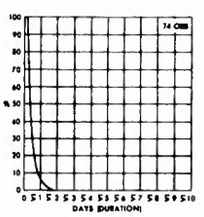
MOULD BAY



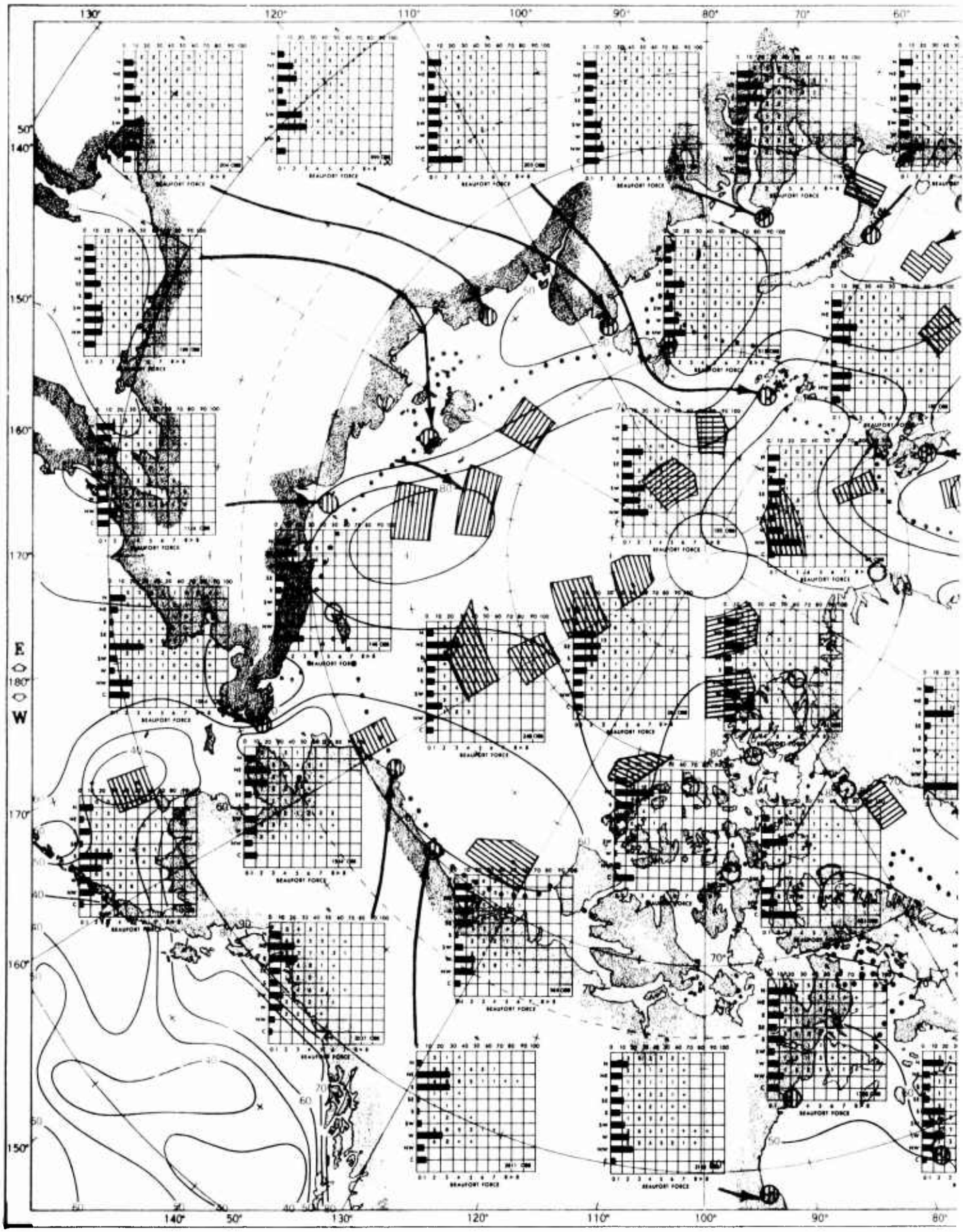
RESOLUTE



THULE

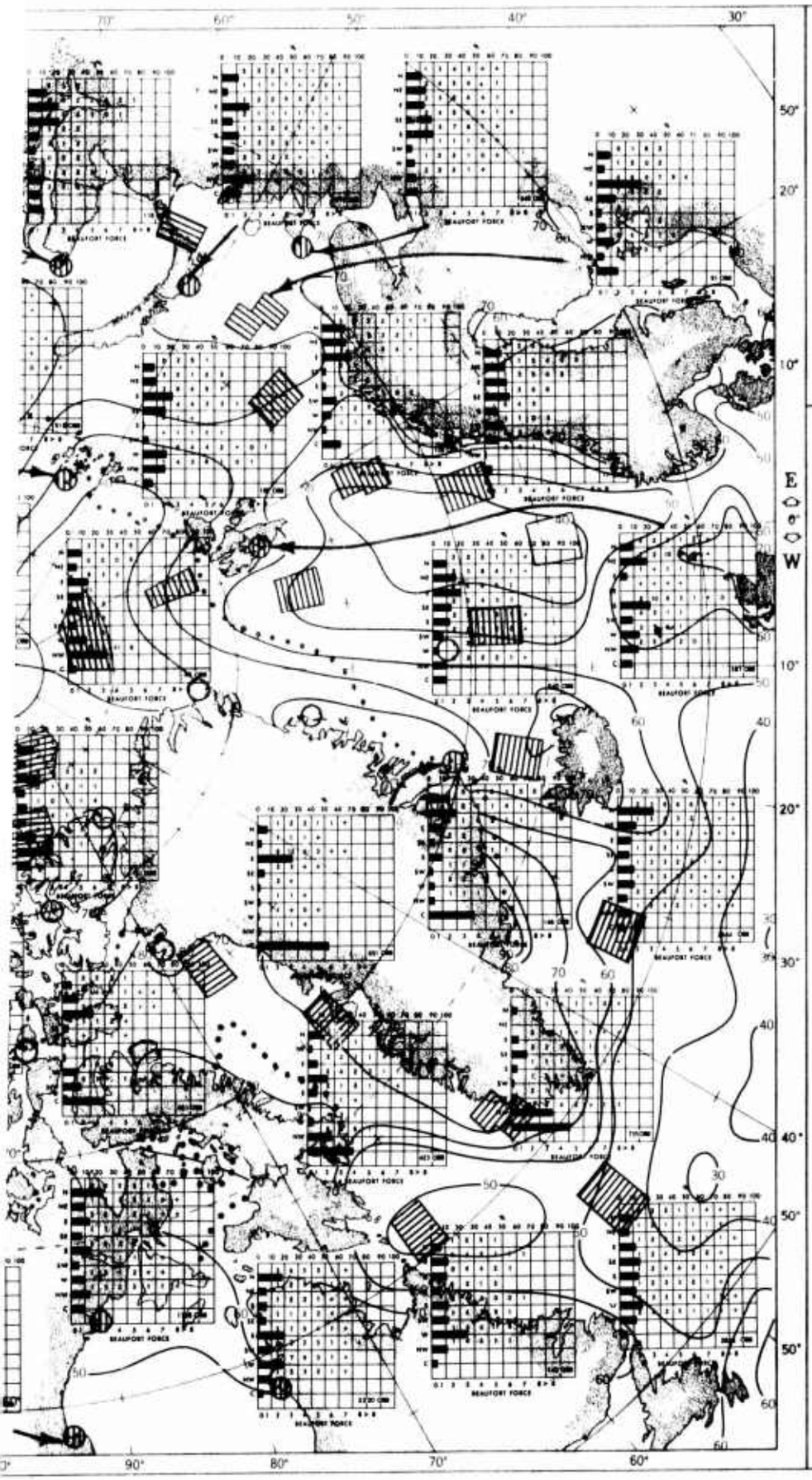


AUGUST SURFACE

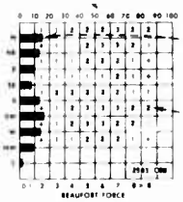


SURFACE WIND

CHART 89



Percentage Frequency of Wind Speed Beaufort Force 3 or less (≤ 10 Knots)



Direction Frequency (Top Scale) Bars represent percentage frequency of wind observed from each direction (& calm)

– (14% of all winds were from N)

Speed Frequency (Bottom Scale) percentage frequency of wind speed by Beaufort Force

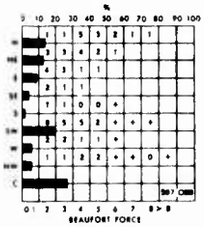
– (2% of all winds from SW were greater than Beaufort Force 8)

All percentages rounded to nearest whole percent

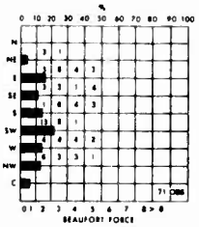
Calm includes Beaufort Force 1 (0-3 knots)

+ indicates less than 1/2 percent

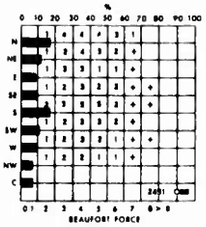
OSTROV VRANGELYA



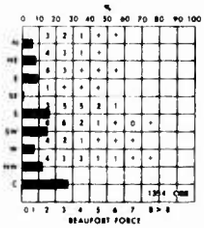
NORTH POLE



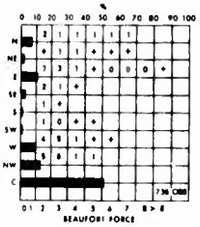
OCEAN STATION M



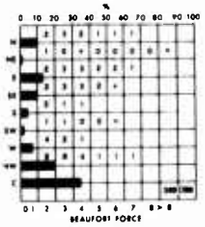
NORD



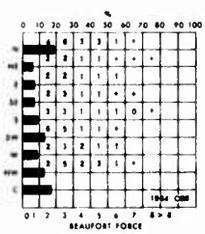
DANMARKSHAVEN



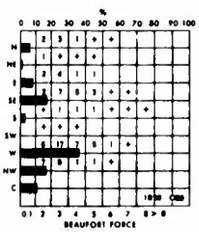
JAN MAYEN



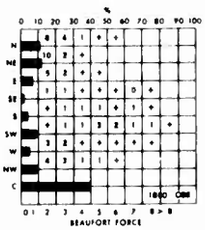
ISACHSEN



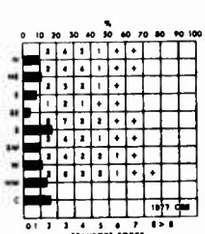
EUREKA



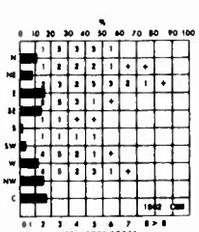
ALERT



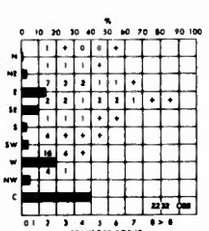
MOULD BAY



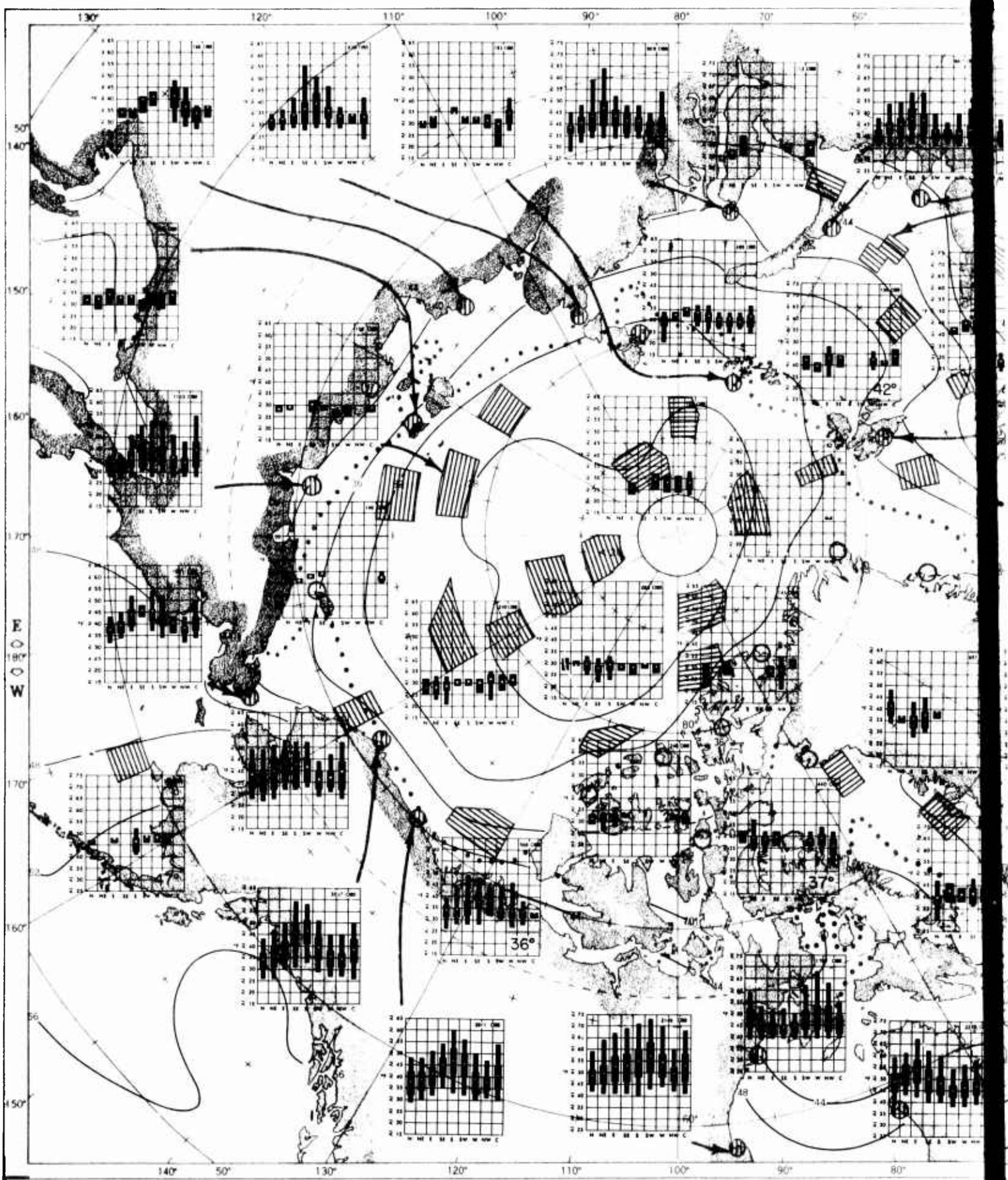
RESOLUTE



THULE

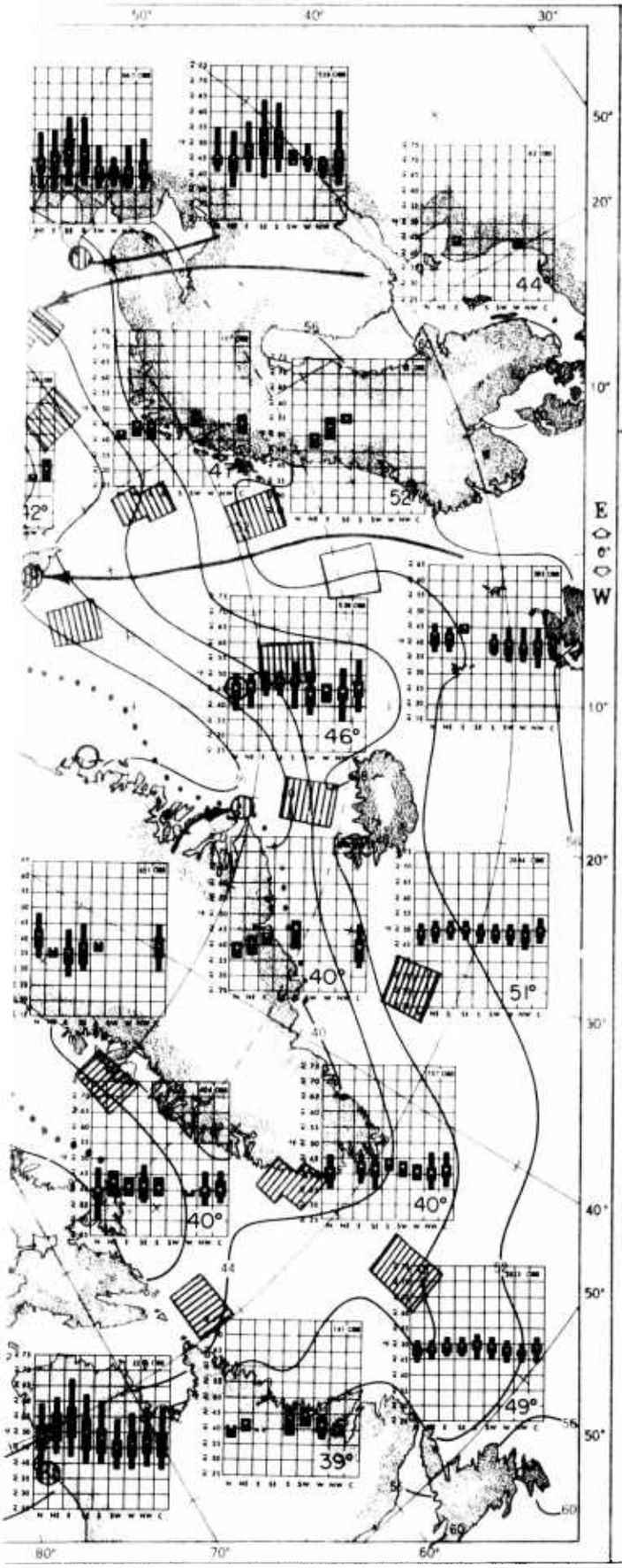


AUGUST AIR TEMPERATURE BY W

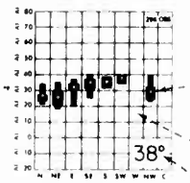


Y WIND DIRECTION

CHART 90



Mean Air Temperature, °F



Distribution of Temperature Observed with each Wind Direction

(a) Mean

(b) 95%, 75%, 25% and 5% of all temperatures were equal to or less than the temperatures indicated by

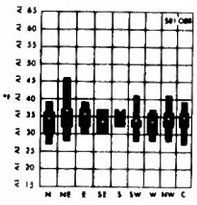
(With NW winds, the mean temperature was 29°F, 5% of the temperatures were 23°F or less, 25% were 24°F or less, etc.)

Mean temperatures and frequencies are omitted when number of observations was 10 or less

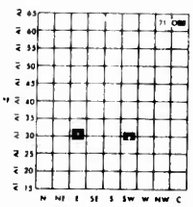
See chart 2 for temperature distribution disregarding wind direction

Mean Water Temperature (when data available)

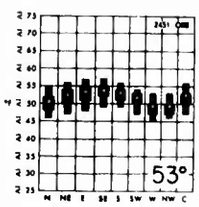
OSTROV VRANGELYA



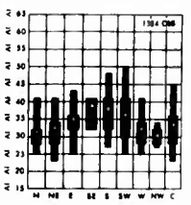
NORTH POLE



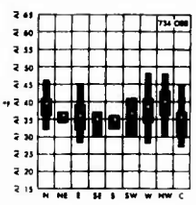
OCEAN STATION M



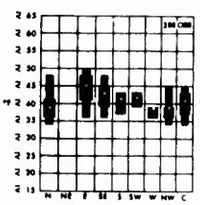
NORD



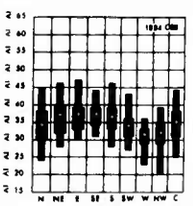
DANMARKSHAVEN



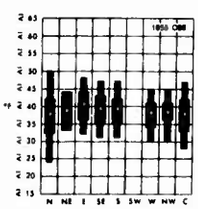
JAN MAYEN



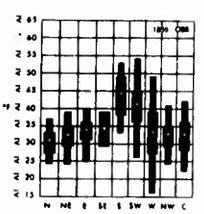
ISACHSEN



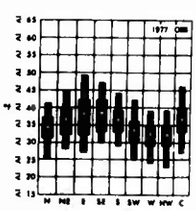
EUREKA



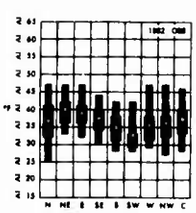
ALERT



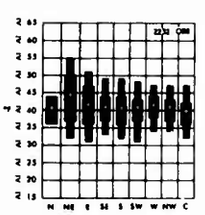
MOULD BAY



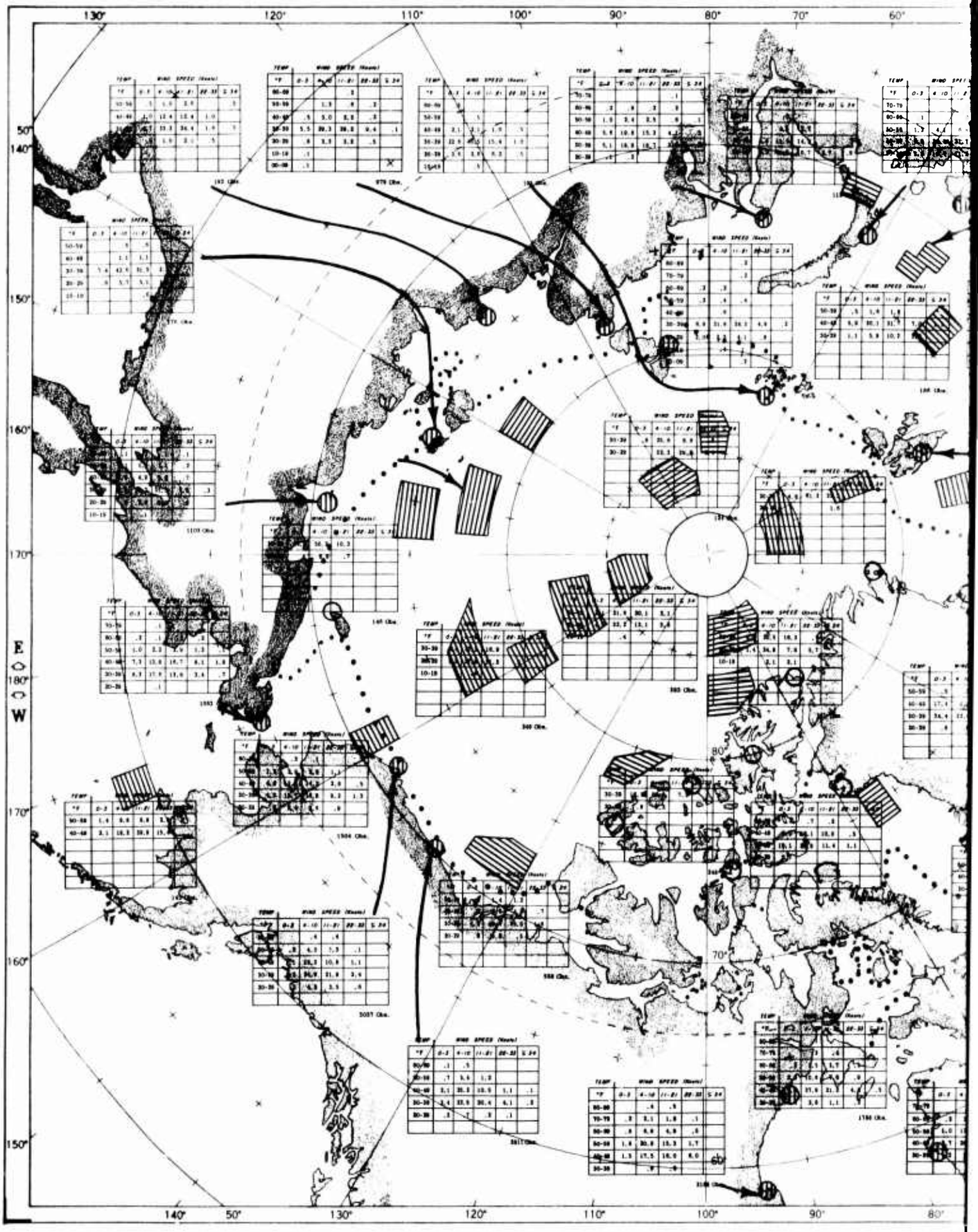
RESOLUTE



THULE

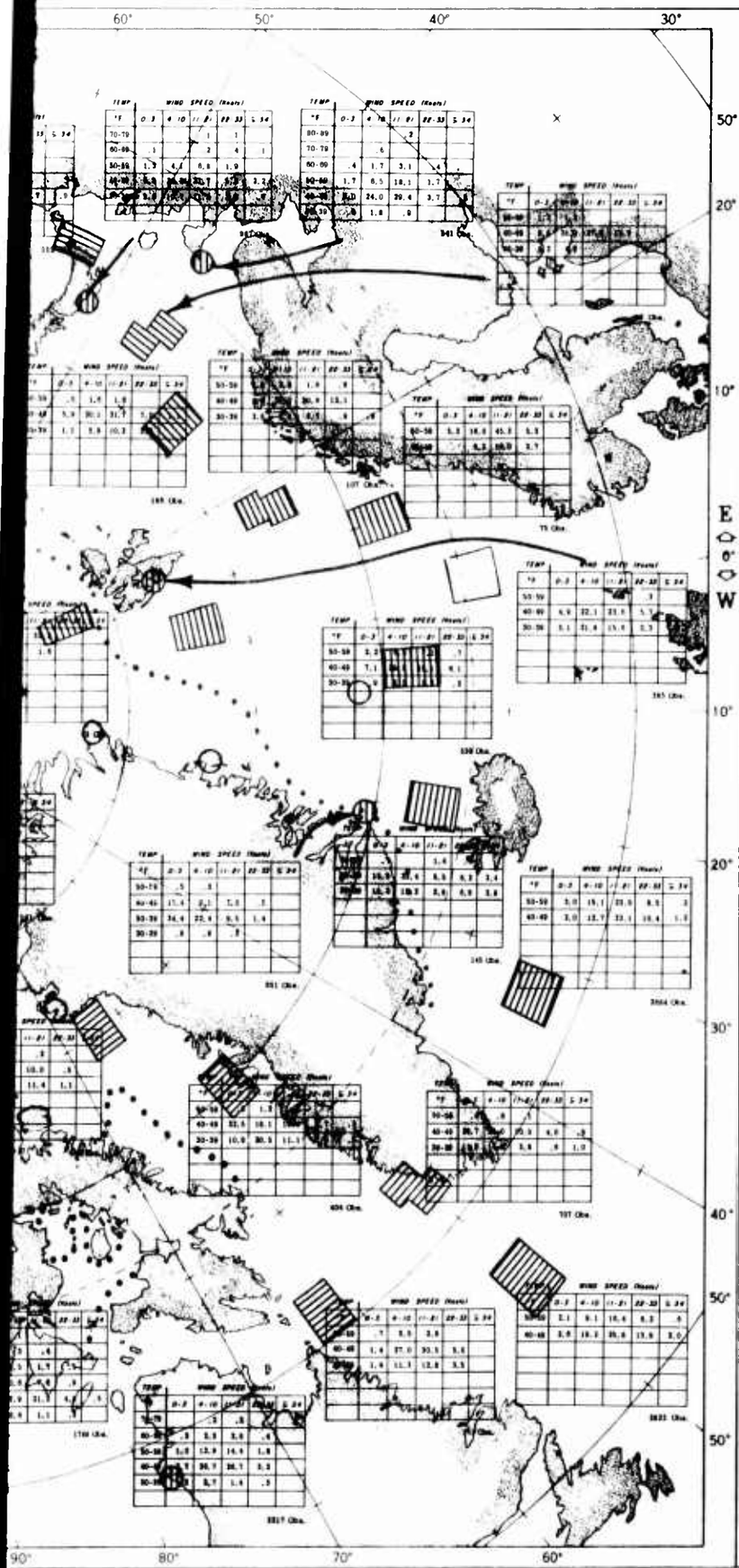


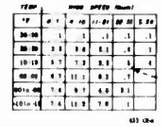
AUGUST AIR TEMPERATURE



ATURE vs. WIND SPEED

CHART 91





Percentage Frequency of simultaneous occurrence of specified Temperature groups and Wind Speed

(5% of the observations on which this tabulation was based reported wind speed 22-33 knots simultaneous with temperature from 10° through 19°F.)

OSTROV VRANGELYA

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
70-79		.2			
60-69	.2	.3	.5		
50-59	.5			.2	
40-49	1.0	3.1	1.8	.3	
30-39	23.1	33.6	33.3	4.8	1.4
20-29	1.9	1.2	2.2		.3
10-19		.2			
00-09	.5				

581 Obs.

NORTH POLE

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-59		.1	.1		
40-49	5.7	21.4	37.8	11.6	3
30-39	1.2	6.9	11.1	3.8	.1

71 Obs.

OCEAN STATION M

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
60-69			.1	.1	
50-59	5.7	21.4	37.8	11.6	3
40-49	1.2	6.9	11.1	3.8	.1

2451 Obs.

NORD

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-59	.4	.7	1.0		
40-49	3.9	6.7	3.8	.3	
30-39	17.8	37.7	9.7	1.6	.1
20-29	5.2	8.6	2.1	.2	
10-19	.2	.1			

1354 Obs.

DANMARKSHAVEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-59	.1	1.2	.4	.1	
40-49	8.3	11.7	2.3	.5	
30-39	38.9	35.7	6.6	.8	.1
20-29	5.2	1.8	.1		

734 Obs.

JAN MAYEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-59		1.3	1.3	.8	
40-49	30.4	18.1	9.0	3.4	
30-39	13.7	30.4	8.3	1.8	.3

387 Obs.

ISACHSEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-59		.3			
40-49	3.6	10.7	3.3	.3	
30-39	10.1	37.6	15.7	3.9	.1
20-29	2.8	5.8	6.0	.7	
10-19	.3	.8	.3		

1984 Obs.

EUREKA

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-59	.2	1.0	.5		
40-49	4.2	28.8	10.7	.6	
30-39	6.0	31.2	15.3	1.0	.2
20-29	.8	2.2	.5		

1855 Obs.

ALERT

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-59	.1	.8	1.3	.6	.1
40-49	6.9	3.7	3.8	1.3	.5
30-39	24.0	38.1	6.9	2.2	.3
20-29	8.6	11.0	1.8	.2	
10-19	1.3	.6			
00-08	.1				

1880 Obs.

MOULD BAY

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-59	.5	.4	.3		
40-49	4.0	8.8	5.9	.3	
30-39	10.0	38.0	17.3	2.8	.1
20-29	2.0	7.1	4.3	.3	
10-19	.1	.3	.3		

1977 Obs.

RESOLUTE

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-59	.2	.6	.4		
40-49	5.3	13.0	9.1	2.2	.2
30-39	10.3	28.6	18.6	6.0	.7
20-29	1.1	3.4	2.4	.2	
10-19	.1	.1			
00-09			.1		

1982 Obs.

THULE

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-59	.9	3.3	1.6	.1	
40-49	30.1	36.5	4.2	1.7	.1
30-39	18.4	18.1	3.6	1.3	.4
20-29	1.1	.6	.1		

2233 Obs.

AUGUST PRECIPITATION BY WIND



WIND DIRECTION

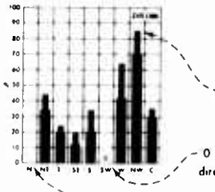
CHART 92



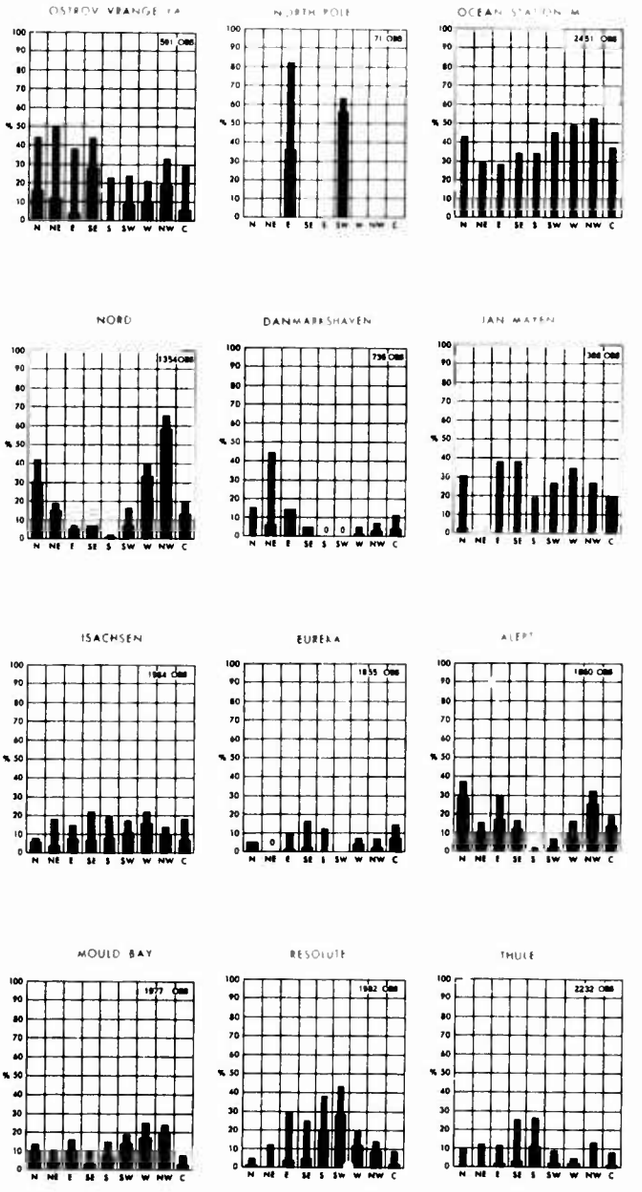
Percentage Frequency of Precipitation by Wind Direction

(a) Percentage of all present weather (and wind) observations reporting precipitation

(b) Percentage of observations recording liquid or frozen precipitation as indicated by

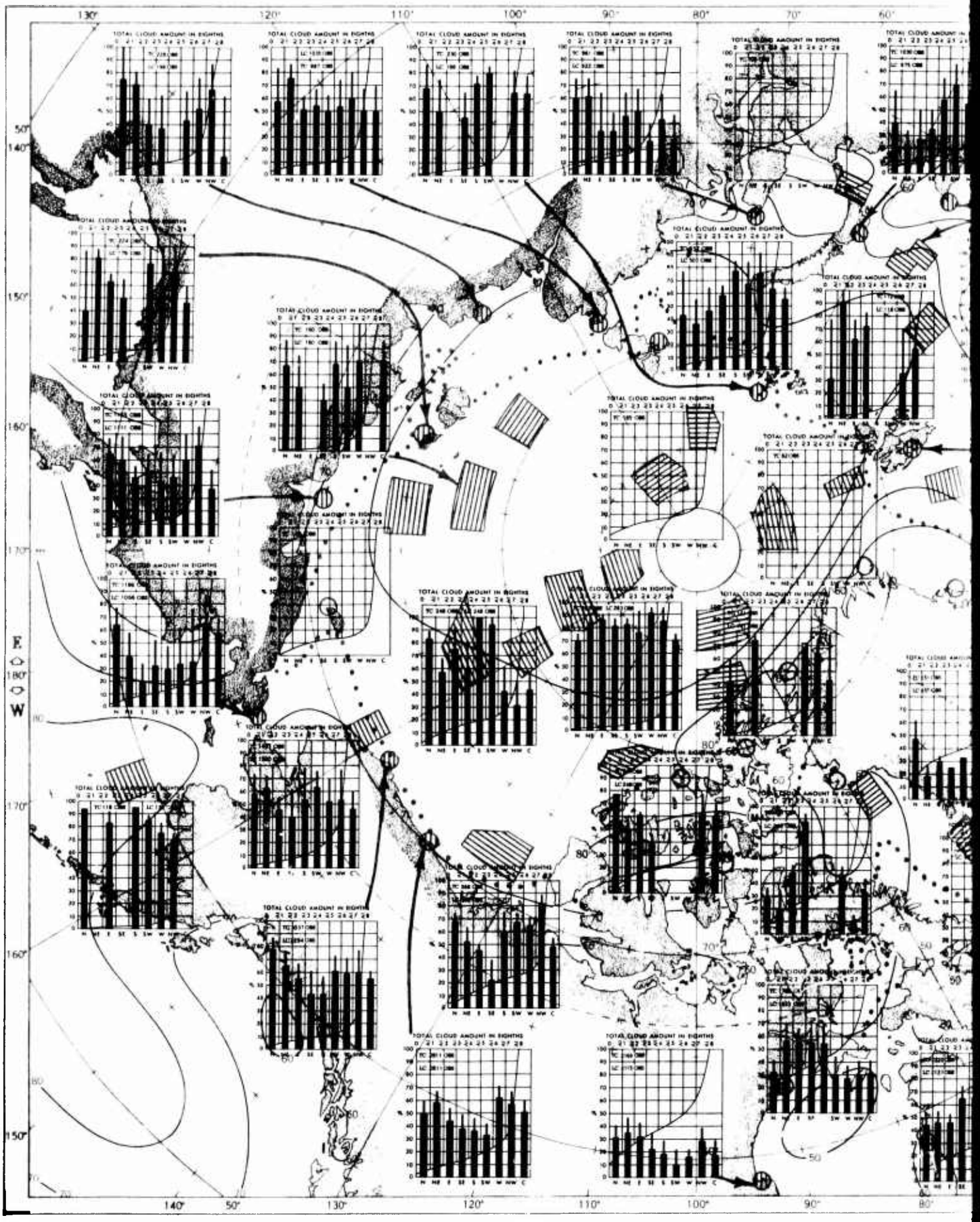


See chart 6 for precipitation incidence disregarding wind direction



AUGUST

CLOUDIN



UDINESS

CHART 93



Percentage Frequency of Total Cloud Amount 8/10 or more

Total Cloud Amount (TC) Percentage frequency of total cloud amounts equal to or less than amount intersected by the curve

(62% of all total cloud amounts were 7/8 or less)

Lower Cloud Amount (LC) Percentage proportions of winds from each direction that were accompanied by low or middle cloud amounts greater than 5/8 and greater than 7/8

(52% of all NW winds were accompanied by lower cloud amounts >5/8 and 38% by lower cloud amounts >7/8)

[>5/8 includes 6/8 8/8 and 7/10 10/10, >7/8 includes 8/8 and 9/10 10/10]

0 replaces bar when no low cloud amounts >5/8 were observed with winds from a direction

Bar (or 0) is omitted when the number of observations including both wind direction and low cloud amount was 10 or less for a direction

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

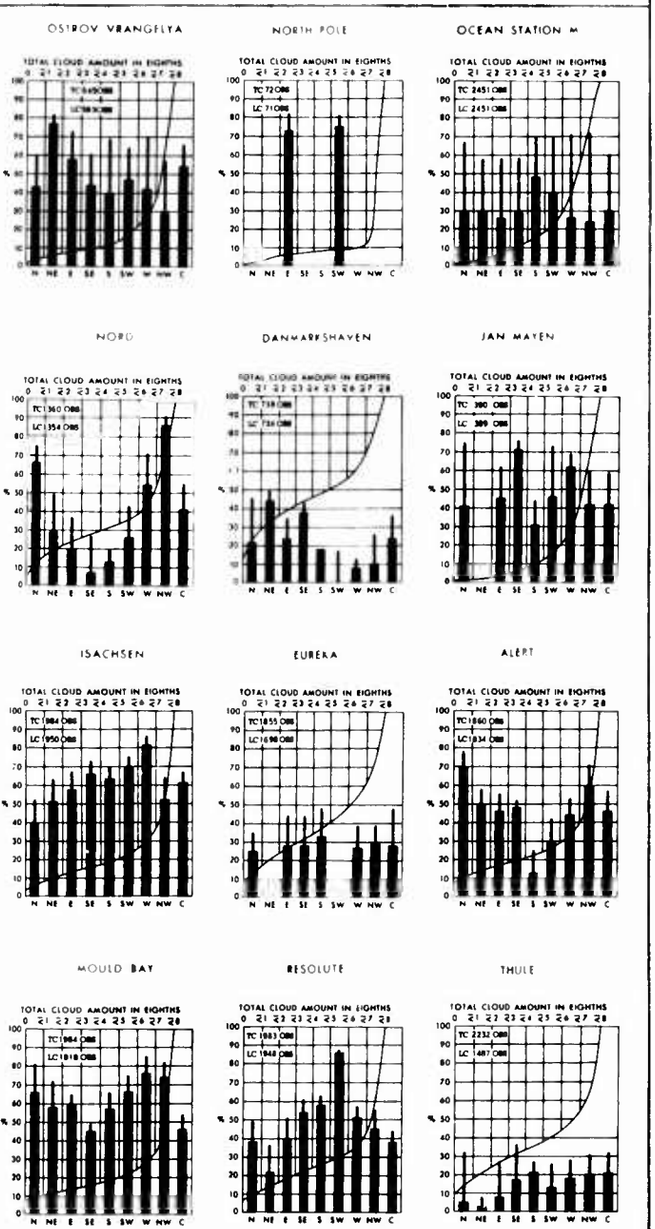
EUREKA

ALERT

MOULD BAY

RESOLUTE

THULE



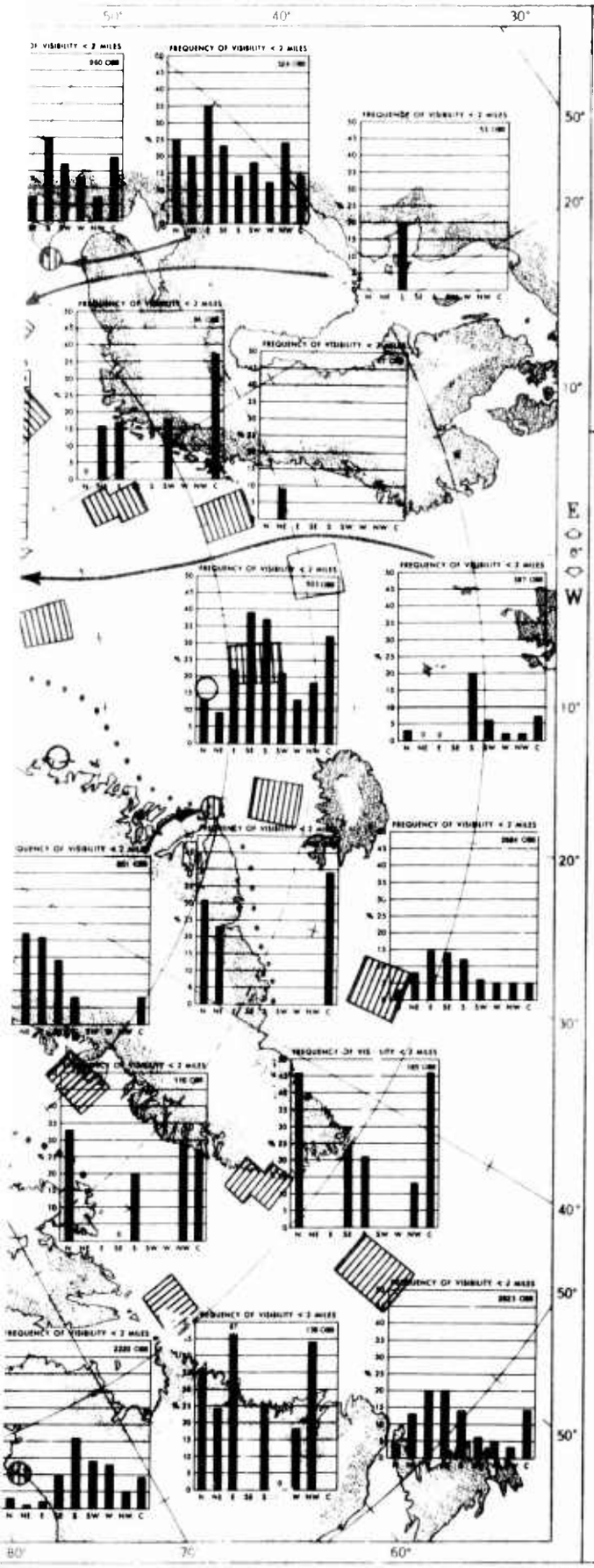
AUGUST

LOW VISIBILITY BY WIN



WIND DIRECTION

CHART 94



Percentage Frequency of Low Visibility by Wind Direction

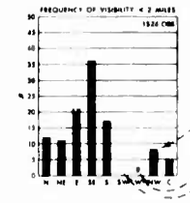
Percentage of all visibility (and wind) observations reporting visibility less than 2 nautical miles

(8% of all NW winds were accompanied by visibility less than 2 miles)

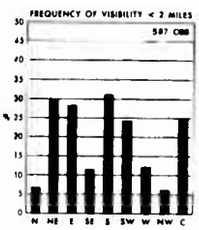
0 replaces bar when no visibilities <2 miles were observed with winds from a direction

Bar or 0 omitted when number of observations was 10 or less

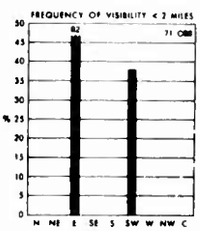
See chart 9 for low visibility incidence disregarding wind direction



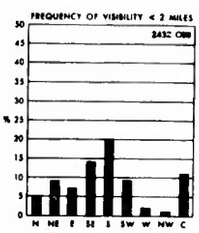
OSTROV VRANGELYA



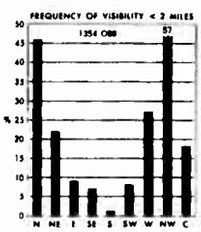
NORTH POLE



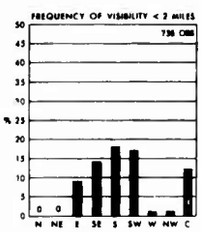
OCEAN STATION M



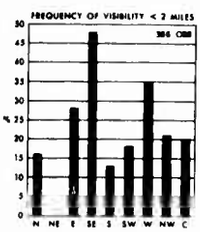
NORD



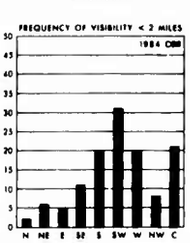
DANMARKSHAVEN



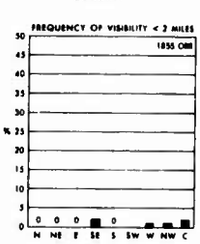
JAN MAYEN



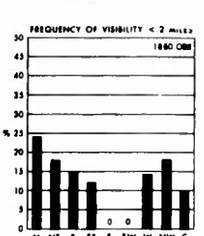
ISACHSEN



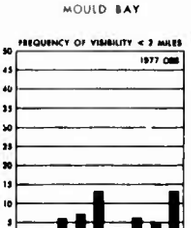
EUREKA



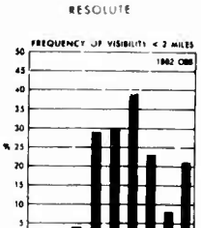
ALERT



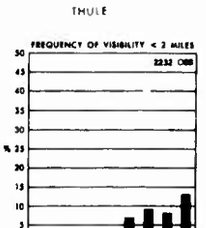
MOULD BAY



RESOLUTE

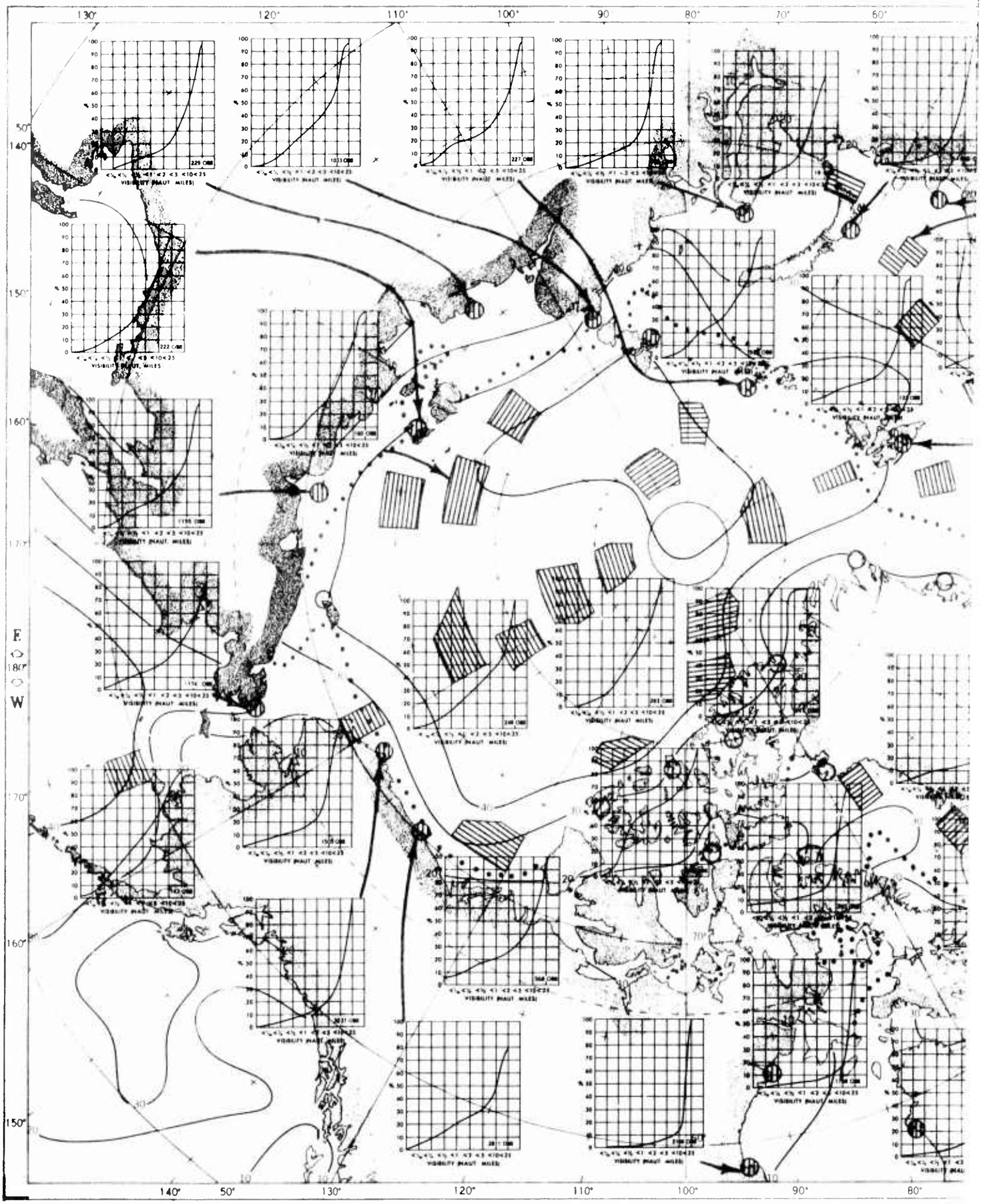


THULE



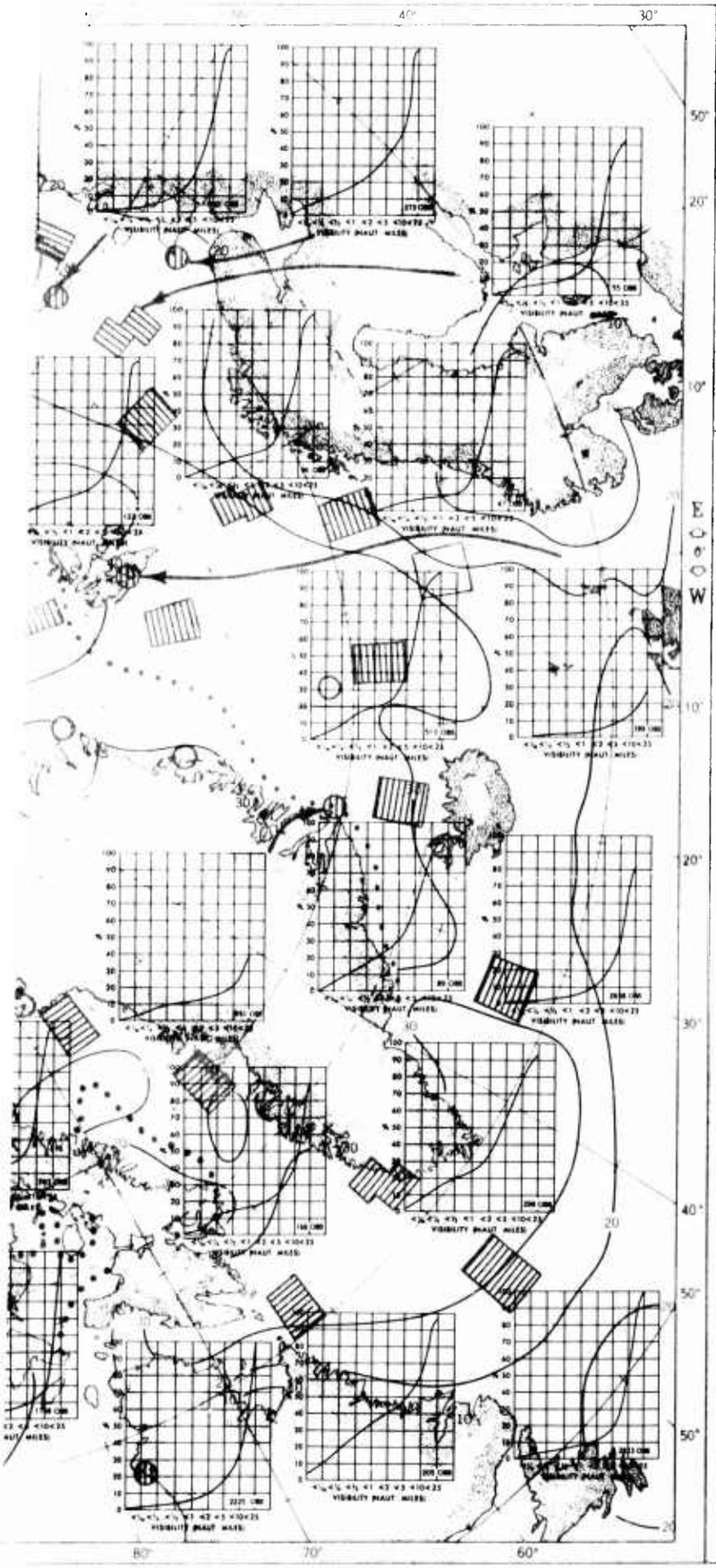
AUGUST

VISIBILITY

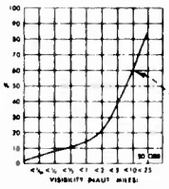


ISIBILITY

CHART 95



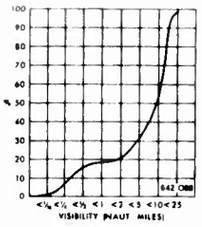
Percentage Frequency of Visibility <5 Nautical Miles



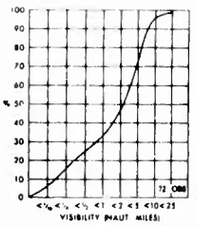
Percentage Frequency of Visibilities less than amount intersected by the curve

(60% of all visibilities were 10 nautical miles or less)

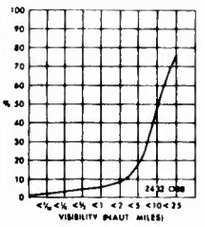
OSTROV VRANGELYA



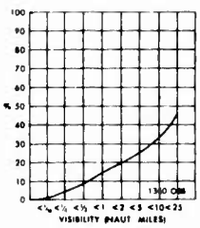
NORTH POLE



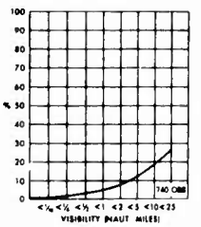
OCEAN STATION M



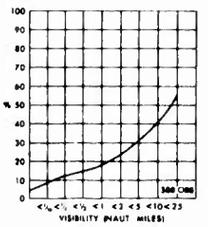
NORD



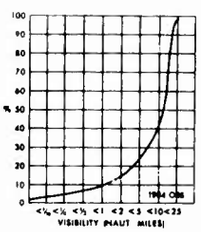
DANMARKSHAVEN



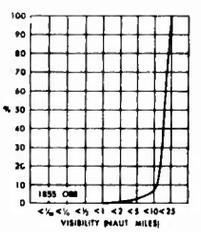
JAN MAYEN



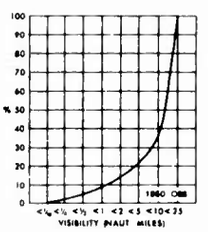
ISACHSEN



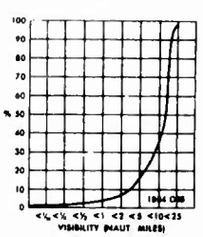
EUREKA



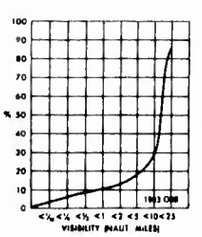
ALERT



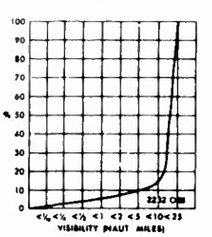
MOULD BAY



RESOLUTE

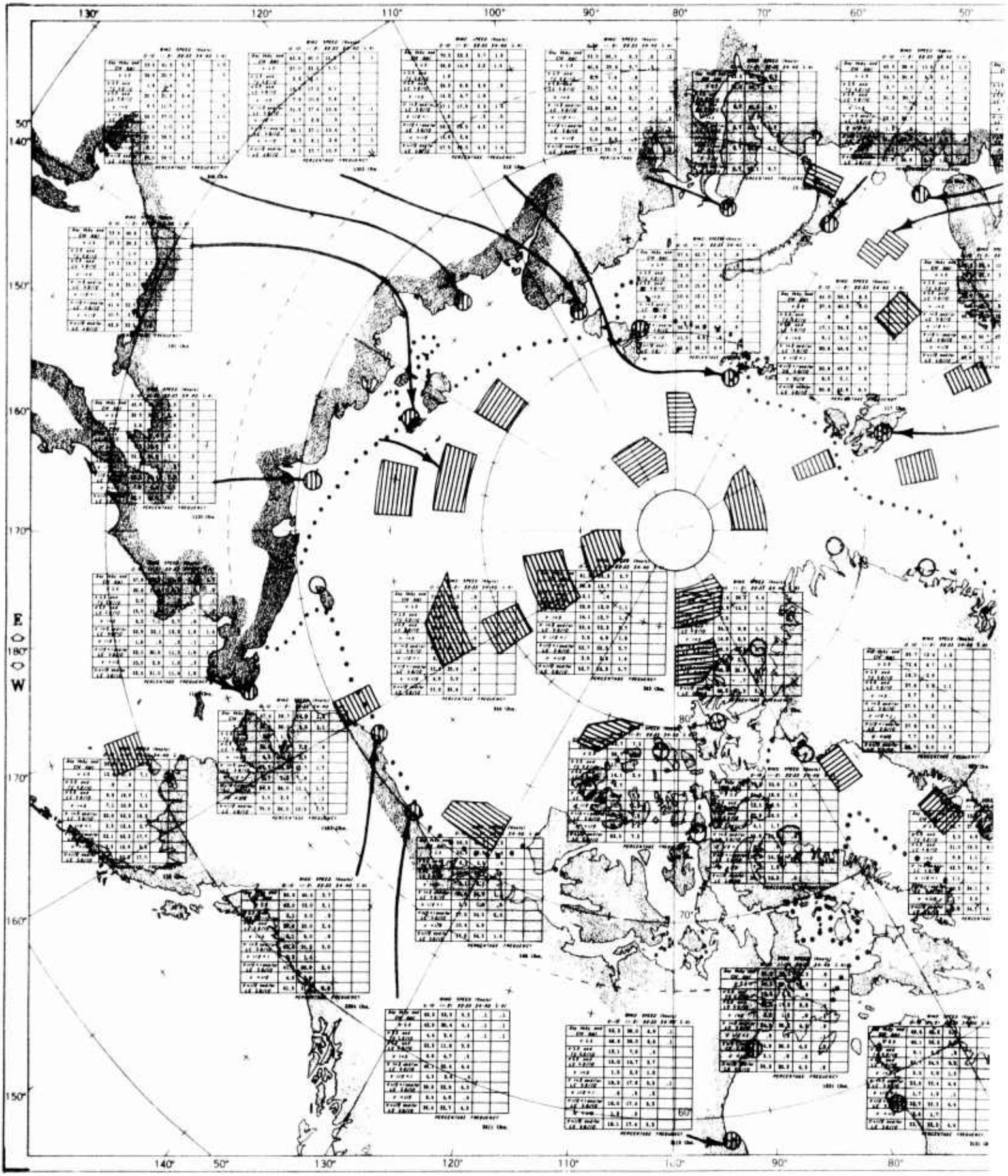


THULE



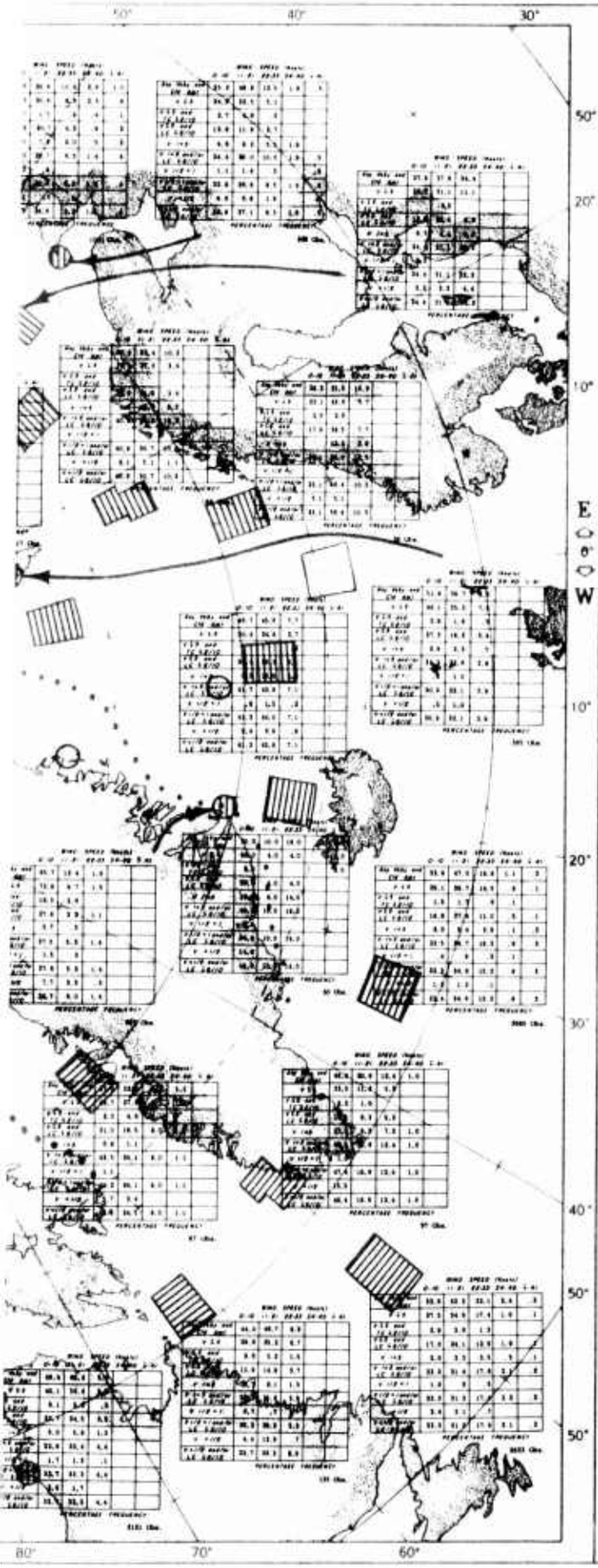
AUGUST

WIND-VISIBILITY-CLOU

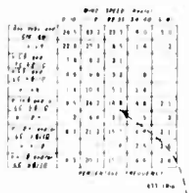


Y-CLOUDINESS

CHART 96



Percentage Frequency of simultaneous occurrence of specified Wind Visibility and Cloudiness conditions (based on the number of observations which reported wind speed visibility total cloud amount and low cloud amount)



Blank box indicates 0.0 percent

Notation

Any Vsby and Cld Amt = Simultaneous occurrence of wind speed with any visibility and cloud amount combination This provides a percentage distribution of wind speeds for the observations used in this tabulation

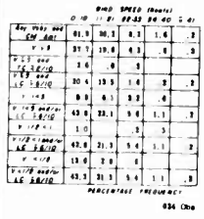
V = Visibility in Nautical Miles
1<5 indicates 1 to (but not including) 5 nautical miles

TC = Total Cloud Amount

LC = Low Cloud Amount (with base approximately 8000 feet or lower)

Ocean Area 166 of the observations on which this tabulation was based reported speed 22-33 knots simultaneous with visibility 1-5 nautical miles and/or low cloud amount 5-6-10

OSTROV VRANGELYA



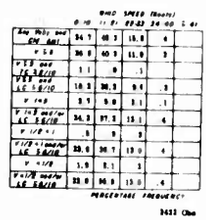
834 Obs.

NORTH POLE



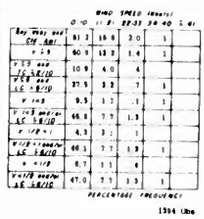
71 Obs.

OCEAN STATION M



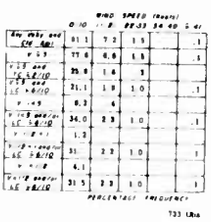
3433 Obs.

NORD



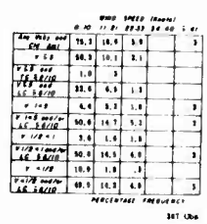
1594 Obs.

DANMARKSHAVEN



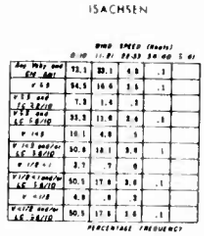
733 Obs.

JAN MAYEN



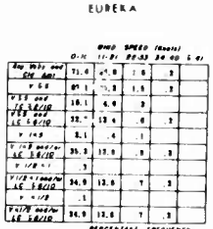
367 Obs.

ISACHSEN



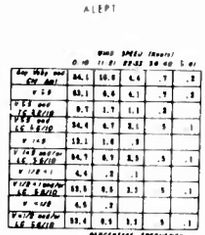
1950 Obs.

EUREKA



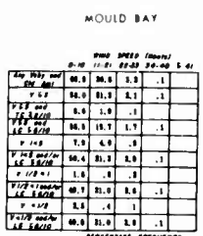
1886 Obs.

ALERT



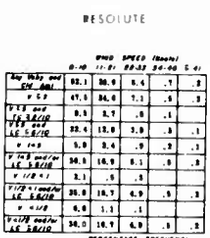
1834 Obs.

MOULD BAY



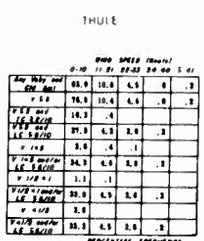
1818 Obs.

RESOLUTE



1848 Obs.

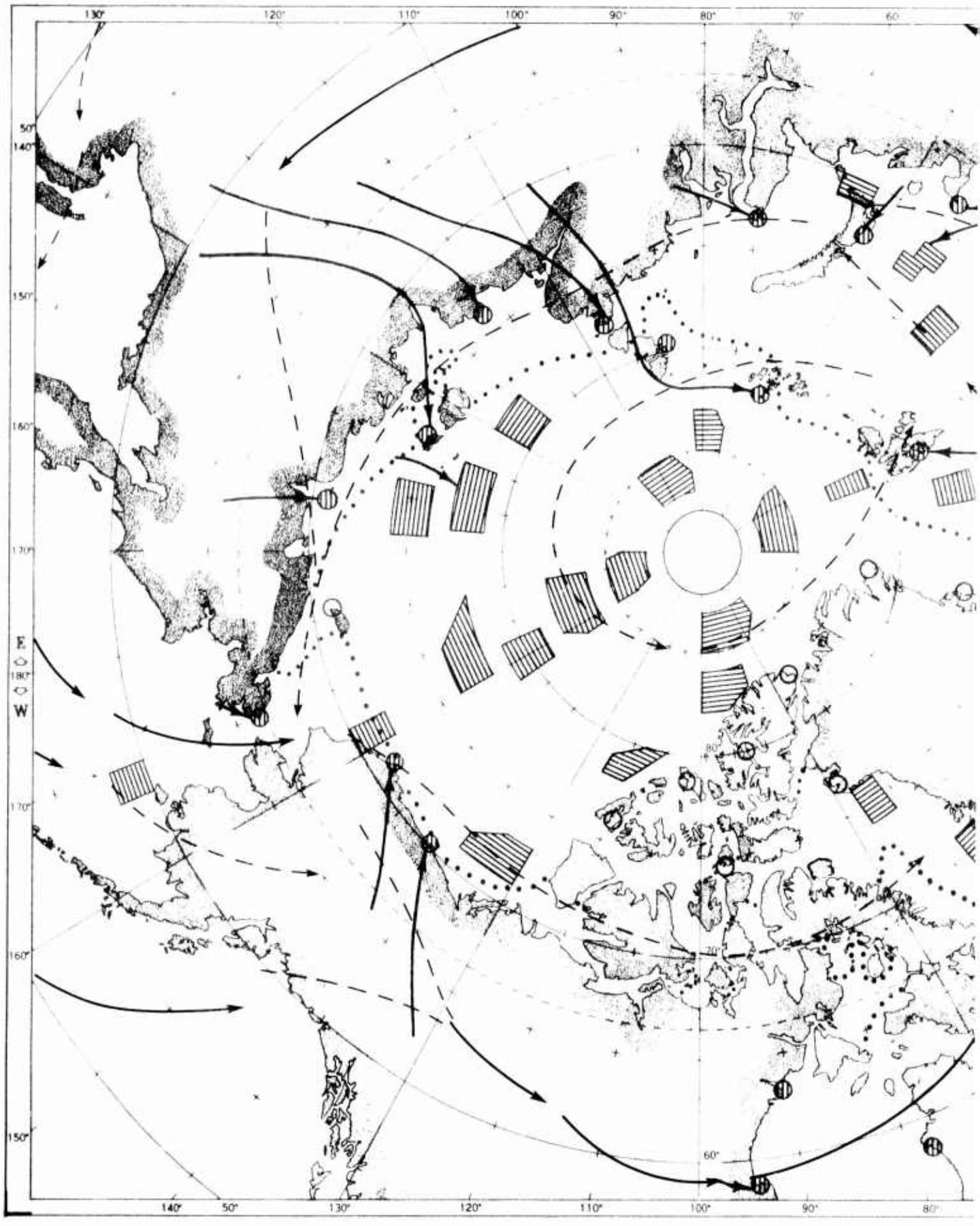
THULE



1687 Obs.

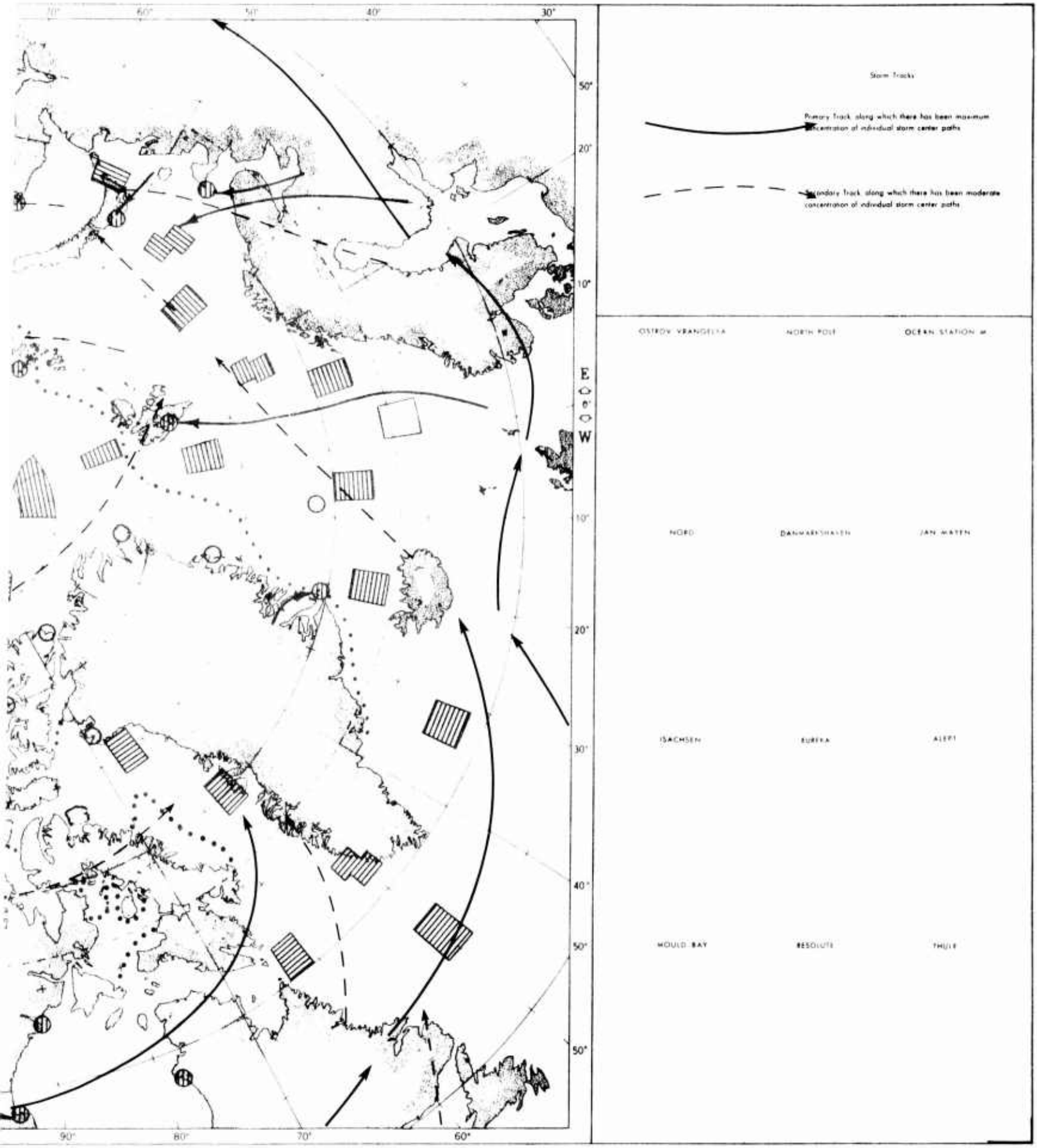
AUGUST

STORM TRA



STORM TRACKS

CHART 97



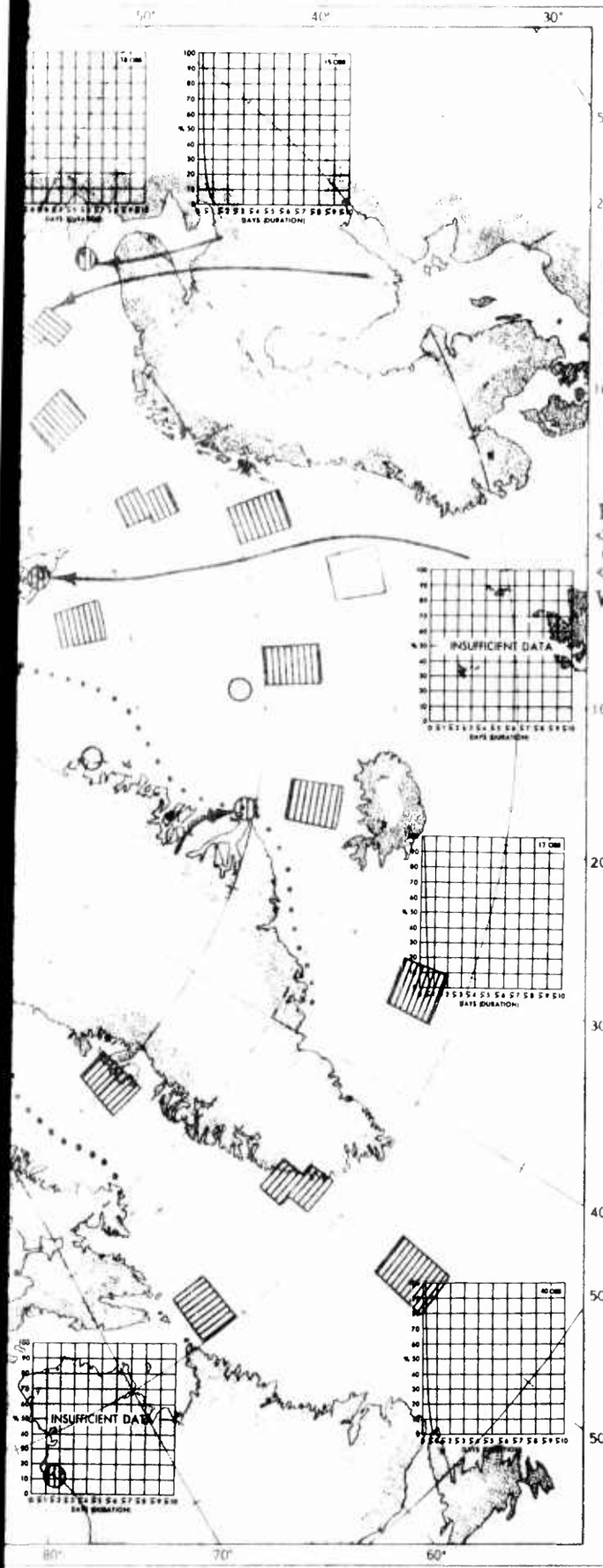
AUGUST

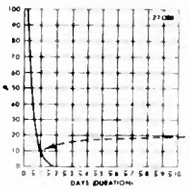
GALE PERSISTENC



RSISTENCE

CHART 98

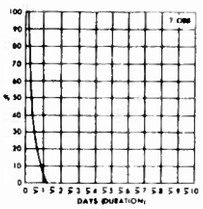




Percentage Frequency of Gales (Beaufort Force 8 or more 34 knots) equal to or greater than number of days intersected by the curve

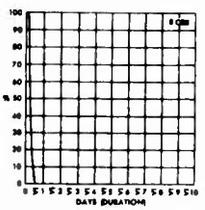
(10% of Gales (34 knots) persist at least one day)

OSTROV VRANGELYA



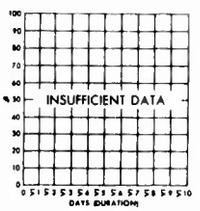
NORTH POLE

OCEAN STATION M

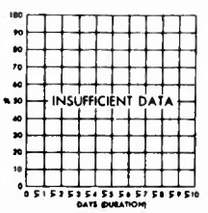


NORD

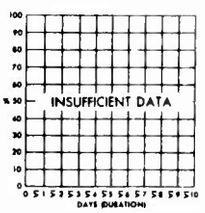
DANMARKSHAVEN



JAN MAYEN

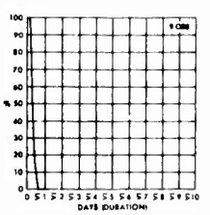


ISACHSEN

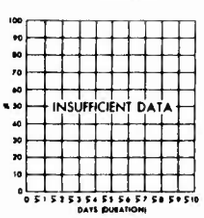


EUREKA

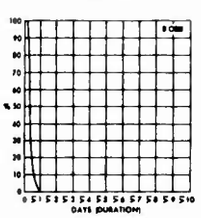
ALERT



MOULD BAY



RESOLUTE

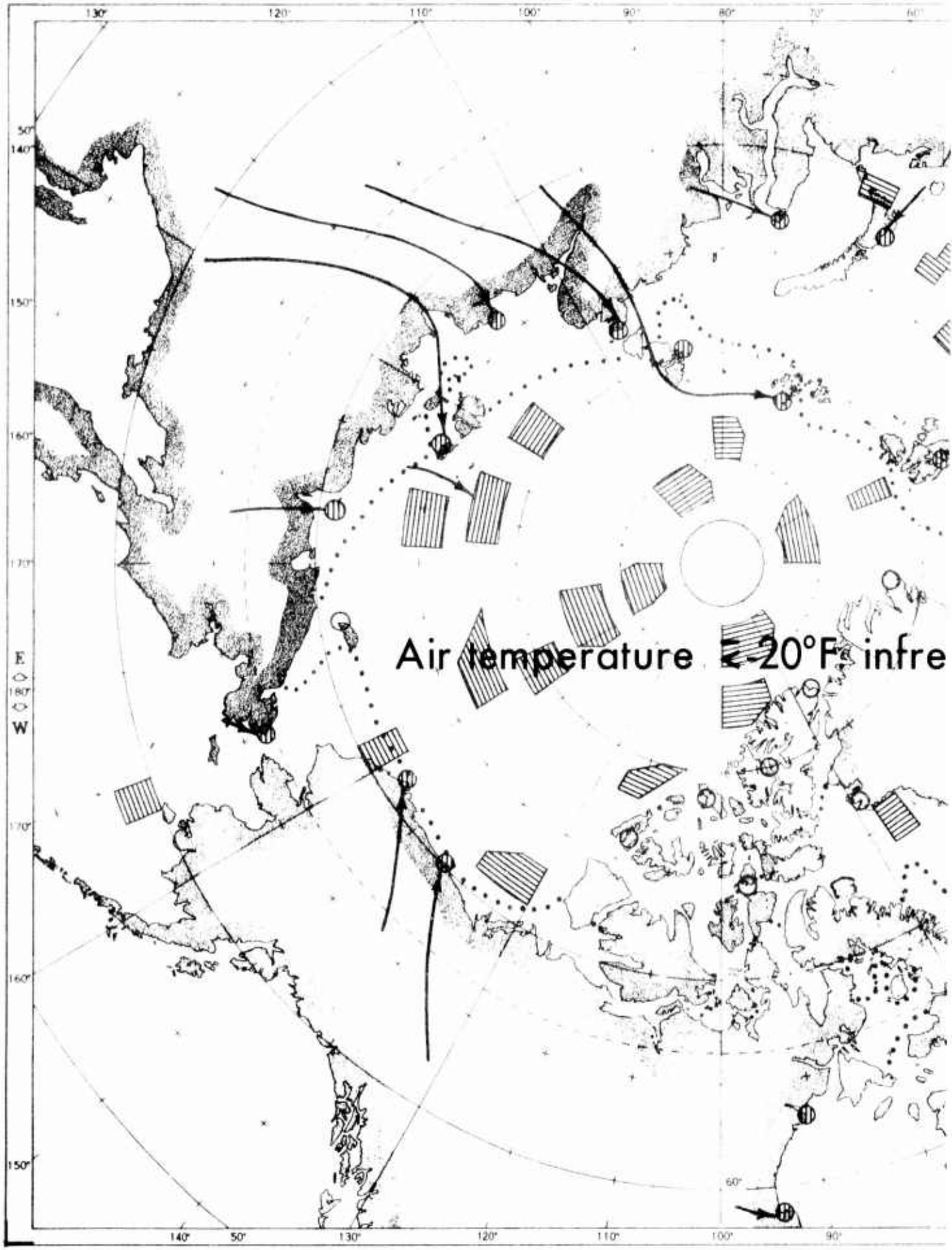


THULE

2

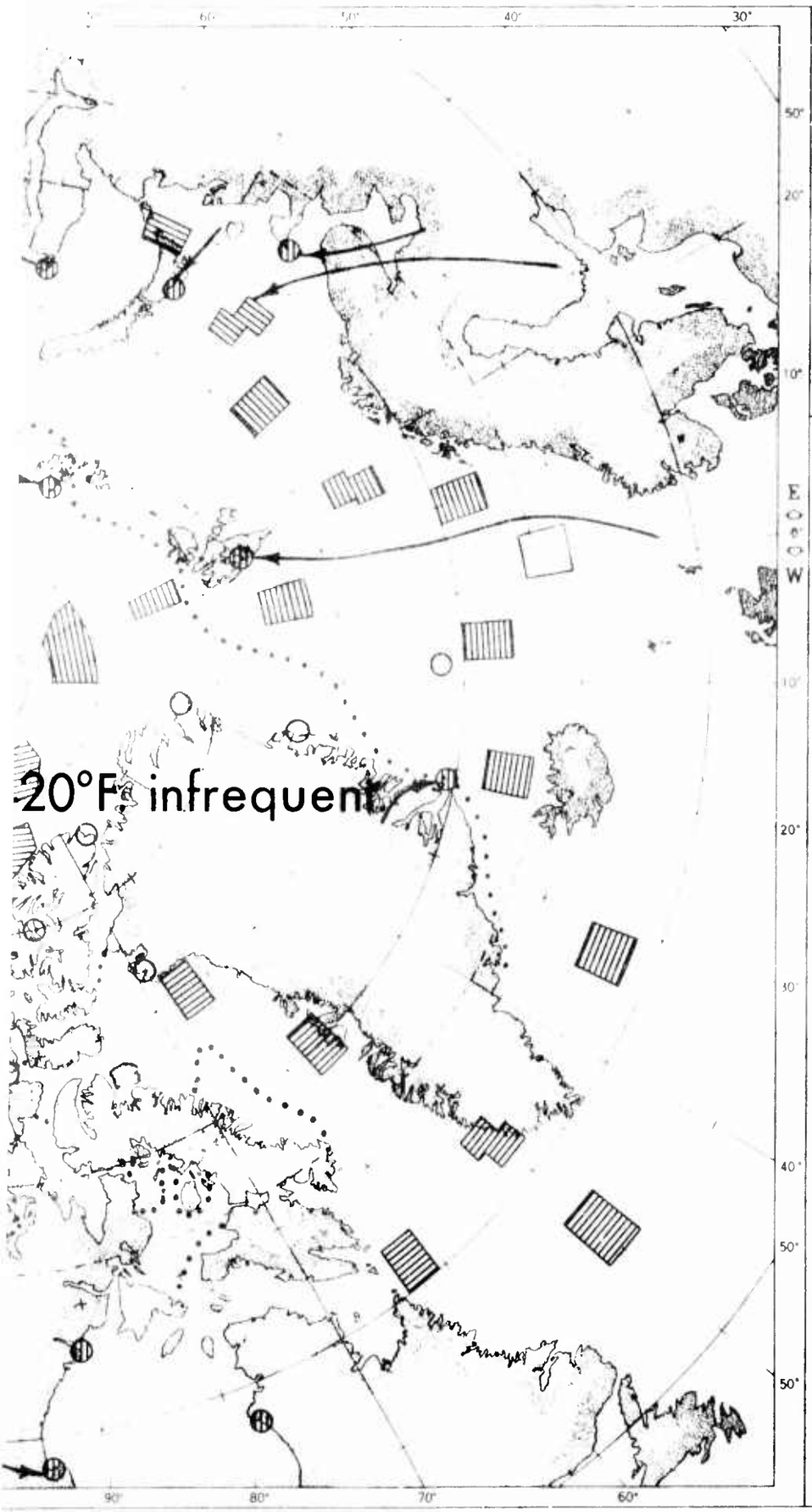
AUGUST

LOW TEMPERATU

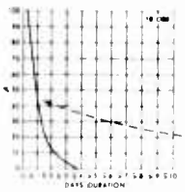


:MPERATURE PERSISTENCE

CHART 99



-20°F infrequent



Percentage Frequency of Air Temperature (20°F or less) equal to or greater than number of days intersected by the curve

[44% of cold temperatures (≤ 20°F) persist at least one day]

OSTROV VRANGELYA | NORTH POLE | OCEAN STATION M

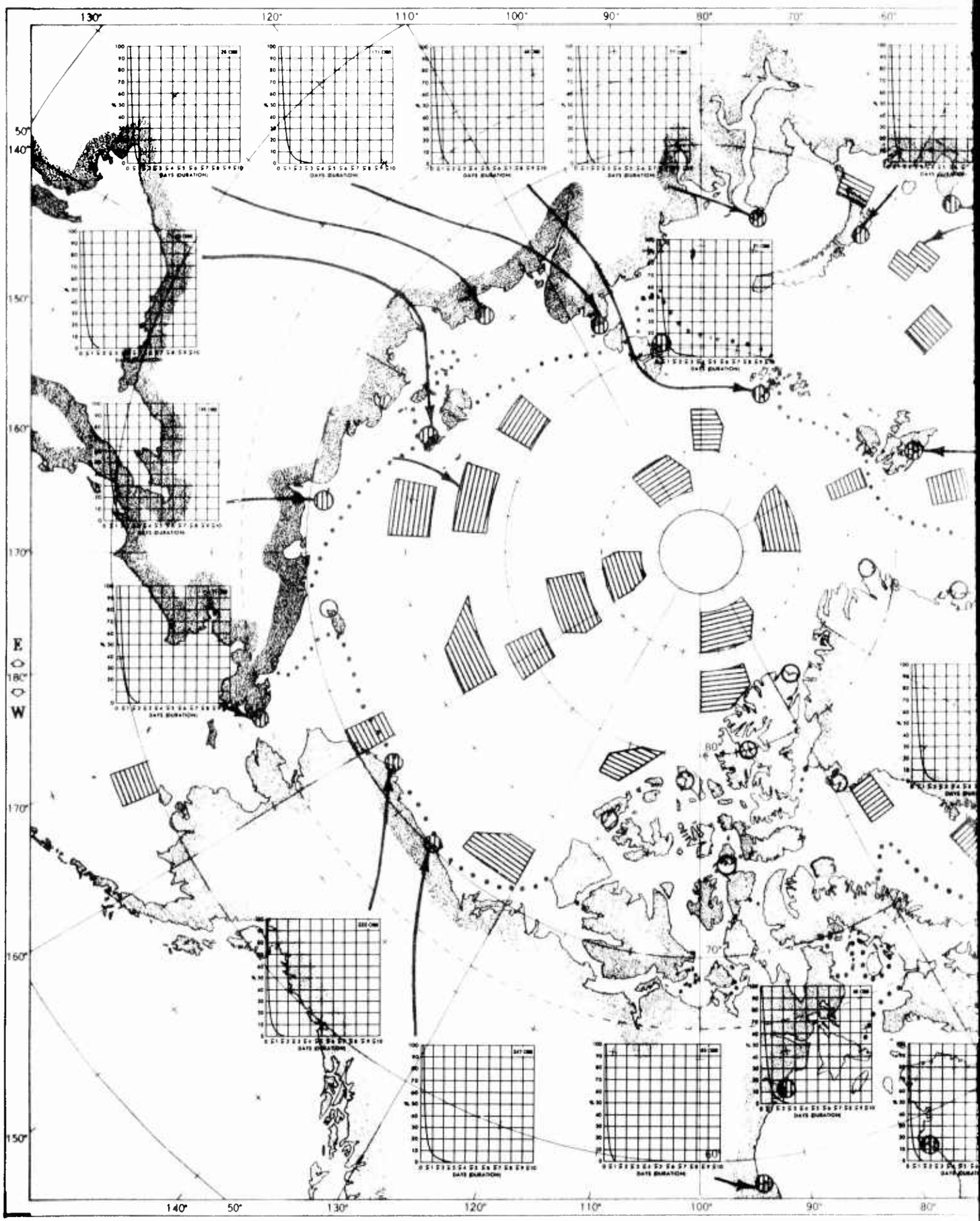
NORD | DANMARKSHAVEN | JAN MAYEN

ISACHSEN | EUREKA | ALERT

MOULD BAY | RESOLUTE | THULE

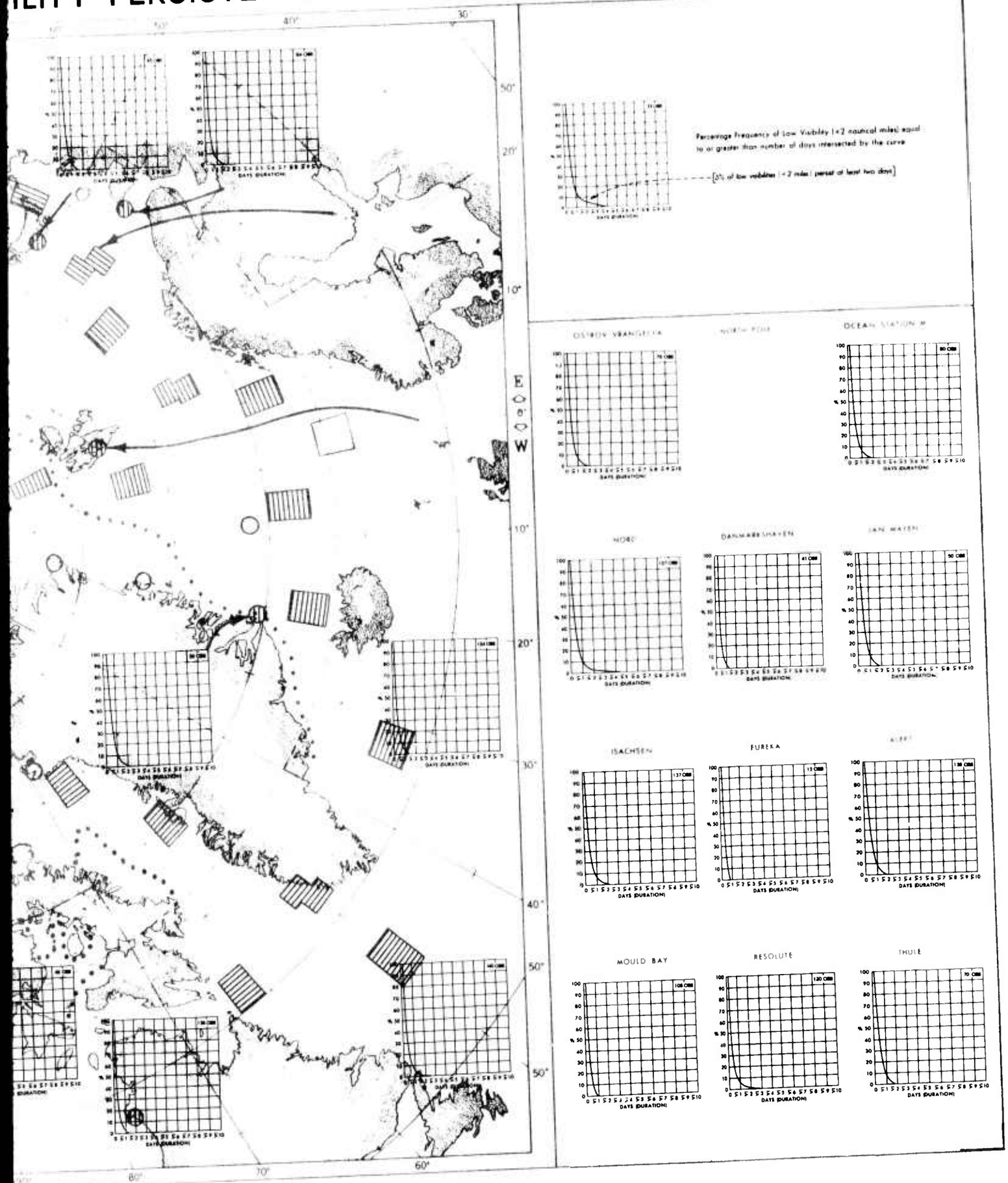
AUGUST

LOW VISIBILITY PE



ILITY PERSISTENCE

CHART 100

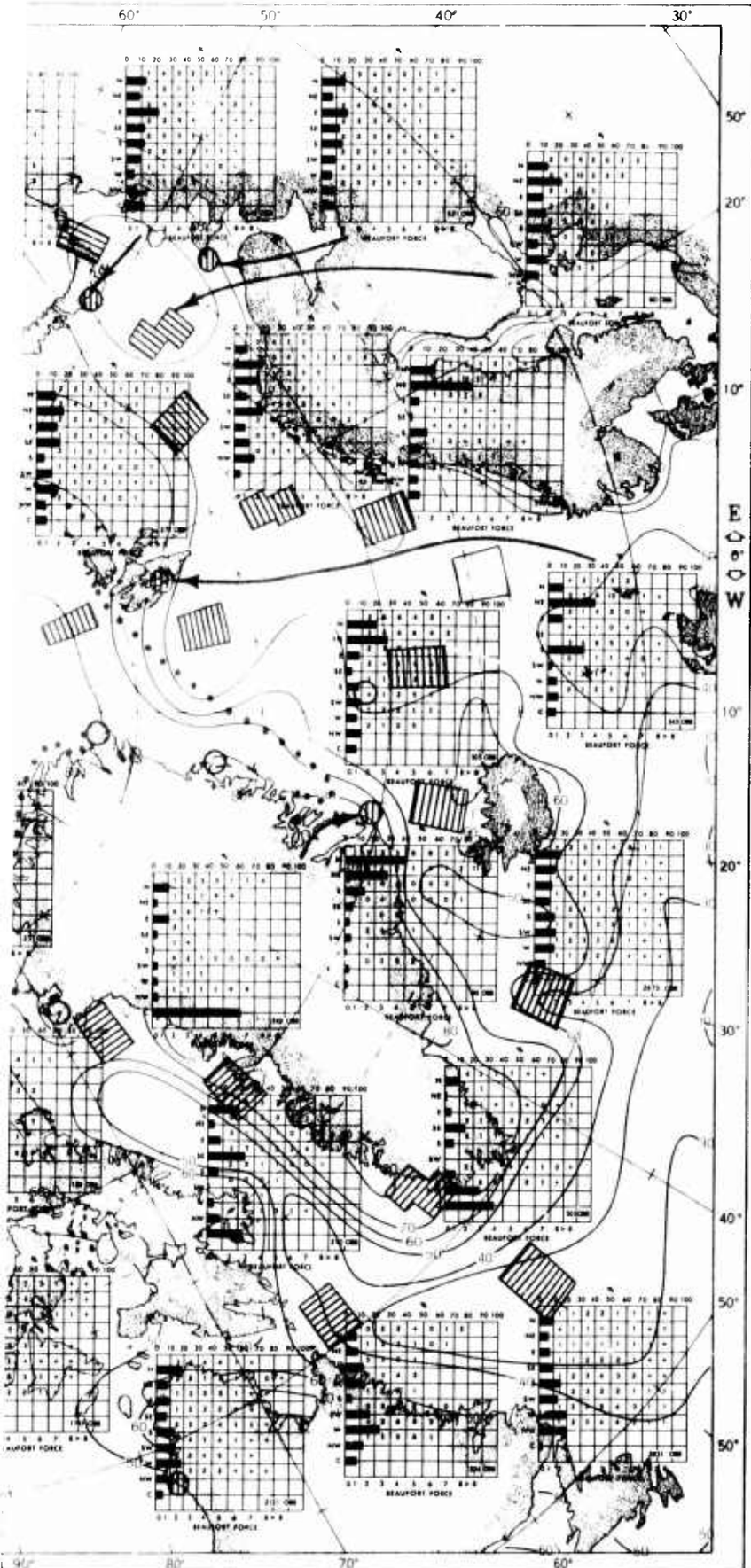


SEPTEMBER SURFACE

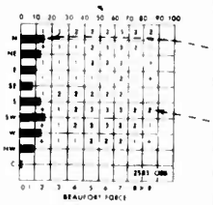


IRFACE WIND

CHART 101



Percentage Frequency of Wind Speed Beaufort Force 3 or less (≤ 10 Knots)



Direction Frequency (Tᴏ Scale) Bars represent percentage frequency of wind observed from each direction (& calm)

(14% of all winds were from N)

Speed Frequency (Bottom Scale) percentage frequency of wind speed by Beaufort Force

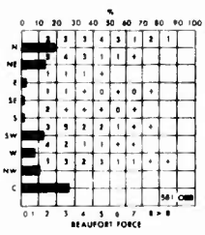
(2% of all winds from SW were greater than Beaufort Force 8)

All percentages rounded to nearest whole percent

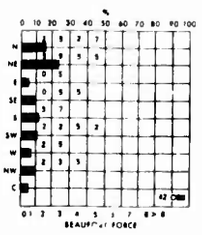
Calm includes Beaufort Force 1 (0-3 knots)

+ indicates less than 1/2 percent

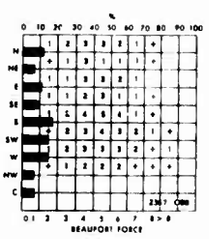
OSTROV VRANGELYA



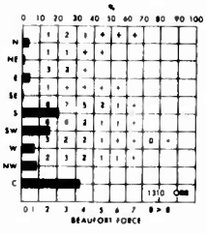
NORTH POLE



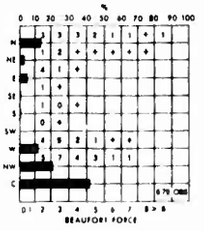
OCEAN STATION M



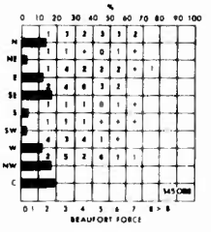
NORD



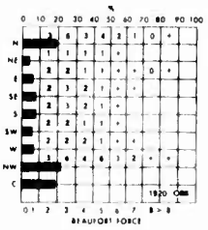
DANMARKSHAVEN



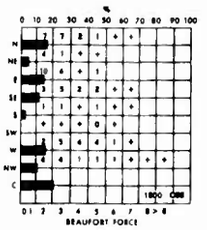
JAN MAYEN



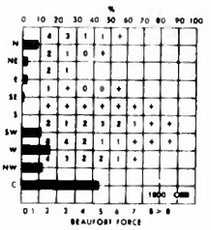
ISACHSEN



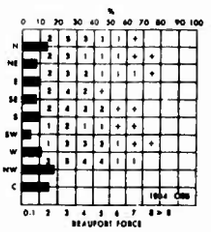
EUREKA



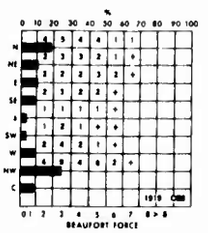
ALERT



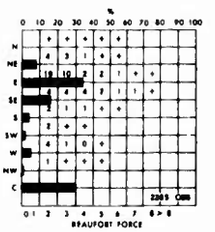
MOULD BAY



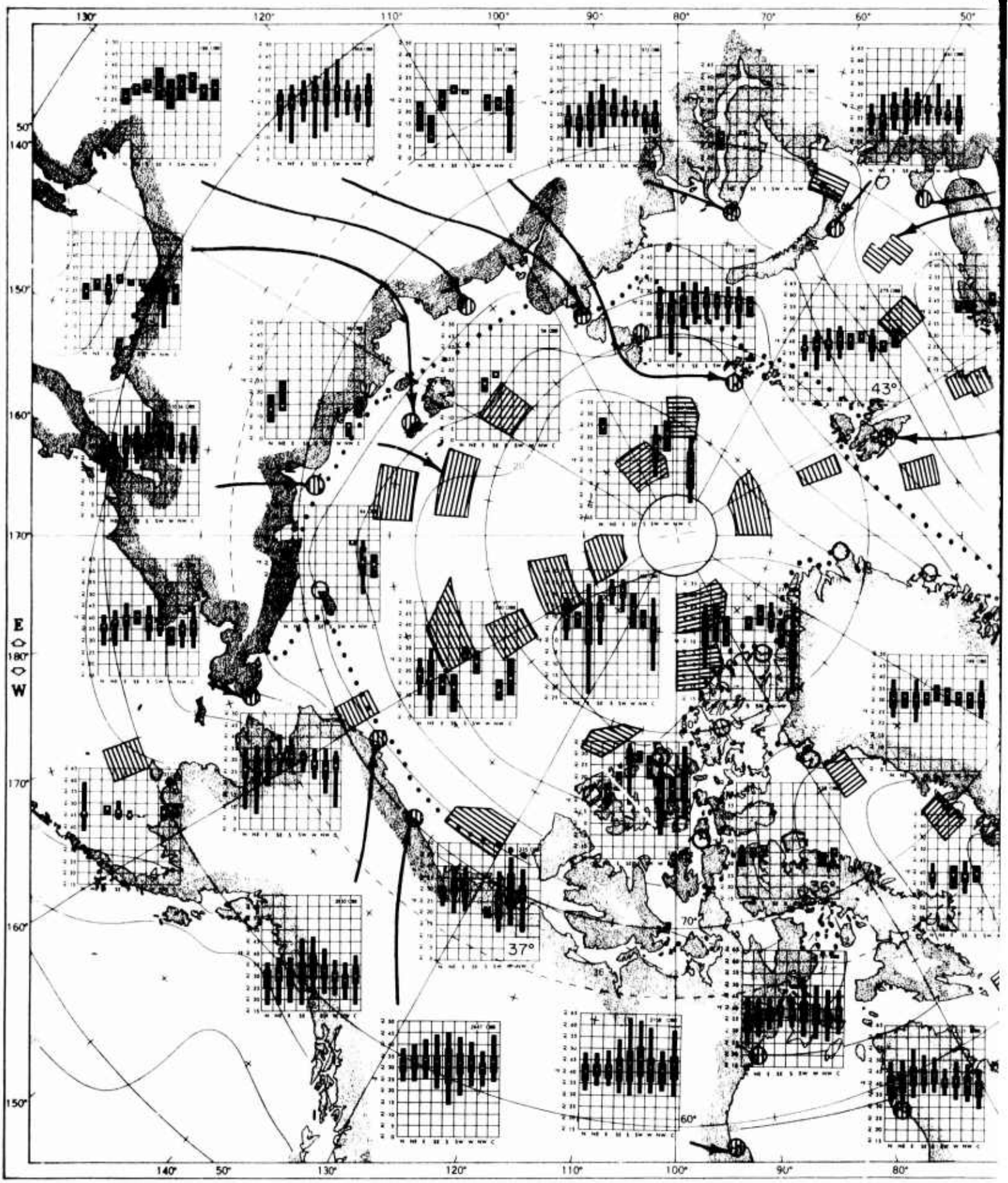
RESOLUTE



THULE

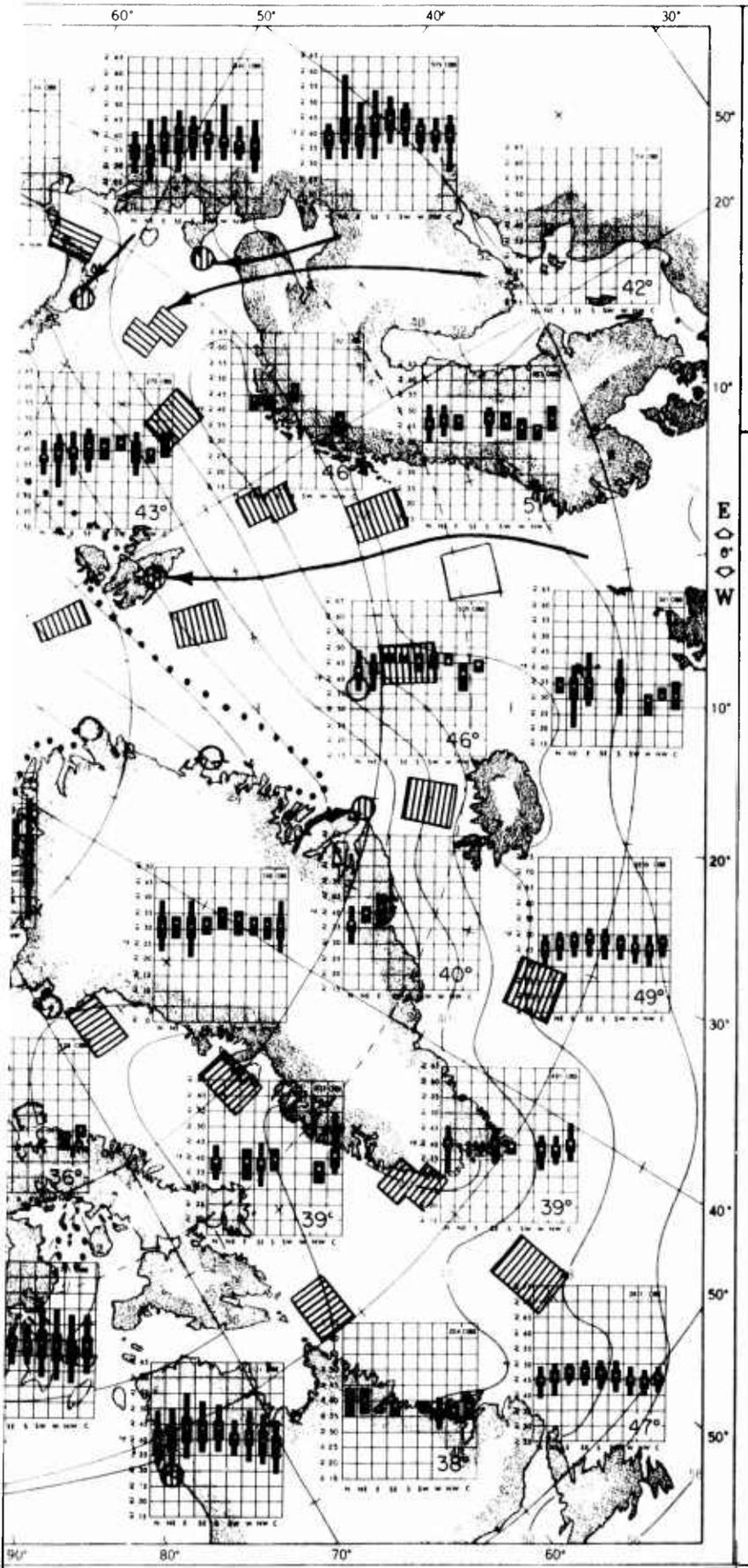


SEPTEMBER AIR TEMPERATURE BY WIN



URE BY WIND DIRECTION

CHART 102



Mean Air Temperature °F

Distribution of Temperature Observed with each Wind Direction

(a) Mean

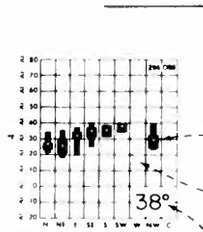
(b) 95%, 75%, 25% and 5% of all temperatures were equal to or less than the temperatures indicated by

(With NW winds, the mean temperature was 29°F, 5% of the temperatures were 23°F or less, 25% were 24°F or less, etc.)

Mean temperatures and frequencies are omitted when number of observations was 10 or less

See chart 2 for temperature distribution disregarding wind direction

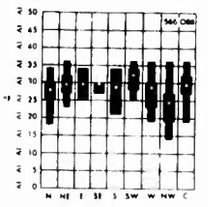
Mean Water Temperature (when data available)

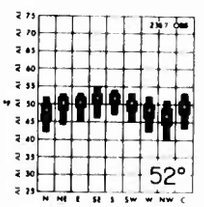


OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

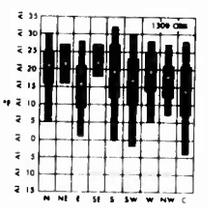


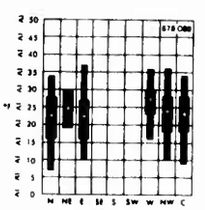


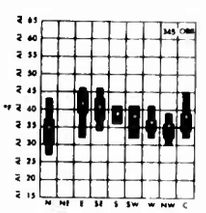
NORD

DANMARKSHAVEN

JAN MAYEN



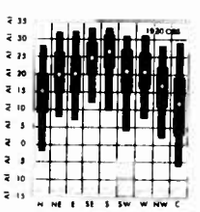


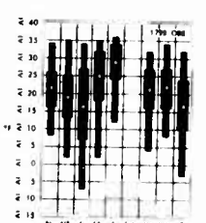


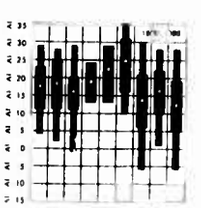
ISACHSEN

EUREKA

ALERT



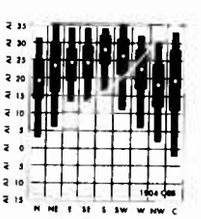


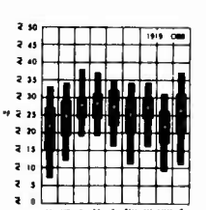


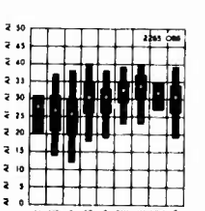
MOULD BAY

RESOLUTE

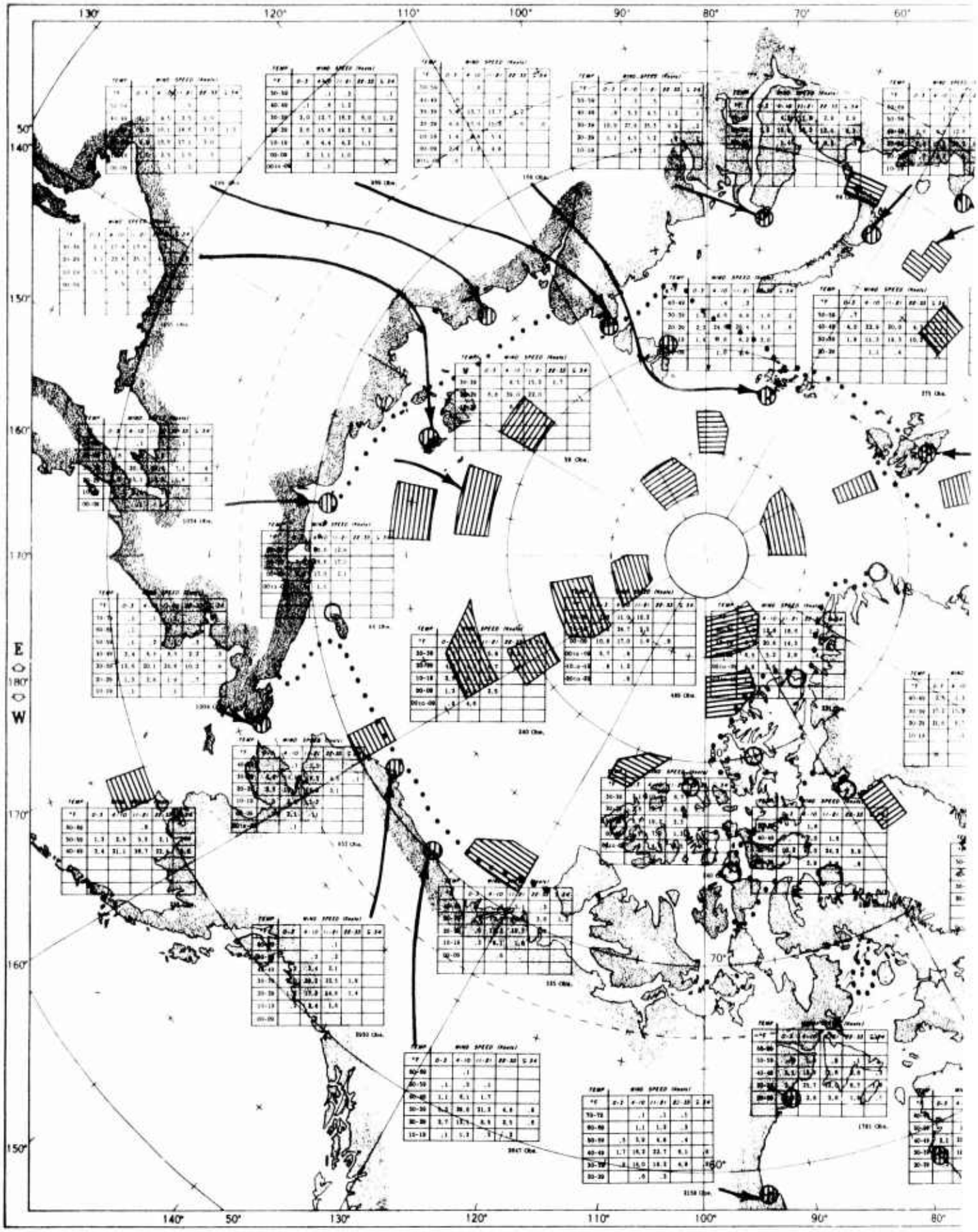
THULE





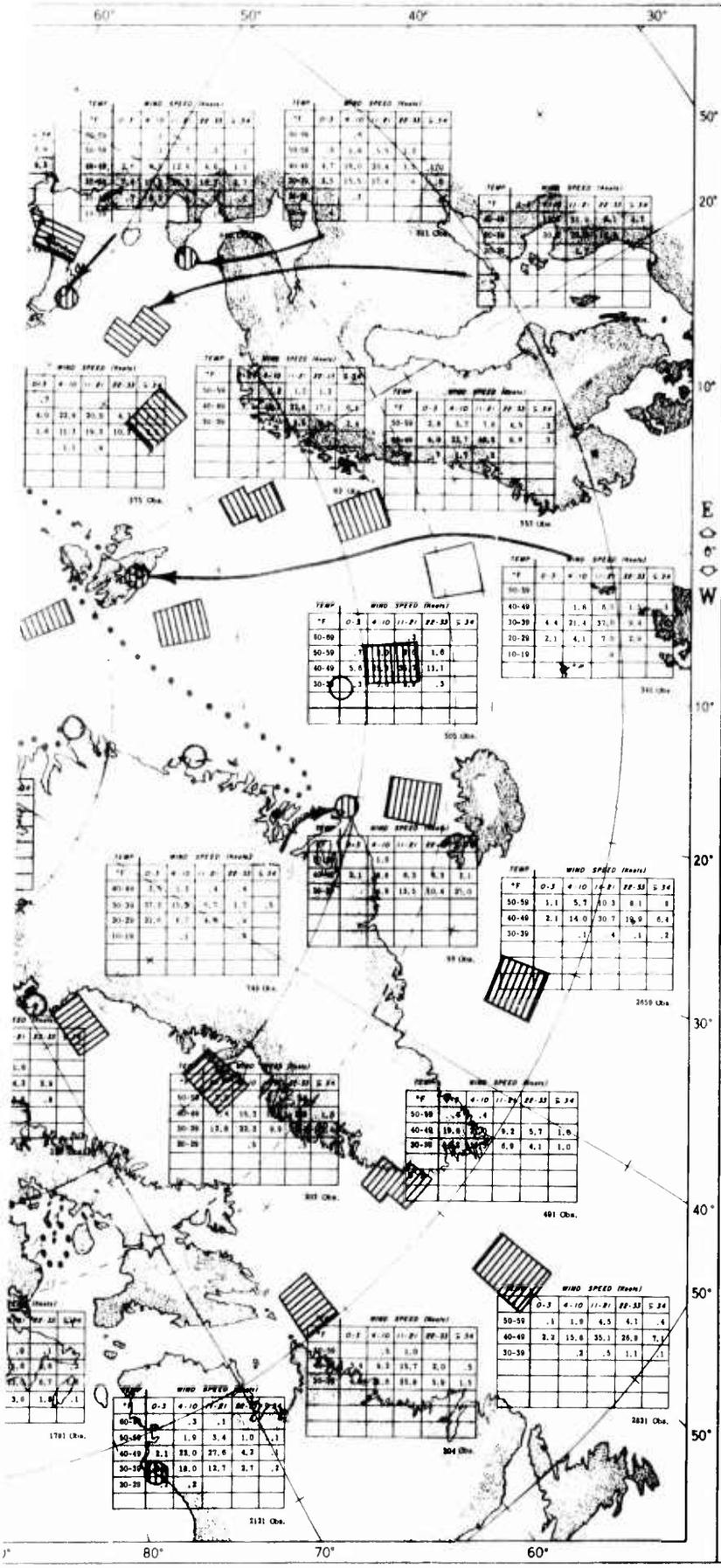


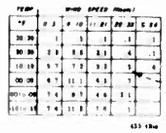
SEPTEMBER AIR TEMPERATURE v



TURE vs. WIND SPEED

CHART 103





Percentage Frequency of simultaneous occurrence of specified Temperature groups and Wind Speed

(5% of the observations on which this tabulation was based reported wind speed 22-33 knots simultaneous with temperature from 10° through 19°F.)

OSTROV VRANGELYA

°F	0-3	4-10	11-21	22-33	≥ 34
40-49	.2		.2		
30-39	13.3	19.3	10.2	6.9	2.3
20-29	11.5	15.9	11.0	2.7	.7
10-19	.9	1.6	2.3	1.9	.5
00-09	.2				

566 Obs.

NORTH POLE

°F	0-3	4-10	11-21	22-33	≥ 34
20-29		29.2	9.5		
10-19	4.8	19.0	14.3		
00-09		7.1	11.9		
		7.1			

42 Obs.

OCEAN STATION M

°F	0-3	4-10	11-21	22-33	≥ 34
50-59	3.8	10.9	29.0	18.0	1.3
40-49	3.2	8.1	16.1	9.6	1.4
30-39		.1	.3	.3	

3367 Obs.

NORD

°F	0-3	4-10	11-21	22-33	≥ 34
40-49		.1	.1		
30-39	1.0	3.7	1.8	.7	
20-29	8.0	14.7	7.5	1.1	
10-19	12.9	20.2	6.4	2.1	.1
00-09	8.6	8.3	.7		
00 to -09	2.0	1.8			
-10 to -19	.1	.2			

1309 Obs.

DANMARKSHAVEN

°F	0-3	4-10	11-21	22-33	≥ 34
40-49	.1	.4	.3		
30-39	9.1	9.3	4.7	1.3	.1
20-29	17.8	10.5	5.6	2.7	1.0
10-19	12.5	10.8	4.0	.4	.1
00-09	1.9	1.2	.1	.1	

878 Obs.

JAN MAYEN

°F	0-3	4-10	11-21	22-33	≥ 34
40-49	6.4	8.7	11.0	4.6	.6
30-39	12.5	23.8	20.9	8.7	
20-29	.3	.8	1.4	.6	

345 Obs.

ISACHSEN

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	1.0	5.8	3.4	.3	.1
20-29	3.8	13.5	14.9	3.4	.1
10-19	6.4	14.5	10.6	4.3	.2
00-09	5.2	6.4	2.4	1.0	.1
00 to -09	1.9	1.3	.8	.4	
-10 to -19	.5	.1			

1930 Obs.

EUREKA

°F	0-3	4-10	11-21	22-33	≥ 34
40-49	.1	.2	.1		
30-39	2.4	10.1	5.8	1.1	
20-29	6.0	20.3	8.3	1.1	.3
10-19	7.9	19.1	3.0	.3	
00-09	3.1	5.7	1.3	.2	
00 to -09	1.1	1.8	.1		
-10 to -19	.4	.5			

1799 Obs.

ALERT

°F	0-3	4-10	11-21	22-33	≥ 34
40-49		.1	.1	.1	
30-39	1.6	2.3	1.8	1.7	
20-29	8.9	11.8	8.1	1.8	.4
10-19	16.1	12.9	4.3	1.8	.1
00-09	12.0	6.7	1.0	.5	
00 to -09	4.8	2.9	.1		
-10 to -19	.6	.2			

1800 Obs.

MOULD BAY

°F	0-3	4-10	11-21	22-33	≥ 34
40-49	.1	.2	.1		
30-39	3.4	11.0	6.3	1.8	
20-29	4.3	18.5	17.3	3.3	.1
10-19	4.7	11.4	7.8	2.3	.1
00-09	1.9	3.9	3.0	.4	
00 to -09	.8	.4	.2		
-10 to -19		.1			

1904 Obs.

RESOLUTE

°F	0-3	4-10	11-21	22-33	≥ 34
40-49	.1	.4	.3		
30-39	3.8	12.7	7.7	1.5	
20-29	3.2	21.4	20.5	4.5	
10-19	1.7	9.5	7.8	1.9	
00-09	.3	1.3	1.3	.2	

1919 Obs.

THULE

°F	0-3	4-10	11-21	22-33	≥ 34
40-49	1.9	2.0	.8	.4	
30-39	16.5	18.7	7.9	2.3	.2
20-29	10.0	23.0	3.6	.7	
10-19	1.2	8.4	.4		
00-09	.3	.6			

2385 Obs.

1

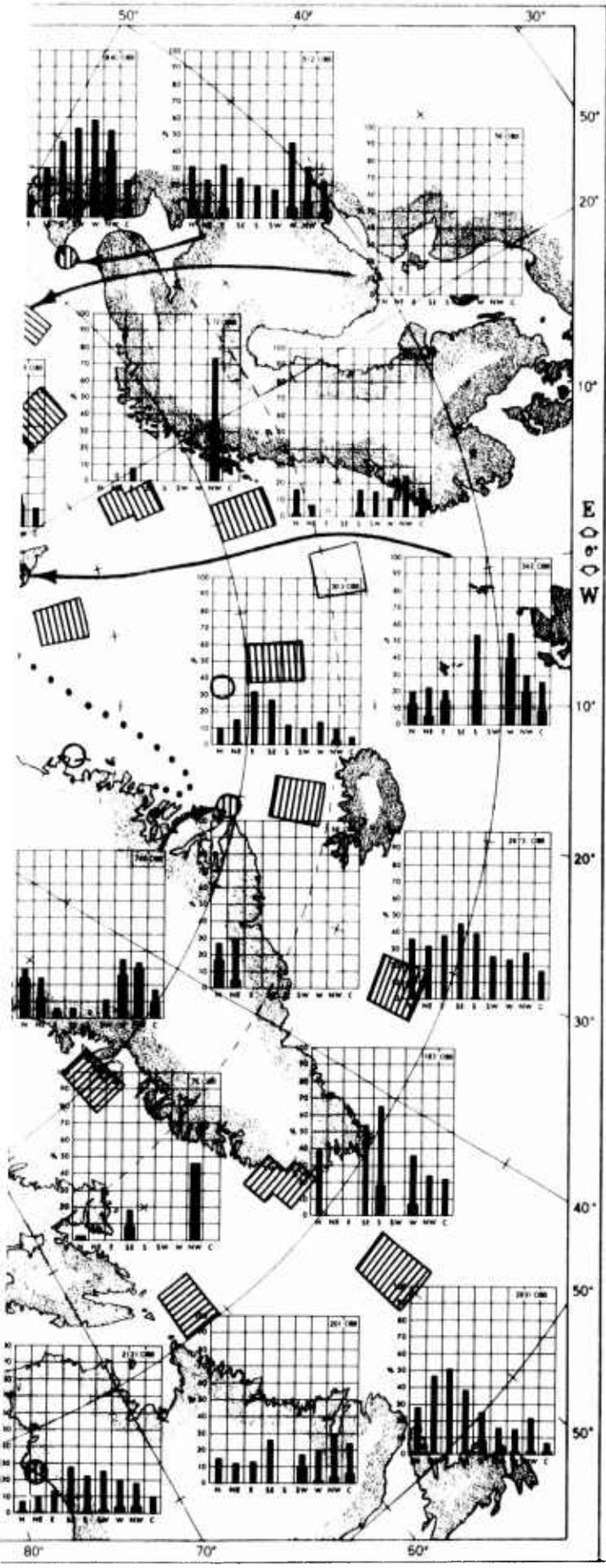
2

SEPTEMBER PRECIPITATION BY WIND



WIND DIRECTION

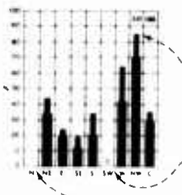
CHART 104



Percentage Frequency of Precipitation by Wind Direction

(a) Percentage of all present weather (and wind) observations reporting precipitation

(b) Percentage of observations recording liquid or frozen precipitation as indicated by

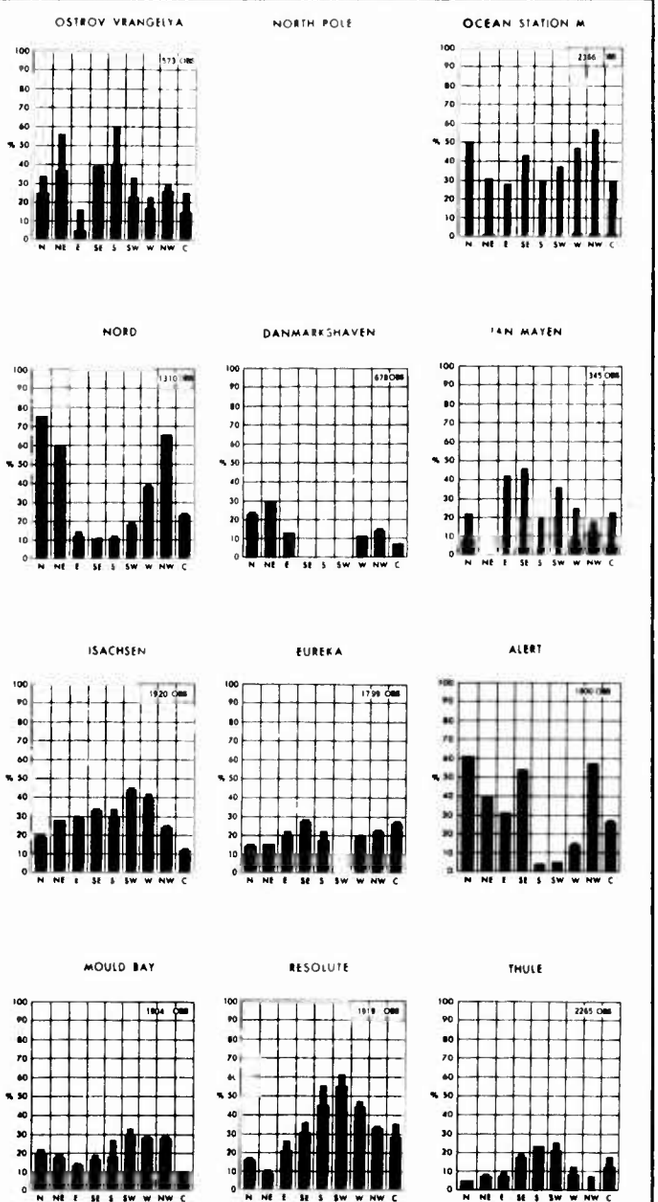


(85% of *all NW winds were accompanied by precipitation* 15% frozen, 70% *liquid*)

0 replaces bar when no precipitation was observed with winds from a direction

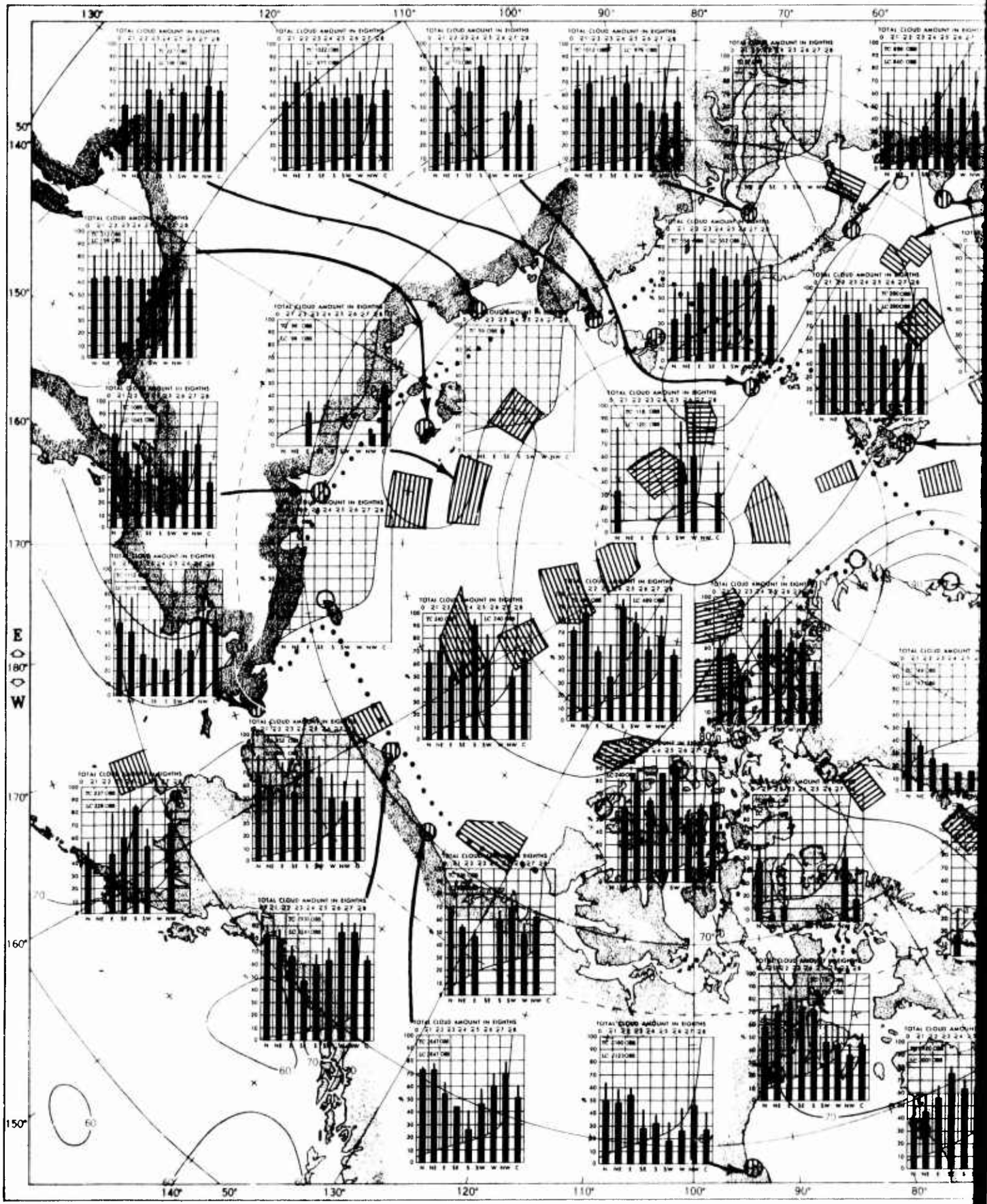
Bar or 0 omitted when number of observations was 10 or Less

See chart 6 for precipitation incidence disregarding wind direction



SEPTEMBER

CLOUDINE



LOUDINESS

CHART 105



Percentage Frequency of Total Cloud Amount 8/10 or more

Total Cloud Amount (TC) Percentage frequency of total cloud amounts equal to or less than amount intersected by the curve

(62% of all total cloud amounts were 7/8 or less)

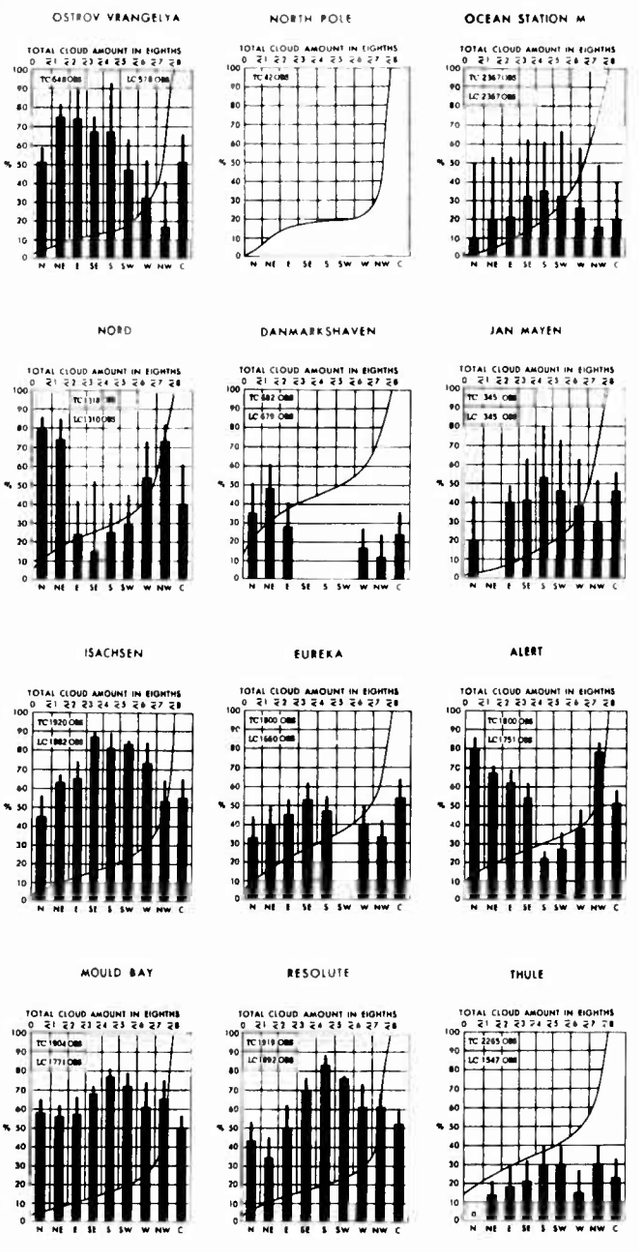
Lower Cloud Amount (LC) Percentage proportions of winds from each direction that were accompanied by low or middle cloud amounts greater than 5/8 and greater than 7/8

(52% of all NW winds were accompanied by lower cloud amounts >5/8 and 38% by lower cloud amounts >7/8)

[>5/8 includes 6/8 8/8 and 7/10 10/10 >7/8 includes 8/8 and 9/10 10/10]

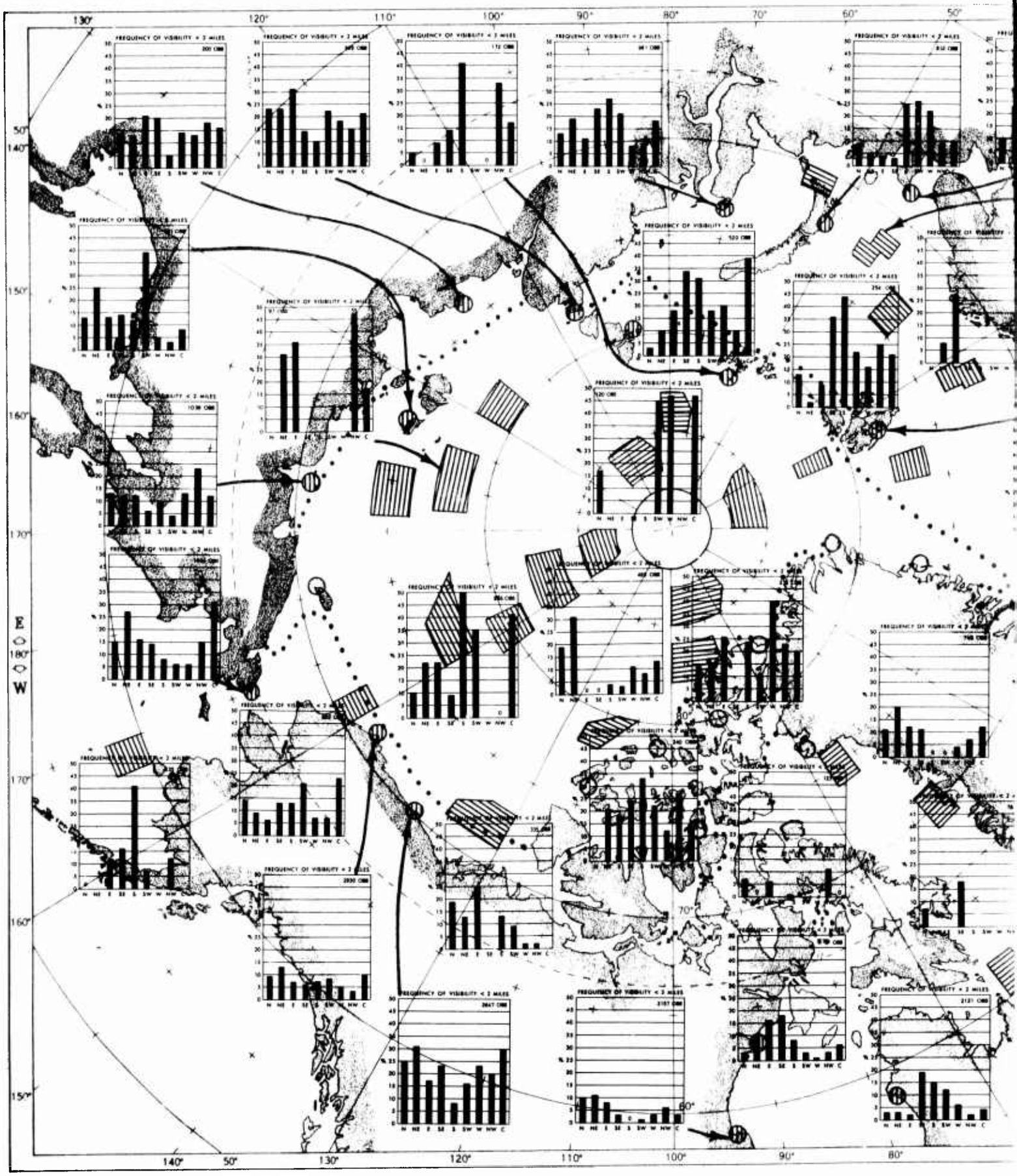
0 replaces bar when no low cloud amounts >5/8 were observed with winds from a direction

Bar (or 0) is omitted when the number of observations including both wind direction and low cloud amount was 10 or less for a direction



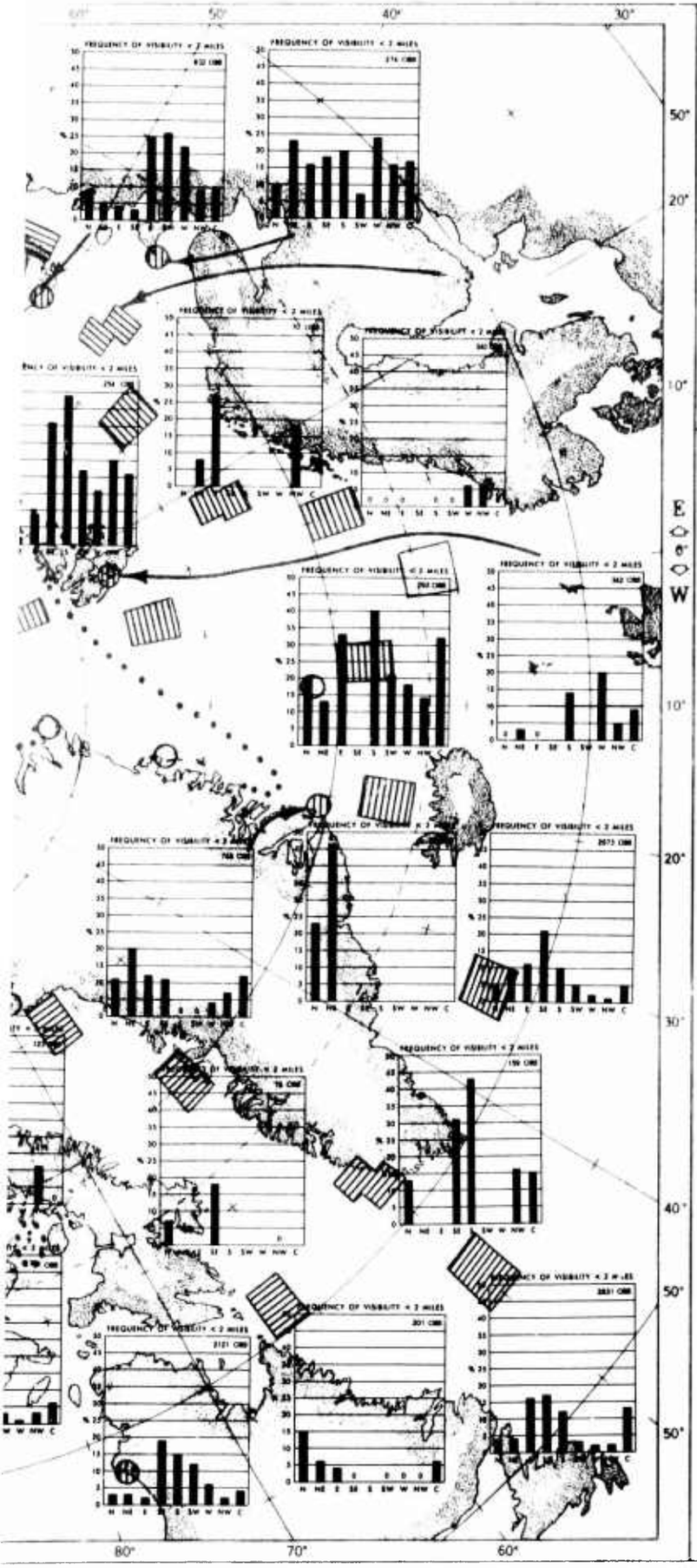
SEPTEMBER

LOW VISIBILITY BY WIND

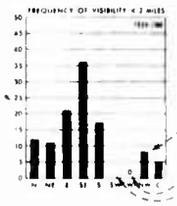


BY WIND DIRECTION

CHART 106



Percentage Frequency of Low Visibility by Wind Direction



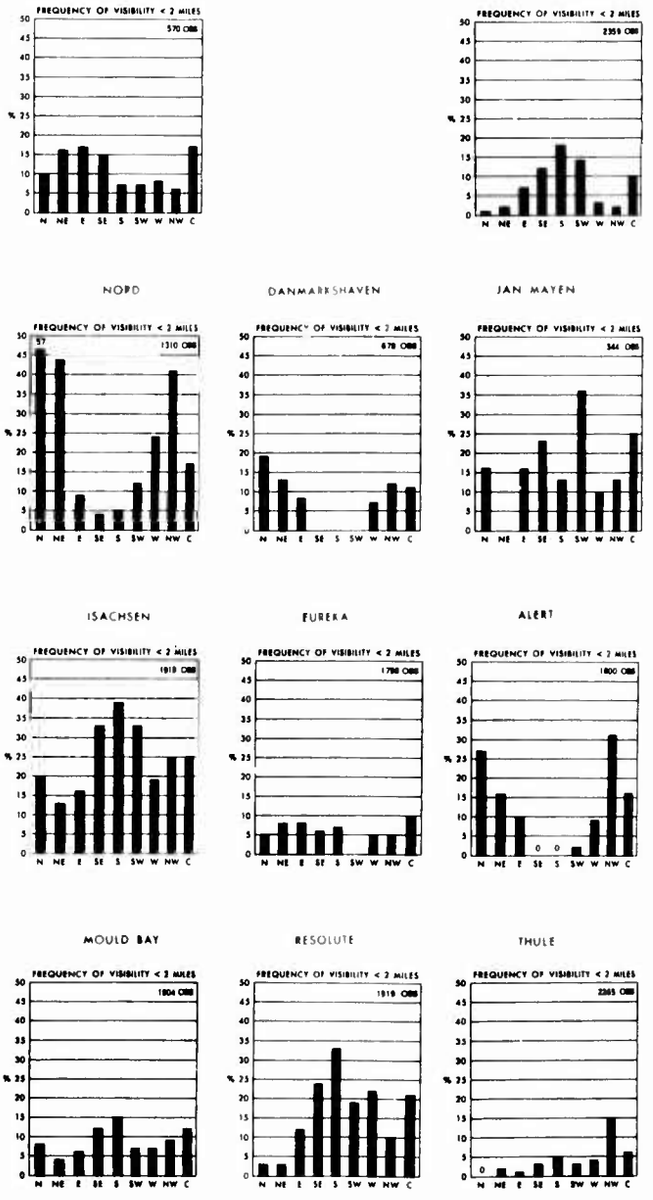
Percentage of all visibility (and wind) observations reporting visibility less than 2 nautical miles

(8% of all NW winds were accompanied by visibility less than 2 miles)

0 replaces bar when no visibilities < 2 miles were observed with winds from a direction

Bar or 0 omitted when number of observations was 10 or less

See chart 9 for low visibility incidence disregarding wind direction

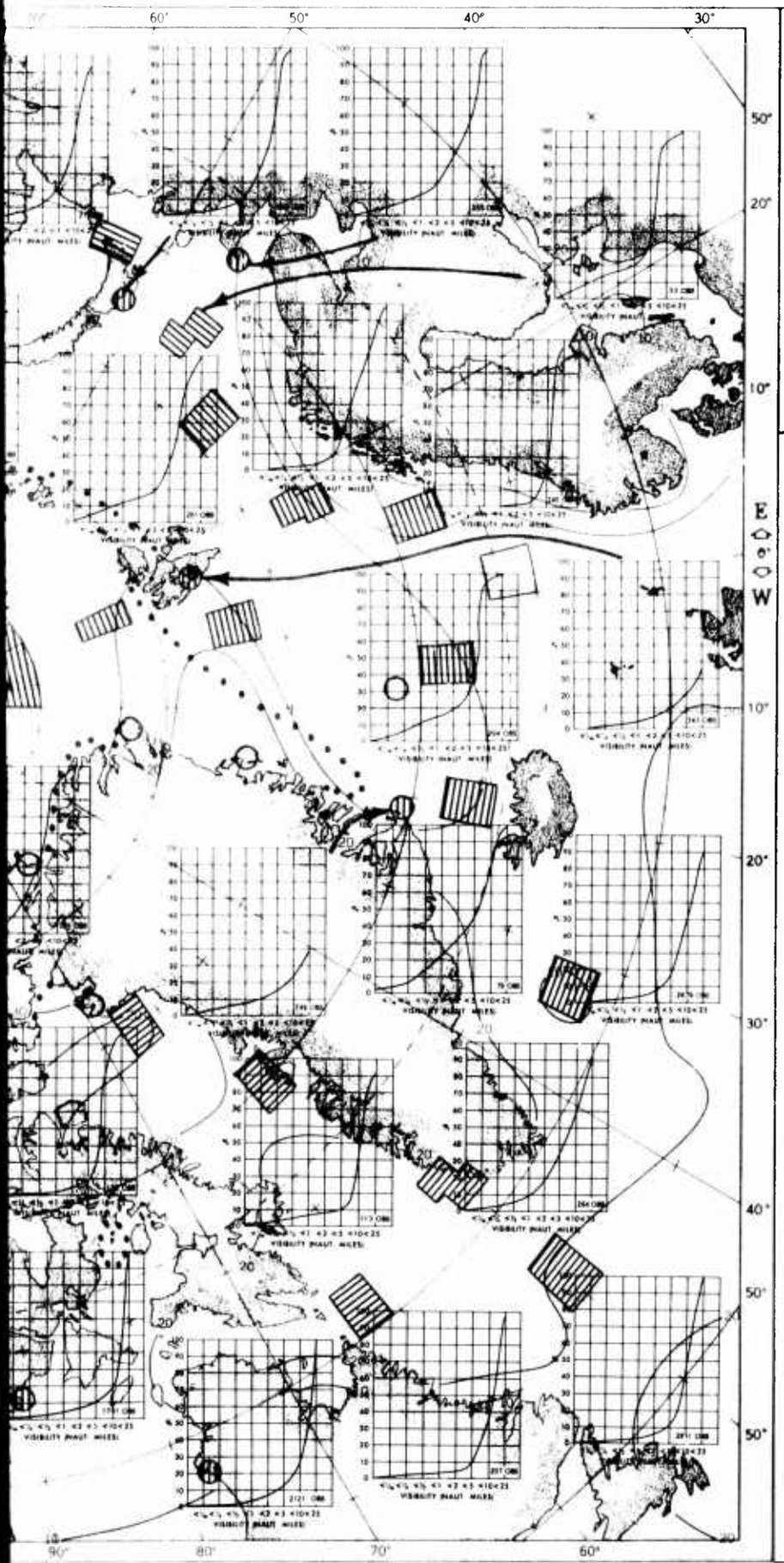


SEPTEMBER VISIBILITY

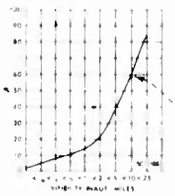


VISIBILITY

CHART 107

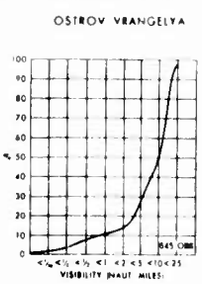


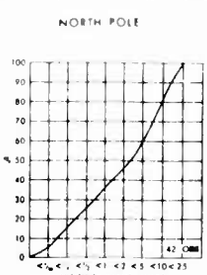
Percentage Frequency of Visibility <5 Nautical Miles

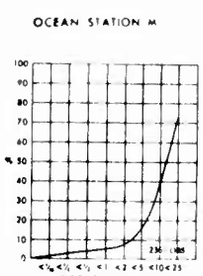


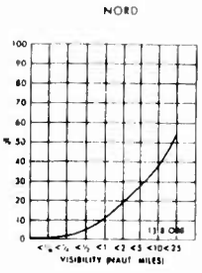
Percentage Frequency of Visibilities less than amount intersected by the curve

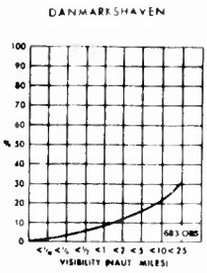
--- 60% of all visibilities were 10 nautical miles or less

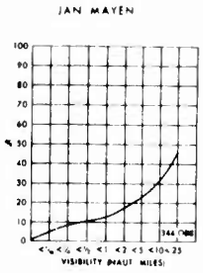


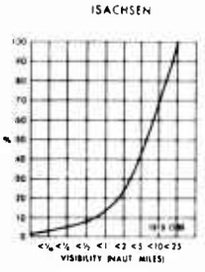


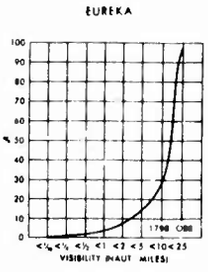


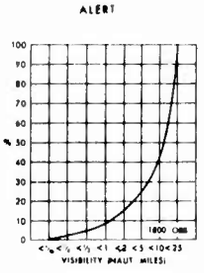


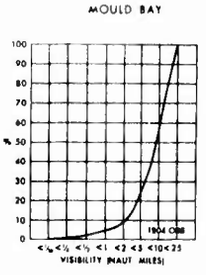


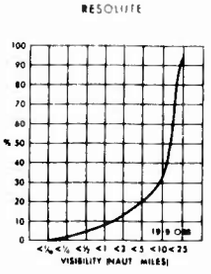


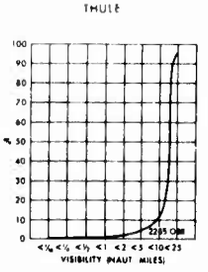








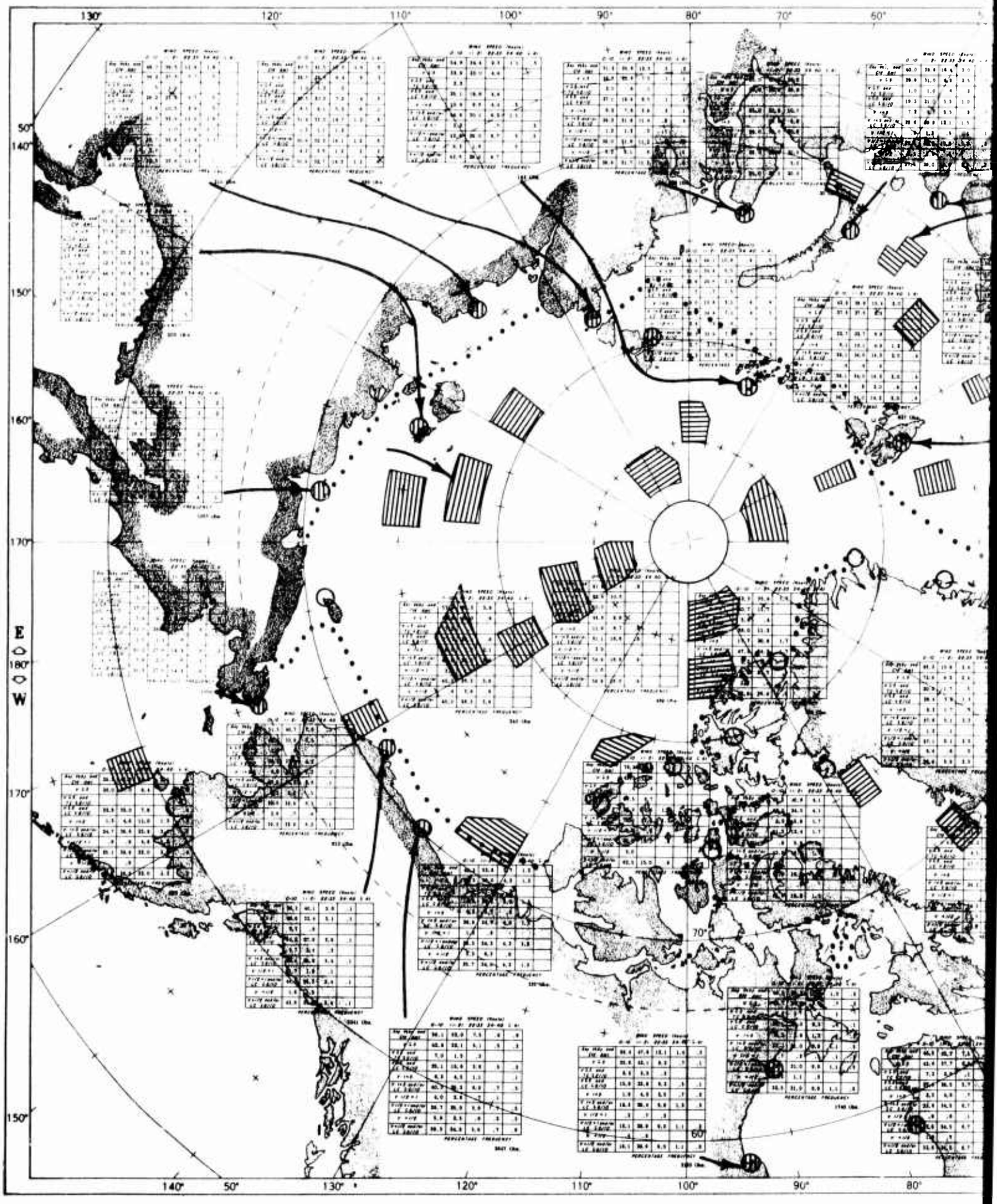




VISIBILITY (NAUT. MILES)

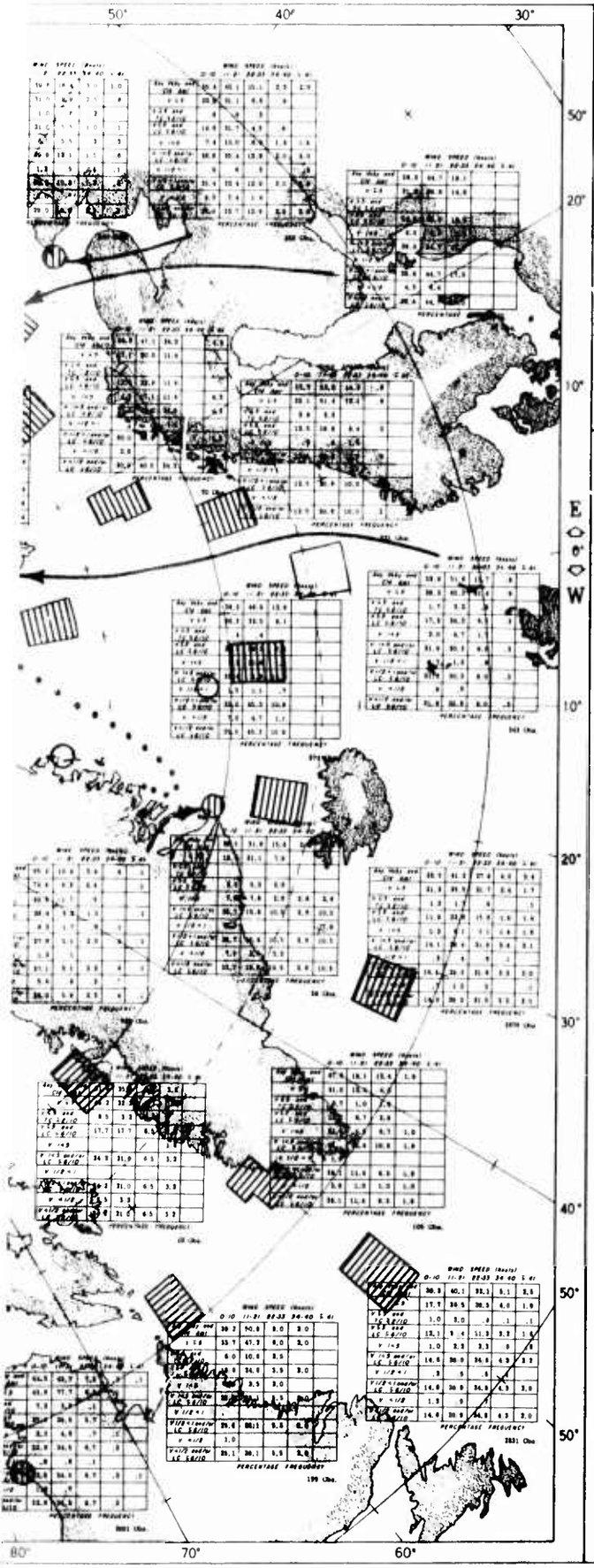
SEPTEMBER

WIND-VISIBILITY-CLO



-CLOUDINESS

CHART 108



Percentage Frequency of simultaneous occurrence of specified Wind, Visibility, and Cloudiness conditions (based on the number of observations which reported wind speed, visibility, total cloud amount, and low cloud amount)



Blank box indicates 0.0 percent

Notation

Any Vsby and Cld Amt = Simultaneous occurrence of wind speed with any visibility and cloud amount combination. This provides a percentage distribution of wind speeds for the observations used in this tabulation.

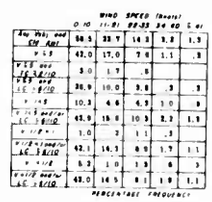
V = Visibility in Nautical Miles
1<5 indicates 1 to (but not including) 5 nautical miles

TC = Total Cloud Amount

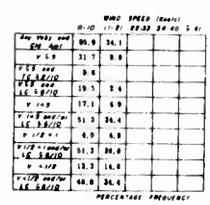
LC = Low Cloud Amount (with base approximately 8000 feet or lower)

Ocean Area 16.6% of the observations on which this tabulation was based reported speed 22-33 knots simultaneous with visibility 1-5 nautical miles and/or low cloud amount 5-6-10

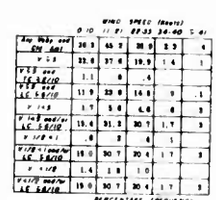
OSTROV VRANGELYA



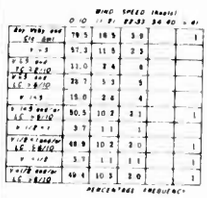
NORTH POLE



OCEAN STATION M



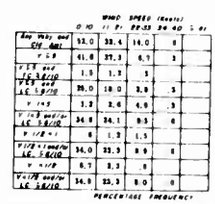
NORD



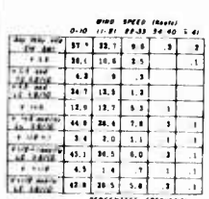
DANMARKSHAVEN



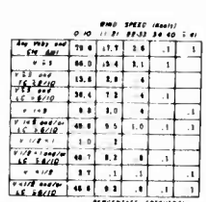
JAN MAYEN



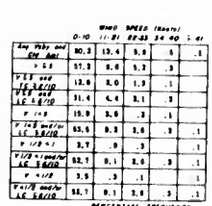
ISACHSEN



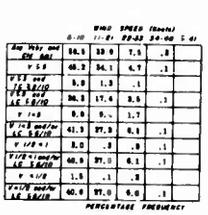
EUREKA



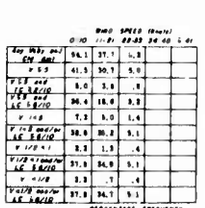
ALERT



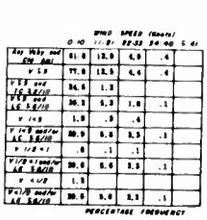
MOULD BAY



RESOLUTE



THULE



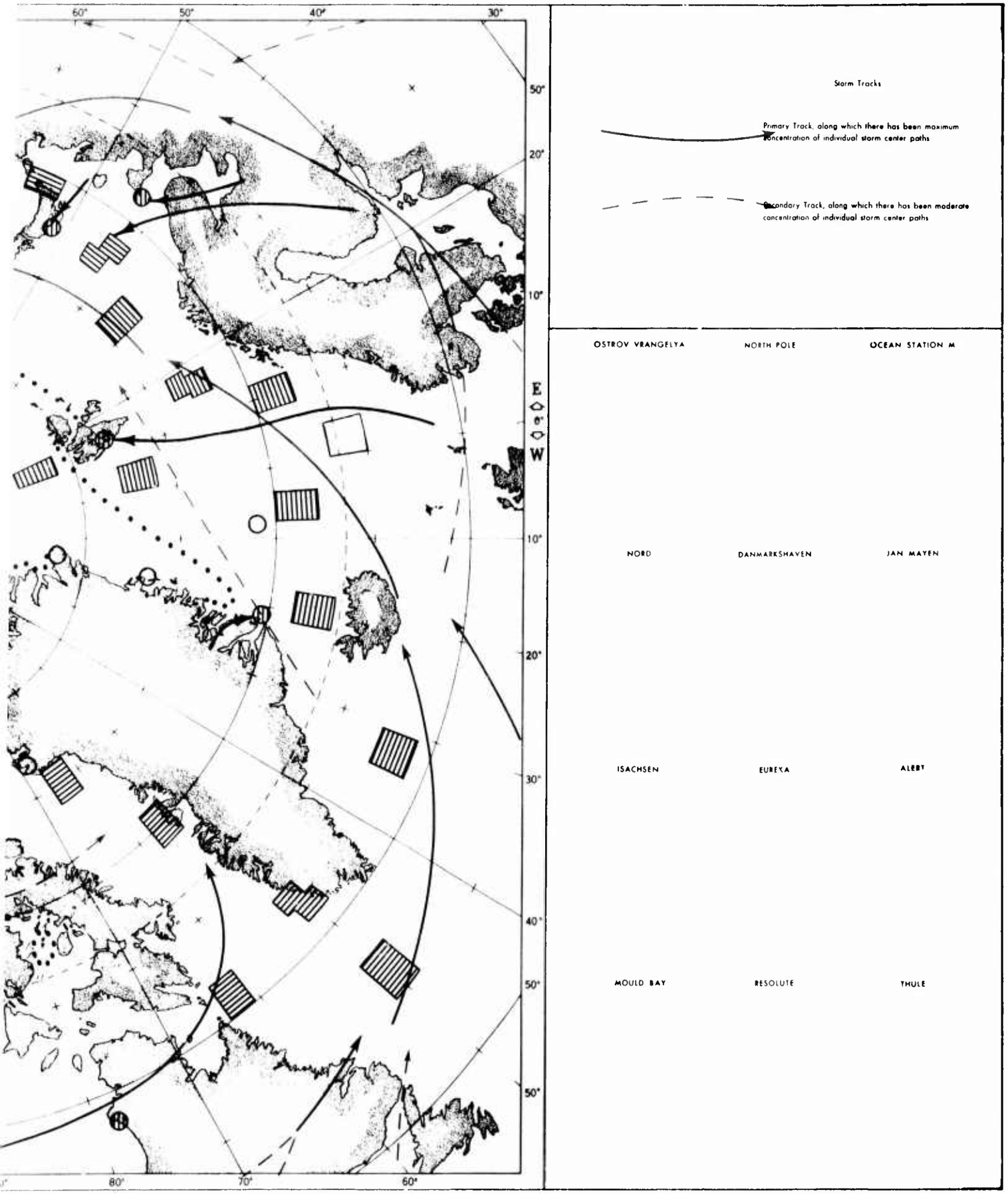
SEPTEMBER

STORM TRA



)RM TRACKS

CHART 109



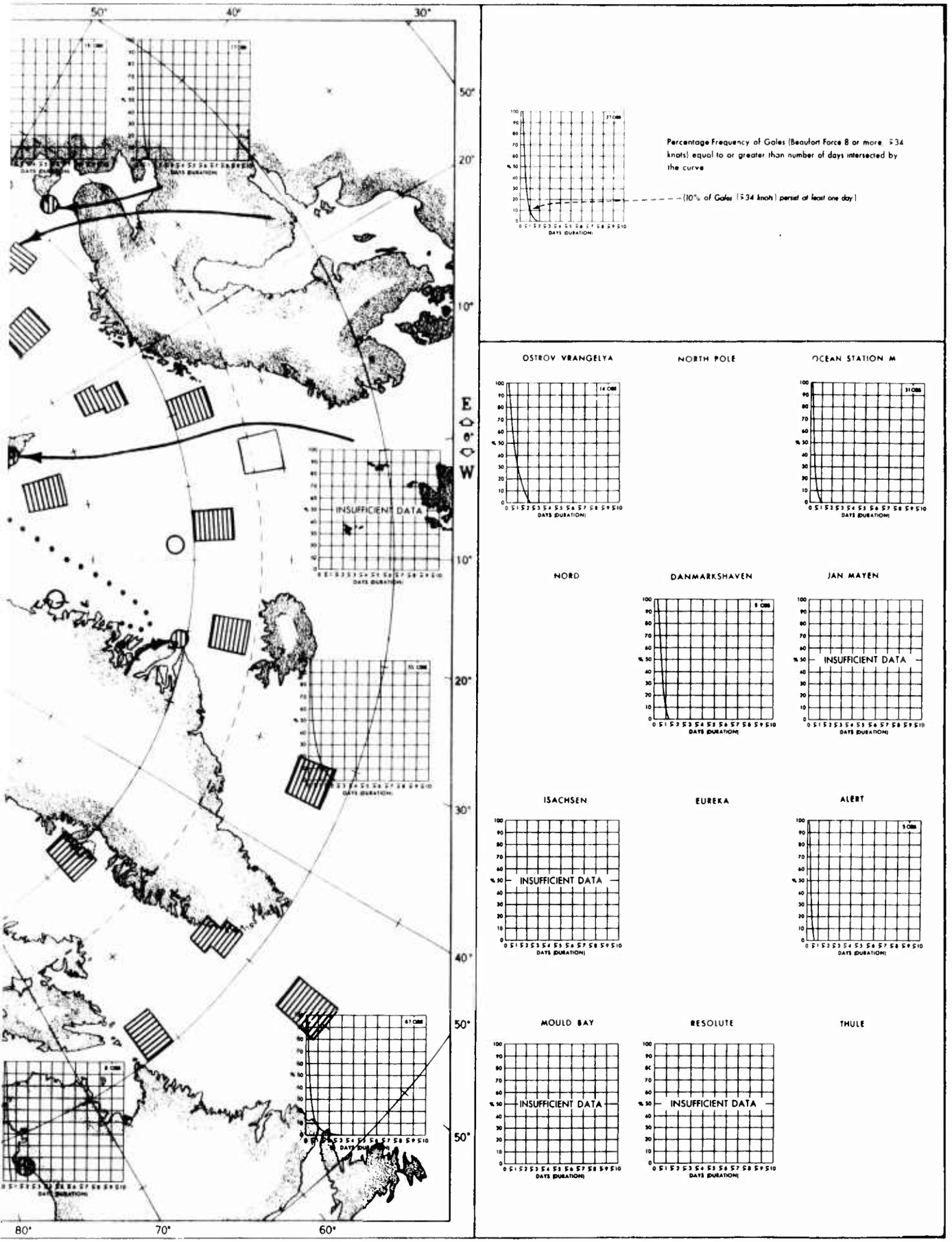
SEPTEMBER

GALE PERSISTEN



SISTENCE

CHART 110



Percentage Frequency of Gales (Beaufort Force 8 or more, 34 knots) equal to or greater than number of days intersected by the curve

(10% of Gales (34 knots) persist at least one day)

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

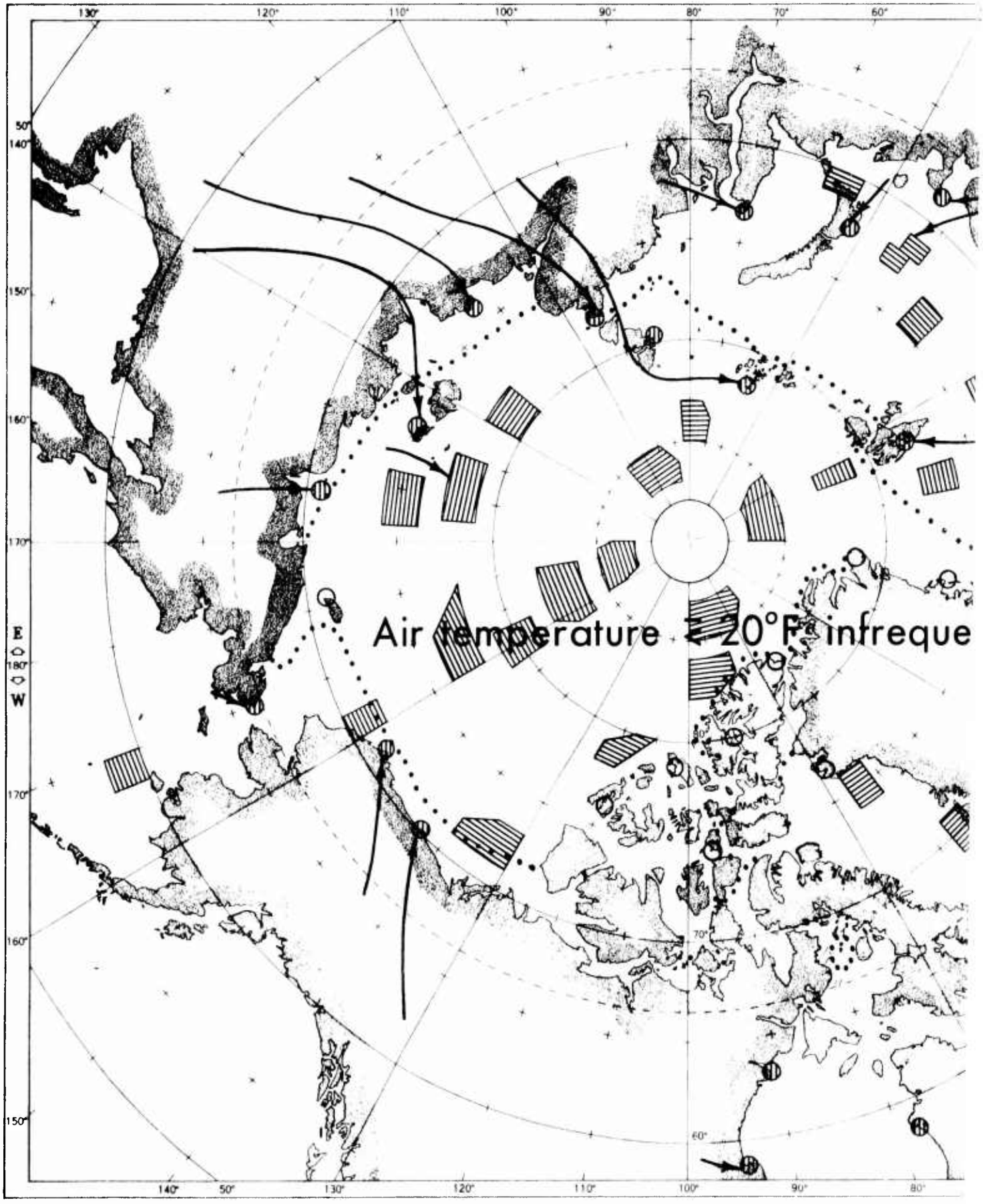
MOULD BAY

RESOLUTE

THULE

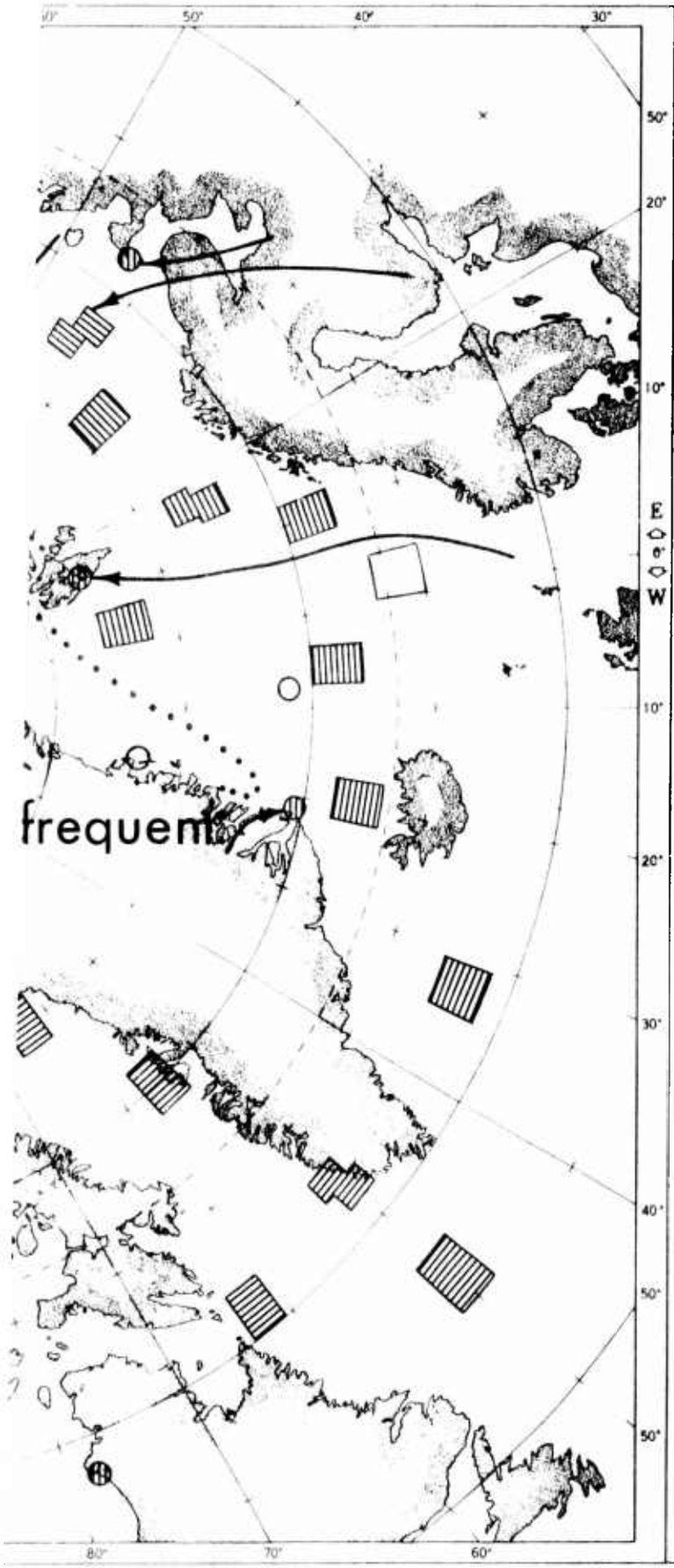
SEPTEMBER

LOW TEMPERATURE

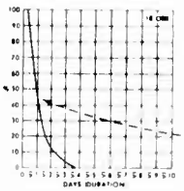


TURE PERSISTENCE

CHART 111



frequen



Percentage Frequency of Air Temperature (-20° F or less) equal to or greater than number of days intersected by the curve

[44% of cold temperatures (≤ 20° F) persist at least one day]

OSTROV VRANGELYA	NORTH POLE	OCEAN STATION M
NORD	DANMARKSHAVEN	JAN MAYEN
ISACHSEN	EUREKA	ALERT
MOULD BAY	RESOLUTE	THULE

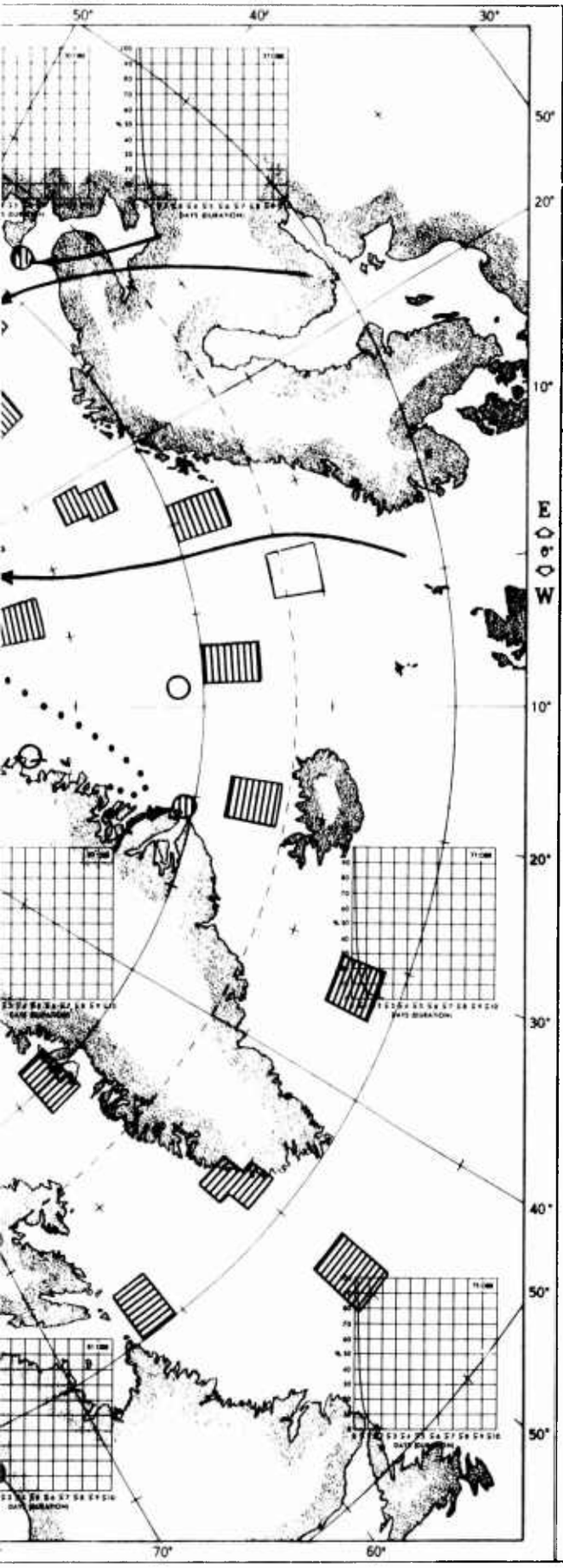
SEPTEMBER

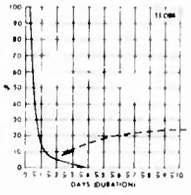
LOW VISIBILITY PERS



PERSISTENCE

CHART 112

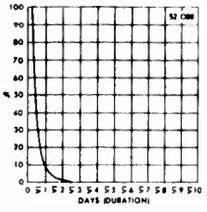




Percentage Frequency of Low Visibility (< 2 nautical miles) equal to or greater than number of days intersected by the curve

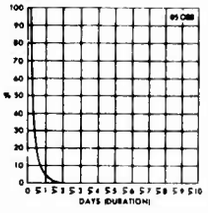
[6% of low visibilities (< 2 miles) persist at least two days]

OSTROV VRANGELYA

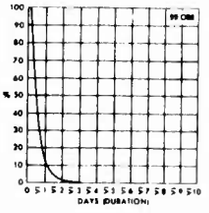


NORTH POLE

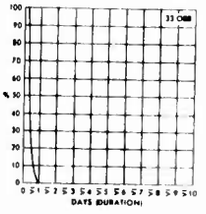
OCEAN STATION M



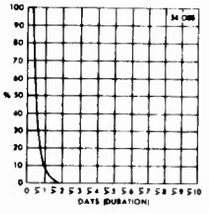
NORD



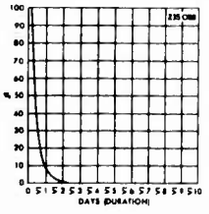
DANMARKSHAVEN



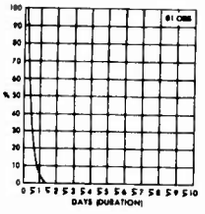
JAN MAYEN



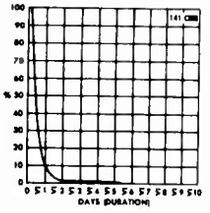
ISACHSEN



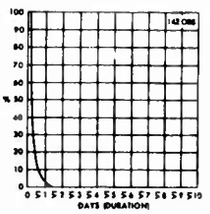
EUREKA



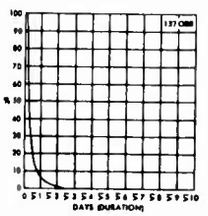
ALERT



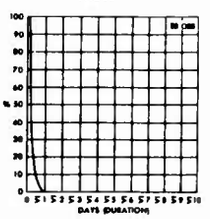
MOULD BAY



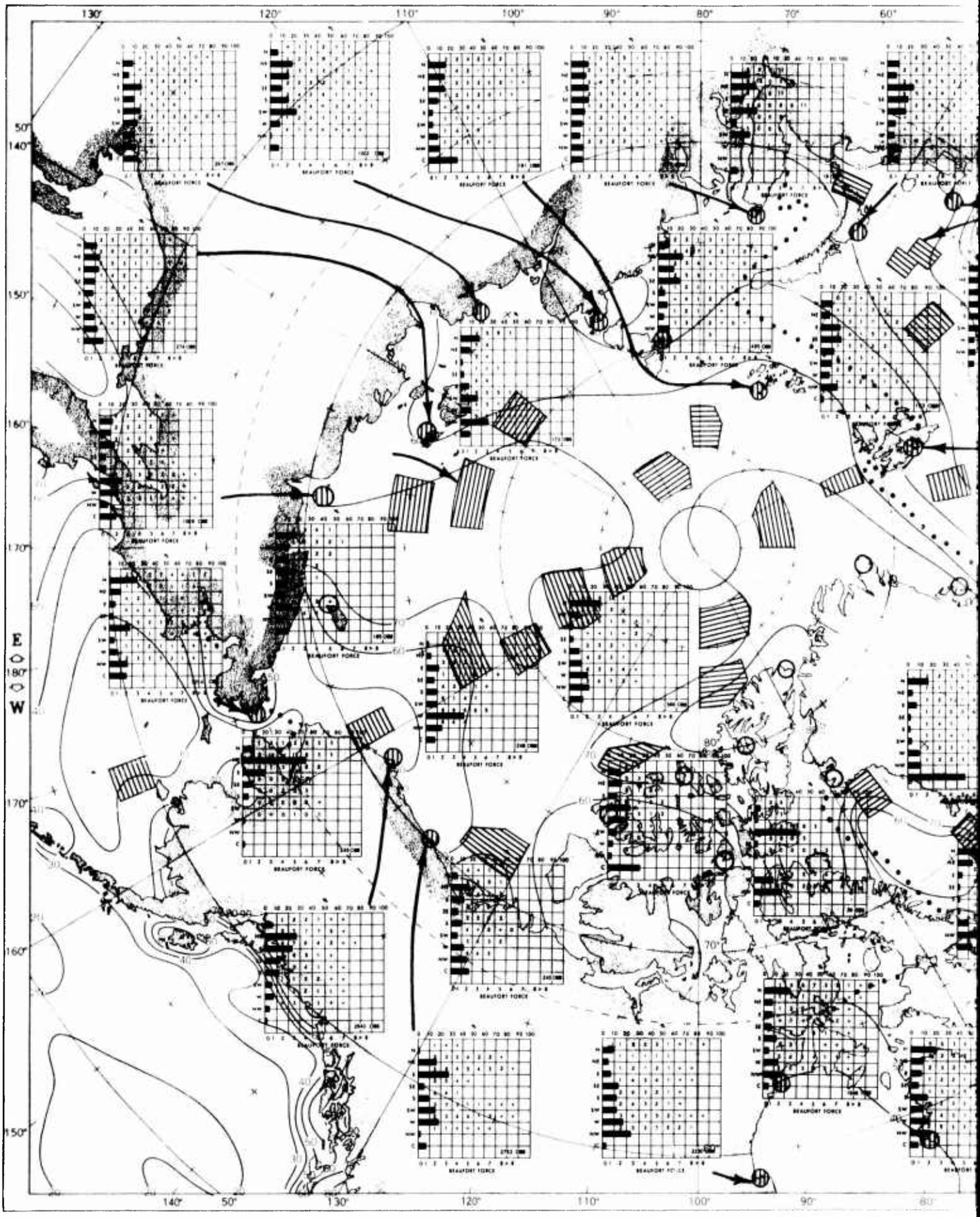
RESOLUTE



THULE

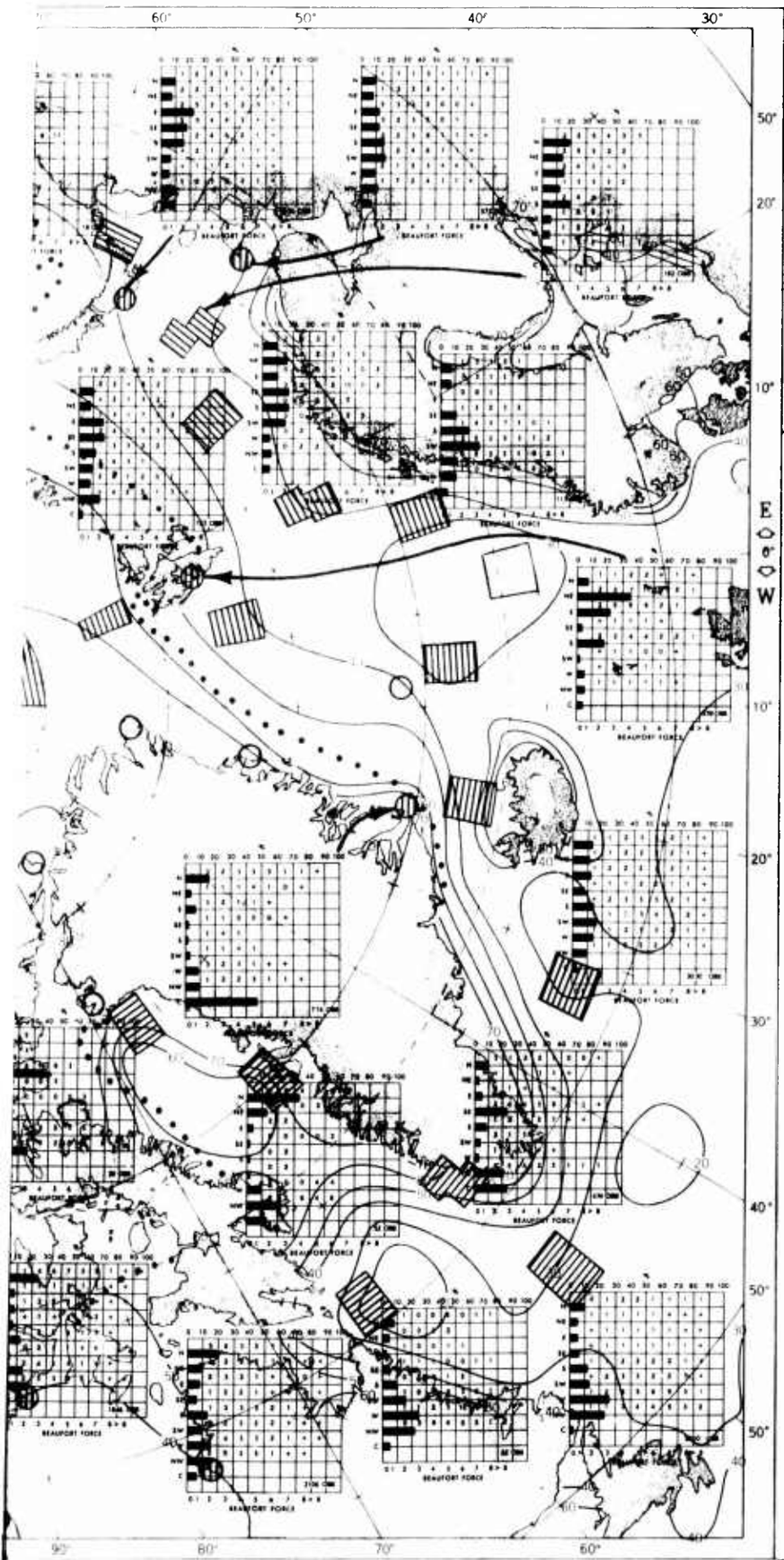


OCTOBER SURFACE W

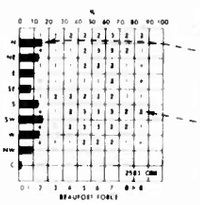


URFACE WIND

CHART 113



Percentage Frequency of Wind Speed Beaufort Force 3 or less (≤ 10 Knots)



Direction Frequency (Top Scale) Bars represent percentage frequency of wind observed from each direction (& calm)

— (14% of all winds were from N)

Speed Frequency (Bottom Scale) percentage frequency of wind speed by Beaufort Force

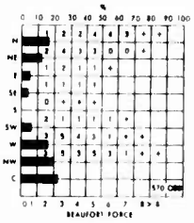
— (12% of all winds from SW were greater than Beaufort Force 8)

All percentages rounded to nearest whole percent

Calm includes Beaufort Force 1 (0.3 knots)

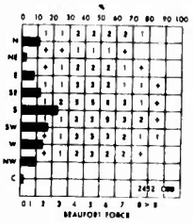
+ indicates less than 1/2 percent

OSTROV VRANGELYA

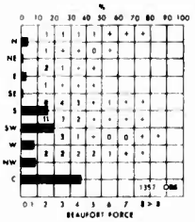


NORTH POLE

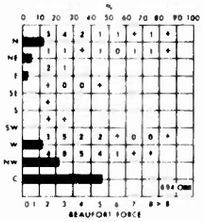
OCEAN STATION M



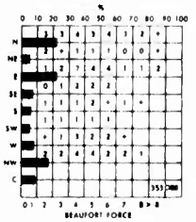
NORD



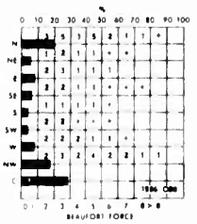
DANMARKSHAVEN



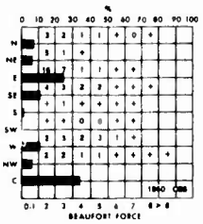
JAN MAYEN



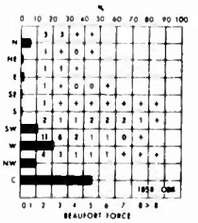
ISACHSEN



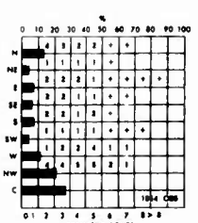
EUREKA



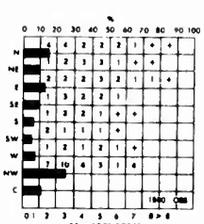
ALERT



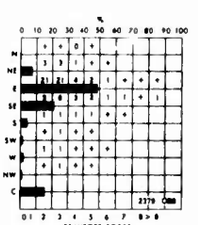
MOULD BAY



RESOLUTE



THULE



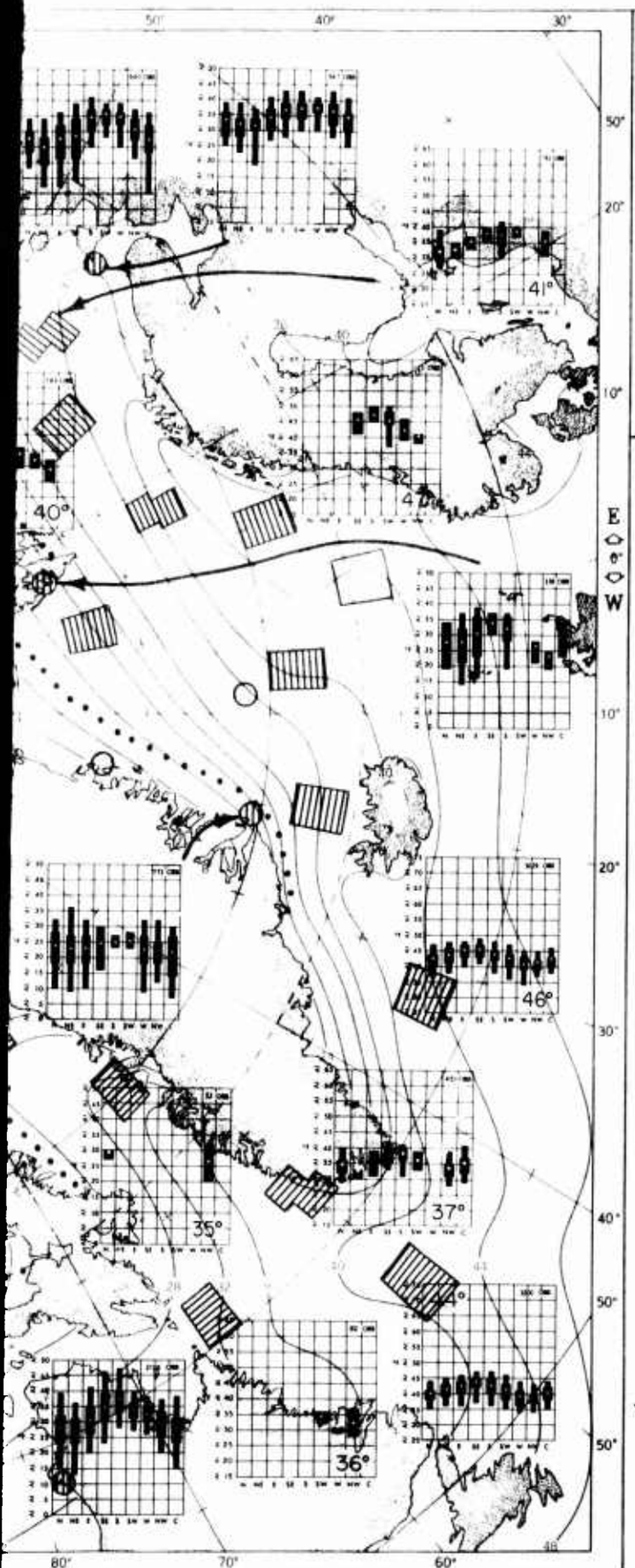
OCTOBER

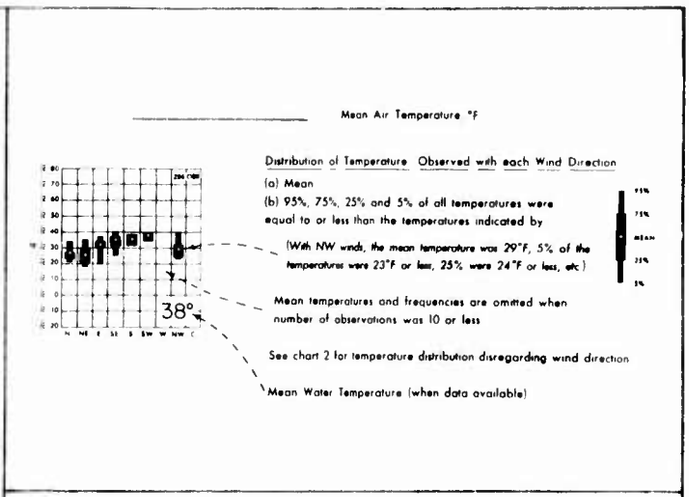
AIR TEMPERATURE BY WIN

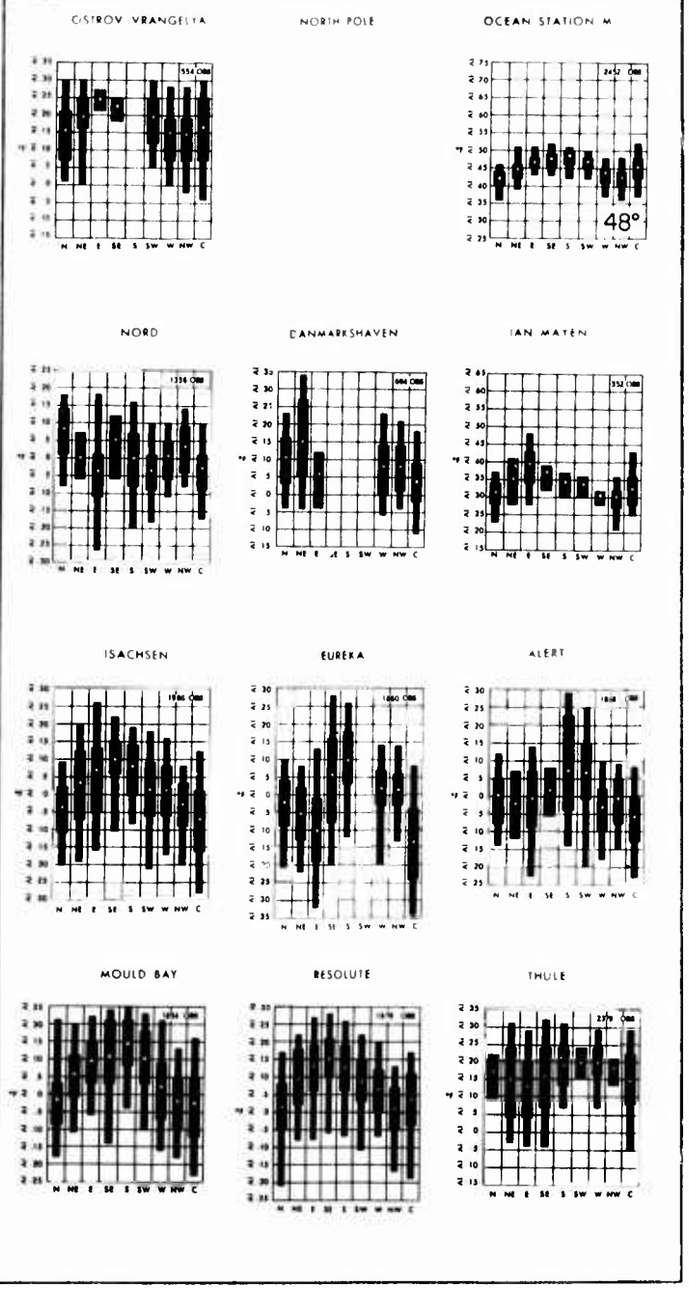


BY WIND DIRECTION

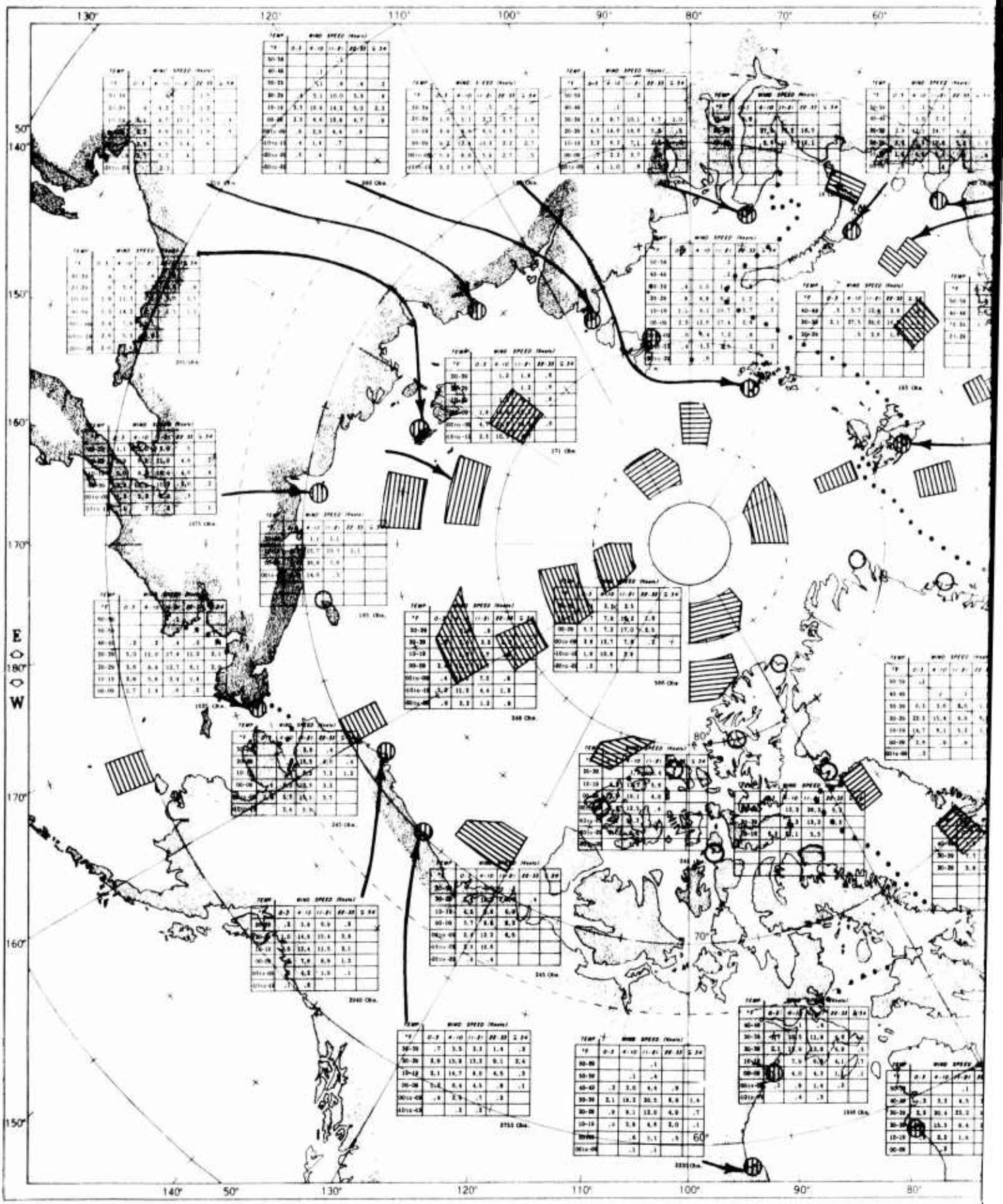
CHART 114





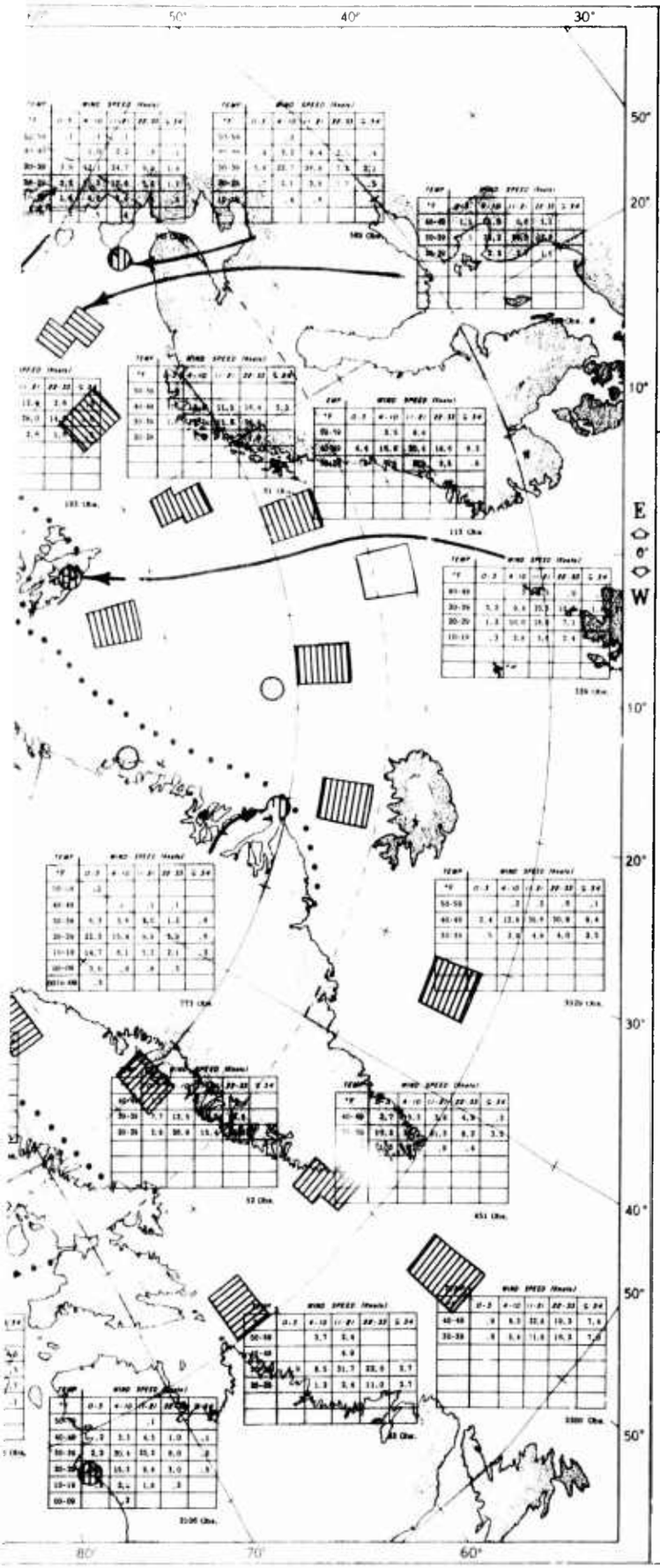


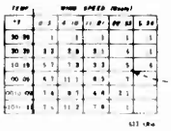
OCTOBER AIR TEMPERATURE vs.



RE vs. WIND SPEED

CHART 115





Percentage Frequency of simultaneous occurrence of specified Temperature groups and Wind Speed

(5% of the observations on which this tabulation was based reported wind speed 22-33 knots simultaneous with temperature from 10° through 19°F.)

OSTROV VRANGELYA

°F	0-3	4-10	11-21	22-33	≥ 34
40-49					.2
30-39	2.5	2.5	1.8	.9	
20-29	6.9	11.9	13.0	2.7	.2
10-19	8.7	9.6	10.8	4.9	.5
00-09	4.9	8.7	6.0	2.5	.5
00 to -09	1.1	.7	.4	.2	
-10 to -19	.2				

554 Obs.

NORTH POLE

OCEAN STATION M

°F	0-3	4-10	11-21	22-33	≥ 34
50-59	.3	1.8	5.8	7.3	.8
40-49	1.7	11.0	33.0	27.9	5.5
30-39	.2	.6	2.7	2.1	.4

3452 Obs.

NORD

°F	0-3	4-10	11-21	22-33	≥ 34
30-39		.1	.1		
20-29	.1	.3	.2	.2	.1
10-19	3.1	4.7	3.7	.9	.1
00-09	12.8	17.5	4.8	.7	.2
00 to -09	13.8	18.4	3.4	.1	
-10 to -19	6.8	5.0			
-20 to -29	.6	1.6			
-30 to -39		.3	.1		

1336 Obs.

DANMARKSHAVEN

°F	0-3	4-10	11-21	22-33	≥ 34
30-39				.6	.4
20-29	.6	1.4	3.0	.6	.4
10-19	11.7	11.2	9.3	1.9	1.3
00-09	31.3	14.0	8.8	1.2	.1
00 to -09	8.9	4.8	1.4	.1	
-10 to -19	2.2	.3	.1		

894 Obs.

JAN MAYEN

°F	0-3	4-10	11-21	22-33	≥ 34
50-59		.3	.6	.3	
40-49	1.4	2.6	8.2	3.1	.8
30-39	4.9	12.5	25.0	14.5	4.0
20-29	9.1	5.4	7.4	4.0	1.1
10-19			.9	.3	

352 Obs.

ISACHSEN

°F	0-3	4-10	11-21	22-33	≥ 34
20-29	.6	.5	.8	.5	
10-19	2.0	6.4	6.2	1.4	.2
00-09	6.8	10.8	7.9	4.3	.8
00 to -09	8.1	8.3	6.0	2.5	1.1
-10 to -19	7.0	5.7	3.9	.8	.1
-30 to -39	4.5	1.7	.8	.1	
-40 to -49	.8	.2			

1988 Obs.

EUREKA

°F	0-3	4-10	11-21	22-33	≥ 34
30-39		.2	.5	.2	
20-29	.2	1.5	1.8	.3	
10-19	1.1	3.0	3.8	.8	.1
00-09	5.0	13.5	5.1	.9	.2
00 to -09	8.2	11.7	1.8	.6	.1
-10 to -19	9.0	10.6	1.5		
-20 to -29	8.9	6.1	.5	.2	
-30 to -39	3.1	1.9			
-40 to -49	.1				

1860 Obs.

ALERT

°F	0-3	4-10	11-21	22-33	≥ 34
30-39			.1	.2	
20-29	.1	.3	.5	1.6	.3
10-19	1.6	1.9	1.1	1.4	.8
00-09	11.5	12.8	4.4	2.7	1.0
00 to -09	18.7	12.8	1.5	.4	.2
-10 to -19	13.3	7.5	.4	.2	.2
-30 to -39	3.9	1.7	.1		

1858 Obs.

MOULD BAY

°F	0-3	4-10	11-21	22-33	≥ 34
30-39		.1	.1		
20-29	.6	3.5	4.3	.8	
10-19	4.1	5.6	7.5	1.5	.1
00-09	8.3	9.9	9.7	2.8	.1
00 to -09	8.3	8.2	8.1	1.7	
-10 to -19	5.2	6.9	3.7	.9	
-30 to -39	2.5	.9	.1		
-40 to -49	.1	.1			

1854 Obs.

RESOLUTE

°F	0-3	4-10	11-21	22-33	≥ 34
30-39		.2	.1	.2	.1
20-29	.4	2.1	4.7	3.1	.4
10-19	3.2	10.2	10.8	3.8	.4
00-09	4.0	16.4	10.4	3.6	.2
00 to -09	3.9	8.4	4.3	1.3	.2
-10 to -19	.8	4.5	1.8	.3	
-20 to -29	.4	1.3	.1		

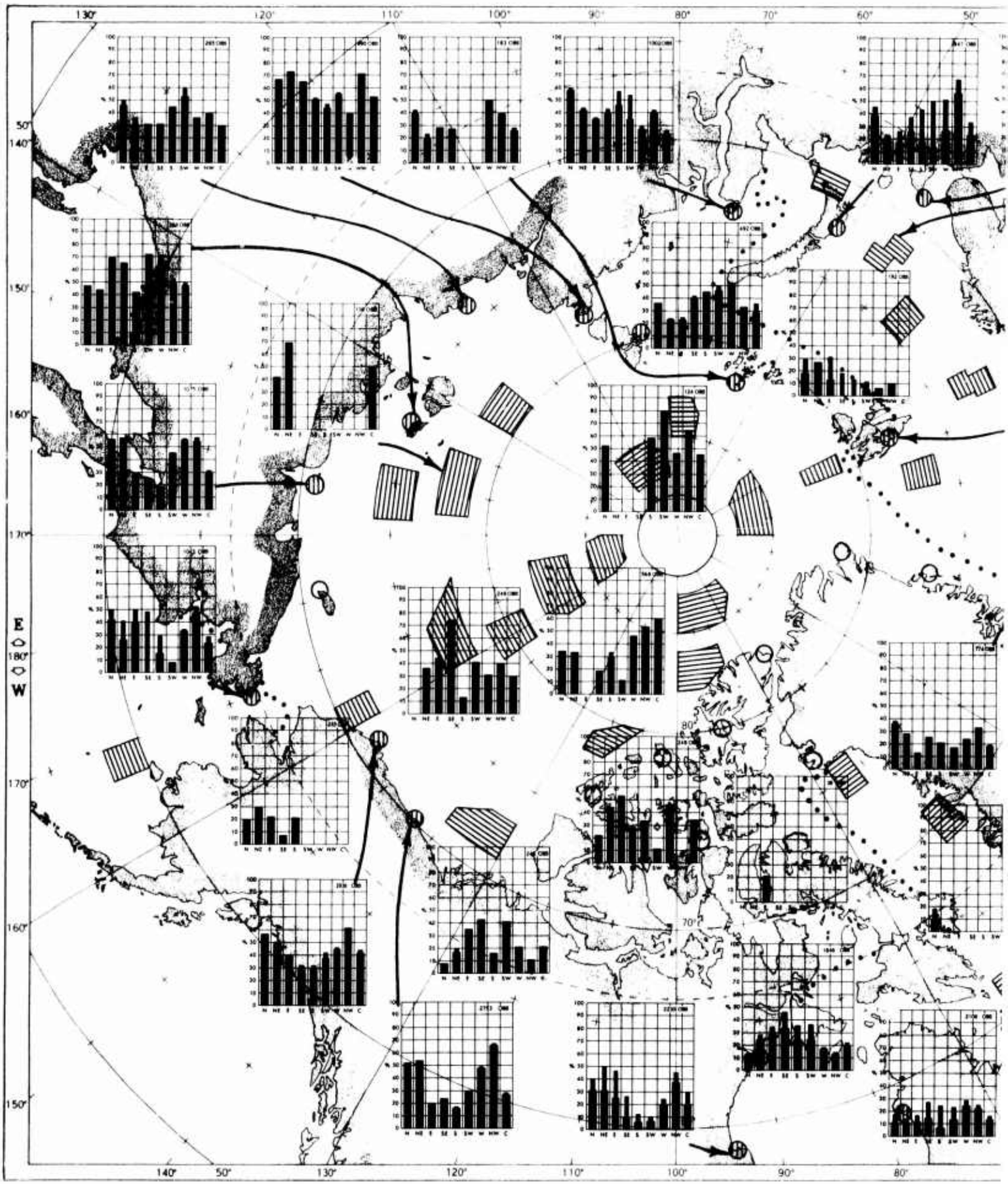
1979 Obs.

THULE

°F	0-3	4-10	11-21	22-33	≥ 34
30-39	.7	2.4	3.6	1.4	.3
20-29	4.9	13.5	4.7	1.8	.6
10-19	5.8	22.7	6.4	.4	
00-09	3.0	30.7	1.9	.1	
00 to -09	1.2	8.0	.8		
-10 to -19	.3	.4			

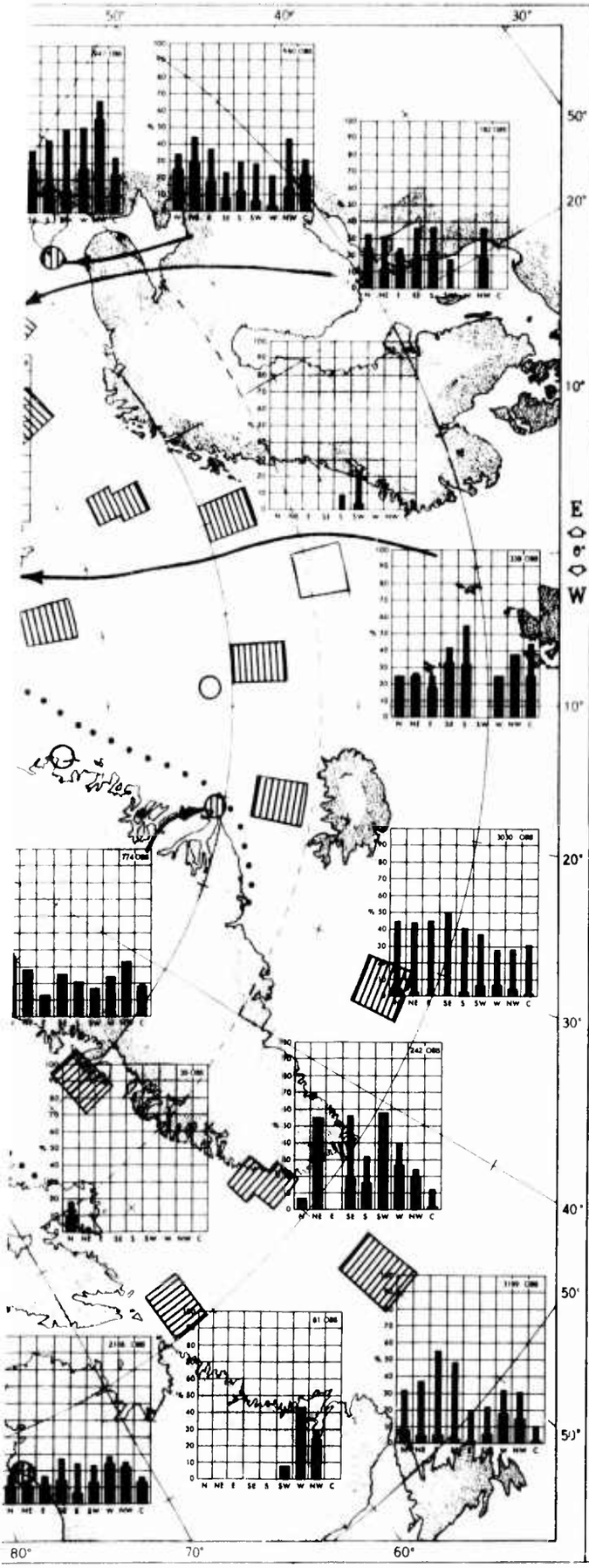
3378 Obs.

OCTOBER PRECIPITATION BY WIND



WIND DIRECTION

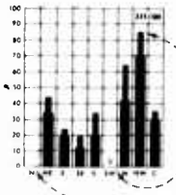
CHART 116



Percentage Frequency of Precipitation by Wind Direction

(a) Percentage of all present weather (and wind) observations reporting precipitation

(b) Percentage of observations recording liquid or frozen precipitation as indicated by

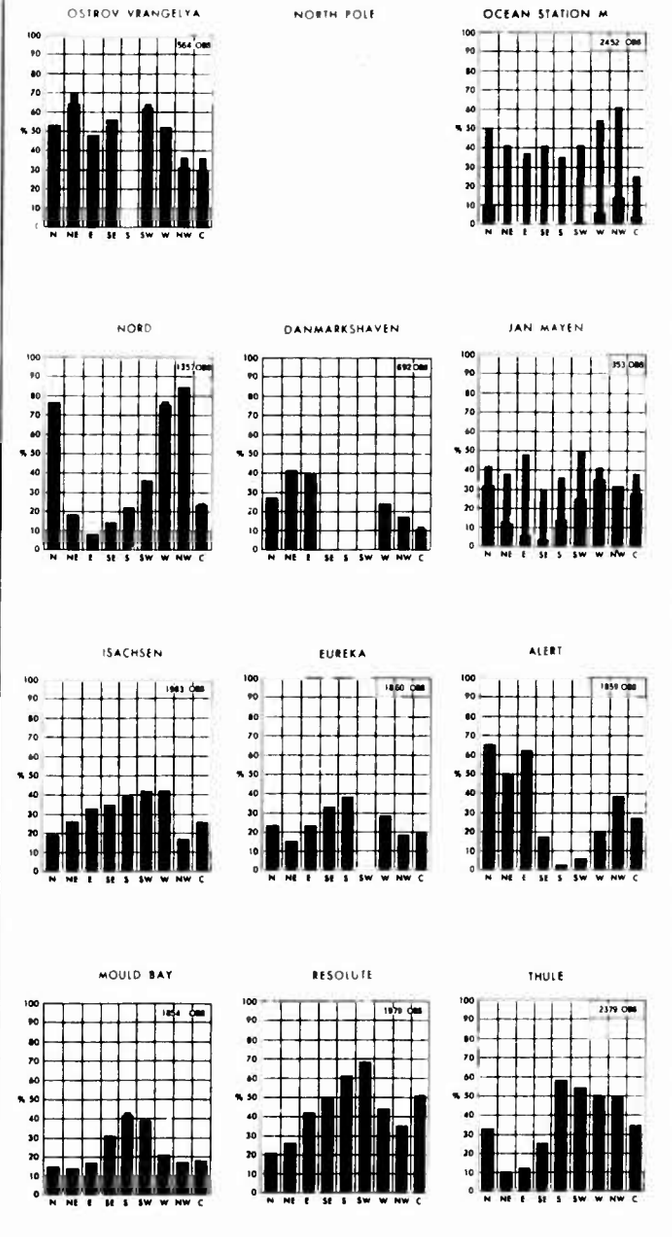


(85% of all NW winds were accompanied by precipitation, 15% frozen, 70% liquid)

0 replaces bar when no precipitation was observed with winds from a direction

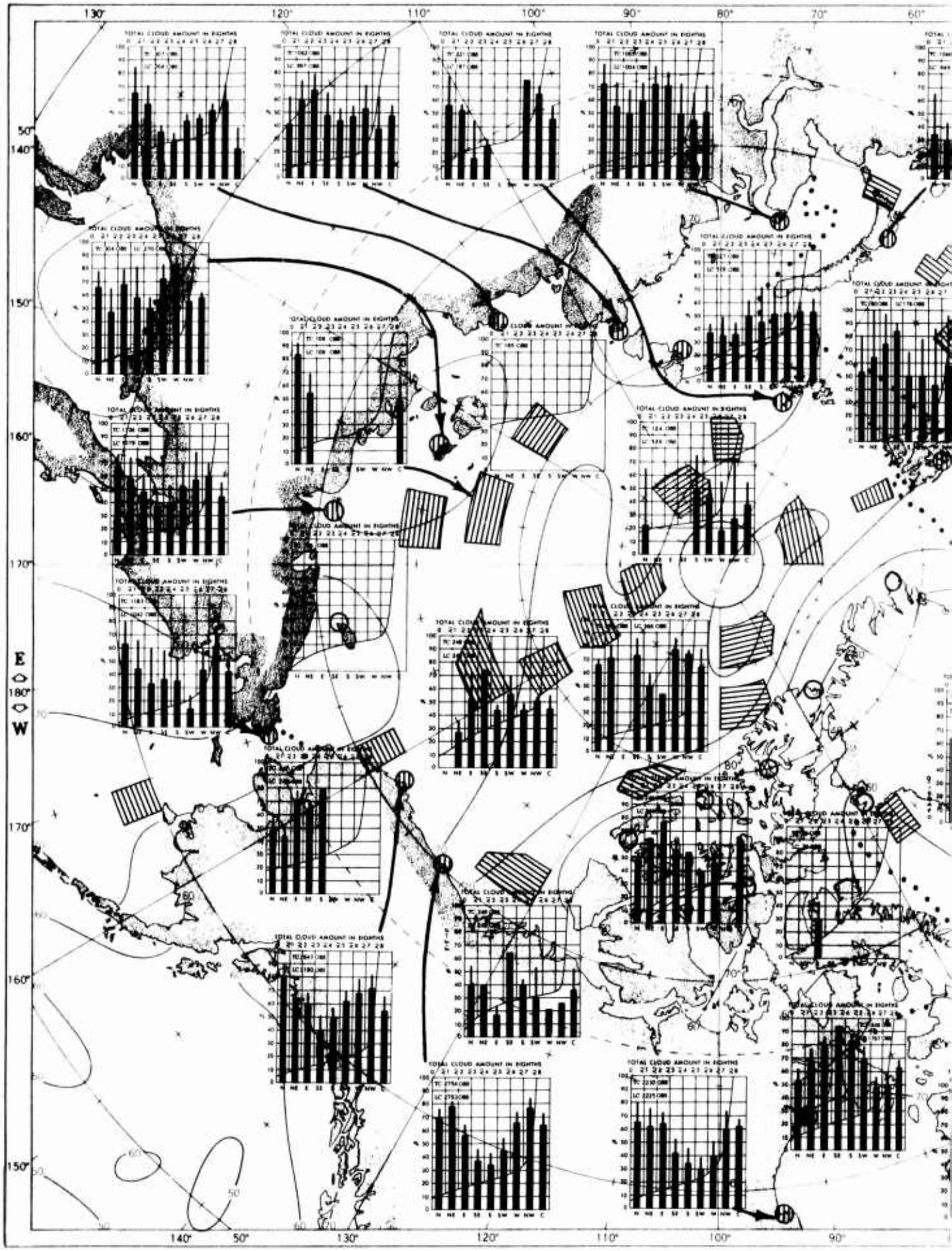
Bar or 0 omitted when number of observations was 10 or less

See chart 6 for precipitation incidence disregarding wind direction



OCTOBER

CLOUD



LOUDINESS

CHART 117



Percentage Frequency of Total Cloud Amount 8/10 or more

Total Cloud Amount (TC) Percentage frequency of total cloud amounts equal to or less than amount intersected by the curve

(62% of all total cloud amounts were 7/8 or less)

Lower Cloud Amount (LC) Percentage proportions of winds from each direction that were accompanied by low or middle cloud amounts greater than 5/8 and greater than 7/8

(52% of all NW winds were accompanied by lower cloud amounts >5/8 and 38% by lower cloud amounts >7/8)

[>5/8 includes 6/8 8/8 and 7/10-10/10, >7/8 includes 8/8 and 9/10-10/10]

0 replaces bar when no low cloud amounts >5/8 were observed with winds from a direction

Bar (or 0) is omitted when the number of observations including both wind direction and low cloud amount was 10 or less for a direction

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

MOULD BAY

RESOLUTE

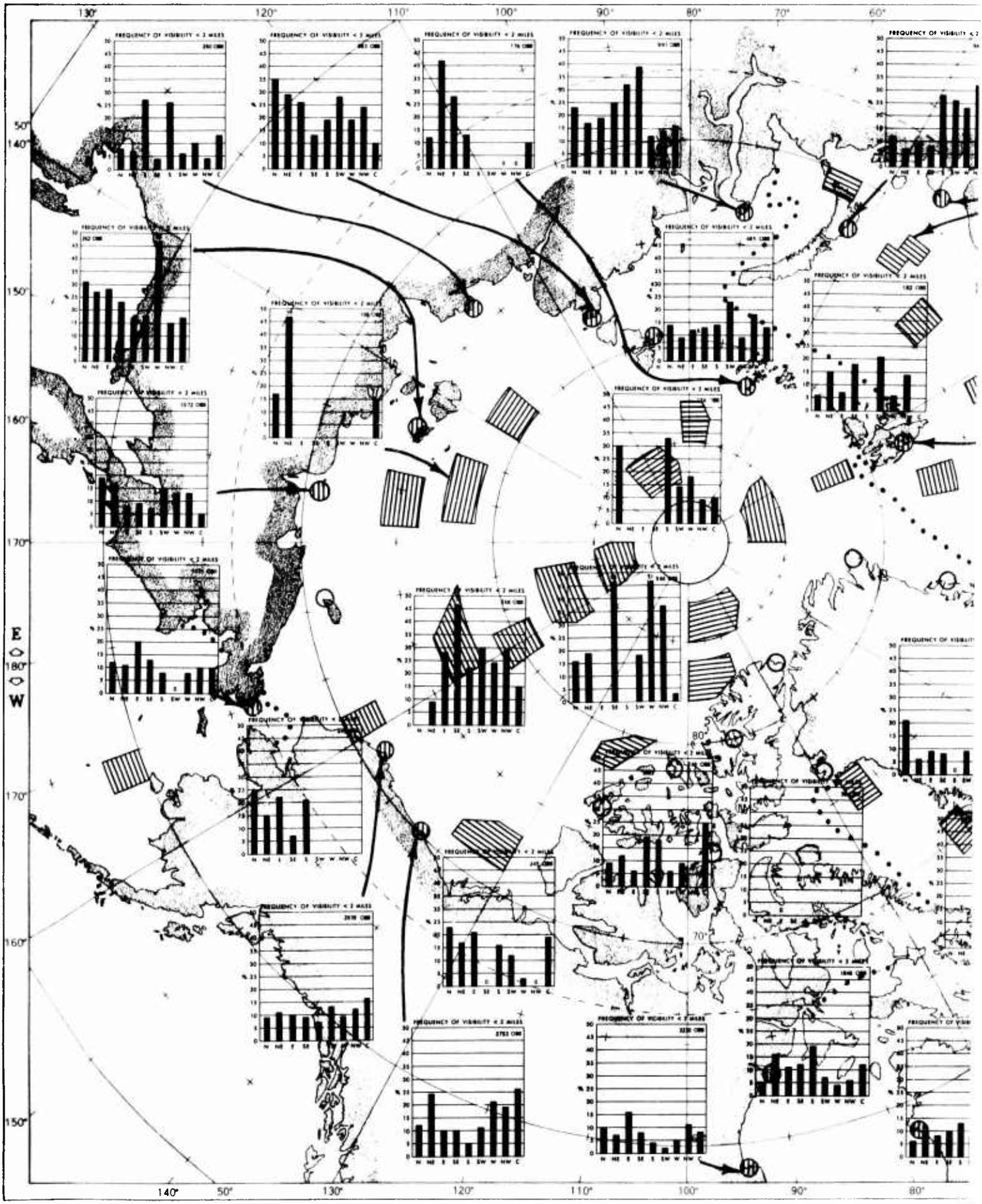
THULE

1

2

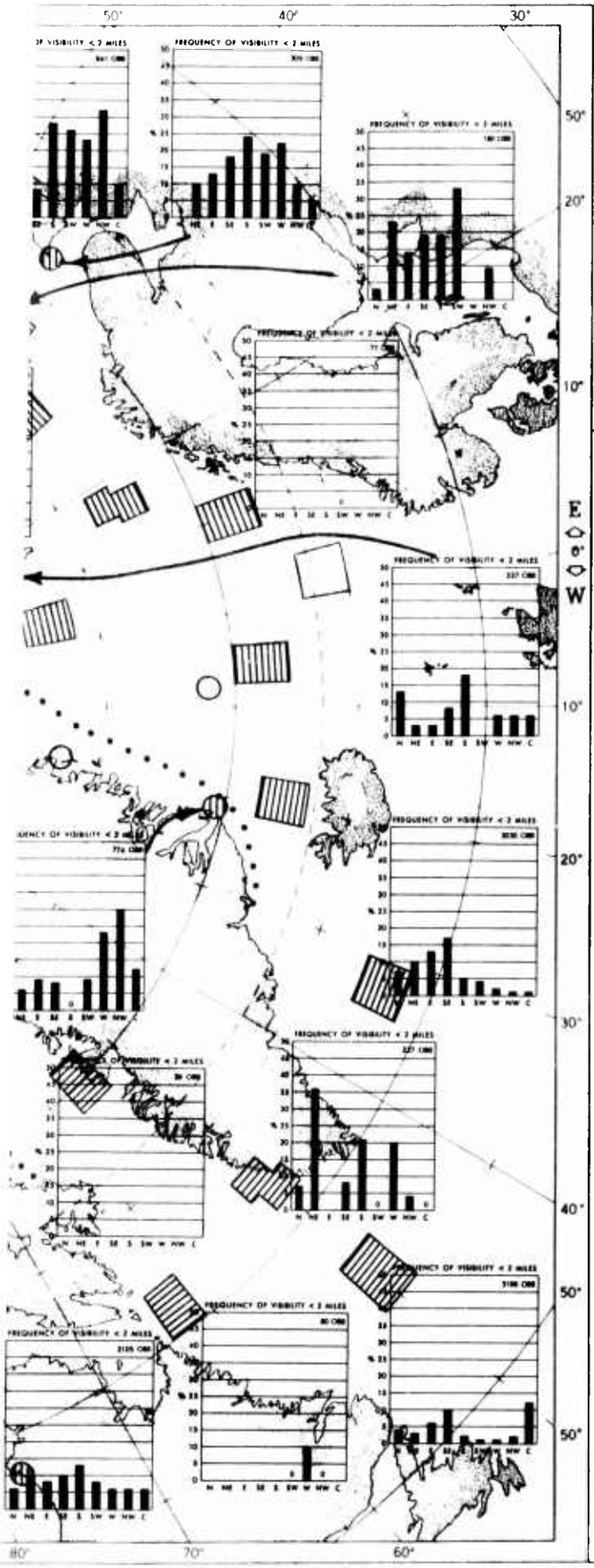
OCTOBER

LOW VISIBILITY BY WIN



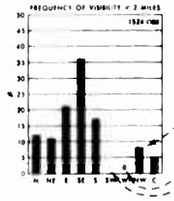
WIND DIRECTION

CHART 118



Percentage Frequency of Low Visibility by Wind Direction

Percentage of all visibility (and wind) observations reporting visibility less than 2 nautical miles.



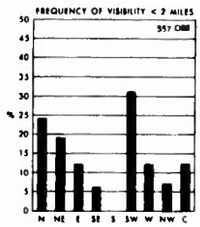
(8% of all NW winds were accompanied by visibility less than 2 miles)

0 replaces bar when no visibilities <2 miles were observed with winds from a direction

Bar or 0 omitted when number of observations was 10 or less

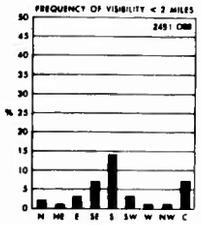
See chart 9 for low visibility incidence disregarding wind direction

OSTROV VRANGELYA

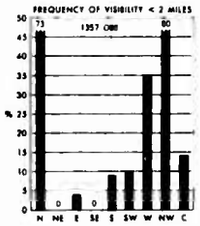


NORTH POLE

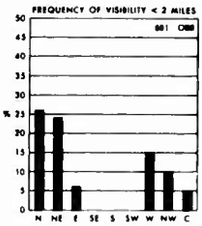
OCEAN STATION M



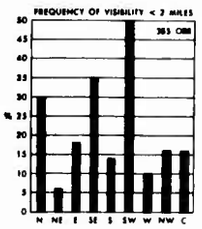
NORD



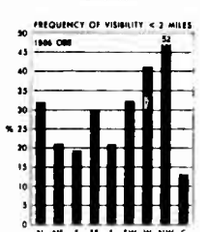
DANMARKSHAVEN



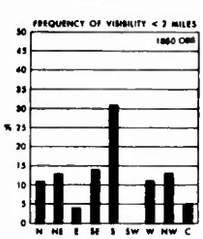
JAN MAYEN



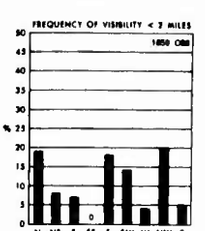
ISACHSEN



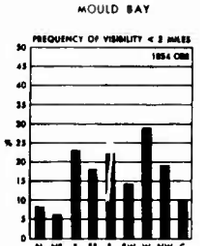
EUREKA



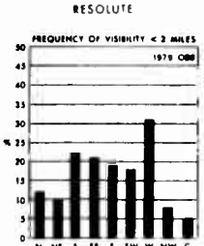
ALERT



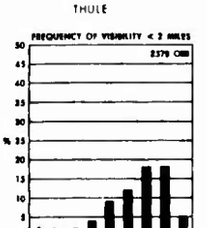
MOULD BAY



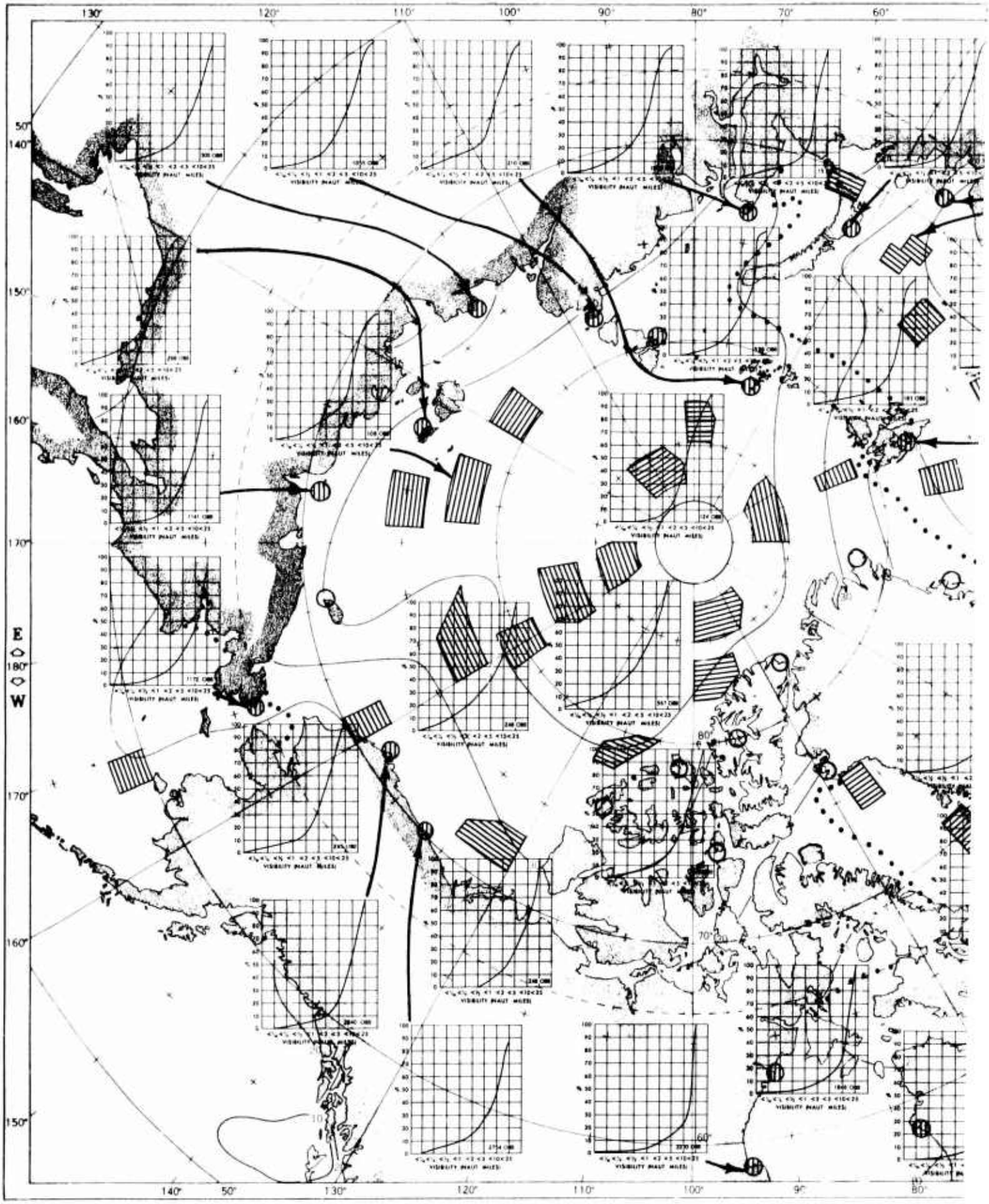
RESOLUTE



THULE

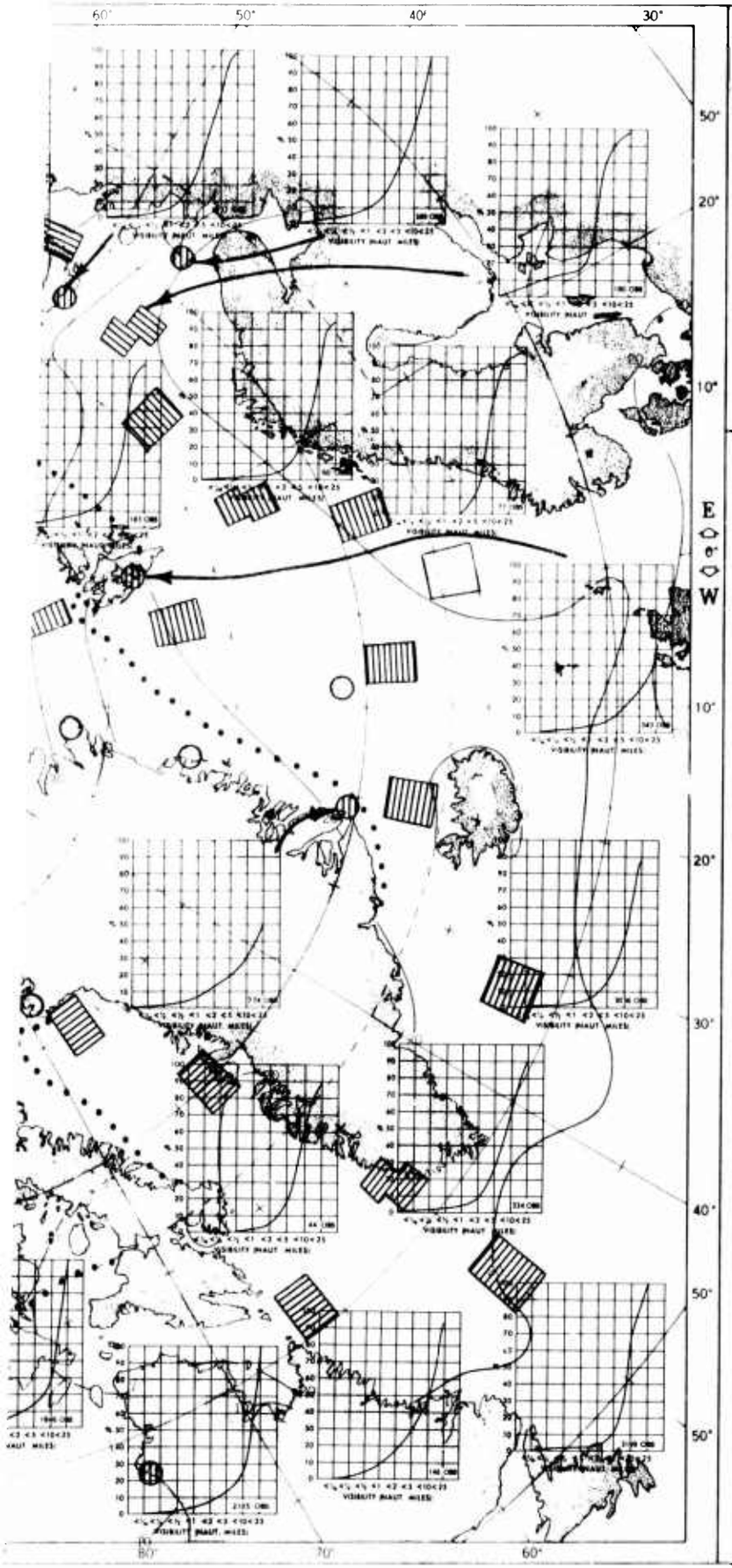


OCTOBER VISIBILITY

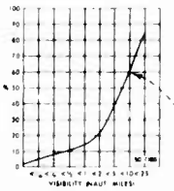


'ISIBILITY

CHART 119



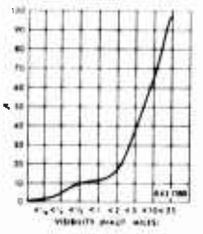
Percentage Frequency of Visibility <5 Nautical Miles



Percentage Frequency of Visibilities less than amount intersected by the curve

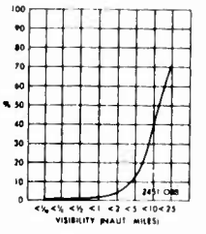
(60% of all visibilities were 10 nautical miles or less)

OSTROV VRANGELYA

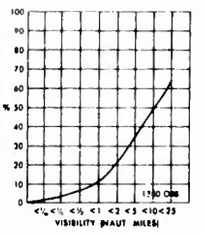


NORTH POLE

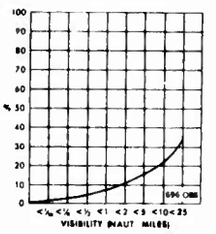
OCEAN STATION M



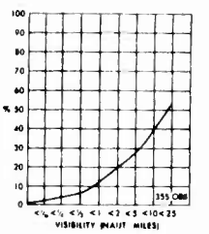
NORD



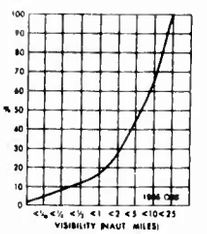
DANMARKSHAVEN



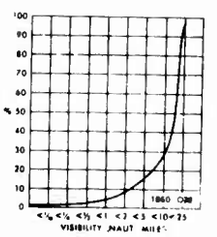
JAN MAYEN



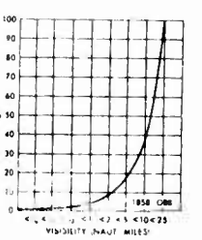
ISACHSEN



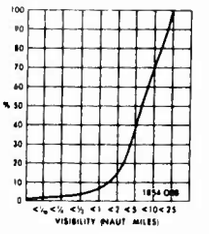
EUREKA



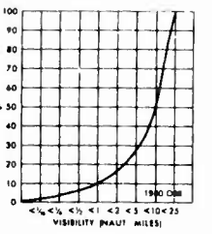
ALERT



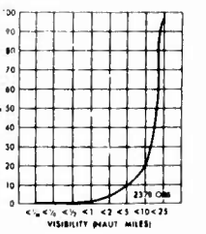
MOULD BAY



RESOLUTE

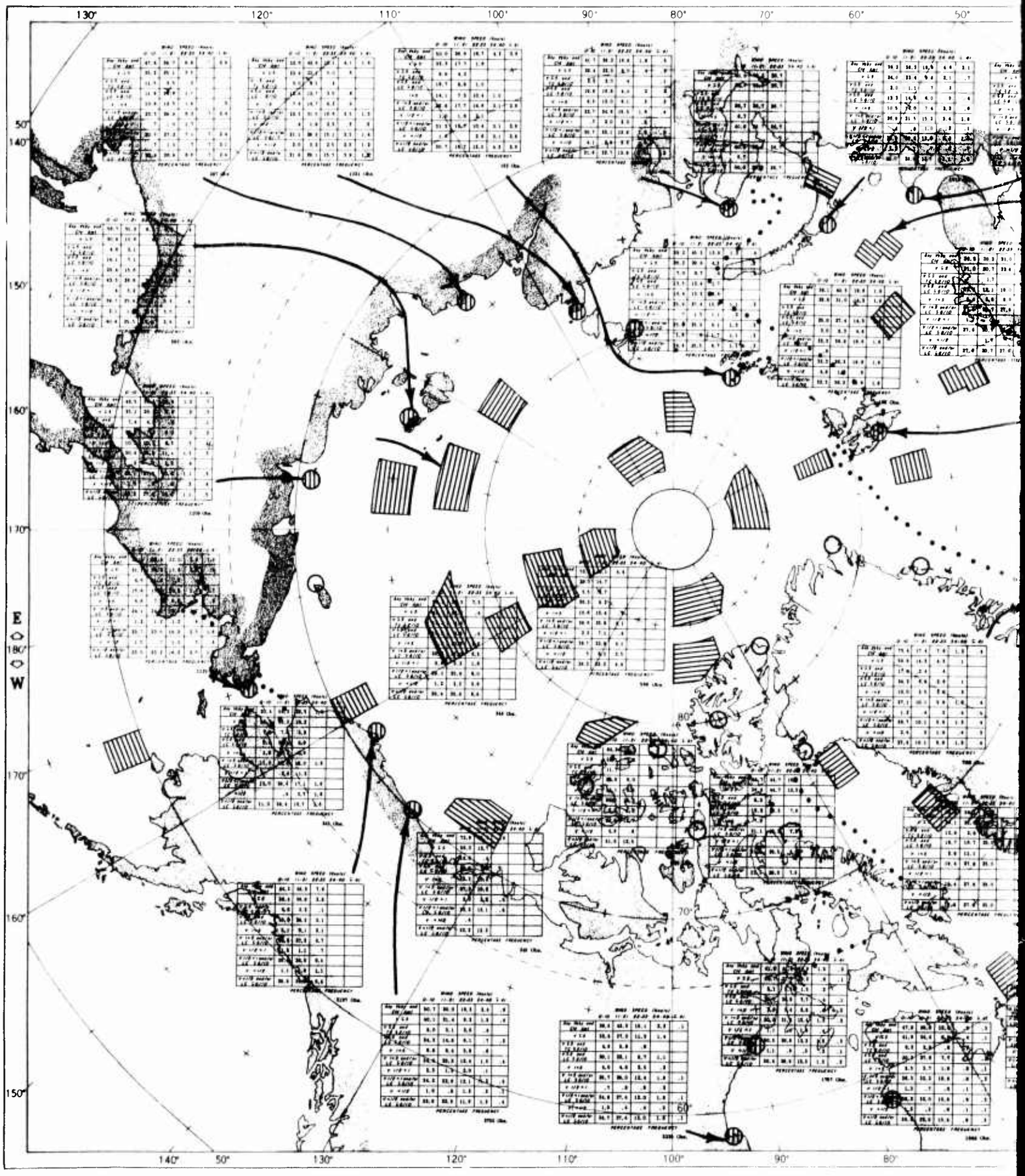


THULE



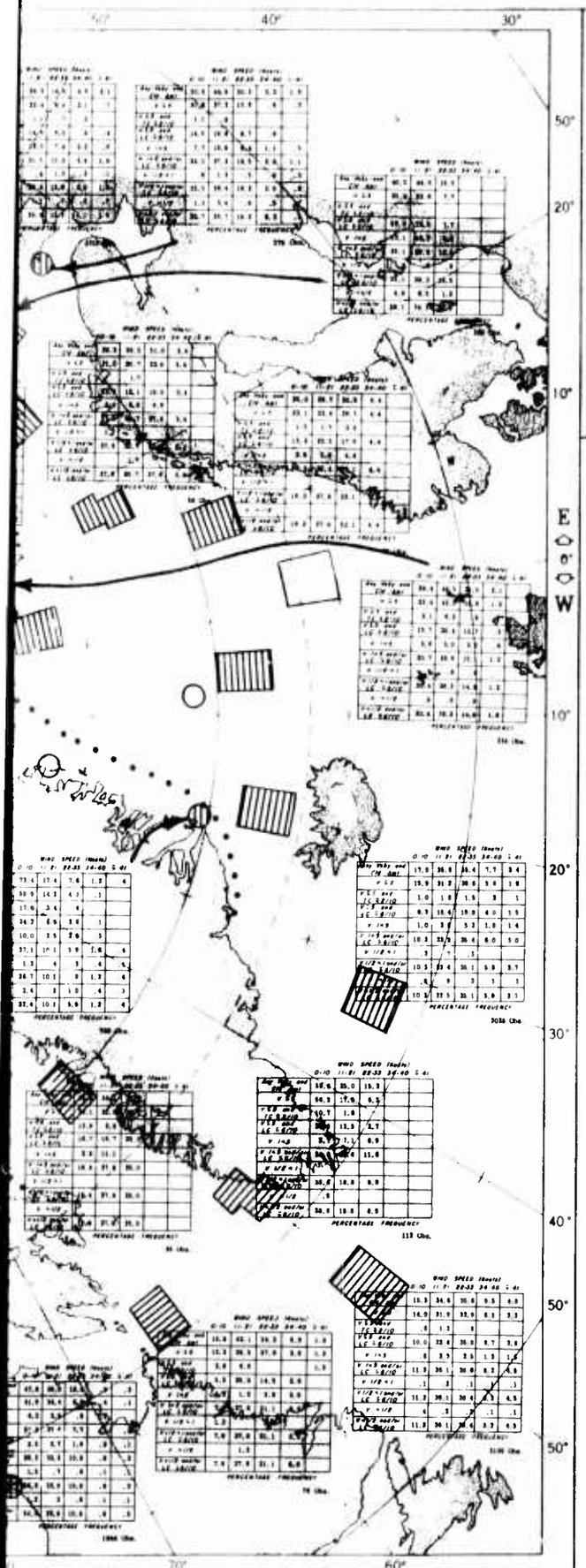
OCTOBER

WIND-VISIBILITY-CLOU



CLOUDINESS

CHART 120



Percentage Frequency of simultaneous occurrence of specified Wind, Visibility, and Cloudiness conditions based on the number of observations which reported wind speed visibility total cloud amount and low cloud amount



Blank box indicates 0.0 percent

Notation

Any Vsby and Cld Amt = Simultaneous occurrence of wind speed with any visibility and cloud amount combination This provides a percentage distribution of wind speeds for the observations used in this tabulation

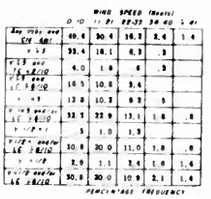
V = Visibility in Nautical Miles
1<5 indicates 1 to (but not including) 5 nautical miles

TC = Total Cloud Amount

LC = Low Cloud Amount (with base approximately 8000 feet or lower)

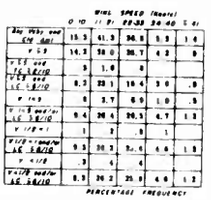
Ocean Area 166% of the observations on which this tabulation was based reported speed 22-33 knots simultaneous with visibility 15 nautical miles and/or low cloud amount 5 6 10)

OSTROV VRANGELYA

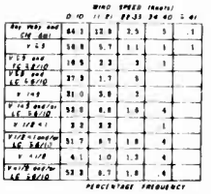


NORTH POLE

OCEAN STATION M



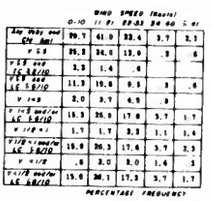
NORD



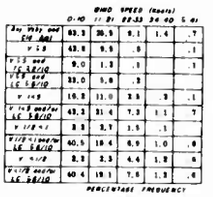
DANMARKSHAVEN



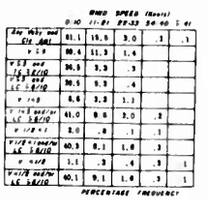
JAN MAYEN



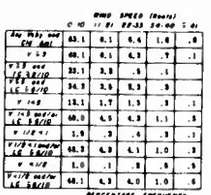
ISACHSEN



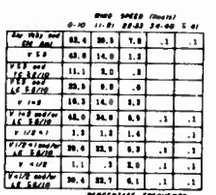
EUREKA



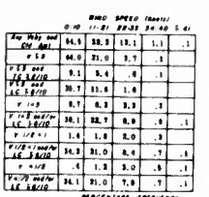
ALERT



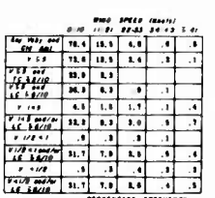
MOULD BAY



RESOLUTE



THULE



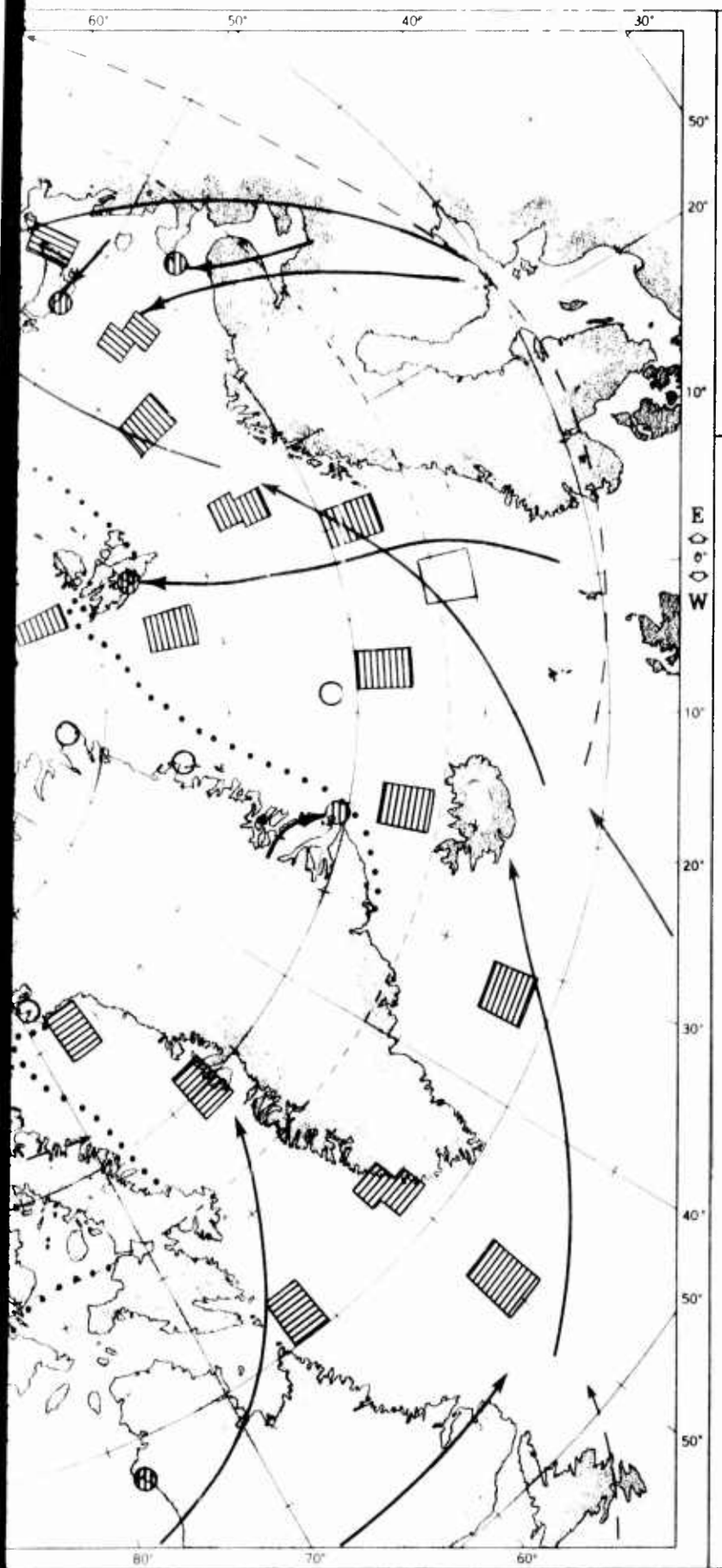
OCTOBER

STORM TRA



ORM TRACKS

CHART 121



Storm Tracks

Primary Track, along which there has been maximum concentration of individual storm center paths

Secondary Track along which there has been moderate concentration of individual storm center paths

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

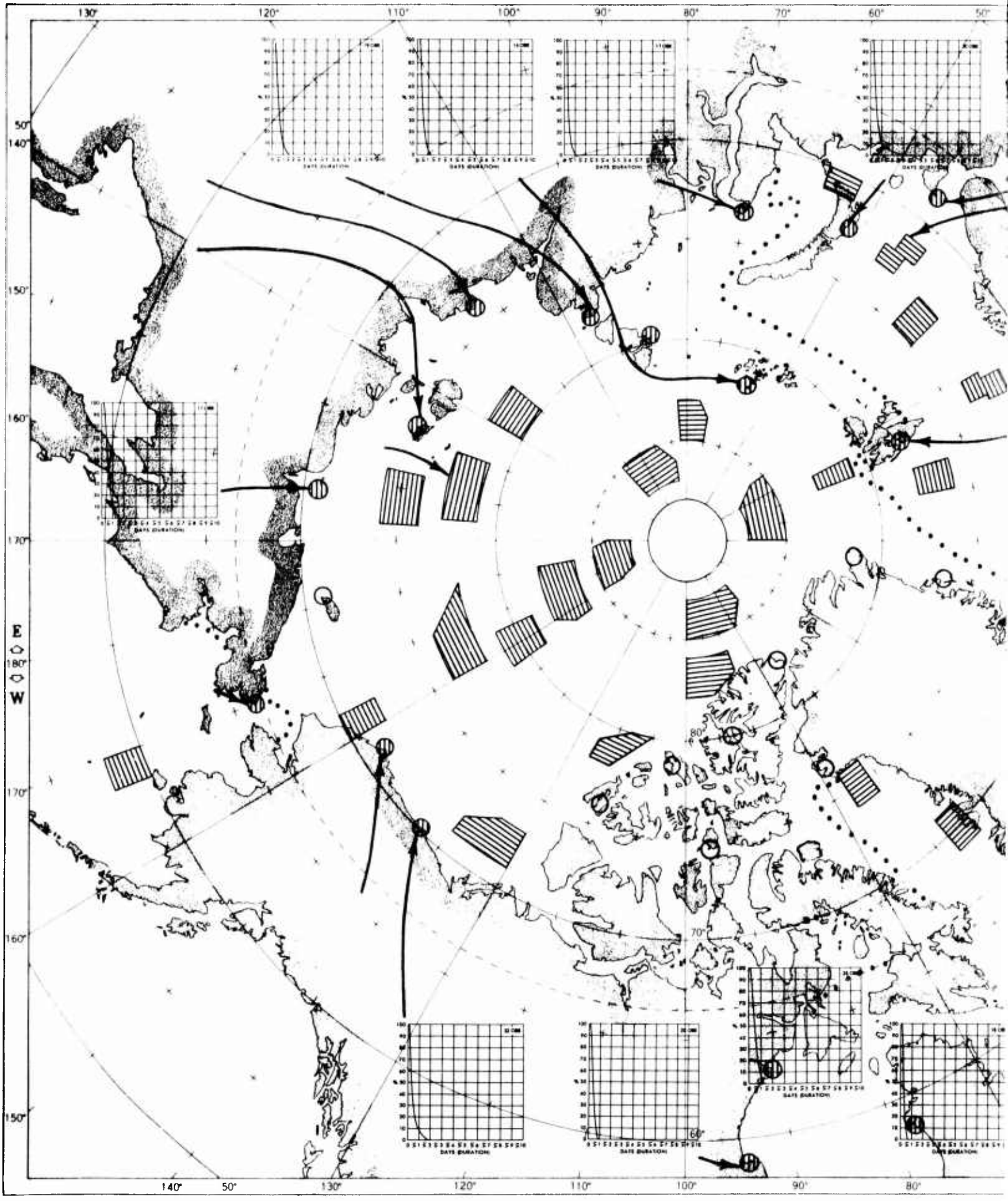
MOULD BAY

RESOLUTE

THULE

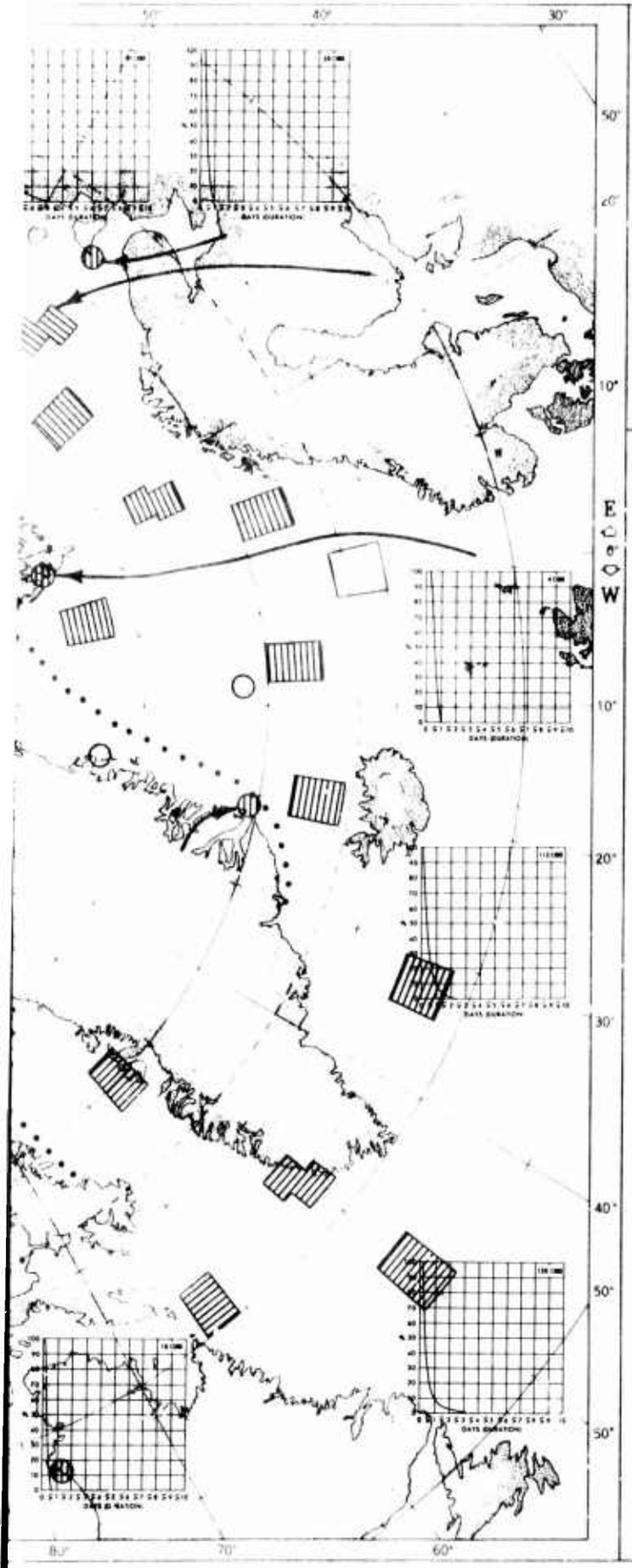
OCTOBER

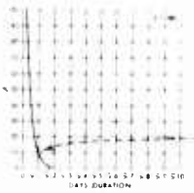
GALE PERSISTEN



RSISTENCE

CHART 122

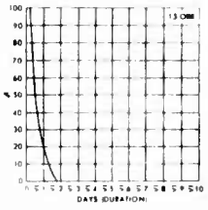




Percentage frequency of Gale (Beaufort Force 8 or more 34 knots) equal to or greater than number of days intersected by the curve

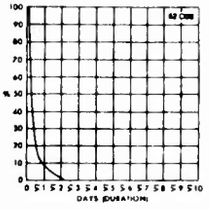
(10% of Gales (34 knots) persist at least one day)

OSTROV VRANGELYA



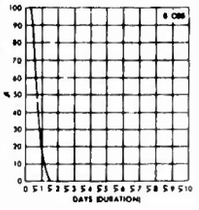
NORTH POLE

OCEAN STATION M

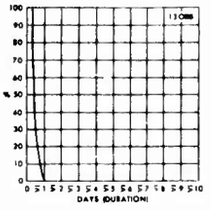


NOR

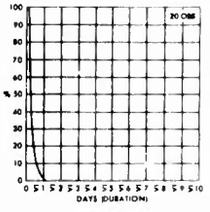
DANMAKKSHAVEN



JAN MAYEN

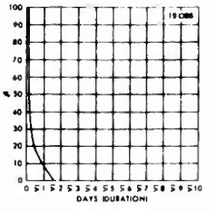


ISACHSEN

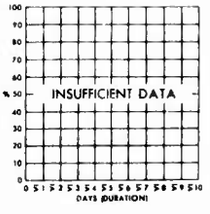


EUREKA

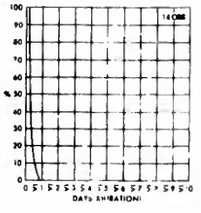
ALERT



MOULD BAY



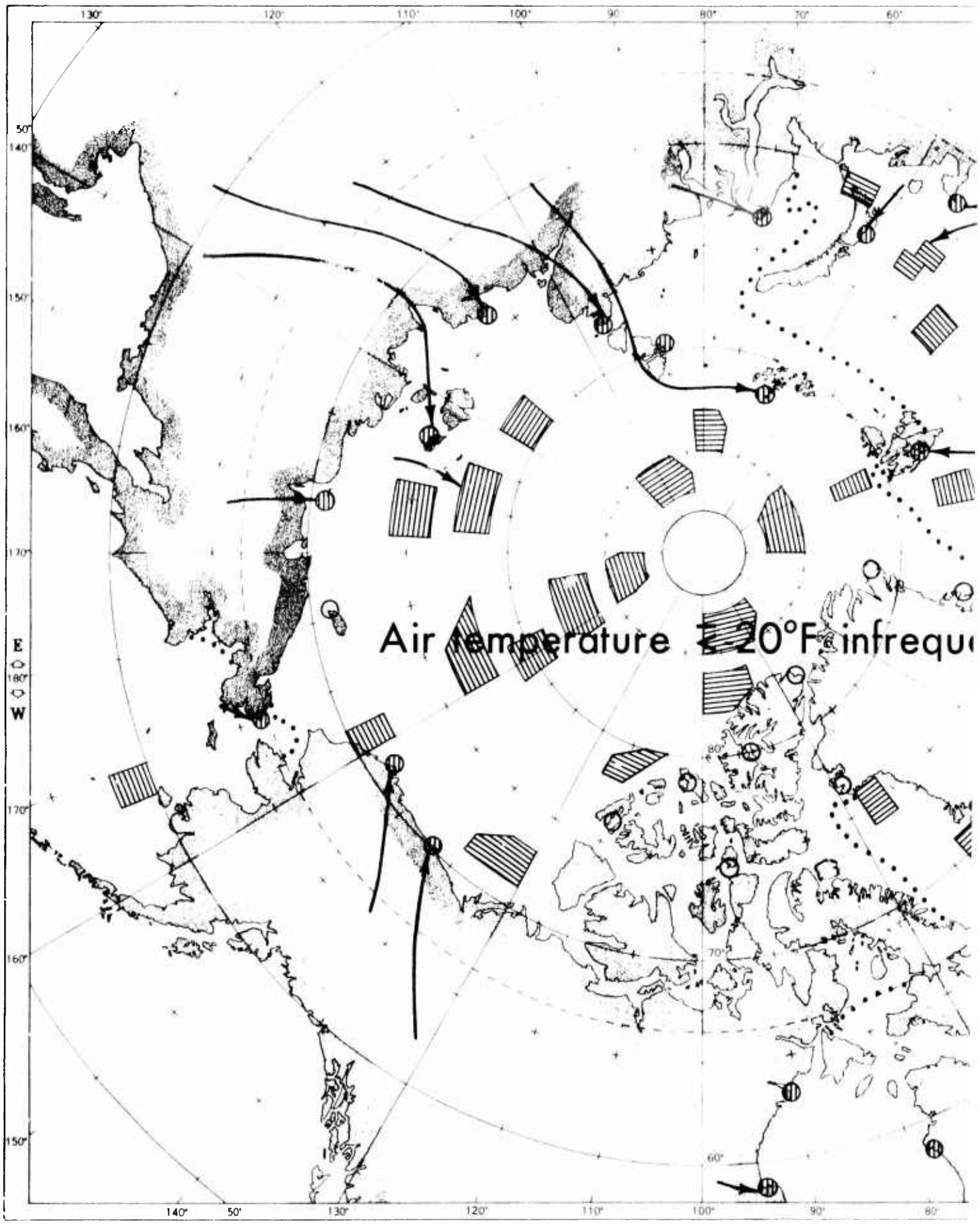
RESOLUTE



THULE

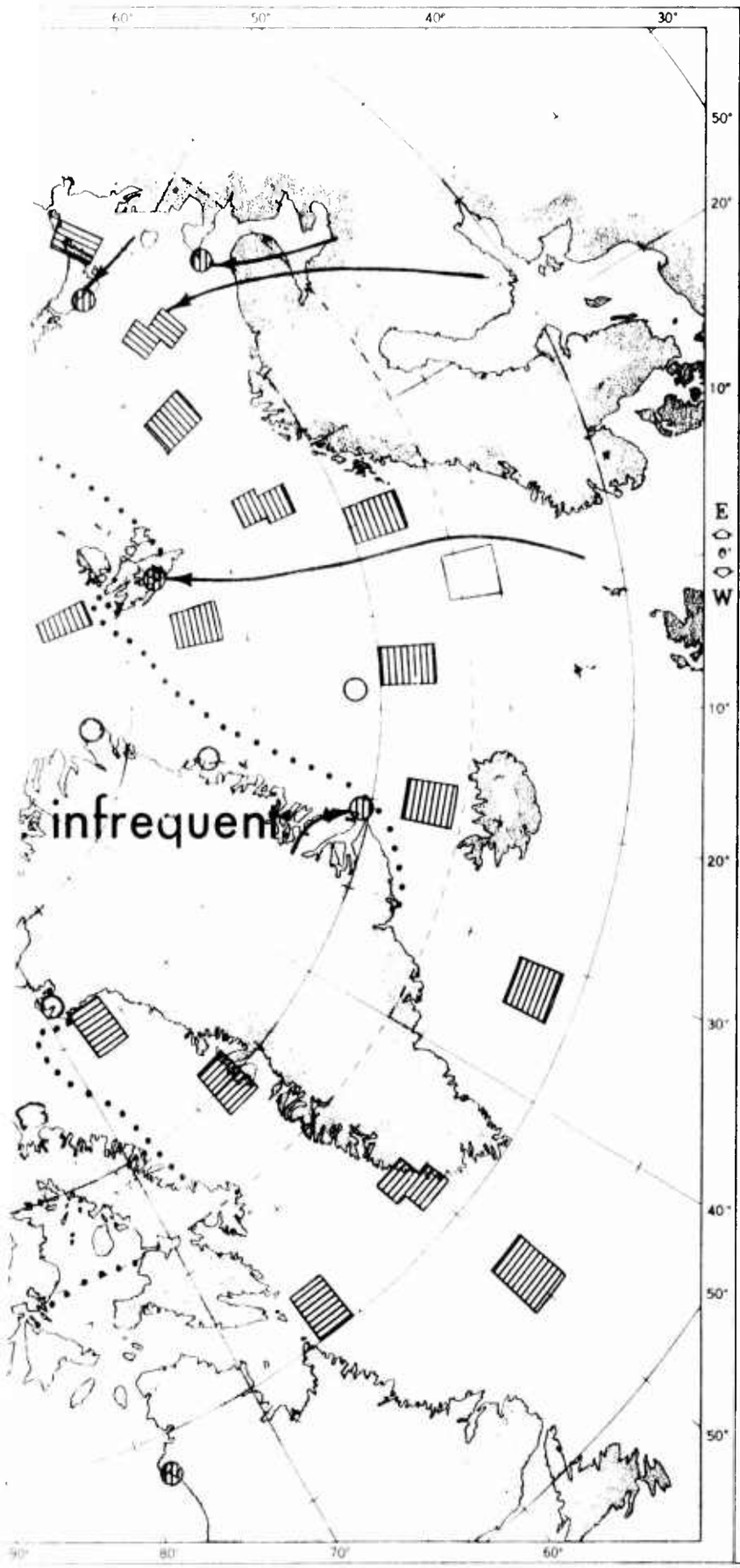
DAYS (DURATION)

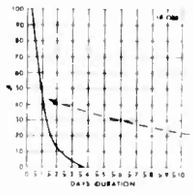
OCTOBER LOW TEMPERATURE



RATURE PERSISTENCE

CHART 123





Percentage Frequency of Air Temperature [20° F or less] equal to or greater than number of days intersected by the curve

[44% of cold temperatures (20° F) persist at least one day]

OSTROV VRANGELYA | NORTH POLE | OCEAN STATION M

NORD | DANMARKSHAVEN | JAN MAYEN

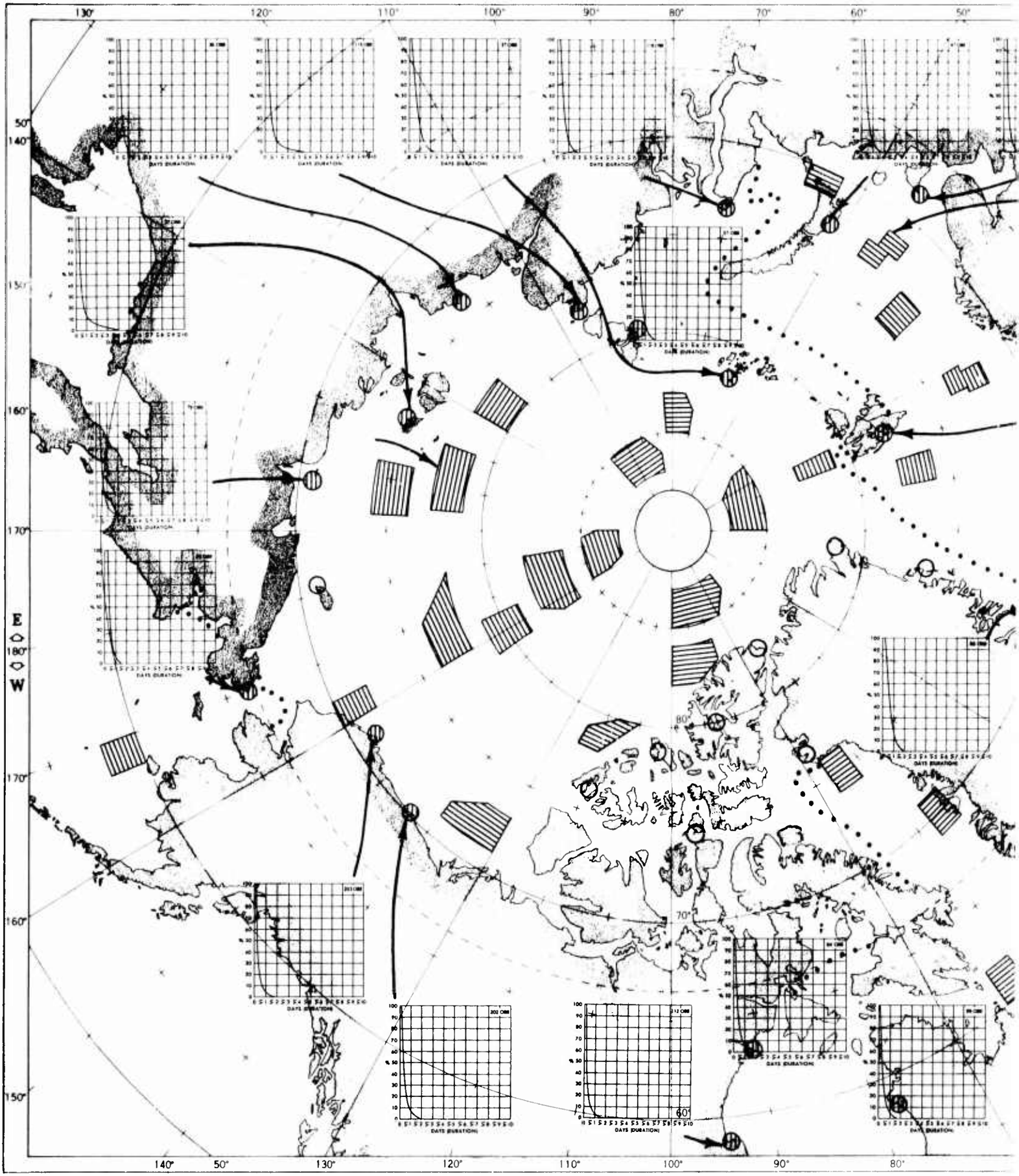
ISACHSEN | EUREKA | ALERT

MCULD BAY | RESOLUTE | THULE

2

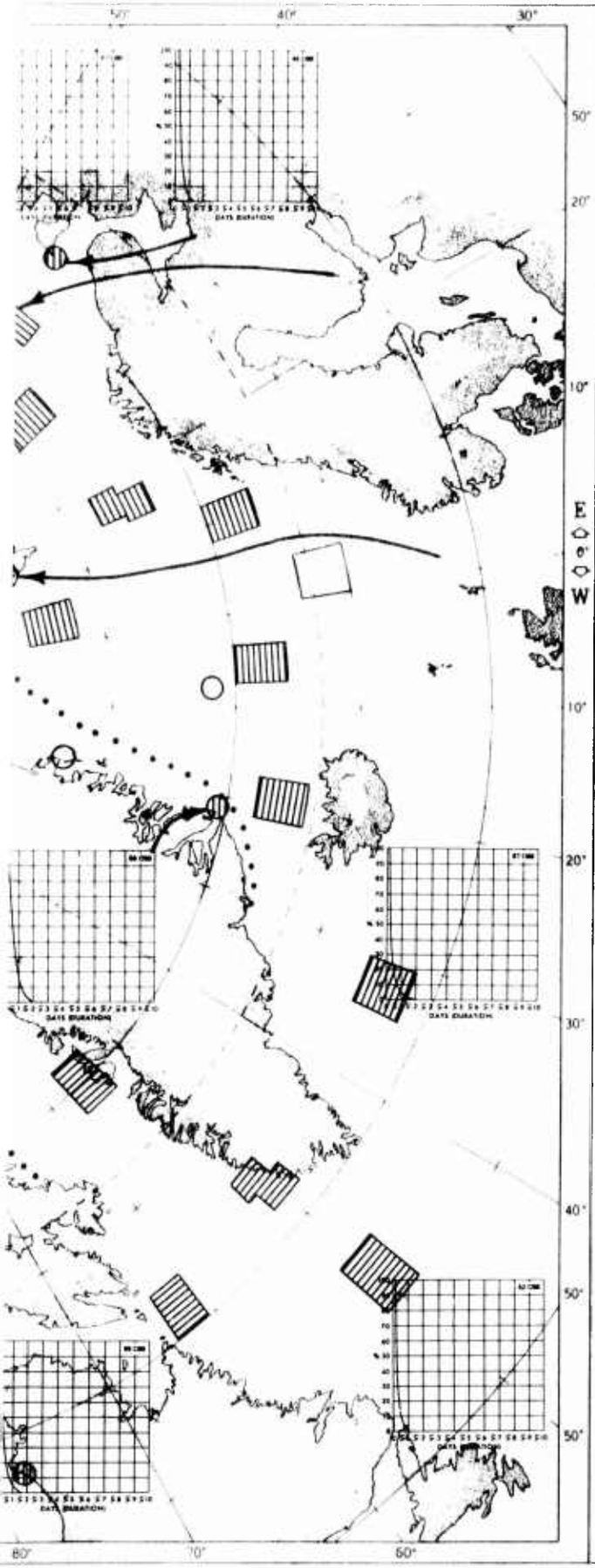
OCTOBER

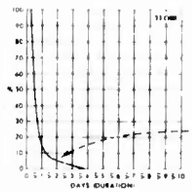
LOW VISIBILITY PERSIS



PERSISTENCE

CHART 124

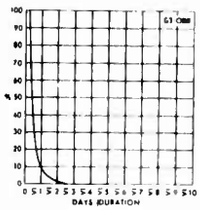




Percentage Frequency of Low Visibility (< 2 nautical miles) equal to or greater than number of days intersected by the curve

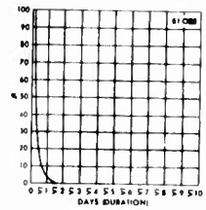
[6% of low visibilities (< 2 miles) persist at least two days]

OSTROV VRANGELYA

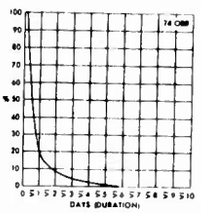


NORTH POLE

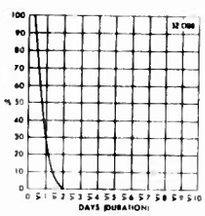
OCEAN STATION M



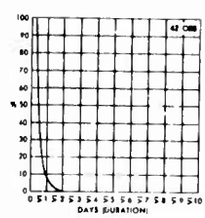
NORD



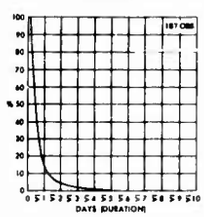
DANMARKSHAVEN



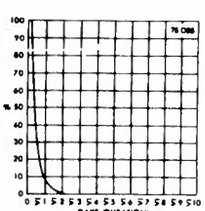
JAN MAYEN



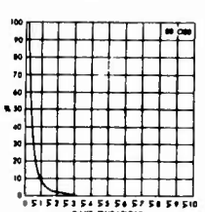
ISACHSEN



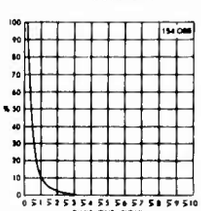
EUREKA



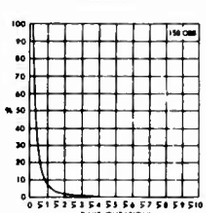
ALERT



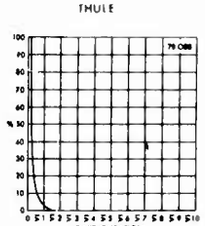
MOULD BAY



RESOLUTE



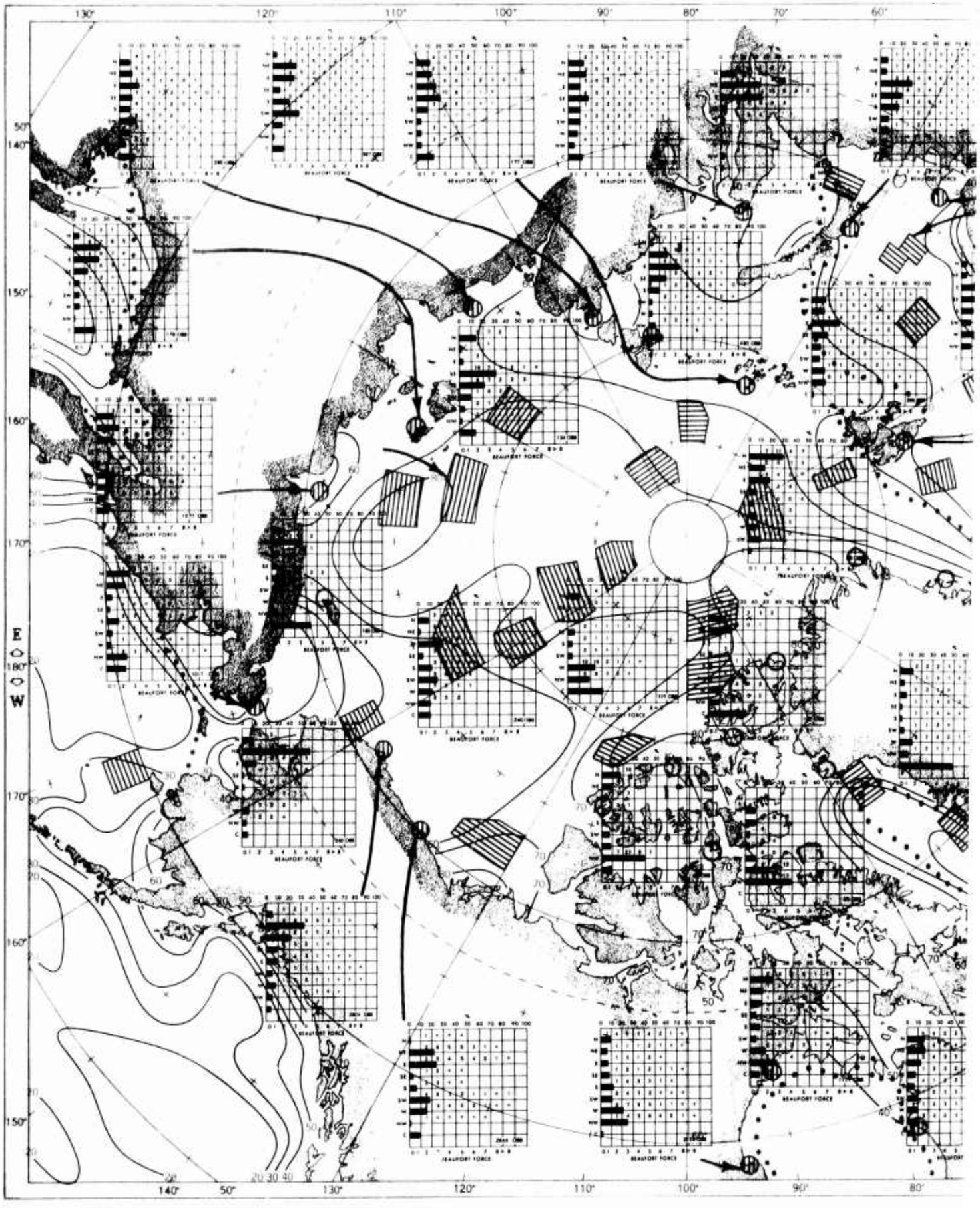
THULE



2

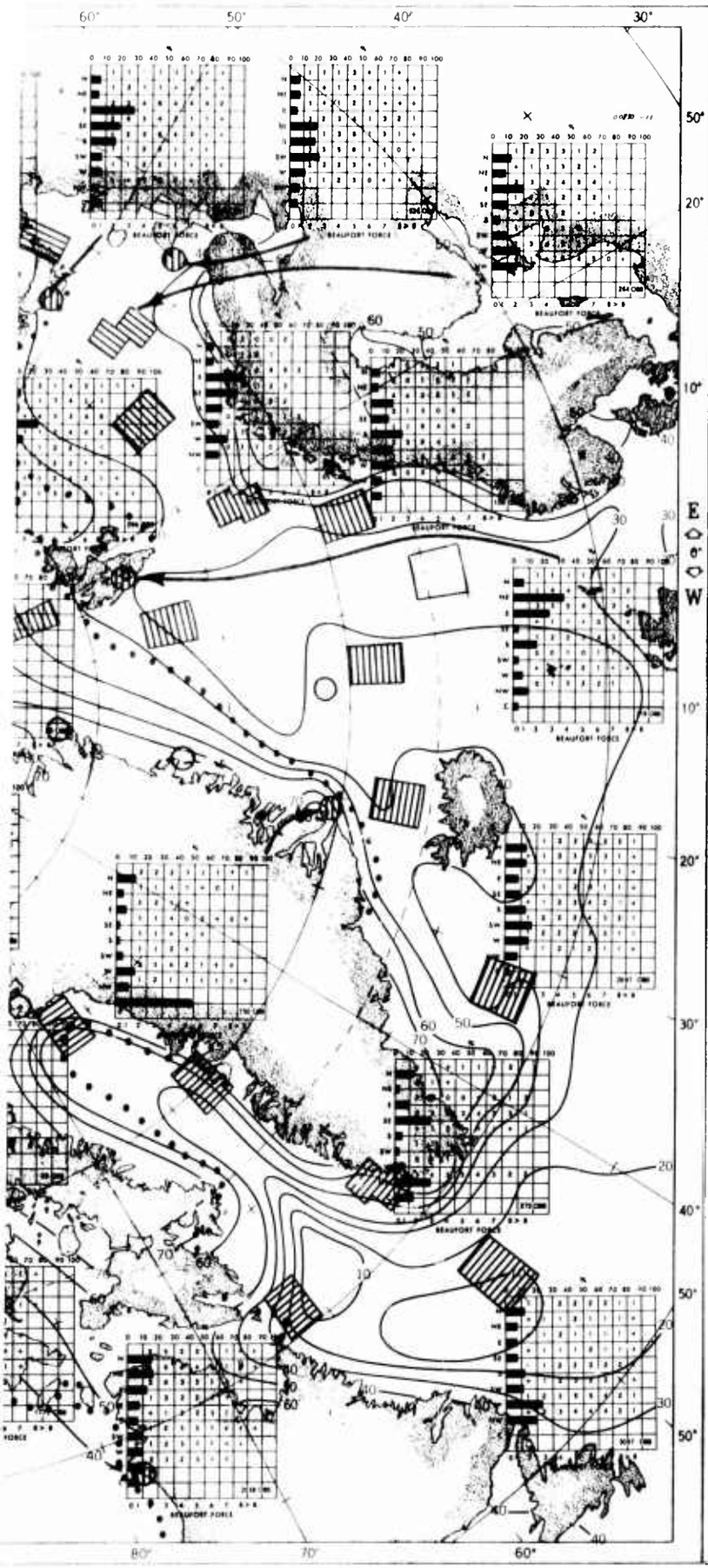
NOVEMBER

SURFACE W

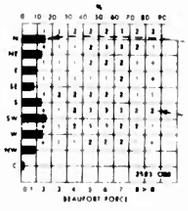


FACE WIND

CHART 125



Percentage Frequency of Wind Speed Beaufort Force 3 or less (≤ 10 Knots)



Direction Frequency (Top Scale) Bars represent percentage frequency of wind observed from each direction (& calm)

– (14% of all winds were from N)

Speed Frequency (Bottom Scale) percentage frequency of wind speed by Beaufort Force

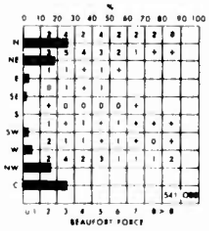
– (2% of all winds from SW were greater than Beaufort Force 8)

All percentages rounded to nearest whole percent

Calm includes Beaufort Force 1 (0-3 knots)

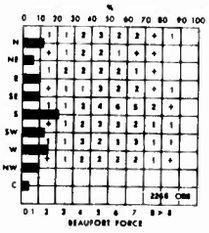
+ indicates less than 1/2 percent

OSTROV VRANGELYA

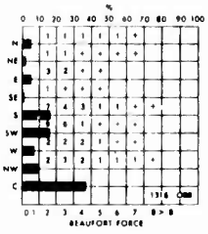


NORTH POLE

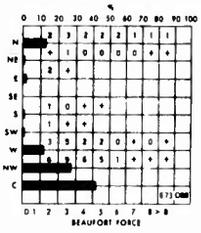
OCEAN STATION M



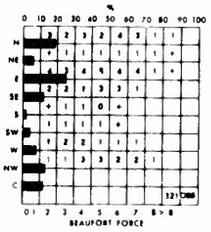
NORD



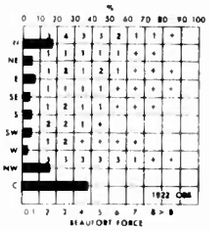
DANMARKSHAVEN



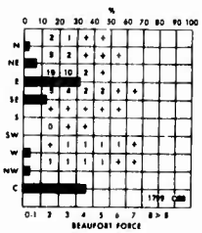
JAN MAYEN



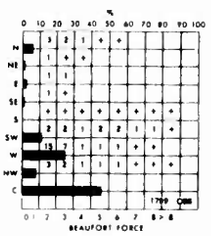
ISACHSEN



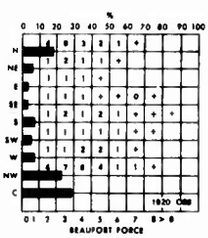
EUREKA



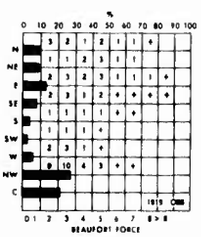
ALERT



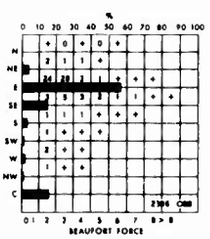
MOULD BAY



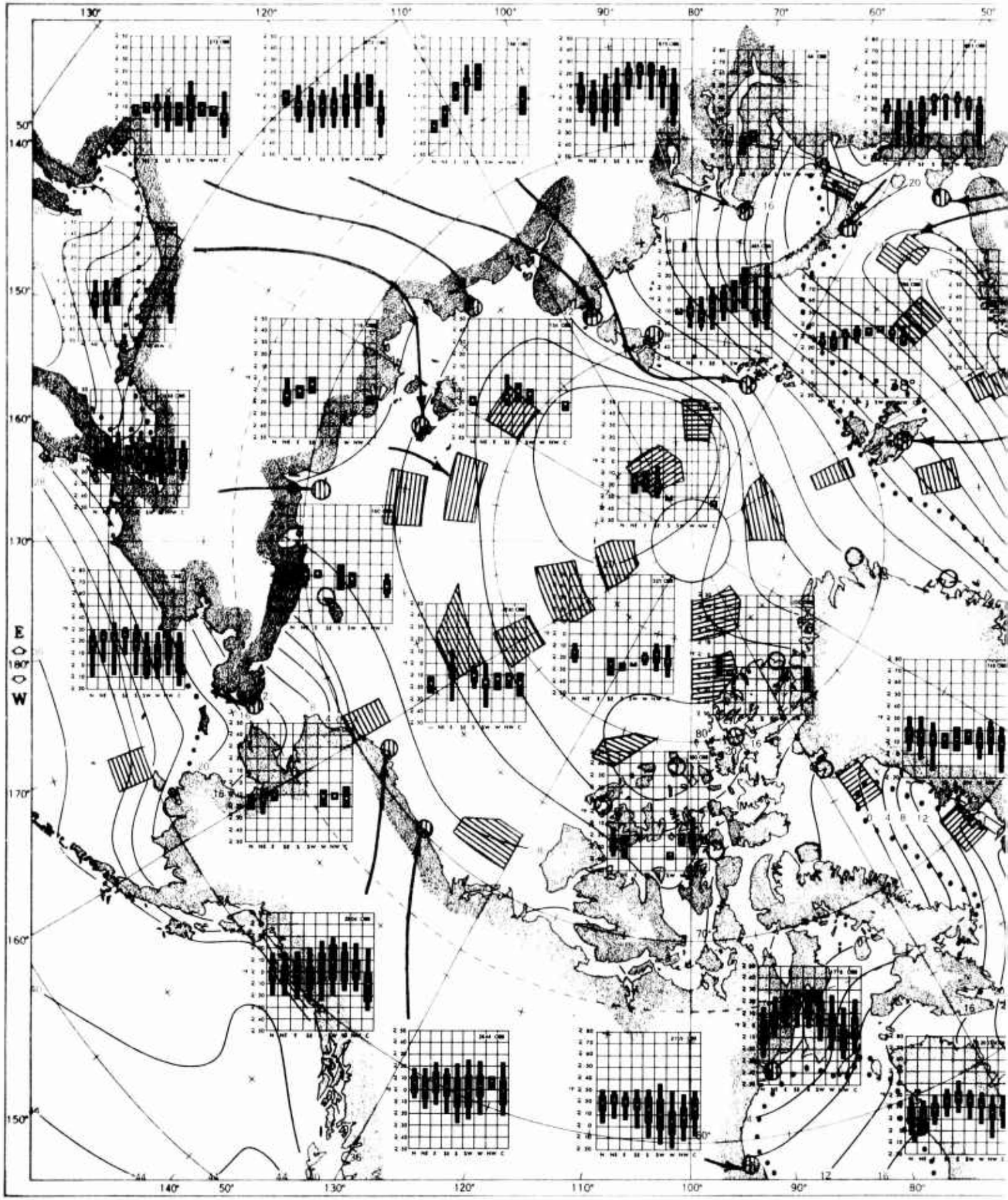
RESOLUTE



THULE

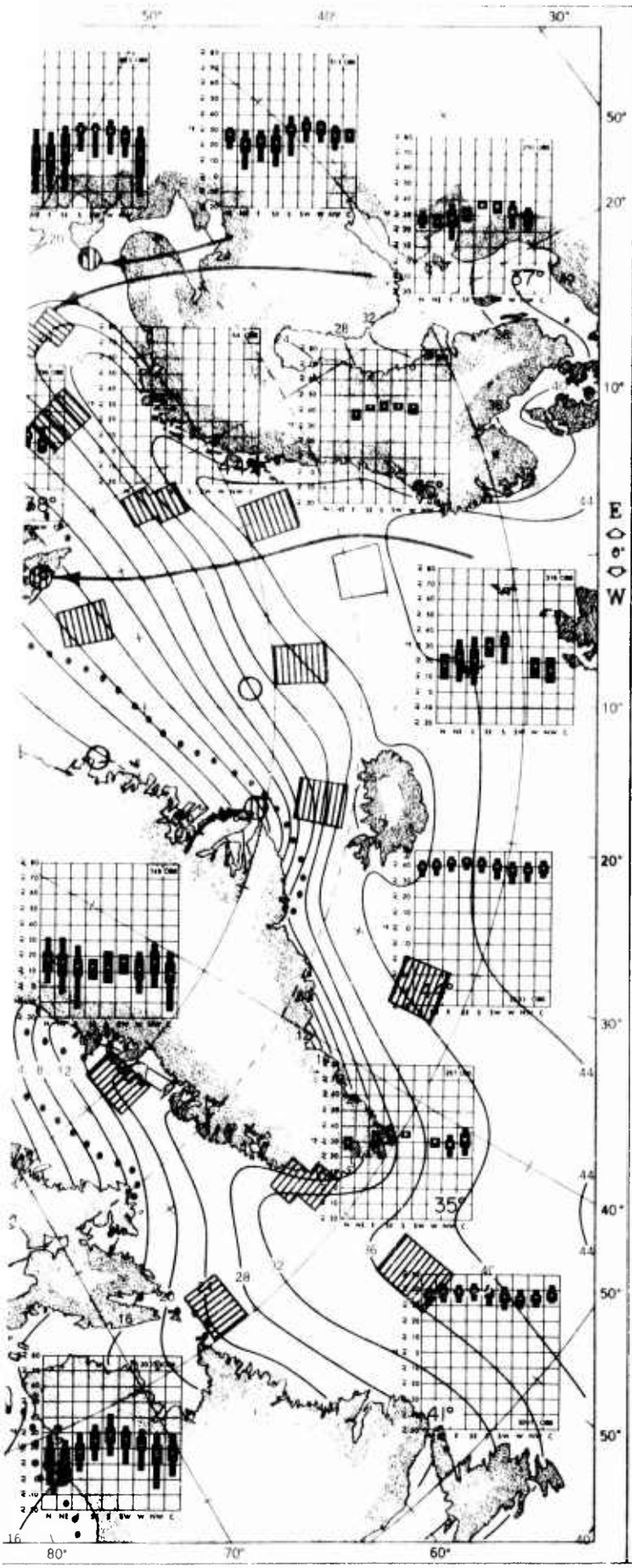


NOVEMBER AIR TEMPERATURE BY WI



BY WIND DIRECTION

CHART 126



Mean Air Temperature °F

Distribution of Temperature Observed with each Wind Direction

(a) Mean

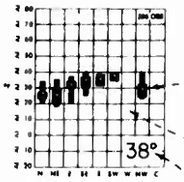
(b) 95%, 75%, 25% and 5% of all temperatures were equal to or less than the temperatures indicated by

(With NW winds, the mean temperature was 29°F, 5% of the temperatures were 23°F or less, 25% were 24°F or less, etc.)

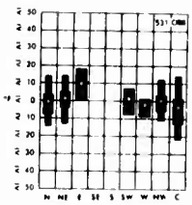
Mean temperatures and frequencies are omitted when number of observations was 10 or less

See chart 2 for temperature distribution disregarding wind direction

Mean Water Temperature (when data available)

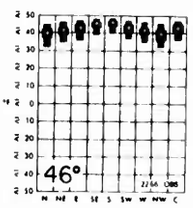


OSTROV VRANGELYA

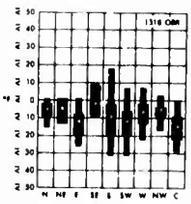


NORTH POLE

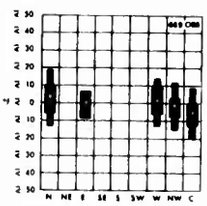
OCEAN STATION M



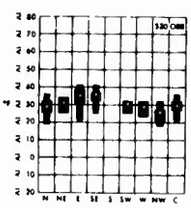
NORD



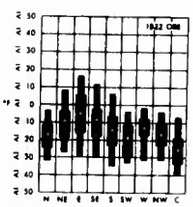
DANMARKSHAVEN



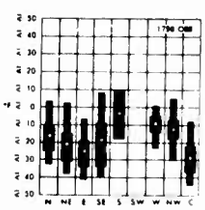
JAN MAYEN



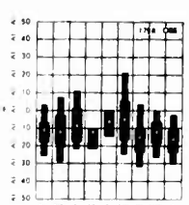
ISACHSEN



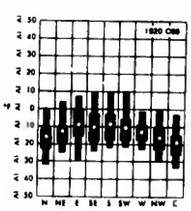
EUREKA



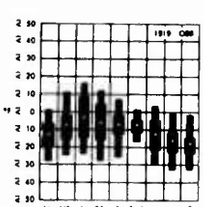
ALERT



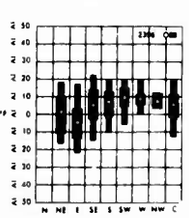
MOULD BAY



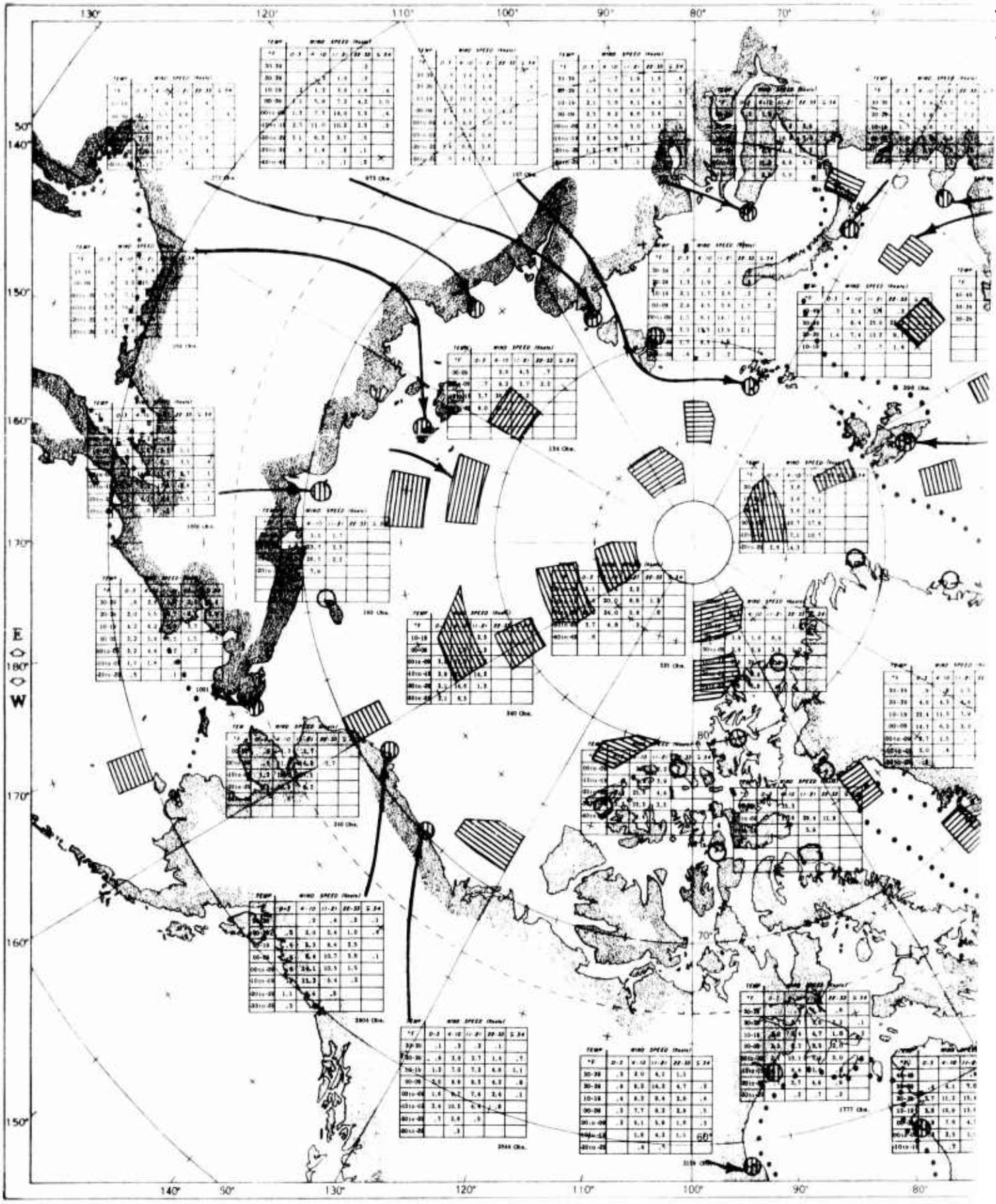
RESOLUTE



THULE

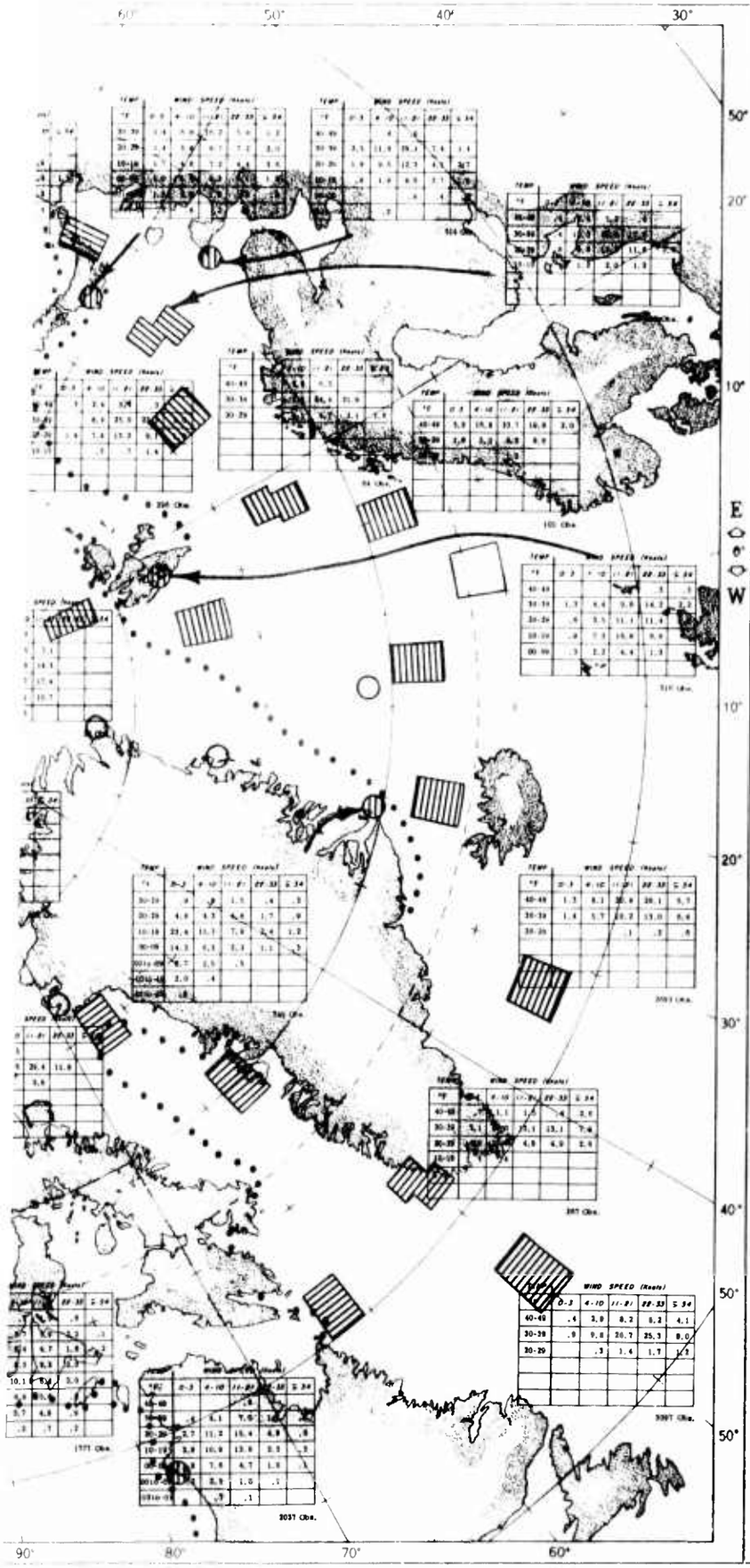


NOVEMBER AIR TEMPERATURE vs.



ATURE vs. WIND SPEED

CHART 127



Percentage Frequency of simultaneous occurrence of specified Temperature groups and Wind Speed

(5% of the observations on which this tabulation was based reported wind speed 22-33 knots simultaneous with temperature from 10° through 19°F.)

OSTROV VRANGELYA

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39		.2		.2	
20-29	.8	.6	.6	.2	.2
10-19	1.7	2.6	1.7	1.0	1.5
00-09	6.6	10.5	14.1	4.9	4.9
00to-09	8.9	7.5	6.6	3.2	4.7
-10to-19	6.6	4.0	.6	.6	1.9
-20to-29	1.5				
-30to-39	.2	.2			.2

531 Obs.

NORTH POLE

OCEAN STATION M

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
50-59			.1	.1	
40-49	3.4	11.6	28.2	30.4	6.4
30-39	.8	1.8	7.5	7.6	1.7

2266 Obs.

NORD

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39		.2	.2	.5	
20-29		.2	.4	.1	
10-19	.3	.9	.8	.4	.1
00-09	2.3	5.8	2.4	.6	.2
00to-09	10.9	16.2	8.4	2.0	.1
-10to-19	11.5	12.9	2.8	.2	.1
-20to-29	10.8	7.5	.4		
-30to-39	1.3	1.4	.2		

1316 Obs.

DANMARKSHAVEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39	.1	.1	.3	.1	.3
10-19	2.4	3.9	4.3	1.3	.4
00-09	10.2	11.8	6.2	2.1	1.0
00to-09	15.5	10.0	5.4	.4	.6
-10to-19	11.2	5.4	1.6		
-20to-29	2.4	.3	.3		

JAN MAYEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
40-49		.8	2.8	4.1	.8
30-39	7.2	12.2	15.0	15.0	2.5
20-29	4.7	11.6	10.3	7.5	1.6
10-19	.3	1.3	1.9	.9	

330 Obs.

ISACHSEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
20-29		.2	.1	.2	.1
10-19	.1	.4	.8	.6	.3
00-09	.4	1.1	1.9	.6	.1
00to-09	2.2	5.8	4.0	2.2	.4
-10to-19	7.6	10.4	7.9	4.0	.6
-20to-29	14.2	8.5	5.5	2.1	.7
-30to-39	11.6	5.7	1.0	.1	
-40to-49	1.8	.1			
-50to-59	.1				

1922 Obs.

EUREKA

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
20-29		.1			
10-19	.2	.3	.7	.3	
00-09	.2	1.8	.8	.1	
00to-09	2.1	5.1	3.6	.5	
10to-19	5.1	11.2	4.2	.4	
20to-29	8.5	13.7	2.0	.2	
30to-39	14.1	16.8	.4		
40to-49	5.3	3.1			

1798 Obs.

ALERT

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
20-29		.2	.2	.5	.2
10-19	.2	.6	.3	.6	.6
00-09	1.2	2.3	1.1	.9	
00to-09	6.2	7.1	3.6	1.2	.2
-10to-19	17.1	14.7	2.8	1.0	.4
-20to-29	16.5	12.2	.7	.1	
-30to-39	2.7	2.2	.1		

1799 Obs.

MOULD BAY

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
20-29				.1	
10-19	.5	.3	.6	.1	.1
00-09	.8	1.7	2.6	1.1	.3
00to-09	2.1	6.7	4.9	.9	.8
-10to-19	11.5	17.2	12.0	2.7	.1
-20to-29	11.3	12.2	4.3	.5	
-30to-39	5.3	1.4	1.0		

1920 Obs.

RESOLUTE

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39	.1	.2	.1	.2	.1
10-19	.1	1.5	1.6	.9	.8
00-09	.8	3.5	3.1	1.8	.6
00to-09	1.8	8.5	6.9	2.5	.2
-10to-19	8.5	17.9	9.0	1.3	
-20to-29	7.5	10.6	4.4	.5	
-30to-39	3.7	2.9	.4		
-40to-49	.2	.1			

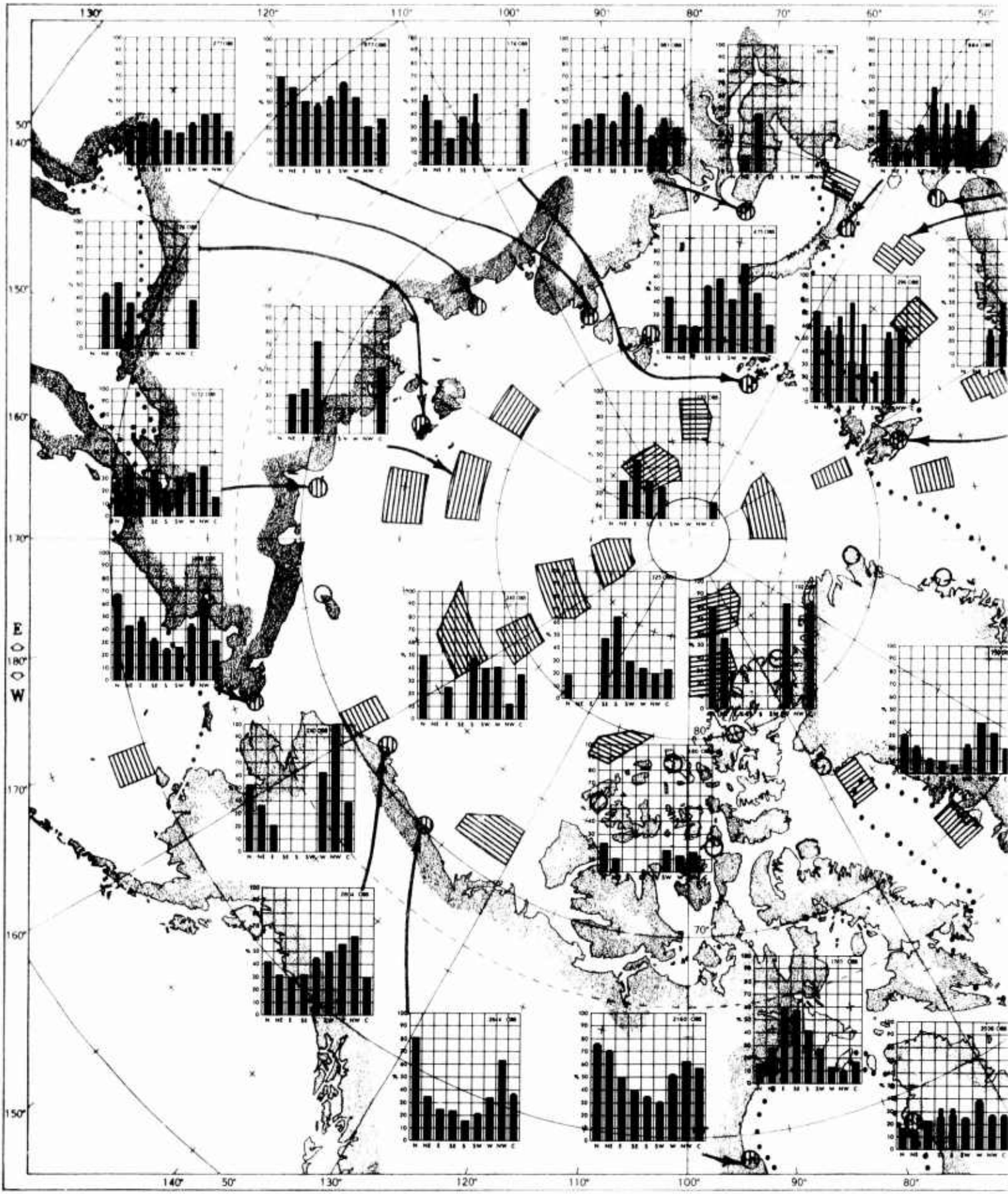
1919 Obs.

THULE

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	≥ 34
30-39		.3	.3	.3	
20-29	.7	1.7	1.5	.5	.1
10-19	4.3	8.9	3.5	1.4	.3
00-09	8.7	17.0	3.1	.3	
00to-09	3.0	10.7	1.9	.3	
-10to-19	1.4	19.9	1.1	.1	
-20to-29	.1	4.8	.1		

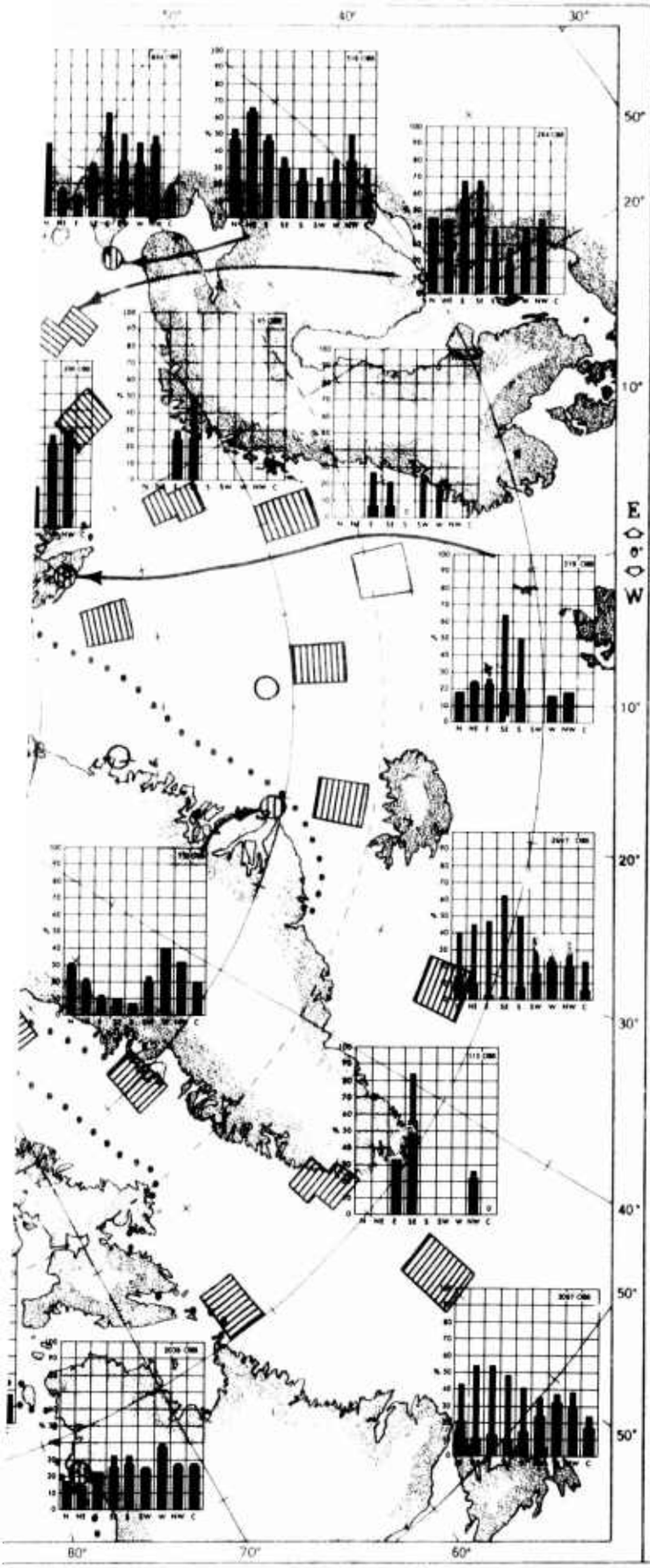
2398 Obs.

NOVEMBER PRECIPITATION BY WIND



WIND DIRECTION

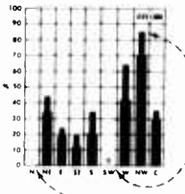
CHART 128



Percentage Frequency of Precipitation by Wind Direction

(a) Percentage of all present weather (and wind) observations reporting precipitation

(b) Percentage of observations recording liquid or frozen precipitation as indicated by





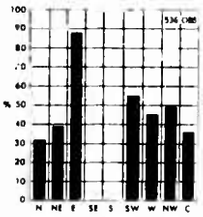
(85% of all NW winds were accompanied by precipitation, 15% frozen, 70% liquid)

0 replaces bar when no precipitation was observed with winds from a direction

Bar or 0 omitted when number of observations was 10 or less

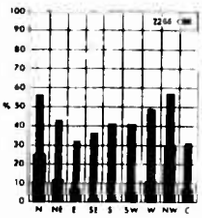
See chart 6 for precipitation incidence disregarding wind direction

OSTROV VRANGELYA

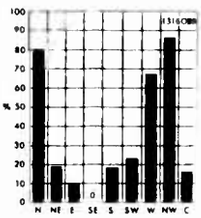


NORTH POLE

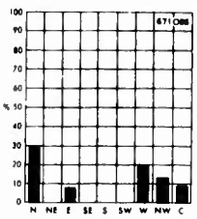
OCEAN STATION M



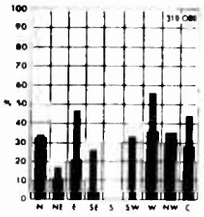
NORD



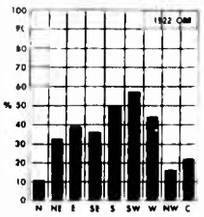
DANMARKSHAVEN



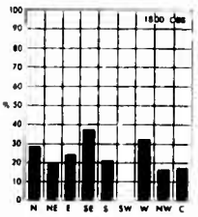
JAN MAYEN



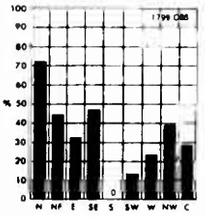
ISACHSEN



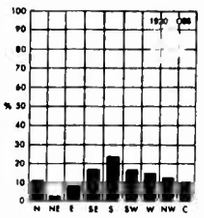
EUREKA



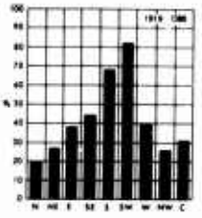
ALERT



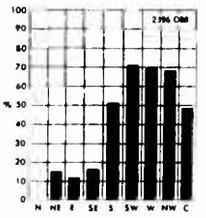
MOULD BAY



RESOLUTE



THULE

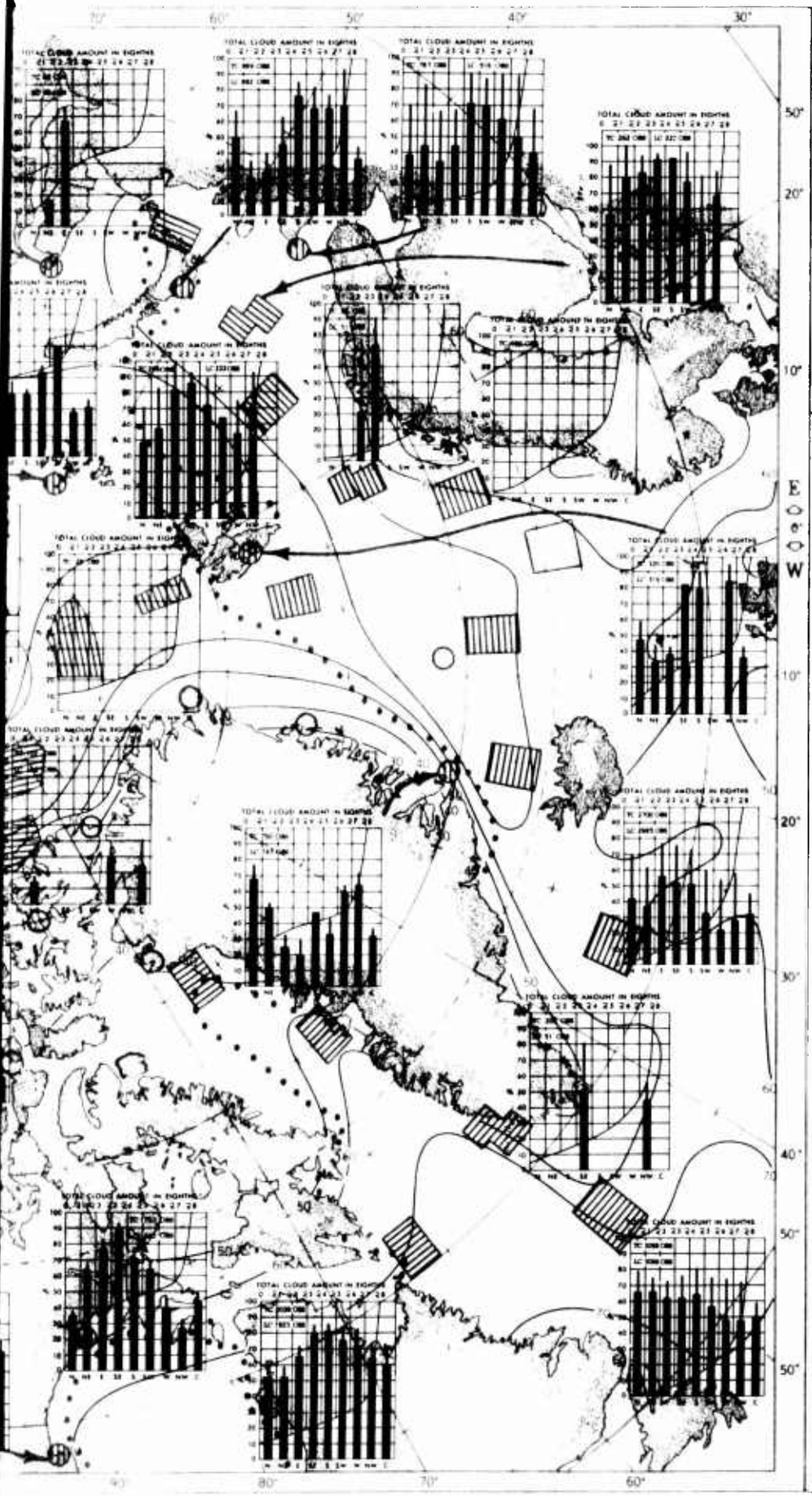


NOVEMBER CLOUD



CLOUDINESS

CHART 129



Percentage Frequency of Total Cloud Amount 8/10 or more

Total Cloud Amount (TC) Percentage frequency of total cloud amounts equal to or less than amount intersected by the curve

162% of all total cloud amounts were 7/8 or less

Lower Cloud Amount (LC) Percentage proportions of winds from each direction that were accompanied by low or middle cloud amounts greater than 5/8 and greater than 7/8

152% of all NW winds were accompanied by lower cloud amounts >5/8 and 38% by lower cloud amounts >7/8

[>5/8 includes 6/8 8/8 and 7/10 10/10 >7/8 includes 8/8 and 9/10 10/10]

0 replaces bar when no low cloud amounts >5/8 were observed with winds from a direction

Bar (or 0) is omitted when the number of observations including both wind direction and low cloud amount was 10 or less for a direction

OSTROV VRANGEL'YA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

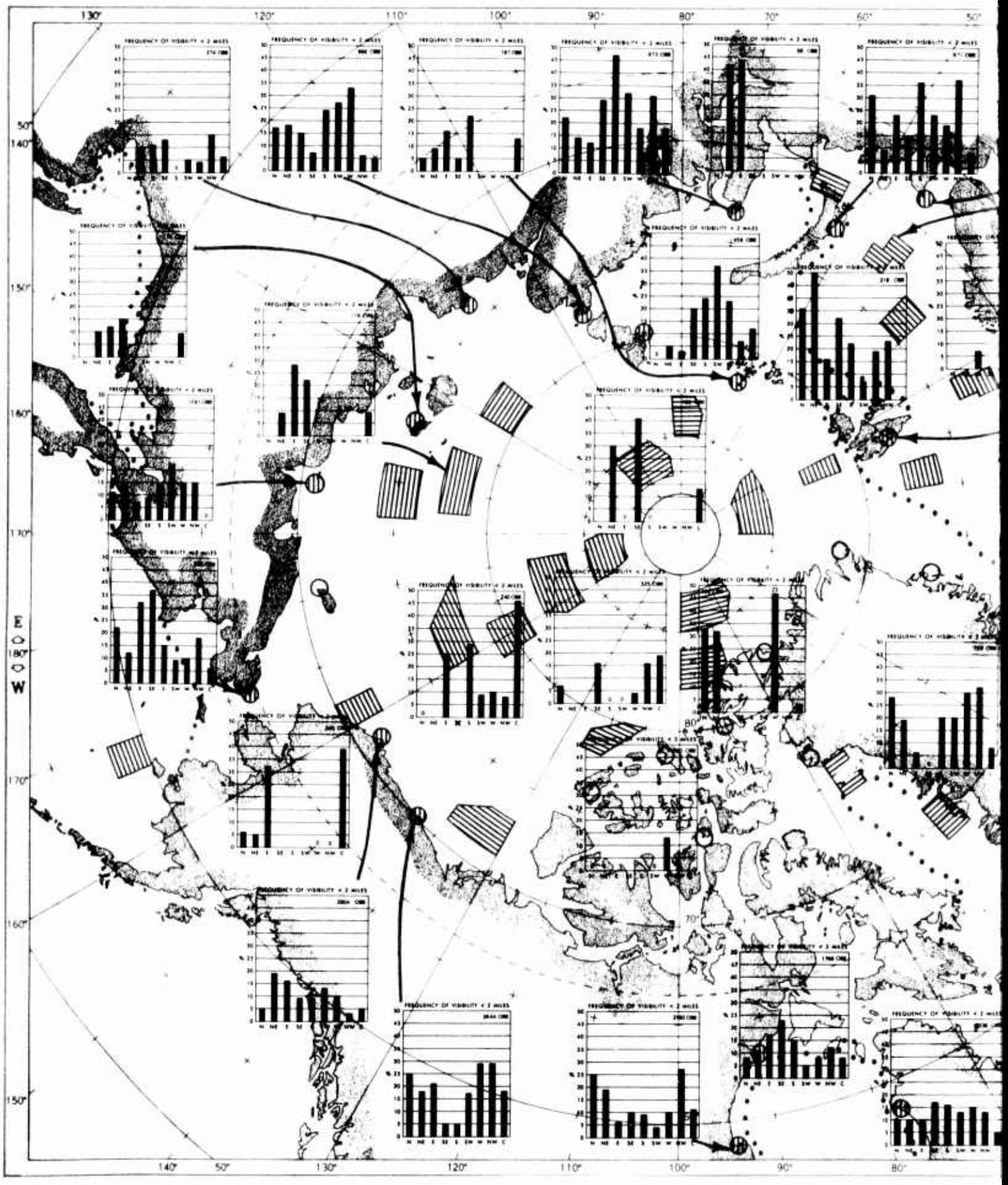
ALERT

MOULD BAY

RESOLUTE

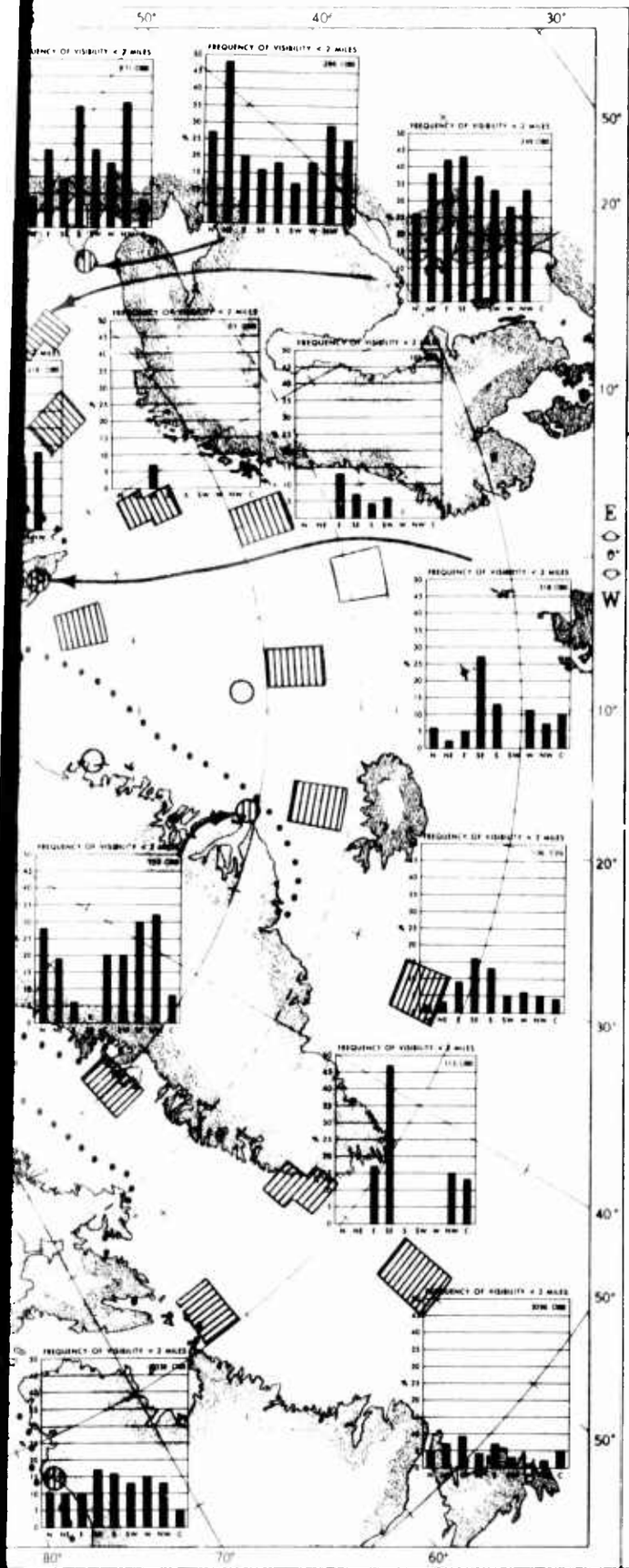
THULE

NOVEMBER LOW VISIBILITY BY WIND

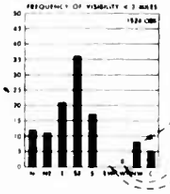


WIND DIRECTION

CHART 130



Percentage Frequency of Low Visibility by Wind Direction



Percentage of all visibility (and wind) observations reporting visibility less than 2 nautical miles

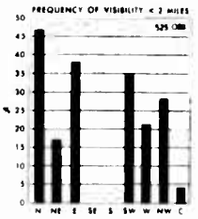
(8% of all NW winds were accompanied by visibility less than 2 miles)

0 replaces bar when no visibilities < 2 miles were observed with winds from a direction

Bar or 0 omitted when number of observations was 10 or less

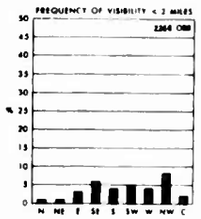
See chart 9 for low visibility incidence disregarding wind direction

OSTROV VRANGELYA

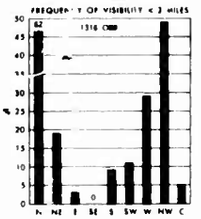


NORTH POLE

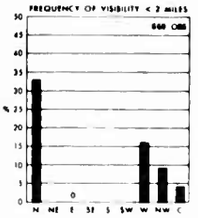
OCEAN STATION M



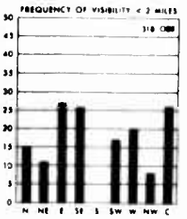
NORD



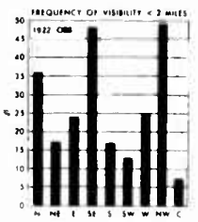
DANMARKSHAVEN



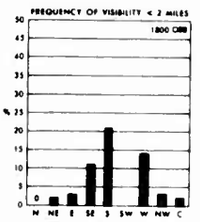
JAN MAYEN



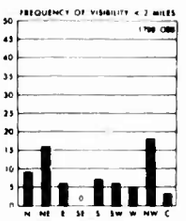
SACHSEN



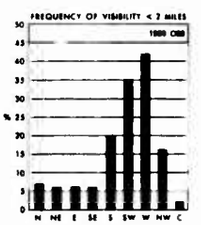
EUREKA



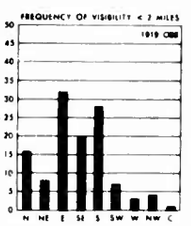
ALERT



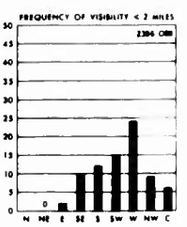
MOULD BAY



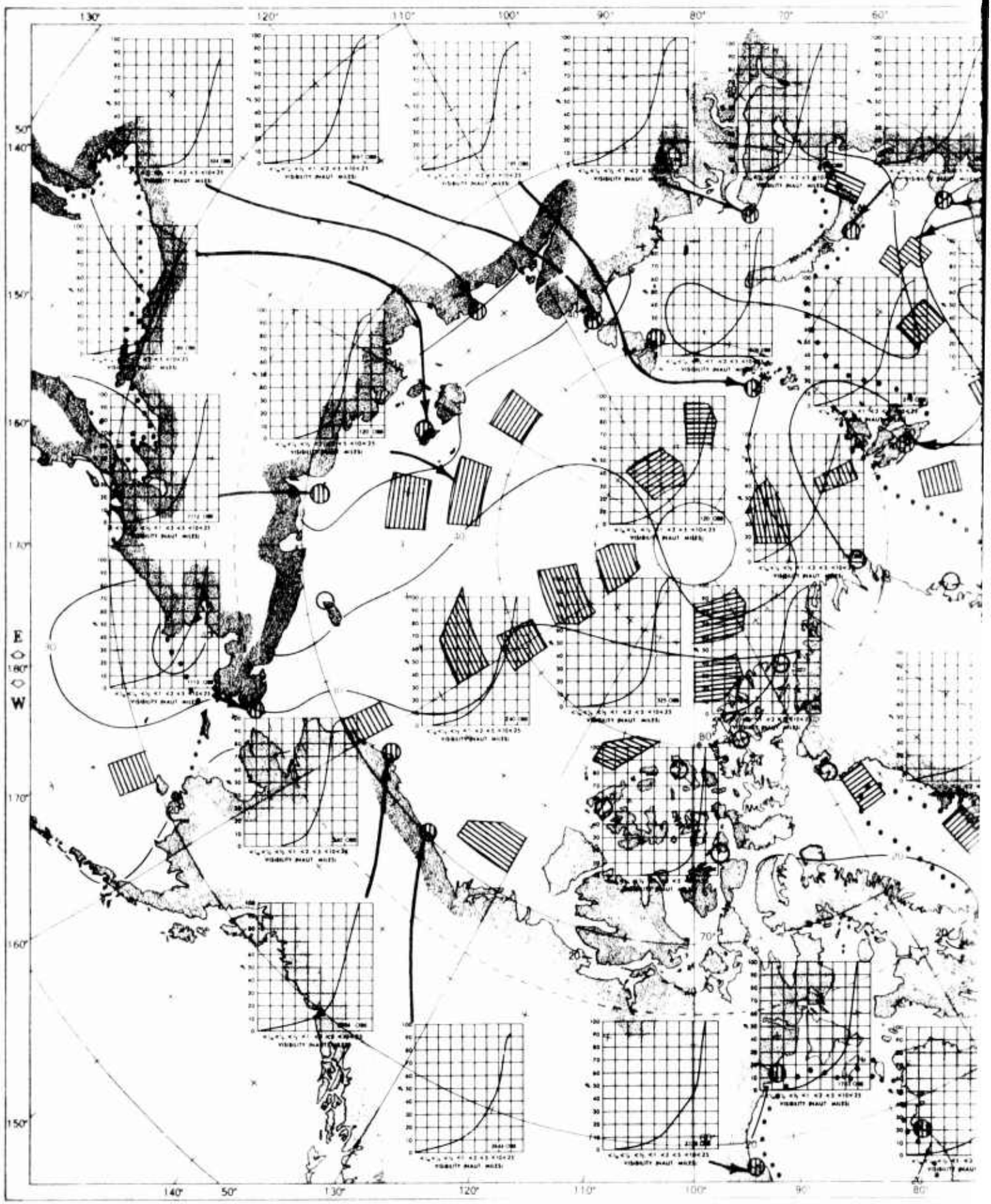
RESOLUTE



THULE

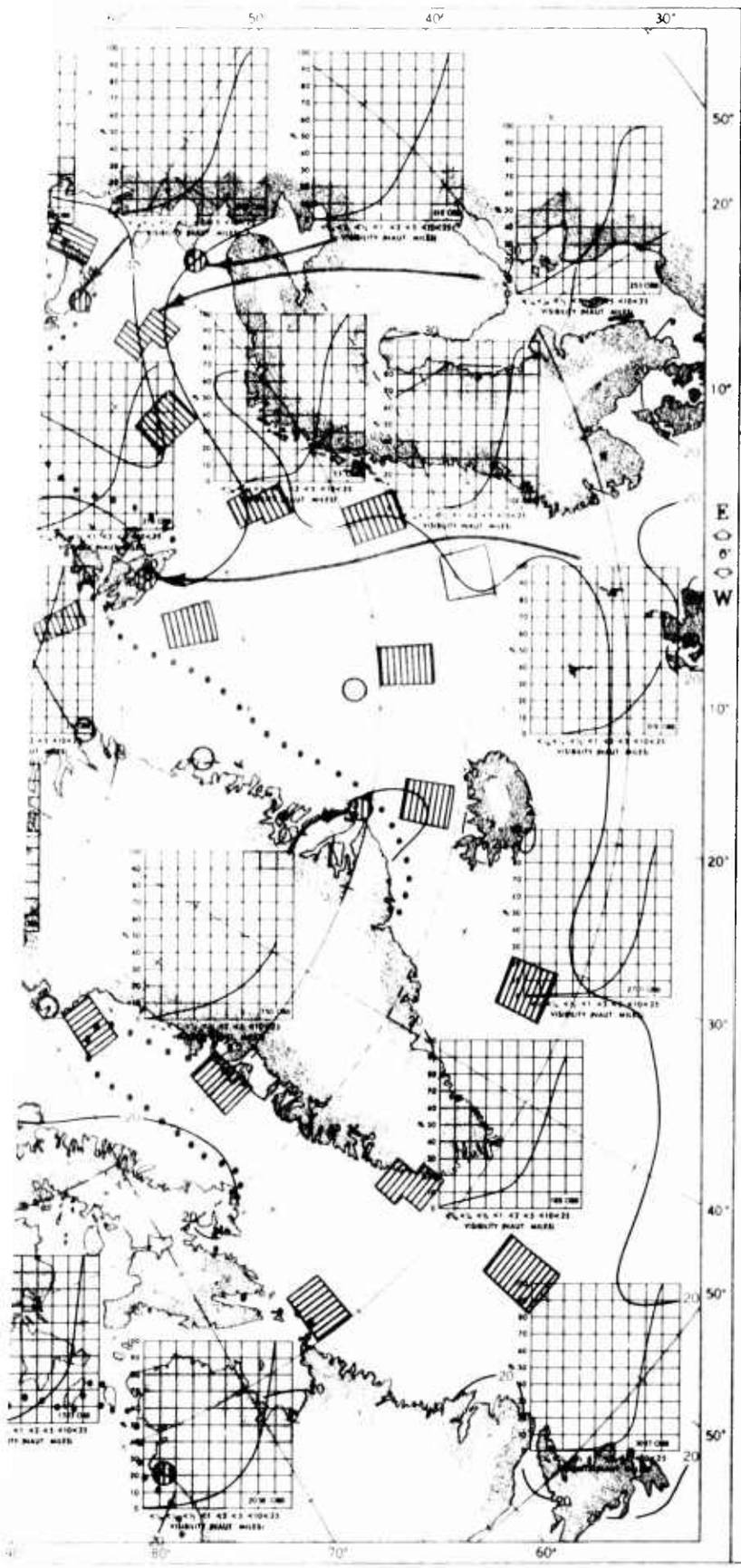


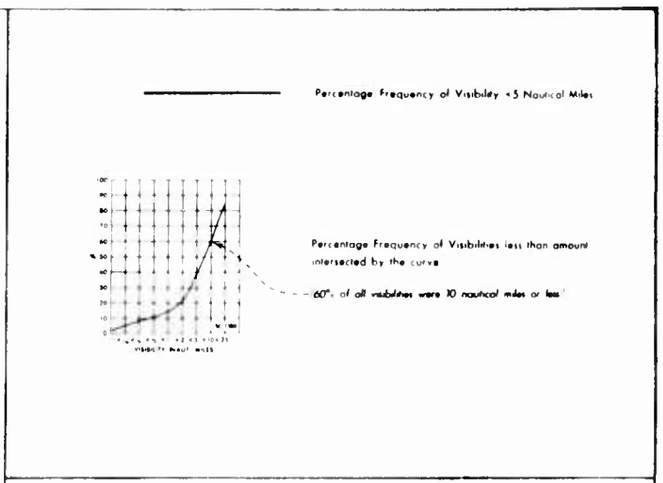
NOVEMBER VISIBILITY

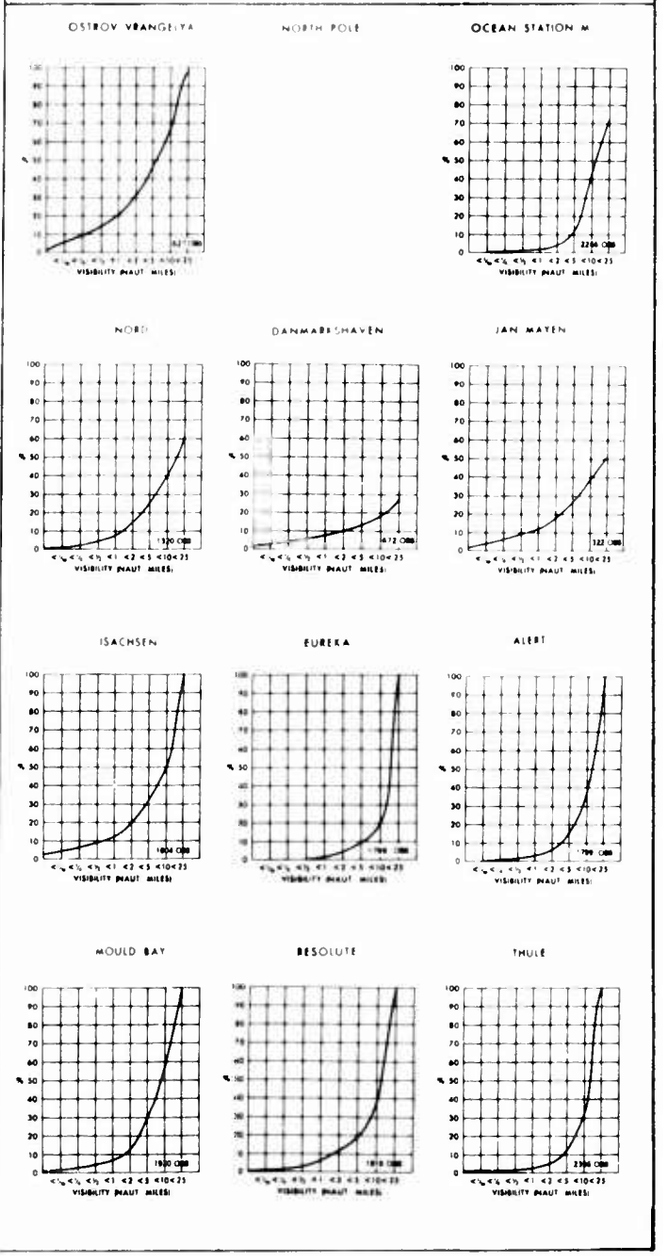


VISIBILITY

CHART 131

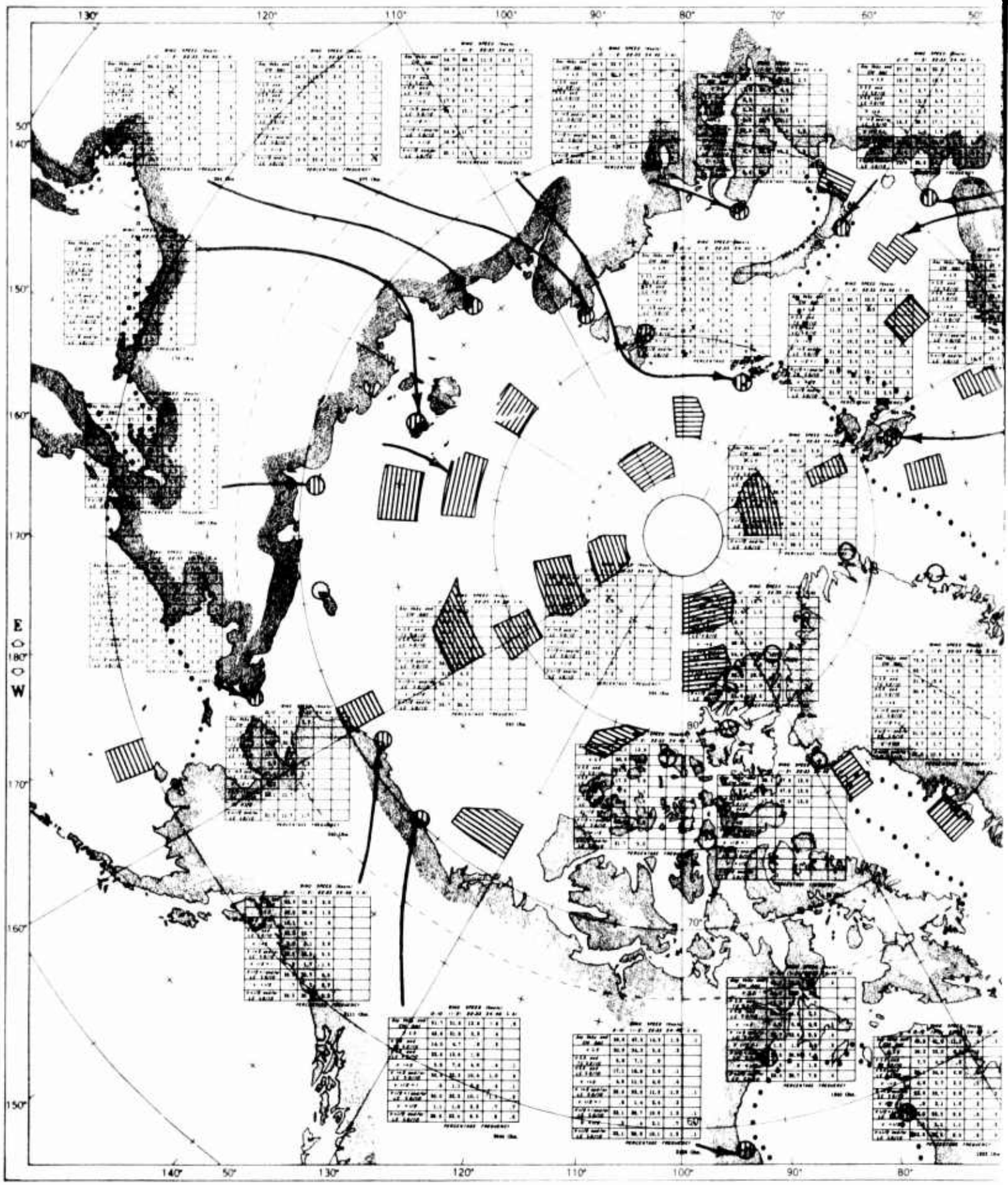






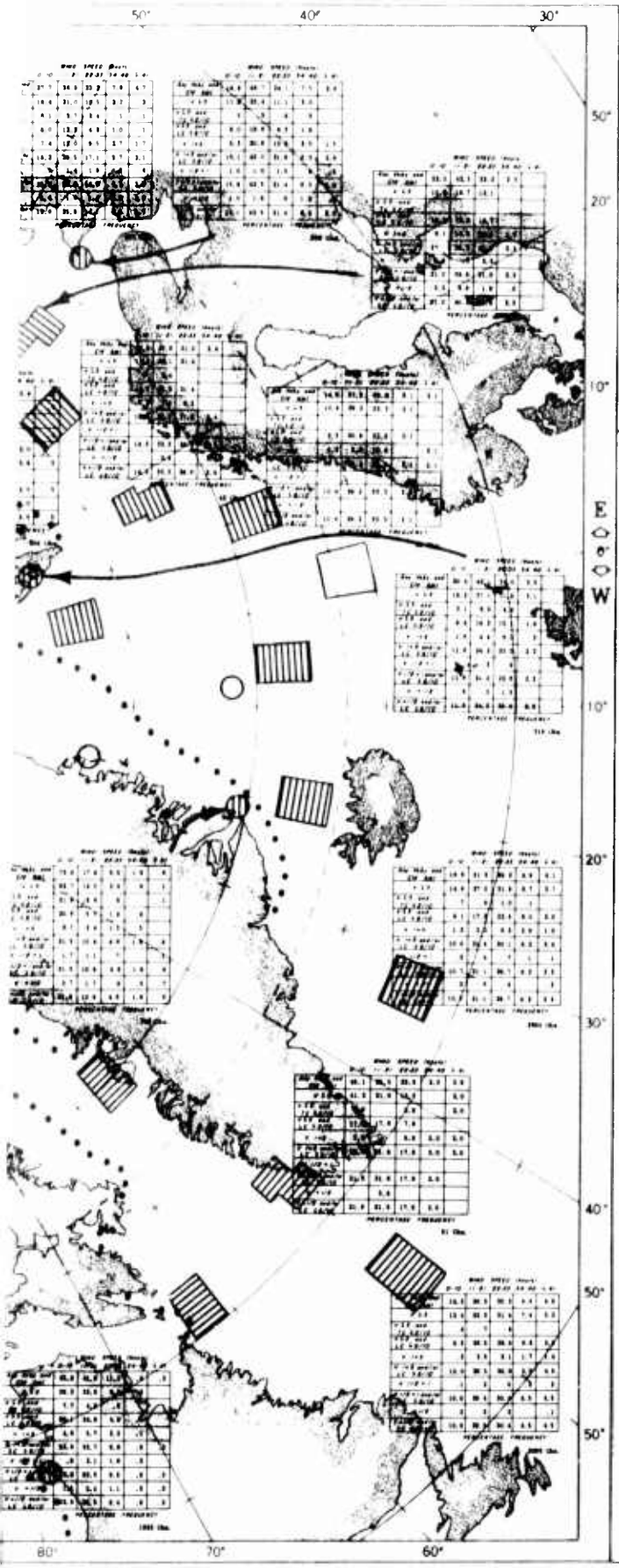
NOVEMBER

WIND-VISIBILITY-CLO

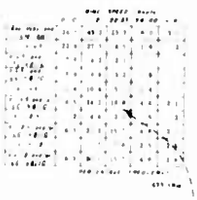


Y-CLOUDINESS

CHART 132



Percentage Frequency of simultaneous occurrence of specified Wind Visibility and Cloudiness conditions based on the number of observations which reported wind speed visibility total cloud amount and low cloud amount



Blank box indicates 0.0 percent

Notation

Any Vsby and Cld Amt = Simultaneous occurrence of wind speed with any visibility and cloud amount combination This provides a percentage distribution of wind speeds for the observations used in this tabulation

V = Visibility in Nautical Miles
1<5 indicates 1 to but not including 5 nautical miles

TC = Total Cloud Amount

LC = Low Cloud Amount with base approximately 8000 feet or lower

Ocean Area 16.6 % of the observations on which this tabulation was based reported speed 22-33 knots simultaneous with visibility 1.5 nautical miles and/or low cloud amount 5-6/10

OSTROV VRANGELYA



NORTH POLE

OCEAN STATION M



NORD



DANMARKSHAVEN



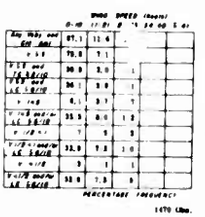
JAN MAYEN



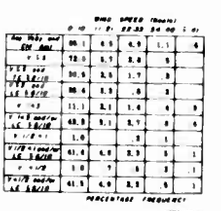
ISACHSEN



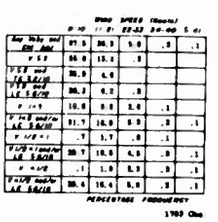
EUREKA



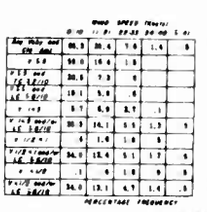
ALERT



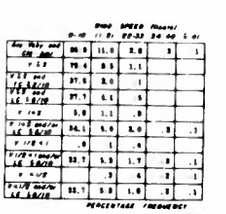
MOULD BAY



RESOLUTE



THULE

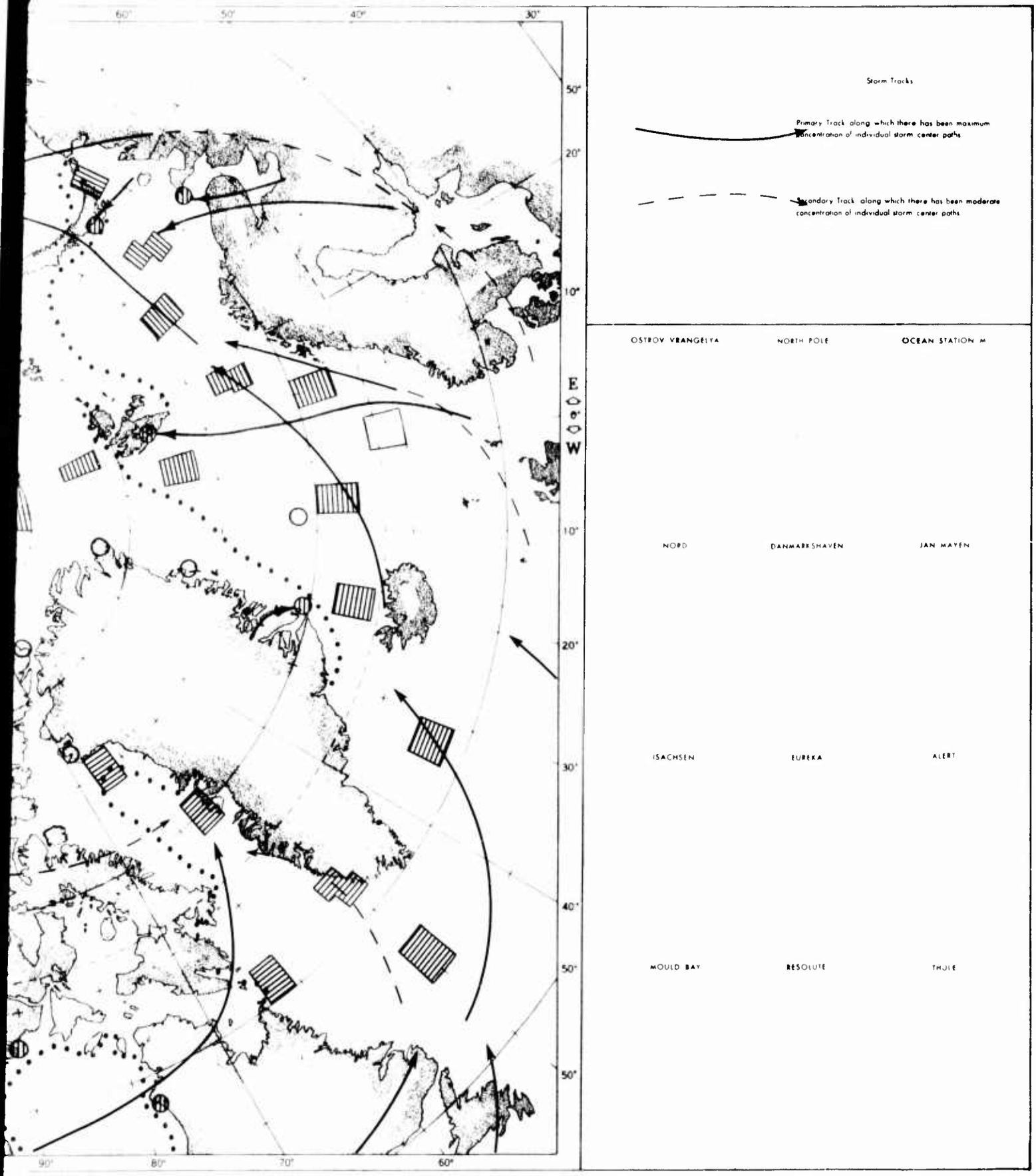


NOVEMBER STORM TR



TORM TRACKS

CHART 133



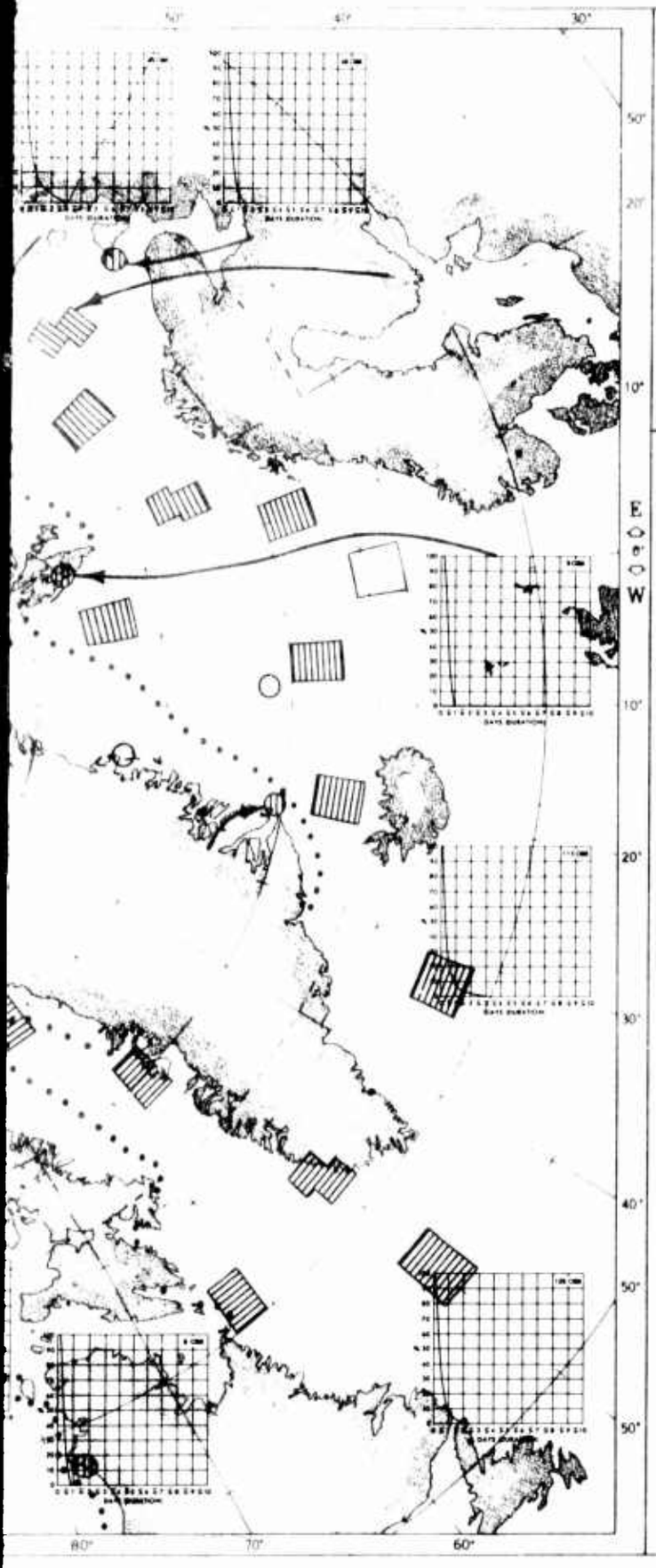
NOVEMBER

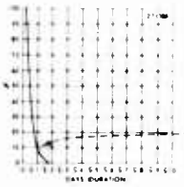
GALE PERSISTE



ERSISTENCE

CHART 134

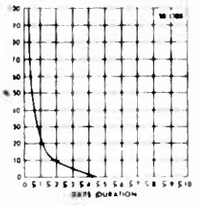




Percentage Frequency of Gales (Beaufort Force 8 or more 34 knots) equal to or greater than number of days intersected by the curve

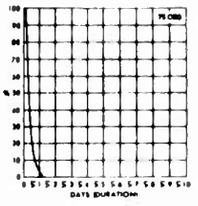
—10% of Gales (34 knots) persist at least one day

OSTROV VRANGELYA



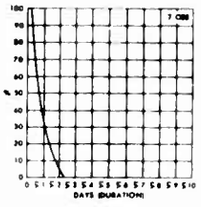
NORTH POLE

OCEAN STATION M

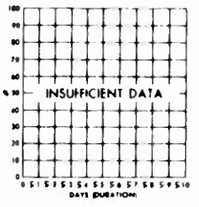


NORD

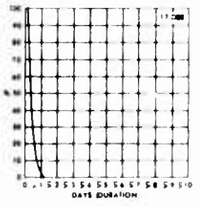
DANMARKSHAVEN



JAN MAYEN

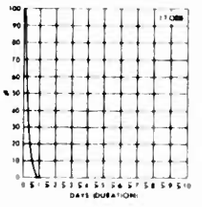


ISACHSEN

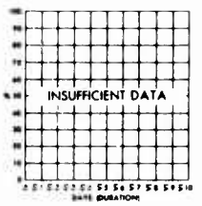


EUREKA

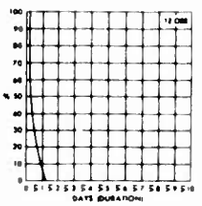
ALERT



MOULD BAY



RESOLUTE



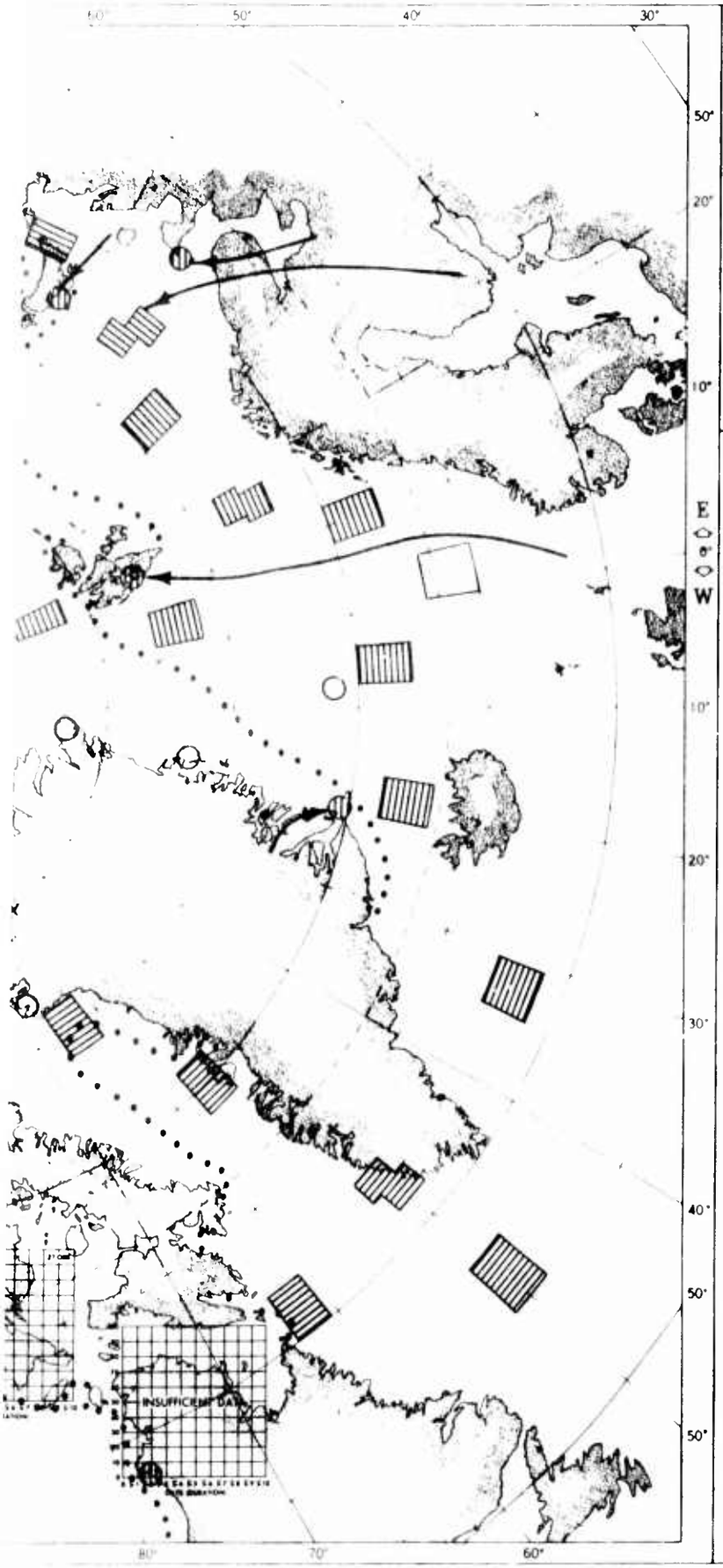
THULE

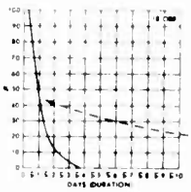
NOVEMBER LOW TEMPERATURE



RATURE PERSISTENCE

CHART 135

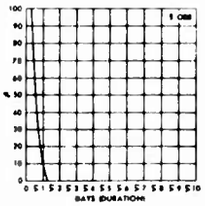




Percentage Frequency of Air Temperature (20° F or less) equal to or greater than number of days intersected by the curve

[44 % of cold temperatures (≤ 20° F) persist at least one day]

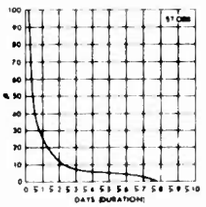
OSTROV VRANGELYA



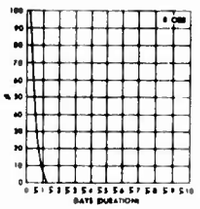
NORTH POLE

OCEAN STATION M

NORD

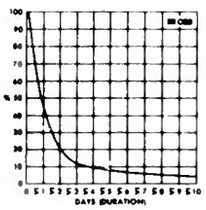


DANMARKSHAVEN

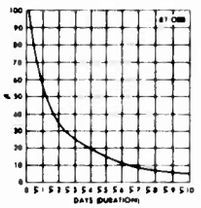


JAN MAYEN

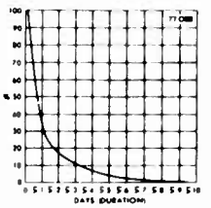
ISACHSEN



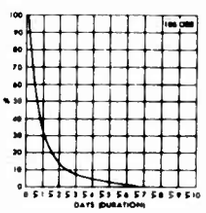
EUREKA



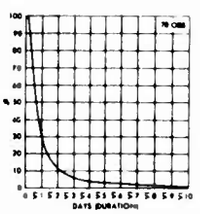
ALERT



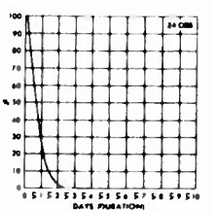
MOULD BAY



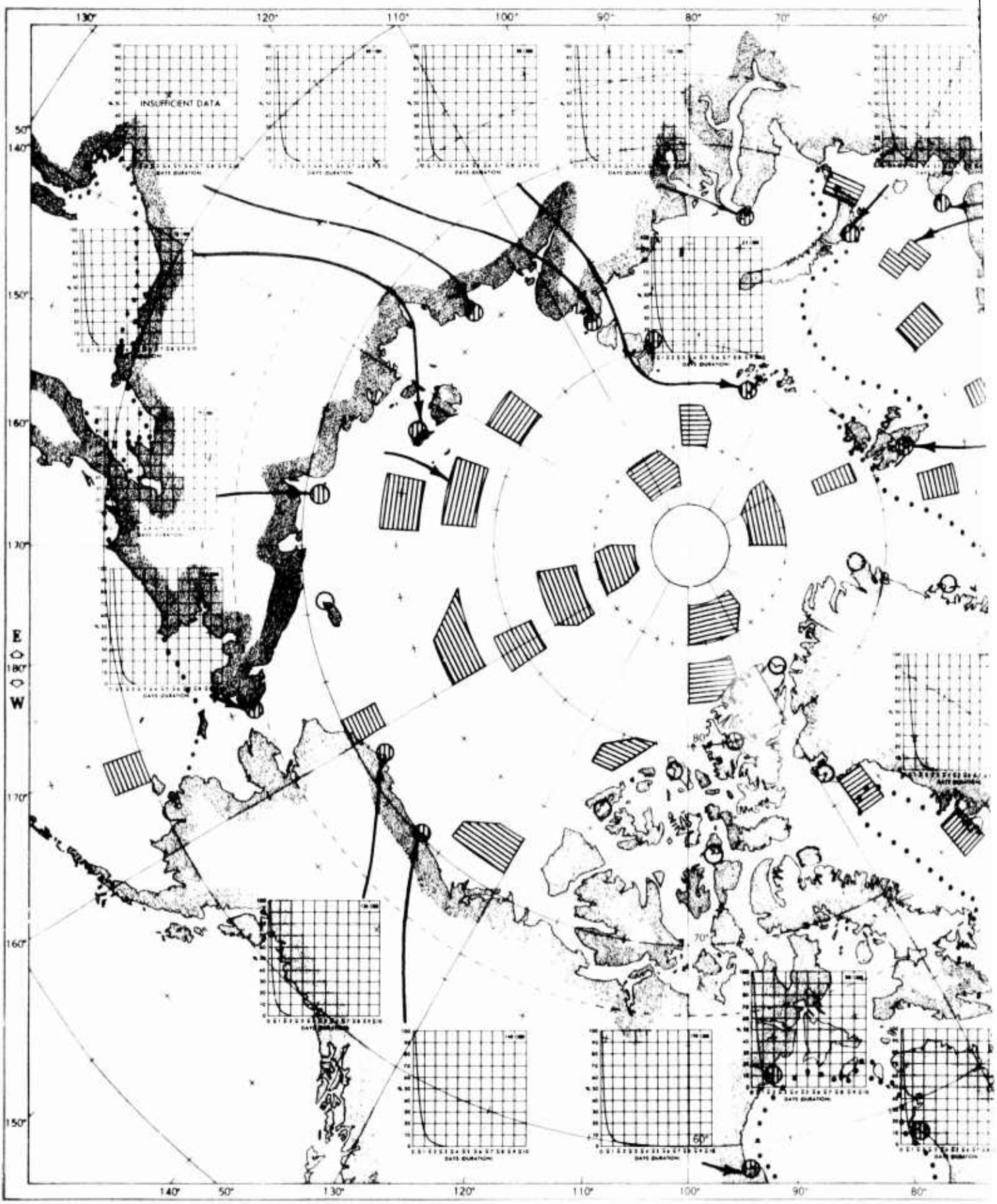
RESOLUTE



THULE

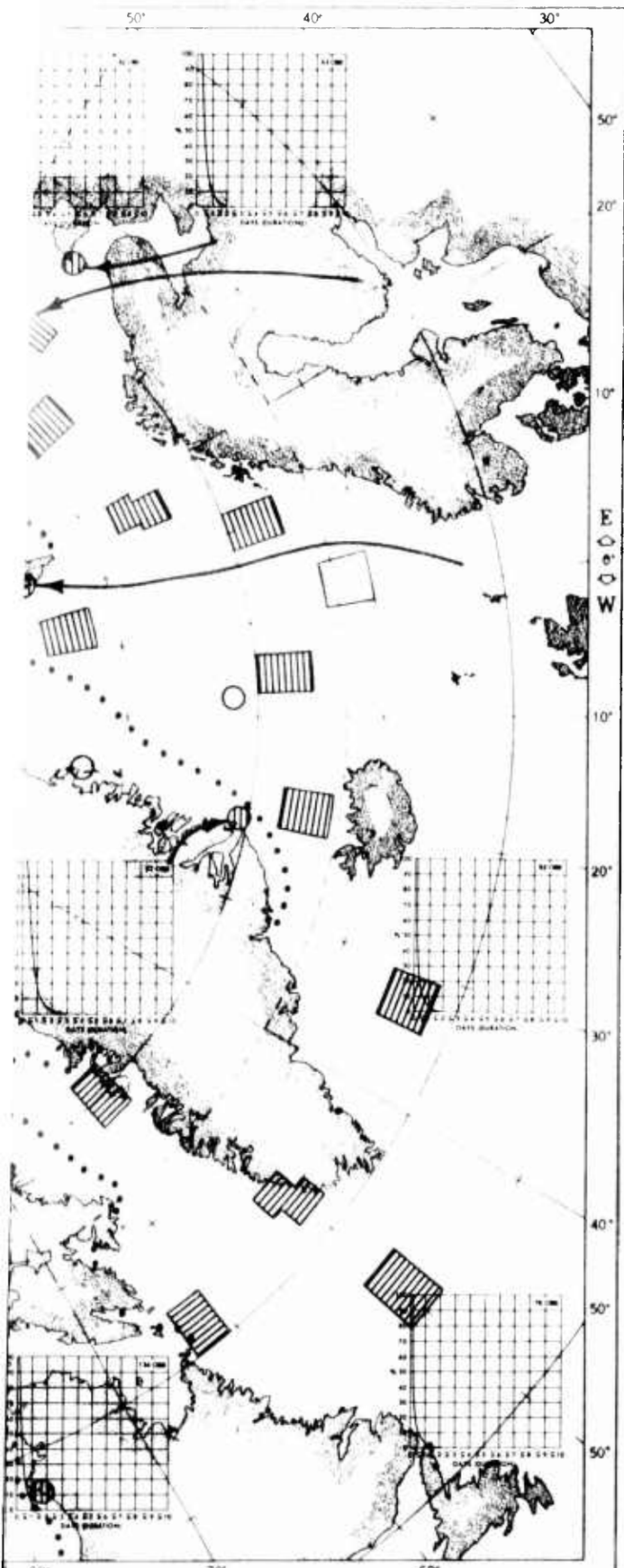


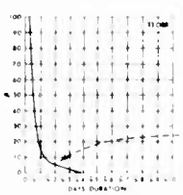
NOVEMBER LOW VISIBILITY PE



PERSISTENCE

CHART 136

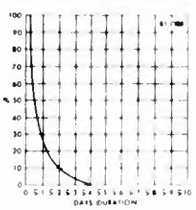




Percentage frequency of Low Visibility (< 2 nautical miles) equal to or greater than number of days intersected by the curve

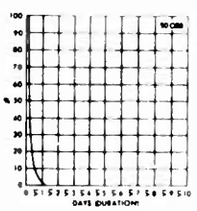
[6% of low visibilities (< 2 miles) persist at least two days]

OSTROV VRANGEL'YA

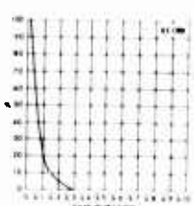


NORTH POLE

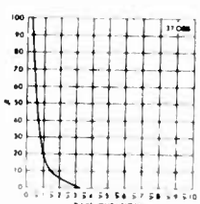
OCEAN STATION M



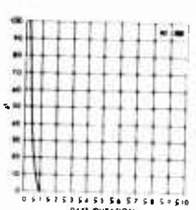
NORD



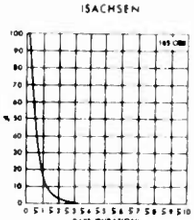
DANMARKSHAVEN



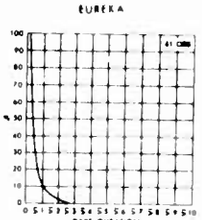
JAN MAYEN



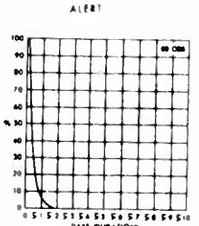
ISACHSEN



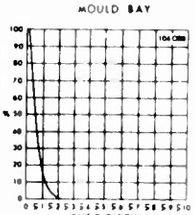
EUREKA



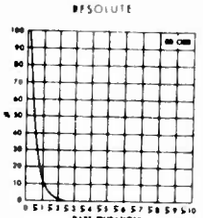
ALERT



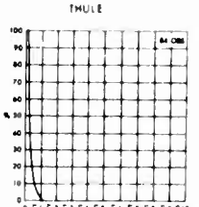
MOULD BAY



RESOLUTE



THULE

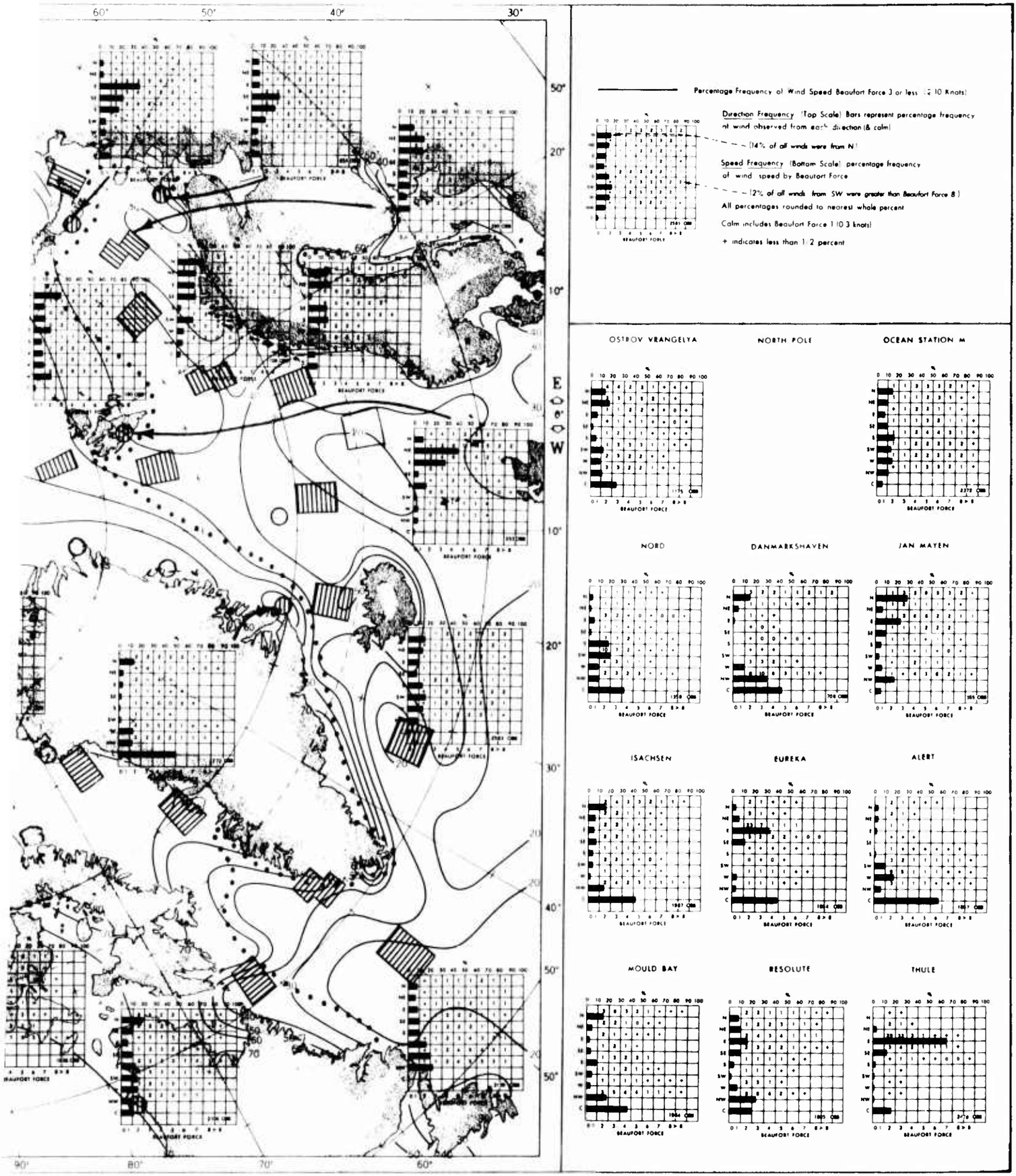


DECEMBER

SURFACE

RFACE WIND

CHART 137



Percentage Frequency of Wind Speed Beaufort Force 3 or less (≤ 10 Knots)

Direction Frequency (Top Scale) Bars represent percentage frequency of wind observed from each direction (& calm)

— (14% of all winds were from N)

Speed Frequency (Bottom Scale) percentage frequency of wind speed by Beaufort Force

— (2% of all winds from SW were greater than Beaufort Force 8)

All percentages rounded to nearest whole percent

Calm includes Beaufort Force 1 (0-3 knots)

+ indicates less than 1/2 percent

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

MOULD BAY

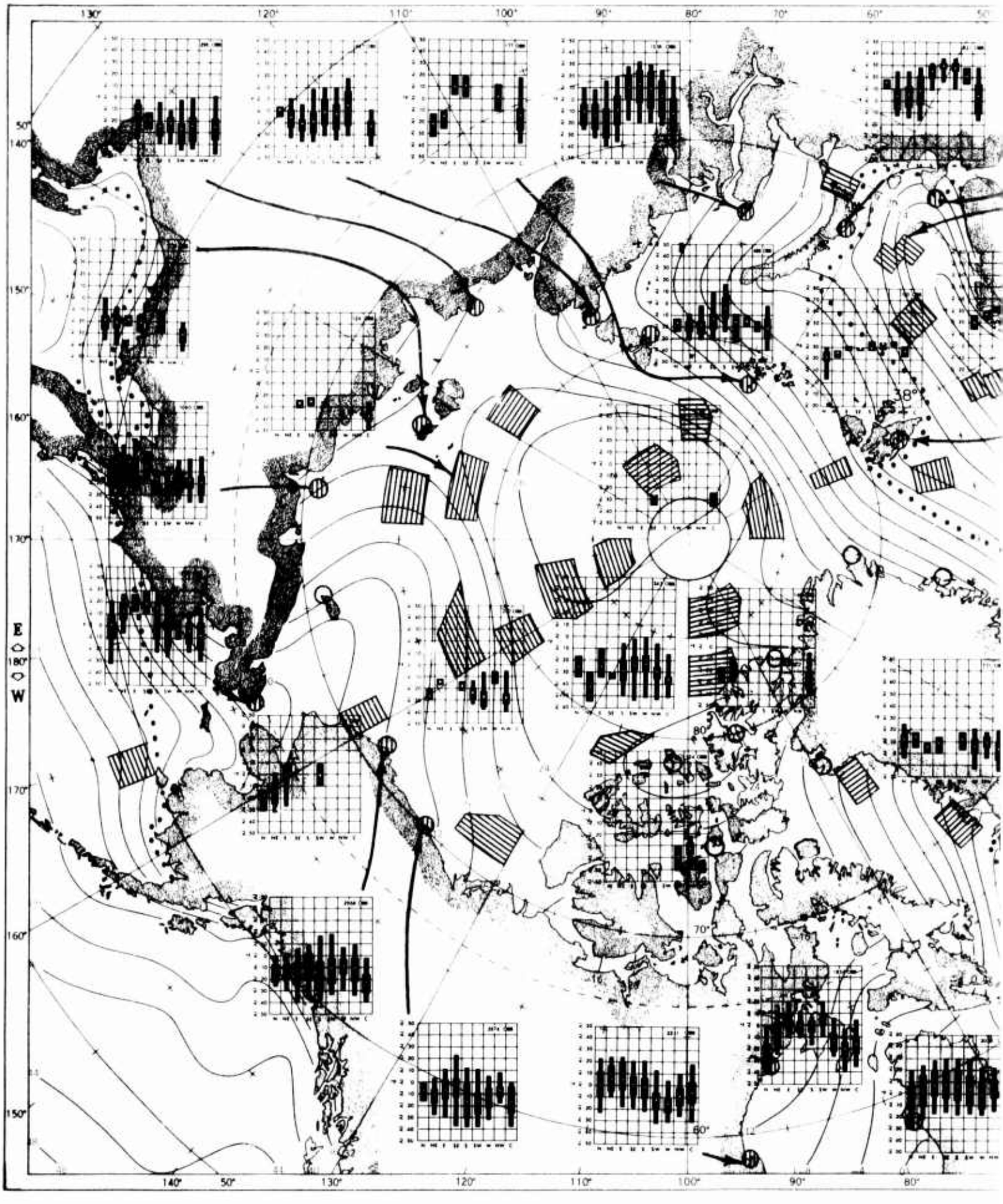
RESOLUTE

THULE

BEAUFORT FORCE

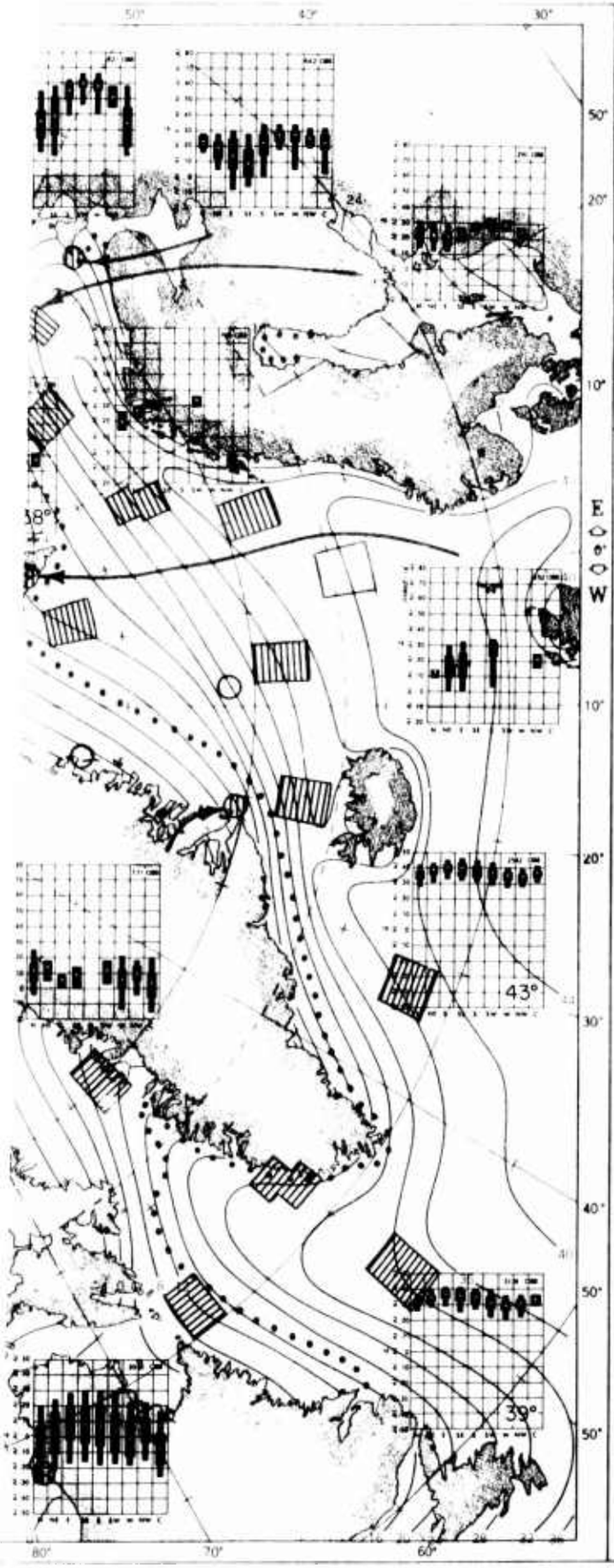
2

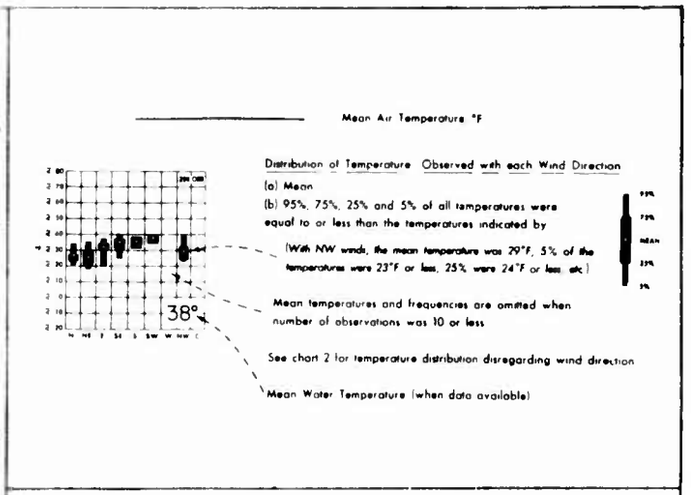
DECEMBER AIR TEMPERATURE BY WI

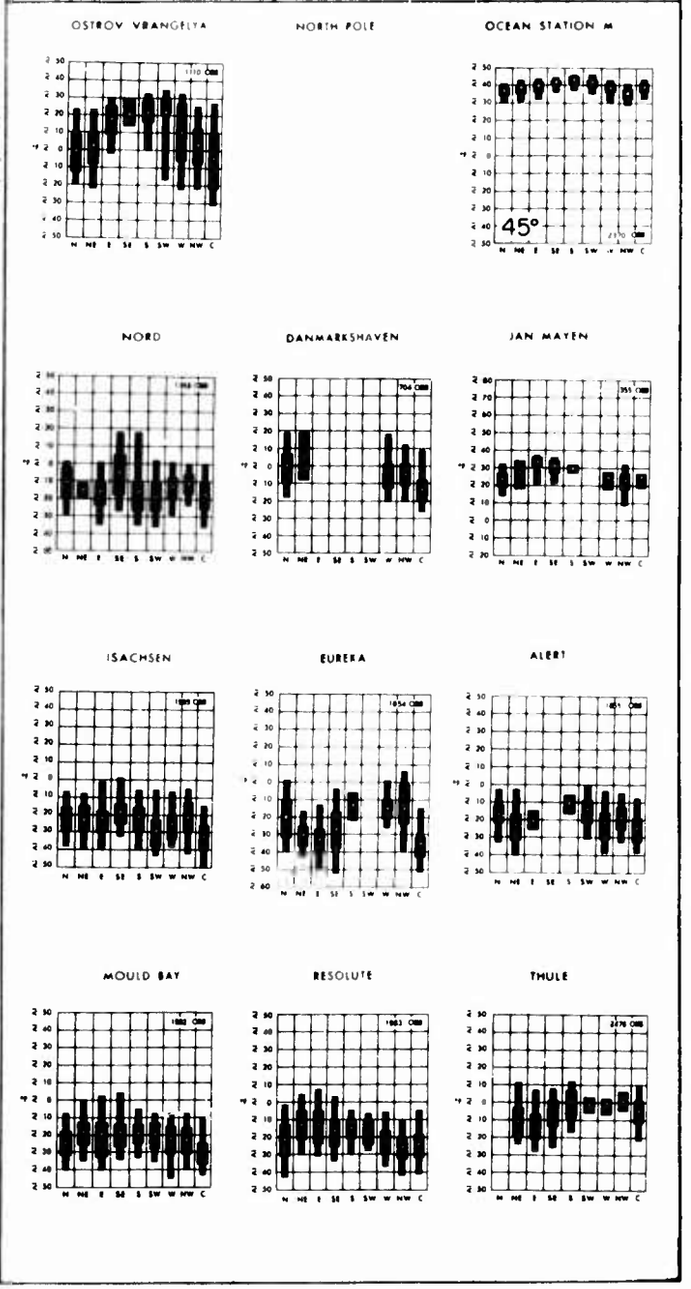


Y WIND DIRECTION

CHART 138





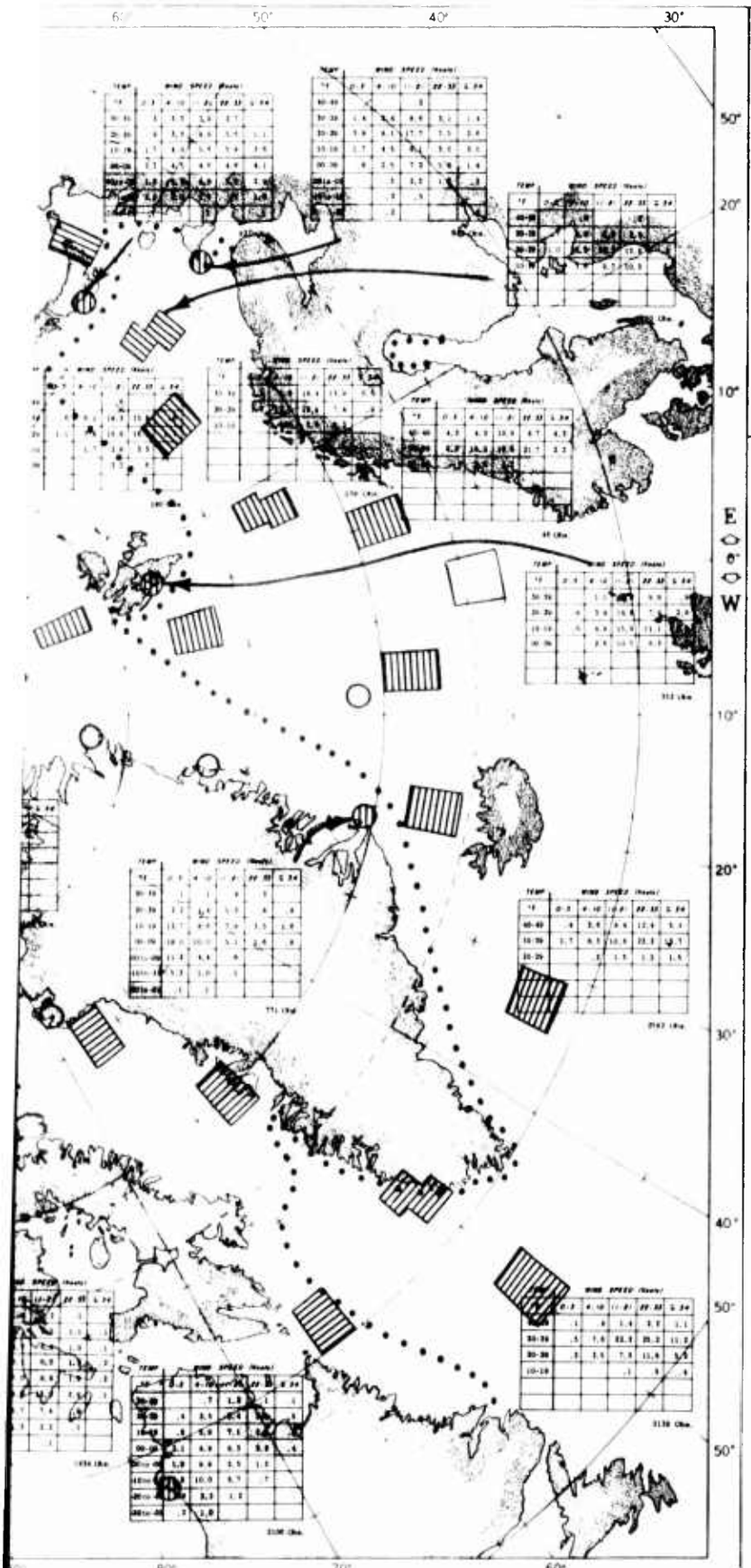


DECEMBER AIR TEMPERATURE vs



,TURE vs. WIND SPEED

CHART 139





Percentage Frequency of simultaneous occurrence of specified Temperature groups and Wind Speed

15% of the observations on which this tabulation was based reported wind speed 22-33 knots simultaneous with temperature from 10° through 19° F

OSTROV VRANGELYA

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	34 & over
30-39	.7	2.6	5.5	1.1	
20-29	2.5	5.9	7.9	1.4	.9
10-19	3.3	5.9	5.4	.4	.3
00-09	3.5	6.8	4.8	2.4	.9
00 to -09	2.7	5.6	6.1	1.3	.5
-10 to -19	5.2	6.4	3.2	1.8	.1
-20 to -29	5.3	2.9	.6		
-30 to -39	1.3	.1			

1110 Obs.

NORTH POLE

OCEAN STATION M

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	34 & over
40-49	3.0	5.0	10.0	33.0	4.8
30-39	2.5	8.4	16.3	15.8	1.6
20-29		.3	.5	.3	.2
10-19					
00-09					

2373 Obs.

NORD

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	34 & over
40-49	.1				
30-39	.1		.2	.3	.1
20-29		.2	.1	.1	
10-19	.4	.4	.1	.4	.1
00-09	2.2	3.2	1.0	.6	.1
00 to -09	5.5	10.2	3.8	.7	
-10 to -19	8.8	15.3	6.0	.3	
-20 to -29	11.0	15.9	2.1		
-30 to -39	3.8	5.4	.1		.1
-40 to -49	.4	.7			

1358 Obs.

DENMARKSHAVEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	34 & over
30-39		.1	.3		
20-29	.1		.1	.8	
10-19	2.0	1.8	2.0	.6	.8
00-09	3.7	7.0	3.7	1.8	3.3
00 to -09	11.1	11.5	8.8	1.3	.3
-10 to -19	15.2	8.4	2.8	.1	
-20 to -29	10.1	1.8	.6		
-30 to -39	.1				

704 Obs.

JAN MAYEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	34 & over
30-39	.6	5.6	17.5	13.0	3.6
20-29	3.7	8.5	13.5	10.4	3.1
10-19	1.1	3.7	9.9	8.2	
00-09			.3	.3	

355 Obs.

ISACHSEN

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	34 & over
10-19		.1	.1		
00-09	.3	.5	.5	.1	.1
00 to -09	1.1	2.1	1.7	1.3	.8
-10 to -19	2.4	5.7	5.6	2.0	.6
-20 to -29	12.5	11.1	6.0	3.6	.5
-30 to -39	15.7	8.0	2.0	.6	
-40 to -49	8.0	2.2	.6		
-50 to -59	2.2	.2			
-60 to -69	.1				

1045 Obs.

EUREKA

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	34 & over
10-19		.1	.1		
00-09	.1	.9	1.0	.3	
00 to -09	1.0	1.3	1.0	.9	.1
-10 to -19	2.8	4.5	3.0	.5	
-20 to -29	5.1	10.9	3.2	.4	
-30 to -39	15.4	19.1	.7		
-40 to -49	13.4	10.9	.1		
-50 to -59	2.7	3.5			

1054 Obs.

ALERT

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	34 & over
10-19		.1	.1		
00-09	.3	.8	.3	.3	.2
00 to -09	4.0	2.3	1.9	1.9	.9
-10 to -19	10.9	8.8	3.7	1.8	.9
-20 to -29	20.7	11.8	1.8	.9	.2
-30 to -39	18.8	6.2	.2		
-40 to -49	2.3	.6			

1057 Obs.

MOULD BAY

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	34 & over
10-19			.1		.1
00-09	.7	1.0	.8	.2	.1
00 to -09	1.1	1.6	2.0	.8	.5
-10 to -19	4.3	9.9	6.4	2.0	.2
-20 to -29	8.9	13.7	7.0	1.3	
-30 to -39	17.1	8.0	3.0	.3	.1
-40 to -49	4.0	1.7	.6		
-50 to -59		.3			

1984 Obs.

RESOLUTE

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	34 & over
10-19		.2	.5		
00-09	.4	1.3	2.3	.9	.1
00 to -09	1.4	3.5	4.3	3.1	.6
-10 to -19	3.8	11.5	8.0	2.2	.2
-20 to -29	7.4	17.0	8.4	.5	
-30 to -39	5.8	10.6	2.0	.1	
-40 to -49	1.2	2.3	.5	.1	

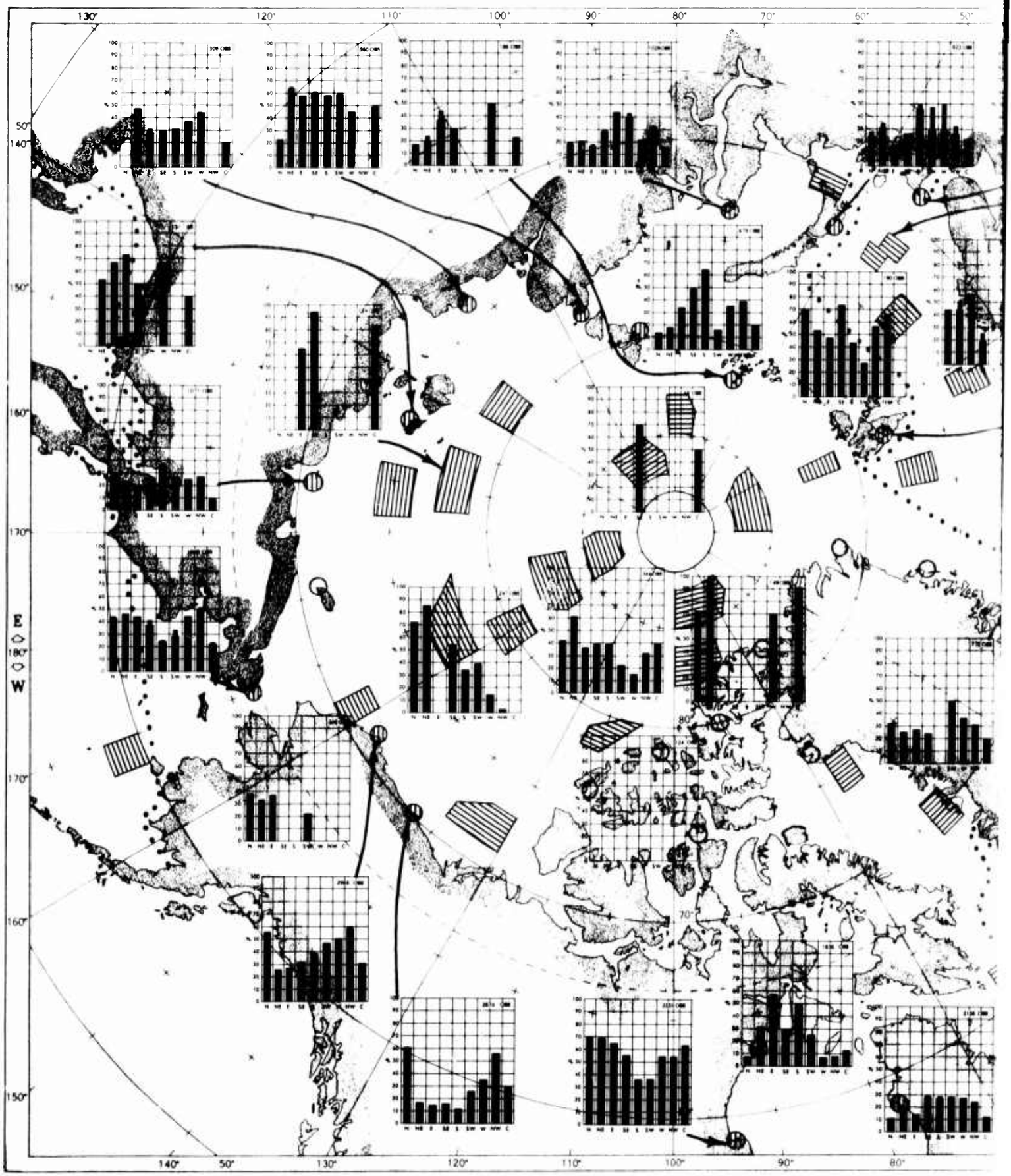
1963 Obs.

THULE

TEMP °F	WIND SPEED (Knots) 0-3	4-10	11-21	22-33	34 & over
30-39		.1			
20-29	.7	1.5	.8	.1	
10-19	4.6	8.4	3.4	.8	
00-09	5.9	10.5	3.1	.3	.1
00 to -09	4.3	24.5	1.7	.3	
-10 to -19	1.3	20.3	.8		
-20 to -29		1.6			

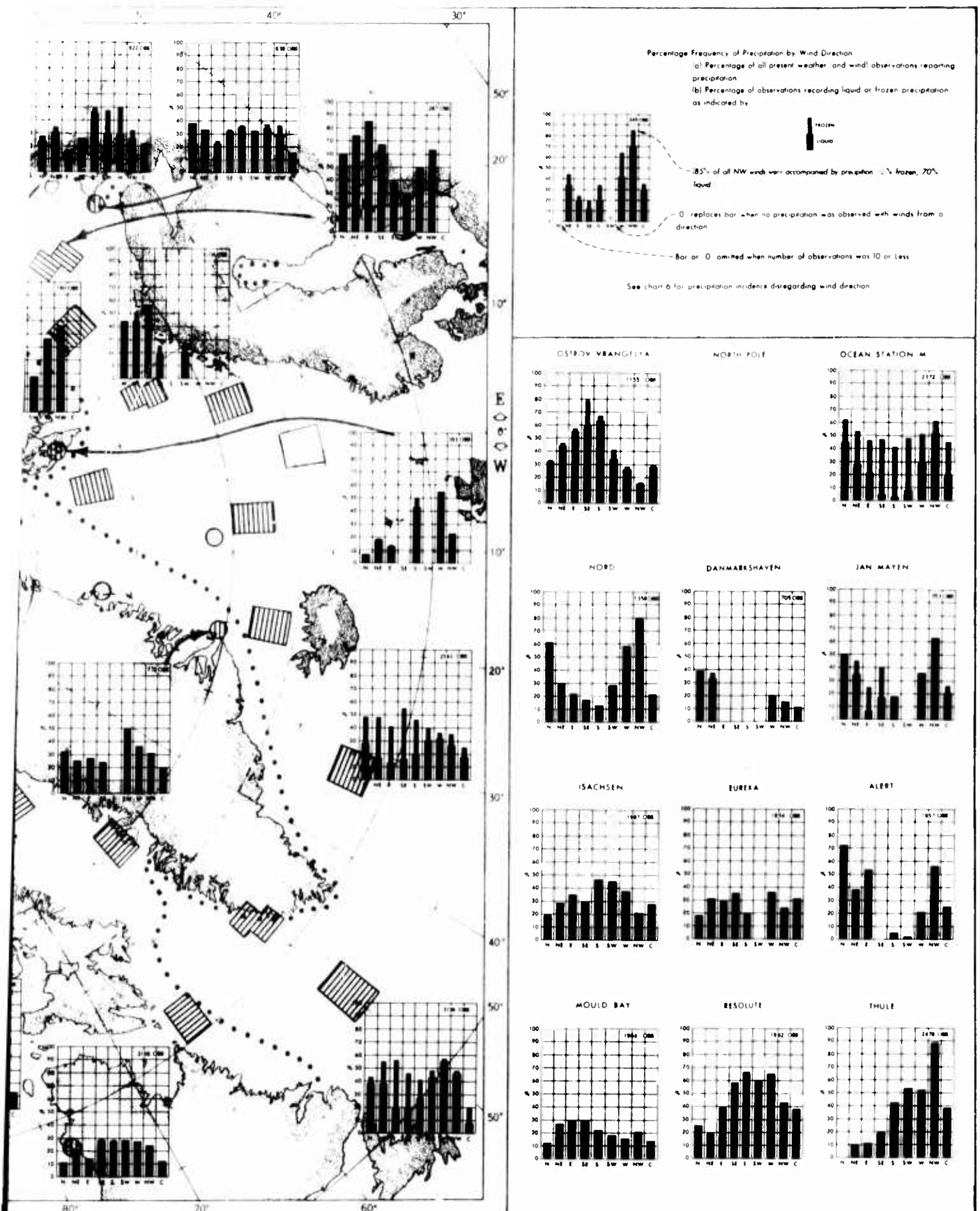
3478 Obs.

DECEMBER PRECIPITATION BY WIND



Y WIND DIRECTION

CHART 140



DECEMBER

CLOUDINE



CLOUDINESS

CHART 141



Percentage Frequency of Total Cloud Amount 8/10 or more

Total Cloud Amount (TC): Percentage frequency of total cloud amounts equal to or less than amount intersected by the curve

162% of all total cloud amounts were 7/8 or less

Lower Cloud Amount (LC): Percentage proportions of winds from each direction that were accompanied by low or middle cloud amounts greater than 5/8 and greater than 7/8

152% of all NW winds were accompanied by lower cloud amounts >5/8 and 38% by lower cloud amounts >7/8)

[>5/8 includes 6/8 8/8 and 7/10 10/10 >7/8 includes 8/8 and 9/10 10/10]

0 replaces bar when no low cloud amounts >5/8 were observed with winds from a direction

Bar for 0 is omitted when the number of observations including both wind direction and low cloud amount was 10 or less for a direction

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

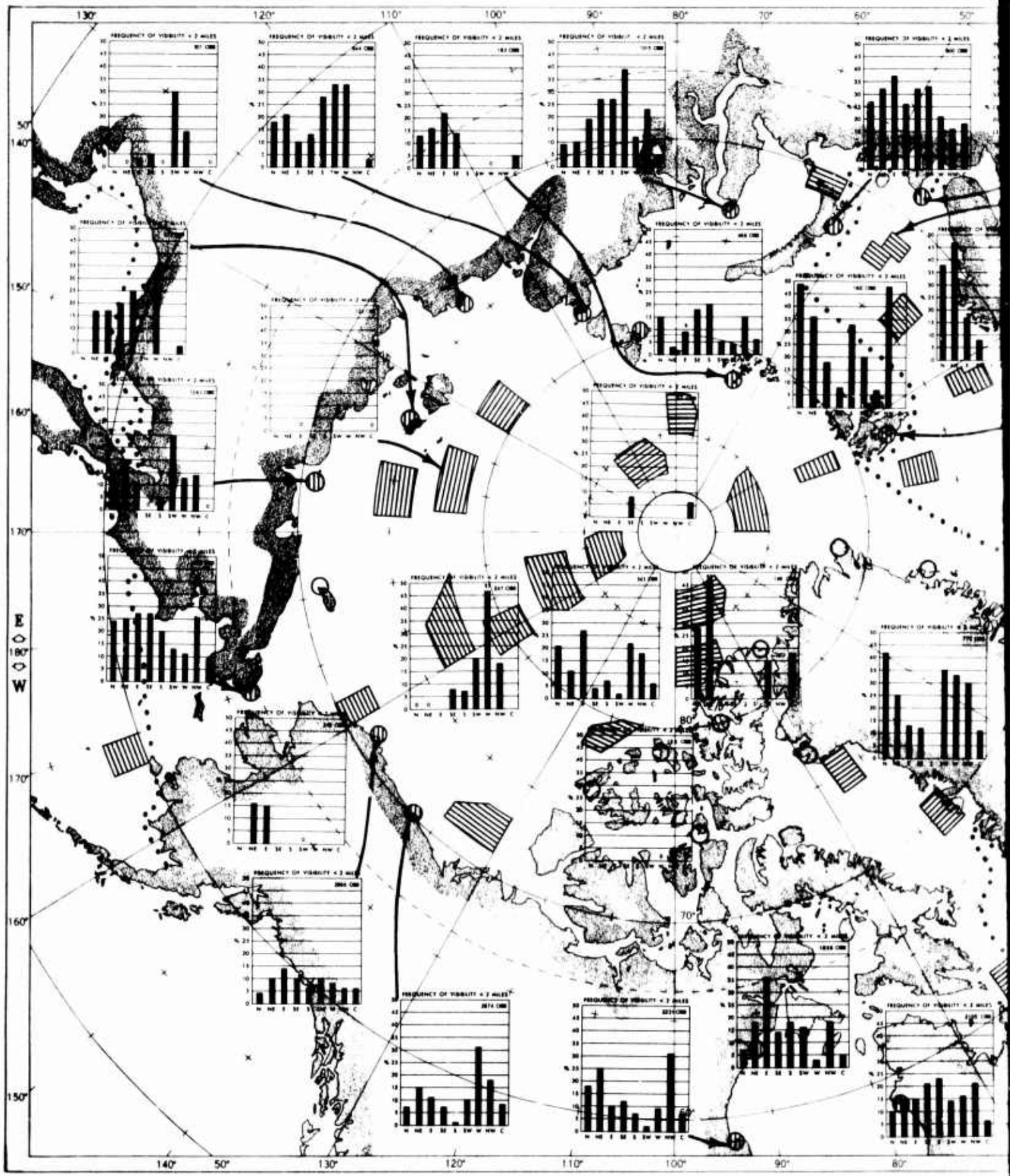
ALERT

MOULD BAY

RESOLUTE

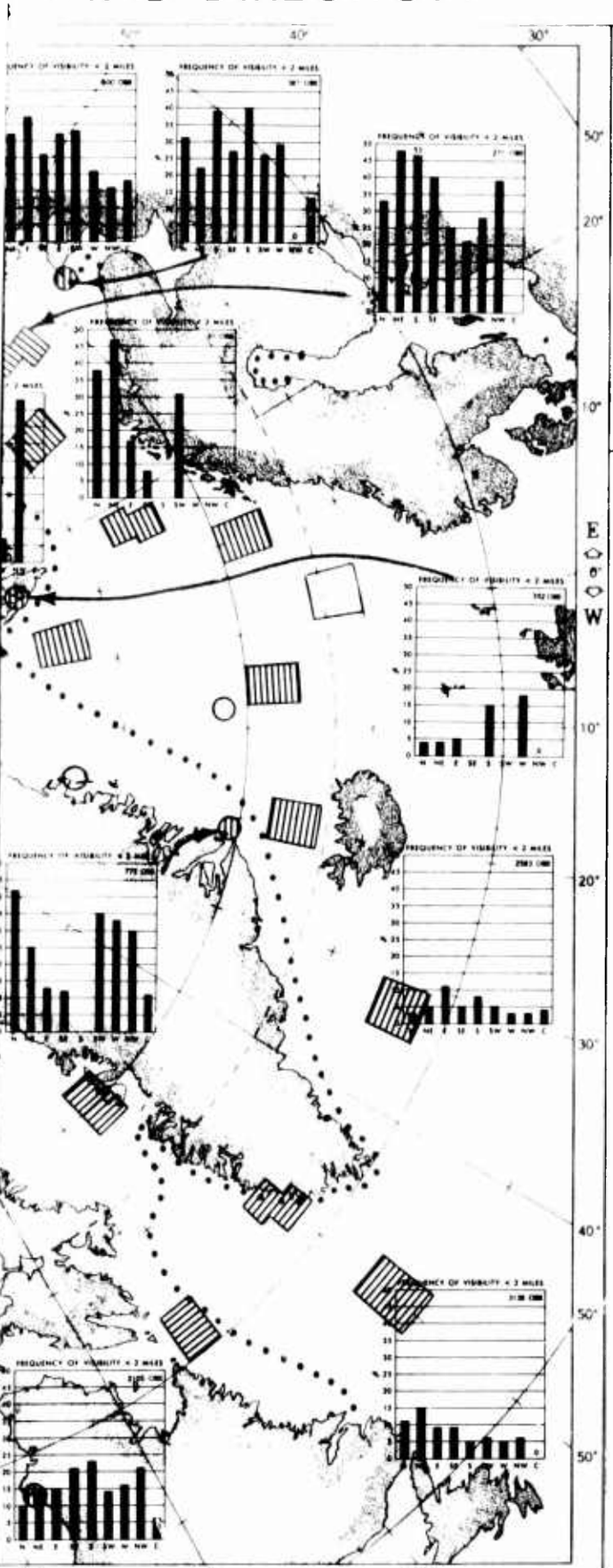
THULE

DECEMBER LOW VISIBILITY BY WIND



WIND DIRECTION

CHART 142



Percentage Frequency of Low Visibility by Wind Direction

Percentage of all visibility (and wind) observations reporting visibility less than 2 nautical miles



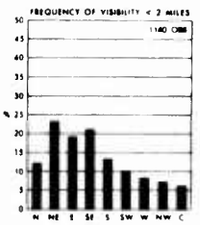
18% of all NW winds were accompanied by visibility less than 2 miles

0 replaces bar when no visibilities < 2 miles were observed with winds from a direction

Bar or 0 omitted when number of observations was 10 or less

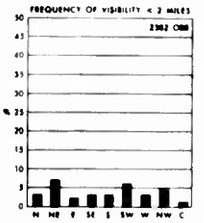
See chart 9 for low visibility incidence disregarding wind direction

OSTROV VRANGELYA

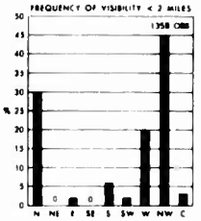


NORTH POLE

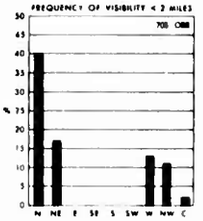
OCEAN STATION M



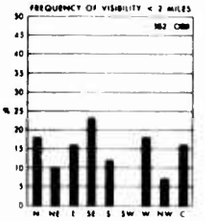
NORD



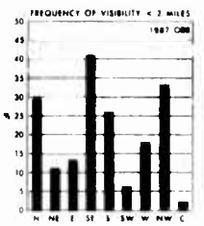
DANMARKSHAVEN



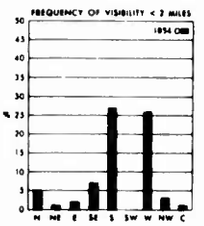
JAN MAYEN



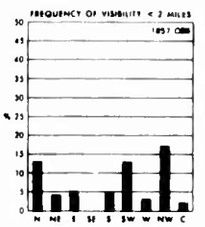
ISACHSEN



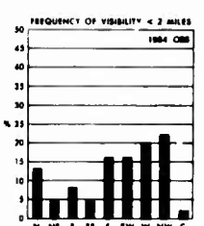
EUREKA



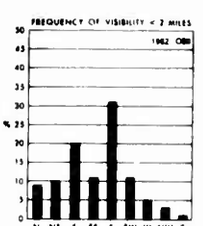
ALERT



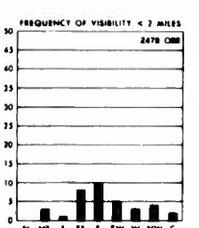
MOULD BAY



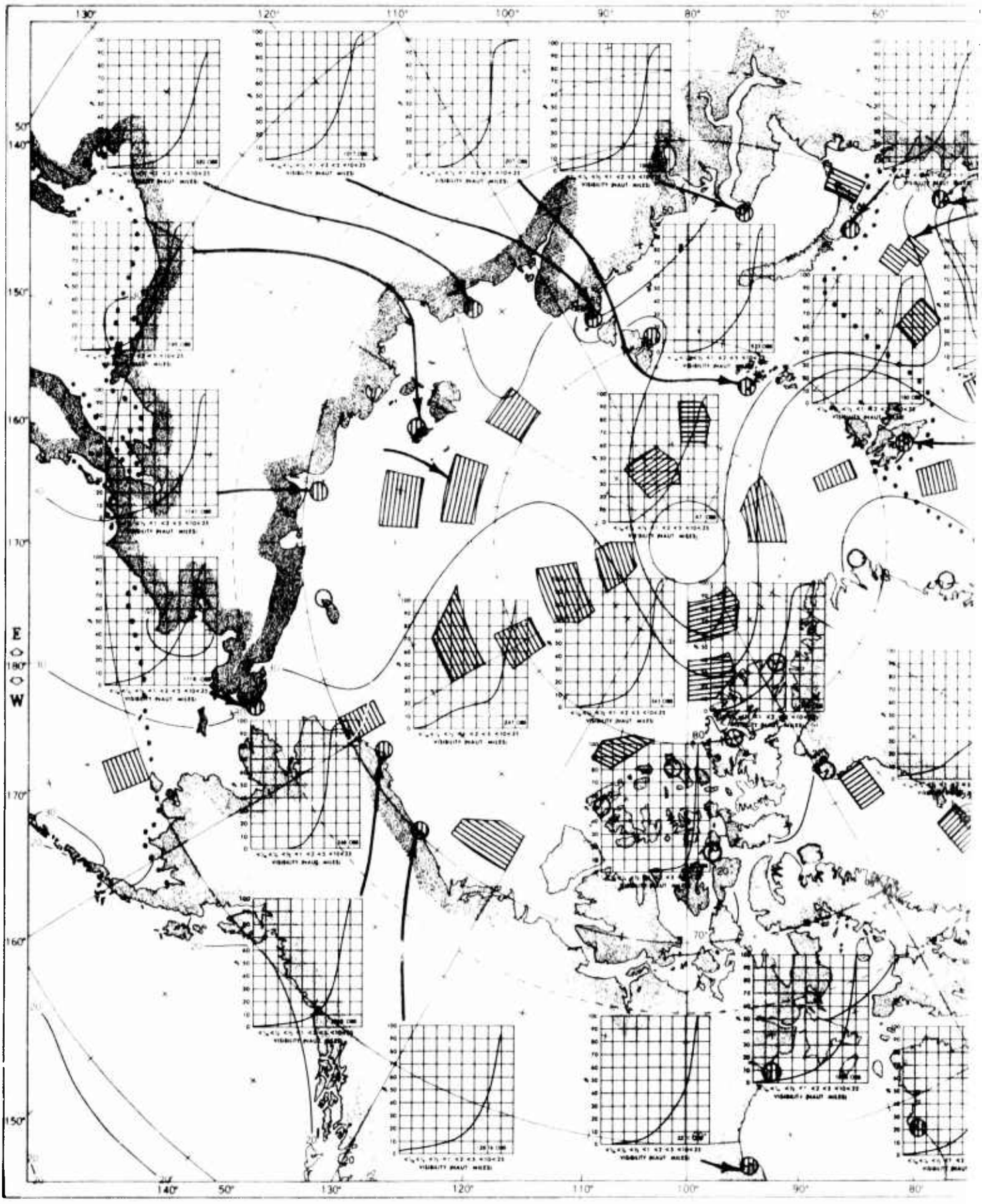
RESOLUTE



THULE

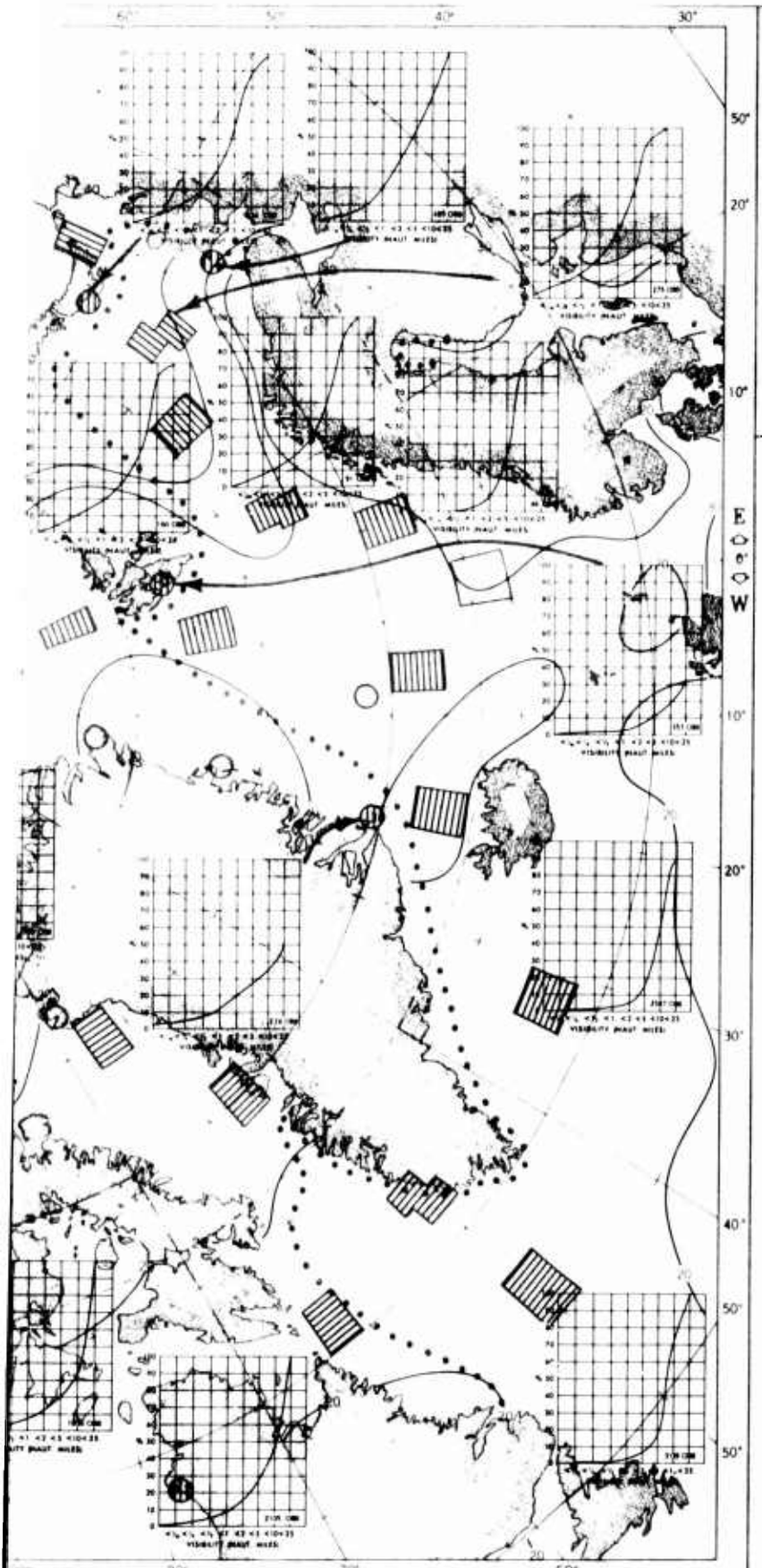


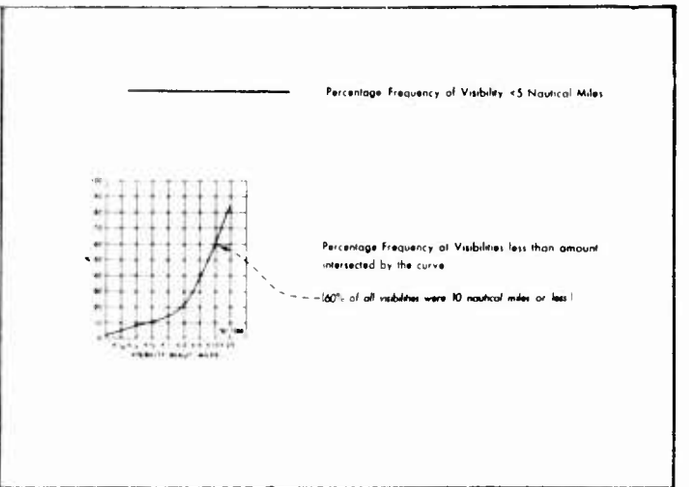
DECEMBER VISIBILITY

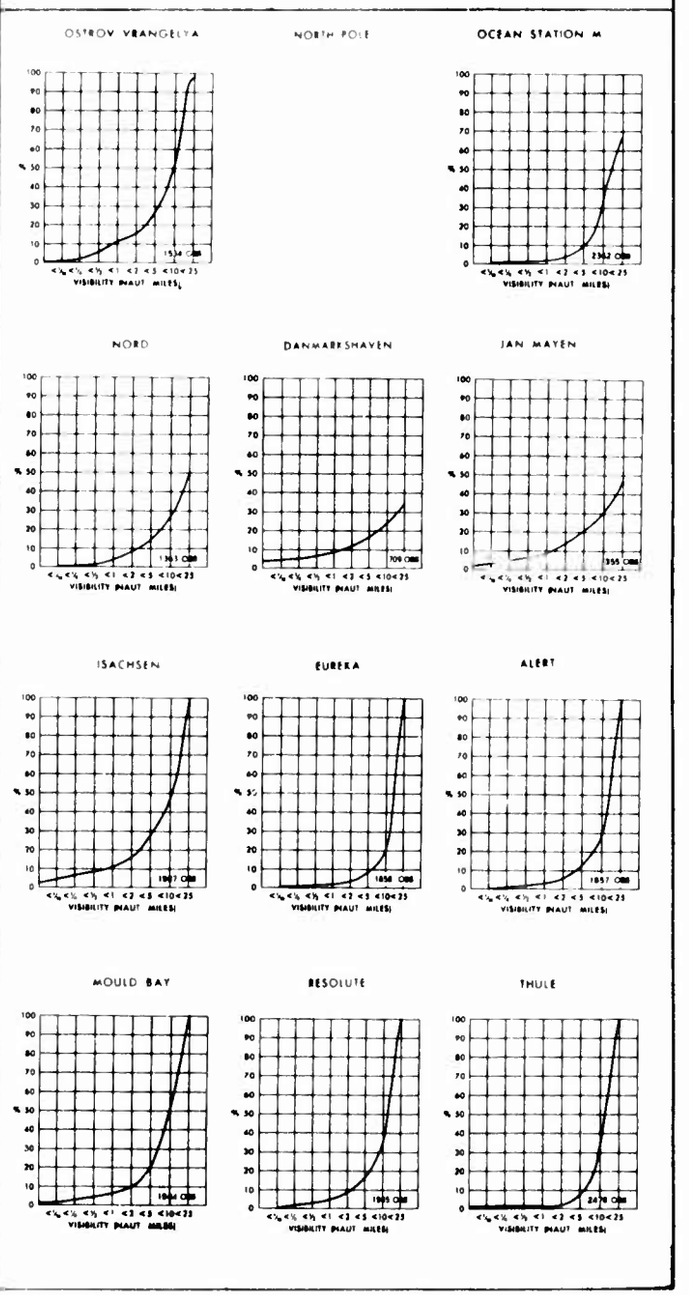


VISIBILITY

CHART 143

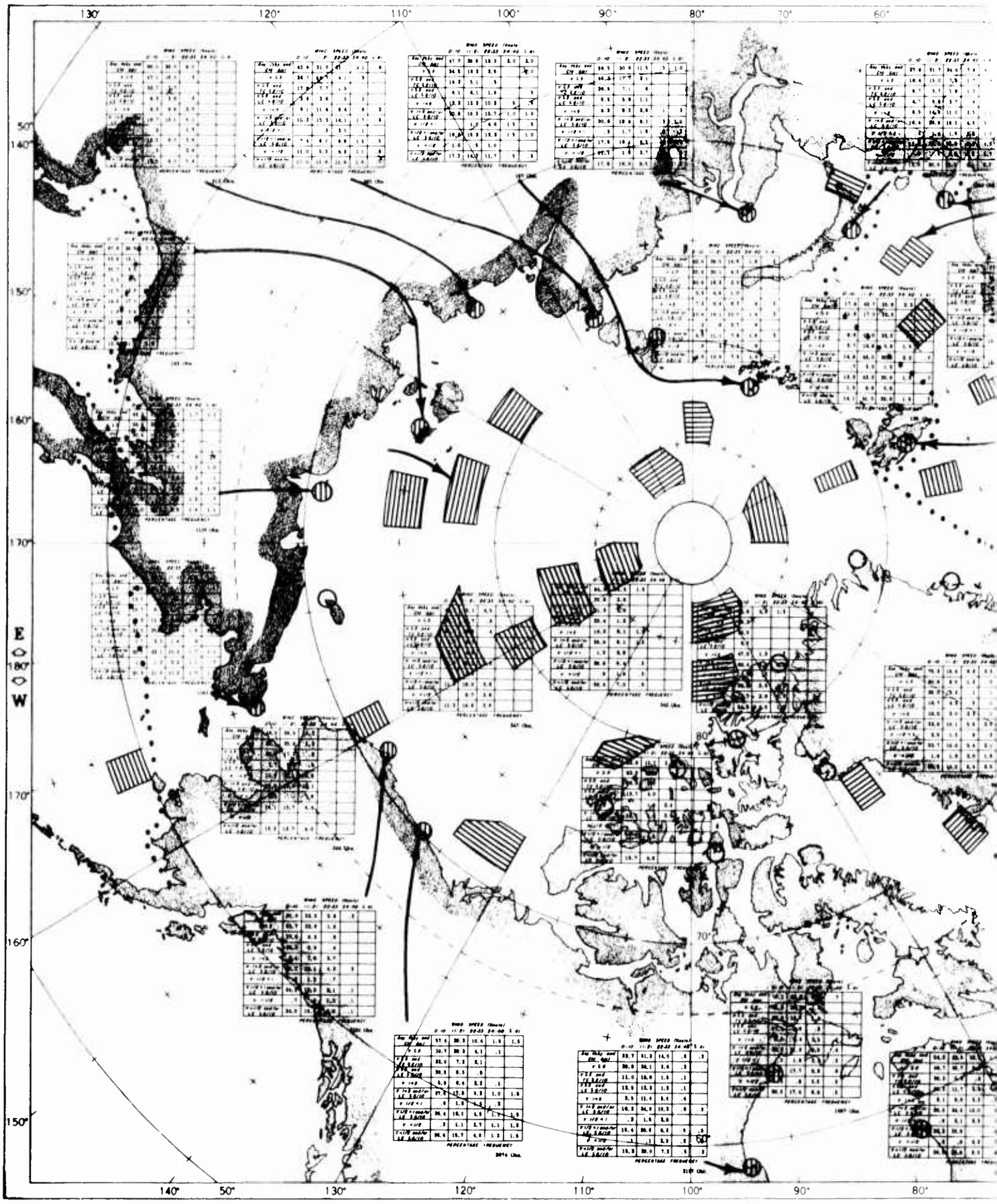






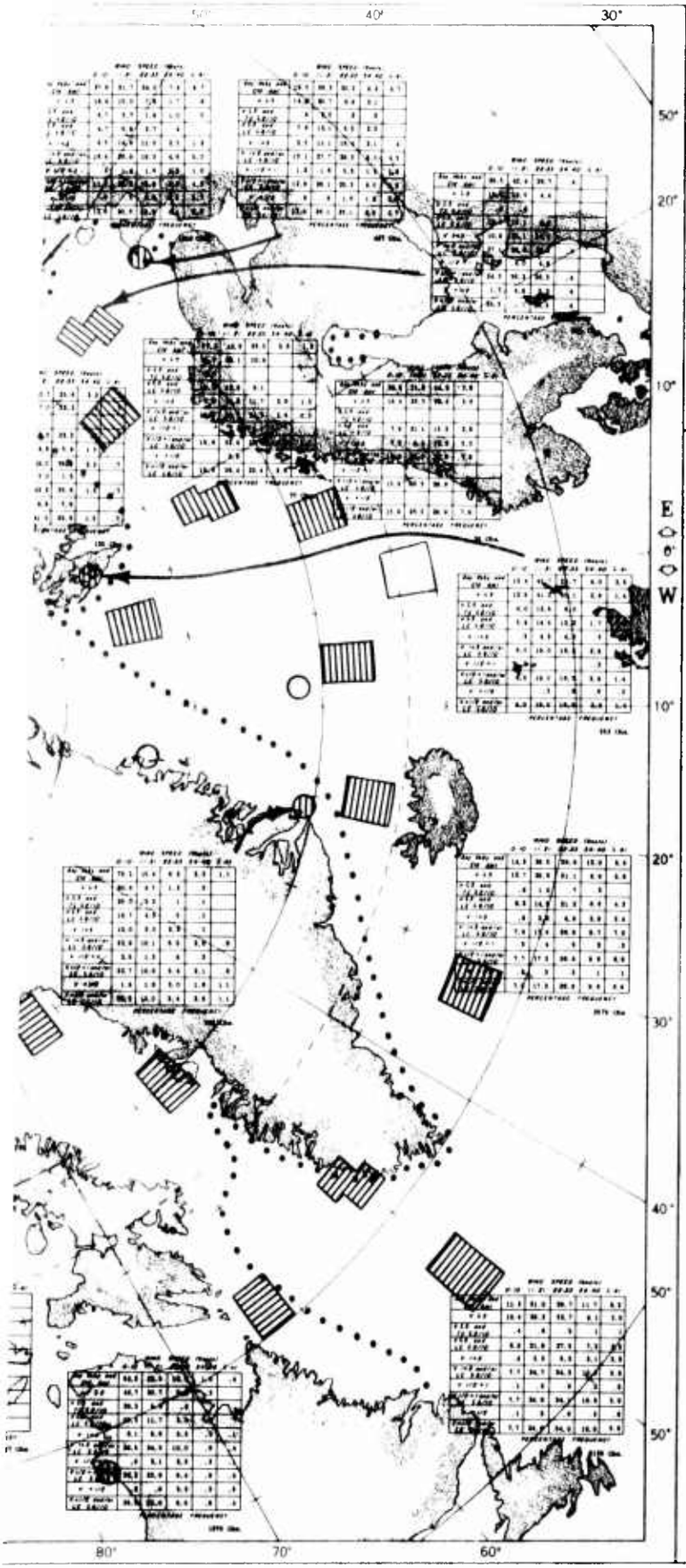
DECEMBER

WIND-VISIBILITY-CLO



ITY-CLOUDINESS

CHART 144



Percentage Frequency of simultaneous occurrence of specified Wind, Visibility, and Cloudiness conditions based on the number of observations which reported wind speed, visibility, total cloud amount, and low cloud amount.



Blank box indicates 0.0 percent

Notation

Any Vsby and Cld Amt = Simultaneous occurrence of wind speed with any visibility and cloud amount combination. This provides a percentage distribution of wind speeds for the observations used in this tabulation.

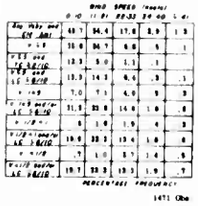
V = Visibility in Nautical Miles
1<5 indicates 1 to but not including 5 nautical miles

TC = Total Cloud Amount

LC = Low Cloud Amount (with base approximately 8000 feet or lower)

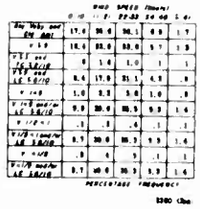
Ocean Area: 16.6% of the observations on which this tabulation was based reported speed 22-33 knots simultaneous with visibility 1-5 nautical miles and/or low cloud amount 5-6-10.

OSTROV VRANGELYA

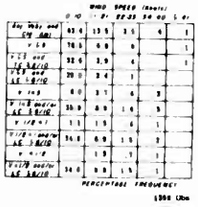


NORTH POLE

OCEAN STATION M



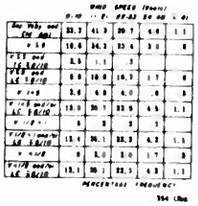
NORD



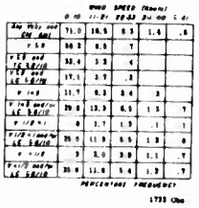
DANMARKSHAVEN



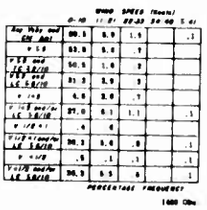
JAN MAYEN



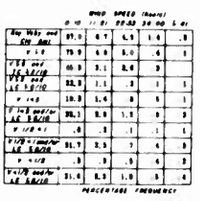
ISACHSEN



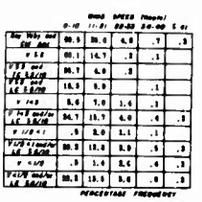
EUREKA



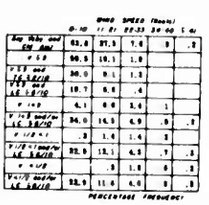
ALERT



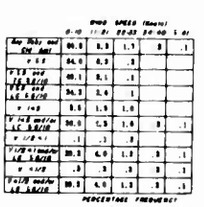
MOULD BAY



RESOLUTE



THULE

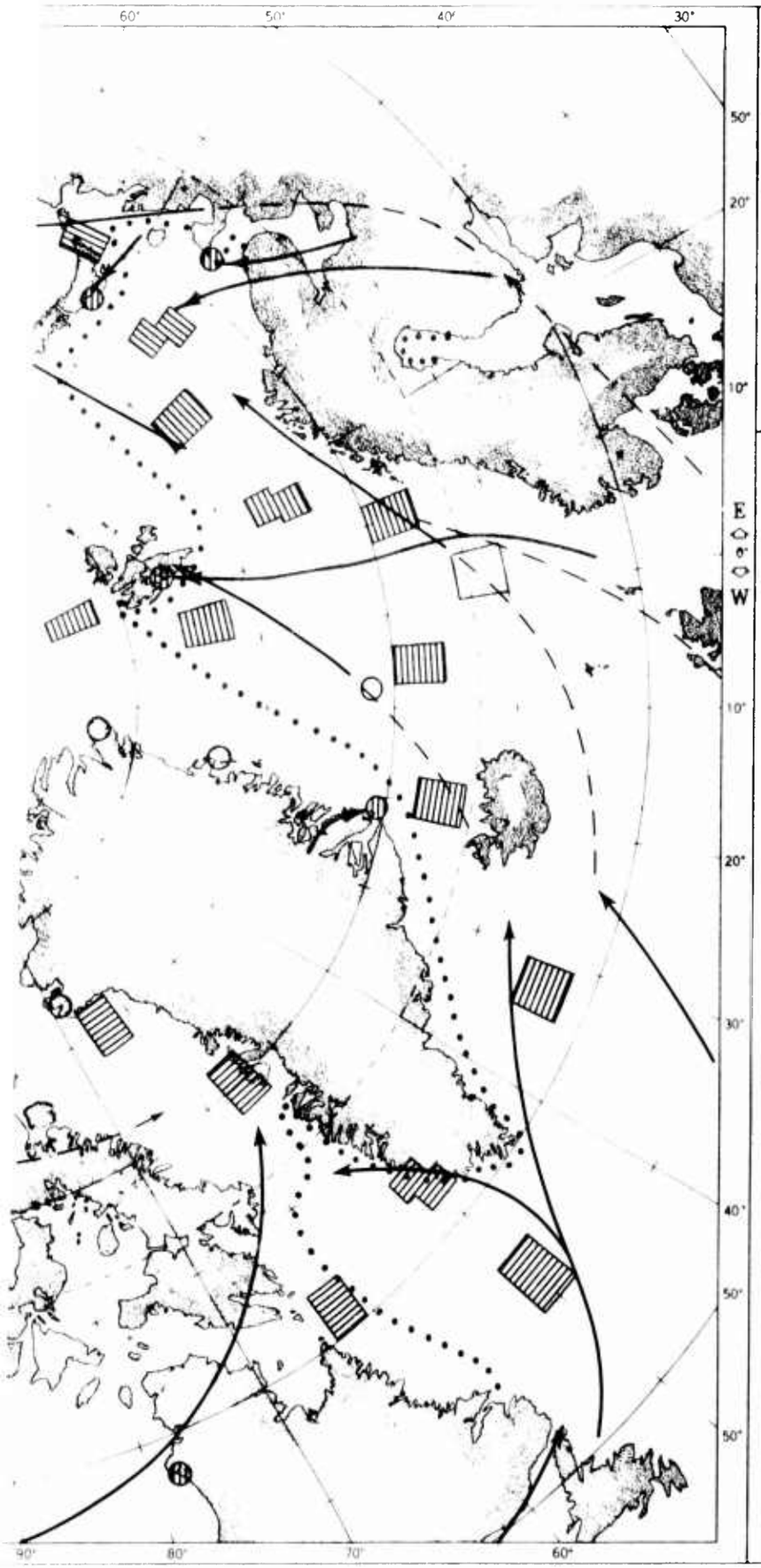


DECEMBER STORM TR



ORM TRACKS

CHART 145



Storm Tracks

Primary Track along which there has been maximum concentration of individual storm center paths

Secondary Track along which there has been moderate concentration of individual storm center paths

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

ALERT

MOULD BAY

RESOLUTE

THULE

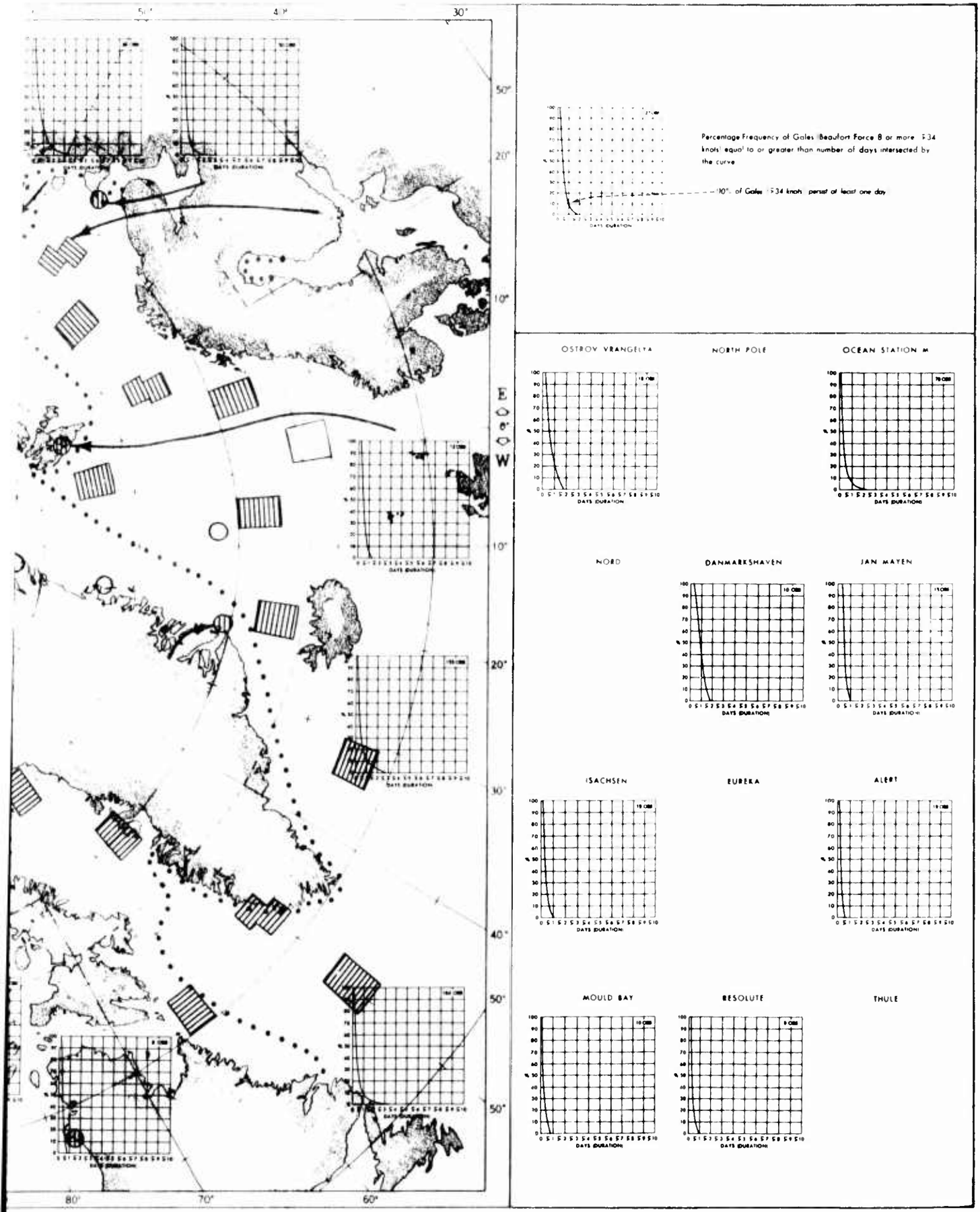
DECEMBER

GALE PERSISTEN



ERSISTENCE

CHART 146



Percentage Frequency of Gales (Beaufort Force 8 or more 34 knots) equal to or greater than number of days intersected by the curve

10% of Gales (34 knots) persist at least one day

OSTROV VRANGELYA

NORTH POLE

OCEAN STATION M

NORD

DANMARKSHAVEN

JAN MAYEN

ISACHSEN

EUREKA

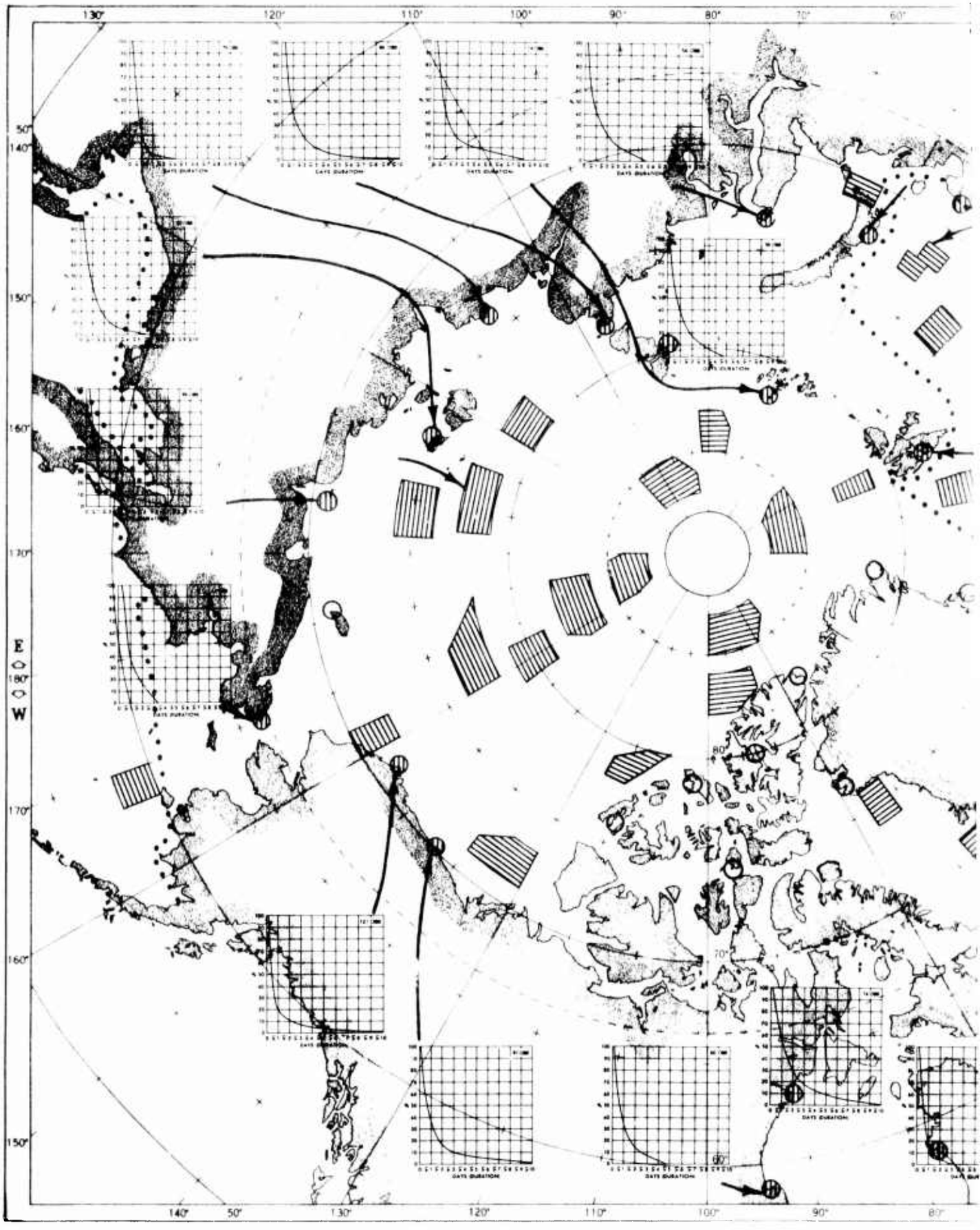
ALERT

MOULD BAY

RESOLUTE

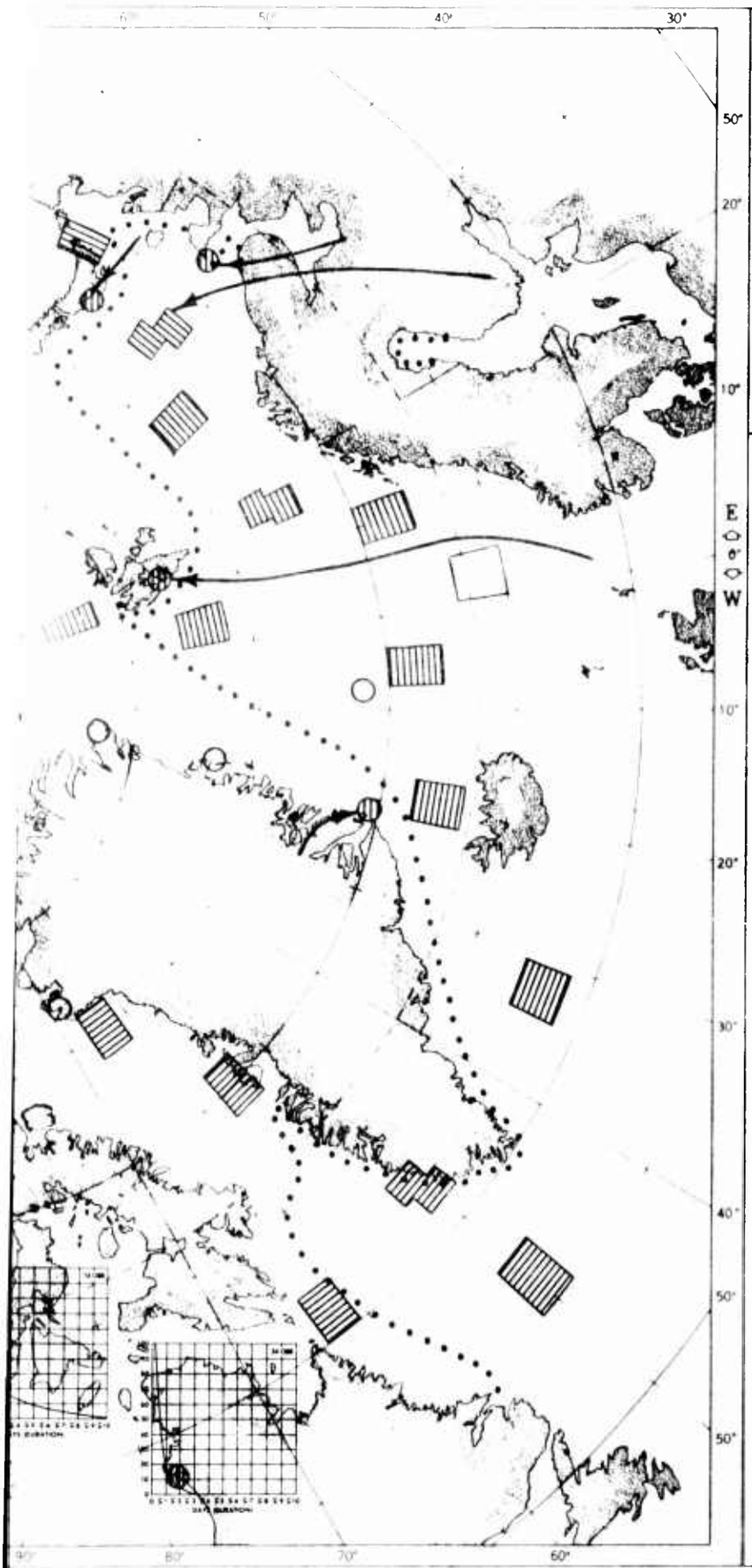
THULE

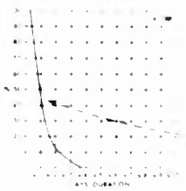
DECEMBER LOW TEMPERATURE



ERATURE PERSISTENCE

CHART 147

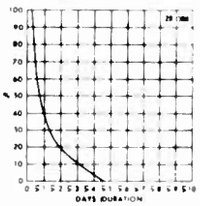




Percentage frequency of Air Temperature 20°F or less equal to or greater than number of days intersected by the curve

[44% of cold temperatures ≤ 20°F persist at least one day]

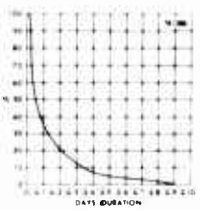
OSTROV VRANGELYA



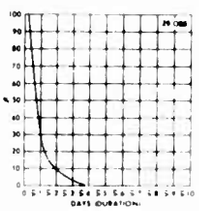
NORTH POLE

OCEAN STATION M

NORD

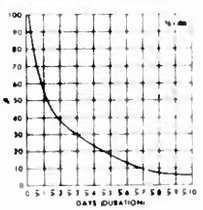


DANMARKSHAVEN

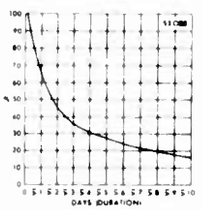


JAN MAYEN

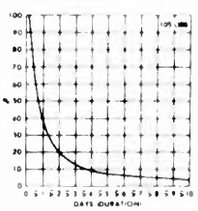
ISACHSEN



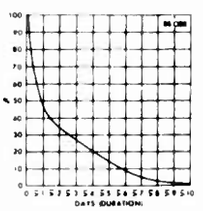
EUREKA



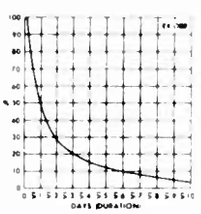
ALERT



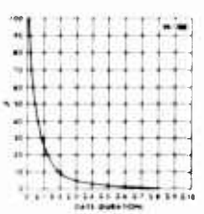
MOULD BAY



RESOLUTE

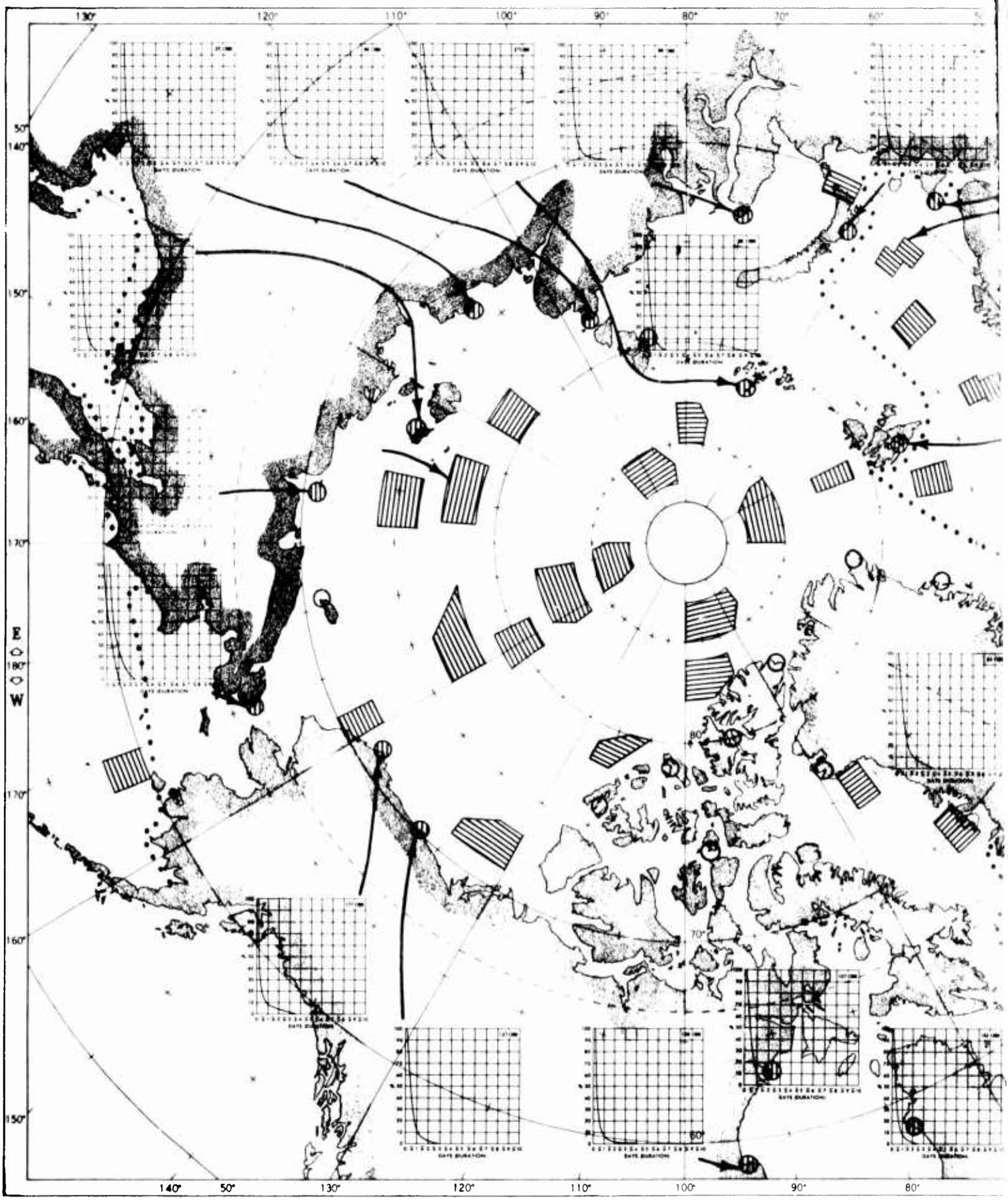


THULE



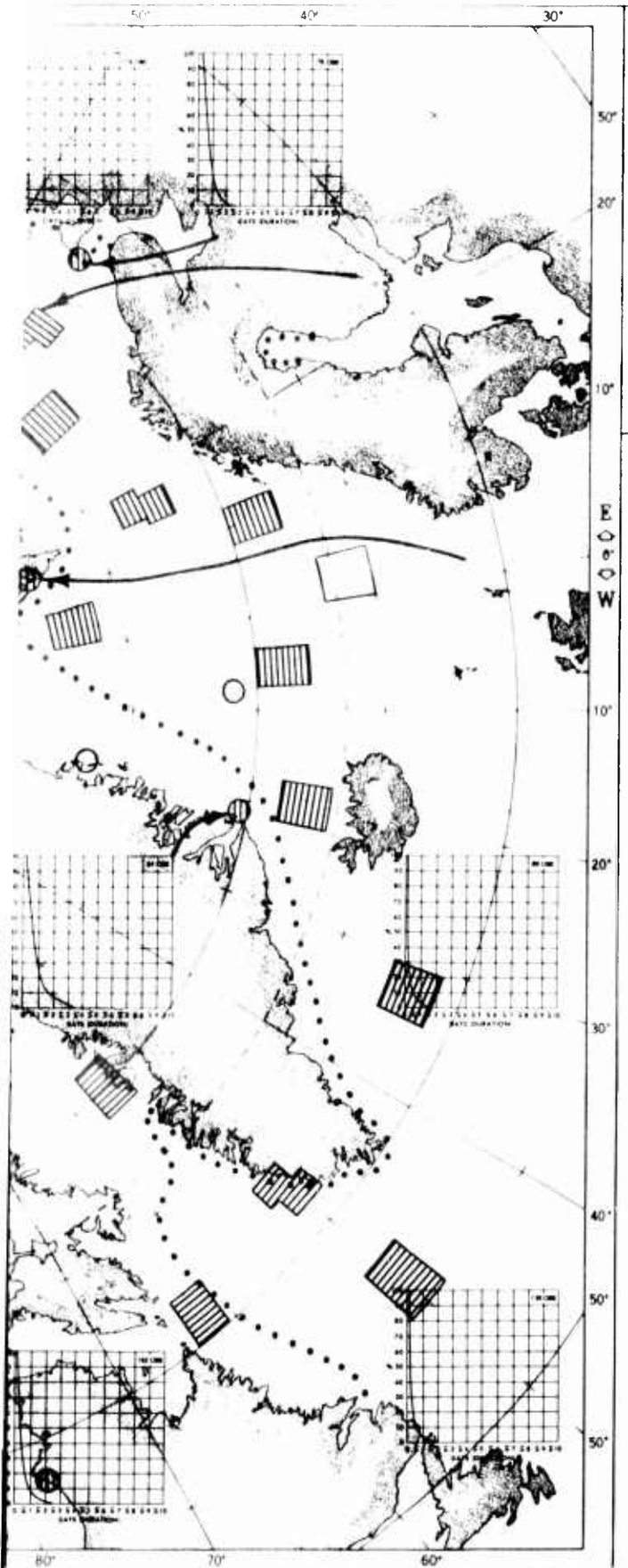
DECEMBER

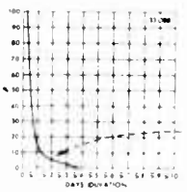
LOW VISIBILITY PER



PERSISTENCE

CHART 148

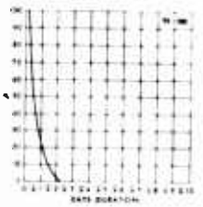




Percentage Frequency of Low Visibility (< 2 nautical miles) equal to or greater than number of days intersected by the curve

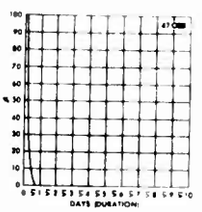
[6% of low visibilities < 2 miles persist at least two days]

OSTROV VRANGELYA

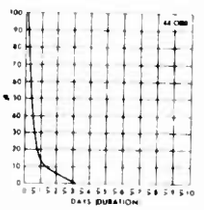


NORTH POLE

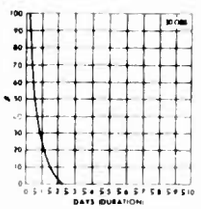
OCEAN STATION M



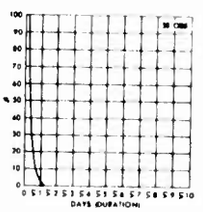
NORD



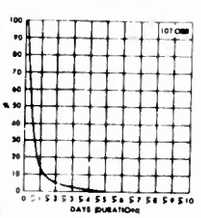
DANMARKSHAVEN



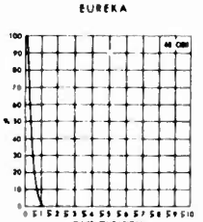
JAN MAYEN



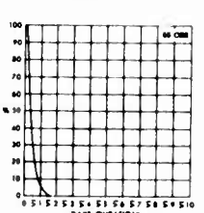
ISACHSEN



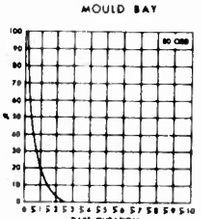
EUREKA



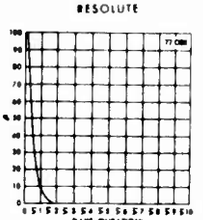
ALERT



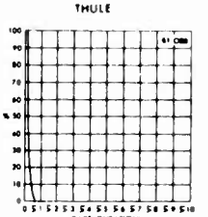
MOULD BAY



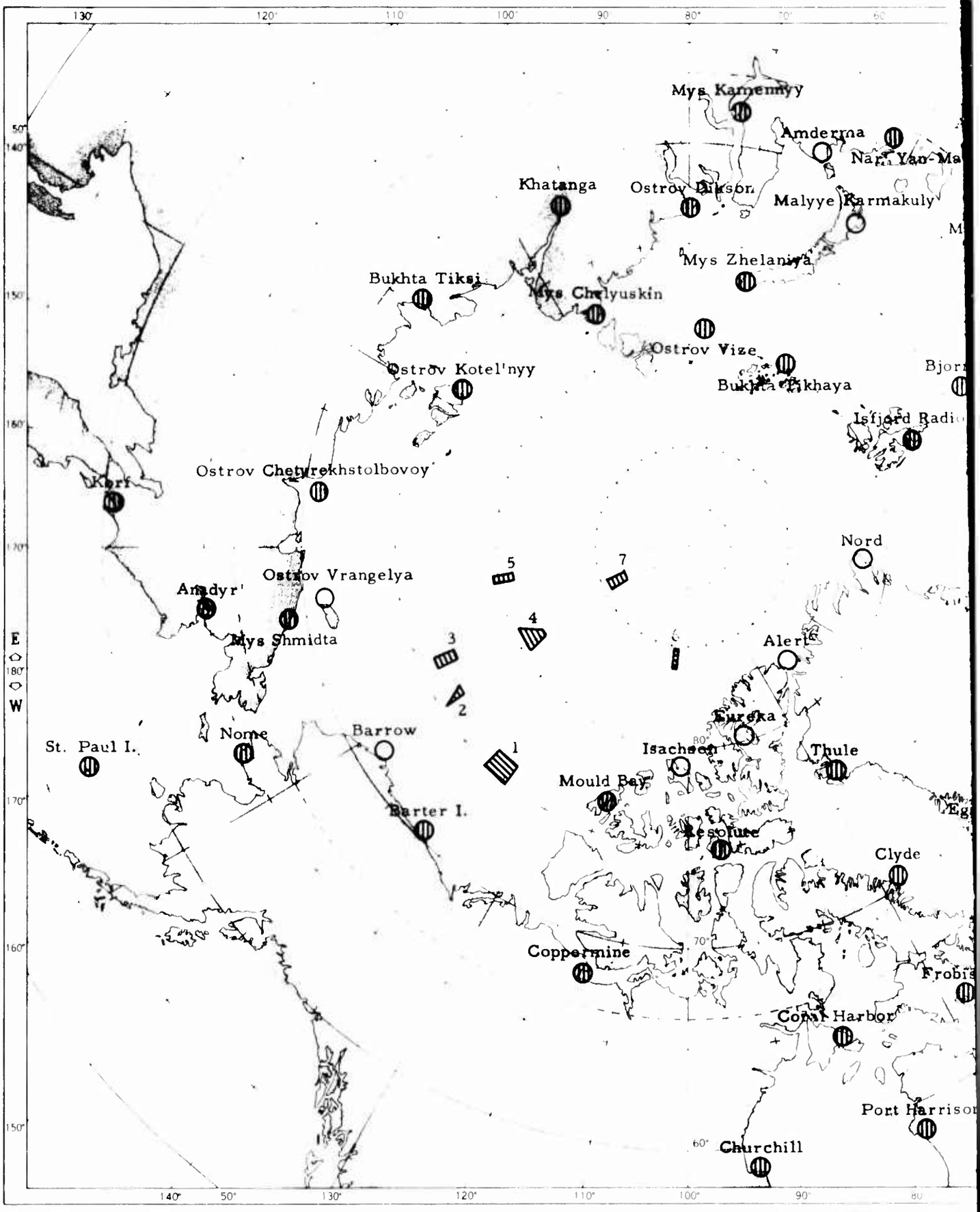
RESOLUTE



THULE

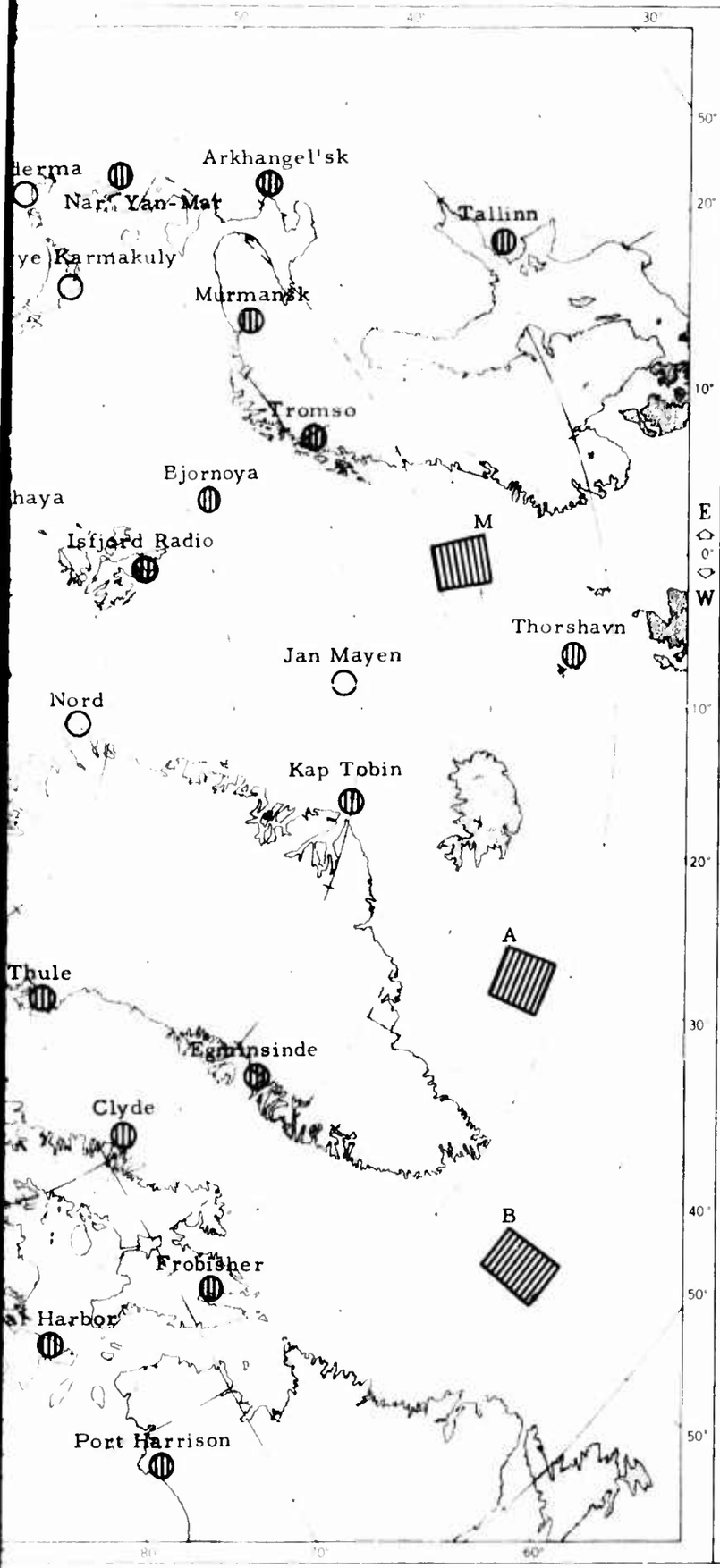


UPPER AIR STATION



TATIONS AND AREAS

CHART 149



Coastal, Island Stations:

- Graphs appear on charts.
- Graphs appear to right of charts.

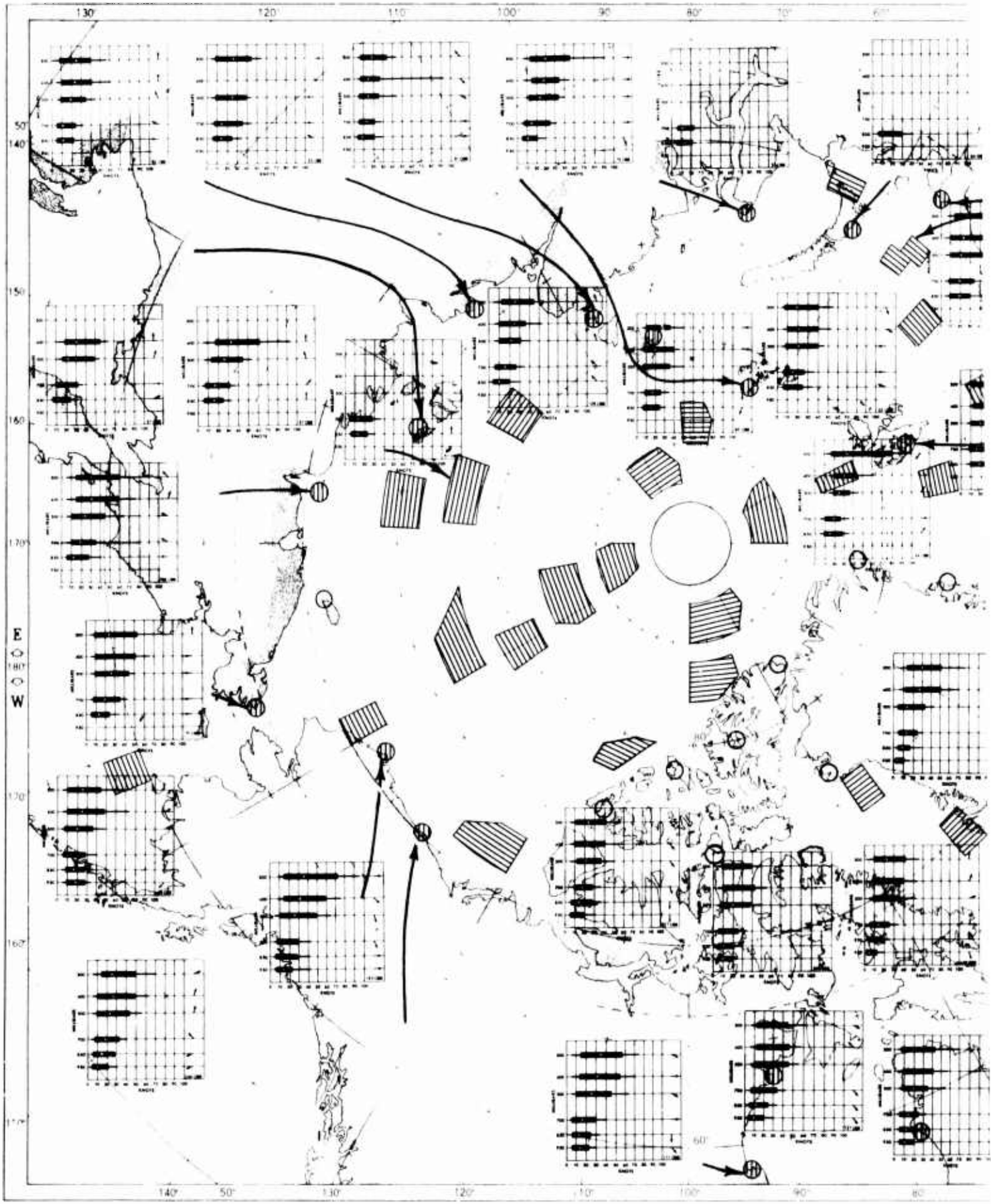
Dropsonde and Ocean "Stations":

- Areas "1" through "7", A, B, M

2

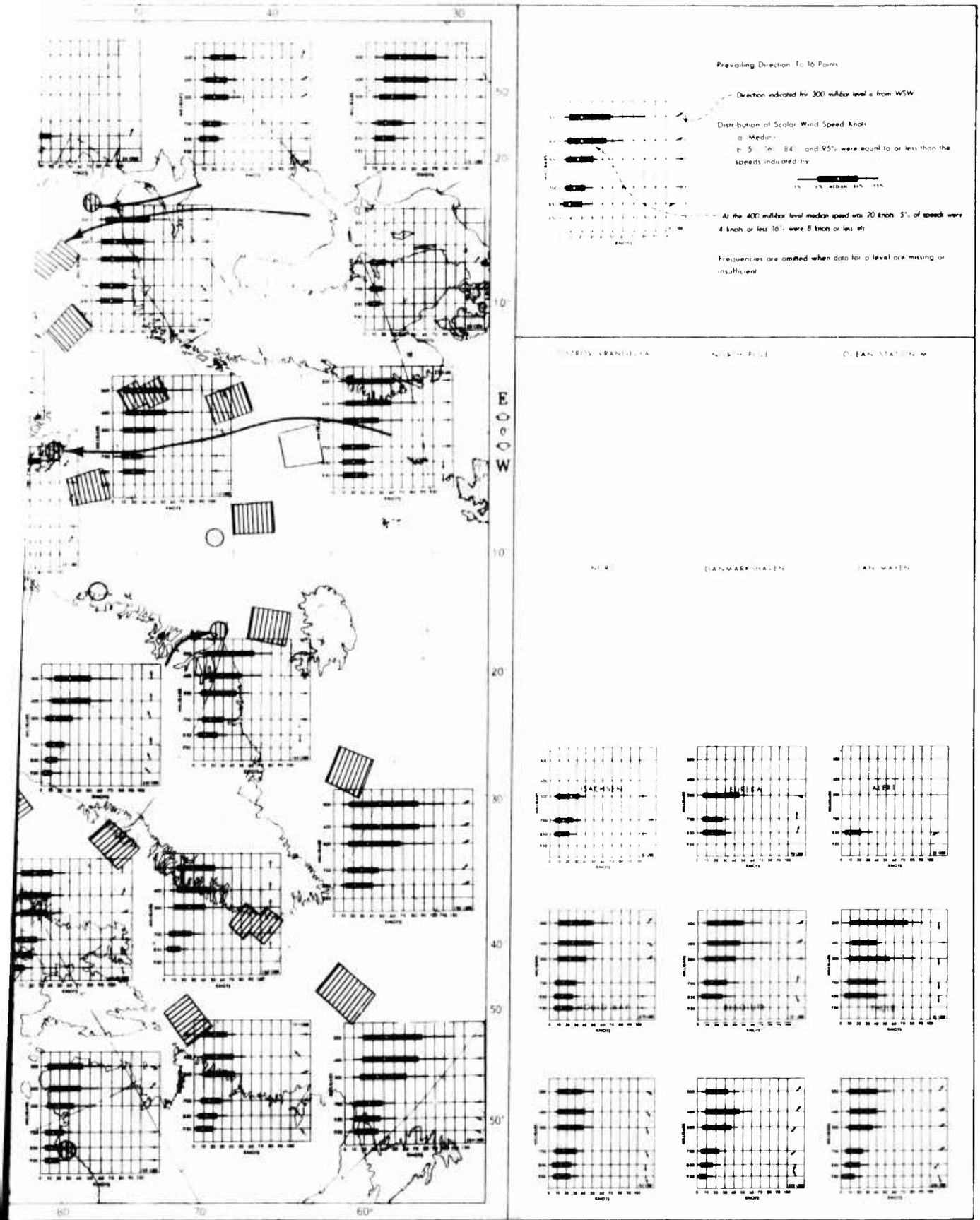
1

JANUARY WIND (950 TO



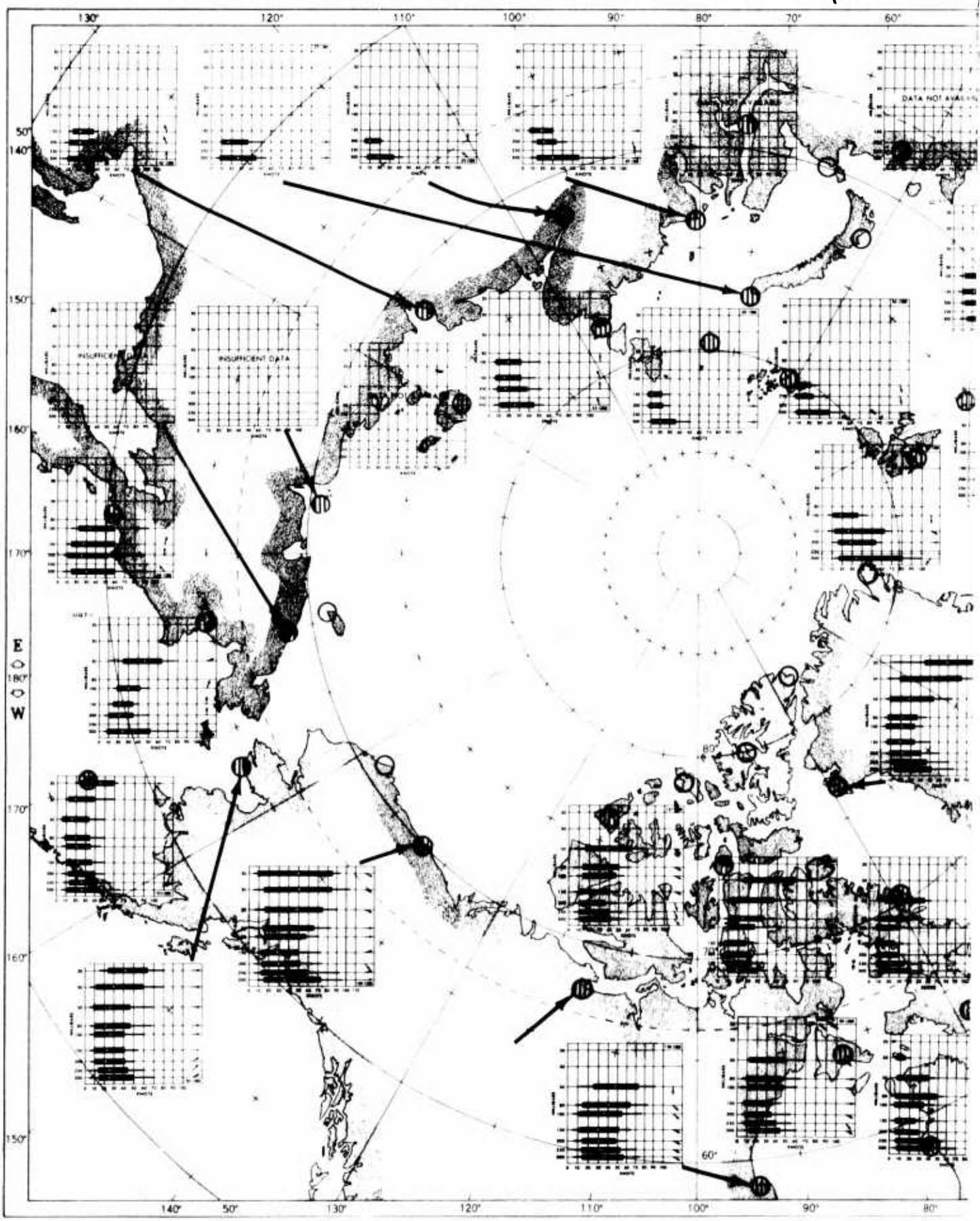
TO 300 MB)

CHART 150



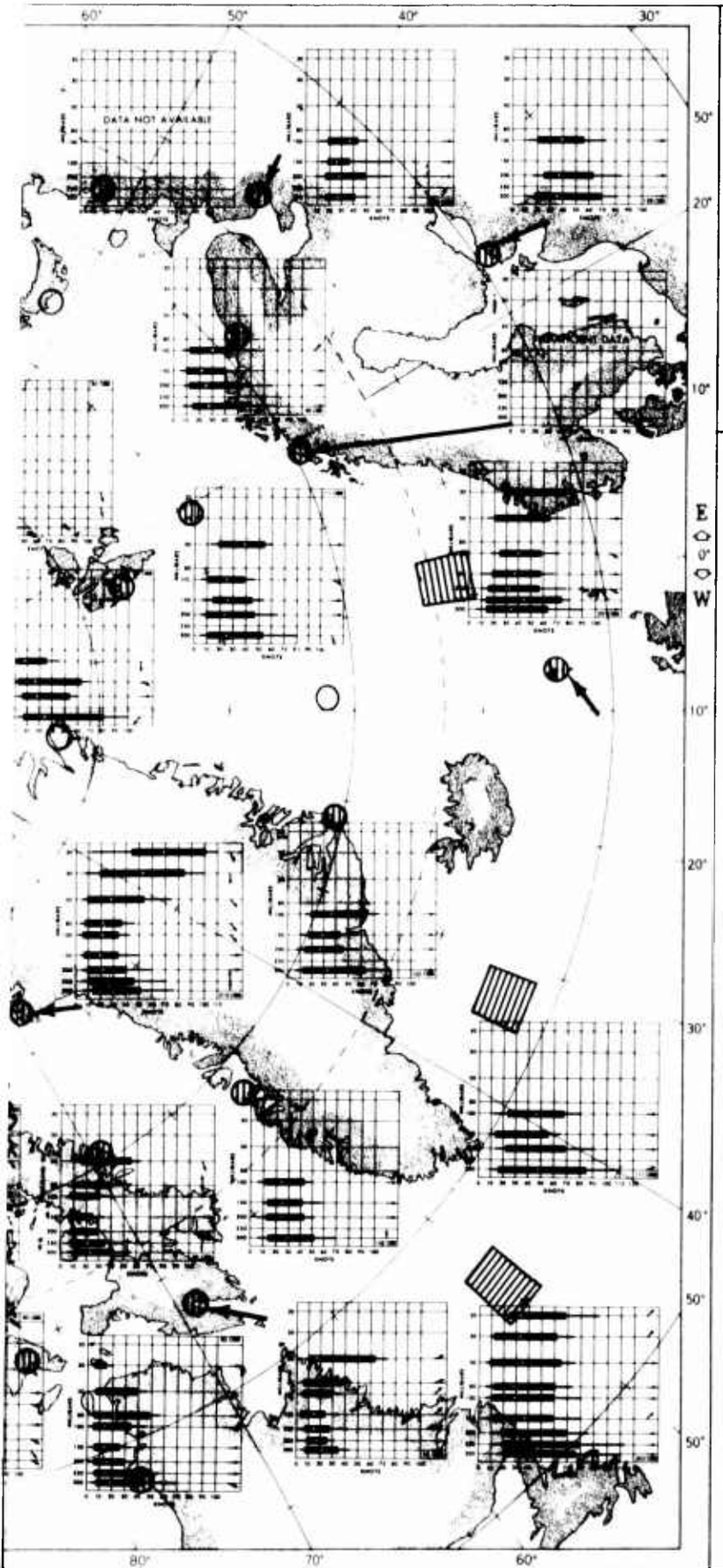
JANUARY

WIND (300 TO



300 TO 20 MB)

CHART 151



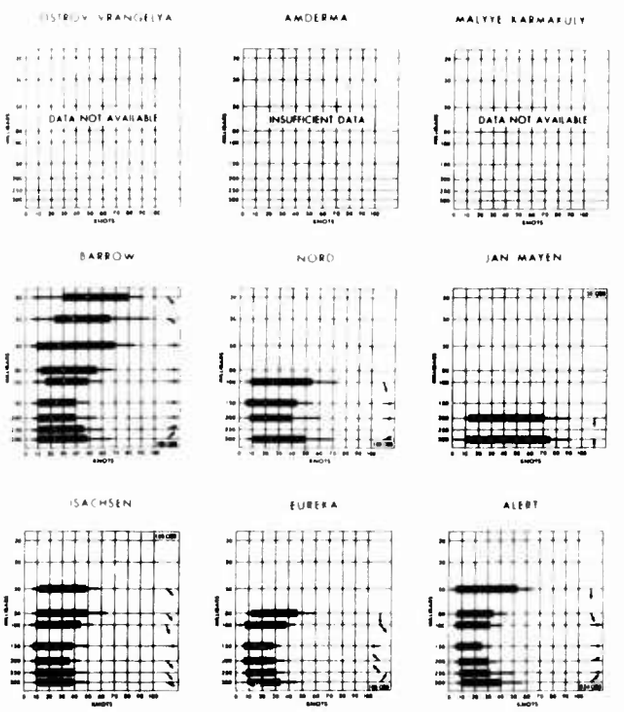
Prevailing Direction To 16 Points

Direction indicated for 30 millibar level is from ENE

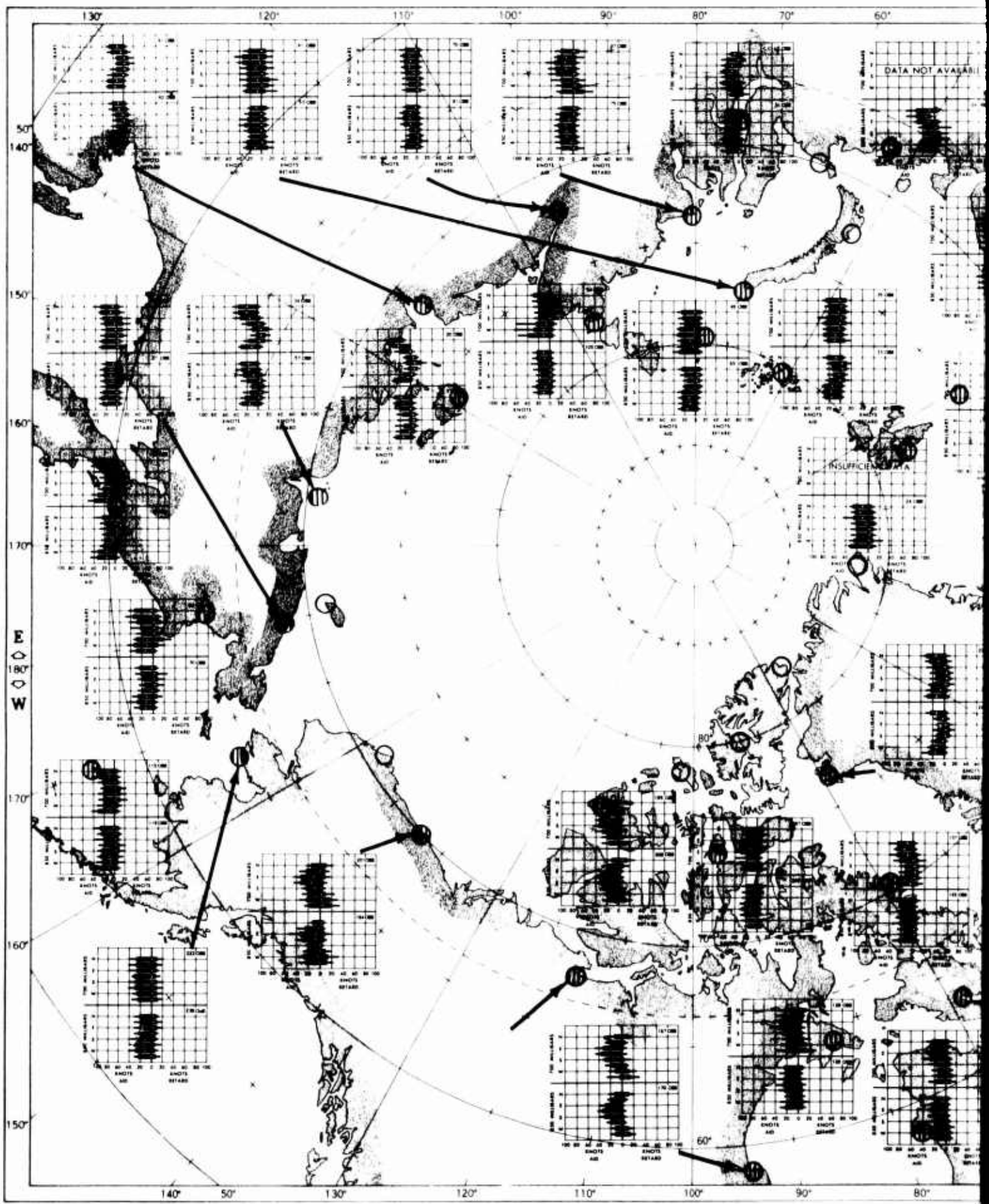
Distribution of Scalar Wind Speed Knots
(a) median
(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by

At the 100 millibar level median speed was 10 knots. 5% of speeds were 2 knots or less, 16% were 4 knots or less, etc.

Frequencies are omitted when data for a level are missing or insufficient

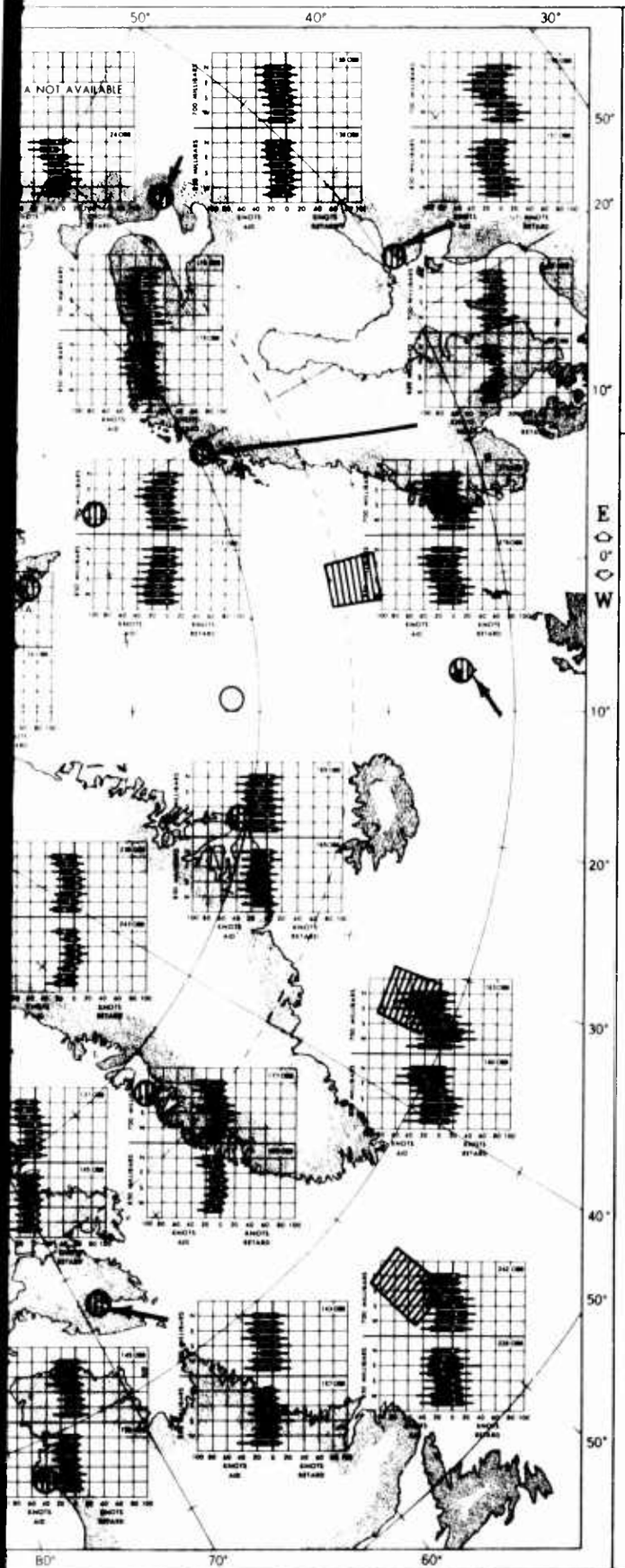


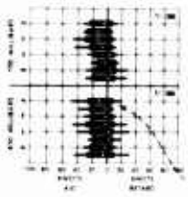
JANUARY WIND AID AND RETARD



ARD (850 & 700 MB)

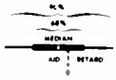
CHART 152





Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 300 knots true air speed

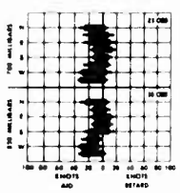
Read median and percentage frequency for direction toward which aircraft is flying thus



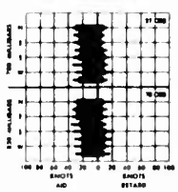
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward north at the 850 millibar level, wind aided or increased ground speed by an average of 12 knots. Wind effect ranged from 28 knots aid to 8 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 20 knots retard in 90% of the observations.

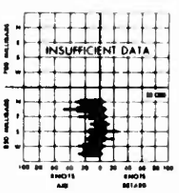
OSTROV WRANGELYA



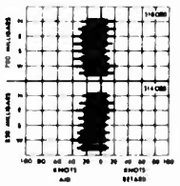
AMDERMA



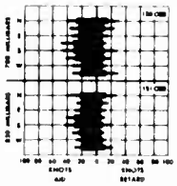
MALYYE KARMAKULY



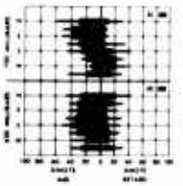
BARROW



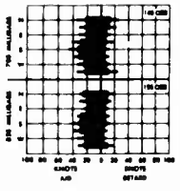
NORD



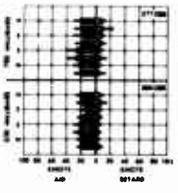
JAN MAYEN



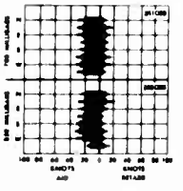
ISACHSEN



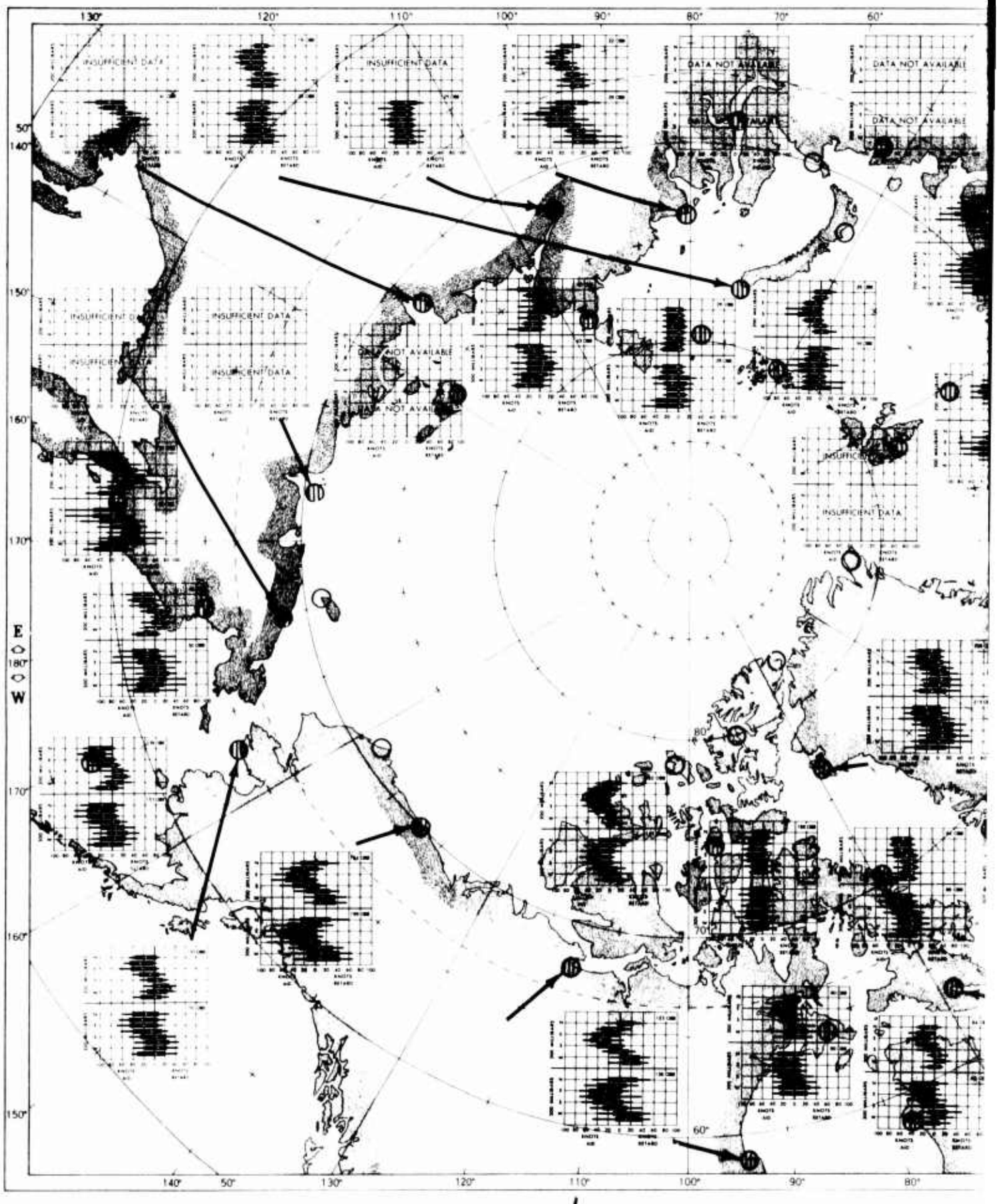
EUREKA



ALERT

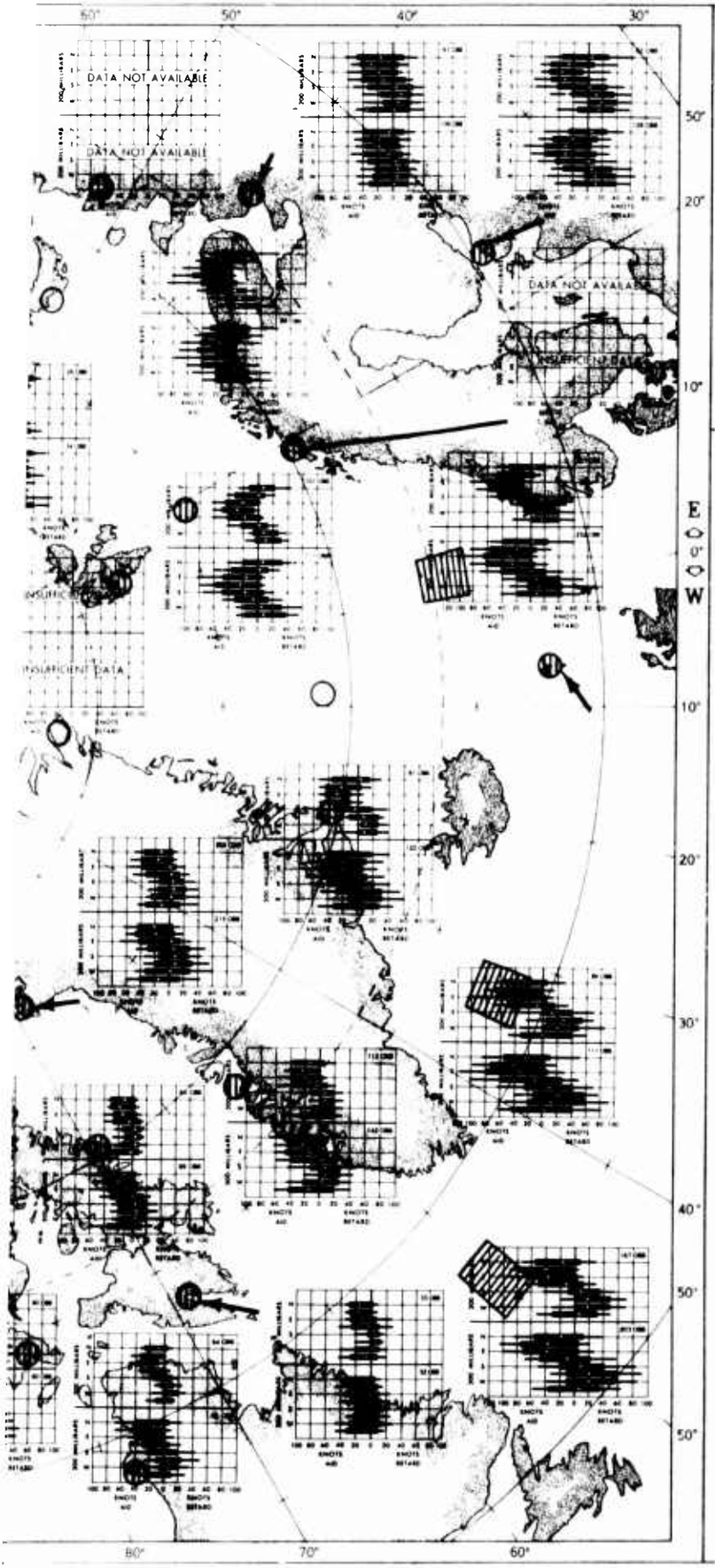


JANUARY WIND AID AND RETARD

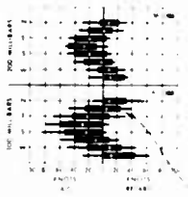


RETARD (300 & 200 MB)

CHART 153



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 600 knots true air speed



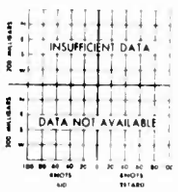
Read median and percentage frequency for direction toward which aircraft is flying thus



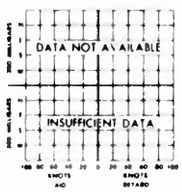
Bars omitted when data for a level are missing or insufficient

For an aircraft flying toward northeast at the 300 millibar level wind retarded or decreased ground speed by an average of 4 knots. Winds effect ranged from 26 knots aid to 25 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 40 knots retard in 90% of the observations.

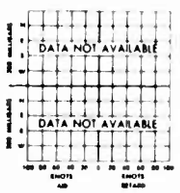
OSTROV VRANGELYA



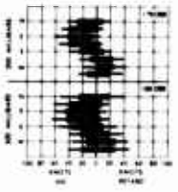
AMDERMA



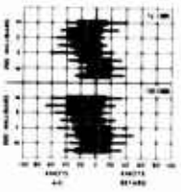
MALYYE KARMAKULY



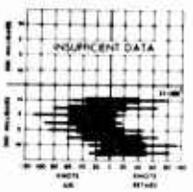
BARROW



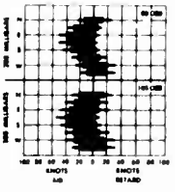
NORD



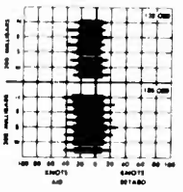
JAN MAYEN



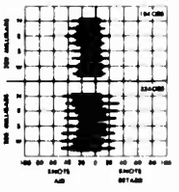
ISACHSEN



EUREKA

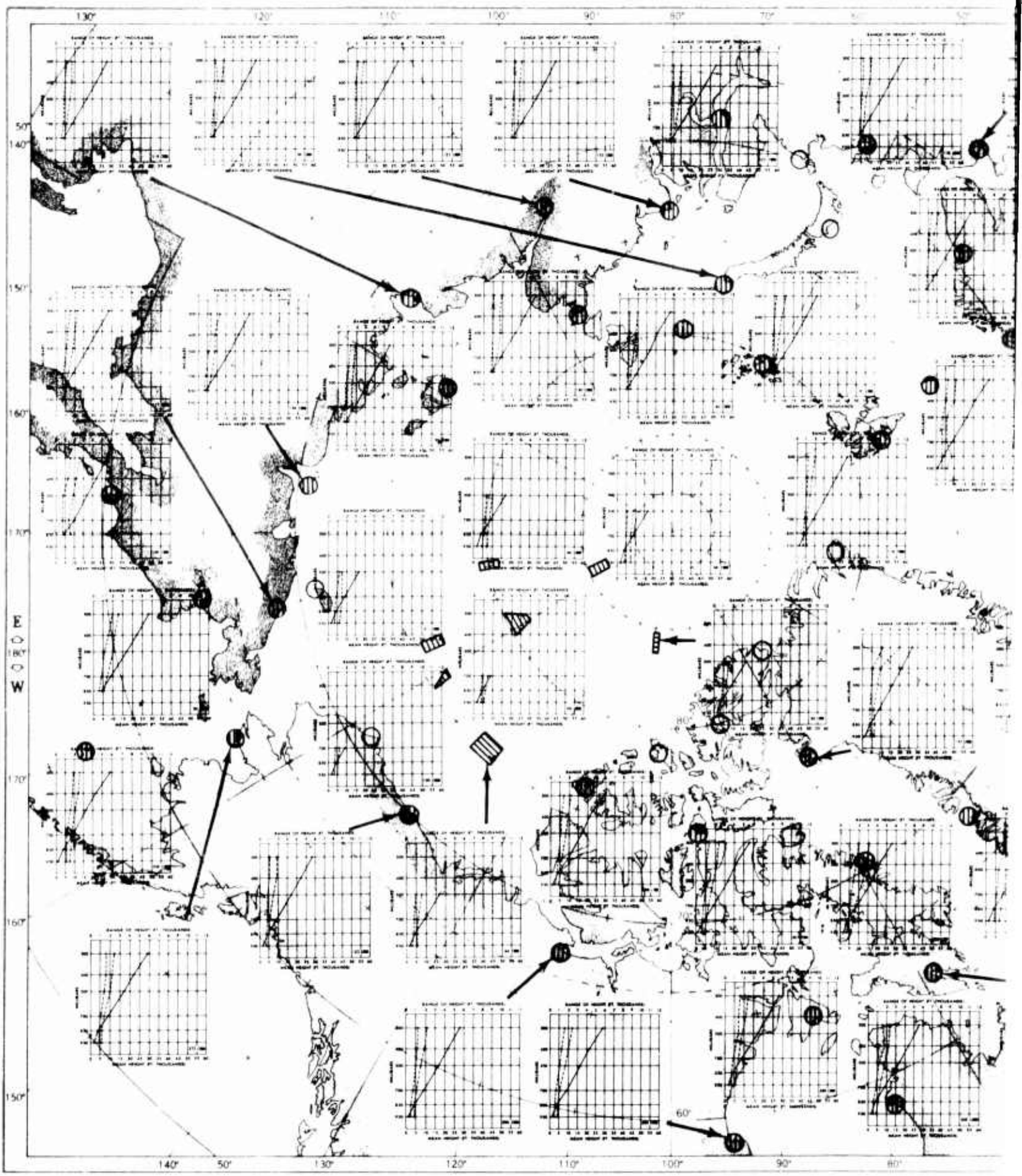


ALERT



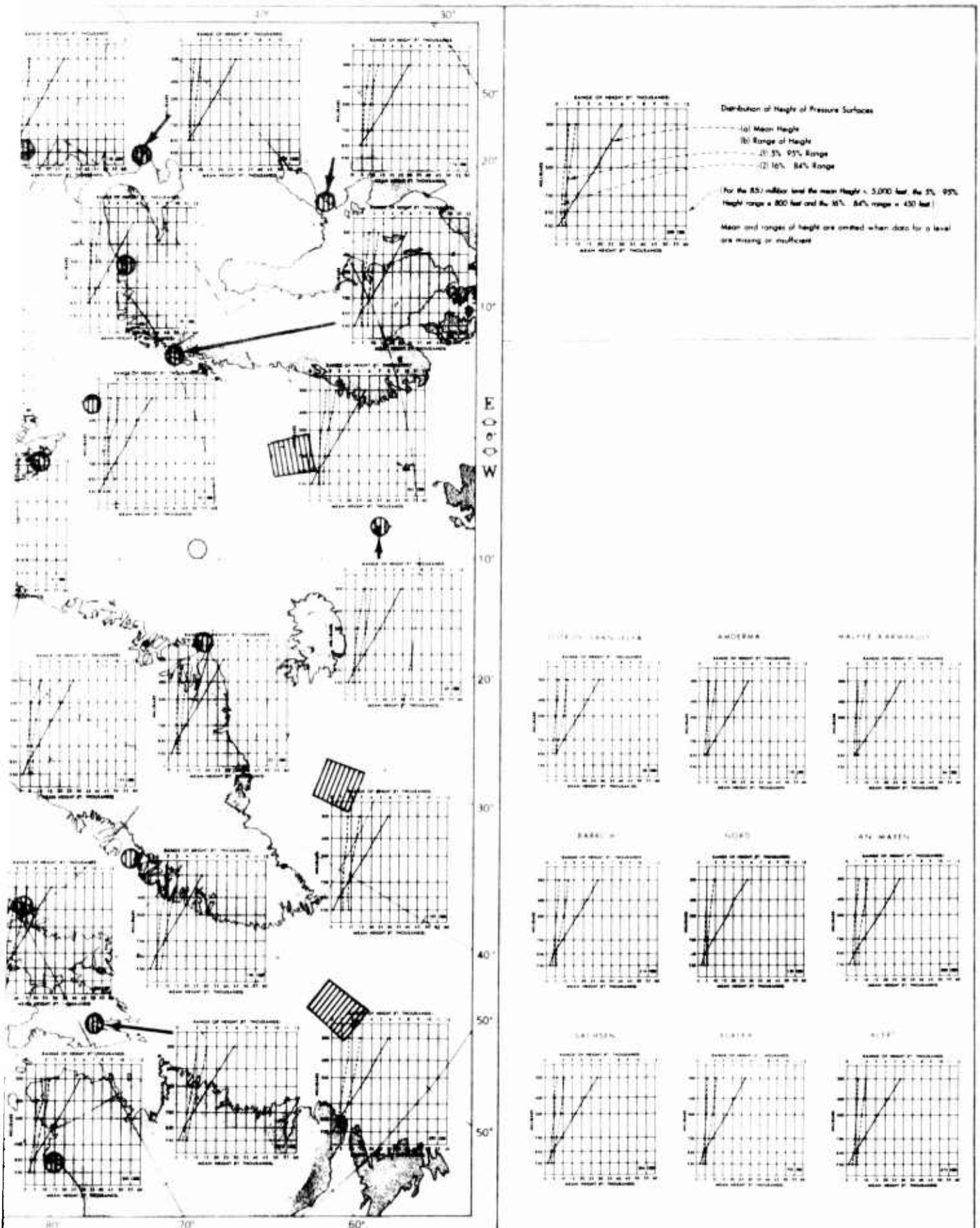
JANUARY

HEIGHT (950 TO 30

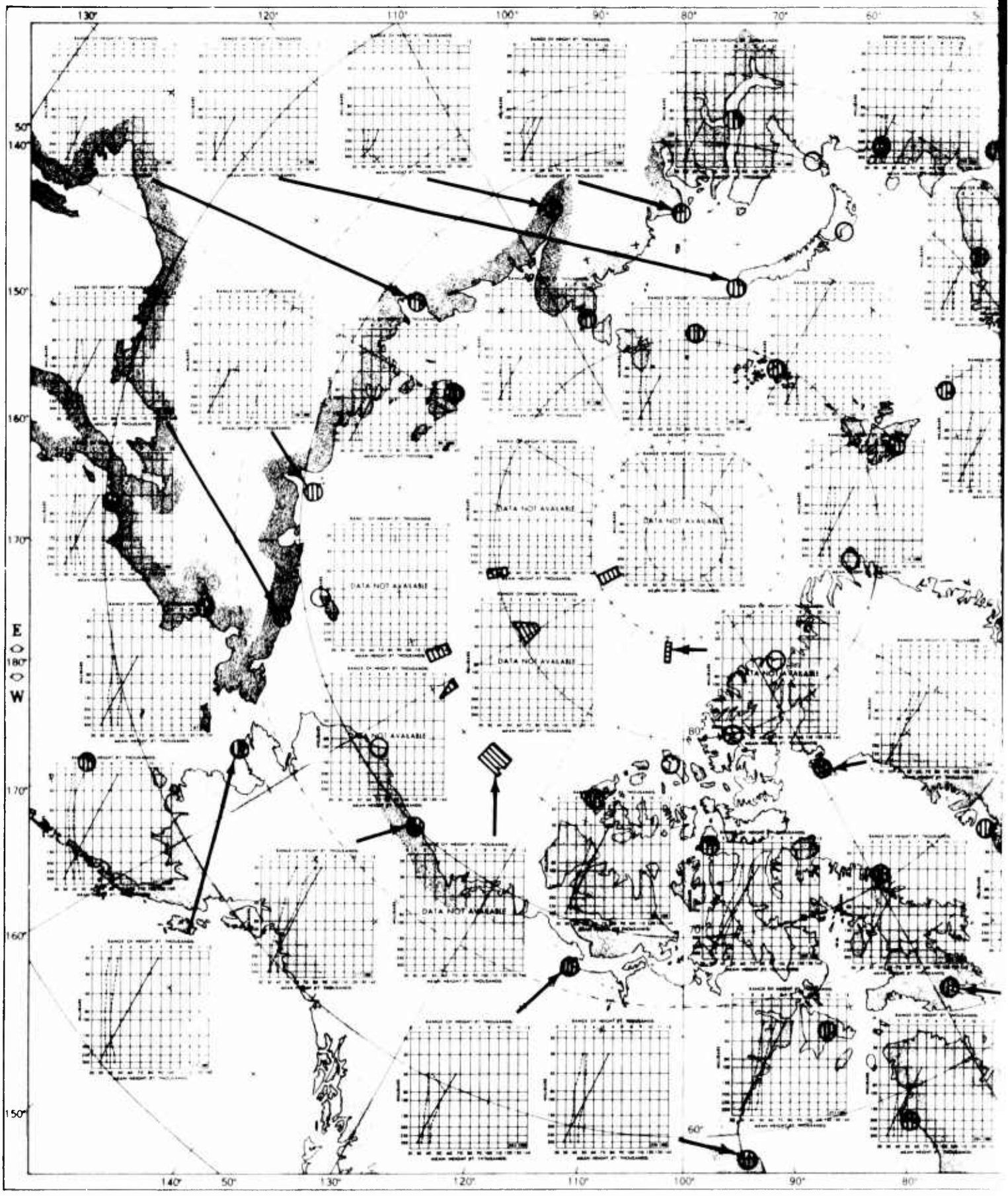


)0 TO 300 MB)

CHART 154

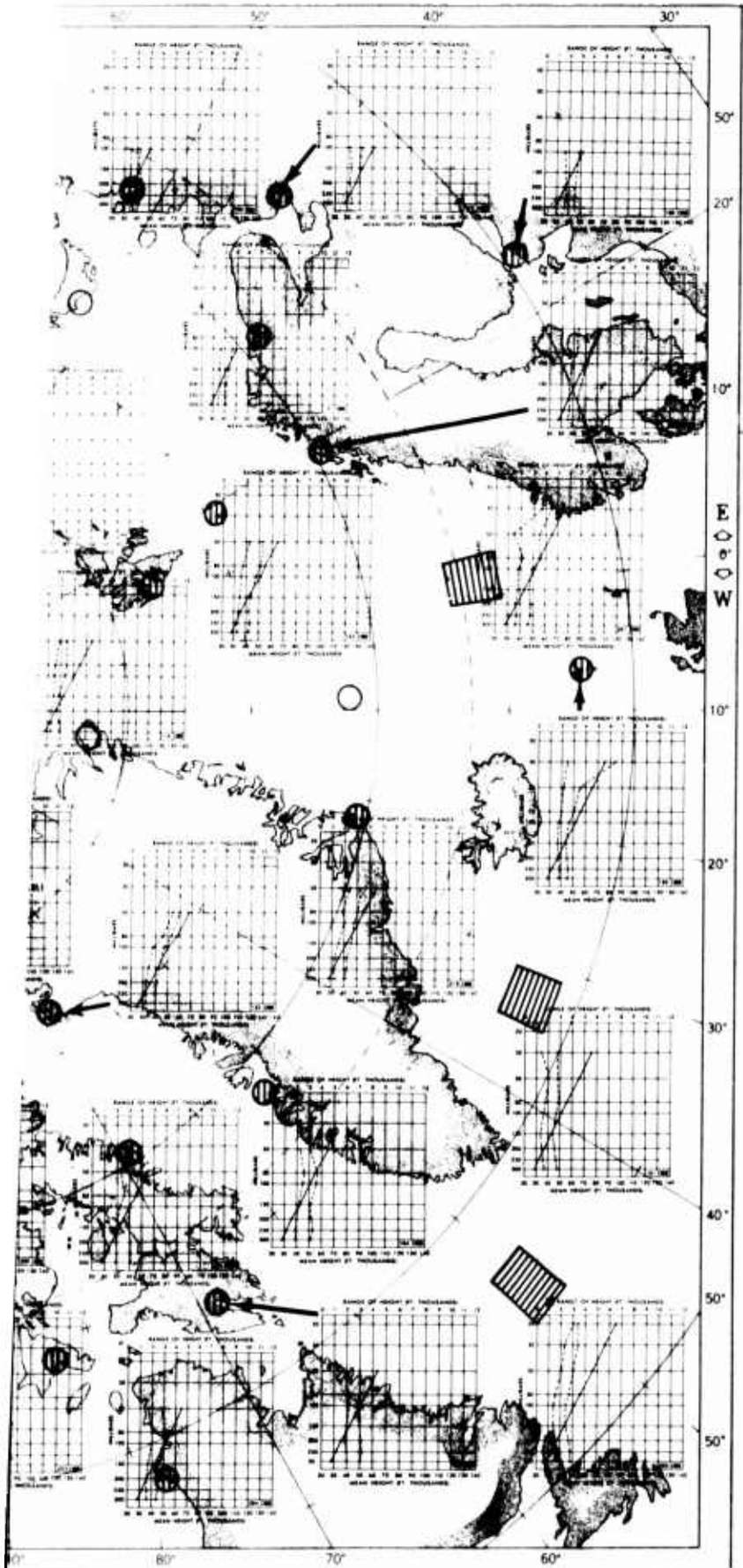


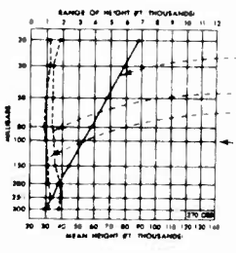
JANUARY HEIGHT (300 TO



(300 TO 20 MB)

CHART 155





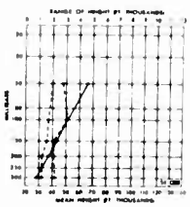
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
- (1) 5% 95% Range
- (2) 16% 84% Range

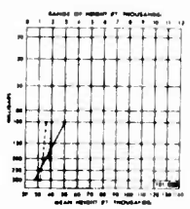
(For the 100 millibar level the mean Height = 53,000 feet, the 5% - 95% Height range = 1,500 feet, and the 16% 84% range = 1,000 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

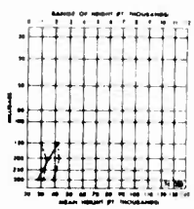
OSTROV VRANGELYA



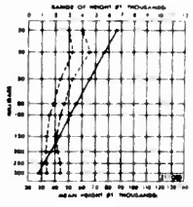
AMDERMA



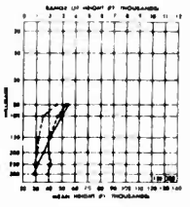
MALYYE KARMAKULY



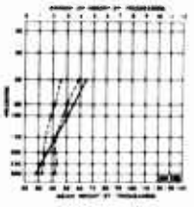
BARROW



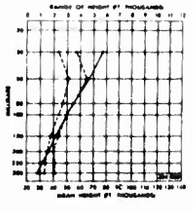
NORD



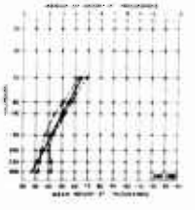
JAN MAYEN



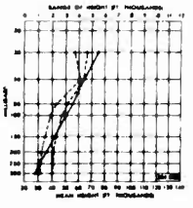
ISACHSEN



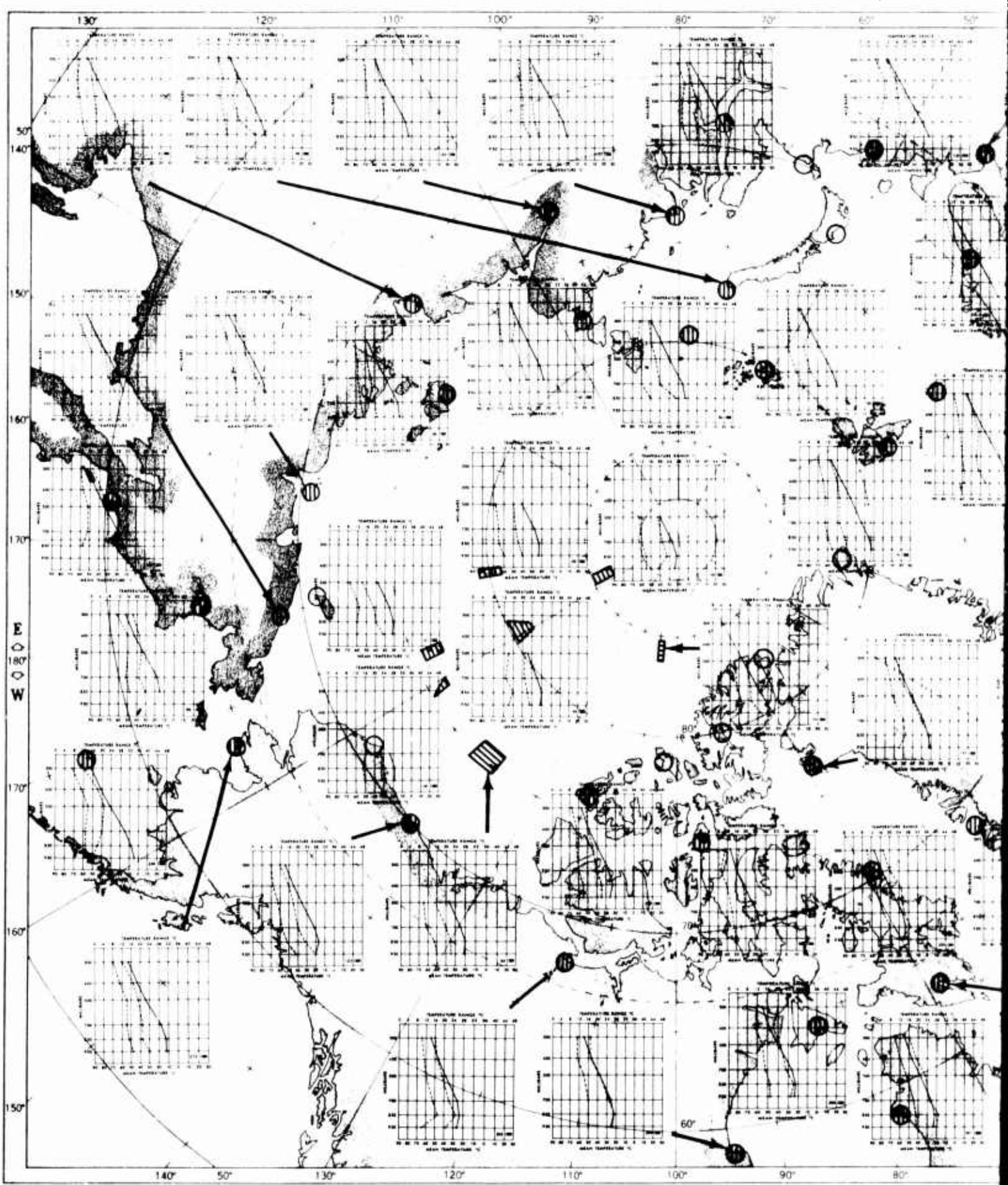
EUREKA



ALERT

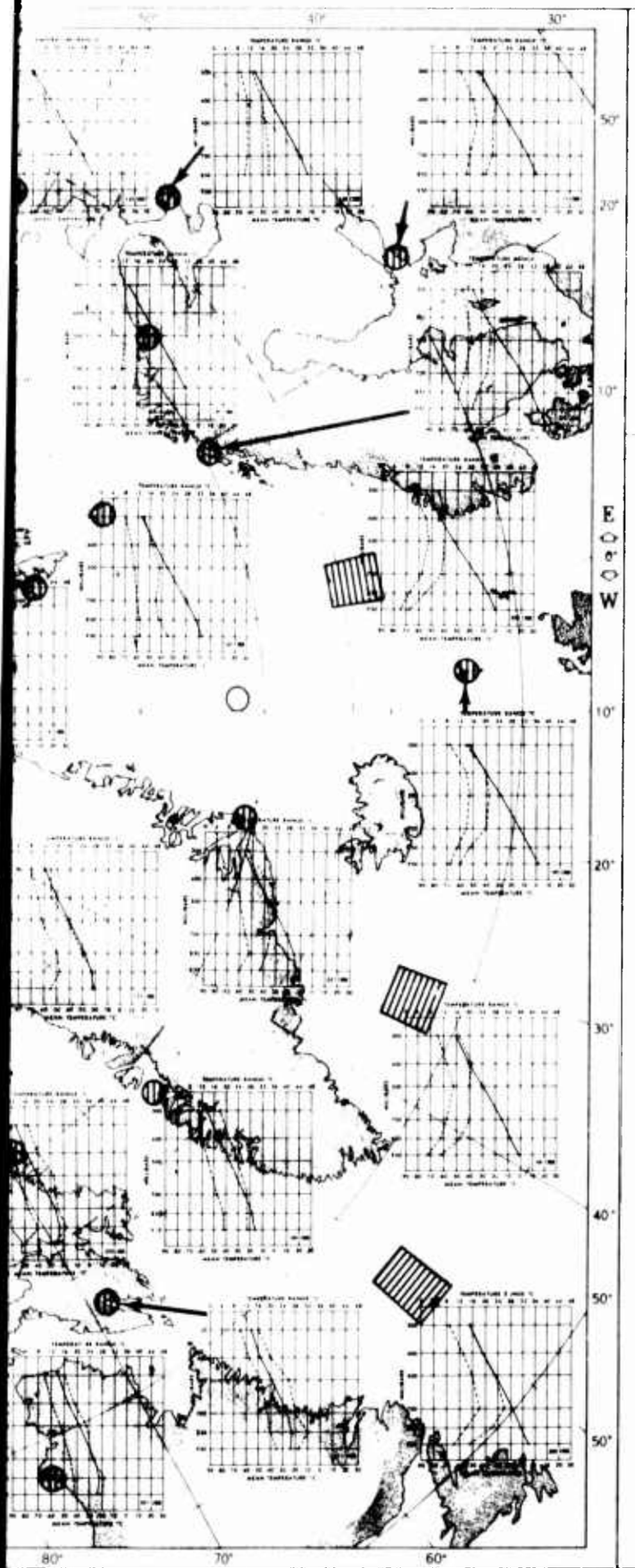


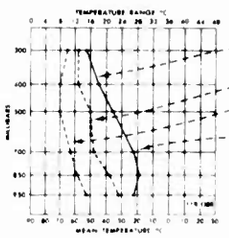
JANUARY TEMPERATURE (950 TO



(950 TO 300 MB)

CHART 156





Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature

(b) Range of Temperature

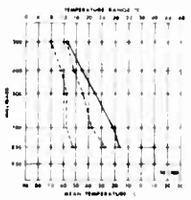
(1) 5% 95% Range

(2) 16% 84% Range

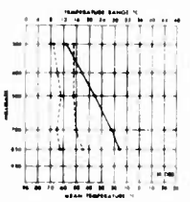
For the 700 millibar level the mean temperature is 29°C the 5% 95% range is 17°C and the 16% 84% range is 11°C

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

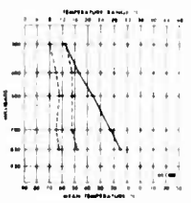
OSTROV VRANGELYA



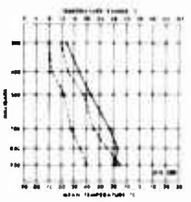
AMDERMA



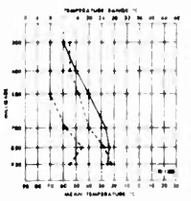
MALYYE KARMAKULY



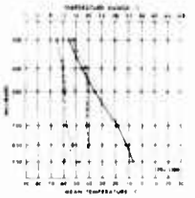
BARROW



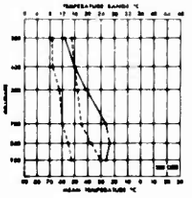
NORD



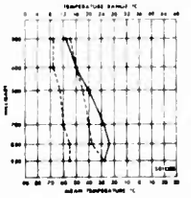
JAN MAYEN



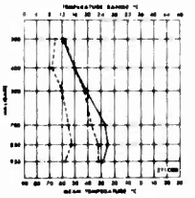
ISACHSEN



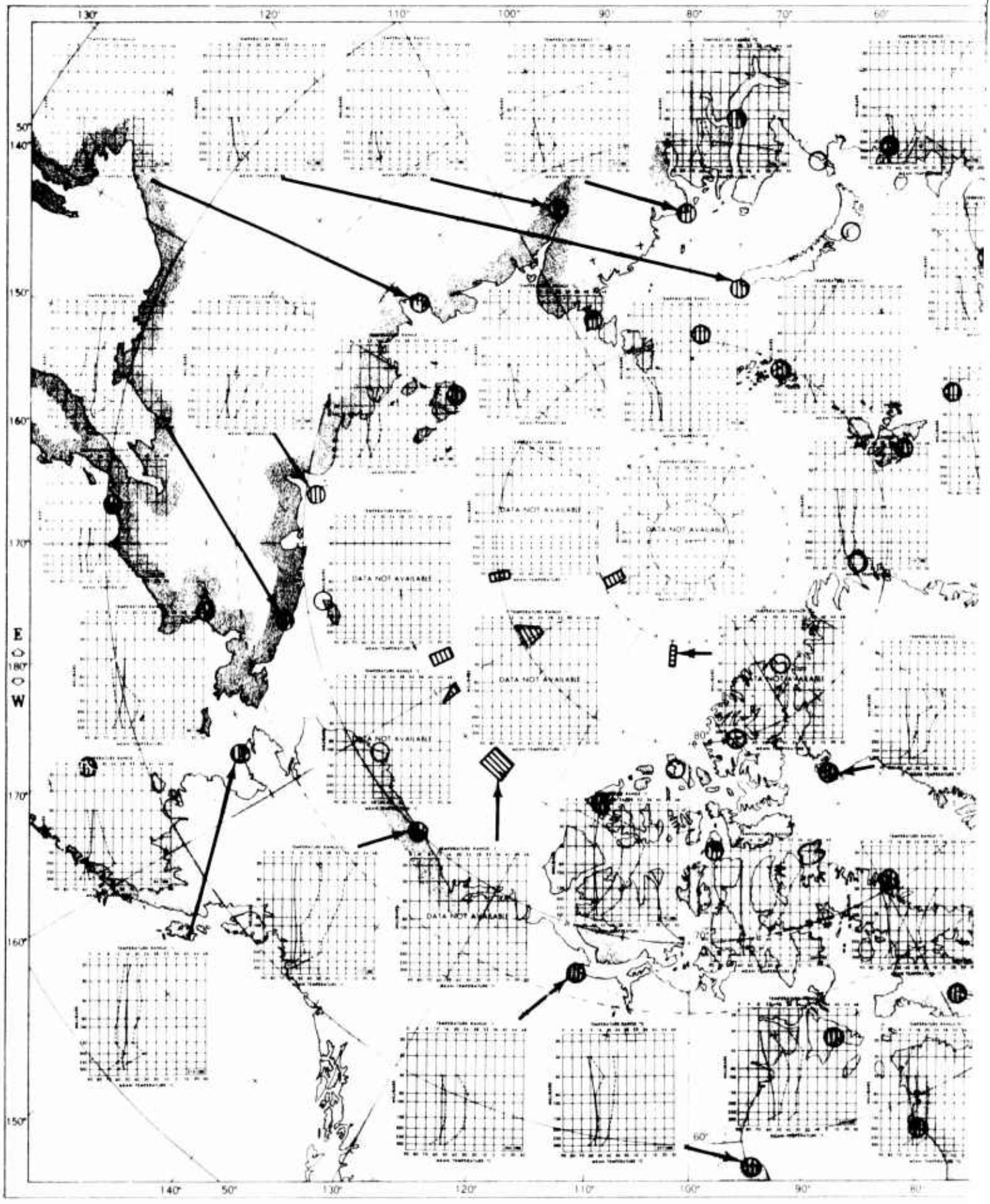
EUREKA



ALERT

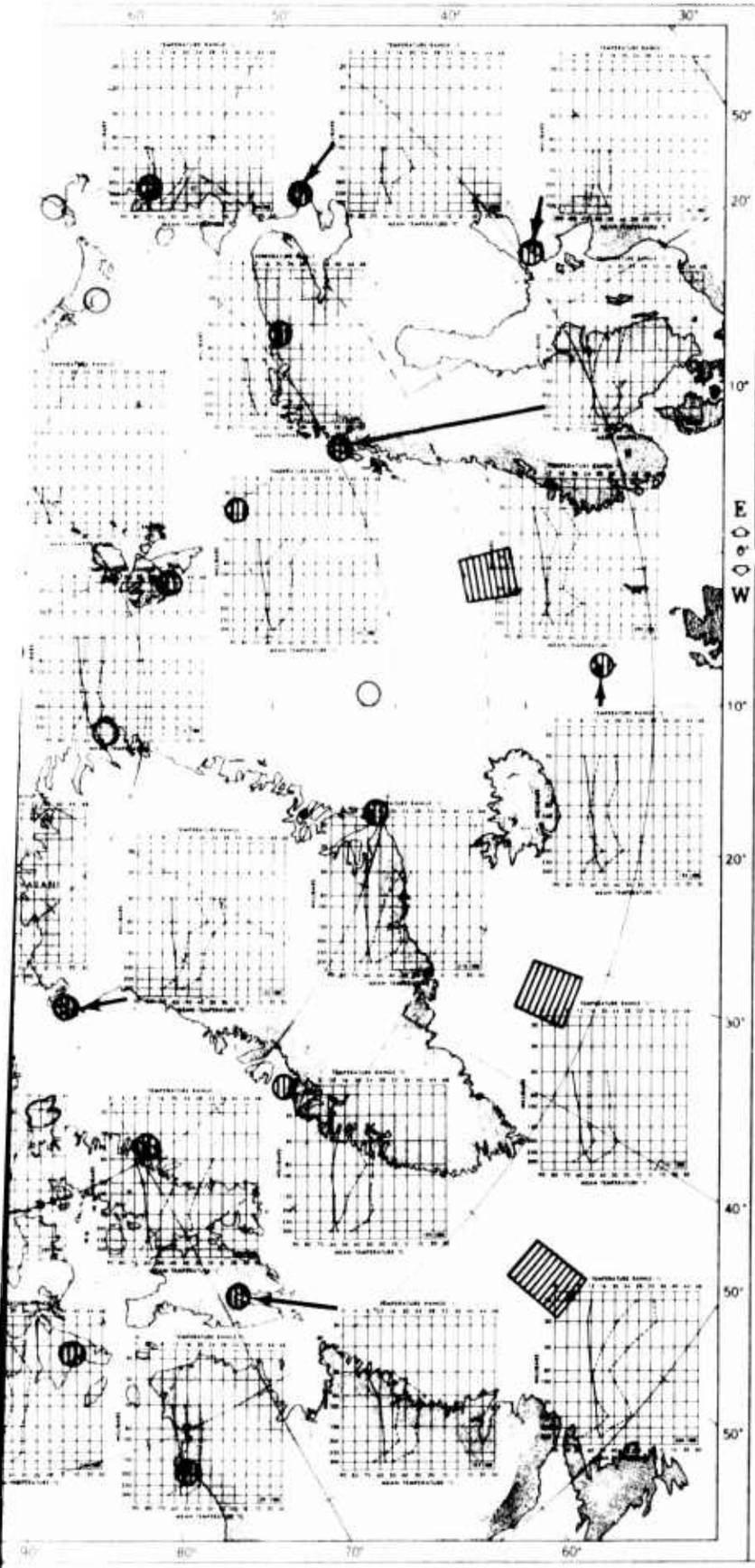


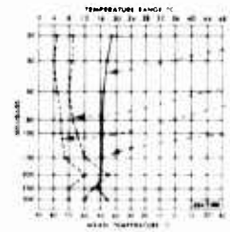
JANUARY TEMPERATURE (300



URE (300 TO 20 MB)

CHART 157





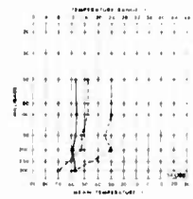
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
1: 5% 95% Range
2: 16% 84% Range

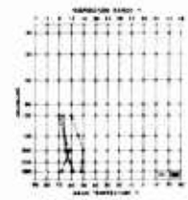
For the 150 millibar level the mean temperature is -49°C the 5% 95% range is 12°C and the 16% 84% range is 7°C

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

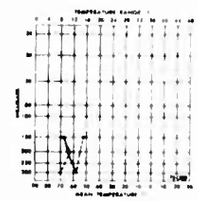
OSTROV VRANGELYA



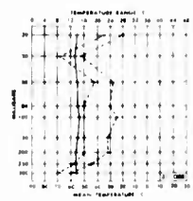
AMDERMA



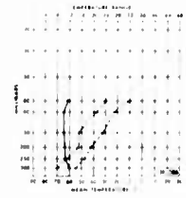
MALYYE KARMAKULY



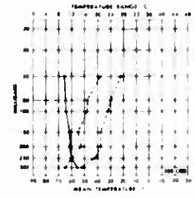
BARROW



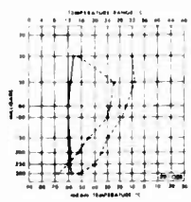
NORD



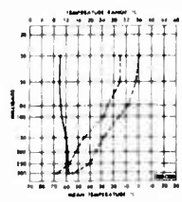
JAN MAYEN



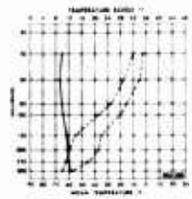
ISACHSEN



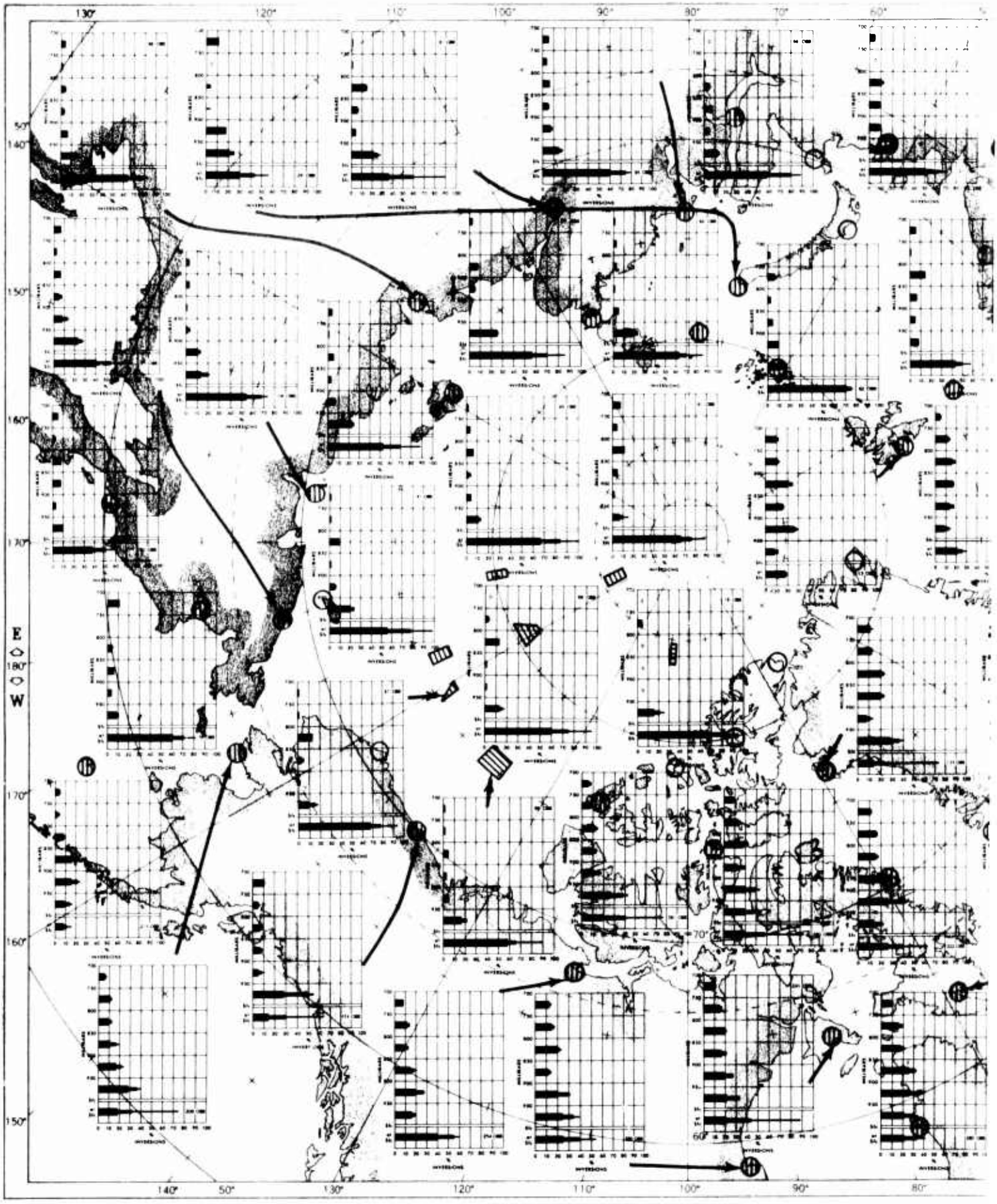
EUREKA



ALERT

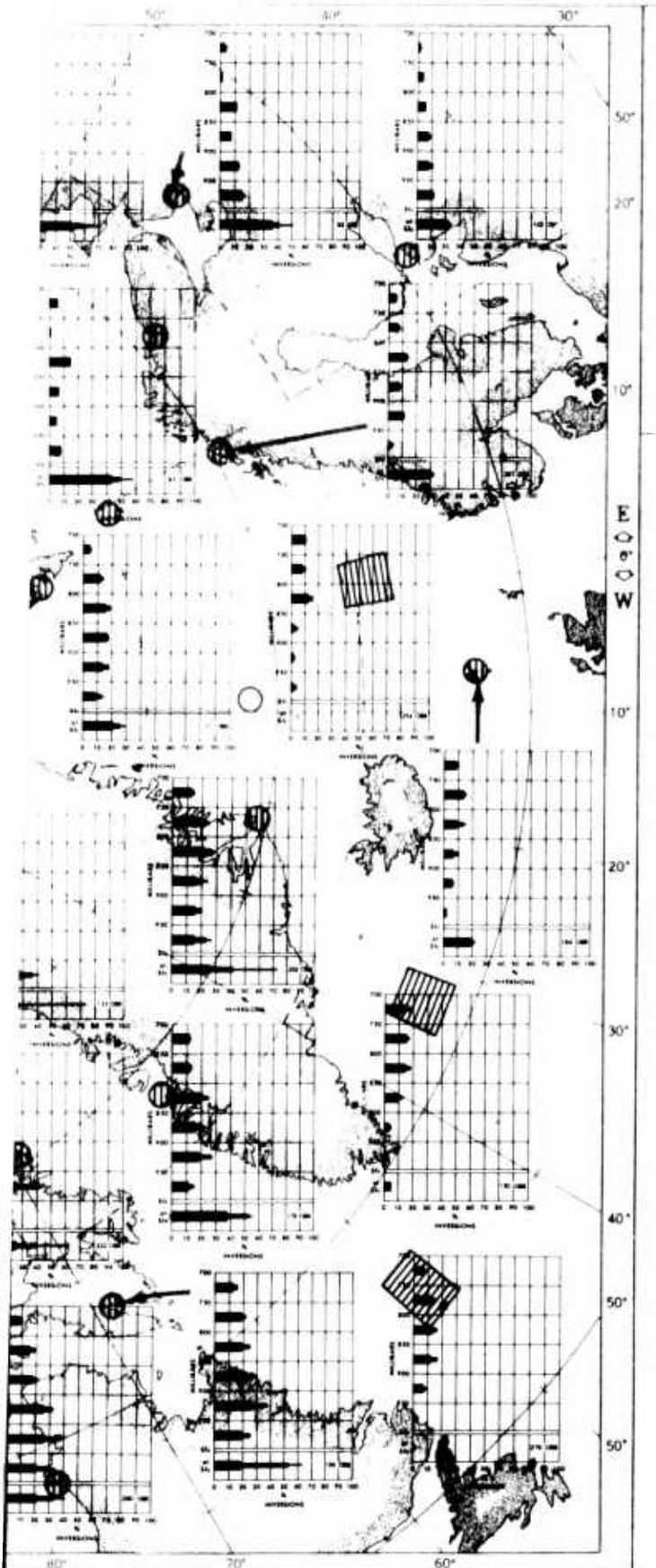


JANUARY INVERSION



SIONS

CHART 158



Percentage Frequencies of three intensities of Temperature Inversions within each of seven layers from the surface to 700 millibars

General Criteria

(a) Temperature Inversion constant or increasing temperature with increasing height that persisted at least 5 millibars (approximately 50 meters)

(b) Layers Inversions were assigned to 7 arbitrary layers according to the pressure at their bases

750 to 701 millibars
800 to 751 millibars
850 to 801 millibars
900 to 851 millibars
950 to 901 millibars
5 millibars above the surface to 951 millibars
At the surface to 49 millibars above the surface

(c) Intensity change in temperature per 100 meters increase - height of

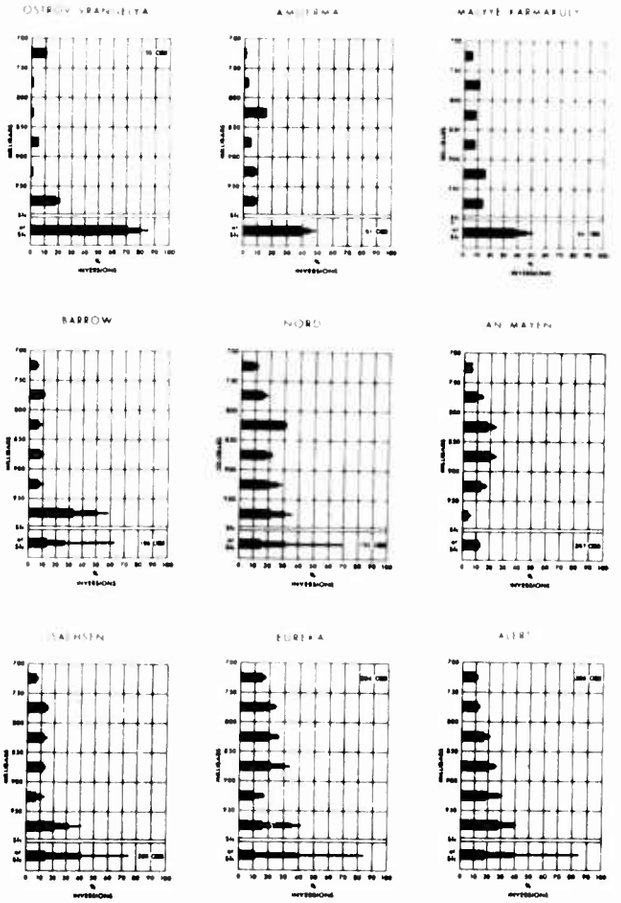
+1°C TO +1.9°C +2.0°C OR MORE

When more than one inversion was recorded within a layer the one with the greatest intensity was counted

0 No occurrence

Blank No data

28% (80.52) of all radiosonde ascents recorded temperature inversions of +1.0°C to +1.9°C per 100 meters with bases in the layer from the surface to 49 millibars above



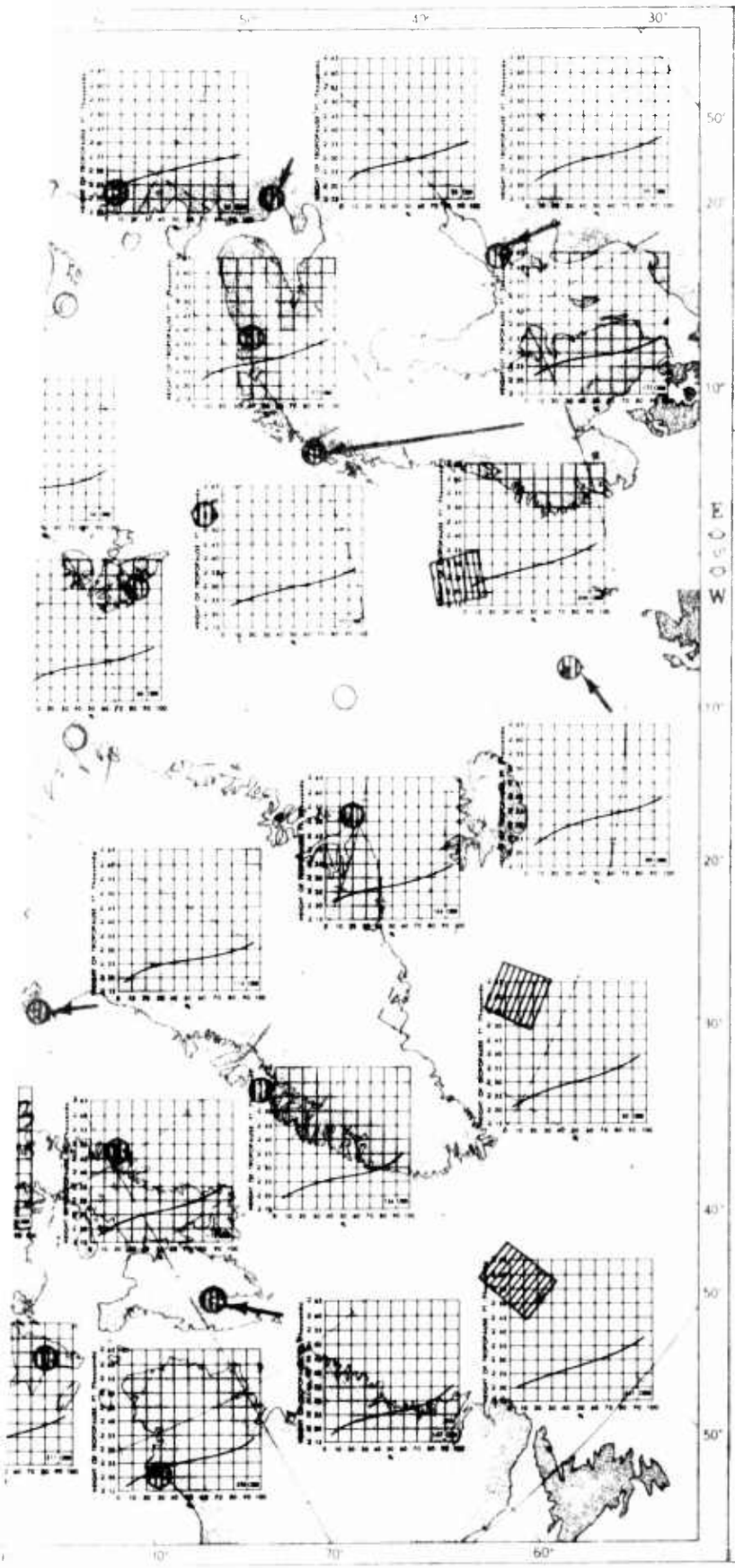
JANUARY

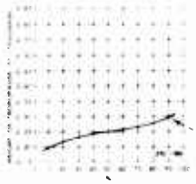
HEIGHT OF TRO



)F TROPOPAUSE

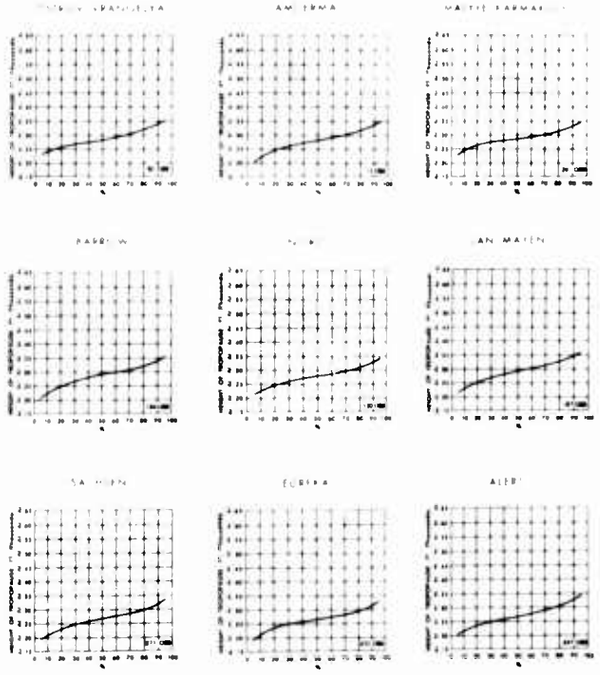
CHART 159





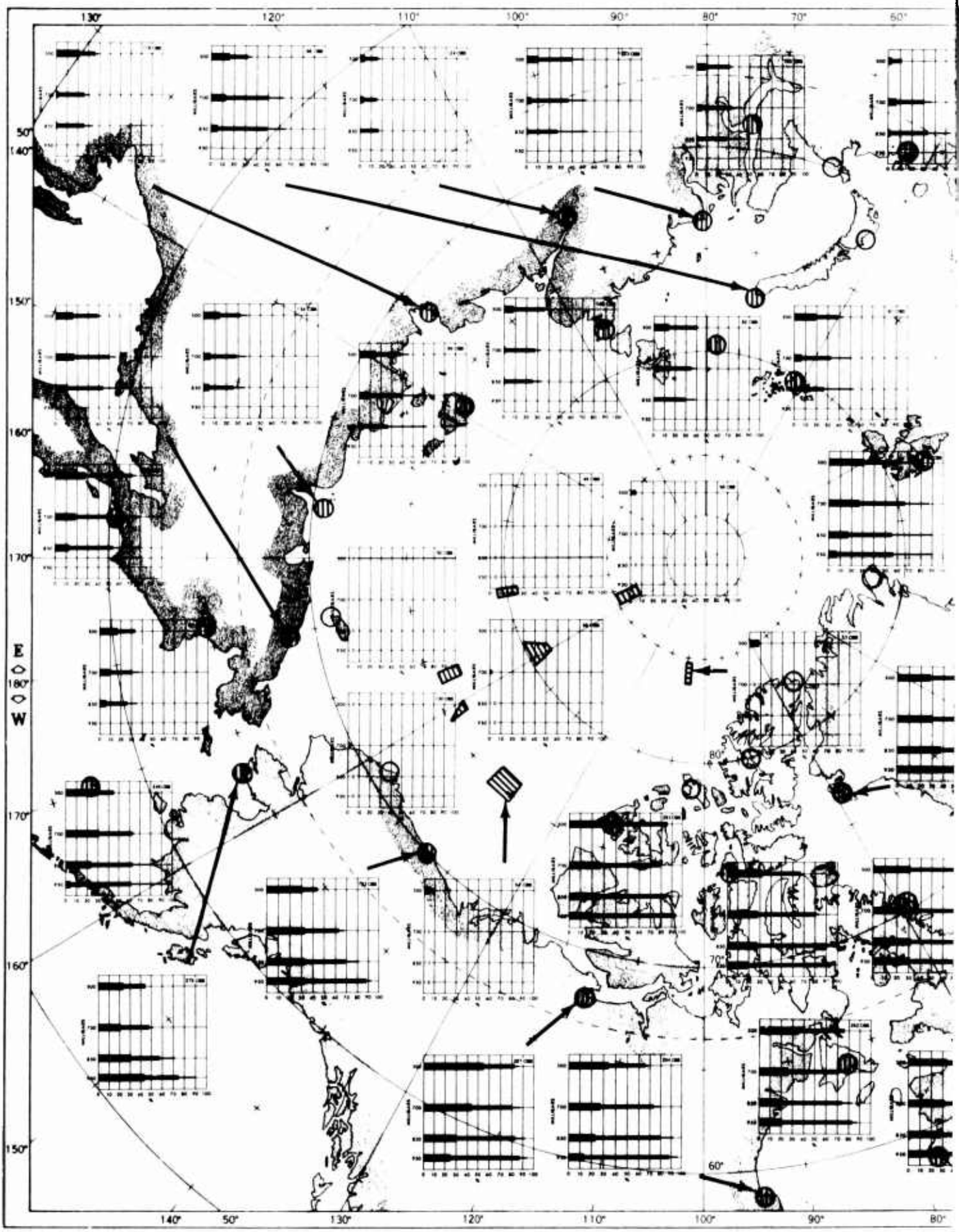
Percentage Frequency of Heights of the Tropopause equal to or less than the height intersected by the curve

(90% of all heights of the tropopause were thirty thousand feet or less)



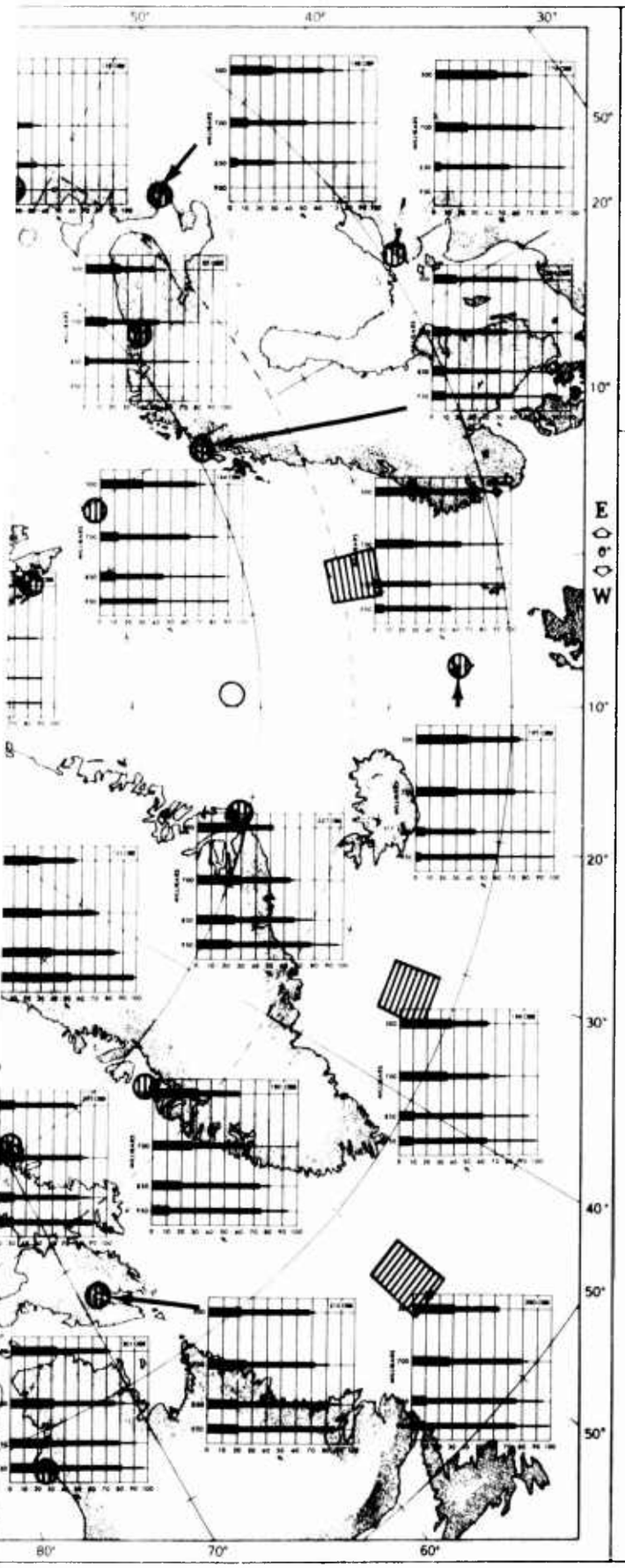
JANUARY

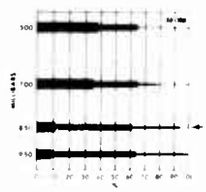
RELATIVE H



HUMIDITY

CHART 160





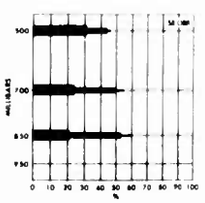
Distribution of Relative Humidity at Pressure Surfaces

(a) Percentage Frequency of Relative Humidity as indicated by

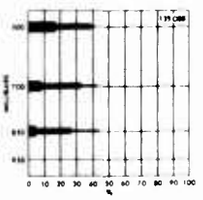


(For the 850 millibar level Relative Humidity was 30% - 59% for 11% of all observations, 60% - 84% humidity occurred 50% [61 minus 11] of the observations, and 85% - 100% humidity occurred 33% [94 minus 61] of the observations.)

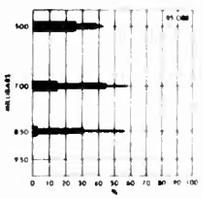
OSTROV VRANGELYA



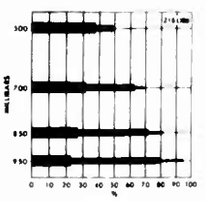
AMDERMA



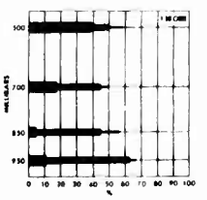
MALYYE KARMAKULY



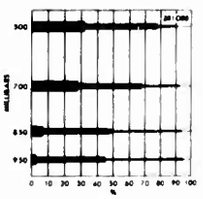
BARROW



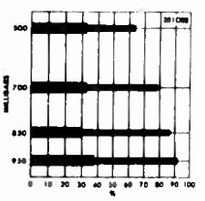
NORD



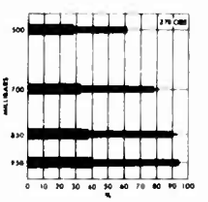
JAN MAYEN



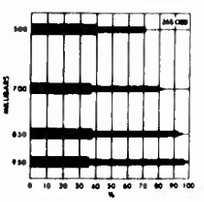
ISACHSEN



EUREKA

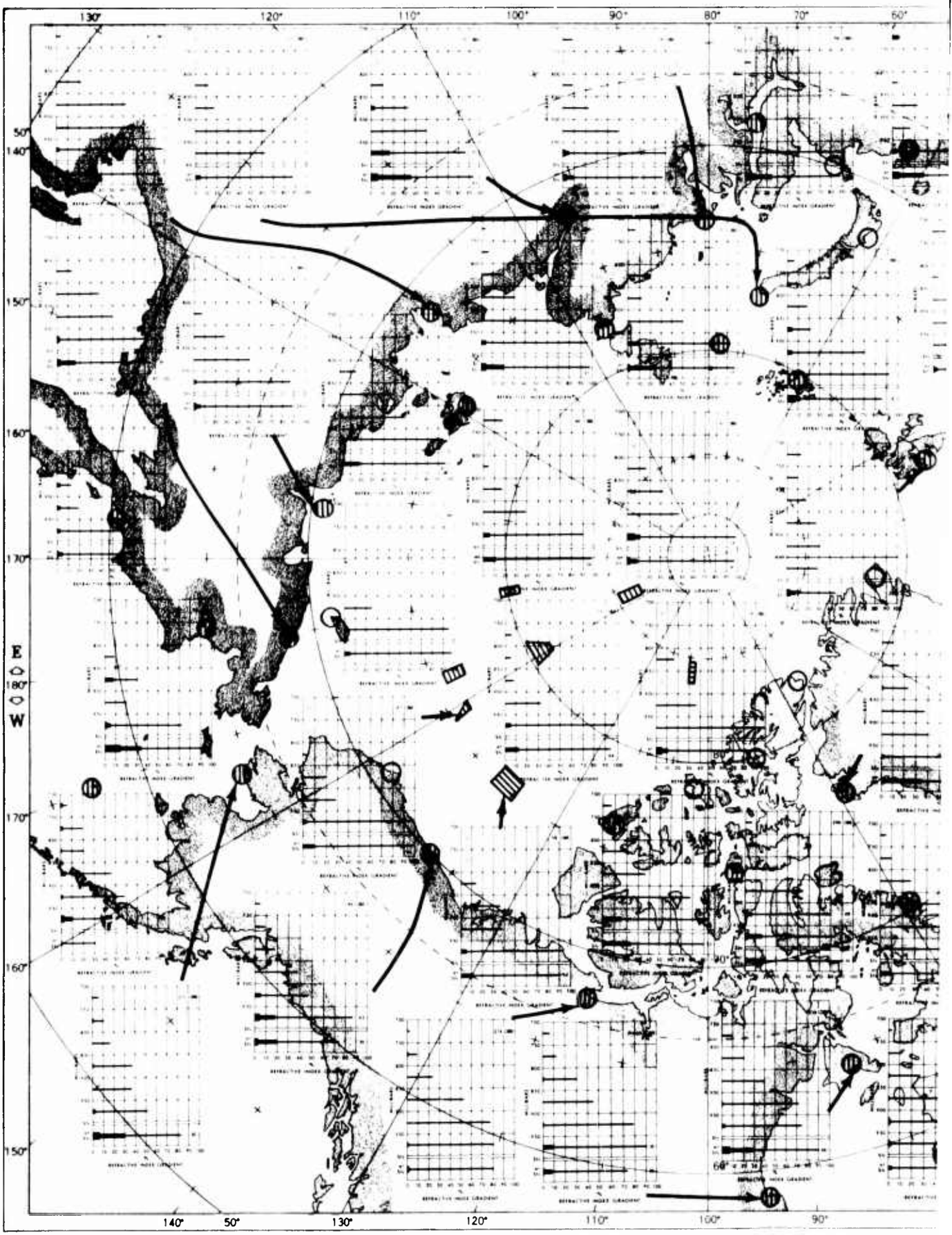


ALERT



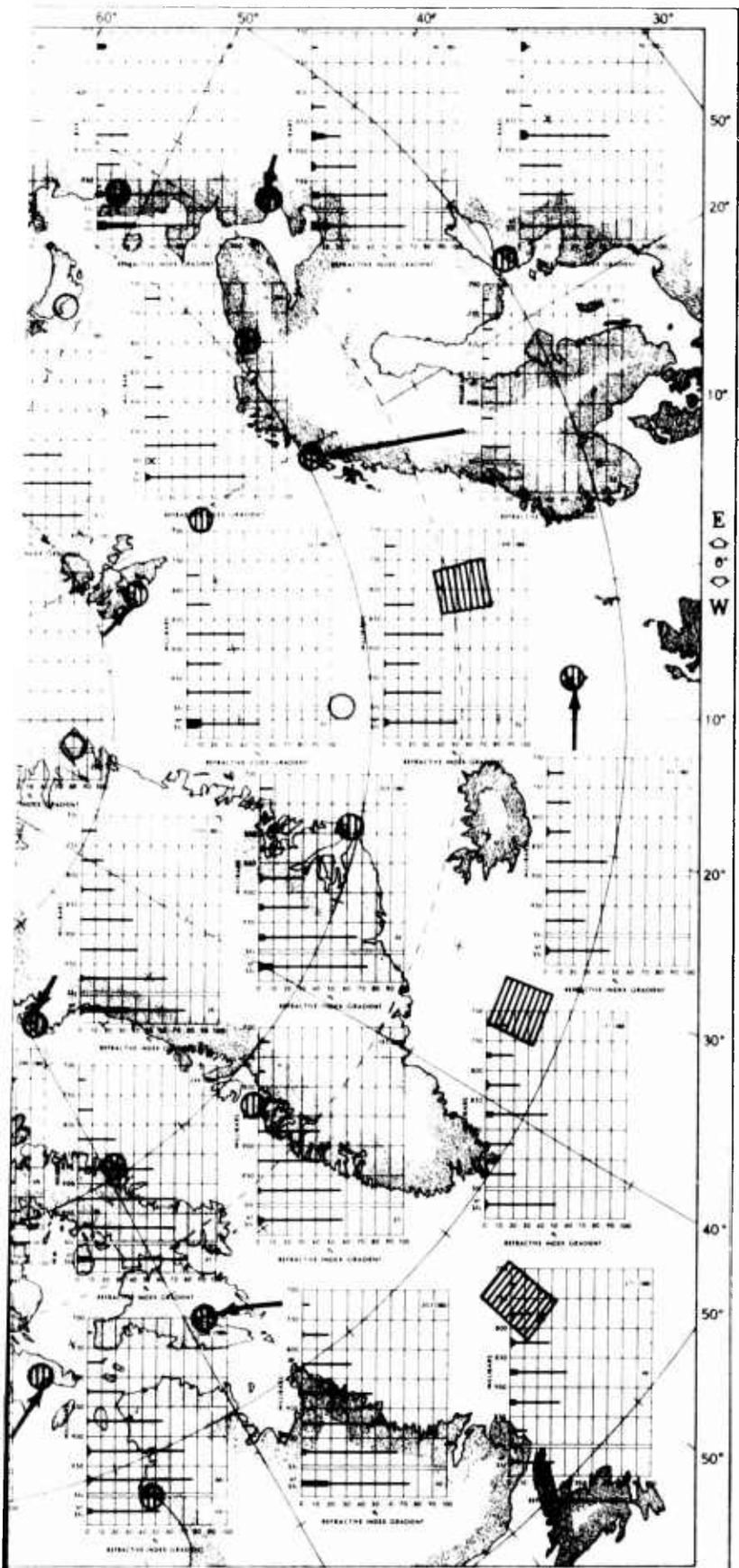
JANUARY

REFRACTIVE IN



VE INDEX GRADIENT

CHART 161



Percentage Frequency Refractive Index Gradient within 7 strata

Criteria

a $\Delta N \Delta H \leq -.048$ Trapping

b $\Delta N \Delta H \leq -.027$ Very Superrefractive

c $\Delta N \Delta H \leq -.012$ Superrefractive

Indicated by

[For the level 951 - 900 millibars

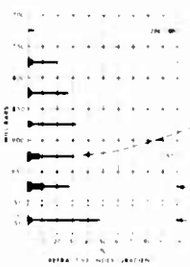
a occurred 2% of all observations

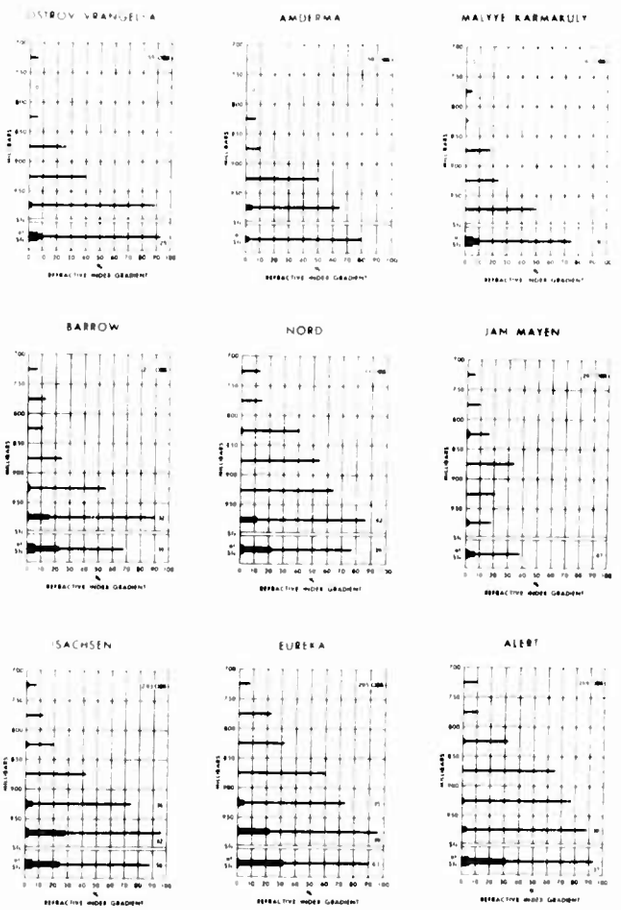
b 8% of observations and

c 31% of observations]

Mean thickness tens of feet of b above

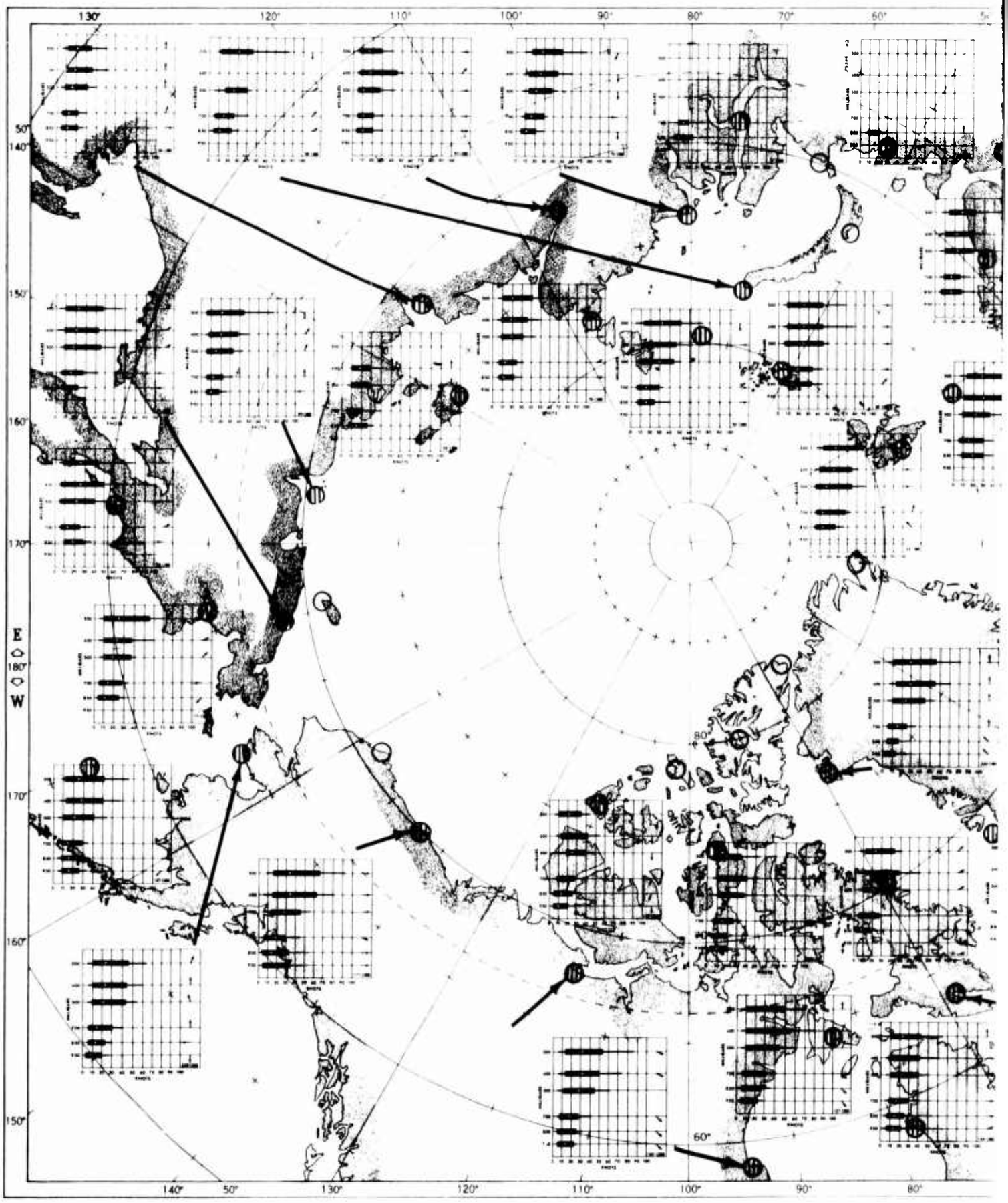
Thickness omitted when there were < 5 superrefractive gradients based within a stratum





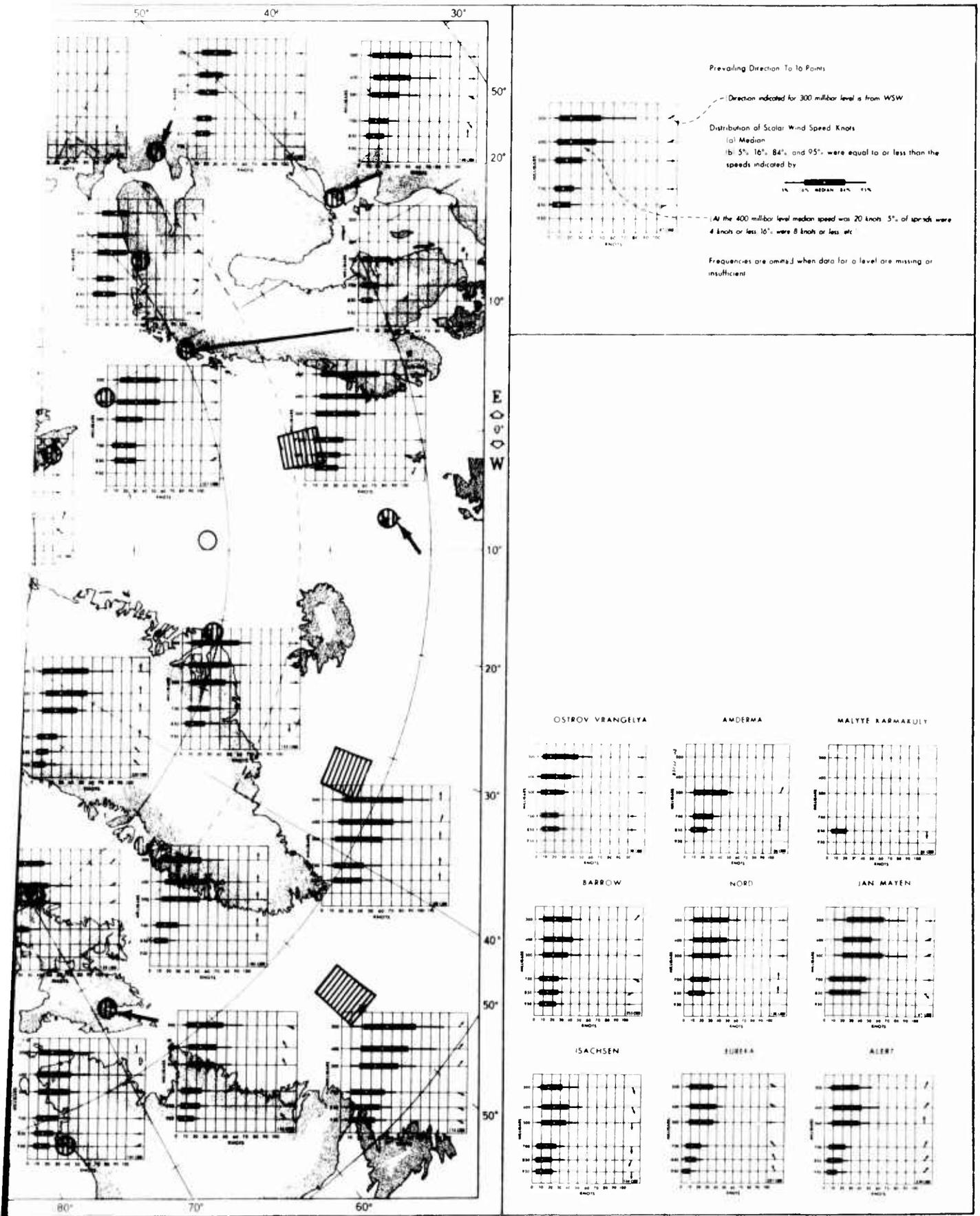
FEBRUARY

WIND (950 TO 3



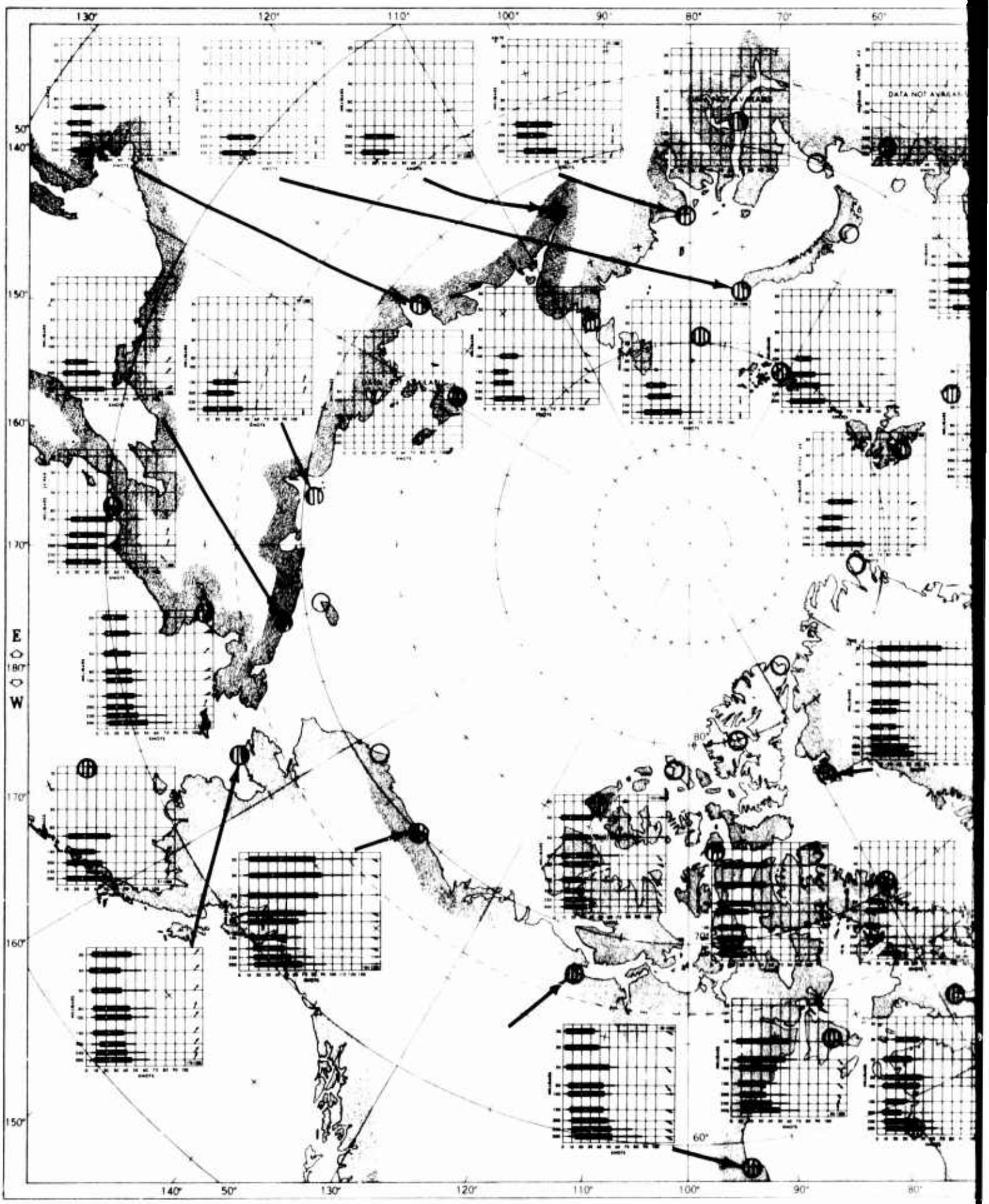
TO 300 MB)

CHART 162



FEBRUARY

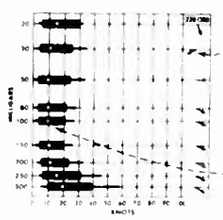
WIND (300 TO



(300 TO 20 MB)

CHART 163





Prevailing Direction To 16 Points

(Direction indicated for 30 millibar level is from ENE)

Distribution of Scalar Wind Speed Knots

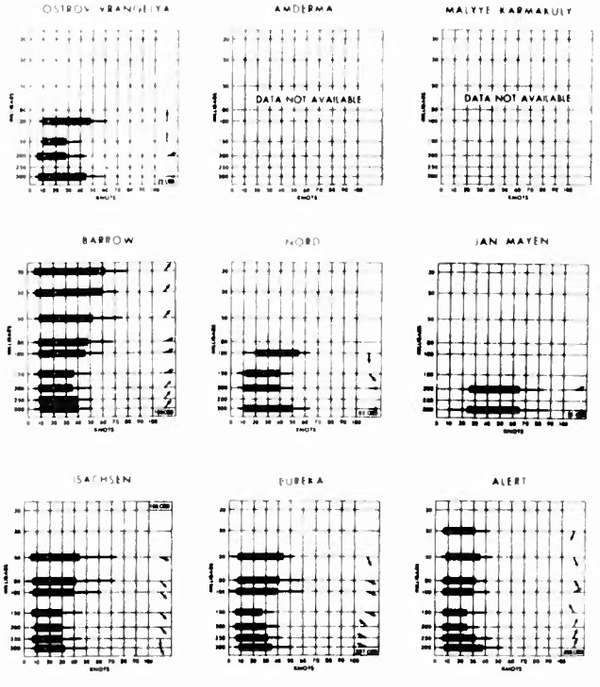
(a) median

(b) 5% 16% 84% and 95% were equal to or less than the speeds indicated by

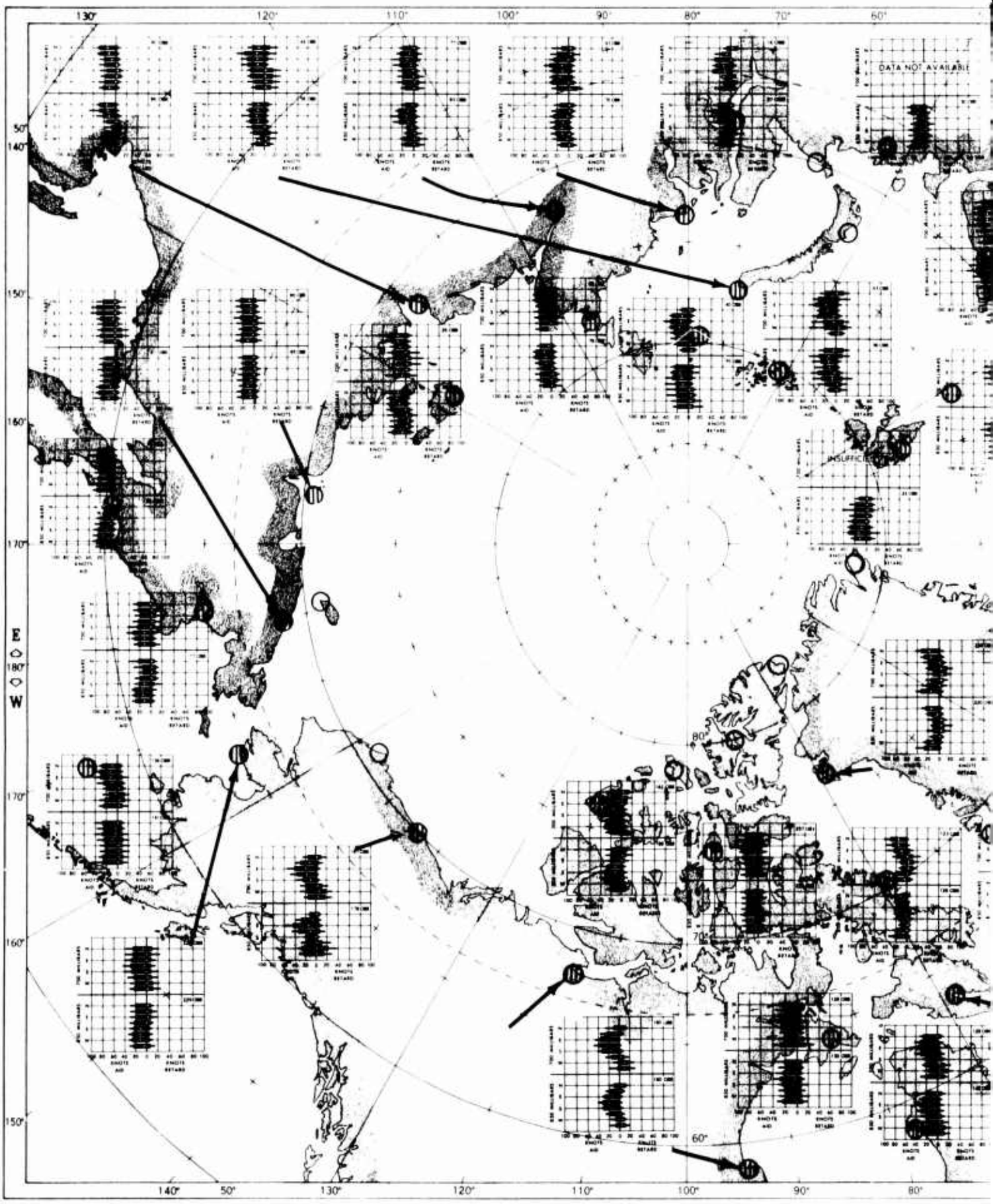


At the 100 millibar level median speed was 10 knots 5% of speeds were 2 knots or less 16% were 4 knots or less etc.

Frequencies are omitted when data for a level are missing or insufficient

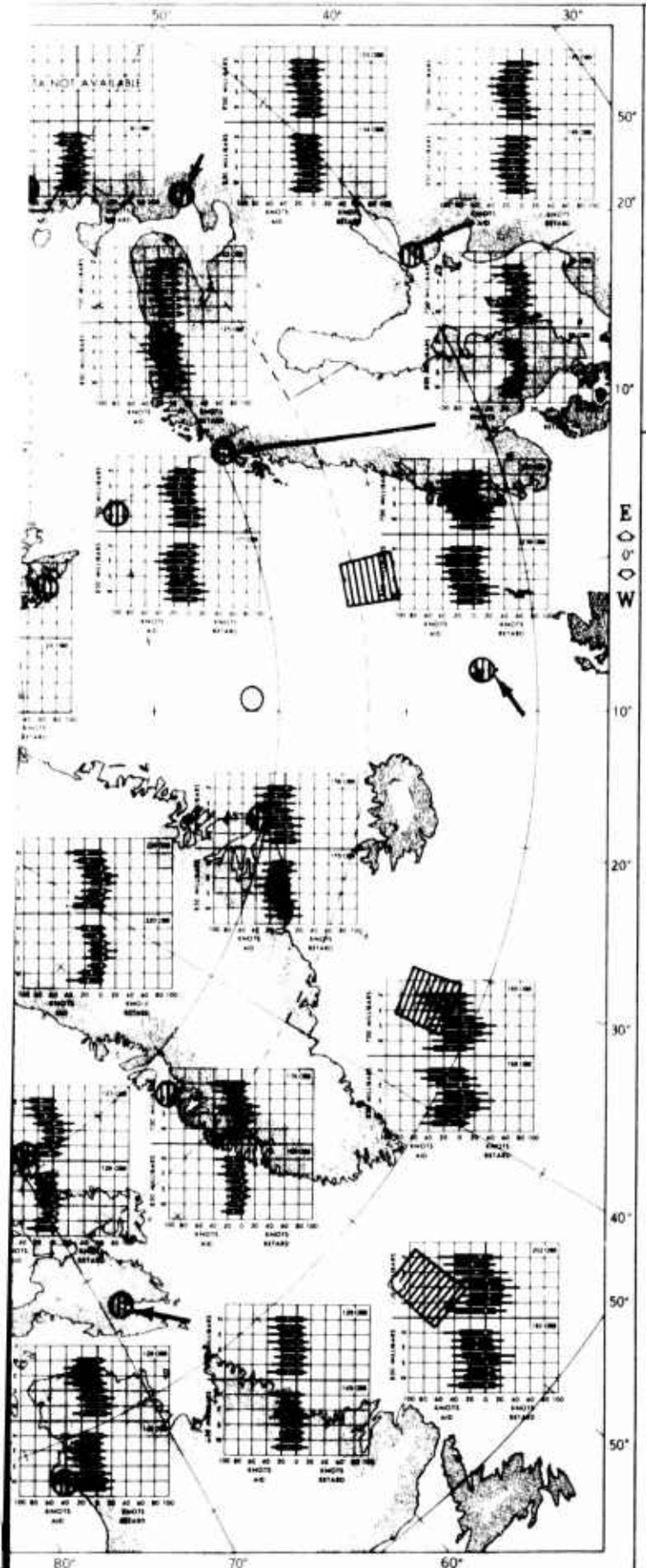


FEBRUARY WIND AID AND RETARD

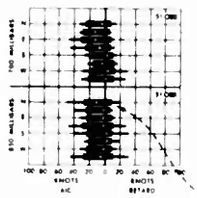


TARD (850 & 700 MB)

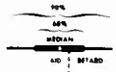
CHART 164



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 300 knots true air speed



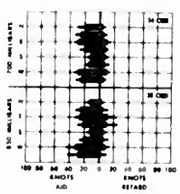
Read median and percentage frequency for direction toward which aircraft is flying thus



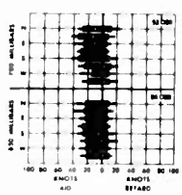
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward north at the 850 millibar level, wind aided or increased ground speed by an average of 12 knots. Wind effect ranged from 28 knots aid to 8 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 20 knots retard in 90% of the observations.)

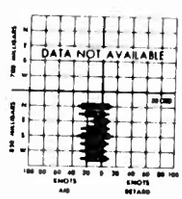
OSTROV VRANGELYA



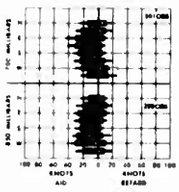
AMDERMA



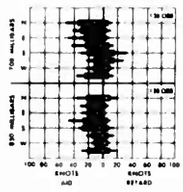
MALYYE KARMAKULY



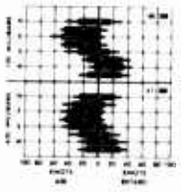
BARROW



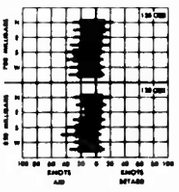
NORD



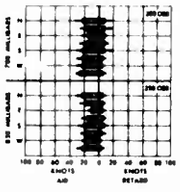
JAN MAYEN



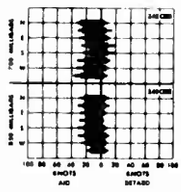
ISACHSEN



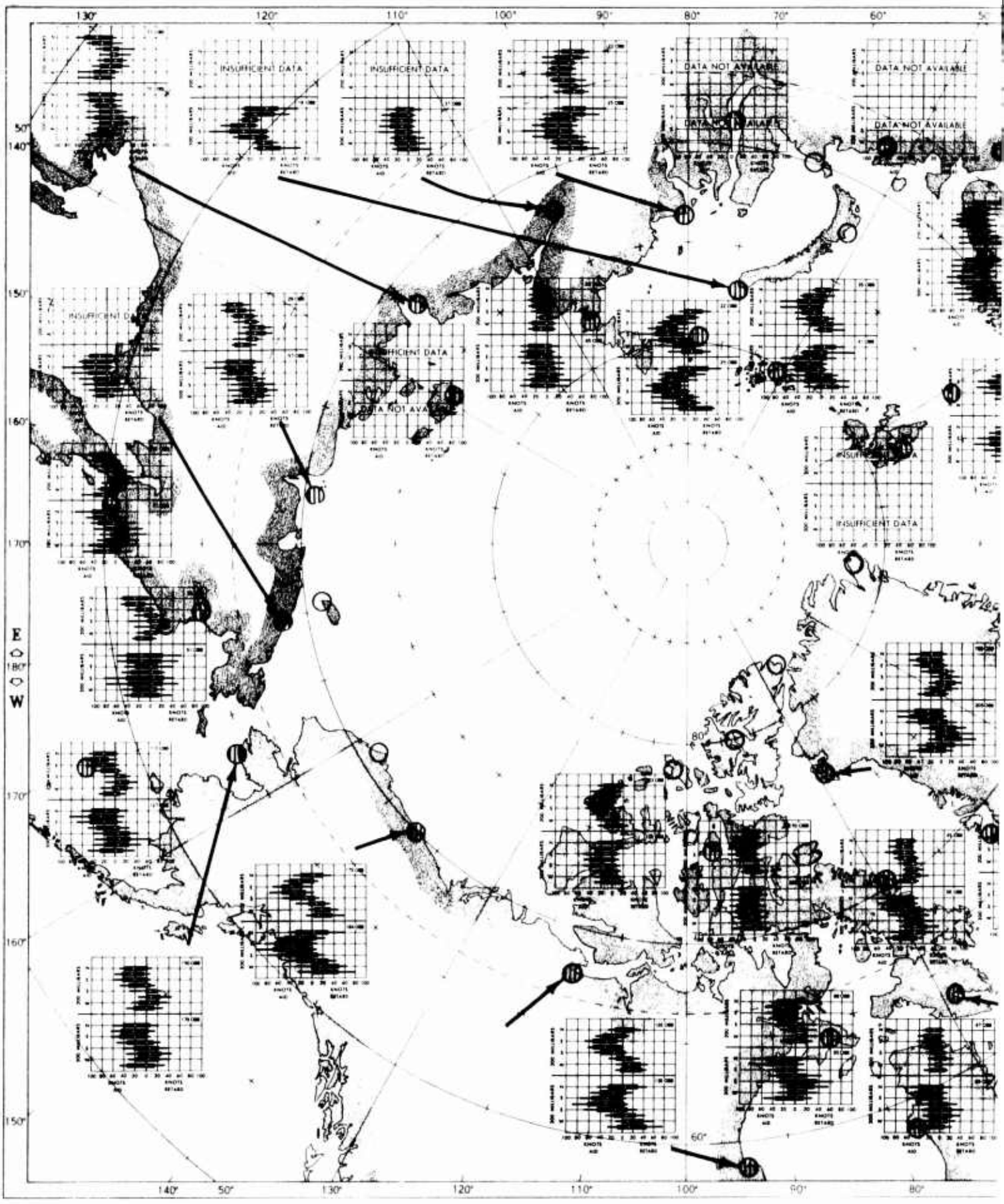
EUREKA



ALERT

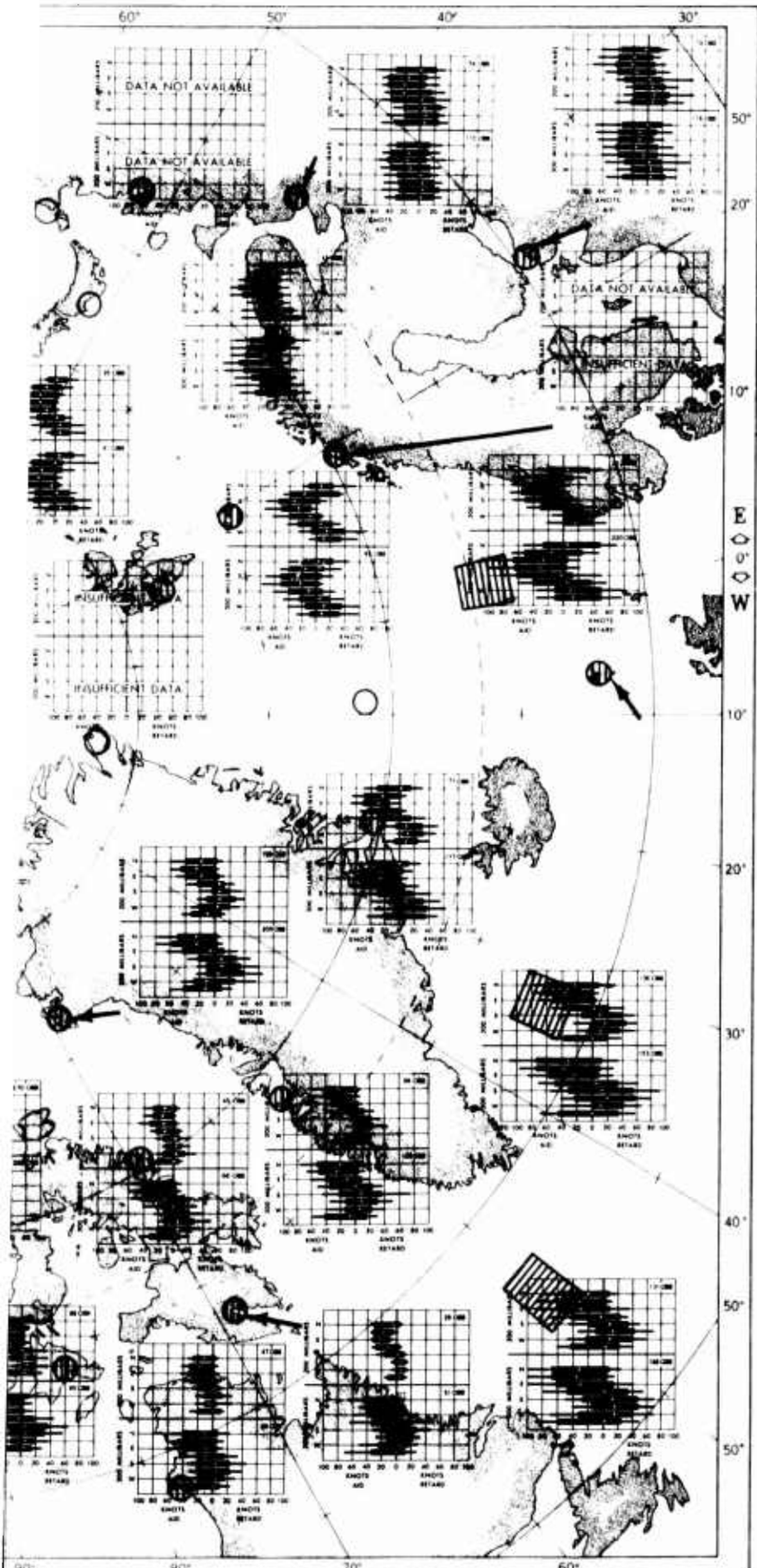


FEBRUARY WIND AID AND RETARD



) RETARD (300 & 200 MB)

CHART 165



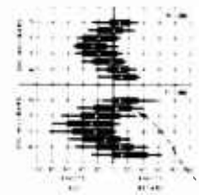
Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 600 knots true air speed

Read median and percentage frequency for direction toward which aircraft is flying thus

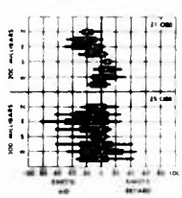


Bars omitted when data for a level are missing or insufficient

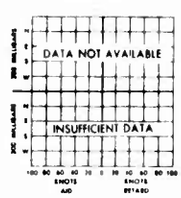
(For an aircraft flying toward northeast at the 300 millibar level wind retarded or decreased ground speed by an average of 4 knots. Winds effect ranged from 26 knots aid to 25 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 40 knots retard in 90% of the observations.



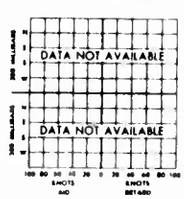
OSTROV VRANGELYA



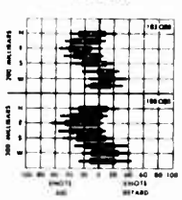
AMDERMA



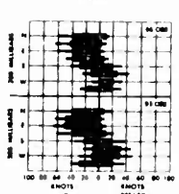
MALYYE KARMAKULY



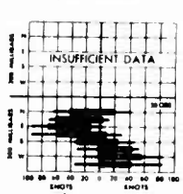
BARROW



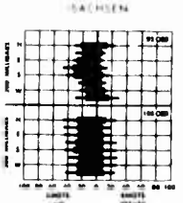
NORD



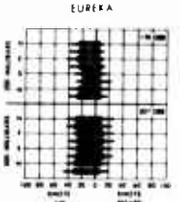
JAN MAYEN



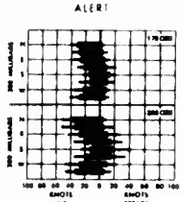
SACHSEN



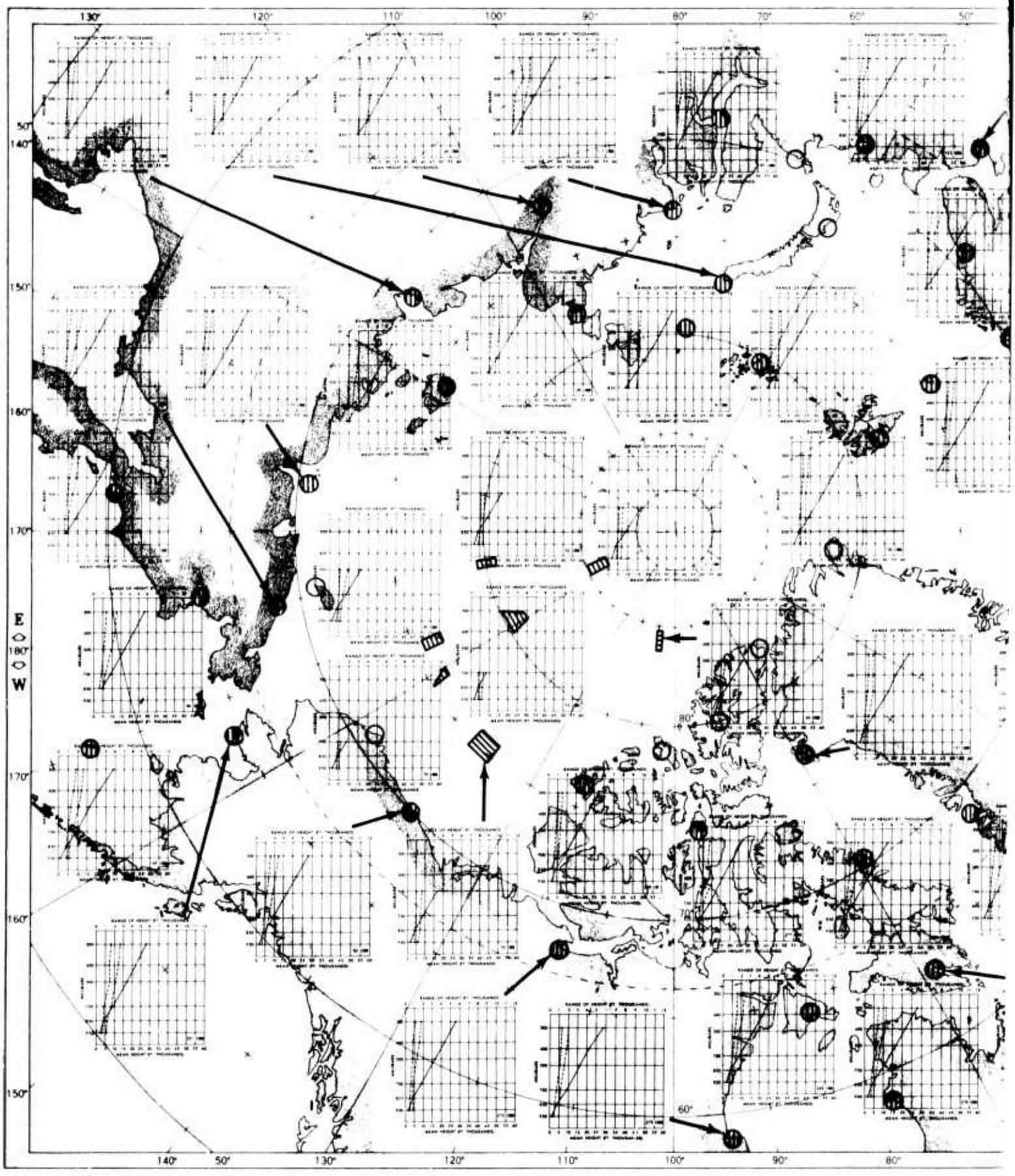
EUREKA



ALERT

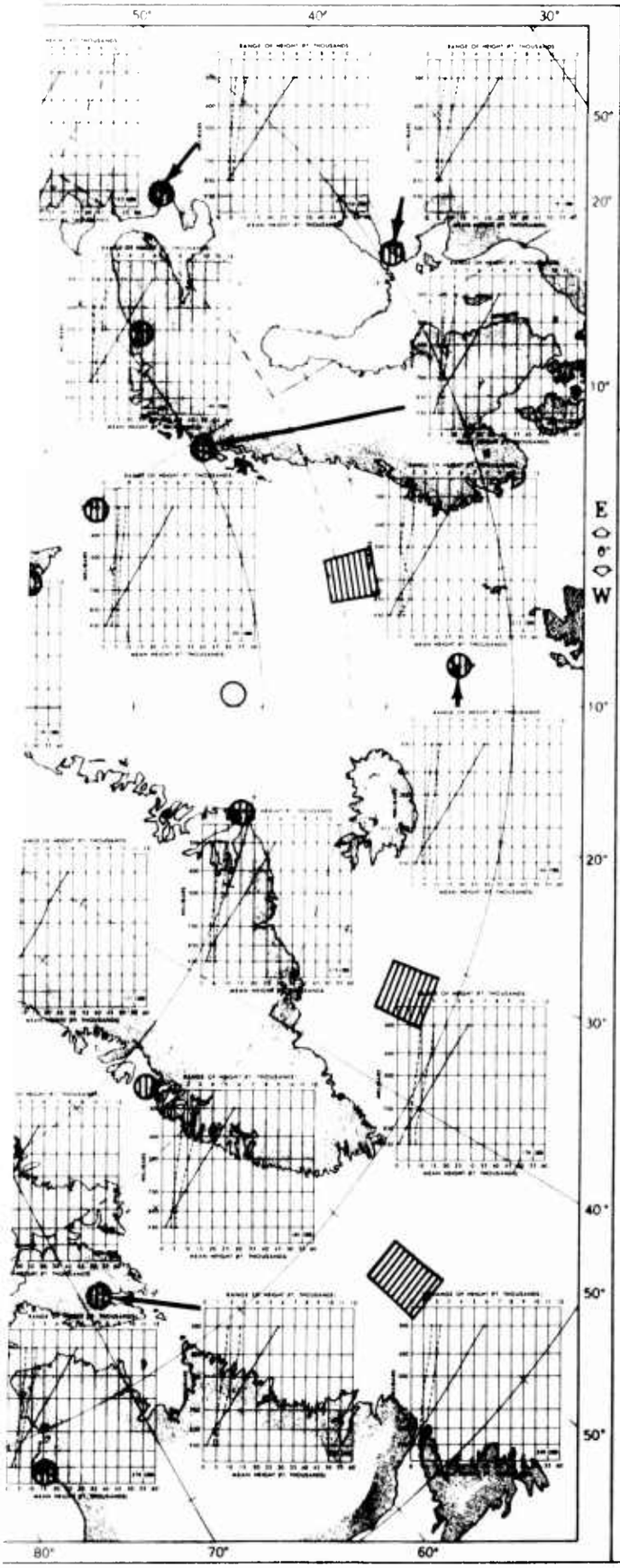


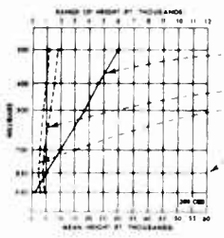
FEBRUARY HEIGHT (950 TO 30



TO 300 MB)

CHART 166





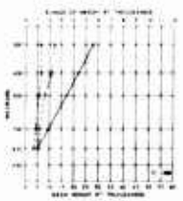
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
  - (1) 5% 95% Range
  - (2) 16% 84% Range

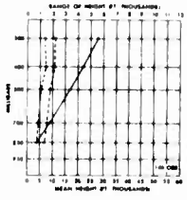
For the 850 millibar level the mean Height = 5,000 feet, the 5% 95% Height range = 800 feet and the 16% 84% range = 450 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

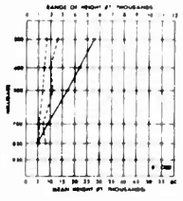
OSTROV VRANGELYA



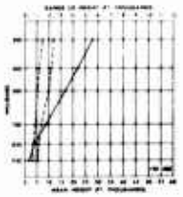
AMDERMA



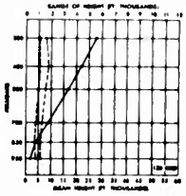
MALTYE KARMAKULY



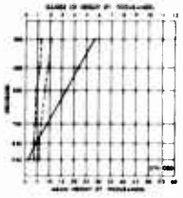
BARROW



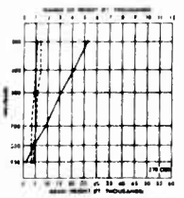
NORD



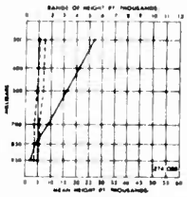
JAN MAYEN



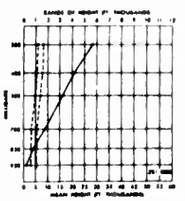
ISACHSEN



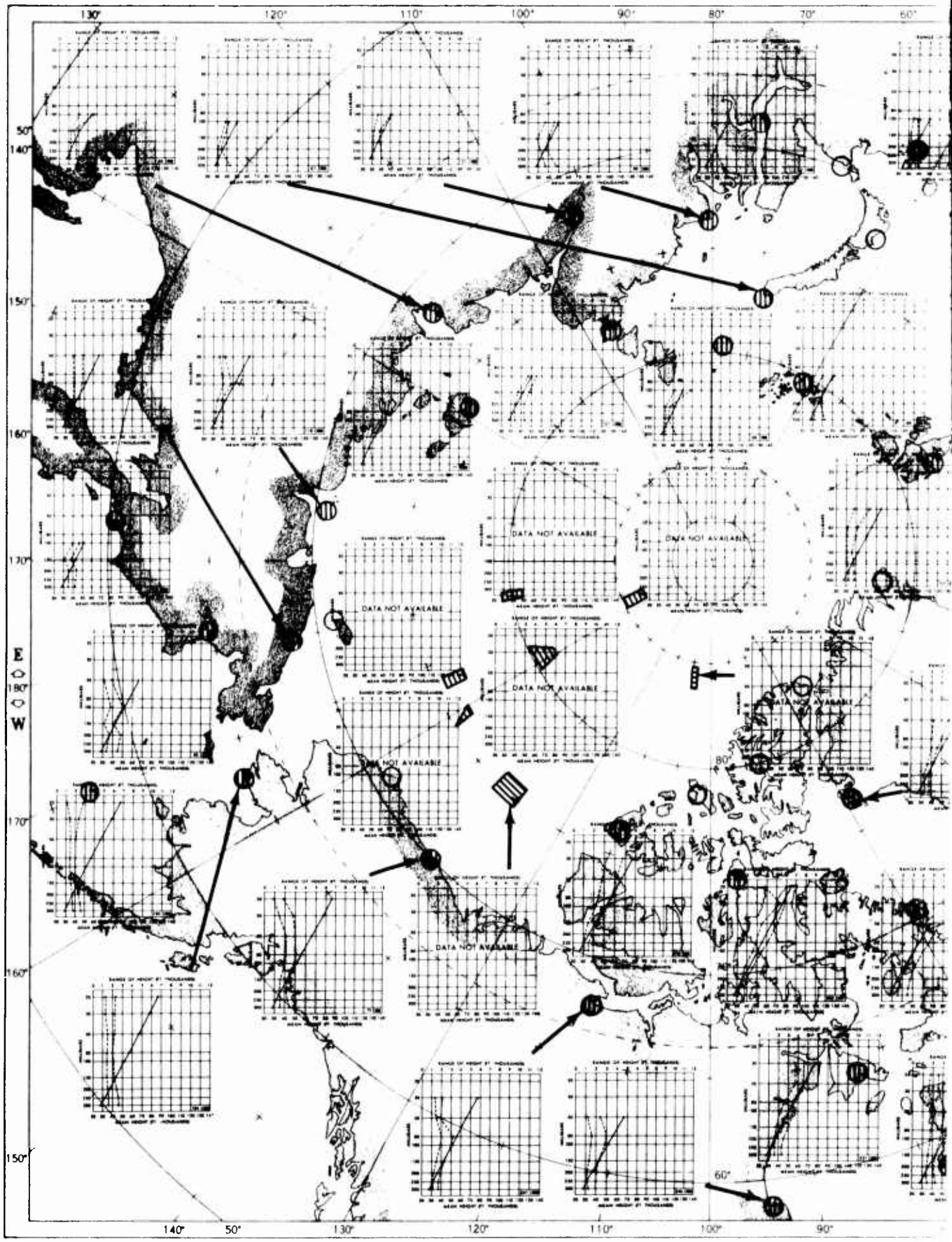
EUREKA



ALERT

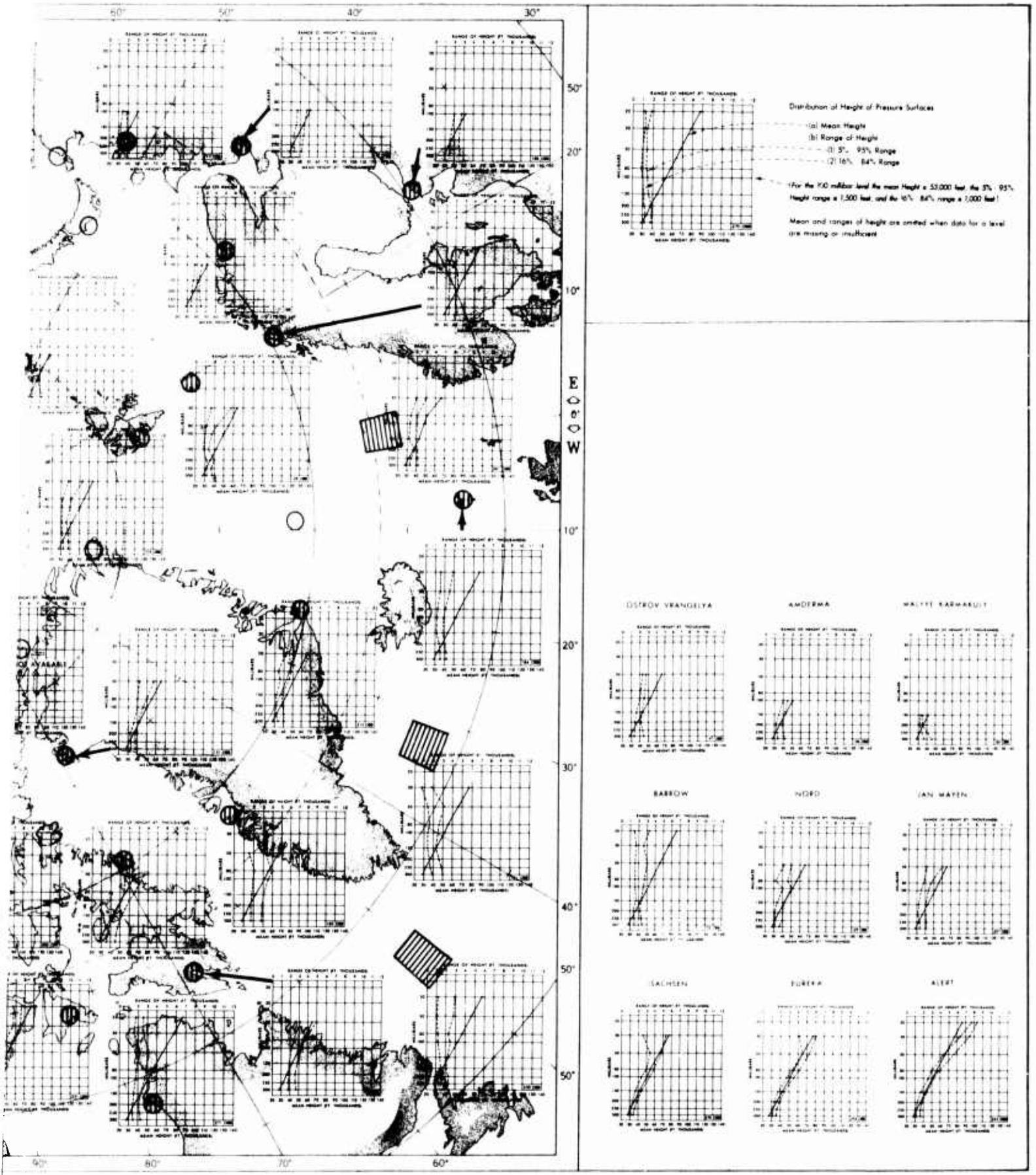


FEBRUARY HEIGHT (300

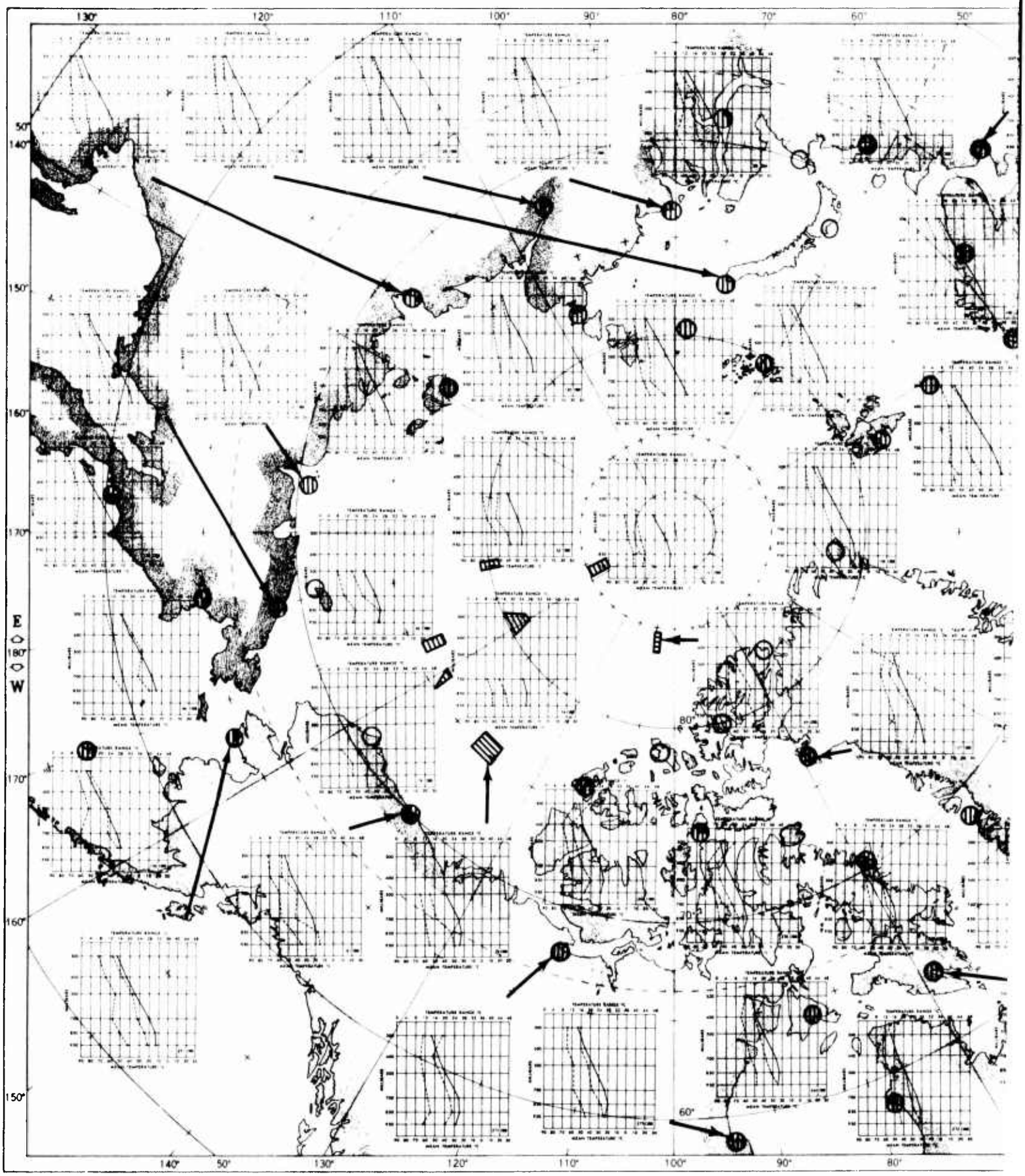


IT (300 TO 20 MB)

CHART 167

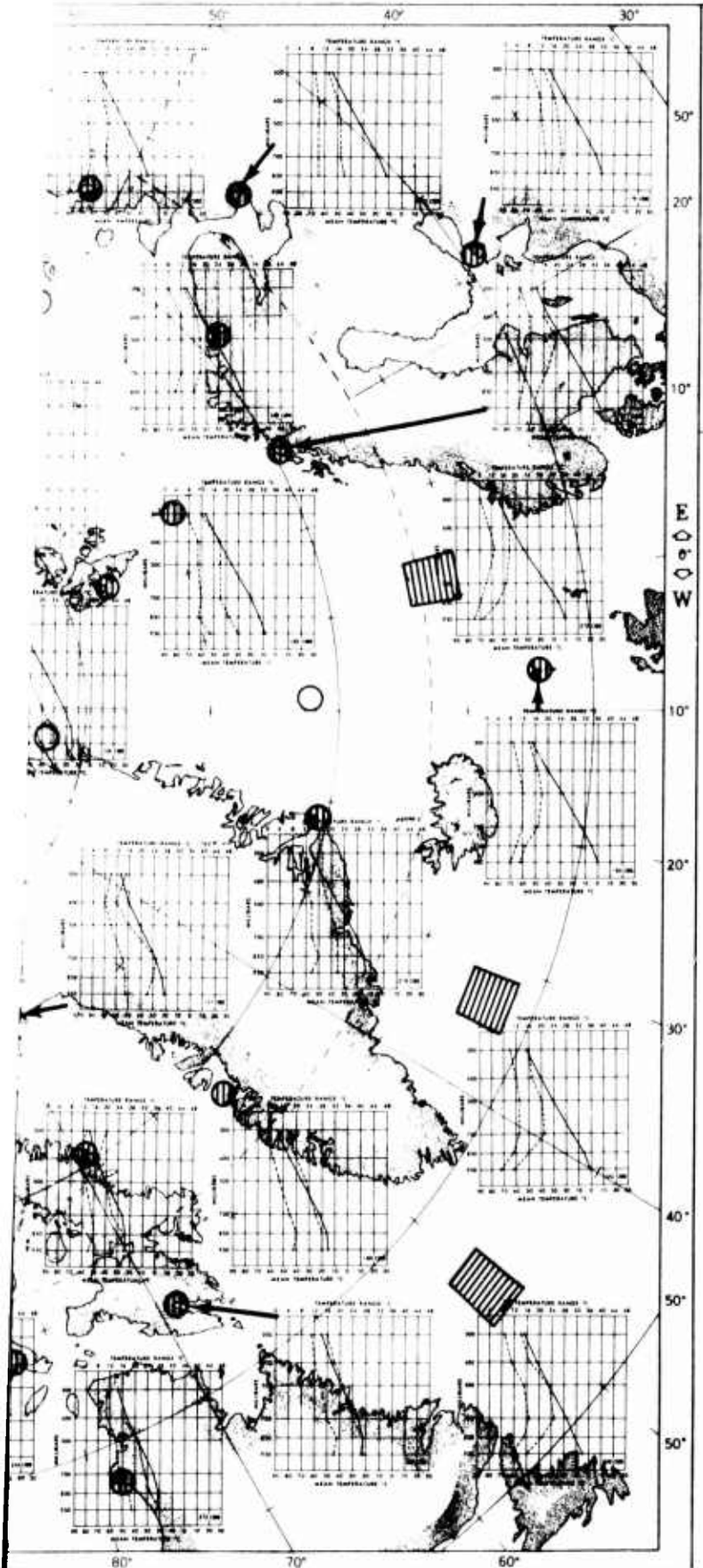


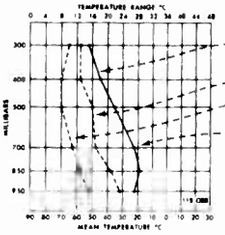
FEBRUARY TEMPERATURE (950 TO



: (950 TO 300 MB)

CHART 168





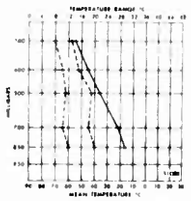
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% 95% Range
(2) 16% 84% Range

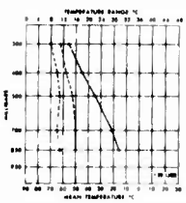
(*For the 700 millibar level the mean temperature is -22 °C the 5% 95% range is 17°C, and the 16% 84% range is 11°C*)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

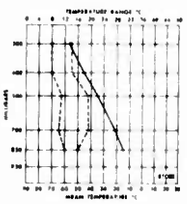
OSTROV VRANGELYA



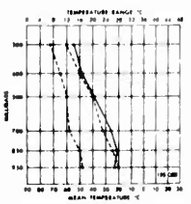
AMDERMA



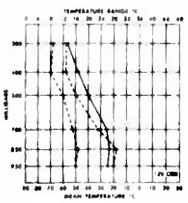
MALYYE KARMAKULY



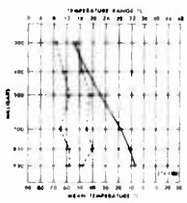
BARROW



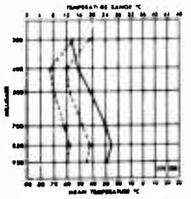
NORD



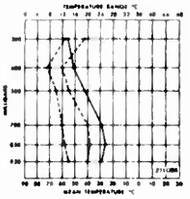
JAN MAYEN



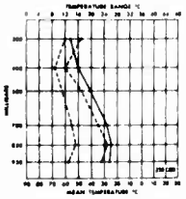
ISACHSEN



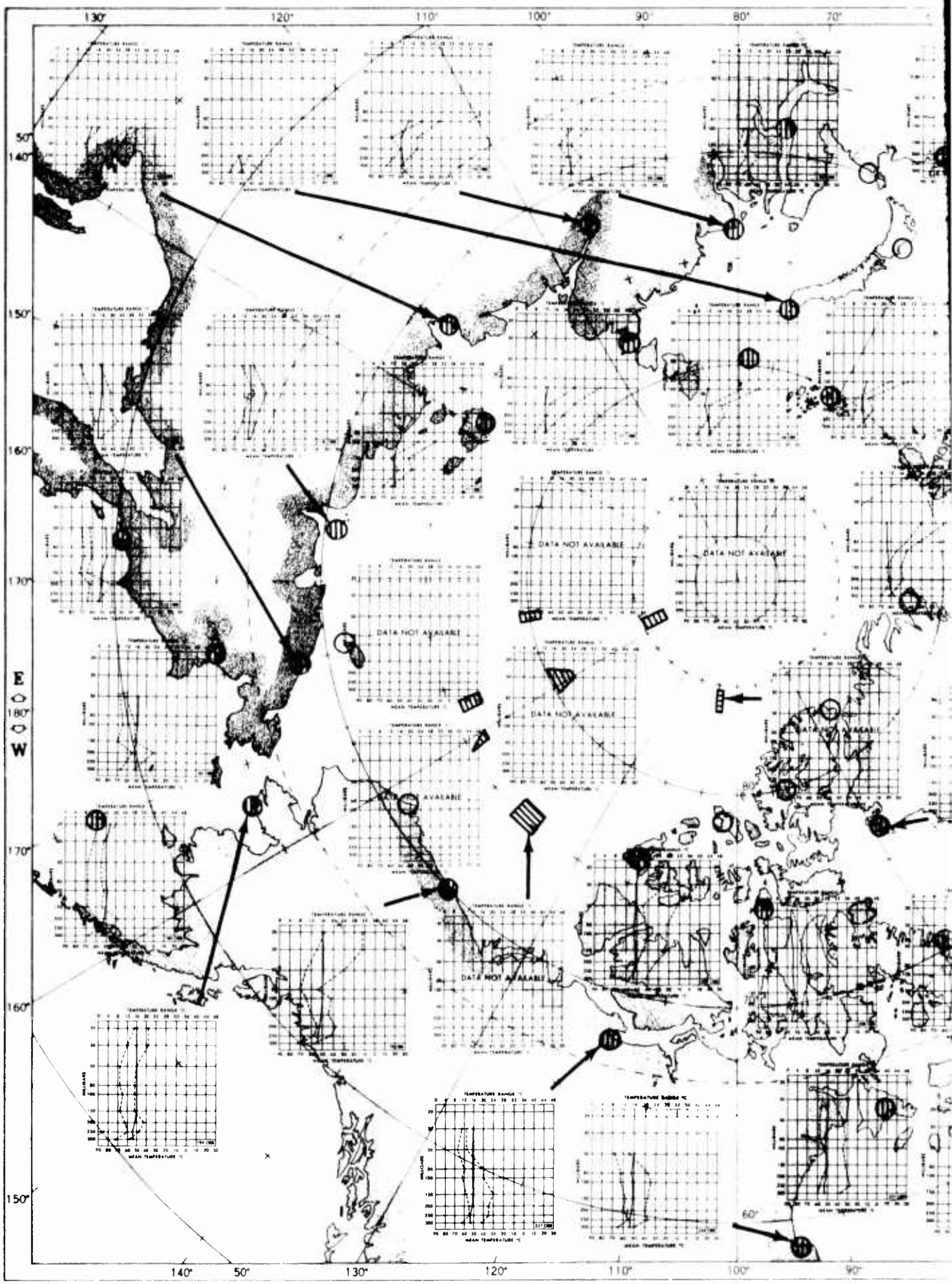
EUREKA



ALERT

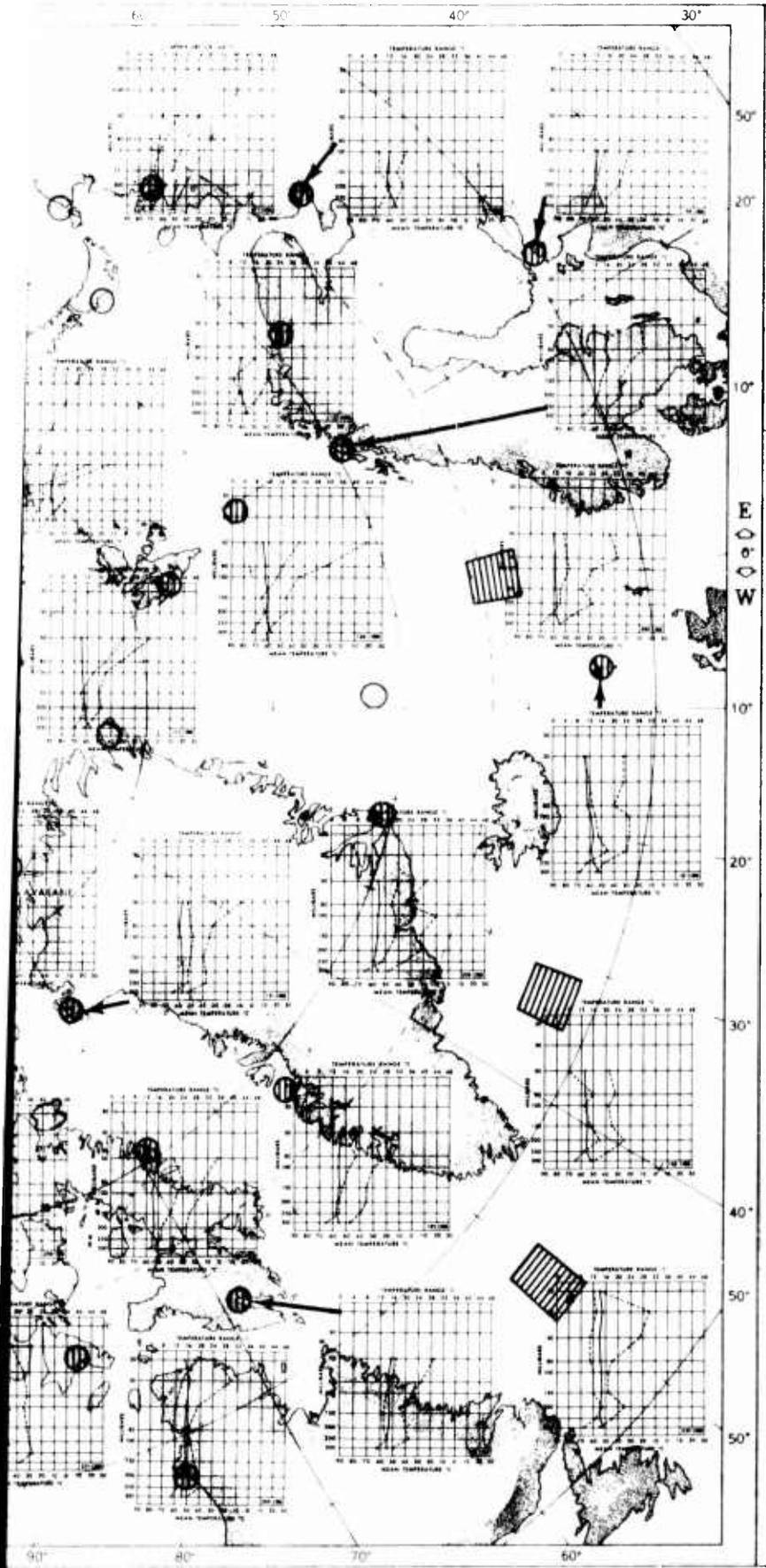


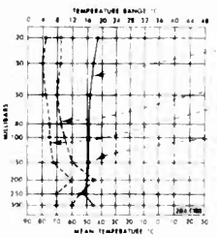
FEBRUARY TEMPERATURE



TURE (300 TO 20MB)

CHART 169





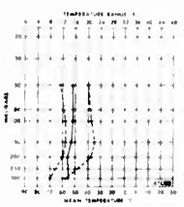
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% - 95% Range
(2) 16% - 84% Range

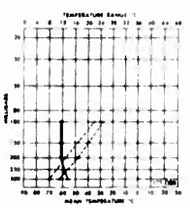
For the 150 millibar level the mean temperature is 49°C the 5% - 95% range is 12°C and the 16% - 84% range is 7°C

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

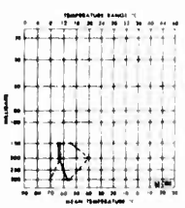
OSTROV VRANGELYA



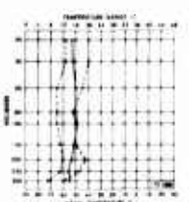
AMDERMA



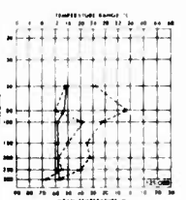
MALYYE KARMAKULY



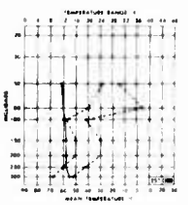
BARROW



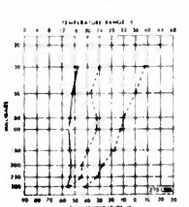
NORD



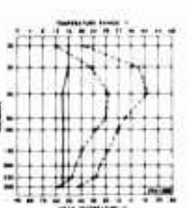
JAN MAYEN



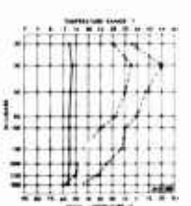
SAVISEN



EUREKA

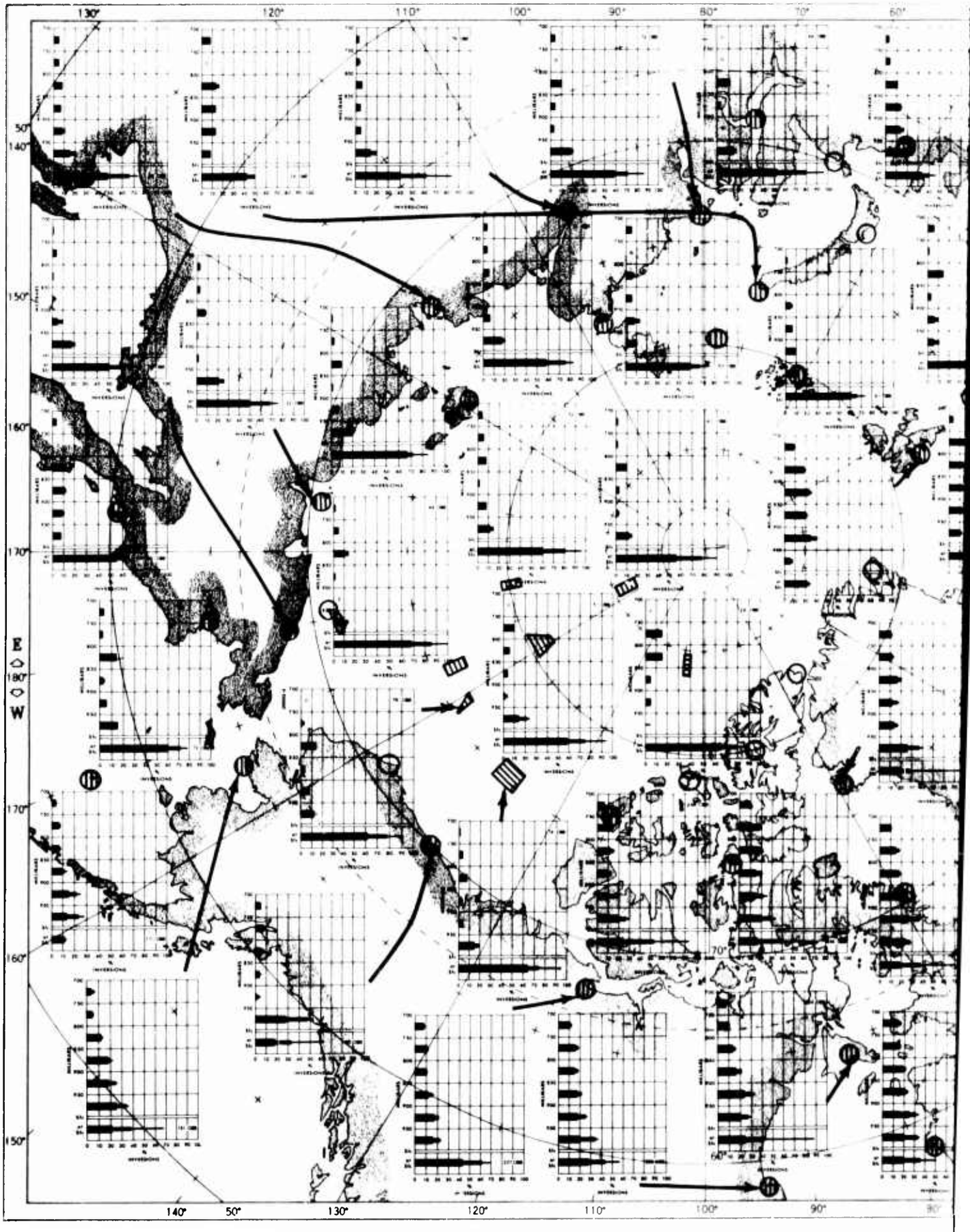


ALERT



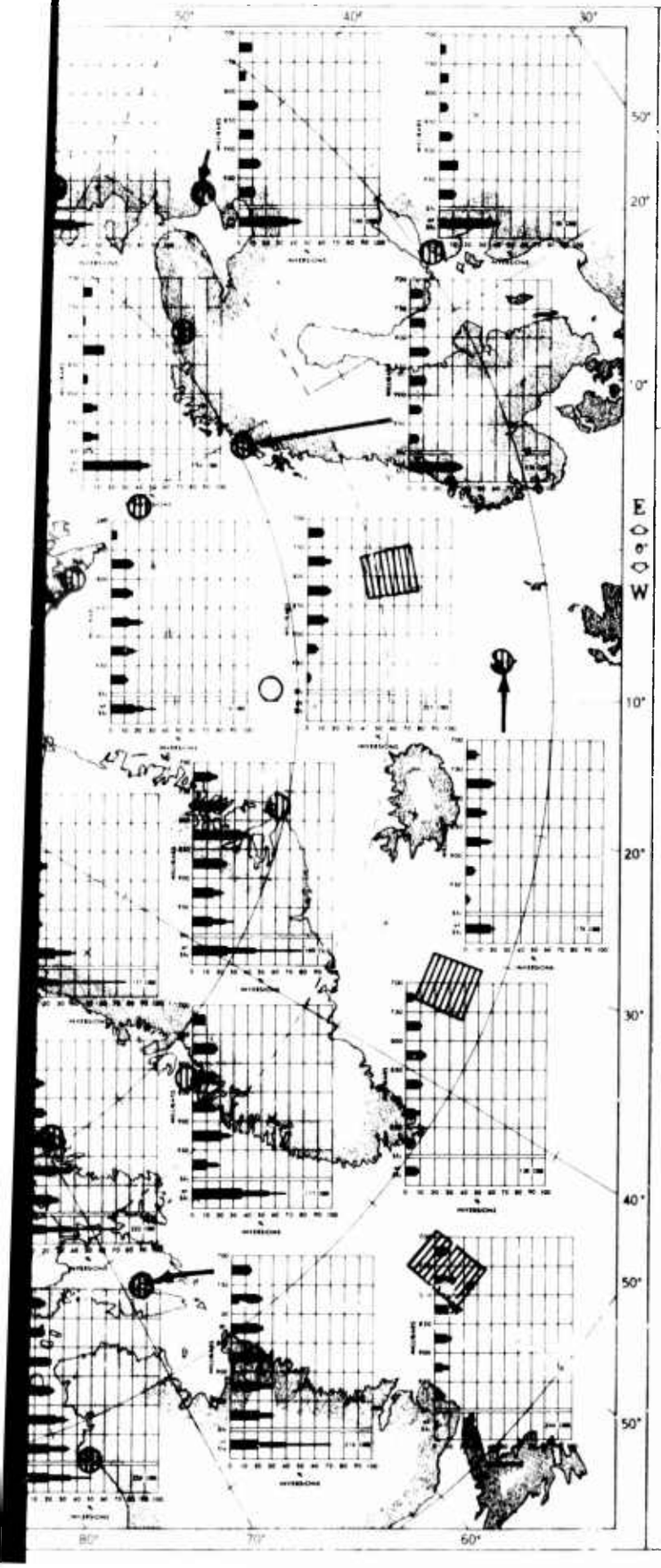
FEBRUARY

INVERSIO



RSIONS

CHART 170



Percentage Frequencies of three intensities of Temperature Inversions within each of seven layers from the surface to 700 millibars

General Criteria

(a) Temperature Inversion constant or increasing temperature with increasing height that persisted at least 5 millibars (approximately 50 meters)

(b) Layers Inversions were assigned to 7 arbitrary layers according to the pressure at their bases

- 750 to 701 millibars
- 800 to 751 millibars
- 850 to 801 millibars
- 900 to 851 millibars
- 950 to 901 millibars
- 5 millibars above the surface to 951 millibars
- At the surface to 49 millibars above the surface

(c) Intensity change in temperature per 100 meters increase in height of

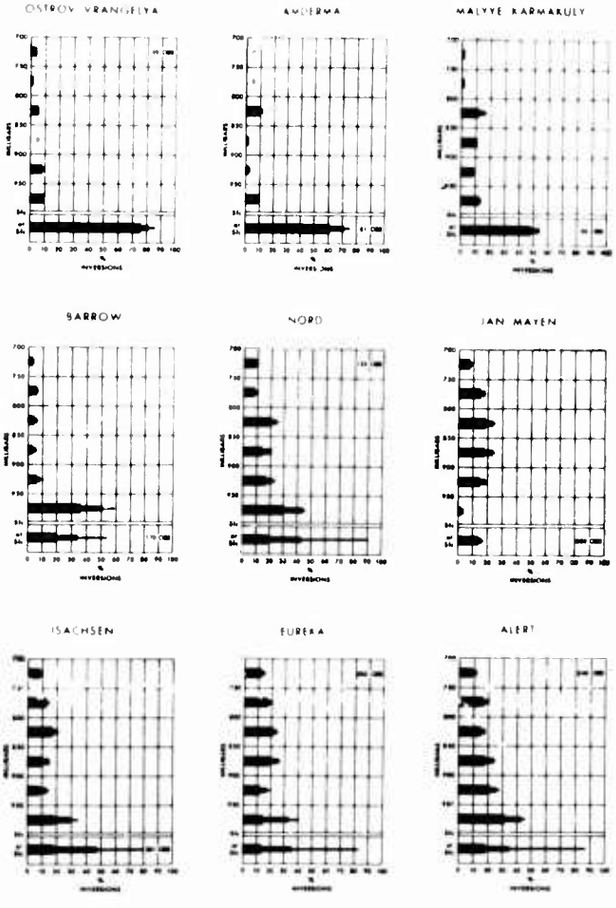
0°C TO +9.9°C | +10°C TO +19°C | +20°C OR MORE

When more than one inversion was recorded within a layer the one with the greatest intensity was counted

0 No occurrence

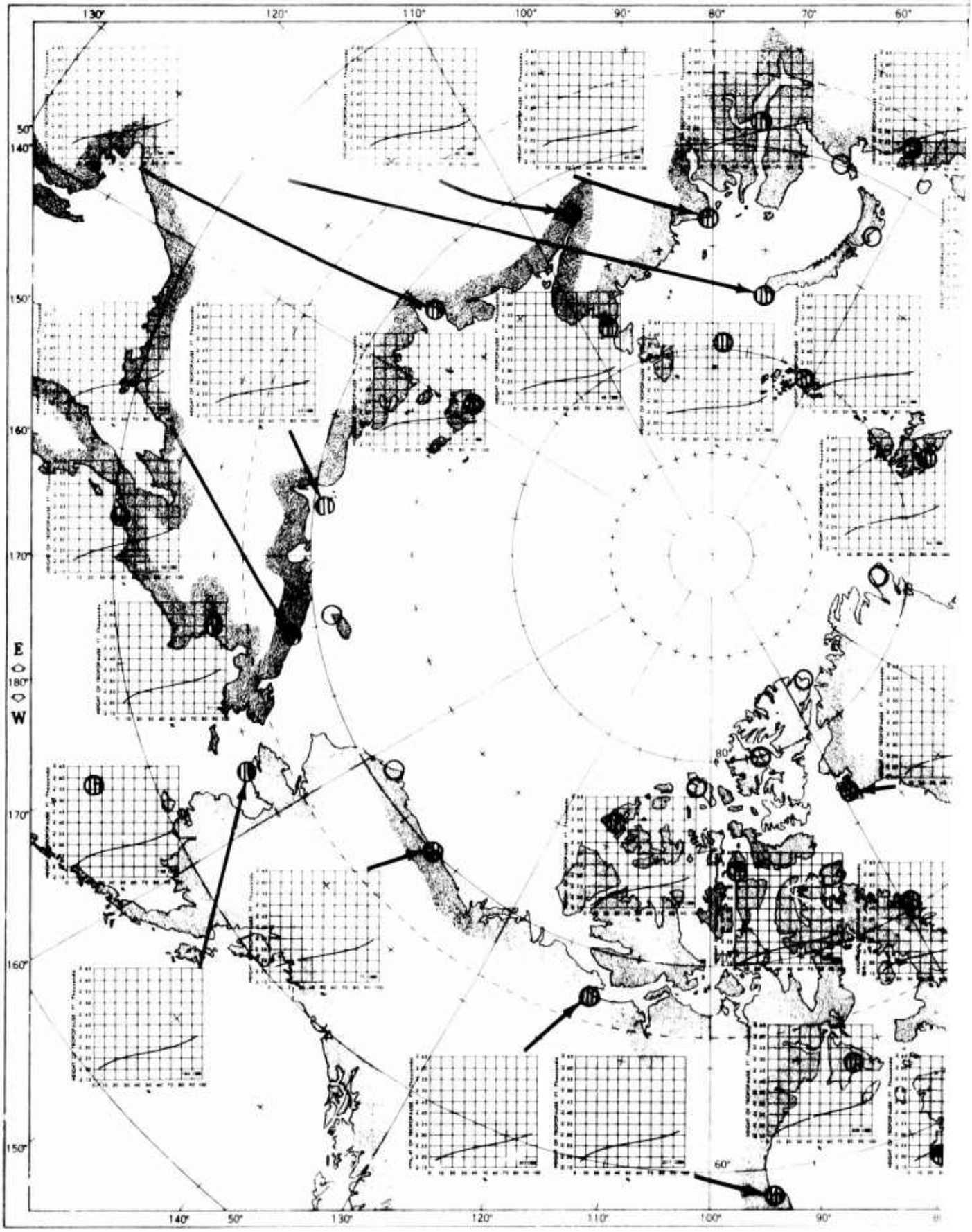
Blank No data

"23% [80 52] of all radiosonde ascents recorded temperature inversions of +10°C to +19°C per 100 meters with bases in the layer from the surface to 49 millibars above."



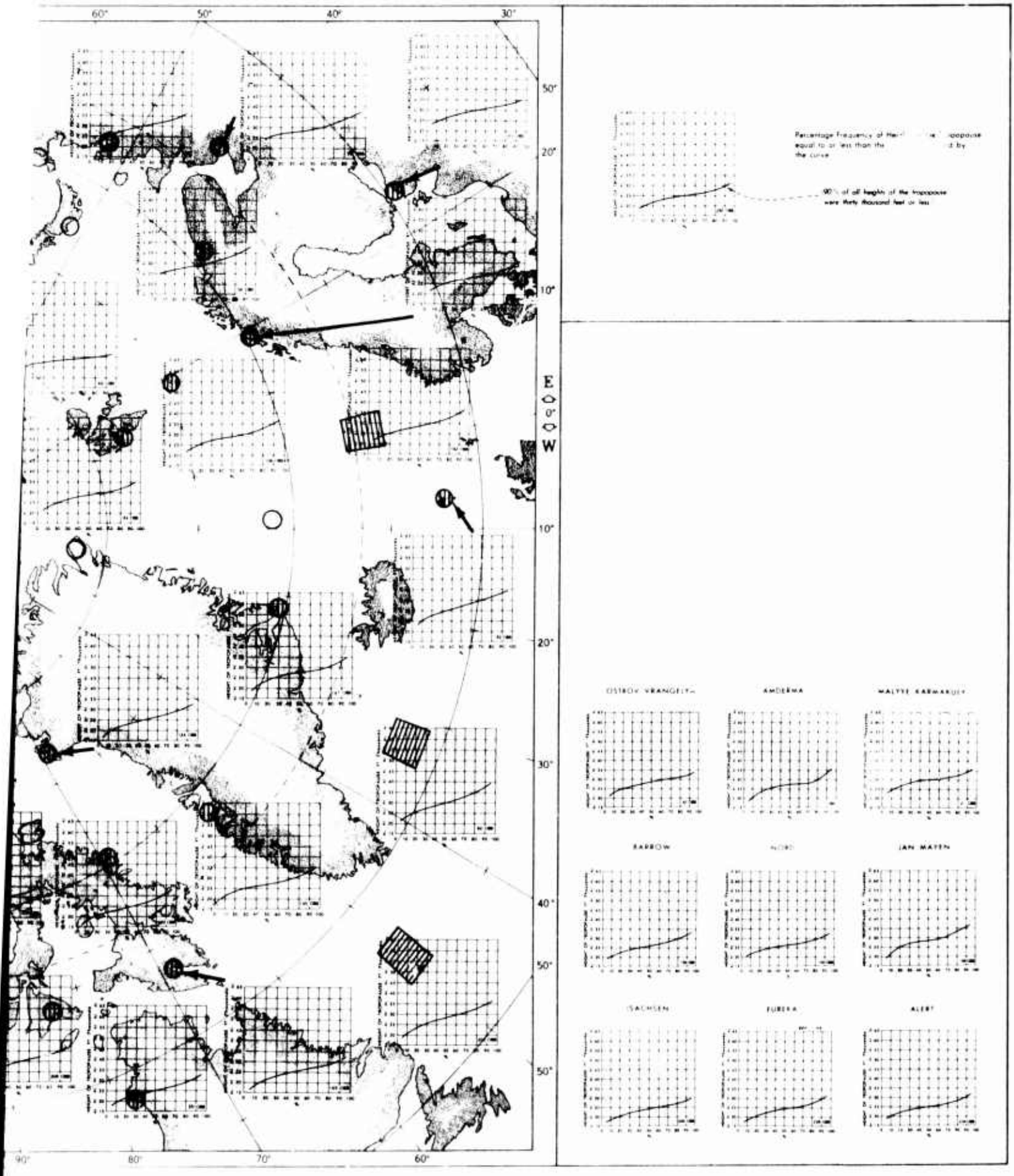
FEBRUARY

HEIGHT OF TRO



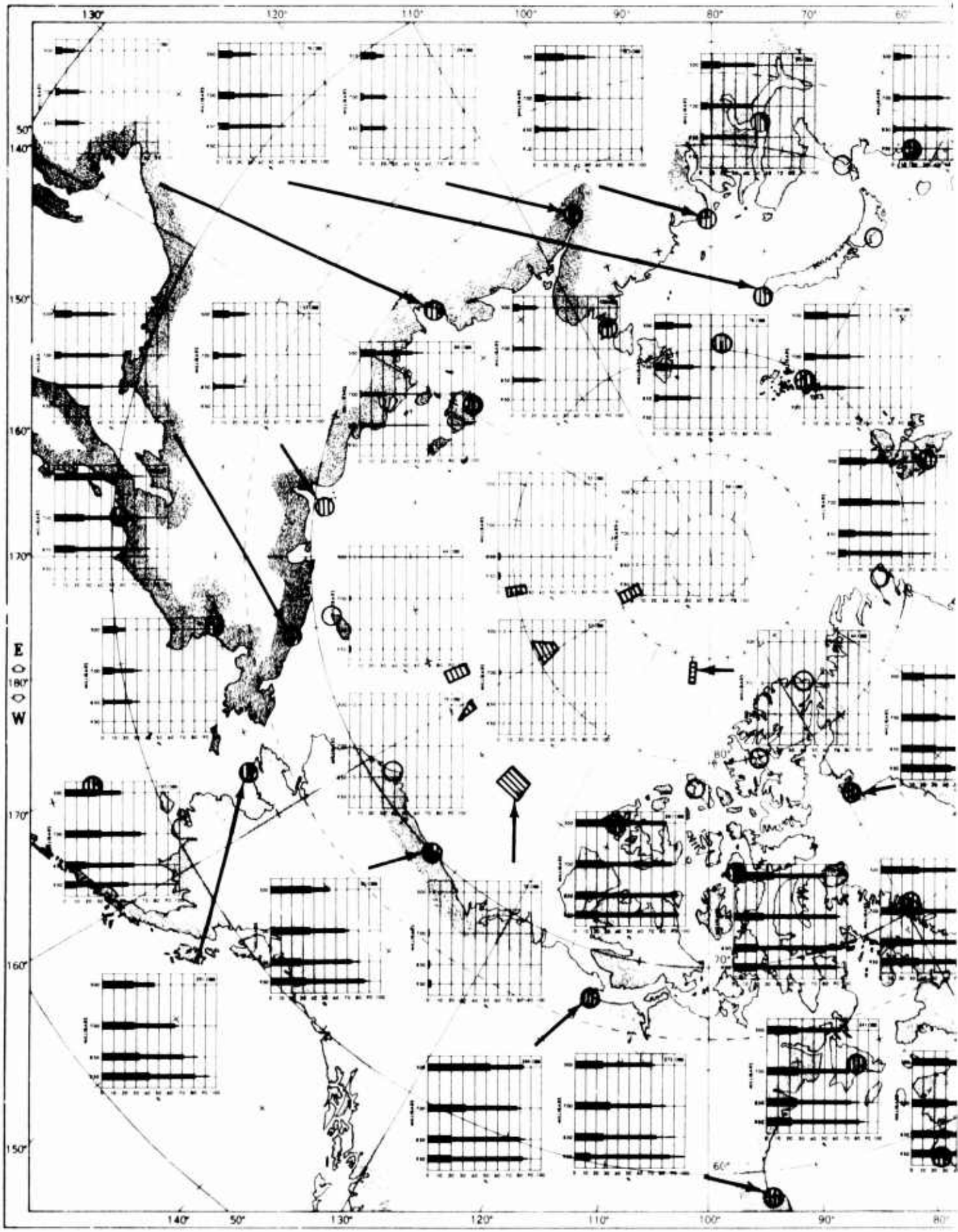
OF TROPOPAUSE

CHART 171



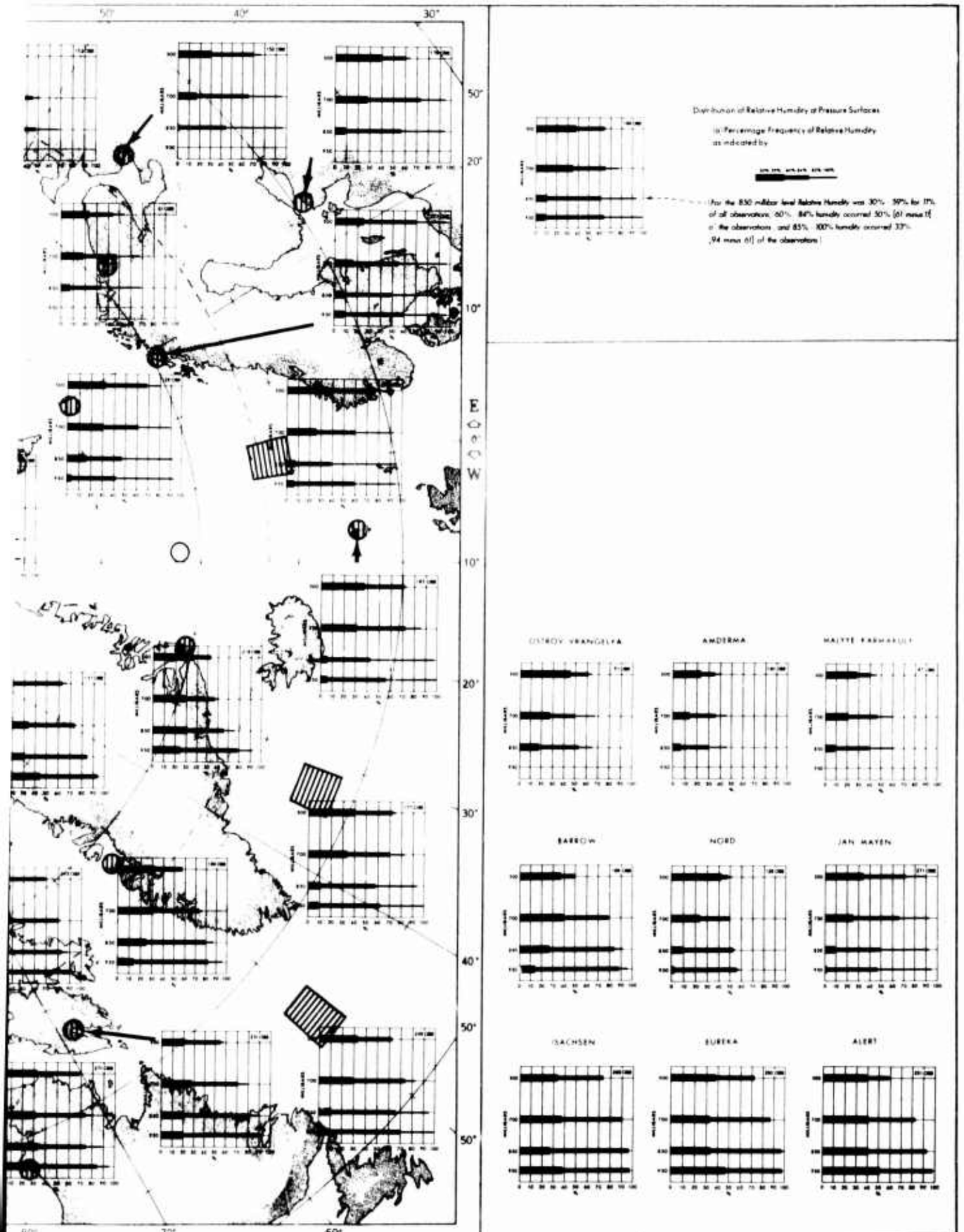
FEBRUARY

RELATIVE H



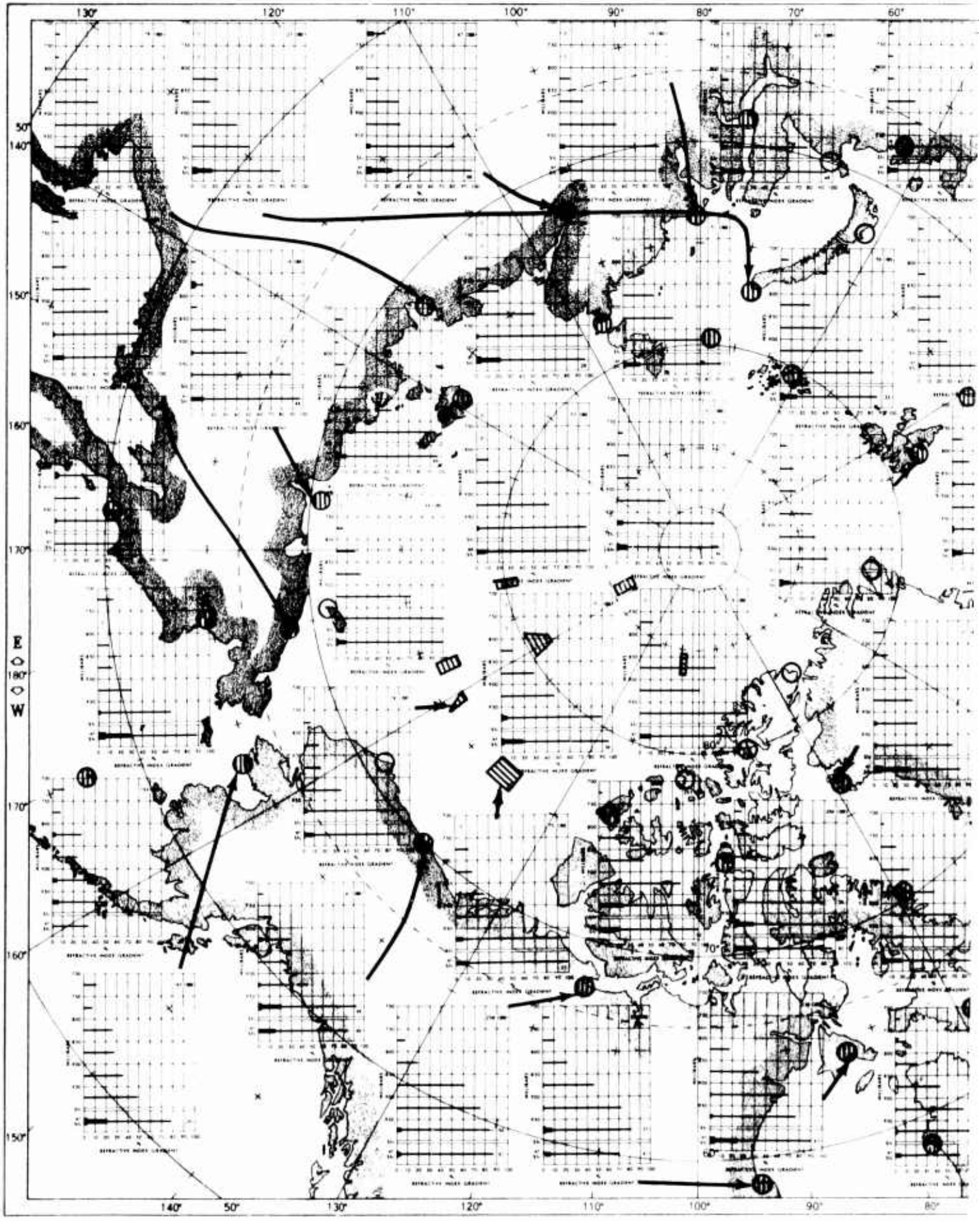
HUMIDITY

CHART 172



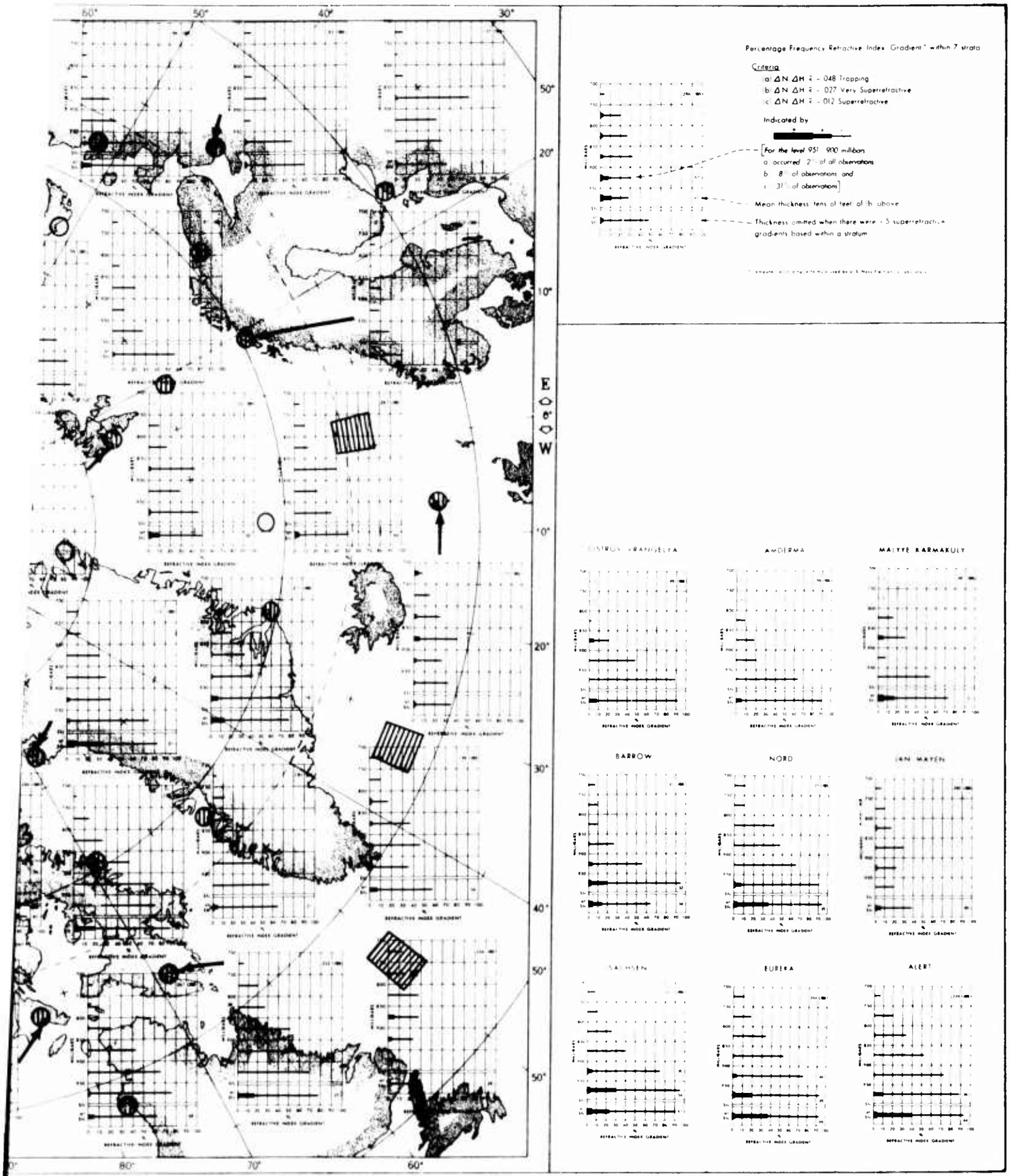
FEBRUARY

REFRACTIVE INDEX



INDEX GRADIENT

CHART 173



Percentage Frequency Refractive Index Gradient within 7 strata

Criteria

(a) $\Delta N / \Delta H \leq -.048$ Trapping

(b) $\Delta N / \Delta H \leq -.027$ Very Superrefractive

(c) $\Delta N / \Delta H \leq -.012$ Superrefractive

Indicated by

[For the level 951 - 900 millibars

a occurred 2% of all observations

b 8% of observations and

c 31% of observations]

Mean thickness tens of feet of lb above

Thickness omitted when there were < 5 superrefractive gradients based within a stratum

OSTROV VRANGELYA

AMDERMA

MALYYE KARMAKULY

BARROW

NORD

JAN MAYEN

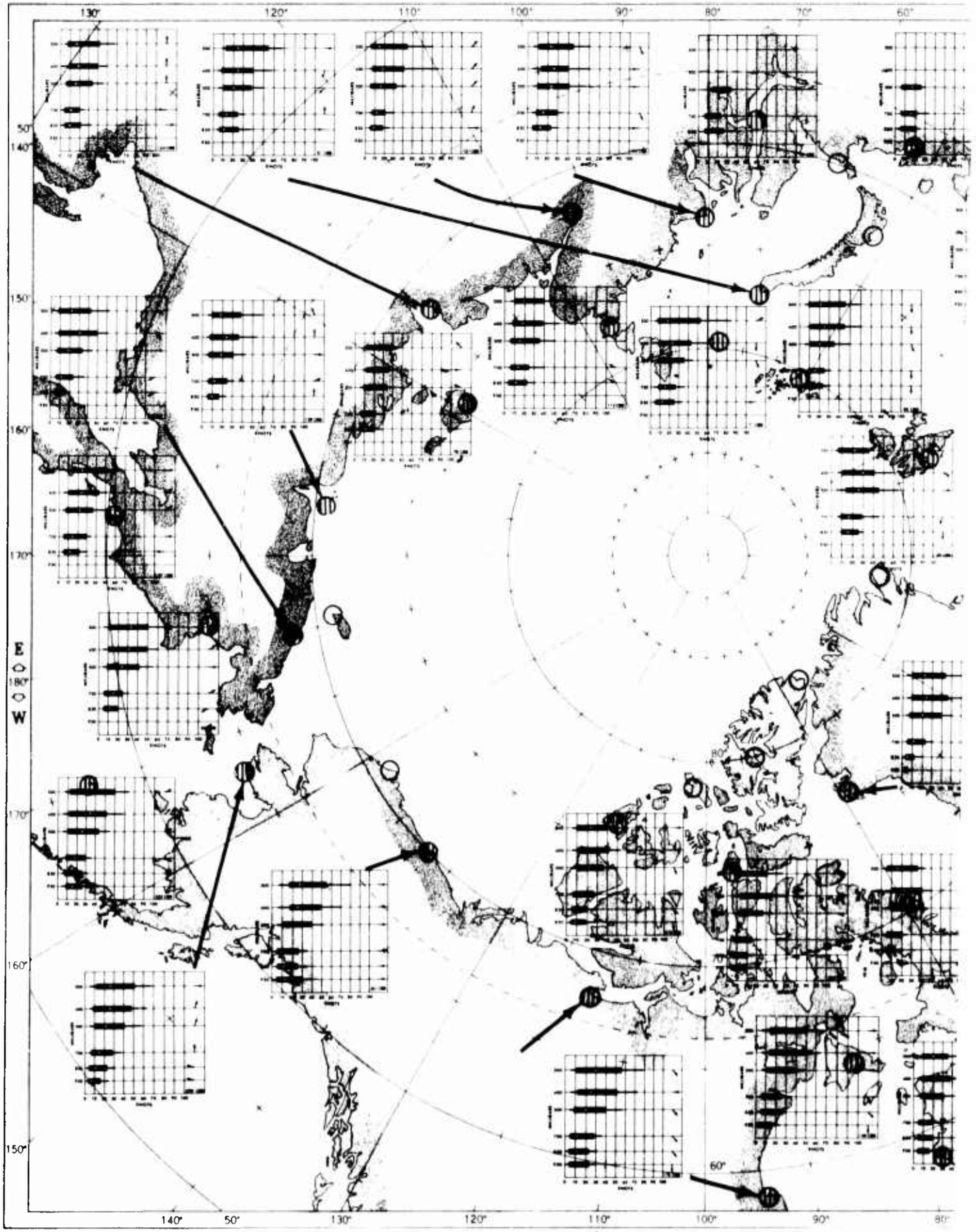
SACHSEN

EUREKA

ALERT

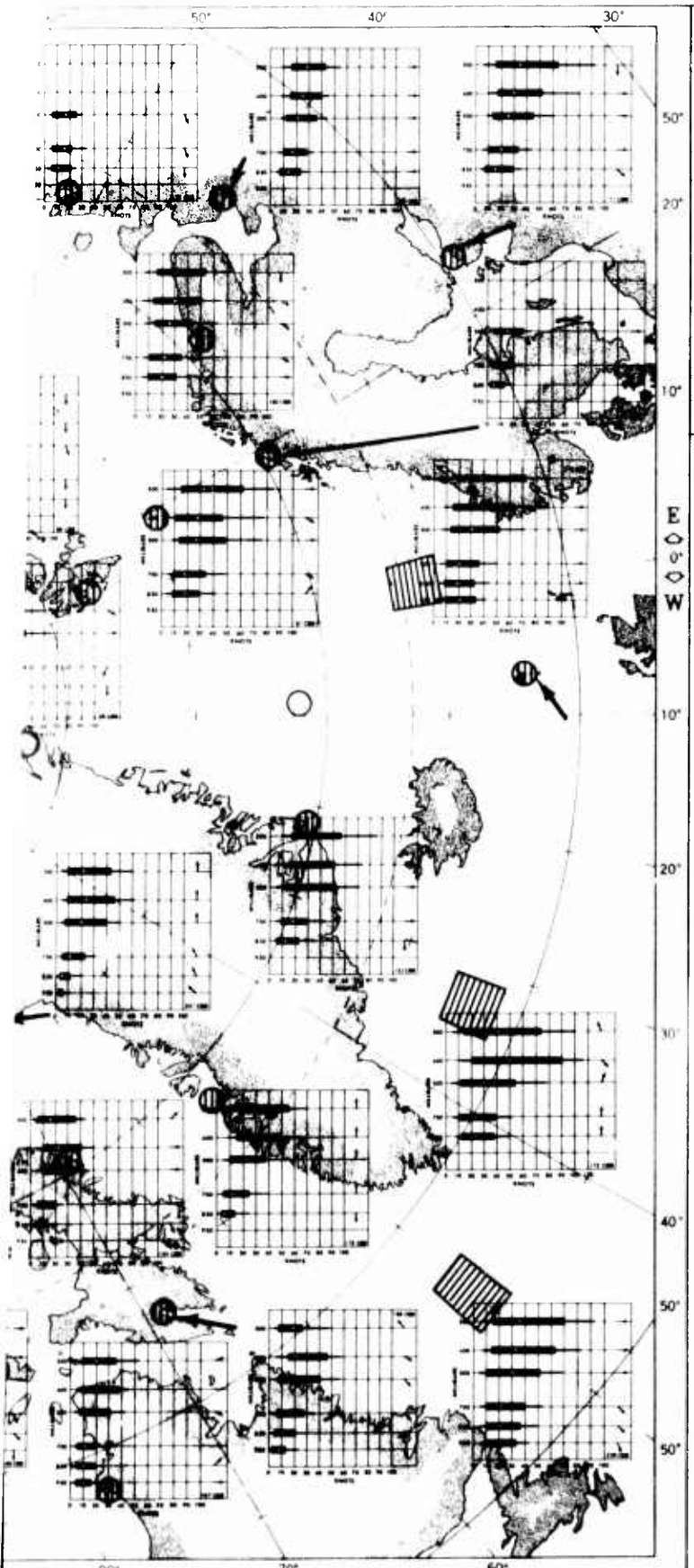
MARCH

WIND (950 TC



0 TO 300 MB)

CHART 174



Prevailing Direction To 16 Points

(Direction indicated for 300 millibar level is from WSW

Distribution of Scalar Wind Speed Knots

(a) Median

(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by

5% 16% MEDIAN 84% 95%

At the 400 millibar level median speed was 20 knots. 5% of speeds were 4 knots or less, 16% were 8 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

OSTROV VRANGELYA

AMDERMA

MALYYE KARMAKULY

BARROW

NOME

JAN MAYEN

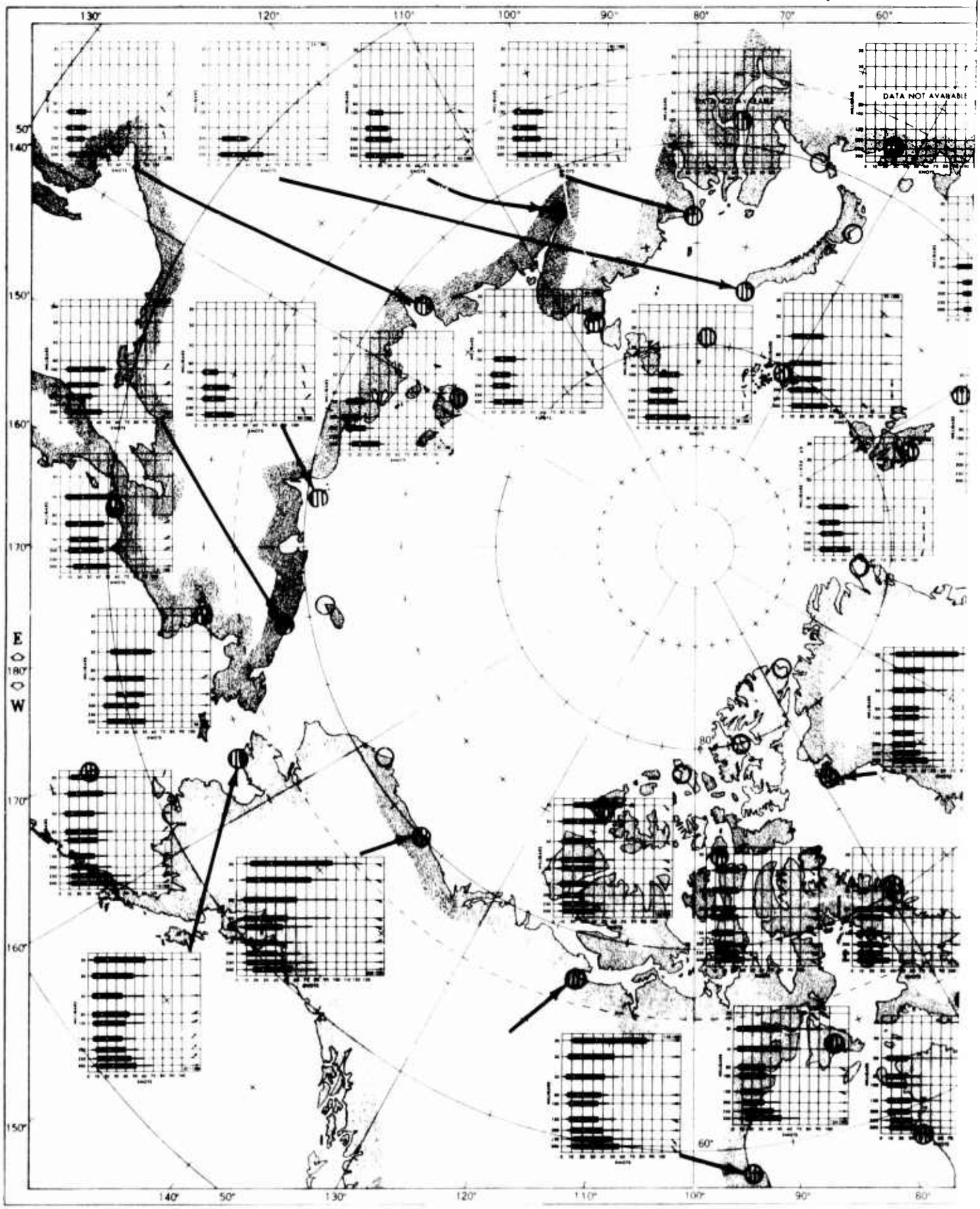
ISACHSEN

EUREKA

ALERT

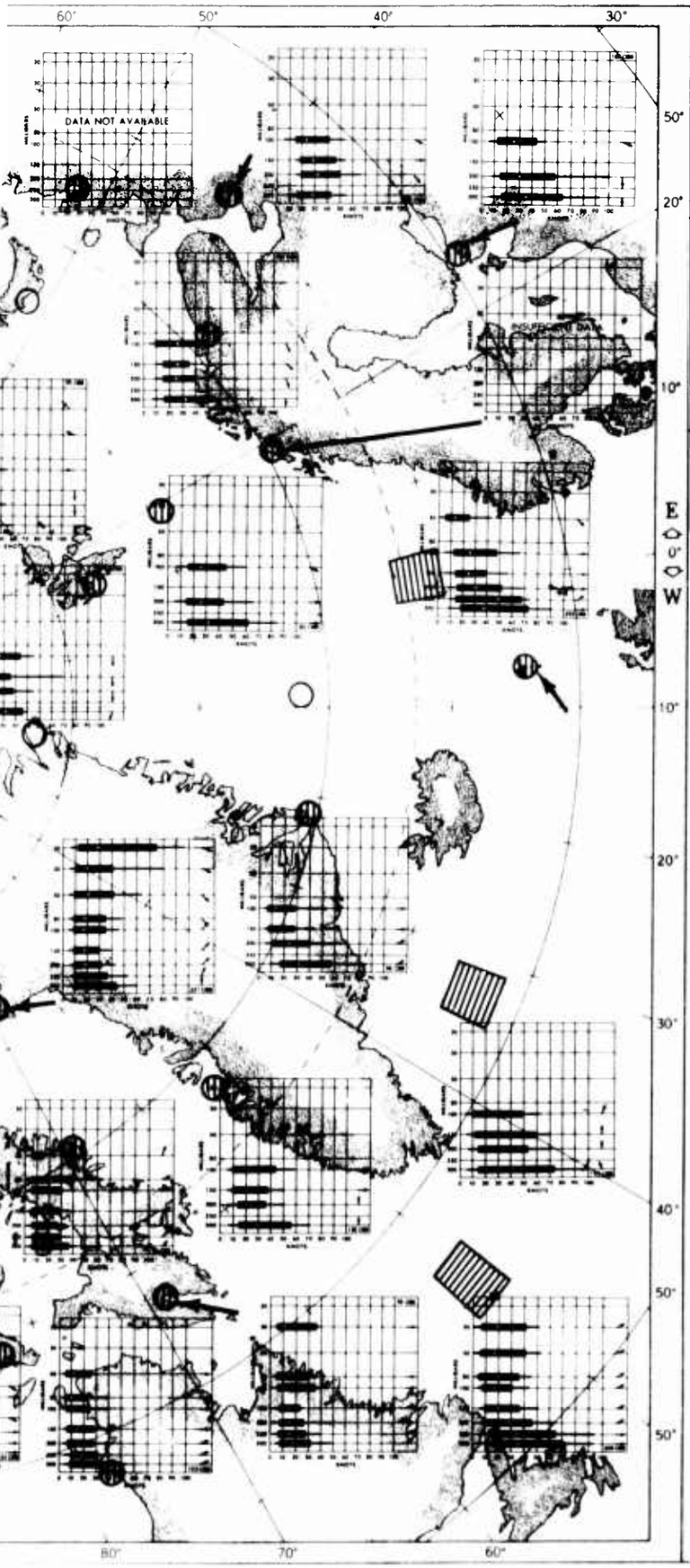
MARCH

WIND (300 TO



300 TO 20 MB)

CHART 175



Prevailing Direction To 16 Points

(Direction indicated for 30 millibar level is from ENE)

Distribution of Scalar Wind Speed Knots

(a) median

(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by

(At the 100 millibar level, median speed was 10 knots. 5% of speeds were 2 knots or less, 16% were 4 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

OSTROV VRANGELYA

AMDERMA

MALYYE KARMAKULY

DATA NOT AVAILABLE

BARROW

NORD

JAN MAYEN

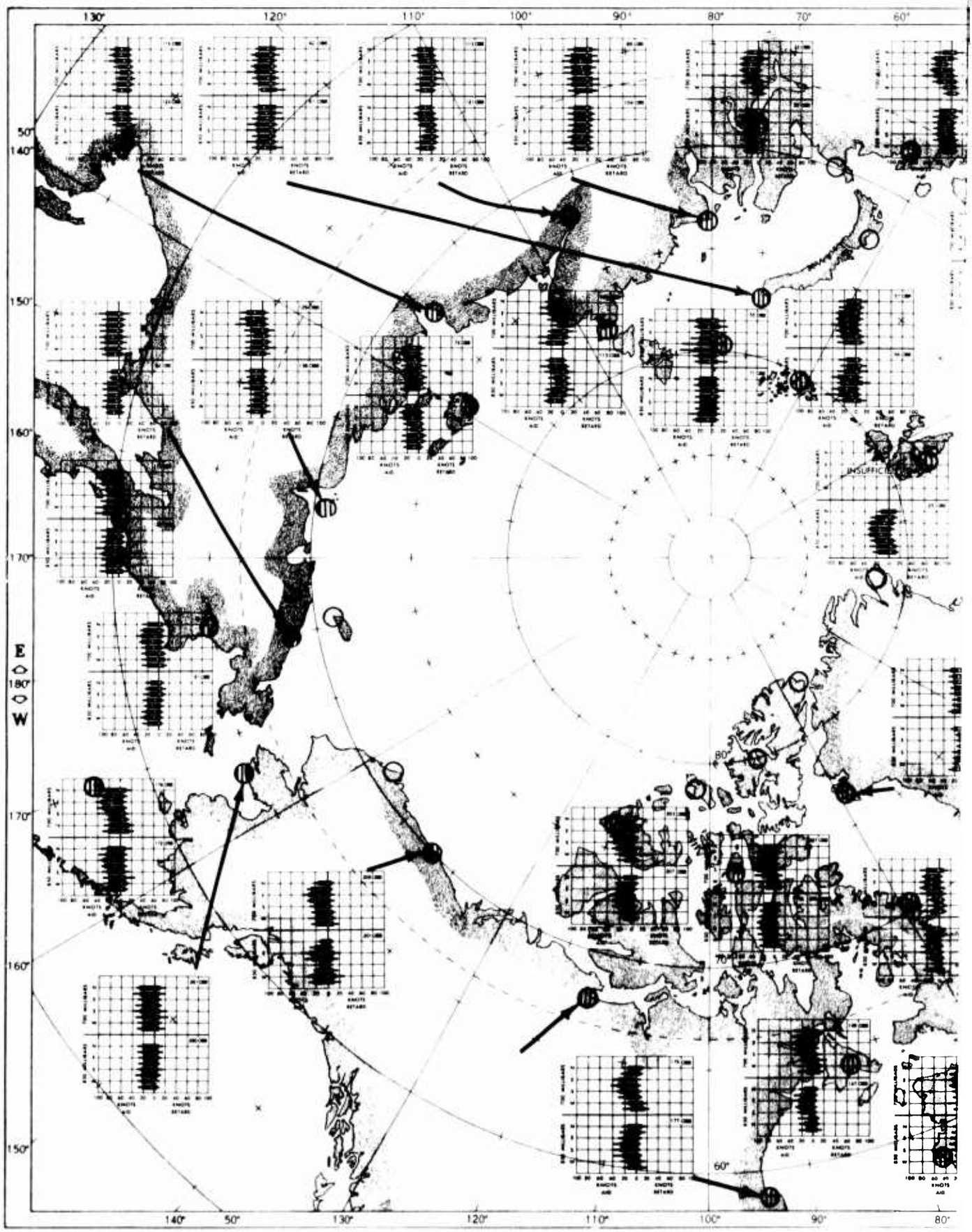
ISACHSEN

EUREKA

ALERT

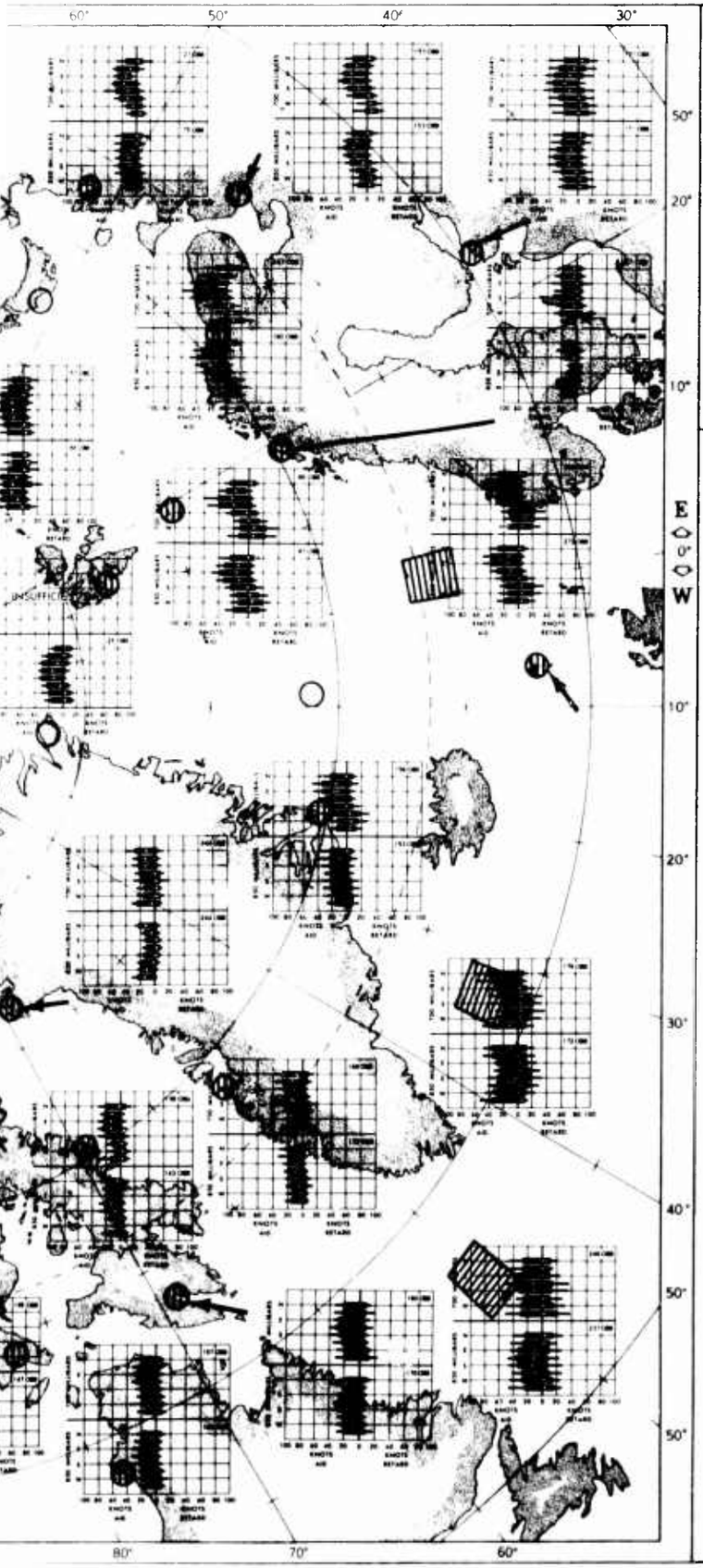
MARCH

WIND AID AND RETAI

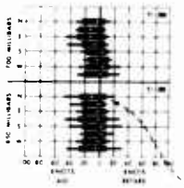


RETARD (850 & 700 MB)

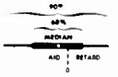
CHART 176



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 300 knots true air speed



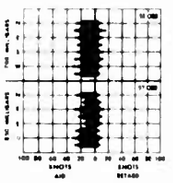
Read median and percentage frequency for direction toward which aircraft is flying thus



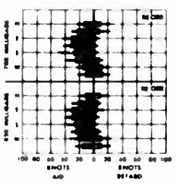
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward north at the 850 millibar level, wind aided or increased ground speed by an average of 12 knots. Wind effect ranged from 28 knots aid to 8 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 20 knots retard in 90% of the observations.)

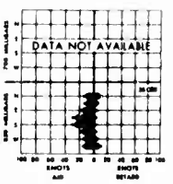
OSTROV VRANGELYA



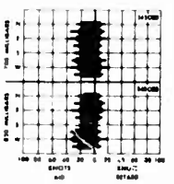
AMDERMA



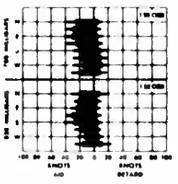
MALYYE KARMAKULY



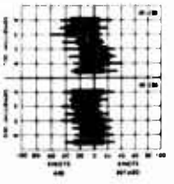
BARROW



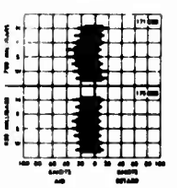
NORD



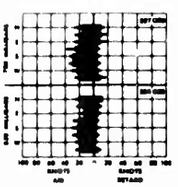
JAN MAYEN



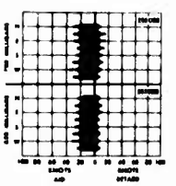
ISACHSEN



EUREKA

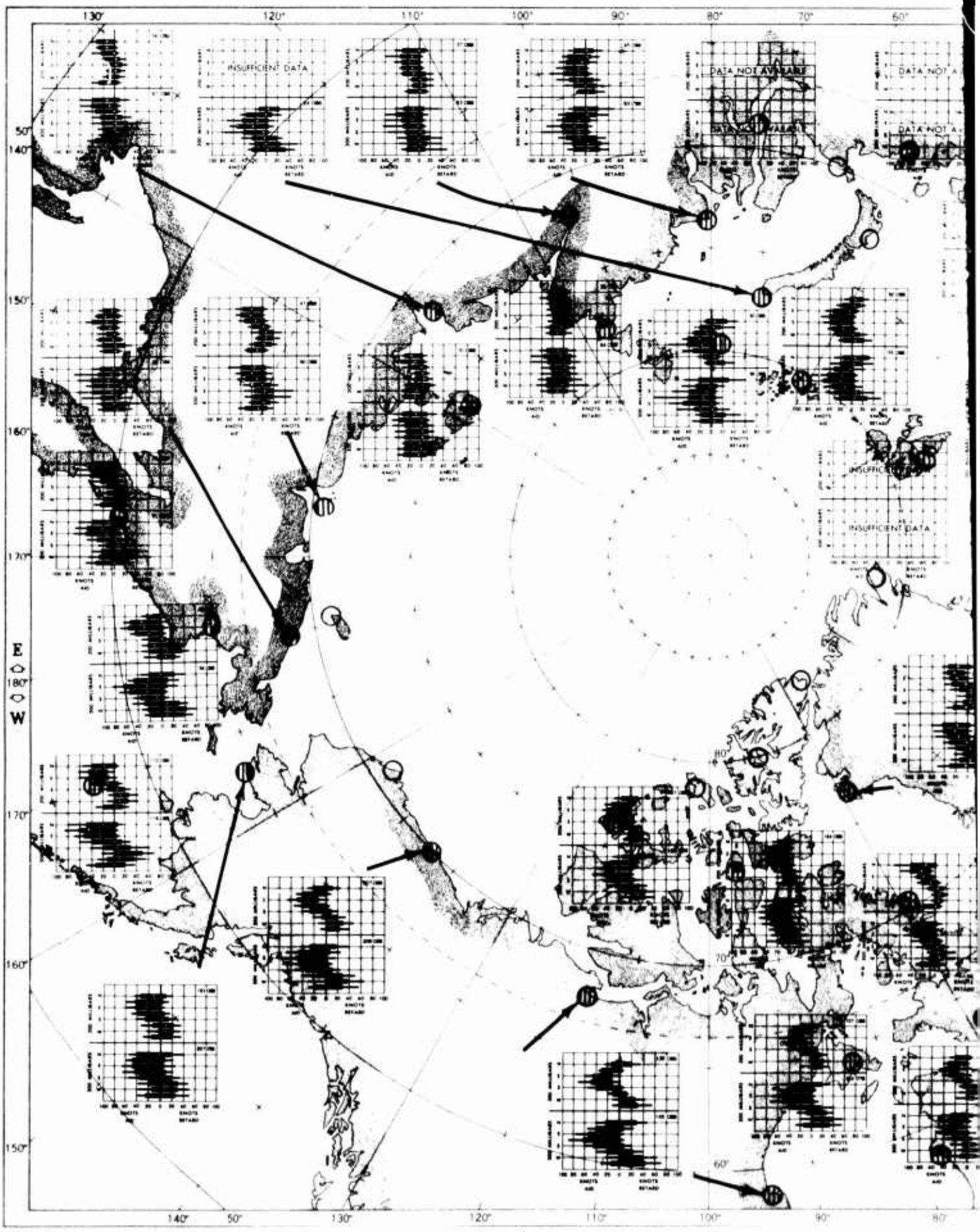


ALERT



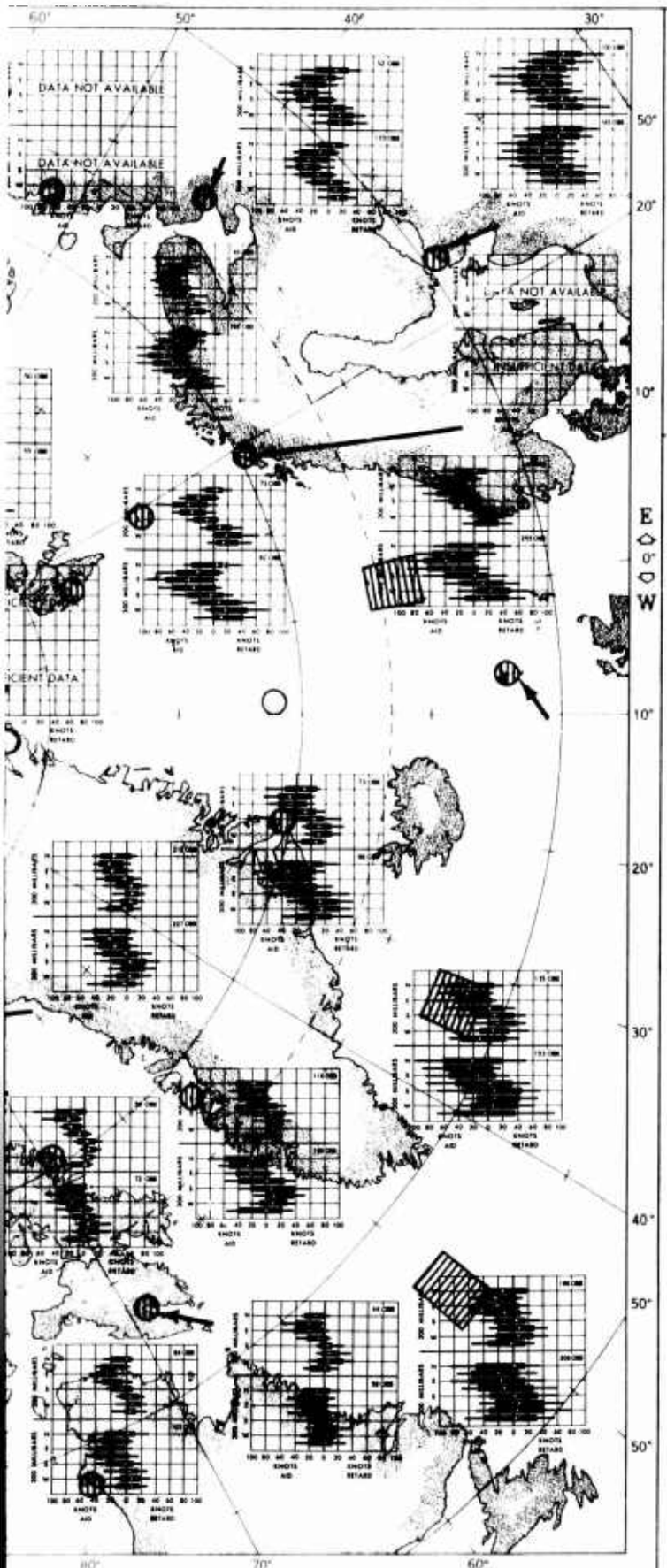
MARCH

WIND AID AND RETA

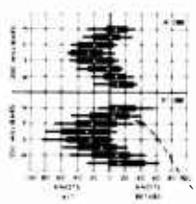


ETARD (300 & 200 MB)

CHART 177



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed at an aircraft moving at 600 knots true air speed



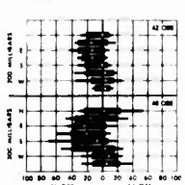
Read median and percentage frequency for direction toward which aircraft is flying thus



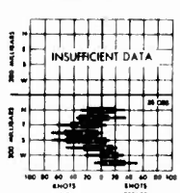
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward northeast at the 300 millibar level wind retarded or decreased ground speed by an average of 4 knots. Winds effect ranged from 26 knots aid to 25 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 40 knots retard in 90% of the observations.)

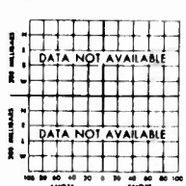
OSTROV VRANGELYA



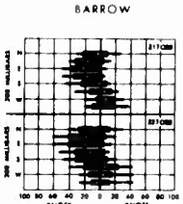
AMDERMA



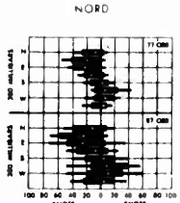
MALYYE KARMAKULY



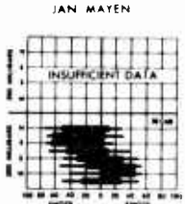
BARROW



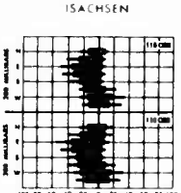
NORD



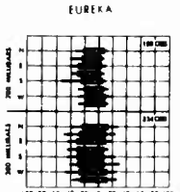
JAN MAYEN



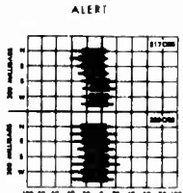
ISACHSEN



EUREKA

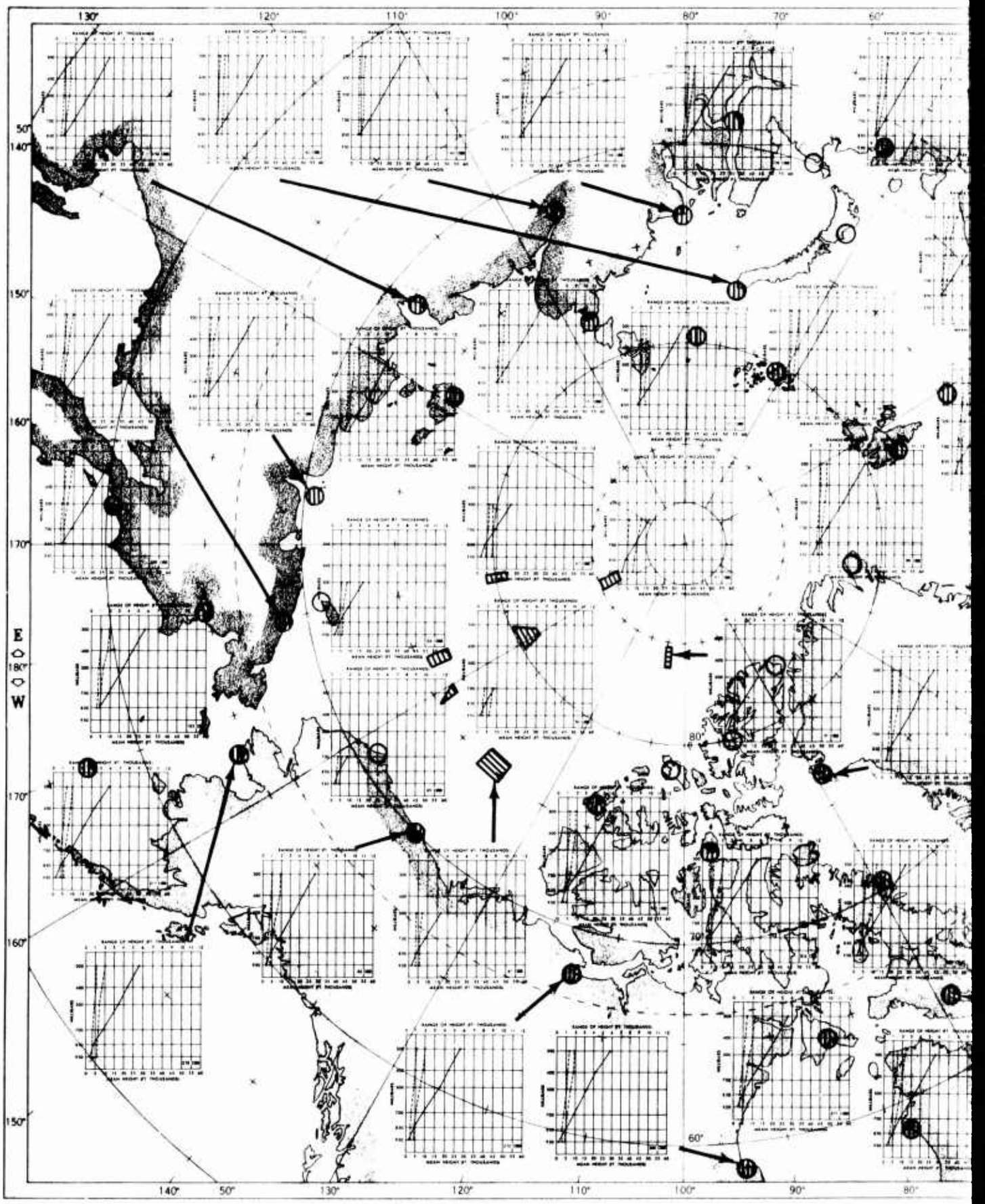


ALERT



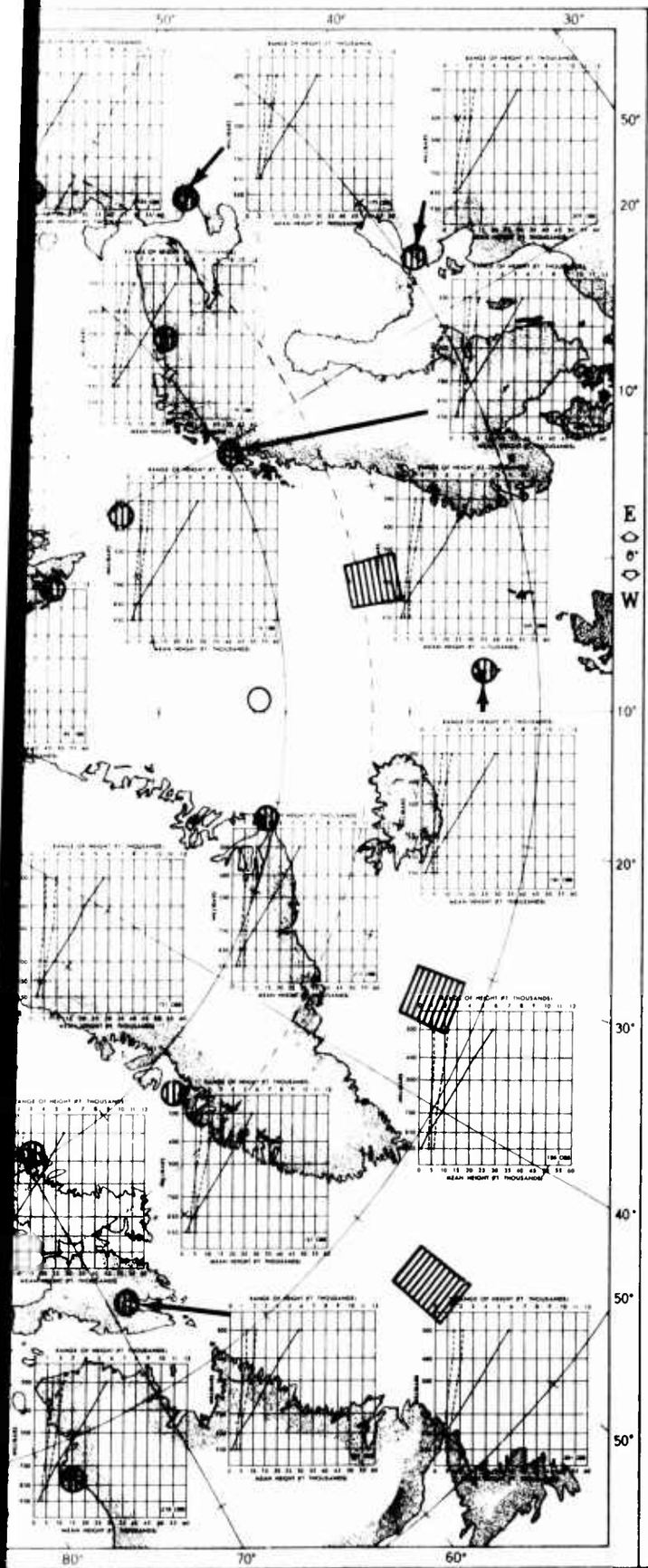
MARCH

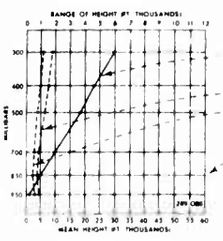
HEIGHT (950 TO



D TO 300 MB)

CHART 178





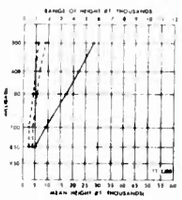
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
- (1) 5% 95% Range
- (2) 16% 84% Range

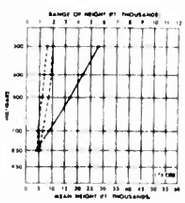
(For the 850 millibar level the mean Height = 5,000 feet, the 5% 95% Height range = 800 feet and the 16% 84% range = 450 feet.)

Mean and ranges of height are omitted when data for a level are missing or insufficient

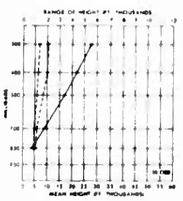
OSTROV VRANGELYA



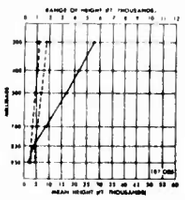
AMDERMA



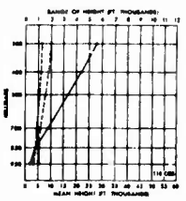
MALYYE KARMAKULY



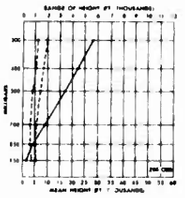
BARROW



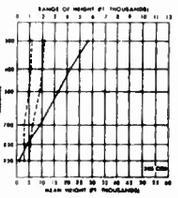
NORD



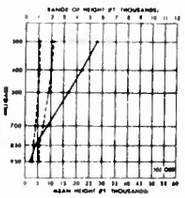
JAN MAYEN



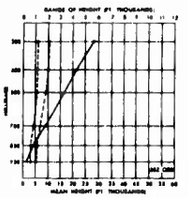
ISACHSEN



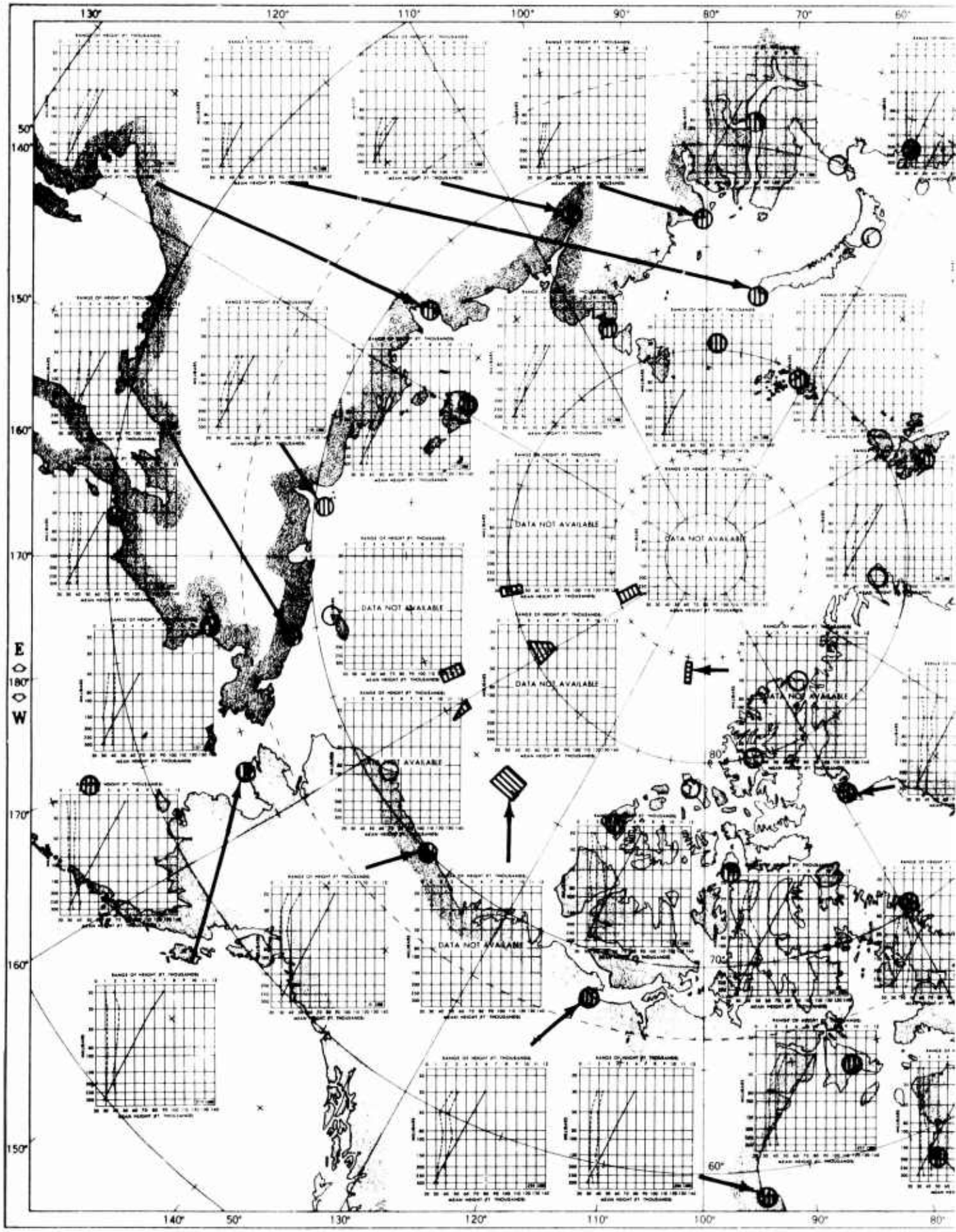
EUREKA



ALERT

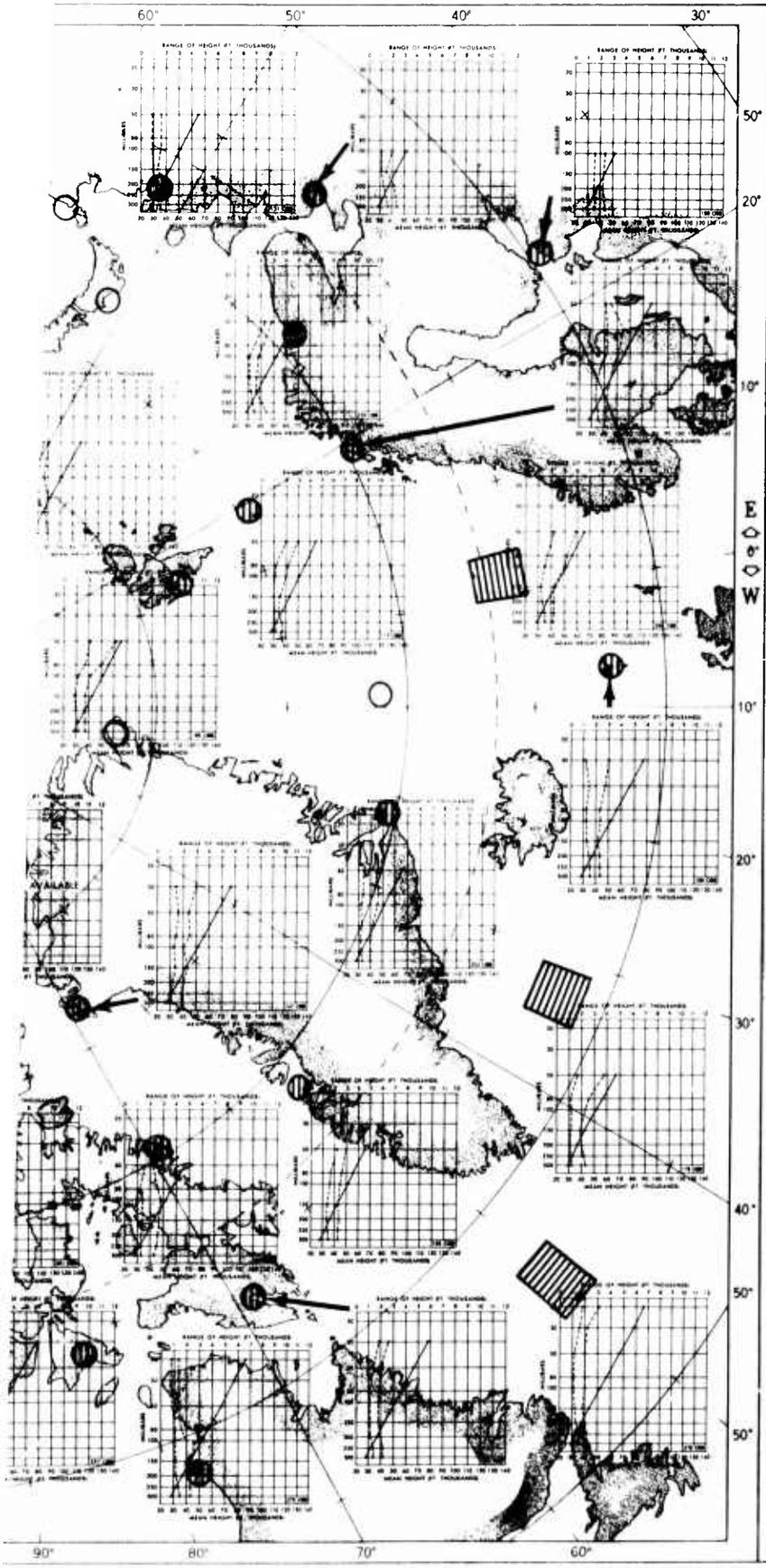


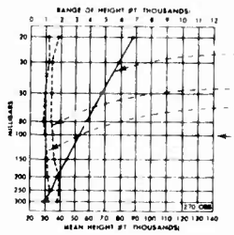
MARCH HEIGHT (300



T (300 TO 20 MB)

CHART 179





Distribution of Height of Pressure Surfaces

(a) Mean Height

(b) Range of Height

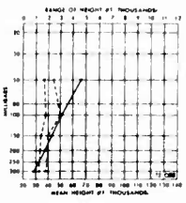
(1) 5% - 95% Range

(2) 16% - 84% Range

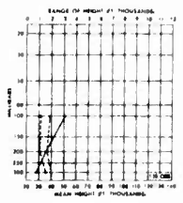
(For the 100 millibar level the mean Height = 53,000 feet, the 5% - 95% Height range = 1,500 feet, and the 16% - 84% range = 1,000 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

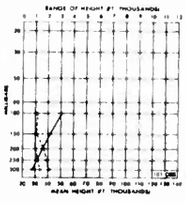
OSTROV VRANGELYA



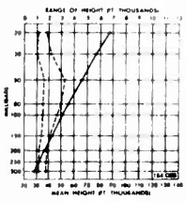
AMDERMA



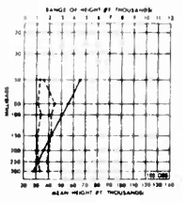
MALYYE KARMAKULY



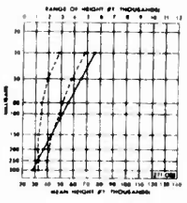
BARROW



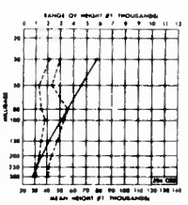
NORD



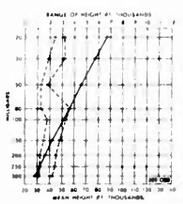
JAN MAYEN



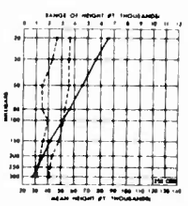
ISACHSEN



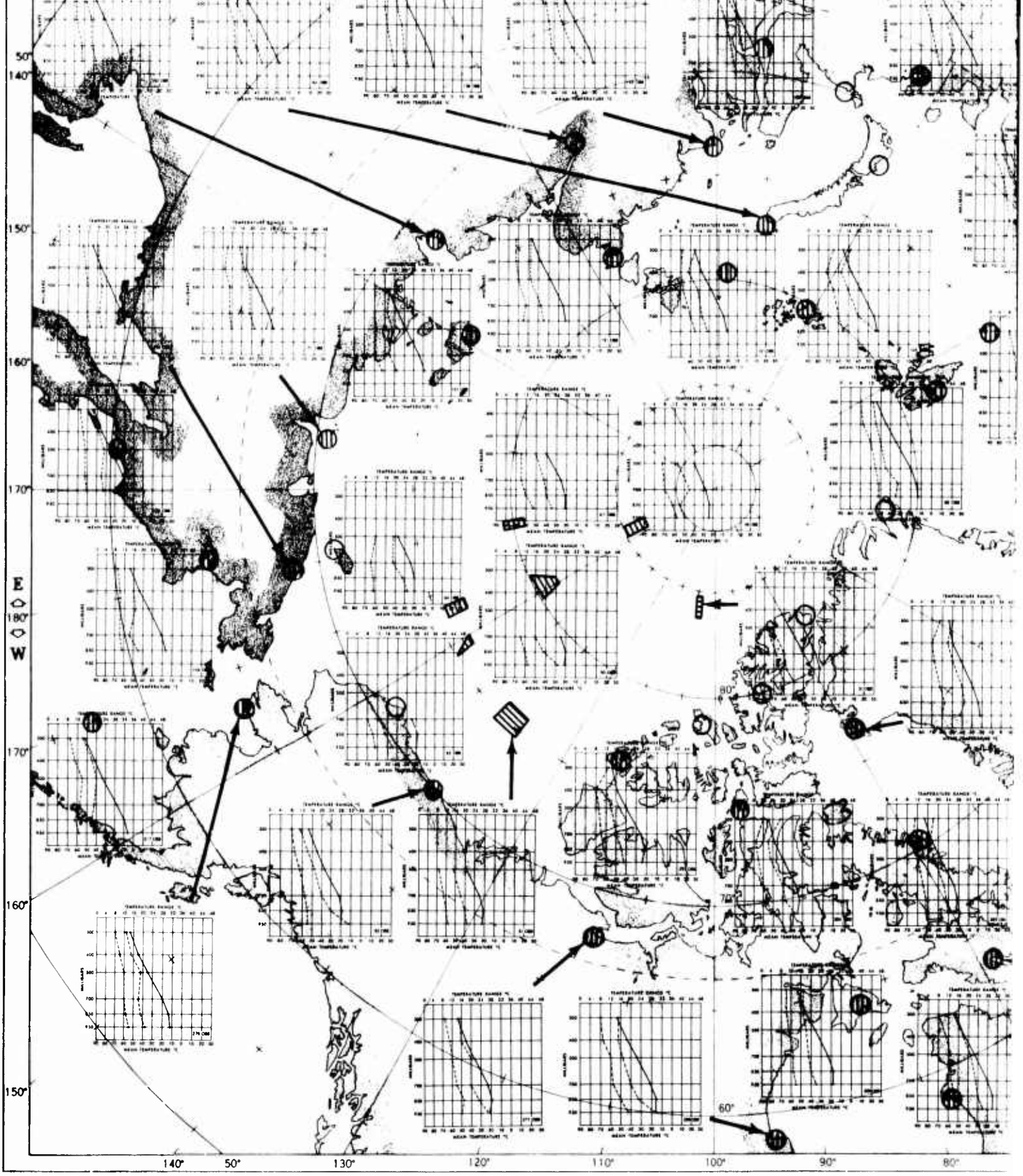
EUREKA



ALERT

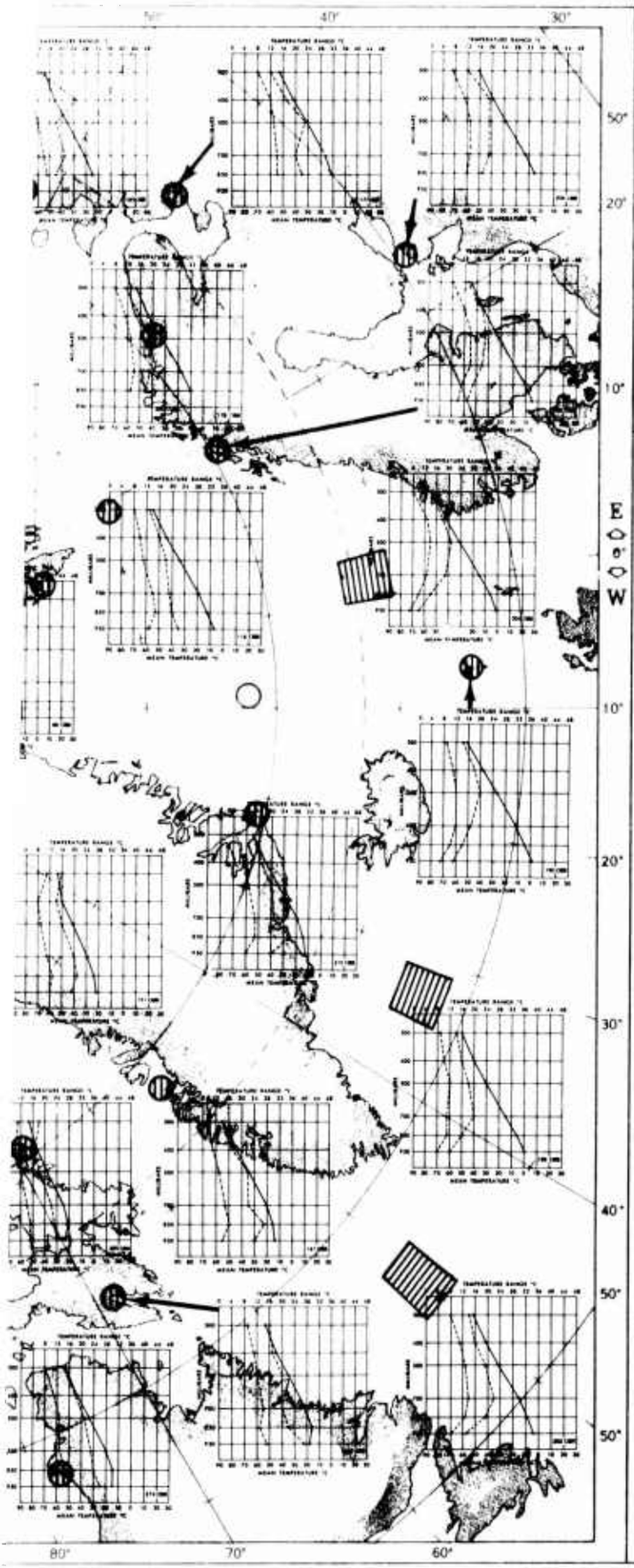


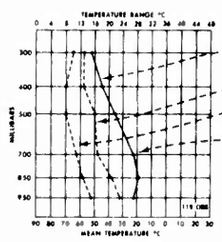
MARCH TEMPERATURE (950



950 TO 300 MB)

CHART 180





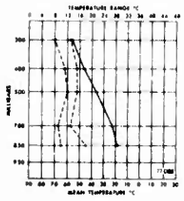
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% - 95% Range
(2) 16% - 84% Range

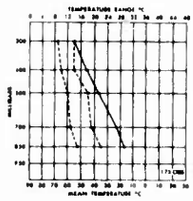
(For the 700 millibar level the mean temperature is -22°C, the 5% - 95 % range is 17°C, and the 16% - 84% range is 11°C)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

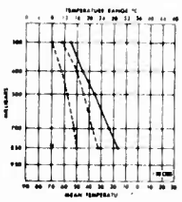
OSTROV VRANGELYA



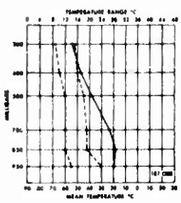
AMDERMA



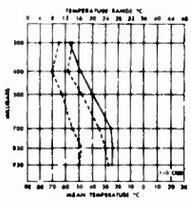
MALYYE KARMAKULY



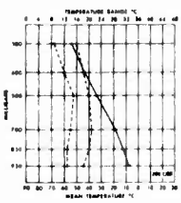
BARROW



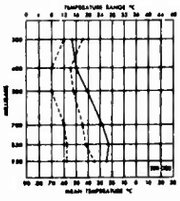
NORD



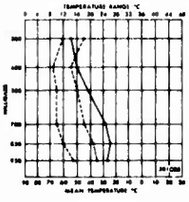
JAN MAYEN



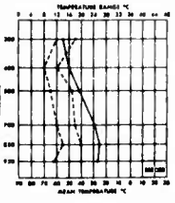
ISACHSEN



EUREKA

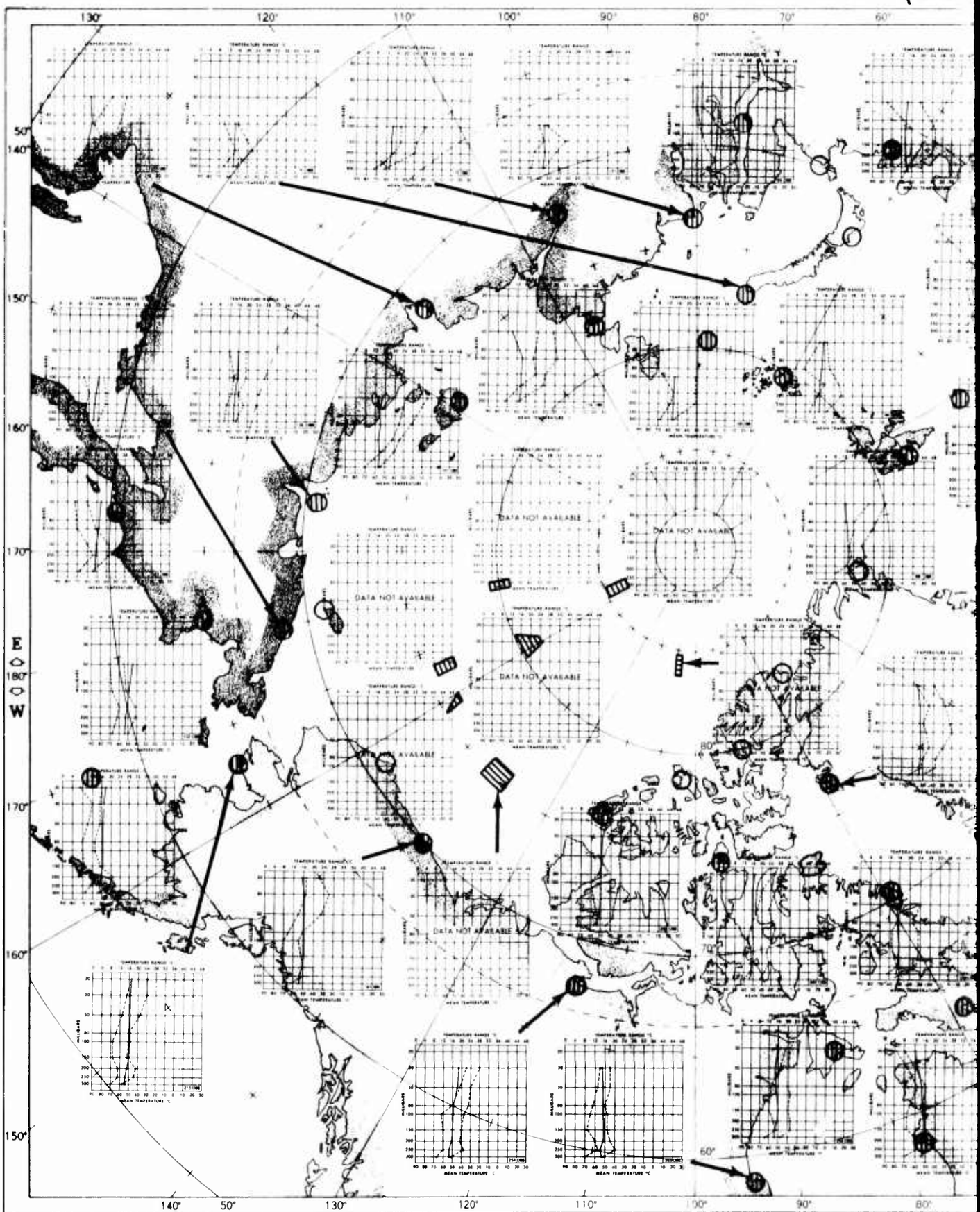


ALERT



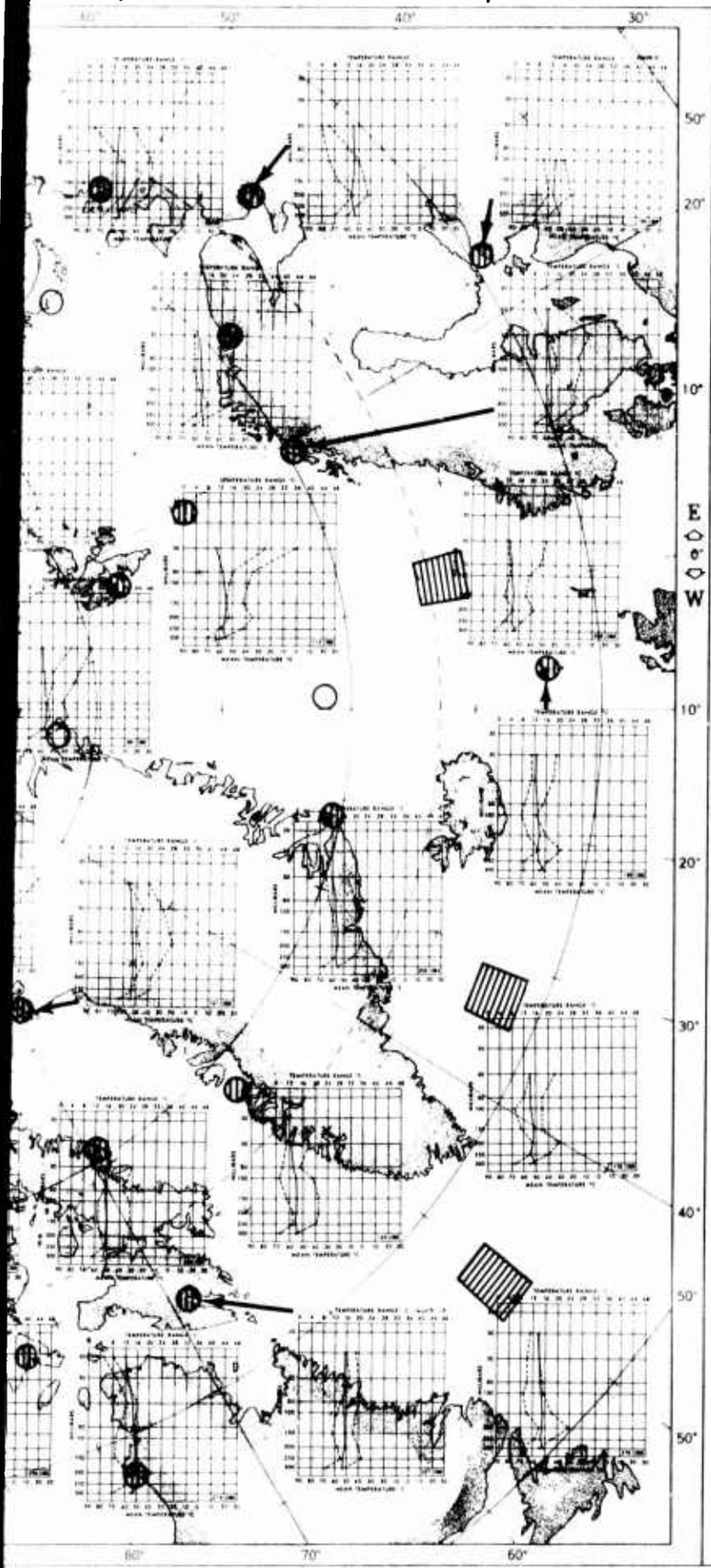
MARCH

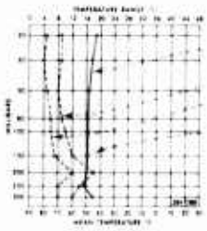
TEMPERATURE (300



RE (300 TO 20 MB)

CHART 181



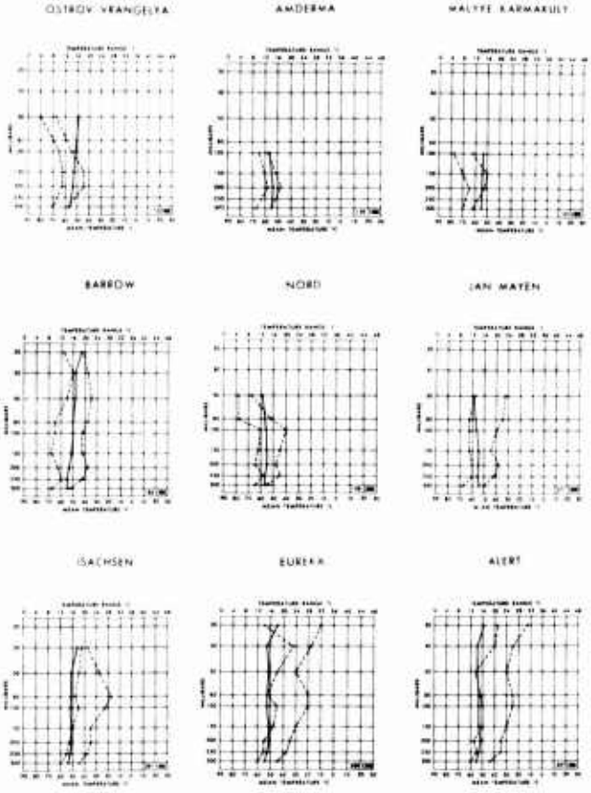


Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% - 95% Range
(2) 16% - 84% Range

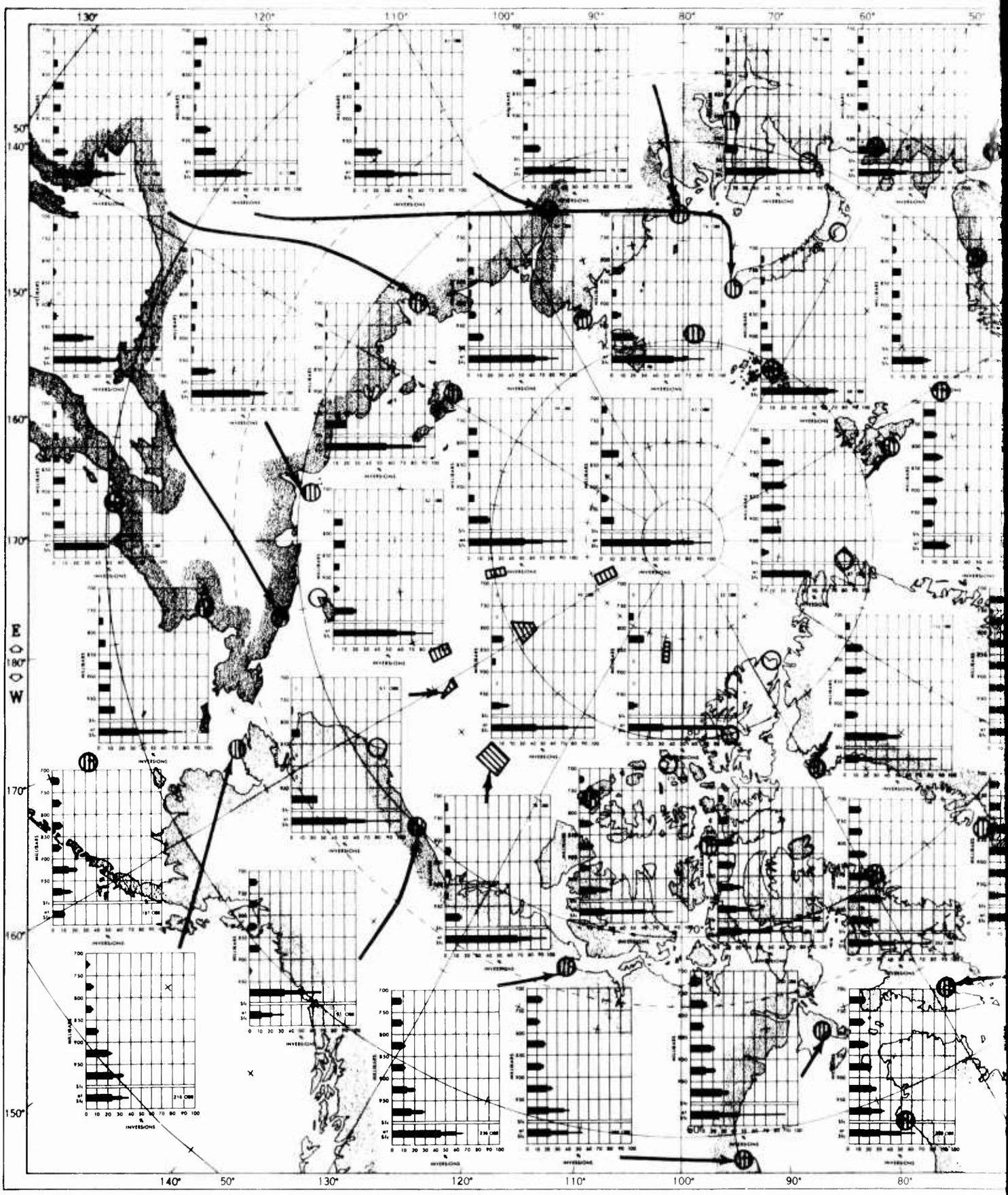
For the 150 millibar level the mean temperature is 49°C
the 5% - 95% range is 12°C and the 16% - 84% range is 7°C

Mean and ranges of temperature are omitted when data for a level are missing or insufficient



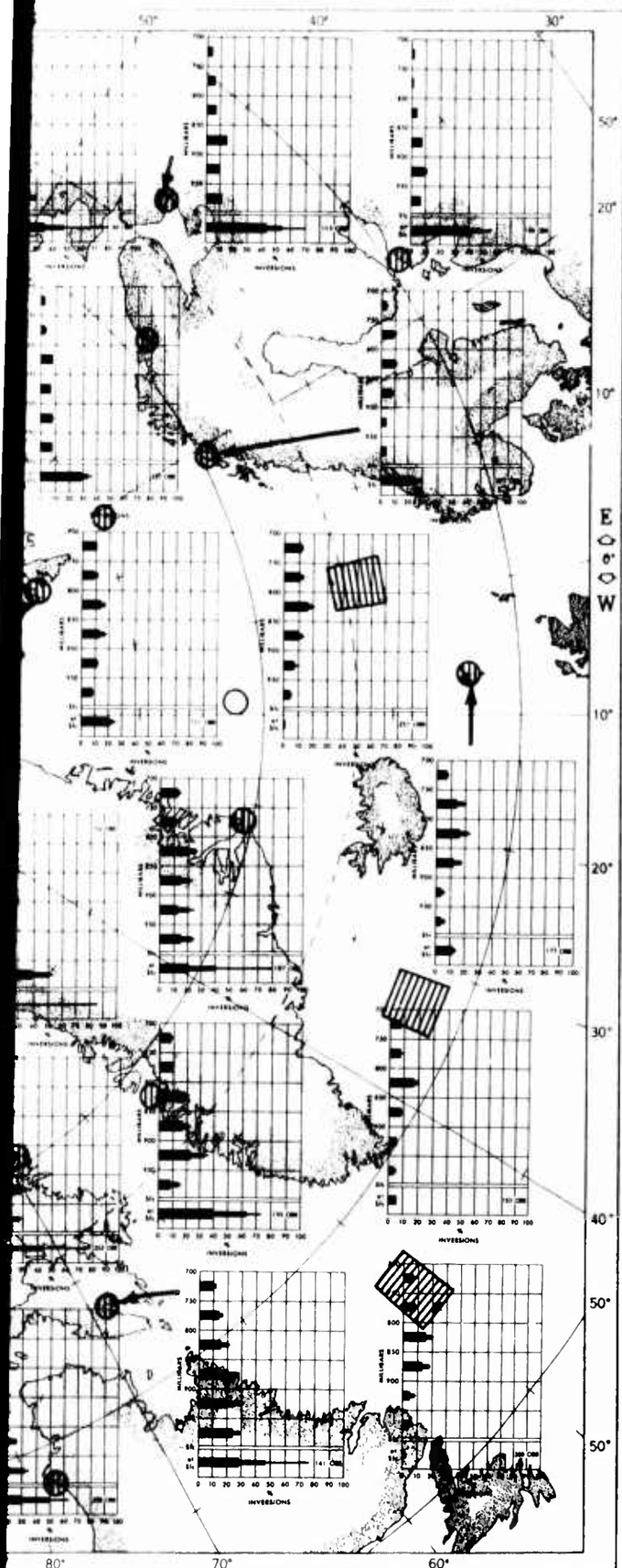
MARCH

INVERSION



SIONS

CHART 182



Percentage Frequencies of three intensities of Temperature Inversions within each of seven layers from the surface to 700 millibars

General Criteria

(a) Temperature Inversion constant or increasing temperature with increasing height that persisted at least 5 millibars (approximately 50 meters)

(b) Layers Inversions were assigned to 7 arbitrary layers according to the pressure at their bases

750 to 701 millibars
800 to 751 millibars
850 to 801 millibars
900 to 851 millibars
950 to 901 millibars
5 millibars above the surface to 951 millibars
At the surface to 49 millibars above the surface

(c) Intensity change in temperature per 100 meters increase in height of

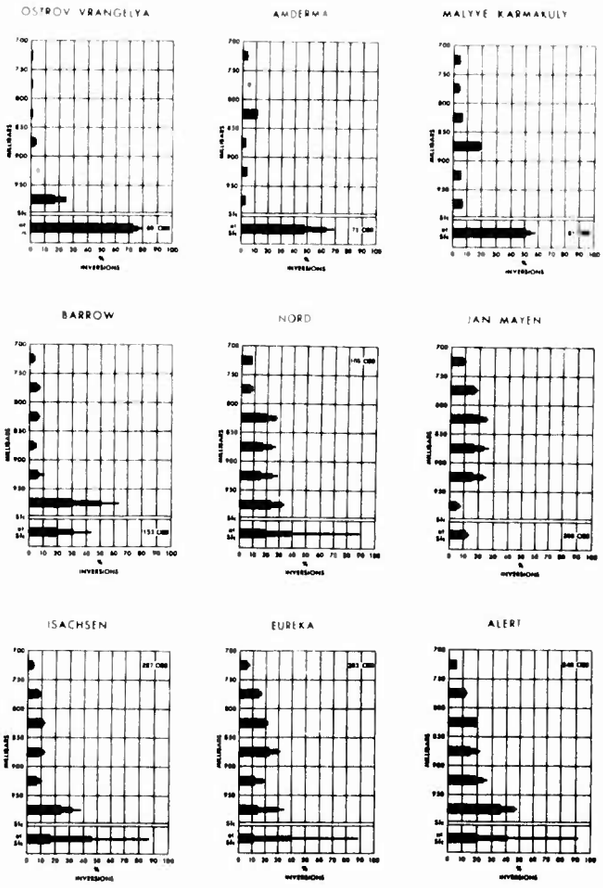
0°C TO +0.9°C | +1.0°C TO +1.9°C | +2.0°C OR MORE

When more than one inversion was recorded within a layer the one with the greatest intensity was counted

0 No occurrence

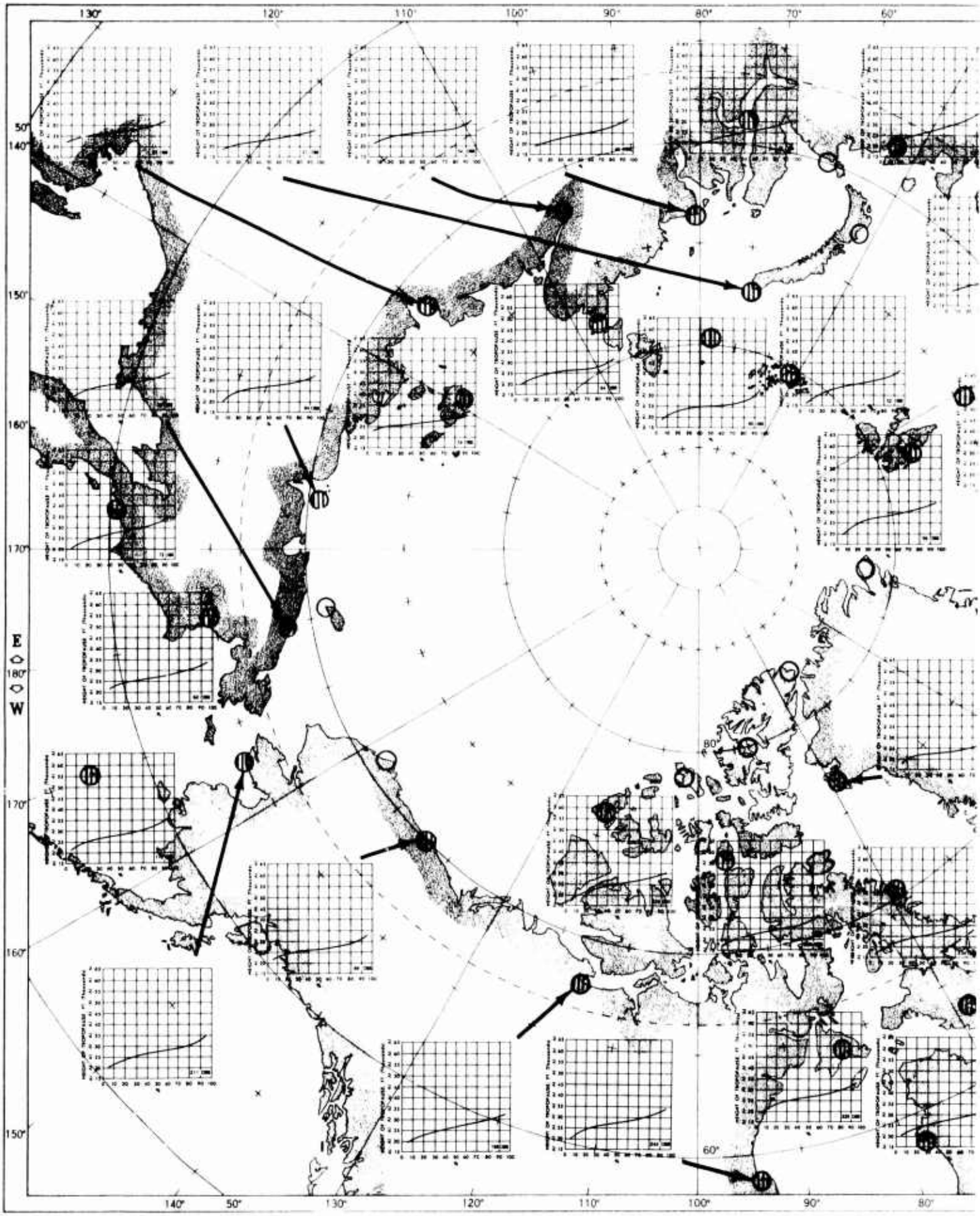
Blank No data

(28% (80.52) of all radiosonde ascents recorded temperature inversions of +1.0°C to +1.9°C per 100 meters with bases in the layer from the surface to 49 millibars above)



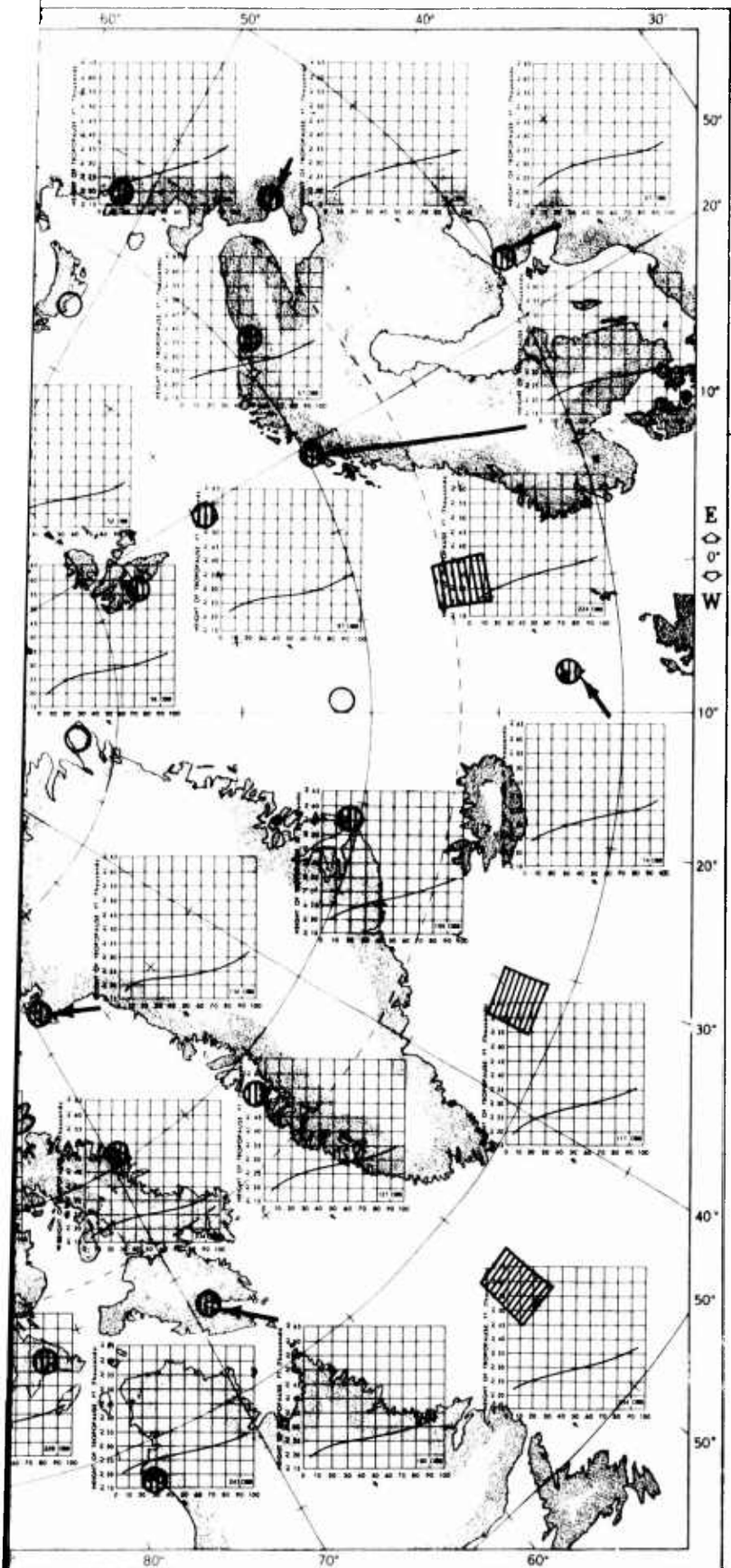
MARCH

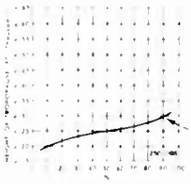
HEIGHT OF TRO



OF TROPOPAUSE

CHART 183

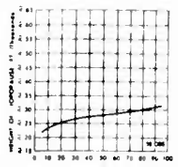




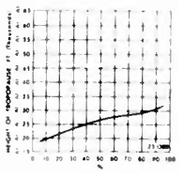
Percentage Frequency of Heights of the Tropopause equal to or less than the height intersected by the curve

(90% of *all heights of the tropopause were thirty thousand feet* or less)

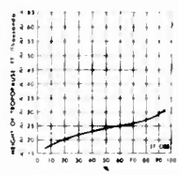
OSTROV VRANGELYA



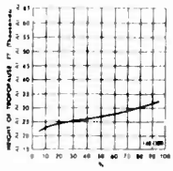
AMDERMA



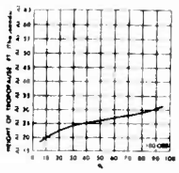
MALYYE KARMAKULY



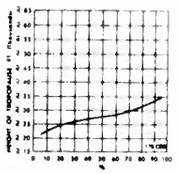
BARROW



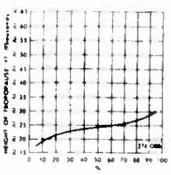
NORD



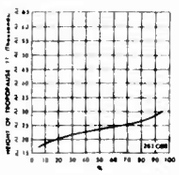
JAN MAYEN



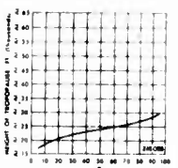
ISACHSEN



EUREKA

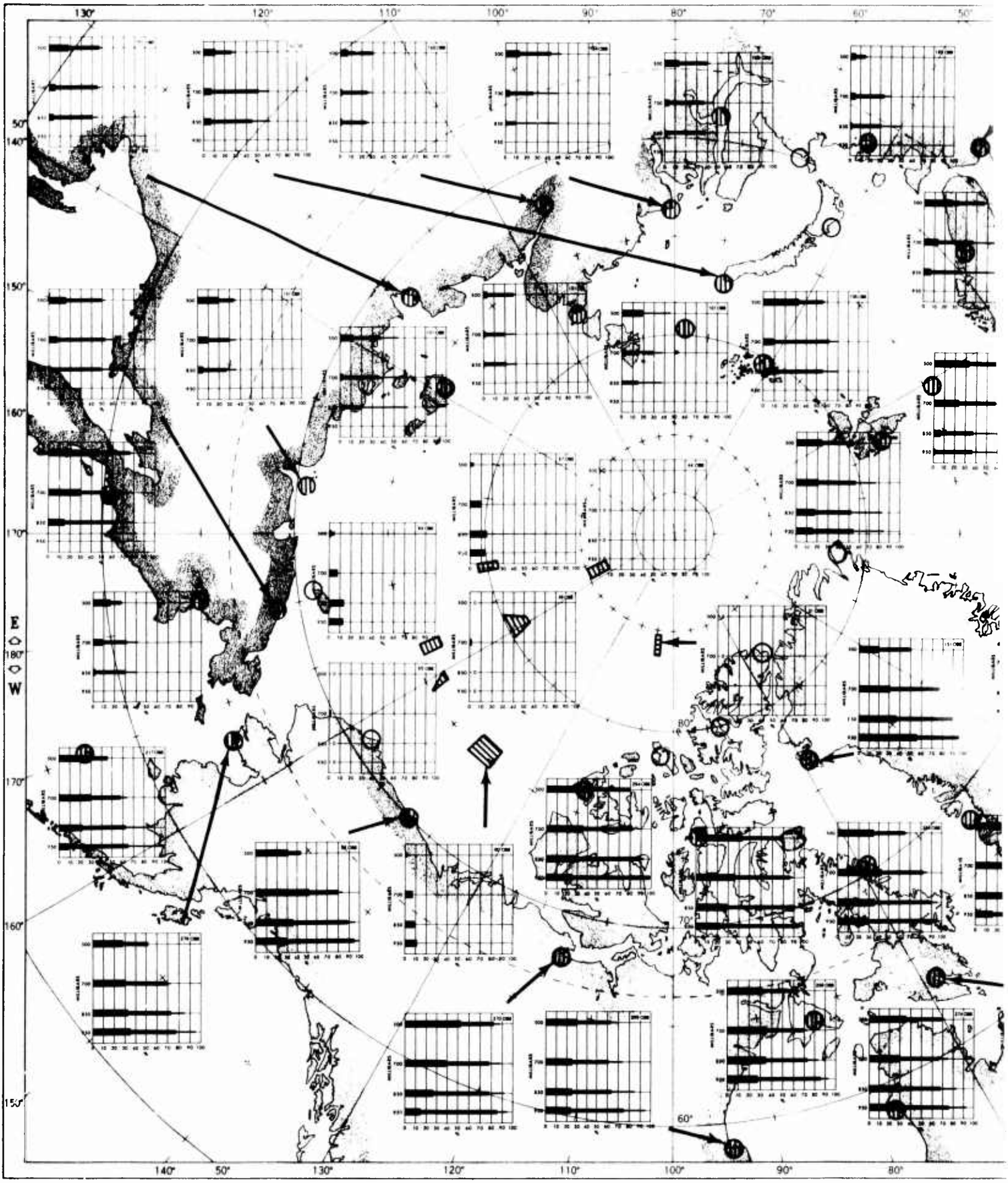


ALERT



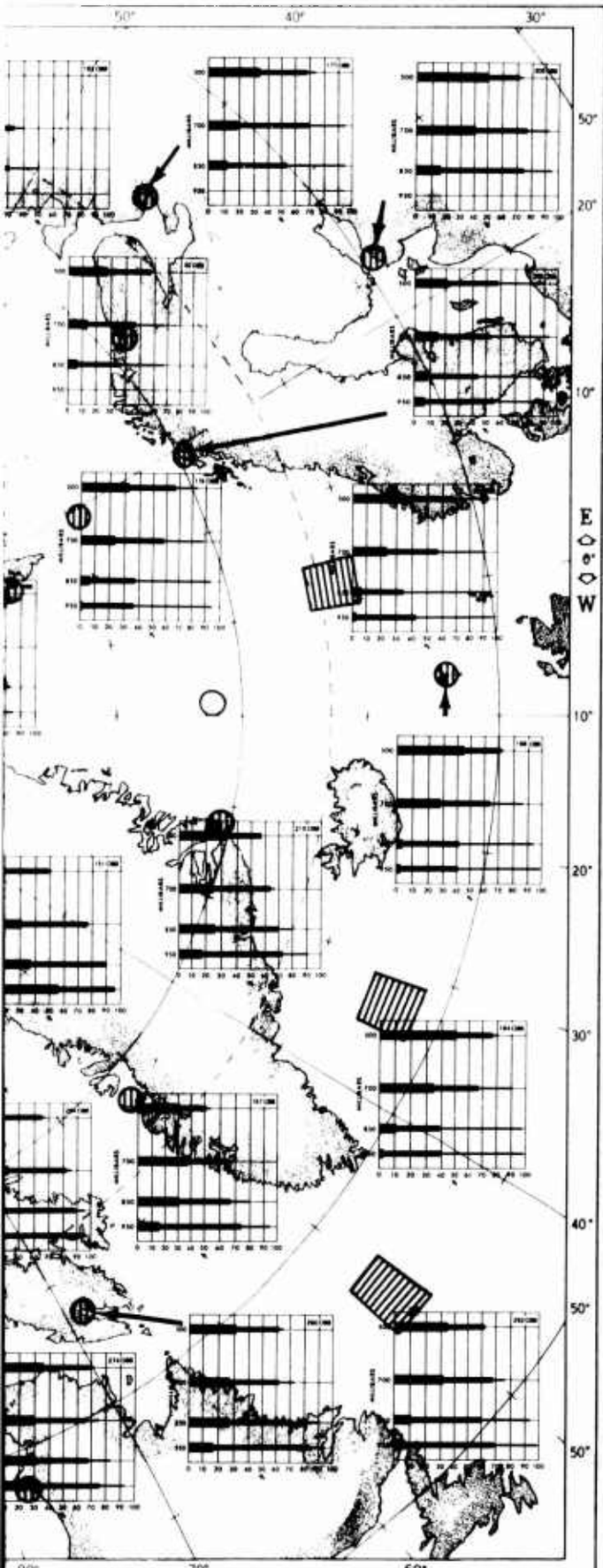
MARCH

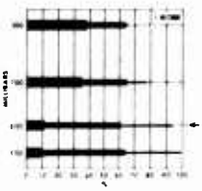
RELATIVE HUMI



HUMIDITY

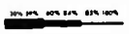
CHART 184





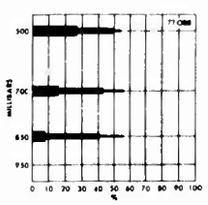
Distribution of Relative Humidity at Pressure Surfaces

(a) Percentage Frequency of Relative Humidity as indicated by

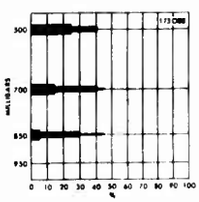


(For the 850 millibar level Relative Humidity was 30% - 59% for 17% of all observations, 60% - 84% humidity occurred 50% (61 minus 11) of the observations, and 85% - 100% humidity occurred 33% (94 minus 61) of the observations.)

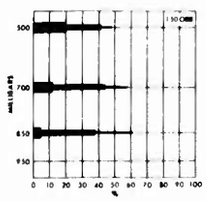
OSTROV VRANGELYA



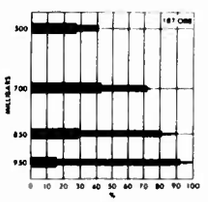
AMDERMA



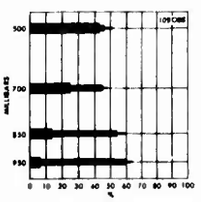
MALYYE KARMAKULY



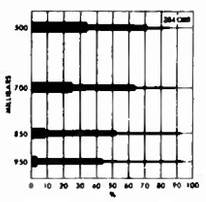
BARROW



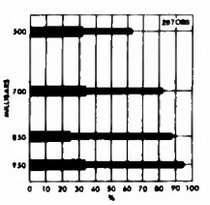
NORD



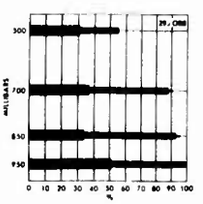
JAN MAYEN



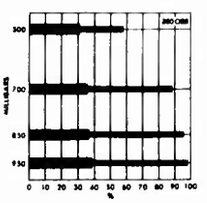
ISACHSEN



EUREKA

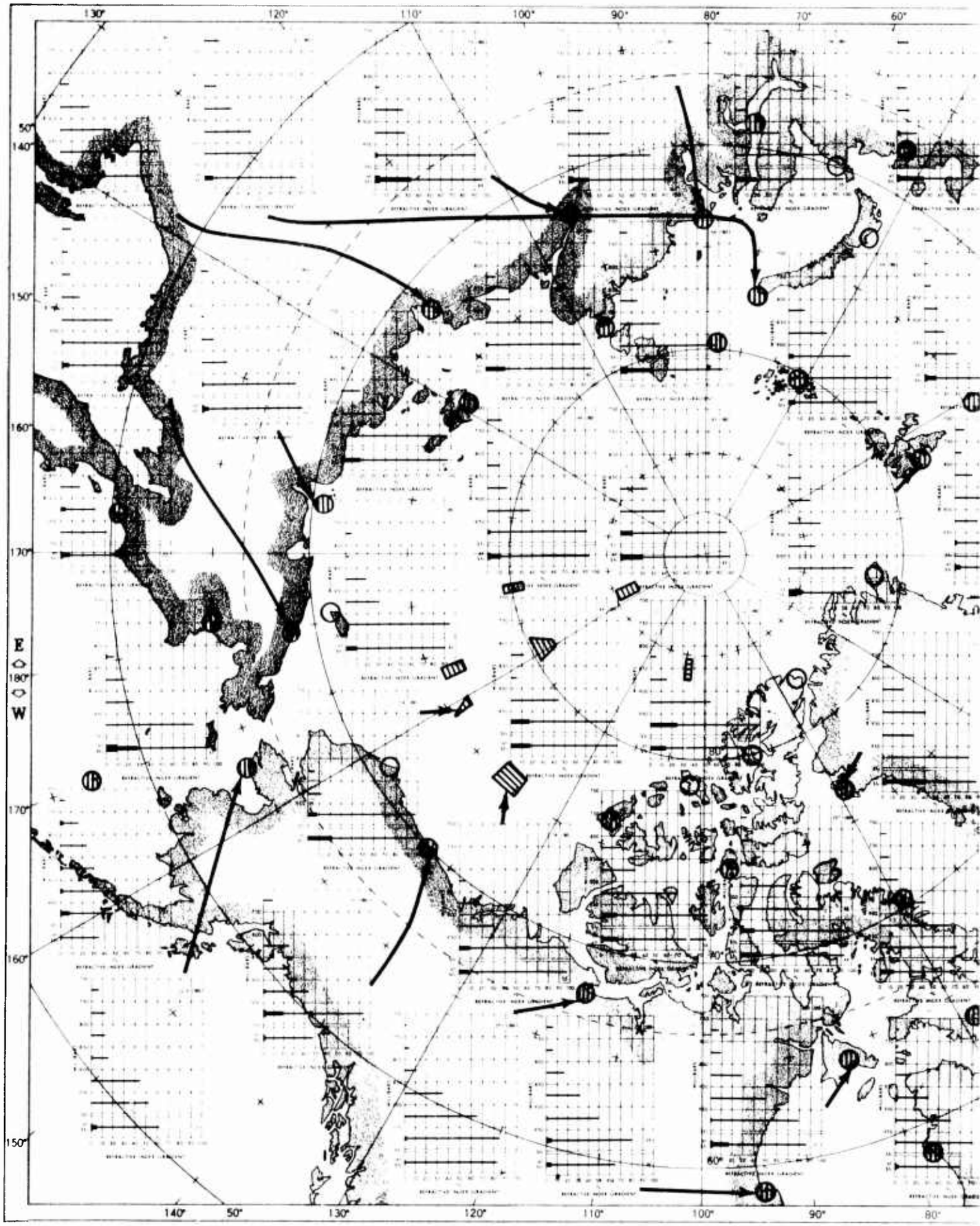


ALERT



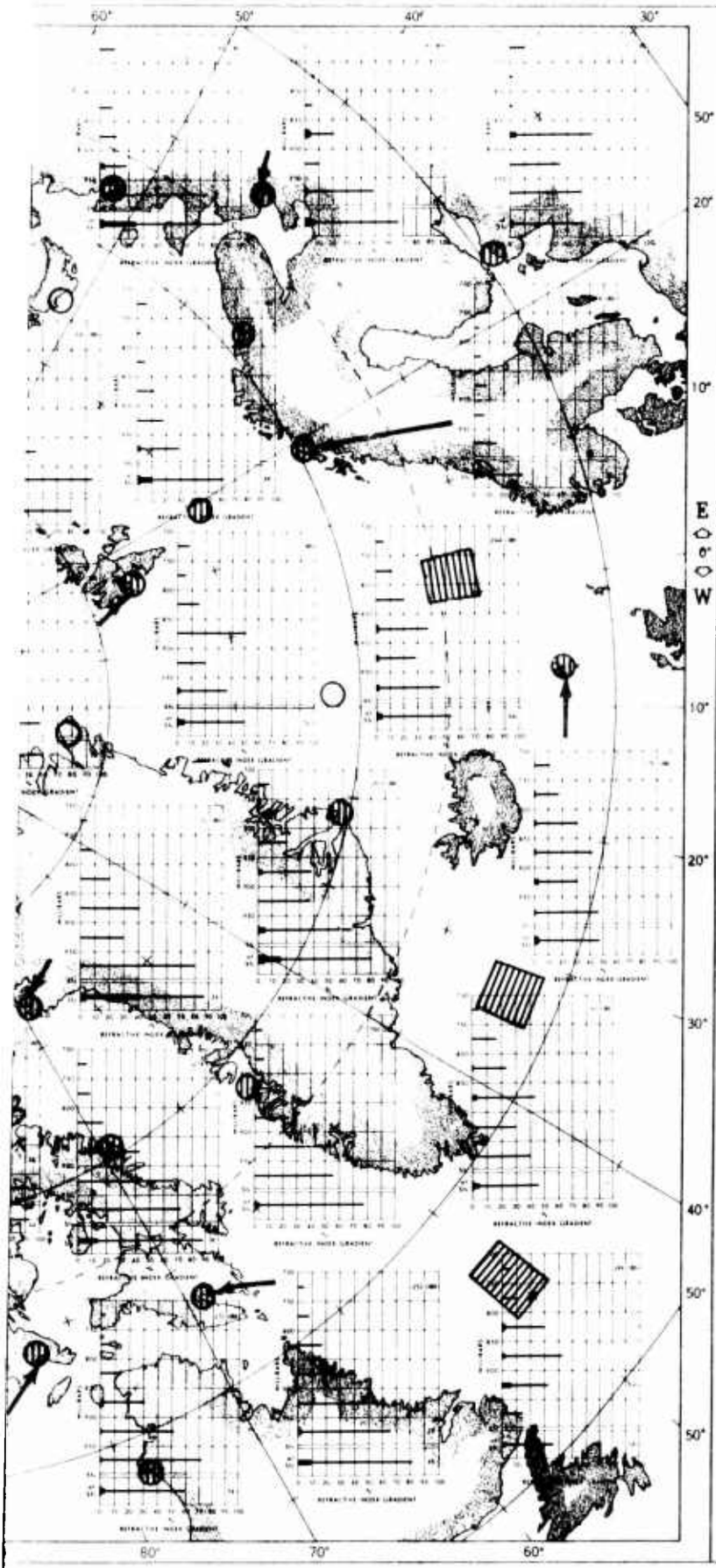
MARCH

REFRACTIVE INDEX



E INDEX GRADIENT

CHART 185



Percentage Frequency, Refractive Index Gradient within 7 strata

Criteria

a $\Delta N/\Delta H <$ -.048 Trapping

b $\Delta N/\Delta H <$ -.027 Very Superrefractive

c $\Delta N/\Delta H <$ -.012 Superrefractive

Indicated by

[For the level 950 - 900 millibars
a occurred 2 % of all observations
b 8 % of observations and
c 31 % of observations]

Mean thickness, tens of feet, of b above

Thickness omitted when there were < 5 superrefractive gradients traced within a stratum

OSTROV VRANGELYA

AMDERMA

MALYYE KARMAKULY

BARROW

NORD

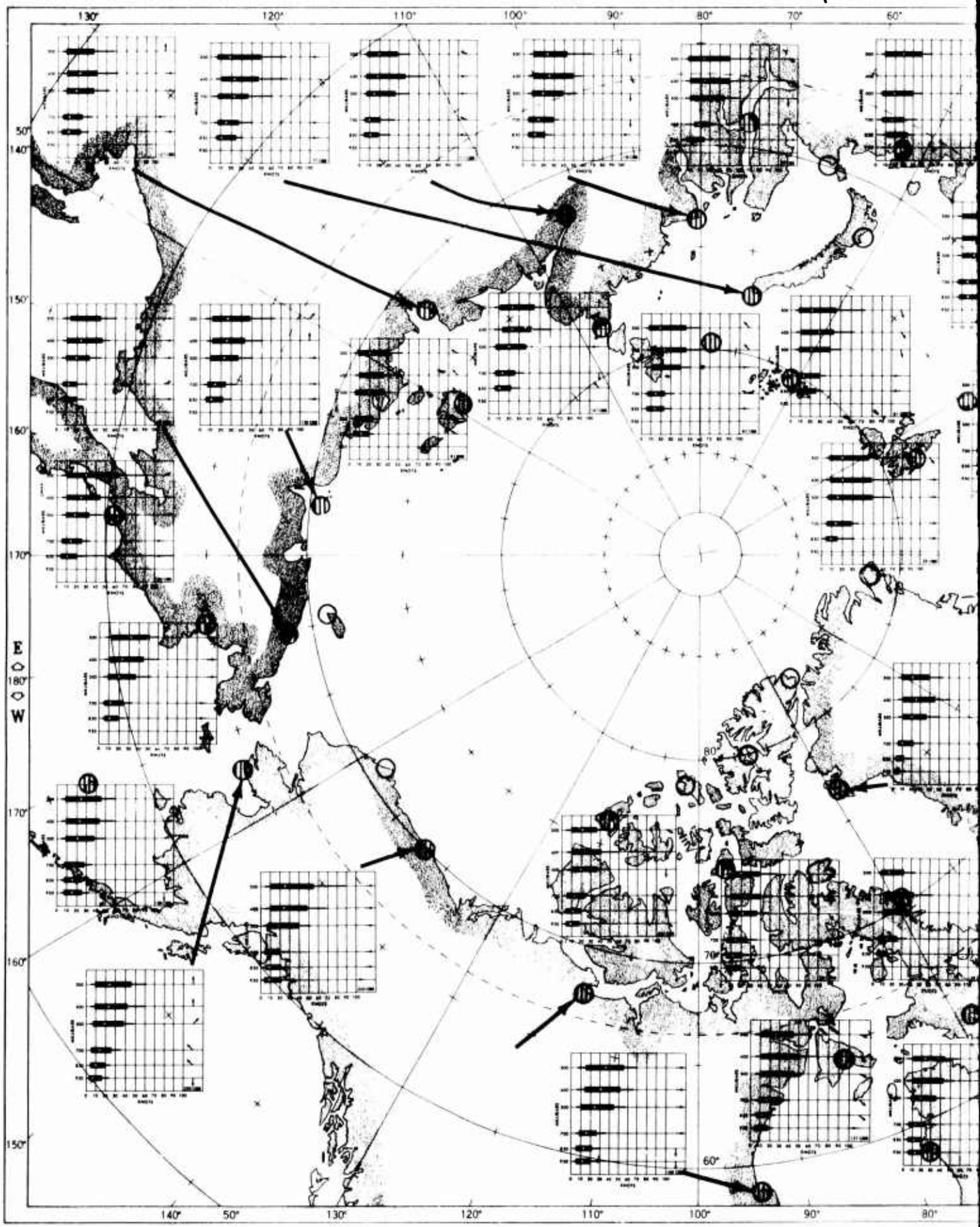
JAN MAYEN

ISACHSEN

EUREKA

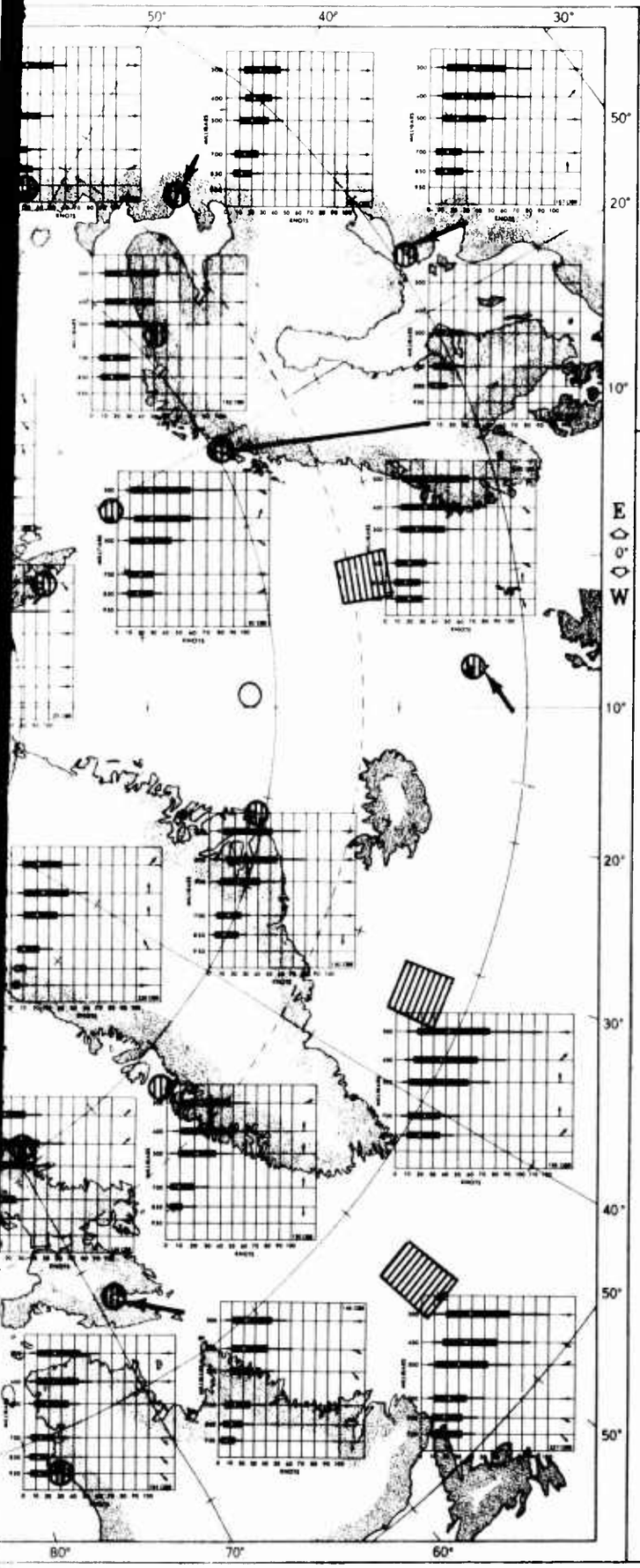
ALERT

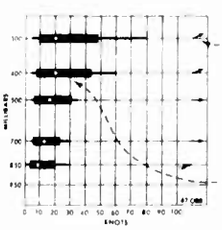
APRIL WIND (950 TO



TO 300 MB)

CHART 186





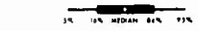
Prevailing Direction To 16 Points

(Direction indicated for 300 millibar level is from WSW.)

Distribution of Scalar Wind Speed Knots

(a) Median

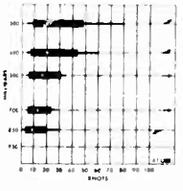
(b) 5%, 16%, 84% and 95% were equal to or less than the speeds indicated by



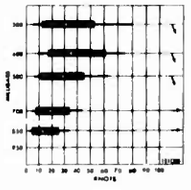
(At the 400 millibar level median speed was 20 knots, 5% of speeds were 4 knots or less, 16% were 8 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

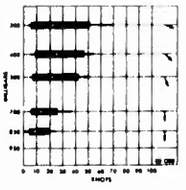
OSTROV VRANGELYA



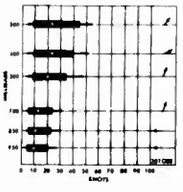
AMDERMA



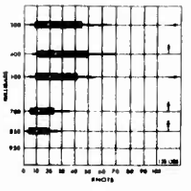
MALYYE KARMAKULY



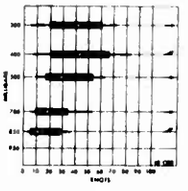
BARROW



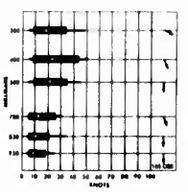
NORD



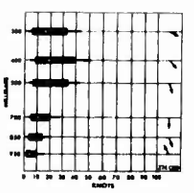
JAN MAYEN



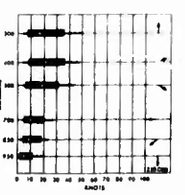
ISACHSEN



EUREKA

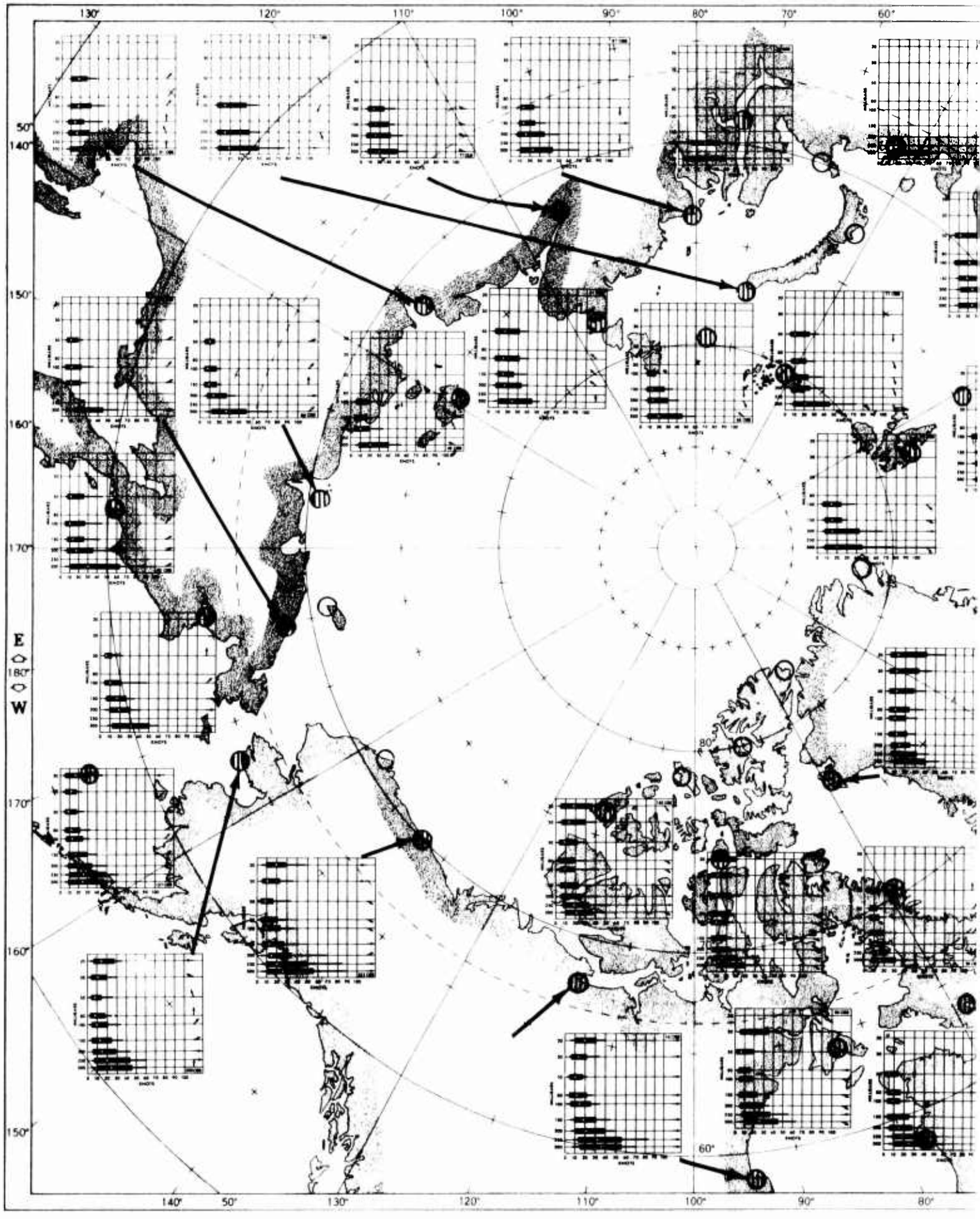


ALERT



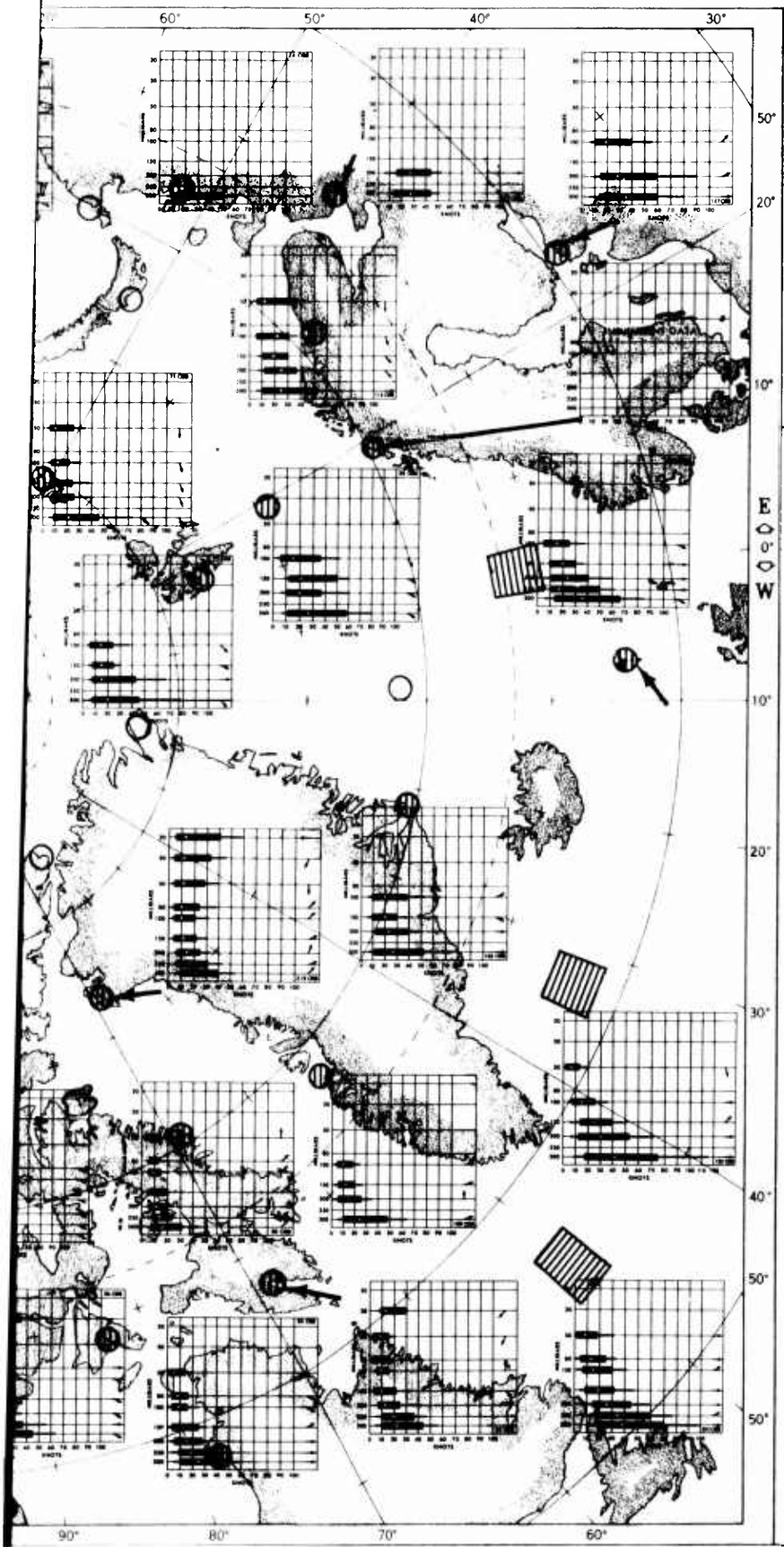
APRIL

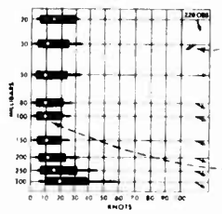
WIND (300 TO



D (300 TO 20 MB)

CHART 187





Prevailing Direction To 16 Points

(Direction indicated for 30 millibar level is from ENE)

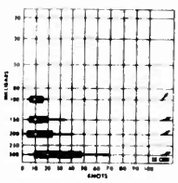
Distribution of Scalar Wind Speed Knots
(a) median
(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by



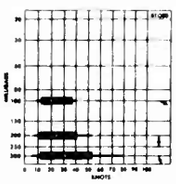
(At the 100 millibar level, median speed was 10 knots, 5% of speeds were 2 knots or less, 16% were 4 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

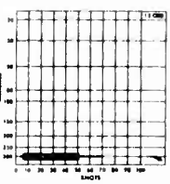
OSTROV VRANGELYA



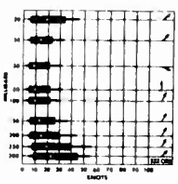
AMDERMA



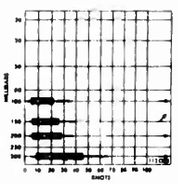
MALYYE KARMAKULY



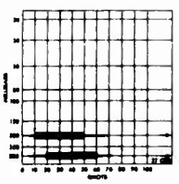
BARROW



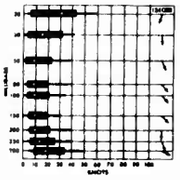
NORD



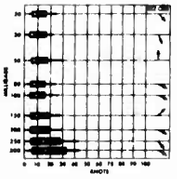
JAN MAYEN



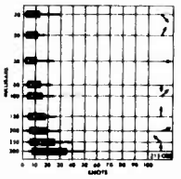
ISACHSEN



EUREKA

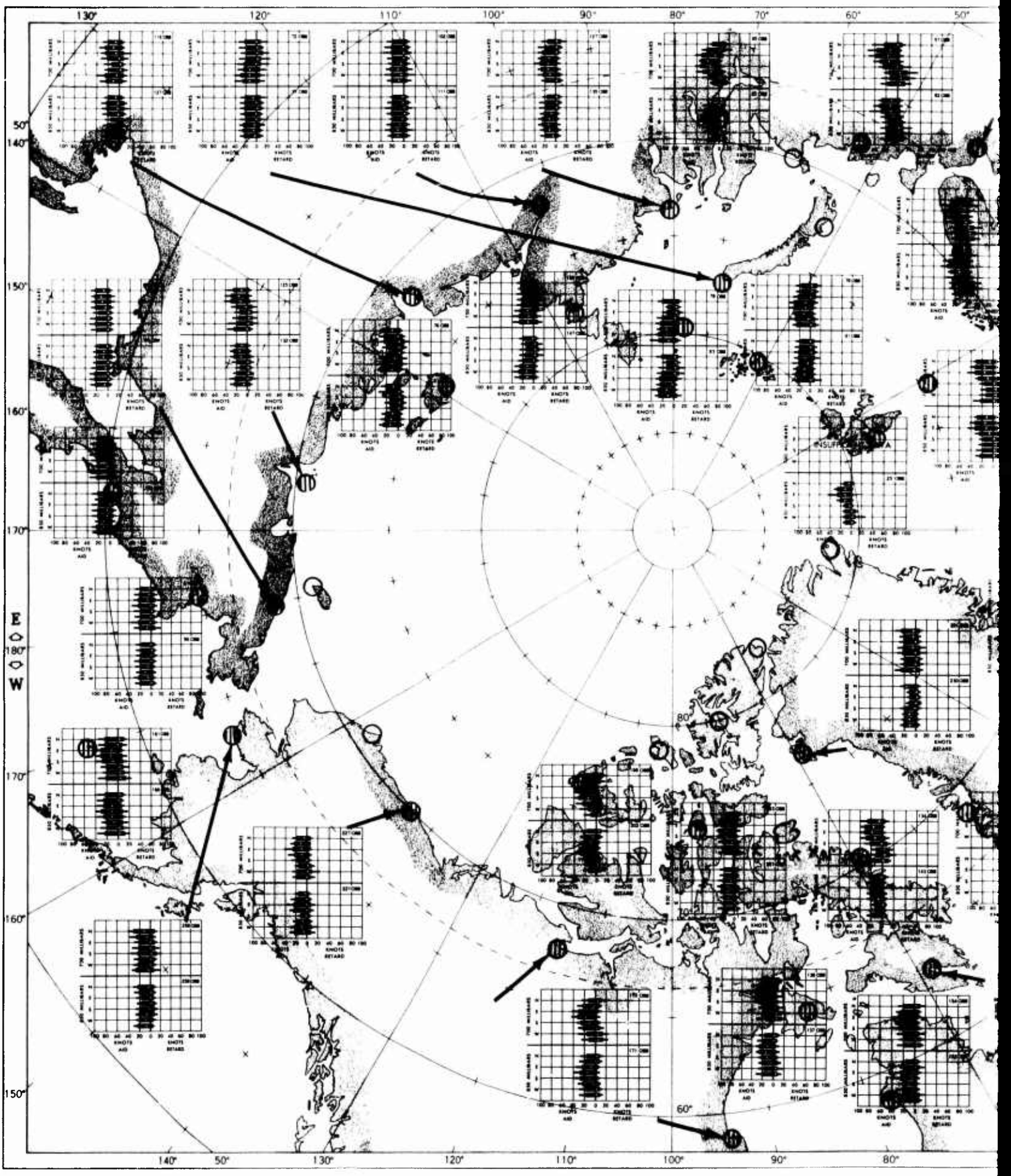


ALERT



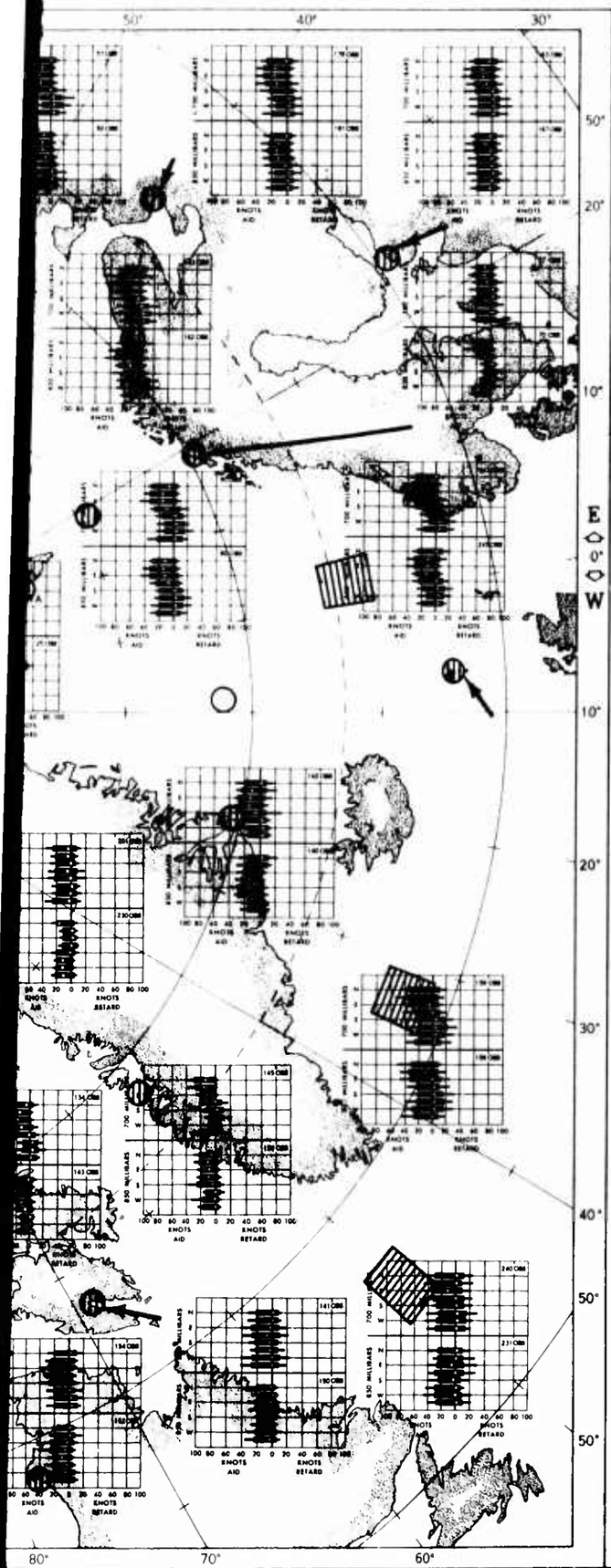
APRIL

WIND AID AND RETARD (8

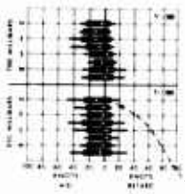


ARD (850 & 700 MB)

CHART 188



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 300 knots true air speed



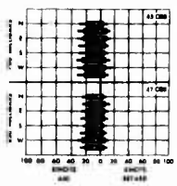
Read median and percentage frequency for direction toward which aircraft is flying thus



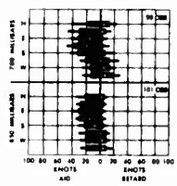
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward north at the 850 millibar level, wind aided or increased ground speed by an average of 12 knots. Wind effect ranged from 28 knots aid to 8 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 20 knots retard in 90% of the observations.)

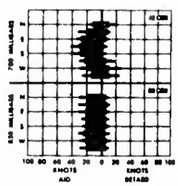
OSTROV VRANGELYA



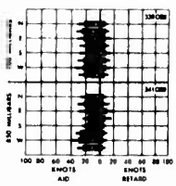
AMDERMA



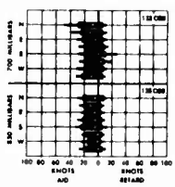
MALYYE KARMAKULY



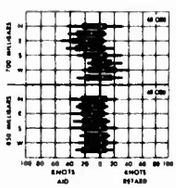
BARROW



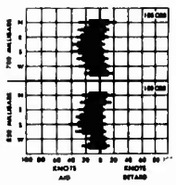
NORD



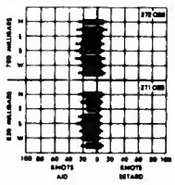
JAN MAYEN



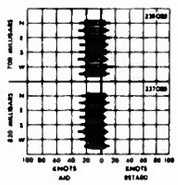
ISACHSEN



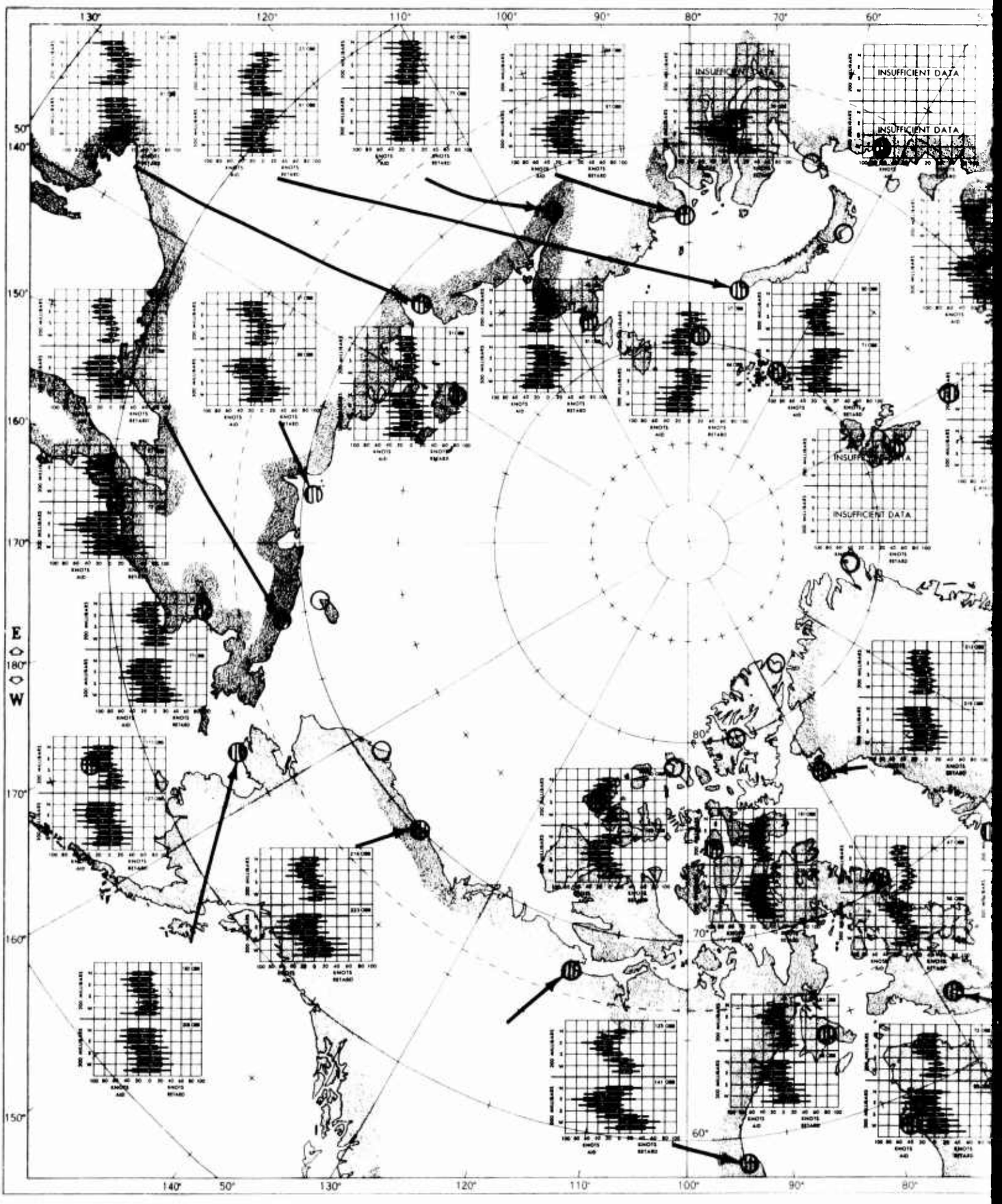
EUREKA



ALERT

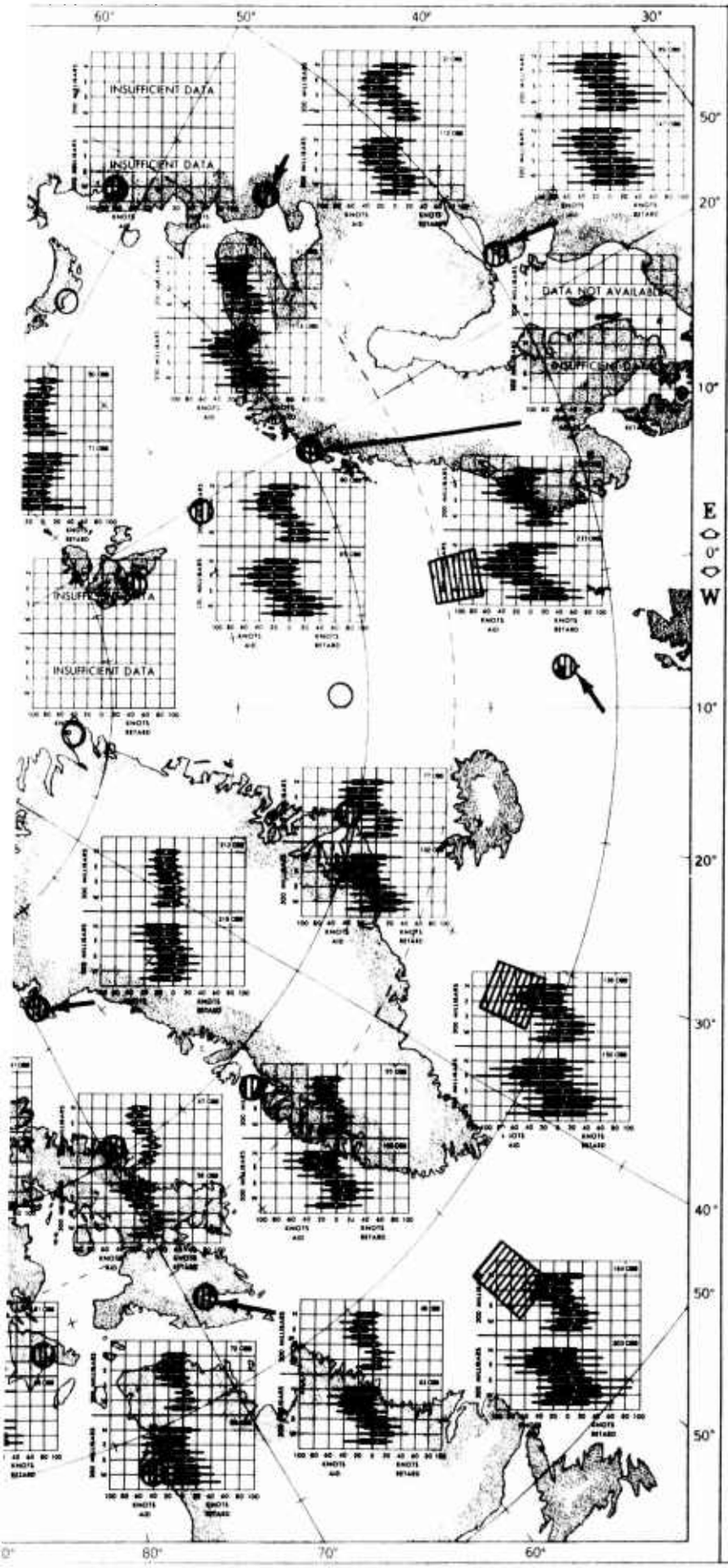


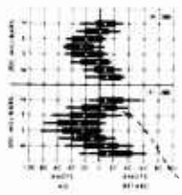
APRIL WIND AID AND RETARD



RETARD (300 & 200 MB)

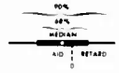
CHART 189





Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 600 knots true air speed

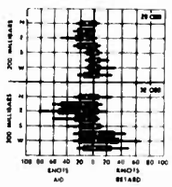
Read median and percentage frequency for direction toward which aircraft is flying thus



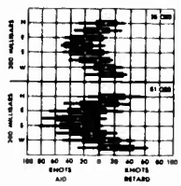
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward northeast at the 300 millibar level wind retarded or decreased ground speed by an average of 4 knots. Winds effect ranged from 26 knots aid to 25 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 40 knots retard in 90% of the observations.)

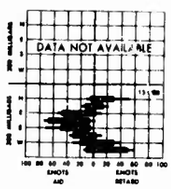
OSTROV VRANGELYA



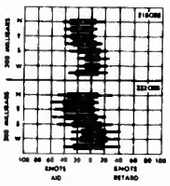
AMDERMA



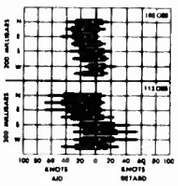
MALYYE KARMAKULY



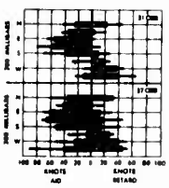
BARROW



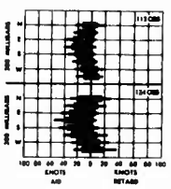
NORD



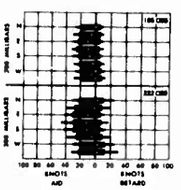
JAN MAYEN



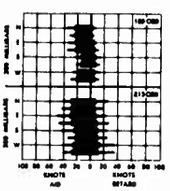
ISACHSEN



EUREKA

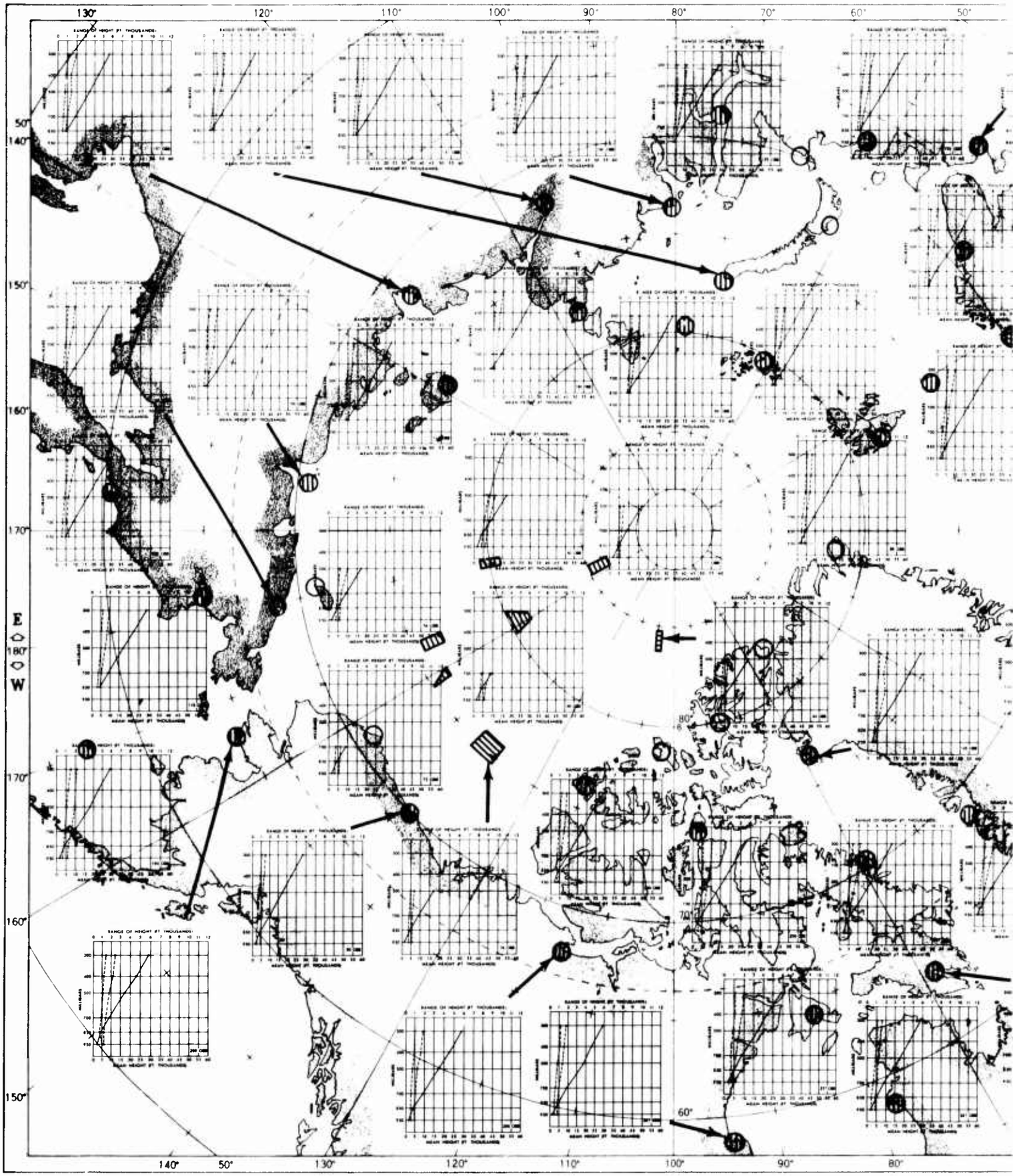


ALERT



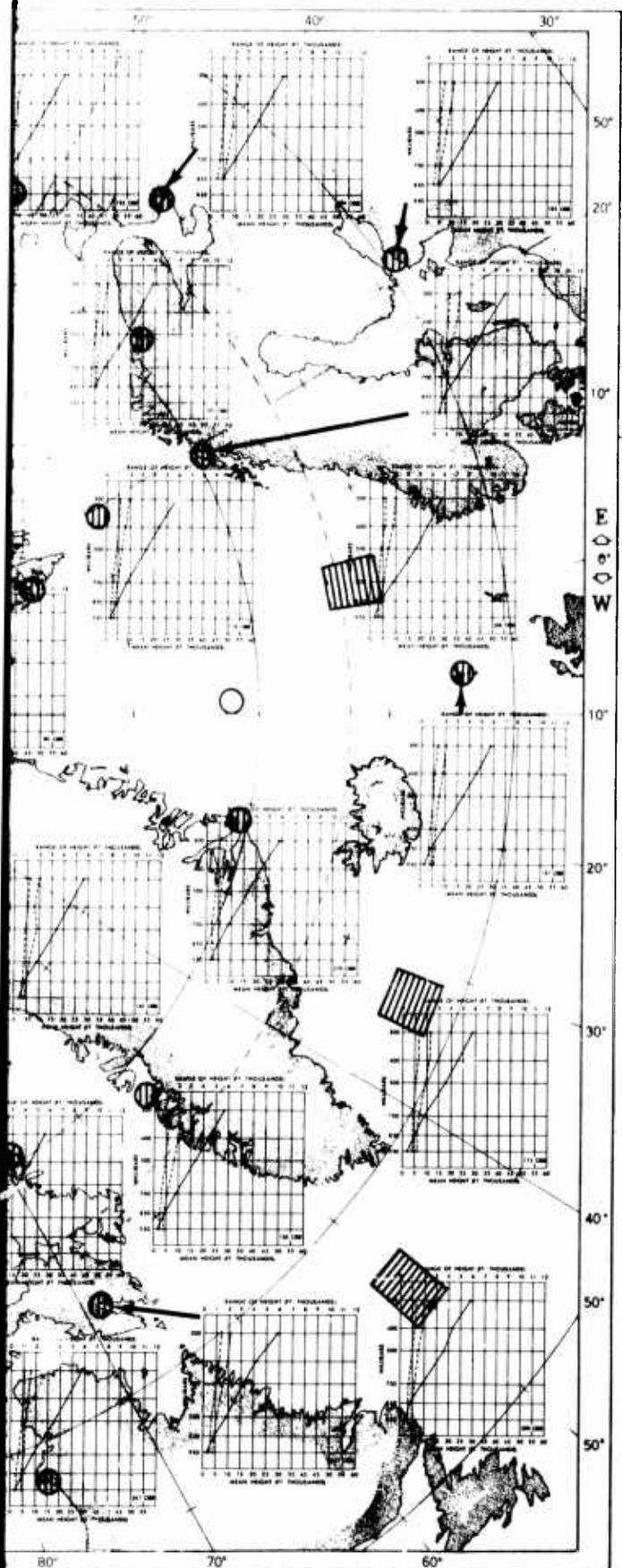
APRIL

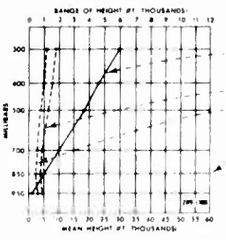
HEIGHT (950 TO 30



0 TO 300 MB)

CHART 190





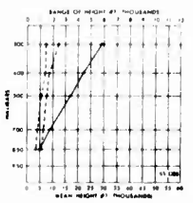
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
- (1) 5% 95% Range
- (2) 16% 84% Range

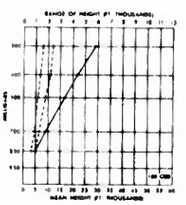
(For the 850 millibar level the mean Height = 5,000 feet, the 5% 95% Height range = 800 feet and the 16% 84% range = 450 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

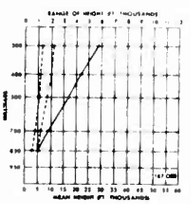
OSTROV VRANGELYA



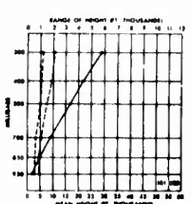
AMDERMA



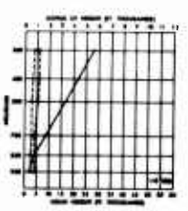
MALYYE KARMAKULY



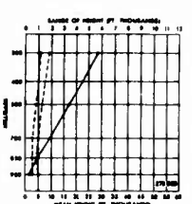
BARROW



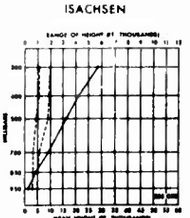
NORD



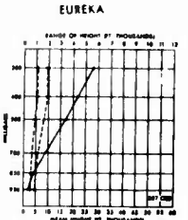
JAN MAYEN



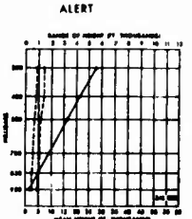
ISACHSEN



EUREKA

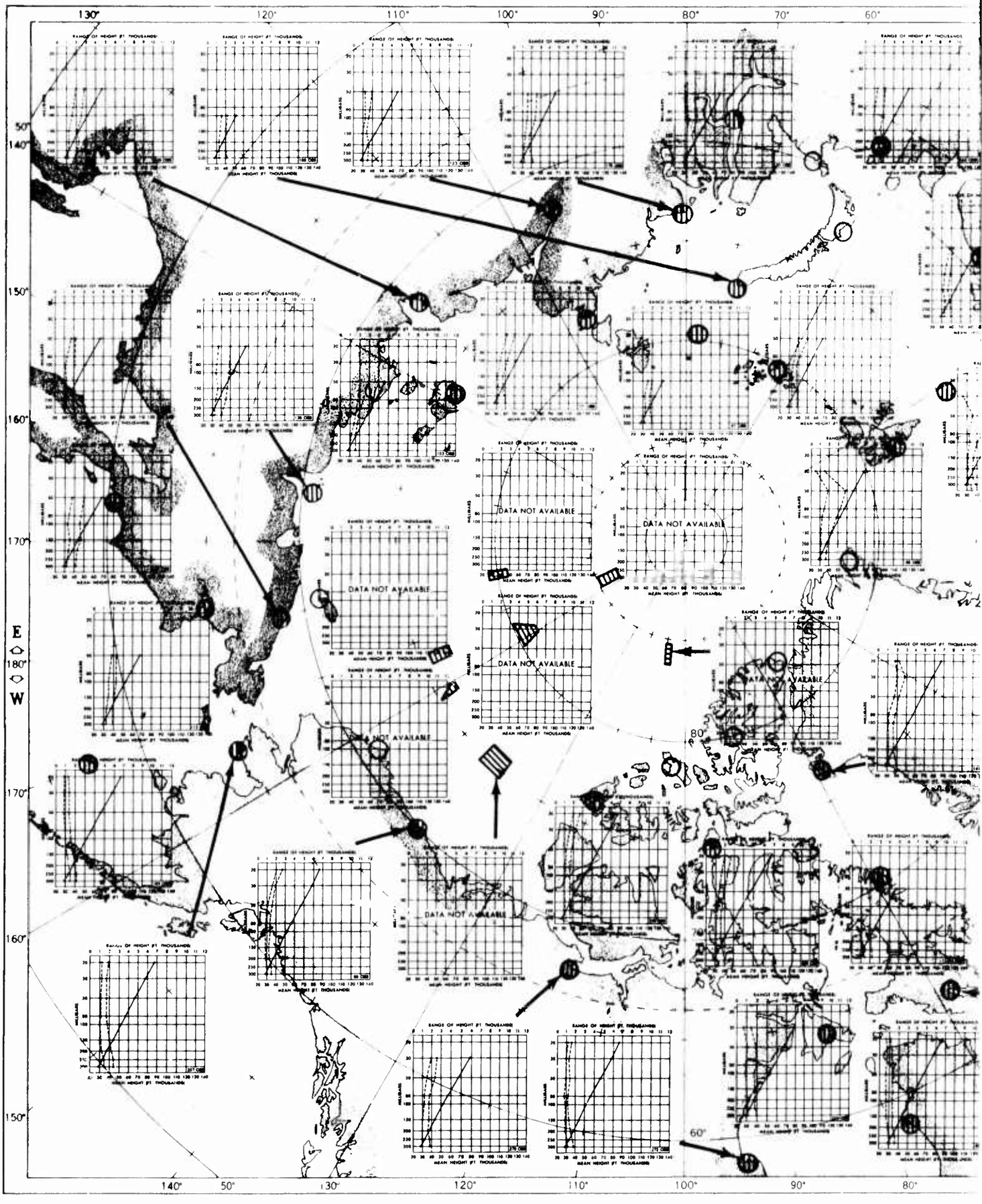


ALERT



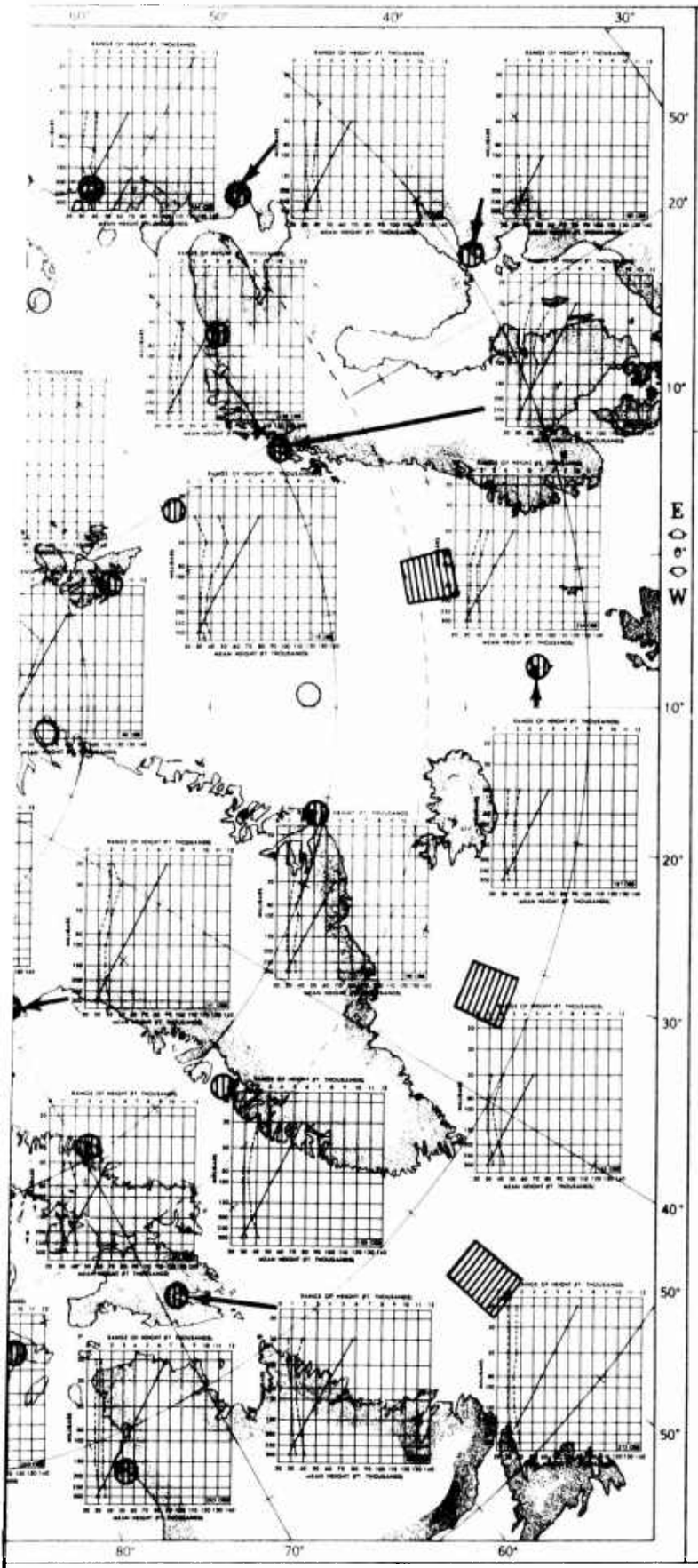
APRIL

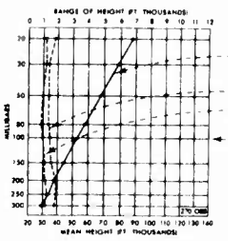
HEIGHT (300 TO



(300 TO 20 MB)

CHART 191





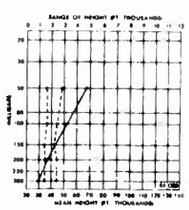
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
- (1) 5% 95% Range
- (2) 16% 84% Range

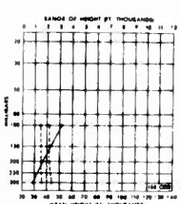
(For the 100 millibar level the mean Height = 53,000 feet, the 5% - 95% Height range = 1,500 feet, and the 16% 84% range = 1,000 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

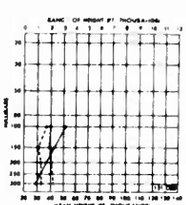
OSTROV VRANGELYA



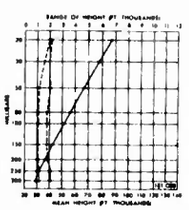
AMDERMA



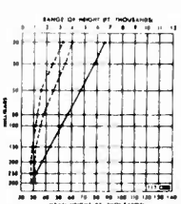
MALYYE KARMAKULY



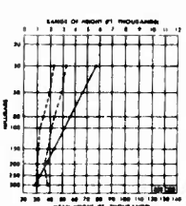
BARROW



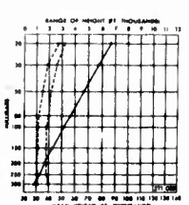
NORD



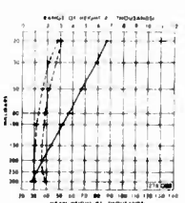
JAN MAYEN



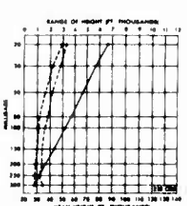
ISACHSEN



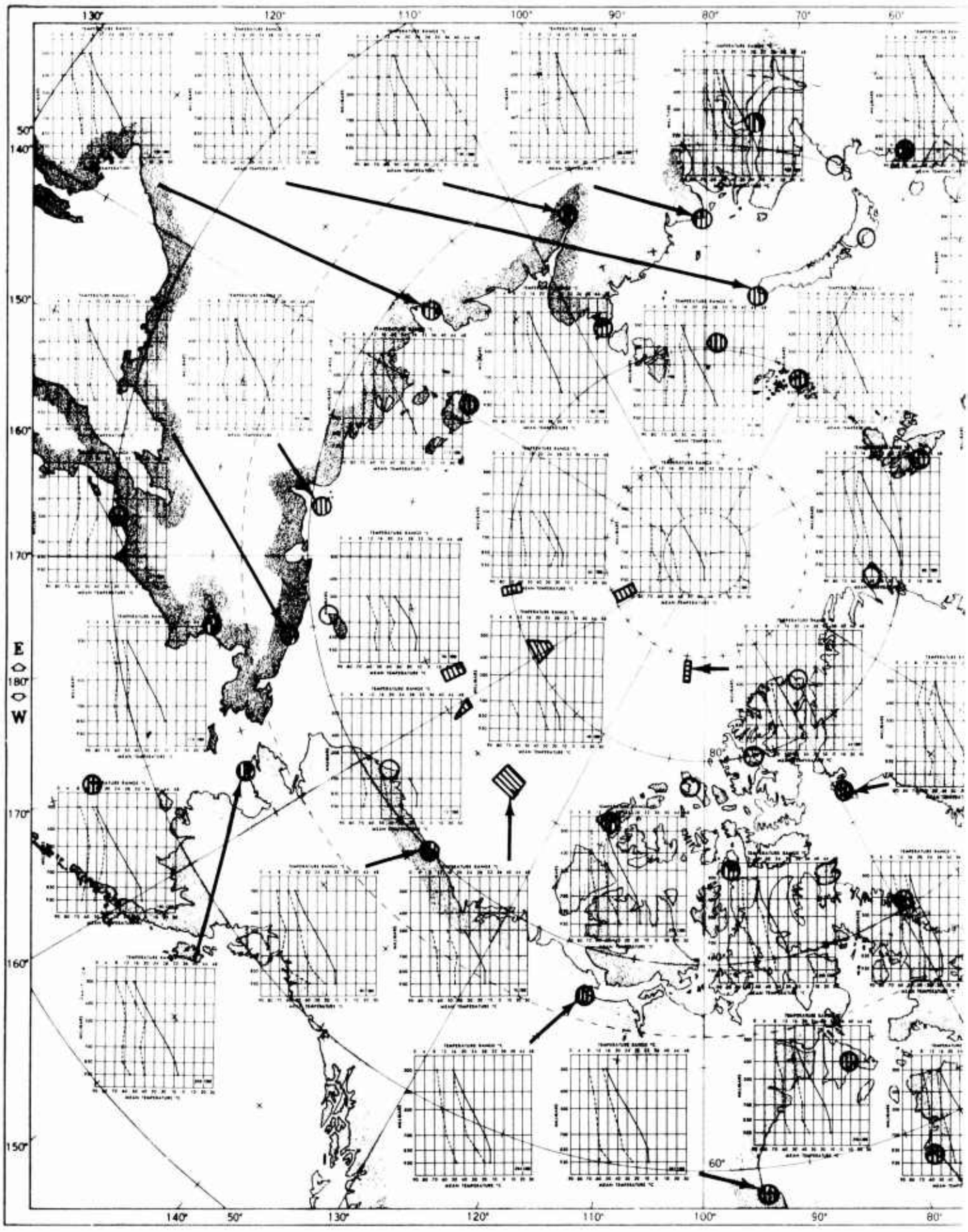
EUREKA



ALERT

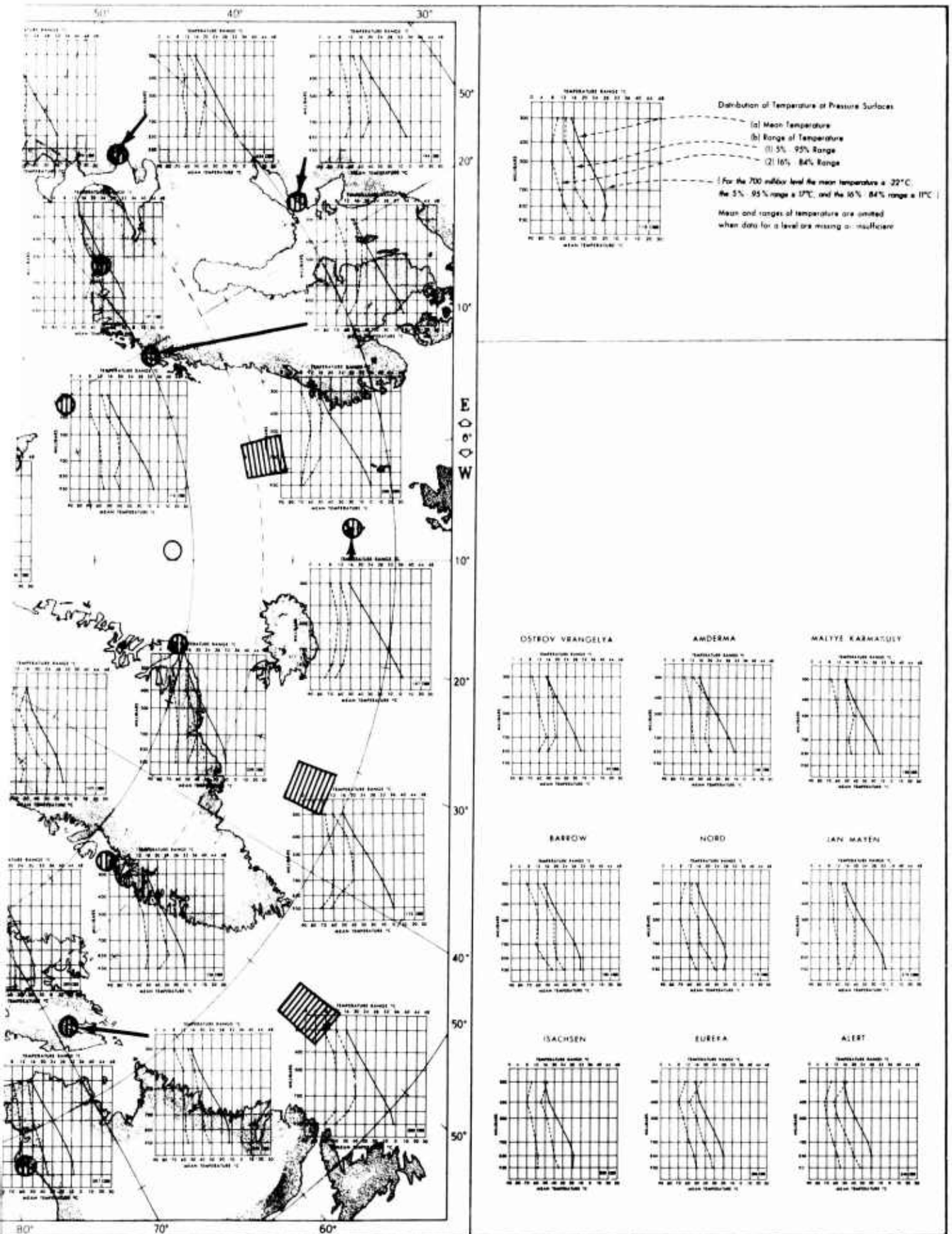


APRIL TEMPERATURE (95



'50 TO 300 MB)

CHART 192



Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature

(b) Range of Temperature

(1) 5% - 95% Range

(2) 16% - 84% Range

(For the 700 millibar level the mean temperature is -22°C, the 5% - 95% range is 17°C, and the 16% - 84% range is 11°C)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

OSTROV VRANGELYA

AMDERMA

MALYYE KARMAKULY

BARROW

NORD

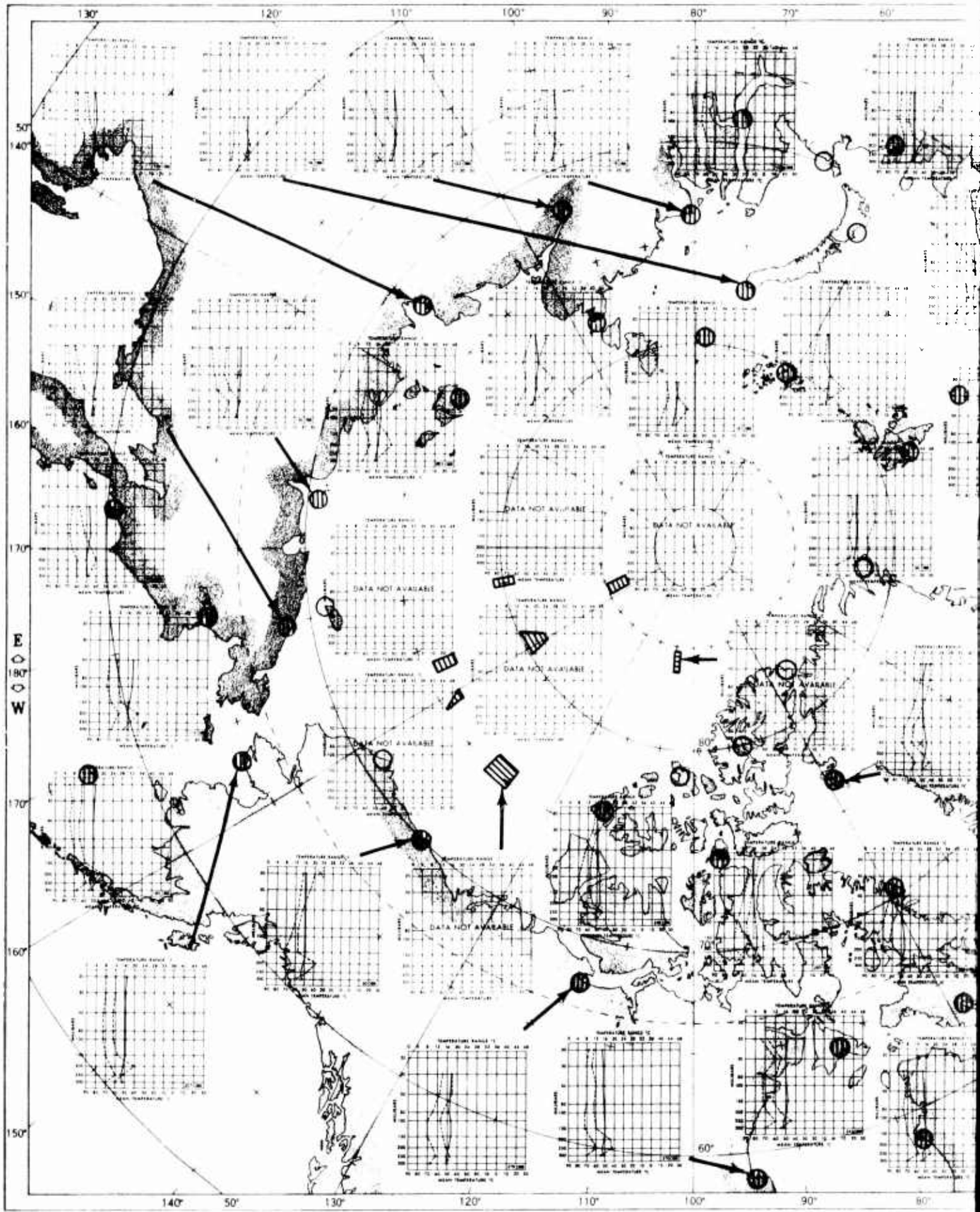
JAN MAYEN

ISACHSEN

EUREKA

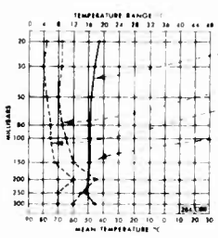
ALERT

APRIL TEMPERATURE (300



URE (300 TO 20 MB)

CHART 193



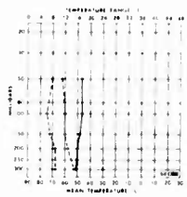
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% 95% Range
(2) 16% 84% Range

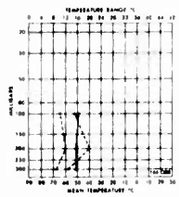
For the 150 millibar level the mean temperature is -49°C the 5% 95% range is 12°C and the 16% 84% range is 7°C

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

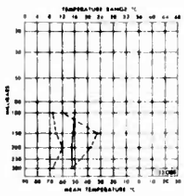
OSTROV VRANGELYA



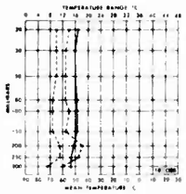
AMDERMA



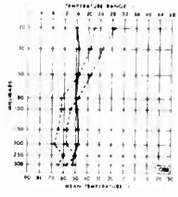
MALYYE KARMAKULY



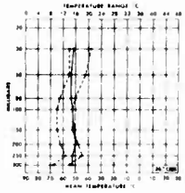
BARROW



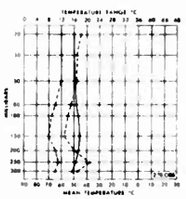
NORD



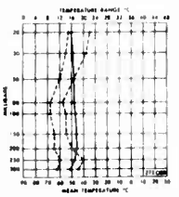
JAN MAYEN



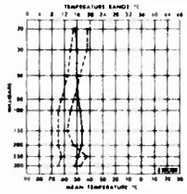
ISACHSEN



EUREKA

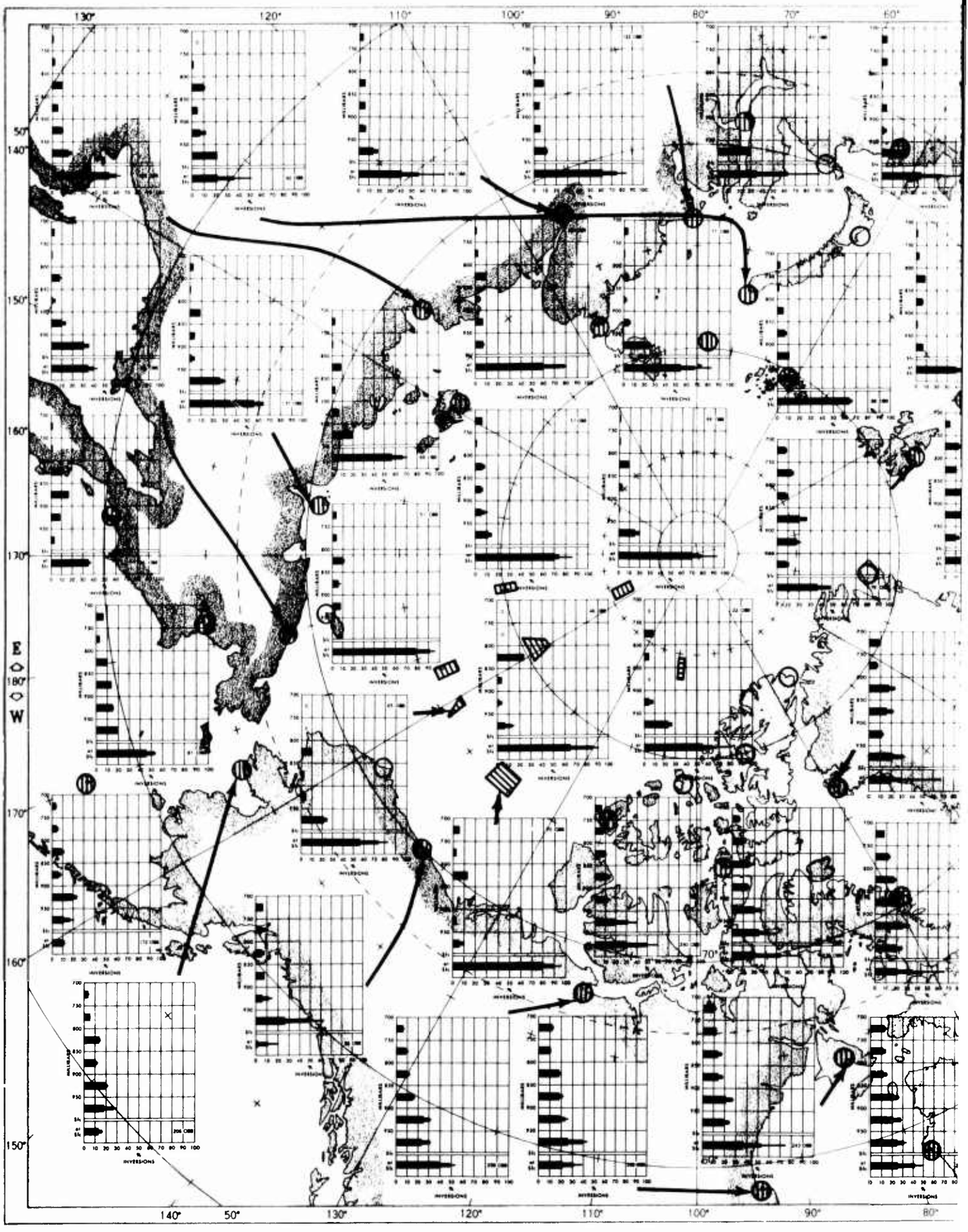


ALERT



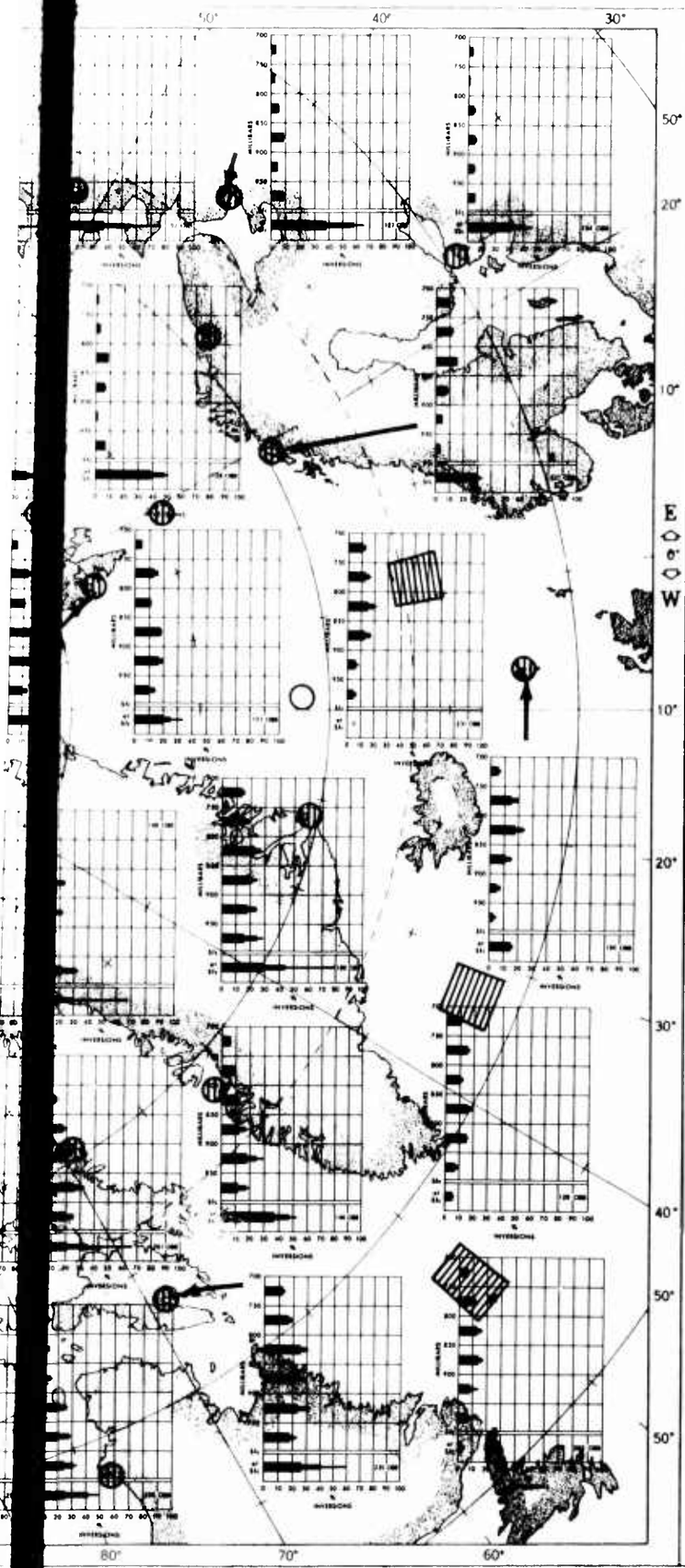
APRIL

INVERSIO



RSIONS

CHART 194



Percentage Frequencies of three intensities of Temperature Inversions within each of seven layers from the surface to 700 millibars

General Criteria

(a) Temperature Inversion constant or increasing temperature with increasing height that persisted at least 5 millibars (approximately 50 meters)

(b) Layers Inversions were assigned to 7 arbitrary layers according to the pressure at their bases

750 to 701 millibars
800 to 751 millibars
850 to 801 millibars
900 to 851 millibars
950 to 901 millibars
5 millibars above the surface to 951 millibars
At the surface to 49 millibars above the surface

(c) Intensity change in temperature per 100 meters increase in height of

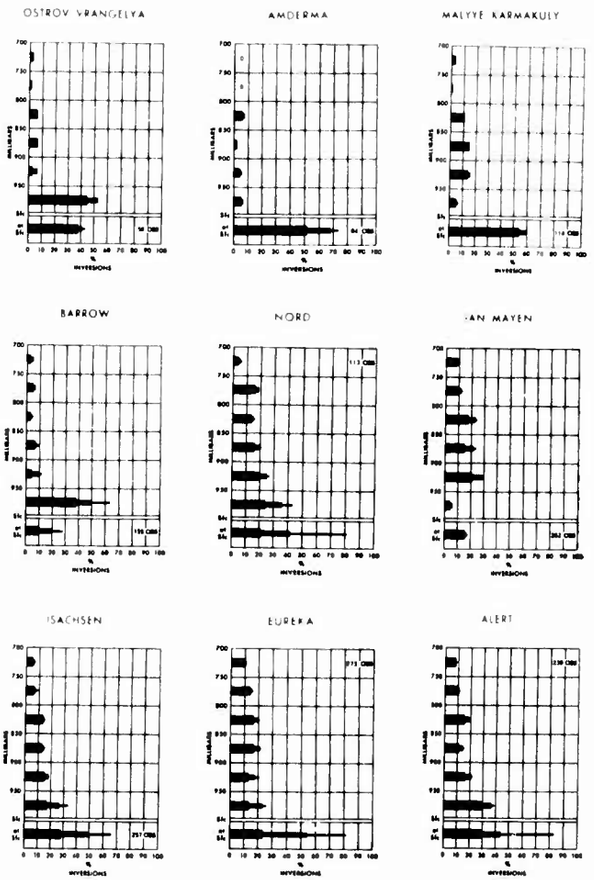
0°C TO +0.9°C +1.0°C TO +1.9°C +2.0°C OR MORE

When more than one inversion was recorded within a layer the one with the greatest intensity was counted

0 No occurrence

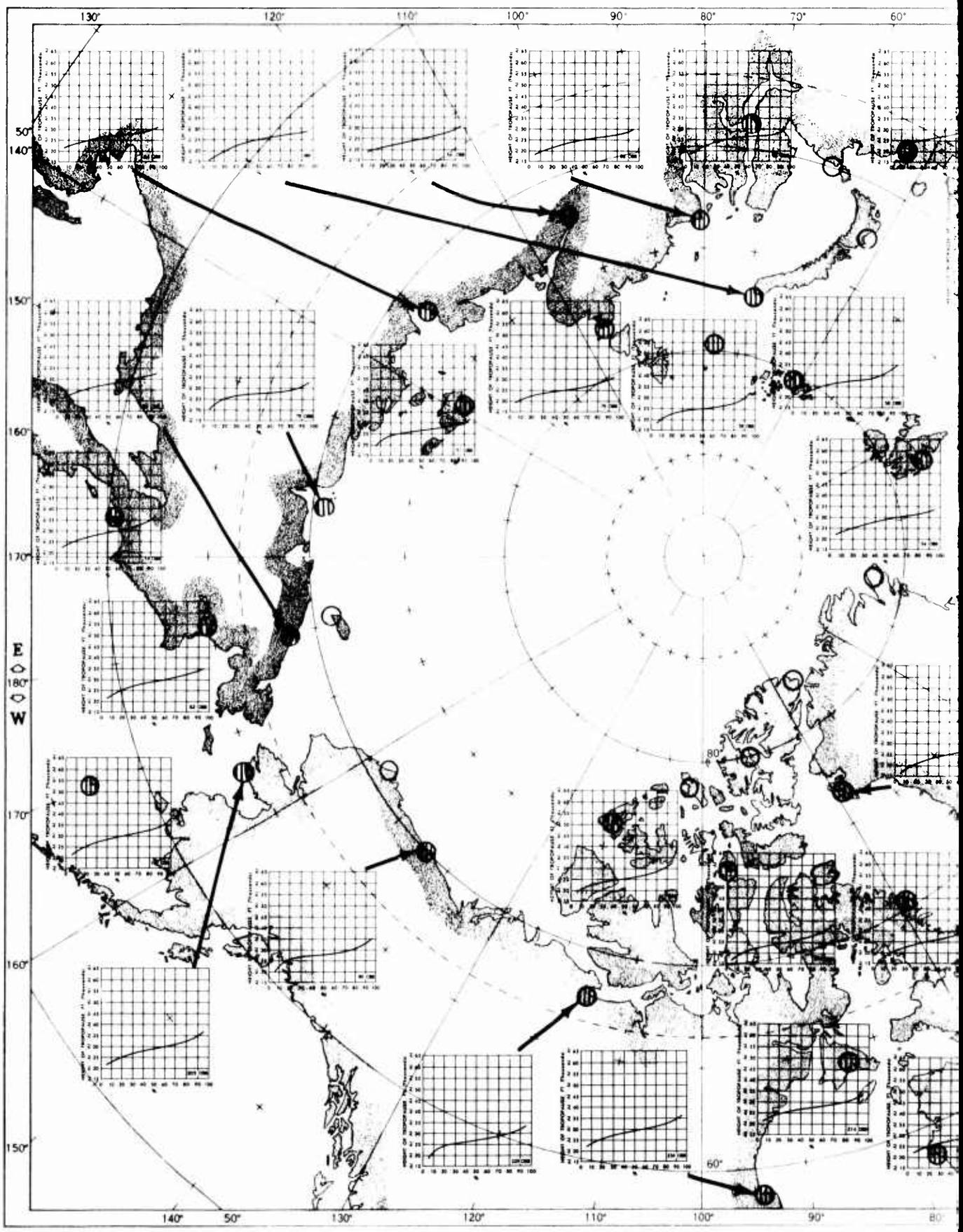
Blank No data

(28% [80 52] of all radiosonde ascents recorded temperature inversions of +1.0°C to +1.9°C per 100 meters with bases in the layer from the surface to 49 millibars above)



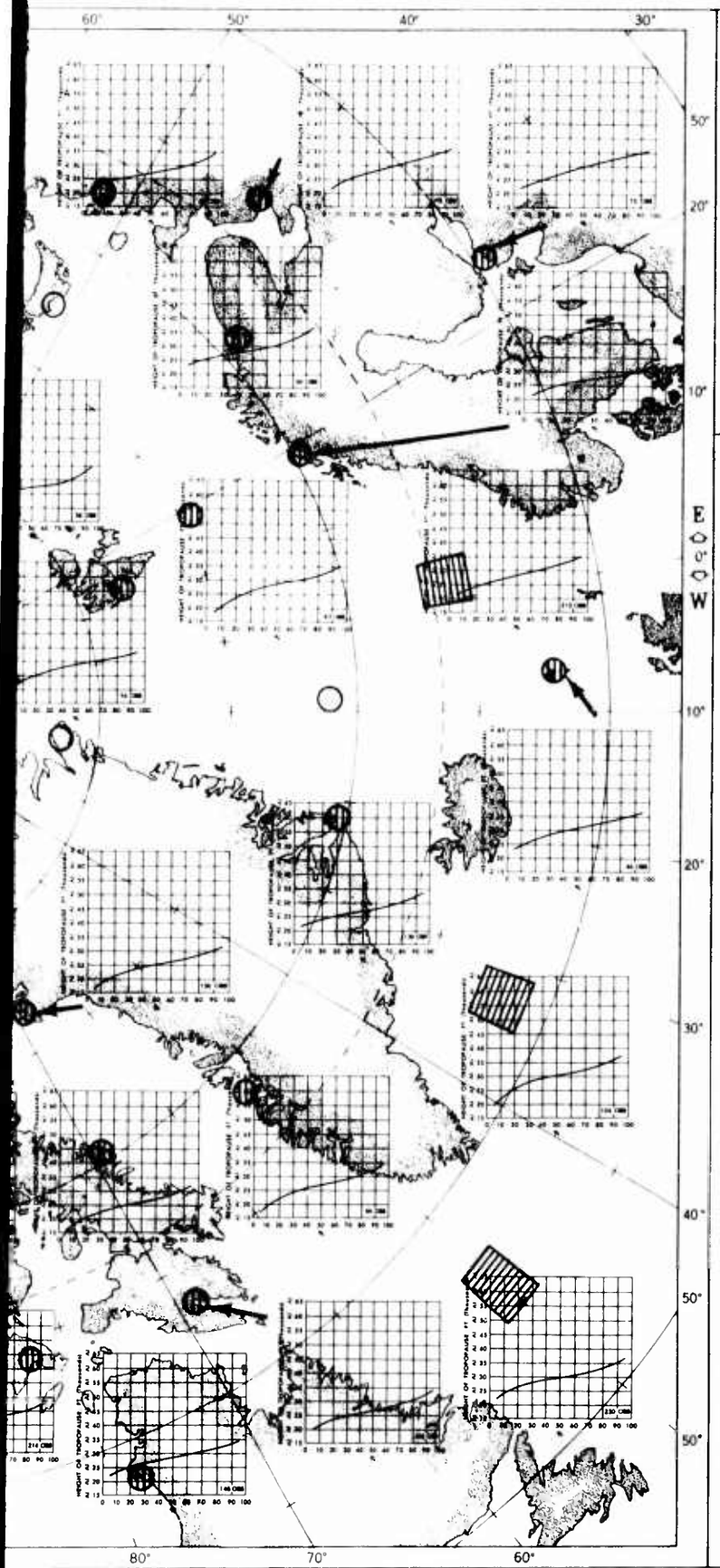
APRIL

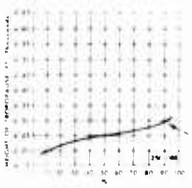
HEIGHT OF TR



OF TROPOPAUSE

CHART 195

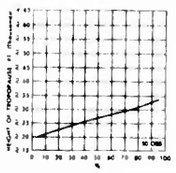




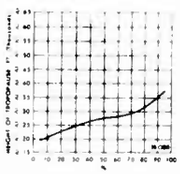
Percentage Frequency of Heights of the Tropopause equal to or less than the height intersected by the curve

(90 % of all heights of the tropopause were thirty thousand feet or less)

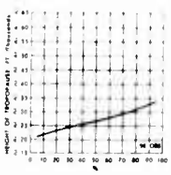
OSTROV VRANGELYA



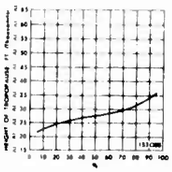
AMDERMA



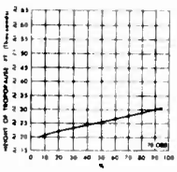
MALYYE KARMAKULY



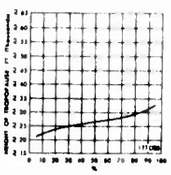
BARROW



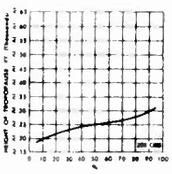
NORD



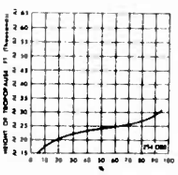
JAN MAYEN



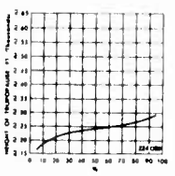
ISACHSEN



EUREKA



ALERT

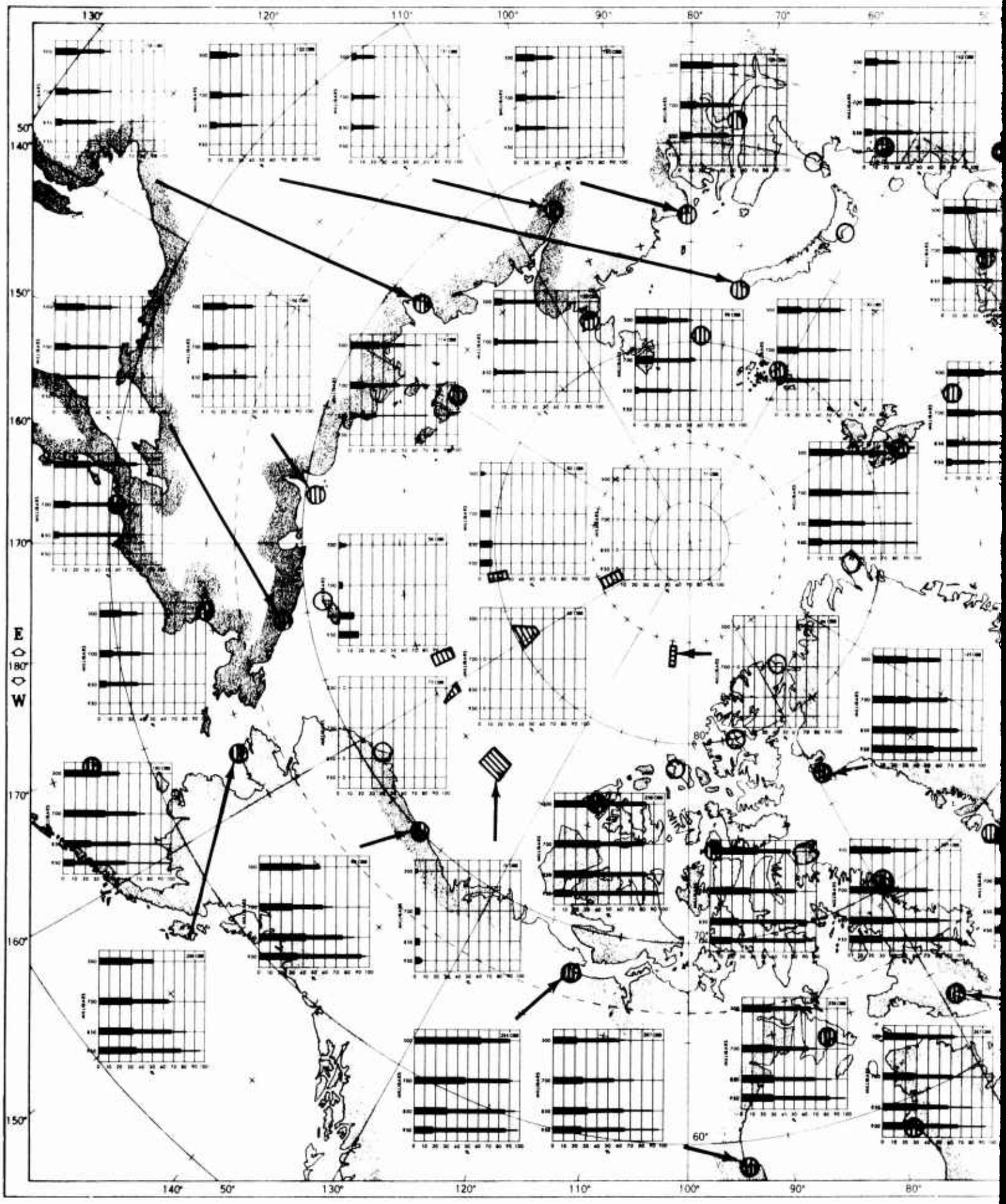


1

2

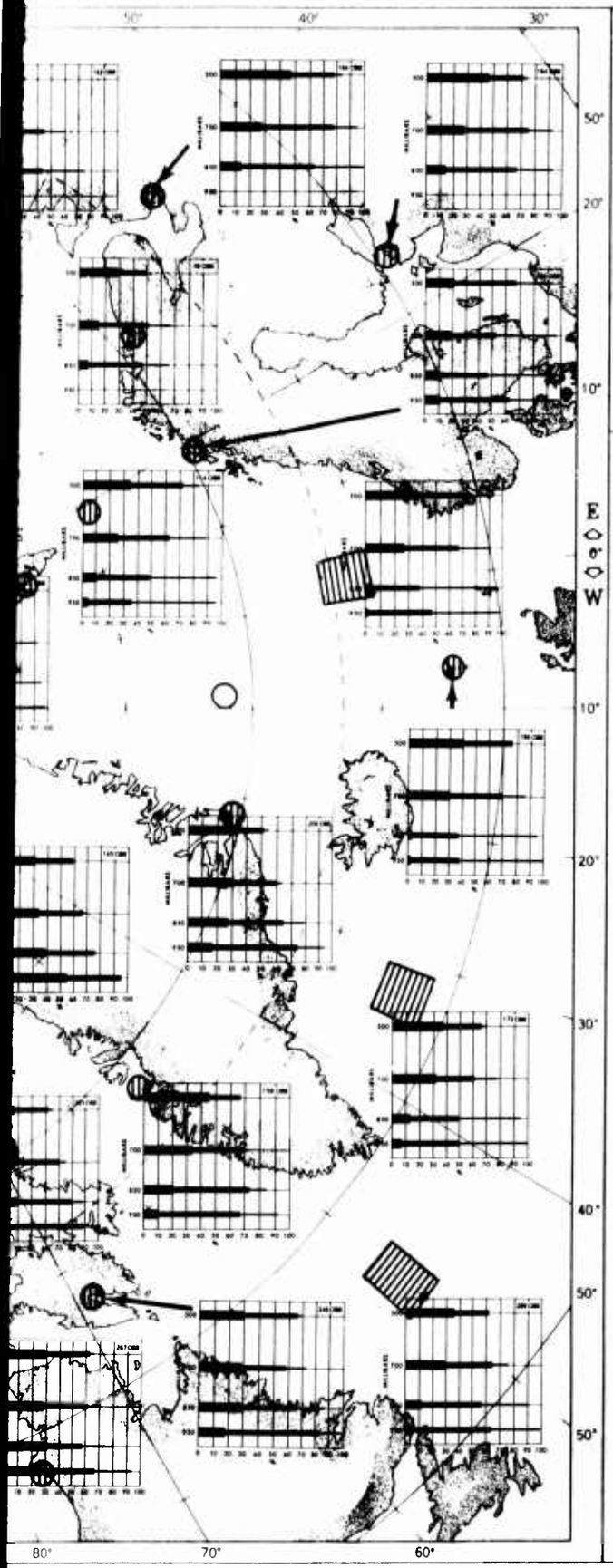
APRIL

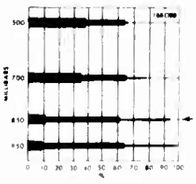
RELATIVE HUM



HUMIDITY

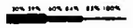
CHART 196





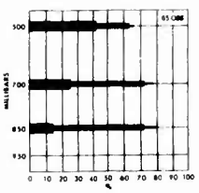
Distribution of Relative Humidity at Pressure Surfaces

(a) Percentage Frequency of Relative Humidity as indicated by

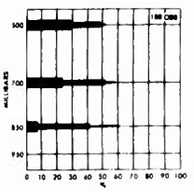


(For the 850 millibar level Relative Humidity was 30% - 59% for 17% of all observations, 60% - 84% humidity occurred 50% (61 minus 11) of the observations, and 85% - 100% humidity occurred 33% (94 minus 61) of the observations.)

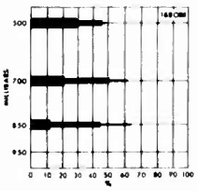
OSTROV VRANGELYA



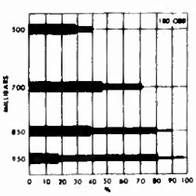
AMDERMA



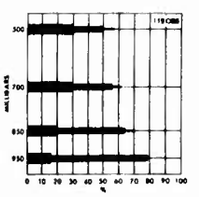
MALYYE KARMAKULY



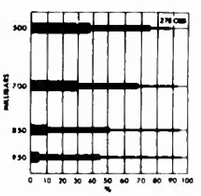
BARROW



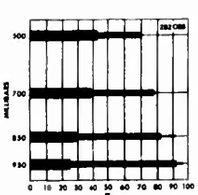
NORD



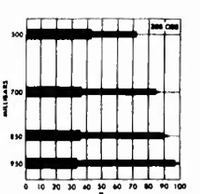
JAN MAYEN



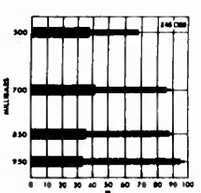
ISACHSEN



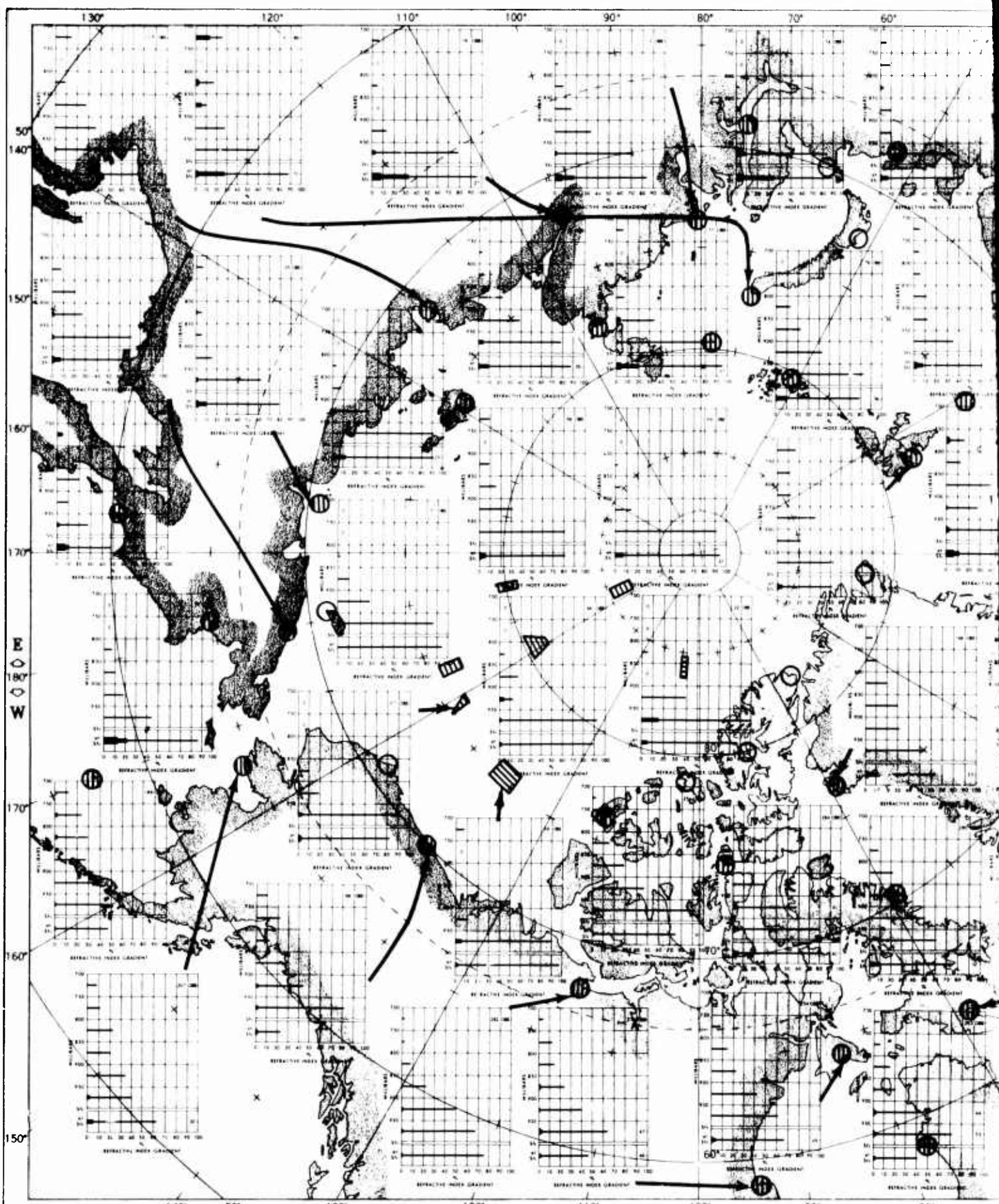
EUREKA



ALERT

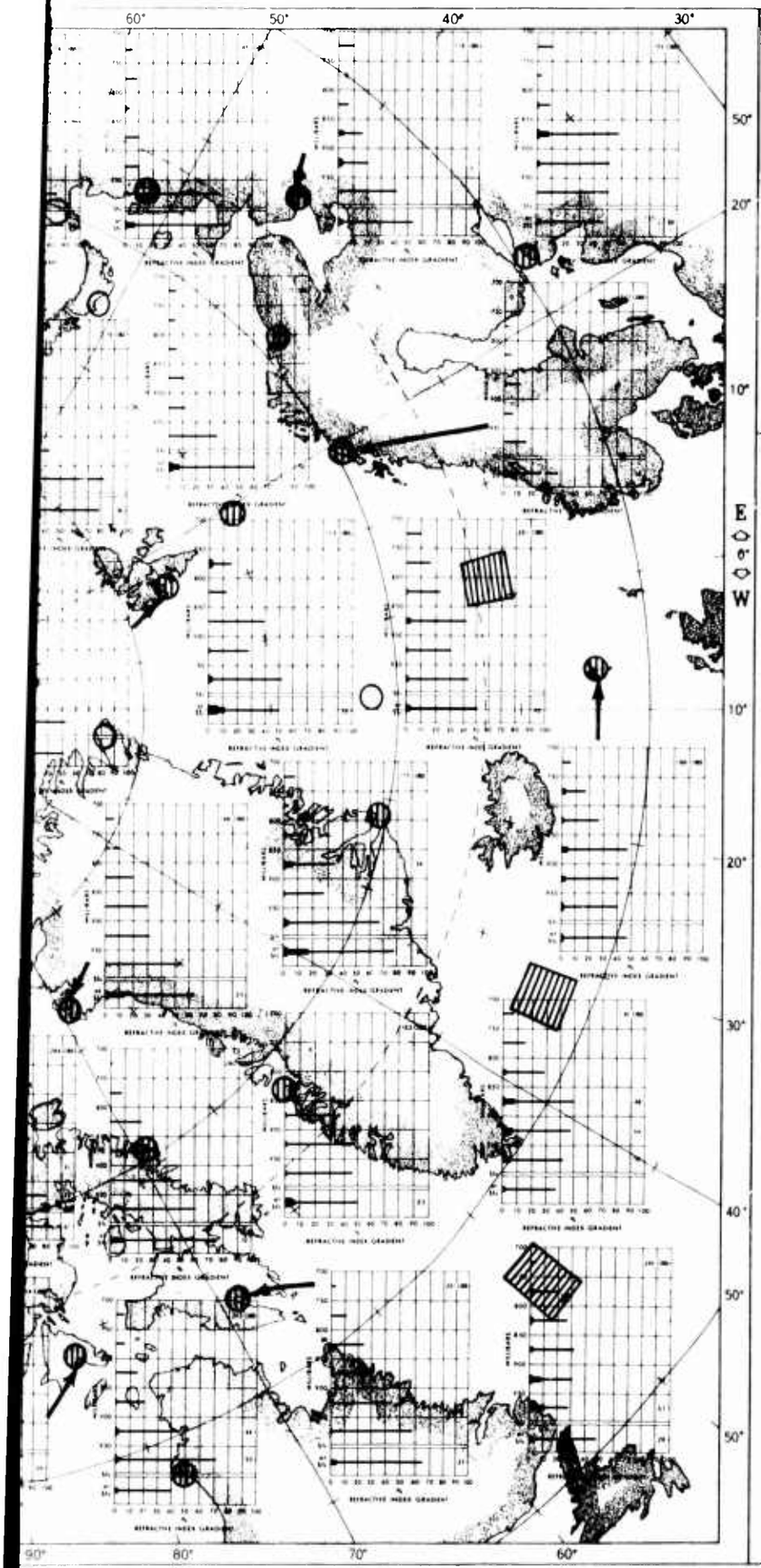


APRIL REFRACTIVE INDEX



VE INDEX GRADIENT

CHART 197



Percentage Frequency Refractive Index Gradient* within 7 strata

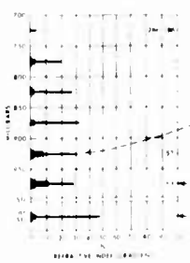
Criteria

a ΔN ΔH ≤ -.048 Trapping

b ΔN ΔH ≤ -.027 Very Superrefractive

c ΔN ΔH ≤ -.012 Superrefractive

Indicated by



[For the level 951 - 900 millibars

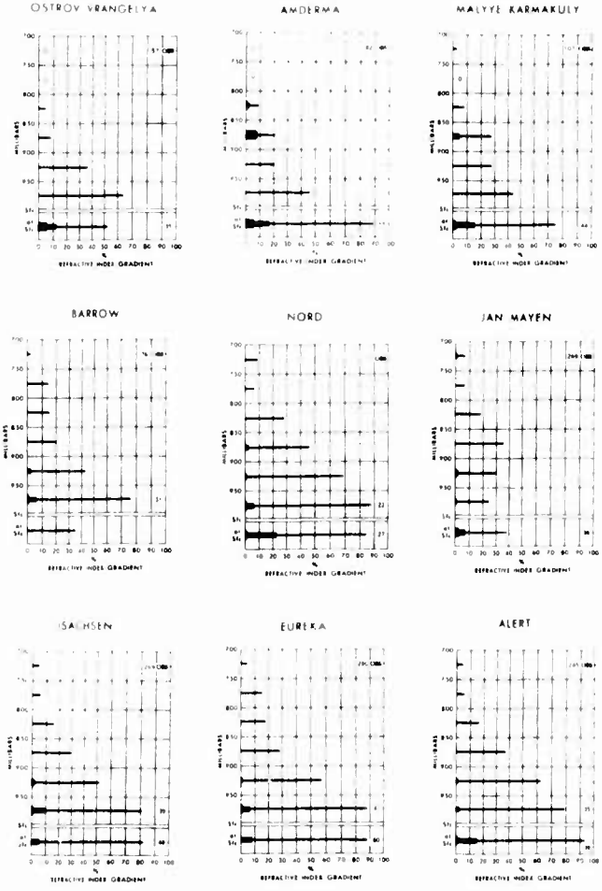
a occurred 2% of all observations,

b 8% of observations and

c 31% of observations]

Mean thickness tens of feet of b above

Thickness omitted when there were < 5 superrefractive gradients based within a stratum

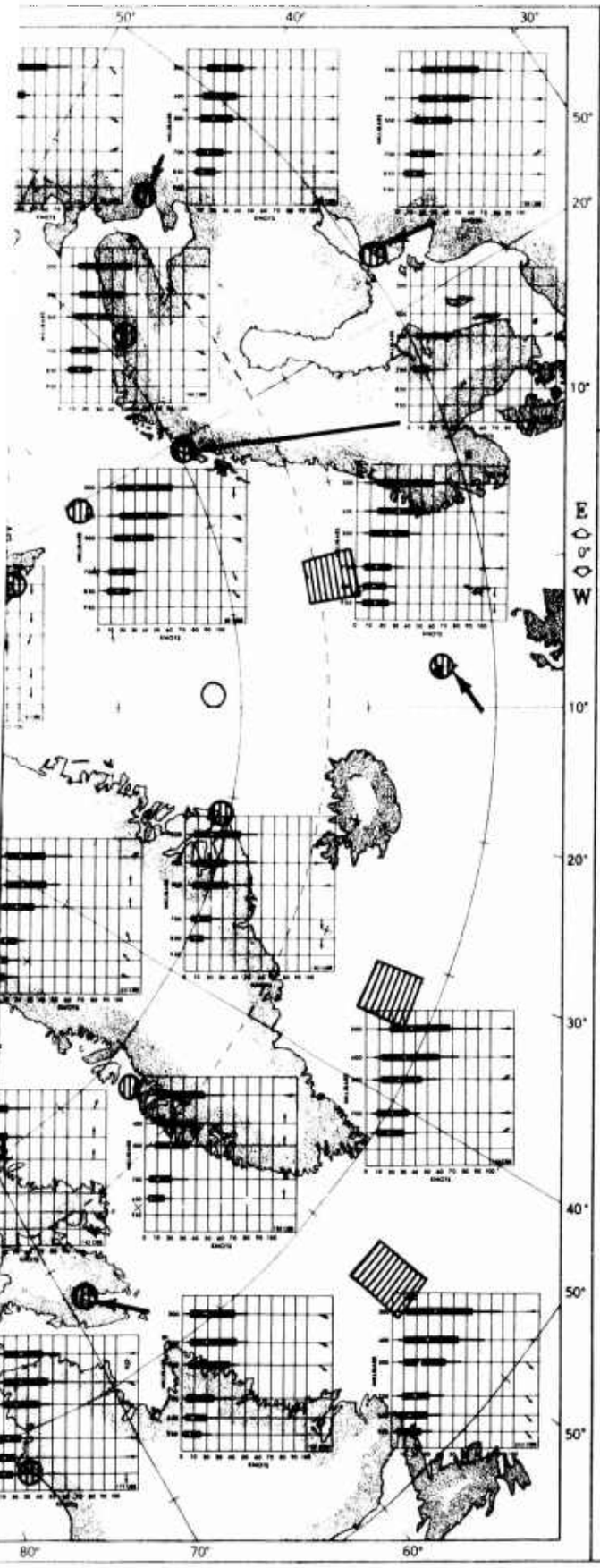


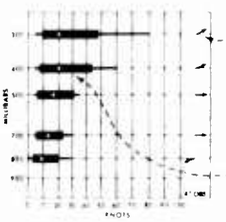
MAY

WIND (950 TO 300

TO 300 MB)

CHART 198





Prevailing Direction To 16 Points

(Direction indicated for 300 millibar level is from WSW.)

Distribution of Scalar Wind Speed Knots

(a) Median

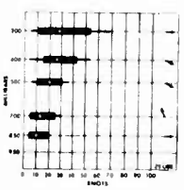
(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by



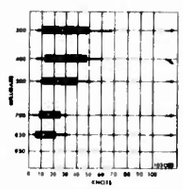
(At the 400 millibar level median speed was 20 knots, 5% of speeds were 4 knots or less, 16% were 8 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient.

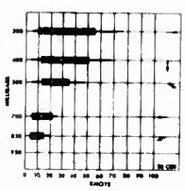
OSTROV VRANGELYA



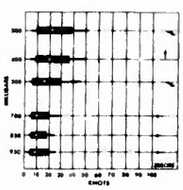
AMDERMA



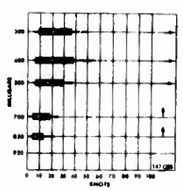
MALYYE KARMAKULY



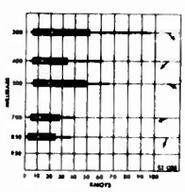
BARROW



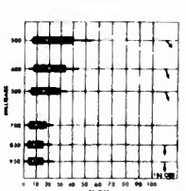
NORD



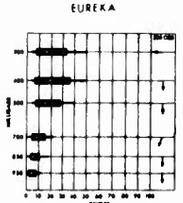
JAN MAYEN



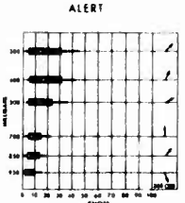
ISACHSEN



EUREKA

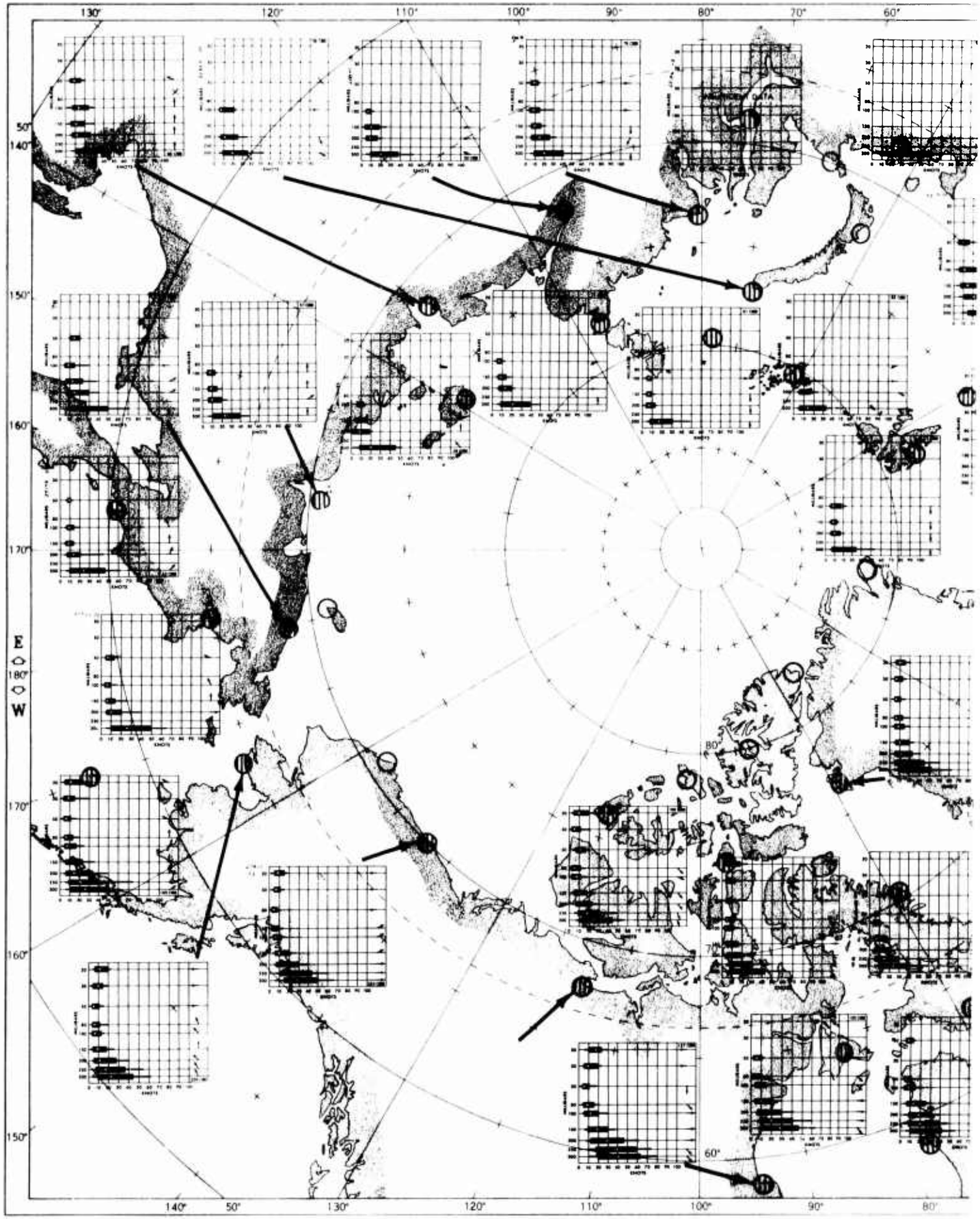


ALERT



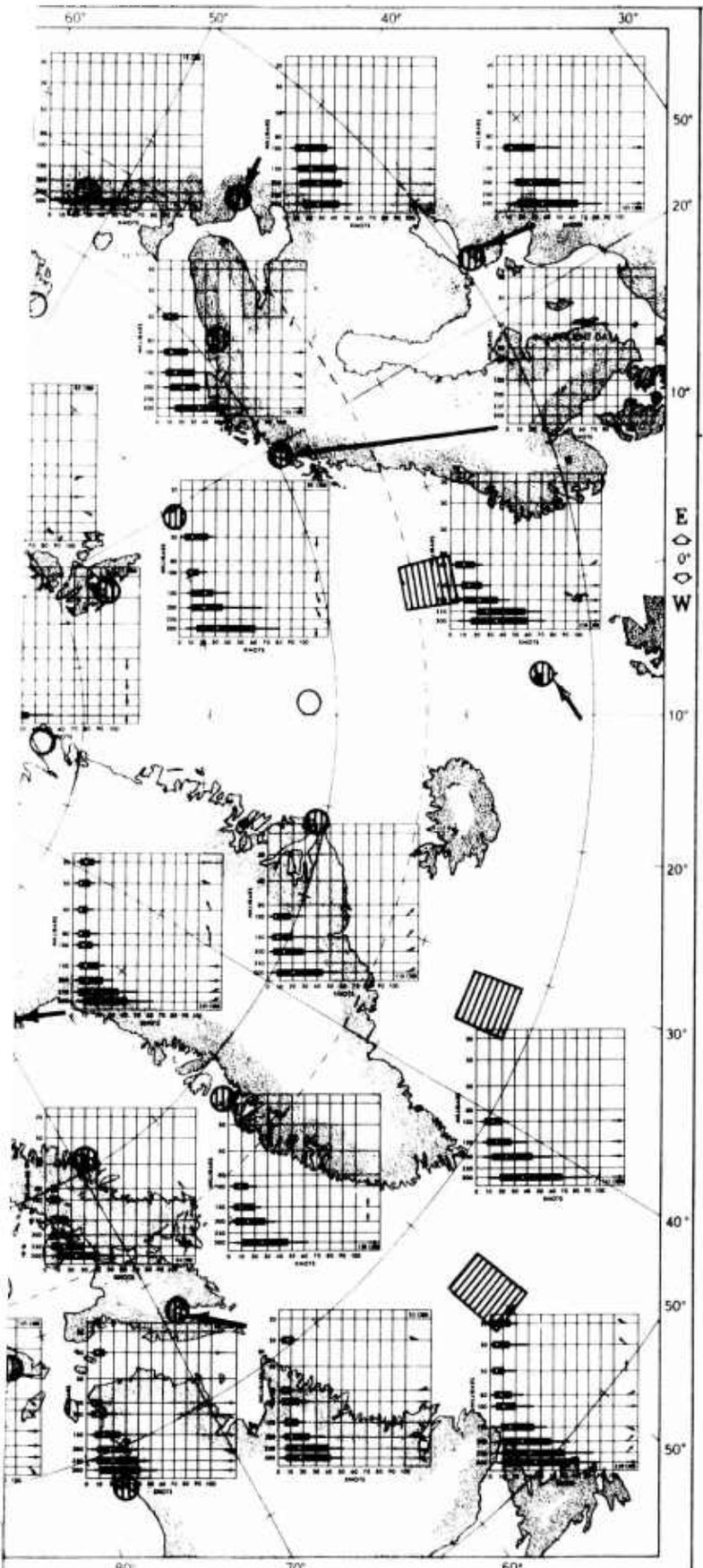
MAY

WIND (300 TO

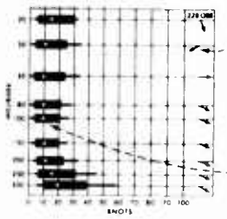


00 TO 20 MB)

CHART 199



Prevailing Direction To 16 Points



(Direction indicated for 30 millibar level is from ENE)

Distribution of Scalar Wind Speed Knots

(a) median

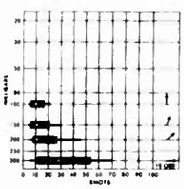
(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by



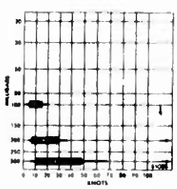
(At the 100 millibar level median speed was 10 knots, 5% of speeds were 2 knots or less, 16% were 4 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

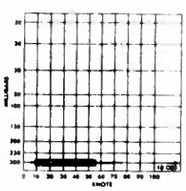
OSTROV VRANGELYA



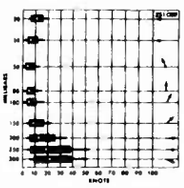
AMDERMA



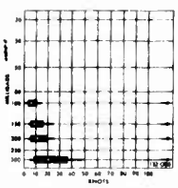
MALYYE KARMAKULY



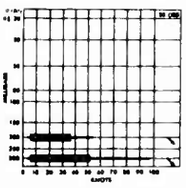
BARROW



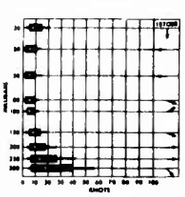
NORD



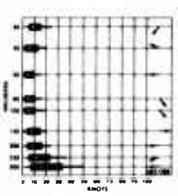
JAN MAYEN



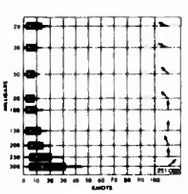
ISACHSEN



EUREKA

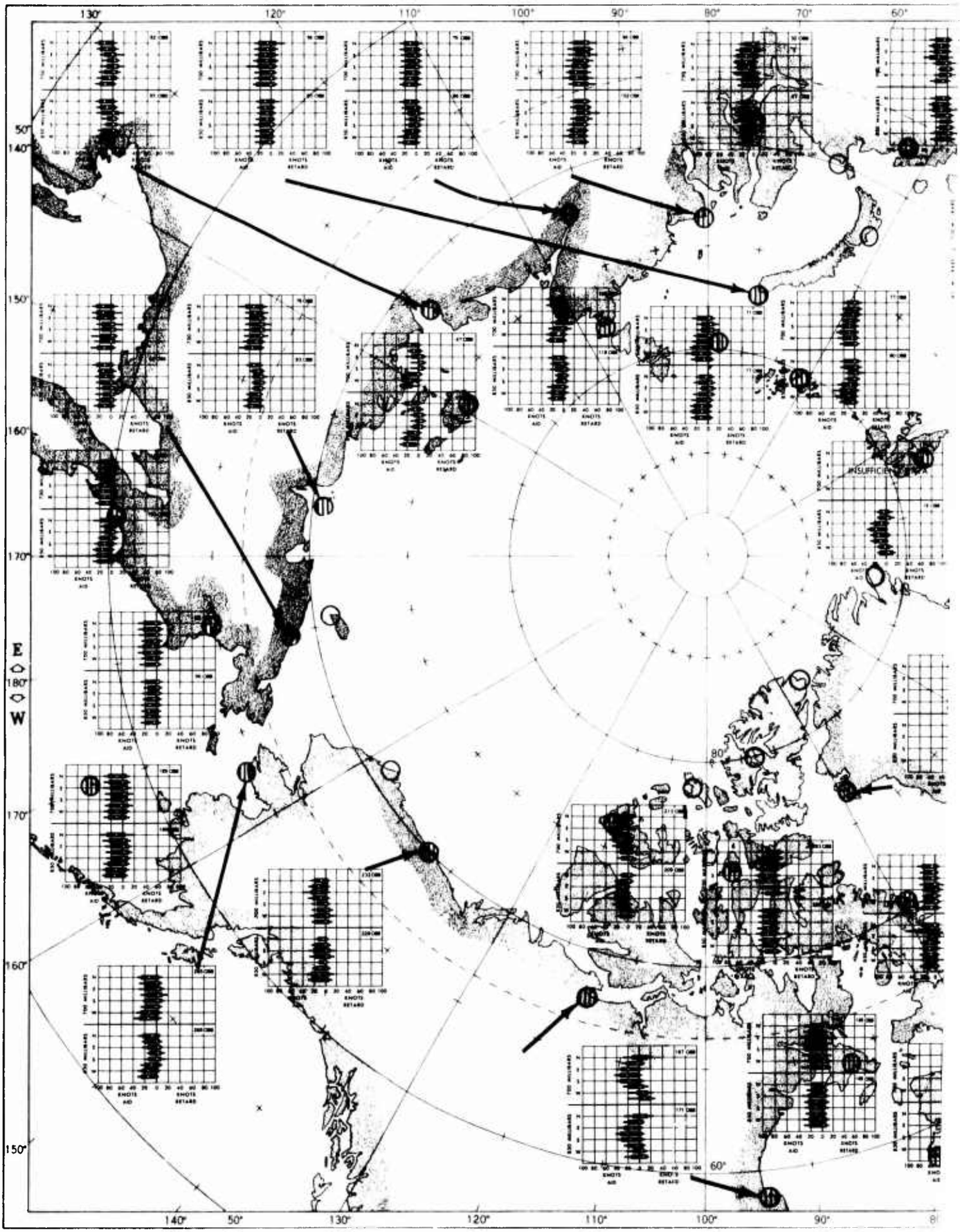


ALERT



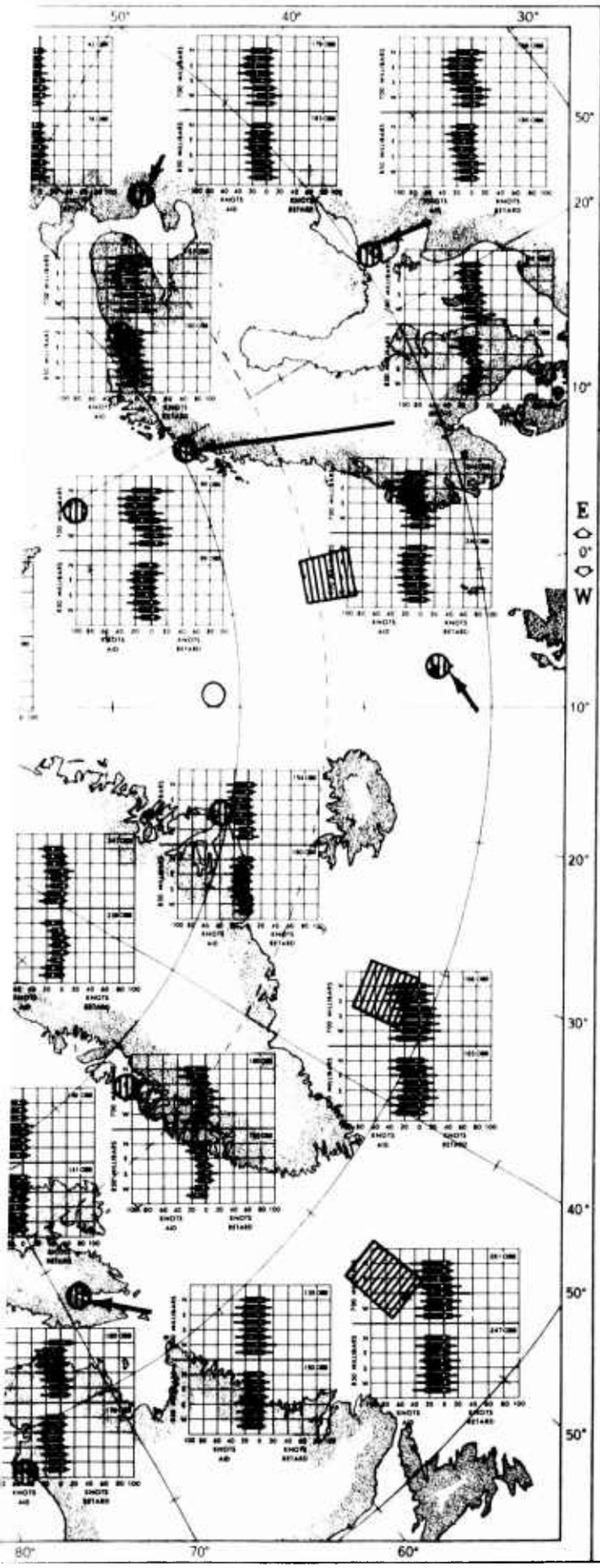
MAY

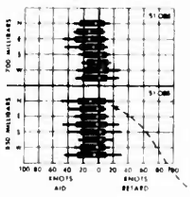
WIND AID AND RETA



ARD (850 & 700 MB)

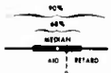
CHART 200





Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 300 knots true air speed

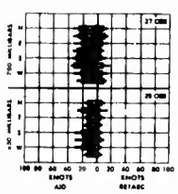
Read median and percentage frequency for direction toward which aircraft is flying thus



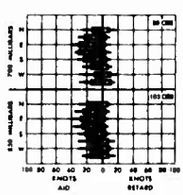
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward north at the 850 millibar level, wind aided or increased ground speed by an average of 12 knots. Wind effect ranged from 28 knots aid to 8 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 20 knots retard in 90% of the observations.)

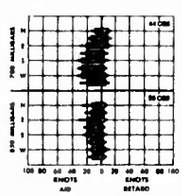
OSTROV VRANGELYA



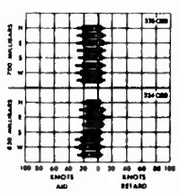
AMDERMA



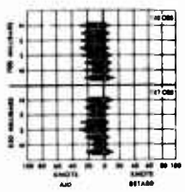
MALYYE KARMAKULY



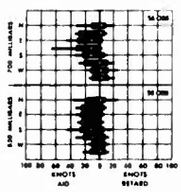
BARROW



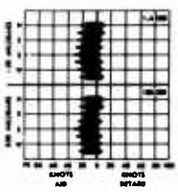
NORD



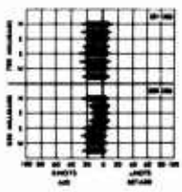
JAN MAYEN



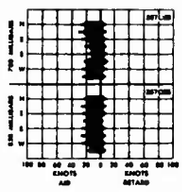
ISACHSEN



EUREKA

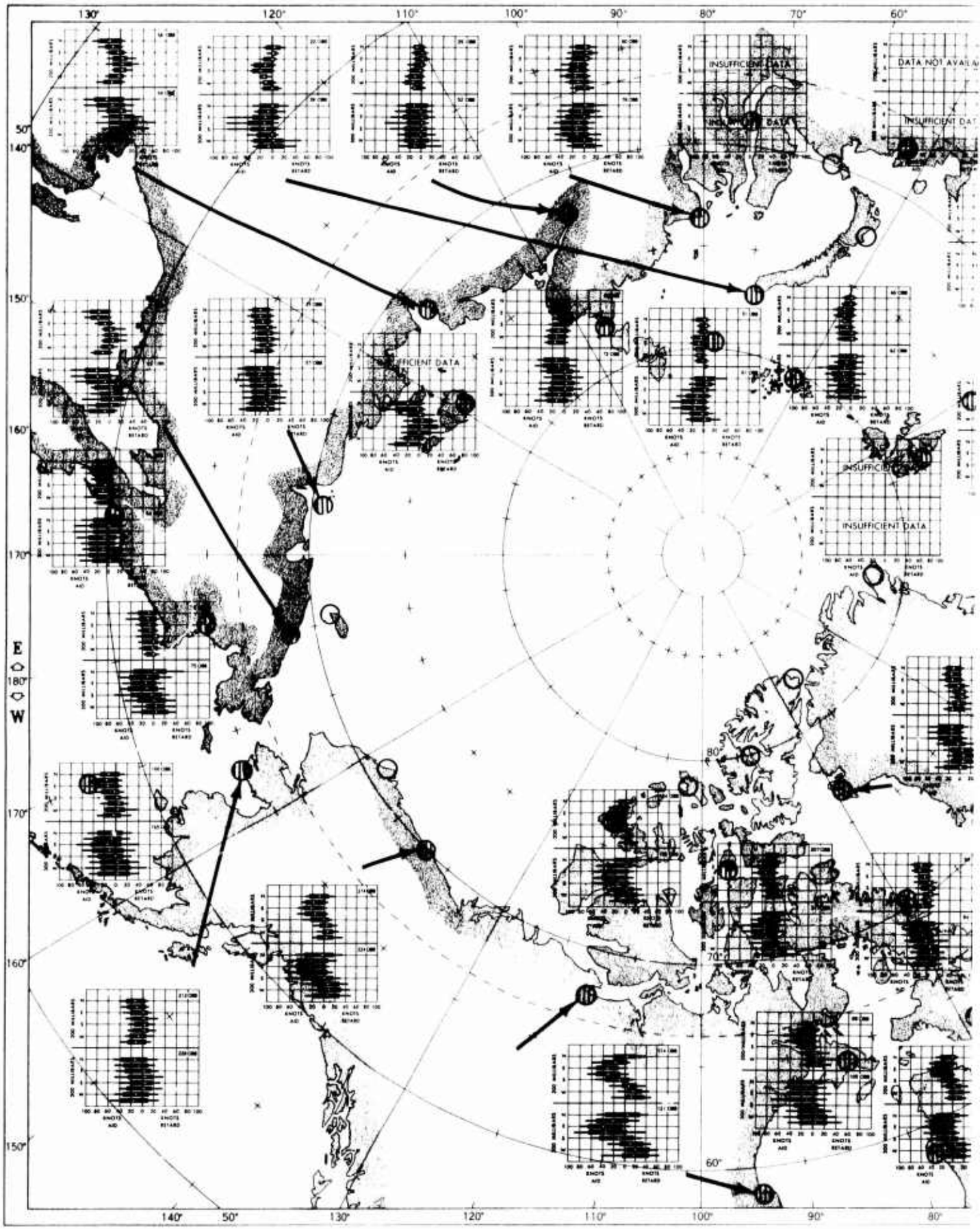


ALERT



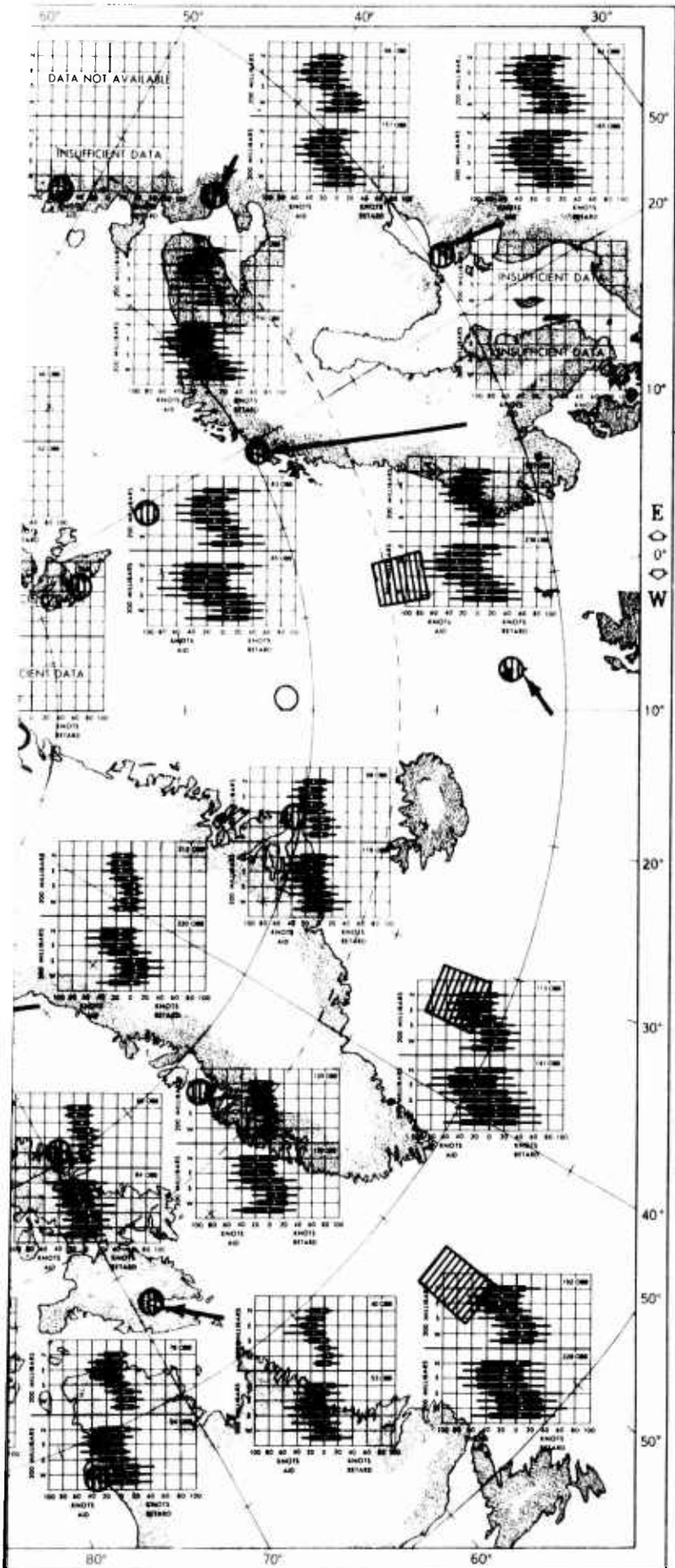
MAY

WIND AID AND RETARD


130°
120°
110°
100°
90°
80°
70°
60°
50°
140°
150°
160°
170°
E
180°
W
INSUFFICIENT DATA
DATA NOT AVAILA
INSUFFICIENT DAT
INSUFFICIENT DATA
INSUFFICIENT DATA
INSUFFICIENT DATA

ETARD (300 & 200 MB)

CHART 201

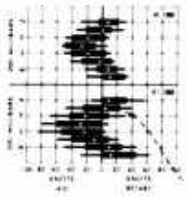


Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 600 knots true air speed

Read median and percentage frequency for direction toward which aircraft is flying thus

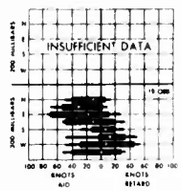


Bars omitted when data for a level are missing or insufficient

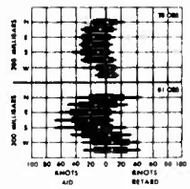


For an aircraft flying toward northeast at the 300 millibar level, wind retarded or decreased ground speed by an average of 4 knots. Winds effect ranged from 26 knots aid to 25 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 40 knots retard in 90% of the observations.

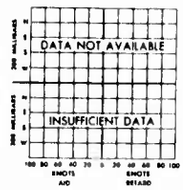
OSTROV VRANGELYA



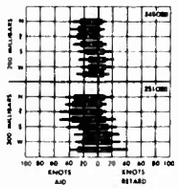
AMDERMA



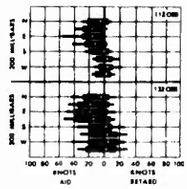
MALYYE KARMAKULY



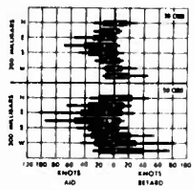
BARROW



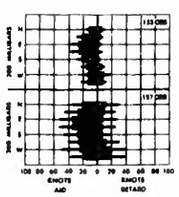
NORD



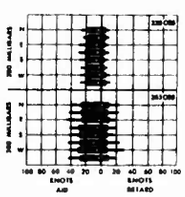
JAN MAYEN



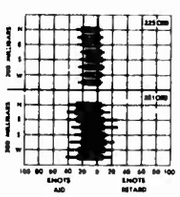
ISACHSEN



EUREKA

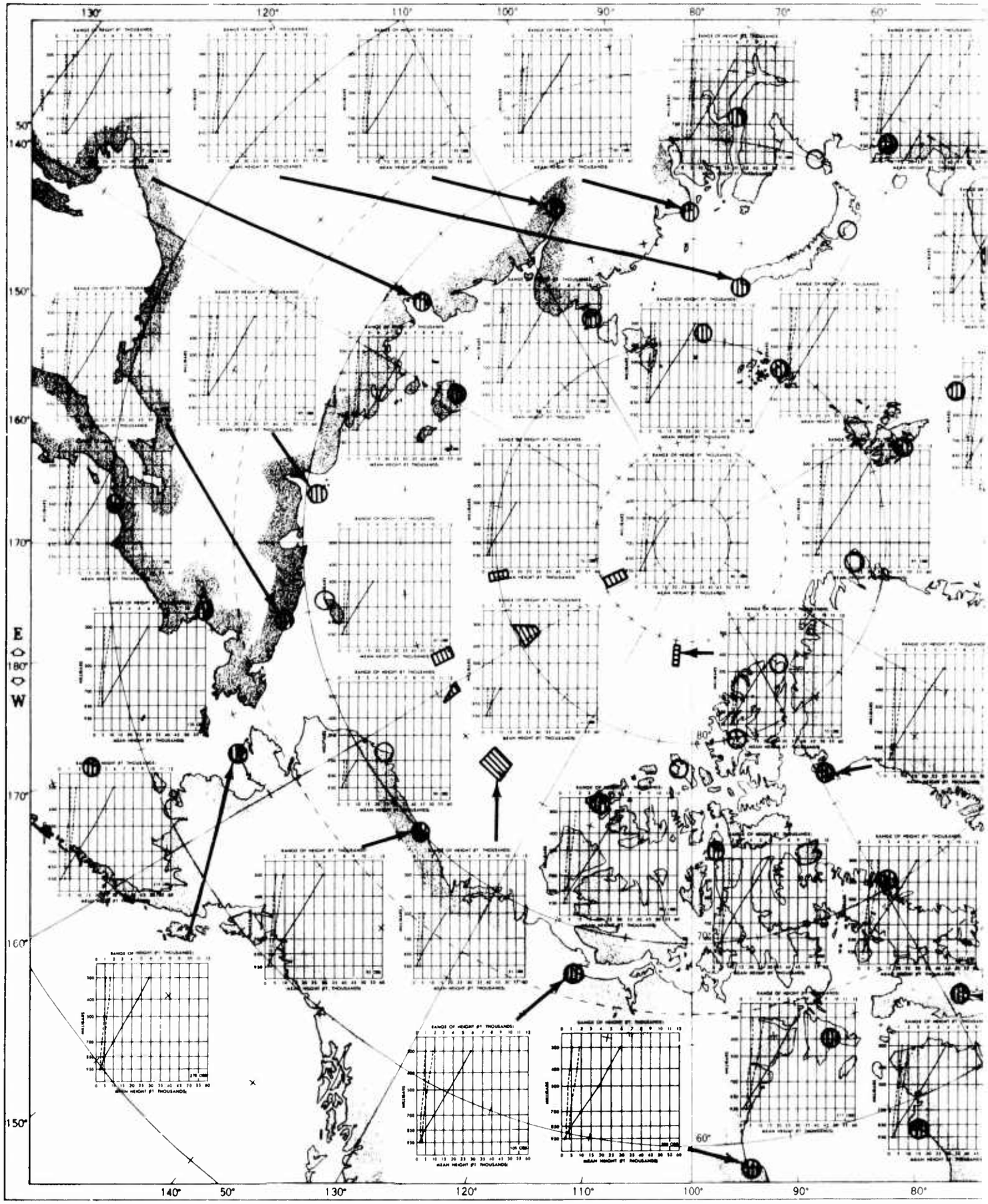


ALERT



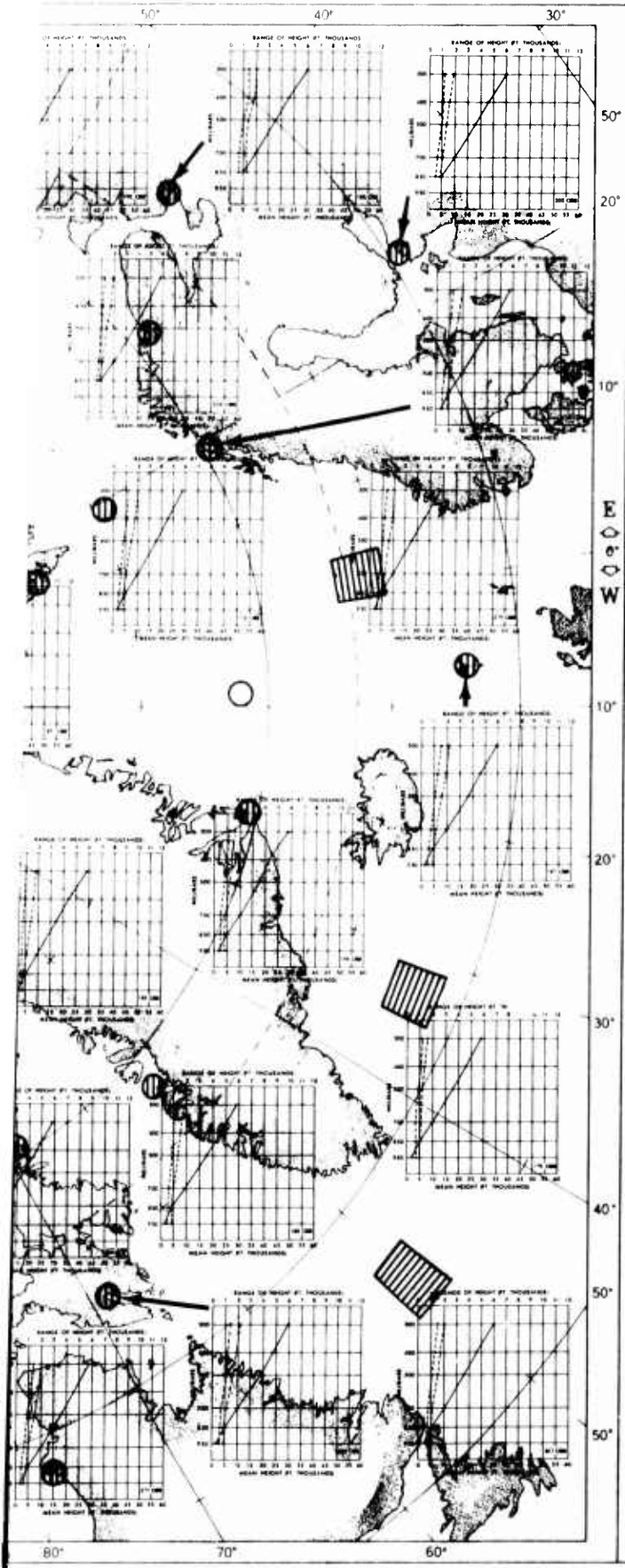
MAY

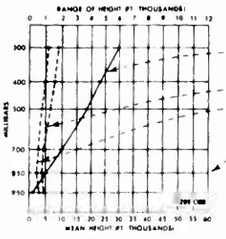
HEIGHT (950 TO



) TO 300 MB)

CHART 202





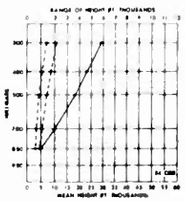
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
- (1) 5% 95% Range
- (2) 16% 84% Range

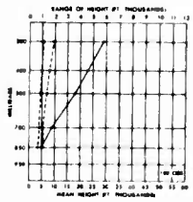
(For the 850 millibar level the mean Height = 5,000 feet, the 5% 95% Height range = 800 feet and the 16% 84% range = 450 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

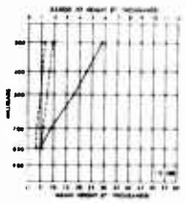
OSTROV VRANGELYA



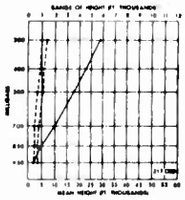
AMDERMA



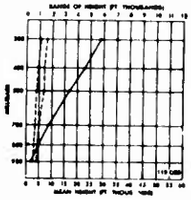
MALYYE KARMAKULY



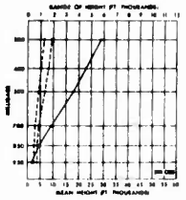
BARROW



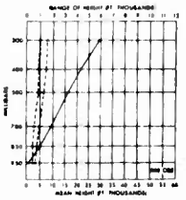
NORD



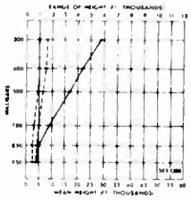
JAN MAYEN



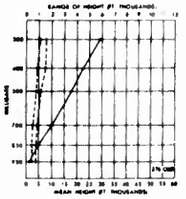
ISACHSEN



EUREKA

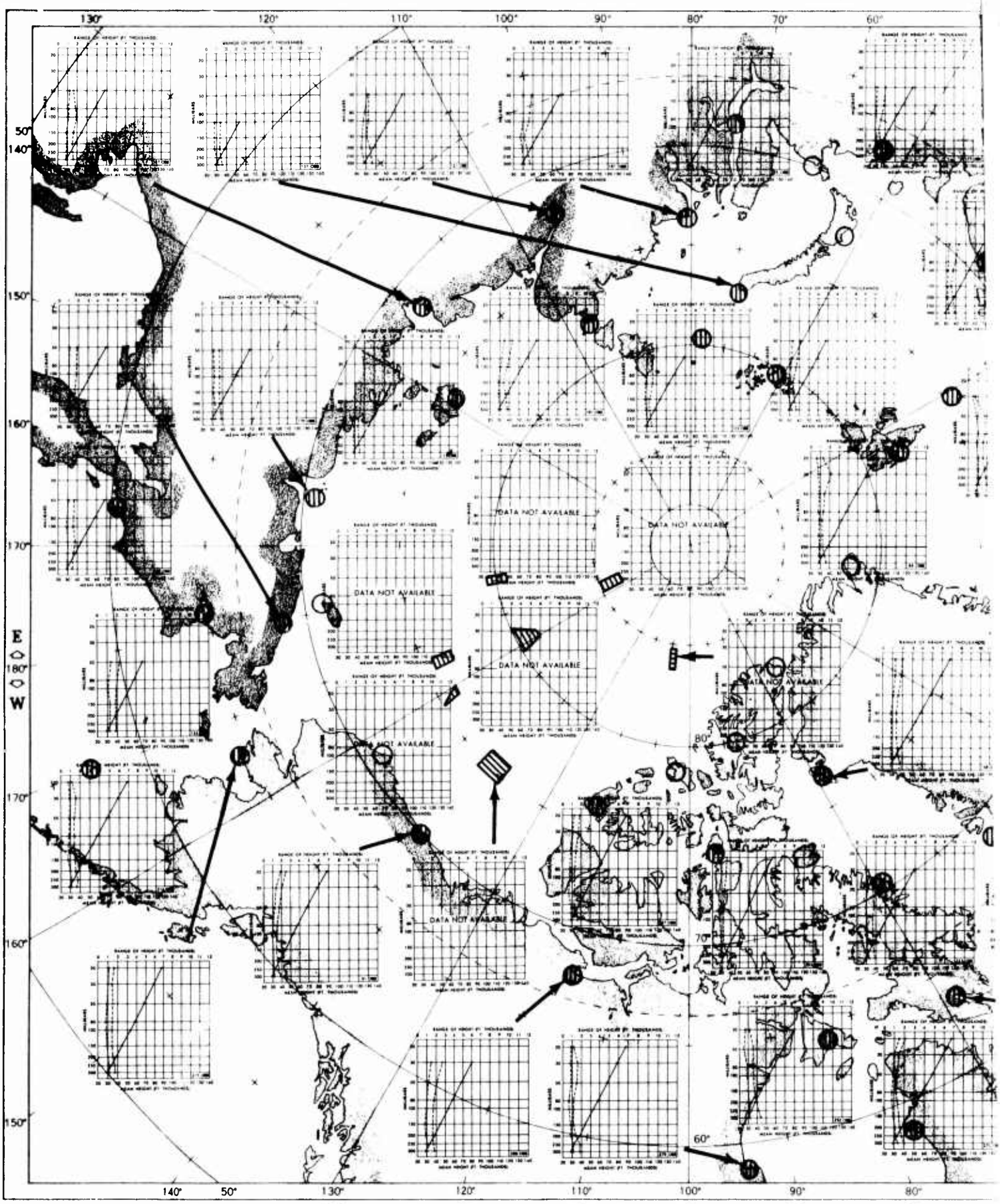


ALERT



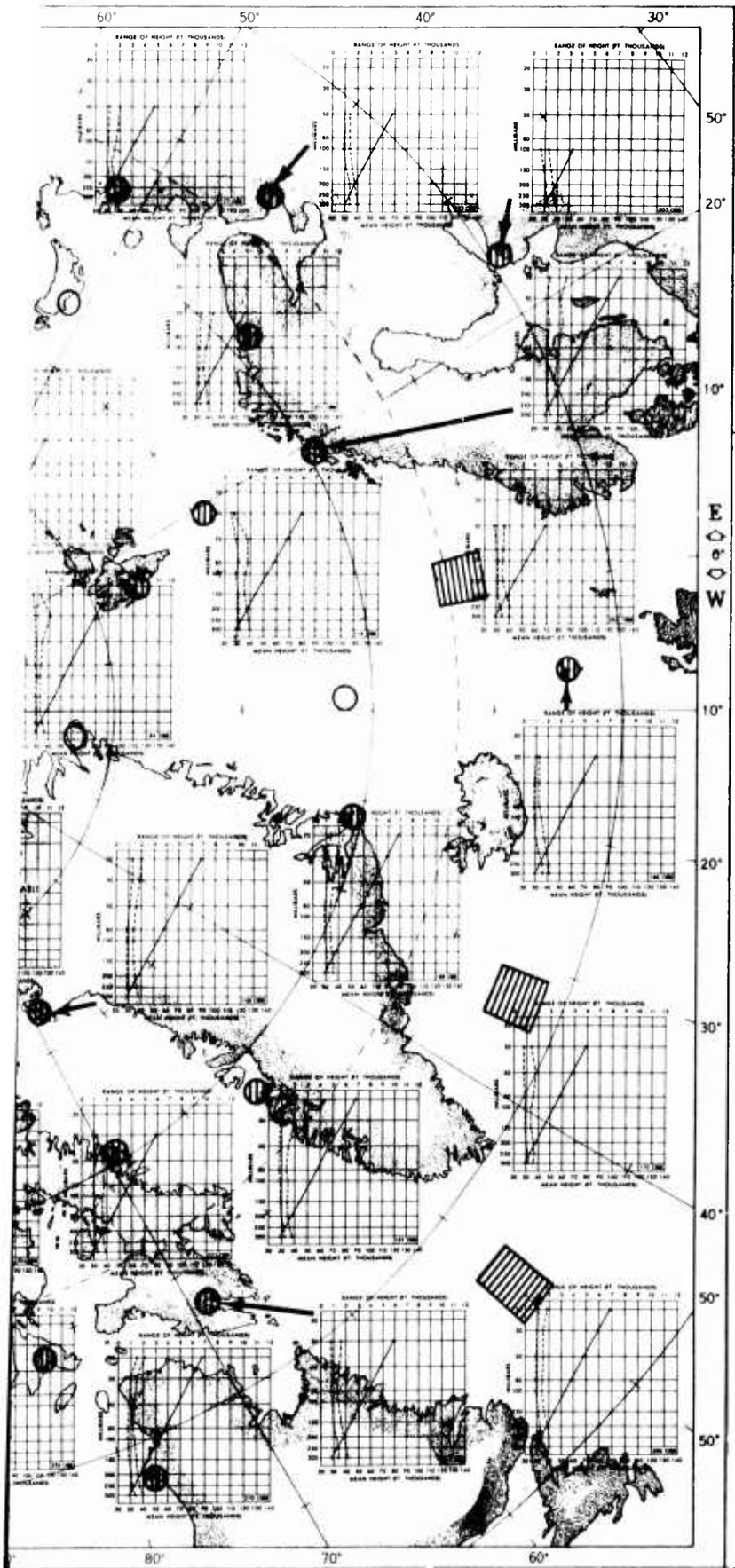
MAY

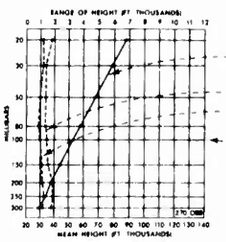
HEIGHT (300 TO



(300 TO 20 MB)

CHART 203





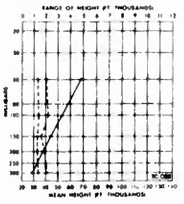
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
- (1) 5% 95% Range
- (2) 16% 84% Range

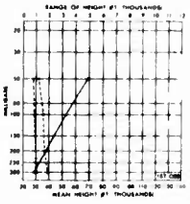
(For the 100 millibar level the mean Height is 53,000 feet, the 5% 95% Height range is 1,500 feet, and the 16% 84% range is 1,000 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

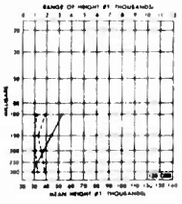
OSTROV VRANGELYA



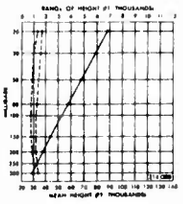
AMDERMA



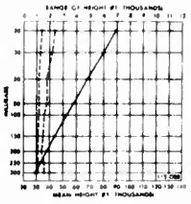
MALYYE KARMAKULY



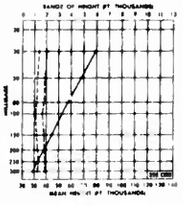
BARROW



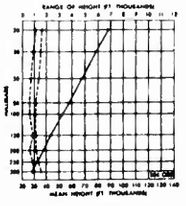
NORD



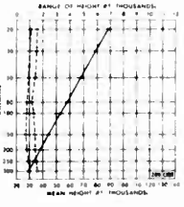
JAN MAYEN



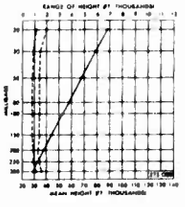
ISACHSEN



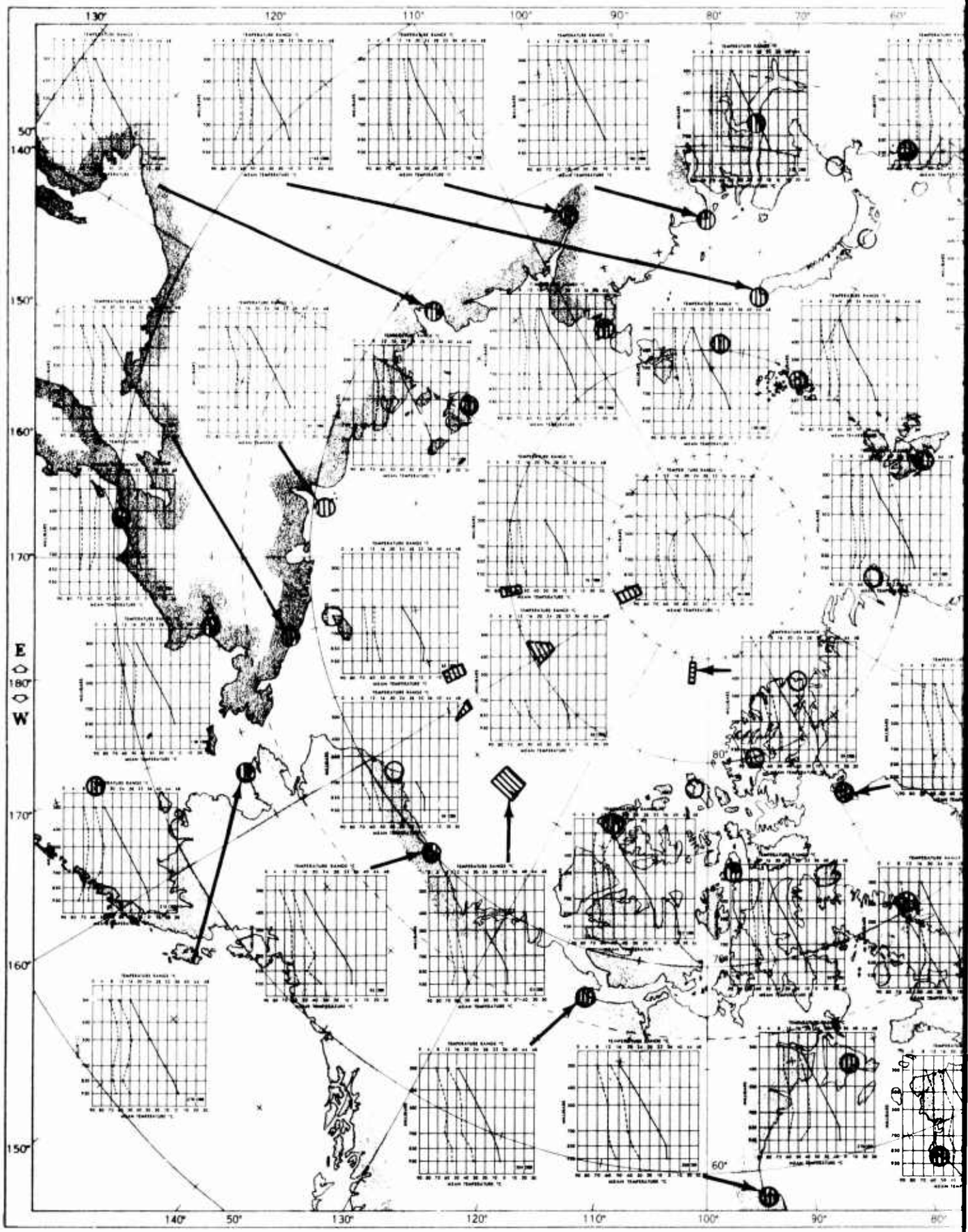
EUREKA



ALERT

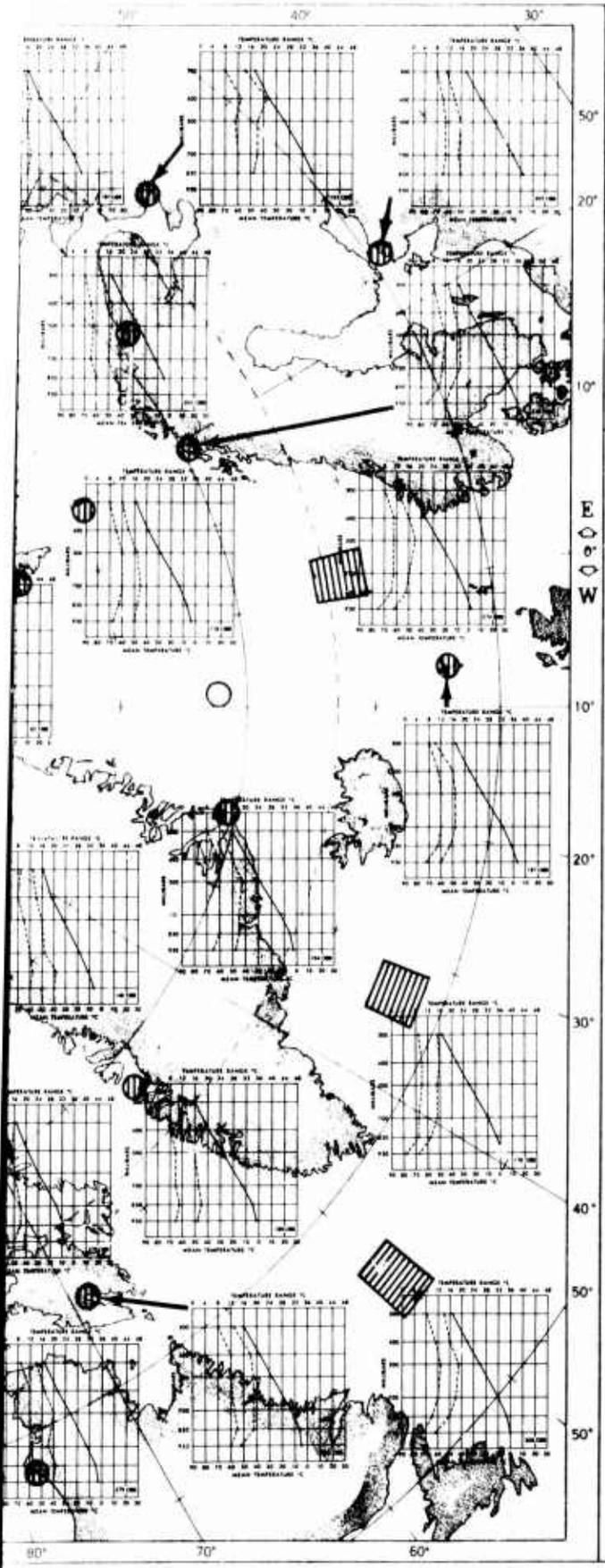


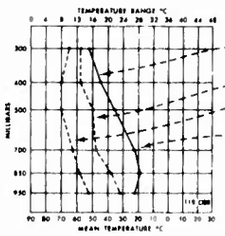
MAY TEMPERATURE (95



950 TO 300 MB)

CHART 204





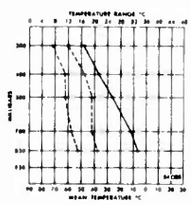
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% - 95% Range
(2) 16% - 84% Range

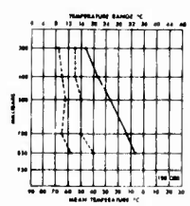
(For the 700 millibar level the mean temperature is -22°C, the 5% - 95% range is 17°C, and the 16% - 84% range is 11°C)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

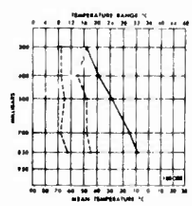
OSTROV VRANGELYA



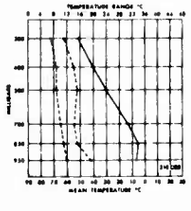
AMDERMA



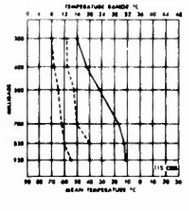
MALYYE KARMAKULY



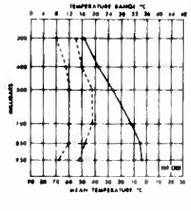
BARROW



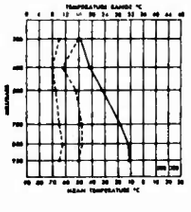
NORD



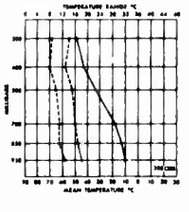
JAN MAYEN



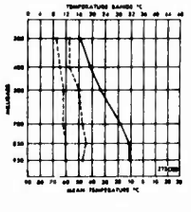
ISACHSEN



EUREKA

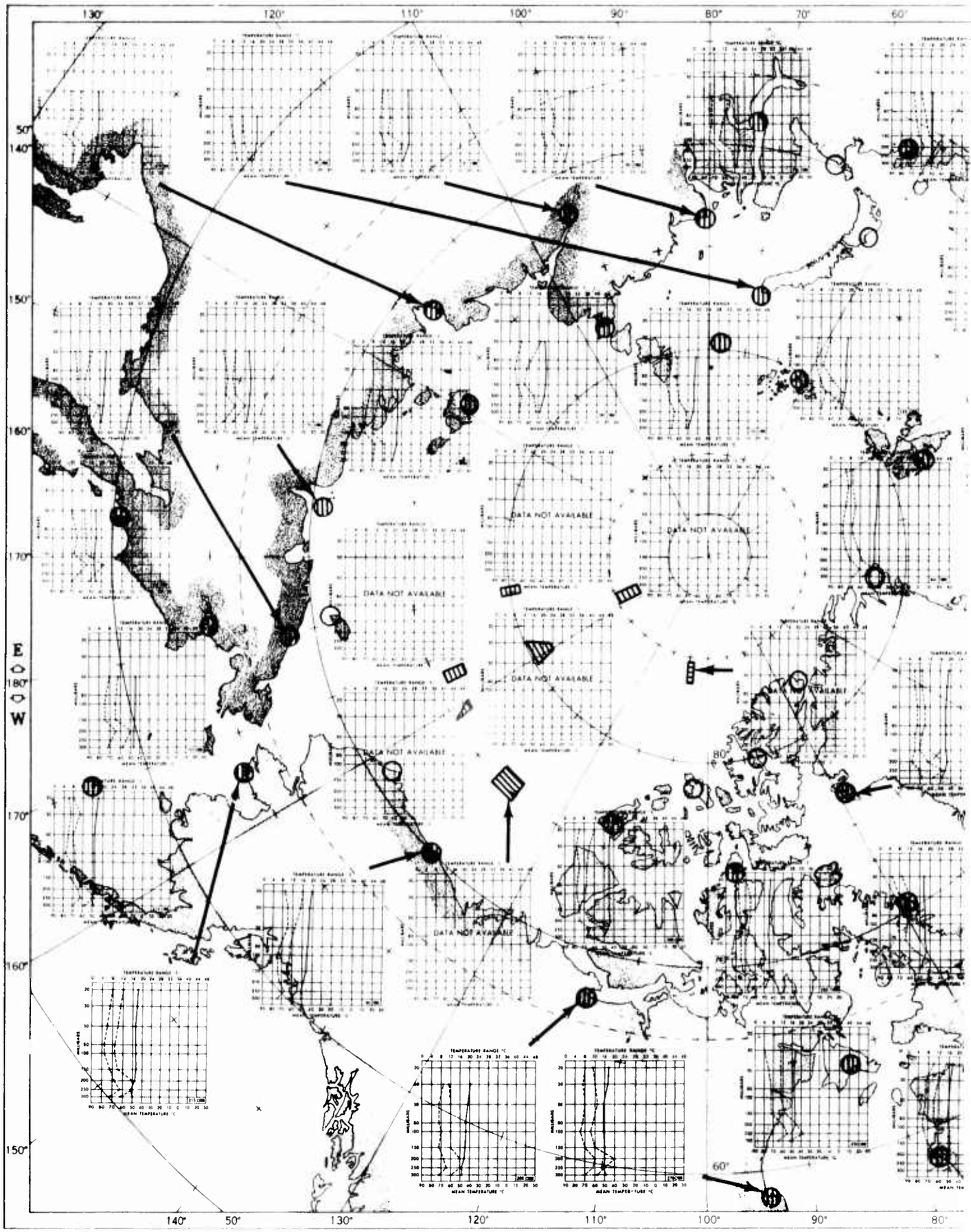


ALERT



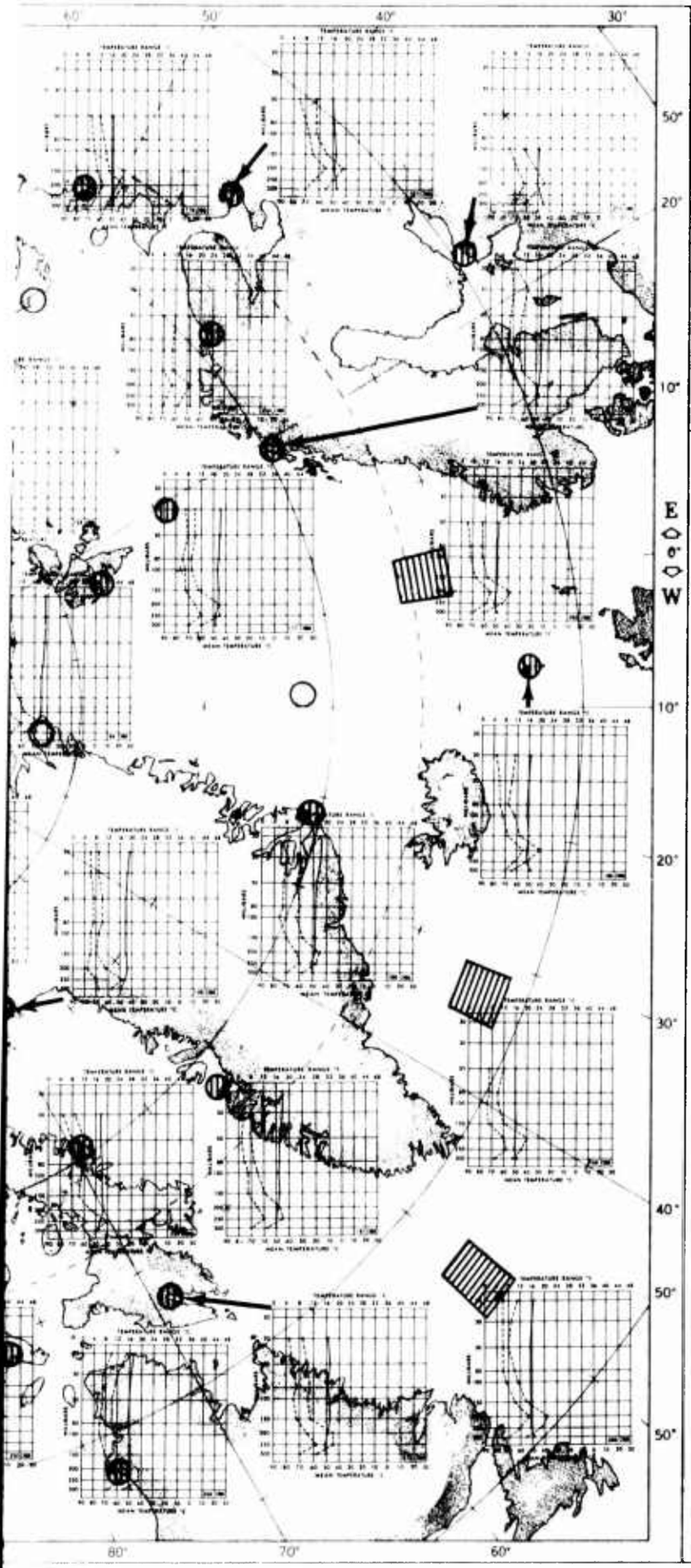
MAY

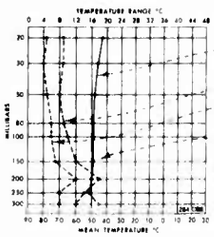
TEMPERATURE (30



RE (300 TO 20 MB)

CHART 205





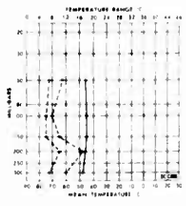
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% 95% Range
(2) 16% 84% Range

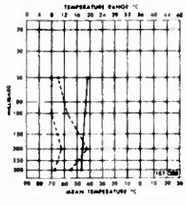
For the 150 millibar level the mean temperature is -49°C the 5% 95% range is 12°C and the 16% 84% range is 7°C

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

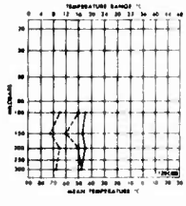
OSTROV V2ANGELYA



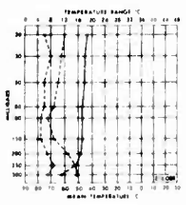
AMDERMA



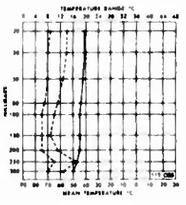
MALYYE KARMAKULY



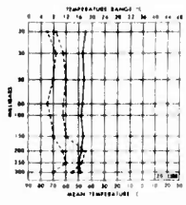
BARROW



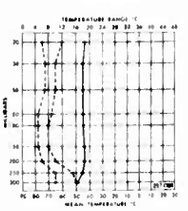
NORD



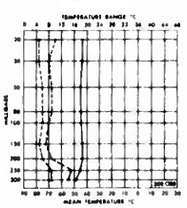
JAN MAYEN



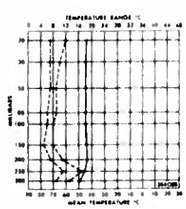
ISACHSEN



EUREKA

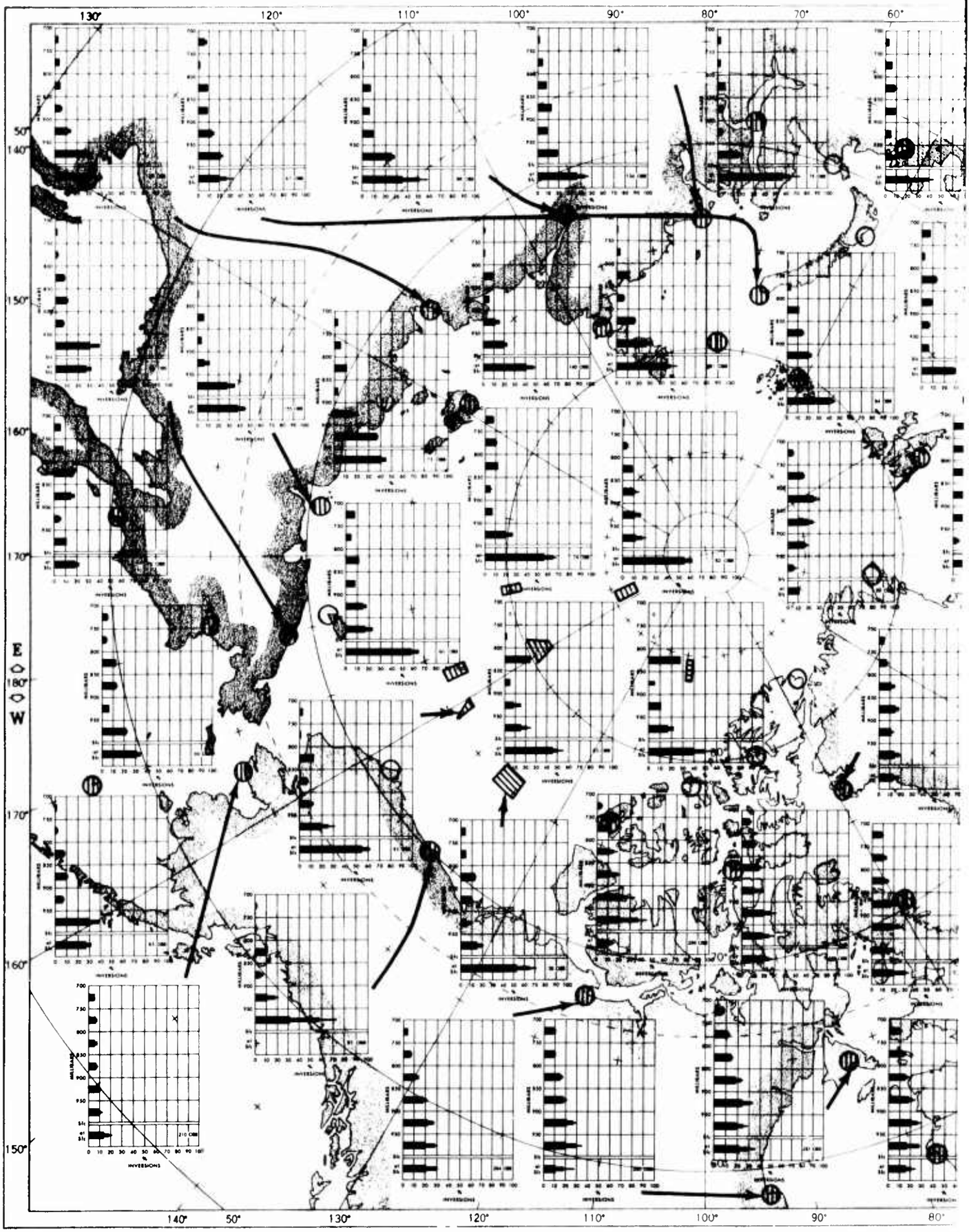


ALERT



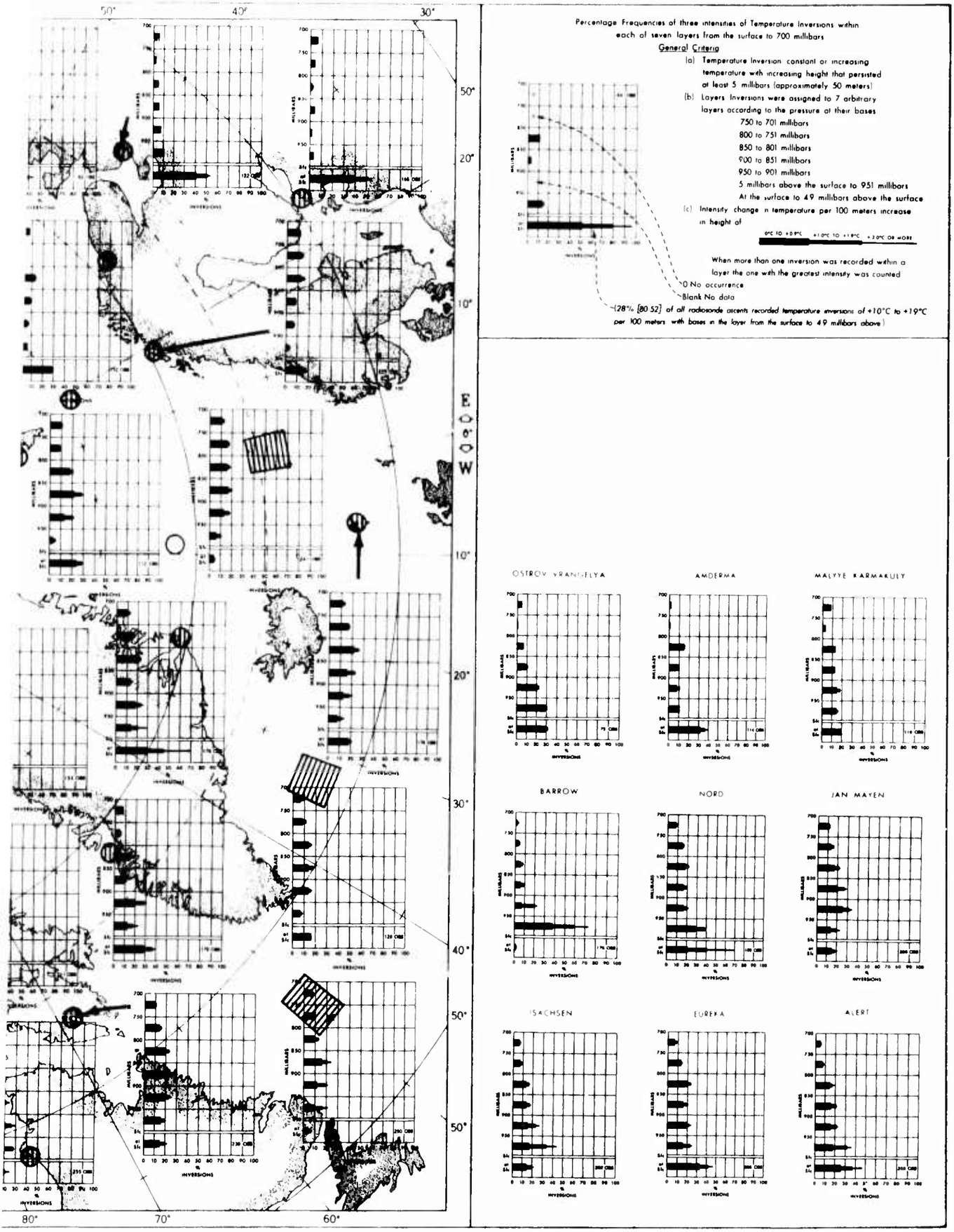
MAY

INVERSIO



;IONS

CHART 206



Percentage Frequencies of three intensities of Temperature Inversions within each of seven layers from the surface to 700 millibars

General Criteria

(a) Temperature Inversion constant or increasing temperature with increasing height that persisted at least 5 millibars (approximately 50 meters)

(b) Layers Inversions were assigned to 7 arbitrary layers according to the pressure at their bases

750 to 701 millibars
800 to 751 millibars
850 to 801 millibars
900 to 851 millibars
950 to 901 millibars
5 millibars above the surface to 951 millibars
At the surface to 49 millibars above the surface

(c) Intensity change in temperature per 100 meters increase in height of

0°C TO +0.9°C | +1.0°C TO +1.9°C | +2.0°C OR MORE

When more than one inversion was recorded within a layer the one with the greatest intensity was counted

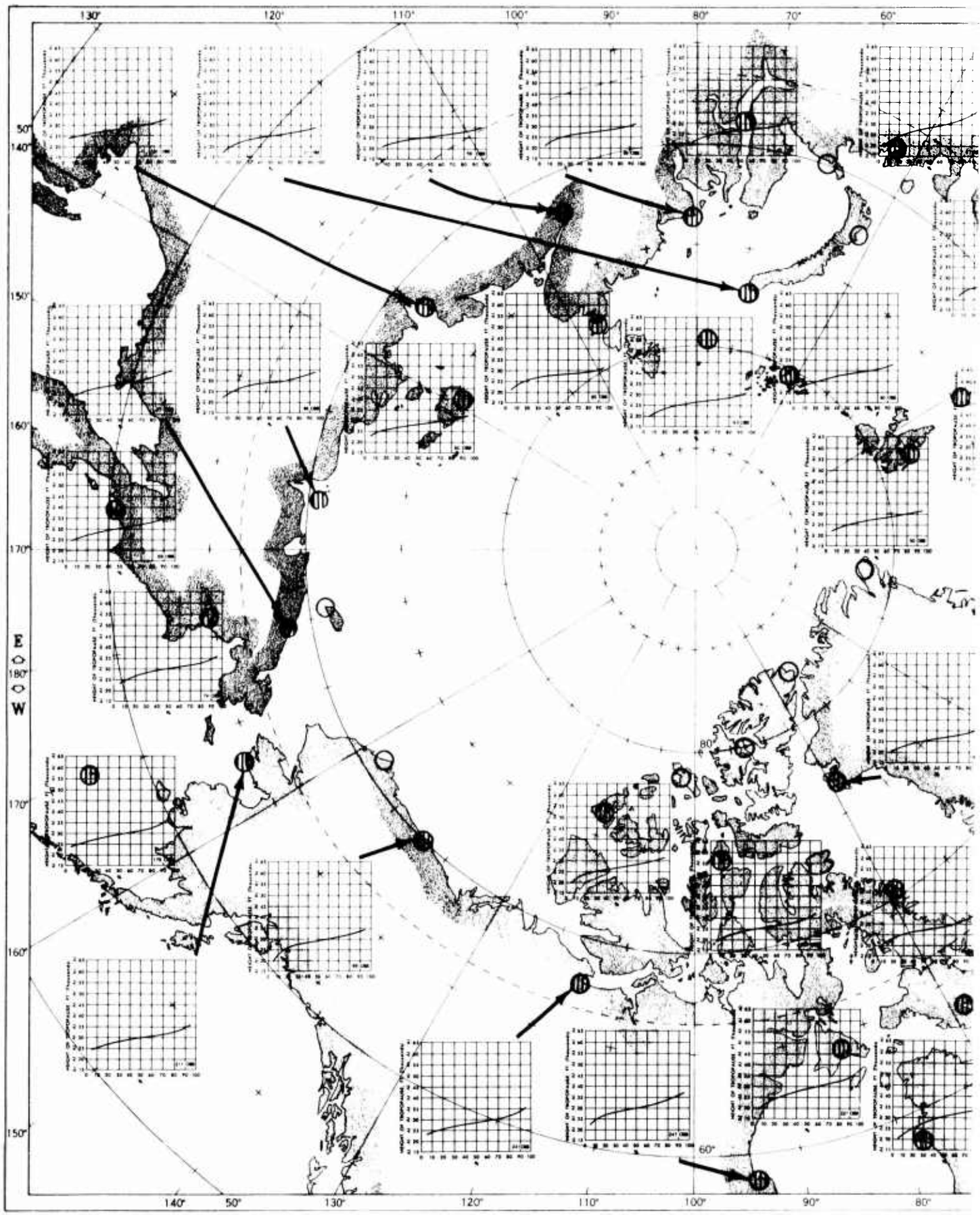
0 No occurrence

Blank No data

(28% [80.52] of all radiosonde ascents recorded temperature inversions of +10°C to +19°C per 100 meters with bases in the layer from the surface to 49 millibars above)

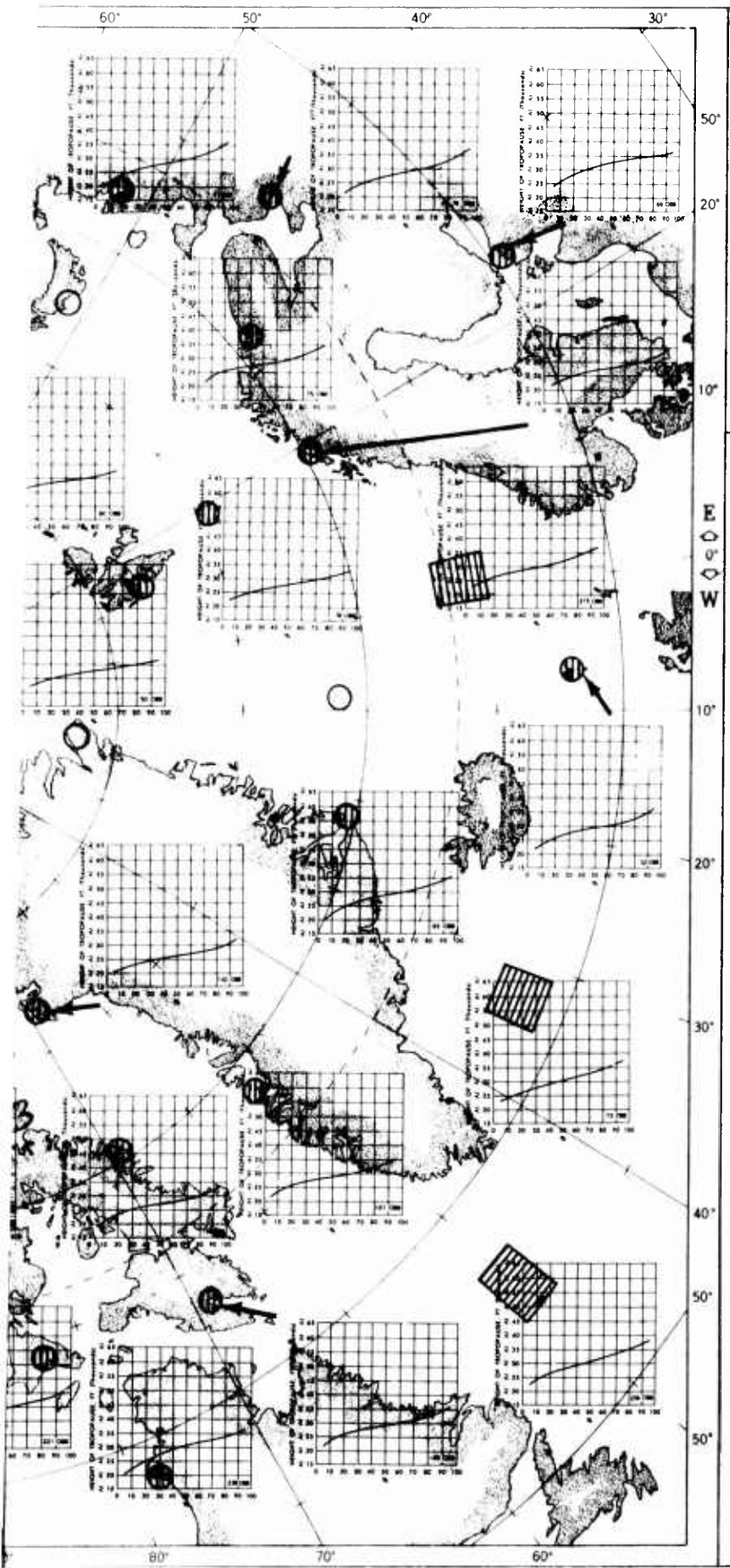
MAY

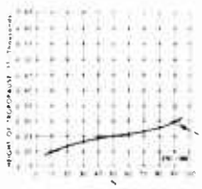
HEIGHT OF TRO



OF TROPOPAUSE

CHART 207

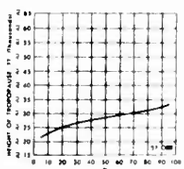




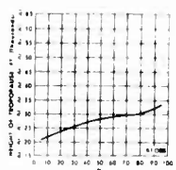
Percentage Frequency of Heights of the Tropopause equal to or less than the height intersected by the curve

(90% of all heights of the tropopause were thirty thousand feet or less)

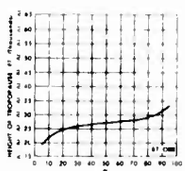
OSTROV VRANGELYA



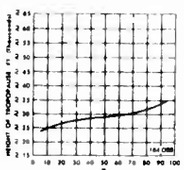
AMDERMA



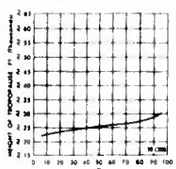
MALYYE KARMAKULY



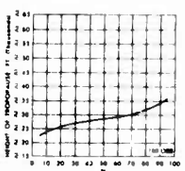
BARROW



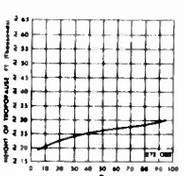
NORD



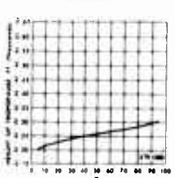
JAN MAYEN



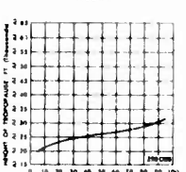
ISACHSEN



EUREKA

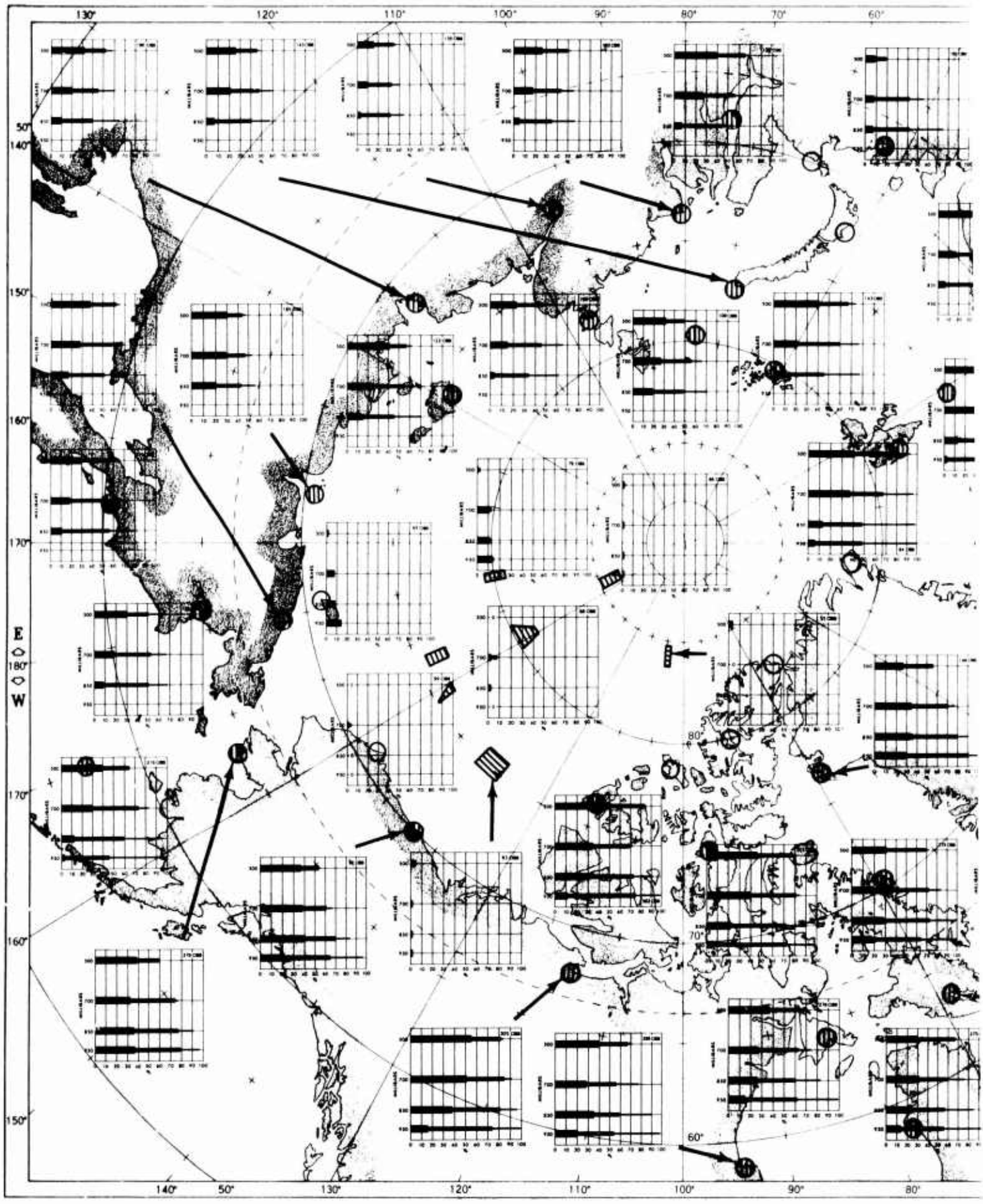


ALERT



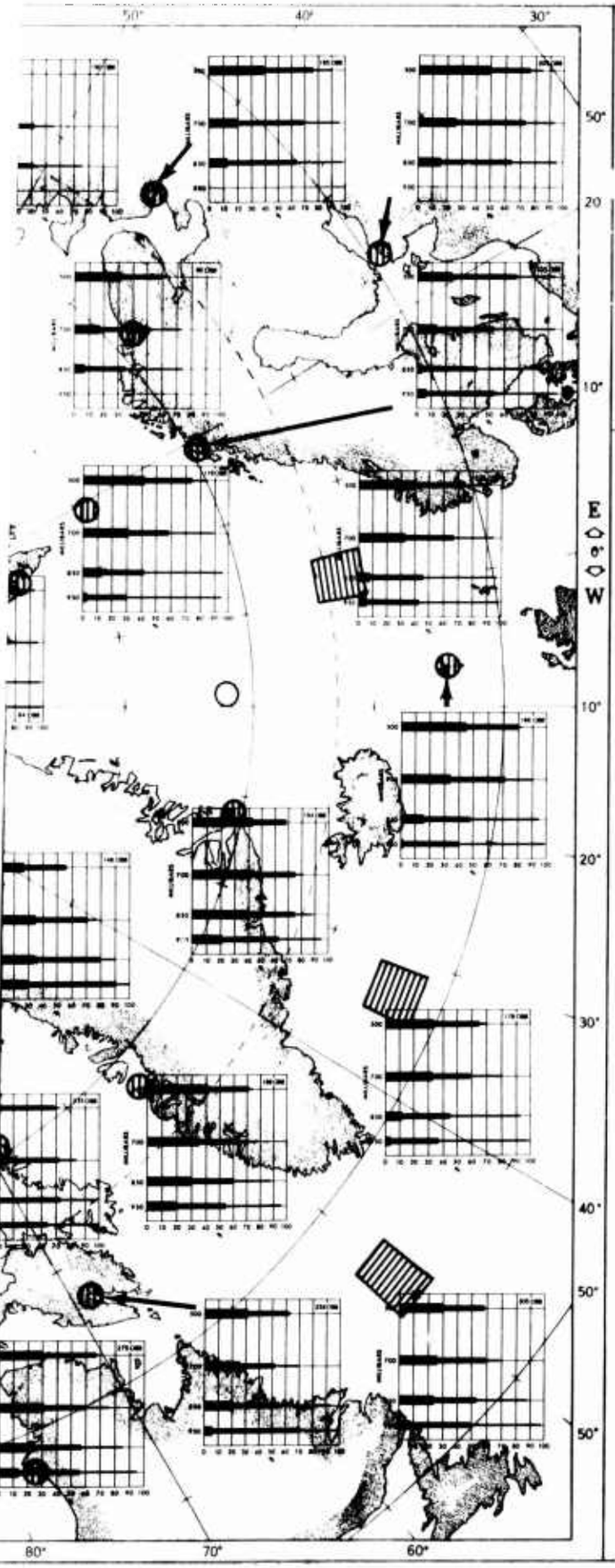
MAY

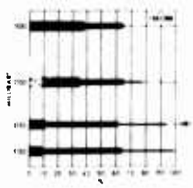
RELATIVE HUM



HUMIDITY

CHART 208



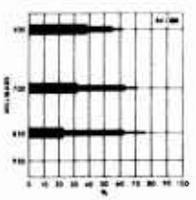


Distribution of Relative Humidity at Pressure Surfaces

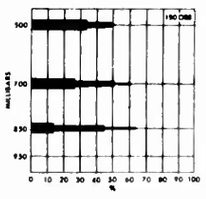
(a) Percentage Frequency of Relative Humidity as indicated by

(For the 850 millibar level Relative Humidity was 30% 59% for 11% of all observations, 60% 84% humidity occurred 50% [61 minus 11] of the observations, and 85% 100% humidity occurred 33% [94 minus 61] of the observations.)

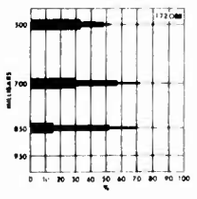
OSTROV VRANGELYA



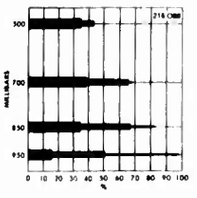
AMDERMA



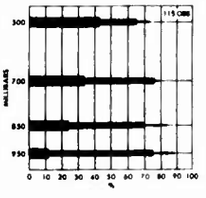
MALYYE KARMAKULY



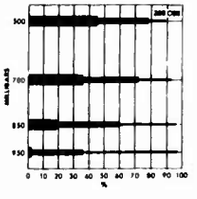
BARROW



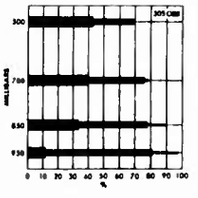
NORD



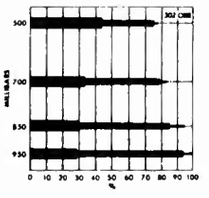
JAN MAYEN



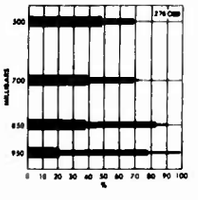
ISACHSEN



EUREKA

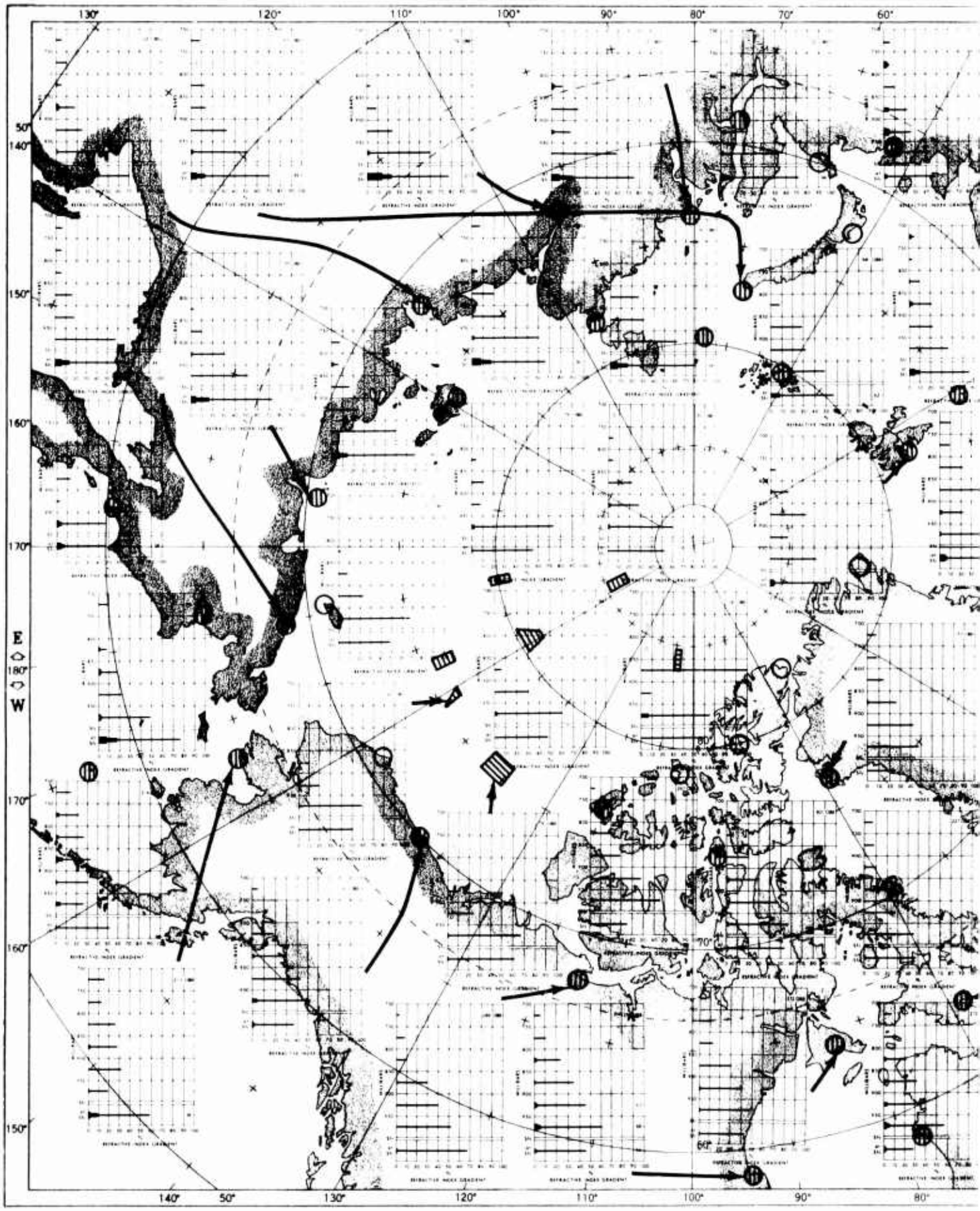


ALERT



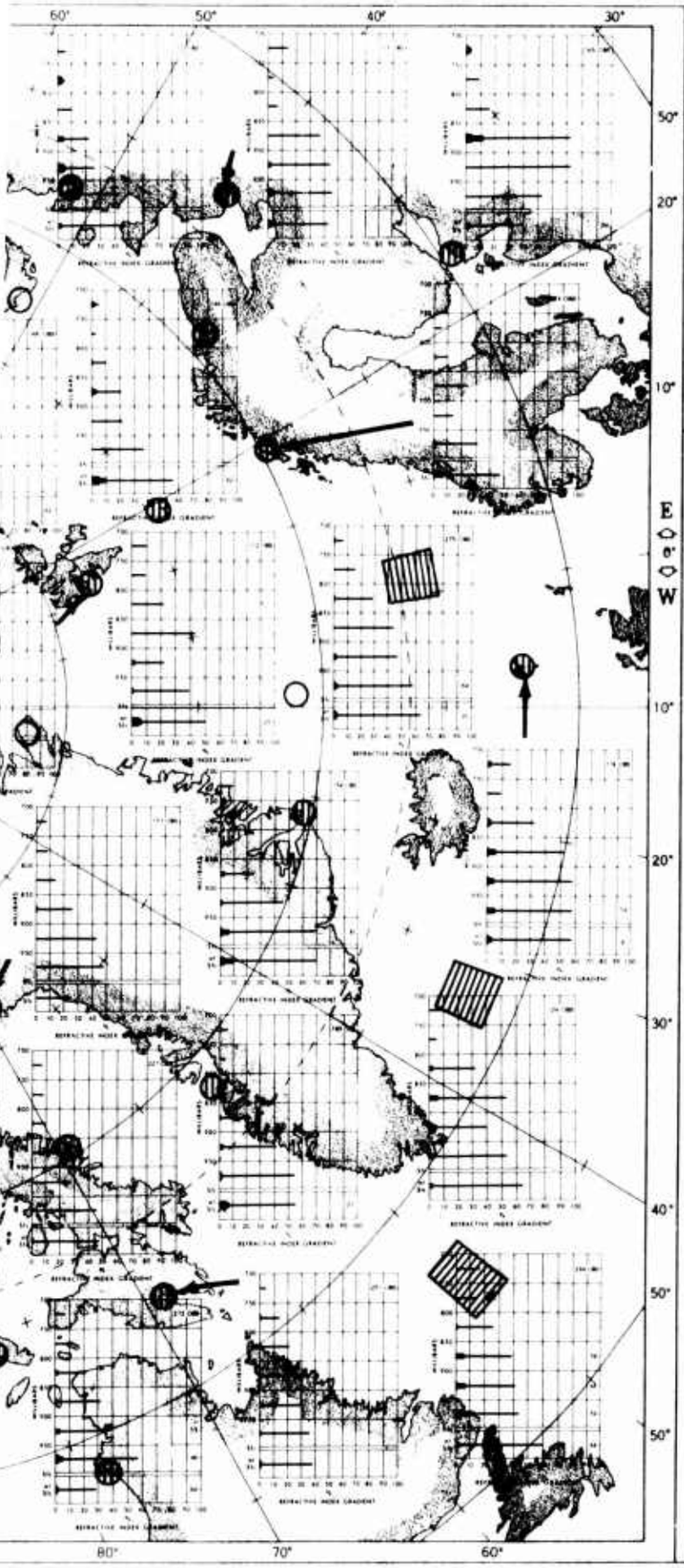
MAY

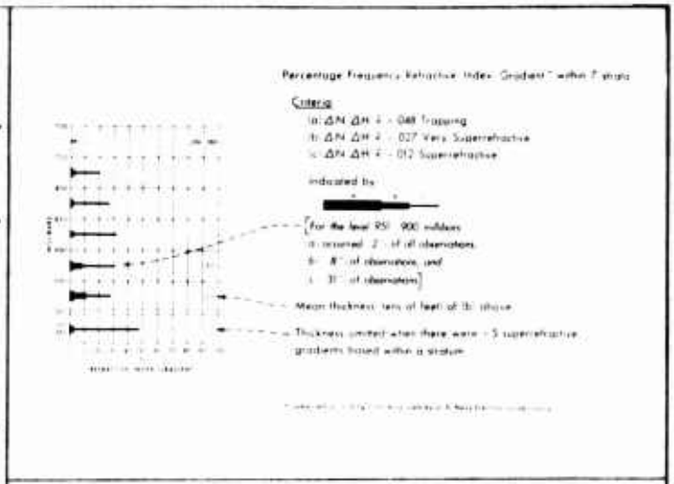
REFRACTIVE INDEX

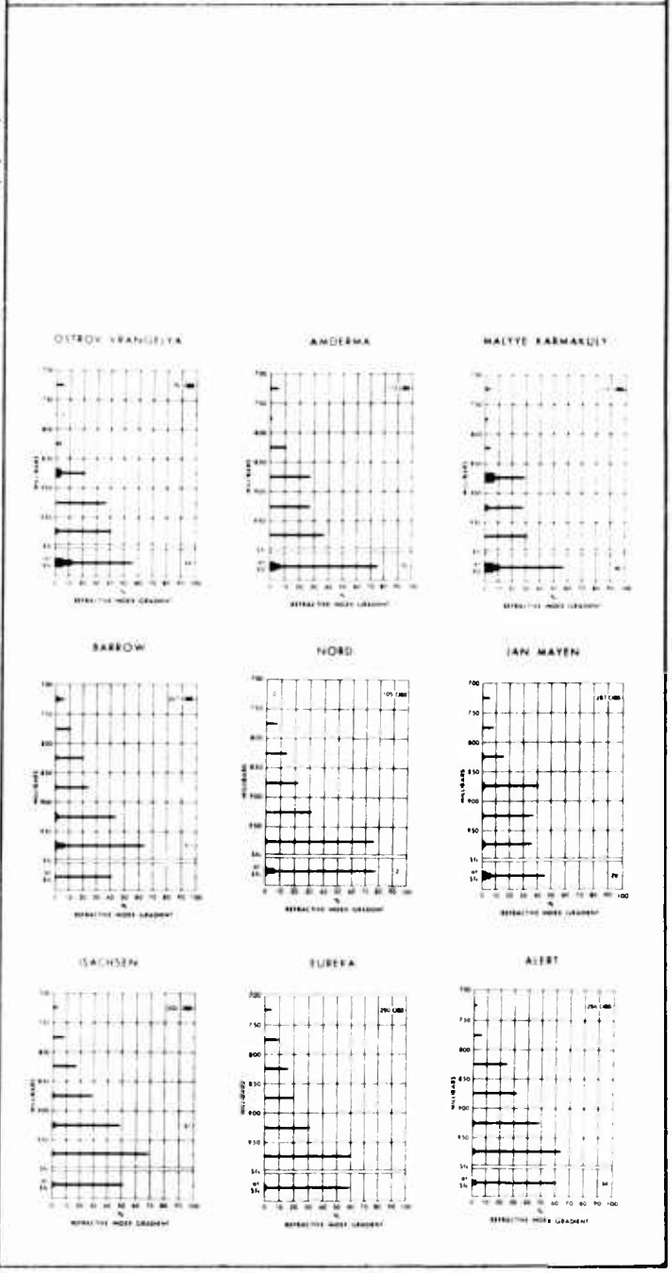


INDEX GRADIENT

CHART 209

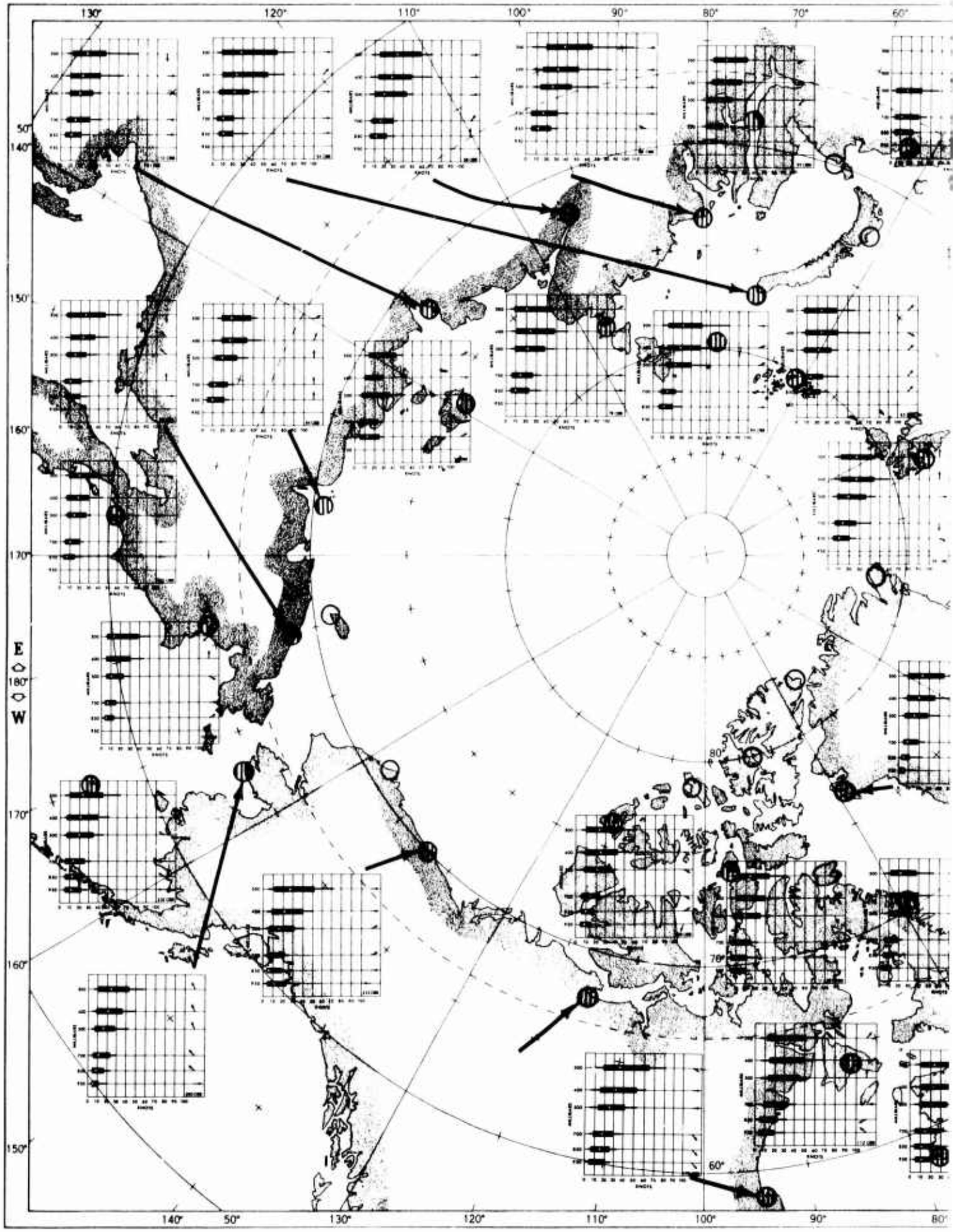






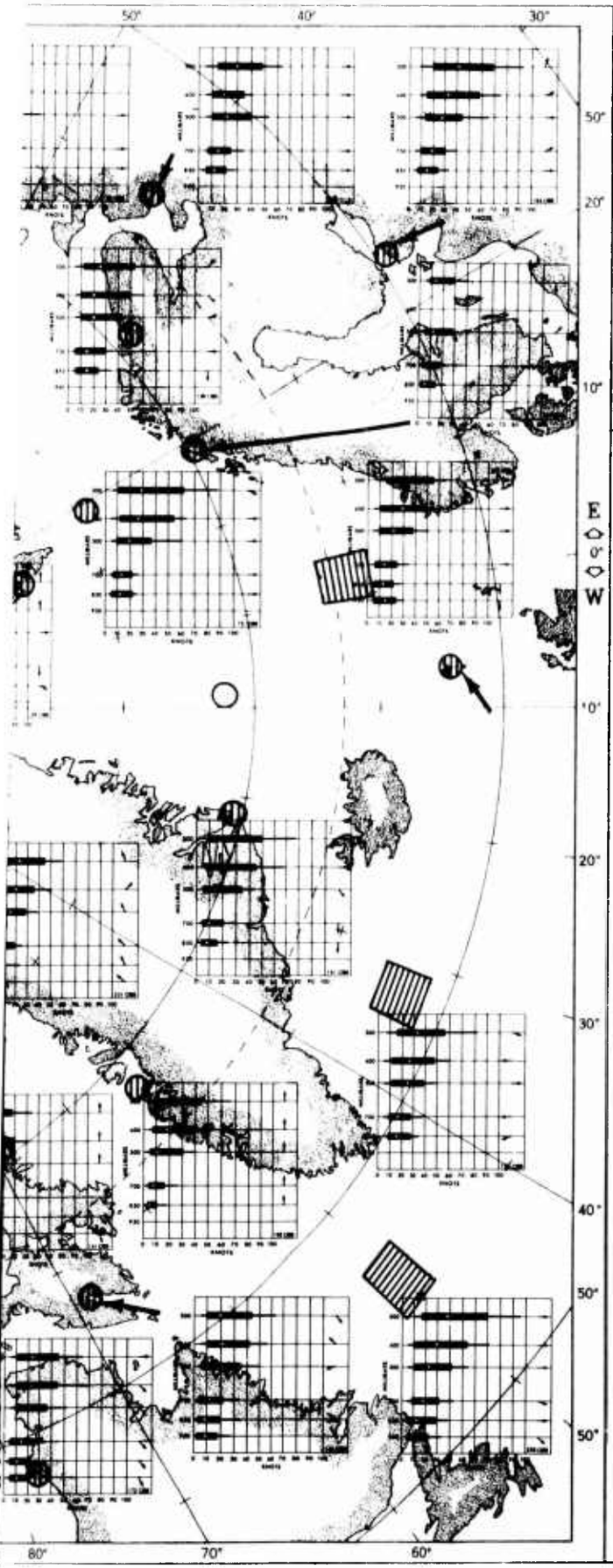
JUNE

WIND (950 T

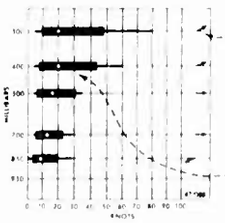


TO 300 MB)

CHART 210



Prevailing Direction To 16 Points



Direction indicated for 300 millibar level is from WSW

Distribution of Scalar Wind Speed Knots

(a) Median

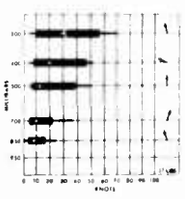
(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by



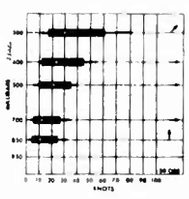
At the 400 millibar level median speed was 20 knots, 5% of speeds were 4 knots or less, 16% were 8 knots or less, etc.

Frequencies are omitted when data for a level are missing or insufficient

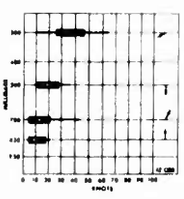
OSTROV VRANGELYA



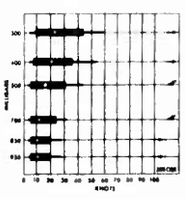
AMDERMA



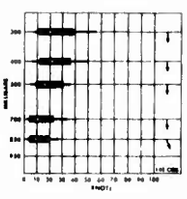
MALYYE KARMAKULY



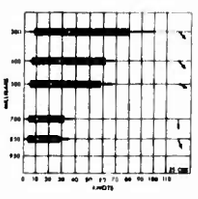
BARROW



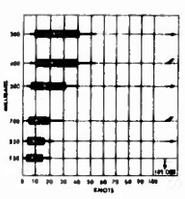
NORD



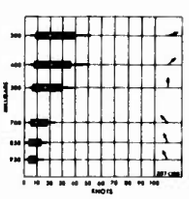
JAN MAYEN



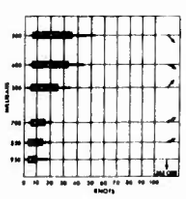
ISACHSEN



EUREKA

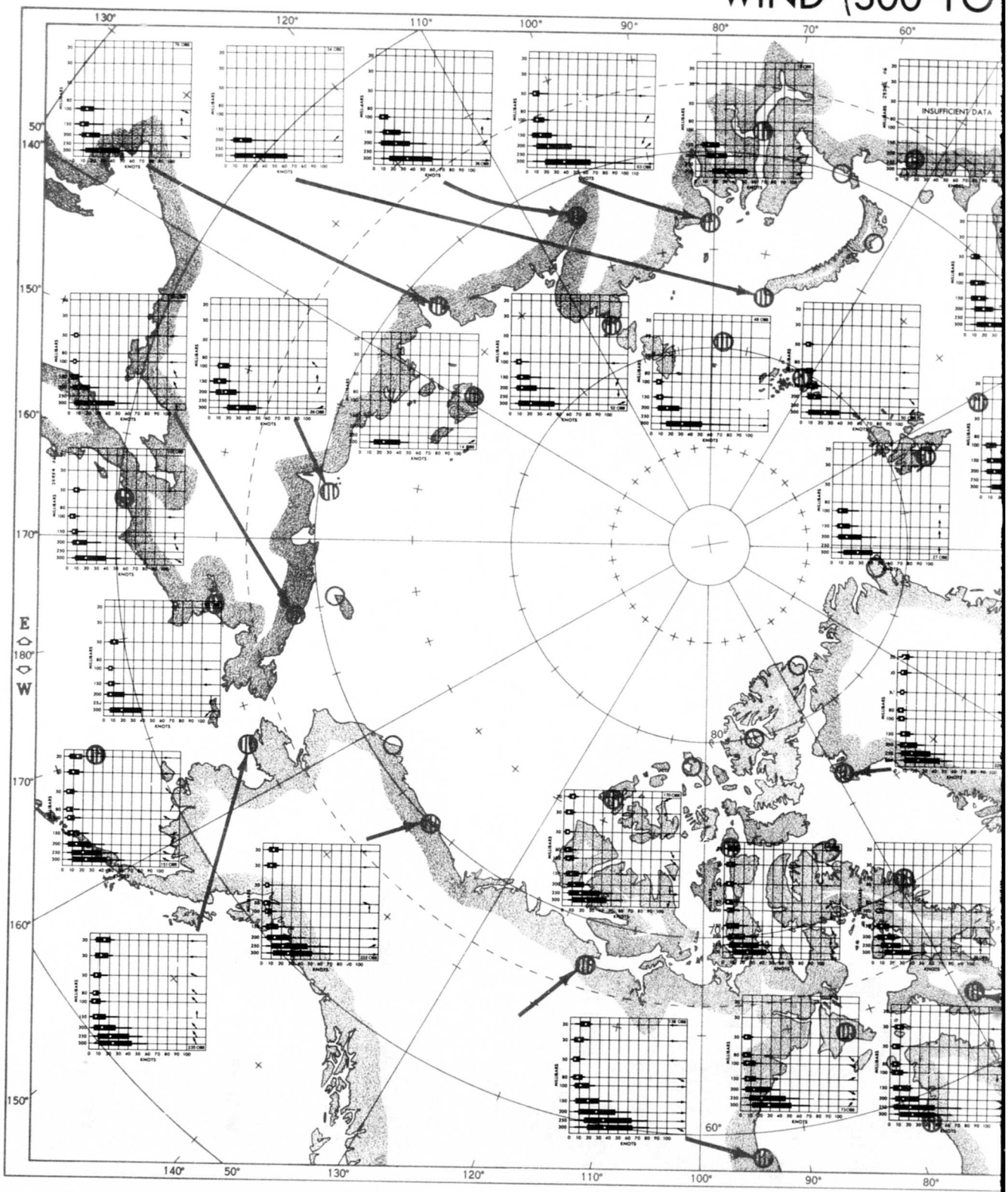


ALERT



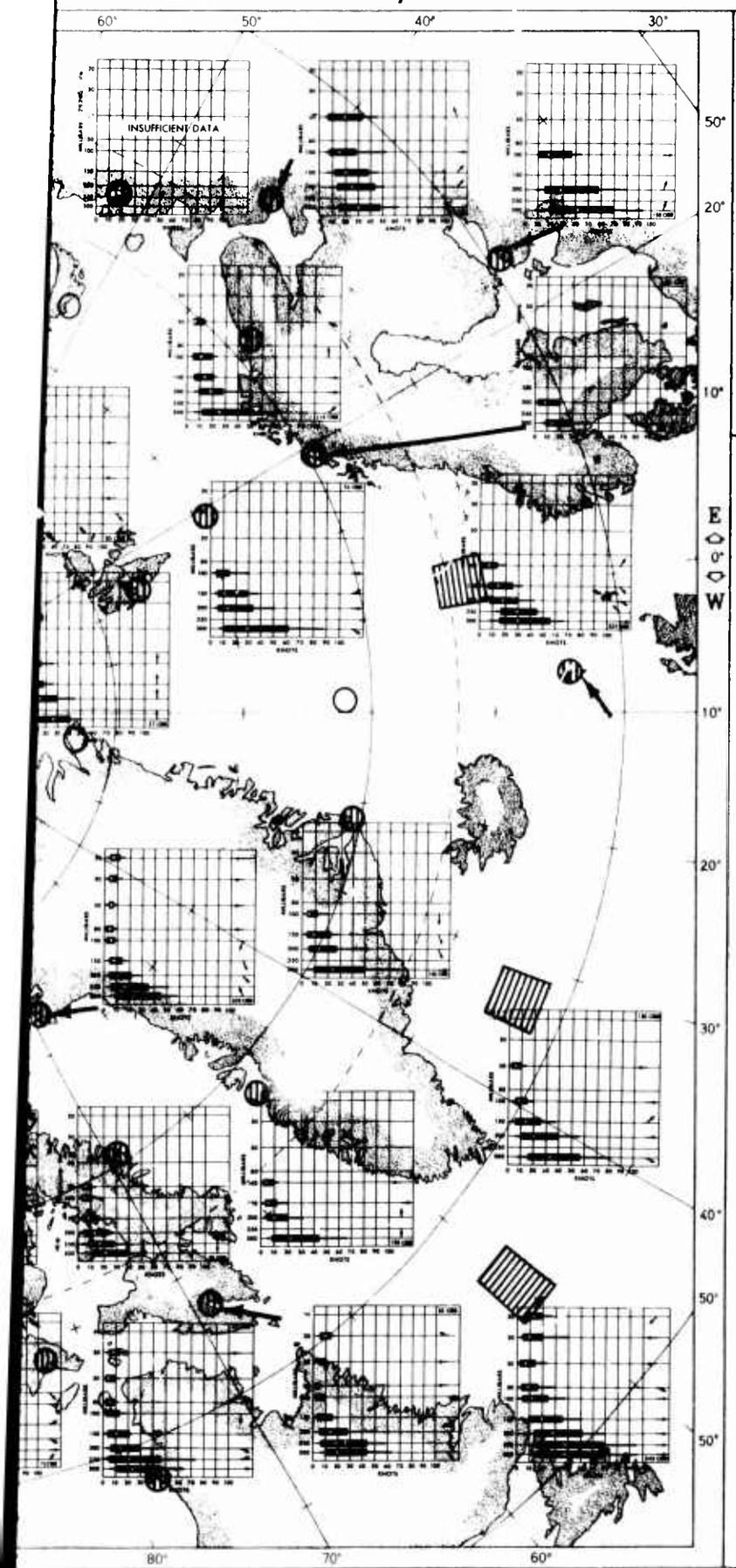
JUNE

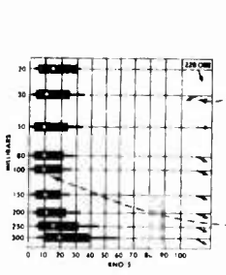
WIND (300 TO



300 TO 20 MB)

CHART 211





Prevailing Direction To 16 Points

(Direction indicated for 30 millibar level is from ENE)

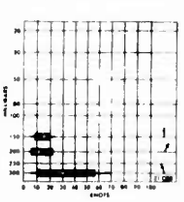
Distribution of Scalar Wind Speed Knots
(a) median
(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by



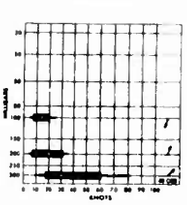
(At the 100 millibar level, median speed was 10 knots 5% of speeds were 2 knots or less, 16% were 4 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

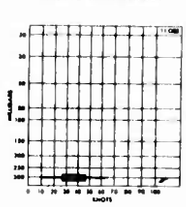
OSTROV VRANGELYA



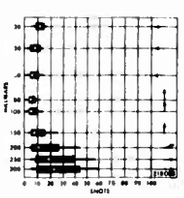
AMDERMA



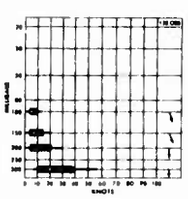
MALYYE KARMAKULY



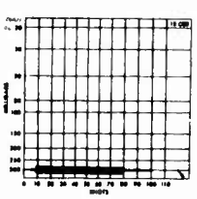
BARROW



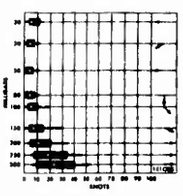
NORD



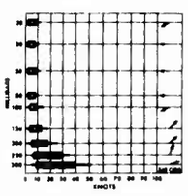
JAN MAYEN



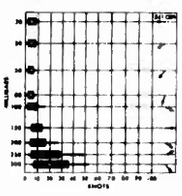
ISACHSEN



EUREKA

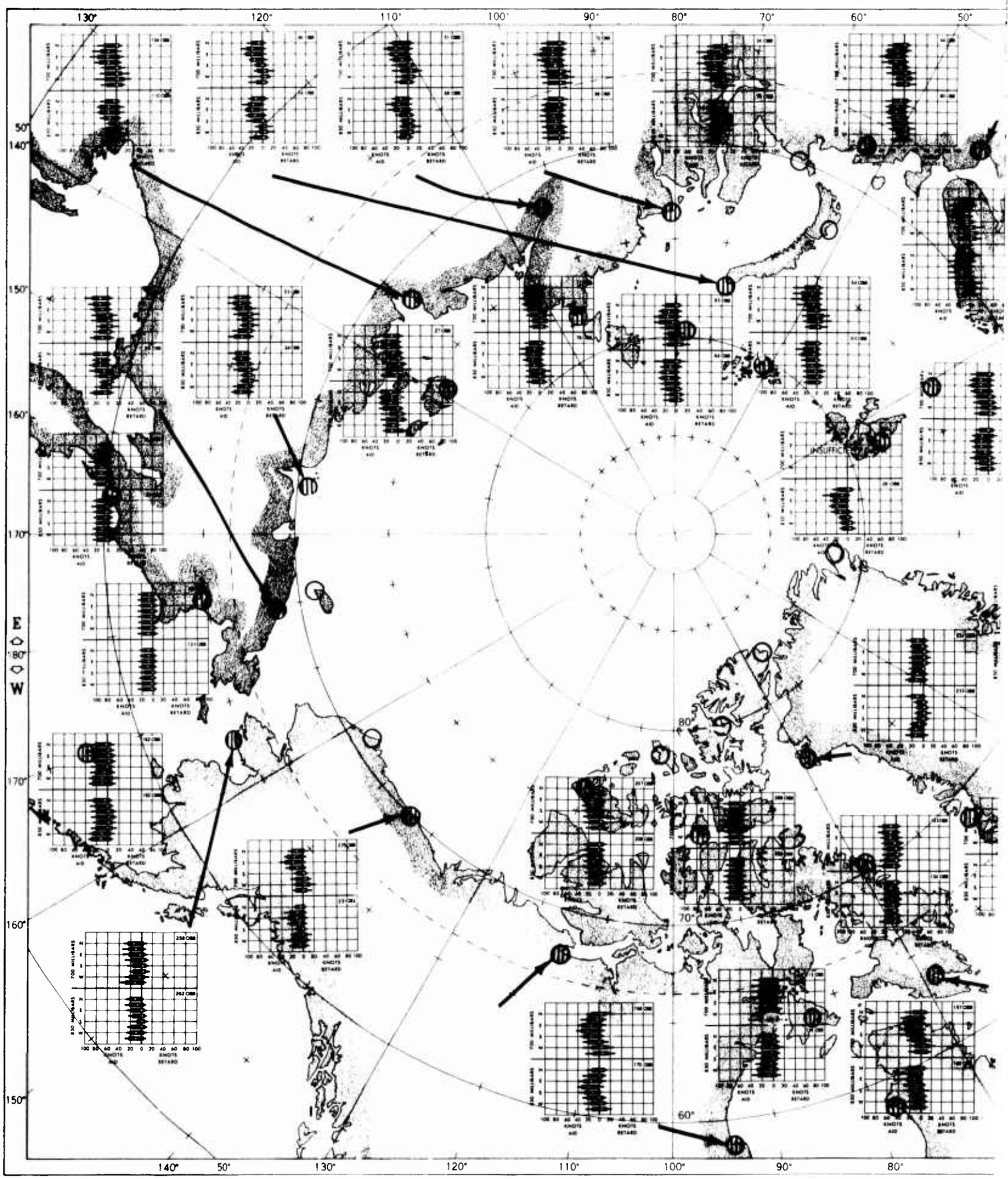


ALERT



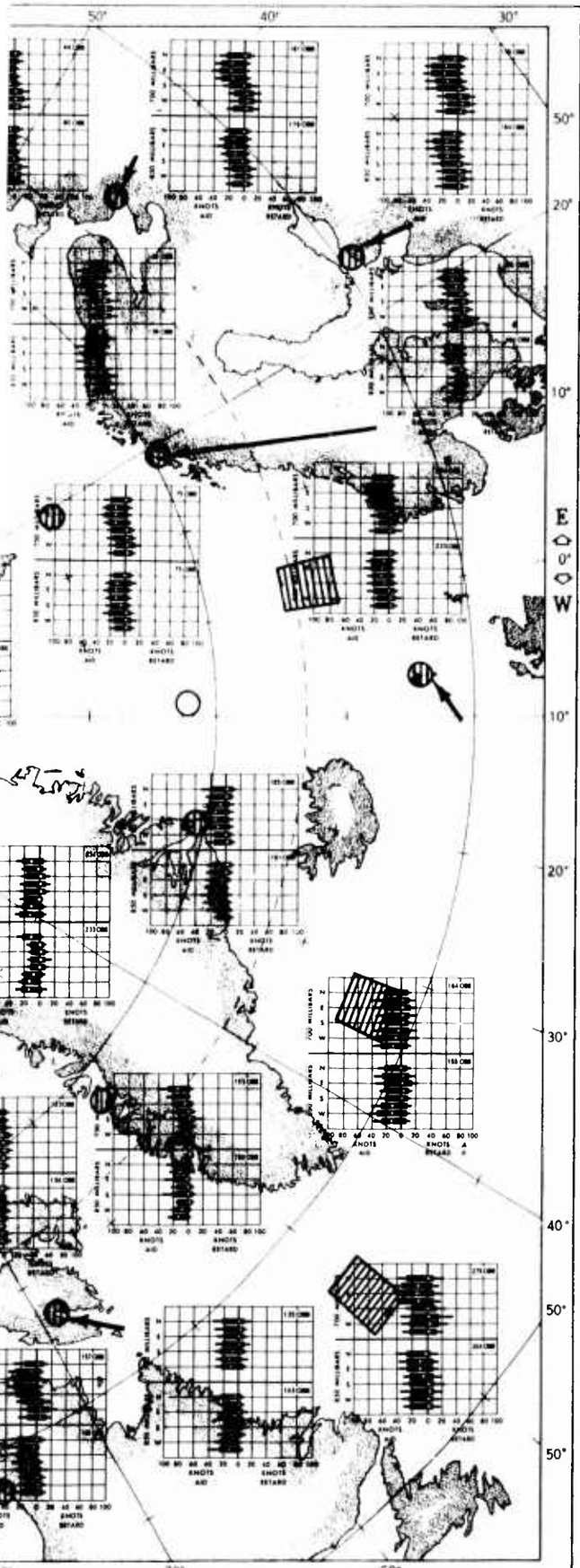
JUNE

WIND AID AND RETARD (8

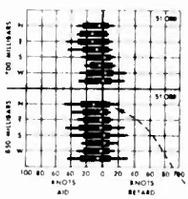


ARD (850 & 700 MB)

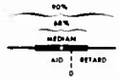
CHART 212



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 300 knots true air speed



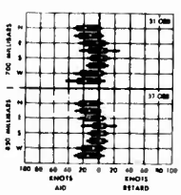
Read median and percentage frequency for direction toward which aircraft is flying thus



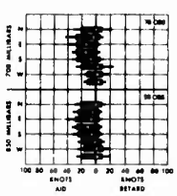
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward north at the 850 millibar level, wind aided or increased ground speed by an average of 12 knots. Wind effect ranged from 28 knots aid to 8 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 20 knots retard in 90% of the observations.)

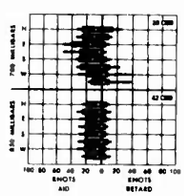
OSTROV VRANGELYA



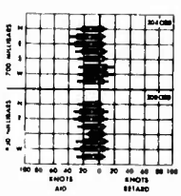
AMDERMA



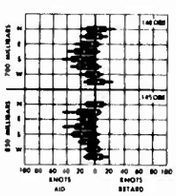
MALYYE KARMAKULY



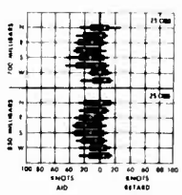
BARROW



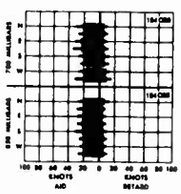
NORD



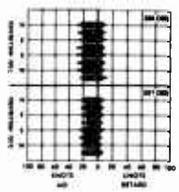
JAN MAYEN



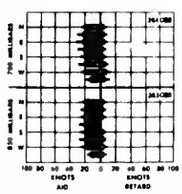
ISACHSEN



EUREKA

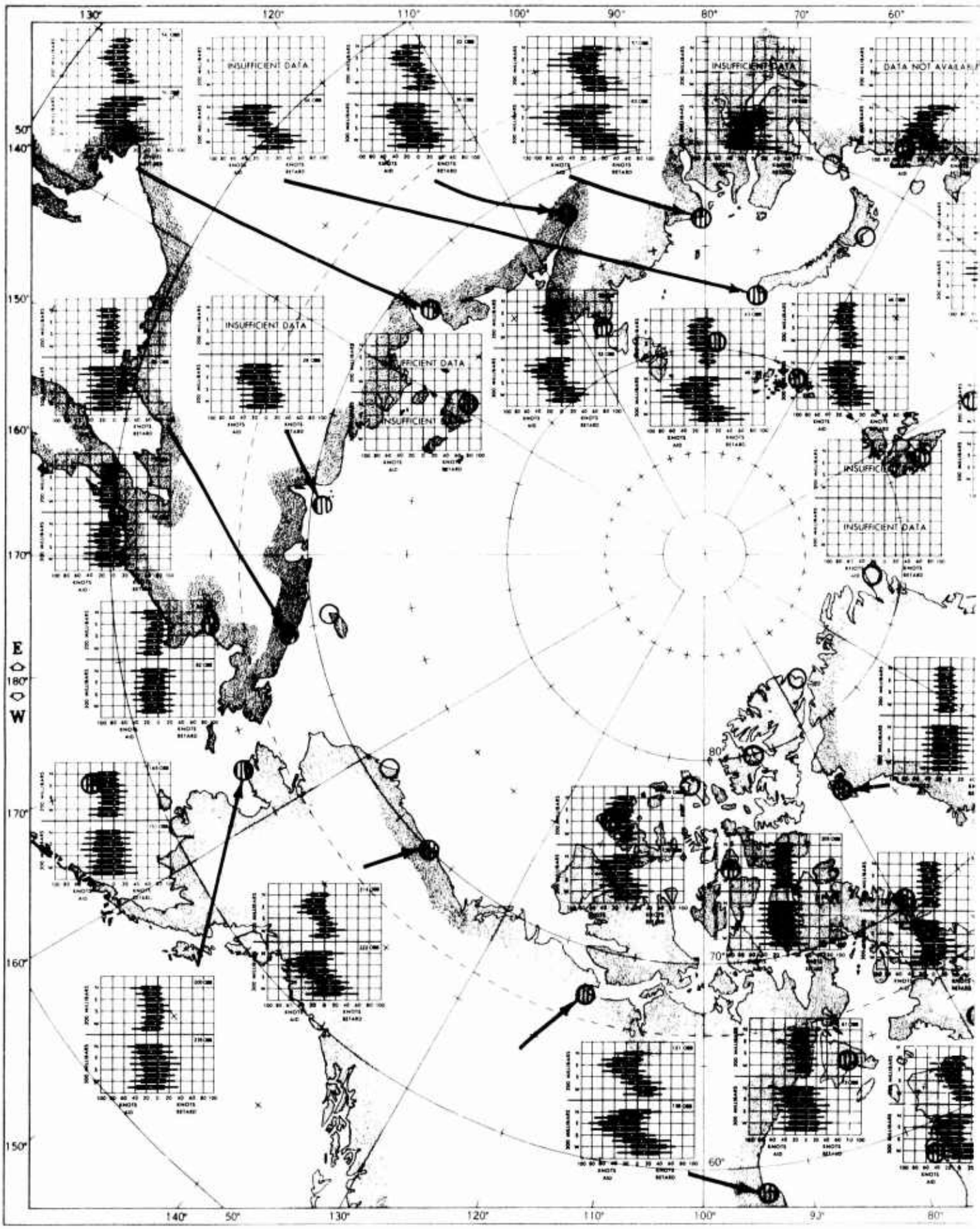


ALERT



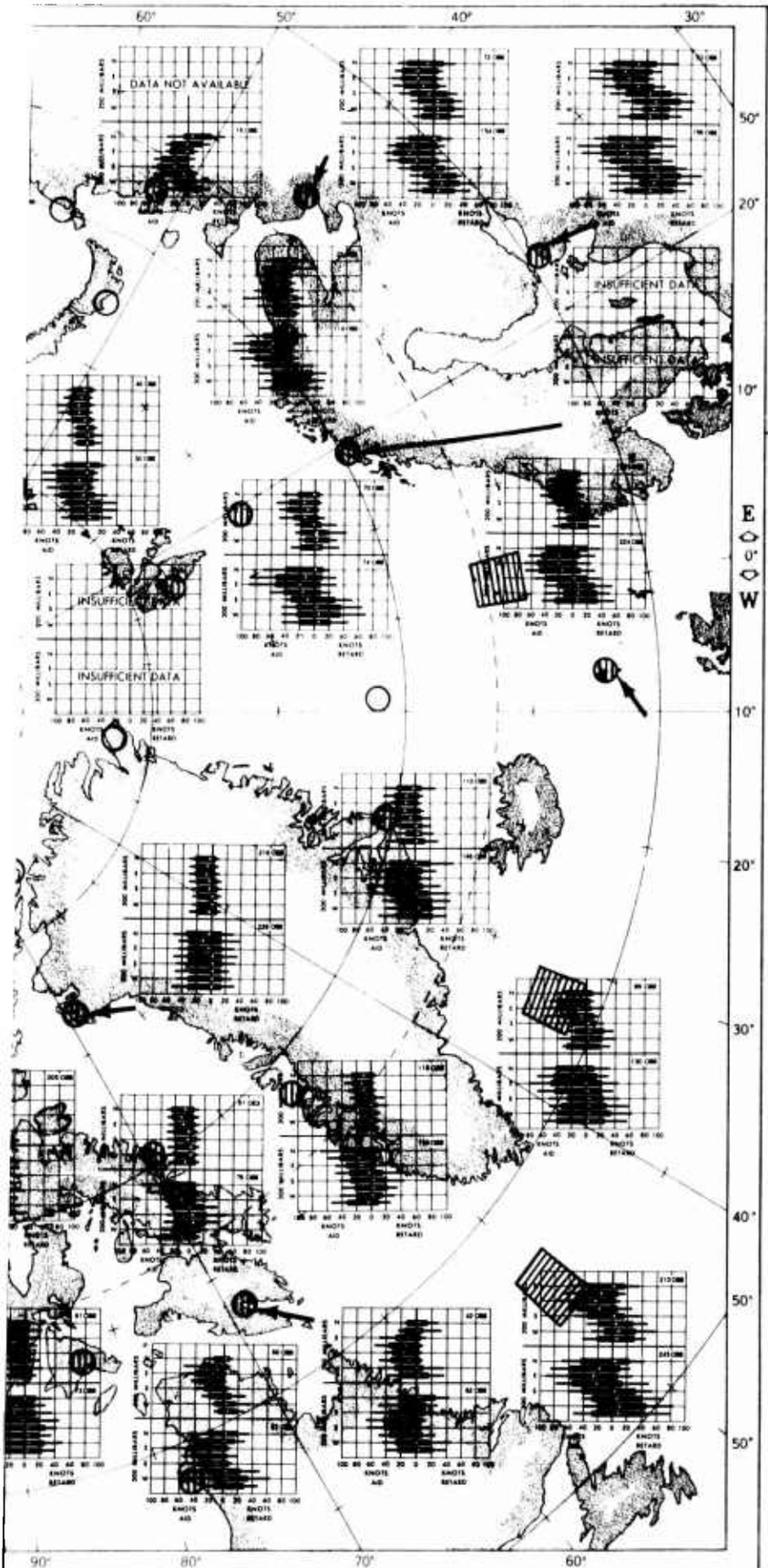
2

JUNE WIND AID AND RETARD

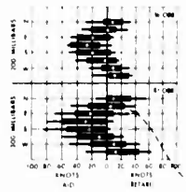


D RETARD (300 & 200 MB)

CHART 213



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 600 knots true air speed



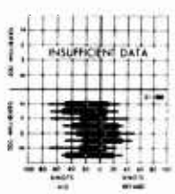
Read median and percentage frequency for direction toward which aircraft is flying thus



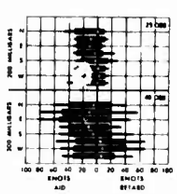
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward northeast at the 300 millibar level, wind retarded or decreased ground speed by an average of 4 knots. Winds effect ranged from 26 knots aid to 25 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 40 knots retard in 90% of the observations.)

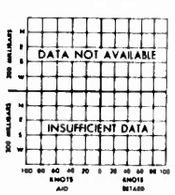
OSTROV VRANGELYA



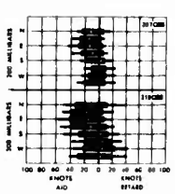
AMDERMA



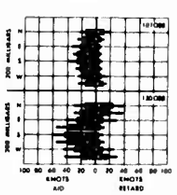
MALYYE KARMAKULY



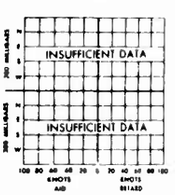
BARROW



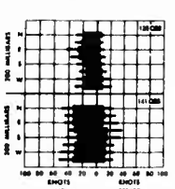
NORD



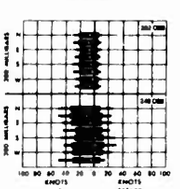
JAN MAYEN



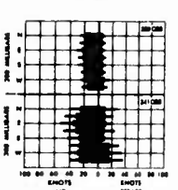
ISACHSEN



EUREKA



ALERT

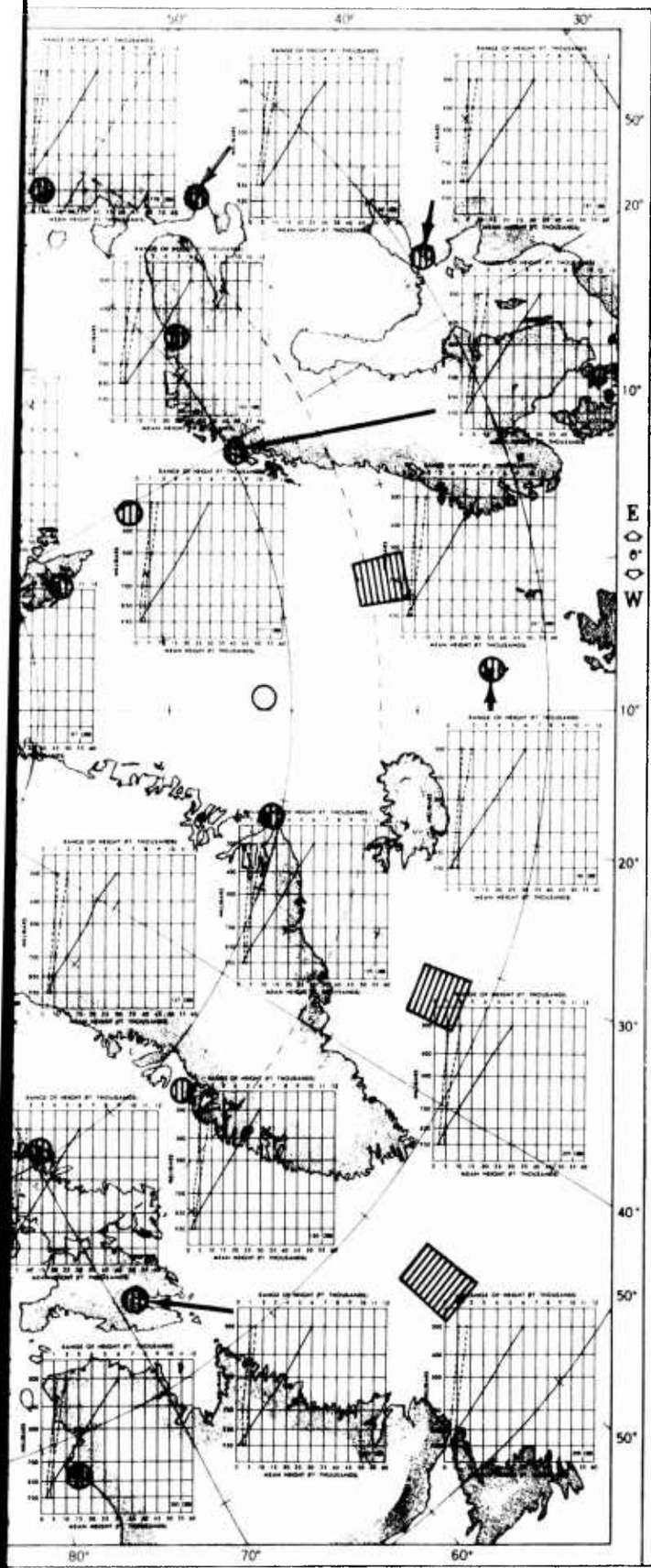


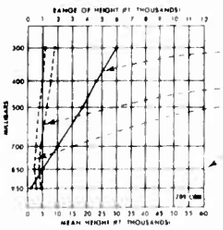
JUNE

HEIGHT (950 TO 3

50 TO 300 MB)

CHART 214





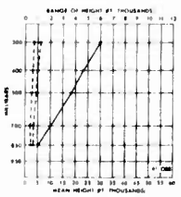
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b Range of Height
- (1) 5% 95% Range
- (2) 16% 84% Range

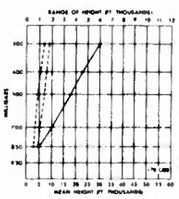
(For the 850 millibar level the mean Height = 5,000 feet, the 5% 95% Height range = 800 feet and the 16% 84% range = 450 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

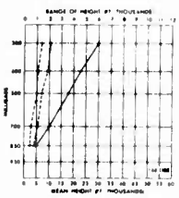
OSTROV VRANGELYA



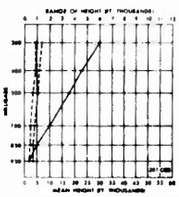
AMDERMA



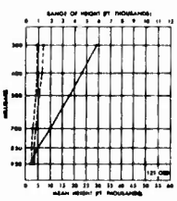
MALYYE KARMAKULY



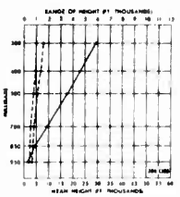
BARROW



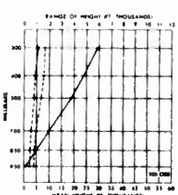
NORD



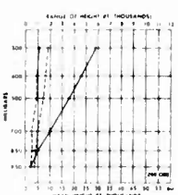
JAN MAYEN



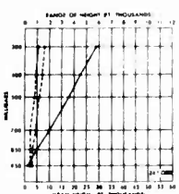
ISACHSEN



EUREKA

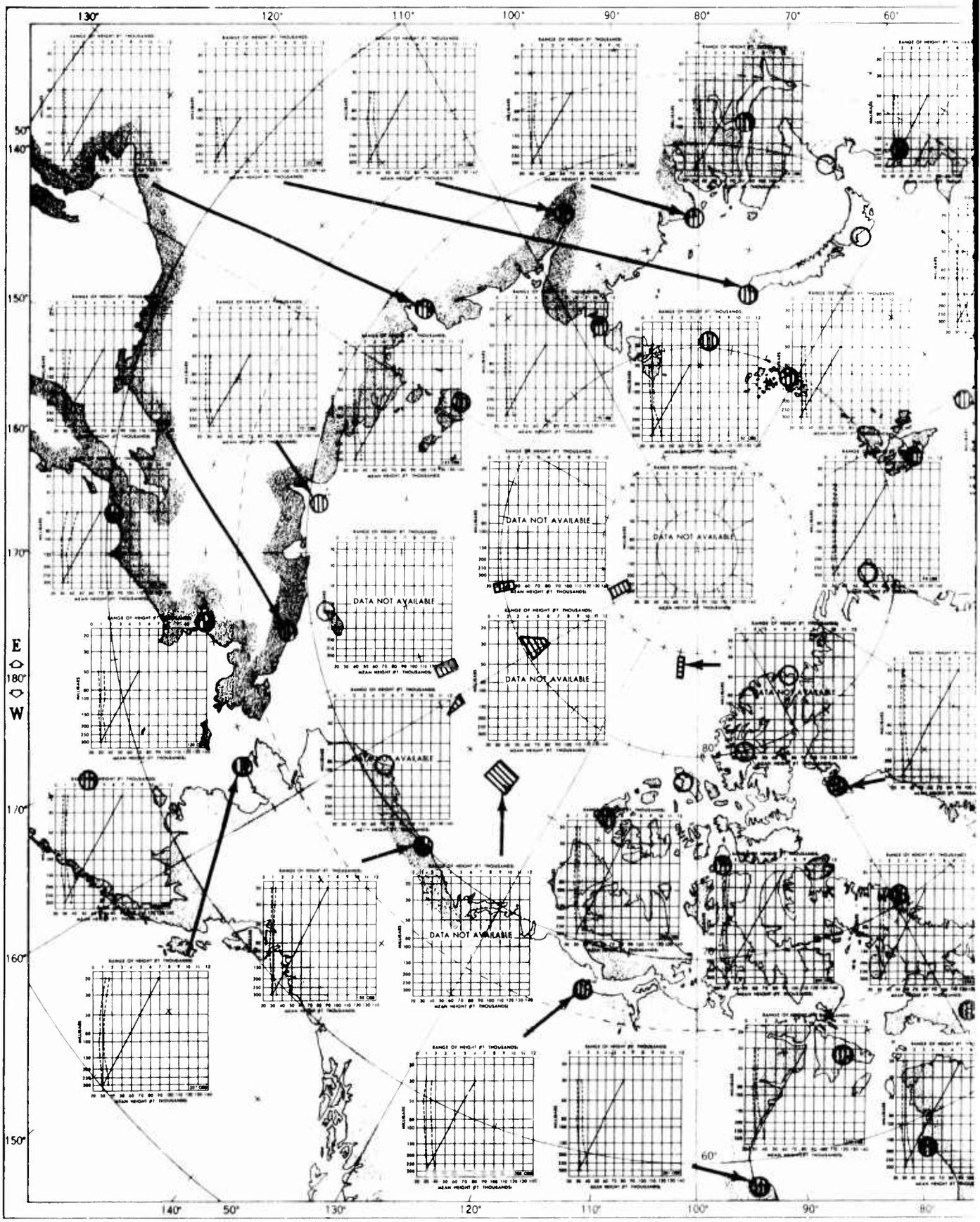


ALERT



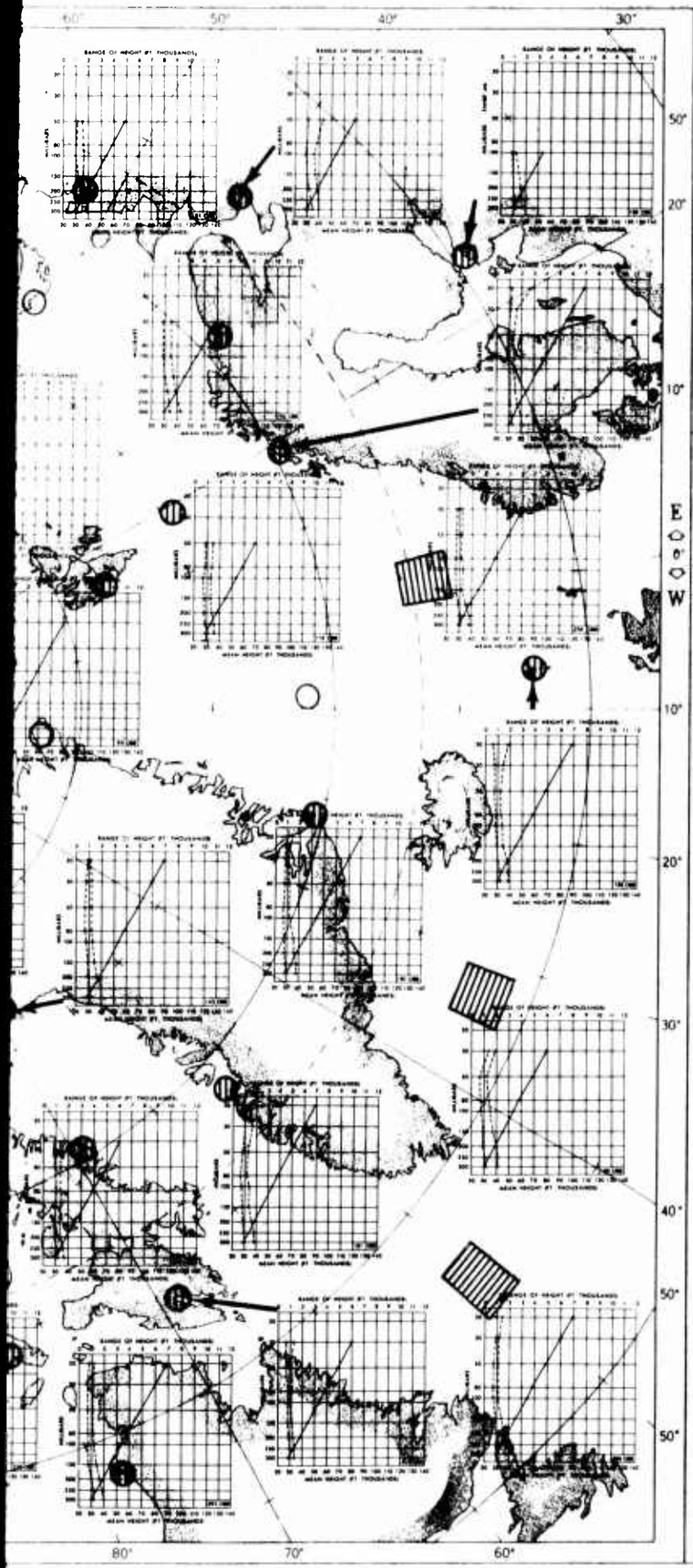
JUNE

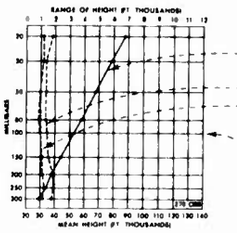
HEIGHT (300 T



(300 TO 20 MB)

CHART 215





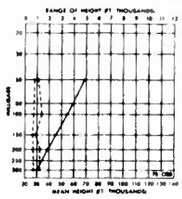
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
- (1) 5% 95% Range
- (2) 16% 84% Range

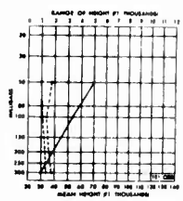
(For the 100 millibar level the mean Height = 53,000 feet, the 5% - 95% Height range = 1,500 feet, and the 16% - 84% range = 1,000 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

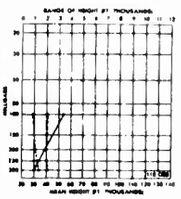
OSTROV VRANGELYA



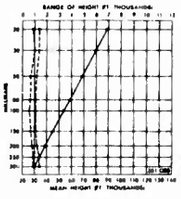
AMDERMA



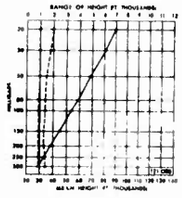
MALYYE KARMAKULY



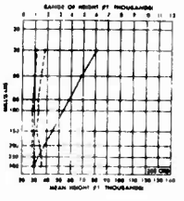
BARROW



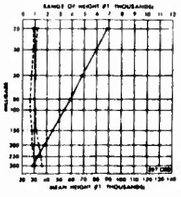
NORD



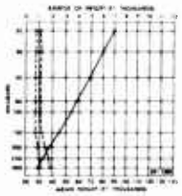
JAN MAYEN



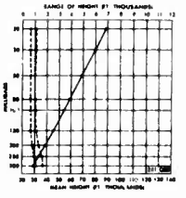
ISACHSEN



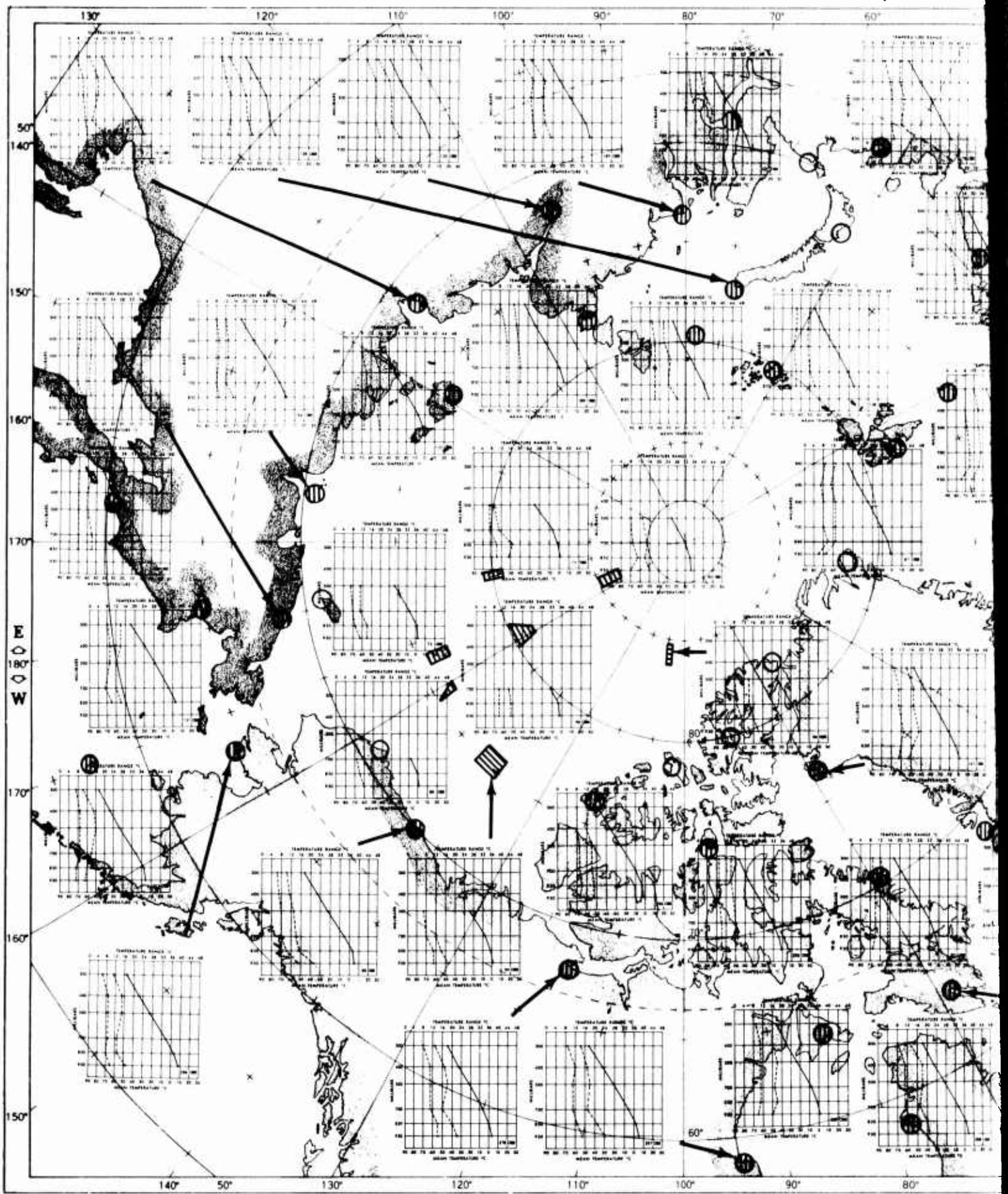
EUREKA



ALERT

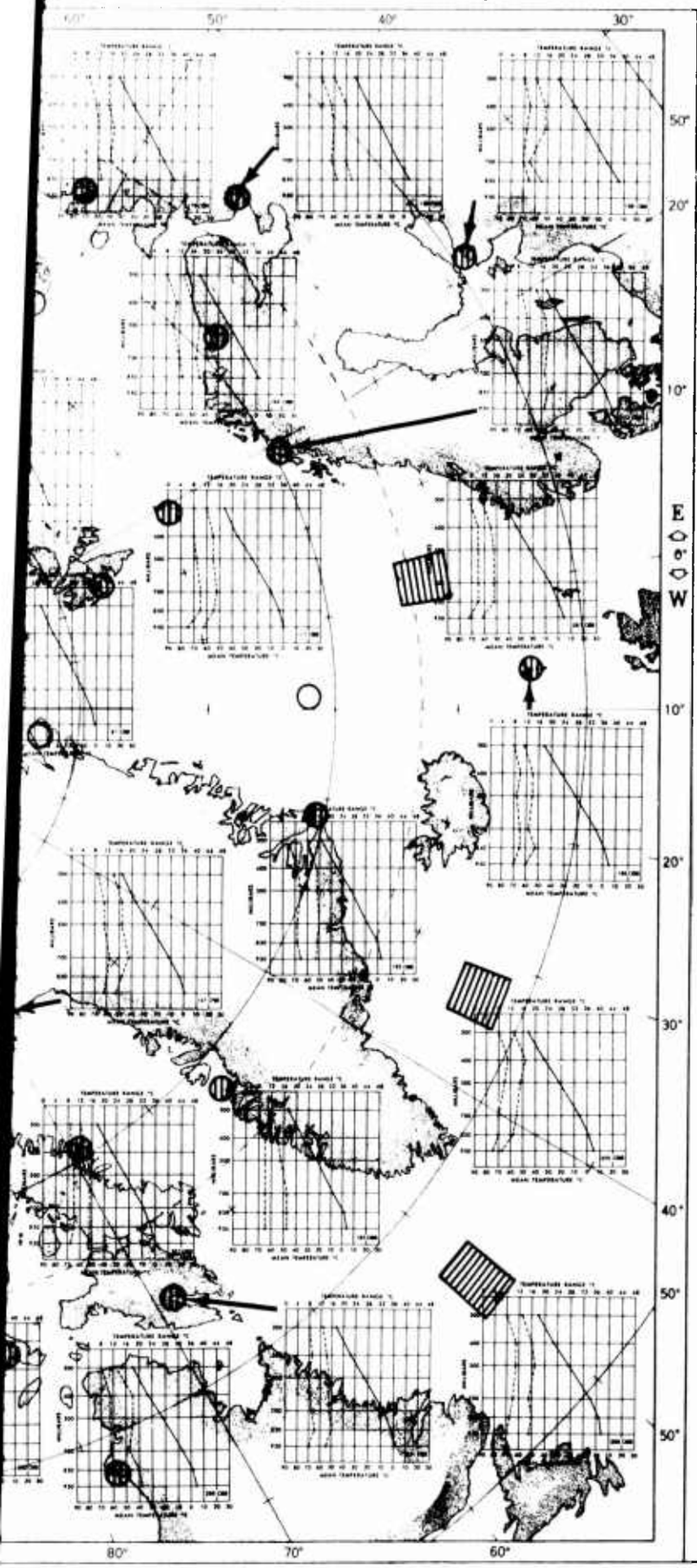


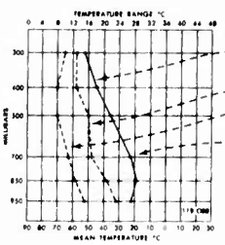
JUNE TEMPERATURE (950 T



E (950 TO 300 MB)

CHART 216





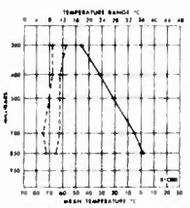
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% 95% Range
(2) 16% 84% Range

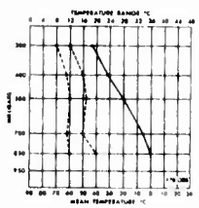
(For the 700 millibar level the mean temperature is -22°C, the 5% 95% range is 17°C, and the 16% 84% range is 11°C)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

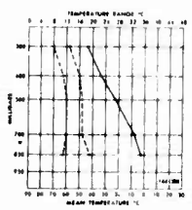
OSTROV VRANGELYA



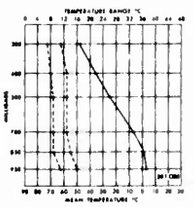
AMDERMA



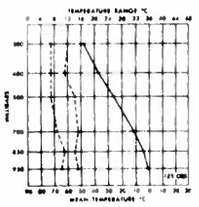
MALYYE KARMAKULY



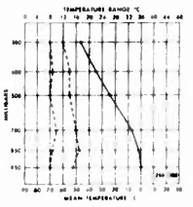
BARROW



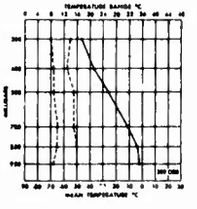
NORD



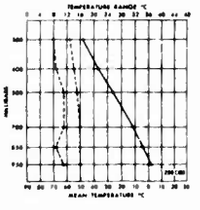
JAN MAYEN



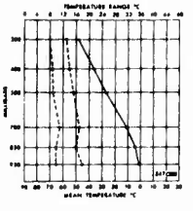
ISACHSEN



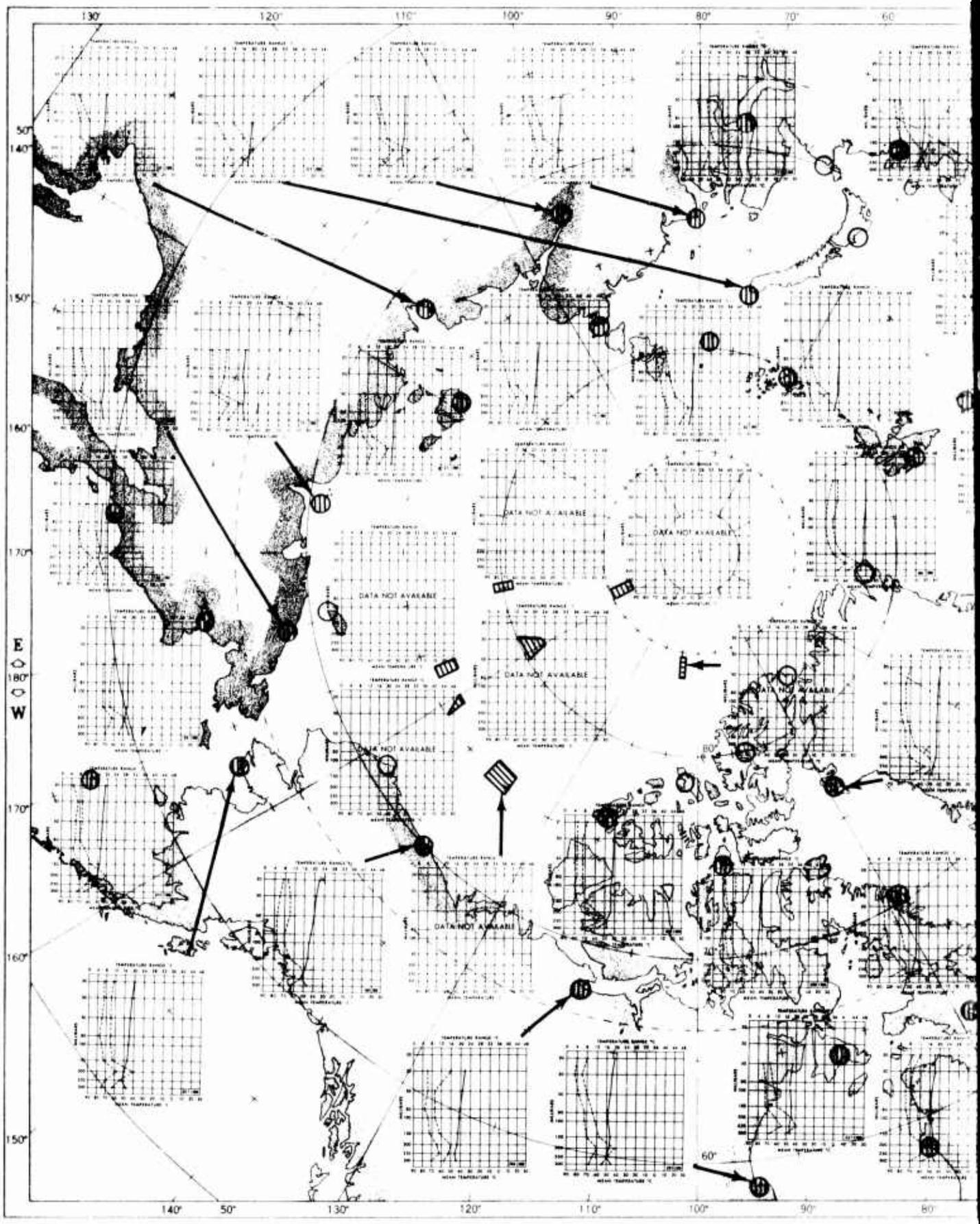
EUREKA



ALERT

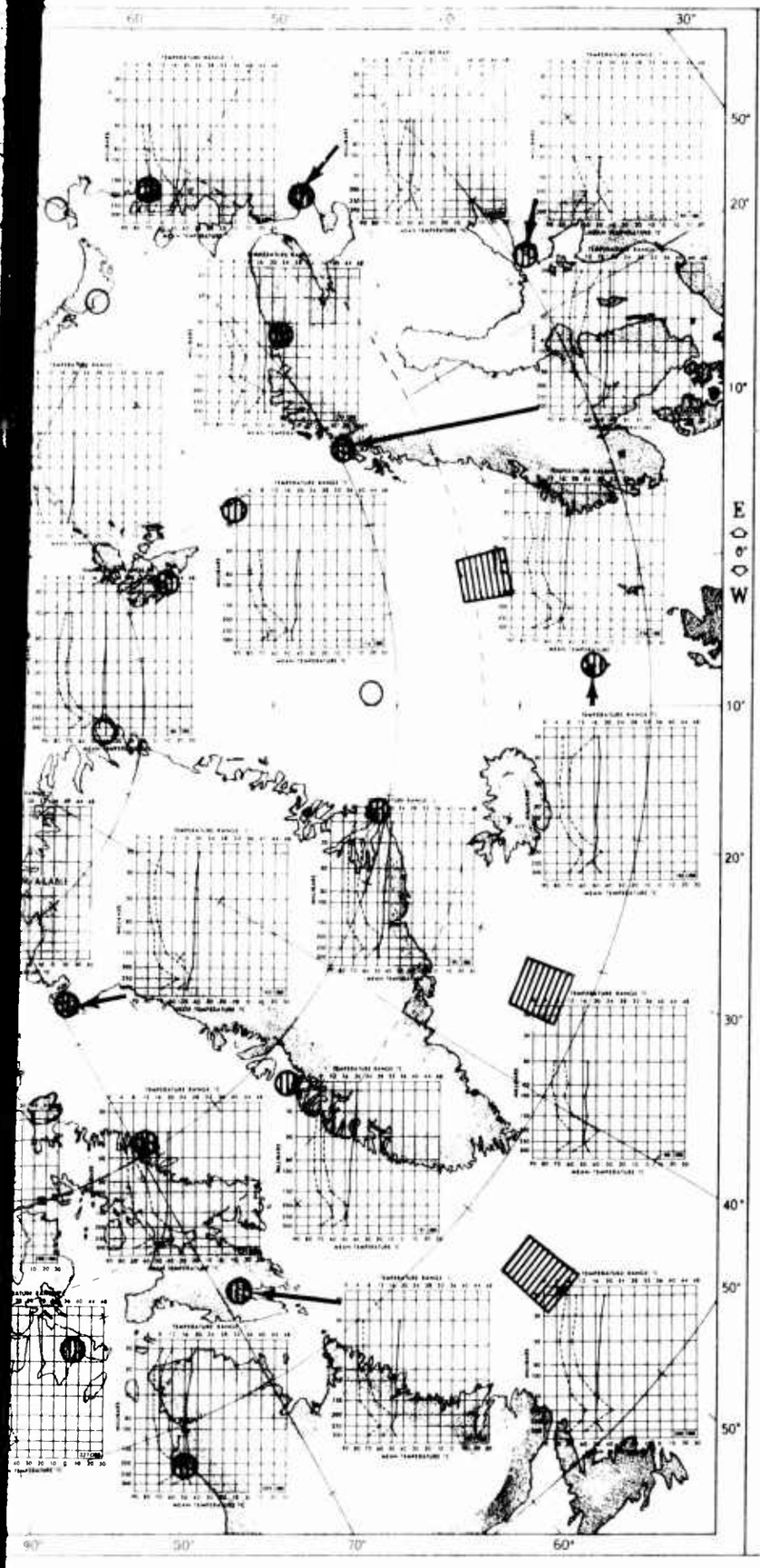


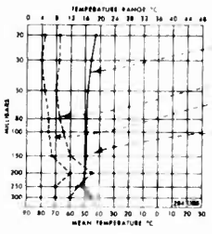
JUNE TEMPERATURE (30



URE (300 TO 20 MB)

CHART 217





Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature

(b) Range of Temperature

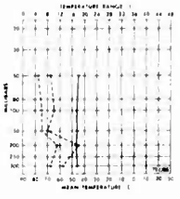
(1) 5% 95% Range

(2) 16% 84% Range

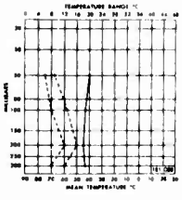
(For the 150 millibar level the mean temperature = -49°C the 5% 95% range = 12°C and the 16% 84% range = 7°C

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

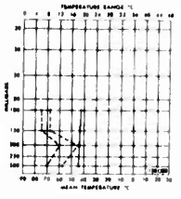
OSTROV VRANGELYA



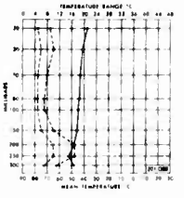
AMDERMA



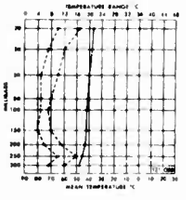
MALYYE KARMAKULY



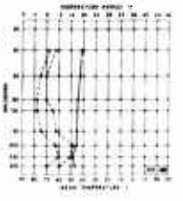
BARROW



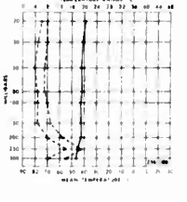
NORD



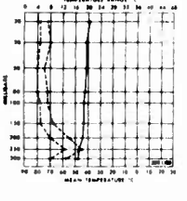
JAN MAYEN



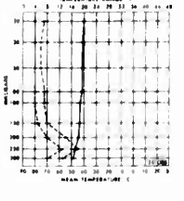
ISACHSEN



EUREKA

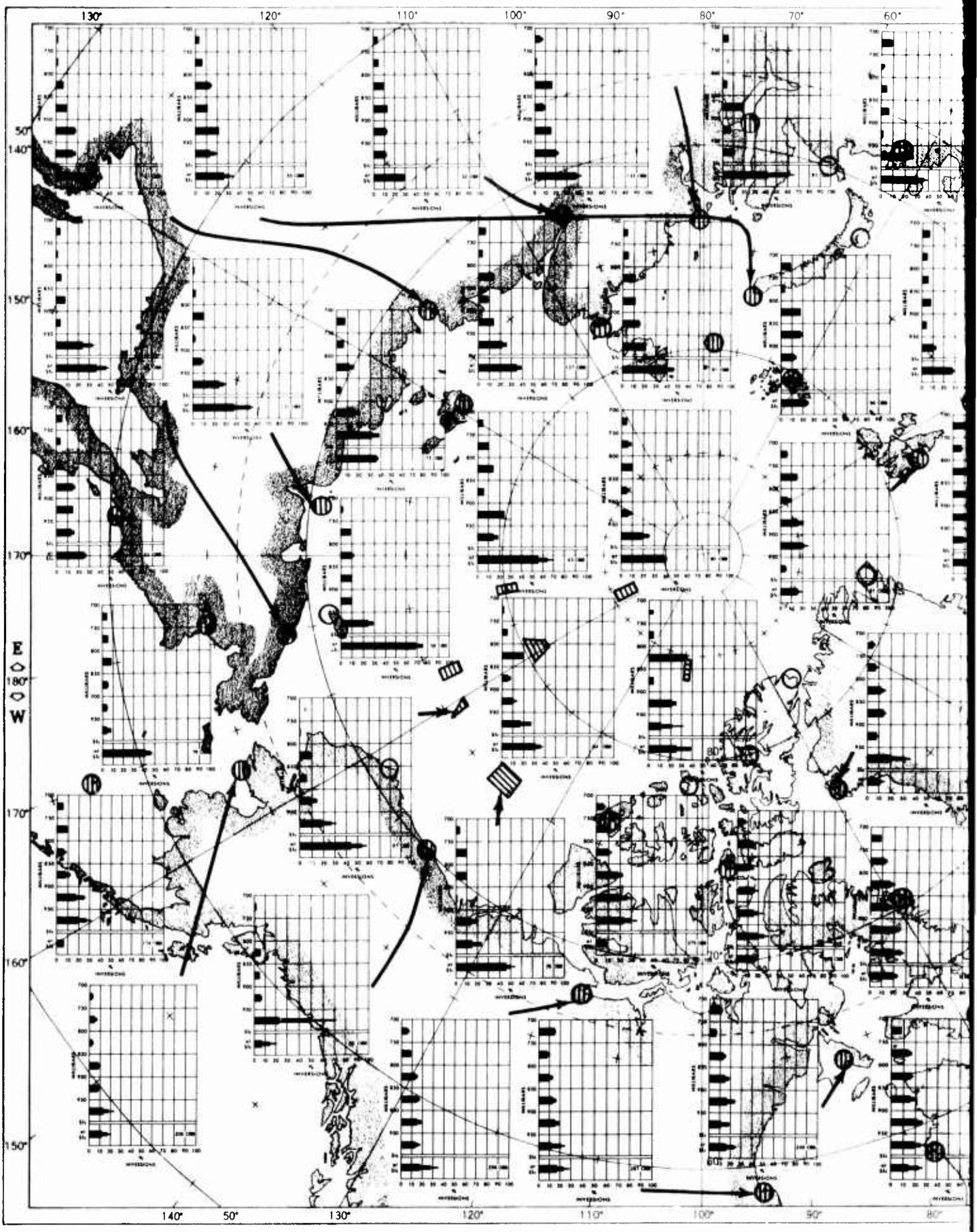


ALERT



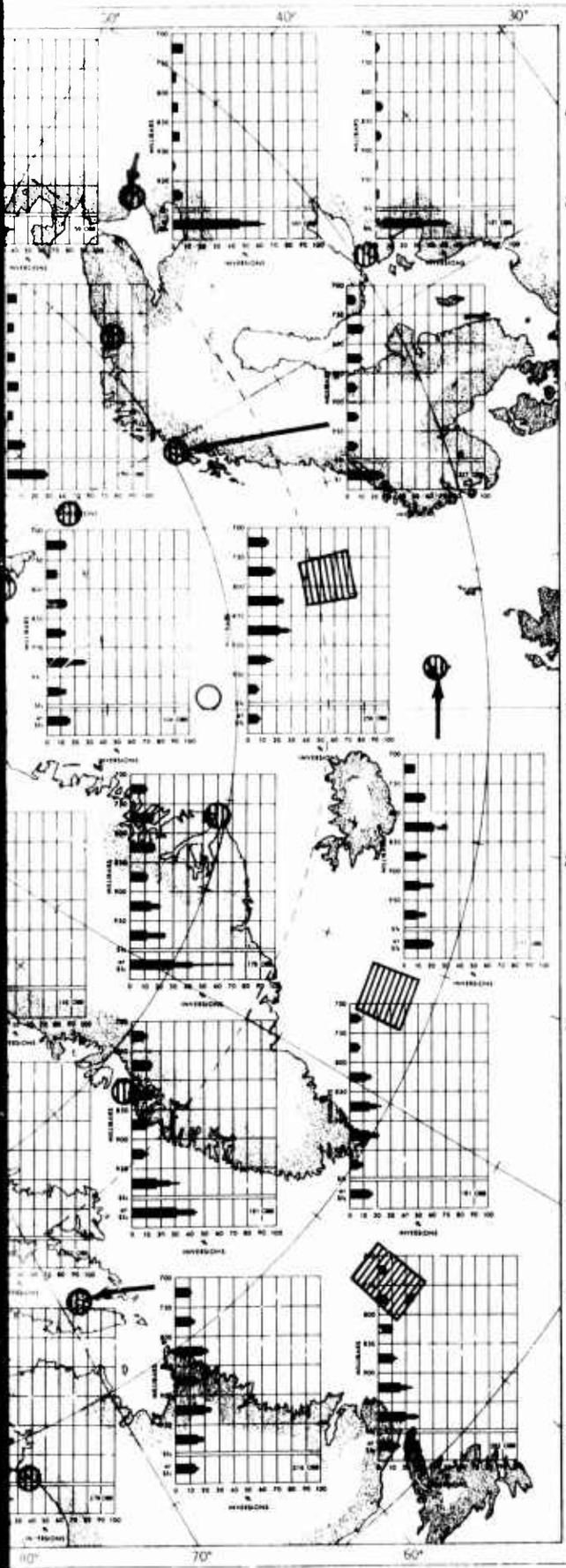
JUNE

INVERSI



SIONS

CHART 218



Percentage Frequencies of three intensities of Temperature Inversions within each of seven layers from the surface to 700 millibars

General Criteria

(a) Temperature inversion constant or increasing temperature with increasing height that persisted at least 5 millibars (approximately 50 meters)

(b) Layers Inversions were assigned to 7 arbitrary layers according to the pressure at their bases

750 to 701 millibars
800 to 751 millibars
850 to 801 millibars
900 to 851 millibars
950 to 901 millibars
5 millibars above the surface to 951 millibars
At the surface to 49 millibars above the surface

(c) Intensity change in temperature per 100 meters increase in height of

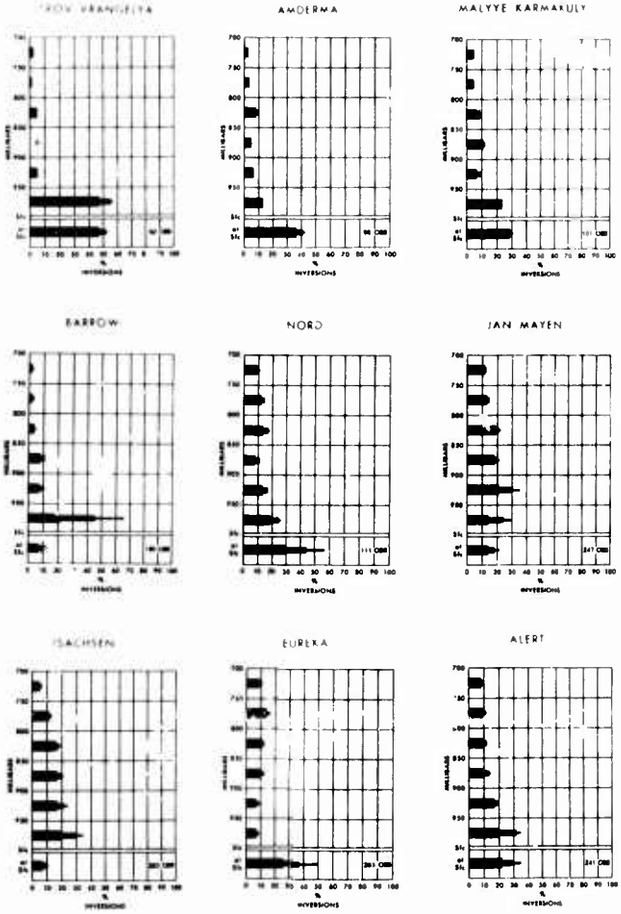
0°C TO +0.9°C | +1.0°C TO +1.9°C | +2.0°C OR MORE

When more than one inversion was recorded within a layer the one with the greatest intensity was counted

0 No occurrence

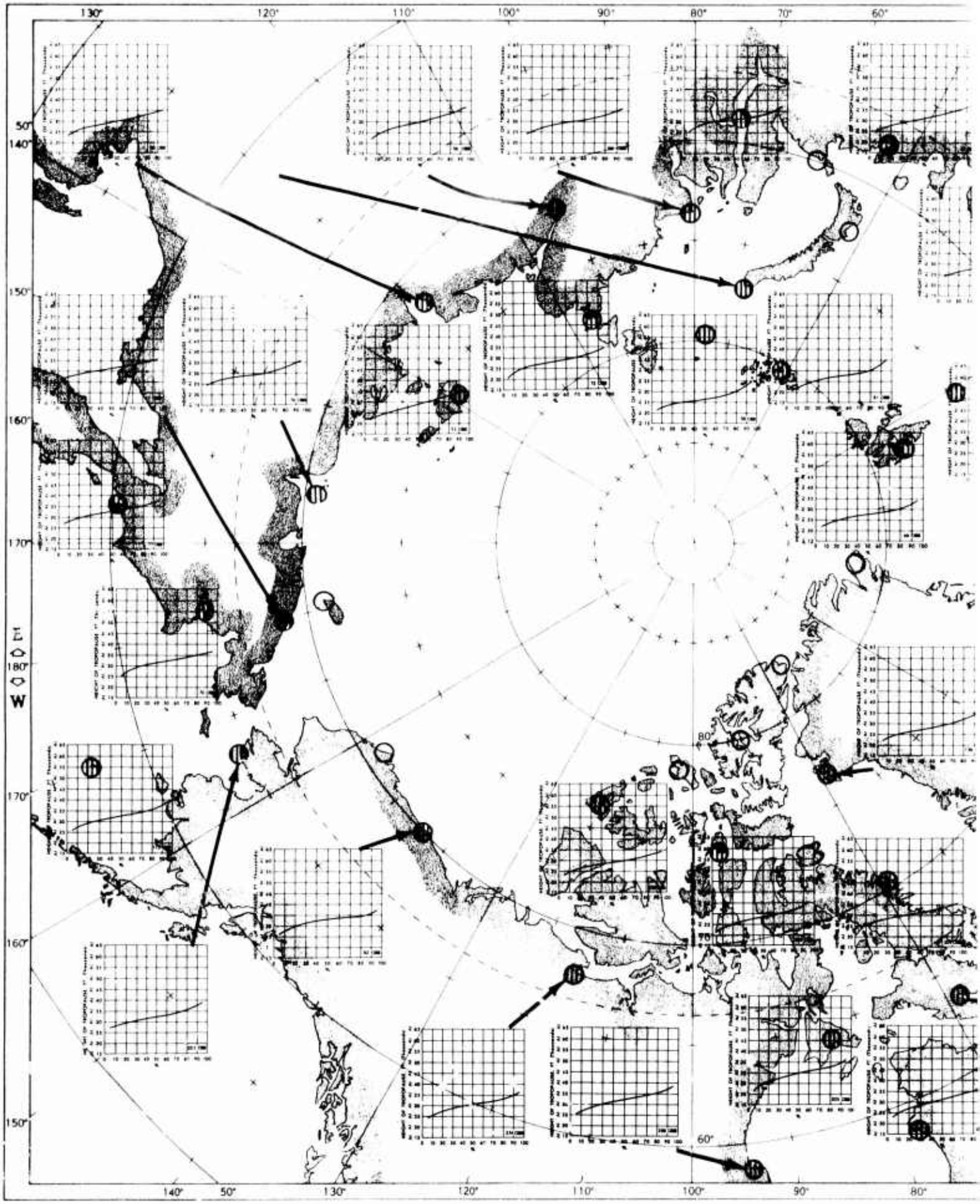
Blank No data

~28% [80-52] of all radiosonde ascents recorded temperature inversions of +10°C to +19°C per 100 meters with bases in the layer from the surface to 49 millibars above



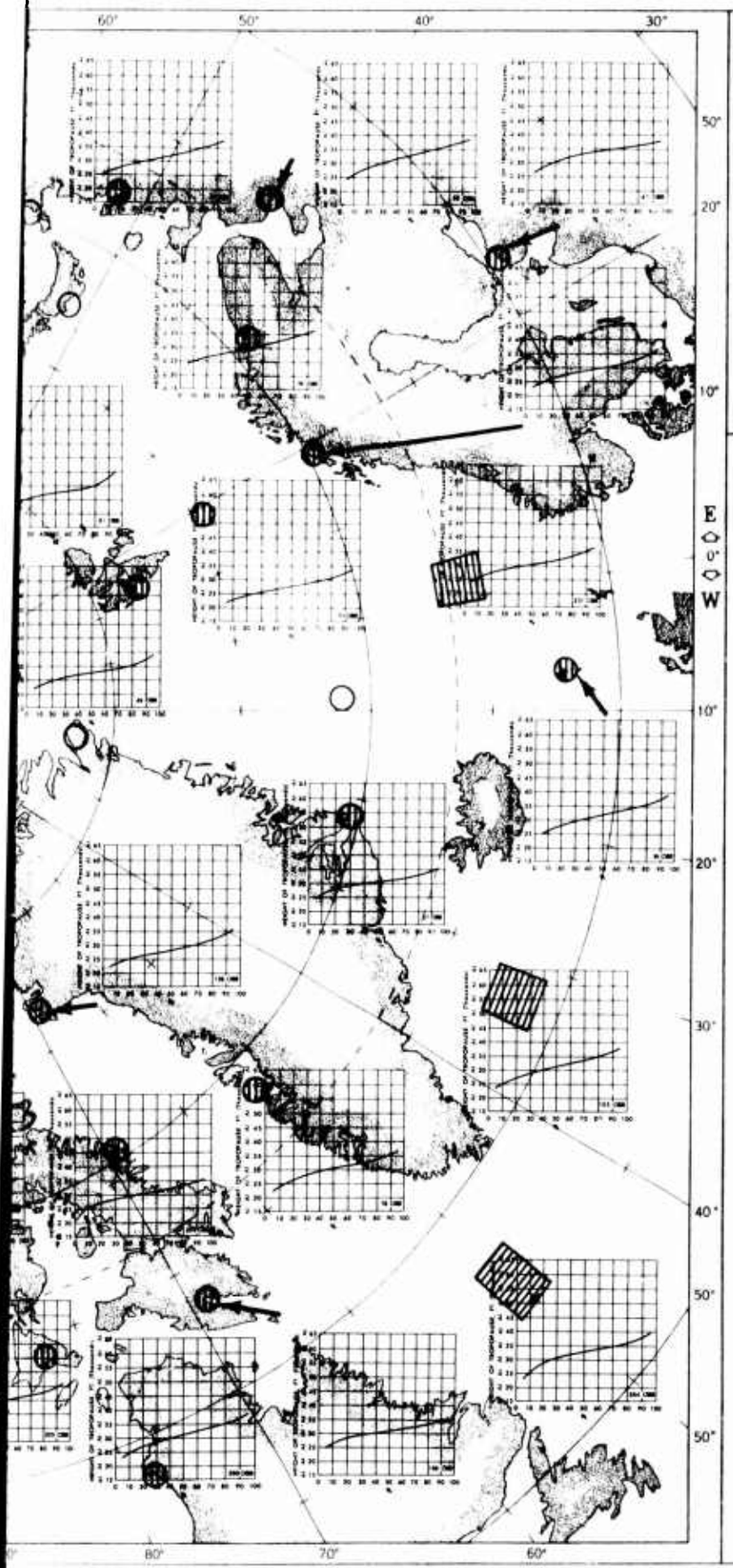
JUNE

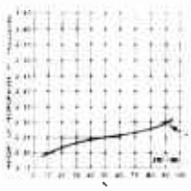
HEIGHT OF TRO



OF TROPOPAUSE

CHART 219

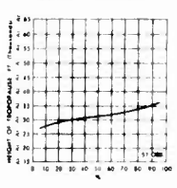




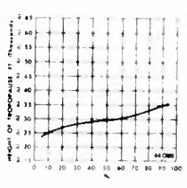
Percentage Frequency of Heights of the Tropopause equal to or less than the height intersected by the curve

(90% of all heights of the tropopause were thirty thousand feet or less)

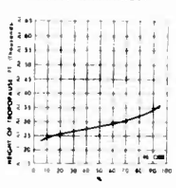
OSTROV VRANGELYA



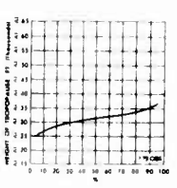
AMDERMA



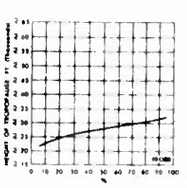
MALYYE KARMAKULY



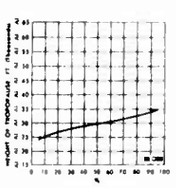
BARROW



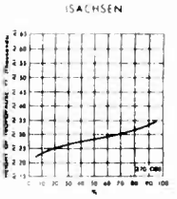
NORD



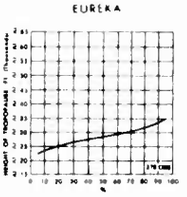
JAN MAYEN



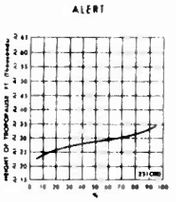
ISACHSEN



EUREKA

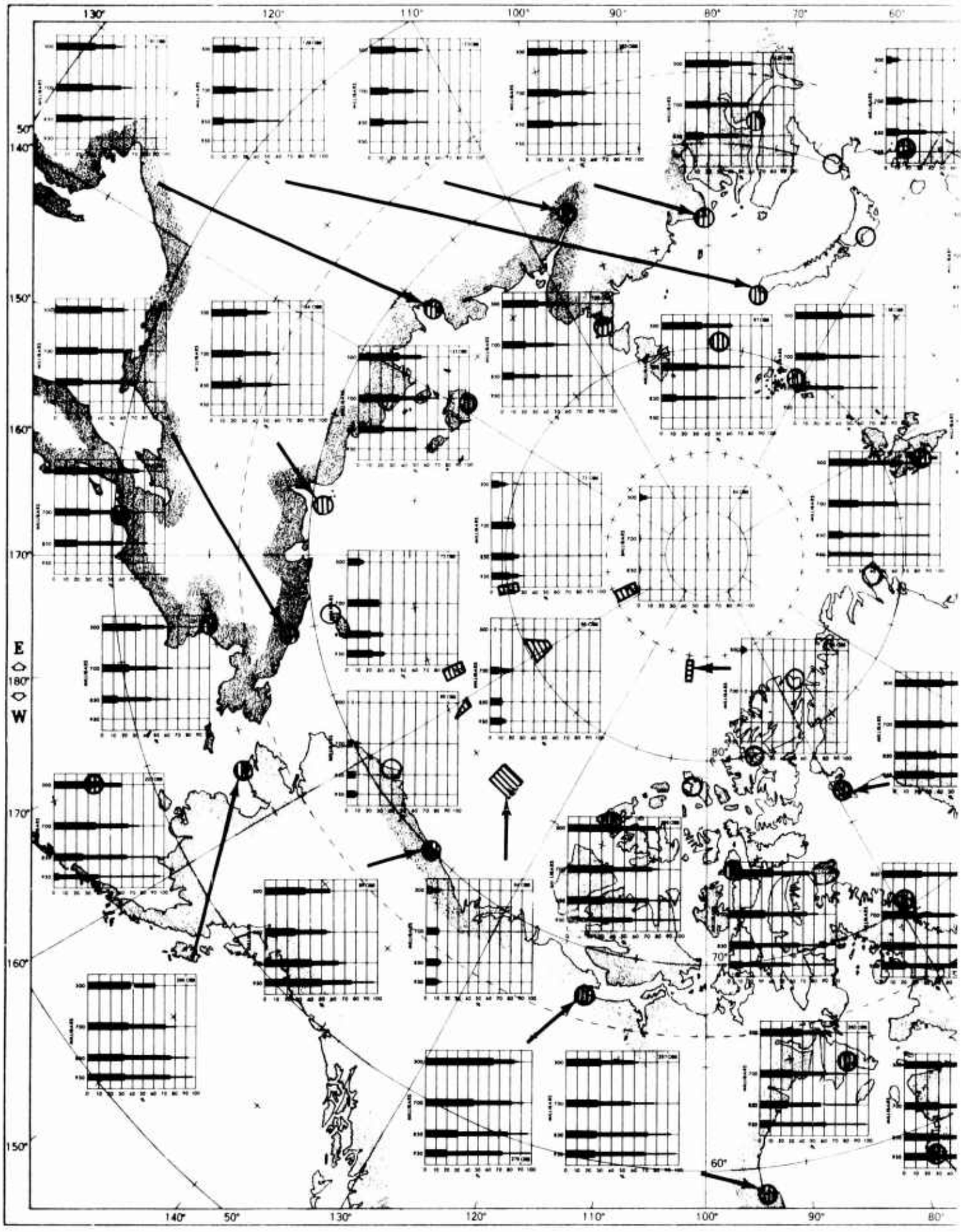


ALERT



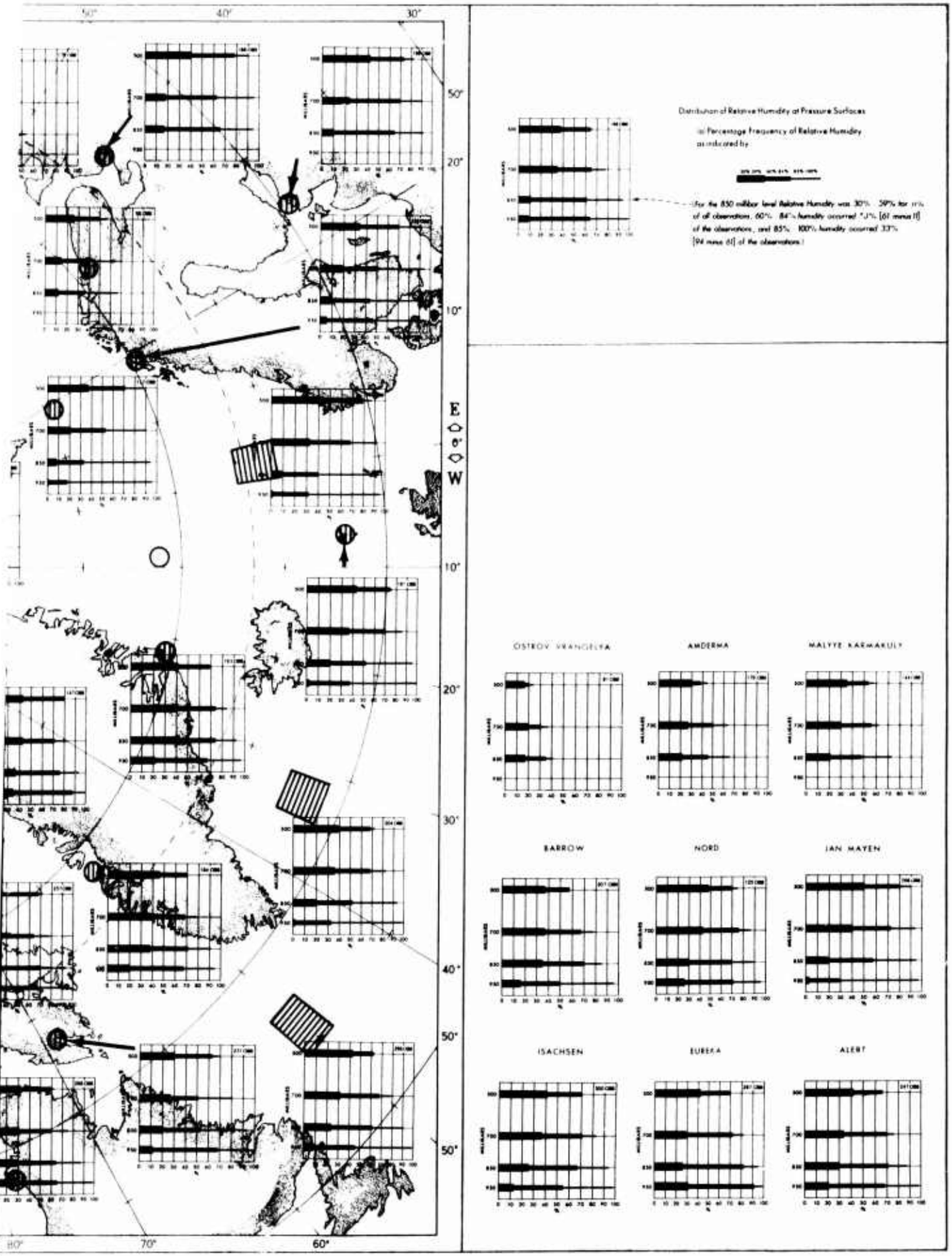
JUNE

RELATIVE H

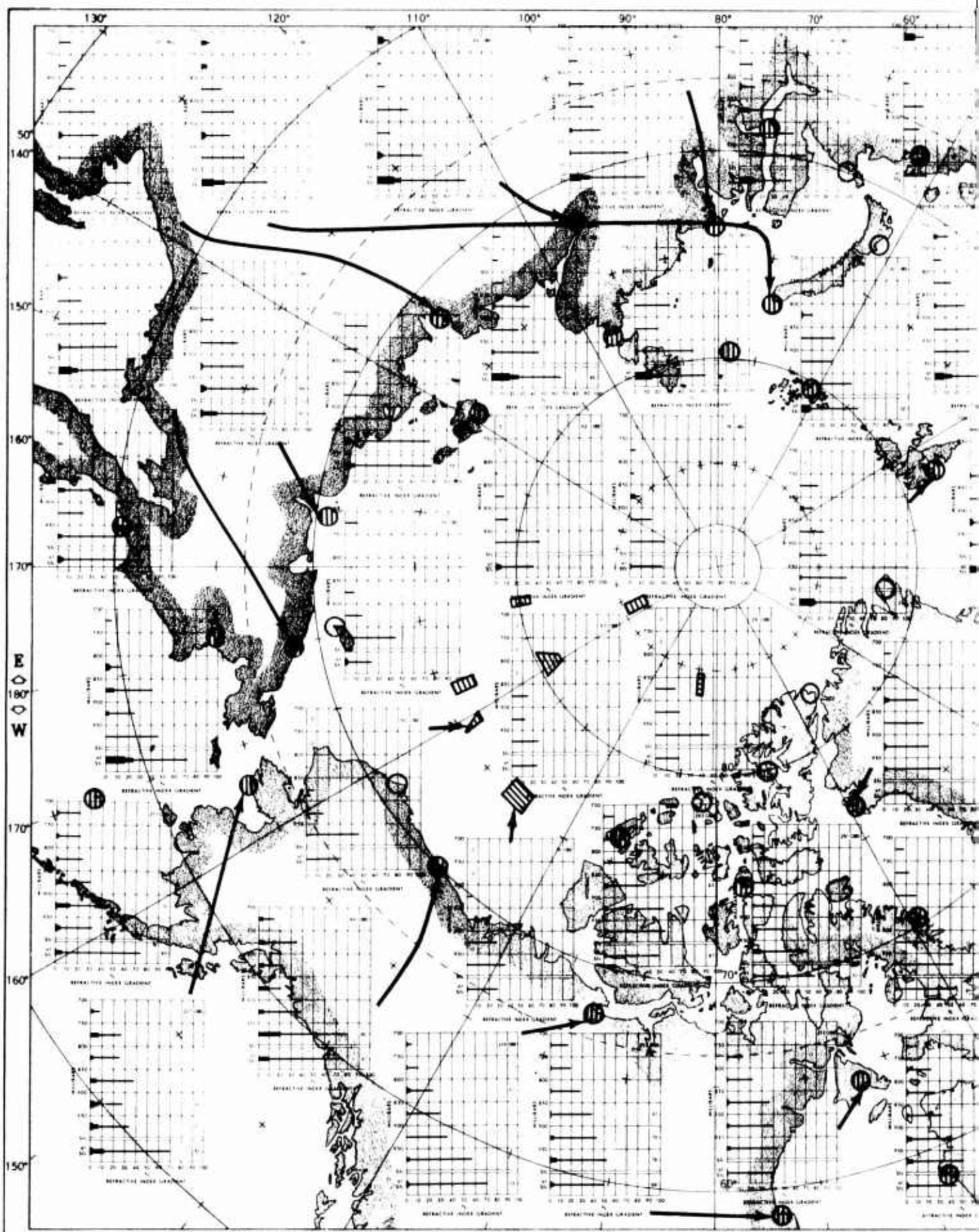


HUMIDITY

CHART 220

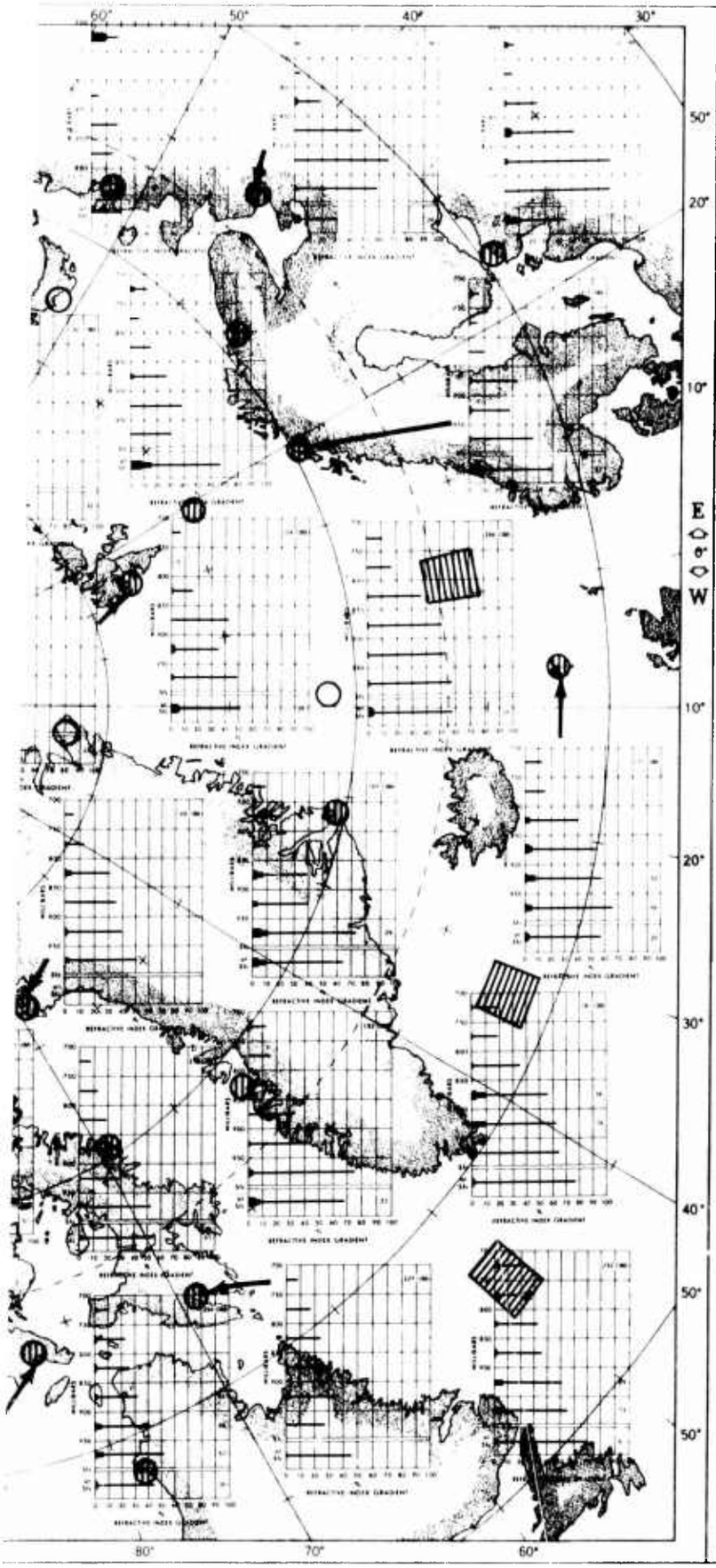


JUNE REFRACTIVE INDE



: INDEX GRADIENT

CHART 221



Percentage Frequency Refractive Index "Gradient" within 7 strata

Criteria

a $\Delta N/\Delta H \leq -.04$ Trapping

b $\Delta N/\Delta H \leq -.027$ Very Superrefractive

c $\Delta N/\Delta H \leq -.012$ Superrefractive

Indicated by

[For the level 951 - 900 millibars

a occurred 2 of all observations

b 8 of observations and

c 31 of observations]

Mean thickness, tens of feet, of b above

Thickness omitted when there were < 5 superrefractive gradients based within a stratum

OSTROV VRANGELYA

AMDERMA

MALYYE KARMAKULY

BARROW

NORD

JAN MAYEN

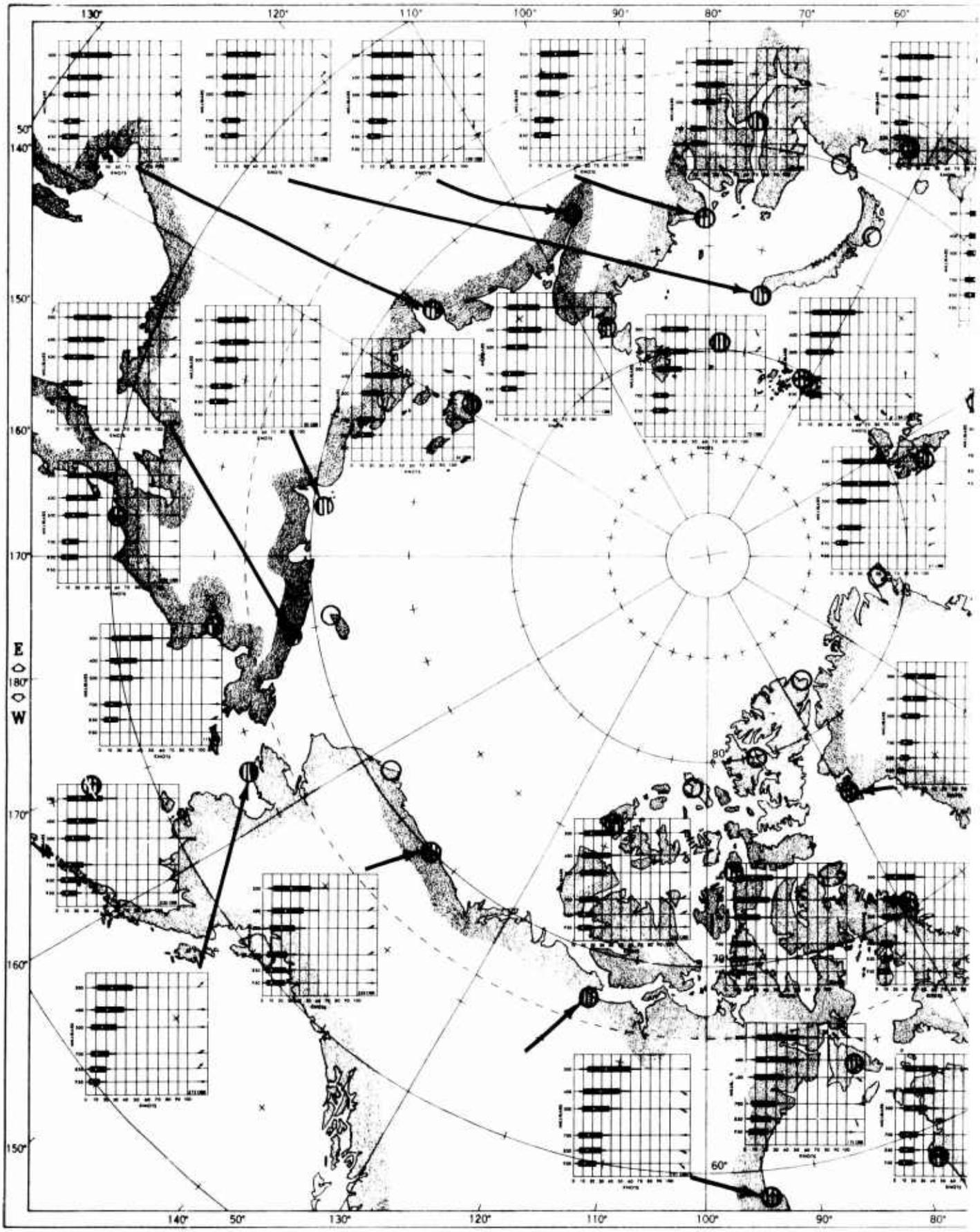
ISACHSEN

EUREKA

ALERT

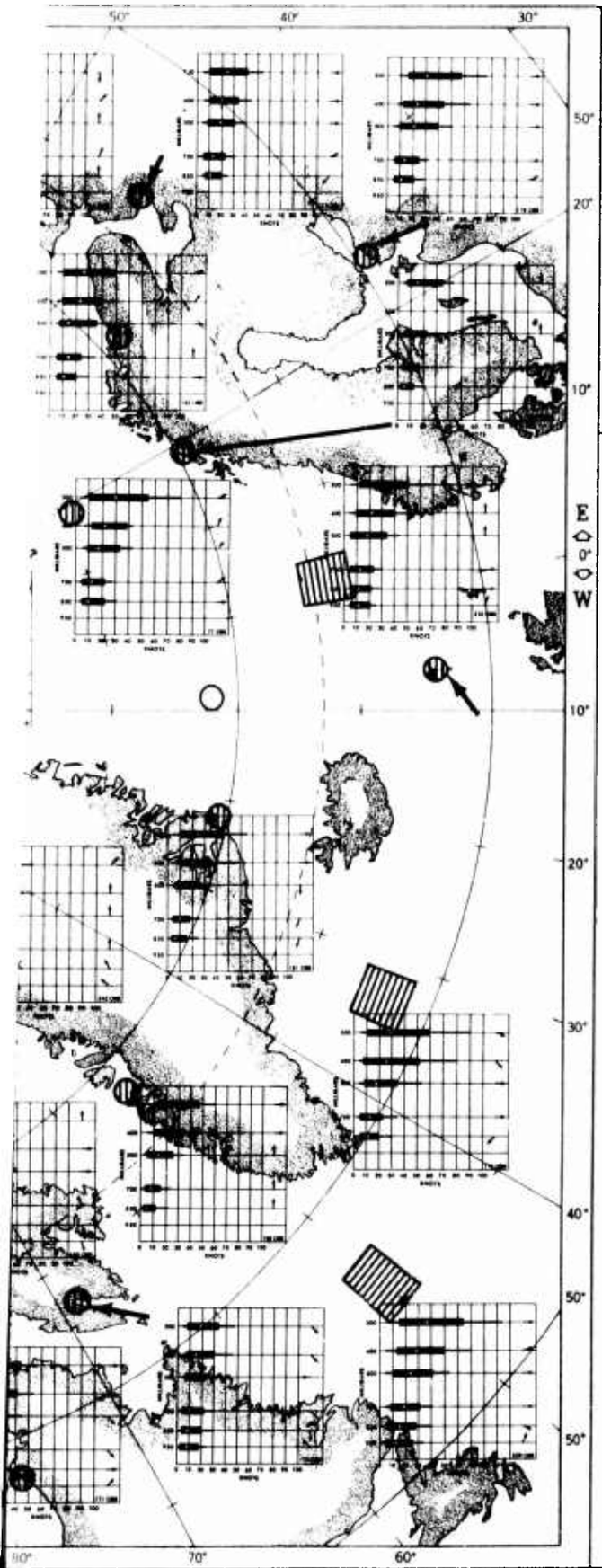
JULY

WIND (950 TO

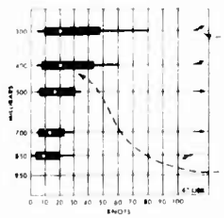


) 300 MB)

CHART 222



Prevailing Direction To 16 Points



(Direction indicated for 300 millibar level is from WSW.)

Distribution of Scalar Wind Speed Knots

(a) Median

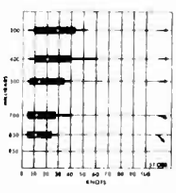
(b) 5%, 16%, 84% and 95% were equal to or less than the speeds indicated by



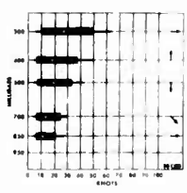
(At the 400 millibar level median speed was 20 knots, 5% of speeds were 4 knots or less, 16% were 8 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

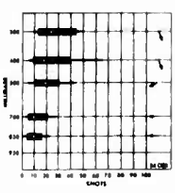
OSTROV VRANGELYA



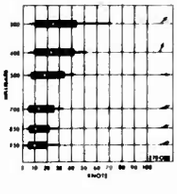
AMDERMA



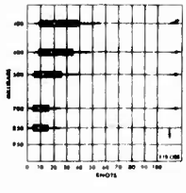
MALYYE KARMAKULY



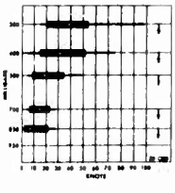
BARROW



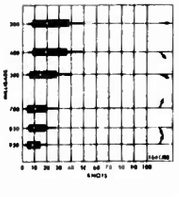
NORD



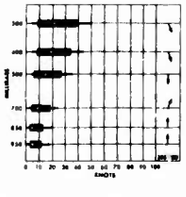
JAN MAYEN



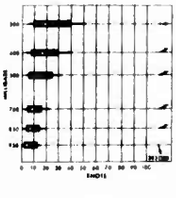
ISACHSEN



EUREKA

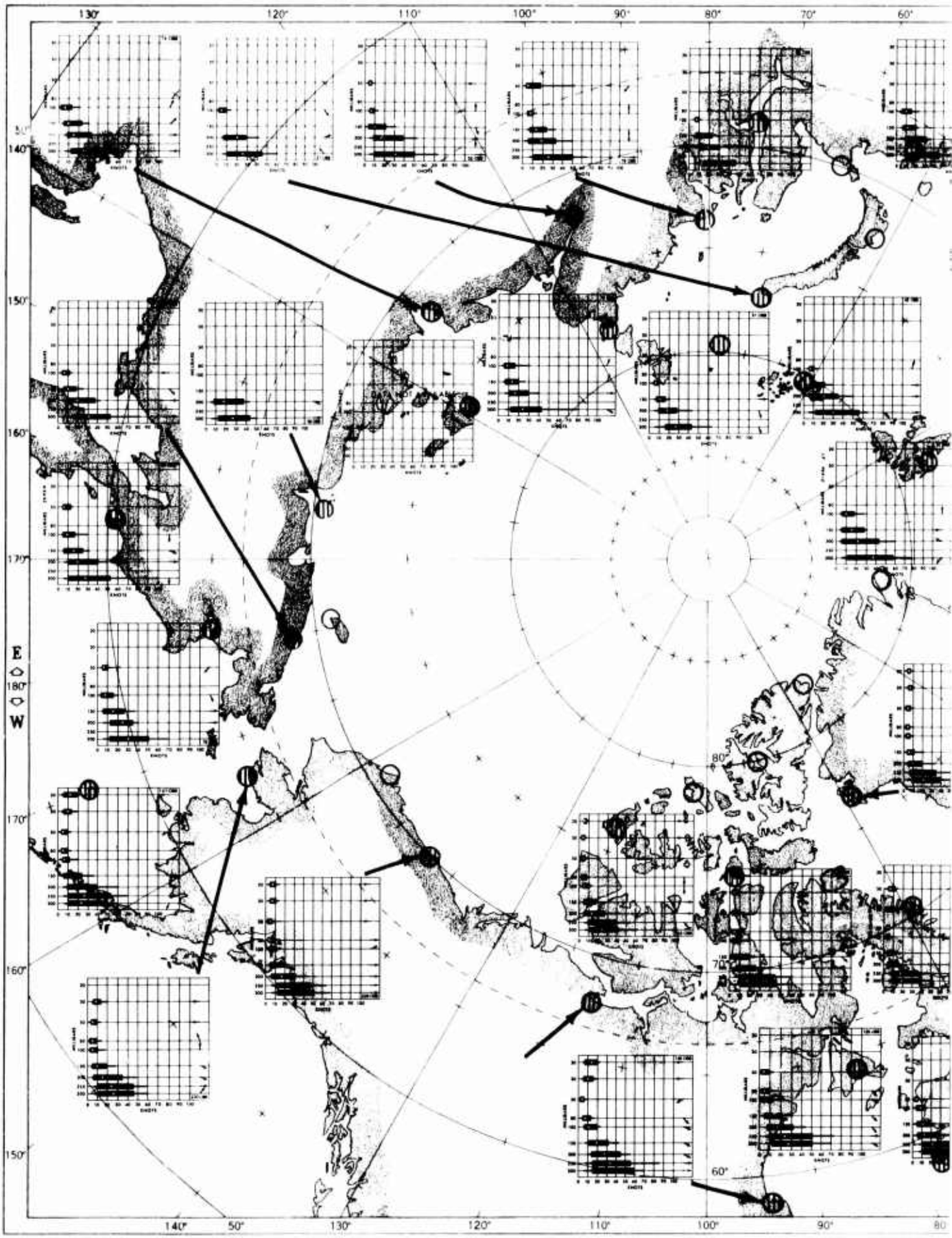


ALERT



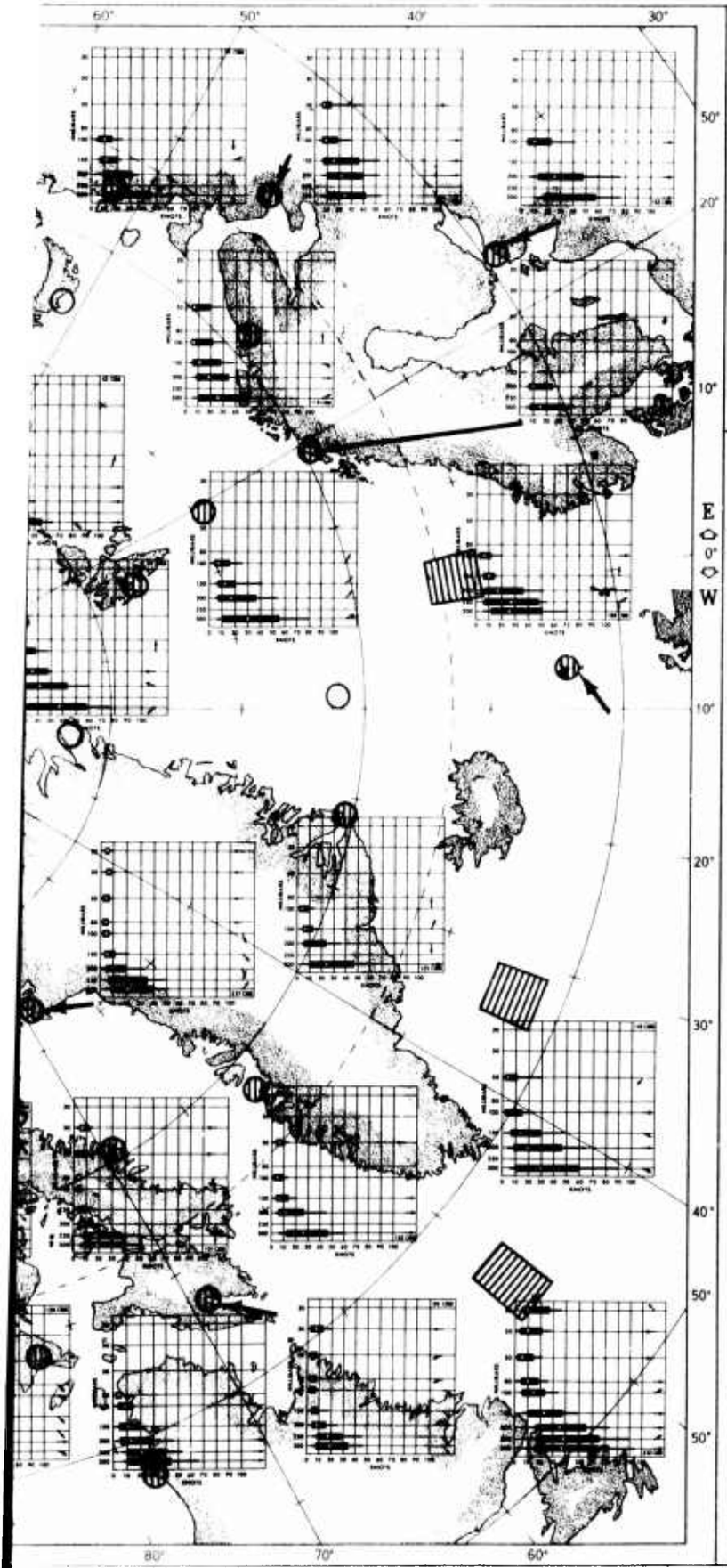
JULY

WIND (300 T

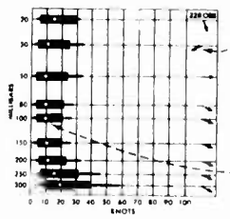


300 TO 20 MB)

CHART 223



Prevailing Direction To 16 Points



(Direction indicated for 30 millibar level is from ENE)

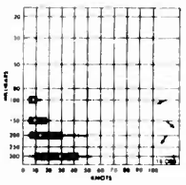
Distribution of Scalar Wind Speed Knots
(a) median
(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by



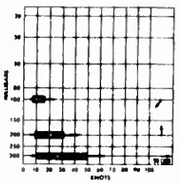
(At the 100 millibar level, median speed was 10 knots, 5% of speeds were 2 knots or less, 16% were 4 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

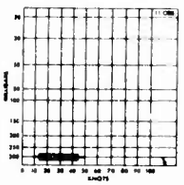
OSTROV VRANGELYA



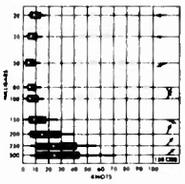
AMDERMA



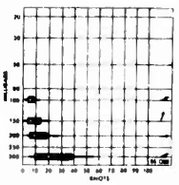
MALYYE KARMAKULY



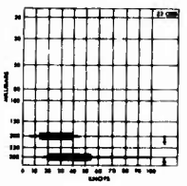
BARROW



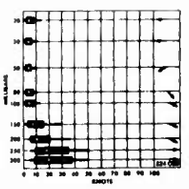
NORD



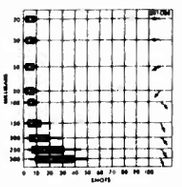
JAN MAYEN



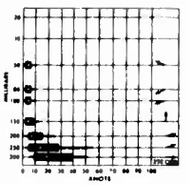
ISACHSEN



EUREKA

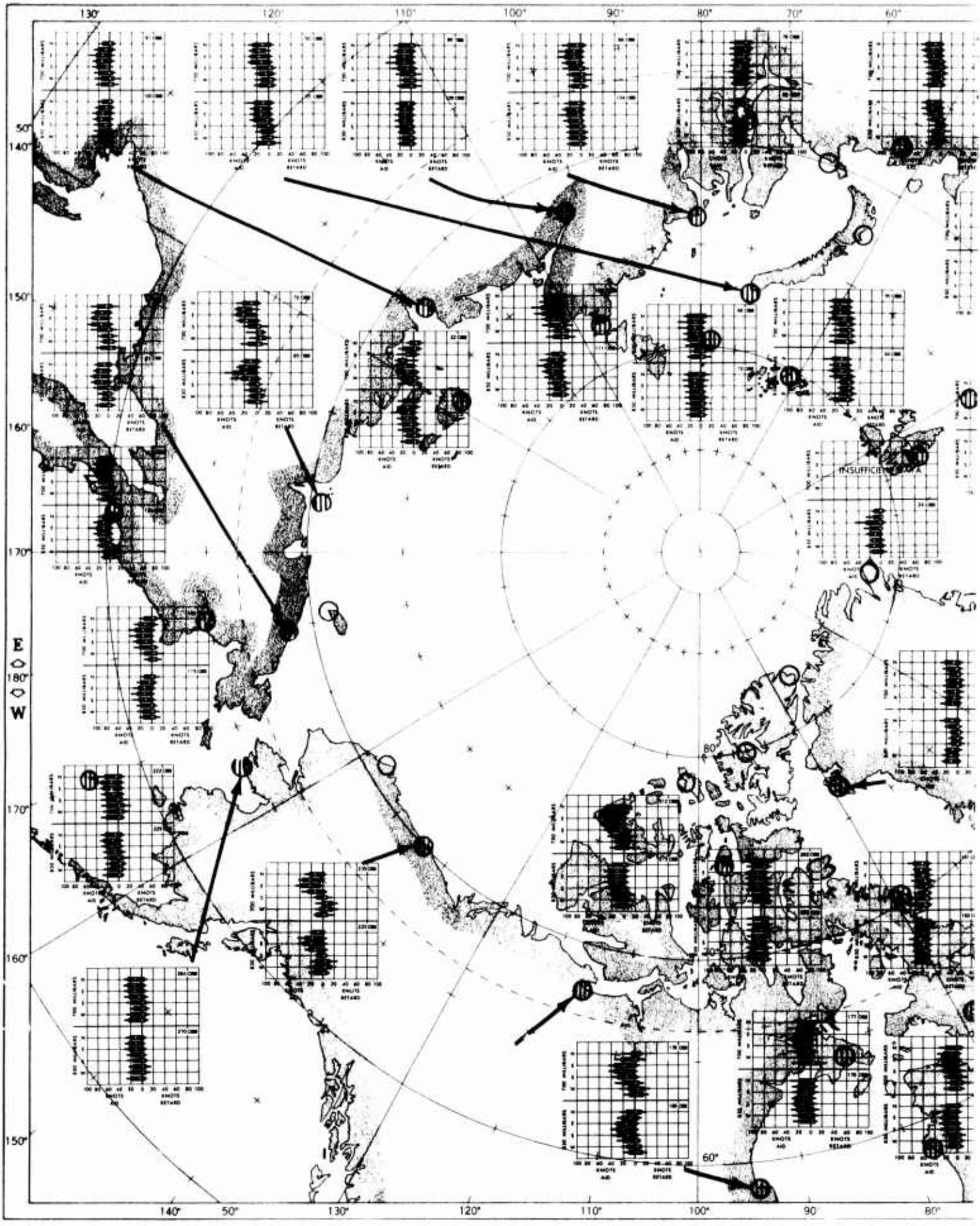


ALERT



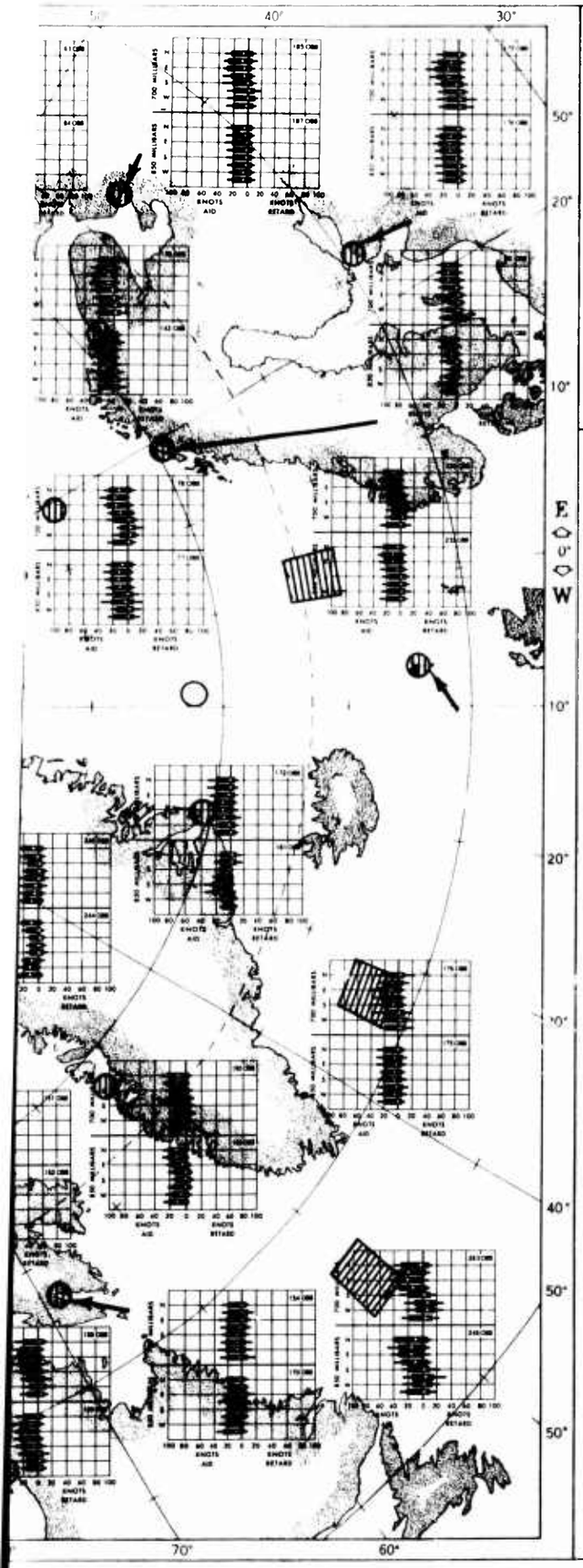
JULY

WIND AID AND RETARD

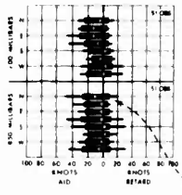


RD (850 & 700 MB)

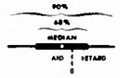
CHART 224



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 300 knots true air speed



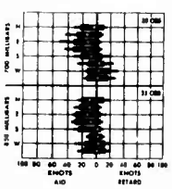
Read median and percentage frequency for direction toward which aircraft is flying thus



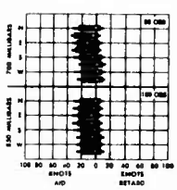
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward north at the 850 millibar level, wind aided or increased ground speed by an average of 12 knots. Wind effect ranged from 28 knots aid to 8 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 20 knots retard in 90% of the observations.)

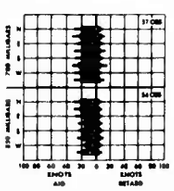
OSTROV VRANGELYA



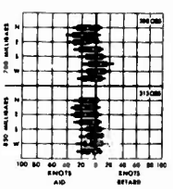
AMDERMA



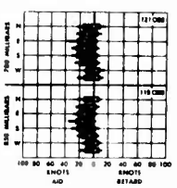
MALYYE KARMAKULY



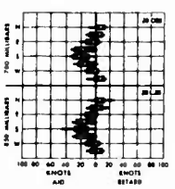
BARROW



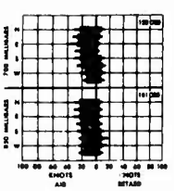
NORD



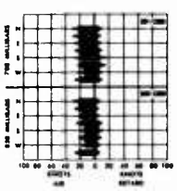
JAN MAYEN



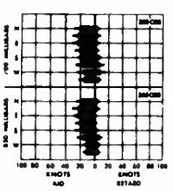
ISACHSEN



EUREKA

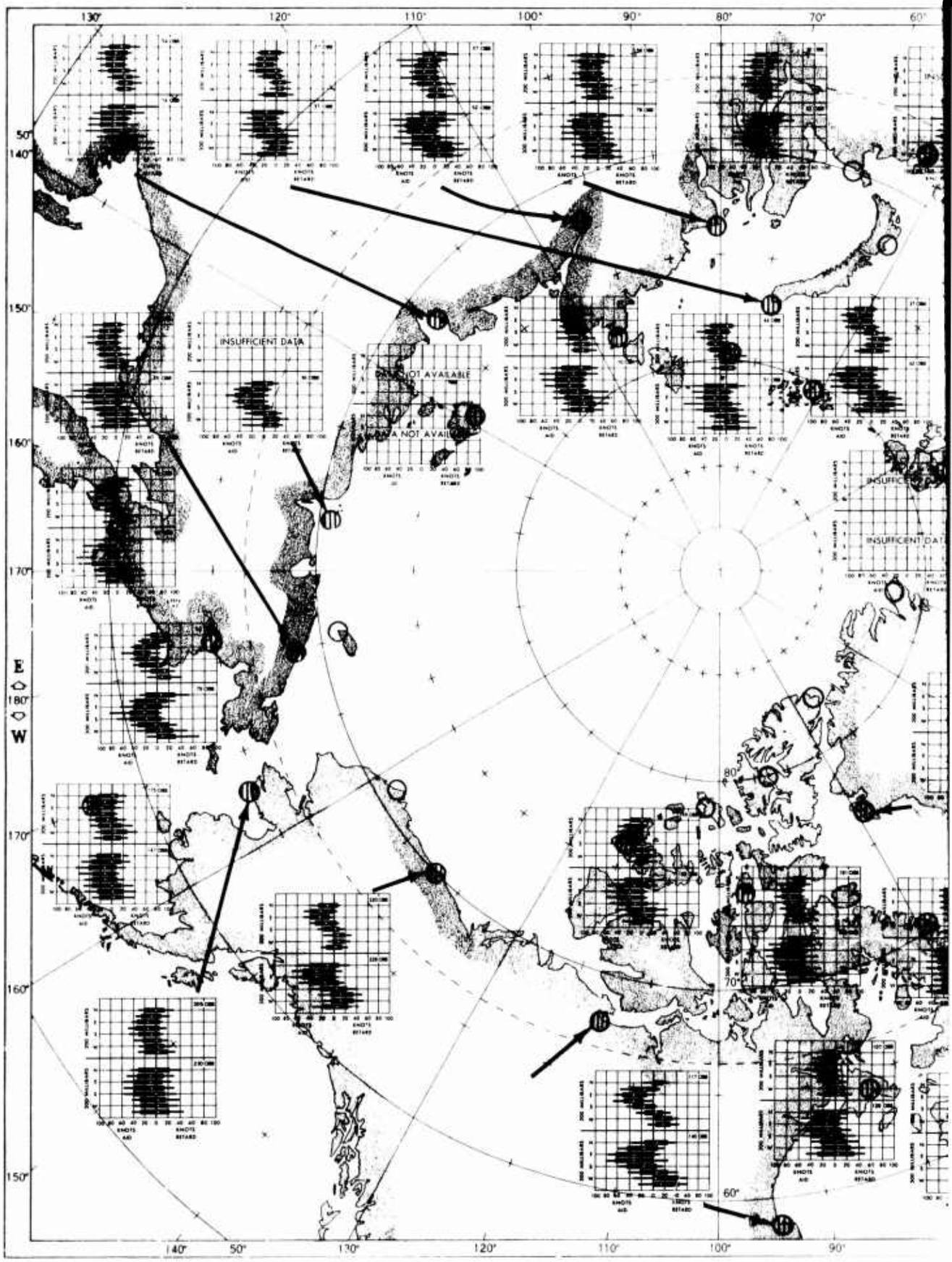


ALERT



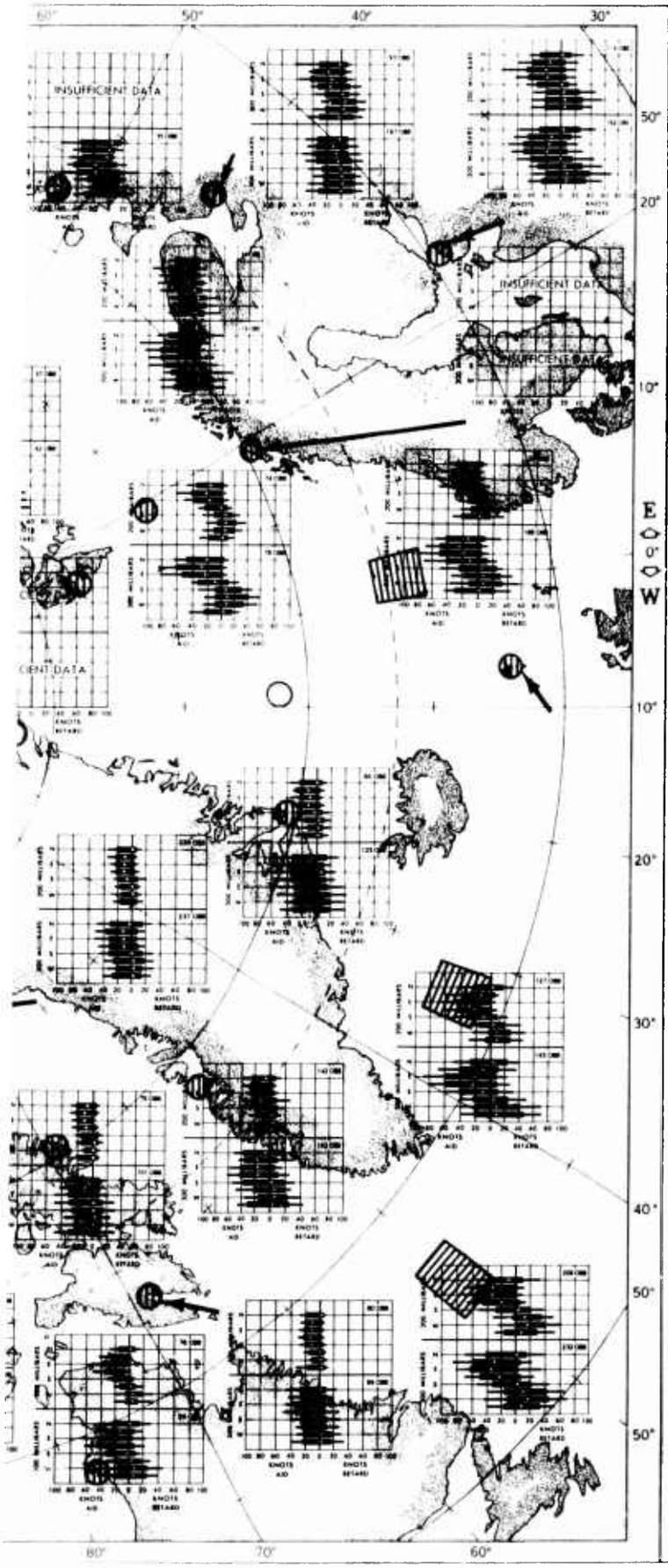
JULY

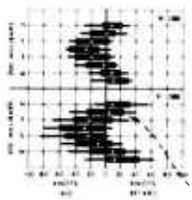
WIND AID AND RET



ETARD (300 & 200 MB)

CHART 225





Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 600 knots true air speed

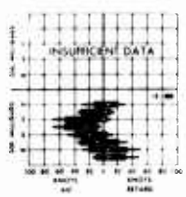
Read median and percentage frequency for direction toward which aircraft is flying thus



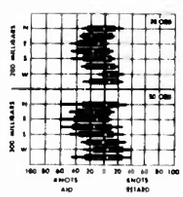
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward northeast at the 300 millibar level, wind retarded or decreased ground speed by an average of 4 knots. Winds effect ranged from 26 knots aid to 25 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 40 knots retard in 90% of the observations.)

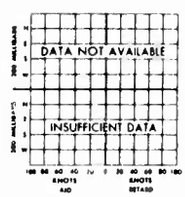
OSTROV VRANGELYA



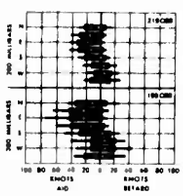
AMDERMA



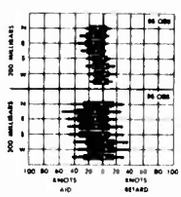
MALYYE KARMAKULY



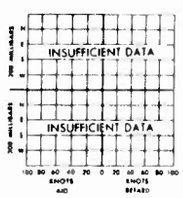
BARROW



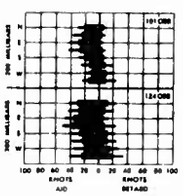
NORD



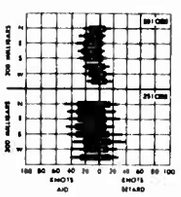
JAN MAYEN



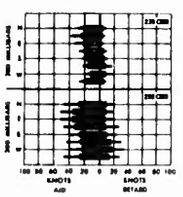
ISACHSEN



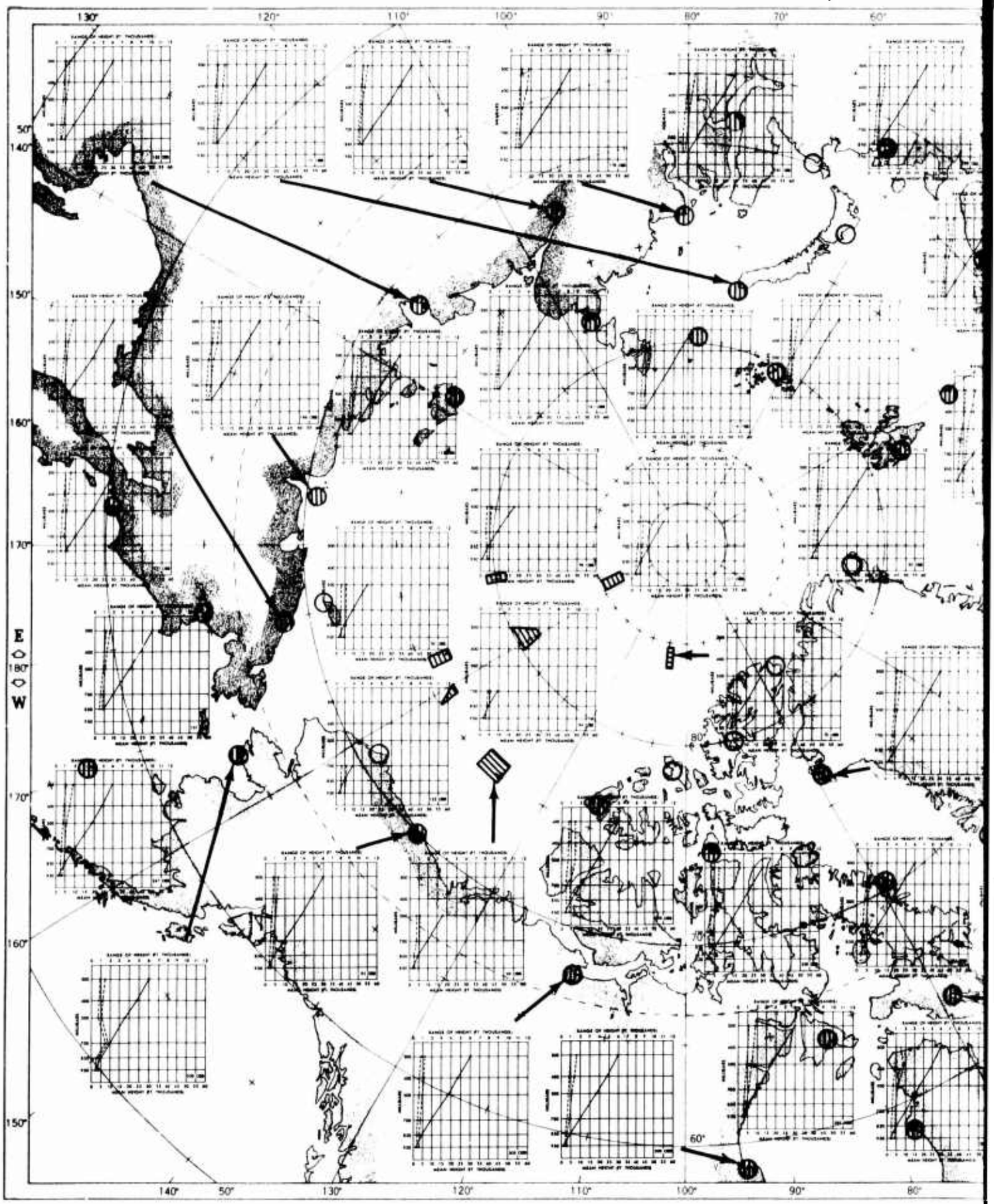
EUREKA



ALERT

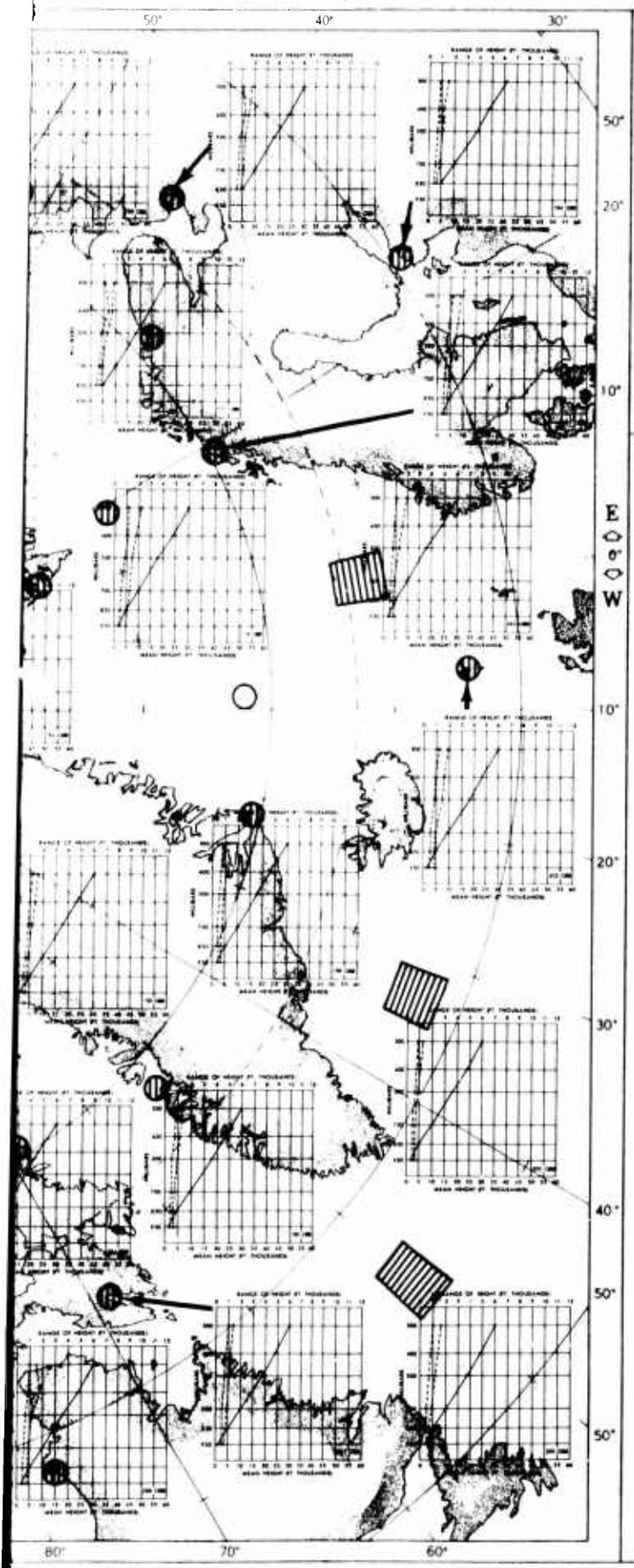


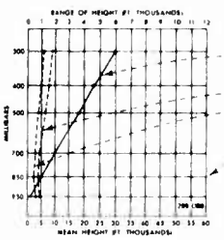
JULY HEIGHT (950 TO



) TO 300 MB)

CHART 226





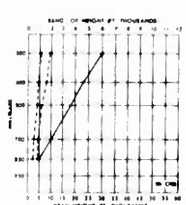
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
- (1) 5% 95% Range
- (2) 16% 84% Range

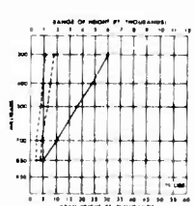
For the 850 millibar level the mean Height = 5,000 feet, the 5% 95% Height range = 800 feet and the 16% 84% range = 450 feet.)

Mean and ranges of height are omitted when data for a level are missing or insufficient

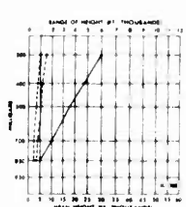
OSTROV VRANGELYA



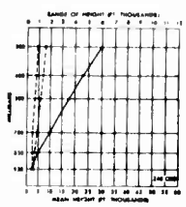
AMDERMA



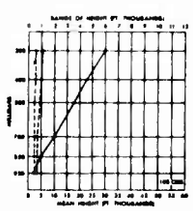
MALYYE KARMAKULY



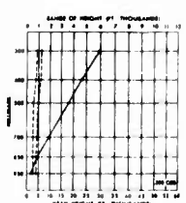
BARROW



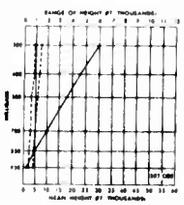
NORD



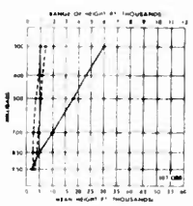
JAN MAYEN



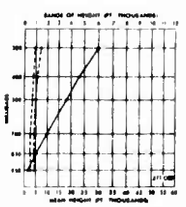
ISACHSEN



EUREKA

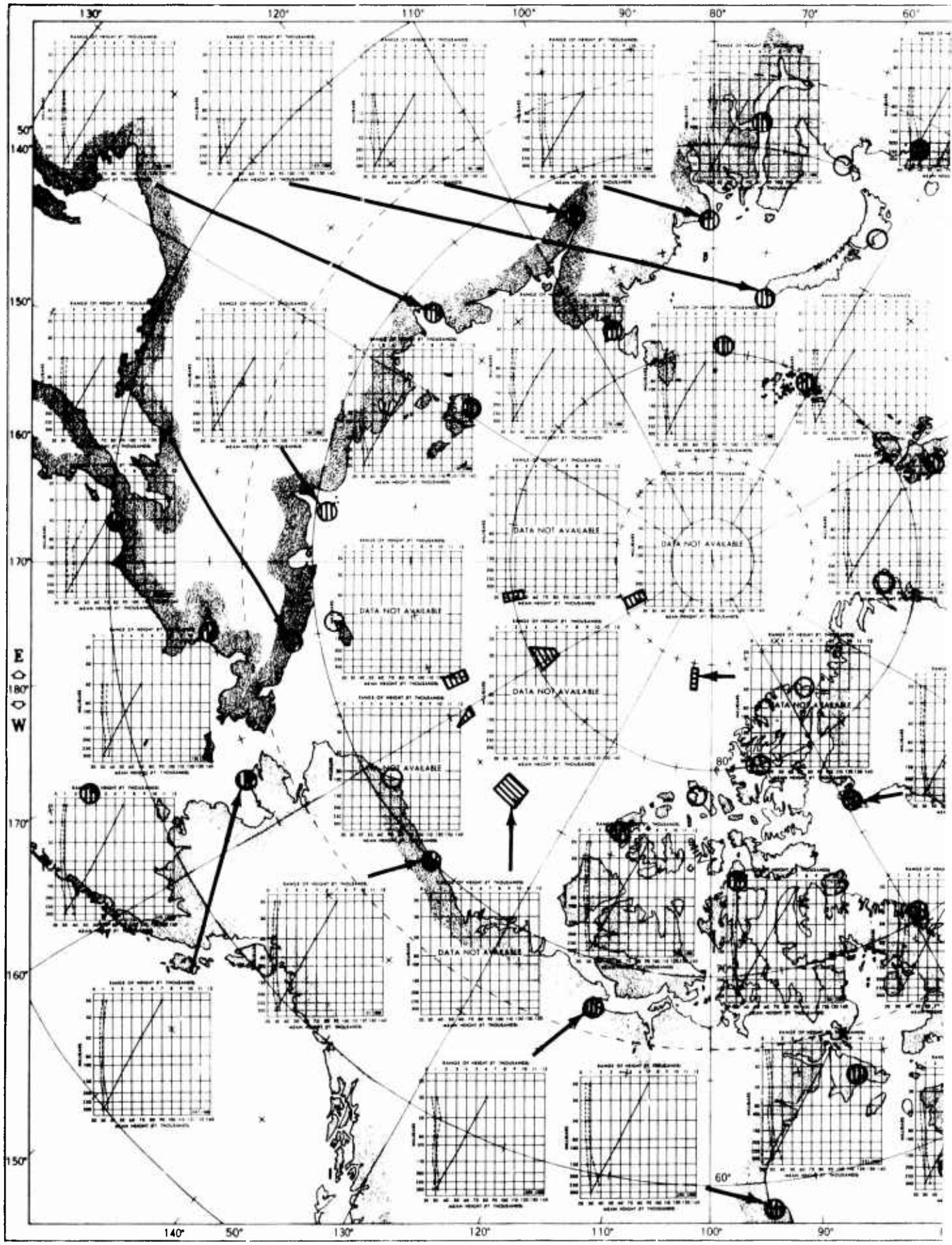


ALERT



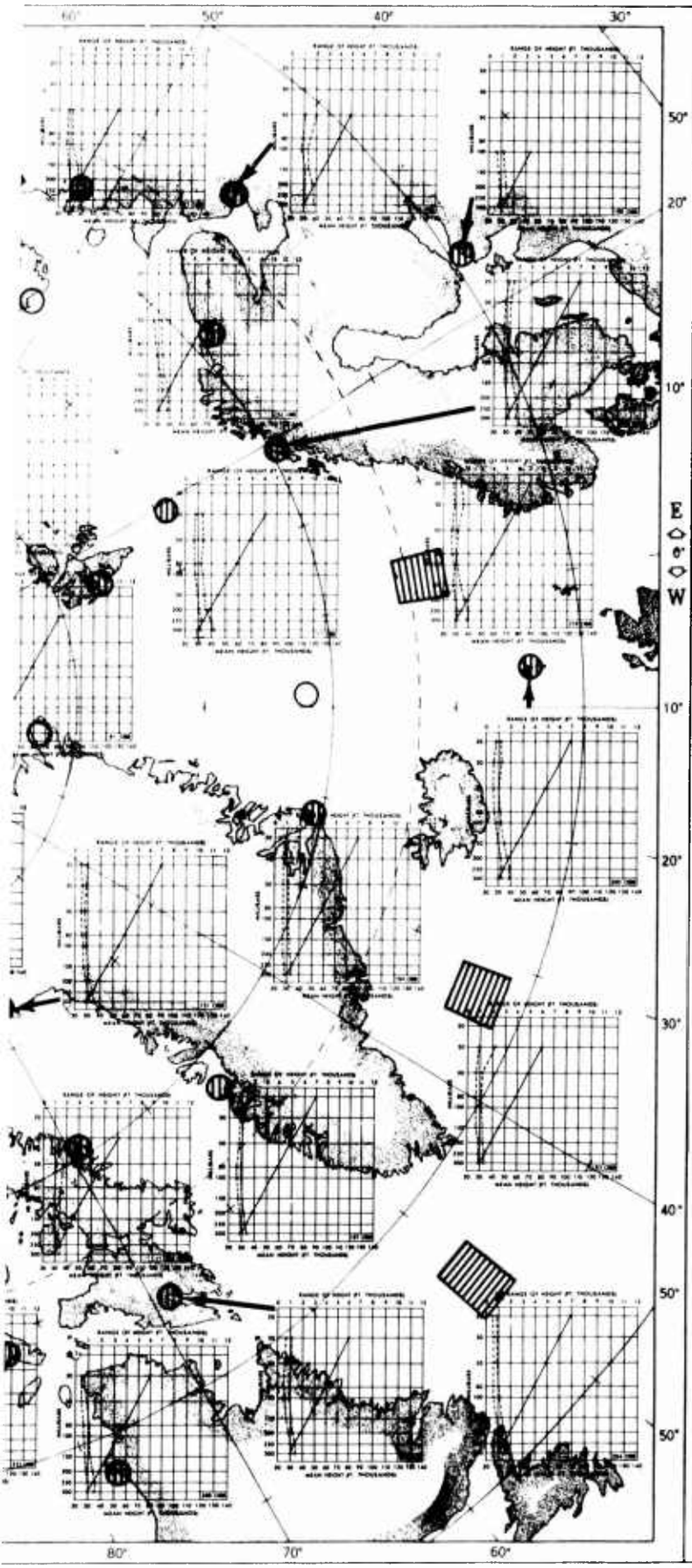
JULY

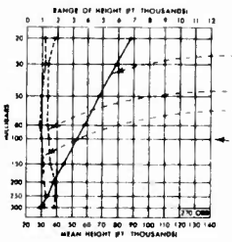
HEIGHT (300



(300 TO 20 MB)

CHART 227





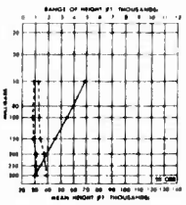
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
- (1) 5% 95% Range
- (2) 16% 84% Range

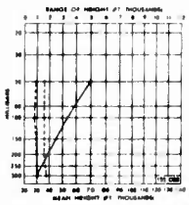
(For the 100 millibar level the mean Height is 53,000 feet, the 5% - 95% Height range is 1,500 feet, and the 16% 84% range is 1,000 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

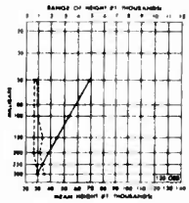
OSTROV VRANGELYA



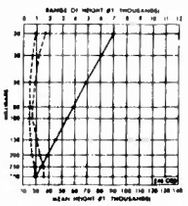
AMDERMA



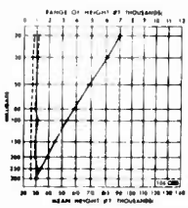
MALYYE KARMAKULY



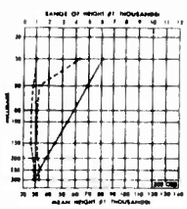
BARROW



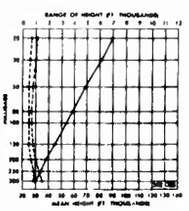
NORD



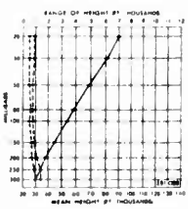
JAN MAYEN



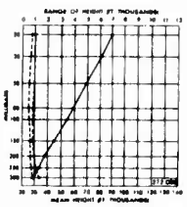
ISACHSEN



EUREKA

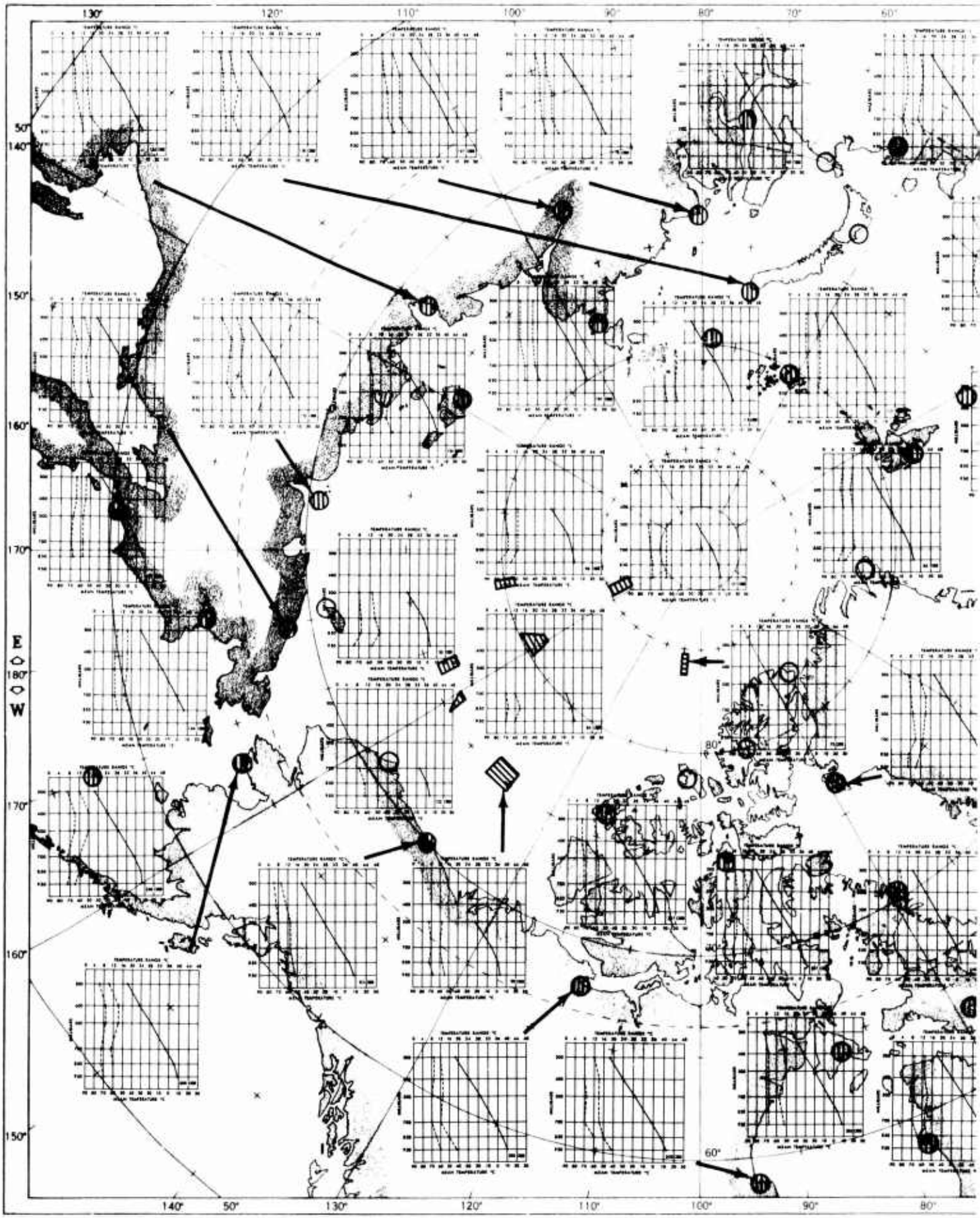


ALERT



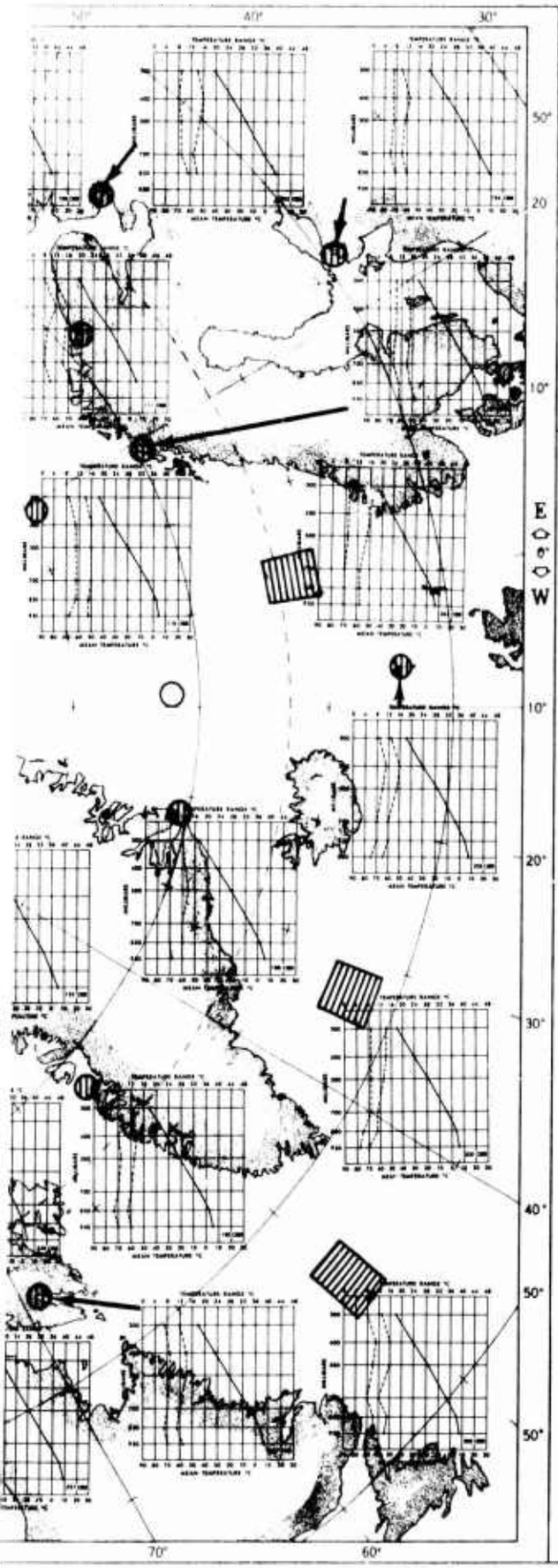
JULY

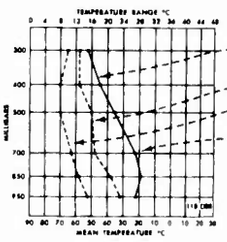
TEMPERATURE (950



0 TO 300 MB)

CHART 228





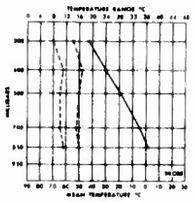
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% - 95% Range
(2) 16% - 84% Range

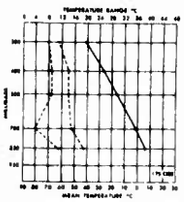
(For the 700 millibar level the mean temperature is -22° C, the 5% - 95% range is 17°C, and the 16% - 84% range is 11°C)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

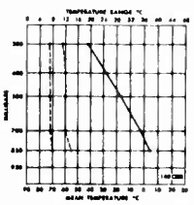
OSTROV VRANGELYA



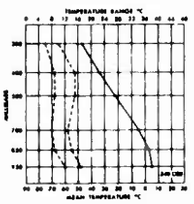
AMDERMA



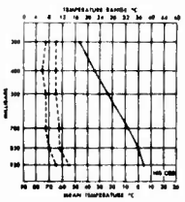
MALYYE KARMAKULY



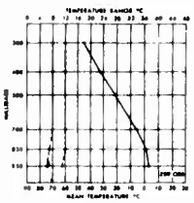
BARROW



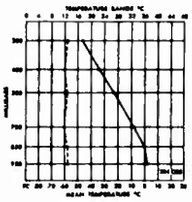
NORD



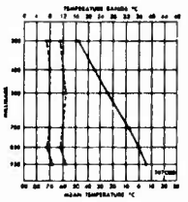
JAN MAYEN



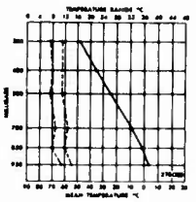
ISACHSEN



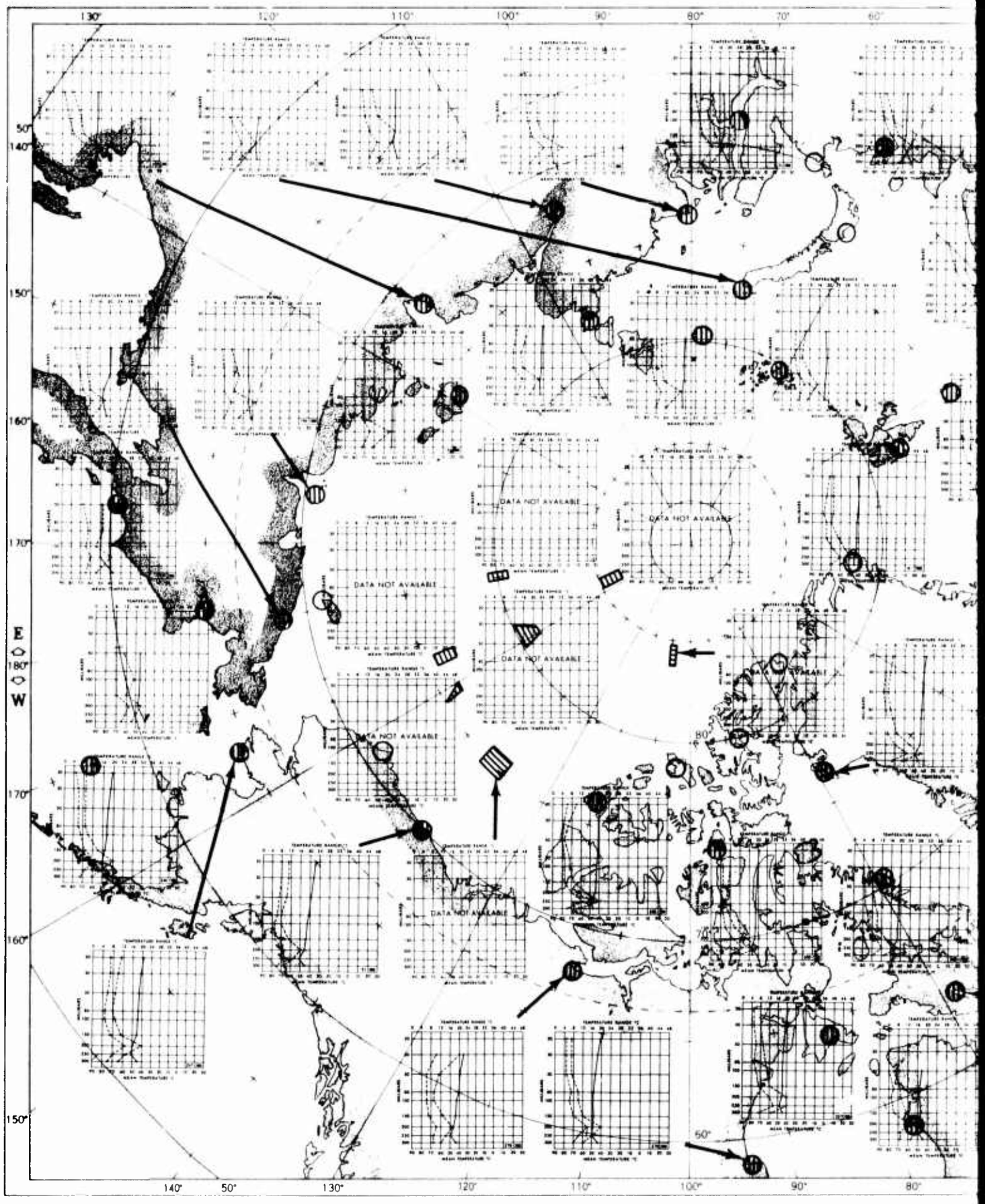
EUREKA



ALERT

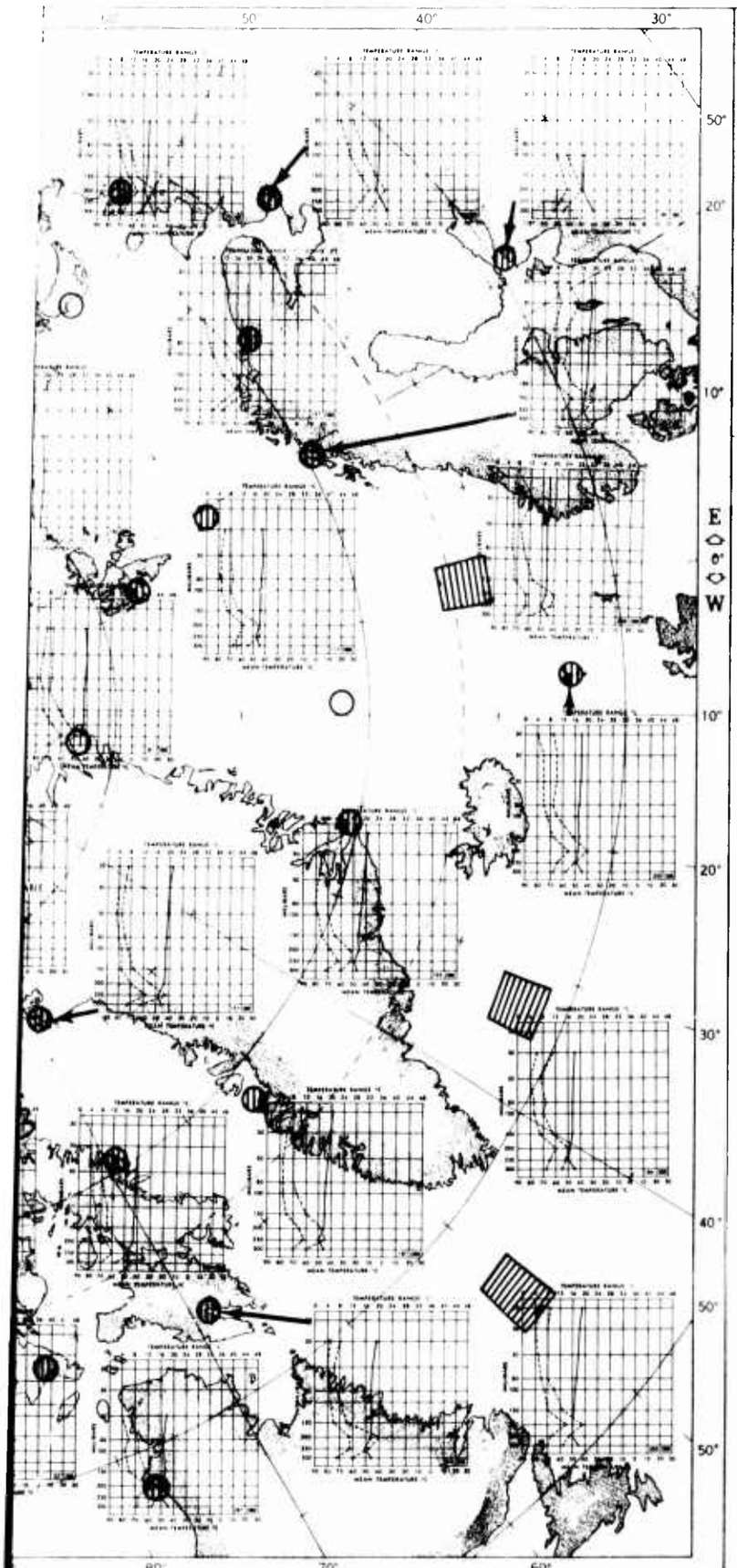


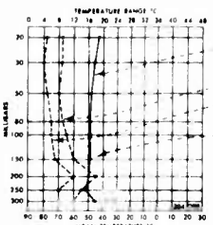
JULY TEMPERATURE (300



JRE (300 TO 20 MB)

CHART 229





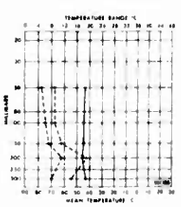
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% - 95% Range
(2) 16% - 84% Range

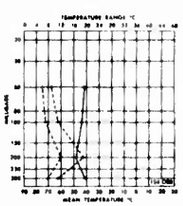
For the 150 millibar level the mean temperature is -49°C the 5% - 95% range is 12°C and the 16% - 84% range is 7°C

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

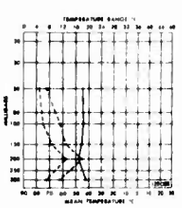
OSTROV VRANGELYA



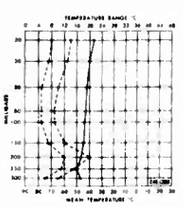
AMDERMA



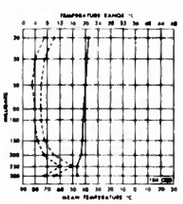
MAIYYE KARMAKULY



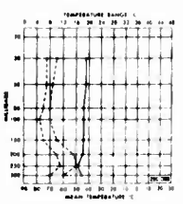
BARROW



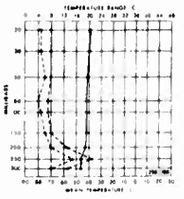
NORD



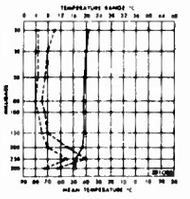
JAN MAYEN



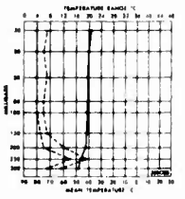
ISACHSEN



EUREKA

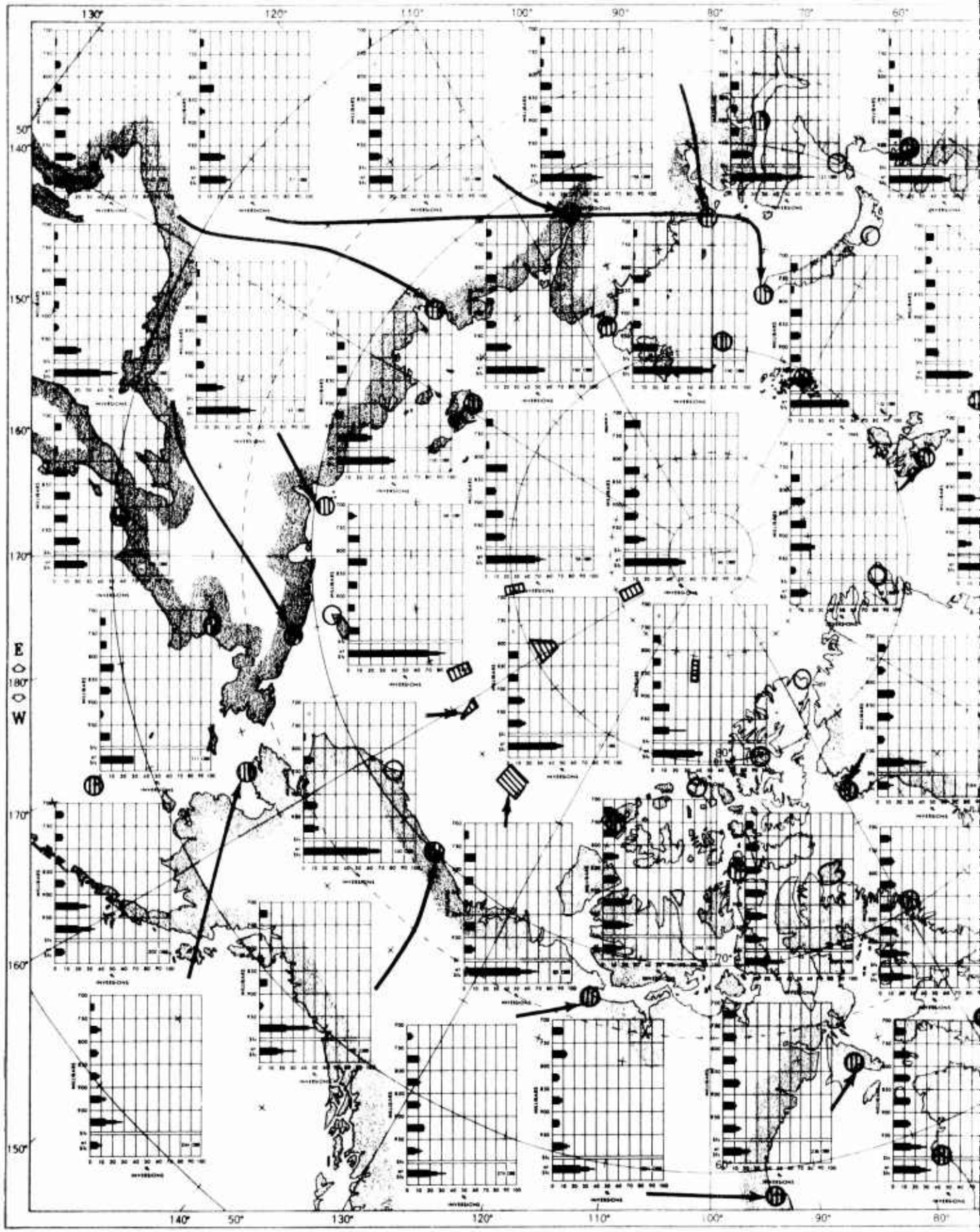


ALERT



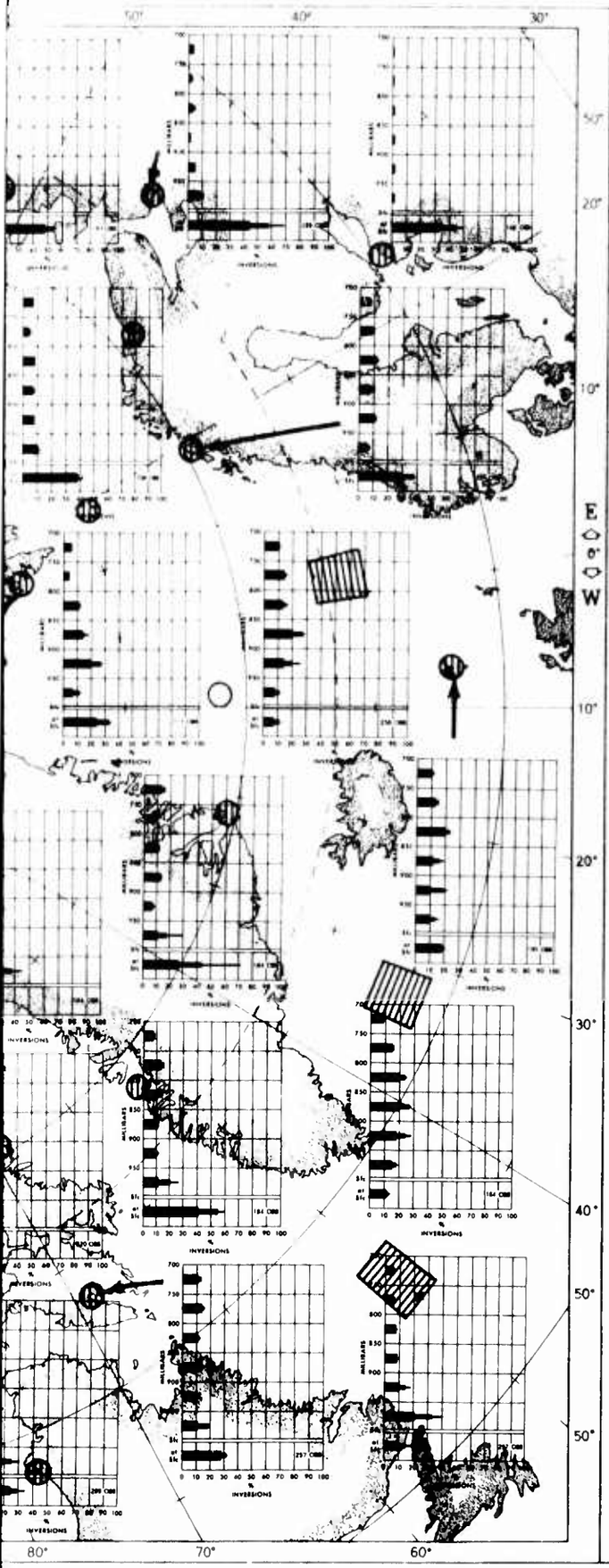
JULY

INVERSIC



RSIONS

CHART 230



Percentage Frequencies of three intensities of Temperature Inversions within each of seven layers from the surface to 700 millibars

General Criteria

(a) Temperature inversion constant or increasing temperature with increasing height that persisted at least 5 millibars (approximately 50 meters)

(b) Layers inversions were assigned to 7 arbitrary layers according to the pressure at their bases

750 to 701 millibars
800 to 751 millibars
850 to 801 millibars
900 to 851 millibars
950 to 901 millibars
5 millibars above the surface to 951 millibars
At the surface to 49 millibars above the surface

(c) Intensity change in temperature per 100 meters increase in height of

0°C TO +9.9°C | +10°C TO +19°C | +20°C OR MORE

When more than one inversion was recorded within a layer the one with the greatest intensity was counted

0 No occurrence

Blank No data

(28% [80.52] of all radiosonde ascents recorded temperature inversions of +10°C to +19°C per 100 meters with bases in the layer from the surface to 49 millibars above)

OSTROV VRANGELYA

AMGERMA

MALYYE KARMAKULY

BARROW

NORD

JAN MAYEN

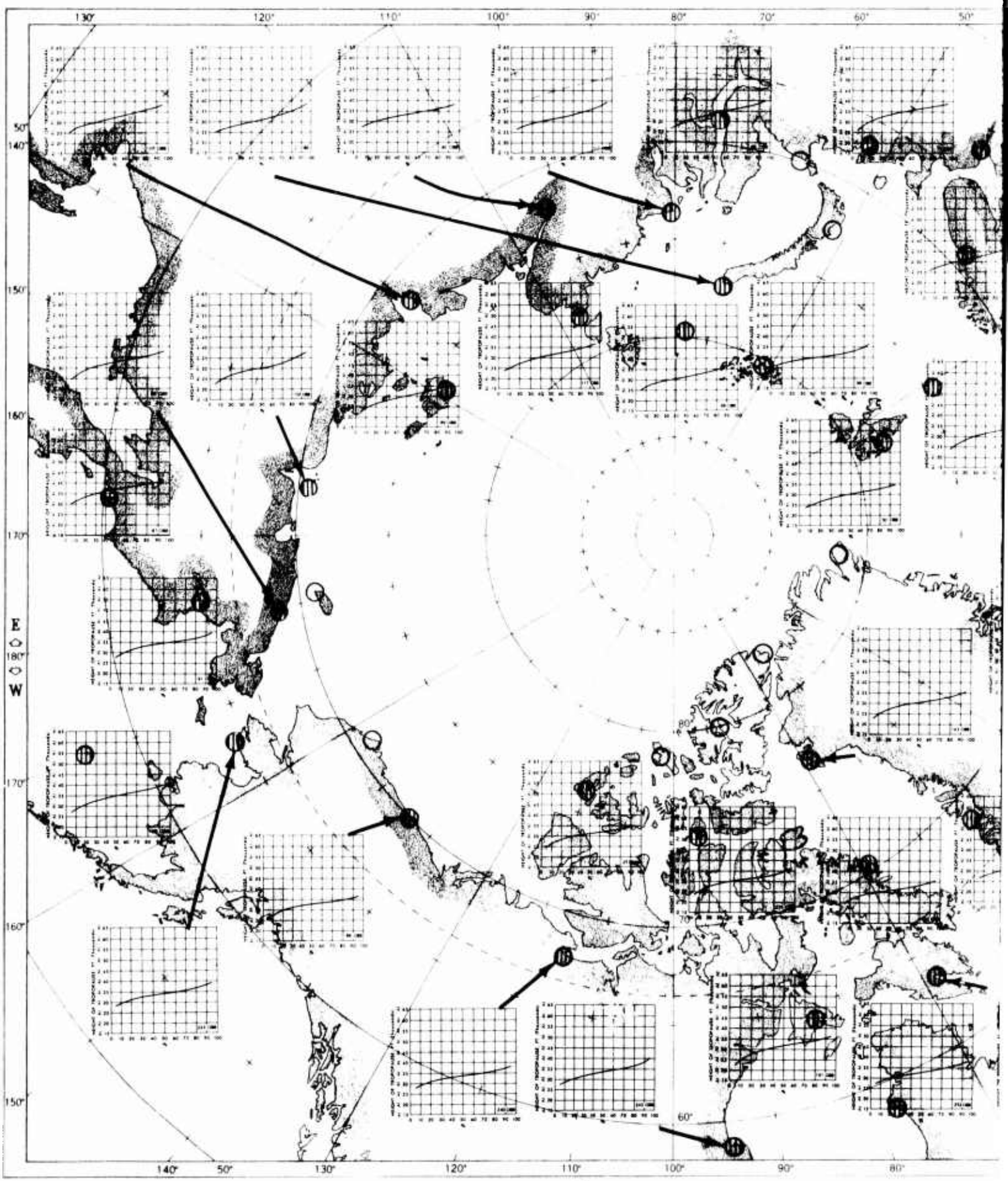
ISACHSEN

EUREKA

ALERT

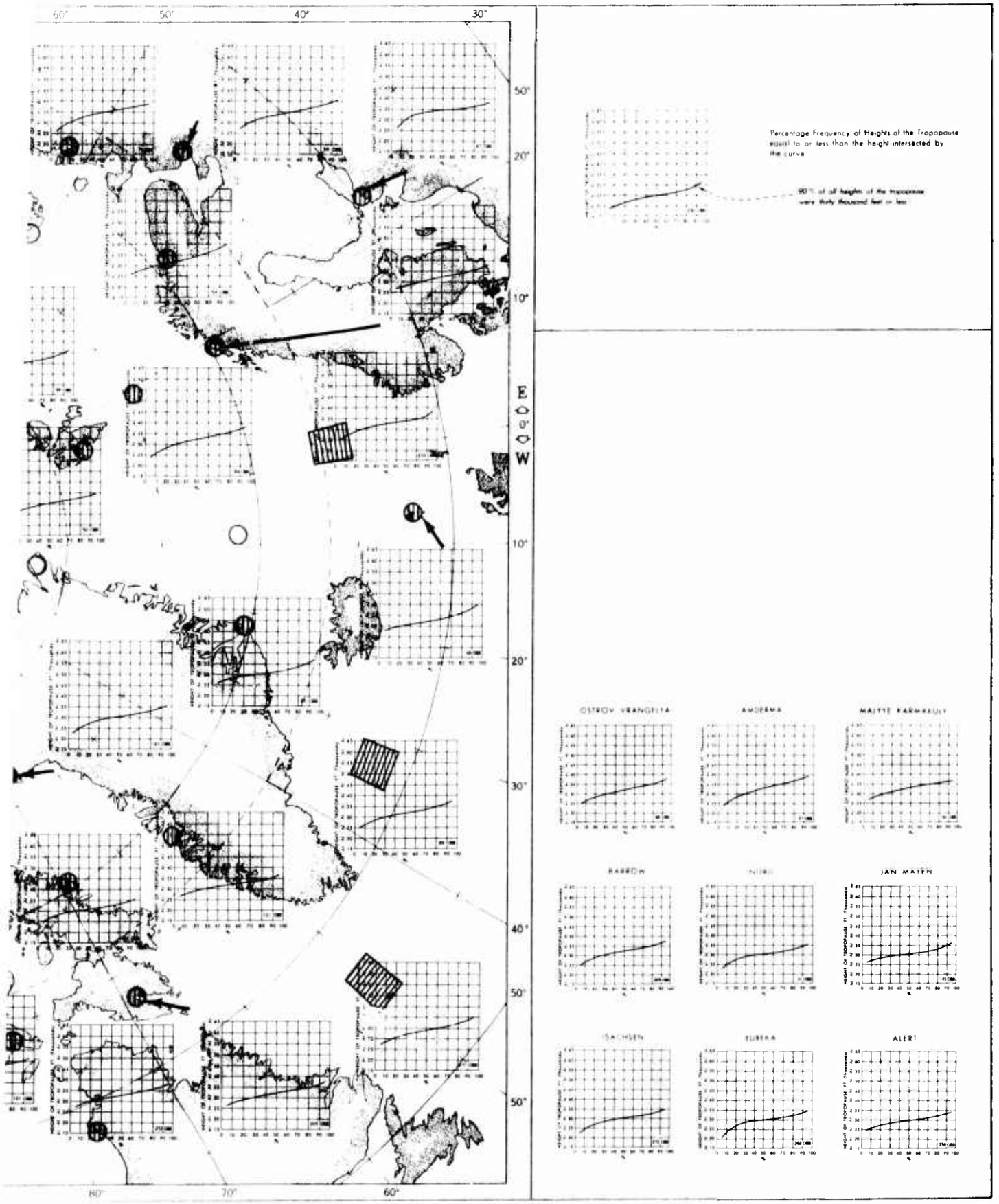
JULY

HEIGHT OF TROPO



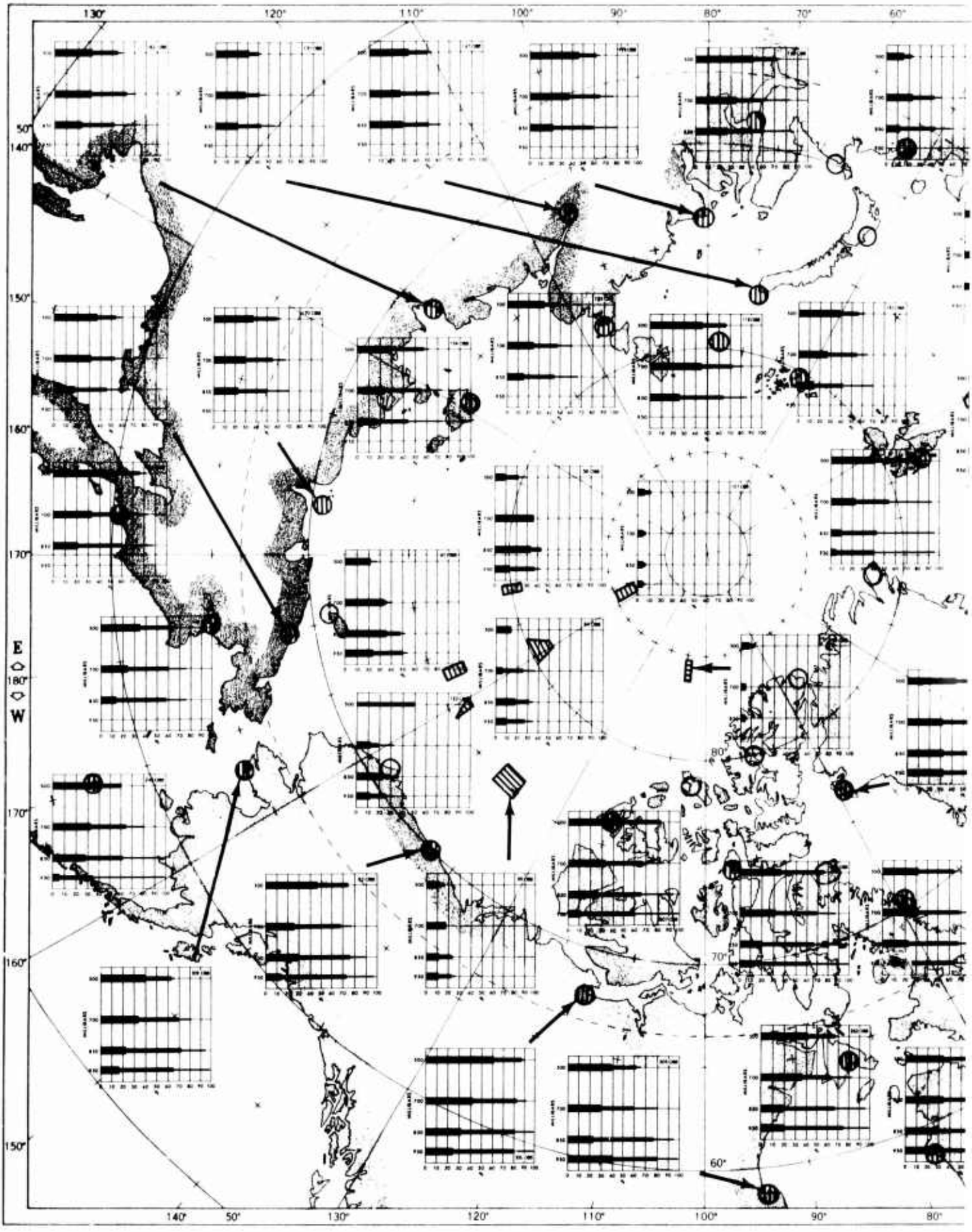
F TROPOPAUSE

CHART 231



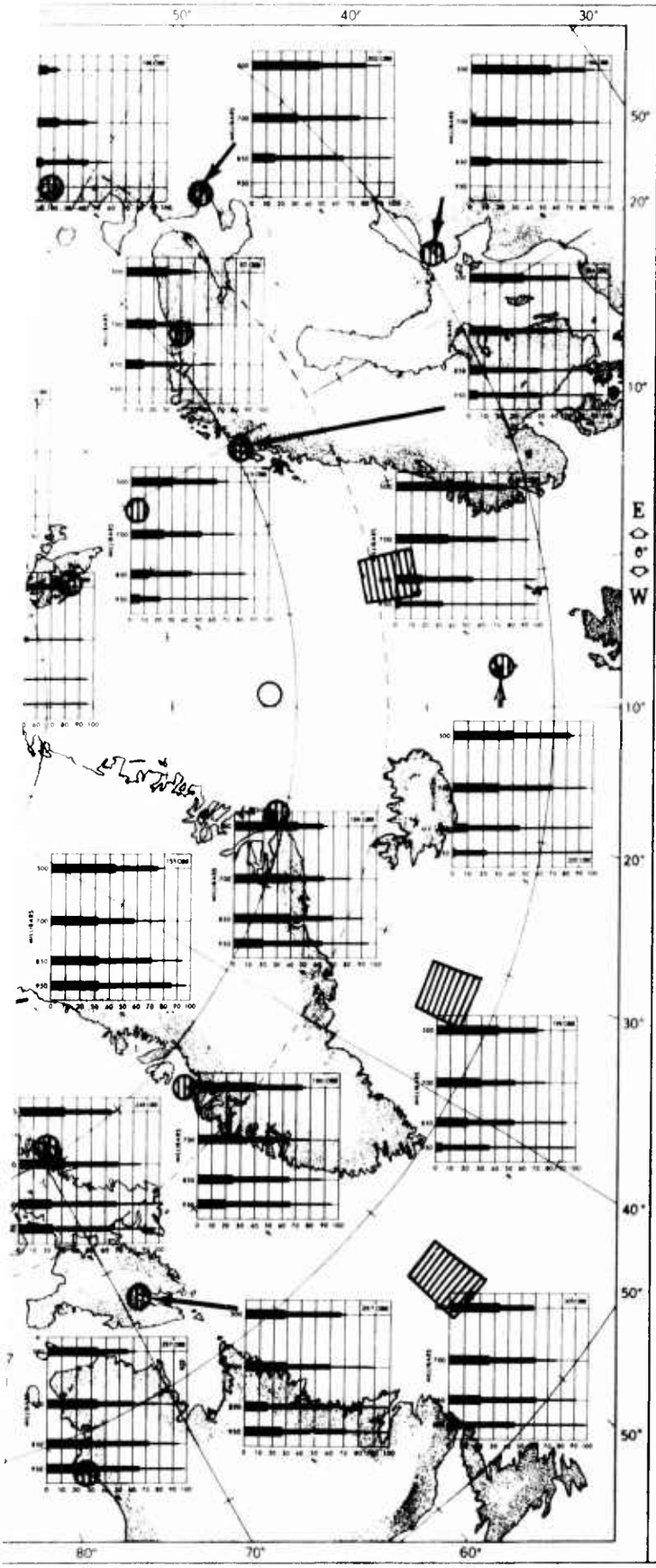
JULY

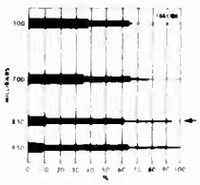
RELATIVE HU



E HUMIDITY

CHART 232



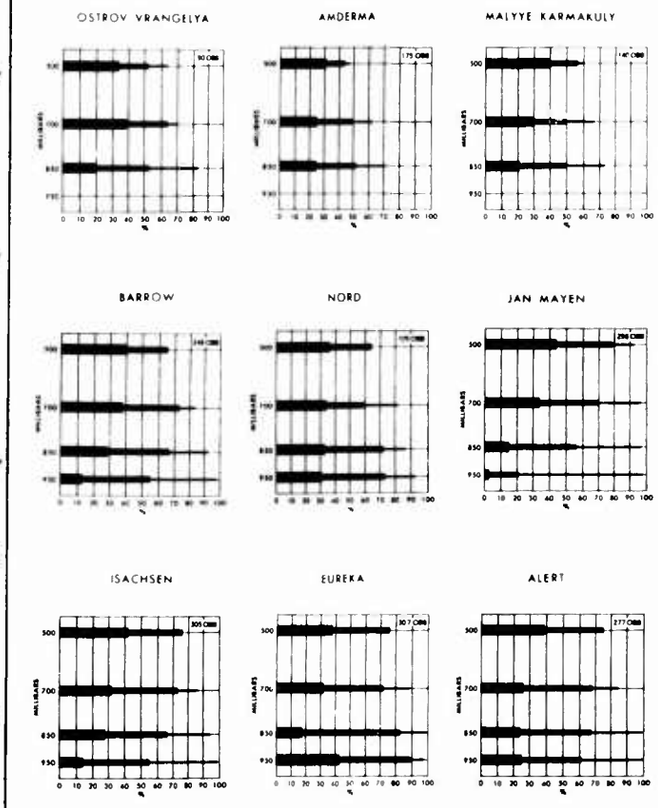


Distribution of Relative Humidity at Pressure Surfaces

(a) Percentage Frequency of Relative Humidity as indicated by

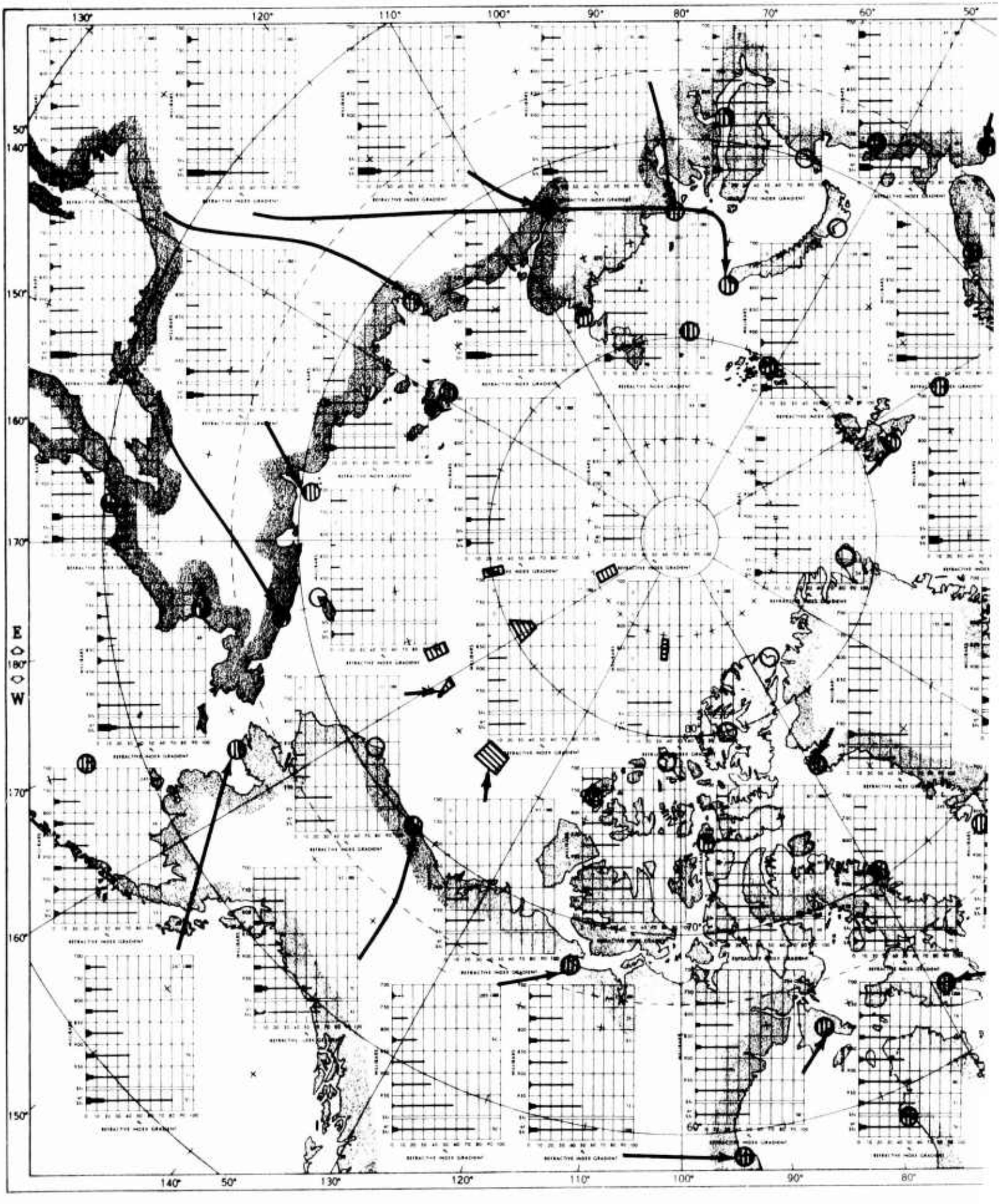


For the 850 millibar level Relative Humidity was 30% - 59% for 17% of all observations 60% - 84% humidity occurred 50% (61 minus 11) of the observations and 85% - 100% humidity occurred 33% (94 minus 61) of the observations)



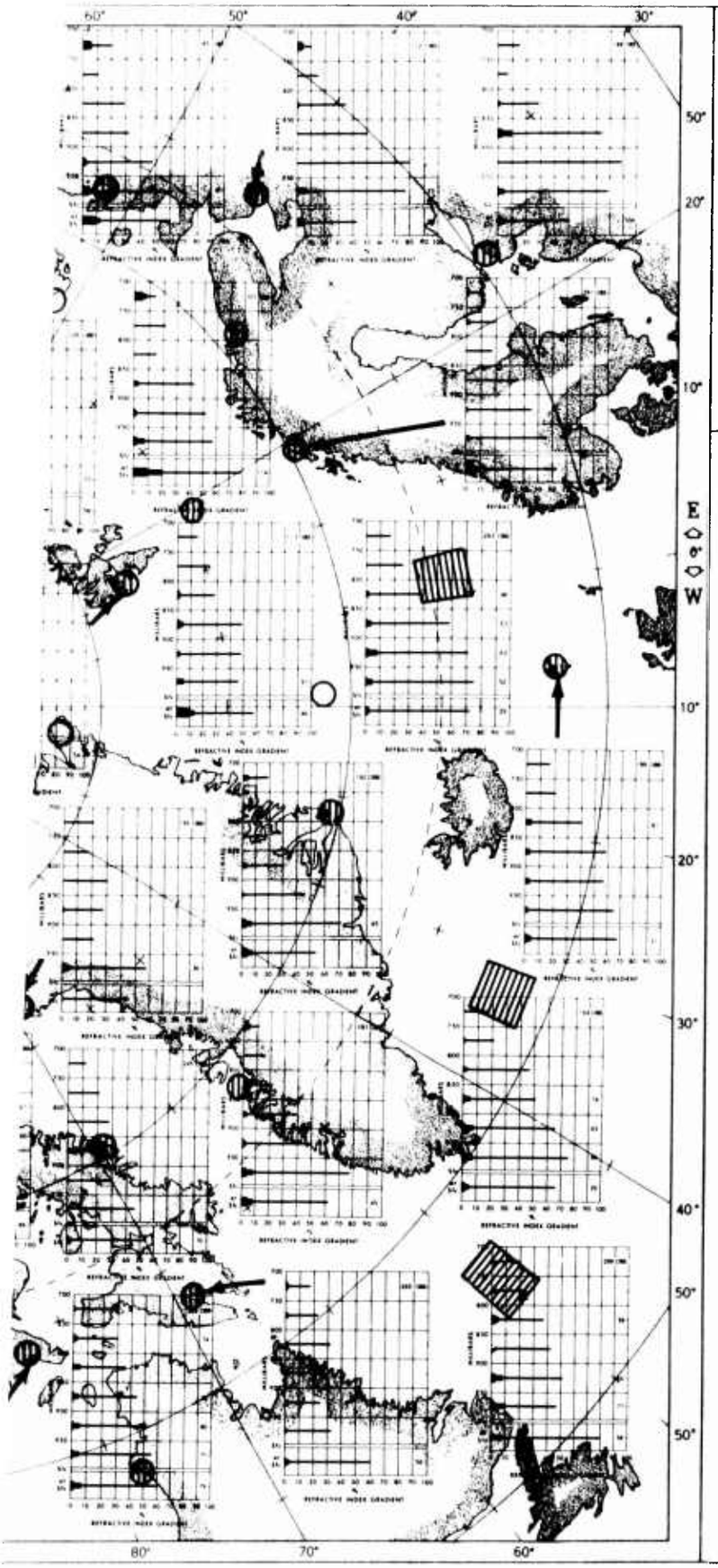
JULY

REFRACTIVE INDEX G



INDEX GRADIENT

CHART 233



Percentage Frequency Refractive Index Gradient * within 7 strata

Criteria

a ΔN ΔH ≤ -.048 Trapping

b ΔN ΔH ≤ -.027 Very Superrefractive

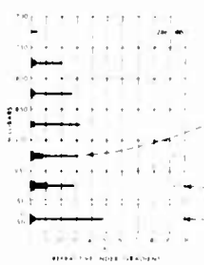
c ΔN ΔH ≤ -.012 Superrefractive

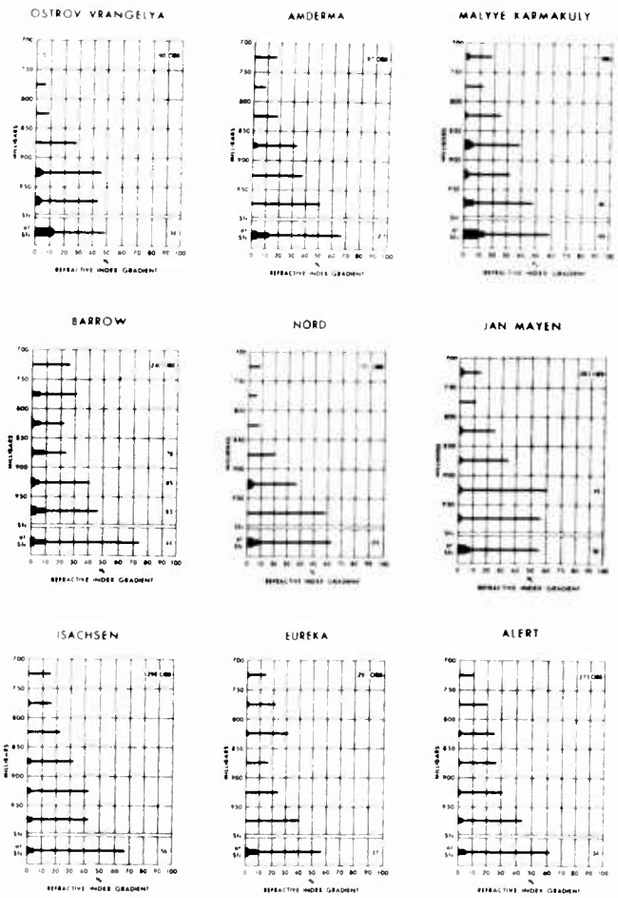
Indicated by

[For the level 951 - 900 millibars
a occurred 2% of all observations,
b 8% of observations and
c 31% of observations]

— Mean thickness (tens of feet) of the above

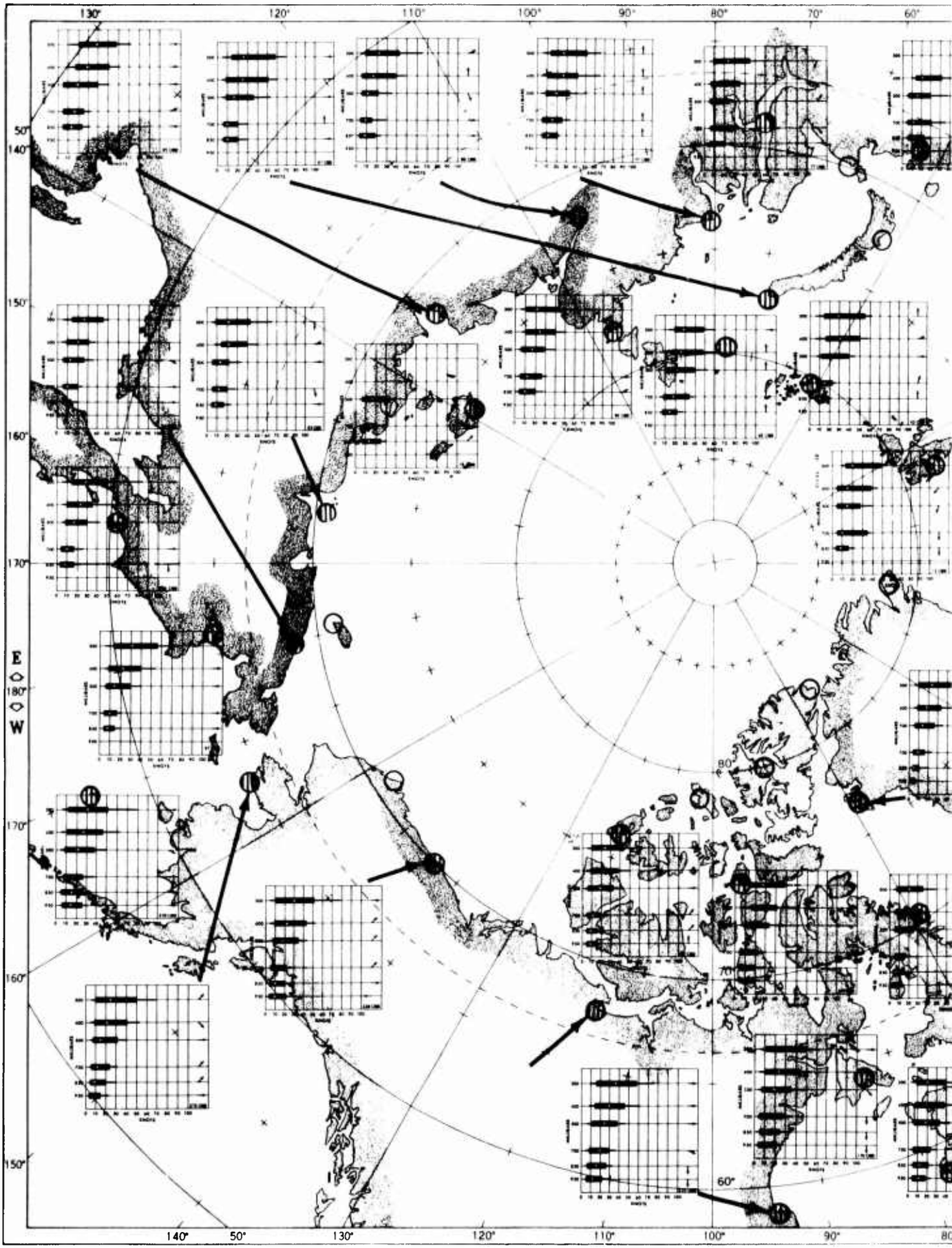
— Thickness omitted when there were < 5 superrefractive gradients based within a stratum





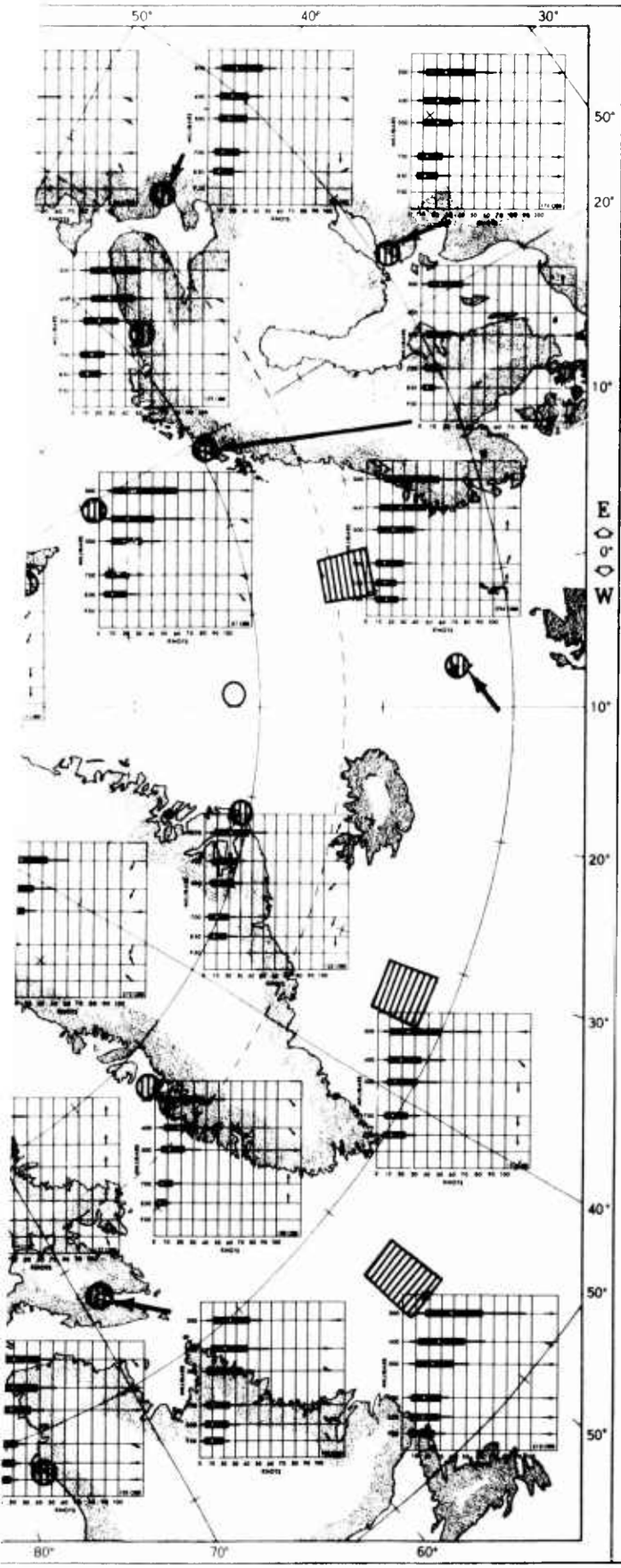
AUGUST

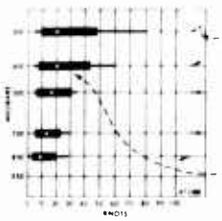
WIND (950 T



TO 300 MB)

CHART 234





Prevailing Direction To 16 Points

(Direction indicated for 300 millibar level is from WSW.)

Distribution of Scalar Wind Speed Knots

(a) Median

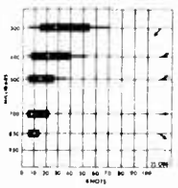
(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by



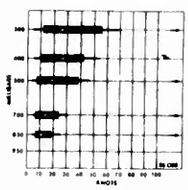
(At the 400 millibar level median speed was 20 knots, 5% of speeds were 4 knots or less, 16% were 8 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

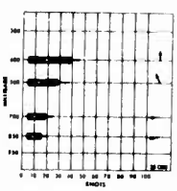
OSTROV VRANGELYA



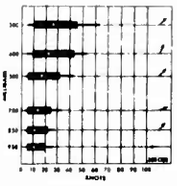
AMDERMA



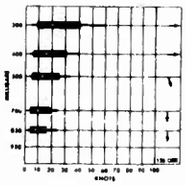
MALYYE KARMAKULY



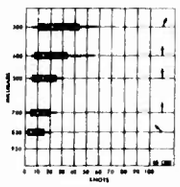
BARROW



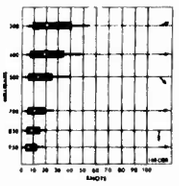
NORD



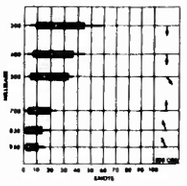
JAN MAYEN



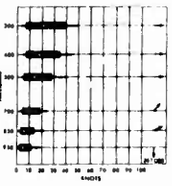
ISACHSEN



EUREKA

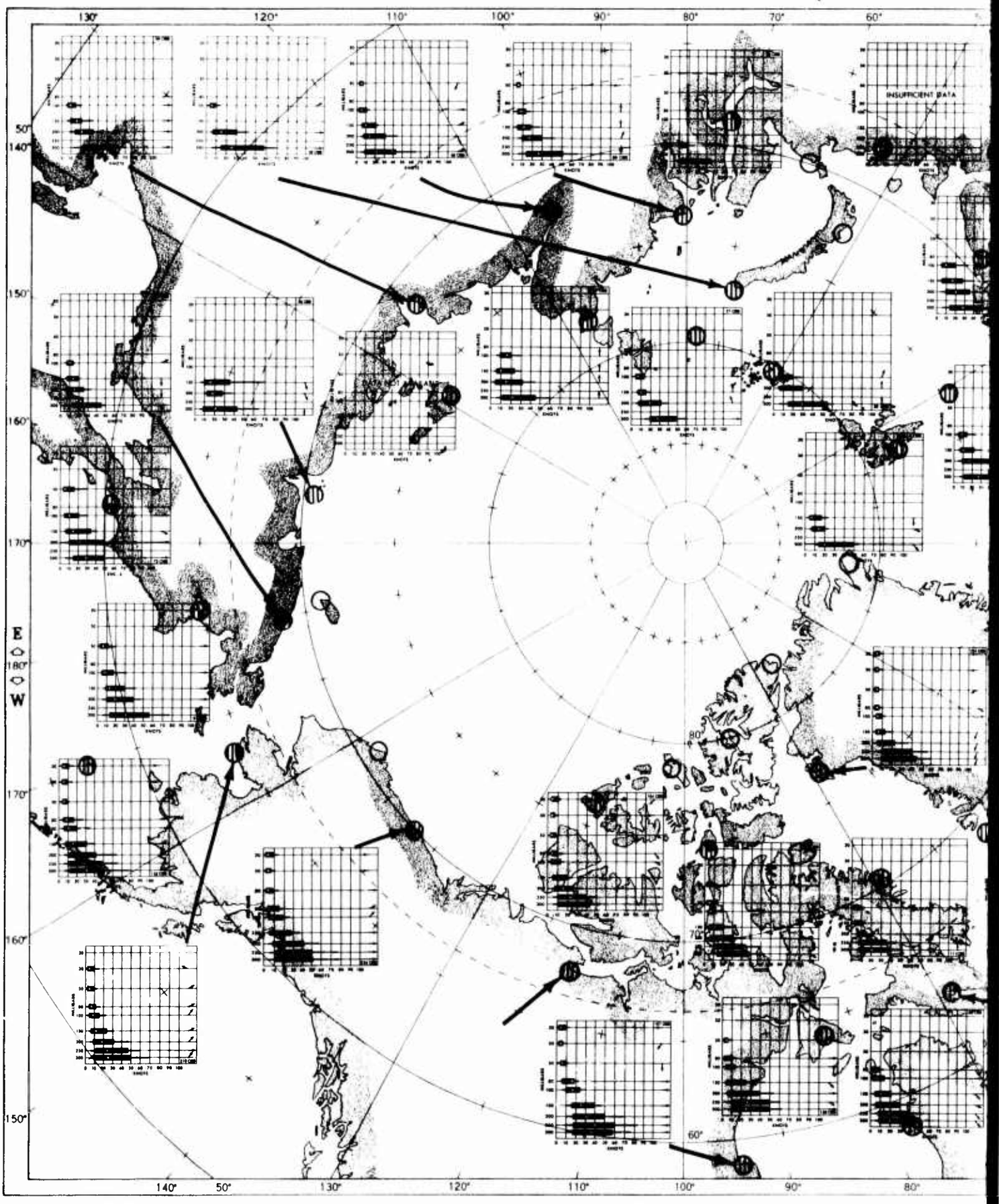


ALERT



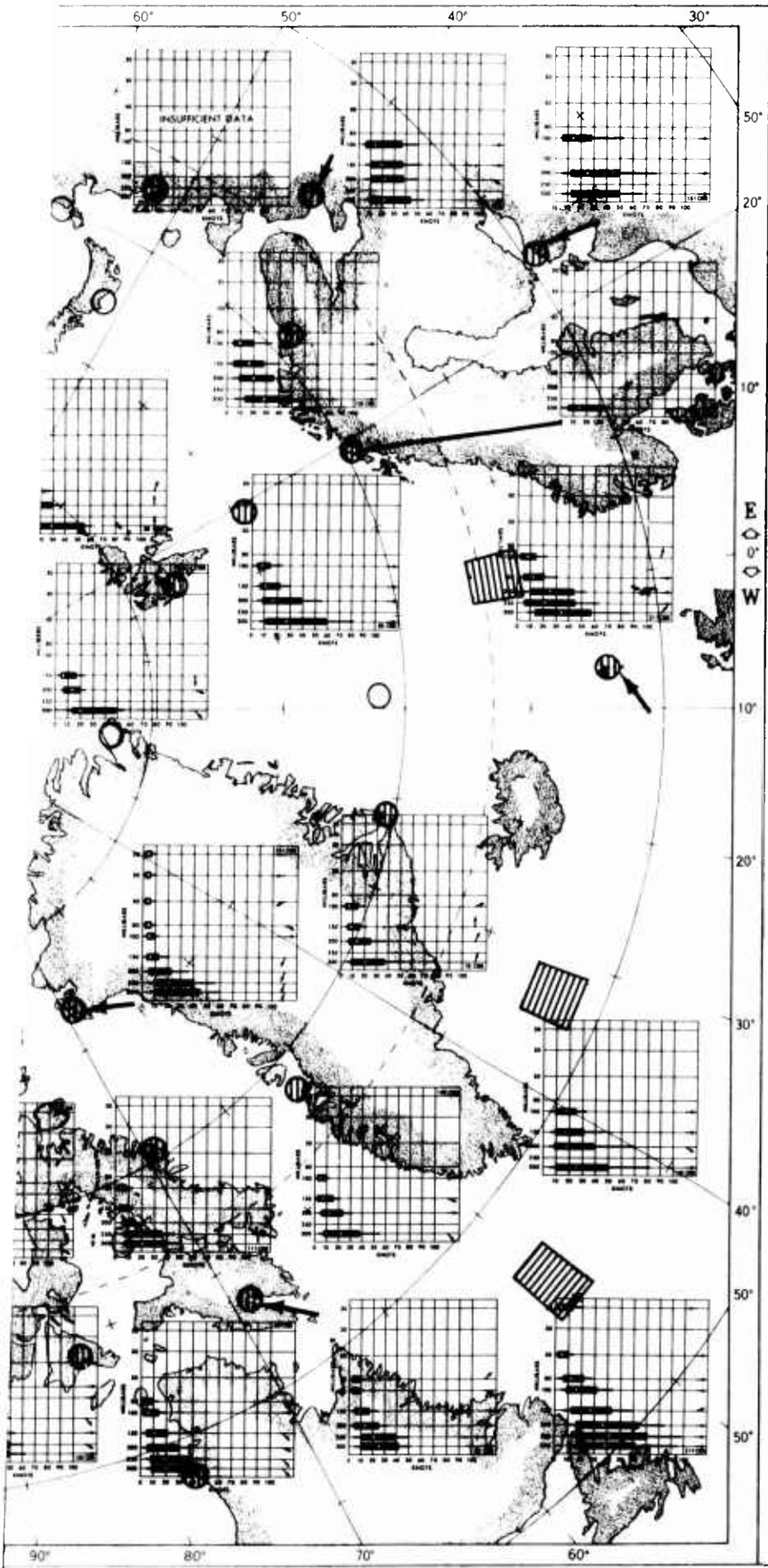
AUGUST

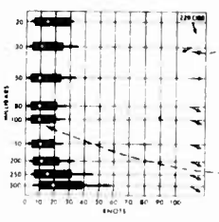
WIND (300 TO 2



(300 TO 20 MB)

CHART 235





Prevailing Direction To 16 Points

(Direction indicated for 30 millibar level is from ENE)

Distribution of Scalar Wind Speed Knots

(a) median

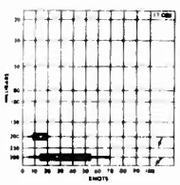
(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by



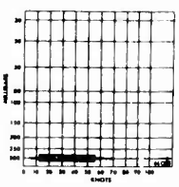
(At the 100 millibar level, median speed was 10 knots, 5% of speeds were 2 knots or less, 16% were 4 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

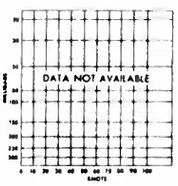
OSTROV VRANGELYA



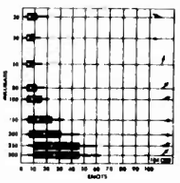
AMDERMA



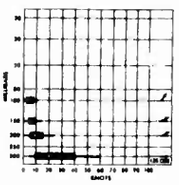
MALYYE KARMAKULY



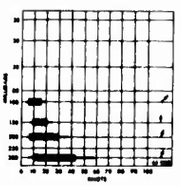
BARROW



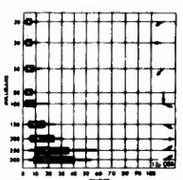
NORD



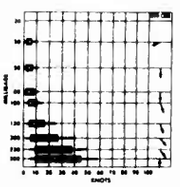
JAN MAYEN



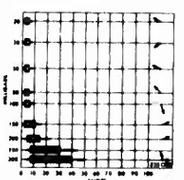
ISACHSEN



EUREKA

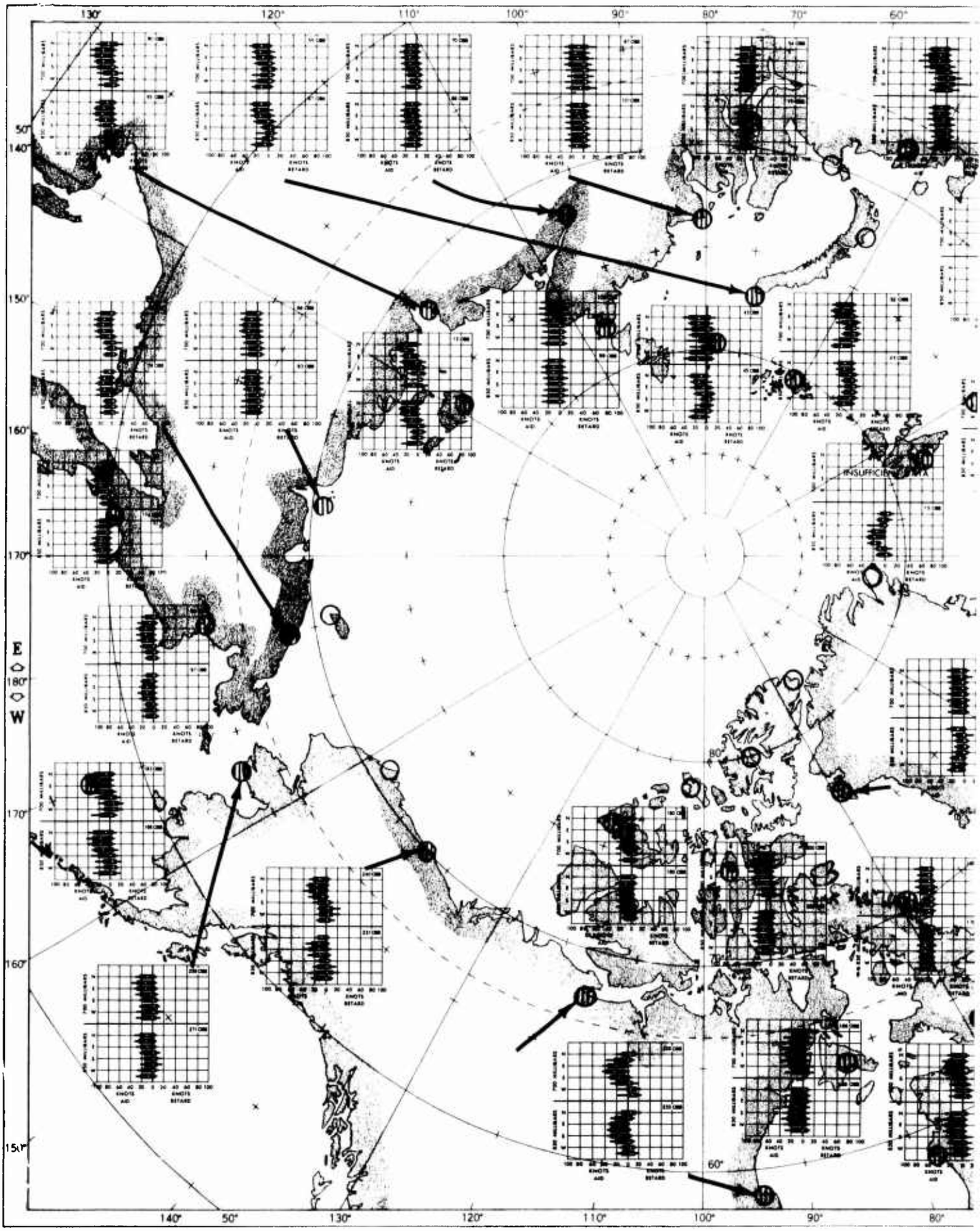


ALERT



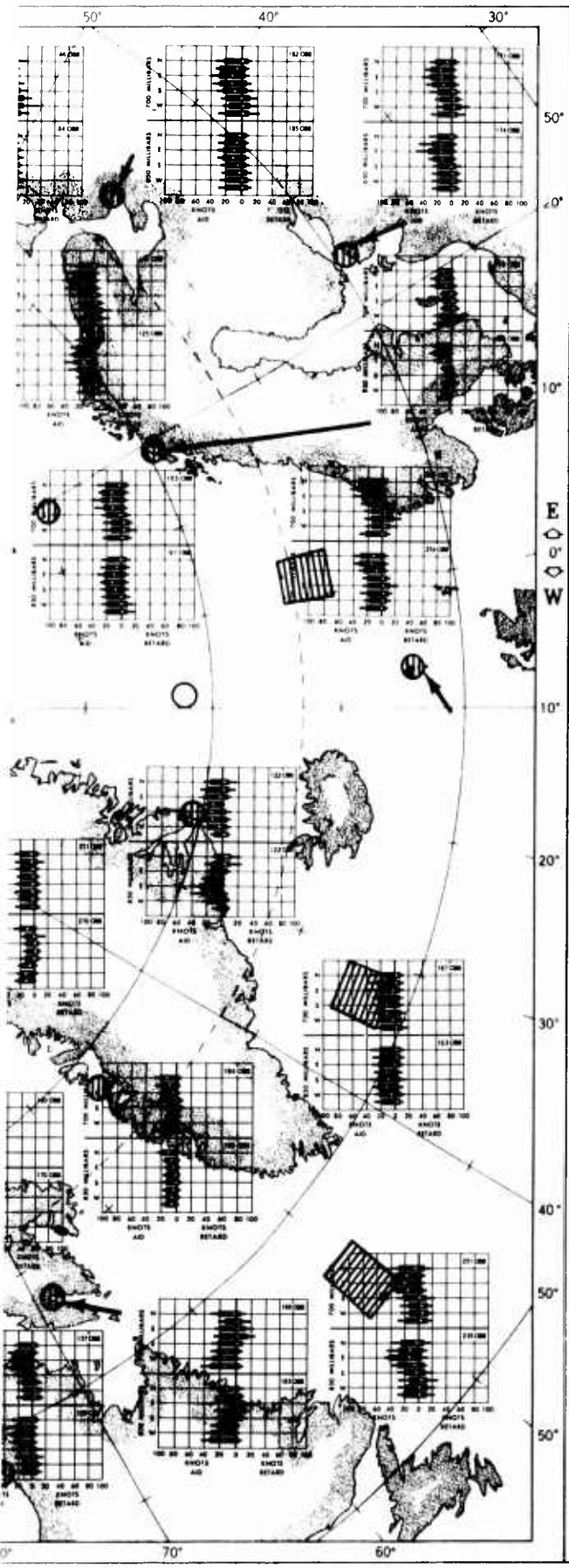
AUGUST

WIND AID AND RETAR

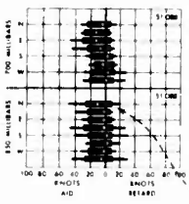


RD (850 & 700 MB)

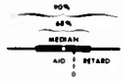
CHART 236



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 300 knots true air speed



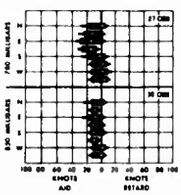
Read median and percentage frequency for direction toward which aircraft is flying thus



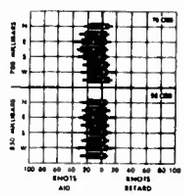
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward north at the 850 millibar level, wind aided or increased ground speed by an average of 12 knots. Wind effect ranged from 28 knots aid to 8 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 20 knots retard in 90% of the observations.)

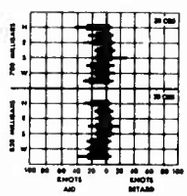
OSTROV VRANGELYA



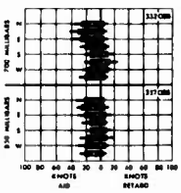
AMDERMA



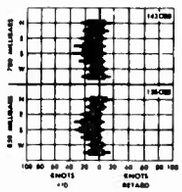
MALYYE KARMAKULY



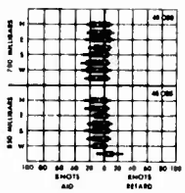
BARROW



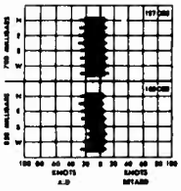
NORD



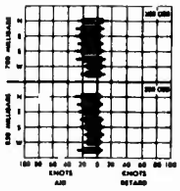
JAN MAYEN



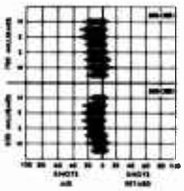
ISACHSEN



EUREKA

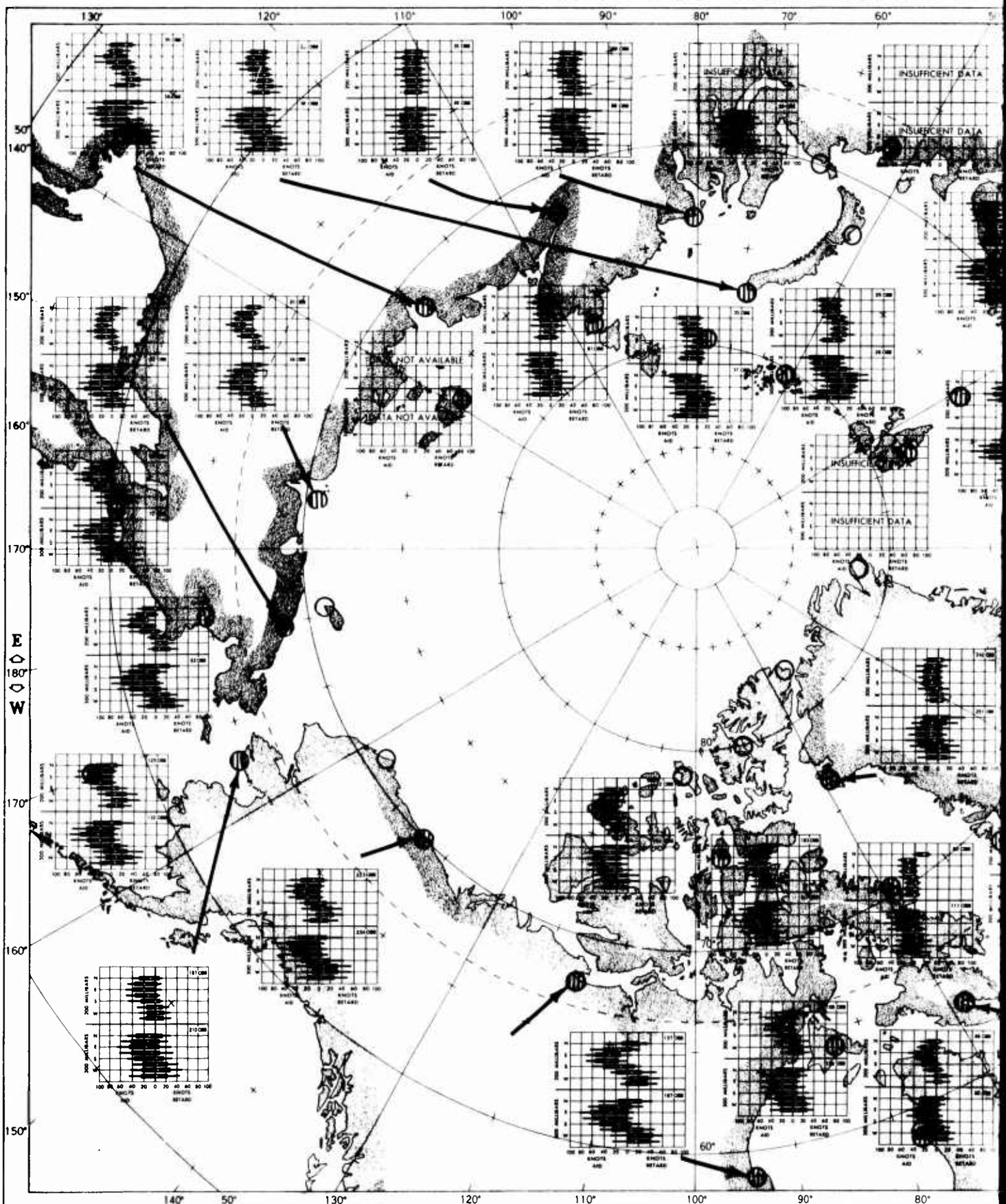


ALERT



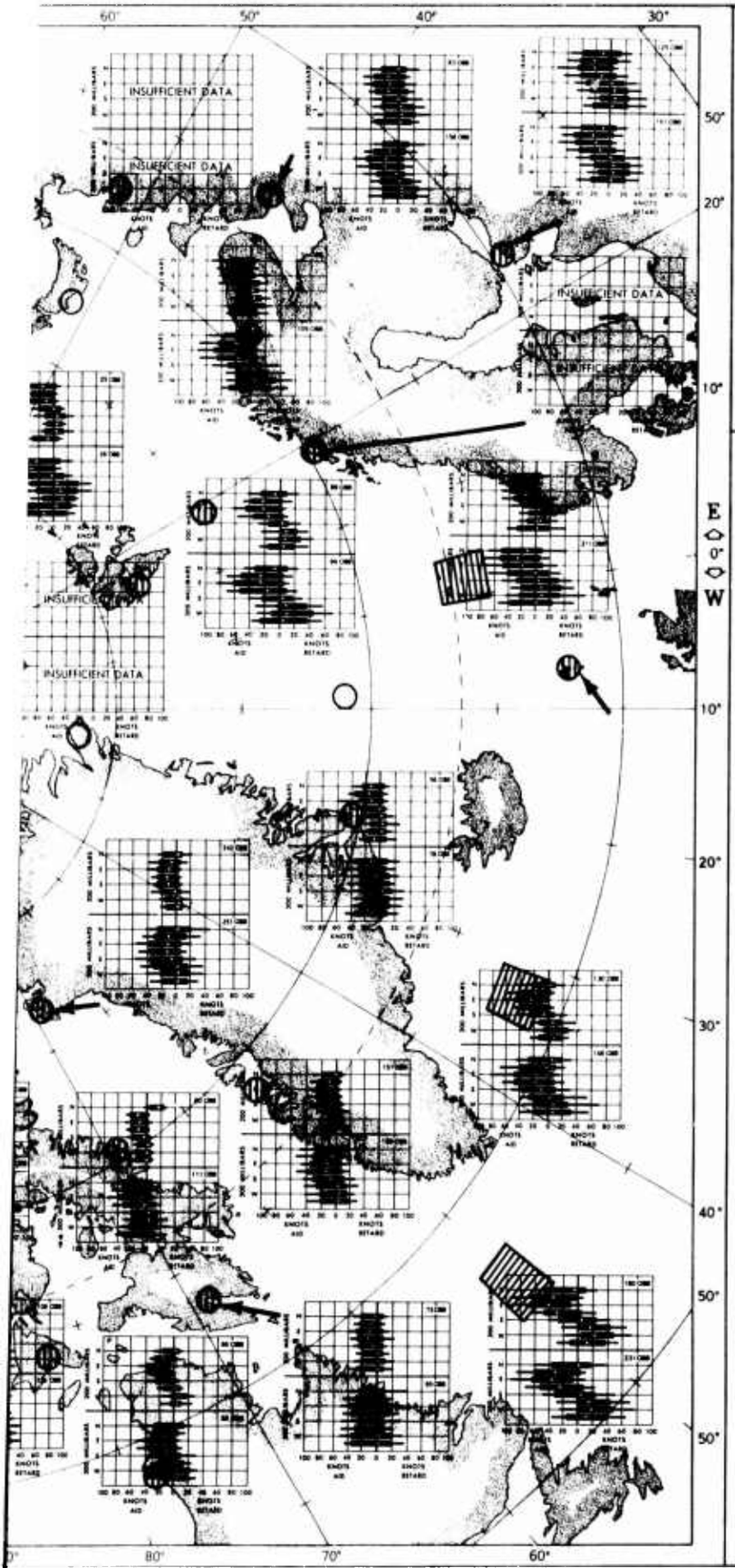
AUGUST

WIND AID AND RETARD

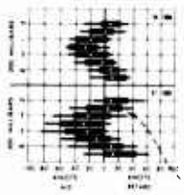


RETARD (300 & 200 MB)

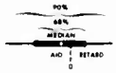
CHART 237



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 600 knots true air speed



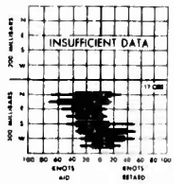
Read median and percentage frequency for direction toward which aircraft is flying thus



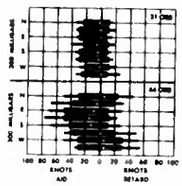
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward northeast at the 300 millibar level, wind retarded or decreased ground speed by an average of 4 knots. Winds effect ranged from 26 knots aid to 25 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 40 knots retard in 90% of the observations.)

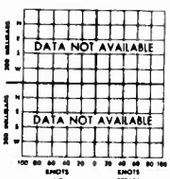
OSTROV VRANGELYA



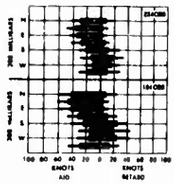
AMDERMA



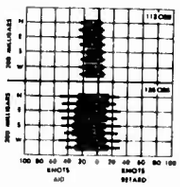
MALYYE KARMAKULY



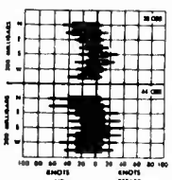
BARROW



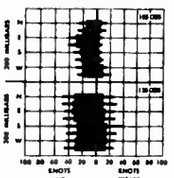
NORD



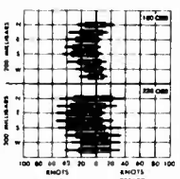
JAN MAYEN



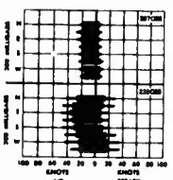
ISACHSEN



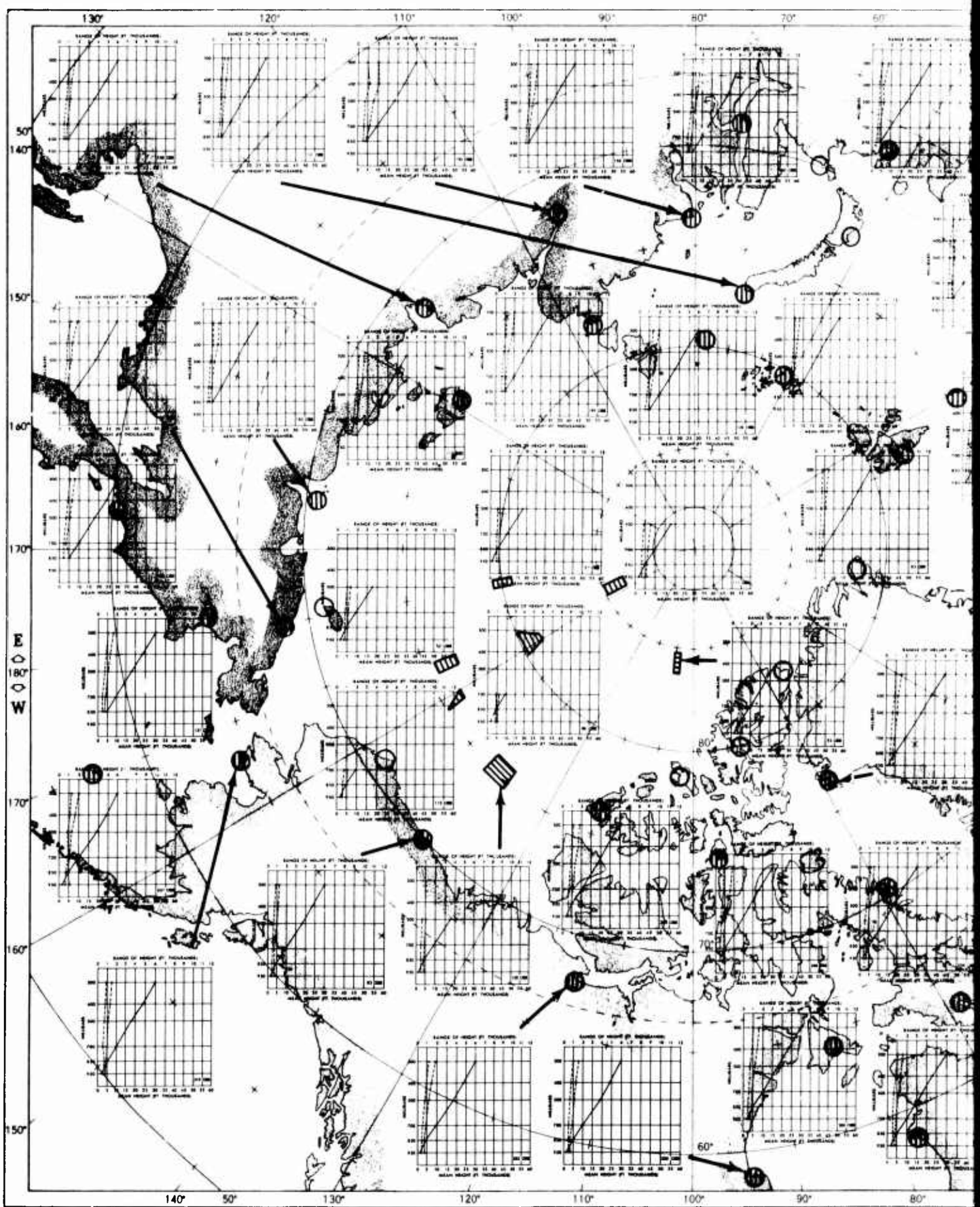
EUREKA



ALERT

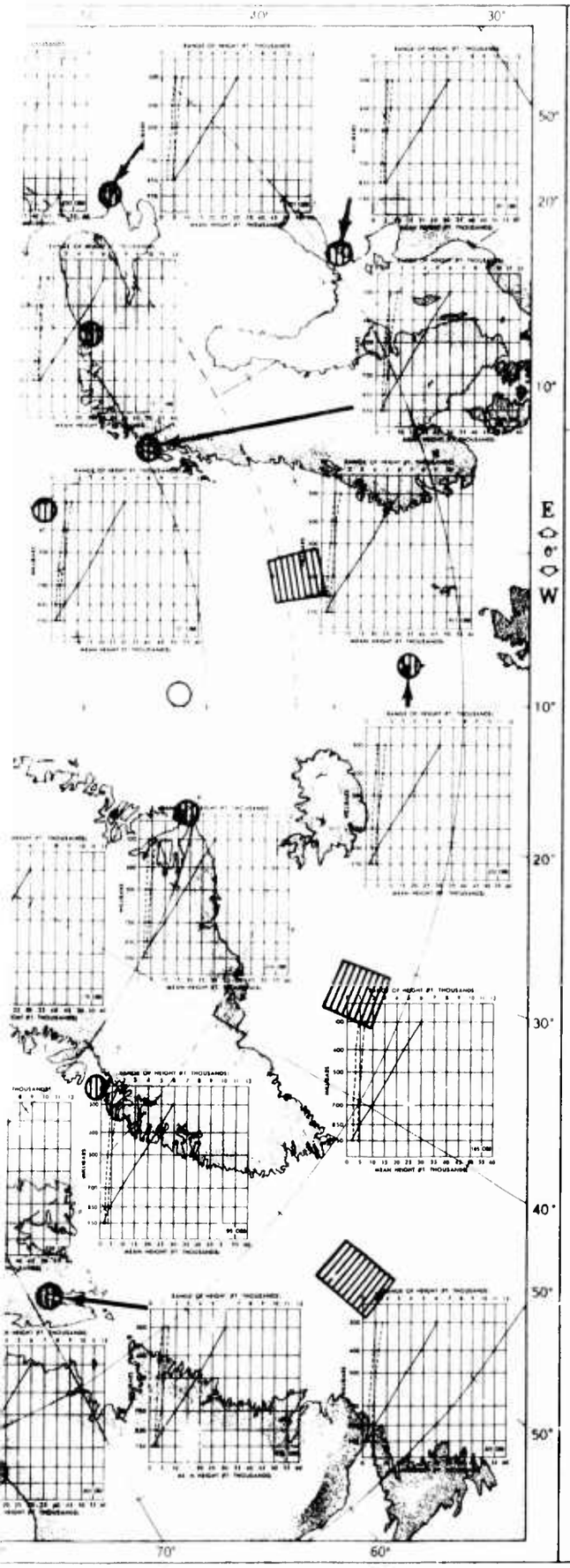


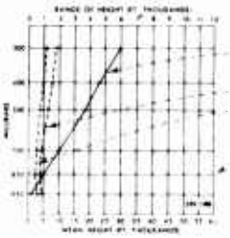
AUGUST HEIGHT (950 TO



O 300 MB)

CHART 238





Distribution of Height of Pressure Surfaces

(a) Mean Height

(b) Range of Height

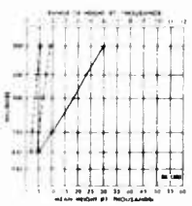
(1) 5% 95% Range

(2) 16% 84% Range

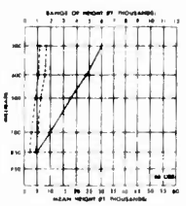
For the 850 millibar level the mean Height = 5,000 feet, the 5% 95% Height range = 800 feet and the 16% 84% range = 450 feet.)

Mean and ranges of height are omitted when data for a level are missing or insufficient

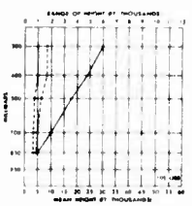
OSTROV VRANGELYA



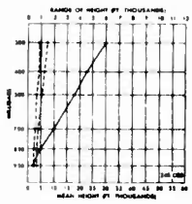
AMDERMA



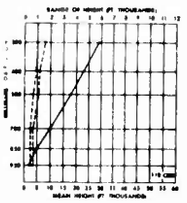
MALYYE KARMAKULY



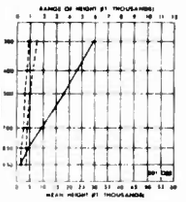
BARROW



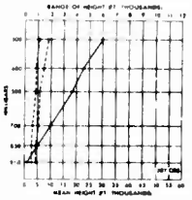
NORD



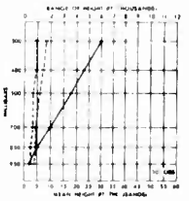
JAN MAYEN



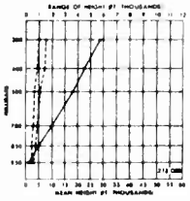
ISACHSEN



EUREKA

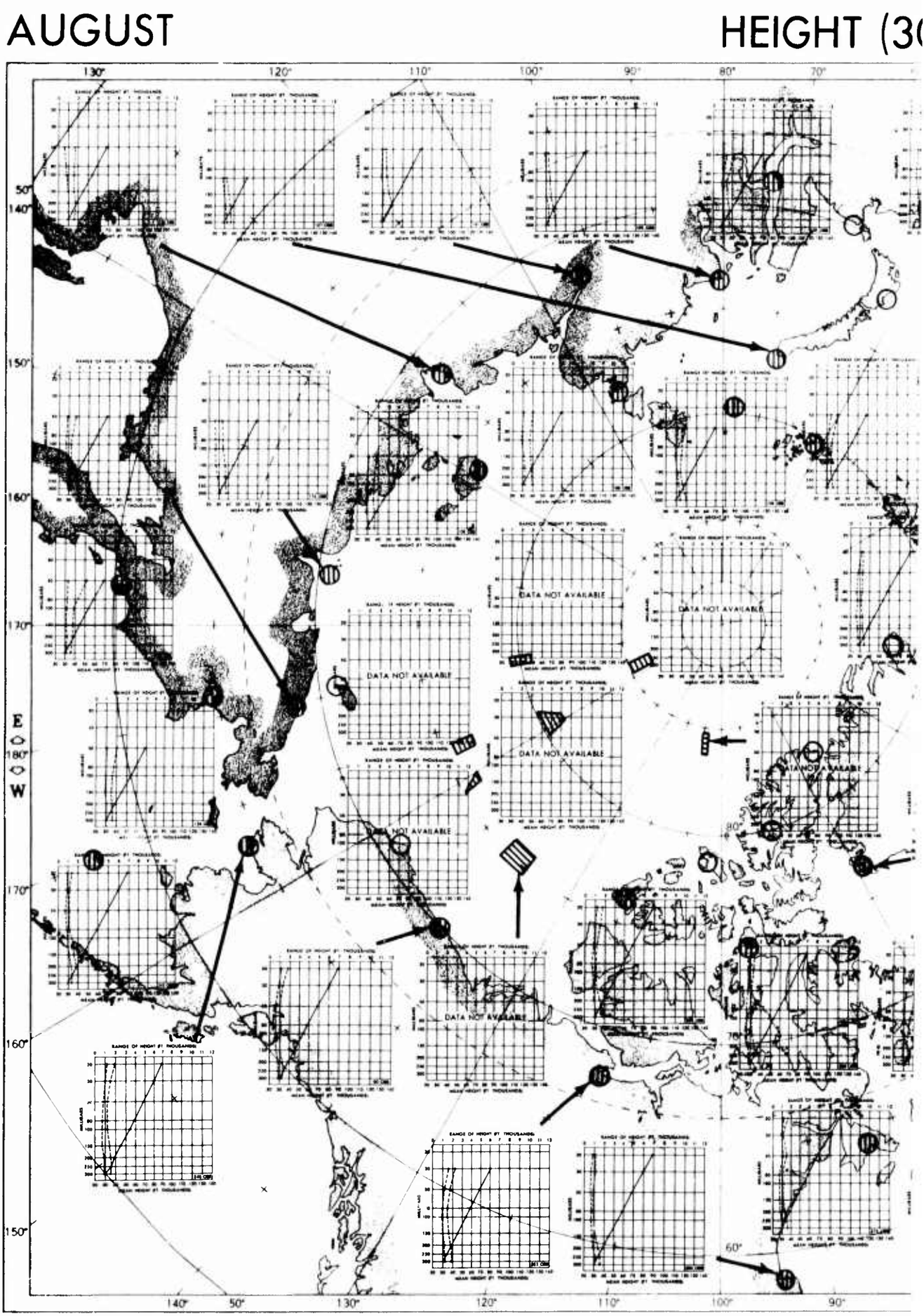


ALERT



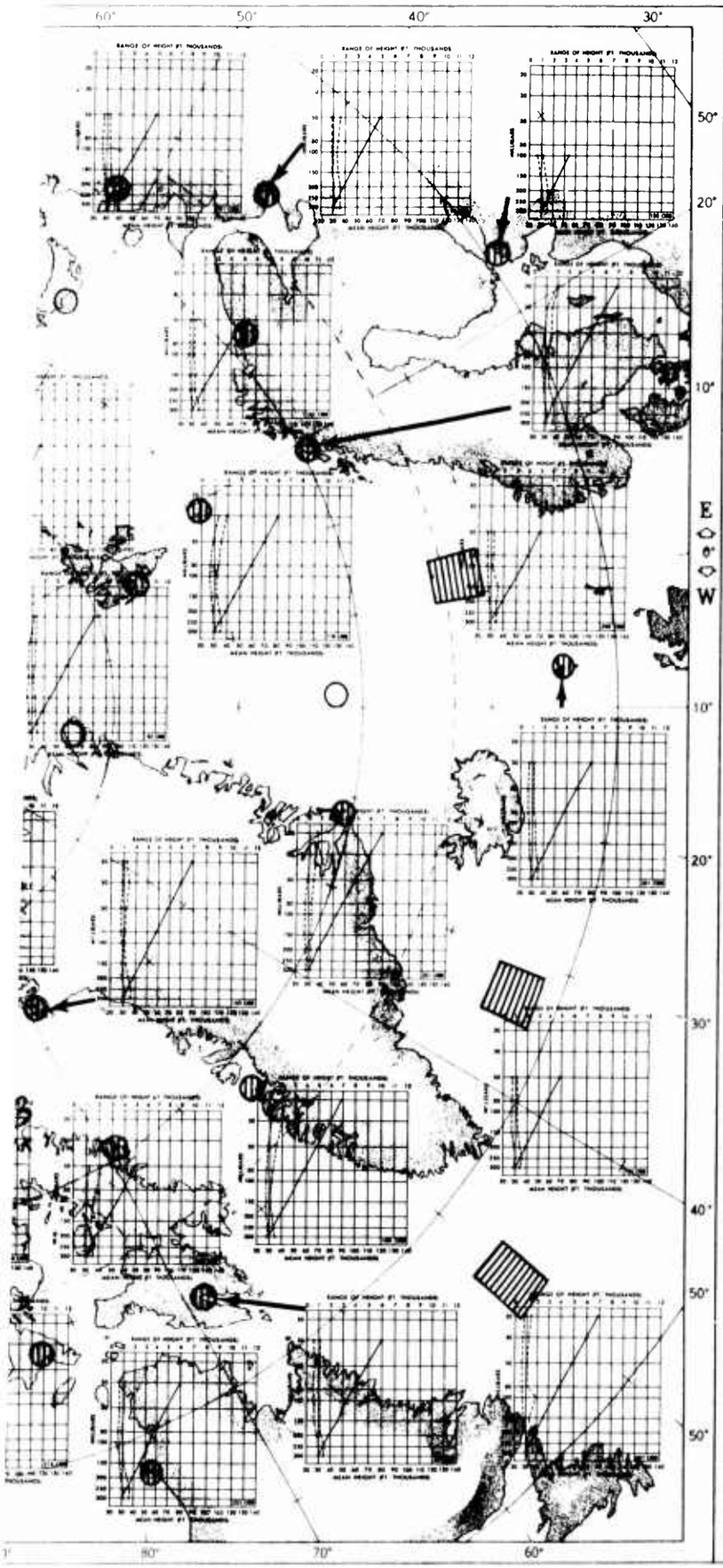
AUGUST

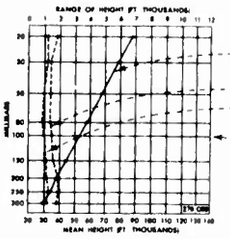
HEIGHT (30



(300 TO 20 MB)

CHART 239





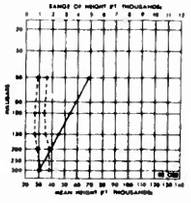
Distribution of Height of Pressure Surfaces

(a) Mean Height
(b) Range of Height
(1) 5% 95% Range
(2) 16% 84% Range

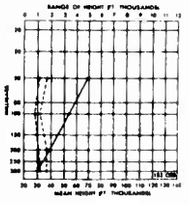
(For the 100 millibar level the mean Height is 53,000 feet, the 5% - 95% Height range is 1,500 feet, and the 16% 84% range is 1,000 feet.)

Mean and ranges of height are omitted when data for a level are missing or insufficient

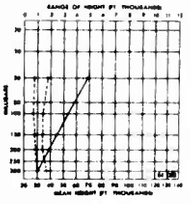
OSTROV VRANGELYA



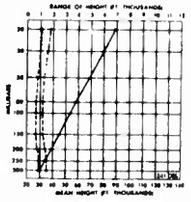
AMDERMA



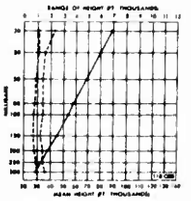
MALYYE KARMAKULY



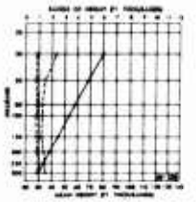
BARROW



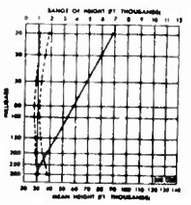
NORD



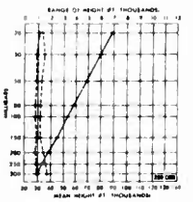
JAN MAYEN



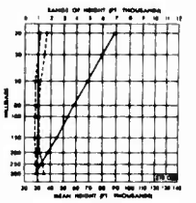
ISACHSEN



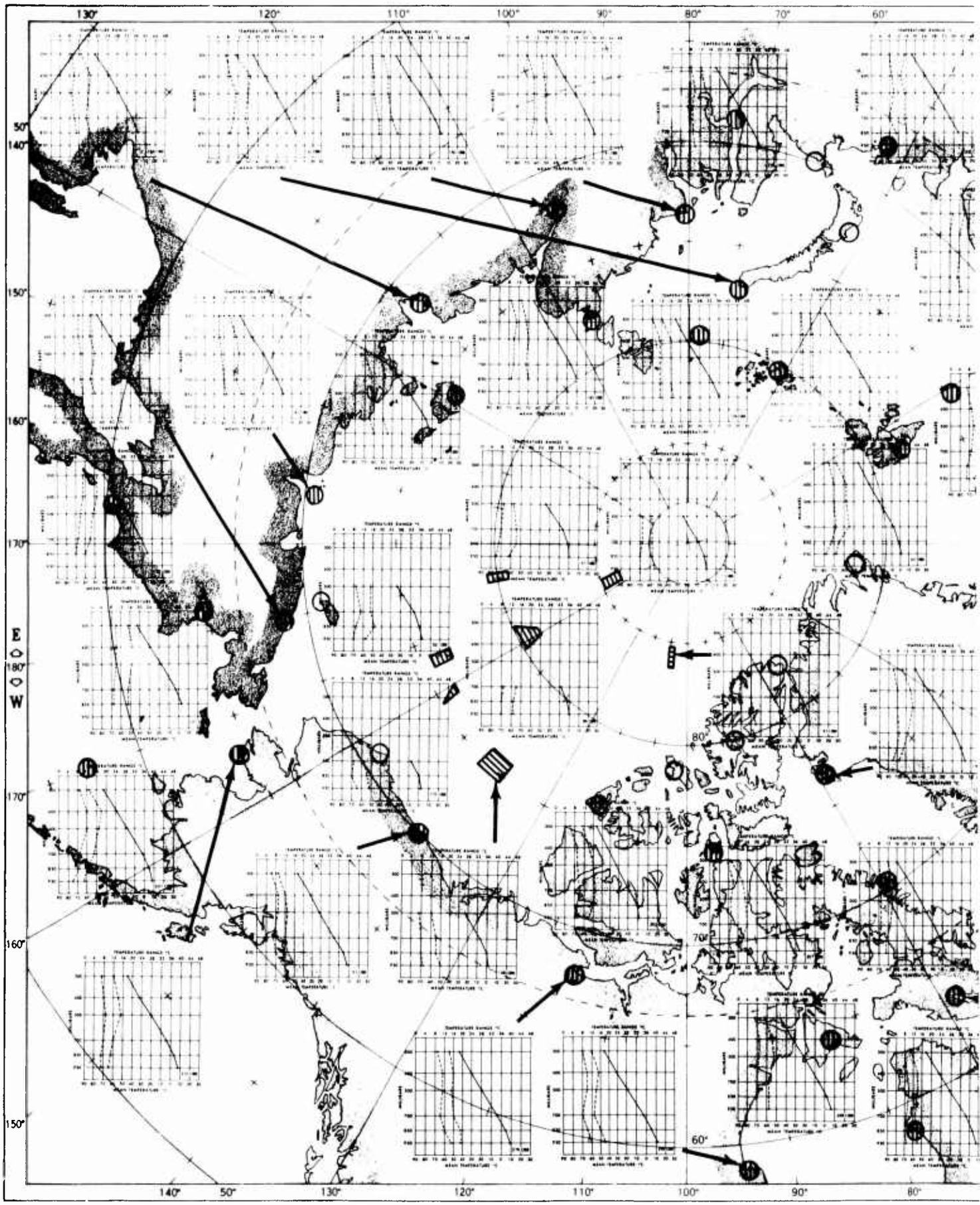
EUREKA



ALERT

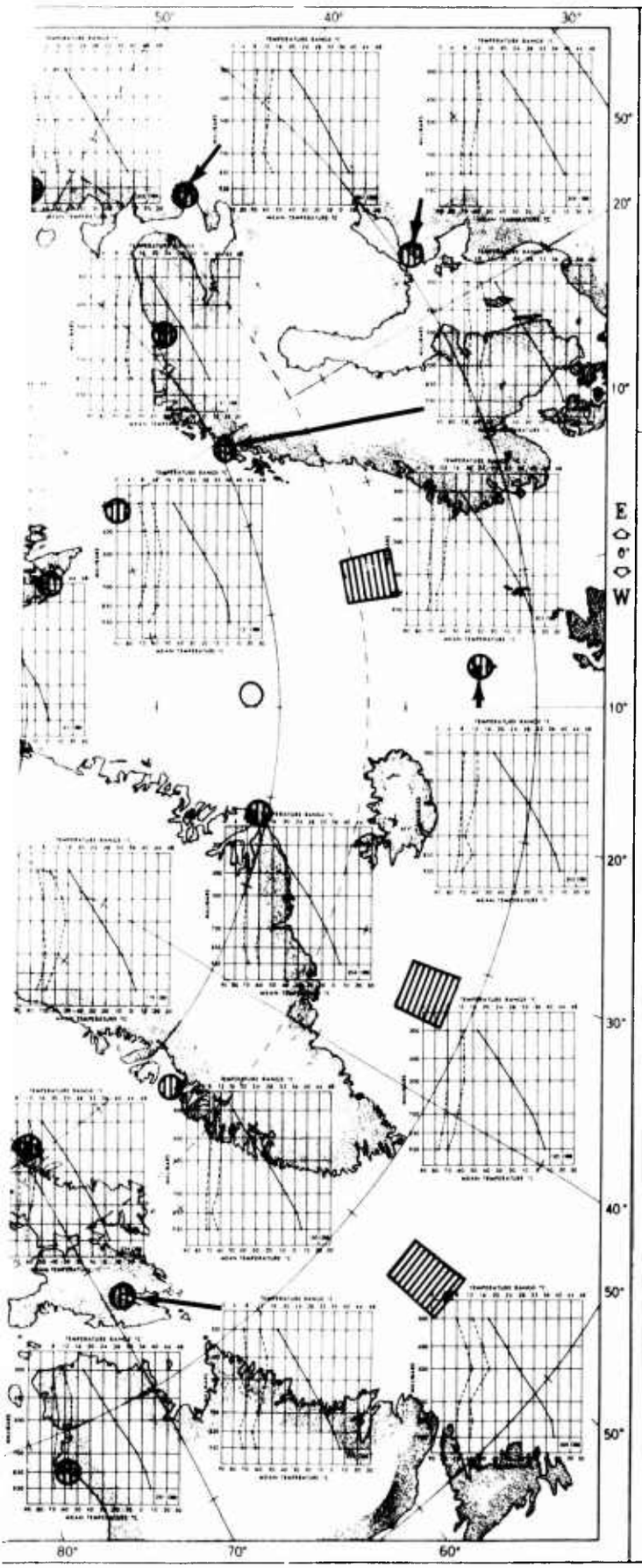


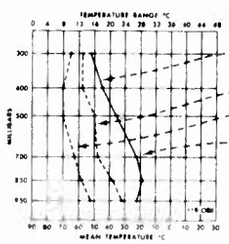
AUGUST TEMPERATURE (950



(950 TO 300 MB)

CHART 240





Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature

(b) Range of Temperature

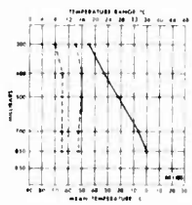
(1) 5% 95% Range

(2) 16% 84% Range

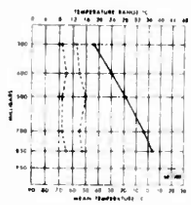
For the 700 millibar level the mean temperature is 22°C. the 5% 95% range is 17°C. and the 16% 84% range is 11°C

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

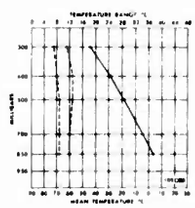
OSTROV VRANGELYA



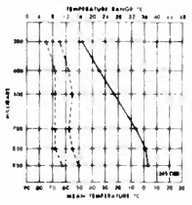
AMDERMA



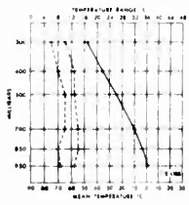
MALYYE KARMAKULY



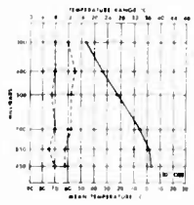
BARROW



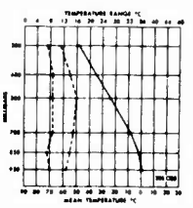
NORD



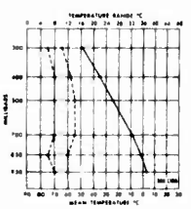
JAN MAYEN



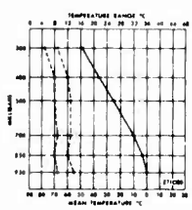
ISACHSEN



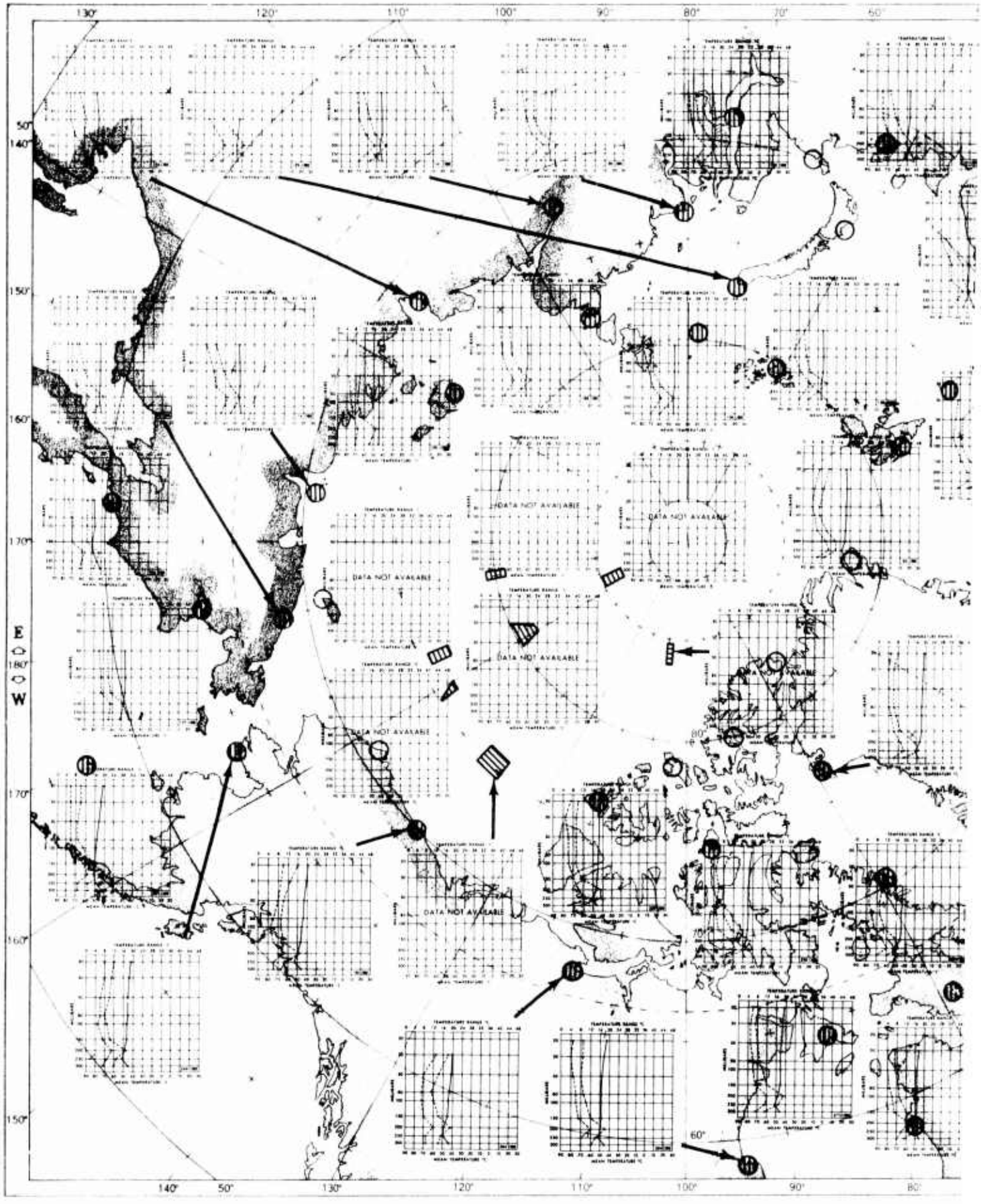
EUREKA



ALERT

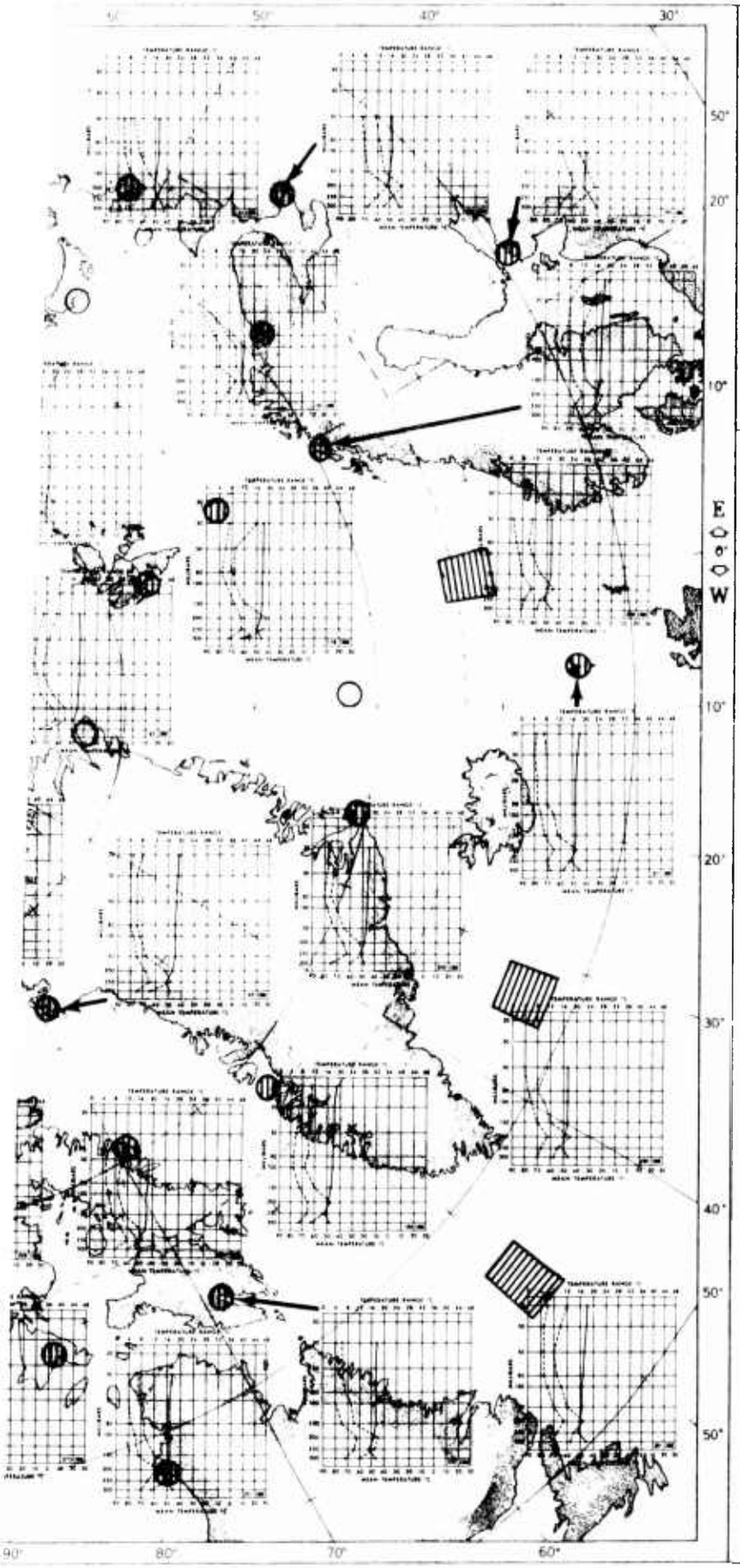


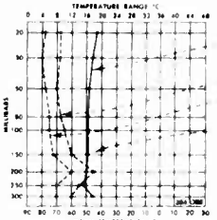
AUGUST TEMPERATURE (300



IRE (300 TO 20 MB)

CHART 241





Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature

(b) Range of Temperature

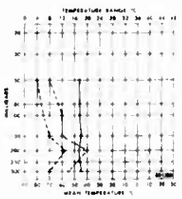
(1) 5% 95% Range

(2) 16% 84% Range

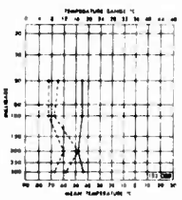
For the 150 millibar level the mean temperature is -49°C the 5% 95% range is 12°C and the 16% 84% range is 7°C

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

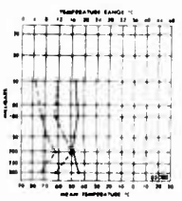
OSTROV VRANGELYA



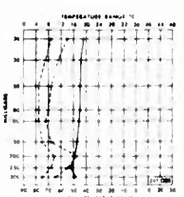
AMDERMA



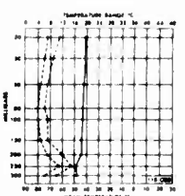
MALYYE KARMAKULY



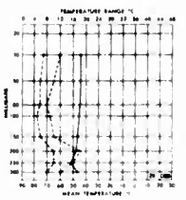
BARROW



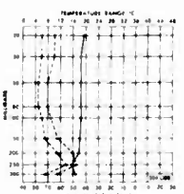
NORD



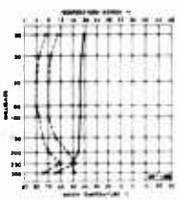
JAN MAYEN



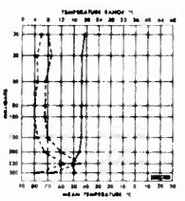
ISACHSEN



EUREKA

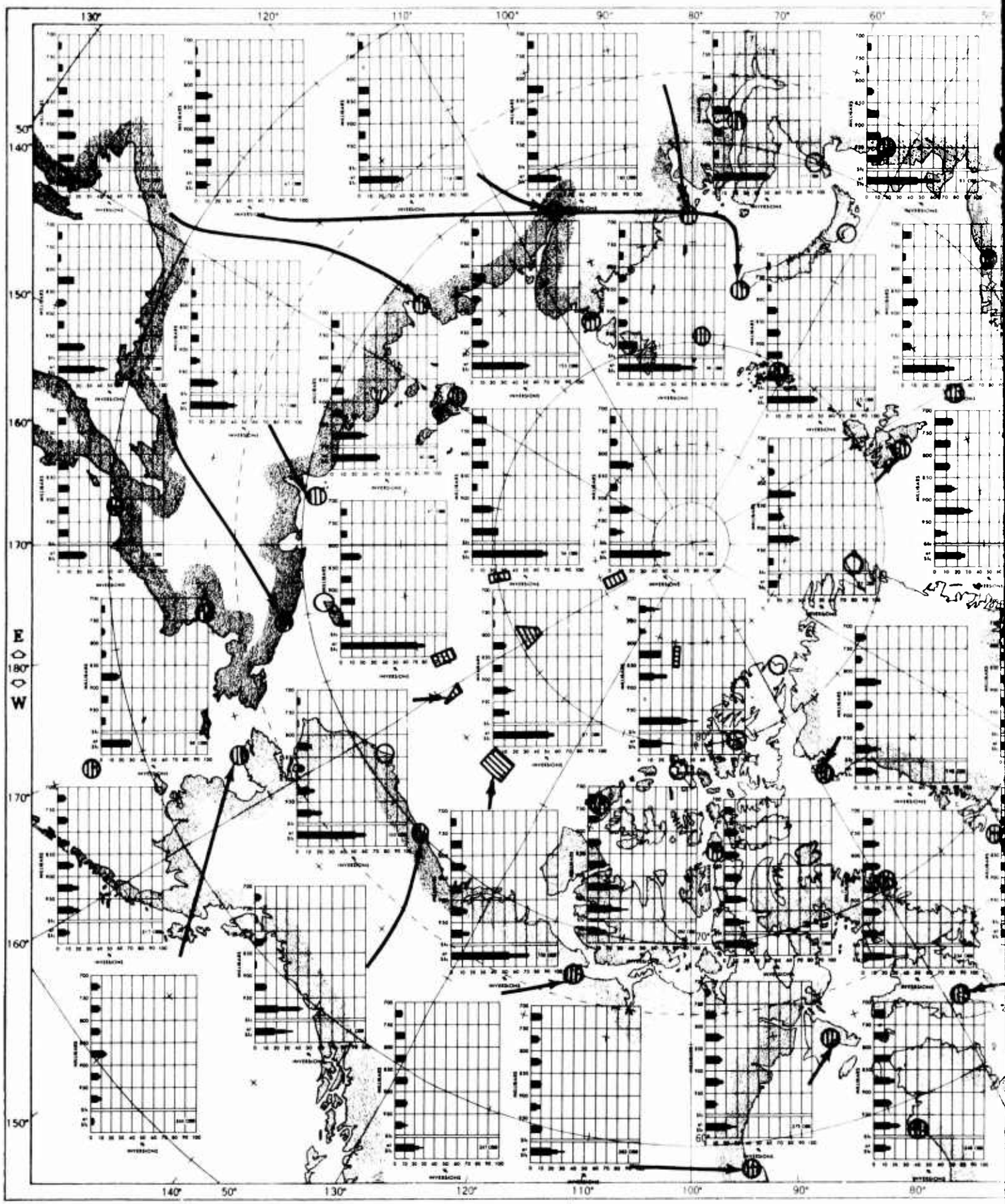


ALERT



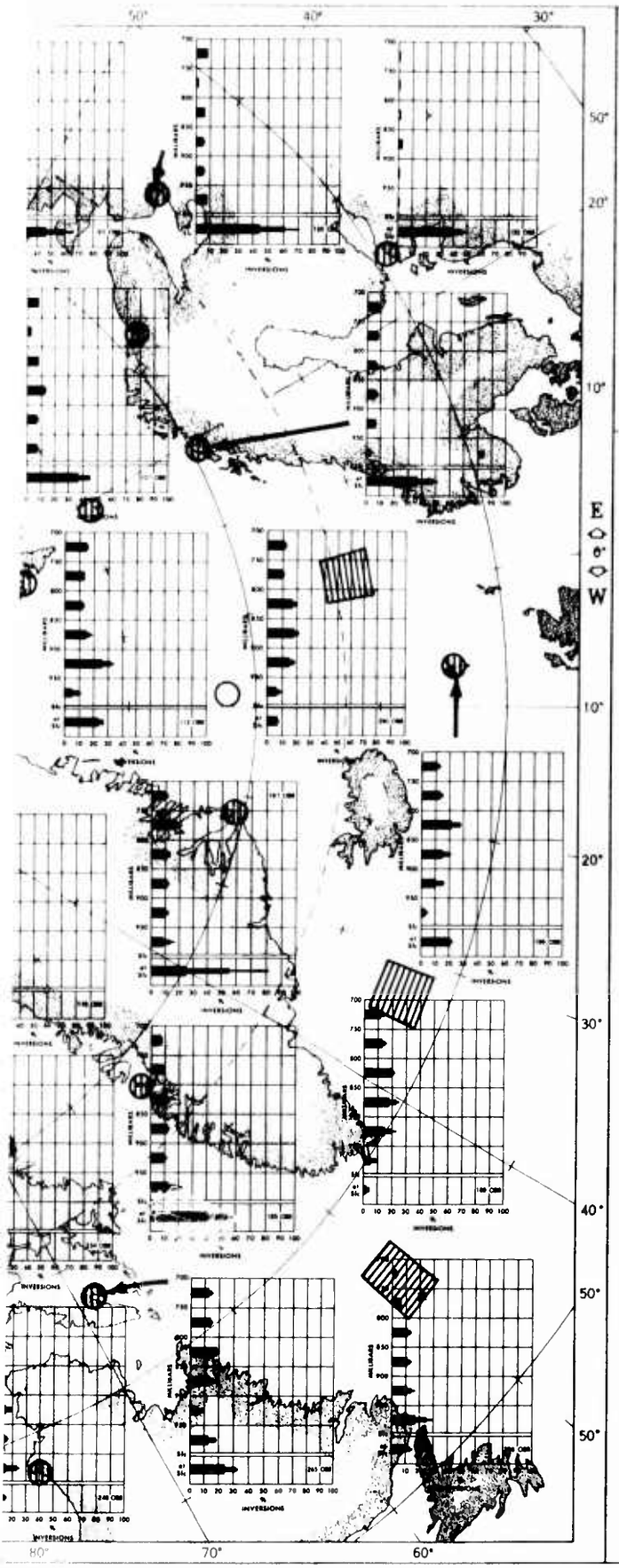
AUGUST

INVERSION



SIONS

CHART 242



Percentage Frequencies of three intensities of Temperature Inversions within each of seven layers from the surface to 700 millibars

General Criteria

(a) Temperature inversion constant or increasing temperature with increasing height that persisted at least 5 millibars (approximately 50 meters)

(b) Layers Inversions were assigned to 7 arbitrary layers according to the pressure at their bases

750 to 701 millibars
800 to 751 millibars
850 to 801 millibars
900 to 851 millibars
950 to 901 millibars
5 millibars above the surface to 951 millibars
At the surface to 49 millibars above the surface

(c) Intensity change in temperature per 100 meters increase in height of

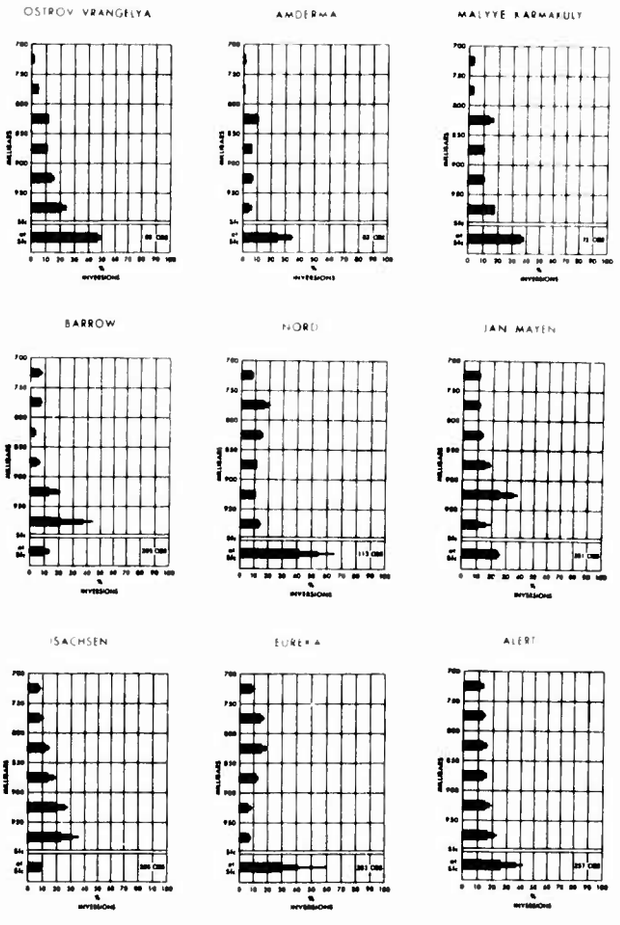
0°C TO +9.9°C +10°C TO +19°C +20°C OR MORE

When more than one inversion was recorded within a layer the one with the greatest intensity was counted

0 No occurrence

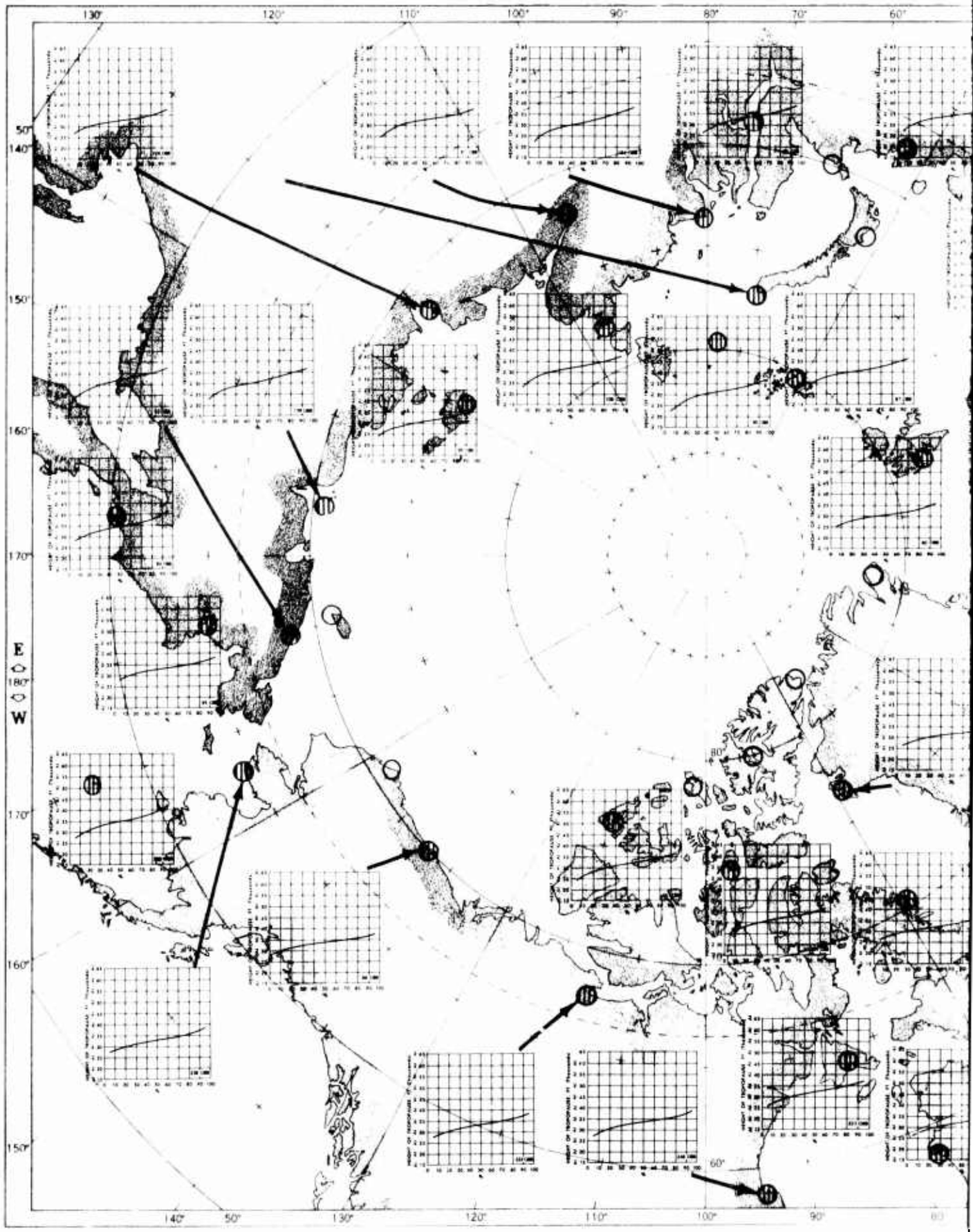
Blank No data

(28% [80/52] of all radiosonde ascents recorded temperature inversions of +10°C to +19°C per 100 meters with bases in the layer from the surface to 49 millibars above)



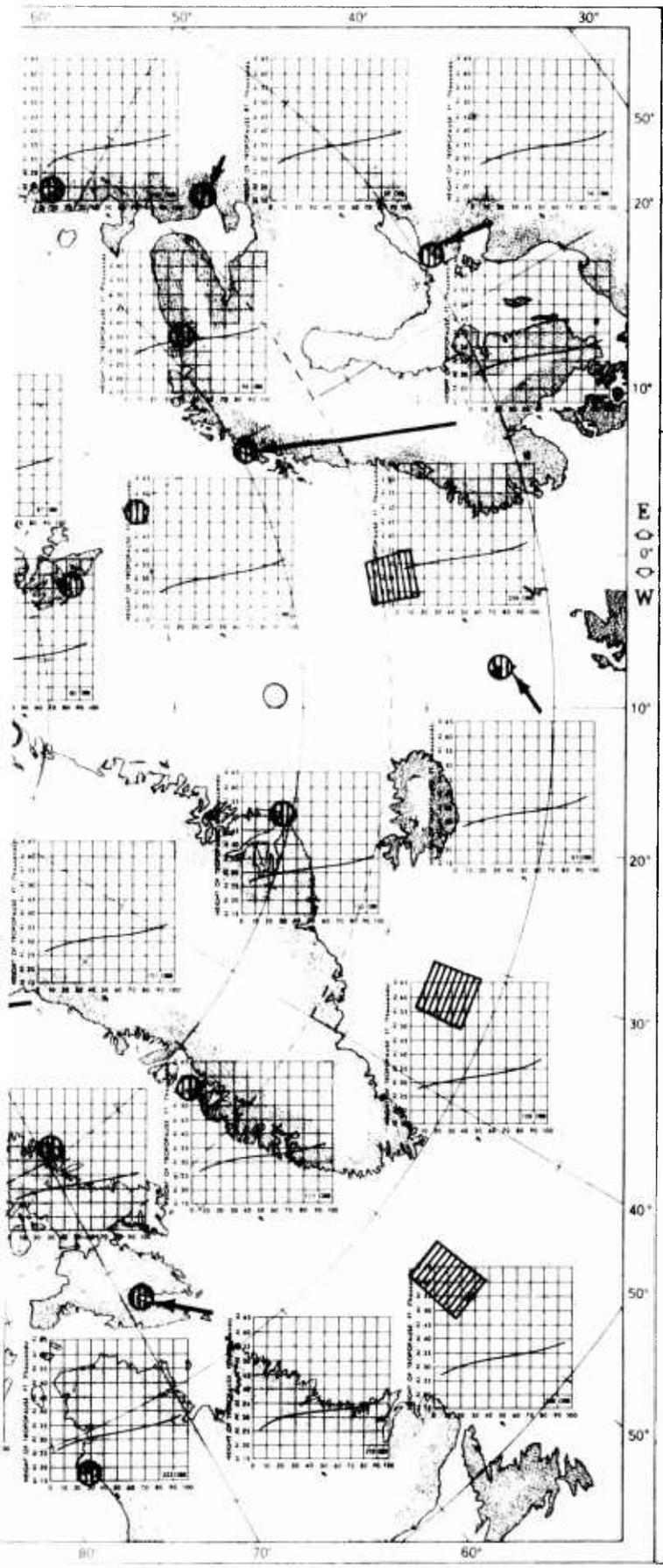
AUGUST

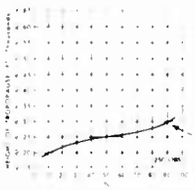
HEIGHT OF TRO



TROPOPAUSE

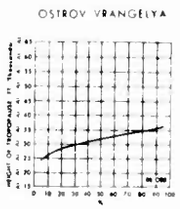
CHART 243

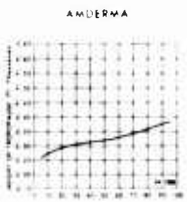


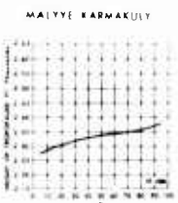


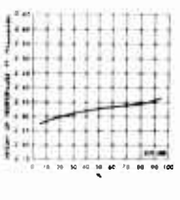
Percentage Frequency of Heights of the Tropopause equal to or less than the height intersected by the curve

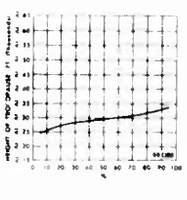
90% of all heights of the tropopause were thirty thousand feet or less

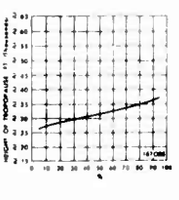


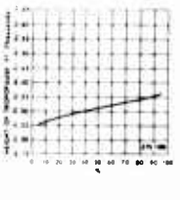


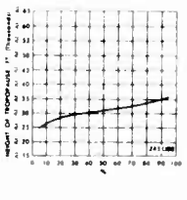


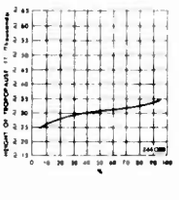










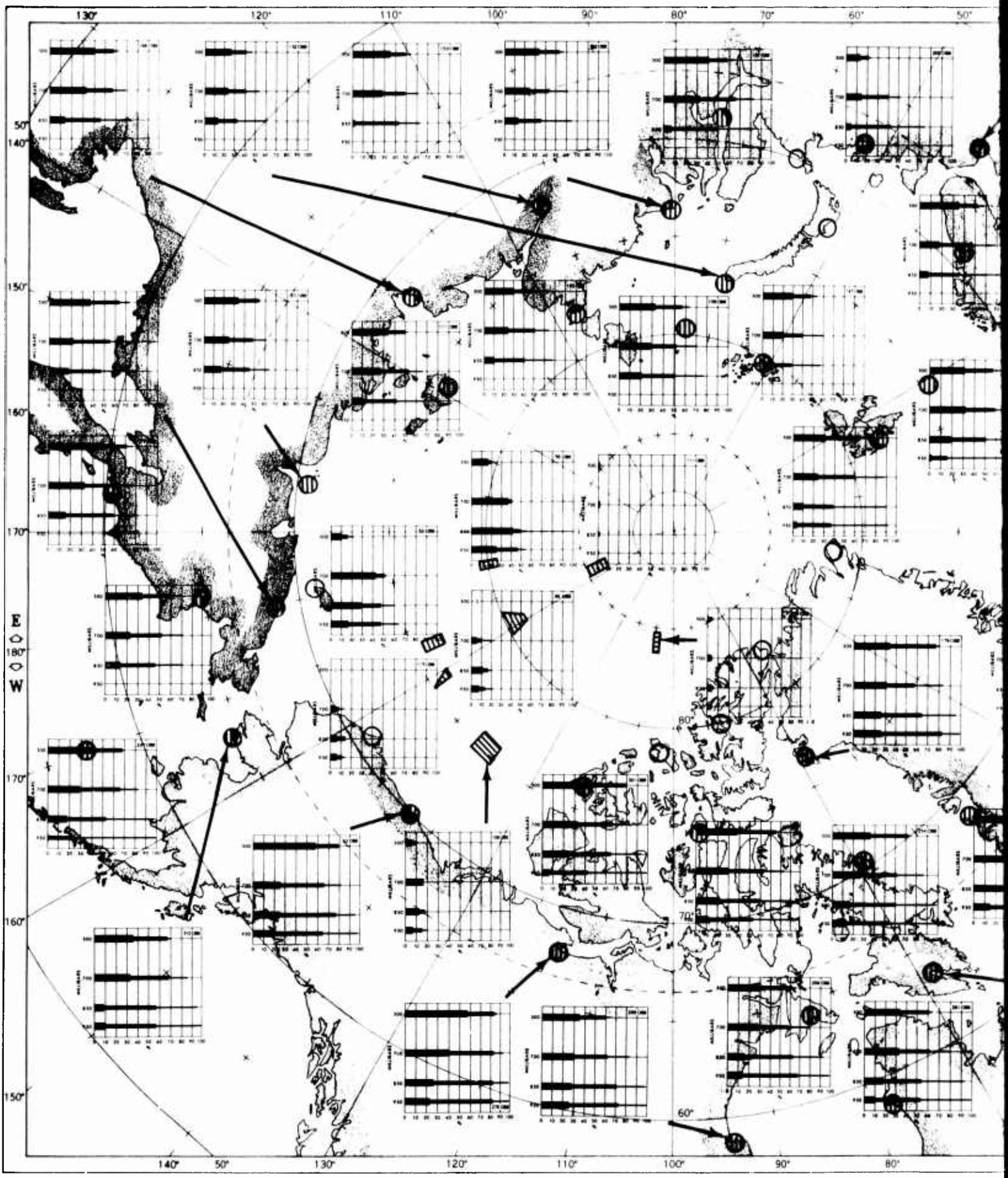


1

2

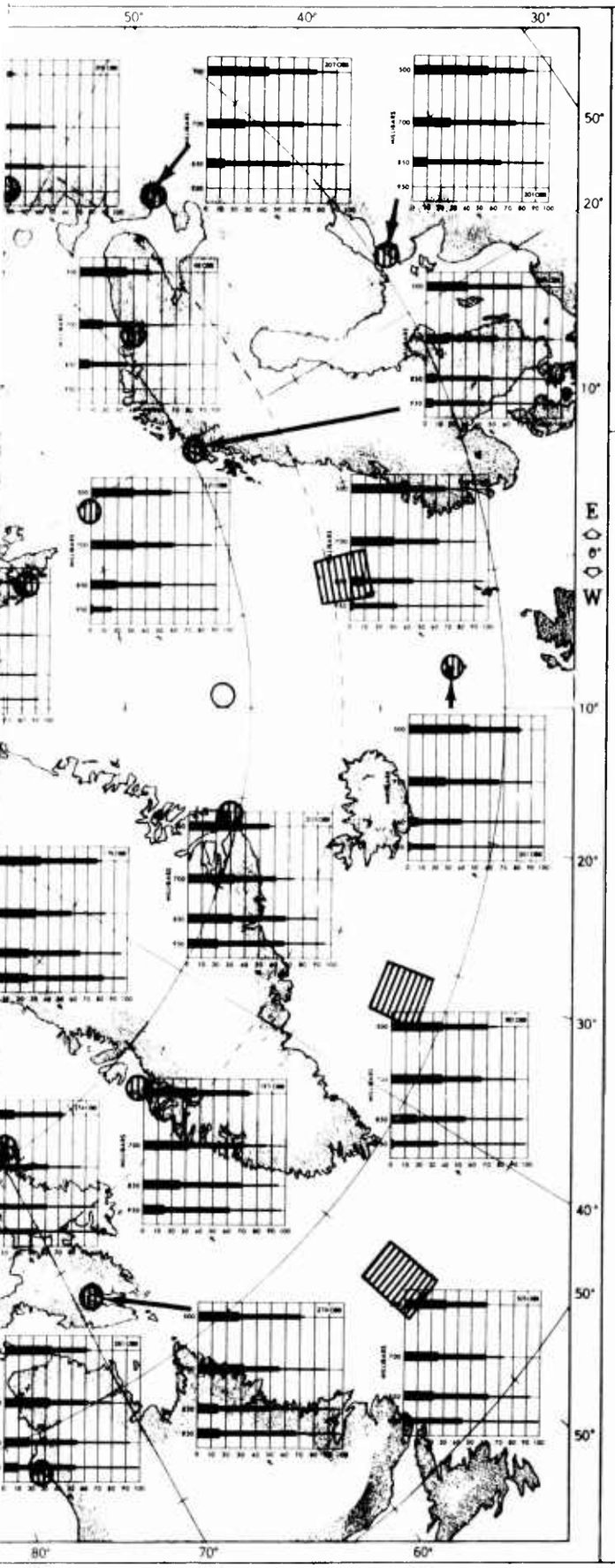
AUGUST

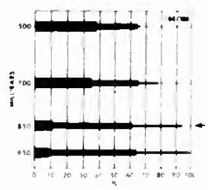
RELATIVE HUMID



HUMIDITY

CHART 244



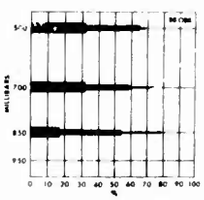


Distribution of Relative Humidity at Pressure Surfaces

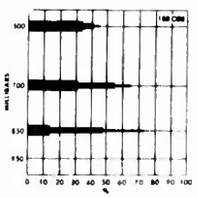
(a) Percentage Frequency of Relative Humidity as indicated by

(For the 850 millibar level Relative Humidity was 30% - 59% for 11% of all observations, 60% - 84% humidity occurred 50% [61 minus 11] of the observations, and 85% - 100% humidity occurred 33% [94 minus 61] of the observations)

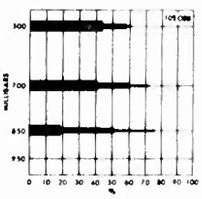
OSTROV VRANGELYA



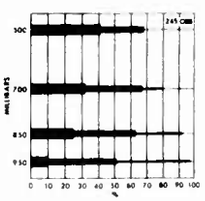
AMDERMA



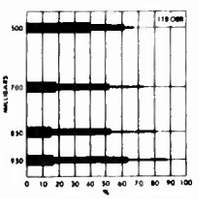
MALYYE KARMAKULY



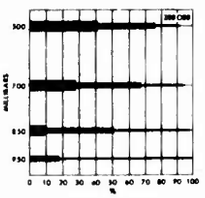
BARROW



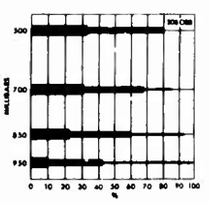
NORD



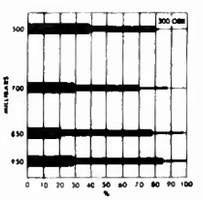
JAN MAYEN



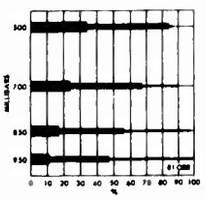
ISACHSEN



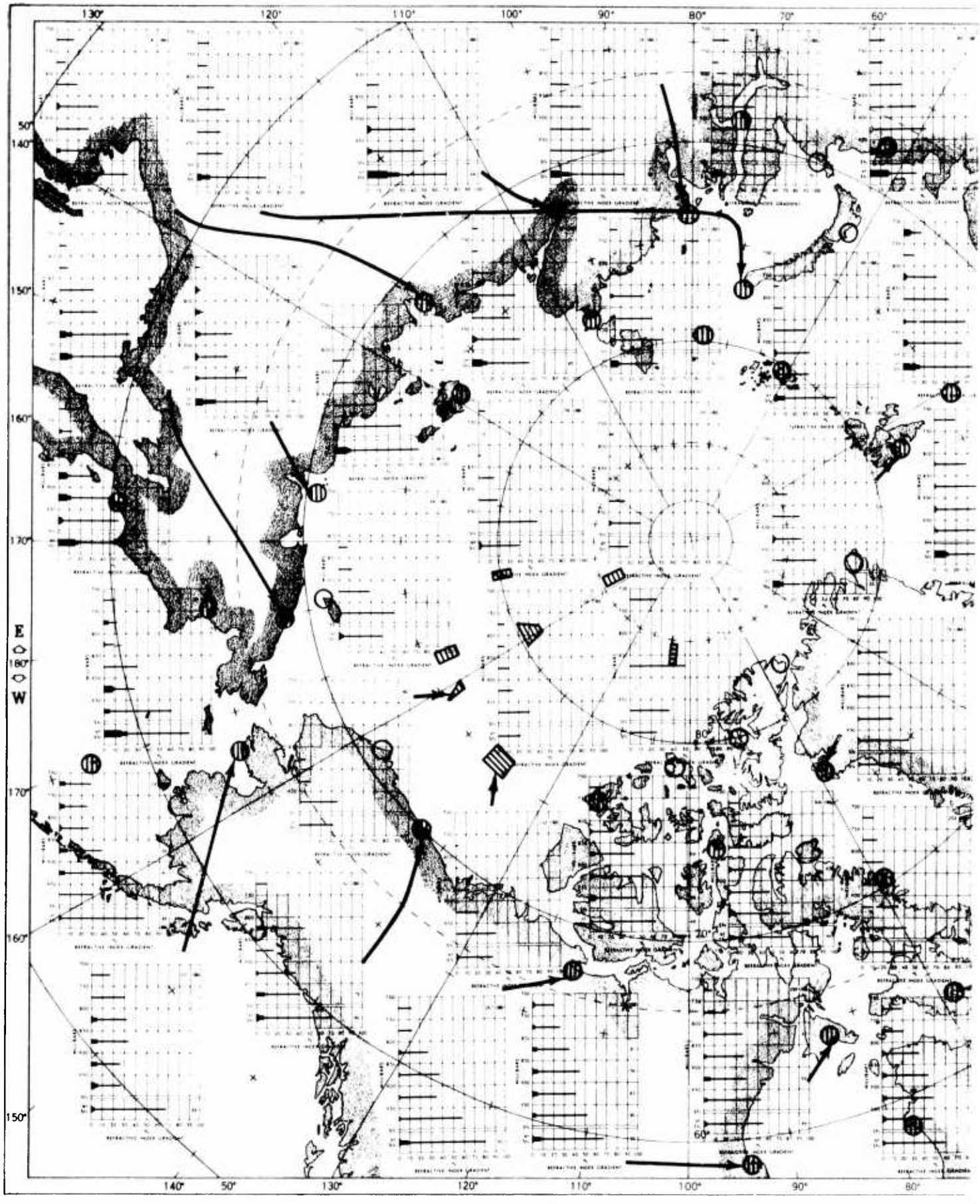
EUREKA



ALERT

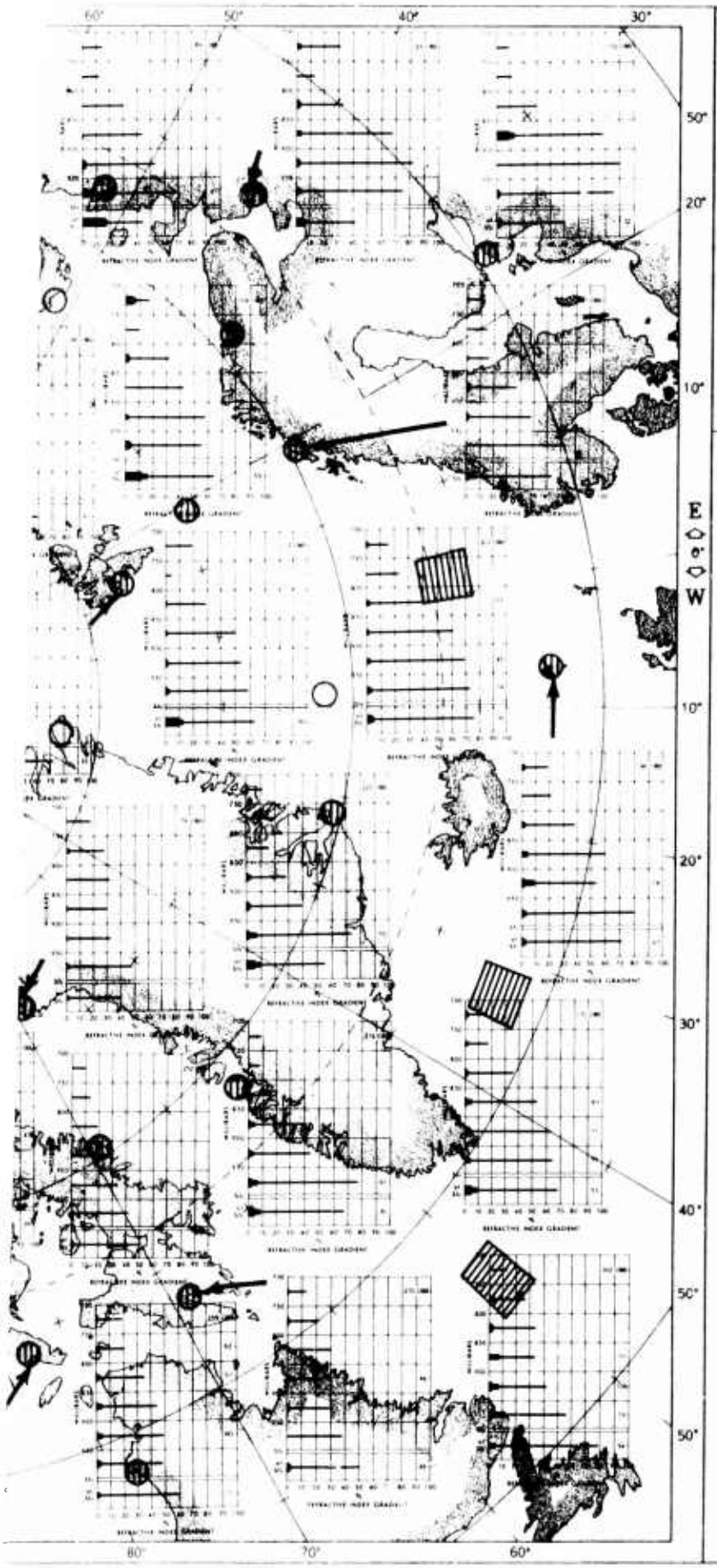


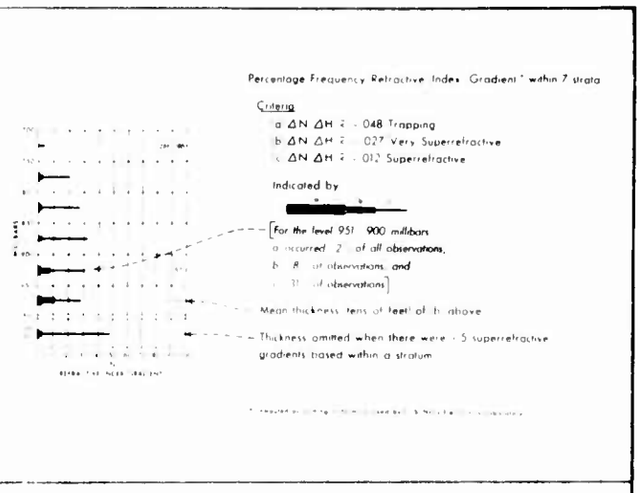
AUGUST REFRACTIVE INDEX

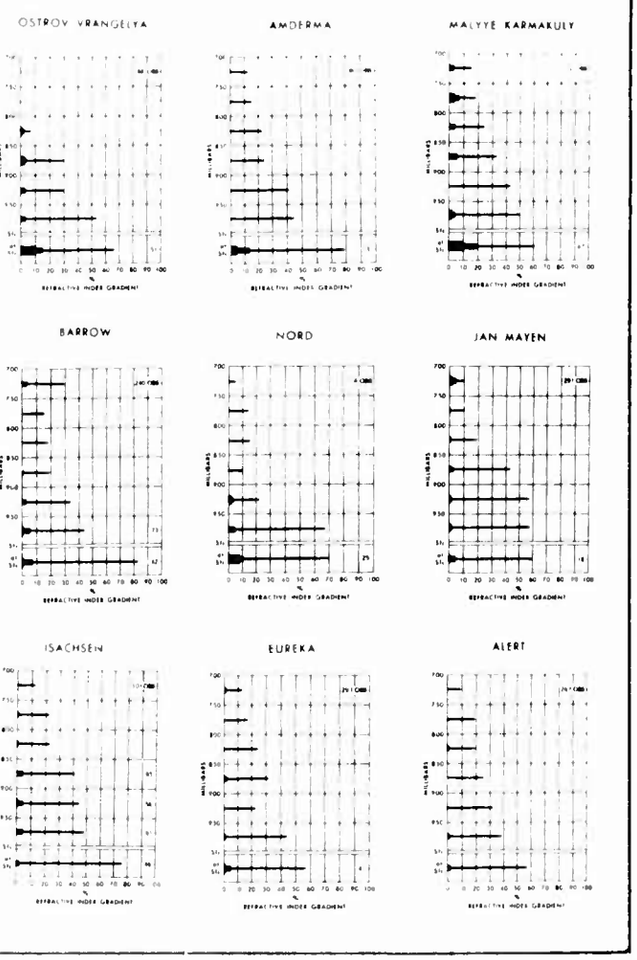


INDEX GRADIENT

CHART 245

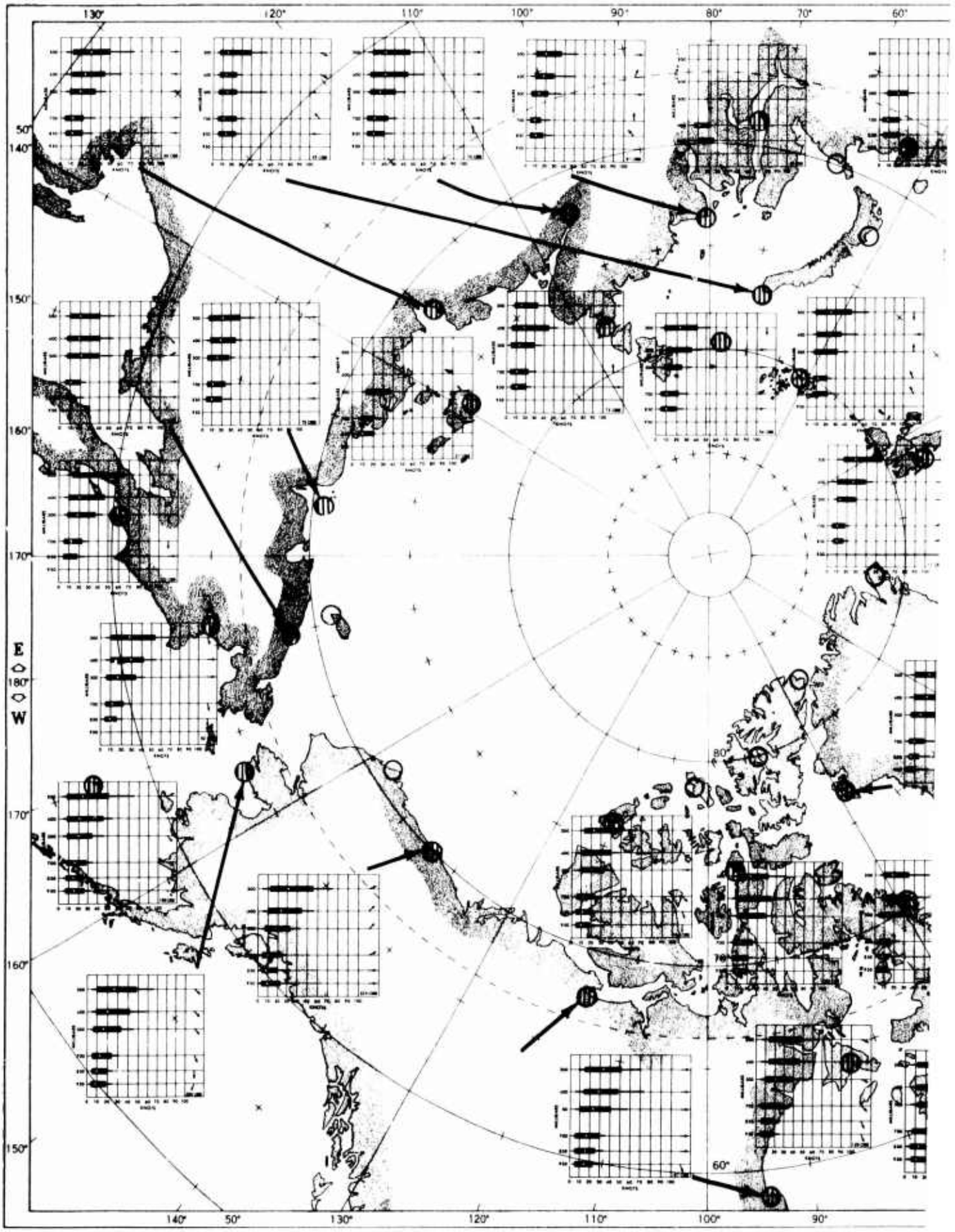






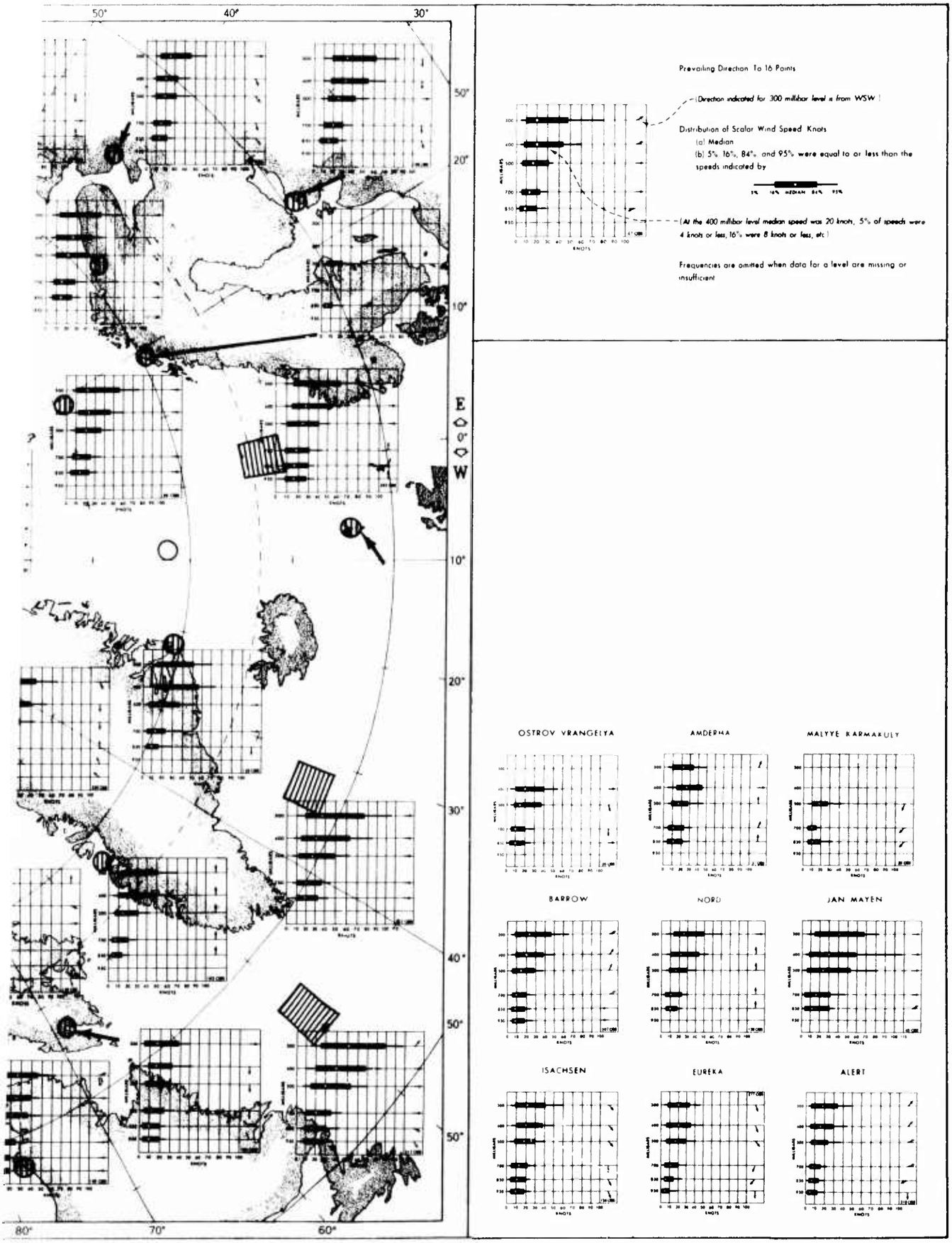
SEPTEMBER

WIND (950 T



ↄ 300 MB)

CHART 246



Prevailing Direction To 16 Points

(Direction indicated for 300 millibar level is from WSW.)

Distribution of Scalar Wind Speed Knots

(a) Median

(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by

(At the 400 millibar level median speed was 20 knots, 5% of speeds were 4 knots or less, 16% were 8 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

OSTROV VRANGELYA

AMDERMA

MALYYE KARMAKULY

BARROW

NORD

JAN MAYEN

ISACHSEN

EUREKA

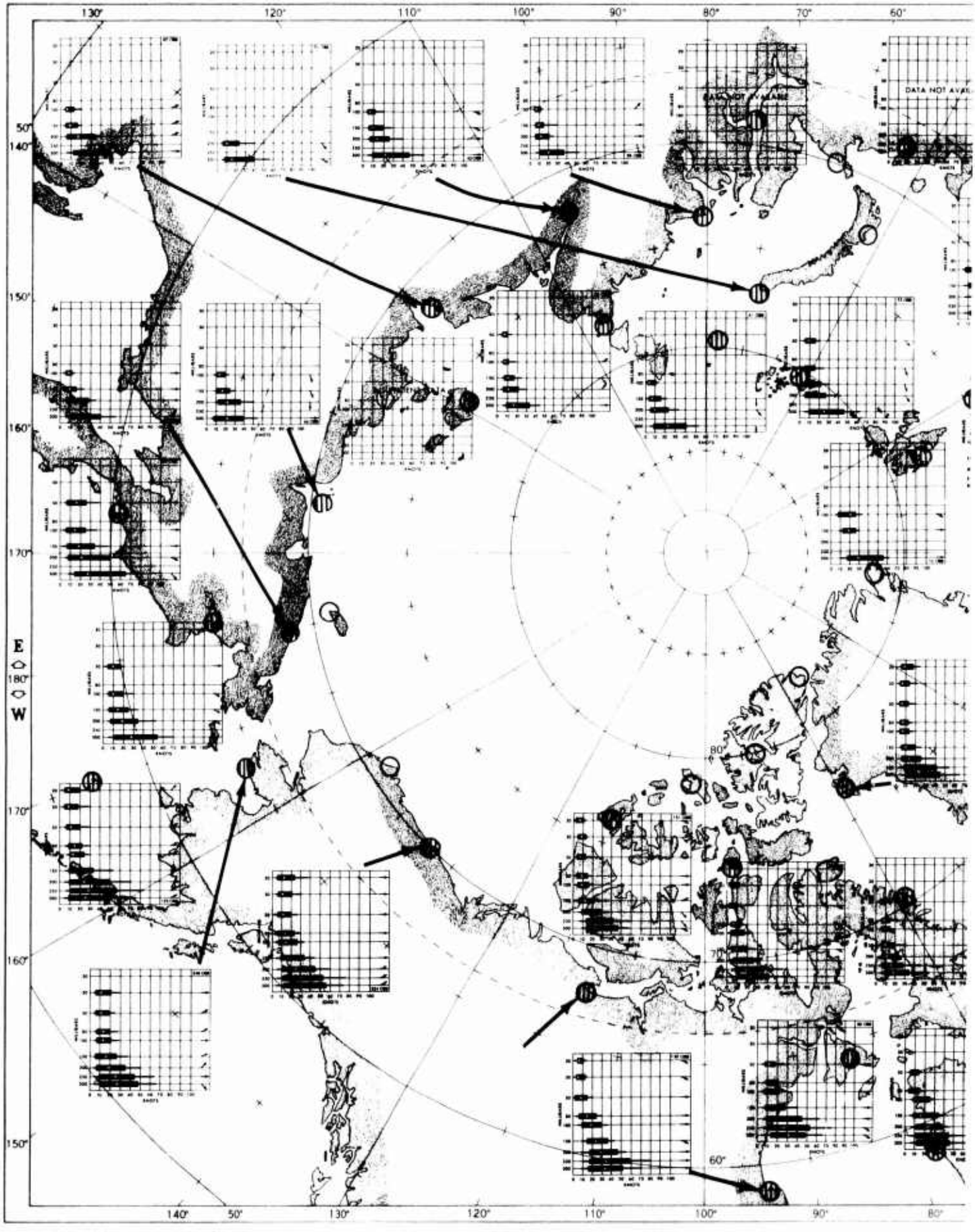
ALERT

1

2

SEPTEMBER

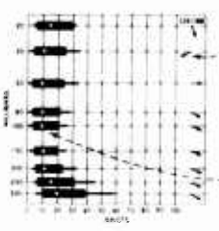
WIND (300 TC



ND (300 TO 20 MB)

CHART 247





Prevailing Direction To 16 Points

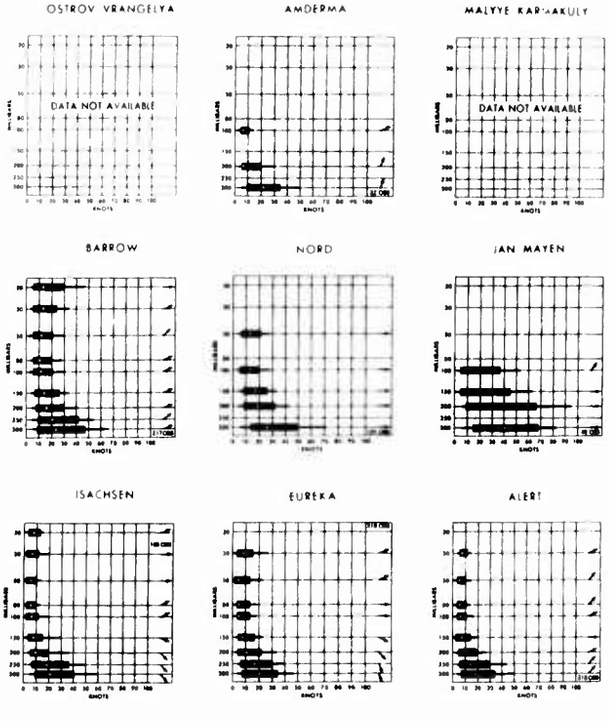
(Direction indicated for 30 millibar level is from ENE)

Distribution of Scalar Wind Speed Knots
(a) median
(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by

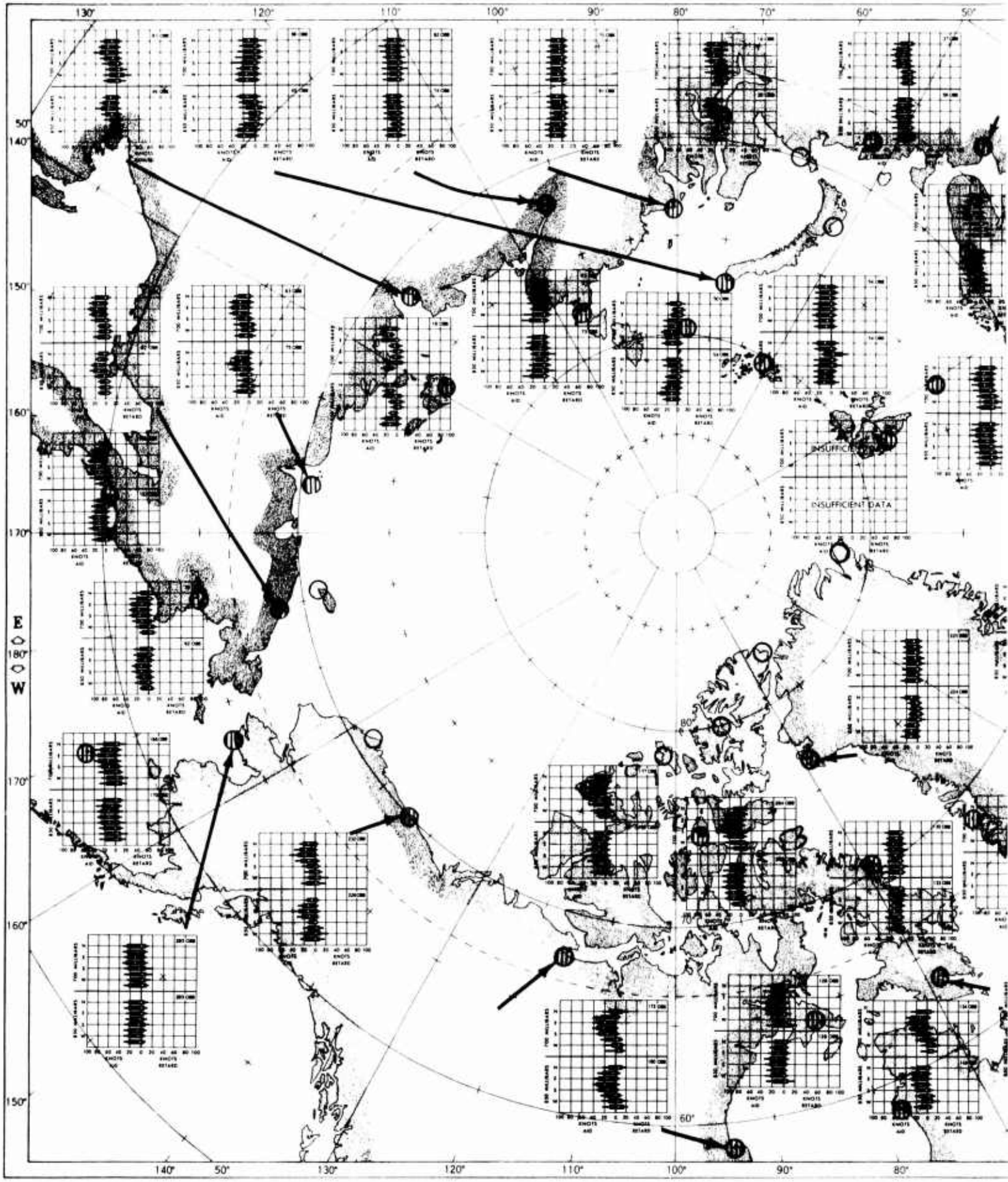
5% 16% MEDIAN 84% 95%

(At the 100 millibar level, median speed was 10 knots, 5% of speeds were 2 knots or less, 16% were 4 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

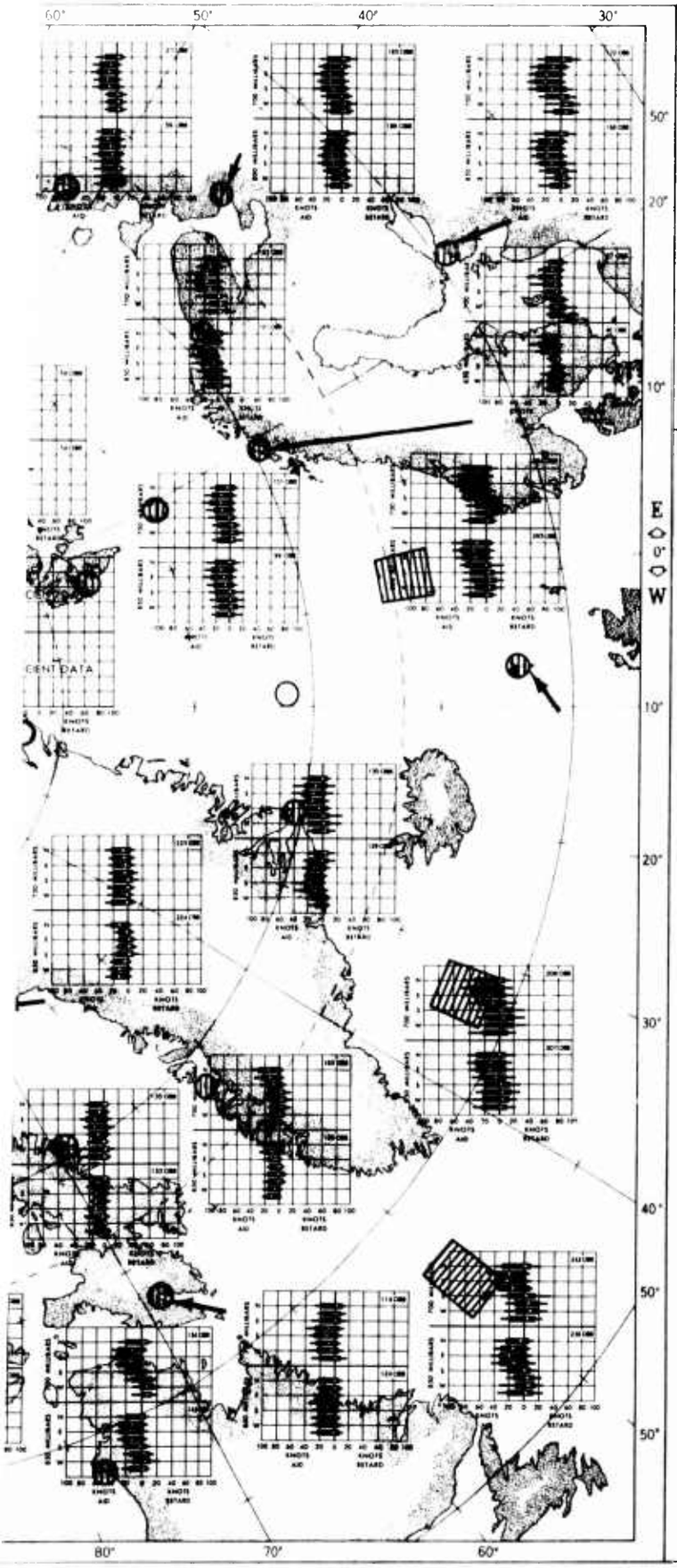


SEPTEMBER WIND AID AND RETARD (8

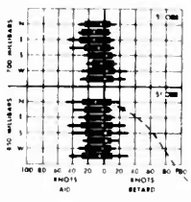


ETARD (850 & 700 MB)

CHART 248



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 300 knots true air speed



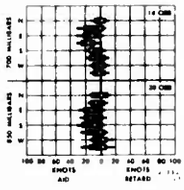
Read median and percentage frequency for direction toward which aircraft is flying thus



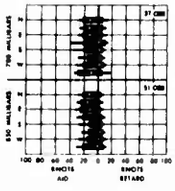
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward north at the 850 millibar level, wind aided or increased ground speed by an average of 12 knots. Wind effect ranged from 28 knots aid to 8 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 20 knots retard in 90% of the observations.)

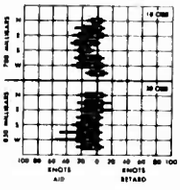
OSTROV VRANGELYA



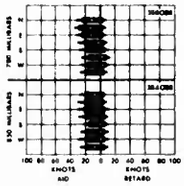
AMDERMA



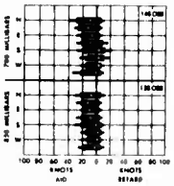
MALYYE KARMAKULY



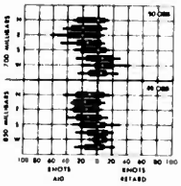
BARROW



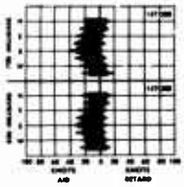
NORD



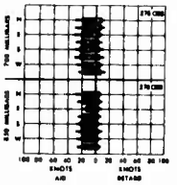
JAN MAYEN



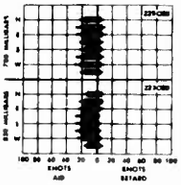
ISACHSEN



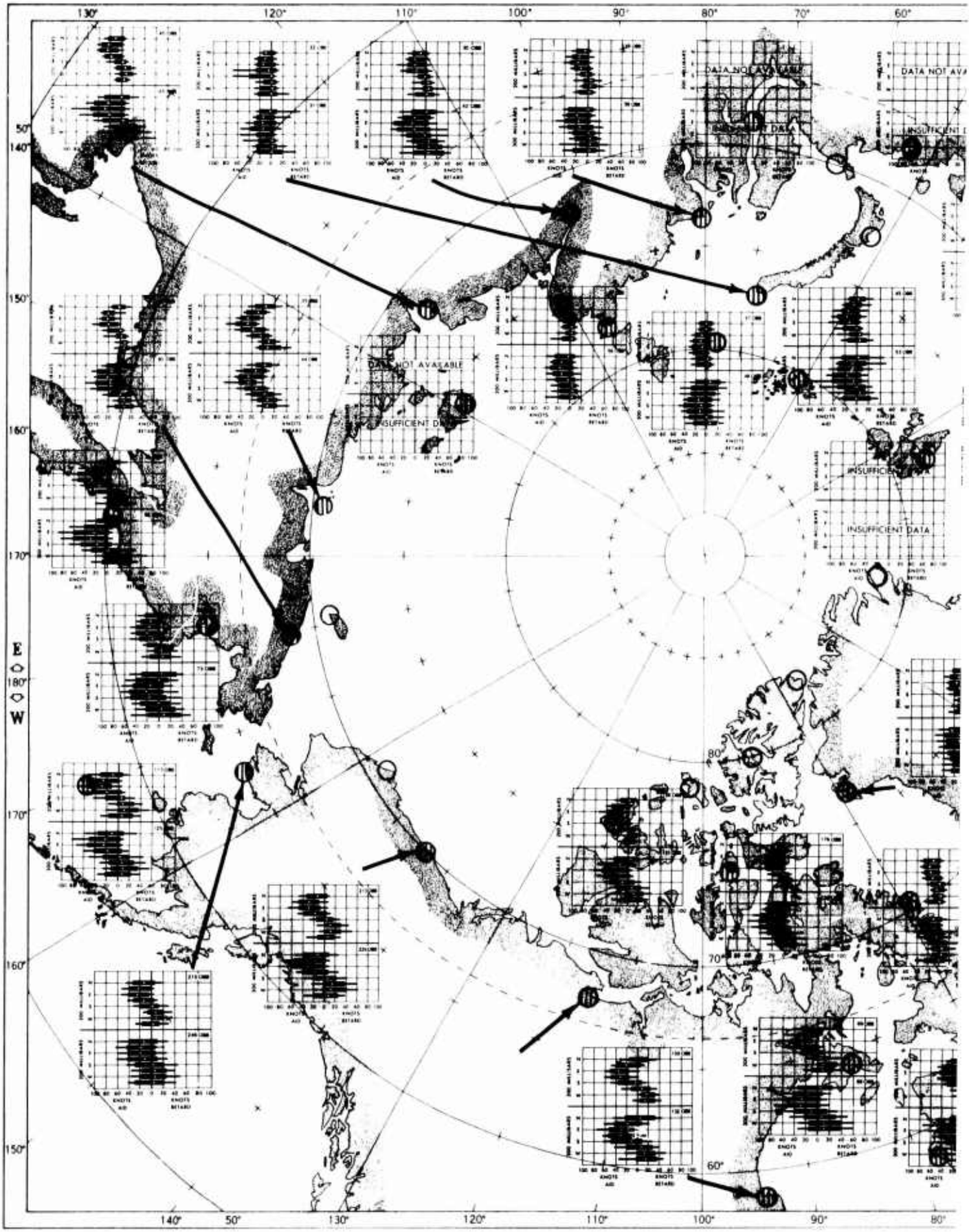
EUREKA



ALERT

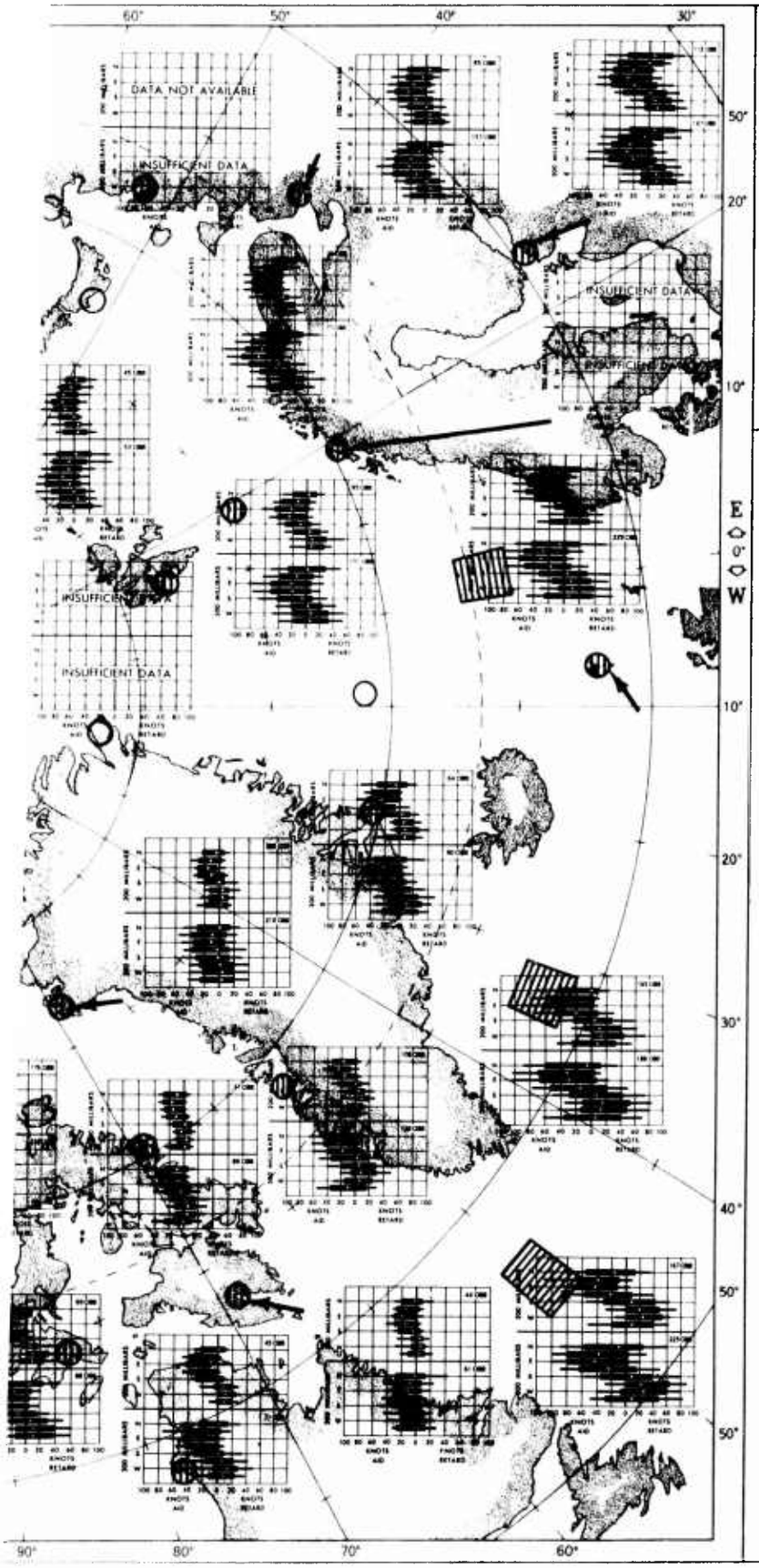


SEPTEMBER WIND AID AND RETAR

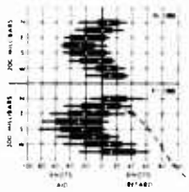


RETARD (300 & 200 MB)

CHART 249



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 600 knots true air speed

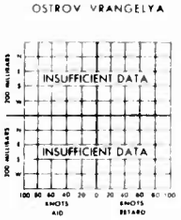


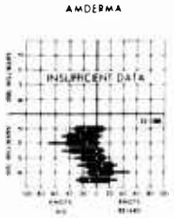
Read median and percentage frequency for direction toward which aircraft is flying thus

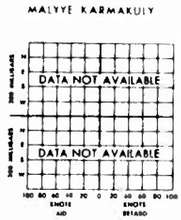


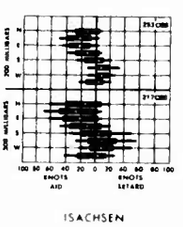
Bars omitted when data for a level are missing or insufficient

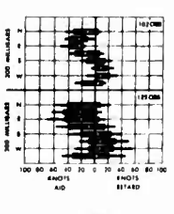
For an aircraft flying toward northeast at the 300 millibar level, wind retarded or decreased ground speed by an average of 4 knots. Winds effect ranged from 26 knots aid to 25 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 40 knots retard in 90% of the observations.

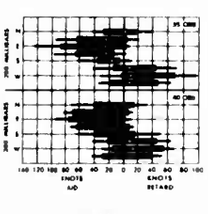


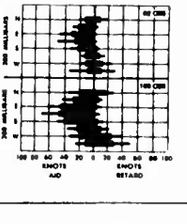


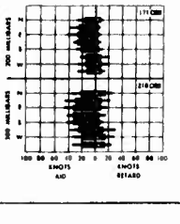


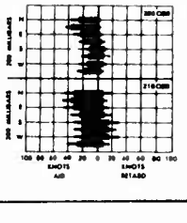








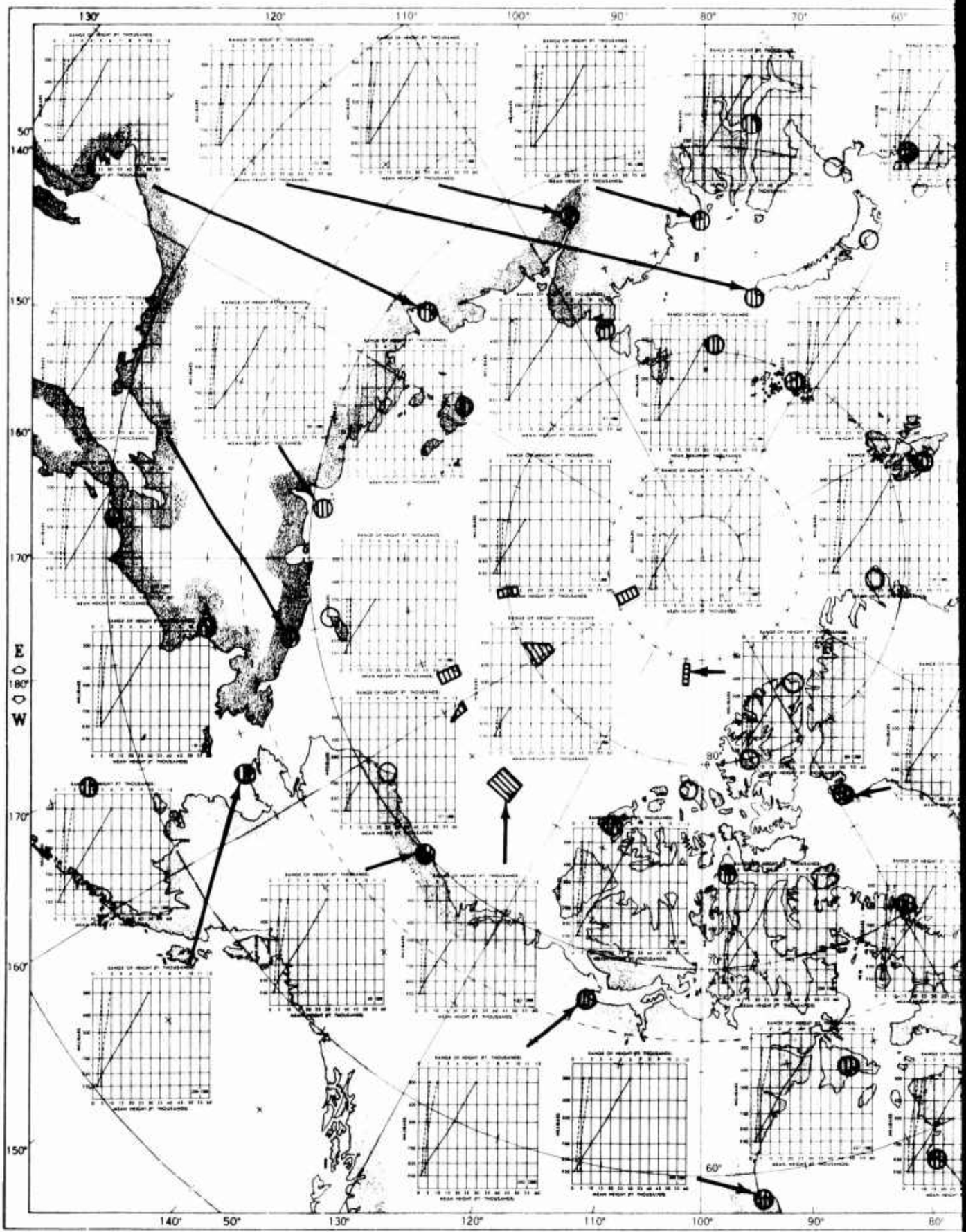




1

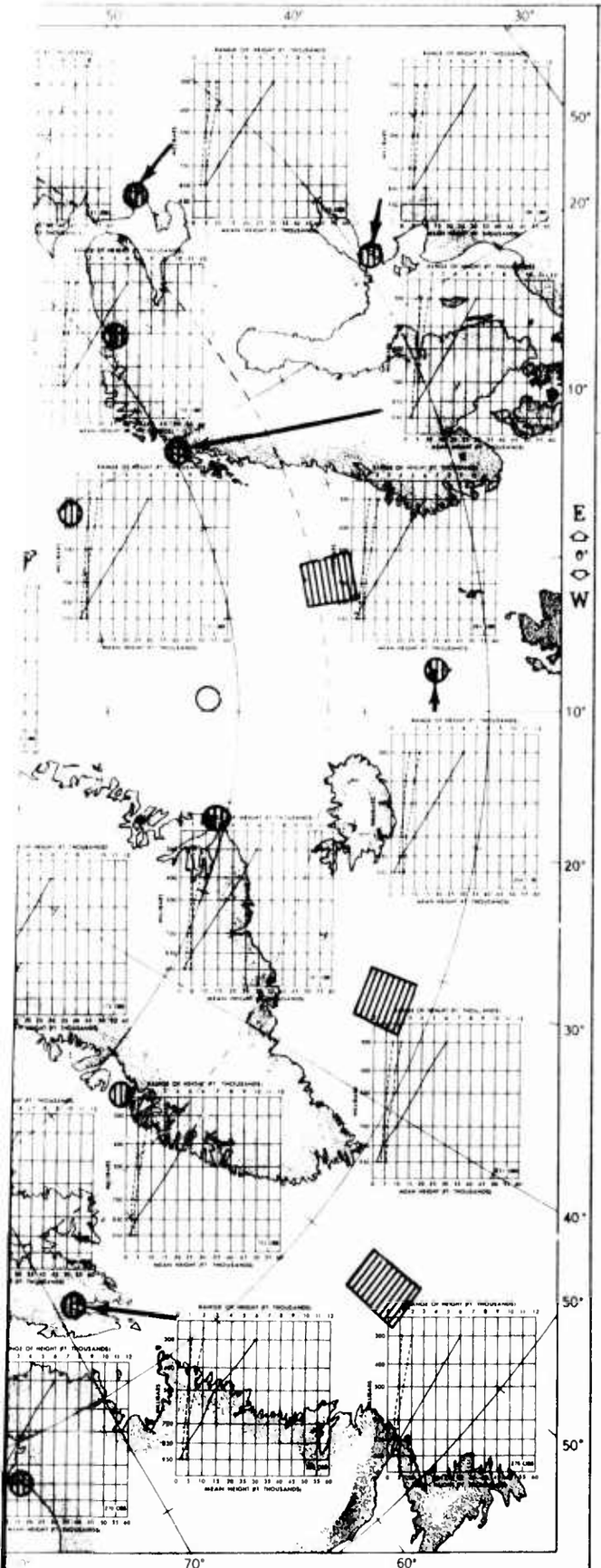
2

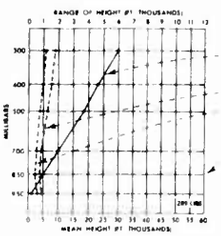
SEPTEMBER HEIGHT (950 T



TO 300 MB)

CHART 250





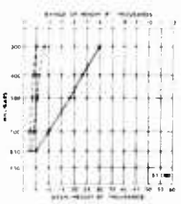
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
  - (1) 5% 95% Range
  - (2) 16% 84% Range

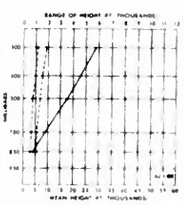
For the 850 millibar level the mean Height = 5,000 feet the 5% 95% Height range = 800 feet and the 16% 84% range = 450 feet.)

Mean and ranges of height are omitted when data for a level are missing or insufficient

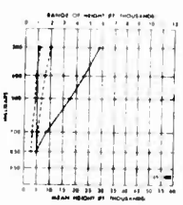
OSTROV VRANGELYA



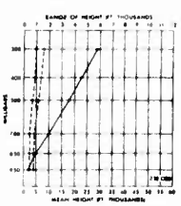
AMDERMA



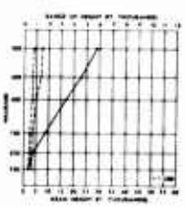
MALYYE KARMAKULY



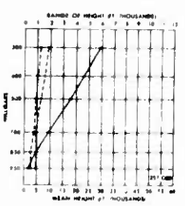
BARROW



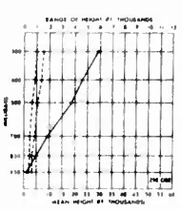
NORD



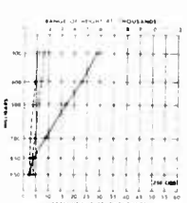
JAN MAYEN



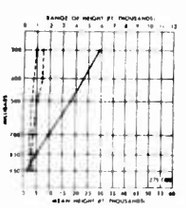
ISACHSEN



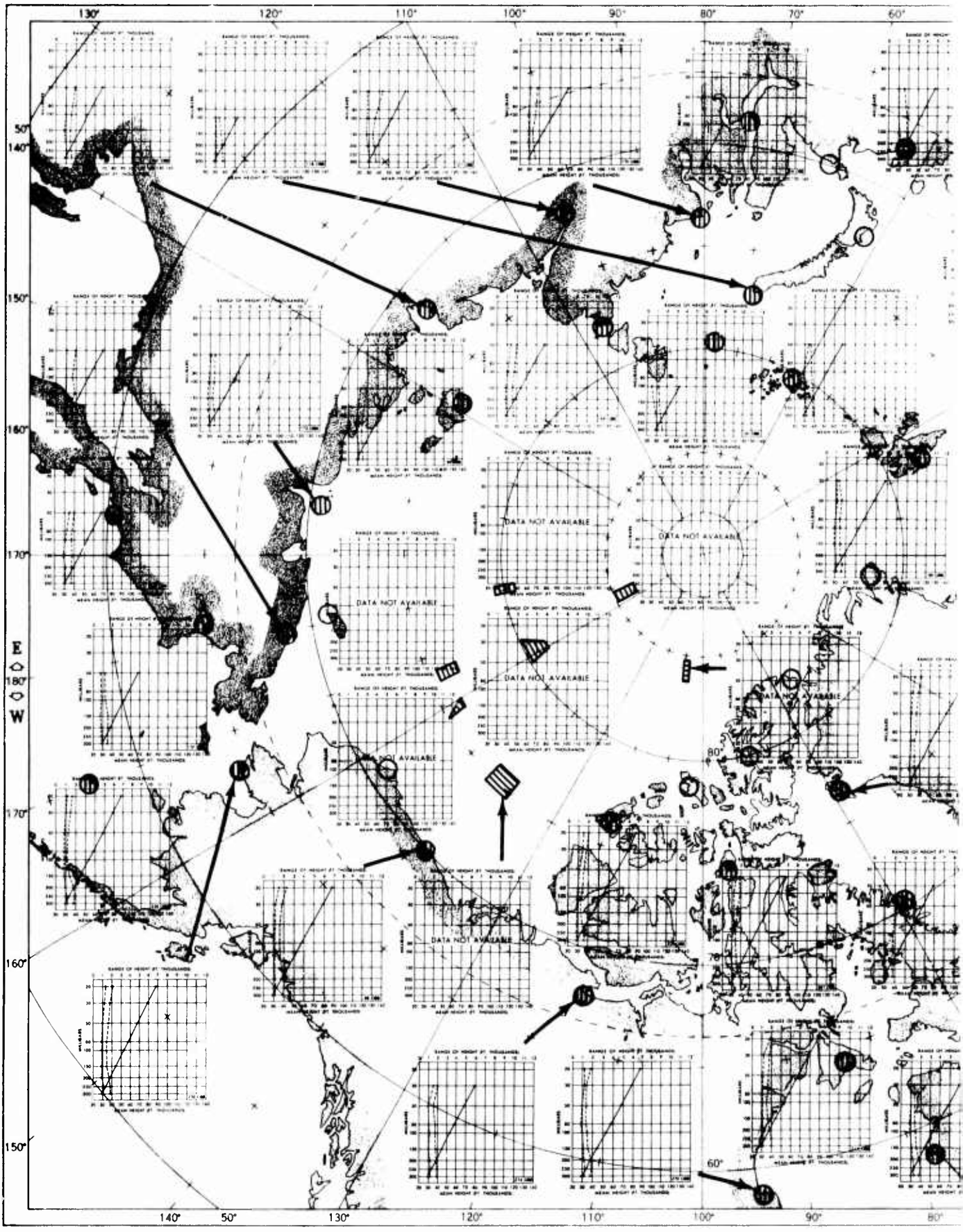
EUREKA



ALERT



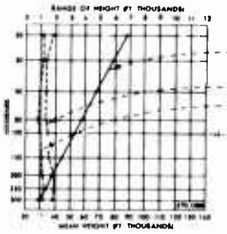
SEPTEMBER HEIGHT (300



;HT (300 TO 20 MB)

CHART 251





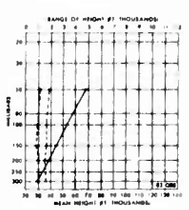
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
  - (1) 5% 95% Range
  - (2) 16% 84% Range

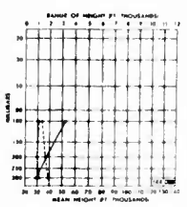
(For the 100 millibar level the mean Height a 53,000 feet, the 5% - 95% Height range a 1,500 feet, and the 16% 84% range a 1,000 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

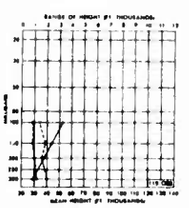
OSTROV VRANGELYA



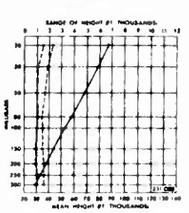
AMDERMA



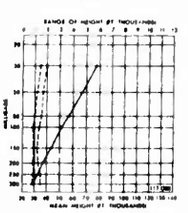
MALYYE KARMAKULY



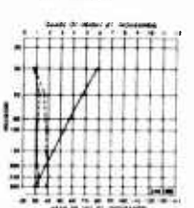
BARROW



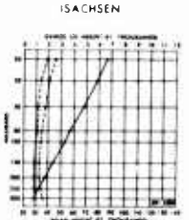
NORD



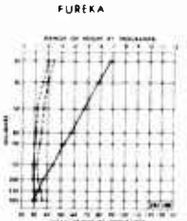
JAN MAYEN



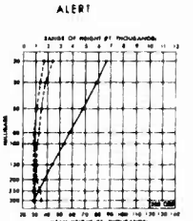
ISACHSEN



EUREKA



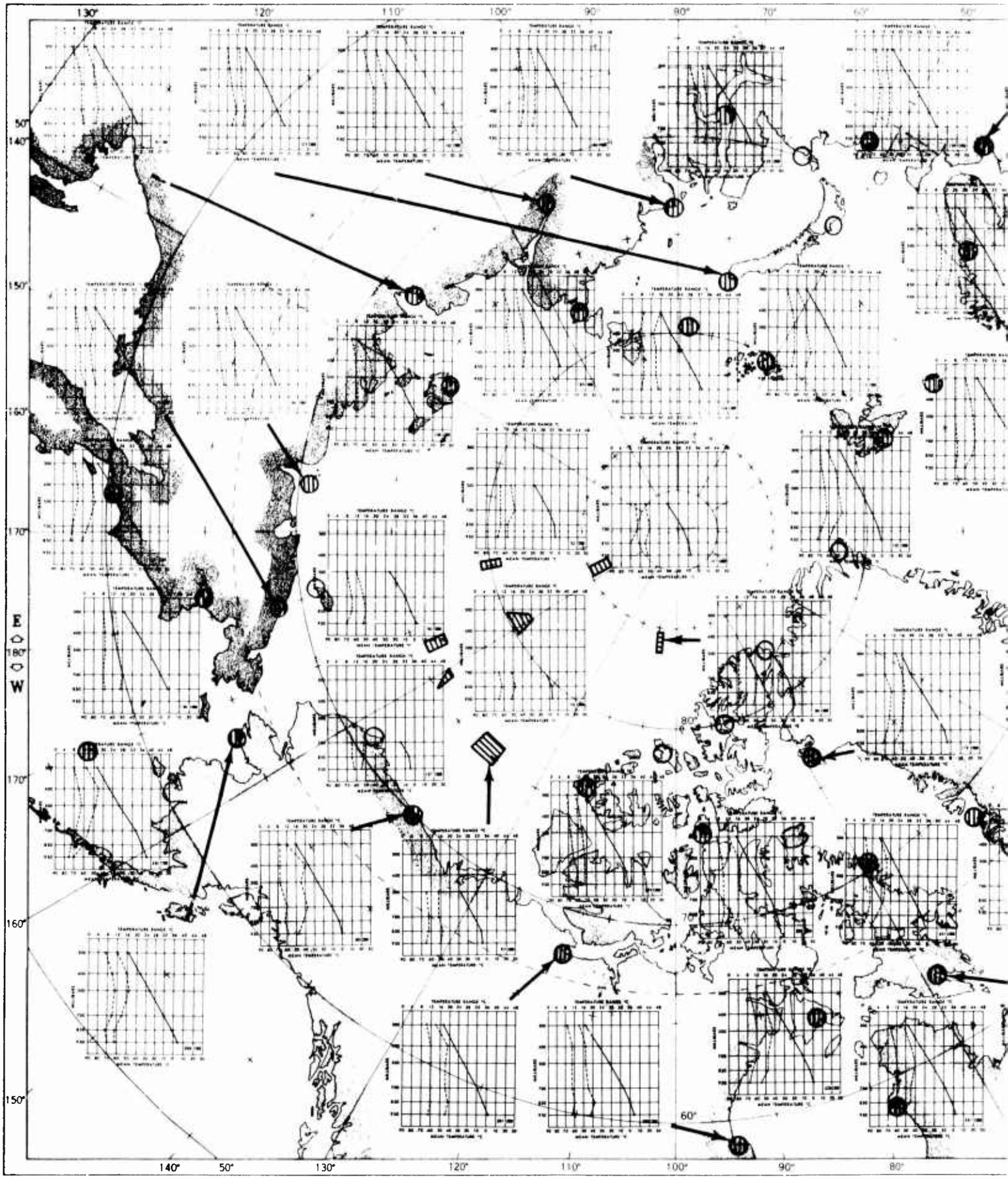
ALERT



1

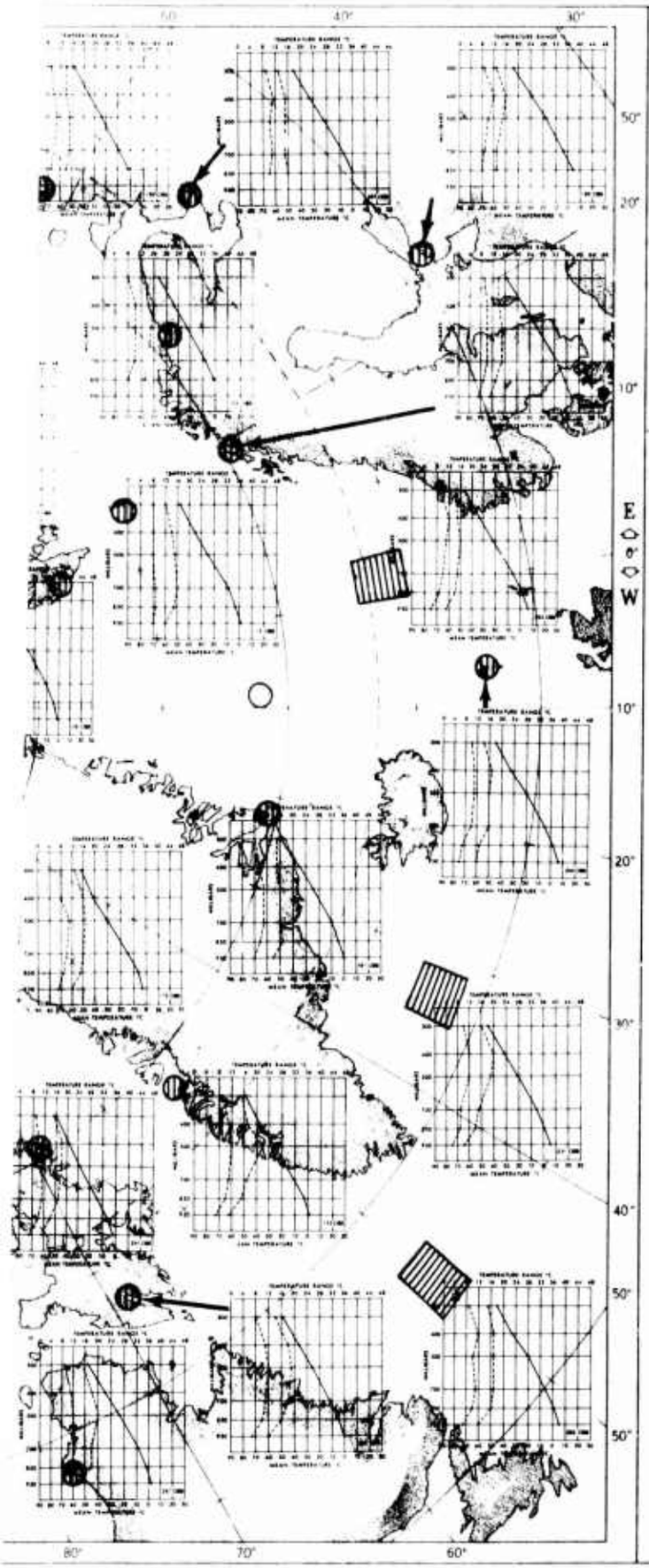
2

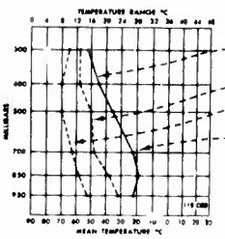
SEPTEMBER TEMPERATURE (950 TO



(950 TO 300 MB)

CHART 252





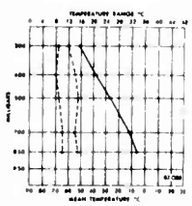
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% 95% Range
(2) 16% 84% Range

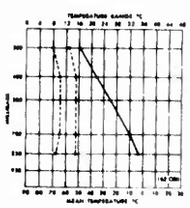
(For the 700 millibar level the mean temperature is -22°C, the 5% 95% range is 17°C, and the 16% 84% range is 11°C)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

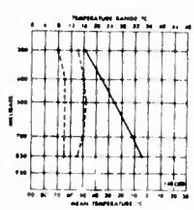
OSTROV VRANGELYA



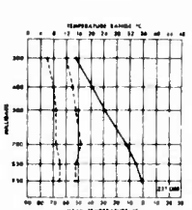
AMDERMA



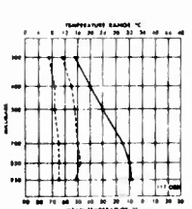
MALYYE KARMAKULY



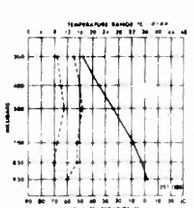
BARROW



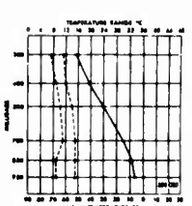
NORD



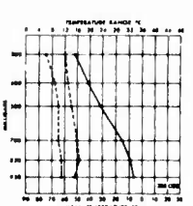
JAN MAYEN



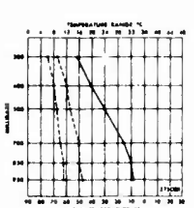
ISACHSEN



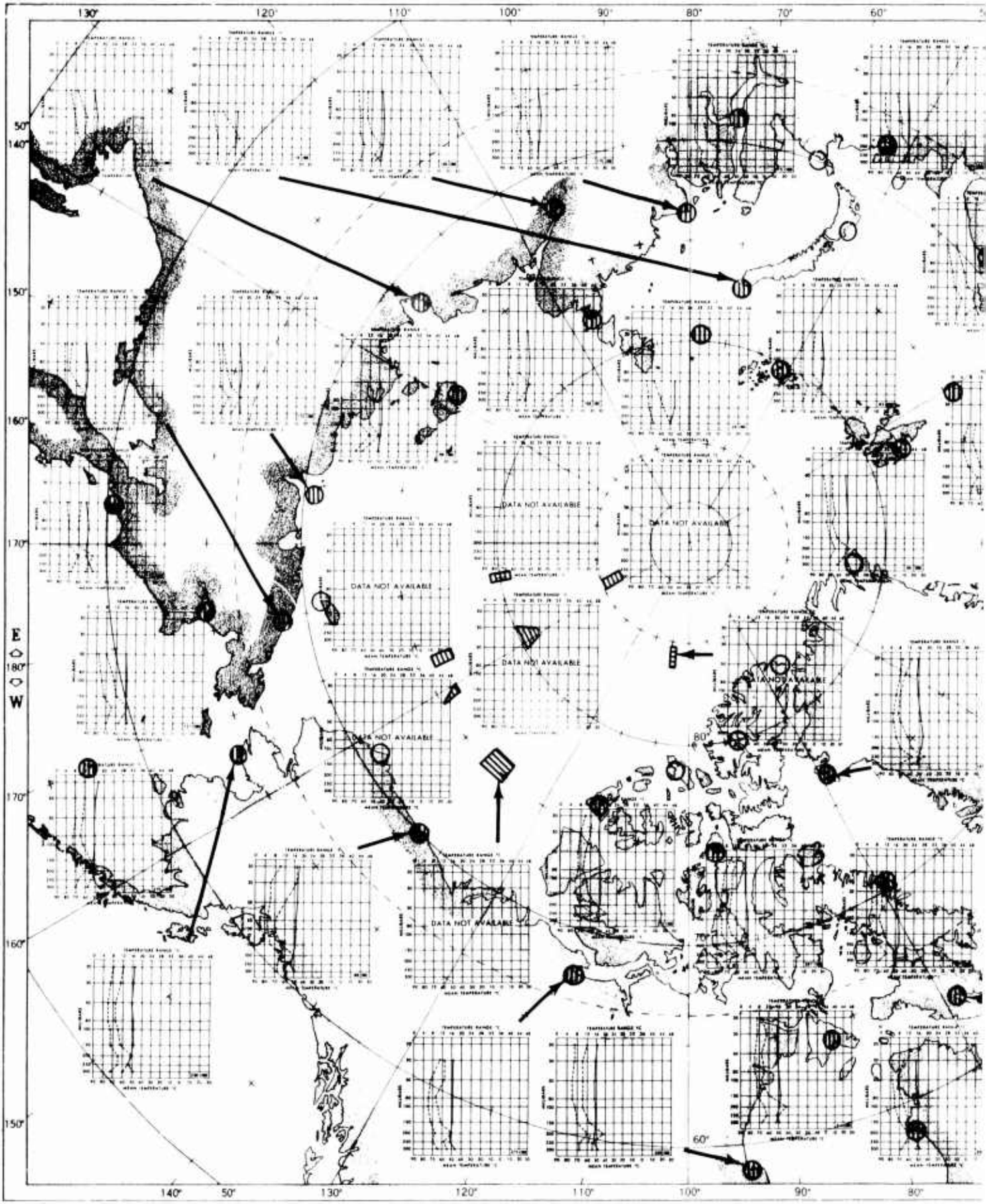
EUREKA



ALERT

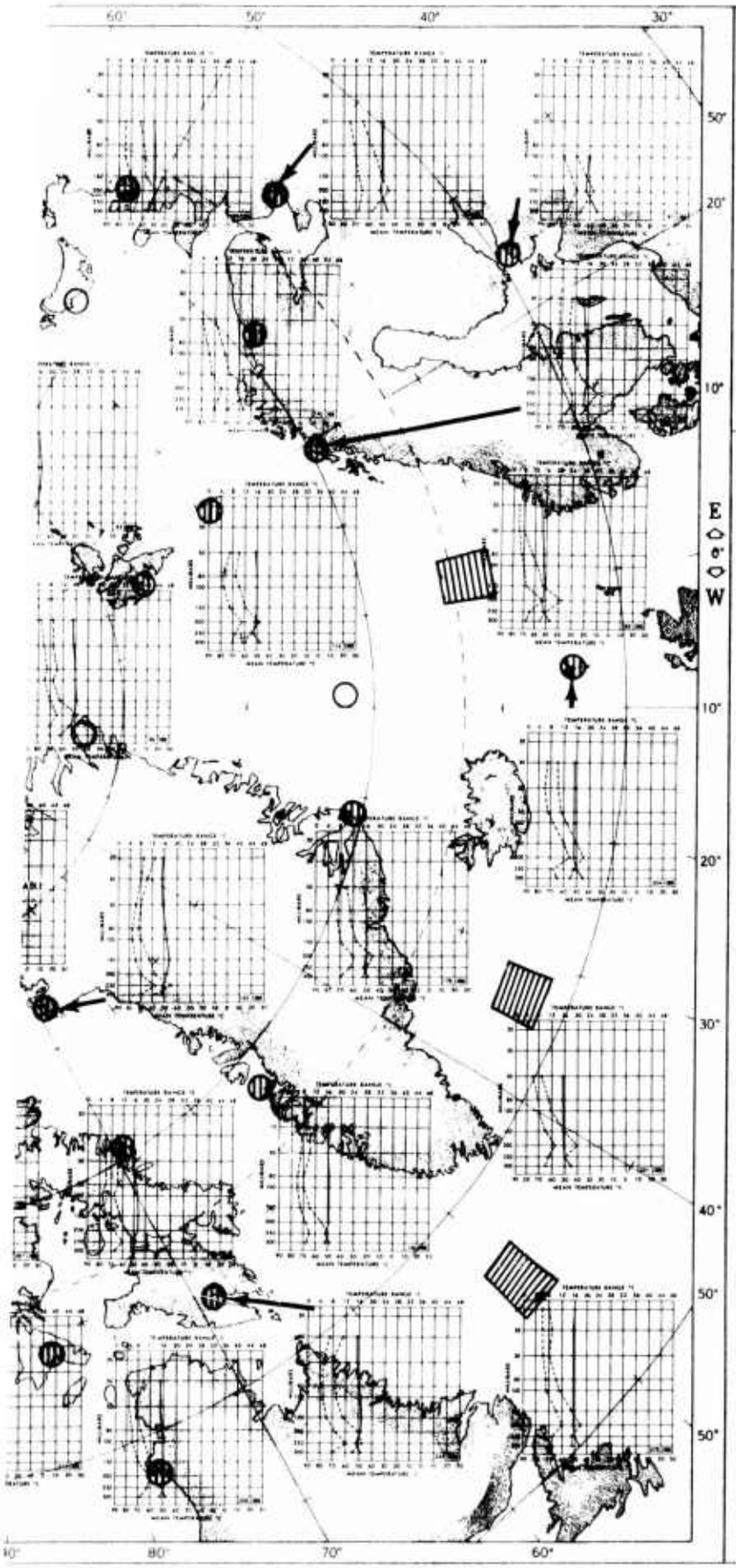


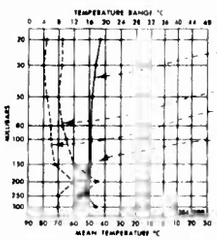
SEPTEMBER TEMPERATURE (300



JRE (300 TO 20 MB)

CHART 253





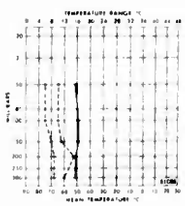
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% - 95% Range
(2) 16% - 84% Range

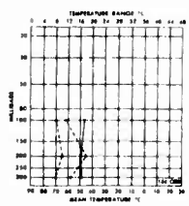
(*For the 150 millibar level the mean temperature is -49°C the 5% - 95% range is 12°C and the 16% - 84% range is 7°C.*)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

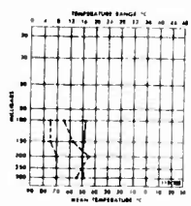
OSTROV VRANGELYA



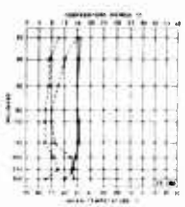
AMDERMA



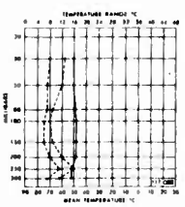
MALYYE KARMAKULY



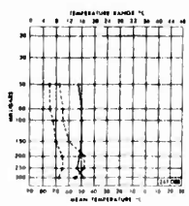
BARROW



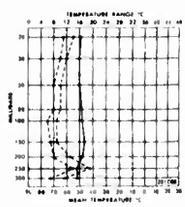
NORD



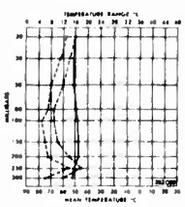
JAN MAYEN



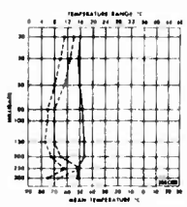
ISACHSEN



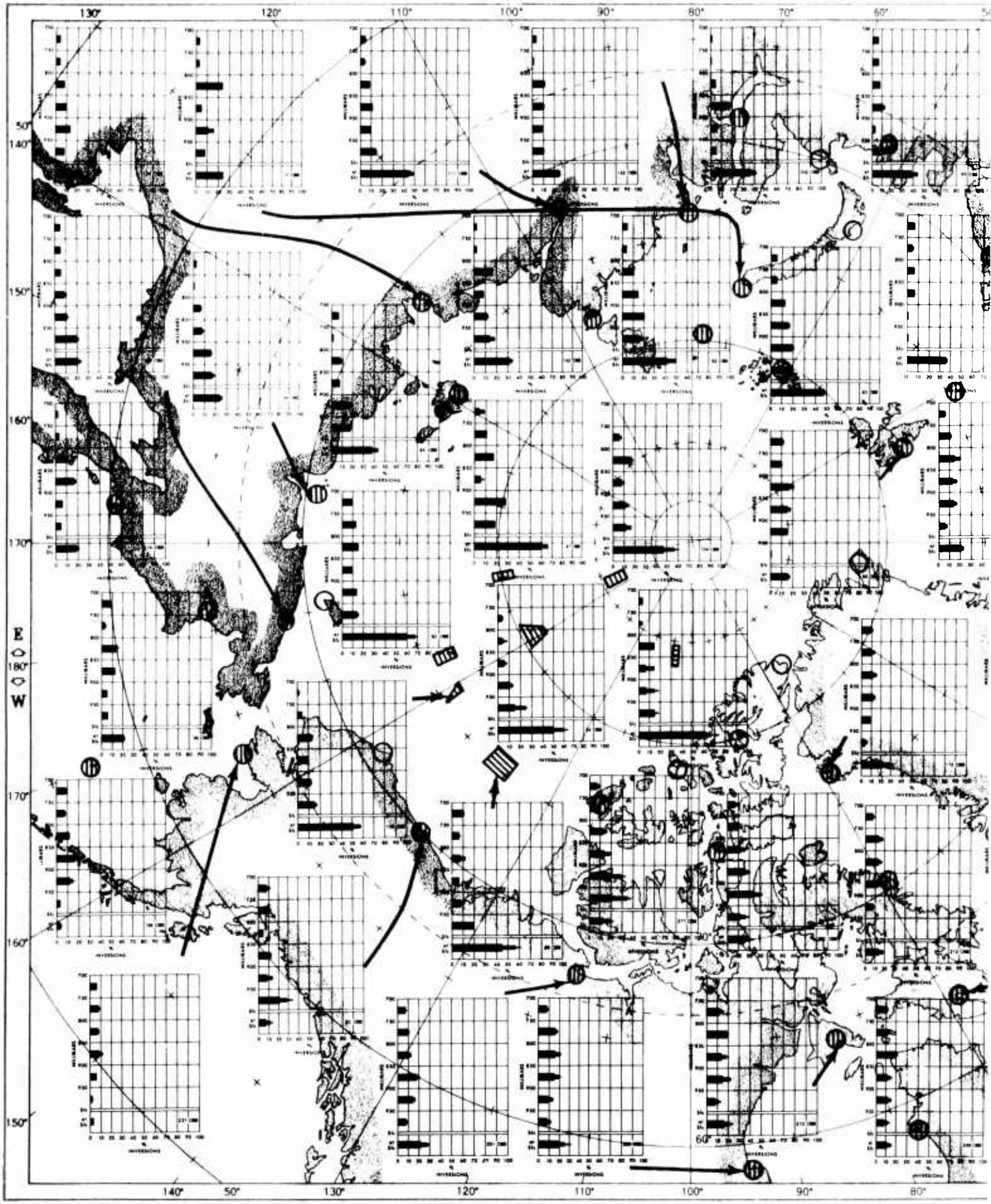
EUREKA



ALERT

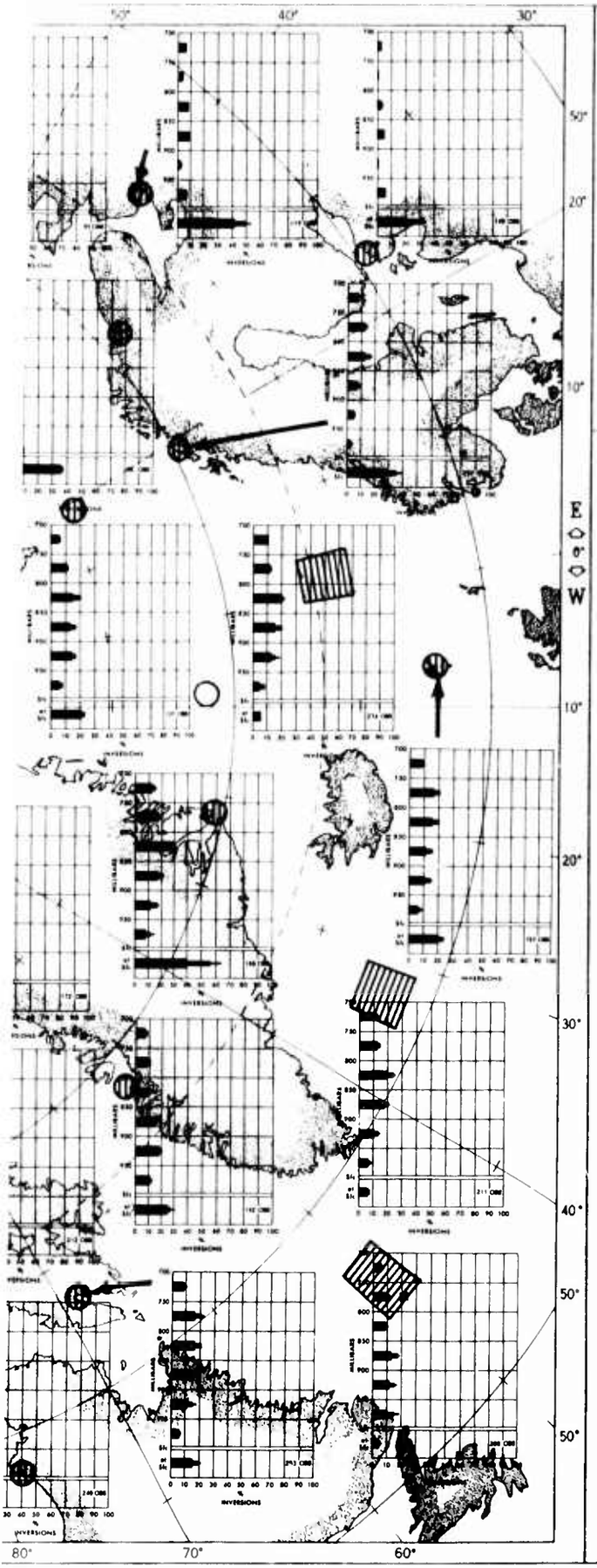


SEPTEMBER INVERSION



IONS

CHART 254



Percentage Frequencies of three intensities of Temperature Inversions within each of seven layers from the surface to 700 millibars

General Criteria

(a) Temperature Inversion constant or increasing temperature with increasing height that persisted at least 5 millibars (approximately 50 meters)

(b) Layers Inversions were assigned to 7 arbitrary layers according to the pressure at their bases

750 to 701 millibars
800 to 751 millibars
850 to 801 millibars
900 to 851 millibars
950 to 901 millibars
5 millibars above the surface to 951 millibars
At the surface to 4.9 millibars above the surface

(c) Intensity change in temperature per 100 meters increase in height of

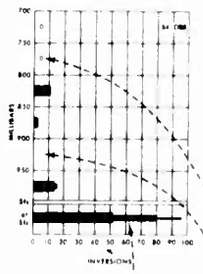
0°C TO +0.9°C +1.0°C TO +1.9°C +2.0°C OR MORE

When more than one inversion was recorded within a layer the one with the greatest intensity was counted

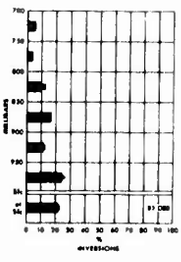
0 No occurrence

Blank No data

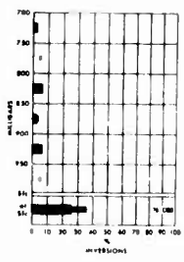
(28% [80-52] of all radiosonde ascents recorded temperature inversions of +1.0°C to +1.9°C per 100 meters with bases in the layer from the surface to 4.9 millibars above)



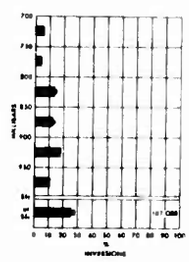
OSTROV VRANGELYA



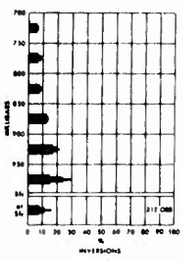
AMDERMA



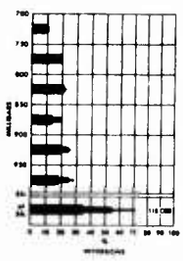
MALYYE KARMAKULY



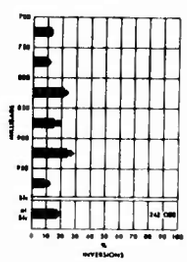
BARROW



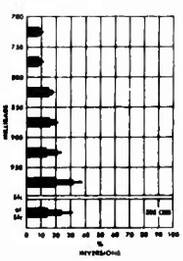
NORD



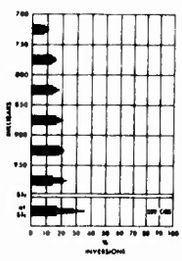
JAN MAYEN



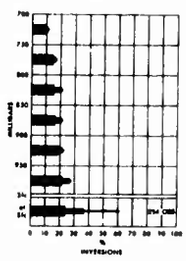
ISACHSEN



EUREKA

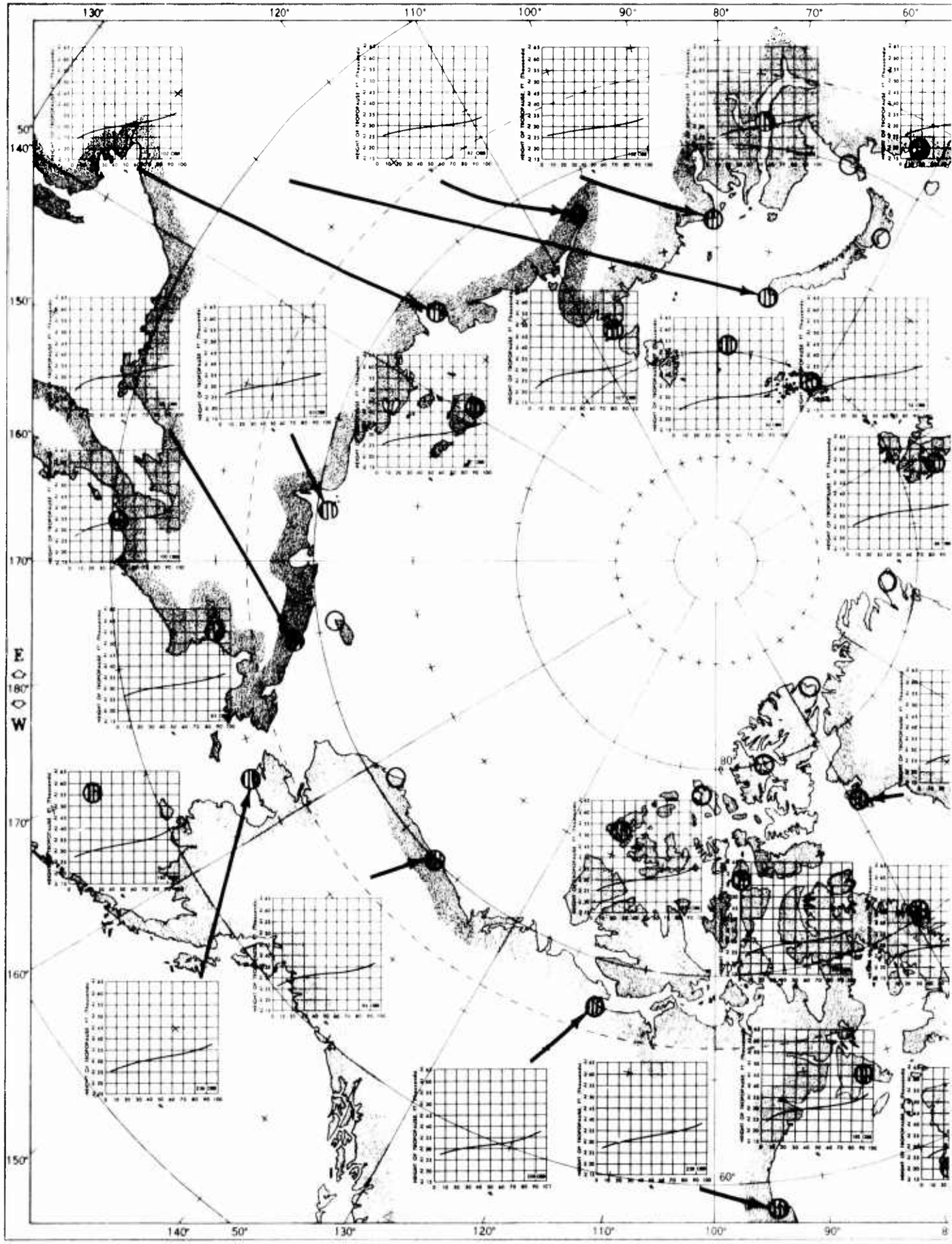


ALERT



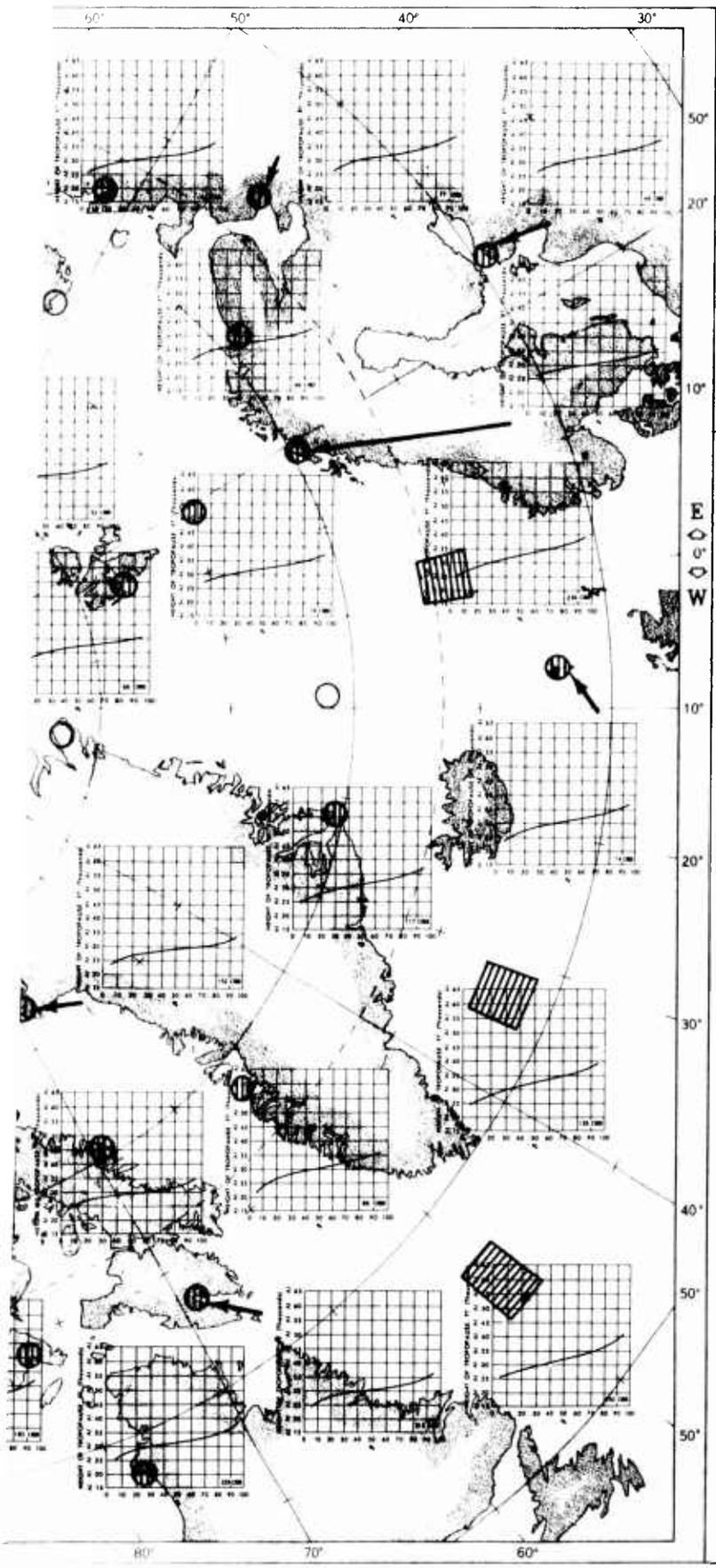
SEPTEMBER

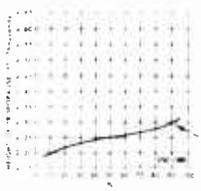
HEIGHT OF TR



)F TROPOPAUSE

CHART 255

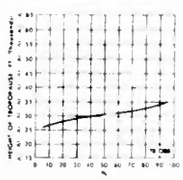




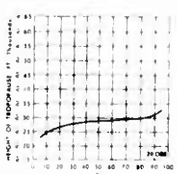
Percentage Frequency of Heights of the Tropopause equal to or less than the height intersected by the curve

(90% of all heights of the tropopause were thirty thousand feet or less)

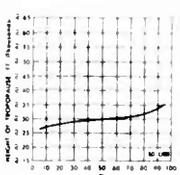
OSTROV VRANGELYA



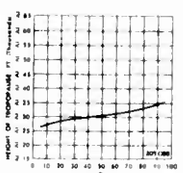
AMDERMA



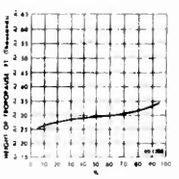
MALYYE KARMAKULY



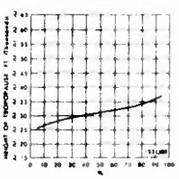
BARROW



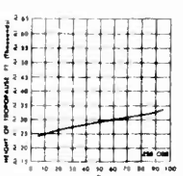
NORD



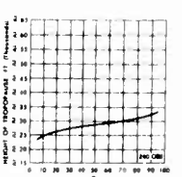
JAN MAYEN



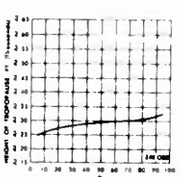
ISACHSEN



EUREKA

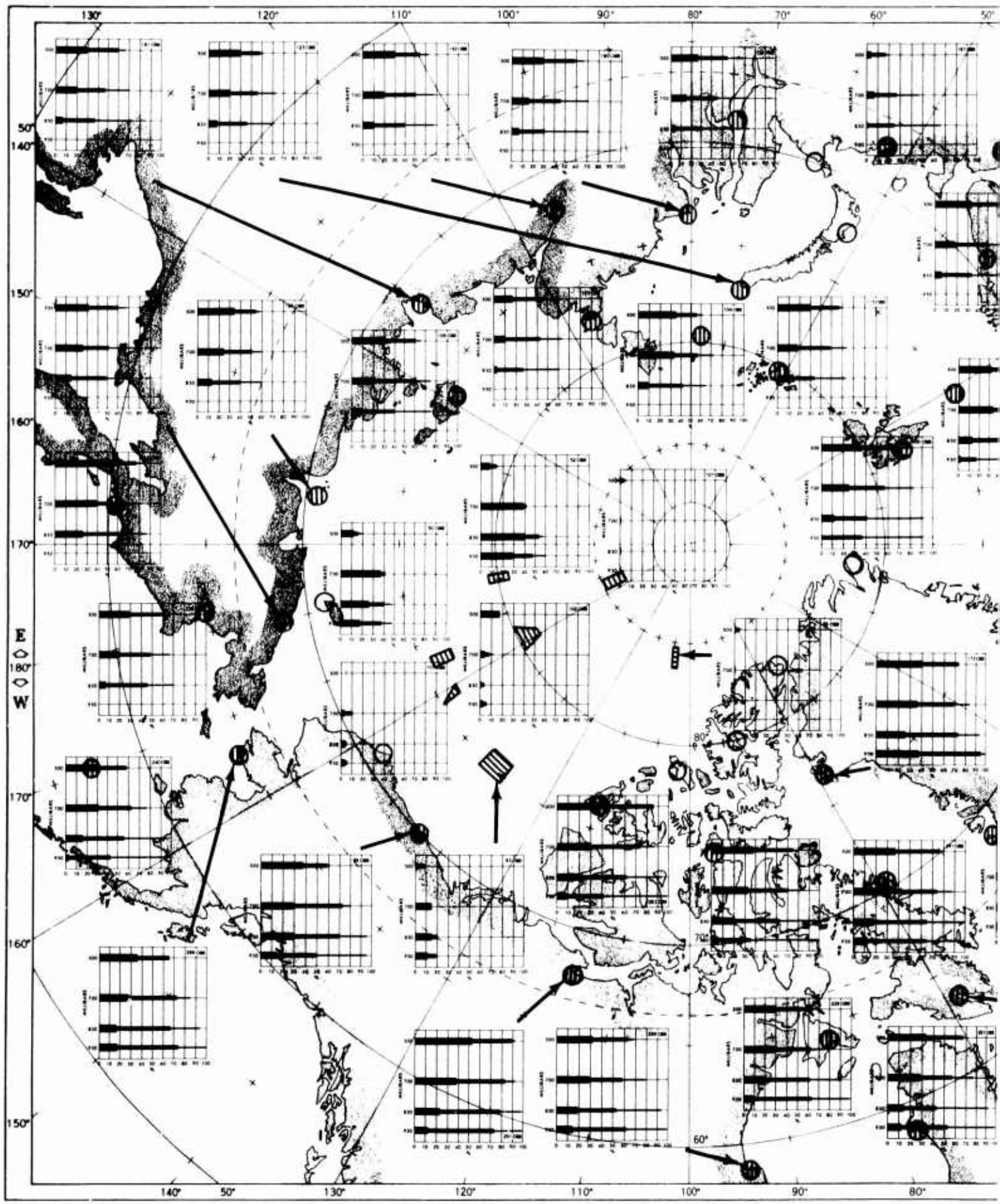


ALERT



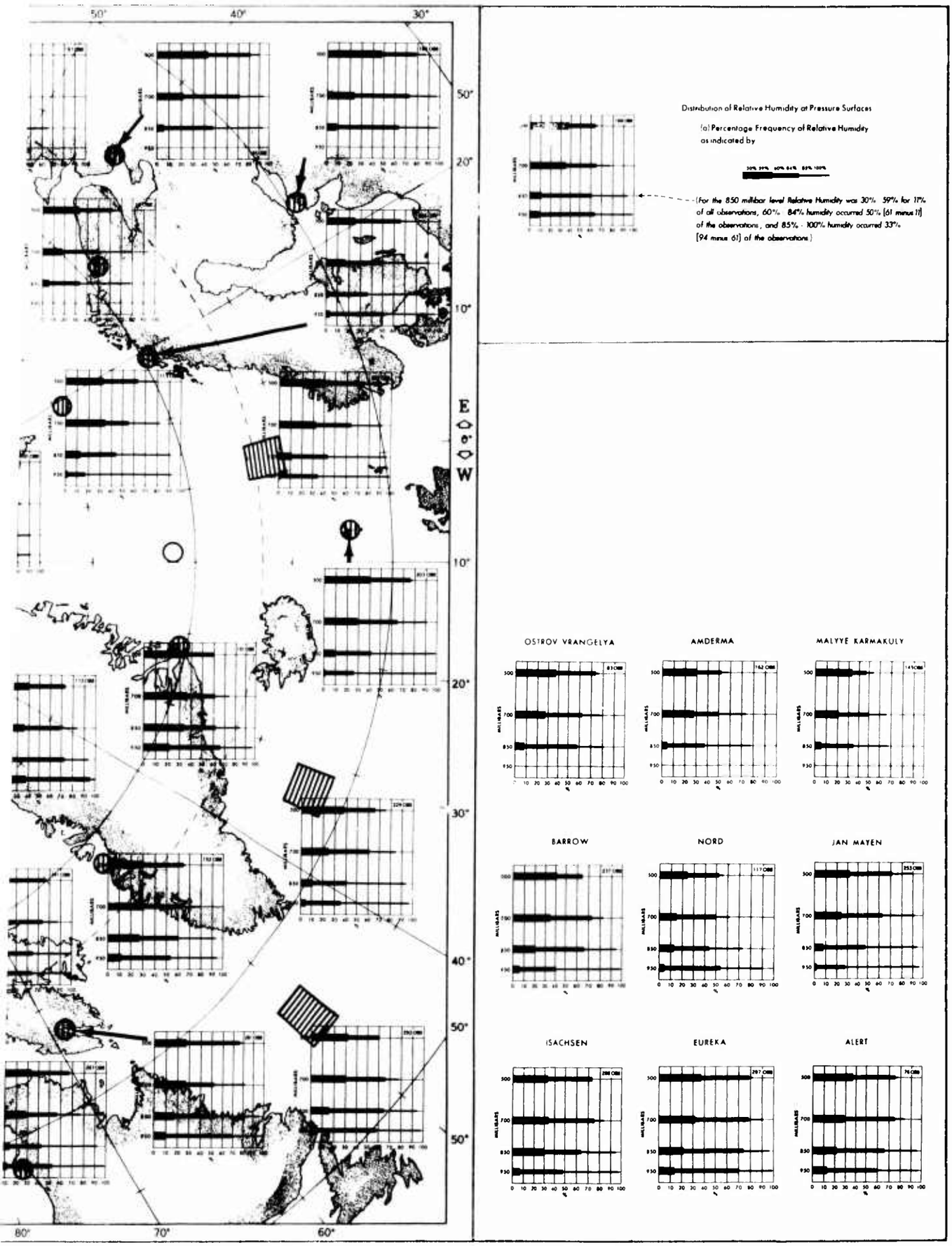
SEPTEMBER

RELATIVE HUM



HUMIDITY

CHART 256



Distribution of Relative Humidity at Pressure Surfaces

(a) Percentage Frequency of Relative Humidity as indicated by

(For the 850 millibar level Relative Humidity was 30% - 59% for 17% of all observations, 60% - 84% humidity occurred 50% [61 minus 11] of the observations, and 85% - 100% humidity occurred 33% [94 minus 61] of the observations.)

OSTROV VRANGELYA

AMDERMA

MALYYE KARMAKULY

BARROW

NORD

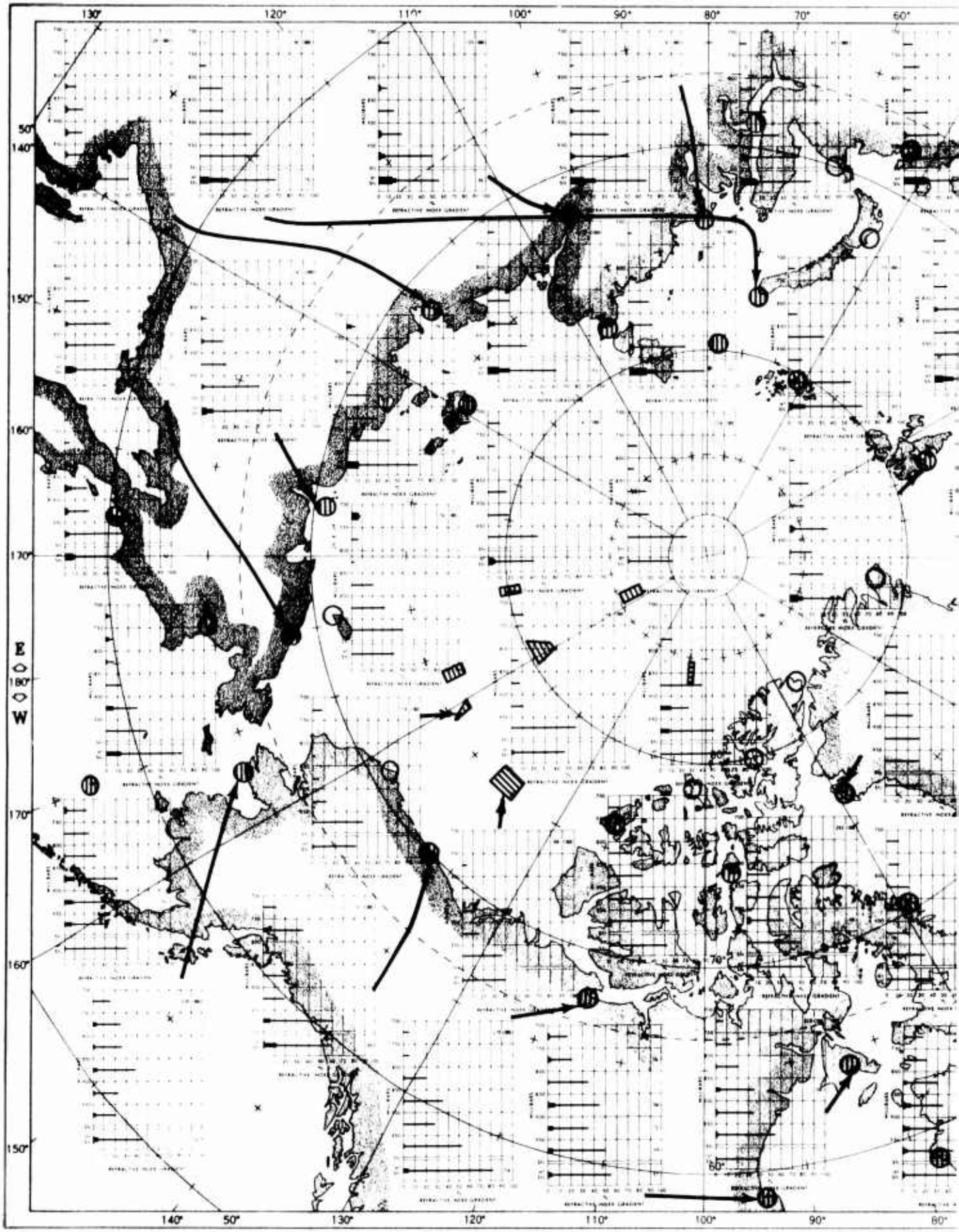
JAN MAYEN

ISACHSEN

EUREKA

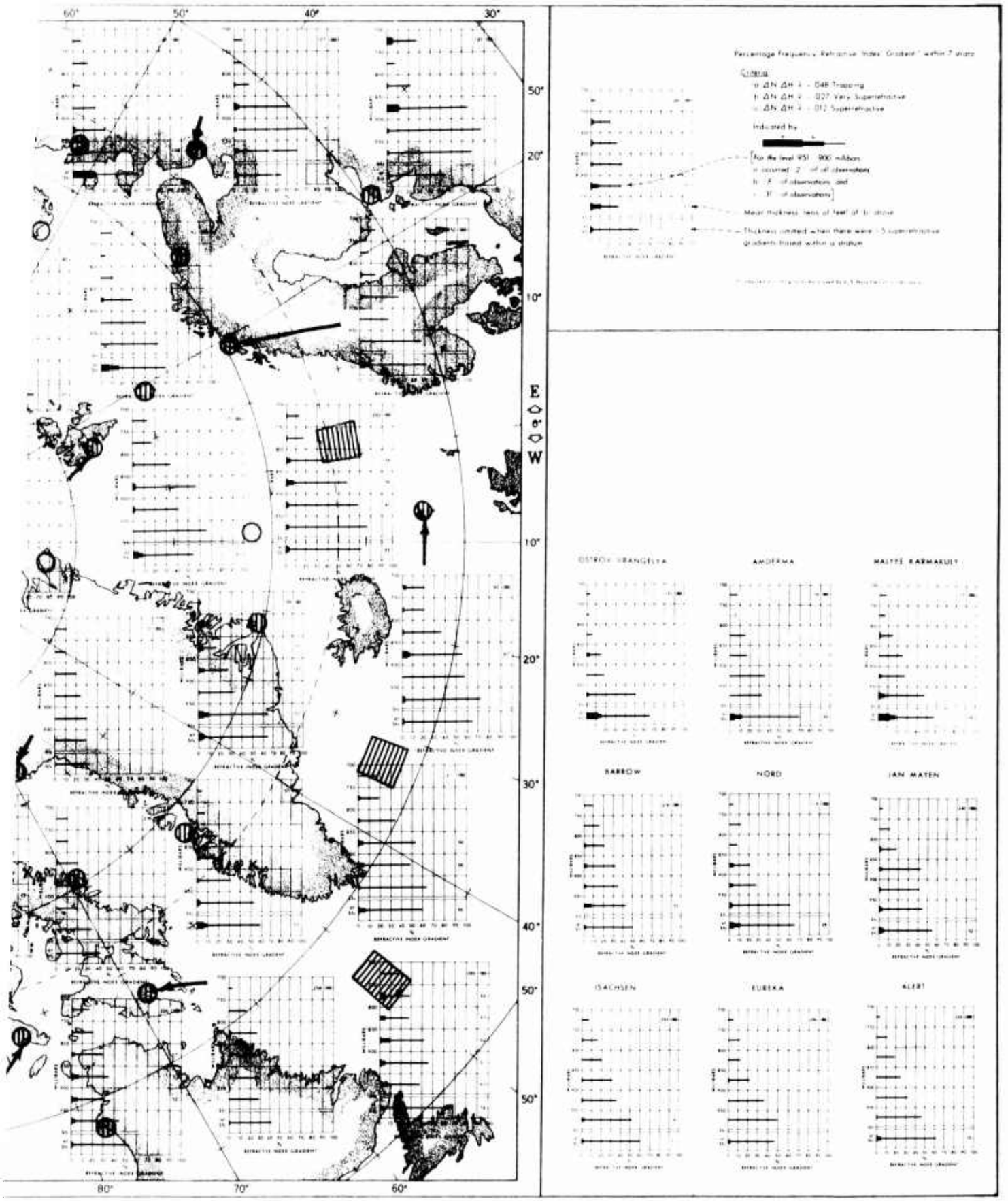
ALERT

SEPTEMBER REFRACTIVE IND



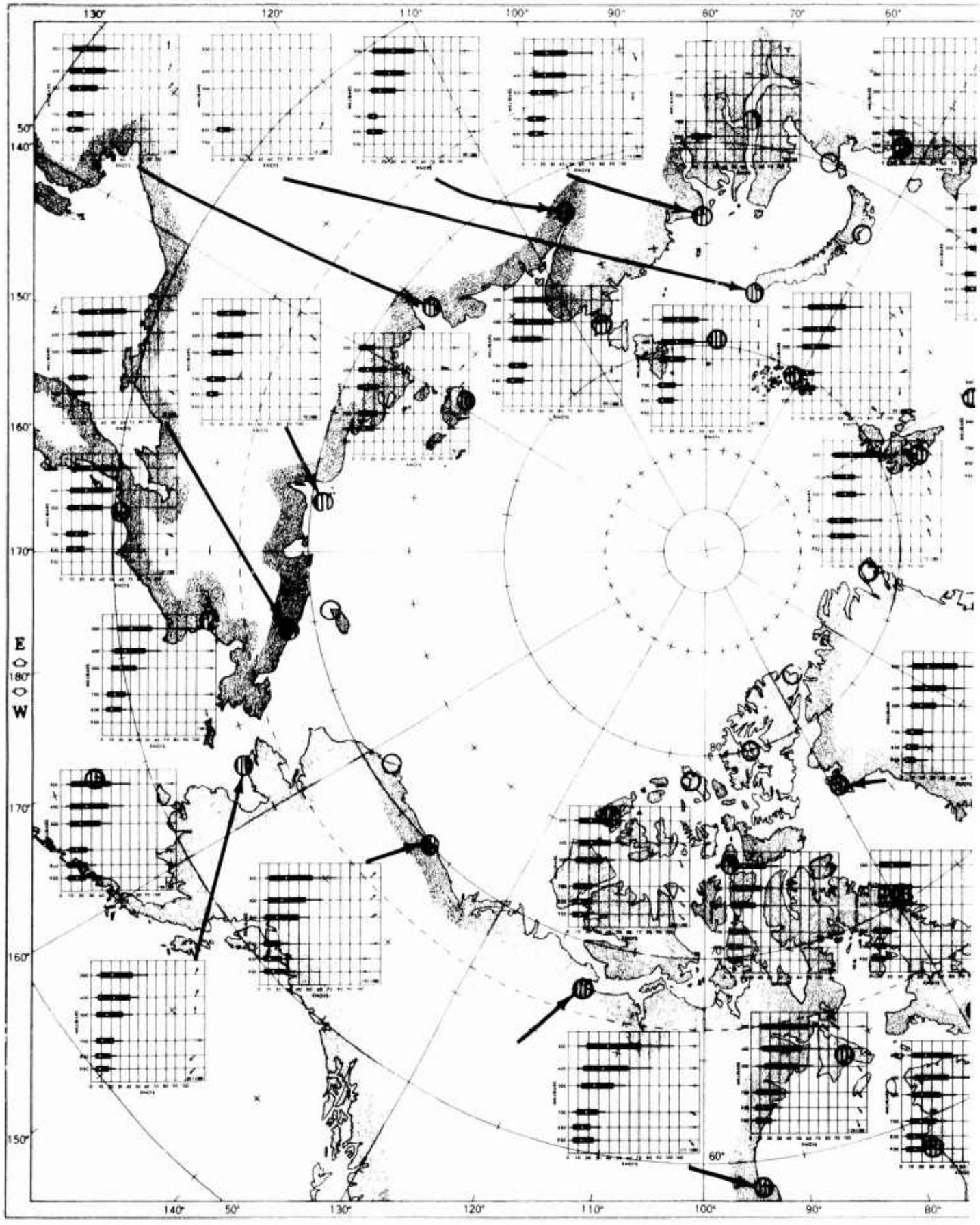
INDEX GRADIENT

CHART 257



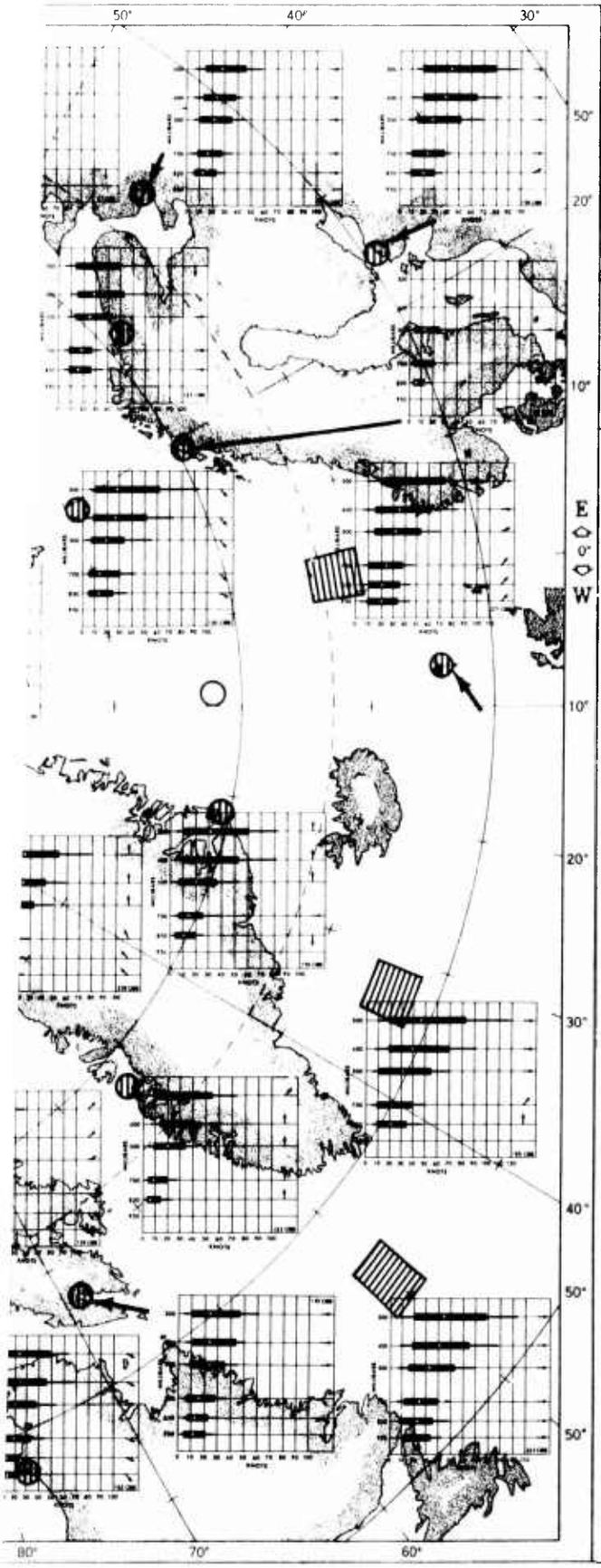
OCTOBER

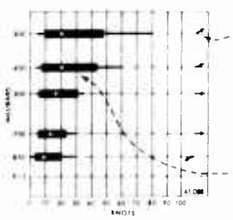
WIND (950 TO



O 300 MB)

CHART 258





Prevailing Direction To 16 Points

(Direction indicated for 300 millibar level is from WSW.)

Distribution of Scalar Wind Speed Knots

(a) Median

(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by

(At the 400 millibar level median speed was 20 knots, 5% of speeds were 4 knots or less, 16% were 8 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

OSTROV VRANGELYA

AMDERMA

MALYYE KARMAKULY

BARROW

NORD

JAN MAYEN

ISACHSEN

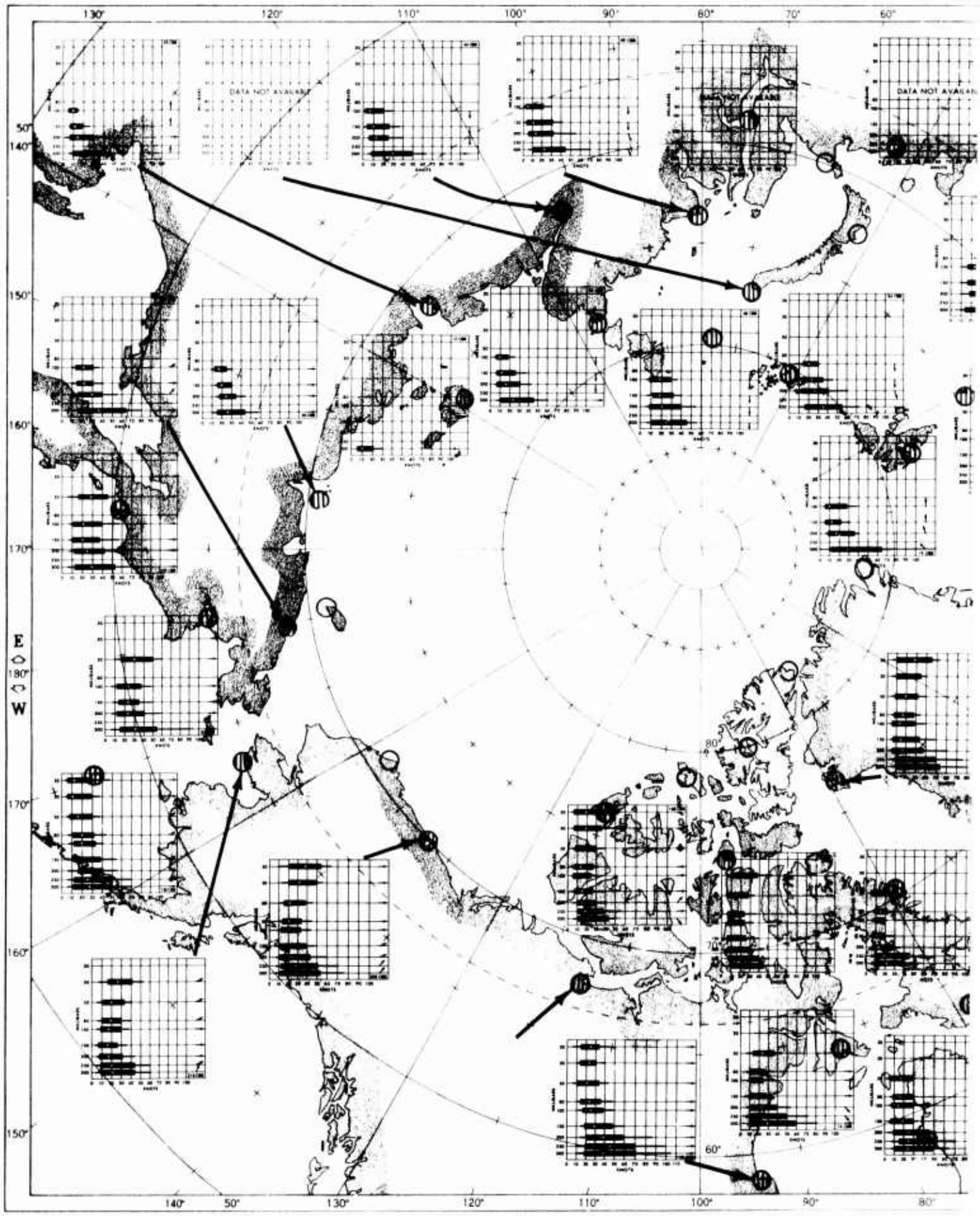
EUREKA

ALERT

2

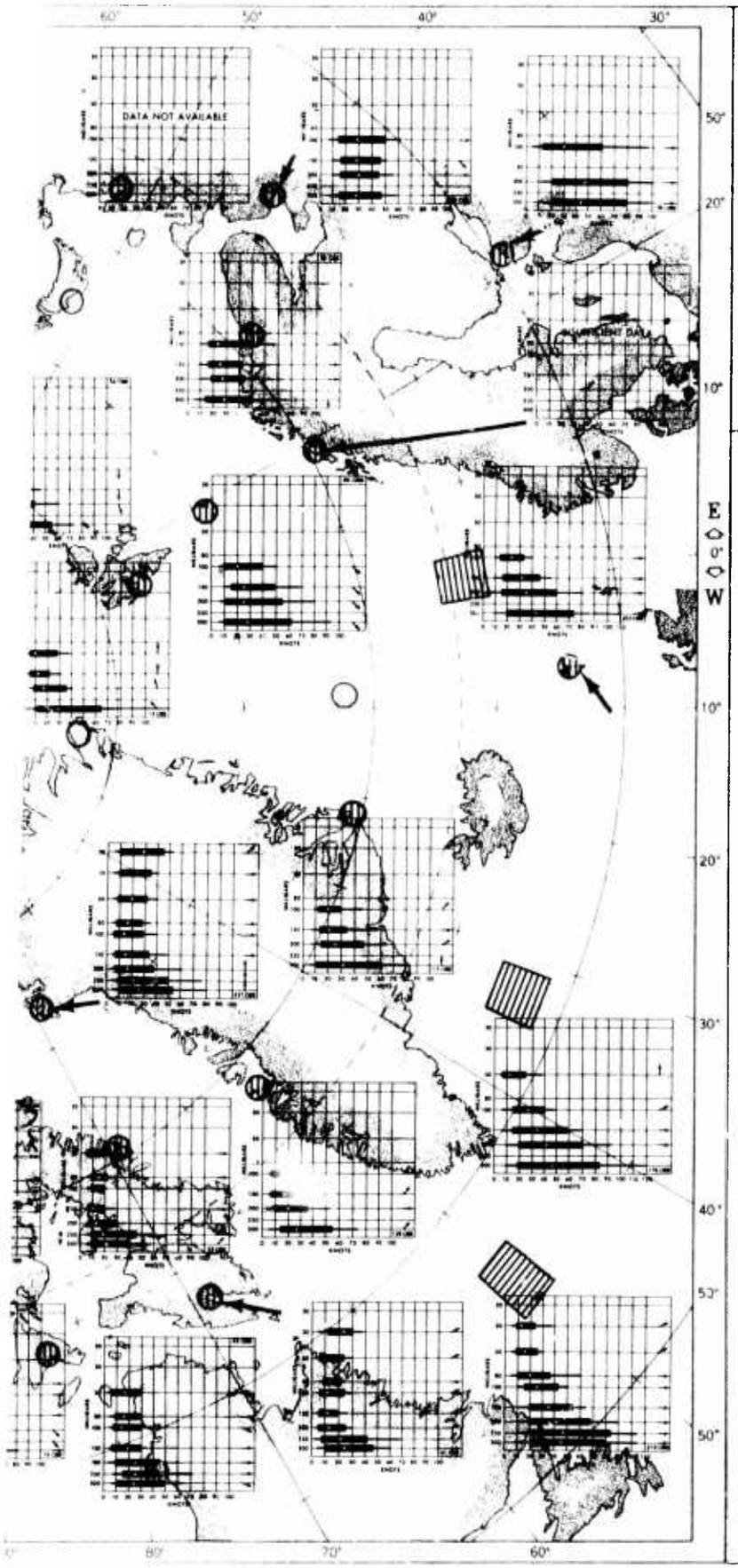
OCTOBER

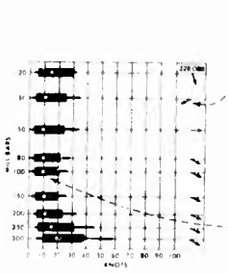
WIND (300 TO



300 TO 20 MB)

CHART 259





Prevailing Direction To 16 Points

(Direction indicated for 30 millibar level is from ENE)

Distribution of Scalar Wind Speed Knots

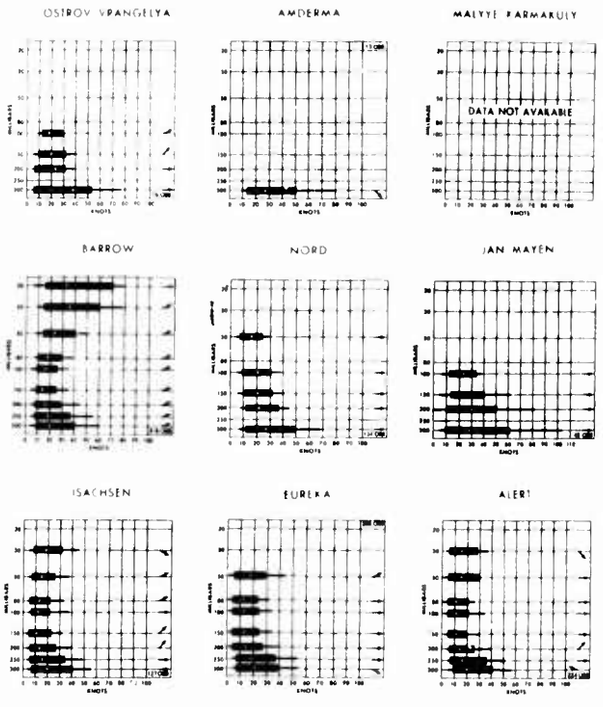
(a) median

(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by



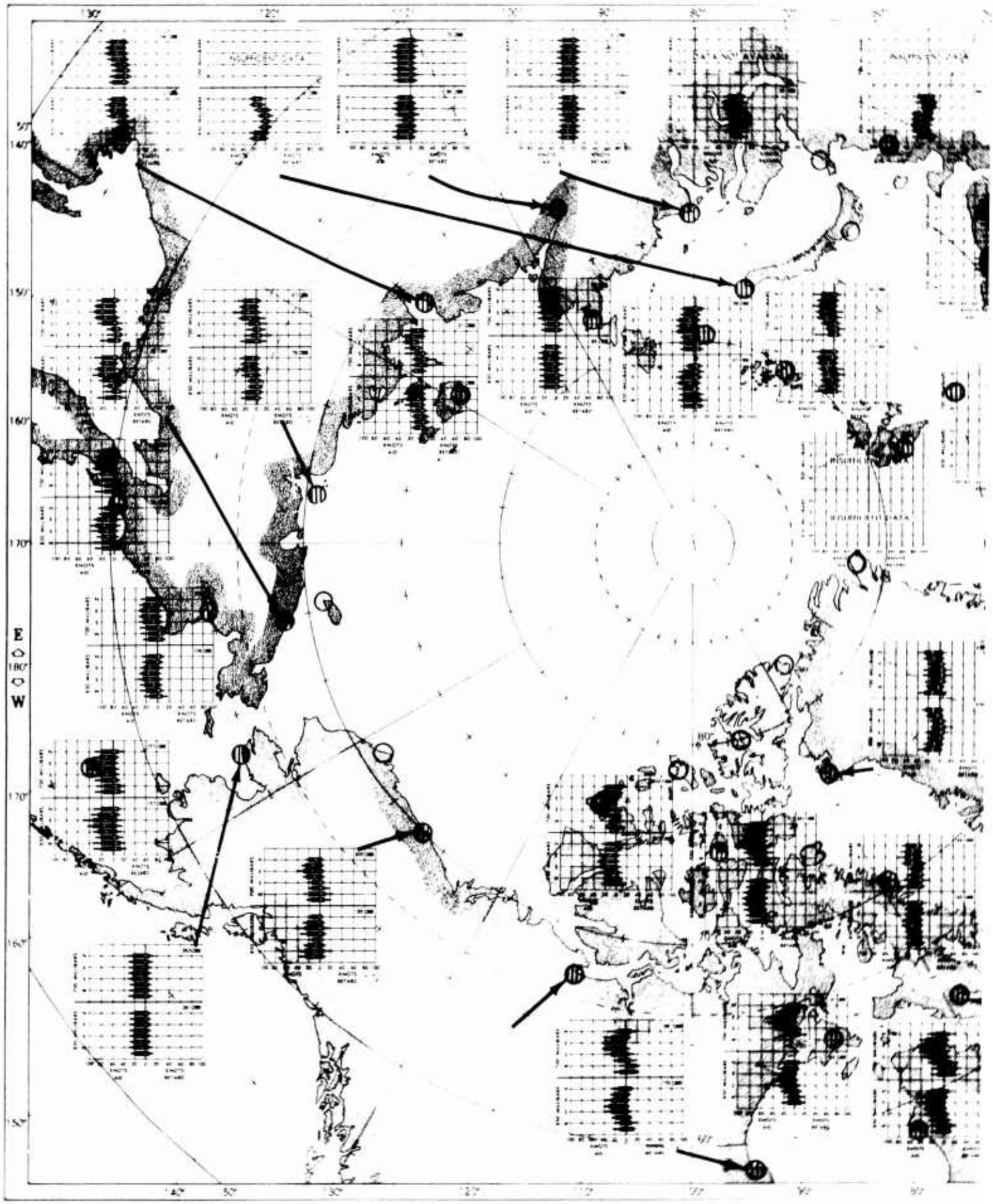
(At the 100 millibar level median speed was 10 knots. 5% of speeds were 2 knots or less, 16% were 4 knots or less, etc.)

Frequences are omitted when data for a level are missing or insufficient



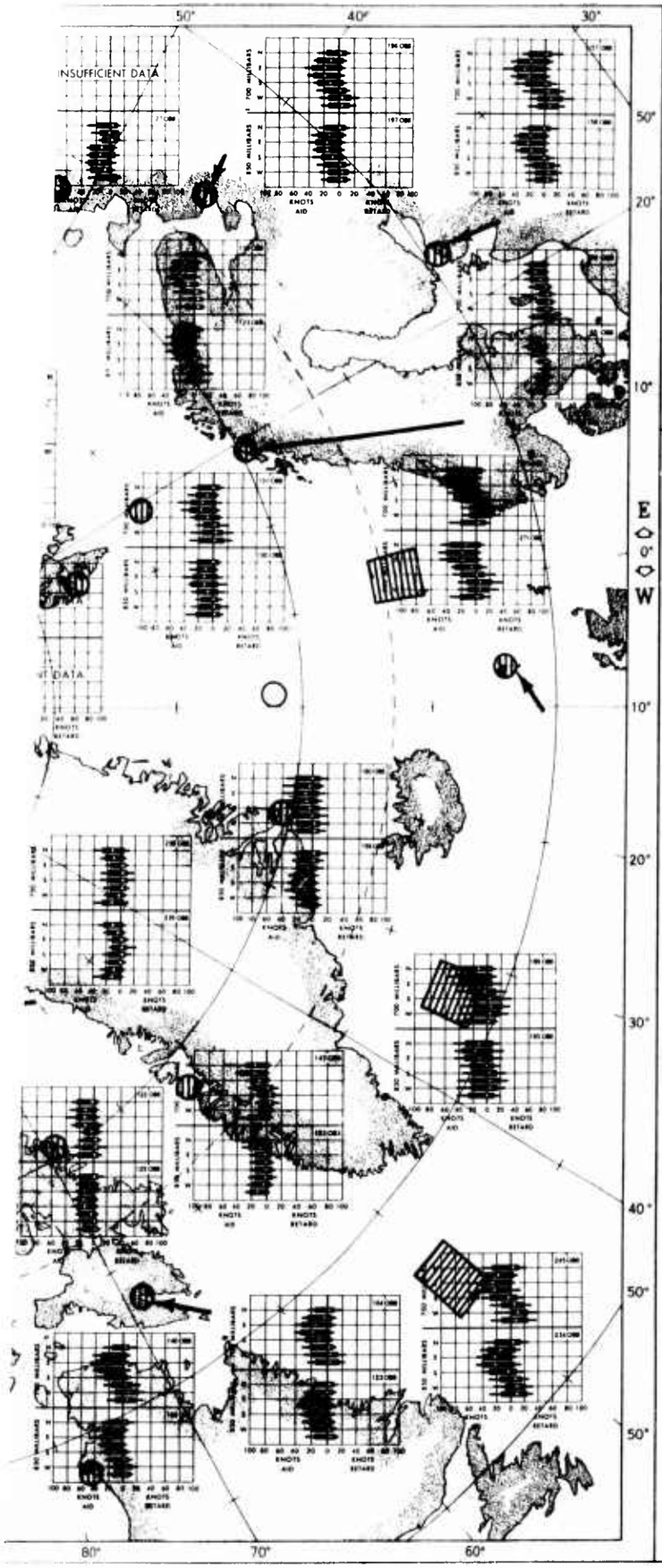
OCTOBER

WIND AID AND RETARD

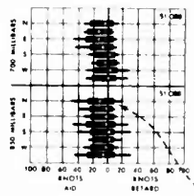


TARD (850 & 700 MB)

CHART 260



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 300 knots true air speed



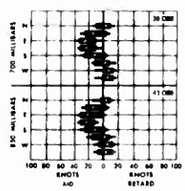
Read median and percentage frequency for direction toward which aircraft is flying thus



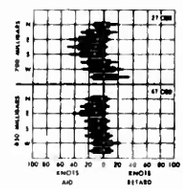
Basis omitted when data for a level are missing or insufficient

(For an aircraft flying toward north at the 850 millibar level, wind aided or increased ground speed by an average of 12 knots. Wind effect ranged from 28 knots aid to 8 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 20 knots retard in 90% of the observations.)

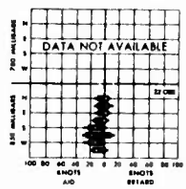
OSTROV VRANGELYA



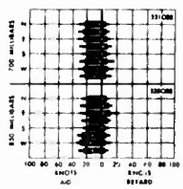
AMDERMA



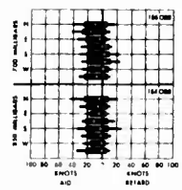
MALYYE KARMAKULY



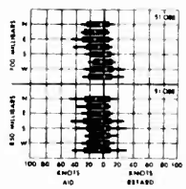
BARROW



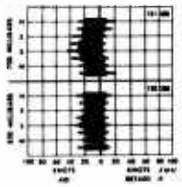
NORD



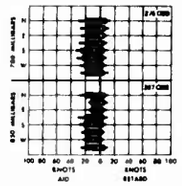
JAN MAYEN



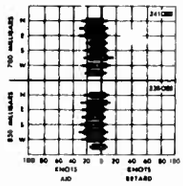
ISACHSEN



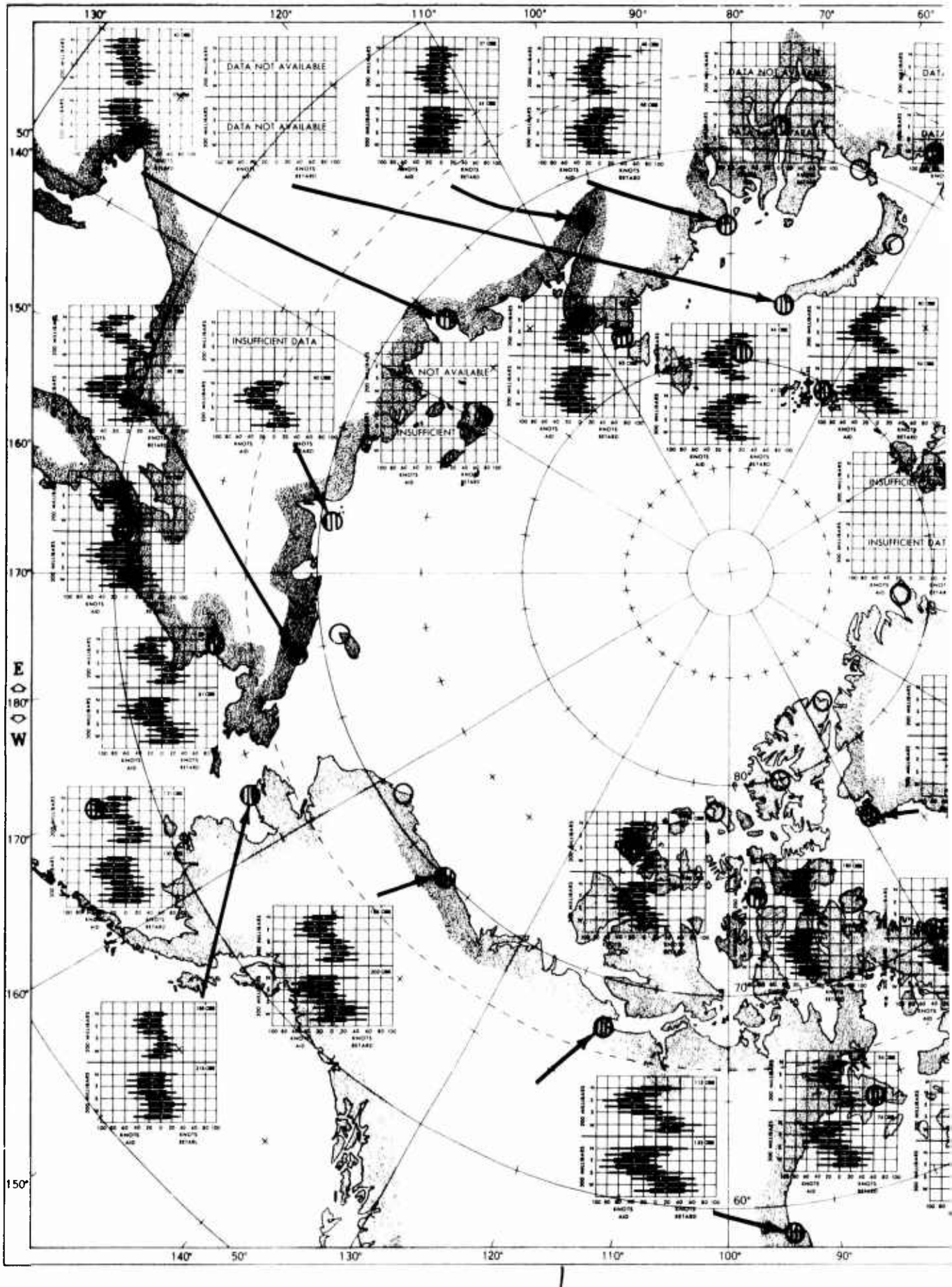
EUREKA



ALERT

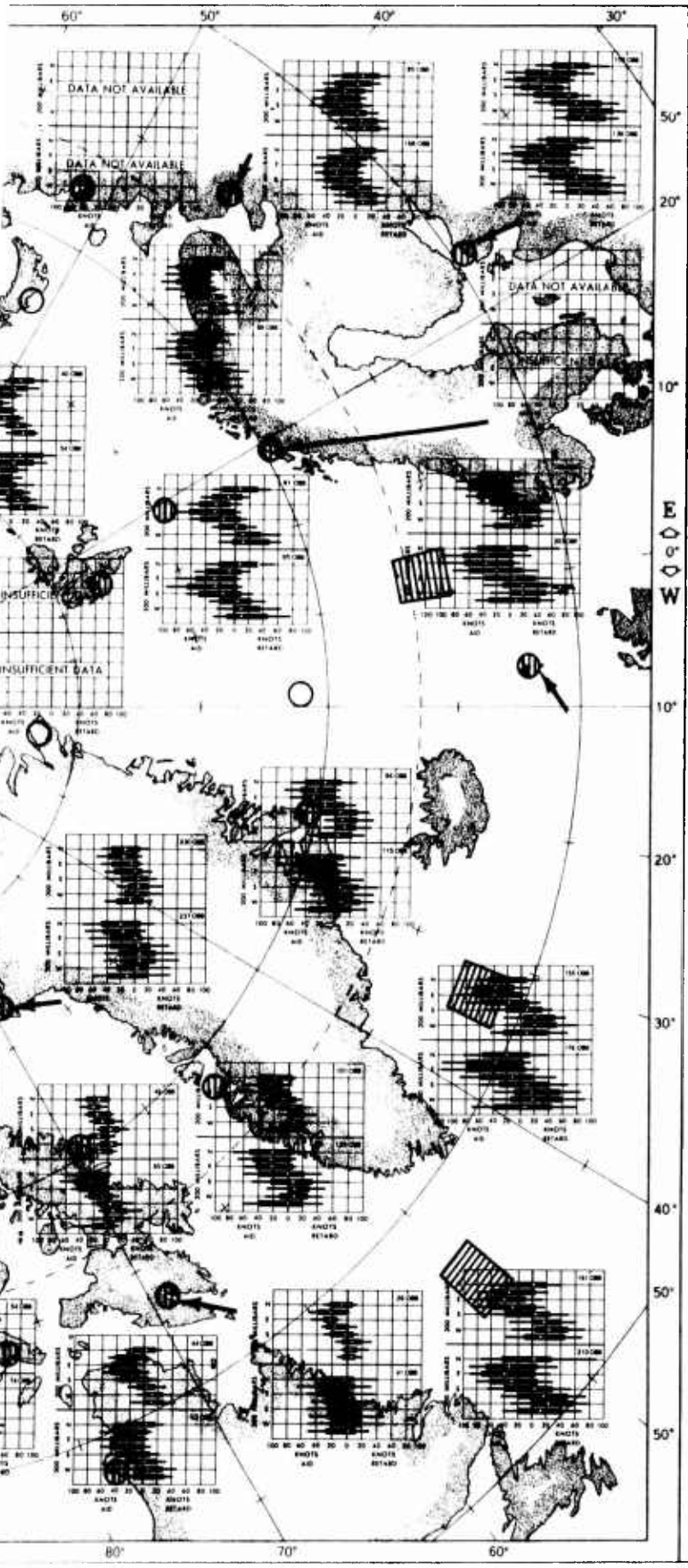


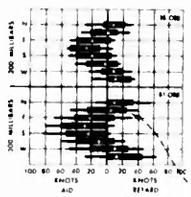
OCTOBER WIND AID AND RET



RETARD (300 & 200 MB)

CHART 261





Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 600 knots true air speed

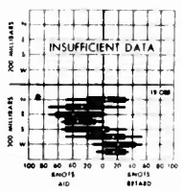
Read median and percentage frequency for direction toward which aircraft is flying thus



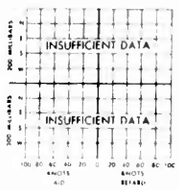
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward northeast at the 300 millibar level, wind retarded or decreased ground speed by an average of 4 knots. Winds effect ranged from 26 knots aid to 25 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 40 knots retard in 90% of the observations.)

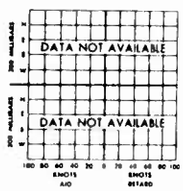
OSTROV VRANGELYA



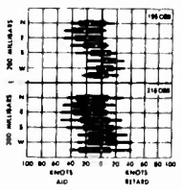
AMDERMA



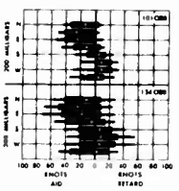
MALYYE KARMAKULY



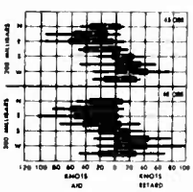
BARROW



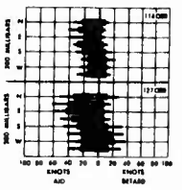
NORD



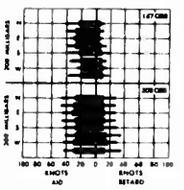
JAN MAYEN



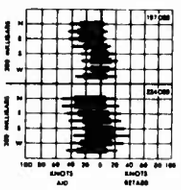
ISACHSEN



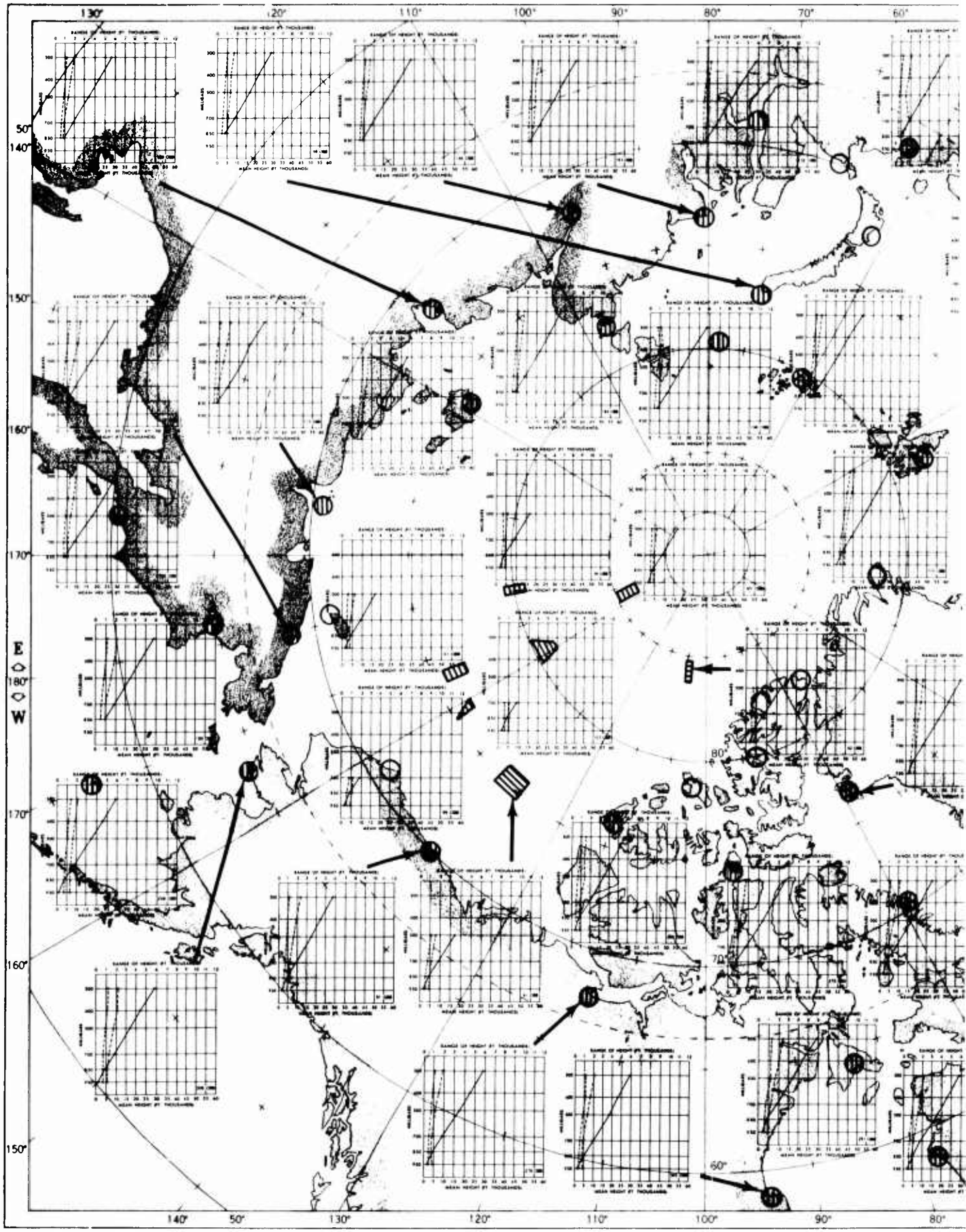
EUREKA



ALERT

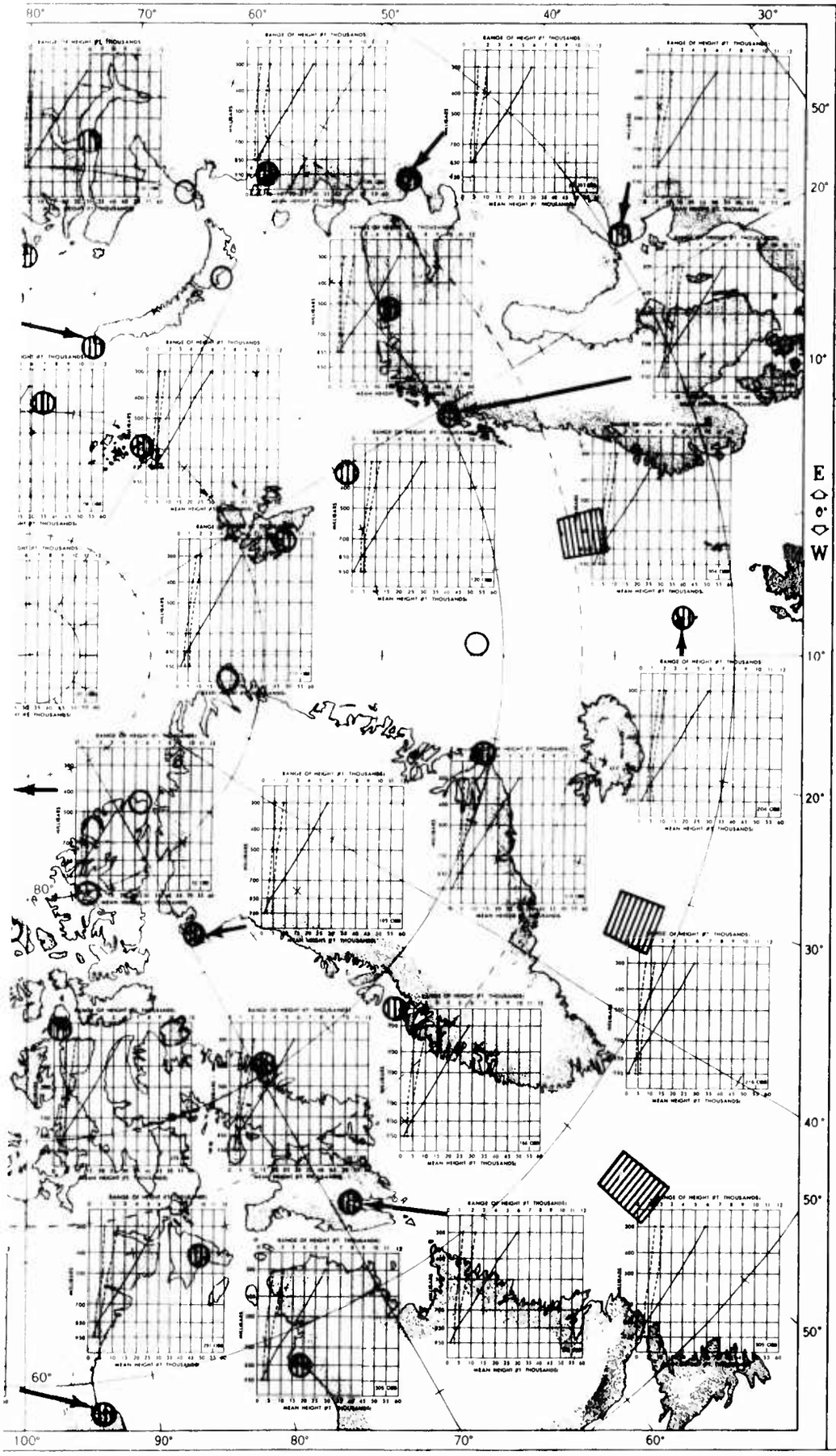


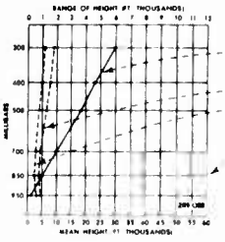
OCTOBER HEIGHT (950 T



HEIGHT (950 TO 300 MB)

CHART 26





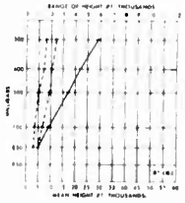
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
  - (1) 5% 95% Range
  - (2) 16% 84% Range

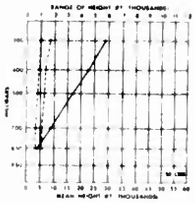
(For the 850 millibar level the mean Height = 5,000 feet, the 5% 95% Height range = 800 feet and the 16% 84% range = 450 feet.)

Mean and ranges of height are omitted when data for a level are missing or insufficient

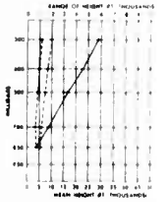
OSTROV VRANGELYA



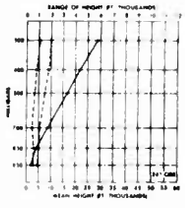
AMDERMA



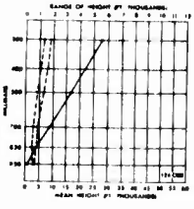
MALYYE KARMAKULY



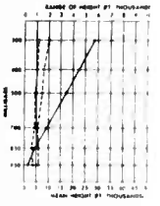
BARROW



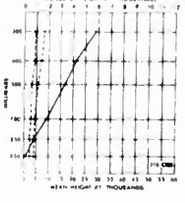
NORD



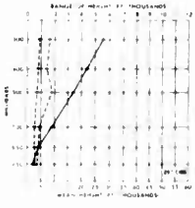
JAN MAYEN



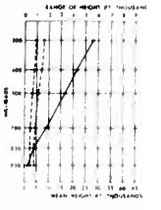
ISACHSEN



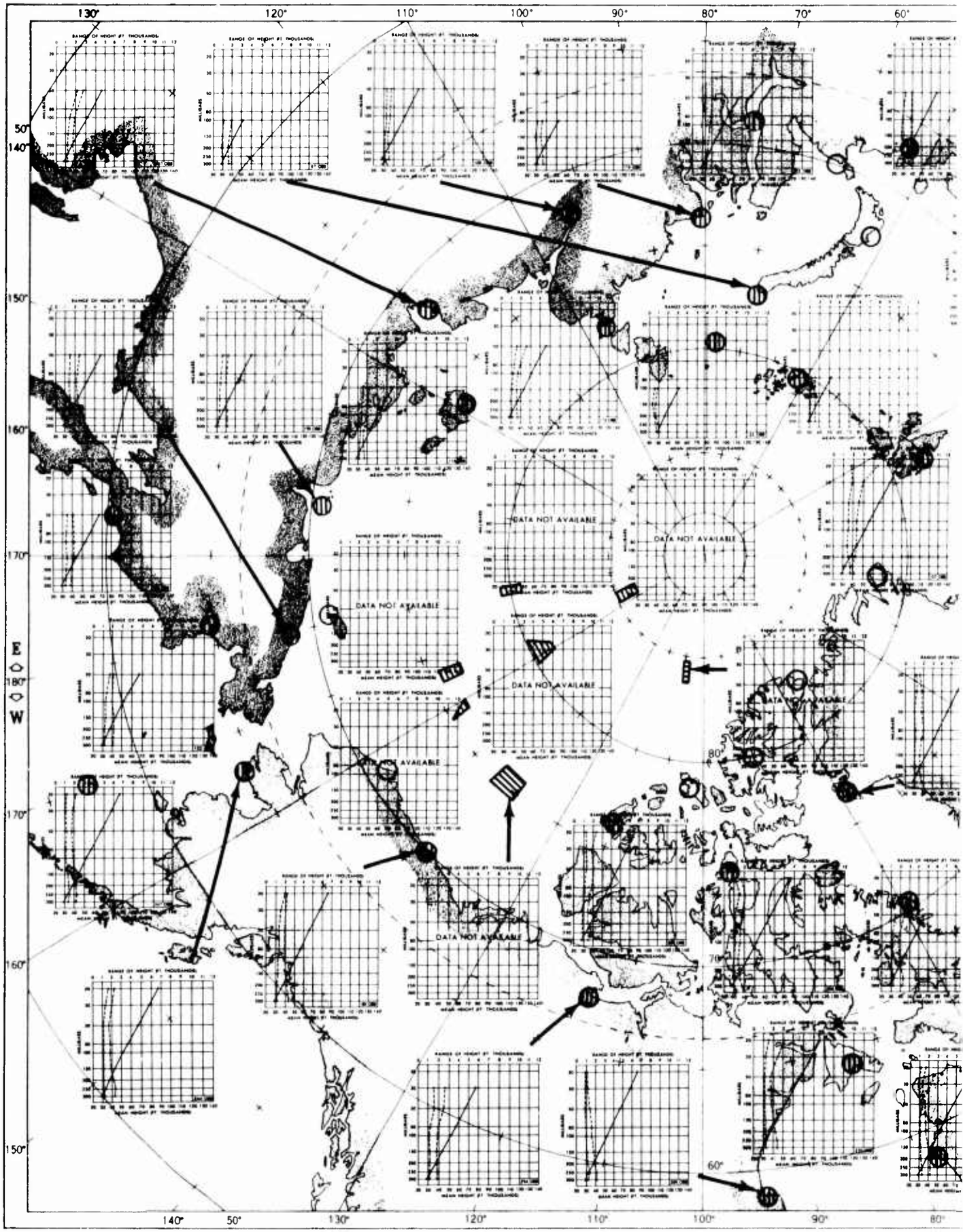
EUREKA



ALERT

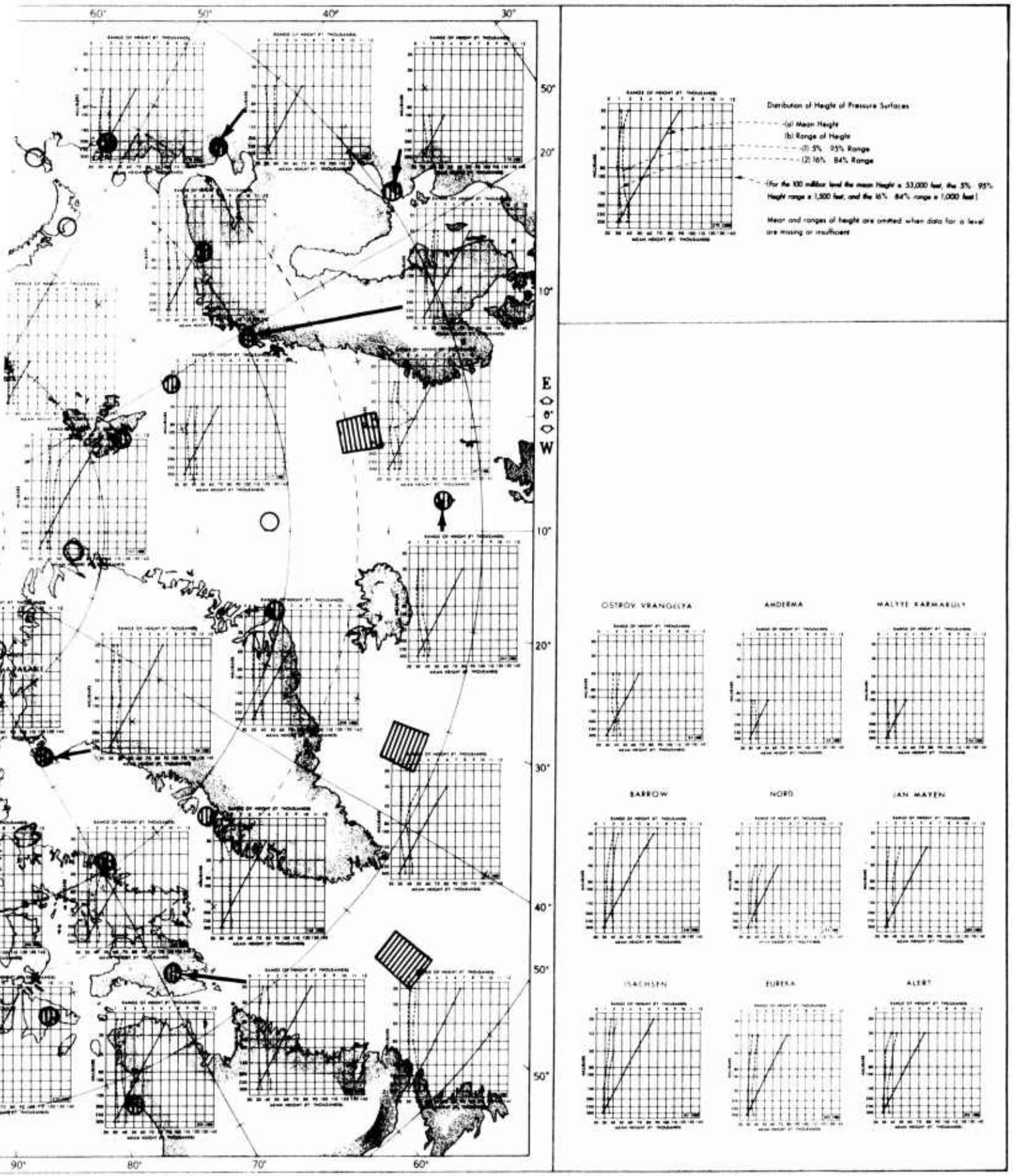


OCTOBER HEIGHT (300

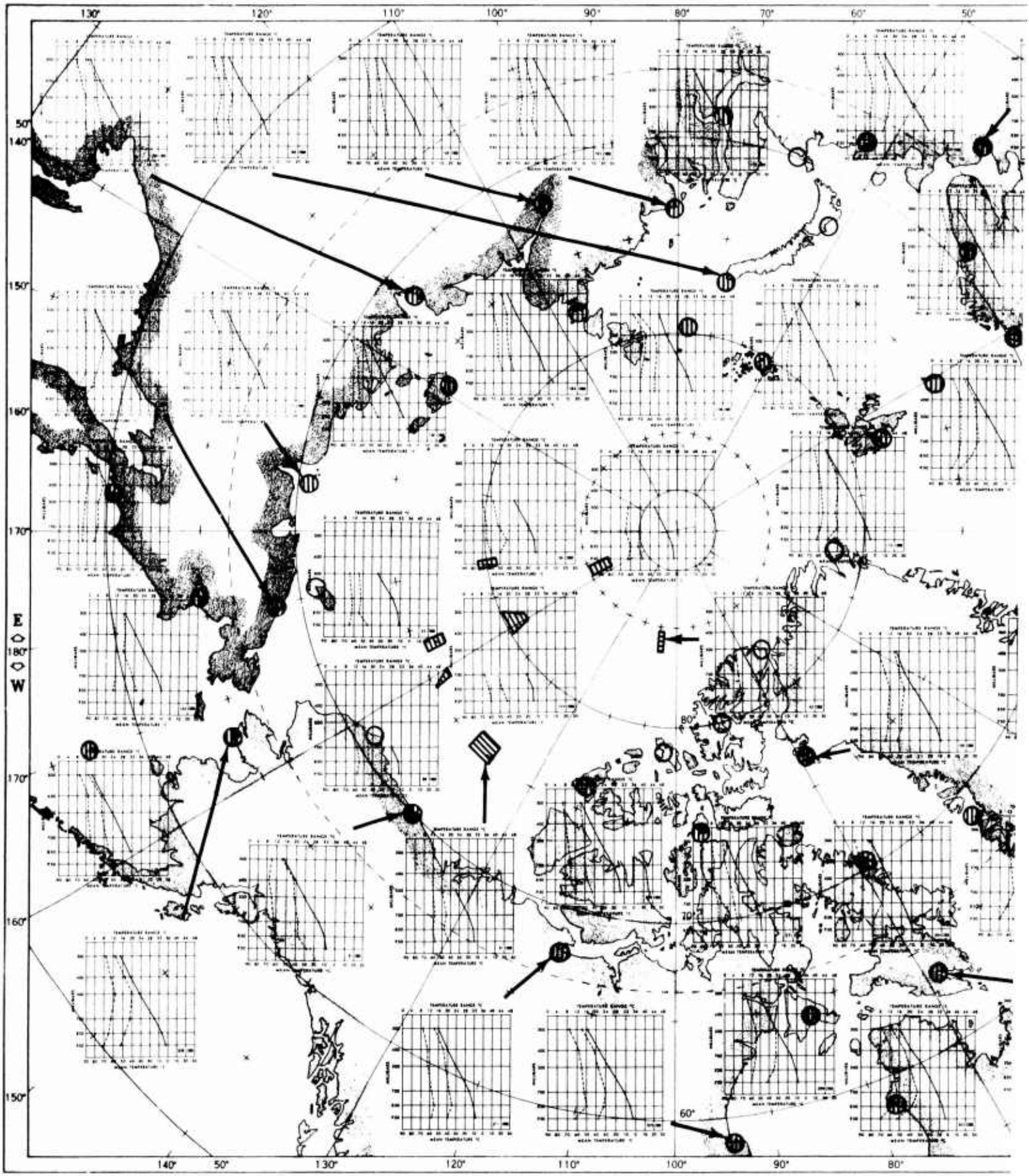


T (300 TO 20 MB)

CHART 263

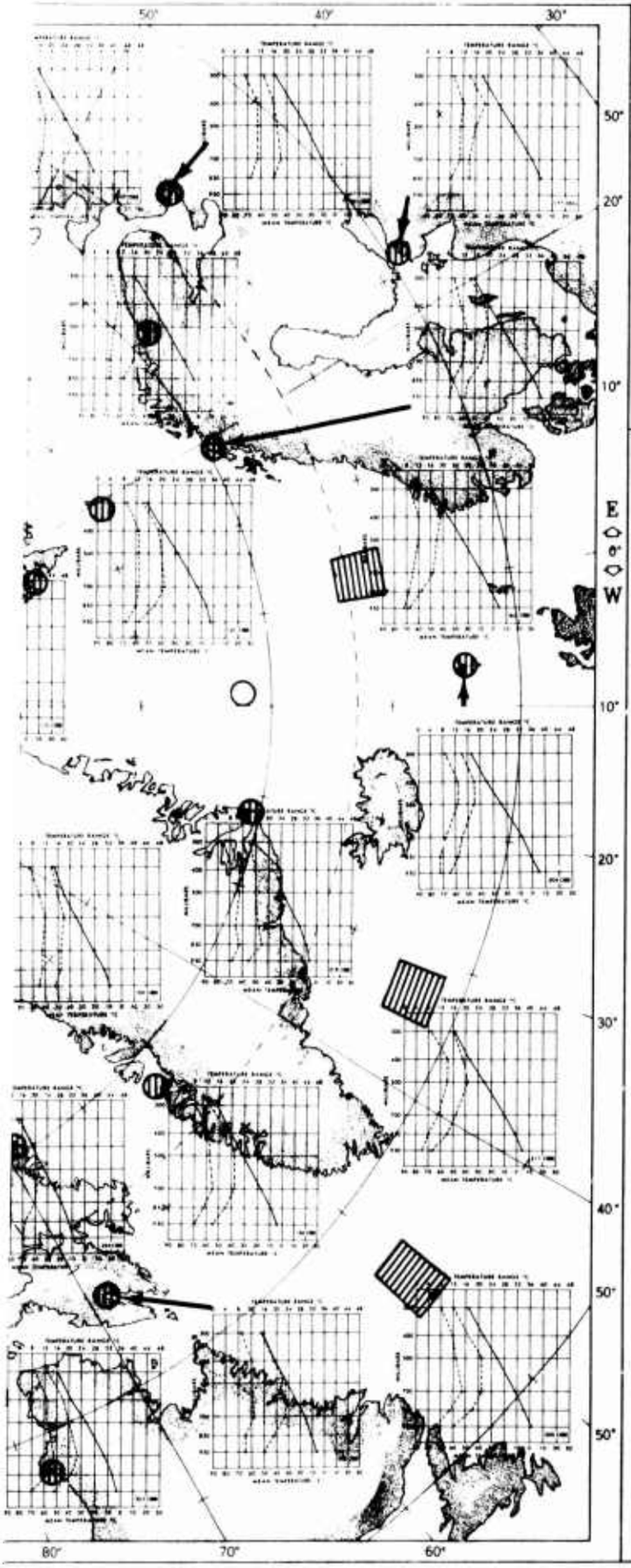


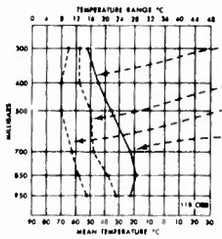
OCTOBER TEMPERATURE (950 TO



950 TO 300 MB)

CHART 264





Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature

(b) Range of Temperature

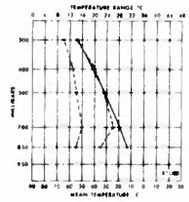
(1) 5% - 95% Range

(2) 16% - 84% Range

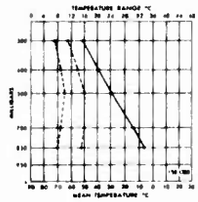
(*For the 700 millibar level the mean temperature is -22°C, the 5% - 95% range is 17°C, and the 16% - 84% range is 11°C.*)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

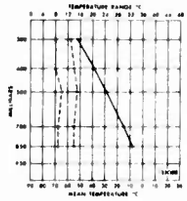
OSTROV VRANGELYA



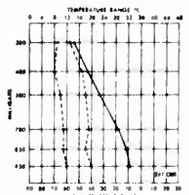
AMDERMA



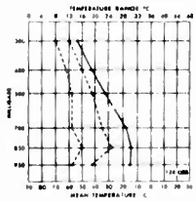
MALYYE KARMAKULY



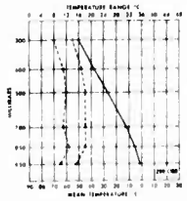
BARROW



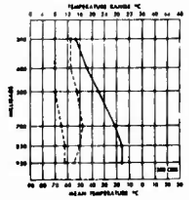
NORD



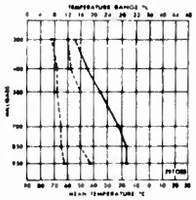
JAN MAYEN



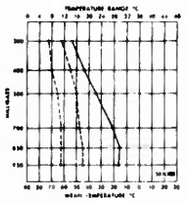
ISACHSEN



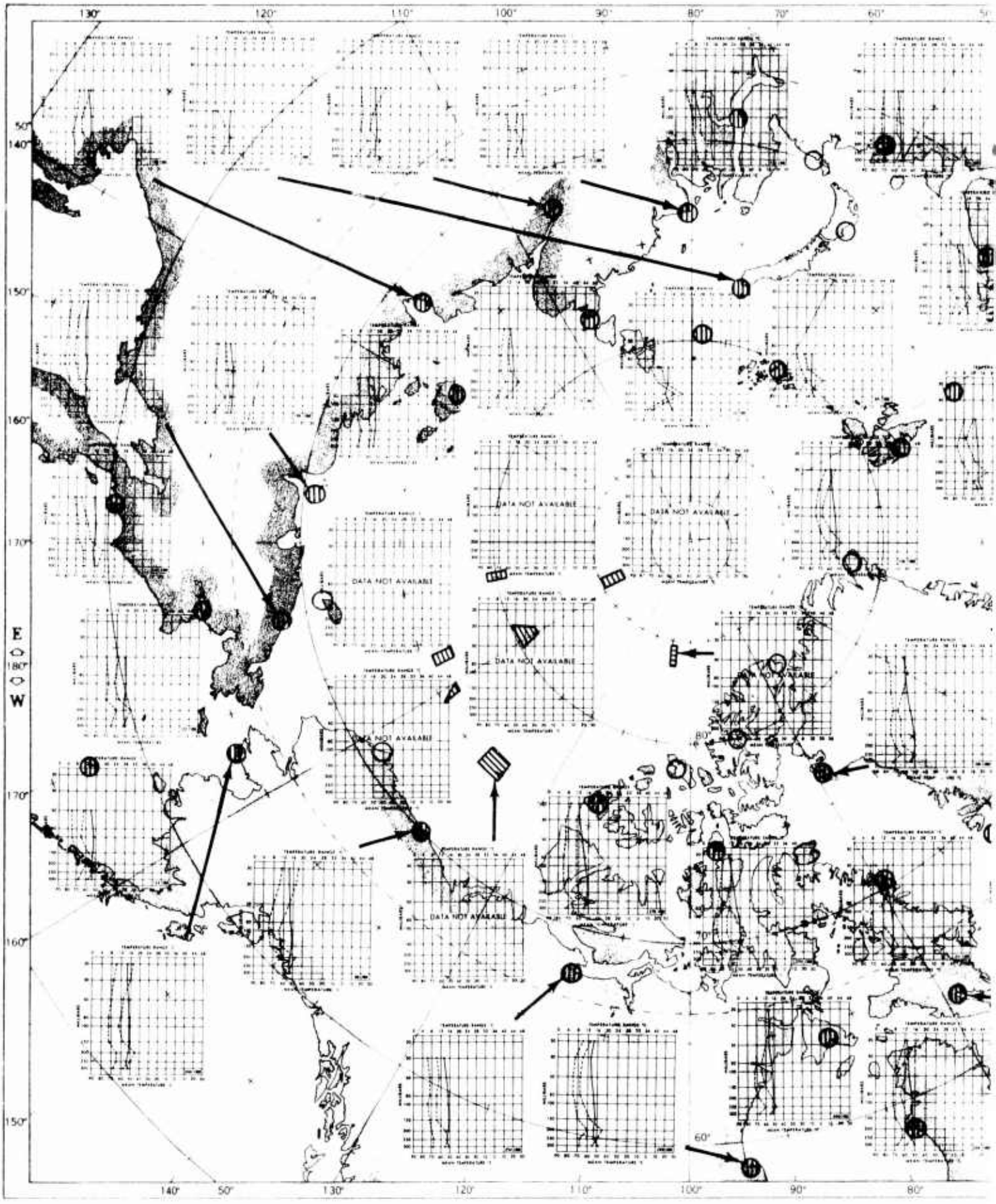
EUREKA



ALERT

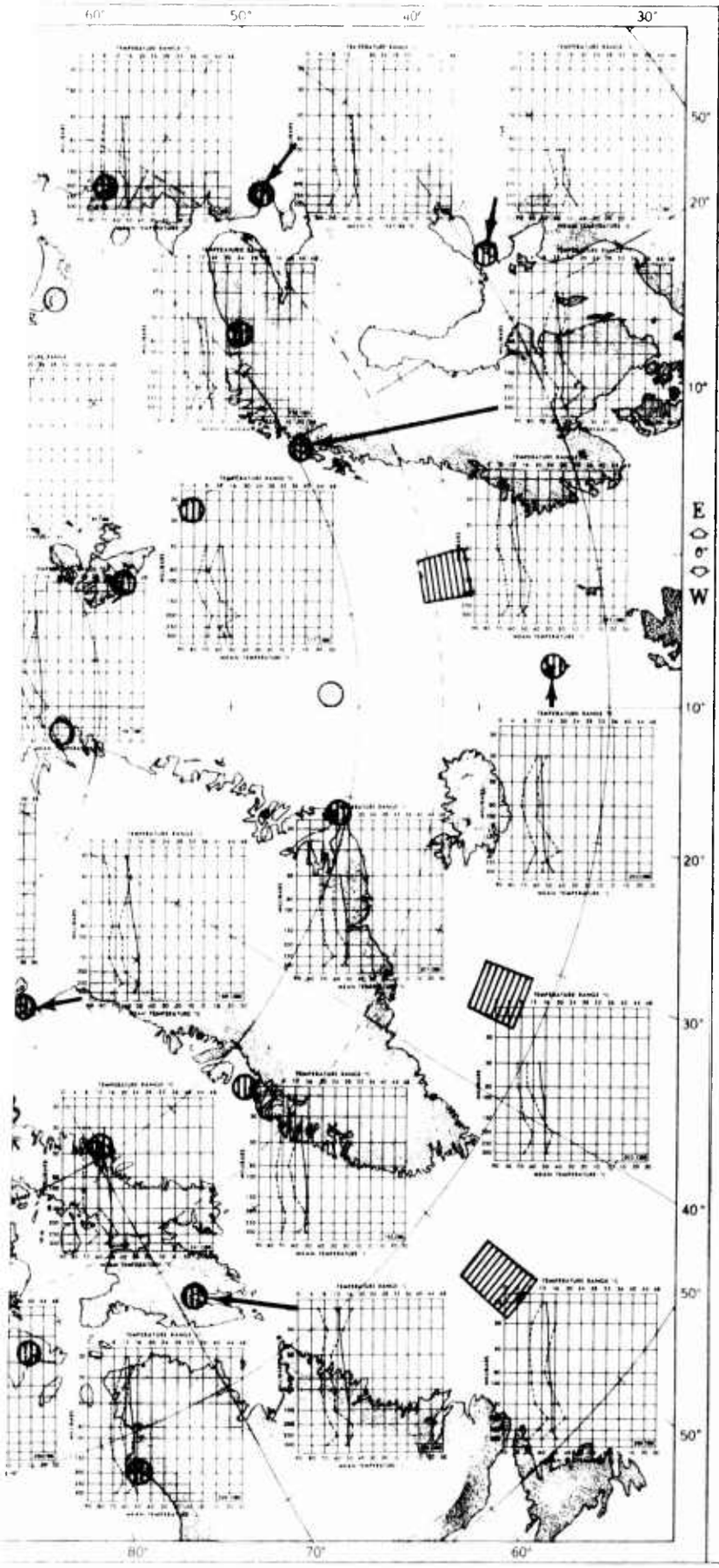


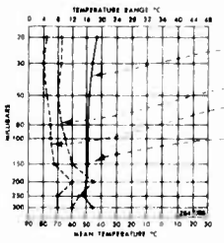
OCTOBER TEMPERATURE (300



IRE (300 TO 20 MB)

CHART 265





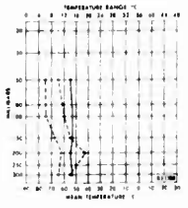
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% 95% Range
(2) 16% 84% Range

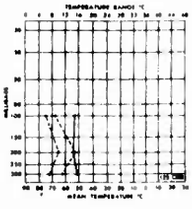
(For the 150 millibar level the mean temperature is -49°C the 5% 95% range is 12°C and the 16% 84% range is 7°C)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

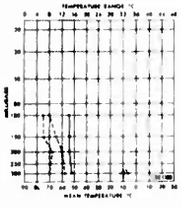
OSTROV VRANGELYA



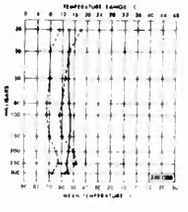
AMDERMA



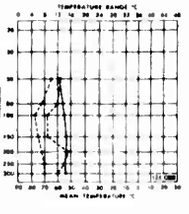
MALYYE KARMAKULY



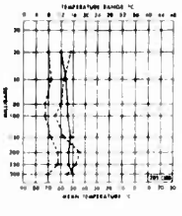
BARROW



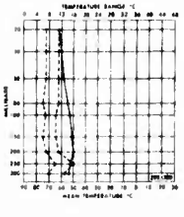
NORD



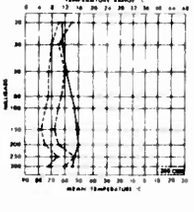
JAN MAYEN



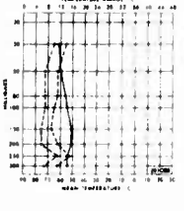
ISACHSEN



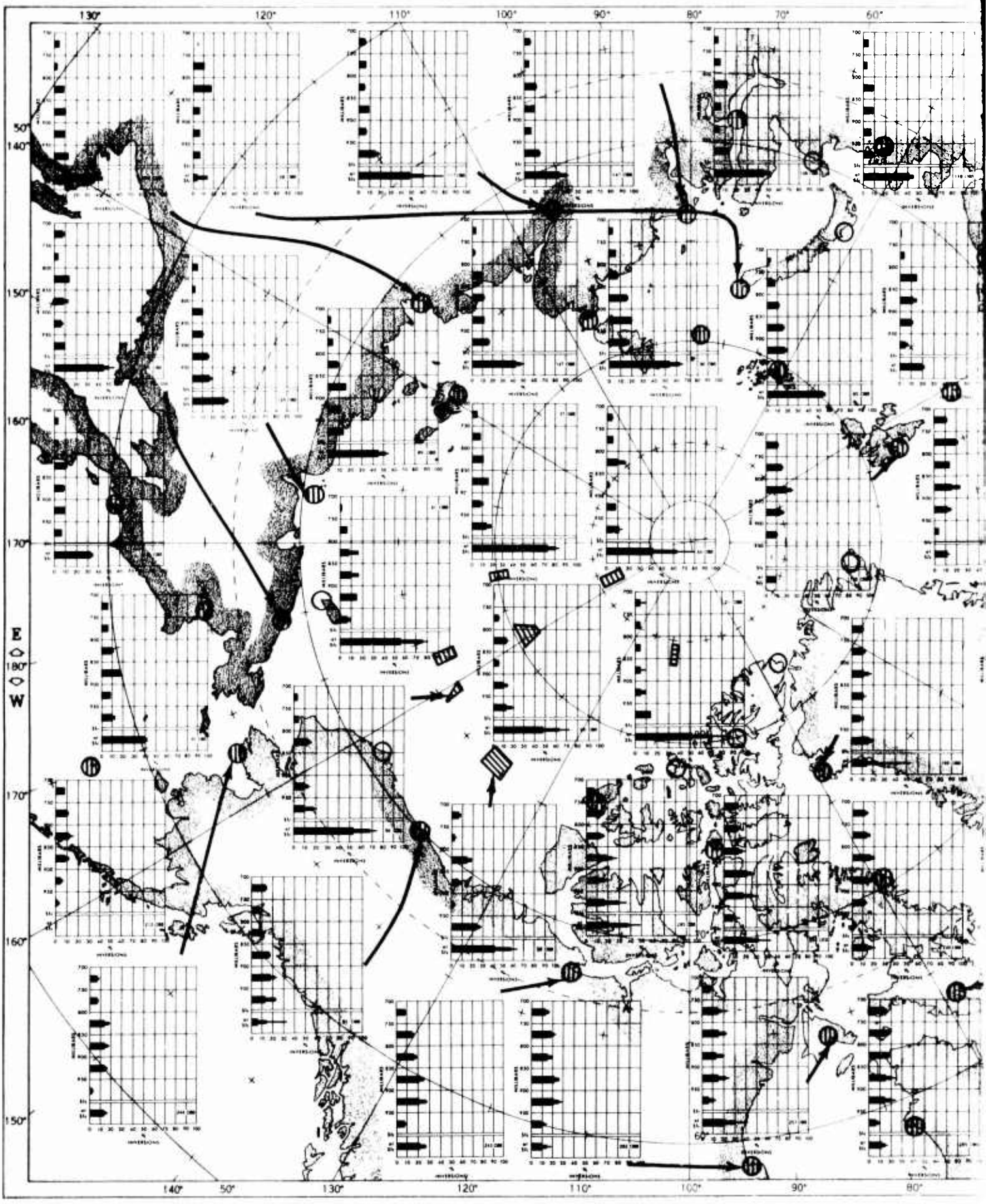
EUREKA



ALERT

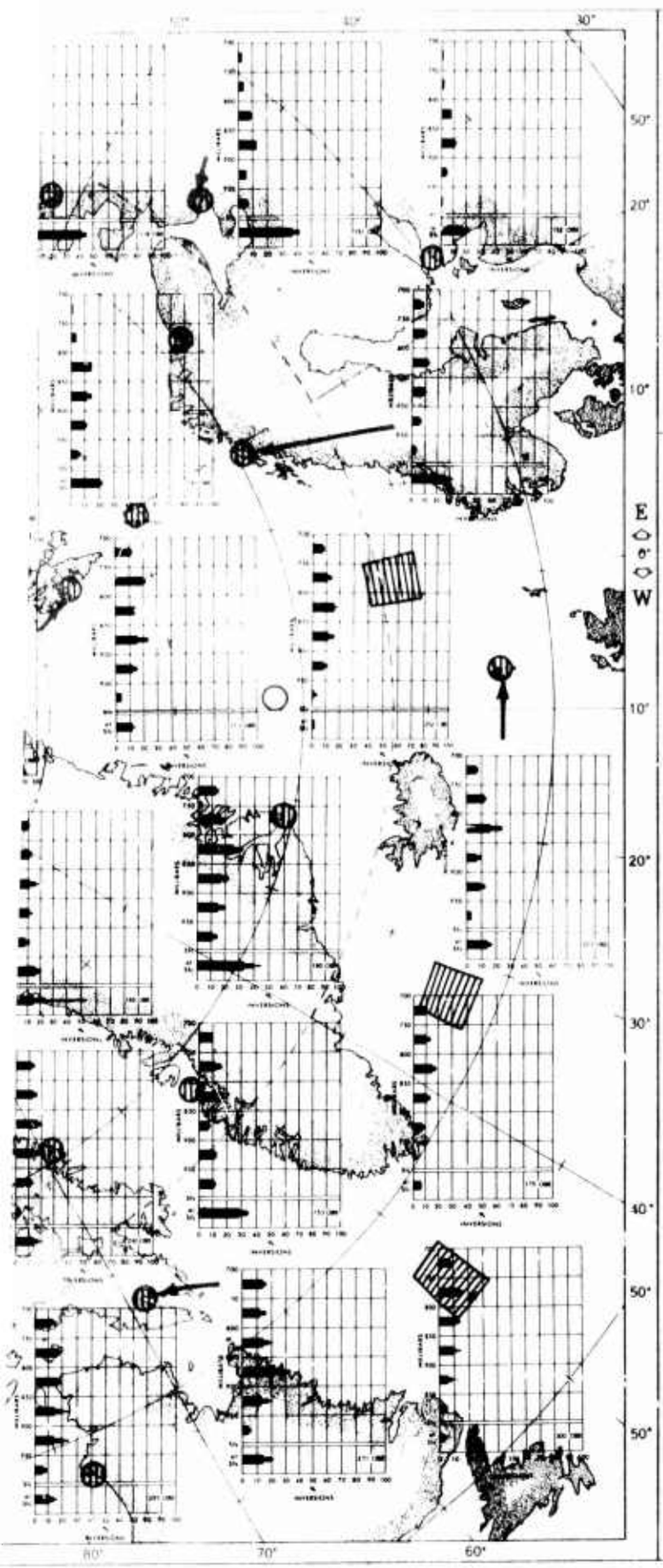


OCTOBER INVERSION



RSIONS

CHART 266



Percentage Frequencies of three intensities of Temperature Inversions within each of seven layers from the surface to 700 millibars

General Criteria

(a) Temperature inversion constant or increasing temperature with increasing height that persisted at least 5 millibars (approximately 50 meters)

(b) Layers Inversions were assigned to 7 arbitrary layers according to the pressure at their bases

750 to 701 millibars
800 to 751 millibars
850 to 801 millibars
900 to 851 millibars
950 to 901 millibars
5 millibars above the surface to 951 millibars
At the surface to 49 millibars above the surface

(c) Intensity change in temperature per 100 meters increase in height of

0°C TO +0.9°C | +1.0°C TO +1.9°C | +2.0°C OR MORE

When more than one inversion was recorded within a layer the one with the greatest intensity was counted

0 No occurrence

Blank No data

(28% [80 52] of all radiosonde ascents recorded temperature inversions of +1.0°C to +1.9°C per 100 meters with bases in the layer from the surface to 49 millibars above)

PROV VRANGELYA

AMDERMA

MALYYE KARMAKULY

BARROW

NORD

JAN MAYEN

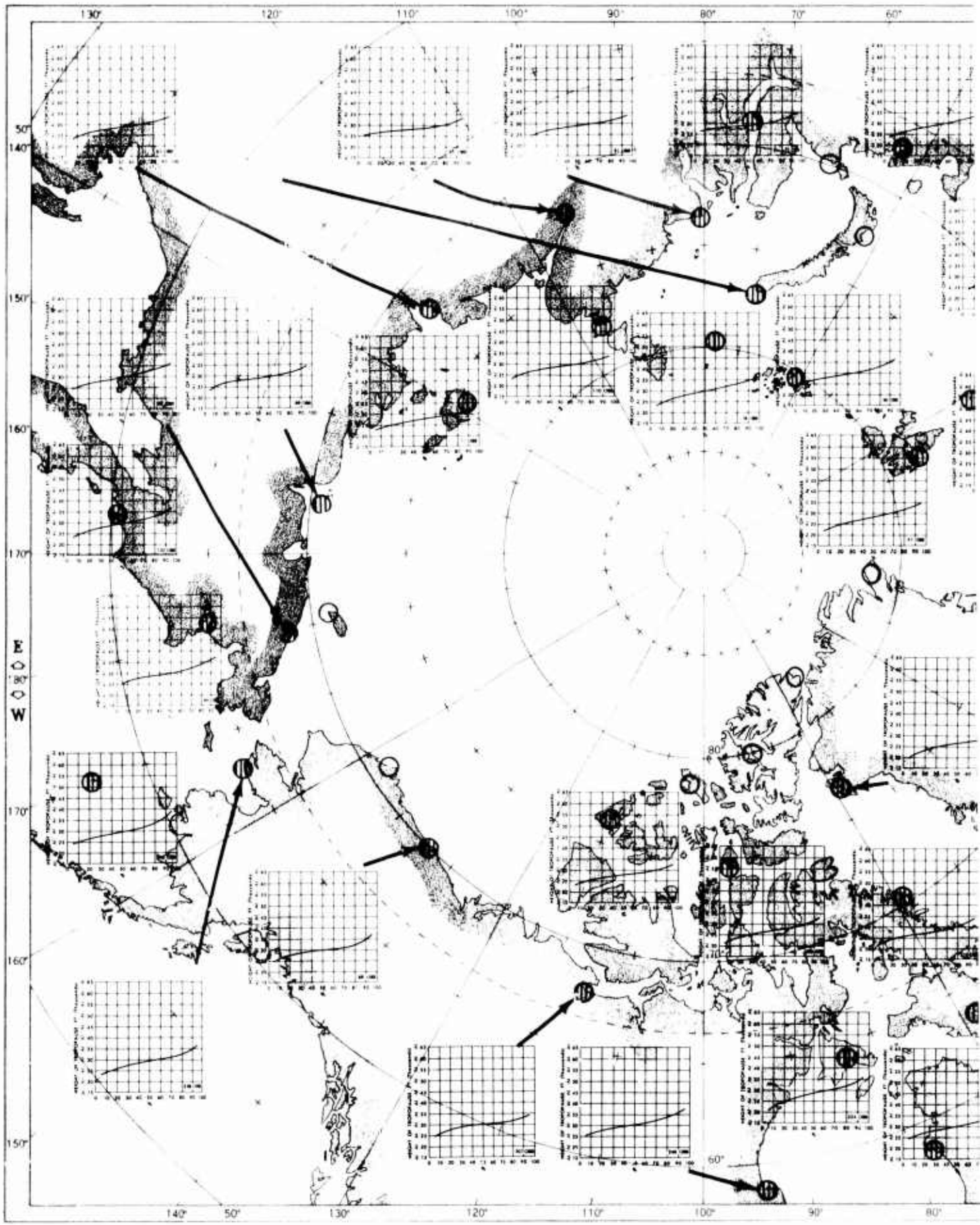
ISACHSEN

EUREKA

ALERT

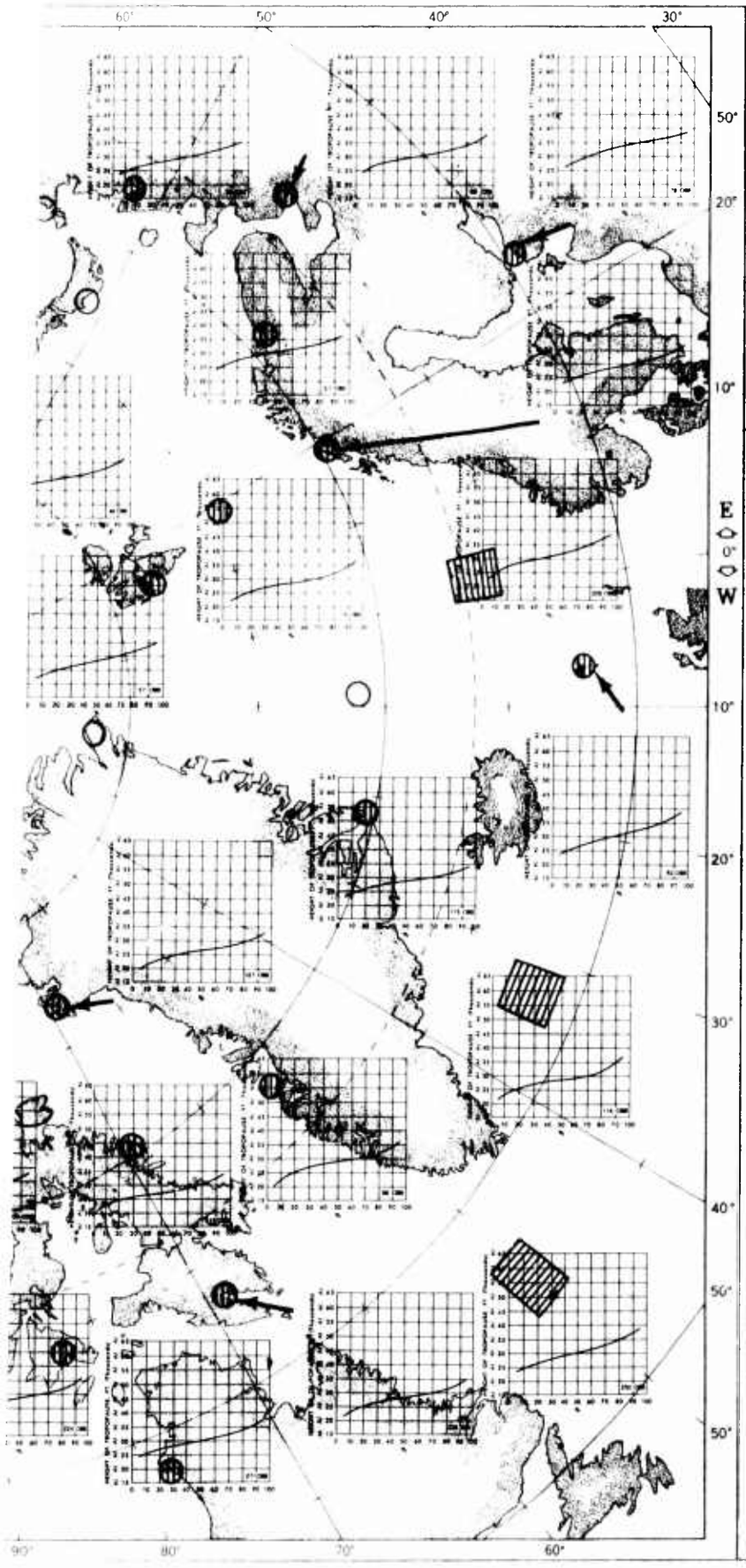
OCTOBER

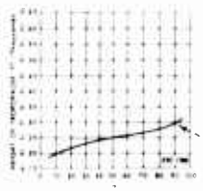
HEIGHT OF TRC



OF TROPOPAUSE

CHART 267

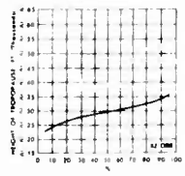




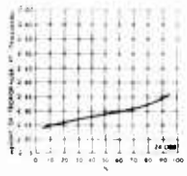
Percentage Frequency of Heights of the Tropopause equal to or less than the height intersected by the curve

[90% of all heights of the tropopause were thirty thousand feet or less]

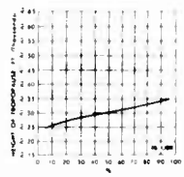
OSTROV VRANGELYA



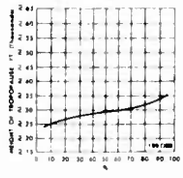
AMDERMA



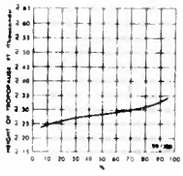
MALYYE KARMAKULY



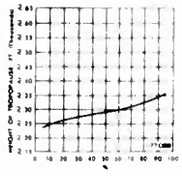
BARROW



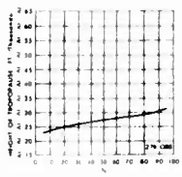
NORD



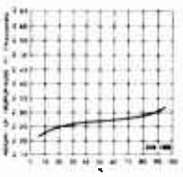
JAN MAYEN



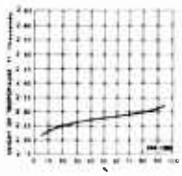
ISACHSEN



EUREKA

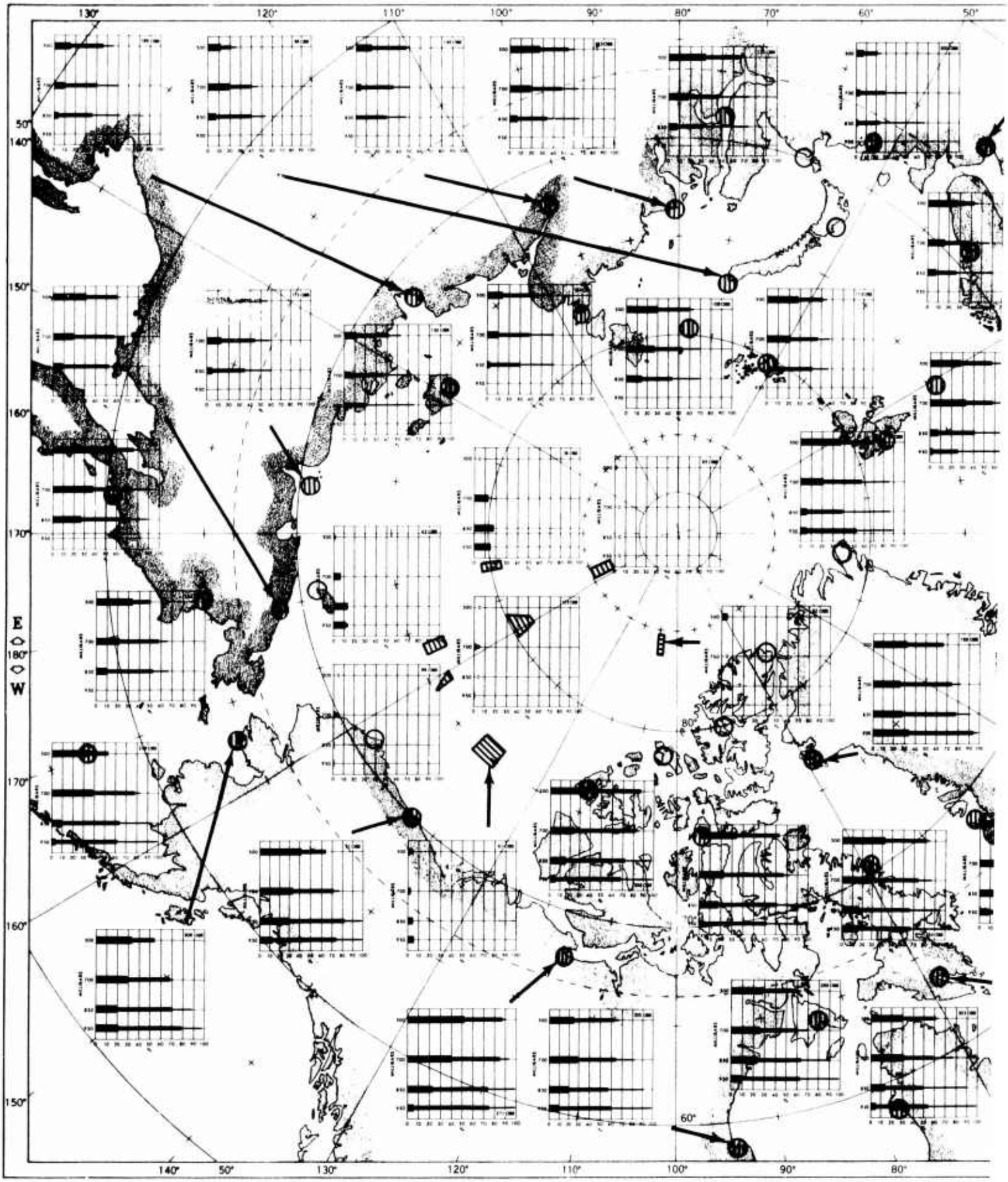


ALERT



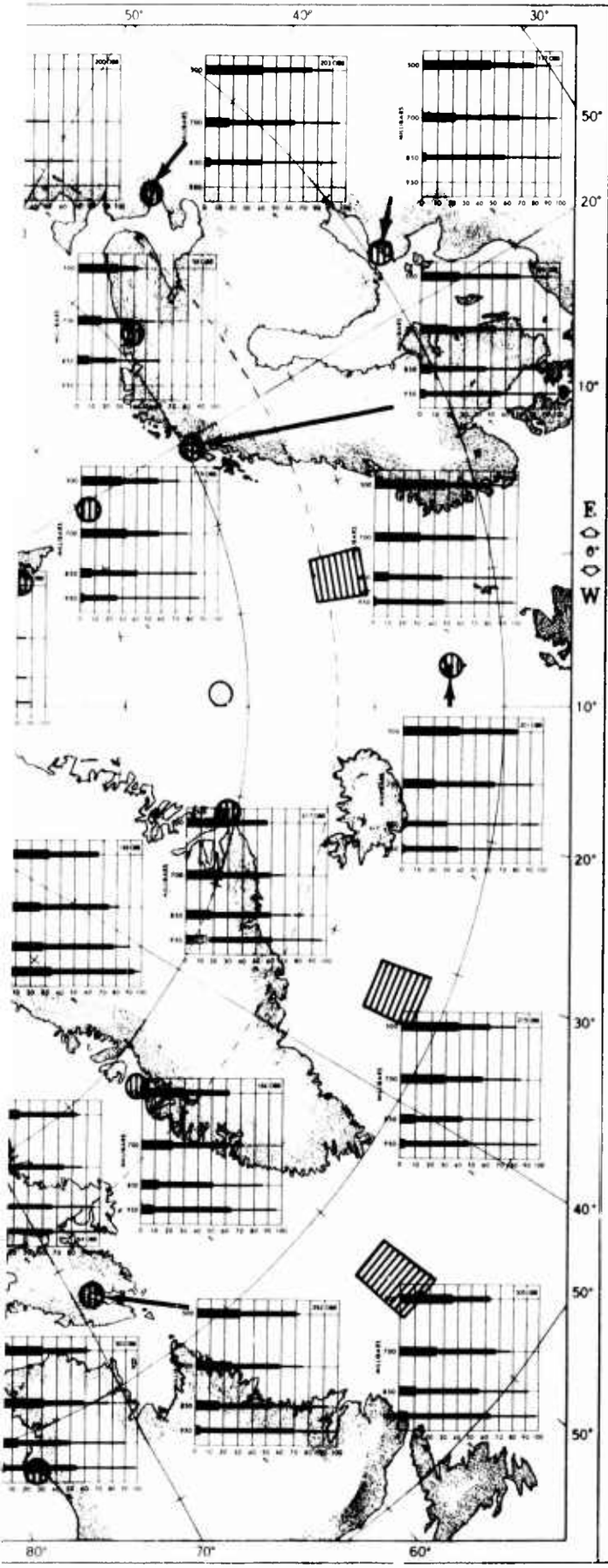
OCTOBER

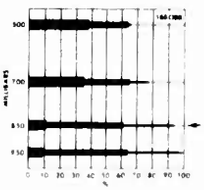
RELATIVE HUMID



HUMIDITY

CHART 268



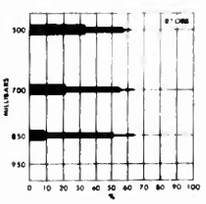


Distribution of Relative Humidity at Pressure Surfaces

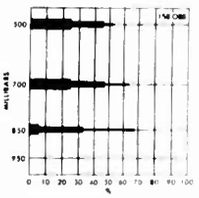
(a) Percentage Frequency of Relative Humidity as indicated by

(For the 850 millibar level Relative Humidity was 30% - 59% for 11% of all observations, 60% - 84% humidity occurred 50% [61 minus 11] of the observations, and 85% - 100% humidity occurred 33% [94 minus 61] of the observations.)

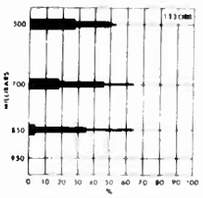
OSTROV VRANGELYA



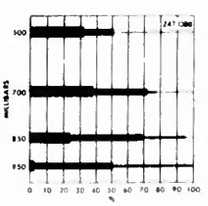
AMDERMA



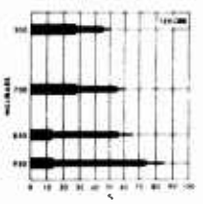
MALYYE KARMAKULY



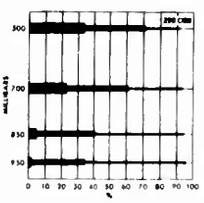
BARROW



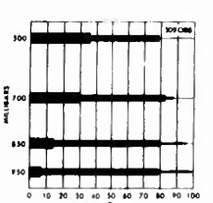
NORD



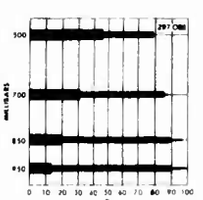
JAN MAYEN



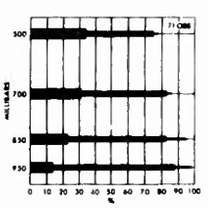
ISACHSEN



EUREKA

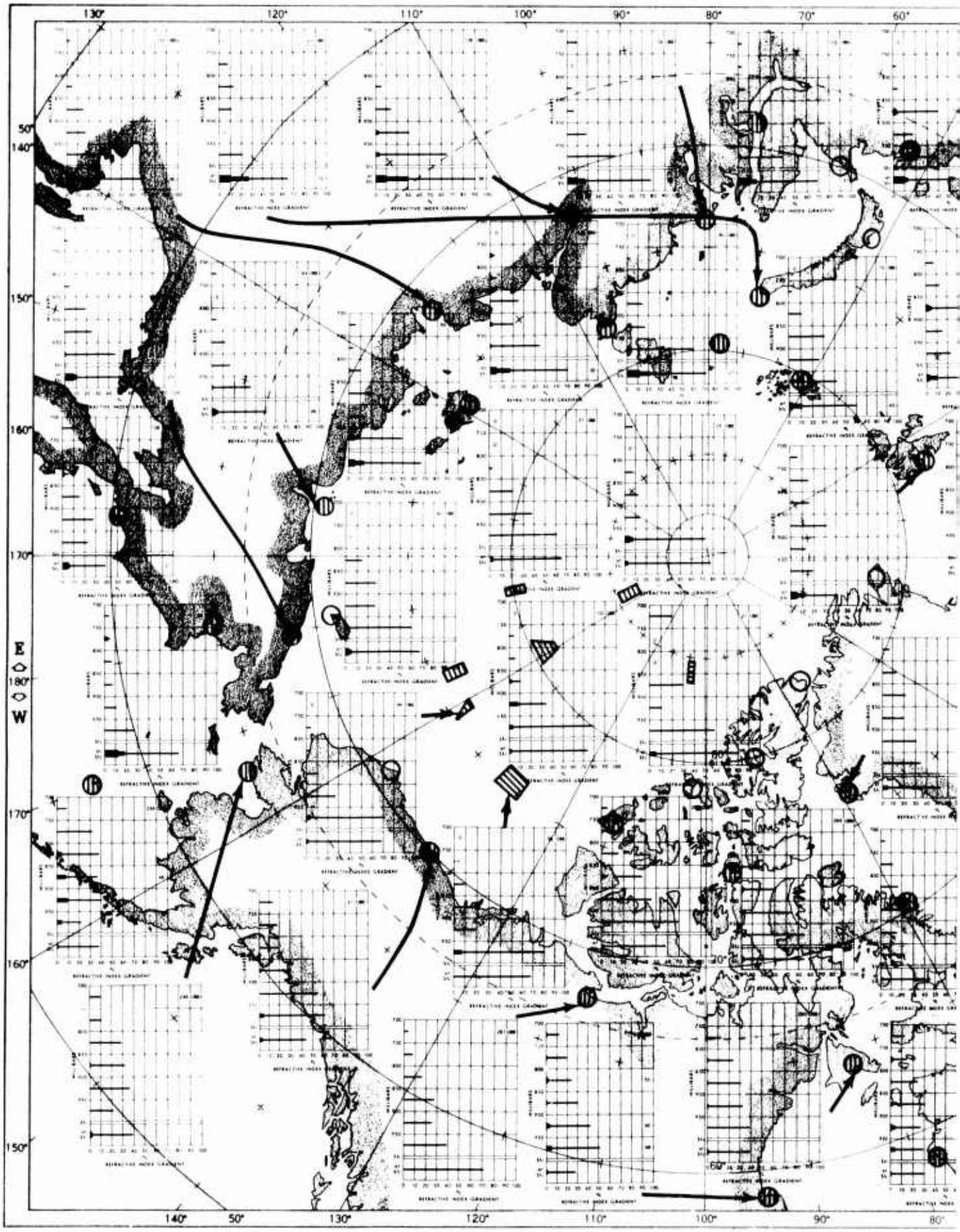


ALERT



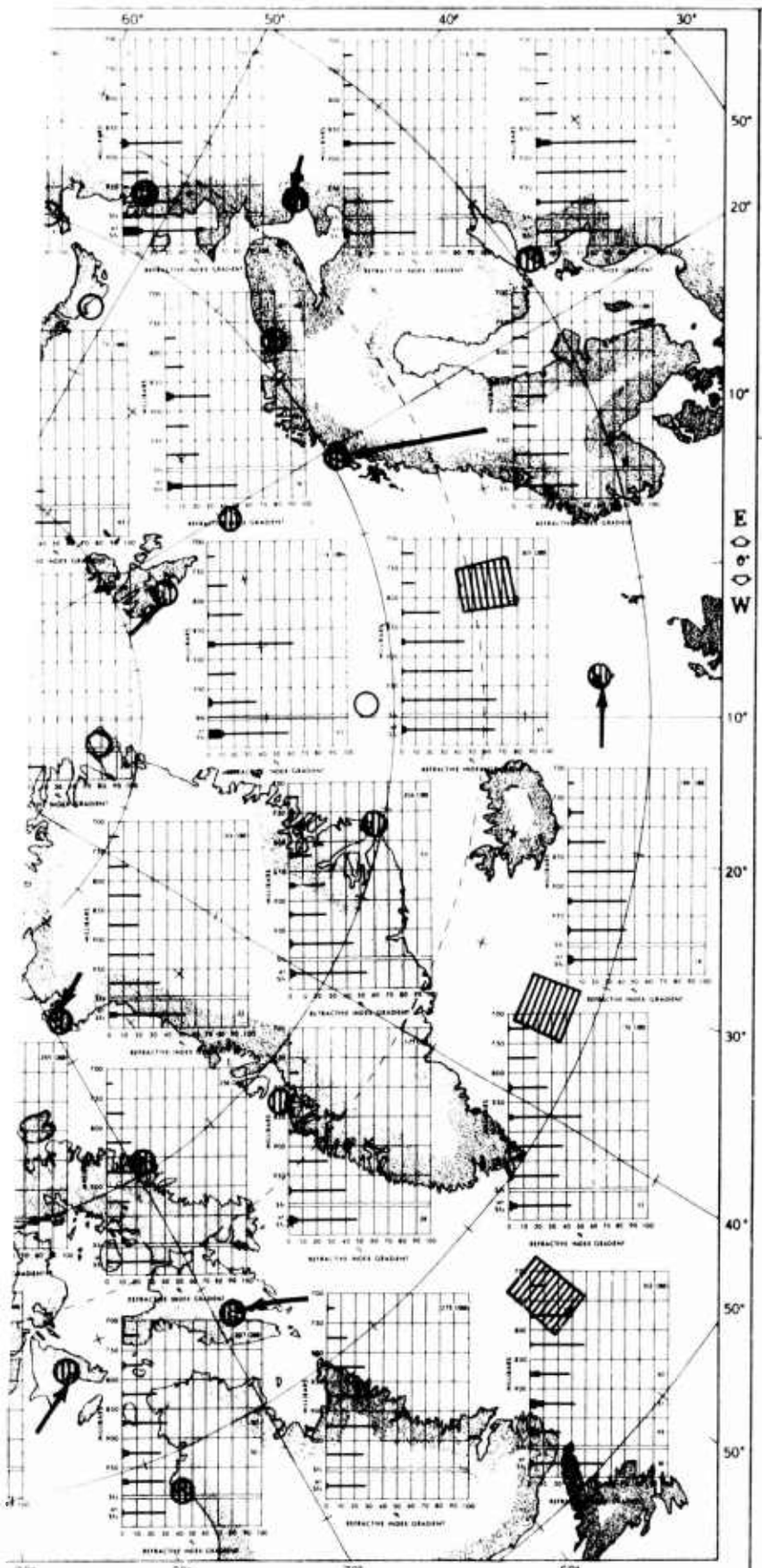
OCTOBER

REFRACTIVE INDI



'E INDEX GRADIENT

CHART 269



Percentage Frequency Refractive Index Gradient* within 7 strata

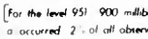
Criteria

(a) $\Delta N \, \Delta H \leq -.048$ Trapping

(b) $\Delta N \, \Delta H \leq -.027$ Very Superrefractive

(c) $\Delta N \, \Delta H \leq -.012$ Superrefractive

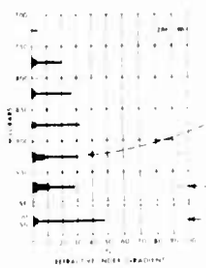
Indicated by



[For the level 951 - 900 millibars
a occurred 2 % of all observations
b 8 % of observations and
c 31 % of observations]

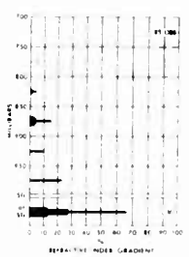
Mean thickness (tens of feet) of (b) above

Thickness omitted when there were < 5 superrefractive gradients based within a stratum

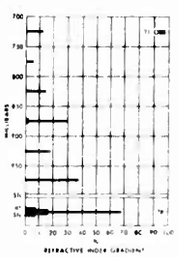


* computed according to the method used by U.S. Navy Electronics Laboratory

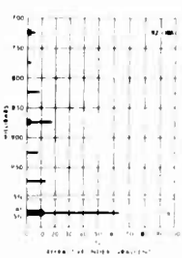
OSTROV VRANGELYA



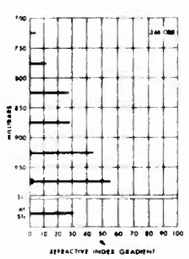
AMDERMA



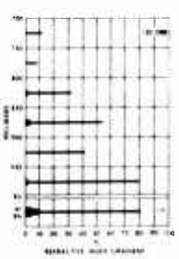
MALYYE KARMAKULY



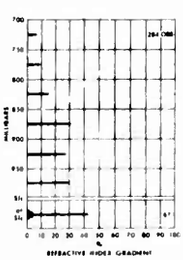
BARROW



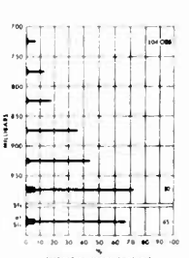
NORD



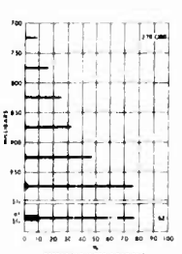
JAN MAYEN



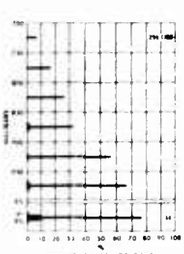
ISACHSEN



EUREKA



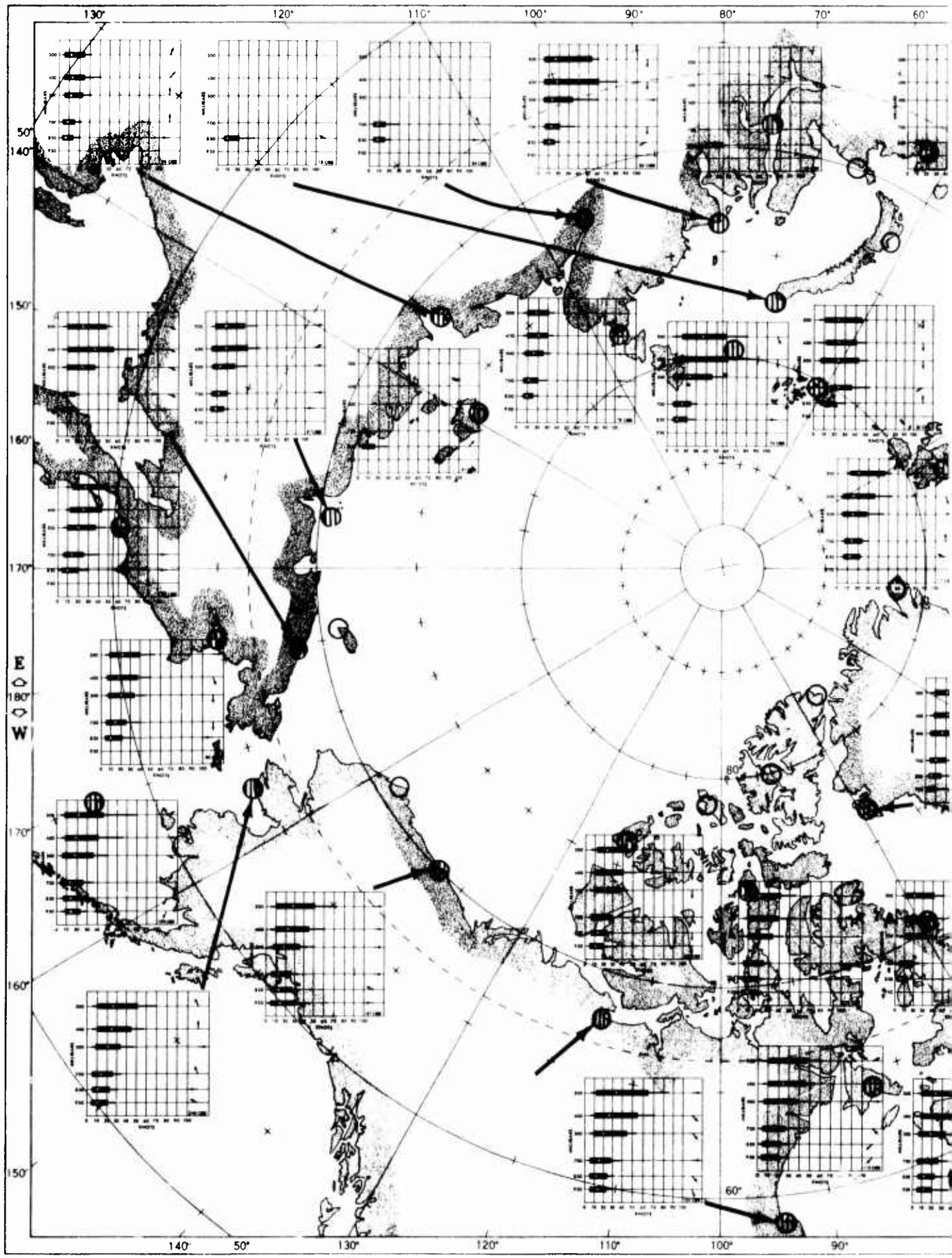
ALERT



All graphs: REFRACTIVE INDEX GRADIENT; MILLIBARS

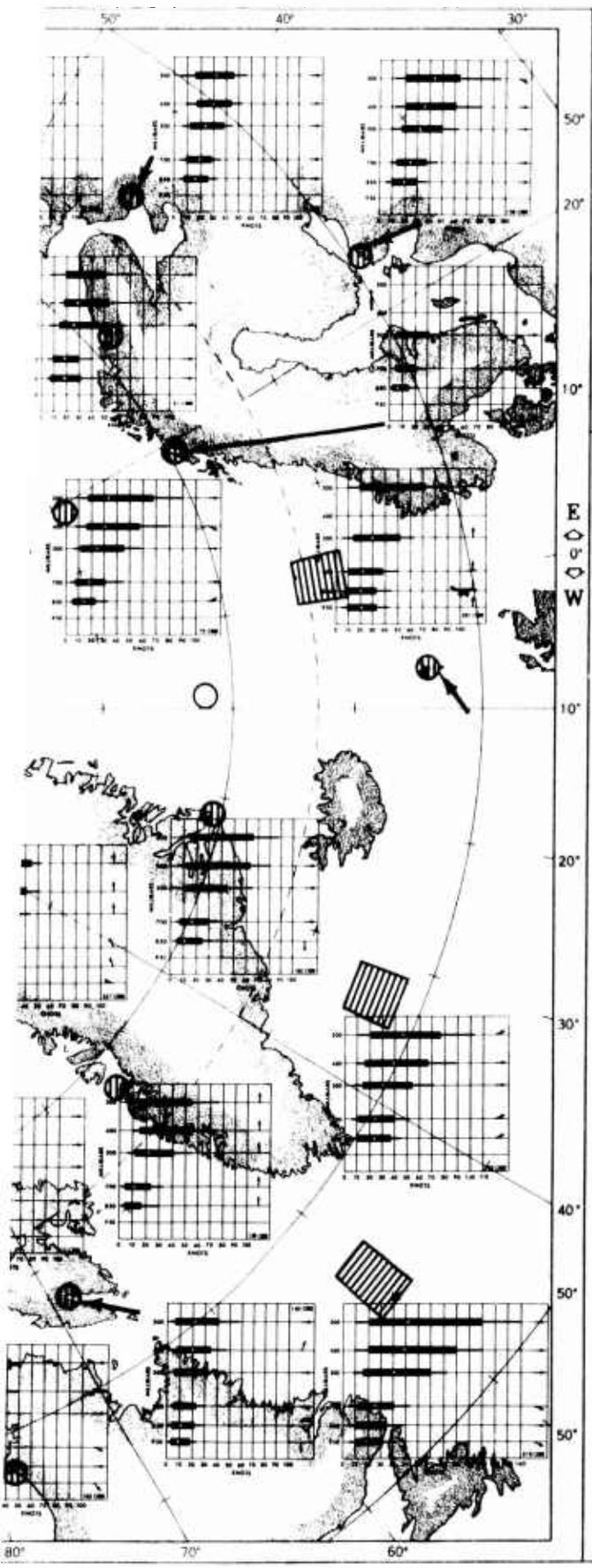
NOVEMBER

WIND (950



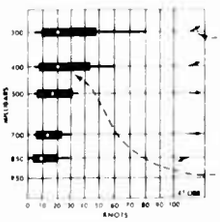
) 300 MB)

CHART 270



Prevailing Direction To 16 Points

(Direction indicated for 300 millibar level is from WSW)



Distribution of Scalar Wind Speed Knots

(a) Median

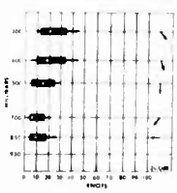
(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by



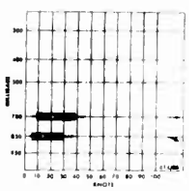
(At the 400 millibar level median speed was 20 knots, 5% of speeds were 4 knots or less 16% were 8 knots or less, etc.)

Frequencies are omitted when data for a level are missing or insufficient

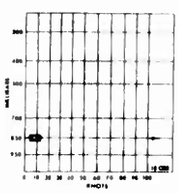
OSTROV VRANGELYA



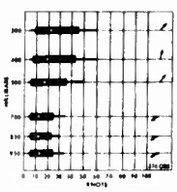
AMDERMA



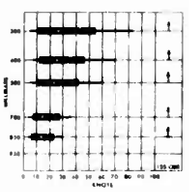
MALYYE KARMAKULY



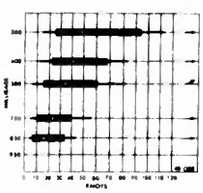
BARROW



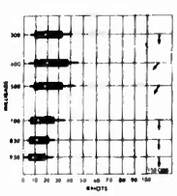
NORD



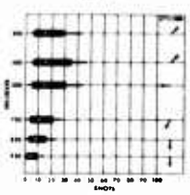
JAN MAYEN



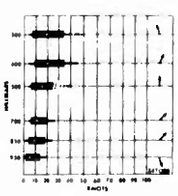
ISACHSEN



EUREKA

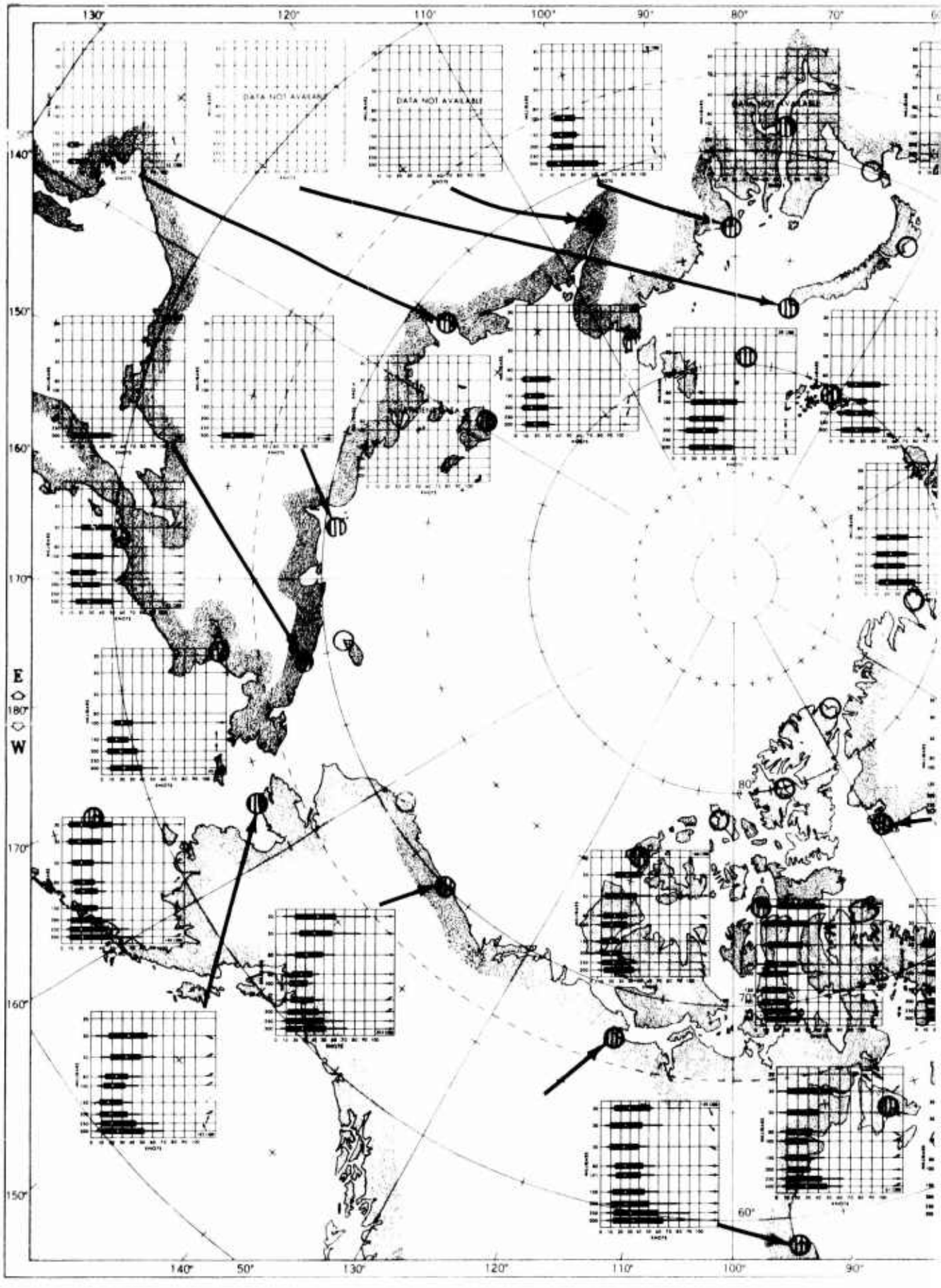


ALERT



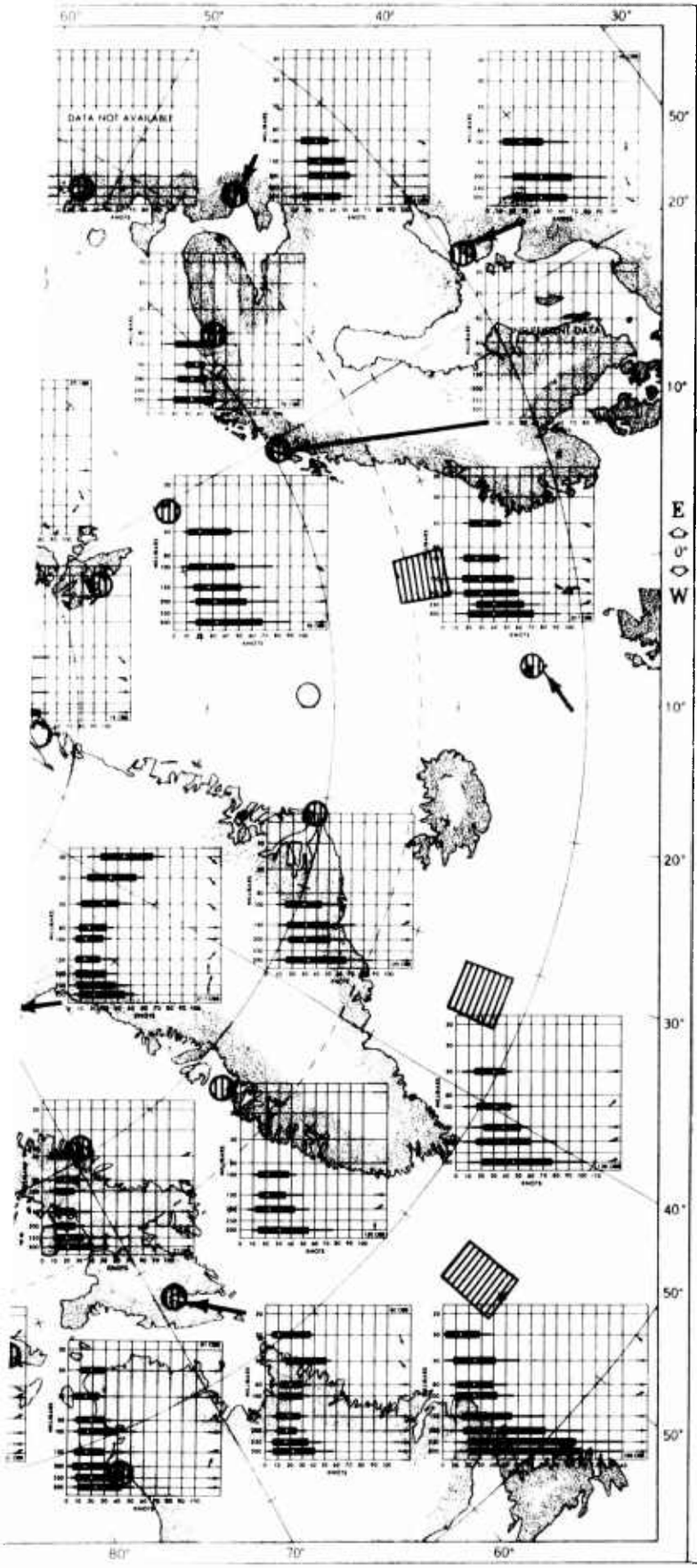
NOVEMBER

WIND (30

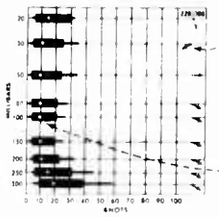


)0 TO 20 MB)

CHART 271



Prevailing Direction To 16 Points



(Direction indicated for 30 millibar level is from ENE)

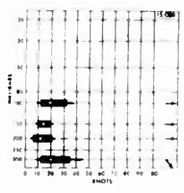
Distribution of Scalar Wind Speed Knots
(a) median
(b) 5%, 16%, 84%, and 95% were equal to or less than the speeds indicated by



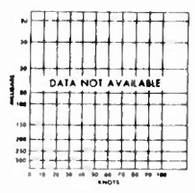
(At the 100 millibar level median speed was 10 knots, 5% of speeds were 2 knots or less, 16% were 4 knots or less etc.)

Frequencies are omitted when data for a level are missing or insufficient

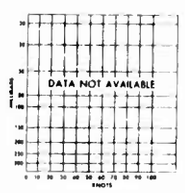
OSTROV VRANGELYA



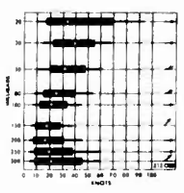
AMDERMA



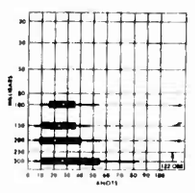
MALYYE KARMAKULY



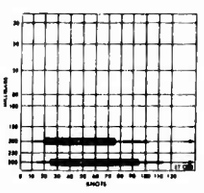
BARROW



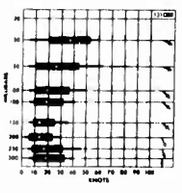
NORD



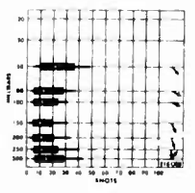
JAN MAYEN



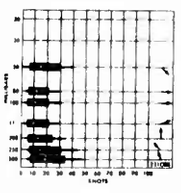
ISACHSEN



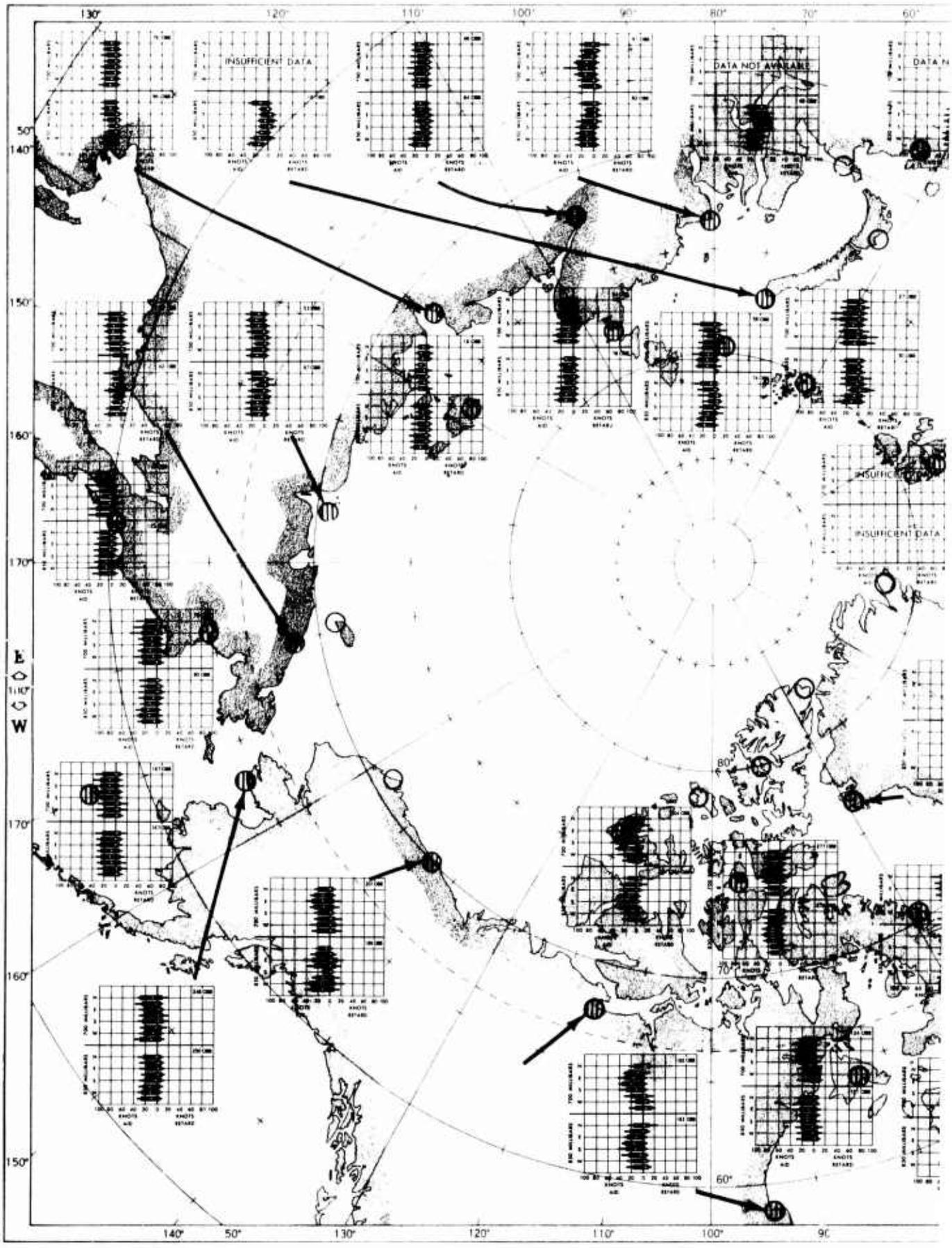
EUREKA



ALERT

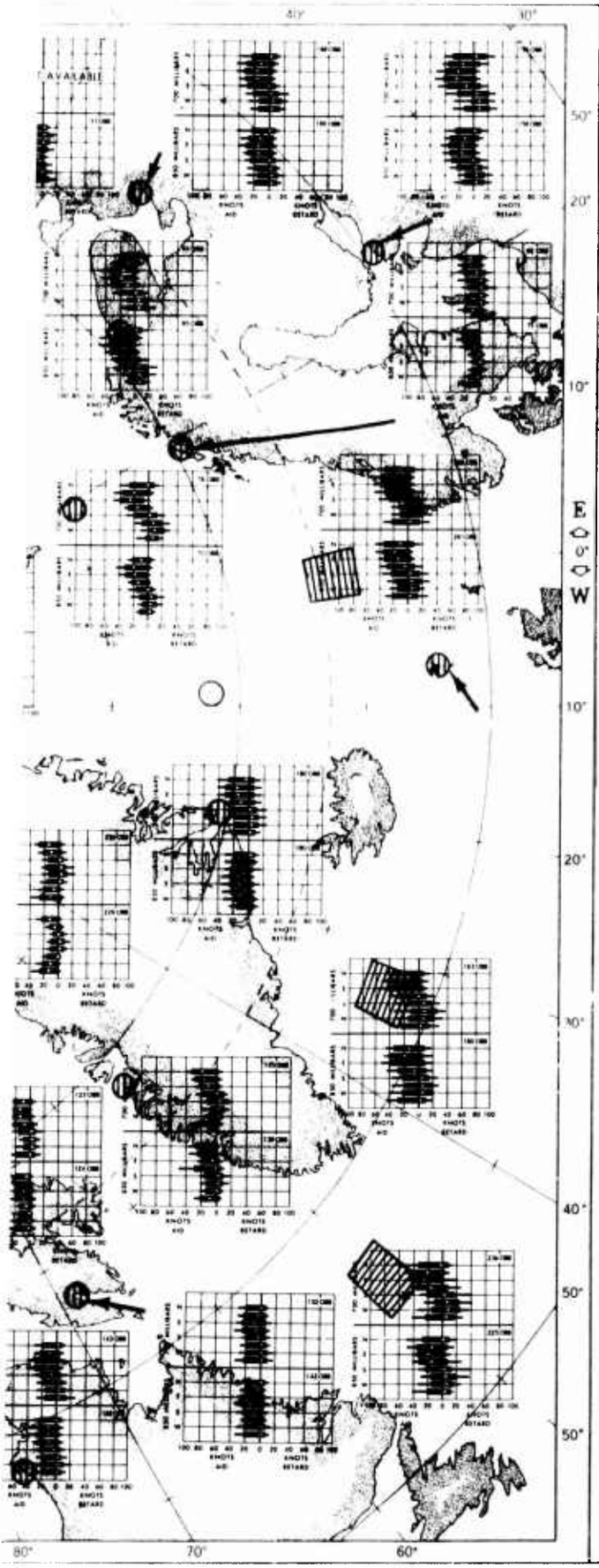


NOVEMBER WIND AID AND RETA

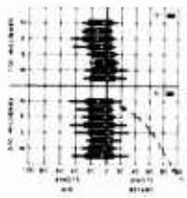


,RD (850 & 700 MB)

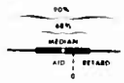
CHART 272



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 300 knots true air speed



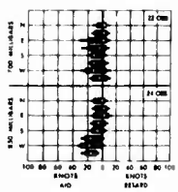
Read median and percentage frequency for direction toward which aircraft is flying thus



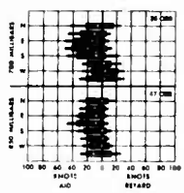
Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward north at the 850 millibar level, wind aided or increased ground speed by an average of 12 knots. Wind effect ranged from 28 knots aid to 8 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 20 knots retard in 90% of the observations.)

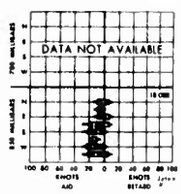
OSTROV VRANGELYA



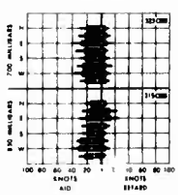
AMDERMA



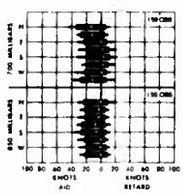
MALYYE KARMAKULY



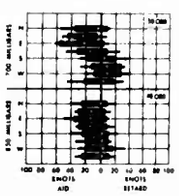
BARROW



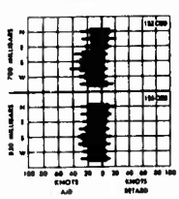
NORD



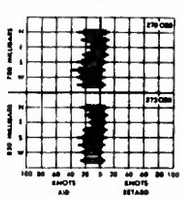
JAN MAYEN



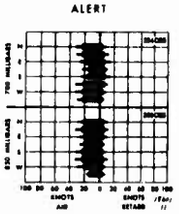
ISACHSEN



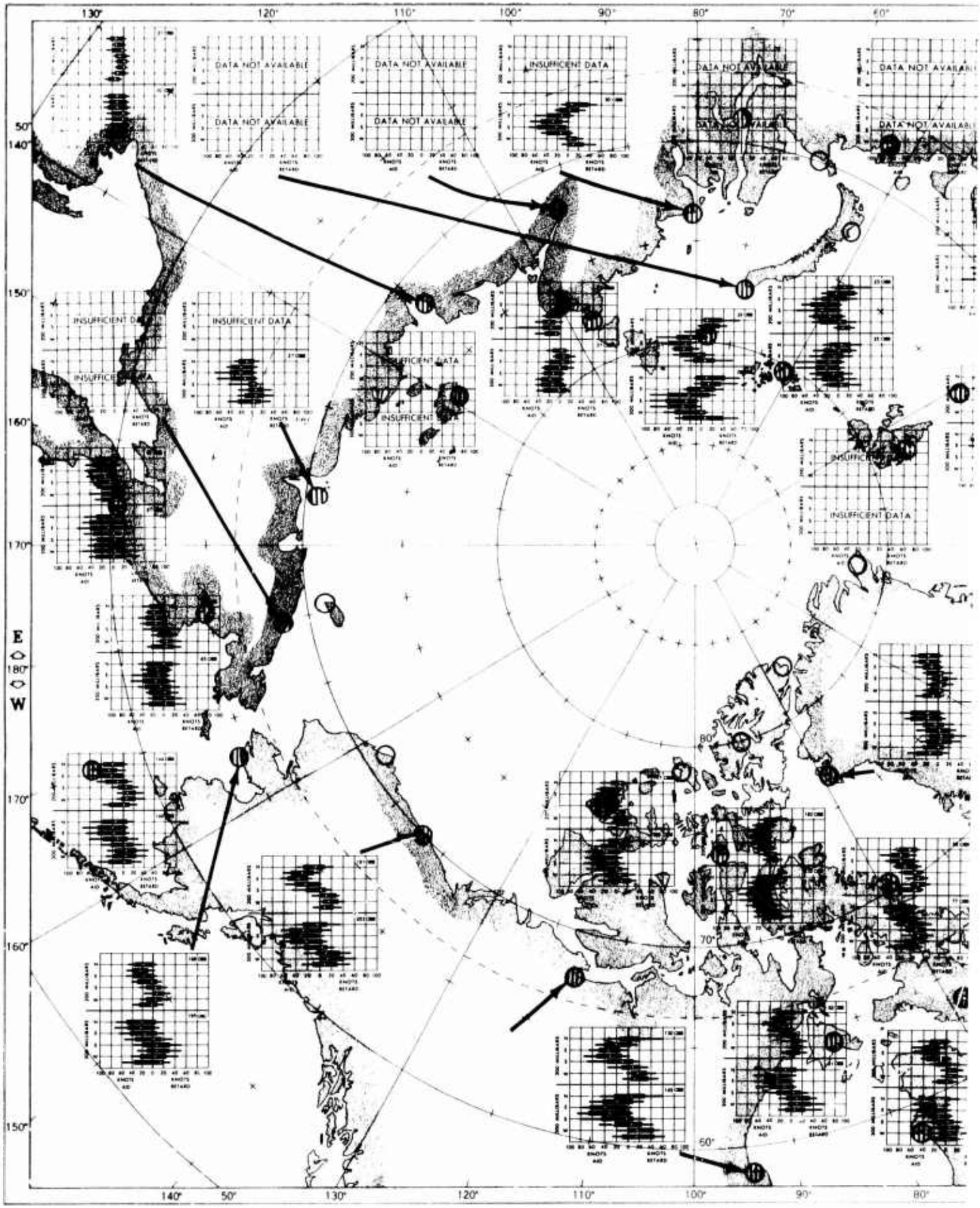
EUREKA



ALERT

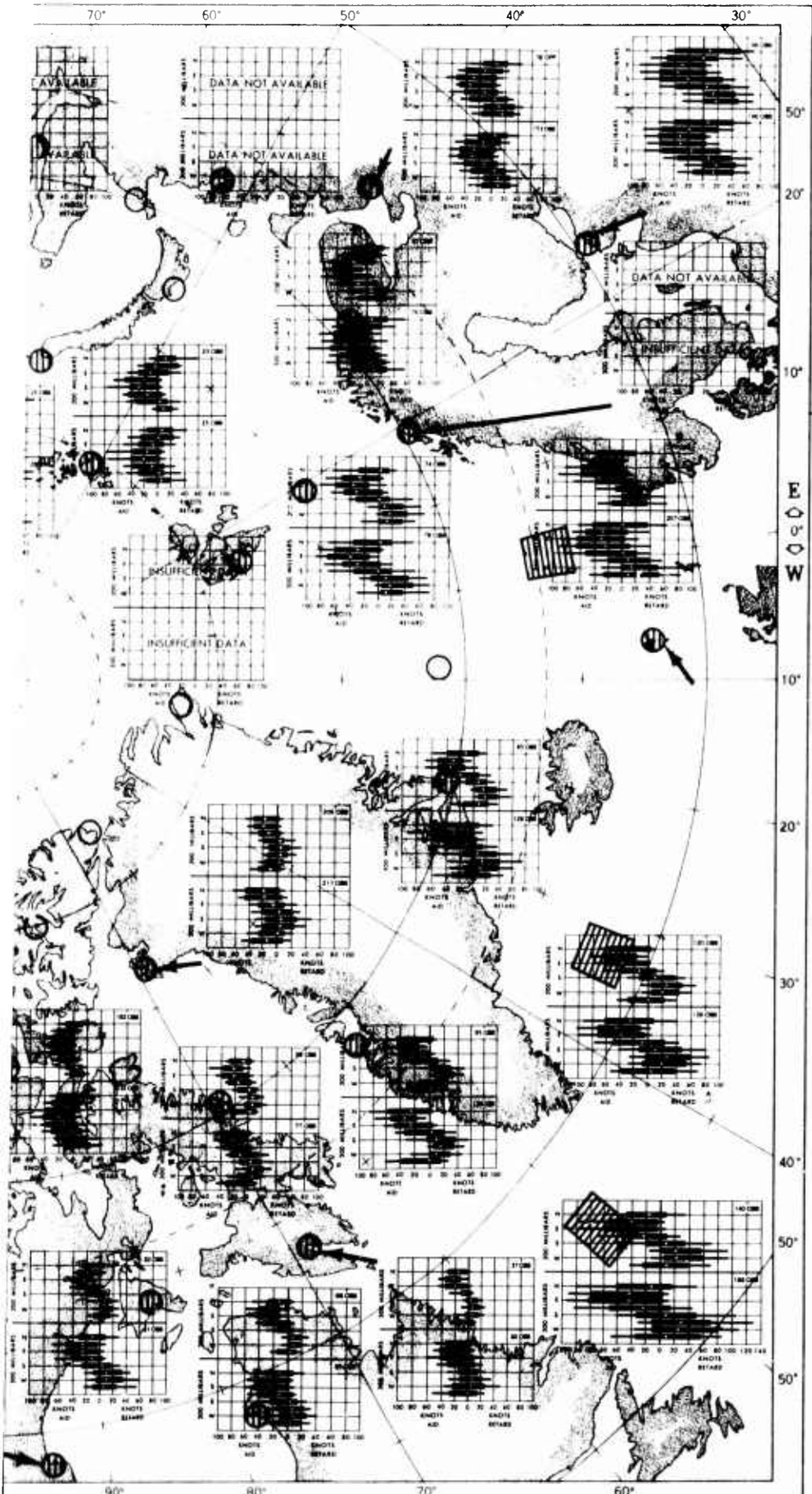


NOVEMBER WIND AID AND RETARD

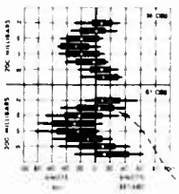


AND RETARD (300 & 200 MB)

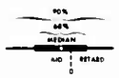
CHART 273



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 600 knots true air speed

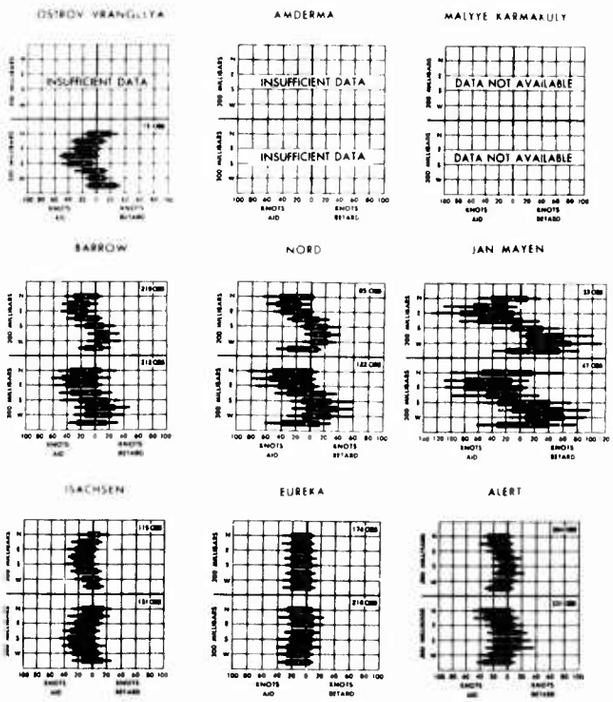


Read median and percentage frequency for direction toward which aircraft is flying thus



Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward northeast at the 300 mbar level, wind retarded or decreased ground speed by an average of 4 knots. Winds effect ranged from 26 knots aid to 25 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 40 knots retard in 90% of the observations.)

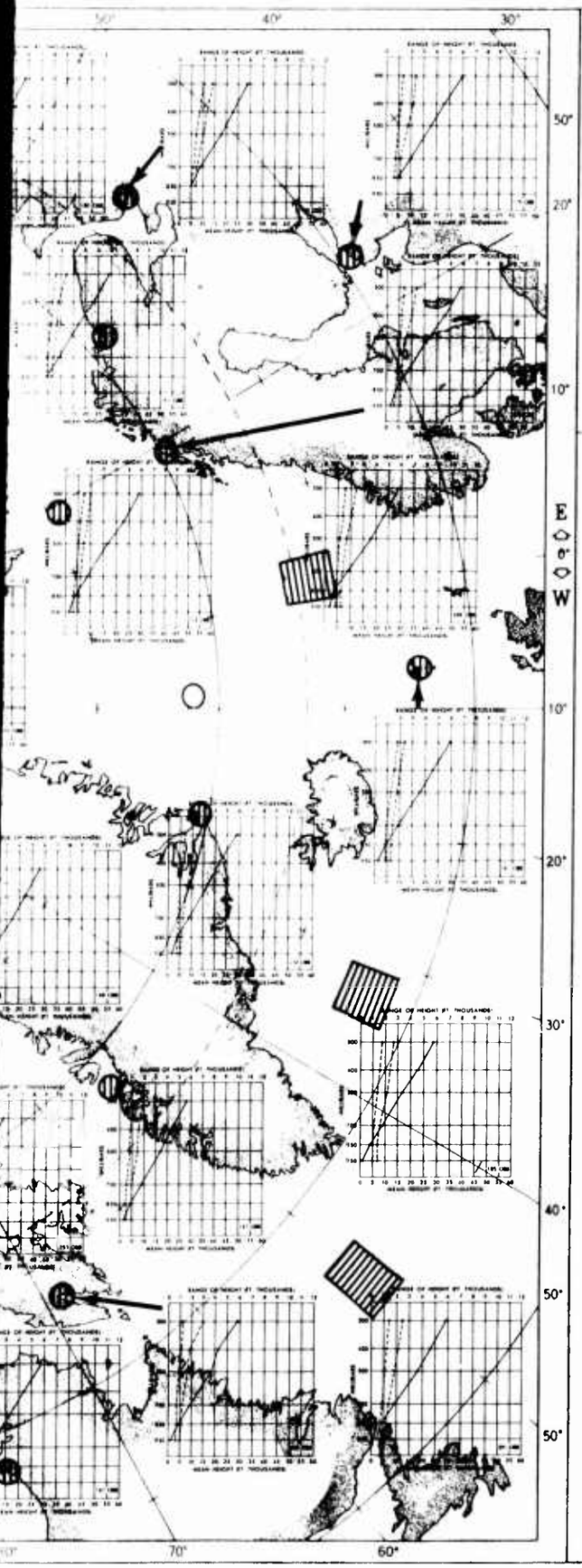


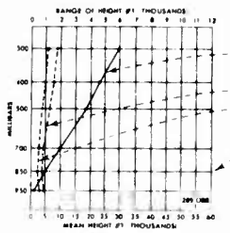
NOVEMBER

HEIGHT (950 TO 300

TO 300 MB)

CHART 274





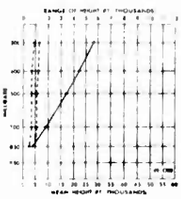
Distribution of Height of Pressure Surfaces

(a) Mean Height
(b) Range of Height
(1) 5% 95% Range
(2) 16% 84% Range

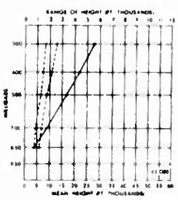
(For the 850 millibar level the mean Height ± 5,000 feet, the 5% 95% Height range ± 800 feet and the 16% 84% range ± 450 feet.)

Mean and ranges of height are omitted when data for a level are missing or insufficient

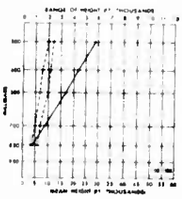
OSTROV VRANGELYA



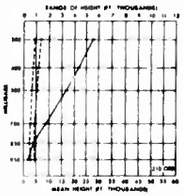
AMDERMA



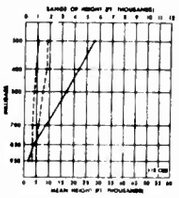
MALYYE KARMAKULY



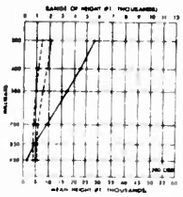
BARROW



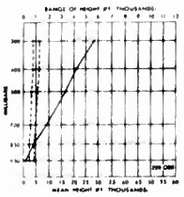
NORD



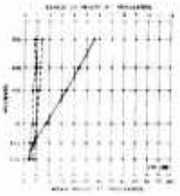
JAN MAYEN



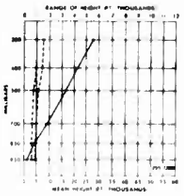
ISACHSEN



EUREKA

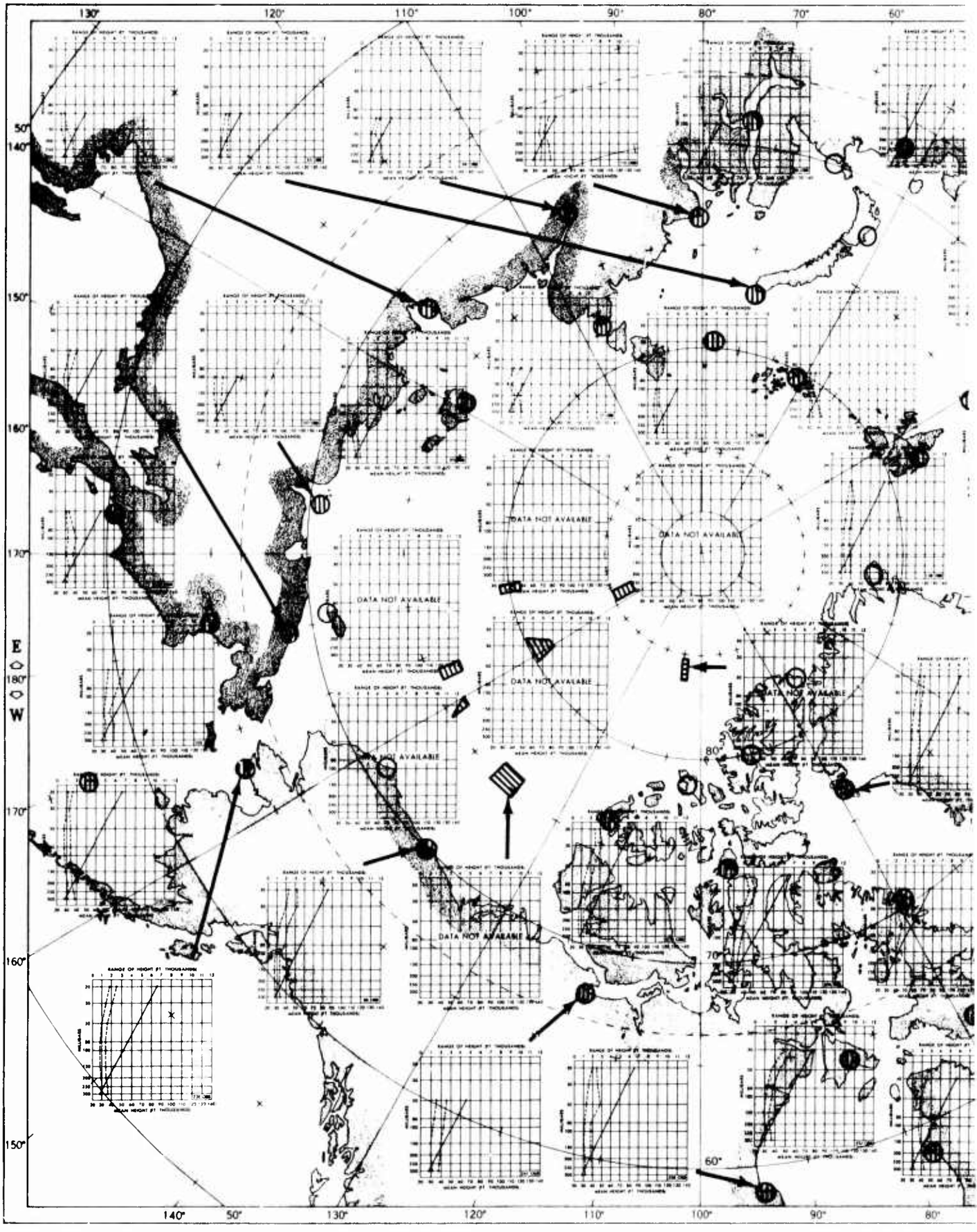


ALERT



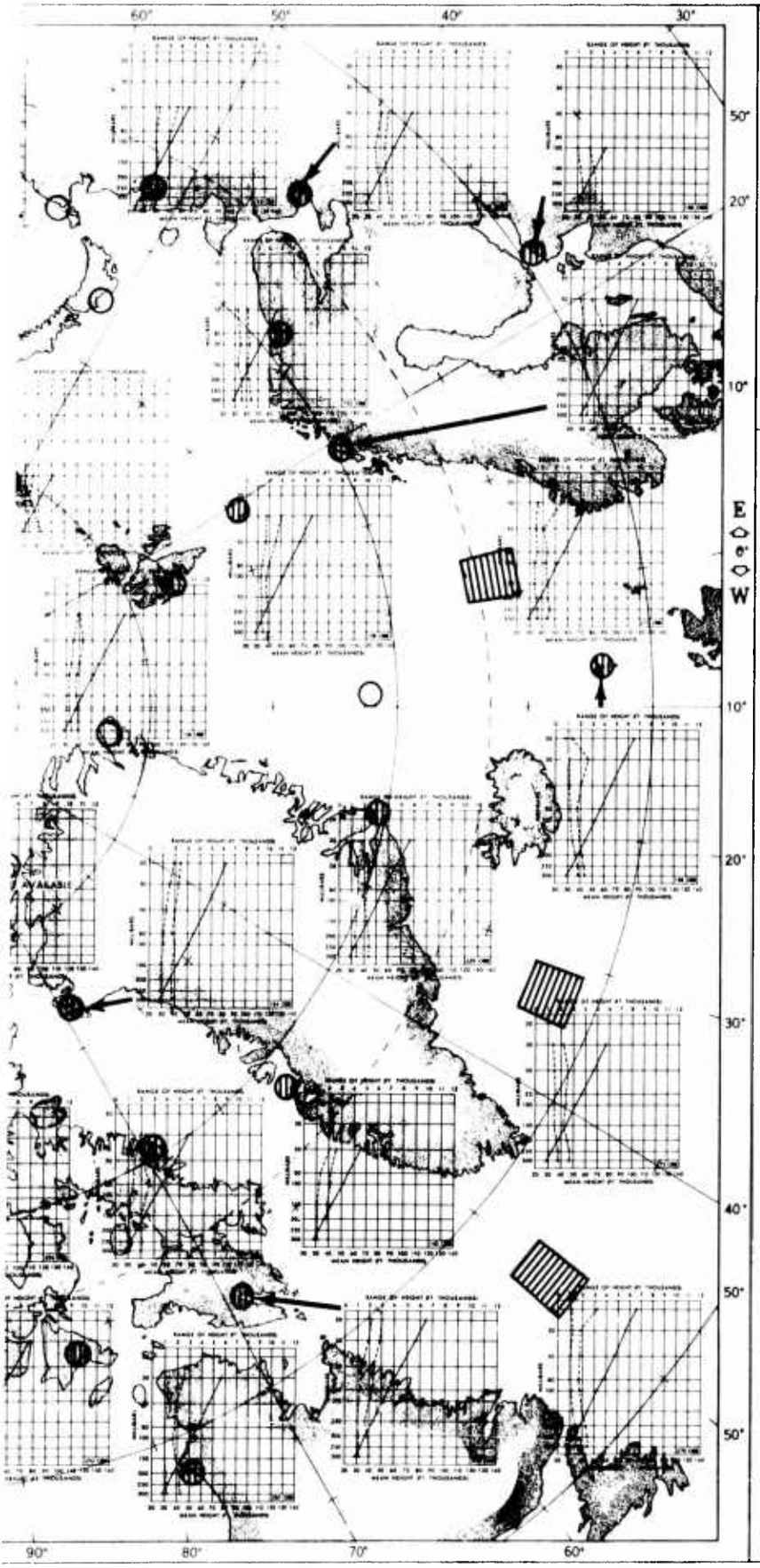
NOVEMBER

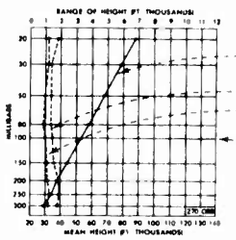
HEIGHT (300 T



HT (300 TO 20 MB)

CHART 275





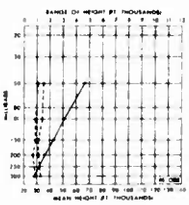
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
- (1) 5% 95% Range
- (2) 16% 84% Range

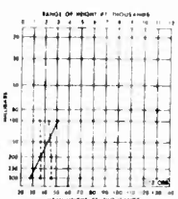
(For the 100 millibar level the mean Height = 53,000 feet, the 5% 95% Height range = 1,500 feet, and the 16% 84% range = 1,000 feet.)

Mean and ranges of height are omitted when data for a level are missing or insufficient

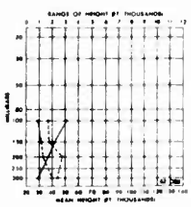
OSTROV VRANGELYA



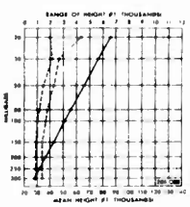
AMDERMA



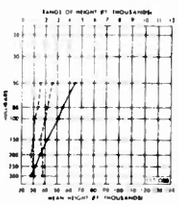
MALYYE KARMAKULY



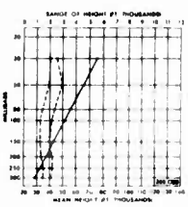
BARROW



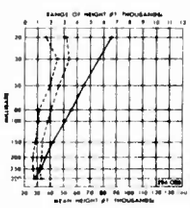
NORD



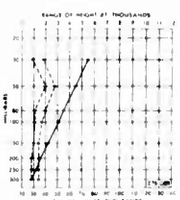
JAN MAYEN



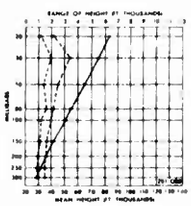
ISACHSEN



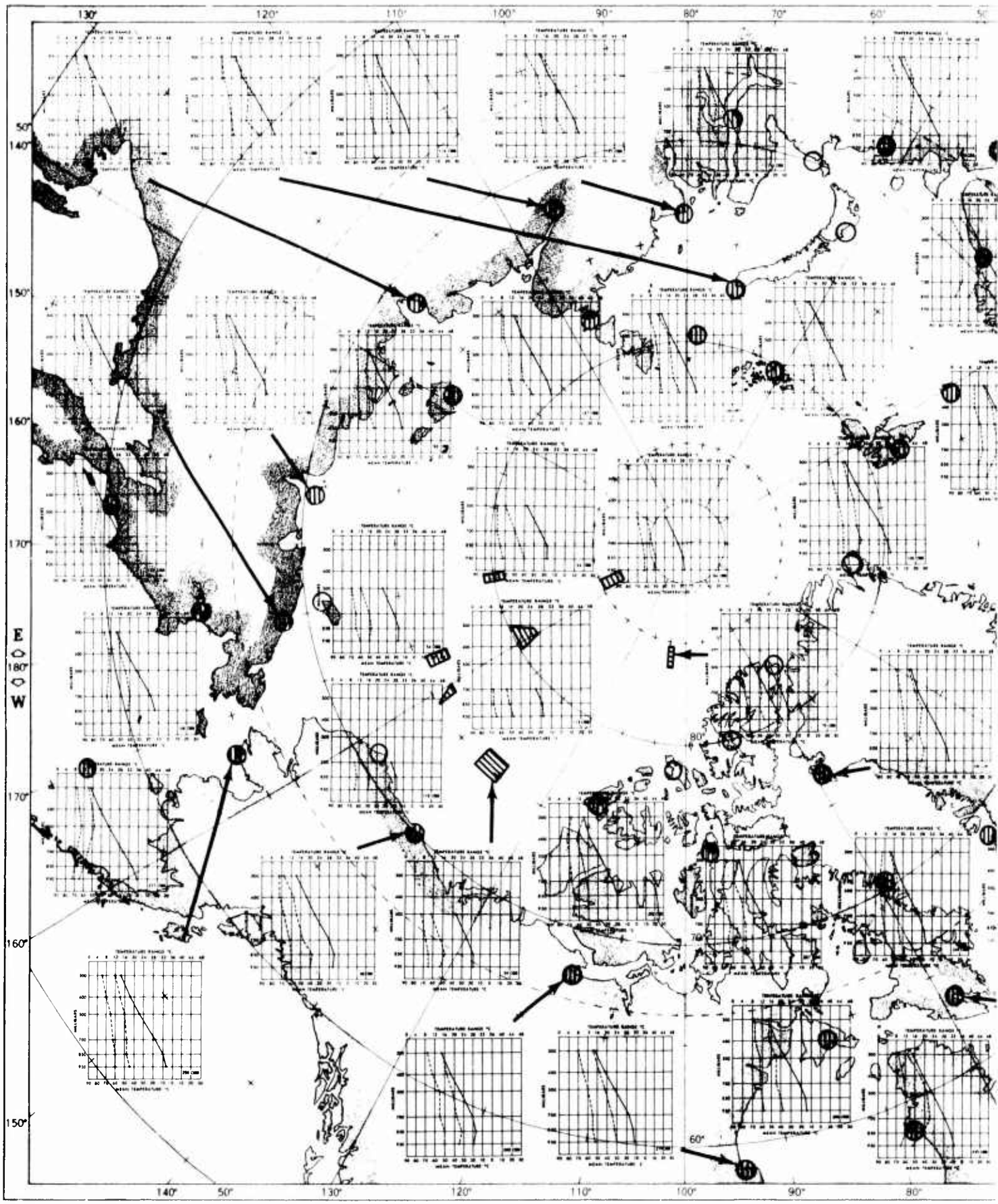
EUREKA



ALERT

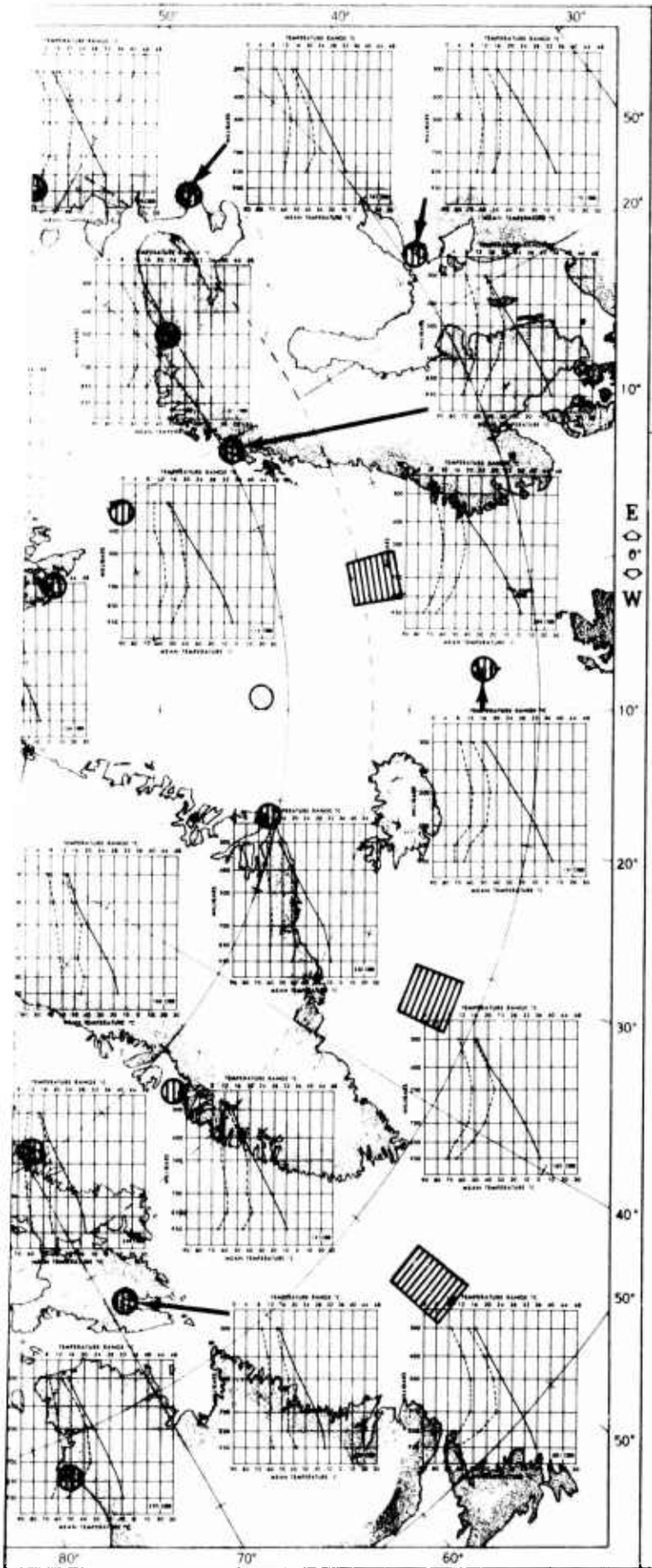


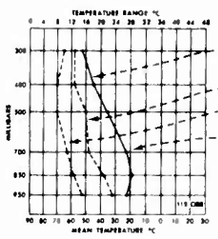
NOVEMBER TEMPERATURE (950 T



(950 TO 300 MB)

CHART 276





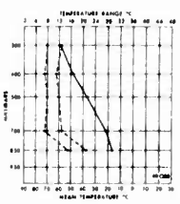
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% 95% Range
(2) 16% 84% Range

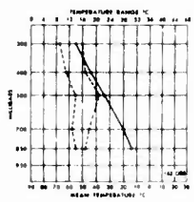
(For the 700 millibar level the mean temperature is -22°C. the 5% 95% range is 17°C, and the 16% 84% range is 11°C)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

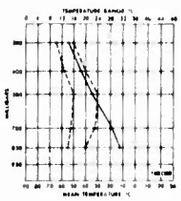
OSTROV VRANGELYA



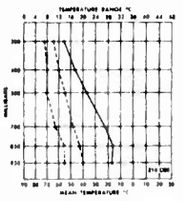
AMDERMA



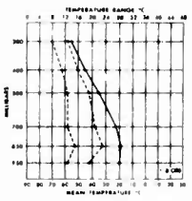
MALYYE KARMAKULY



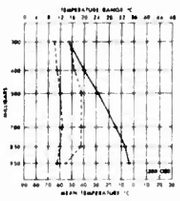
BARROW



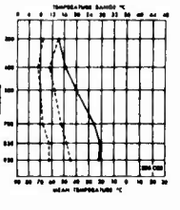
NORD



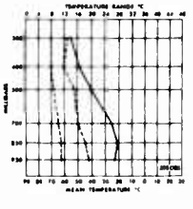
JAN MAYEN



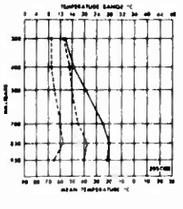
ISACHSEN



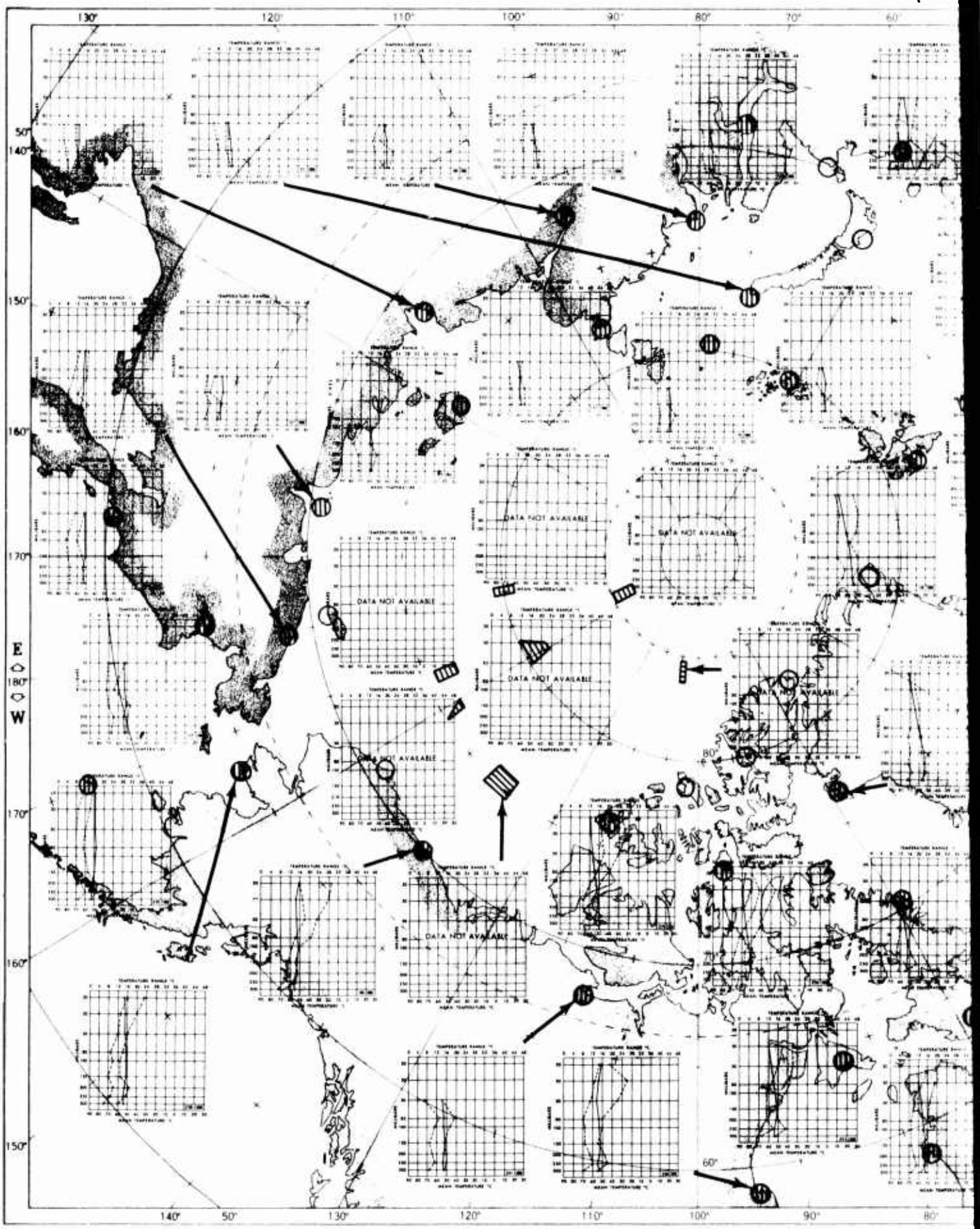
EUREKA



ALERT

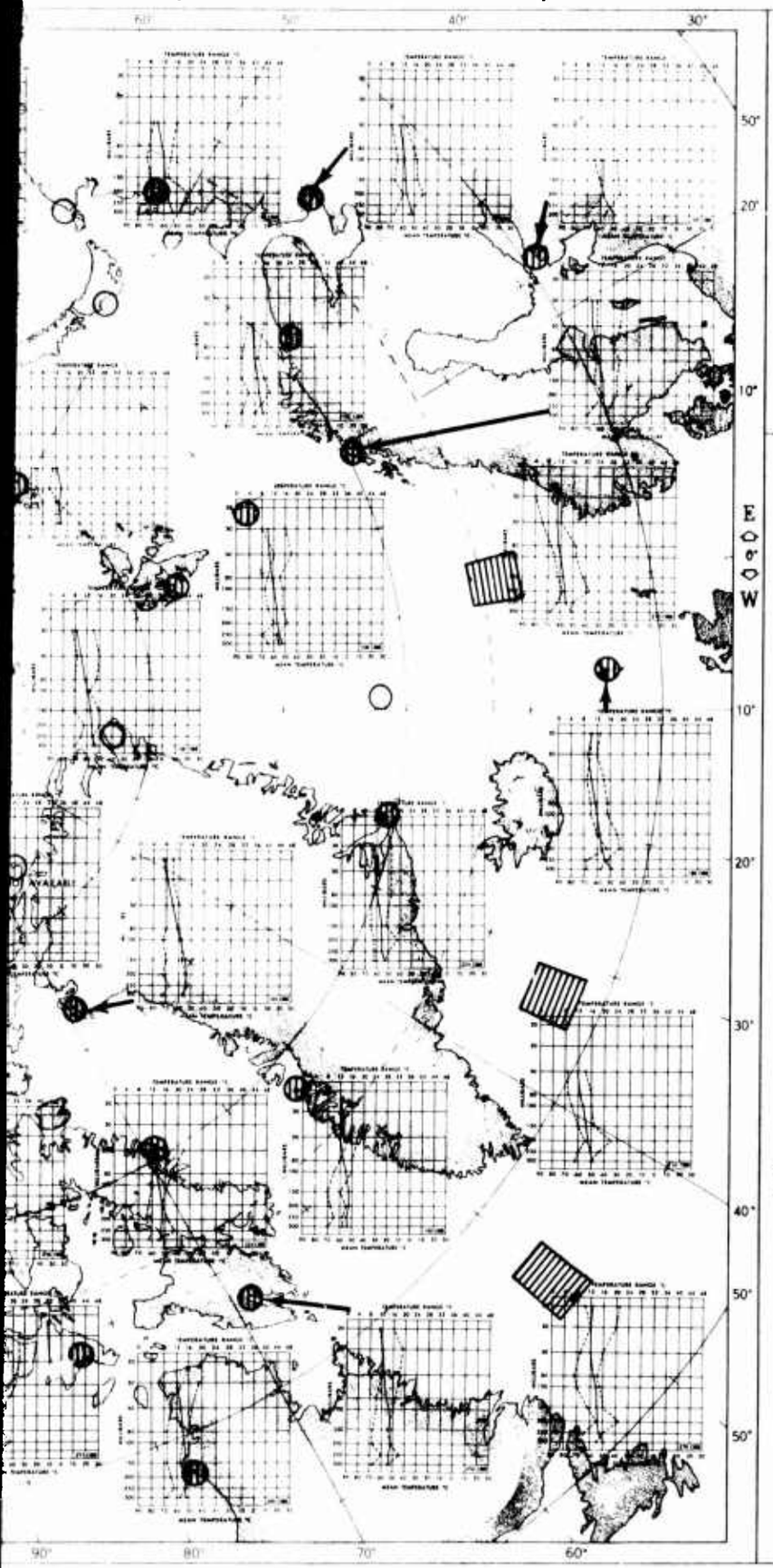


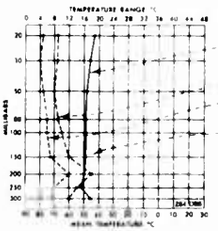
NOVEMBER TEMPERATURE (30



TURE (300 TO 20 MB)

CHART 277





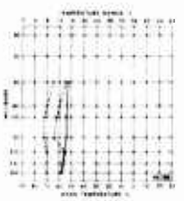
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5%, 95% Range
(2) 16%, 84% Range

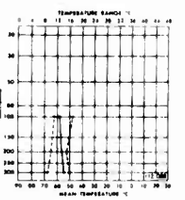
For the 150 millibar level the mean temperature is 49°C the 5%, 95% range is 12°C and the 16%, 84% range is 7°C

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

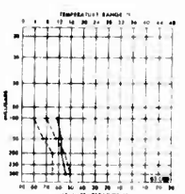
OSTROV VRANGELYA



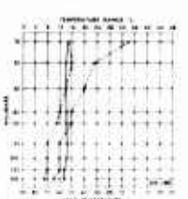
AMDERMA



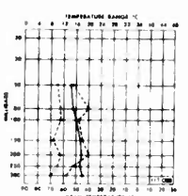
MALYYE KARMAKULY



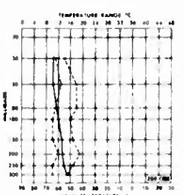
BARROW



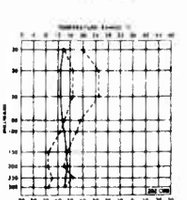
NORD



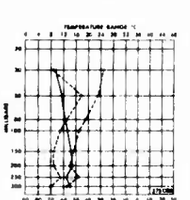
JAN MAYEN



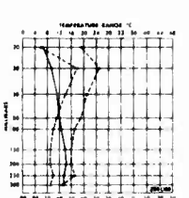
ISACHSEN



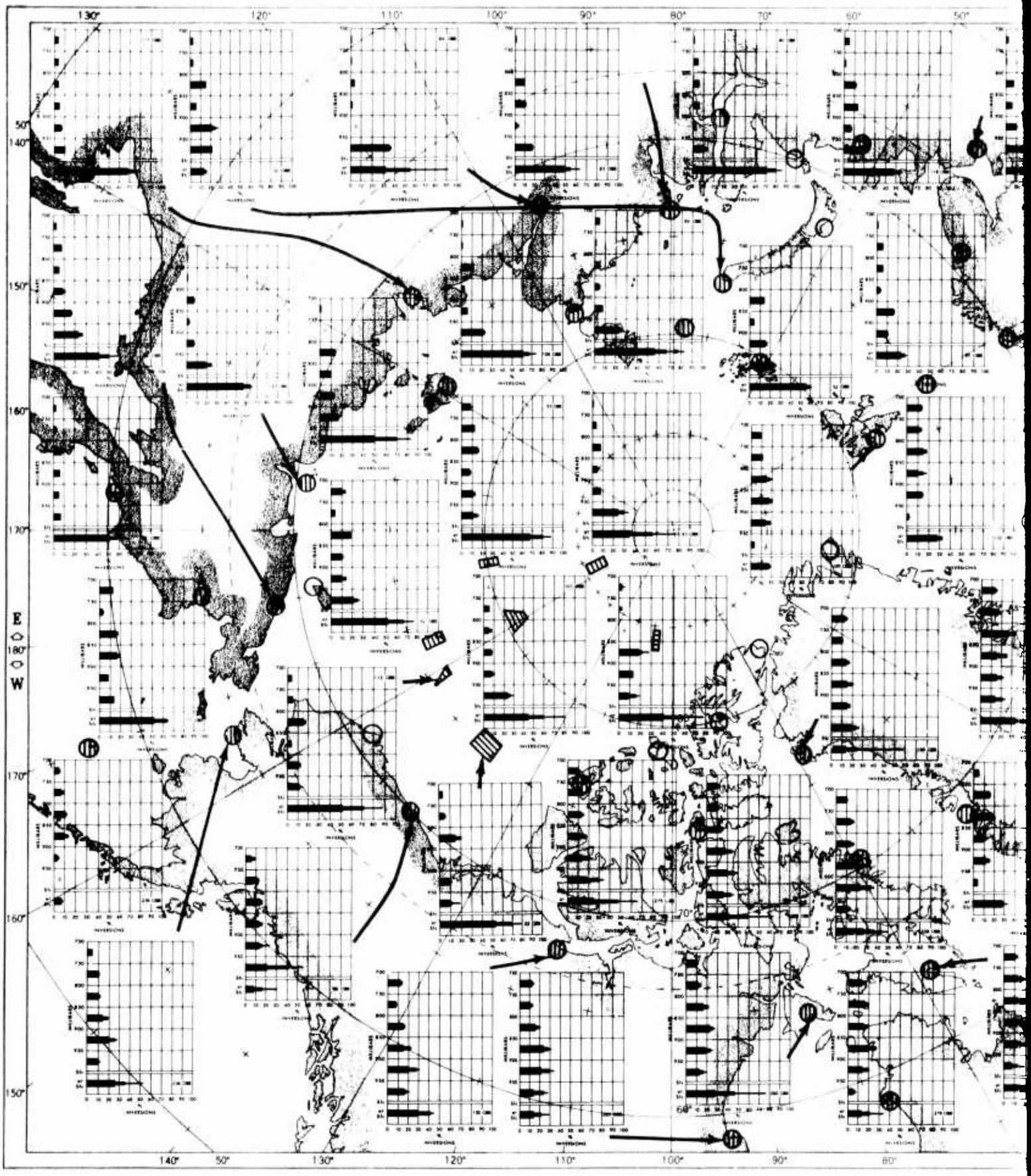
EUREKA



ALERT

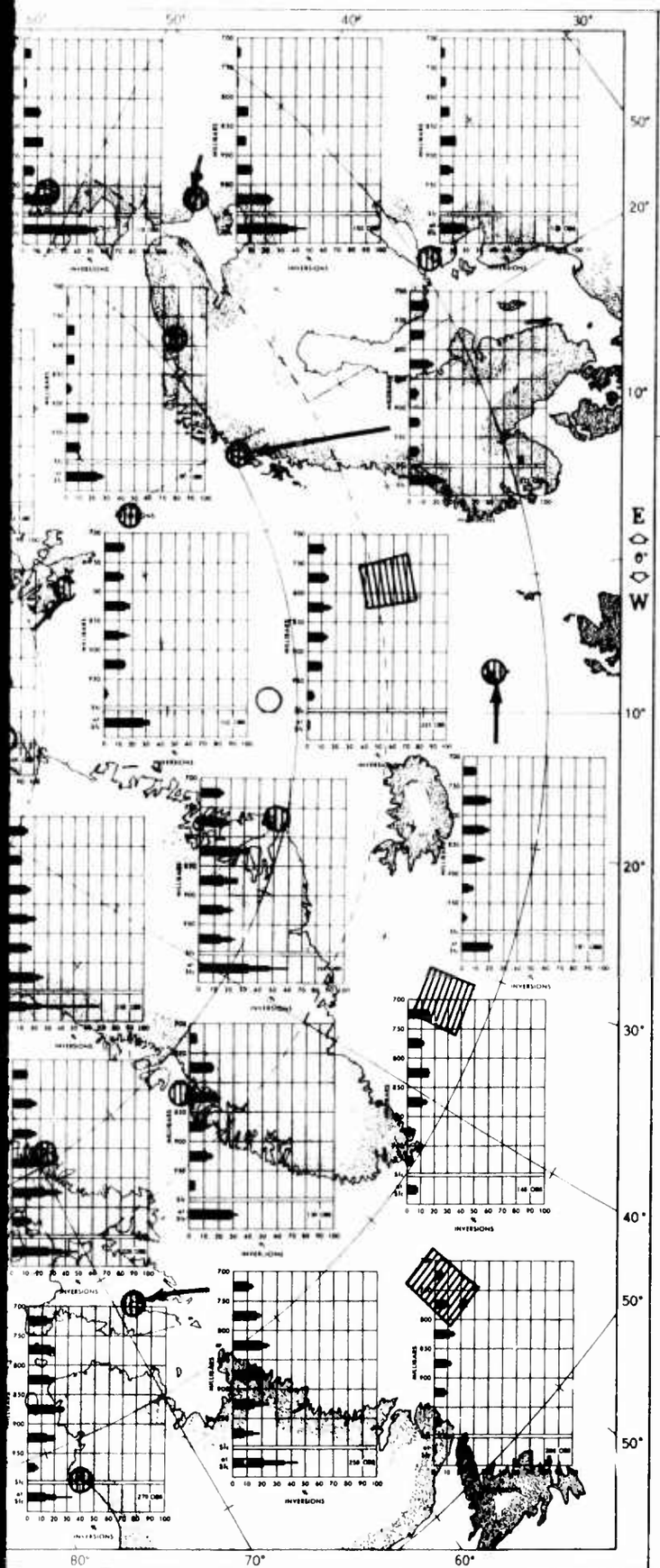


NOVEMBER INVERSIONS



ERSIONS

CHART 278



Percentage Frequencies of three intensities of Temperature Inversions within each of seven layers from the surface to 700 millibars

General Criteria

(a) Temperature Inversion constant or increasing temperature with increasing height that persisted at least 5 millibars (approximately 50 meters)

(b) Layers Inversions were assigned to 7 arbitrary layers according to the pressure at their bases

750 to 701 millibars
800 to 751 millibars
850 to 801 millibars
900 to 851 millibars
950 to 901 millibars
5 millibars above the surface to 951 millibars
At the surface to 49 millibars above the surface

(c) Intensity change in temperature per 100 meters increase in height of

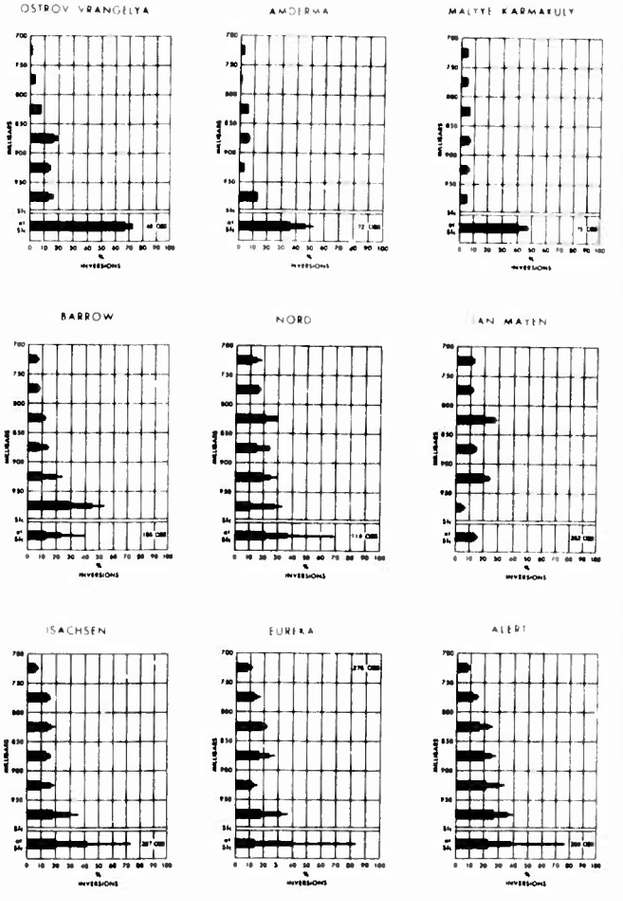
0°C TO +0.9°C | +1.0°C TO +1.9°C | +2.0°C OR MORE

When more than one inversion was recorded within a layer the one with the greatest intensity was counted

0 No occurrence

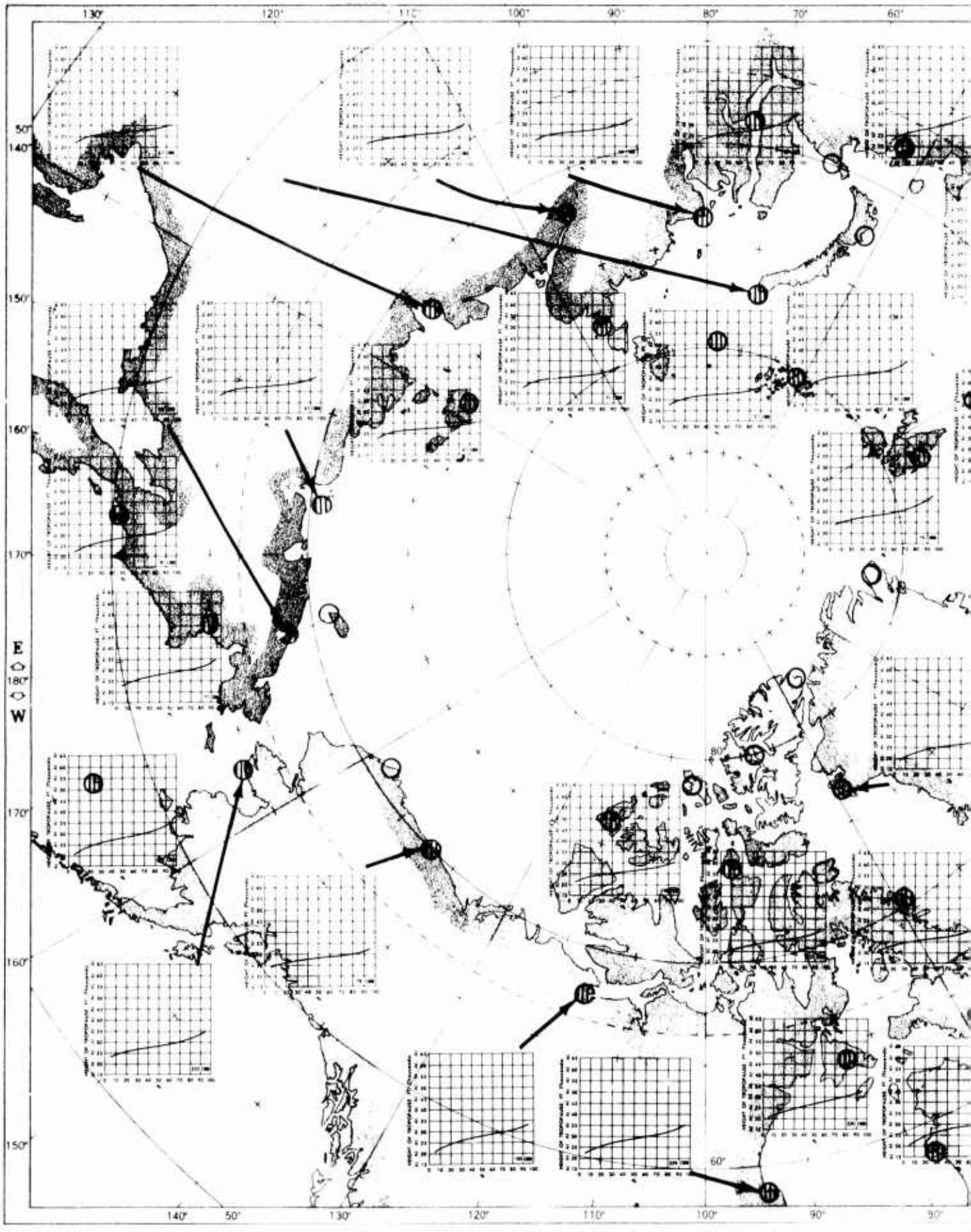
Blank No data

(28% [80.52] of all radiosonde ascents recorded temperature inversions of +1.0°C to +1.9°C per 100 meters with bases in the layer from the surface to 49 millibars above)



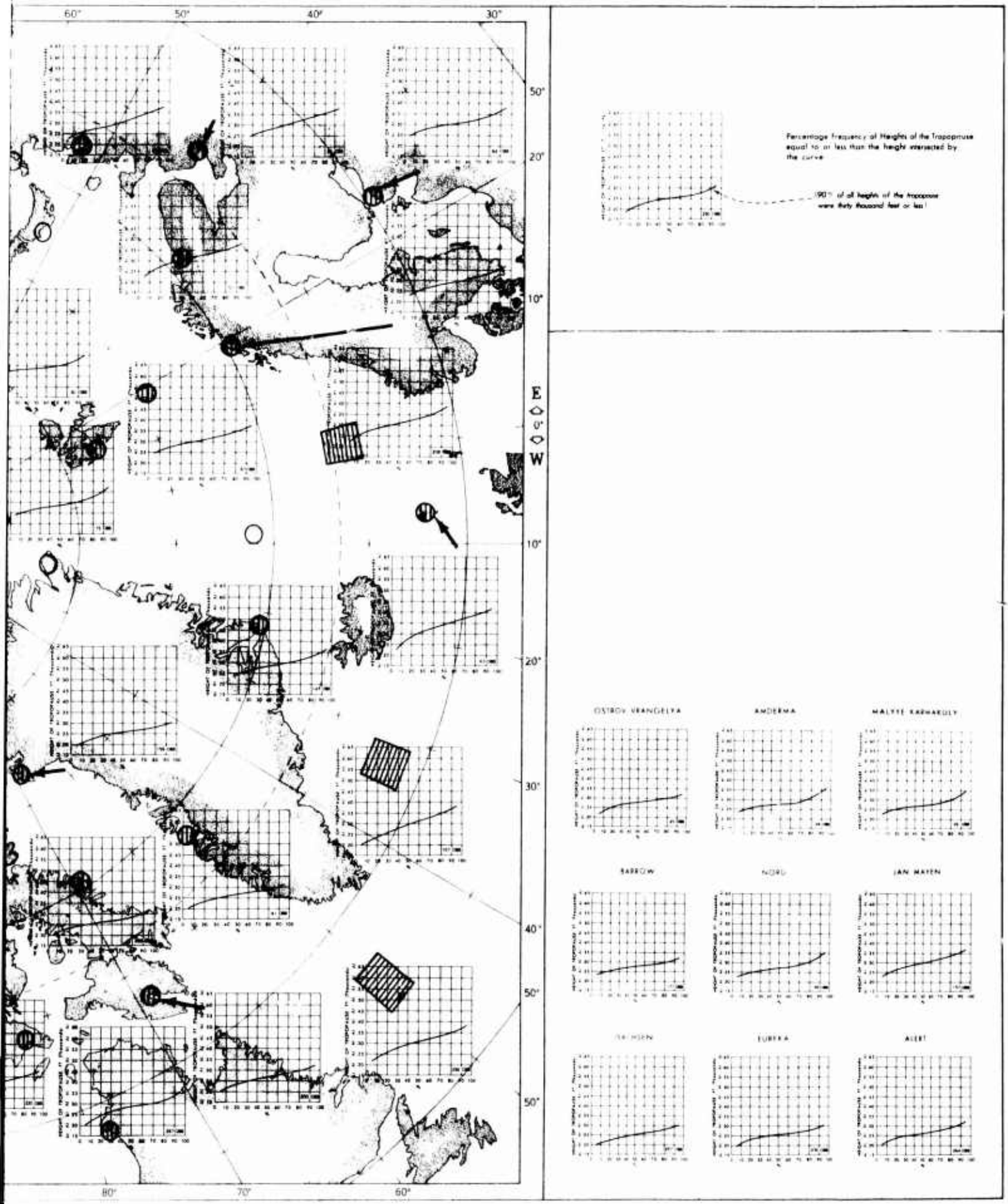
NOVEMBER

HEIGHT OF TRO

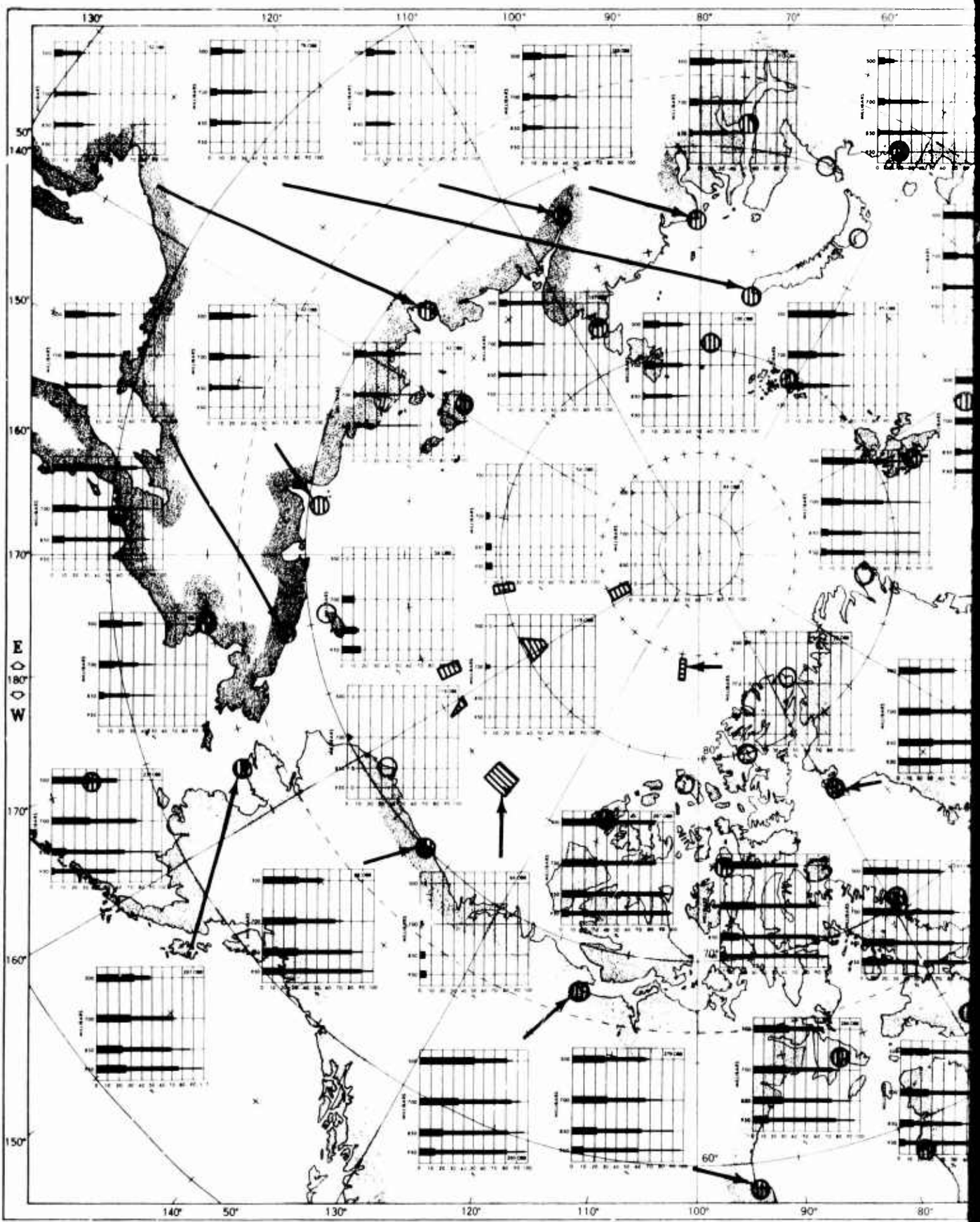


OF TROPOPAUSE

CHART 279

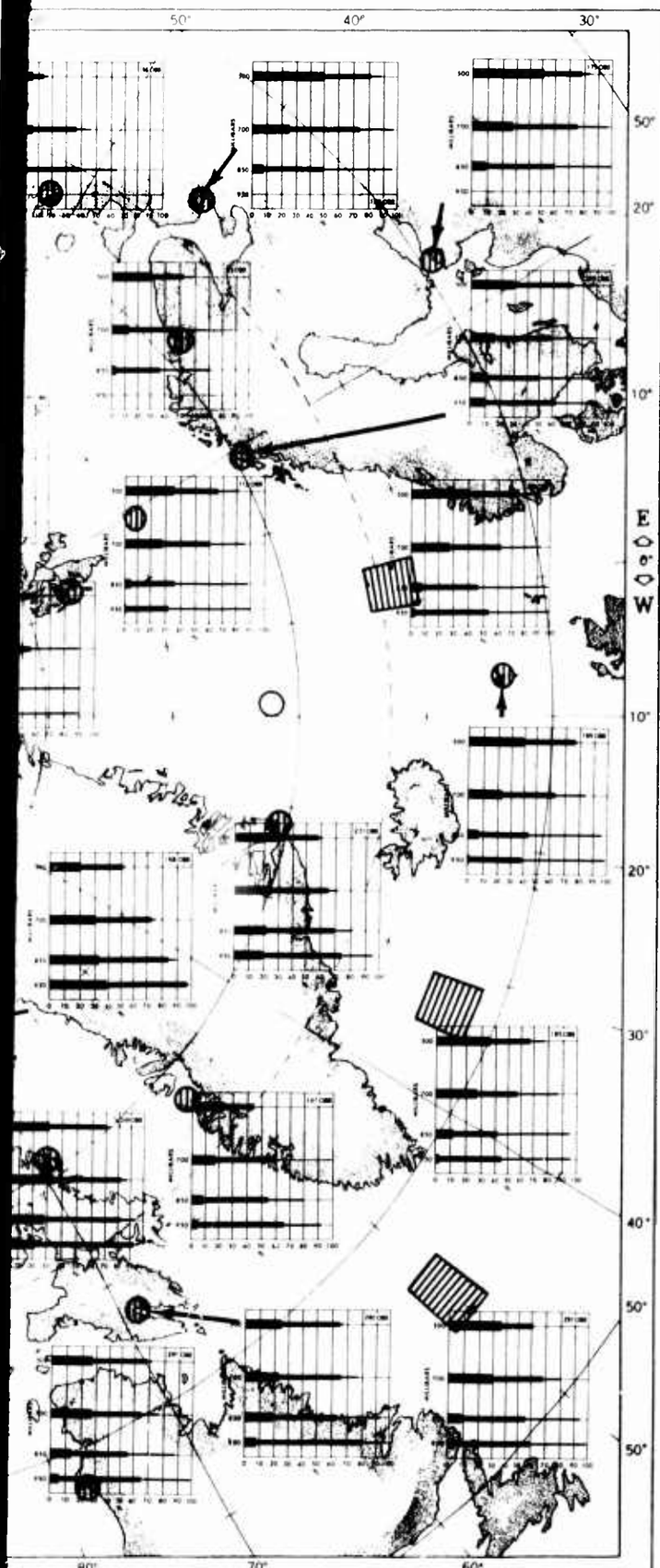


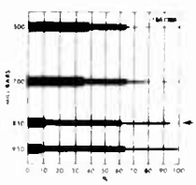
NOVEMBER RELATIVE HU



E HUMIDITY

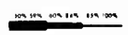
CHART 280





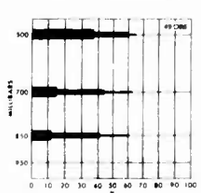
Distribution of Relative Humidity at Pressure Surfaces

(a) Percentage Frequency of Relative Humidity as indicated by

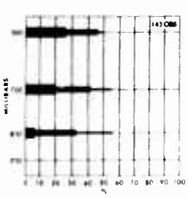


(For the 850 millibar level Relative Humidity was 30% 59% for 17% of all observations, 60% 84% humidity occurred 50% [61 minus 11] of the observations, and 85% 100% humidity occurred 33% [94 minus 61] of the observations.)

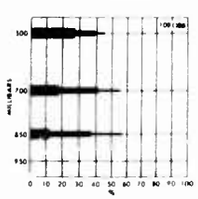
OSTROV VRANGELYA



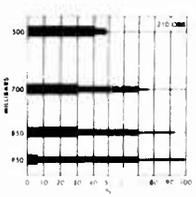
AMDERMA



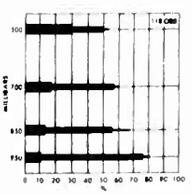
MALYYE KARMAKULY



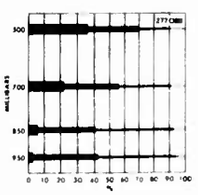
BARROW



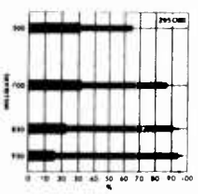
NORD



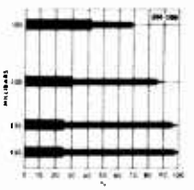
JAN MAYEN



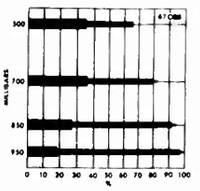
ISACHSEN



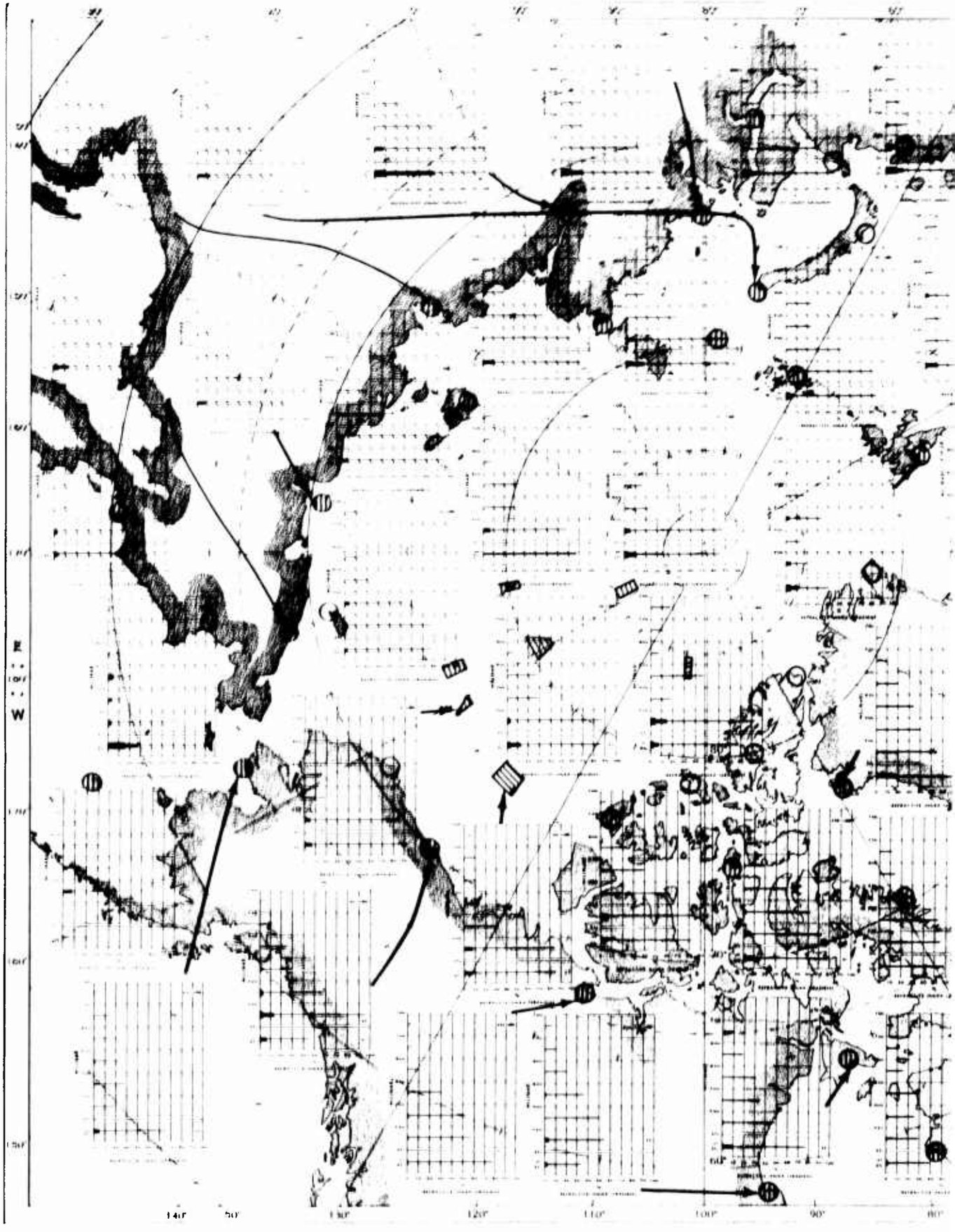
EUREKA



ALERT

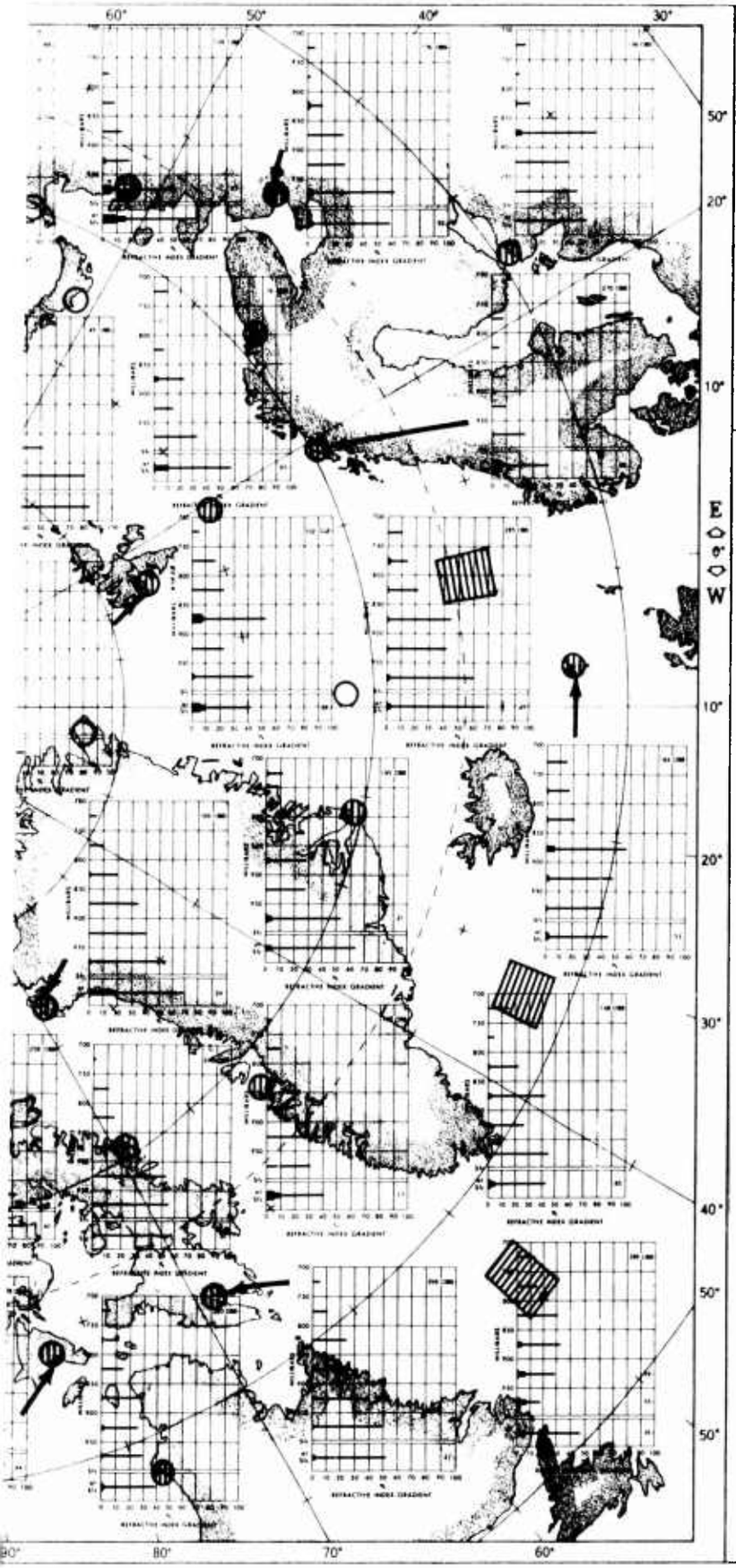


NOVEMBER REFRACTIVE IND



'E INDEX GRADIENT

CHART 281



Percentage Frequency Refractive Index Gradient* within 7 strata

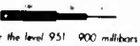
Criteria

(a) $\Delta N / \Delta H \leq -.048$ Trapping

(b) $\Delta N / \Delta H \leq -.027$ Very Superrefractive

(c) $\Delta N / \Delta H \leq -.012$ Superrefractive

Indicated by



[For the level 951 - 900 millibars

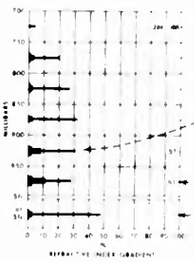
a - occurred 2 % of all observations

b - 8 % of observations and

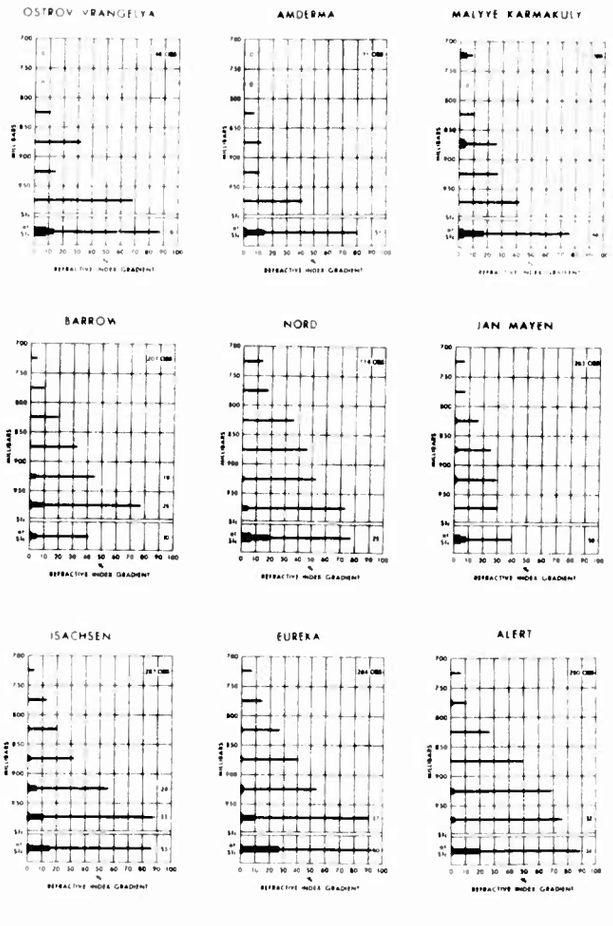
c - 31 % of observations]

Mean thickness (tens of feet) of (b) above

Thickness omitted when there were < 5 superrefractive gradients based within a stratum

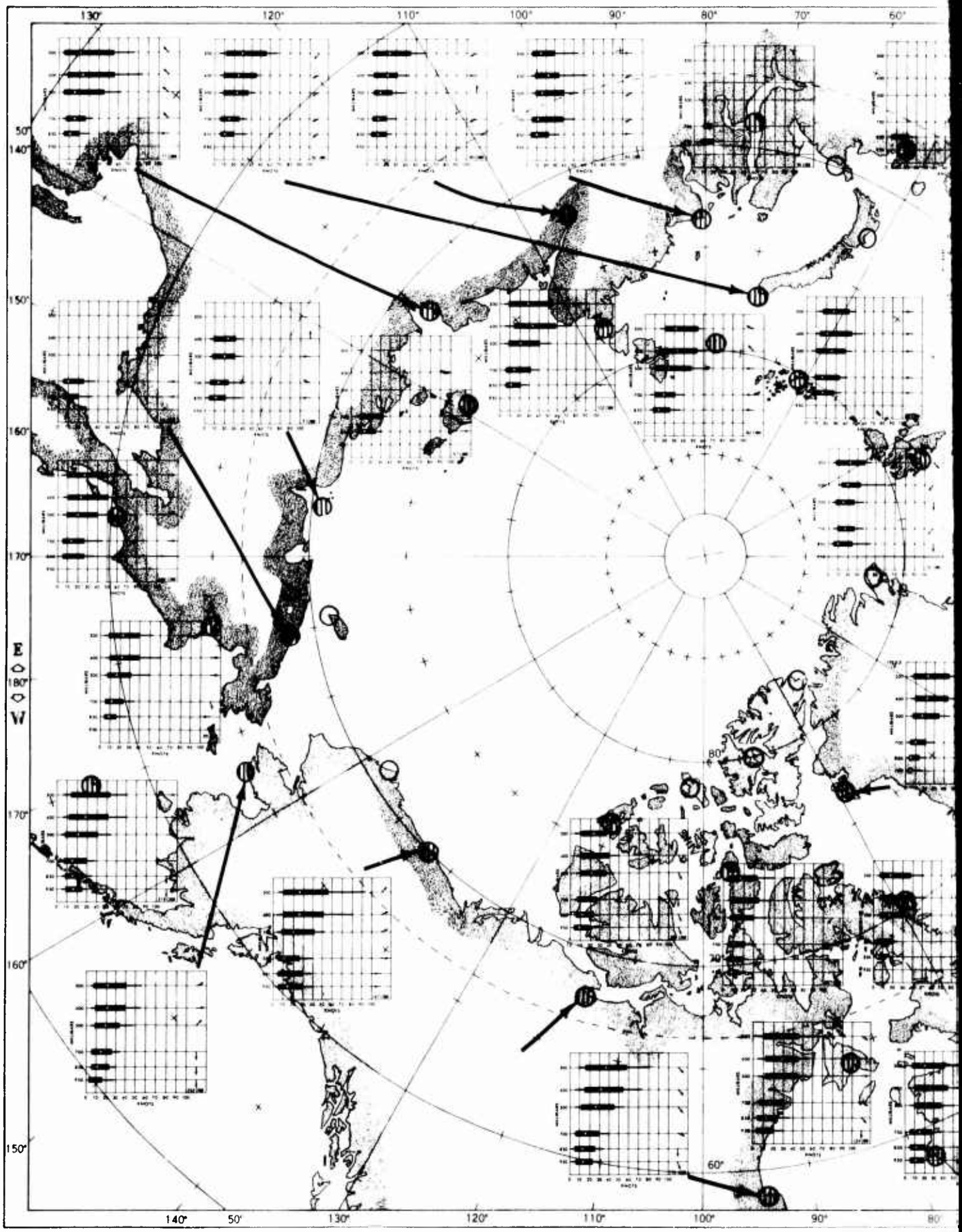


* computed according to methods used by U.S. Navy Electronics Laboratory



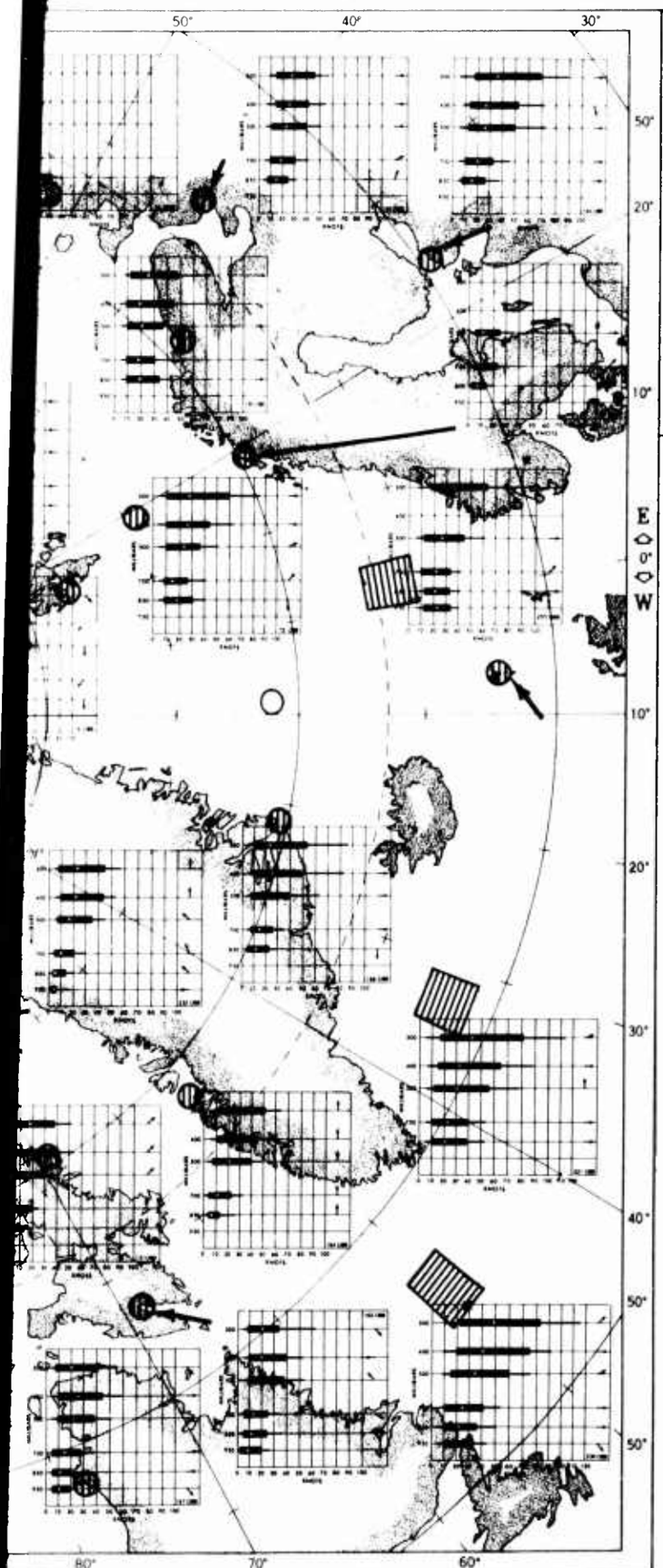
DECEMBER

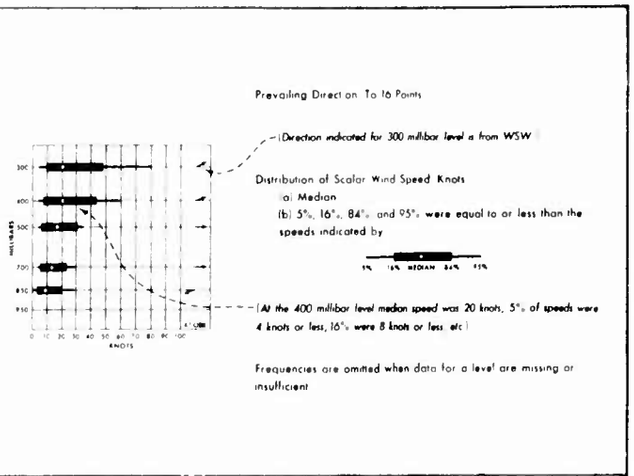
WIND (950 T

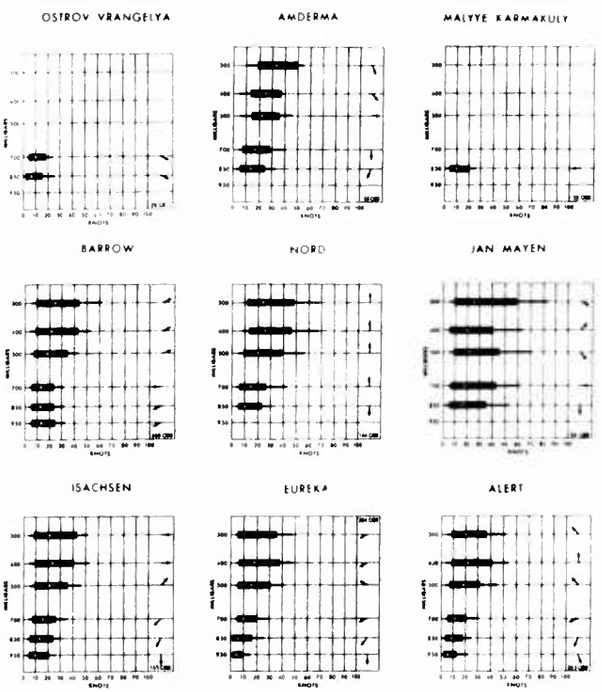


TO 300 MB)

CHART 282

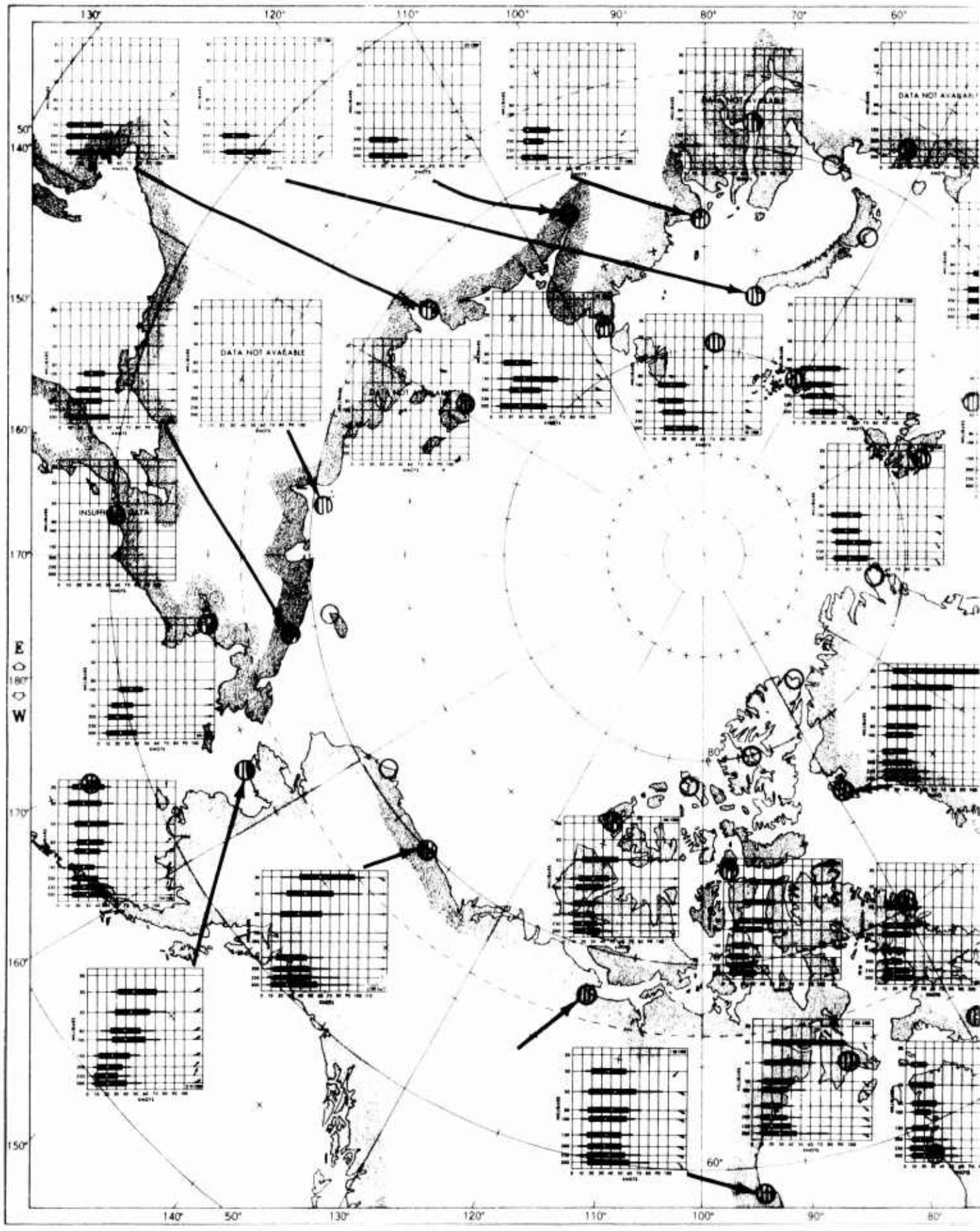






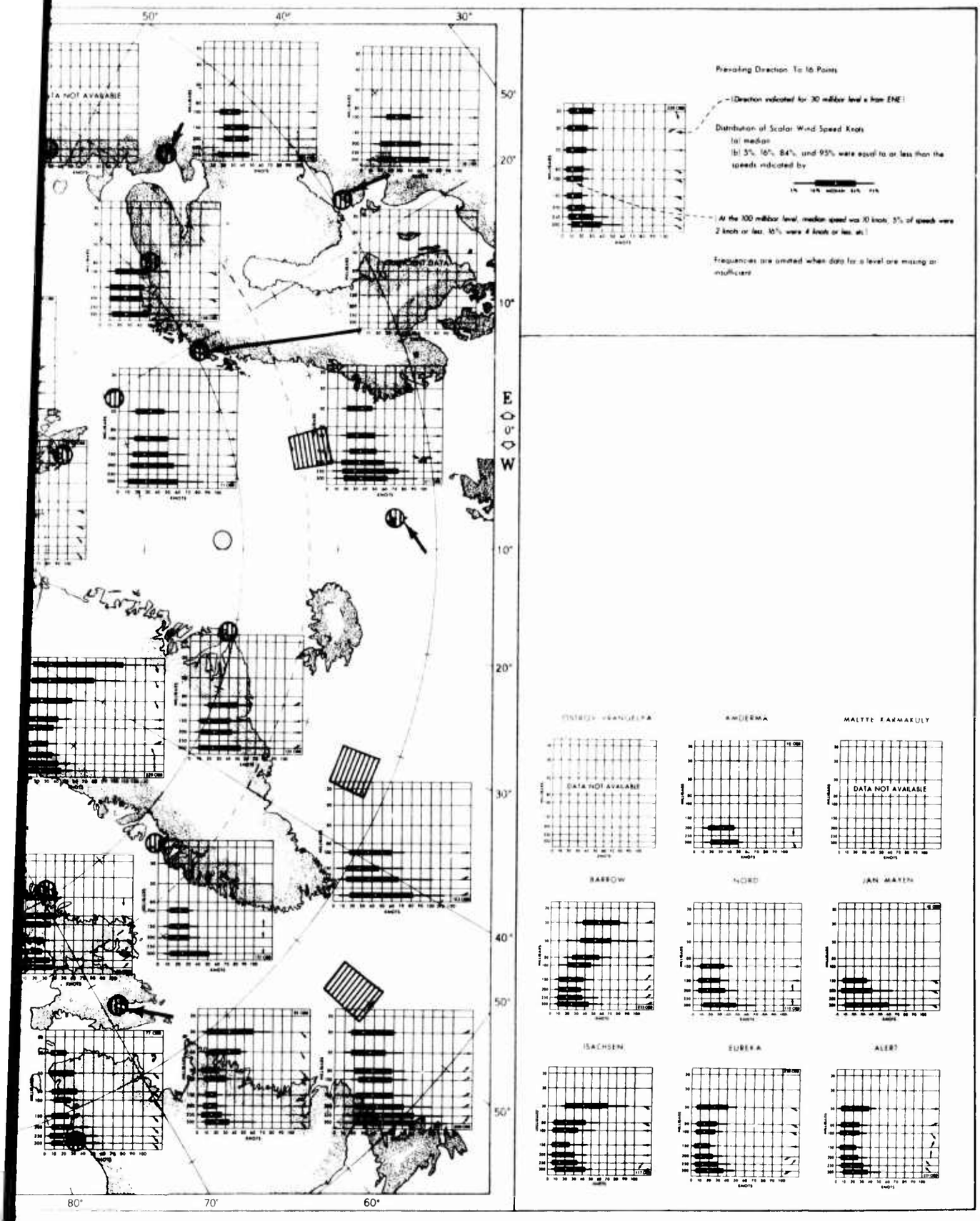
DECEMBER

WIND (300 TC

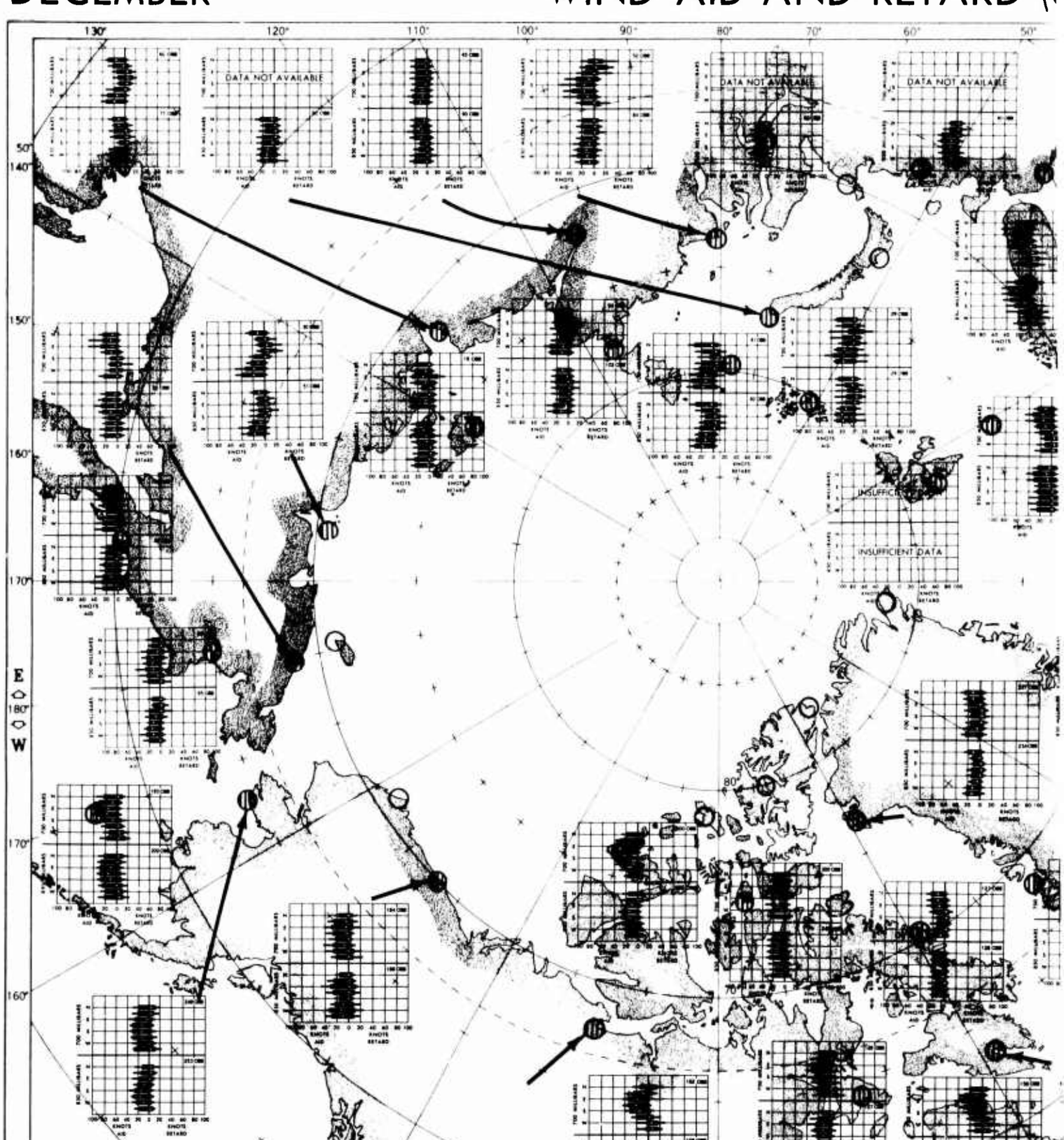


) TO 20 MB)

CHART 283

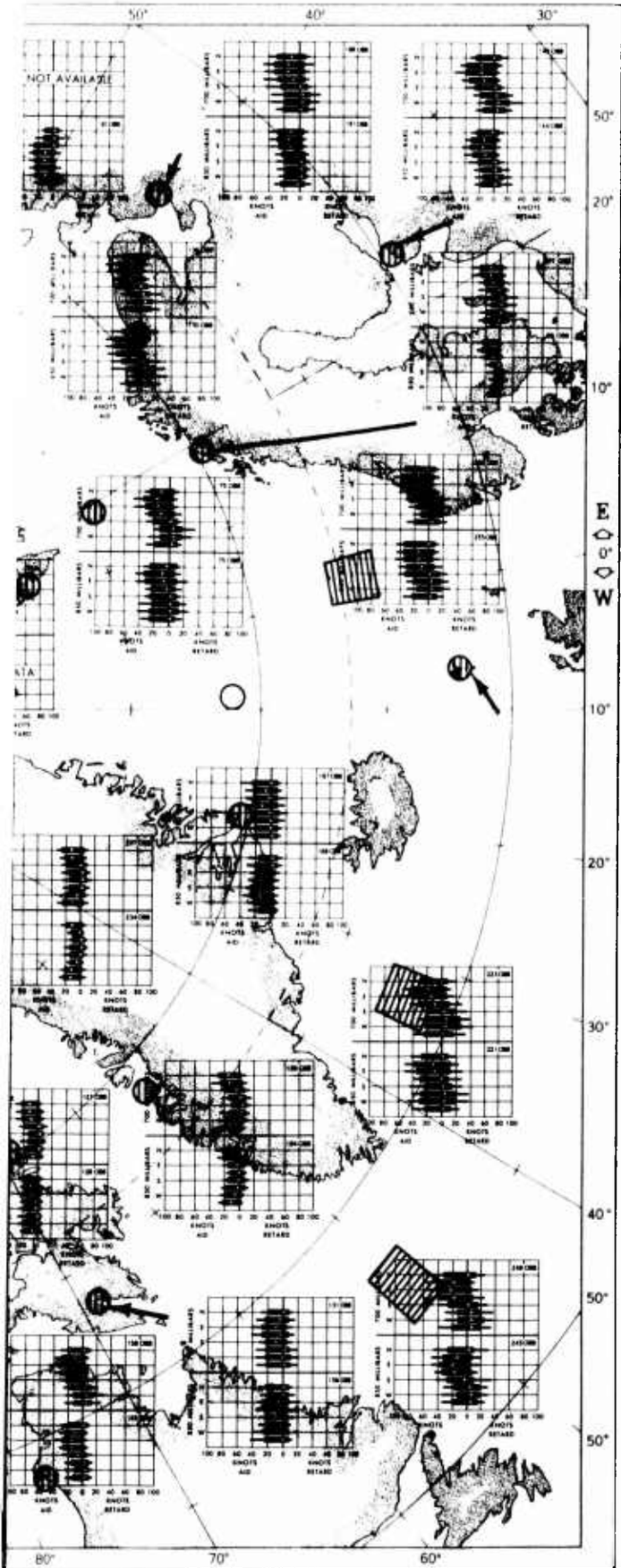


DECEMBER WIND AID AND RETARD (

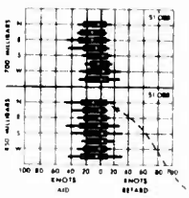


ARD (850 & 700 MB)

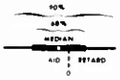
CHART 284



Distribution of Wind Component aiding (increasing) or retarding (decreasing) ground speed of an aircraft moving at 300 knots true air speed

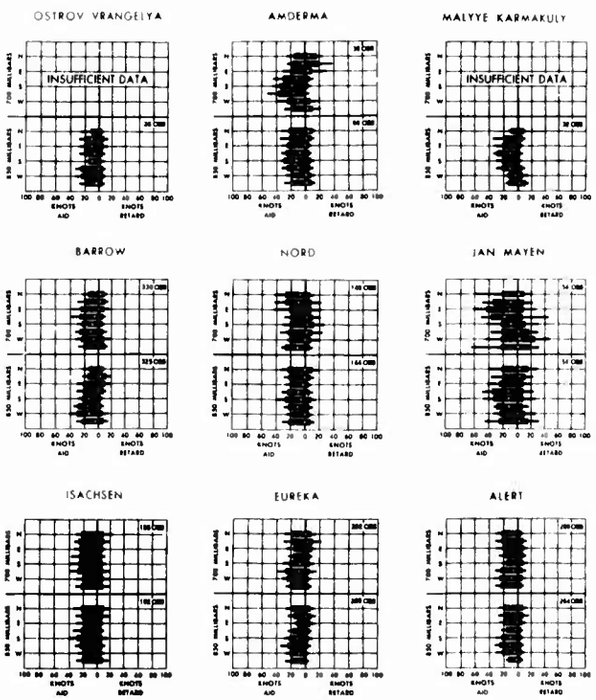


Read median and percentage frequency for direction toward which aircraft is flying thus

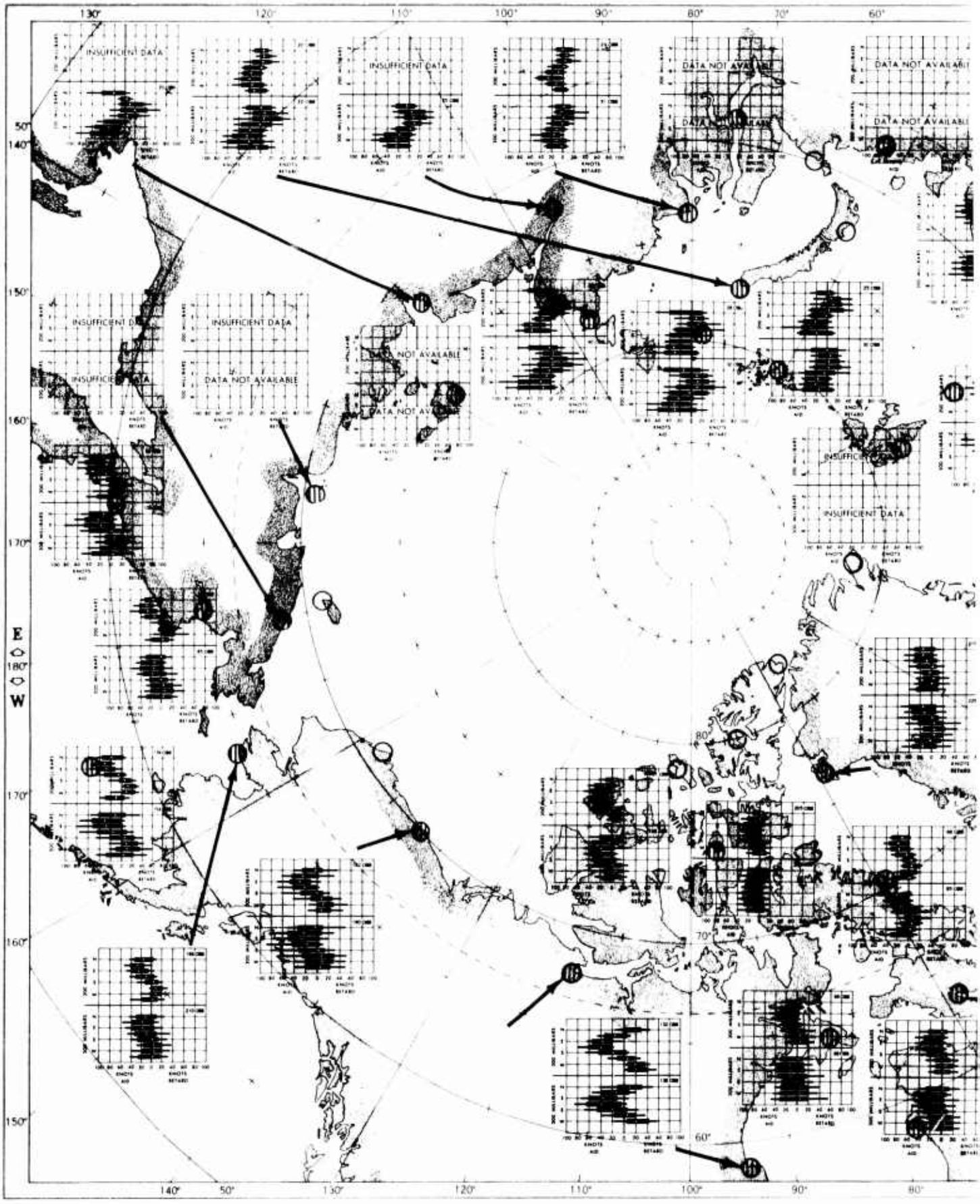


Bars omitted when data for a level are missing or insufficient

(For an aircraft flying toward north at the 850 millibar level, wind aided or increased ground speed by an average of 12 knots. Wind effect ranged from 28 knots aid to 8 knots retard in 68% of the observations. Wind effect ranged from 50 knots aid to 20 knots retard in 90% of the observations.)

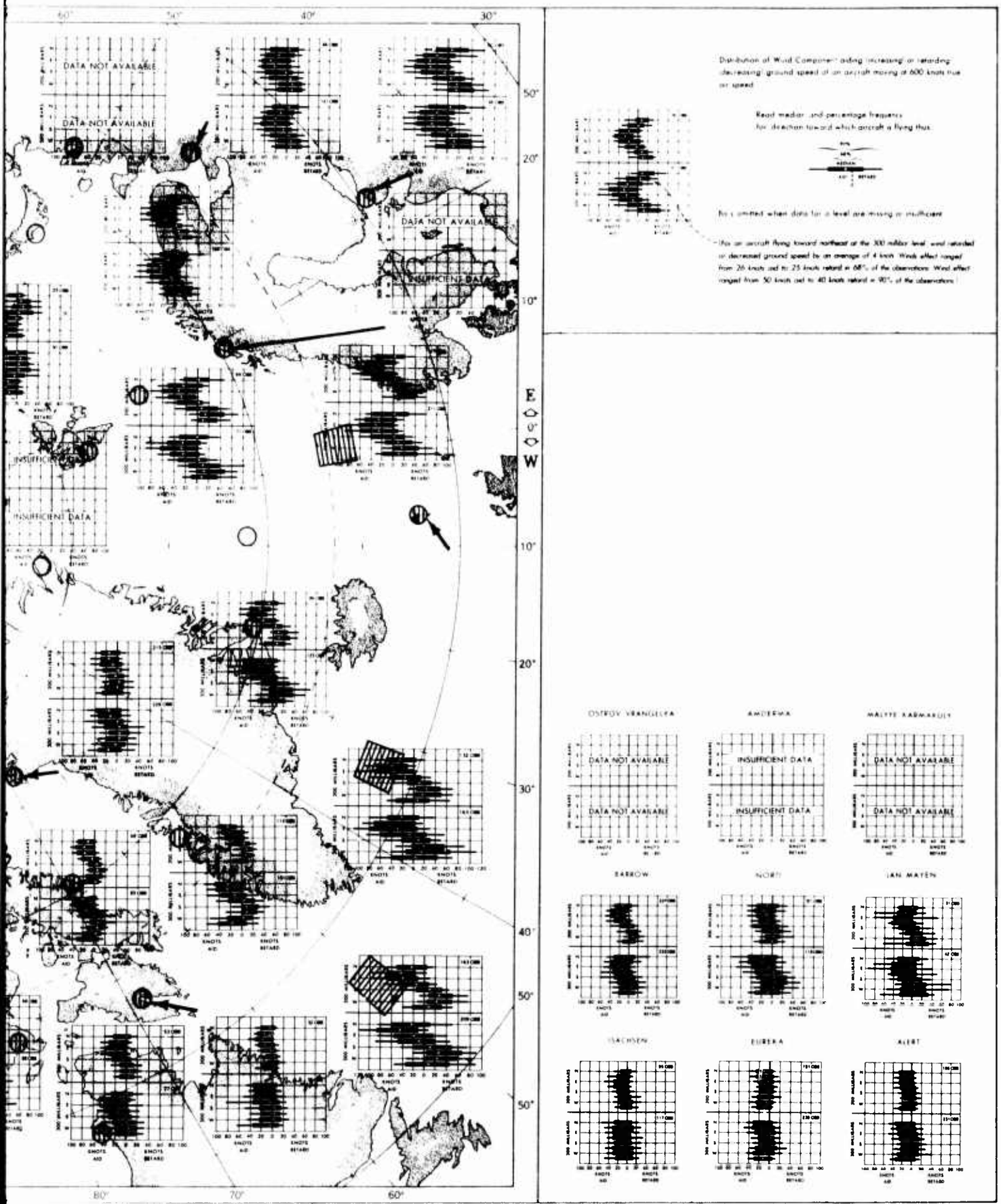


DECEMBER WIND AID AND RETARD

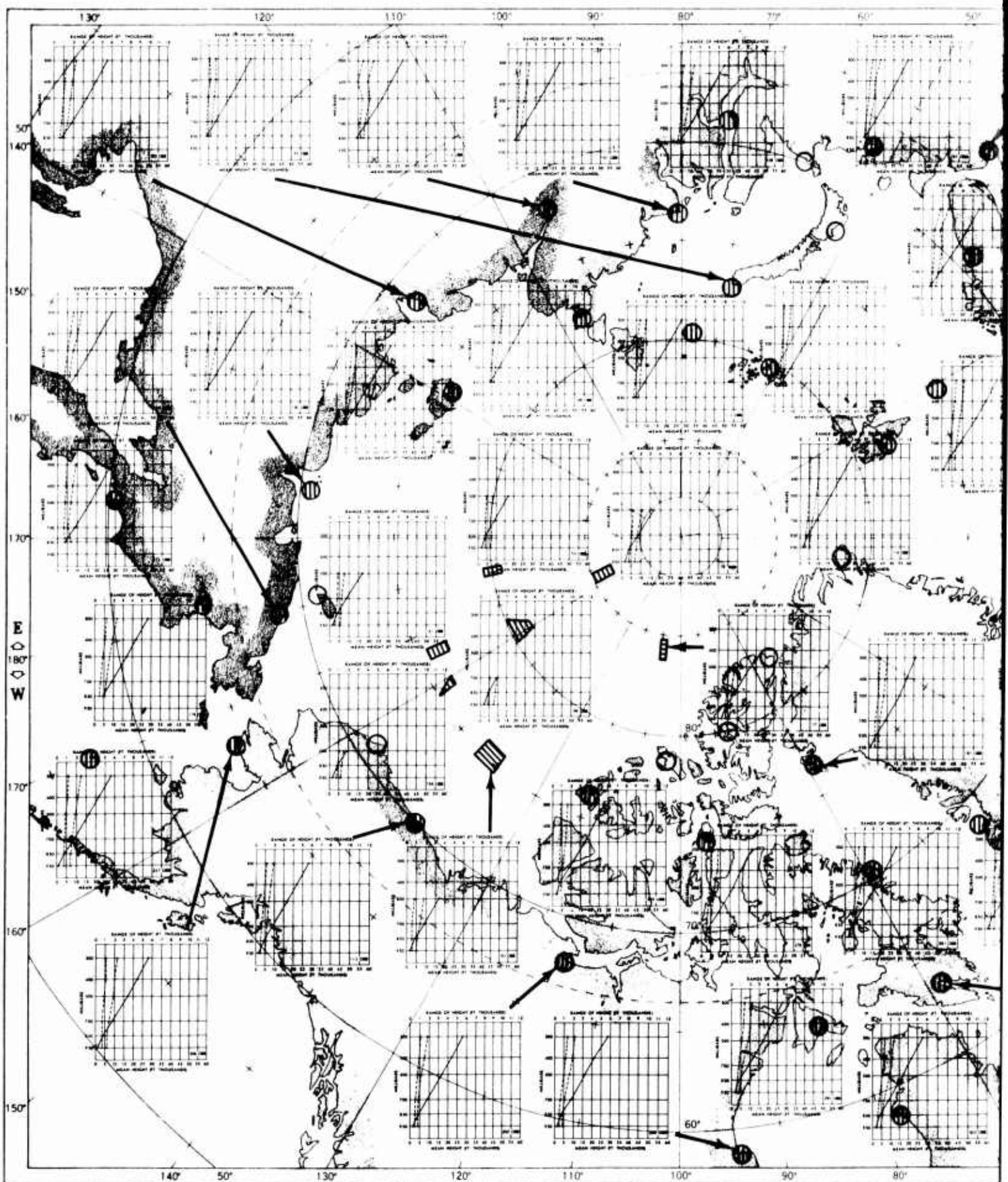


RETARD (300 & 200 MB)

CHART 285

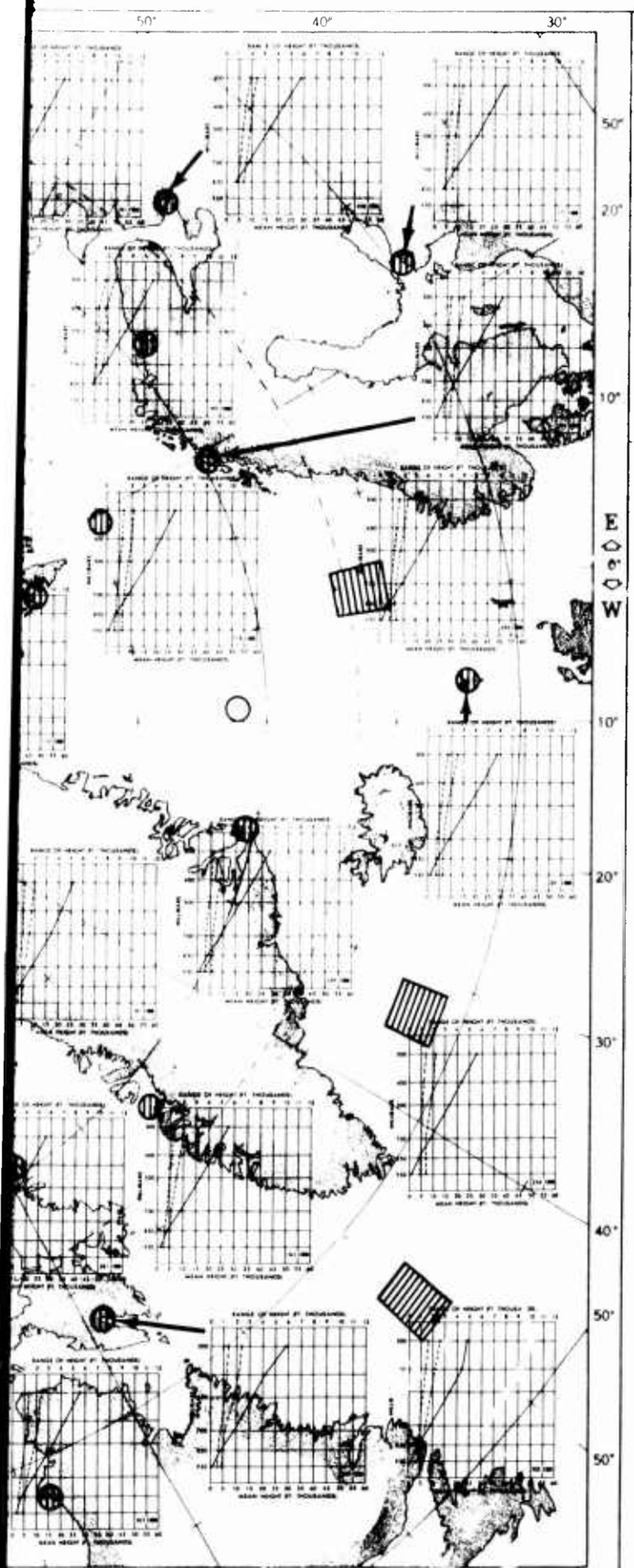


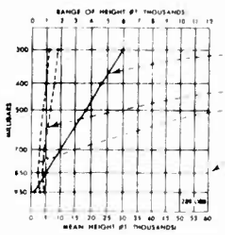
DECEMBER HEIGHT (950 TO 3



) TO 300 MB)

CHART 286





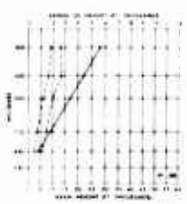
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
  - (1) 5% 95% Range
  - (2) 16% 84% Range

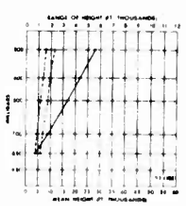
(For the 850 millibar level the mean Height = 5,000 feet, the 5% 95% Height range = 800 feet and the 16% 84% range = 450 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

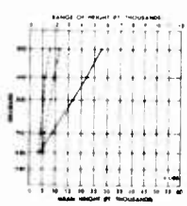
OSTROV VRANGELYA



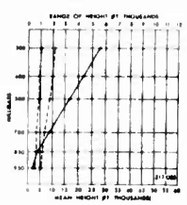
AMDERMA



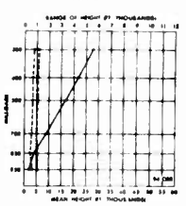
MALYYE KARMAKULY



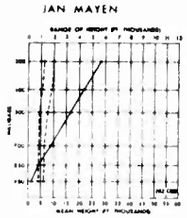
BARROW



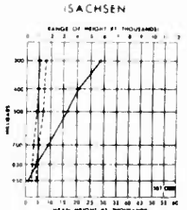
NORD



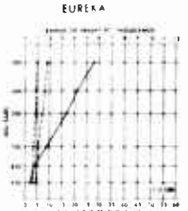
JAN MAYEN



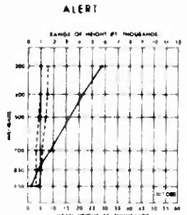
ISACHSEN



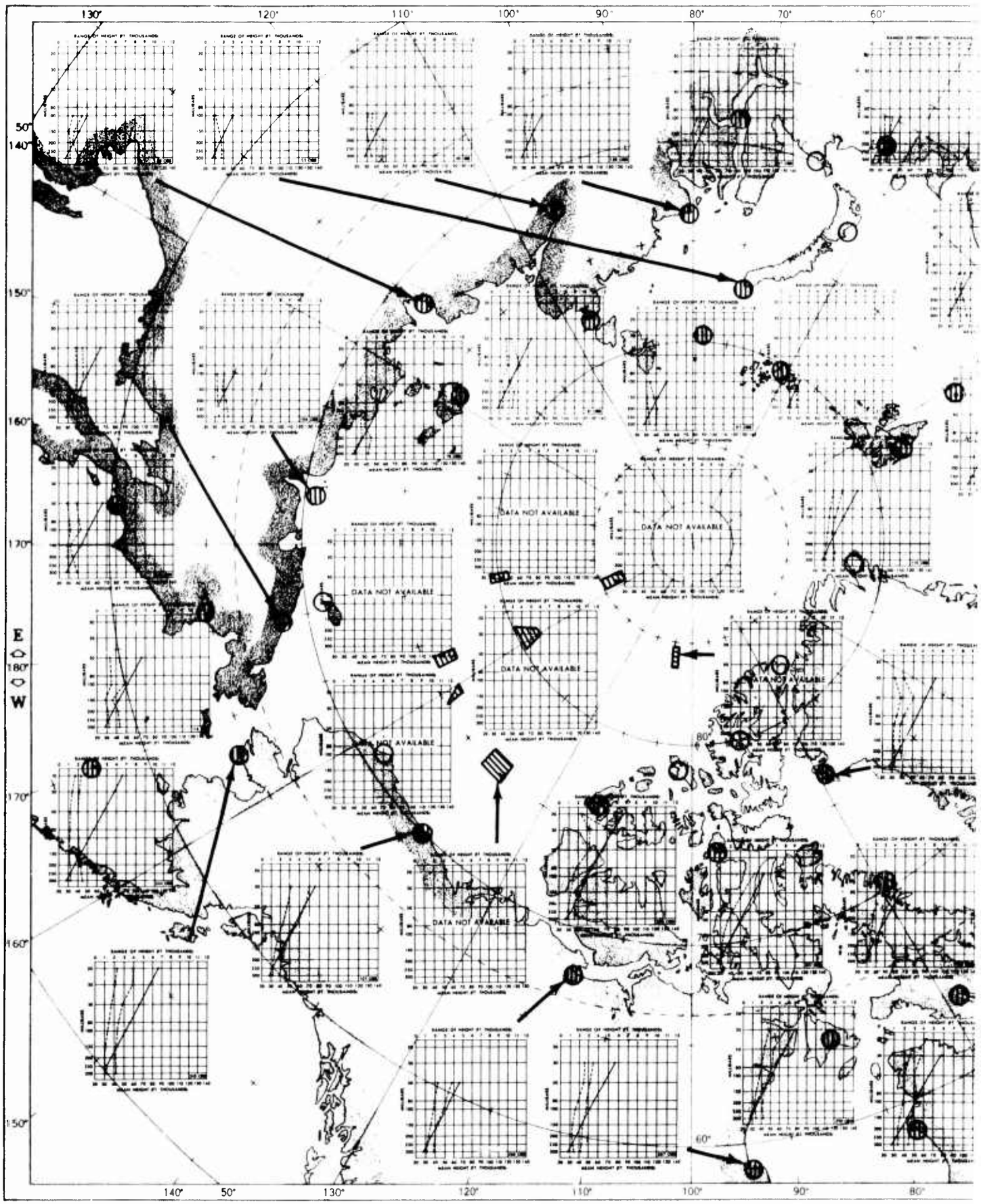
EUREKA



ALERT

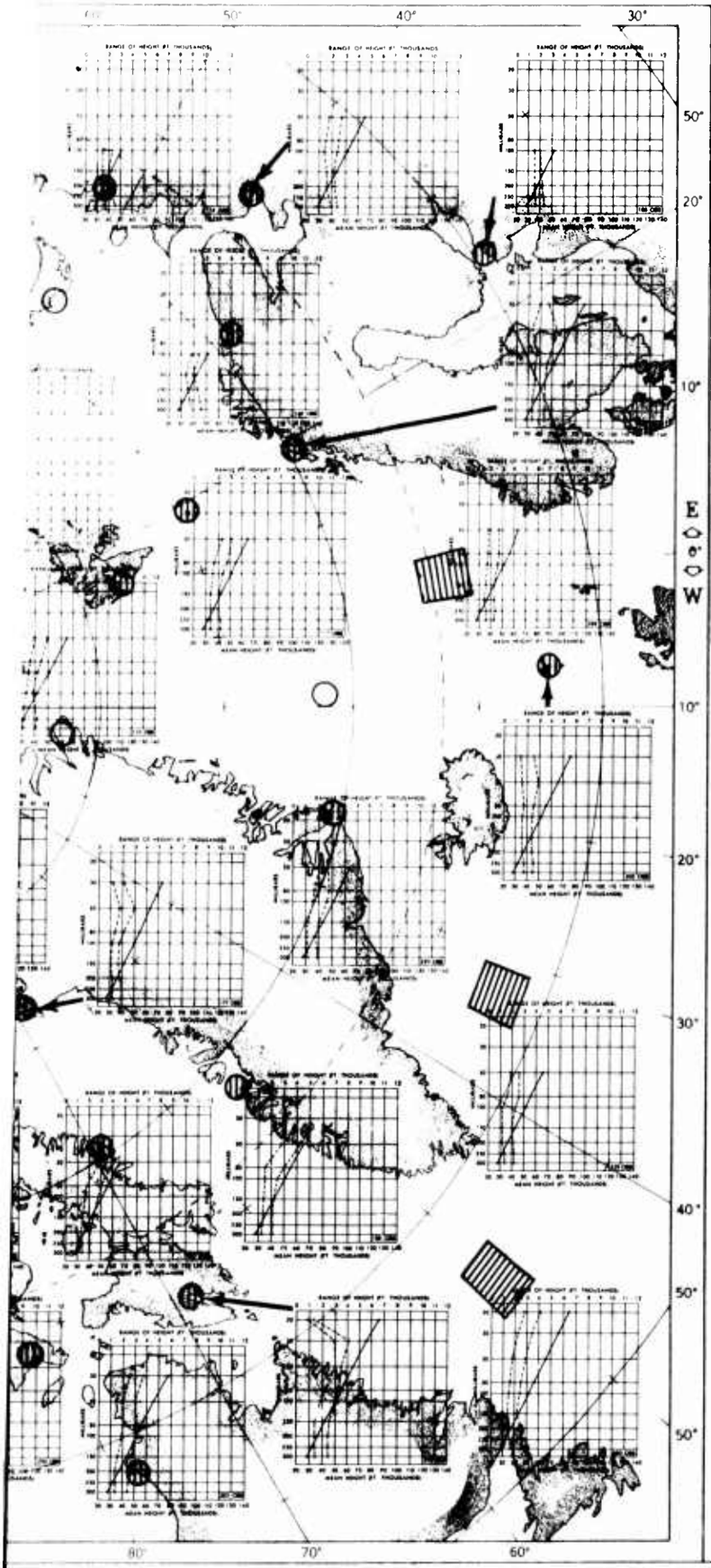


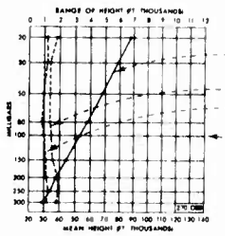
DECEMBER HEIGHT (300 TC



(300 TO 20 MB)

CHART 287





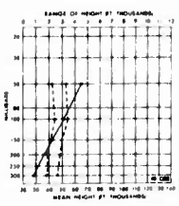
Distribution of Height of Pressure Surfaces

- (a) Mean Height
- (b) Range of Height
- (1) 5% 95% Range
- (2) 16% 84% Range

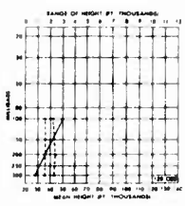
(For the 100 millibar level the mean Height = 53,000 feet, the 5% - 95% Height range = 1,500 feet, and the 16% 84% range = 1,000 feet)

Mean and ranges of height are omitted when data for a level are missing or insufficient

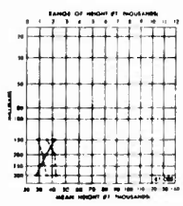
OSTROV VRANGELYA



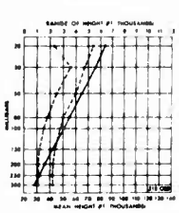
AMDERMA



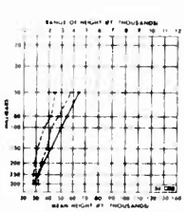
MALYYE KARMAKULY



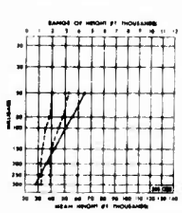
BARROW



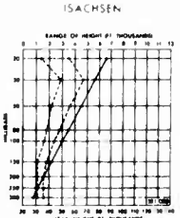
NORD



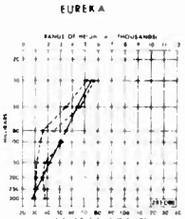
JAN MAYEN



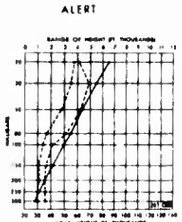
ISACHSEN



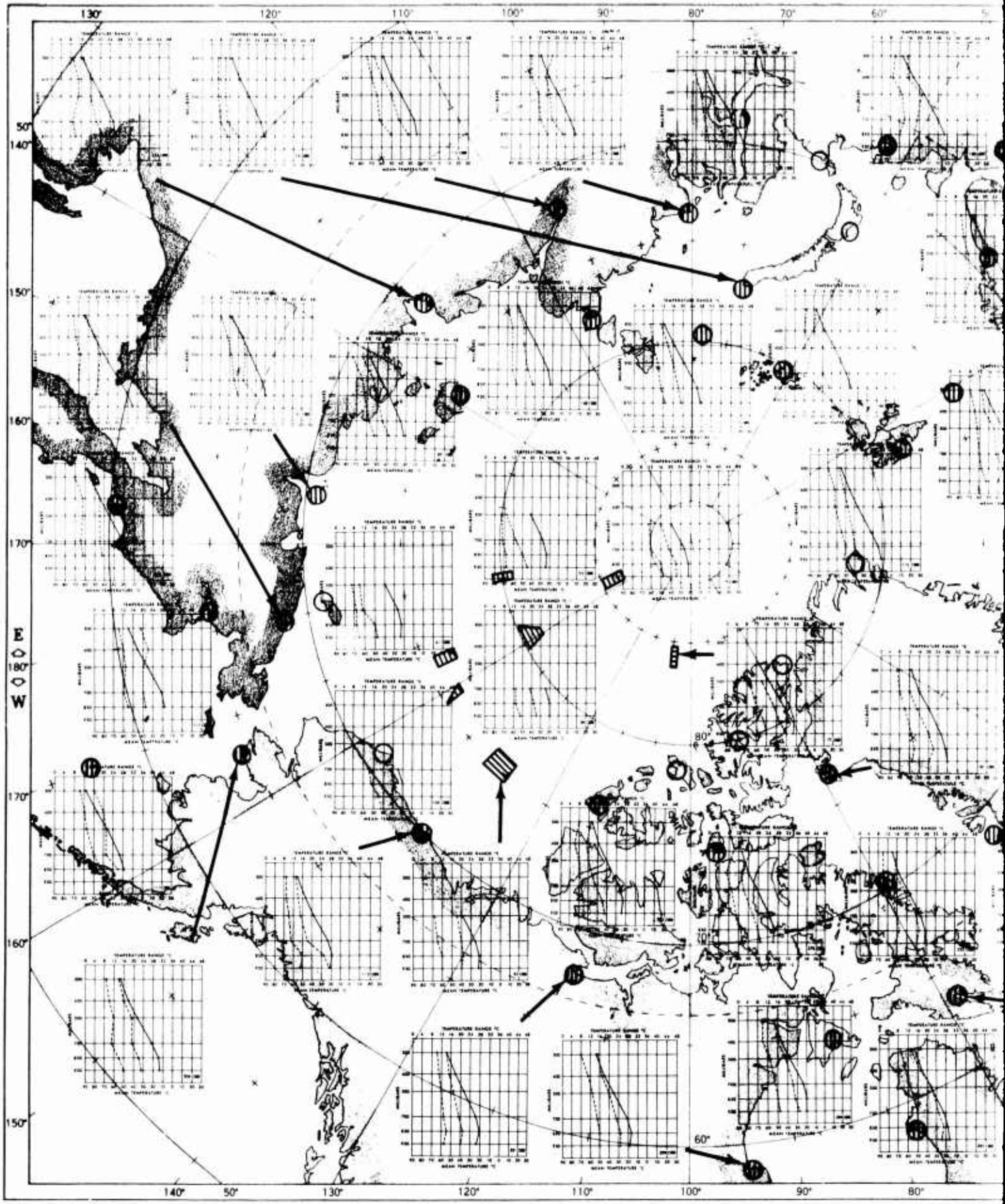
EUREKA



ALERT

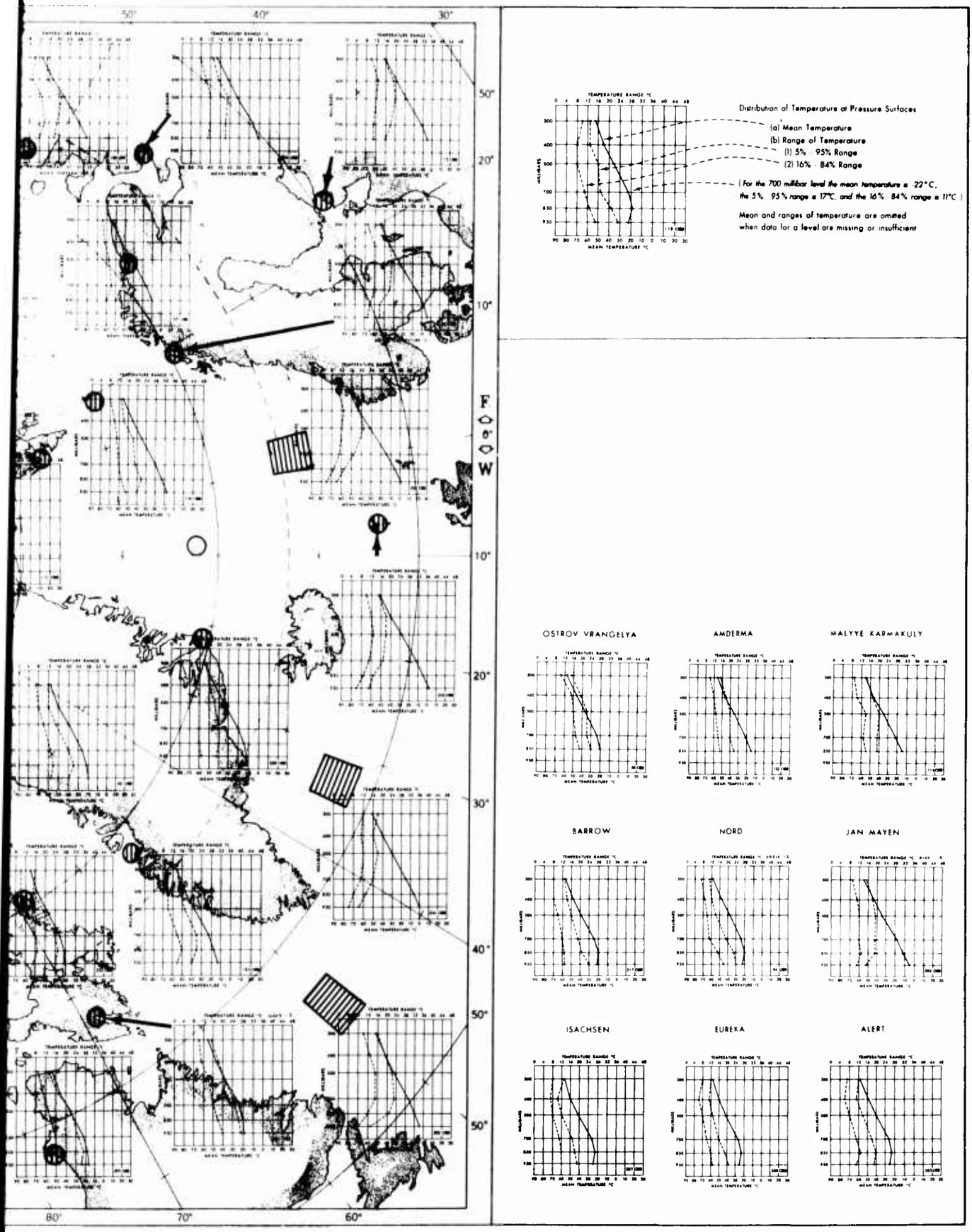


DECEMBER TEMPERATURE (950 T



(950 TO 300 MB)

CHART 288



Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% - 95% Range
(2) 16% - 84% Range

(For the 700 millibar level the mean temperature is 22°C, the 5% - 95% range is 17°C, and the 16% - 84% range is 11°C)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

OSTROV VRANGELYA

AMDERMA

MALYYE KARMAKULY

BARROW

NORD

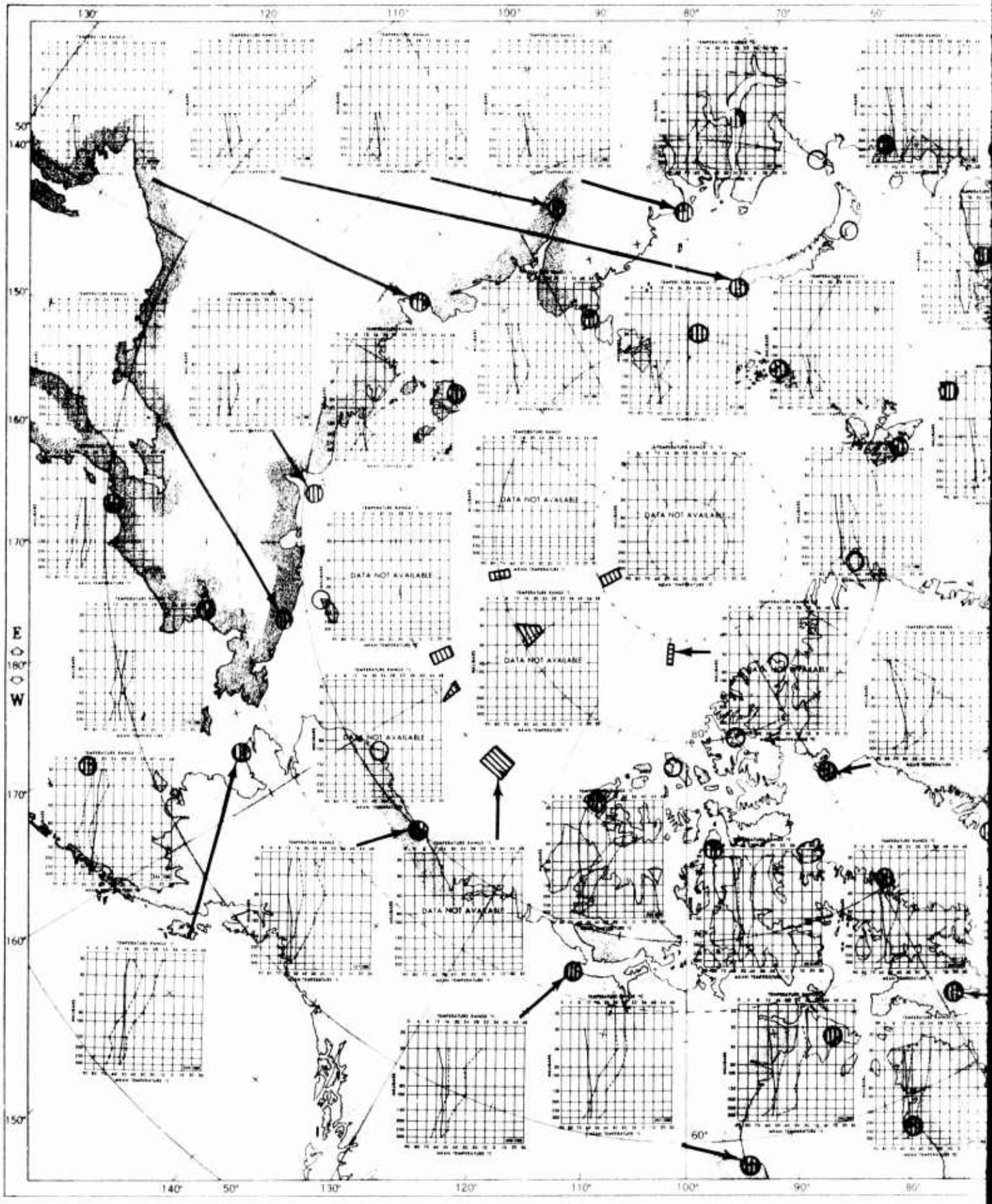
JAN MAYEN

ISACHSEN

EUREKA

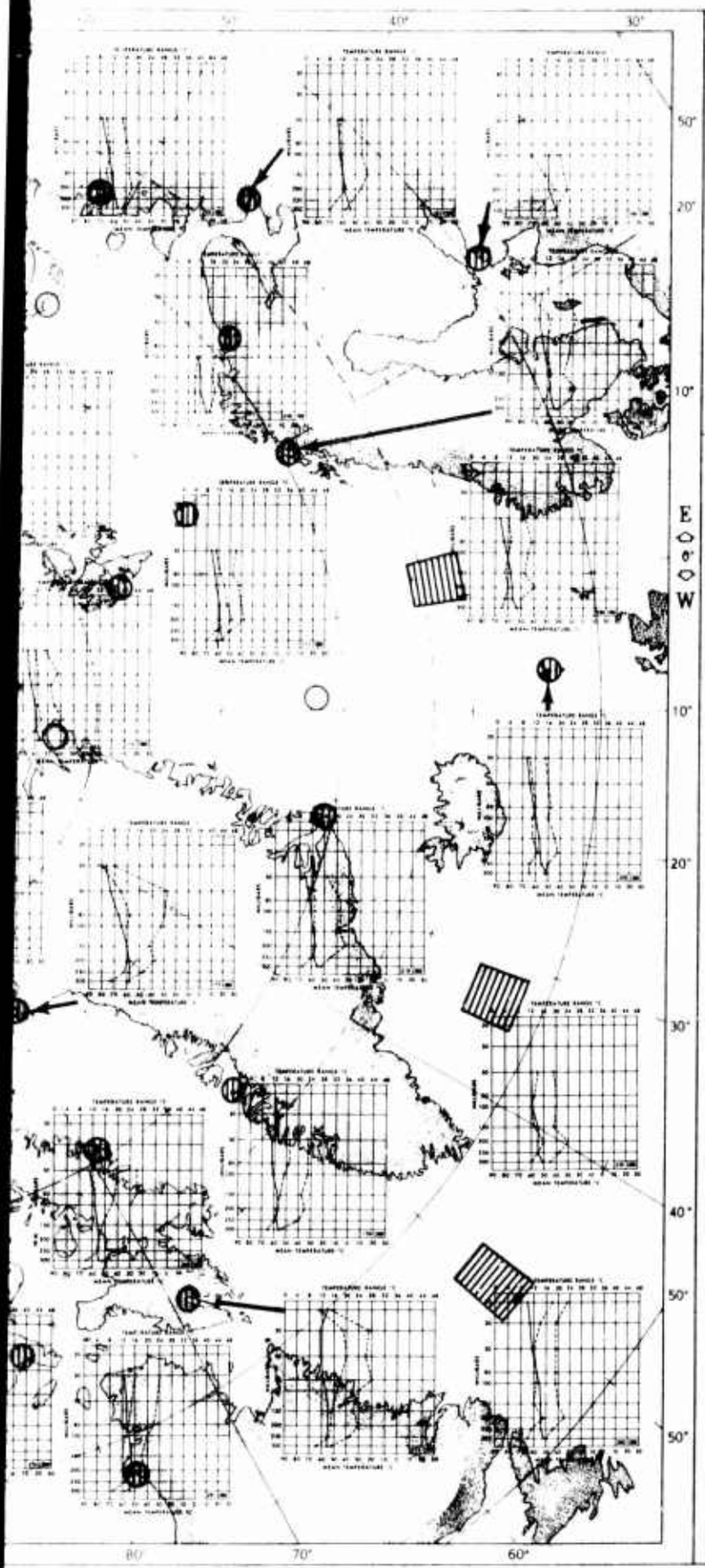
ALERT

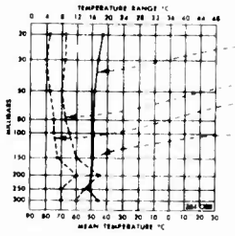
DECEMBER TEMPERATURE (300



RE (300 TO 20 MB)

CHART 289





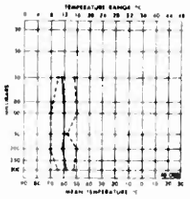
Distribution of Temperature at Pressure Surfaces

(a) Mean Temperature
(b) Range of Temperature
(1) 5% 95% Range
(2) 16% 84% Range

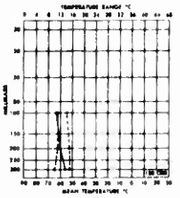
(For the 150 millibar level the mean temperature is -49°C the 5% 95% range is 12°C and the 16% 84% range is 7°C)

Mean and ranges of temperature are omitted when data for a level are missing or insufficient

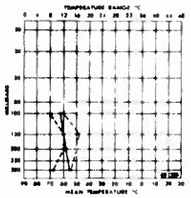
OSTROV VRANGELYA



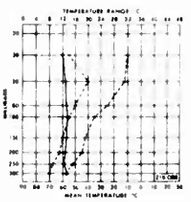
AMDERMA



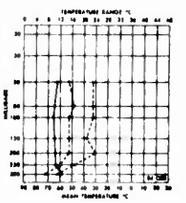
MALYYE KARMAKULY



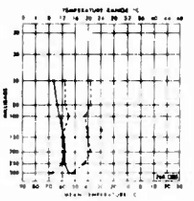
BARROW



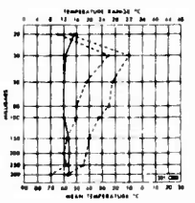
NORD



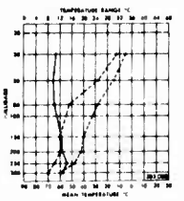
JAN MAYEN



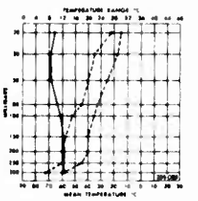
ISACHSEN



EUREKA

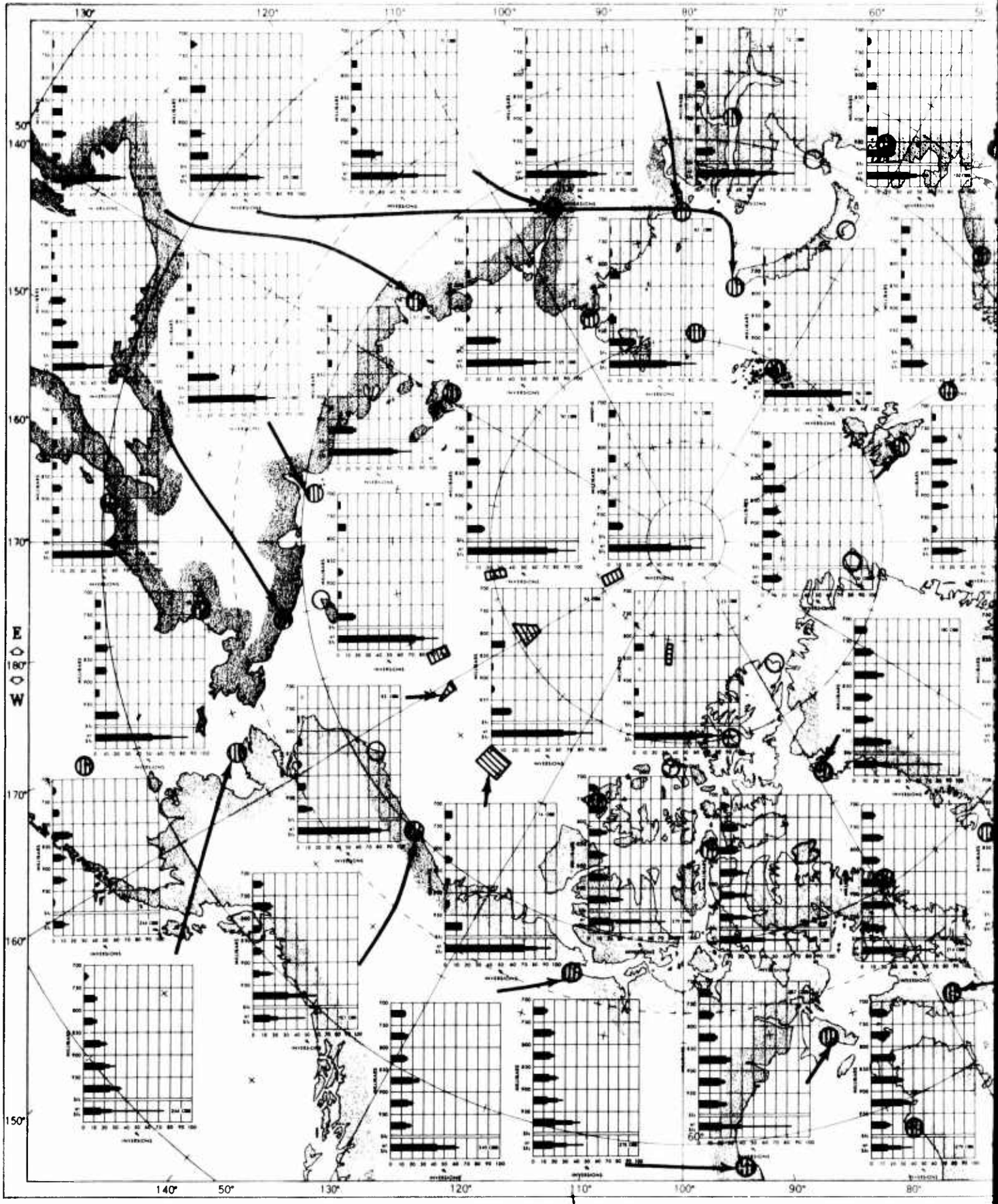


ALERT



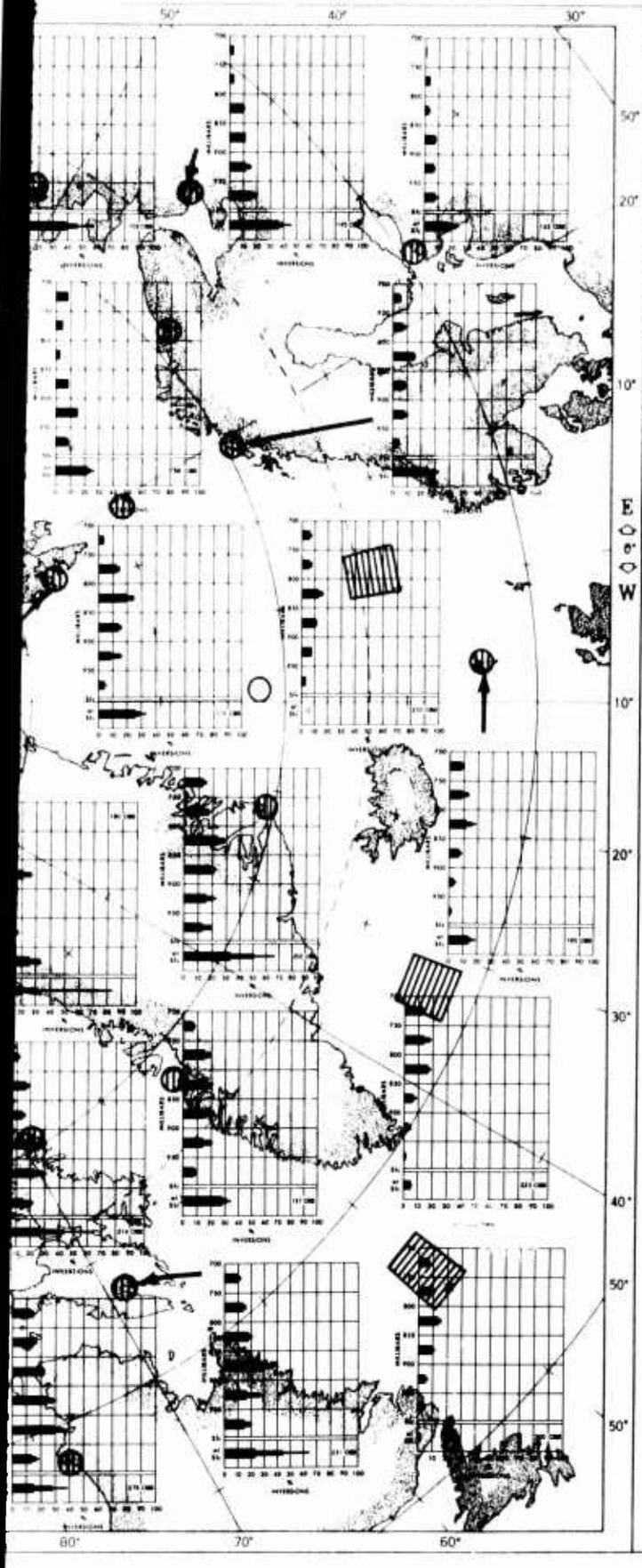
DECEMBER

INVERSION



RSIONS

CHART 290



Percentage Frequencies of three intensities of Temperature Inversions within each of seven layers from the surface to 700 millibars

General Criteria

(a) Temperature Inversion constant or increasing temperature with increasing height that persisted at least 5 millibars (approximately 50 meters)

(b) Layers Inversions were assigned to 7 arbitrary layers according to the pressure at their bases

750 to 701 millibars
800 to 751 millibars
850 to 801 millibars
900 to 851 millibars
950 to 901 millibars
5 millibars above the surface to 951 millibars
At the surface to 49 millibars above the surface

(c) Intensity change in temperature per 100 meters increase in height of

0°C TO +0.9°C | +1.0°C TO +1.9°C | +2.0°C OR MORE

When more than one inversion was recorded within a layer the one with the greatest intensity was counted

0 No occurrence

Blank No data

(28% [80.52] of all radiosonde ascents recorded temperature inversions of +1.0°C to +1.9°C per 100 meters with bases in the layer from the surface to 49 millibars above.)

OSTROV VRANGELYA

AMDERMA

MALYYE KARMAKULY

BARROW

NORD

JAN MAYEN

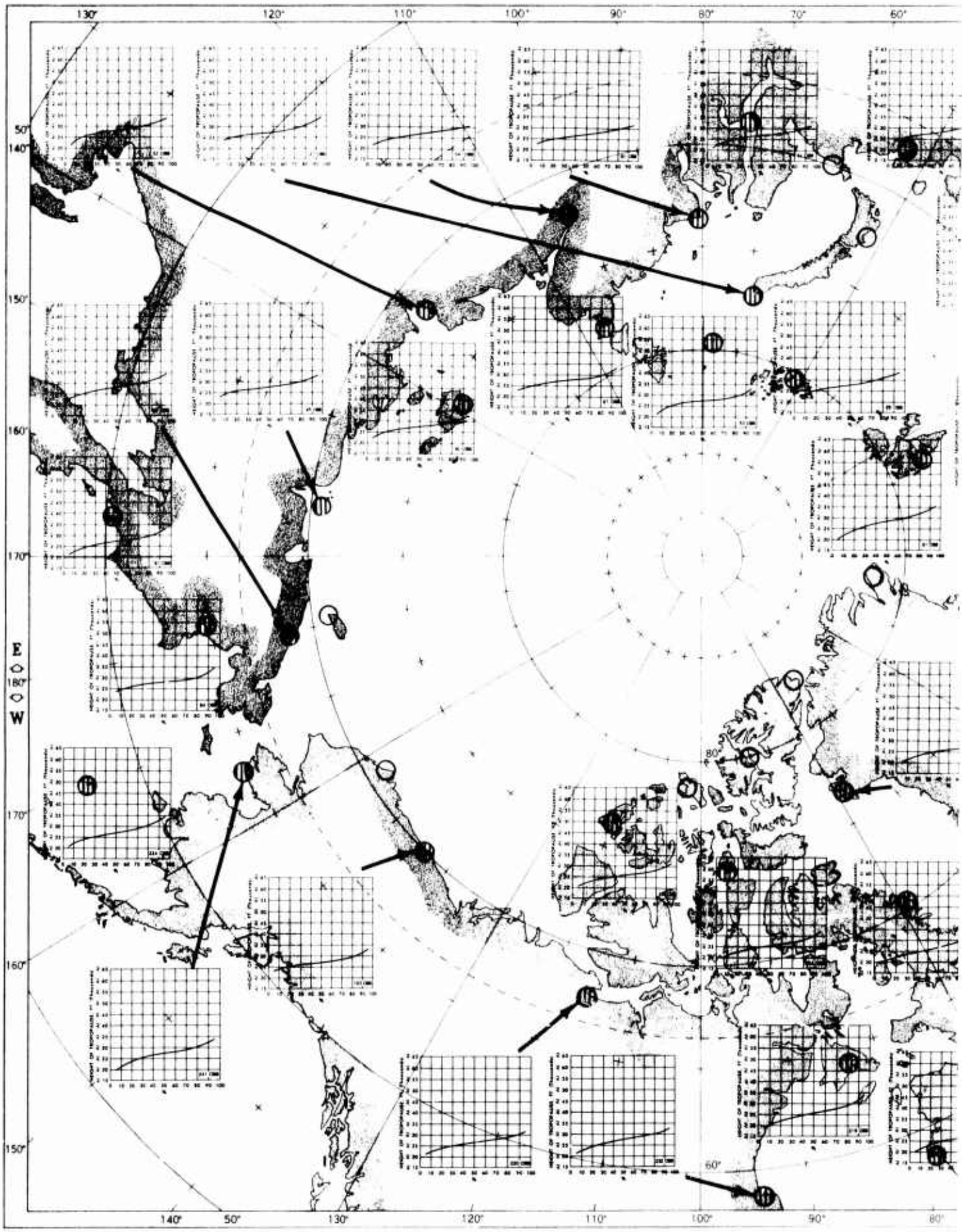
ISACHSEN

EUREKA

ALERT

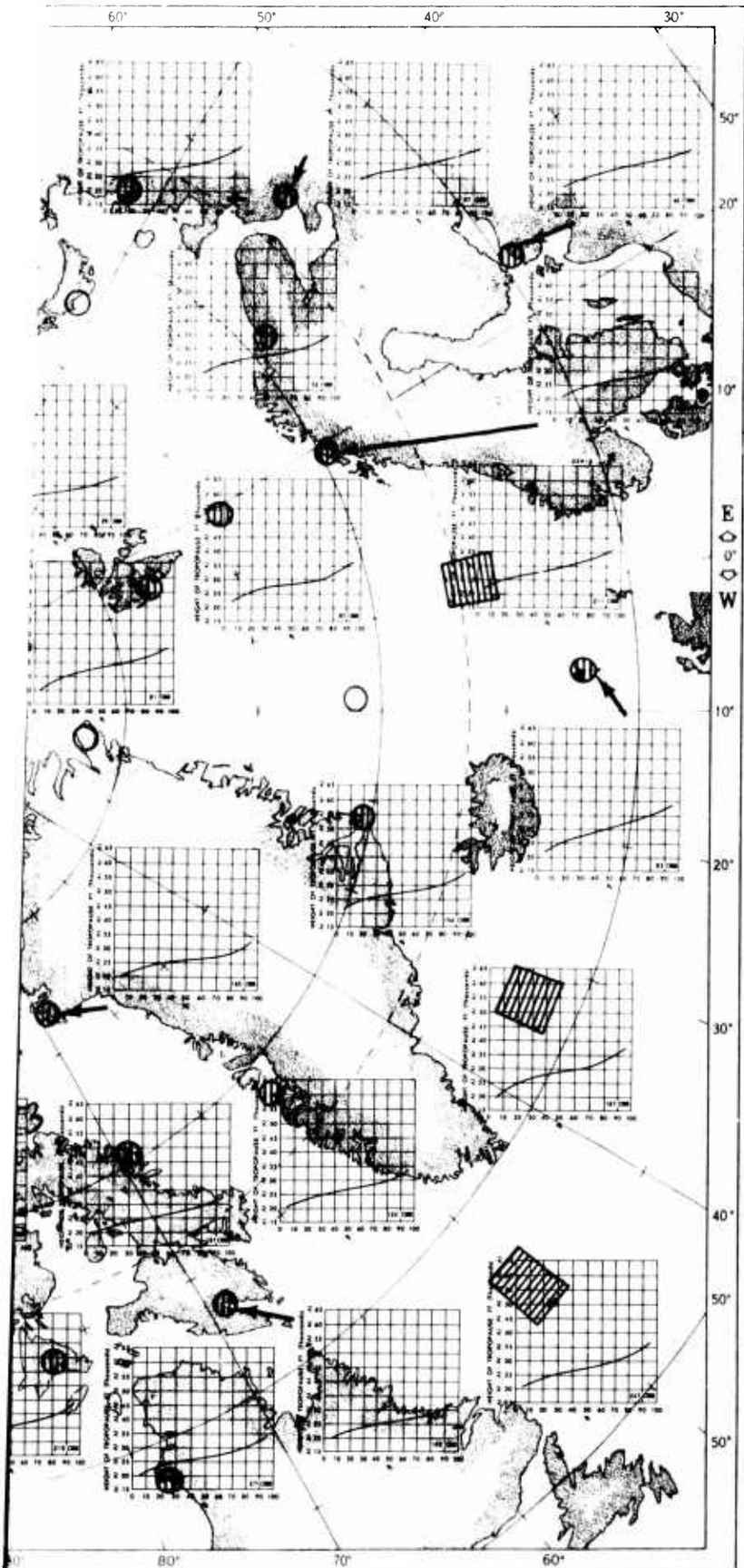
DECEMBER

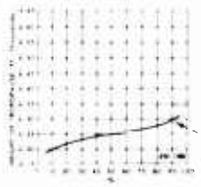
HEIGHT OF TRO



OF TROPOPAUSE

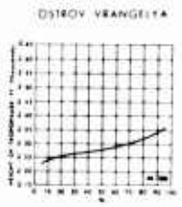
CHART 291

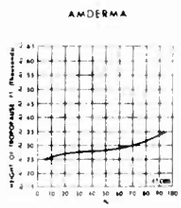


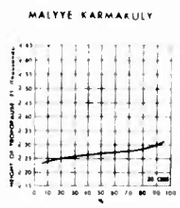


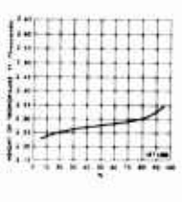
Percentage Frequency of Heights of the Tropopause equal to or less than the height intersected by the curve

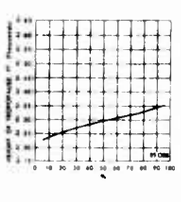
90% of all heights of the tropopause were thirty thousand feet or less

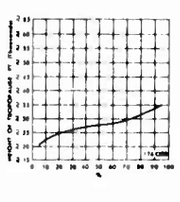


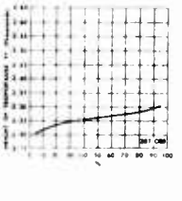


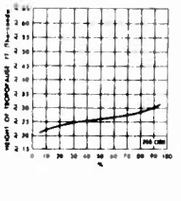


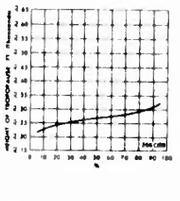






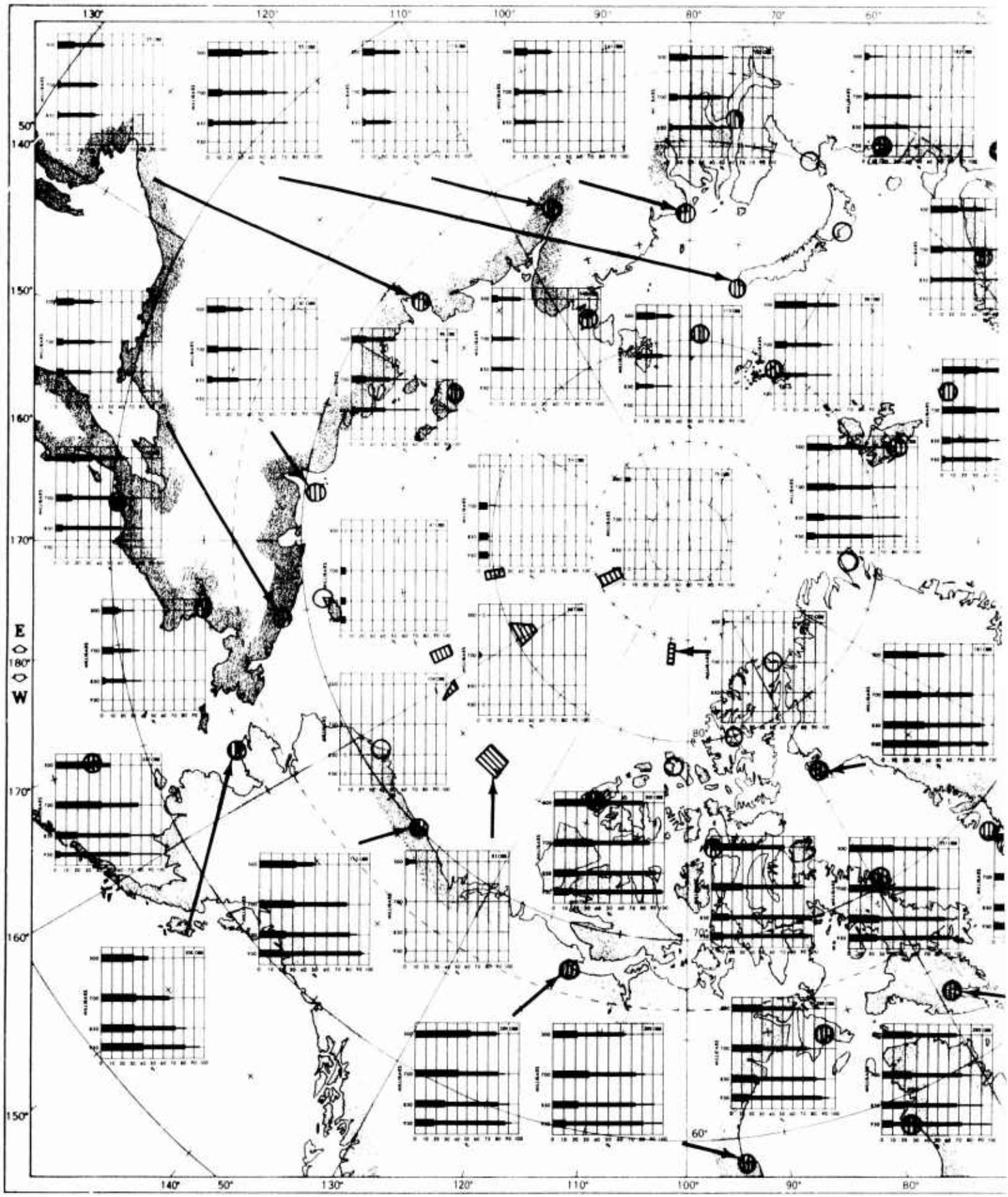






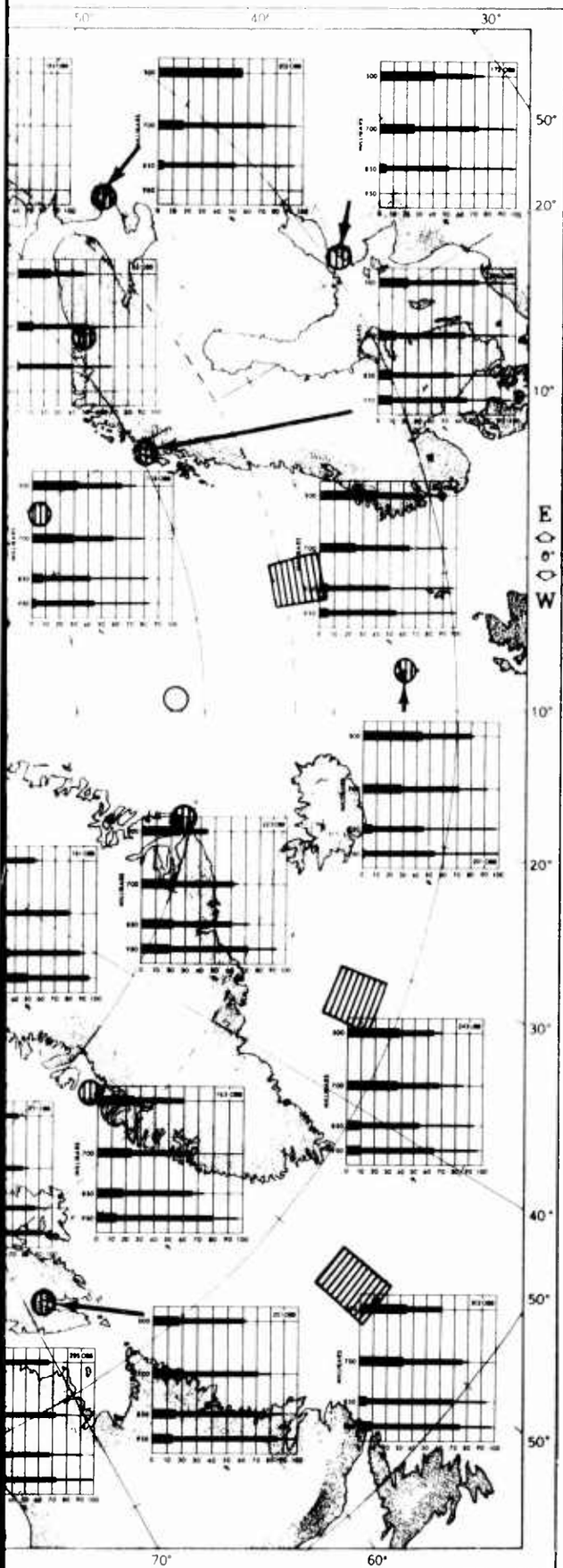
DECEMBER

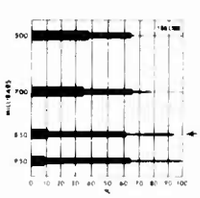
RELATIVE HUMI



UMIDITY

CHART 292



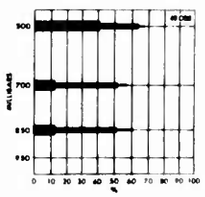


Distribution of Relative Humidity at Pressure Surfaces

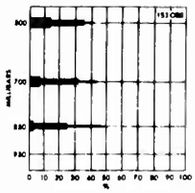
(a) Percentage Frequency of Relative Humidity as indicated by

(For the 850 millibar level Relative Humidity was 30% - 59% for 11% of all observations, 60% - 84% humidity occurred 50% [61 minus 11] of the observations, and 85% - 100% humidity occurred 33% [94 minus 61] of the observations)

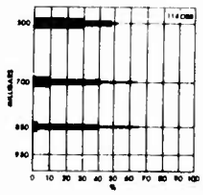
OSTROV VRANGELYA



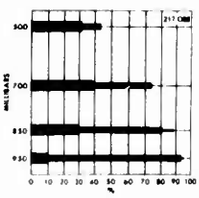
AMDERMA



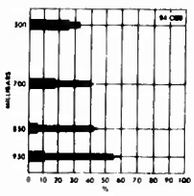
MALYYE KARMAKULY



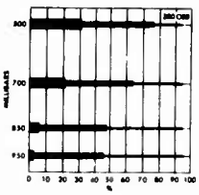
BARROW



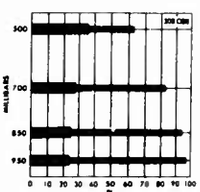
NORD



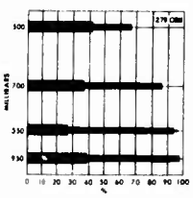
JAN MAYEN



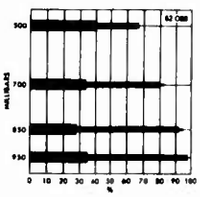
ISACHSEN



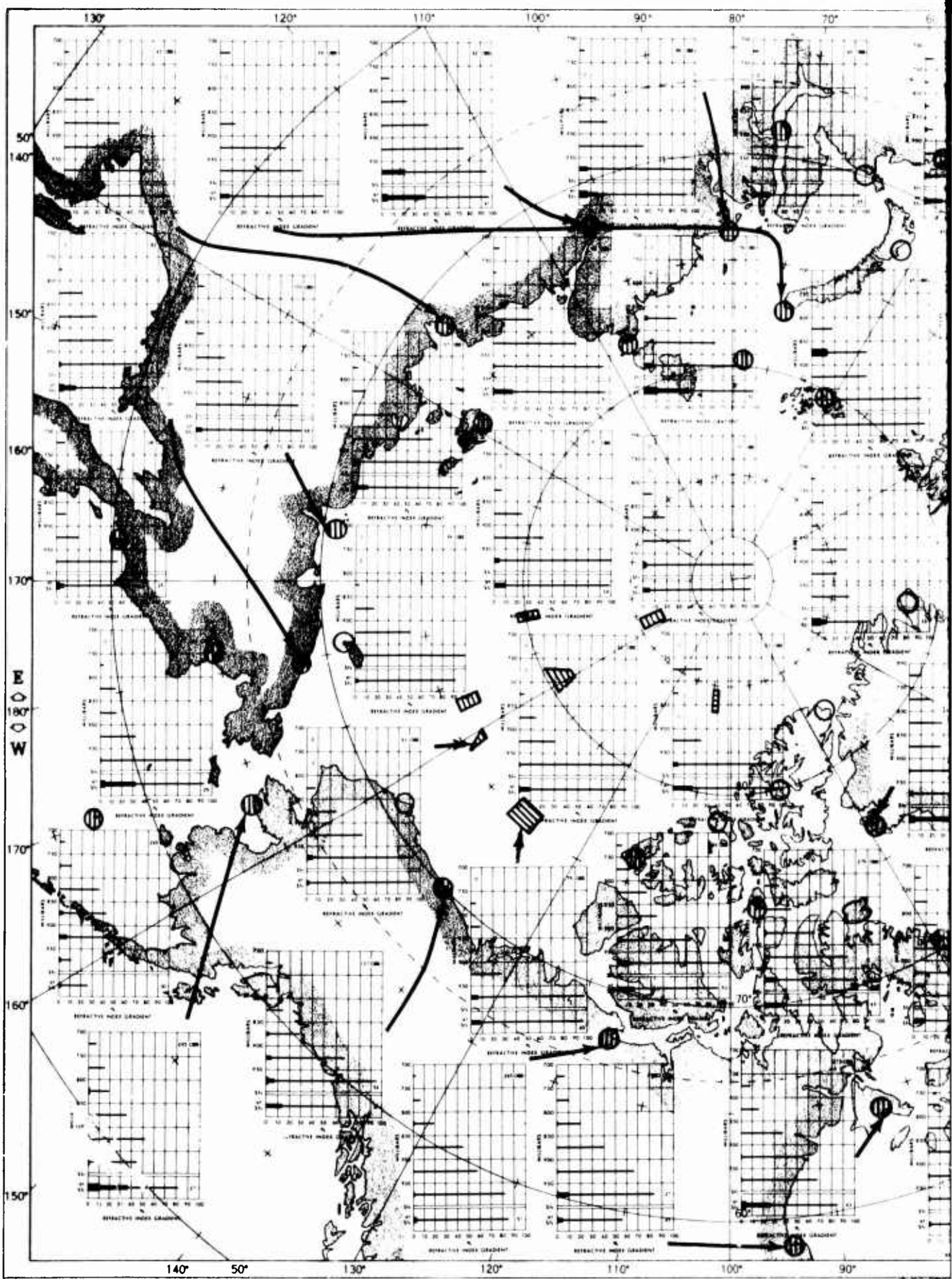
EUREKA



ALERT

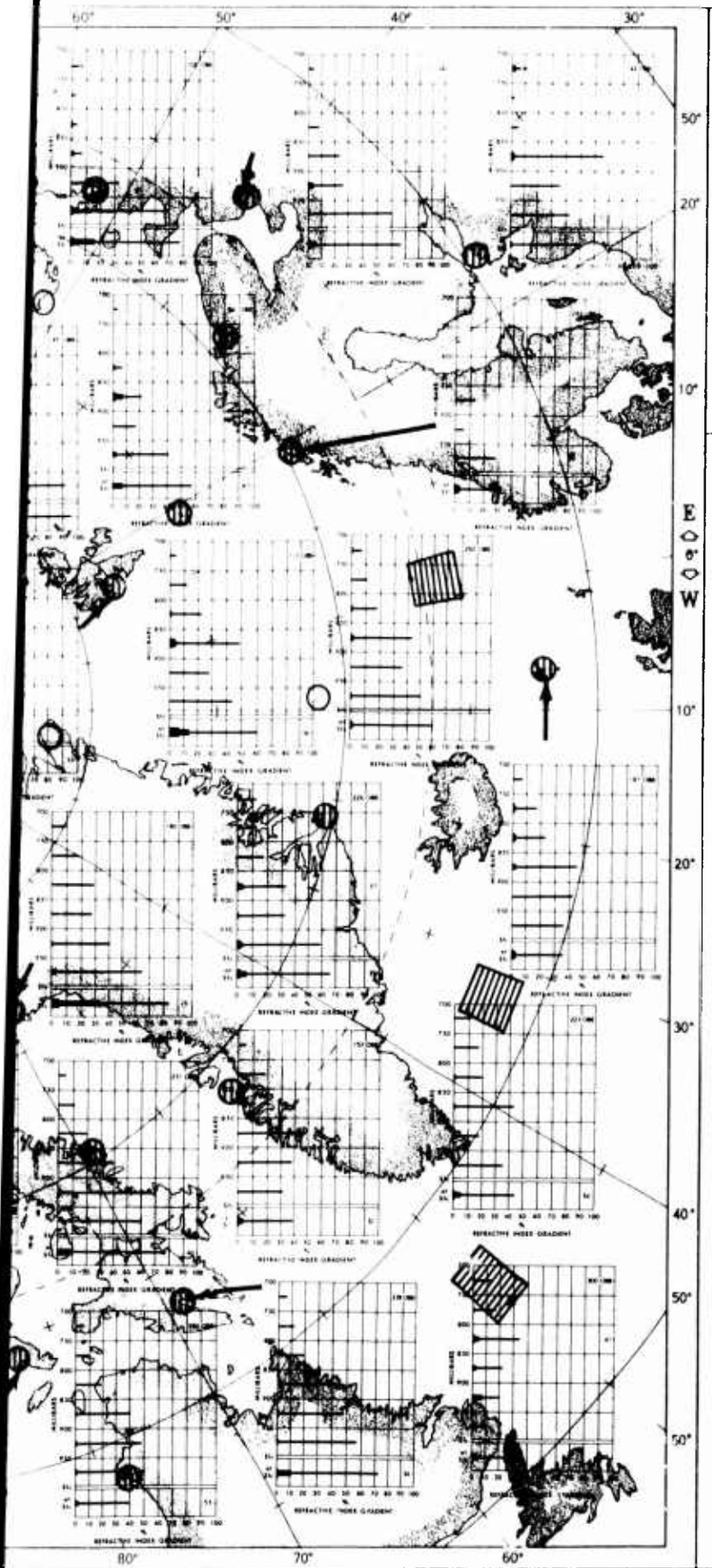


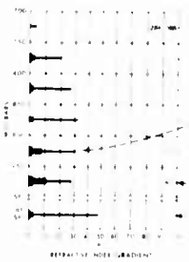
DECEMBER REFRACTIVE IN



INDEX GRADIENT

CHART 293





Percentage Frequency Refractive Index Gradient* within / strata

Criteria

(a) $\Delta N \, \Delta H \leq -.048$ Trapping

(b) $\Delta N \, \Delta H \leq -.027$ Very Superrefractive

(c) $\Delta N \, \Delta H \leq -.012$ Superrefractive

Indicated by

[For the level 951 - 900 millibars

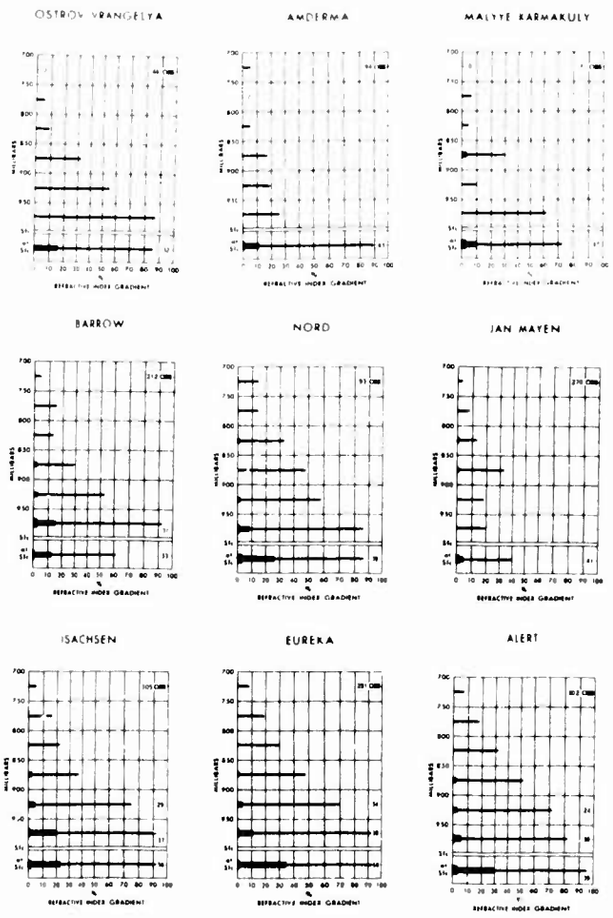
a occurred 2 % of all observations

b 8 % of observations and

c 31 % of observations]

Mean thickness tens of feet of b above

Thickness omitted when there were < 5 superrefractive gradients based within a stratum



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