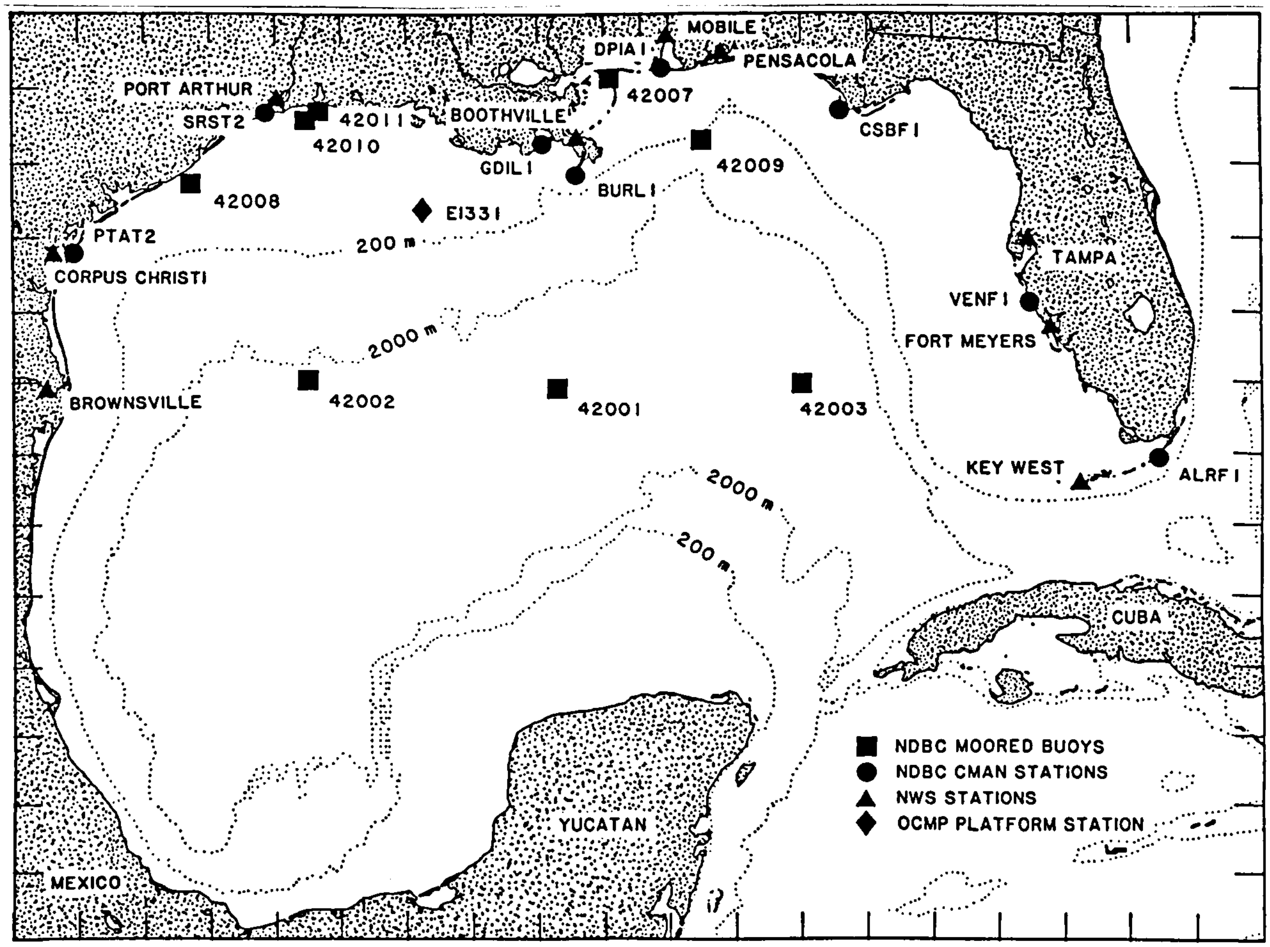
OCS Study
MMS 88-0064

Meteorological Database and Synthesis for the Gulf of Mexico



MMS
U.S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region

OCS Study
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Meteorological Database and Synthesis for the Gulf of Mexico

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During the compilation of this extensive data base and the subsequent generation of the final report, numerous persons have provided invaluable assistance to the contributors. It is impossible to name everyone at this time; however, we would like to acknowledge five very important people who made this project successful. The data processing, analysis, presentation and archiving phases of this summary were made possible by the very capable, conscientious efforts of Miss Rebecca J. Weber. Without Ms. Weber's assistance, the burden upon the authors would have been insurmountable. Mrs. Mary Lynn Stephenson was very helpful in the final stages of the report generation, mounting the massive number of figures and assuring that each figure was properly captioned and in place. In any report this size, the author's best friend is the typist. We would like to thank Mrs. Elaine Wiley for her patience and dedication which was so important to the completion of this document. The production coordination of the final report (printing, binding and laminating) was handled by Mrs. Gail T. McGee, to whom we are equally grateful. Finally, we would like to acknowledge, Dr. Murray Brown whose flexibility and ongoing attention made this project a success. Without Dr. Brown's continued interest and involvement, this program would have had less success and would have been more limited in its final results.

EXECUTIVE SUMMARY

This meteorological summary consists of a compilation of data from a number of sources and a statistical description by month, season and year of the pertinent meteorological variables affecting oceanographic operations in the Gulf of Mexico region. The primary data sets utilized in this study are as follows: National Weather Service (NWS) coastal station data; National Data Buoy Center (NDBC) moored-buoy and marine platform network; NDBC Coastal Marine Automated Network (CMAN) stations; a segment of the Ocean Currents Measurement Program (OCMP) data; National Hurricane Center 101-year storm track data (HURDAT); and the University of Virginia cyclone data set. The coastal data covers the period 1970-1986, while the buoy data exists for only 1976-1986. The CMAN data set spans the period 1985-1987, depending upon which station is considered. The hurricane and cyclone climatologies are for 101 and 100 years, respectively. In addition, a ship-based sea surface temperature (SST) climatology is analyzed by 1° quadrangles for the period 1854-1973. The analyses included in this report should provide useful information on the variability of meteorological conditions in the Gulf of Mexico.

The primary results emphasize the difference between winter and summer means and variances, particularly for the central and northwestern Gulf of Mexico. Winter is characterized by high variability associated with the frequent frontal/cyclogenesis events which traverse the area. Summer is a more quiescent period, except for the occasional variability generated by tropical cyclone systems that may form in or enter the Gulf region between June and November. Transition between the two seasons can occur within a few weeks over most of the Gulf, and therefore, a distinct spring and fall is not apparent.

Thus, this report summarizes the compilation of these data and the associated types of analysis performed. The results delineate how varying atmospheric conditions can affect oceanographic processes in this region. Furthermore, this report identifies a data set that is currently stored in one location and is readily available to the Gulf of Mexico scientific community for use in future research.

I. INTRODUCTION

1.1 Project Scope

The Minerals Management Service (MMS) identified a need for an improved statistical summary of meteorological conditions in and immediately adjacent to the Gulf of Mexico (Figure 1.1-1). The MMS contracted with Florida A & M University (FAMU) to acquire, archive and manage a database appropriate to the Gulf of Mexico meteorology, with a particular emphasis on those factors having a substantial impact on oceanographic conditions and processes. The data catalog is described in Appendix A and a listing of persons contributing to this data base are located in Appendix B. As support for this overall project scope, FAMU issued a subcontract to Science Applications International Corporation (SAIC) to produce a summary of meteorological conditions in the Gulf.

The thrust of this report is two fold:

- to provide a unified information source and data reference
- to characterize statistically, oceanographically significant meteorological conditions and processes.

The stated scope of this subcontract is to provide a general statistical summary using readily available data. The primary effort was directed at 10- to 15-year time series. As available the 10-year record was to coincide with a corresponding 10-year ocean circulation model run by National Ocean Research and Development Activity (NORDA) (Rhodes et al., 1985). For these intervals, SAIC prepared the observations to be used for analysis. The original observational data sets are to be archived by FAMU for access and use by the Gulf of Mexico oceanographic community.

1.2 General Oceanography

The two exchange ports for the Gulf of Mexico are located in the southwest corner. The Loop Current (LC) enters the Gulf through the Yucatan Straits and exits through the Florida Straits as the Florida Current. Between inflow and outflow, the LC can occupy a range of positions, extending from just north of Cuba to 27½°N. Rarely does the LC proper extend westward of 90°W.

Periodically, an anticyclonic eddy separates from the Loop Current. This separation "tops" or truncates the northward extension of LC. Following separation, these eddies generally move westward at a nominal speed of 5 km/day. Movement of these eddies is a major source of heat, salt and momentum for the central, and in particular, the western Gulf. The eddy-shedding period is not well-documented, but appears to be between 4 and 16 months. Theory, modeling and field data suggest that these anticyclones can foster a range of secondary, yet linked features (such as cold core eddies) having coupled temperature, density and velocity structures. During westward movement and dissipation against the western continental slope, LC eddies tend to dominate oceanographic conditions in the deeper Gulf.

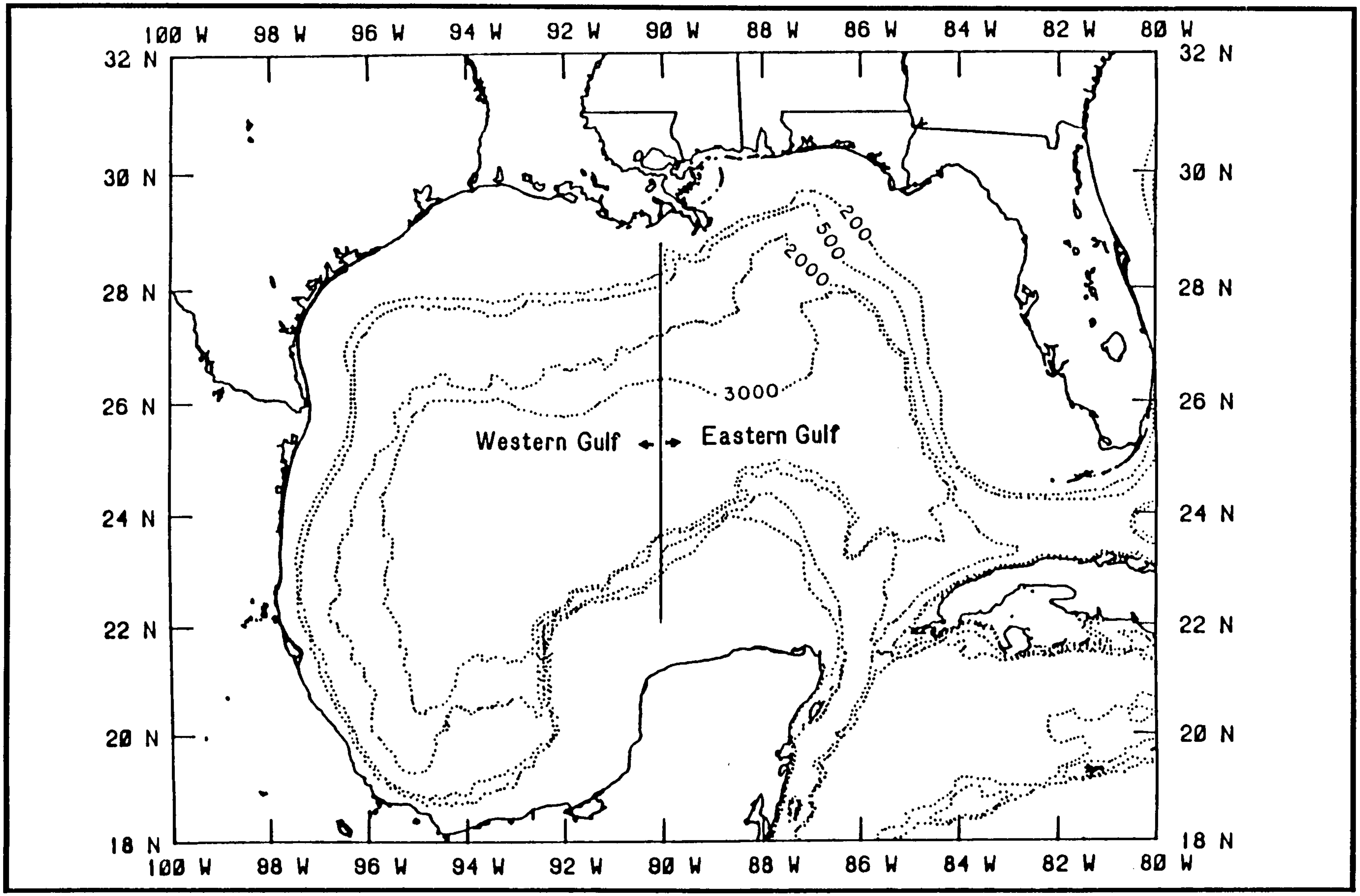


Figure 1.1-1 Gulf of Mexico bathymetric map showing the normal partition of the eastern and western Gulf of Mexico study areas. This also partitions the emphasis on the Loop Current (LC) and LC eddies.

Below the surface layer (nominally 100 m), eddy water is consistently as warm or warmer than the ambient or receiving water, creating a large heat reservoir. In the surface layer, above the seasonal thermocline, an annual temperature cycle occurs. During summer, surface/near surface temperatures are fairly uniform. During cooler months surface water in an eddy tends to be warmer than ambient water. This reflects a vertical heat exchange and the greater heat reservoir in the eddy.

The Gulf is ringed by a shelf, which varies in width from 10 km to over 200 km. The basin geometry means that the shelf orientation rotates through 360°. Data clearly shows that shelf circulation and conditions are often closely linked to the local meteorological conditions. Because the shelf is generally 100 m deep or less, the entire water column is within the region of direct wind forcing and seasonal temperature patterns.

Direction and magnitude of wind stress on water surface is a key influence on circulation and exchange processes. Similarly, seasonal variation of air temperatures is a major control on magnitude and direction of heat flux for the shelf waters.

Oceanographic measurements on the shelf indicate the important relationship between alongshore wind stress and currents, although the curved nature of both the coastline and bathymetry can distort or alter this pattern. In the north-central Gulf, presence of and discharge from the Mississippi River has a substantial seasonal impact on salinity and temperature fields of adjacent waters. Even from this cursory presentation, it should be apparent that an understanding of particular meteorological conditions and patterns is fundamental to understanding important oceanographic conditions in the Gulf region.

1.3 General Meteorology

Meteorological conditions which influence oceanographic processes occur over a range of temporal and spatial scales. As a mid-latitude location, the Gulf is seasonally influenced by different types of air masses. The boundary or front between these air masses occurs over a fairly broad band, which in the mean shows an annual north-south cycle. The band of interaction is the region of cyclogenesis associated with frontal boundaries.

Over the continental shelf in the northern half of the Gulf, the characteristic pattern of winds associated with cold frontal passages is a major circulation-producing mechanism, particularly in cooler months. In addition, cold air behind these fronts extracts heat from the shelf and surface waters. The passage of cold fronts is most frequent in winter and virtually absent in summer, with a transition between the two extremes. During winter, many northern fronts "stall" over the Gulf. The exact pattern of any return flow is a subject of current study.

Due to interaction with underlying water, continental air masses coming from the north are successively modified by increasing water vapor content and decreasing air-water temperatures differences. An increasing frequency of fronts and more extreme air-water temperature differences in fall act in conjunction with decreased hours of sunlight to cause local surface water cooling. In part, a reverse process occurs in spring.

During summer the influence of the subtropical high (Bermuda High) increases as the frontal zone between subtropical and mid-latitude air masses moves north and out of the Gulf. Weaker pressure gradients and hence calmer winds associated with high pressure produce less vigorous wind stress forcing of oceanic or, in particular, shelf circulation. During summer, warm fronts tend to move generally from south to north.

A vigorous sea breeze system can develop in a band around the Gulf Coast. This can drive some circulation; however, associated wind speed and direction change rapidly as compared to time required to "spin-up" a steady-state circulation pattern. A time-evolving circulation can occur due to sea-breeze forcing, especially if concern is only about the upper portion of the water column and about transport over limited distances. The coastal wind-wave field has a strong diurnal periodicity where the sea-breeze is well-developed.

Hurricanes move into and develop in the Gulf. Influence is heavily dependent not only on intensity of the hurricane, but its path or trajectory and speed of propagation. The most pronounced oceanographic influence seems to occur on the shelf and slope regions where vigorous hurricane-initiated currents have been measured.

1.4 Organization of Report

The report is organized into seven sections:

- Chapter I - Introduction
- Chapter II - Synoptic Climatology of the Gulf of Mexico
- Chapter III - Summary
- Appendix A - Data Catalog describing the source of each data base utilized in this summary
- Appendix B - List of persons contacted during the compilation of the data catalog
- Appendix C - Statistical Tables (mean, variance, number of possible data points and number of points used) for Sea Surface Temperature (SST), Air-SST, Air Temperature, Atmospheric Pressure and Sensible Heat Flux
- Appendix D - Bi-variate Histograms of Wind Data

The bulk of the data analysis and synthesis is found in Chapter II, where each meteorological data set and associated analyses is described in detail. Meteorological conditions in the Gulf of Mexico, as they relate to the oceanographic processes of the region, are described as well. Chapter II also summarizes the mean SST of the Gulf in 12 individual maps. Chapter III summarizes the available data sets and significant conclusions drawn from the analyses performed on the data. Appendices A and B contain complete listings of the data catalog and list of contacts, respectively. Appendices C and D contain complete statistical analyses of all data used in compiling this report, and are referenced throughout Chapter II.

II. SYNOPTIC CLIMATOLOGY OF THE GULF OF MEXICO

2.1 Introduction

Climatology of a region is governed primarily by the types of air masses influencing the area on a seasonal basis. Most mid-latitude geographic regions have two distinct seasonal weather patterns, connected to each other by less well-defined transition periods. The region surrounding the Gulf of Mexico fits this scenario very well. The area has well-defined summer (May-October) and winter (December-March) circulation patterns, with two transitional months (April and November) interwoven. Generally, air masses originating over large bodies of water tend to be warm and moist due to the greater heat capacity of water. Continental air masses are notoriously dry and much cooler. The winter air mass structure of the Gulf of Mexico shows the West Florida Shelf region dominated by warm, moist maritime tropical (mT) air, while the central and western Gulf of Mexico is influenced primarily by very cold, dry continental polar (cP) air. However, during summer months, the mid-latitude polar jet retreats northward, allowing mT air to dominate throughout the Gulf of Mexico, and push northward as far as the midwest and Ohio River Valley (Muller and Oberlander, 1978). Figures 2.1-1 and 2.1-2 summarize the air masses that strongly influence the Gulf of Mexico during summer and winter seasons.

Major global circulation features influencing the Gulf of Mexico are the Atlantic subtropical gyre, the Icelandic low, the Pacific high and the Rocky Mountain low. The strength of the Icelandic low during winter months pushes the Atlantic high well south, where its influence can be seen throughout the Gulf of Mexico in the surface wind field. This sub-tropical gyre circulation is responsible for mild winters experienced along the western coast of Florida, as the clockwise flow of air around the high pressure center funnels warm, moist air into this region. The Pacific high migrates eastward and decreases in size during winter, mainly in response to the deepening Aleutian low. This coastward shift in the Pacific high provides little change in climate of the Gulf of Mexico. The major change during winter is provided by southerly migration of the polar front, which brings cold, dry continental polar outbreaks into the Gulf region. Fernandez-Partegas and Mooers (1975) found these polar outbreaks occur at 3- to 10-day intervals from October to April. A different study analyzing major Arctic outbreaks affecting Louisiana found 20 cases over the past 103 years where severe freeze conditions were experienced in the Gulf Coastal region, Mortimer et al. (1988). These events occur about once every 5 years, and appear to be cyclical in nature. The cycle appears to be best fit by the solar sun spot cycle, where the majority of events occur between peaks and lulls in sun spot activity (Mortimer et al. 1988).

Summer circulation is marked by a decrease in size of the subtropical gyre and its migration northward. This process allows the northeast trade wind belt to push further north, influencing the entire Gulf of Mexico. Coincident with Atlantic high repositioning is the northward excursion of the polar front (jet stream), which essentially closes the door to any continental originating air masses in the region. Development of the Rocky Mountain low, in the southwestern United States/Mexico pumps moisture from the Pacific Ocean over Mexico and into

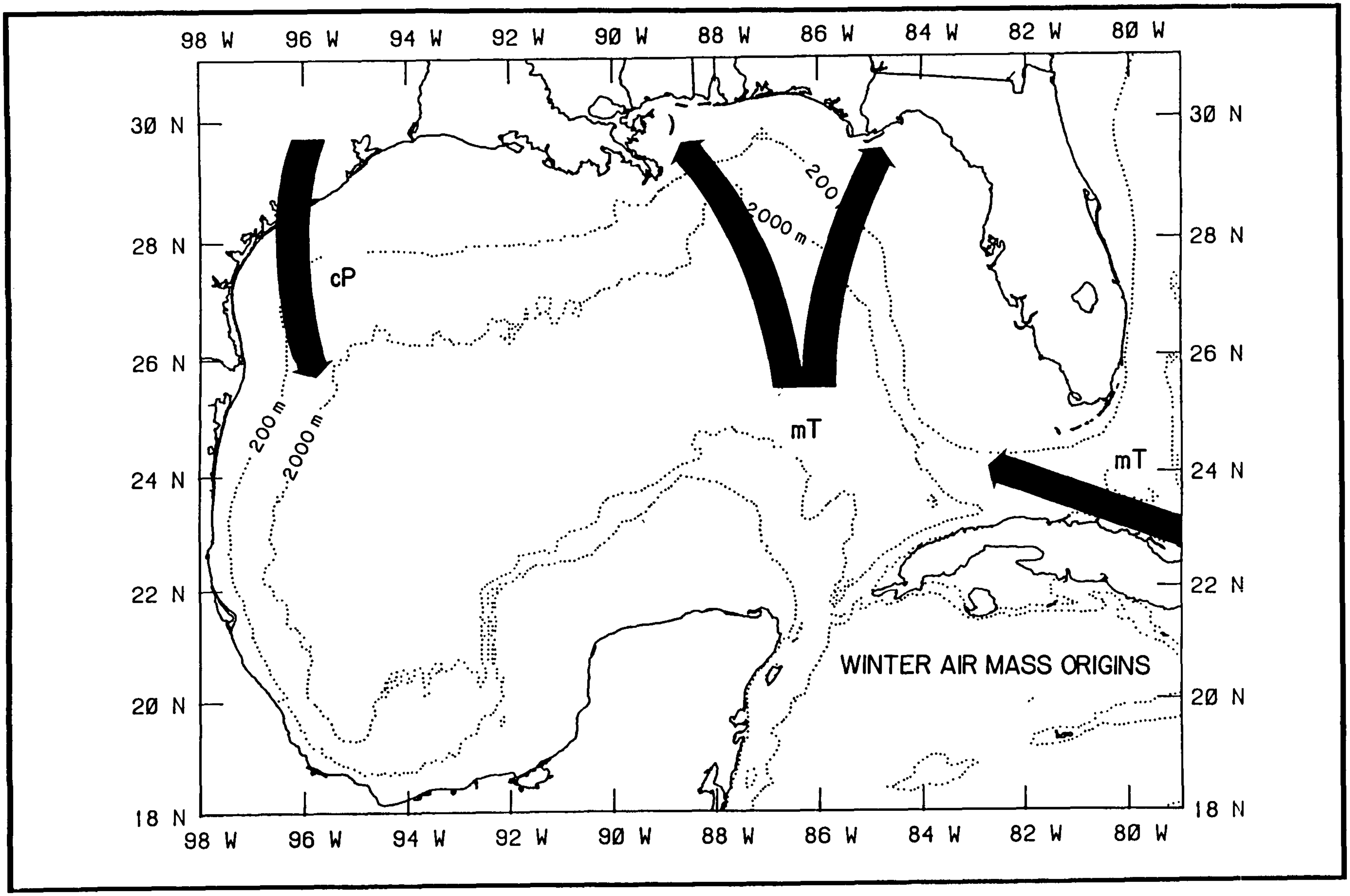


Figure 2.1-1 Description of winter (December-March) air masses influencing meteorological conditions in the Gulf of Mexico and surrounding regions (adapted from Muller and Oberlander, 1978).

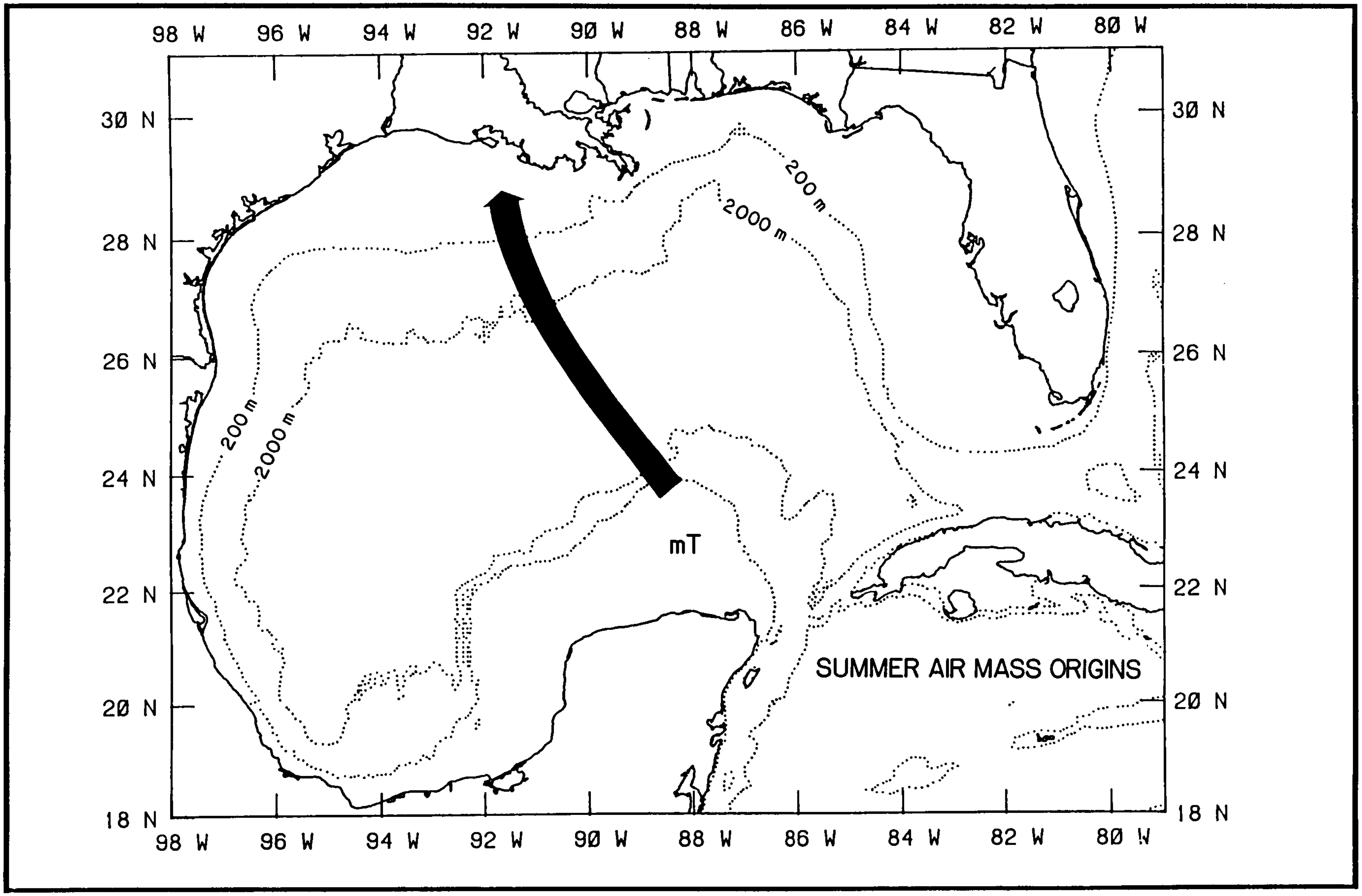


Figure 2.1-2 Description of summer (May-October) air masses influencing meteorological conditions in the Gulf of Mexico and surrounding regions (adapted from Muller and Oberlander, 1978).

the western Gulf of Mexico and Texas. Also, northward movement of the trade wind belt channels tropical cyclones into the Gulf, where they often become major factors in seasonal climatology of the region.

Muller (1977) devised a synoptic climatology for New Orleans, Louisiana, representing a good portion of the northern and central Gulf of Mexico. Using 3 years (1971-1974) of data, he analyzed daily synoptic weather situations for New Orleans at 0600 and 1500 CST (Central Standard Time). These results allowed him to classify the synoptic conditions for this region into 8 all-inclusive types for each day during the study. The 8 classifications and their percent of occurrence are detailed in Table 2.1-1.

Muller's (1977) analysis shows that the region around New Orleans is dominated by Gulf return and the Continental High synoptic scenarios. The former translates into warm, moist mT air from the western margin of a ridge pumped-up from the Caribbean and the eastern Gulf. The latter is generally associated with an anticyclone east of the Rockies, funnelling cool, dry continental air into the region. The Continental High region is restricted to fair weather associated with the core of the high pressure system (Muller, 1977).

Thus, while the Gulf Coast region is subjected to harsh, extreme conditions associated with tropical cyclones, extratropical cyclones and cold Arctic/Polar air outbreaks, warm waters in the Gulf of Mexico provide a buffering agent, keeping the mean climatology of the region quite mild. The following sections, will discuss both the extreme and normal conditions for this region hopefully adding insight into the underlying processes which make this region such an exciting environmental area to analyze and study.

2.2 Data Sets Utilized

The initiation of any climatological survey begins with identification of a clear, concise and accurate data base plan, from which all desired parameters can be obtained. However, dealing with an ocean basin the size of the Gulf of Mexico requires structuring the analyses around available data. This situation arises from sparse oceanic data collection platforms and problems associated with making continuous measurements at fixed locations in the marine environment. Two major drawbacks in any marine measurements program are the extremely high cost of deploying instrument arrays and the subsequent high maintenance costs associated with obtaining reliable data from instruments subjected to the harsh, corrosive environment. In addition, response time to instrument failures is generally quite large (ranging from days to weeks), often resulting in "gappy" data records. Thus, data in this summary are drawn from reliable sources and have been carefully analyzed to insure accuracy and reliability.

Starting points for data compilation were the National Oceanographic Data Center (NODC) in Washington, D.C., and the National Climatic Data Center (NCDC) in Asheville, North Carolina. These 2 agencies, operated under the direction of the Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), are responsible for archiving marine and continental meteorological data sets, respectively. During the past 5 years, SAIC/Raleigh has dealt with these 2 agencies in obtaining both meteorological and oceanographic data in support of the Gulf of Mexico Physical Oceanographic Program (GOMPOP). Through this work, 9 first-order (e.g., hourly surface meteorological observations are made) National Weather Service (NWS) stations surrounding the Gulf of Mexico have been

Table 2.1-1 Synoptic weather types in percent of hours for New Orleans, 1971-74 (from Muller, 1977).

TYPE	J	F	M	A	M	J	J	A	S	O	N	D	TOTAL
Pacific High	6	15	9	9	7	0	0	0	2	11	4	8	6
Continental High	14	25	16	21	30	23	11	22	18	42	29	27	23
Frontal Over-running	27	16	15	10	8	7	4	4	8	8	23	20	13
Coastal Return	8	12	11	12	6	4	7	20	16	18	10	7	11
Gulf Return	24	16	26	30	27	25	28	16	20	13	18	11	21
Frontal Gulf Return	17	16	23	18	17	11	4	4	7	7	16	27	14
Gulf Tropical Disturbance	0	0	0	0	1	2	4	6	25	0	0	0	3
Gulf High	4	0	0	0	4	28	42	28	4	1	0	0	9

identified. Each of these stations provides a complete time series of wind speed, wind direction, air temperature and atmospheric pressure. Table 2.2-1 is a listing of these stations, including their locations and NWS identification numbers. For each of these stations, a 17-year record of the "TD-1440 Airways Surface Observations" was obtained, except for Boothville, Louisiana, which was unavailable prior to May 1971. Figure 2.2-1 is a time line, detailing the period of observations included in this climatology.

Marine meteorological data, consisting primarily of fixed-position, moored deep-ocean buoys, were obtained from NODC in raw NODC file format type F191. The operation and maintenance of this buoy network is under the direction of the National Data Buoy Center (NDBC), formerly the National Data Buoy Office (NDBO). The NDBC has supported programs operating these buoys since the early 1970's. Currently, the NDBC maintains approximately 49 buoys in the marine environment, 20 of which are considered in deep ocean areas greater than 150 km offshore (National Data Buoy Center, 1987; Hamilton, 1986). In this study, 8 moored buoys were identified and selected for inclusion in the analysis. Of these, 3 were considered deep-ocean buoys, while the remaining five 5 were in shallower shelf regions. Stations 42010 and 42011 were platform locations as opposed to moored buoys. Table 2.2-2 details the locations of each individual buoy, while Figure 2.2-2 is a time line depicting the period of observation selected for each location. The accuracy/reliability of these data prior to 1976 is questionable, and thus this climatology begins with data collected in January 1976.

In 1981, due to the vital importance of marine meteorological observations for the detection, intensity and movement of storms, and their importance in providing high resolution observations of the pressure and wind fields (for use with numerical weather prediction schemes), the NDBC (in conjunction with NWS) launched the Coastal Marine Automated Network (CMAN) program. Currently, the network consists of approximately 48 stations around the contiguous United States, Alaska and the Bahamas. The network consists of standard meteorological instrument systems at 9 United States Coast Guard (USCG) offshore platforms, 17 USCG lighthouses, 10 beach areas, 3 public fishing piers and 9 NDBC buoys. Of these, Table 2.2-3 details the location and period of operation for 8 stations which are currently operable within the Gulf of Mexico region (NDBC, 1987; Hamilton, 1986). Five of these stations (BURL1, CSBF1, GDIL1, PTAT2 and SRST2) contain relatively complete data records beginning in January, 1985. ALRF1 becomes reliable during 1986, while the station at Venice, Florida (VENF1) has a good time series beginning in January, 1987. The CMAN station located on Dauphin Island, Alabama (DPIA1) was listed as being operational during 1987; however, this data set was not included with the FAMU submission, which was obtained directly from NODC. Figures 2.2-3a-c are computer-generated time lines depicting the periods of observation utilized during this study for each of 4 environmental variables: (a) wind speed/wind direction, (b) air temperature/atmospheric pressure and (c) sea surface temperature (SST). It should be noted that SST was only recorded at 3 stations, ALRF1, GDIL1 and VENF1.

In an effort to increase the quantity of open ocean observations, data from the Ocean Currents Measurement Program (OCMP) were targeted for analysis. However, due to the large expense of digitizing these data (from analog tapes to digital tapes) only one of 3 available data sets was chosen for analysis. The central most station, located in Shell's Eugene Island Block 331-A (28.2°N, 91.6°W), was selected as the best data set for analysis. The primary aim of the OCMP program had been to obtain a complete data set on hurricane-generated currents. The

Table 2.2-1 List of National Weather service stations surrounding the Gulf of Mexico, where TD-1440 Airways Surface Observation data were available for the period 1/01/70 - 12/31/86 (except for Boothville, Louisiana; 5/01/71 - 12/31/86).

Station ID	Name	Latitude	Longitude
12835	Fort Myers, Florida	26.8°N	82.2°W
12836	Key West, Florida	24.5°N	81.7°W
12842	Tampa, Florida	27.9°N	82.5°W
12917	Port Arthur, Texas	29.9°N	93.9°W
12919	Brownsville, Texas	25.9°N	97.5°W
12924	Corpus Christi, Texas	27.8°N	97.4°W
13894	Mobile, Alabama	30.7°N	82.2°W
13899	Pensacola, Florida	30.5°N	87.2°W
12884	Boothville, Louisiana	29.4°N	89.4°W

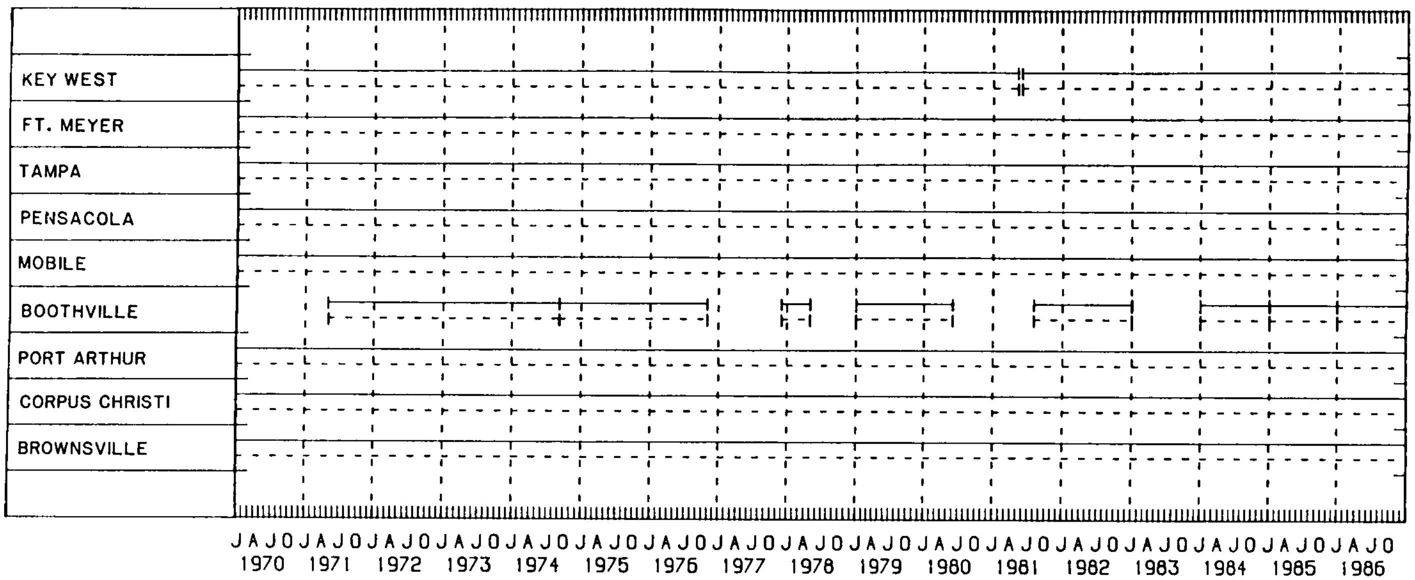


Figure 2.2-1 Computer-generated time line from SAIC/Raleigh's Data Base Management System (DBMS) showing the National Weather Service (NWS) sites utilized during this study and the period of observations analyzed. Solid lines denote wind data, while dashed lines refer to air temperature and atmospheric pressure data.

Table 2.2-2 Summary listing of NDBC buoy locations in the Gulf of Mexico selected for analysis in the climatological summary.

Buoy	Latitude	Latitude	Period of Operation
42001	26.0°N	90.0°W	8/75 - 8/79
	25.9°N	89.7°W	8/79- Present
42002	26.0°N	93.5°W	9/76 - Present
42003	26.0°N	86.0°W	11/76 - 7/80
	26.0°N	85.9°W	7/80 - Present
42007	30.1°N	88.9°W	1/81 - 12/86
	30.1°N	89.8°W	6/87 - Present
42008	28.7°N	95.3°W	8/80 - 7/84
42009	29.3°N	87.5°W	9/80 - 1/87
42010	29.7°N	93.4°W	4/81 - 3/82
42011	29.6°N	93.5°W	1/82 - 9/84

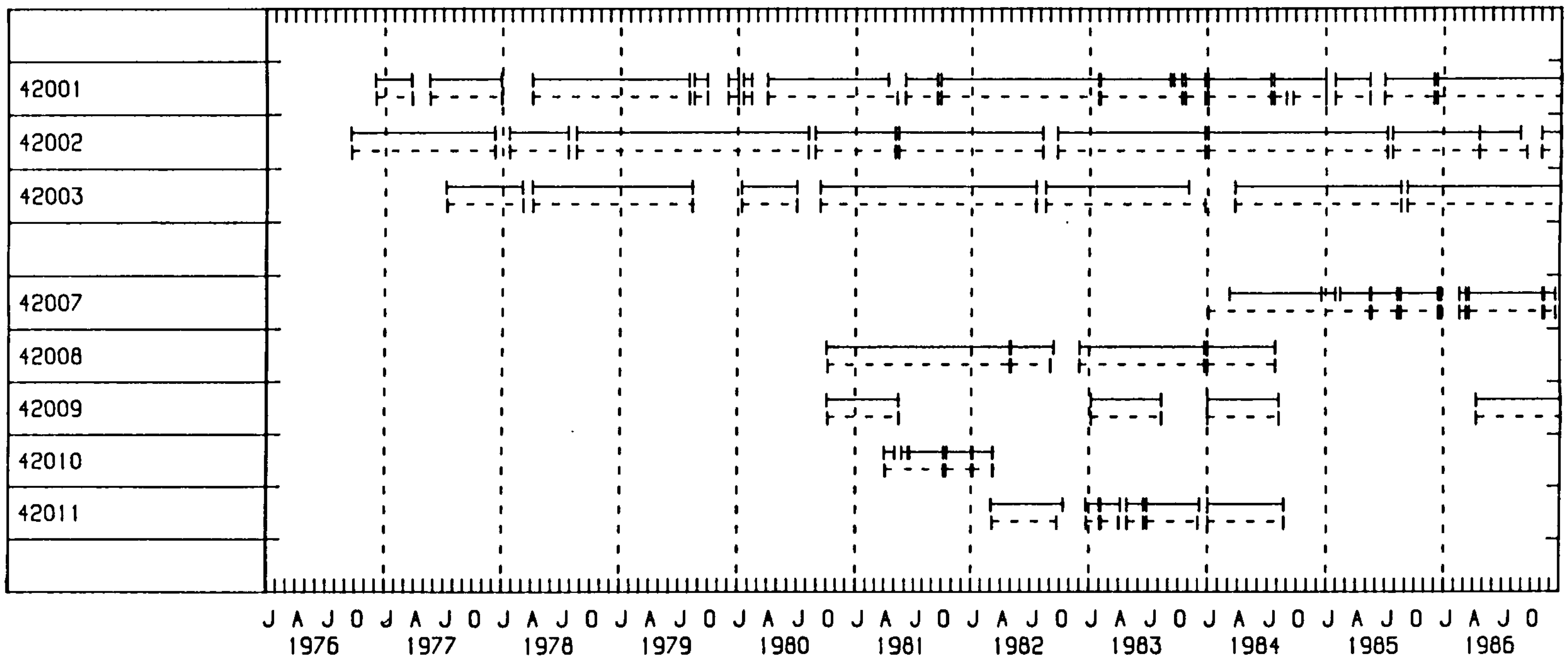


Figure 2.2-2 Computer-generated time line from SAIC/Raleigh's DBMS showing the National Data Buoy Center (NDBC) buoy numbers and the period of observations utilized during this study. Solid lines denote wind data, while dashed lines refer to air temperature and atmospheric pressure data.

Table 2.2-3 Summary listing of NDBC C-MAN observation stations surrounding the Gulf of Mexico.

Station ID	Name	Latitude	Longitude	Period of Operation
ALRF1	Alligator Reef, Florida	24.9°N	80.8°W	1/85-5/86 5/86 7/86-Present
BURL1	Southwest Pass, Louisiana	28.9°N	89.4°W	2/84-5/84 5/84-7/84 7/84-6/85 7/85 8/85-Present
CSBF1	Cape San Blas, Florida	29.7°N	85.4°W	3/83-Present
DPIA1	Dauphin Island, Alabama	30.3°N	88.1°W	1/87-Present
GDIL1	Grand Isle, Louisiana	29.3°N	90.0°W	1/85-11/85 11/85-Present
PTAT2	Port Aransas, Texas	27.8°N	97.1°W	3/84-Present
SRST2	Sabine, Texas	29.7°N	94.1°W	2/84-7/85 8/85-12/86 1/87-Present
VENF1	Venice, Florida	27.1°N	82.5°W	5/86-9/86 10/86-Present

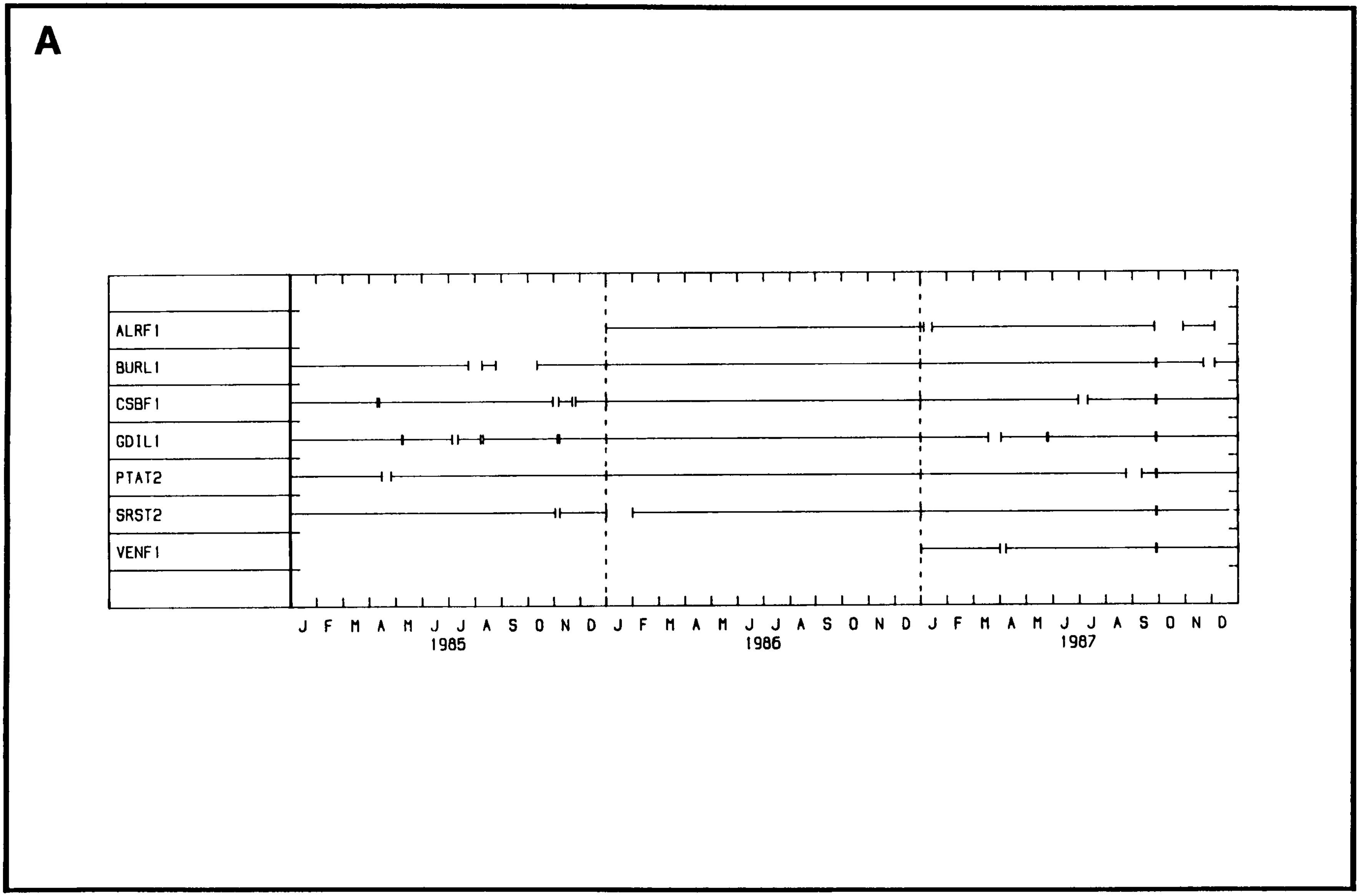


Figure 2.2-3a Computer-generated time line from SAIC/Raleigh's DBMS showing the National Data Buoy Center (NDBC) CMAN stations and the period of observations utilized during this study. Solid lines denote wind data.

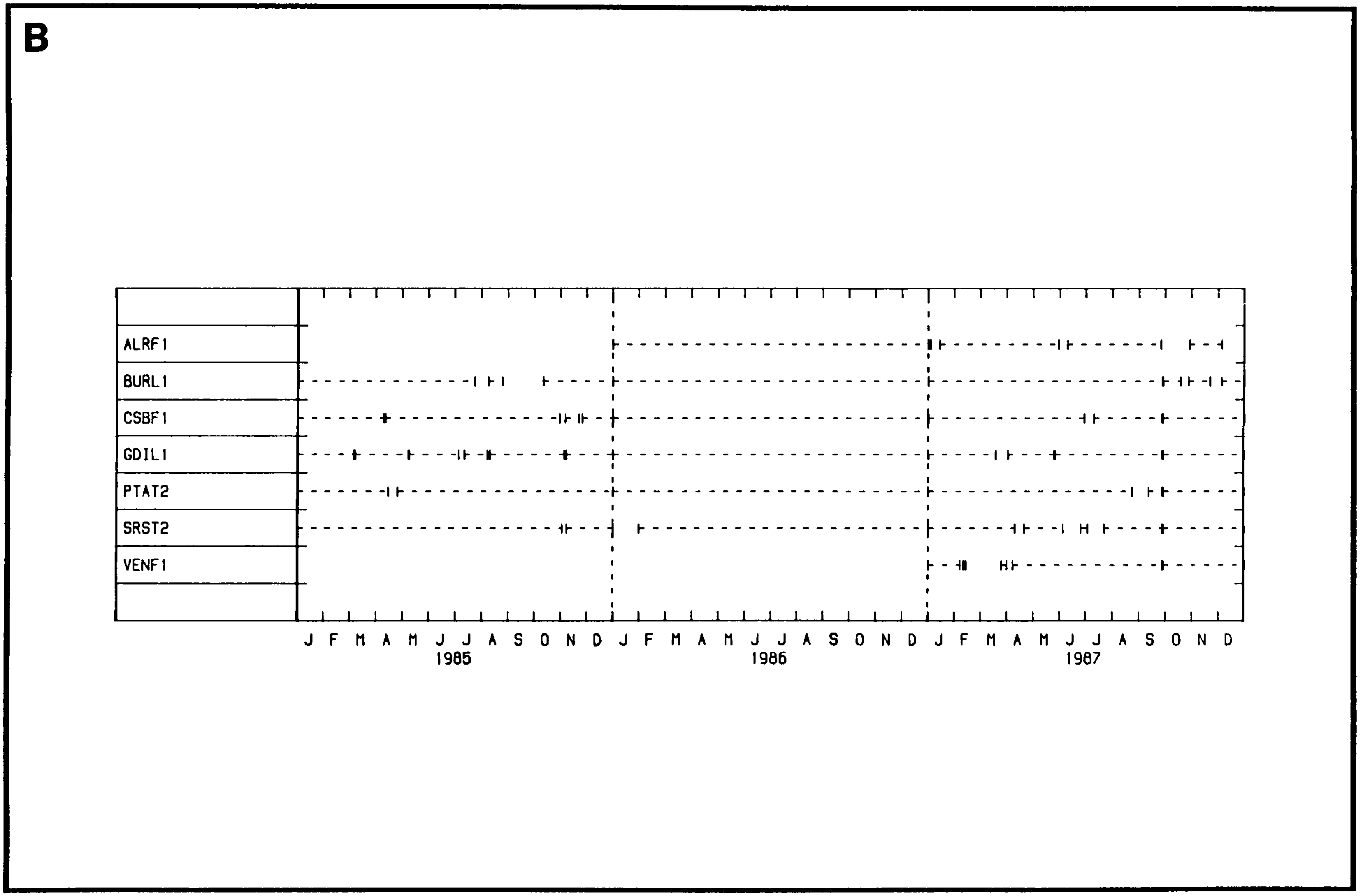


Figure 2.2-3b Computer-generated time line from SAIC/Raleigh's DBMS showing the National Data Buoy Center (NDBC) CMAN stations and the period of observations utilized during this study. Dashed lines denote air temperature and atmospheric pressure data.

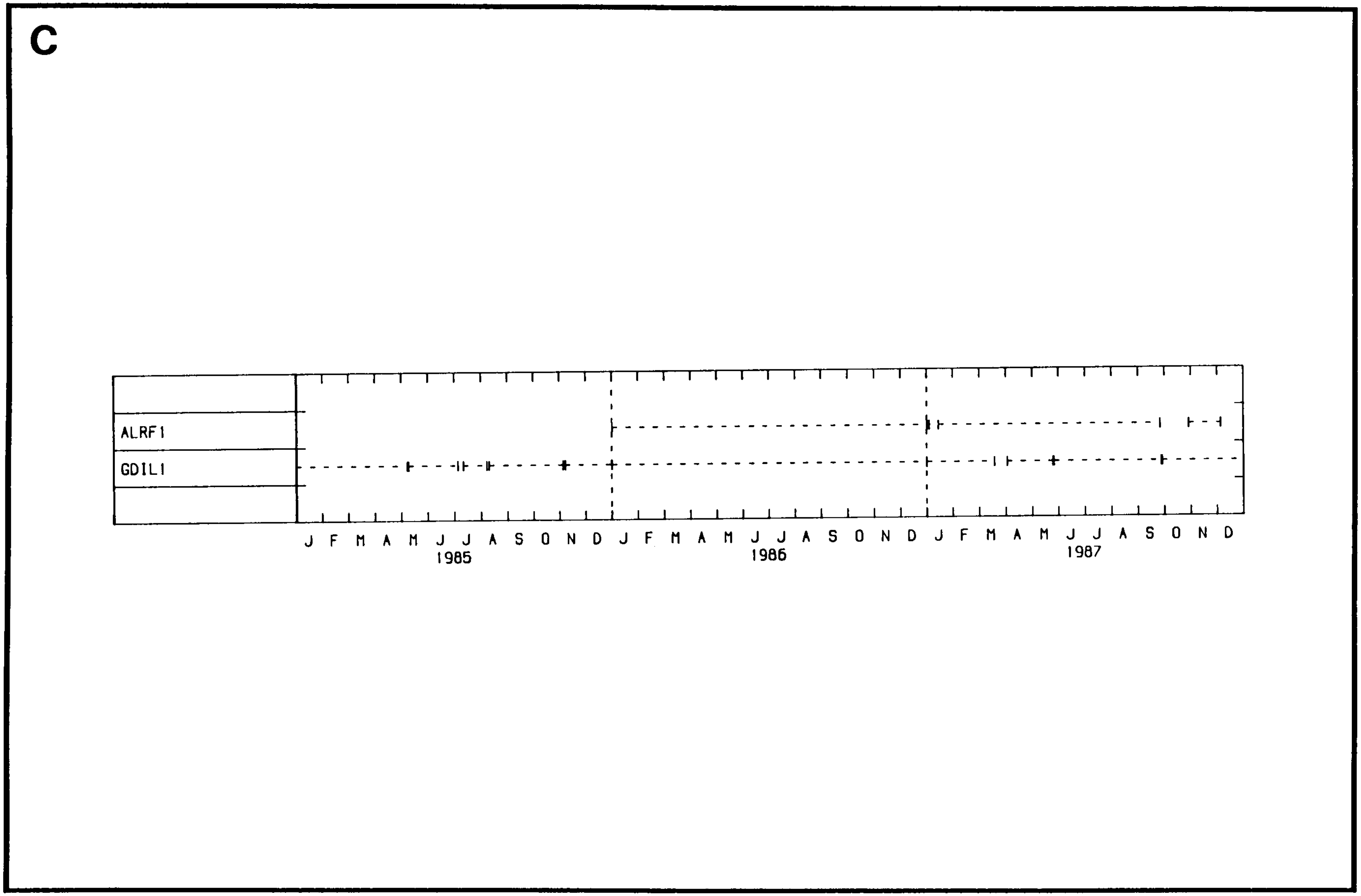


Figure 2.2-3c Computer-generated time line from SAIC/Raleigh's DBMS showing the National Data Buoy Center (NDBC) CMAN stations and the period of observations utilized during this study. Dashed lines denote sea surface temperature (SST) data.

instrument package, consisting of 4 EMCM-3BX current meters, a Baylor 9737 wave gauge, a Baylor 11612 electro-barometer and a Baylor 14457 wind system, was a direct extension of the Ocean Data Gathering Program (ODGP), described in detail by Hamilton and Ward (1974). The period of observation discussed in this study spans from September 1972 through November 1976 (Hall, 1972). In addition, only the wind data are presented in this analysis. A schematic time line of these data is presented in Figure 2.2-4.

Figure 2.2-5 summarizes the locations of meteorological stations utilized in this study. The most striking observation is the lack of data in the southwestern Gulf of Mexico and along the eastern coast of the Yucatan Peninsula. However, for the United States Gulf Coast, the data coverage is relatively complete and provides a good summary of wind, temperature and pressure norms and extrema over the period of analysis. The norms are associated with the general circulation of the region, providing the background upon which the extrema lie. These extrema generally occur during strong synoptic disturbances such as extratropical or tropical cyclones and fronts which traverse the Gulf region.

Extratropical cyclone data analyzed in this study were obtained from the University of Virginia, Department of Environmental Sciences. These data span the 100-year period between 1885 and 1986 for each of 101 2½° latitude by 5° longitude grid cells. Each cell represents a "frequency-count" of the number of storms passing through a particular box during each month of the record. The cyclone tracks were obtained from 2 primary sources: "Tracks of the Centers of Cyclones at Sea Level," published by the Monthly Weather Review, and most recently by the Mariners Weather Log. Multiple entries of a single storm in a grid cell were ignored (Hayden, 1981). For this particular study, a 100-year, 12-cell subset was extracted from the original 101-cell data matrix. The location of each grid cell is shown in Figure 2.2-6.

In an attempt to characterize the effects of hurricanes on meteorological conditions surrounding the Gulf, the North Atlantic Basin, Tropical Cyclone Data Tape was obtained from NCDC. This data set, commonly known as "HURDAT", contains 6 hourly positions of tropical cyclones spanning the years 1886 through 1986. The tracks contained in HURDAT correspond to those given by Neumann et al. (1981), which is basically an updated version of Cry's (1965) original storm track atlas containing cyclone tracks between 1886 and 1963. This data set contains position (latitude and longitude), maximum sustained wind speed (knots), central pressure (millibars) and time and date of observations for each tropical cyclone. Obviously, the availability and accuracy of these data have been inconsistent through the years. In fact, it is likely that in earlier years, when open ocean detection was based on ship reports, some storms went undetected. Thus, the most useful information from early years can be gleaned from cyclone track data as opposed to wind speed or central pressure observations (Jarvinen et al., 1984). In addition, our tropical cyclone analysis was supplemented by the results of a previous study on North Atlantic Basin storms by Neumann and Pryslak (1981).

The final piece of information studied during the analysis was a compilation of all available commercial and military ship data for the Gulf of Mexico for the period 1854 through 1973. This enabled the generation of monthly composite sea surface temperature (SST) maps for the Gulf. The data were compiled in tabular form by Baltz (1978), in 1° latitude by 1° longitude quadrangles using computer-

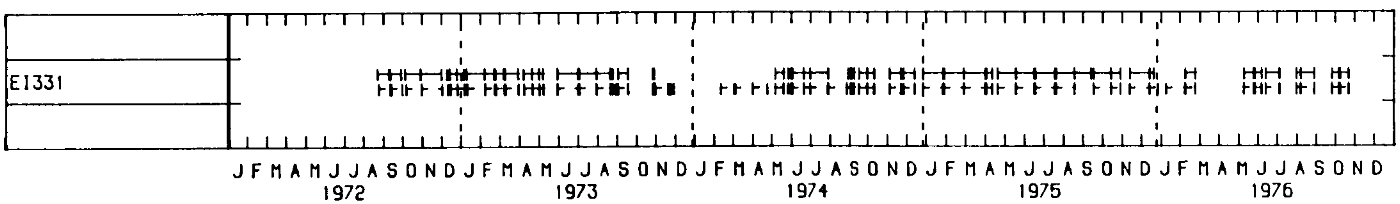


Figure 2.2-4 Computer-generated time line from SAIC/Raleigh's DBMS showing the period of observations utilized from the Eugene Island Block 331-A platform. Solid lines denote wind data, while dashed lines refer to atmospheric pressure and wave height data.

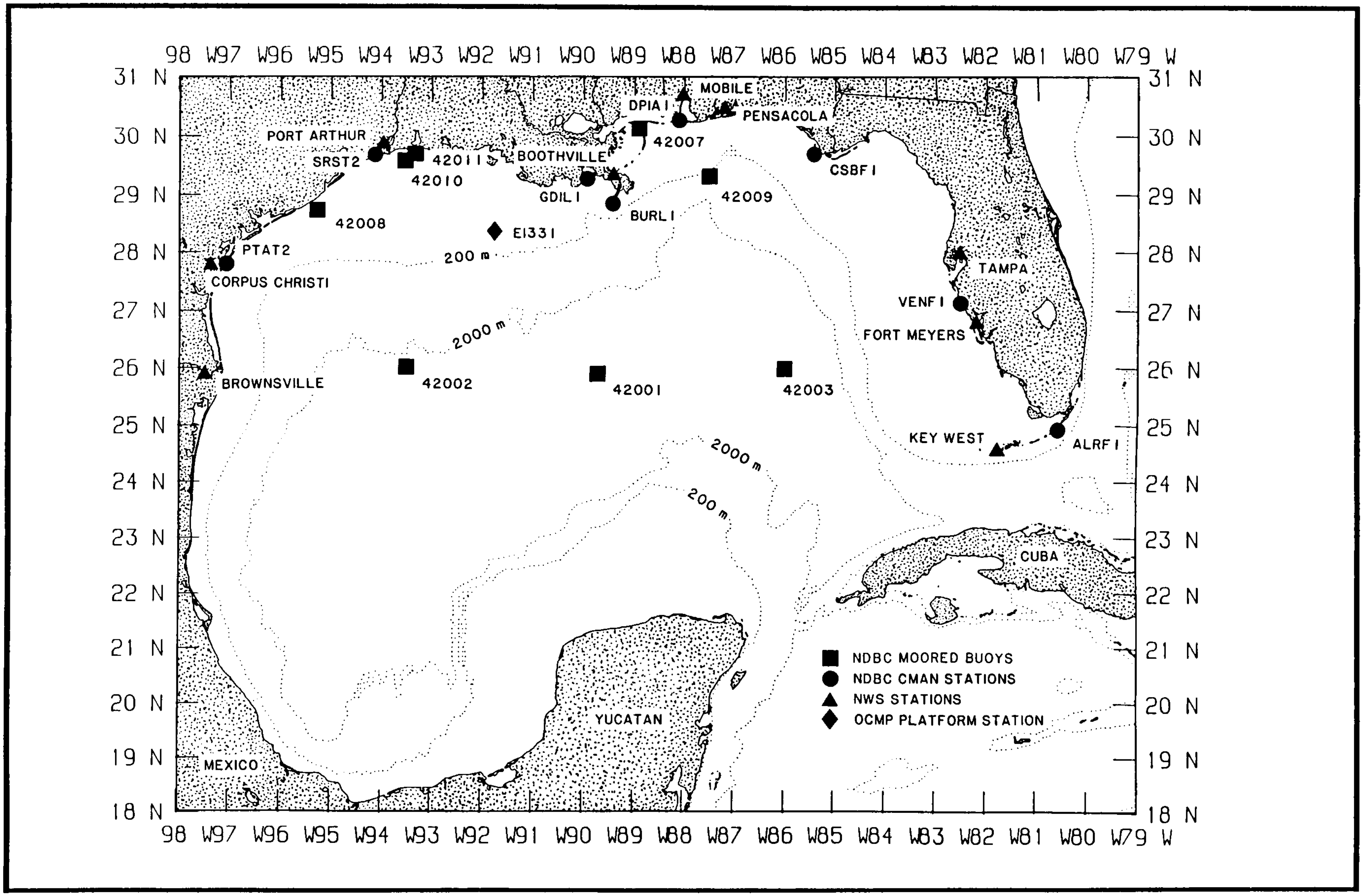


Figure 2.2-5 Summary map showing the locations of all data sets analyzed during this study.

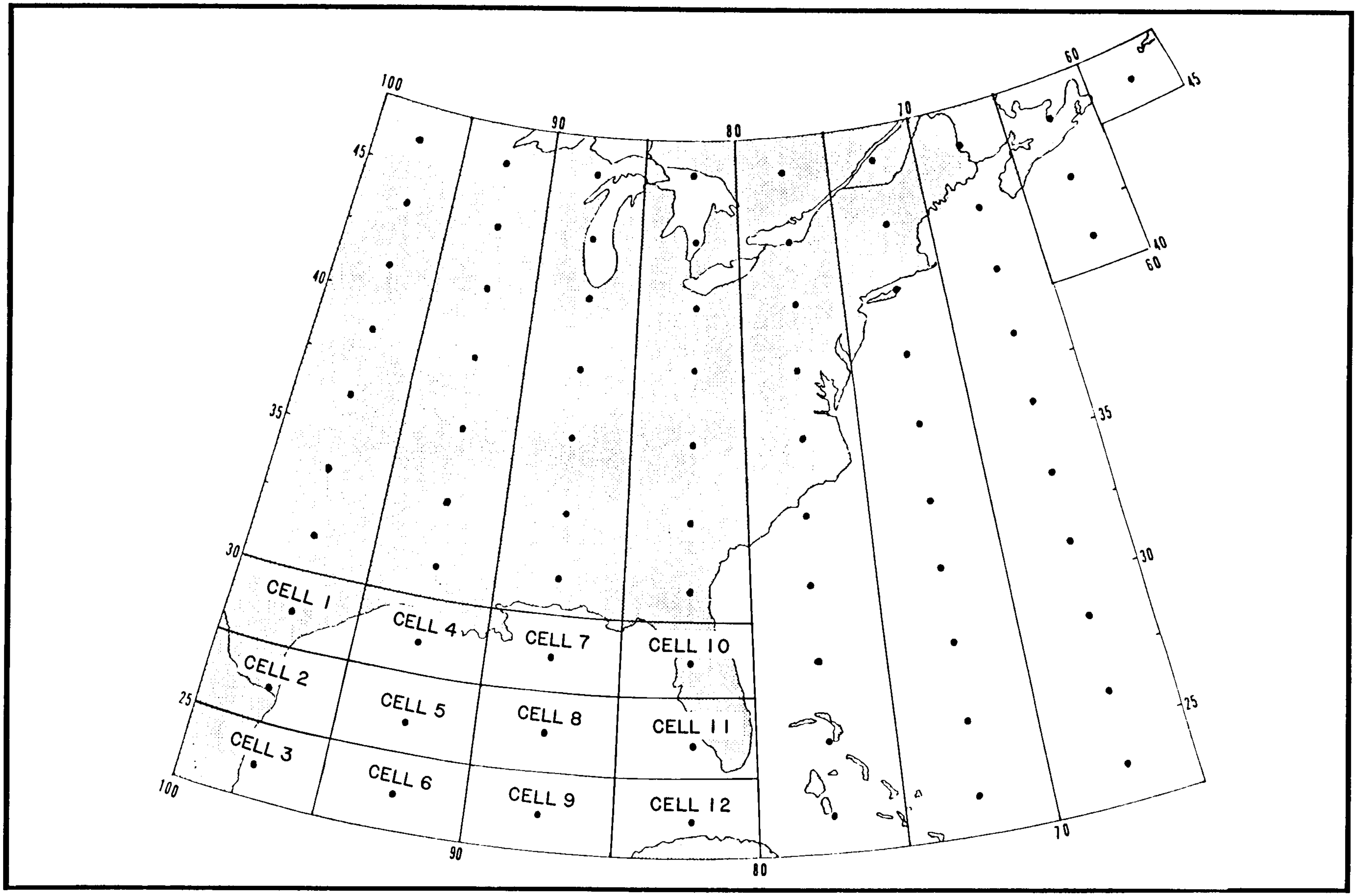


Figure 2.2-6 Base map showing the location of the 12 $2^1/_2$° latitude by 5° longitude grid cells used in this study (map adapted from Hayden, 1981).

produced worksheets used to prepare the U.S. Navy Marine Climatic Atlas of the World, Volume I, North Atlantic Ocean, (U.S. Dept. of Defense, U.S. Dept. of the Navy, 1974). These data were obtained directly from NCDC by Baltz (1978) and organized in monthly maps detailing mean SST and number of observations per quadrangle. Grid cells containing less than 10 observations over the analysis period were neglected in Baltz's (1978) analysis, but were linearly interpolated using the closest 2 quadrangles in the present analysis. Quadrangles requiring interpolation were few and generally near the northeast Gulf coastline, where temperature variation between quadrangles rarely exceeded 0.5°C.

2.3 Data Processing/Analysis

A wide variety of the data sets collected by various government agencies detailed in Section 2.2 require uniformity of processing so that standard analyses can be applied to produce directly comparable statistics for different locations and years. The majority of data used in this report is in the form of time series of vector or scalar values (i.e., wind, temperature, pressure, etc.) at a fixed location or station. Initial processing of these time series removes spurious values by procedures outlined below and uses various interpolation schemes to produce equally-spaced time series suitable for standard time series analysis techniques (i.e., spectral analyses). Unit conversions are made as appropriate (i.e., miles per hour to ms^{-1}).

Most of the data taken by unattended sensors on the ocean suffer failures from time to time, which may produce long gaps in the time series until the sensor is replaced or serviced. Therefore, long continuous time series are not available from NDBC buoys. Occasional long gaps occur in land-based data also. Such data is broken into segments, each of which is a continuous equally-spaced time series. These segments are then run together with the long gaps, between the end of 1 segment and the beginning of the next and filled with the appropriate number of unique flag values. The analysis programs recognize these flag values and take action so that gap values do not contaminate the statistical calculations. Thus, multi-year statistics can be calculated from a time series constructed of many segments of good data separated by gaps.

Statistical techniques used are quite standard and include calculation of means and variances on a monthly, seasonal, annual and multi-year basis. These statistics are summarized in Appendix C. Wind roses (using meteorological convention for wind direction) are constructed for wind vector time series. Wind roses display the percentage of time wind blows from a given range of directions (usually ± 15°) with a given range of speeds (e.g. 2-4 ms^{-1}). Calms, defined as speeds equal to zero, are counted as a separate class. Similar information is displayed in tabular form as speed and direction frequency distributions (or histograms) in Appendix D. The calculations of derived quantities such as surface heat flux from air temperature, sea surface temperature and wind speed are discussed in the appropriate section below. The following sections discuss the treatment and quality assurance of data from NWS coastal stations, NDBC buoys, NDBC CMAN stations, storm tracks and OCMP platform data.

2.3.1 NWS Coastal Data

The data obtained from NWS coastal stations include wind speed and direction, air temperature and atmospheric pressure. The data are read from NCDC archive tapes, converted to internal binary values in standard units (ms^{-1}, degrees celsius and millibars, respectively) and missing values flagged. Wind speed and direction are converted in positive east (u) and north (v) vector components and 1000 mb is subtracted from the pressure values. The resulting binary files are checked for values out of range and missing records. Gaps caused by both values out of range and data values not being taken, which are less than 8 hours, are filled by linear interpolation. Longer gaps, 8 to 24 hours, are filled by an interpolation procedure which takes account of the periodicities in the record and preserves the spectral content. Gaps longer than 1 day are not filled, and the record is segmented at these points. In some records (primarily Boothville) data was regularly not taken at night for periods of many months. The gap-filling procedures outlined above assume that they occur essentially randomly through the time series. Therefore, periods with daily occurring 6- to 8-hour gaps were discarded from the records. Coastal station, NDBC buoy and NDBC CMAN data, discussed in the following sections, are usually taken at 3- or 1-hour intervals, and the same station can have data taken at both time intervals. Three-hour data was common prior to about 1981 for both NWS and NDBC buoy stations, while 1-hour data is common after this date. Therefore, to generate consistent time series from a single station and for comparison between stations, the 3 hourly data sets were linearly interpolated to 1-hour time intervals. The clean up and interpolation of the data records is done interactively by displaying the data graphically, and is under the control of the analyst at all times. Thus, extreme events or unusual but valid data are not discarded as is sometimes the case with automatic range checking using climatologically derived extremes.

The resulting segments of equally spaced and continuous records of data are shown in the time lines given in Section 2.2. Short segments of less than 2 to 3 weeks have been discarded, and where data from separate years were processed separately, the segments have been run together where feasible. The time base information (start and stop dates, time interval, number of data values) for each segment and data type are entered into the SAIC/Raleigh Data Base Management System (DBMS) which provides this information to the analysis routines and allows rapid and easy identification and retrieval of data files associated with a particular station and data type. The time lines in Section 2.2 were generated automatically by computer search of the data base information.

2.3.2 NDBC Buoy Data

NDBC buoys generate wind speed and direction, air temperature, sea surface temperature (SST), atmospheric pressure and significant wave height and period if a wave rider is installed. Since heat flux is proportional to the difference between air and sea surface temperature and wind speed, statistics are calculated for this difference (Air-SST) rather than air temperature alone. Not all buoys have a complete suite of instruments and sensors were added at various times through their history. The records have considerably more short and long gaps than the coastal and CMAN station data. However, the clean up, gap filling and interpolation to 1-hour time intervals is essentially the same as outlined above.

The shelf NDBC platforms off Cameron, Louisiana (42010 and 42011) were quite close to each other. There is little overlap between the end of the 42010 data record and the beginning of the 42011 record. Therefore, in the calculation of multi-year monthly means and variances and seasonal statistics, the 2 data sets from 42010 and 42011 were merged and considered as being from 1 site.

2.3.3 NDBC CMAN Data

NDBC CMAN sites collect wind speed and direction, air temperature and atmospheric pressure at all 8 stations in the Gulf of Mexico. At 3 of these locations (ALRF1, GDIL1 and VENF1), a thermistor is also available to archive the sea surface temperature. Differencing the air temperature and SST allows the computation of a sensible heat flux time series at these 3 locations. The length of the CMAN records are considerably shorter than those of the NDBC buoy and NWS coastal station data sets. Thus, use caution when considering these data, since they do not represent long-term, stable mean values. These time series are of such short duration (maximum of 3 years) that their seasonal and annual means may not be directly comparable to the longer NWS and NDBC buoy time series. However, they supply very important information towards our understanding of the meteorological processes affecting oceanographic operations in the Gulf of Mexico, and thus were included in this report for completeness. The data processing/quality control procedures are identical to those mentioned in the above sections (2.3-1 and 2.3-2) when discussing the buoy and coastal station data.

2.3.4 Storm Track Data

The storm track data set can be subdivided into 2 separate components: the extratropical cyclone data, organized by grid cells and the hurricane track data organized by 6 hourly positions. Thus, the data processing procedures for the 2 data sets varied remarkably and will be discussed as 2 separate entities. First, a discussion of the procedure followed in processing the University of Virginia's extratropical cyclone data.

Initially, the 101-grid cell matrix was decomposed into individual cells and then a 12-grid cell matrix encompassing the study area was reconstructed. The geographical area covered by this 12-grid cell matrix is shown in Figure 2.2-6. The lower left-hand corner of the box is at 22.5°N, 100.0°W, while the upper right-hand corner of the matrix rests just east of the Florida coast at 30.0°N, 80.0°W. This area corresponds to grid cells 11-13, 24-26, 37-40 and 50-52 in Hayden's (1980) original classification scheme. For the purpose of this study, these cells have been renumbered as 1-3, 4-6, 7-9 and 10-12, respectively, and are now referred to as the 12 independent variables. The Gulf of Mexico extratropical cyclone data base now consists of a matrix containing 12 variables (each individual grid cell) by 1,200 cases (totals for each month for each year between 1886-1985).

The new 12 by 1,200 matrix contains a frequency count for each month for each grid cell. In order to perform an analysis of seasonal trends in the cyclone, the data set must be further subdivided into winter, summer and transitional data sets. From analysis of the coastal, CMAN and buoy winds, it was determined that December-March constituted a good winter season, while May-October accurately represented the summer season. April and November were considered transitional periods and were analyzed only in terms of their mean and standard deviation. No complex analyses were performed on these latter 2 periods. In creating the summer, winter and transitional matrices the monthly values for each grid cell within a given season were summed to give a single frequency value per season per year. Thus, the data set was further reduced to its final working size of 12 variables by 100 cases.

In order to partition the variance in this data set, principal components analysis (PCA) was chosen, since it has been shown that PCA can successfully resolve the variance structure in multivariate, geophysical data (Kutzbach, 1967; Fritts et al., 1971; Resio and Hayden, 1975; Hayden, 1980; and Wayland, 1983). PCA is often referred to as empirical orthogonal function (EOF) analysis in the literature. Using a minimization of least square errors, this procedure is useful in determining patterns in large data sets (Lorenz, 1956; Gilman, 1957; and Kutzbach, 1967). The purpose of the analysis is to transform a series of intercorrelated variables (currently defined as the frequency counts in each of 12 cells) into a set of new statistically independent variables. These new variables are linear combinations of the original variables. However, they are mutually orthogonal. In order to prevent grid cells having a high-mean frequency count from dominating the total variance and eigenvector forms, a correlation matrix was employed as opposed to a covariance matrix. Upon completion, the PCA provides a description of the uncorrelated major modes of variation in the Gulf of Mexico cyclone data set. From this type of analysis can be drawn the estimate of total system variance explained by each eigenvector and the importance of each component within each case. Generally, each principal component eigenvector can be related to some property of the original data set (Hayden, 1980).

Analysis of the tropical storm data began with the definition of a data window which covered the region of interest--the Gulf of Mexico. The dimensions of the box being 10 degrees of latitude by 20 degrees of longitude, ranging from 20°N, 100°W in the lower left-hand corner to 30°N, 80°W at the upper right boundary (Figure 2.3.4-1). Using this window the HURDAT data set was analyzed, partitioning the storm statistics on the basis of location either inside or outside the box. The computed statistics, tabulated on an annual basis for each year between 1886 and 1986, were as follows: total number of storms occurring (i.e., hurricanes, tropical storms and subtropical storms); total number of storm days; number of hurricanes; number of tropical storms; number of subtropical storms; number of storms crossing the U.S. coastline (e.g., making landfall); number of storms entering the Gulf of Mexico window and the number of storm days observed within the window. The calculation of the number of storm days allows for the counter to increment for each day that a tropical or subtropical event is active. However, if more than 1 system is present on any given day, the counter is still only incremented once. The results showed the relative distribution of storms within the Gulf of Mexico as opposed to the total storm climate for each of the 101 years on record. From these results, it is quite easy to assess the importance of storm tracks to the climatology of the Gulf of Mexico for any given year.

Finally, North Atlantic basin-wide statistics are presented based on an analysis scheme developed by Neumann and Pryslak (1981). Their data set consisted of 663 tropical systems spanning the 80-year period between 1899 and 1978. Their analysis routines are based on a 54 row by 91 column data matrix containing 4,914 data points. The resulting grid spacing was 111.2 km, and a 139 km circle, centered on each of the 4,914 points, was used for the digital frequency counts. In addition, the 6-hourly storm positions were interpolated to hourly positions, using the bivariate scheme of Akima (1970). A 139-km circle was chosen in the analysis for two reasons. First, 139 km is the average area generally associated with tropical cyclone damage and secondly, the area within the circle closely resembles the 2½° latitude by 2½° longitude boxes used in a similar study by Hope and Neumann (1969).

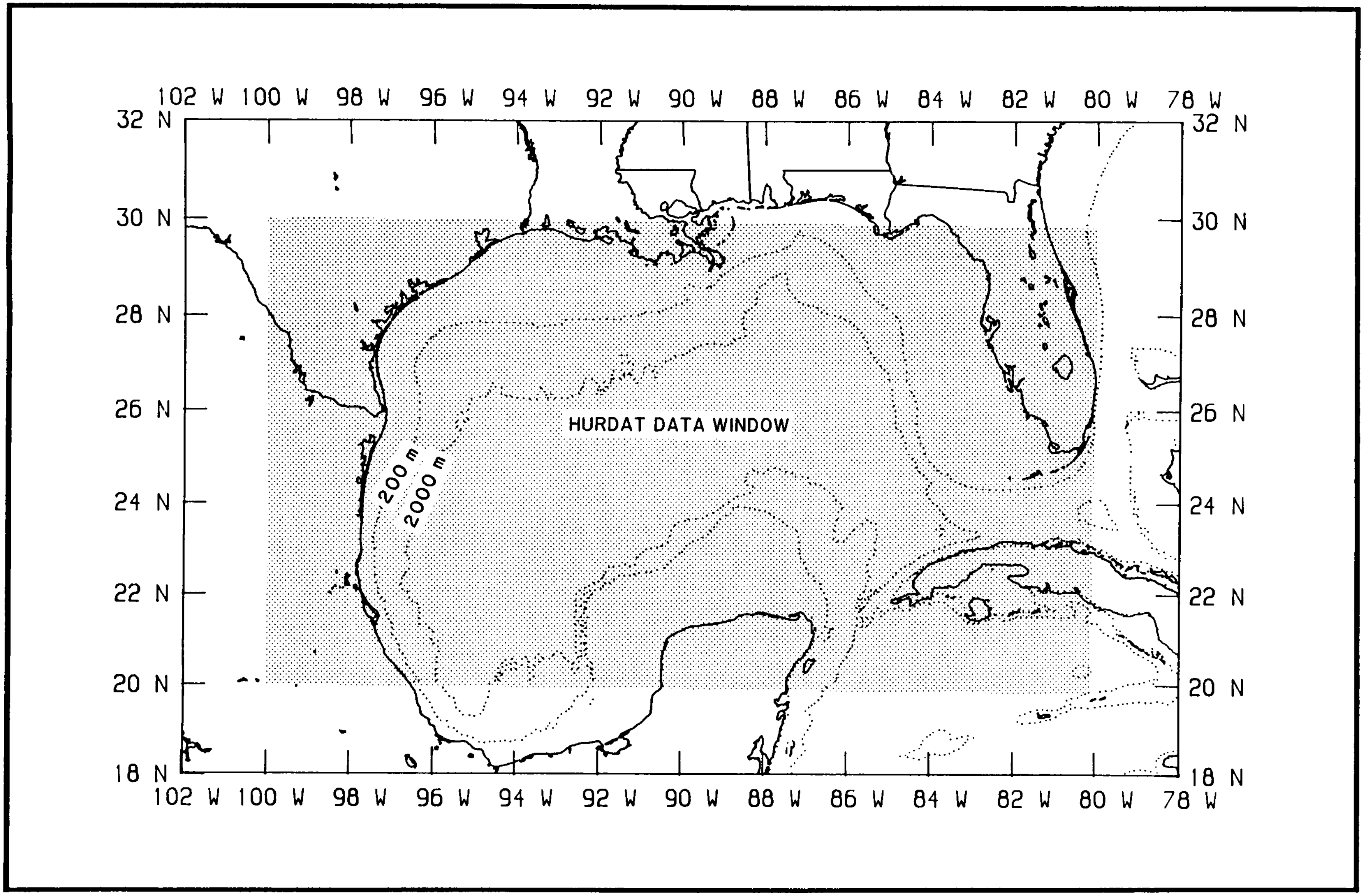


Figure 2.3.4-1 Base map detailing the data window utilized during the analysis of the tropical cyclone data set (HURDAT).

The base map detailing the identification number of each 2½° latitude/longitude grid cell is given in Figure 2.3.4-2. From this analysis, Neumann and Pryslak (1981) presented 3 charts and 1 table depicting (1) average storm frequency per unit area per 100-year interval, (2) mean resultant speed and direction, (3) storm tracks for all storms upon which (1) and (2) are based, and (4) a table summarizing the means and standard deviations of the storm translation data. The preceding calculations were subdivided into 3 separate storm classifications: maximum sustained winds > 34 knots, > 64 knots and > 100 knots. These storm intensities relate to the storm classifications of tropical storm, hurricane and great hurricane, respectively. Neumann and Pryslak (1981) provided calculations on an overlapping monthly basis for each month during the hurricane season (June 1-November 30) and included the preceding month of May. In this analysis, only season summary maps are presented, detailing tropical cyclone climatologies for each of the 3 storm types for the period of May 1 through November 30.

2.3.5 Ocean Current Measurement Program (OCMP) Data

The data from each of the 4 instruments (barometer, wave gauge, current meter and wind system) were collected in analog form and stored on 7,200 foot tapes, using FM recorders run at a speed of 0.03 inches per second. Using this procedure, a maximum time of 33 days of continual operation was allowed during the program. The general instrument service cycle was 1 month, with complete calibrations performed on all data channels each visit (Hall, 1972). A total number of 56 analog tapes were generated during the OCMP project and were made available to this program for analysis by Shell Oil Company.

The conversion (digitization) of the analog data tapes to more useful digital tapes was performed by Mr. Robert Hamilton of Evans-Hamilton, Incorporated (EHI), Houston, Texas. Mr. Hamilton has had previous data conversion experience both with this data set and with the original Ocean Data Gathering Program (ODGP). Due to the length of time elapsed since data collection and this analysis, several of the analog tapes had begun to deteriorate and were not suitable for processing. Thus, a total of 47 digital tapes were digitized and sent to SAIC/Raleigh for analysis and inclusion in this meteorological summary. The digitization procedure consisted of using high and low calibration count values to convert the analog data to digital form. Slope and intercept values were also generated for each hour and these values were, in turn, used in the final data transcription procedure. Figure 2.3.5-1 is an example of a printout provided by EHI for each tape processed during this study. The stability of these values (e.g., the count, calibration, slope and intercept) was a good indicator of the quality of the data for each hour written to digital tape.

The final output digital data set consisted of the 4 data channels (wind speed, wind direction, atmospheric pressure and wave height) being demultiplexed into 4 blocks. The resulting data record size being 1,920 bytes and the block size being 7,680 bytes. The digitization process resulted in the first 1,024 seconds (17.067 minutes) of each hour being sampled at a 0.5 second interval, yielding 2,048 samples per data channel. Therefore, each logical tape record contained 128 samples of data and each physical tape record contained 512 samples. The units were unchanged with waves in feet, wind speed in miles per hour, wind direction in degrees True (from which the wind blew, e.g., meteorological

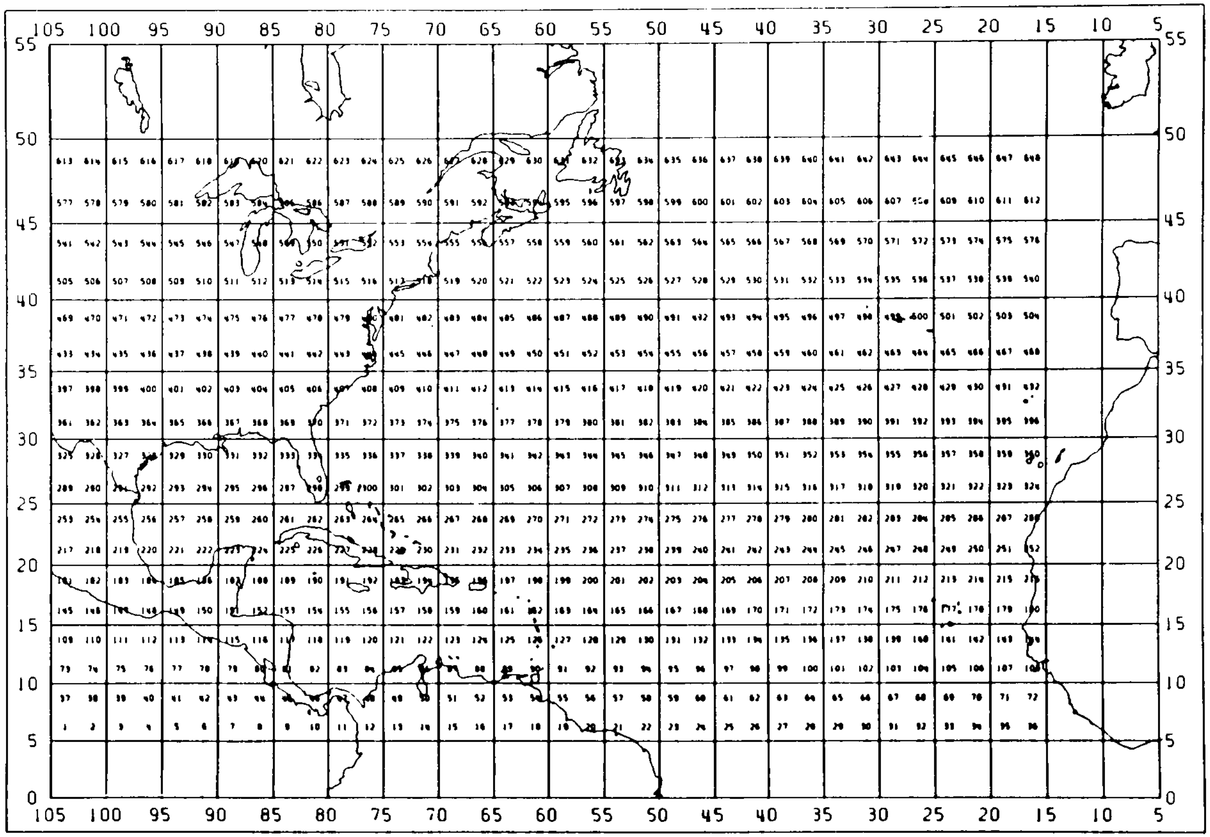


Figure 2.3.4-2 Base map detailing the location of each 2½° latitude/longitude grid cell used in the North Atlantic Basin tropical cyclone analyses (from Neumann and Pryslak, 1981).

EVANS-HAMILTON OCEANOGRAPHIC DATA REDUCTION
MINERALS MANAGEMENT SERVICE DATA REDUCTION PROJECT - ANALOG TAPE: 234W.DAT
CALIBRATIONS AT RECORD 12 -

CHANNEL DESCRIPTION	LOCNT	LOCAL	HICNT	HICAL	SLOPE	INTERCEPT
WAVE	-1727.36670	77.50000	1086.09998	3.90000	-0.02616	32.31227
WIND SPEED	-1773.69995	0.00000	-172.43333	96.40000	0.06020	106.78089
WIND DIRECTION	-1635.71667	360.00000	774.83331	4.30000	-0.14756	118.63416
BAROMETER	-1794.43335	26.00000	1476.41663	31.36000	0.00164	28.94057

EVANS-HAMILTON OCEANOGRAPHIC DATA REDUCTION
MINERALS MANAGEMENT SERVICE DATA REDUCTION PROJECT - ANALOG TAPE: 234W.DAT
CALIBRATIONS AT RECORD 36 -

CHANNEL DESCRIPTION	LOCNT	LOCAL	HICNT	HICAL	SLOPE	INTERCEPT
WAVE	-1712.33337	77.50000	1127.69995	3.90000	-0.02592	33.12456
WIND SPEED	-1738.41663	0.00000	-131.26666	96.40000	0.05998	104.27363
WIND DIRECTION	-1602.88330	360.00000	811.26666	4.30000	-0.14734	123.83173
BAROMETER	-1754.53333	26.00000	1308.71667	31.36000	0.00175	29.07004

EVANS-HAMILTON OCEANOGRAPHIC DATA REDUCTION
MINERALS MANAGEMENT SERVICE DATA REDUCTION PROJECT - ANALOG TAPE: 234W.DAT
CALIBRATIONS AT RECORD 60 -

CHANNEL DESCRIPTION	LOCNT	LOCAL	HICNT	HICAL	SLOPE	INTERCEPT
WAVE	-1685.33337	77.50000	1149.80005	3.90000	-0.02596	33.74879
WIND SPEED	-1716.66663	0.00000	-119.66666	96.40000	0.06036	103.62346
WIND DIRECTION	-1579.36670	360.00000	831.66669	4.30000	-0.14753	126.99586
BAROMETER	-1731.80005	26.00000	1307.11670	31.36000	0.00176	29.05453

EVANS-HAMILTON OCEANOGRAPHIC DATA REDUCTION
MINERALS MANAGEMENT SERVICE DATA REDUCTION PROJECT - ANALOG TAPE: 234W.DAT
CALIBRATIONS AT RECORD 84 -

CHANNEL DESCRIPTION	LOCNT	LOCAL	HICNT	HICAL	SLOPE	INTERCEPT
WAVE	-1719.73328	77.50000	1092.05005	3.90000	-0.02618	32.48502
WIND SPEED	-1772.23328	0.00000	-167.60001	96.40000	0.06008	106.46874
WIND DIRECTION	-1635.59998	360.00000	775.20001	4.30000	-0.14754	118.67641
BAROMETER	-1766.83337	26.00000	1263.43335	31.36000	0.00177	29.12521

EVANS-HAMILTON OCEANOGRAPHIC DATA REDUCTION
MINERALS MANAGEMENT SERVICE DATA REDUCTION PROJECT - ANALOG TAPE: 234W.DAT
CALIBRATIONS AT RECORD 108 -

CHANNEL DESCRIPTION	LOCNT	LOCAL	HICNT	HICAL	SLOPE	INTERCEPT
WAVE	-1710.46667	77.50000	1079.61670	3.90000	-0.02638	32.37936
WIND SPEED	-1780.58337	0.00000	-176.28334	96.40000	0.06009	106.99261
WIND DIRECTION	-1647.83337	360.00000	761.25000	4.30000	-0.14765	116.69821
BAROMETER	-1776.68335	26.00000	1253.28333	31.36000	0.00177	29.14295

EVANS-HAMILTON OCEANOGRAPHIC DATA REDUCTION
MINERALS MANAGEMENT SERVICE DATA REDUCTION PROJECT - ANALOG TAPE: 234W.DAT
CALIBRATIONS AT RECORD 132 -

CHANNEL DESCRIPTION	LOCNT	LOCAL	HICNT	HICAL	SLOPE	INTERCEPT
WAVE	-1696.71667	77.50000	1074.36670	3.90000	-0.02656	32.43519
WIND SPEED	-1781.88330	0.00000	-183.45000	96.40000	0.06031	107.46369
WIND DIRECTION	-1648.50000	360.00000	758.34998	4.30000	-0.14779	116.37390
BAROMETER	-1778.25000	26.00000	1248.28333	31.36000	0.00177	29.14929

Figure 2.3.5-1 Sample calibration log sheet from one of the Ocean Current Measurement Program analog to digital tape conversions (from Evans-Hamilton, Incorporated).

conventions), and atmospheric pressure in inches of Mercury. The maximum wave crest elevation was taken at 80 feet, while the minimum trough is zero feet. (Vogel, personal correspondence, 1987).

SAIC/Raleigh processed the digital data tapes from EHI using a Digital Equipment Corporation (DEC) MICRO-VAX II (registered trademark of DEC). The resulting data files were then entered into the DBMS and were processed in a similar manner to the NWS and NDBC wind data sets (See Sections 2.3.1, 2.3.2 and 2.3.3). The exception for the OCMP data was that the wind speeds and directions were converted into positive north and east components and stored in units of ms^{-1}, the wave heights converted into meters (m) and the atmospheric pressure was stored in units of millibars (mb). The individual wind files, ranging in length from 1 day to approximately 31 days, were concatenated together for statistical analysis, using flag values to fill gaps greater than 6 hours. The flag values served as "bad data indicators" and were ignored during all statistical computations.

2.4 Thermal Structure

2.4.1 Air Temperature

Seventeen-year time series of hourly air temperature observations from 9 NWS coastal stations were used to compile monthly mean values and variances. In addition, similar analyses were completed for the 7 CMAN stations, where the time series lengths ranged between 1 and 3 years. Seasonal means of temperature for the winter and summer were computed as the mean of the monthly means for December-March and May-October, respectively. Tables 2.4.1-1 and 2.4.1-2 present these data. Figures 2.4.1-1a-i and 2.4.1-2a-g present the monthly mean temperatures for each of the NWS coastal and NDBC CMAN stations, respectively. Each figure contains error bars indicating the standard deviation from the monthly mean for that particular month and the annual mean temperature for the duration of each record.

The mean annual patterns of temperature are very similar at all stations. However, there are significant variations from year to year. Such variations can be easily recognized using the tables provided in Appendix C (Sections C.1.2 and C.3.1). The highest annual mean temperature is recorded in Key West, Florida (25.3°C), and the lowest annual mean temperature is found at Mobile, Alabama (19.3°C). The greatest temperature difference (9.68°C) in the region is found during winter when comparing the winter seasonal means for Key West and Mobile. Differences between cities at about the same latitude are relatively small during the winter season. For example, Brownsville is 1.28°C cooler than Fort Meyers, primarily due to more frequent frontal activity at Brownsville. The annual variation of monthly air temperatures around the Gulf Coast for all NWS coastal station and NDBC CMAN locations is summarized in Figures 2.4.1-3 and 2.4.1-4, respectively.

The summer temperature variability is less than the winter, but again the greatest difference in summer means of 3.27°C was found between Mobile and Key West. East-West differences in the Gulf of Mexico during this season were generally less than 1°C. This reduction in summertime variability can partially be attributed to the northward retreat of the jet stream during this period, and thus the subsequent reduction in frontal activity.

Table 2.4.1-1 Seasonal means of air temperature (°C) for each of the 9 NWS coastal stations analyzed in this study.

Sta	April	May-Oct. Summer	November	Dec.-Mar. Winter
KW	24.92	27.96	24.26	21.73
FM	22.68	26.40	21.39	18.46
TA	21.83	25.89	19.74	16.61
PE	19.55	25.15	15.90	12.55
MO	19.34	24.69	15.45	12.05
BO	20.15	25.73	17.95	14.08
PA	20.21	25.21	15.88	12.83
CC	22.22	25.56	18.28	15.18
BV	23.47	26.98	19.80	17.18

Table 2.4.1-2 Seasonal means of air temperature (°C) for each of the 7 NDBC CMAN stations analyzed in this study. Note these records have maximum lengths of 1-3 years.

STA	April	May-Oct. Summer	November	Dec.-Mar. Winter
ALRF1[2]	21.88	27.48	25.34	21.72
VENF1[1]	20.08	25.56	20.26	17.56
CSBF1[3]	19.03	25.68	19.42	13.84
BURL1[3]	19.58	26.43	20.08	11.17
GDIL1[3]	20.49	26.33	19.49	14.01
SRST2[3]	19.70	25.54	17.20	12.03
PTAT2[3]	20.60	26.17	19.01	14.30

[1] One year record
[2] Two year record
[3] Three year record

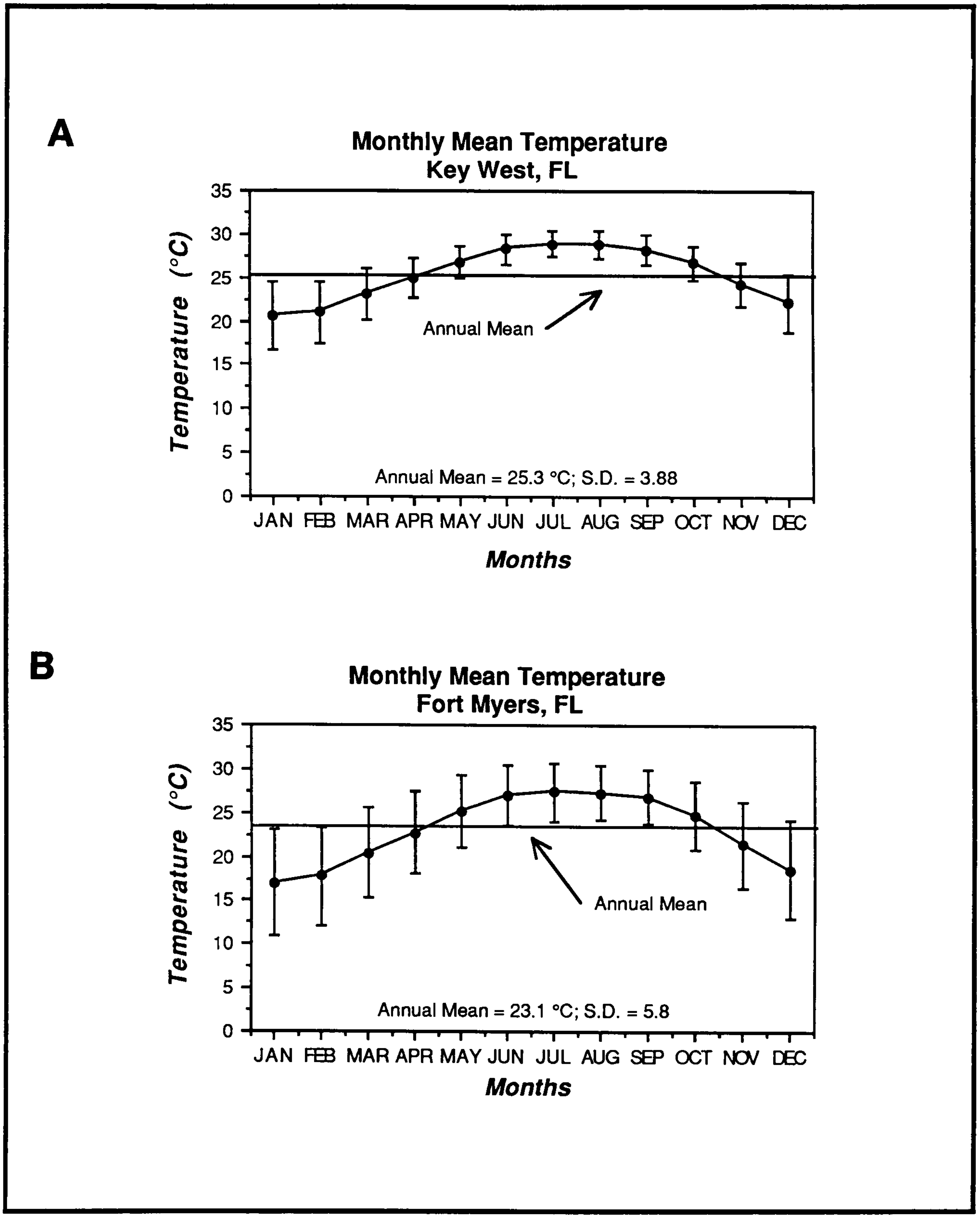


Figure 2.4.1-1a-b Monthly mean air temperatures with standard deviation and annual mean for (a) Key West, Florida and (b) Fort Myers, Florida.

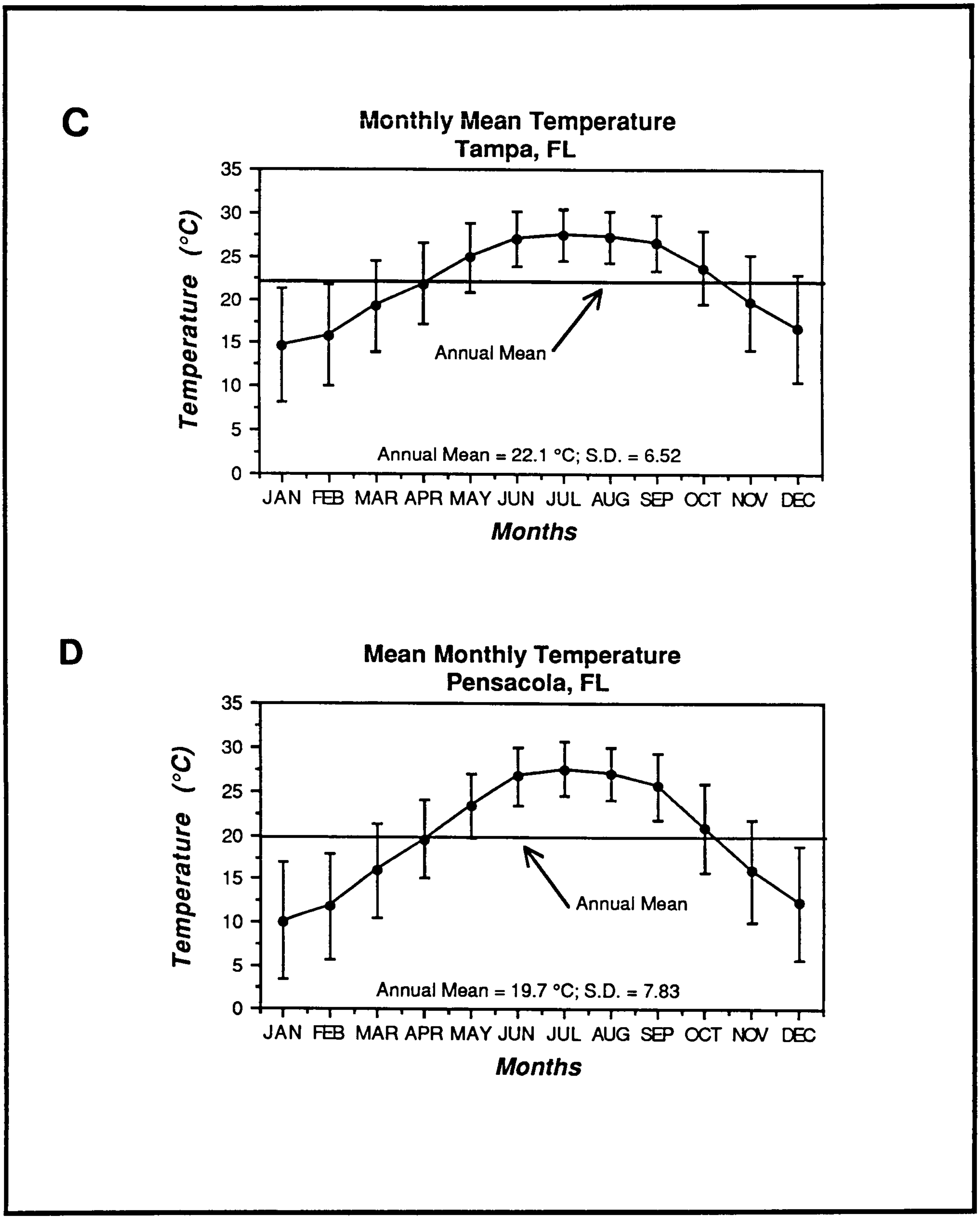
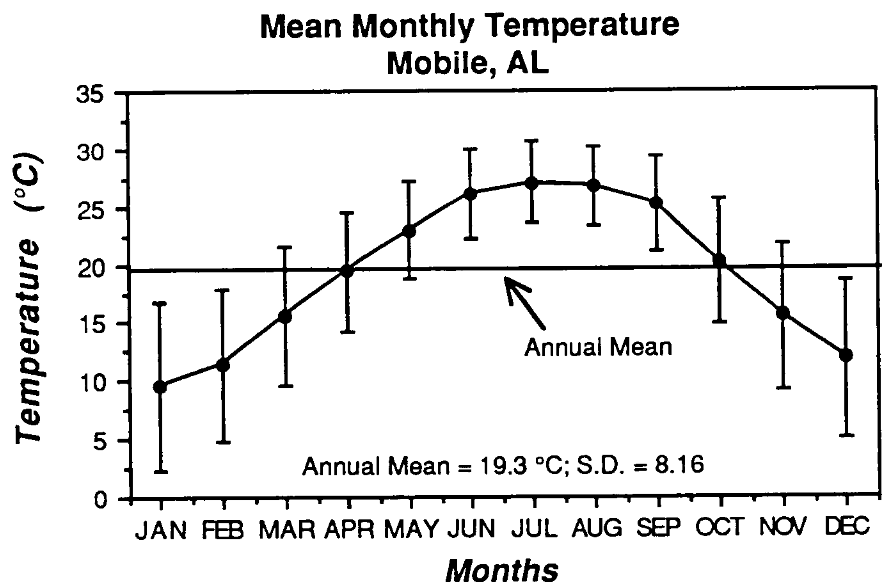


Figure 2.4.1-1c-d Monthly mean air temperatures with standard deviation and annual mean for (c) Tampa, Florida and (d) Pensacola, Florida.

E



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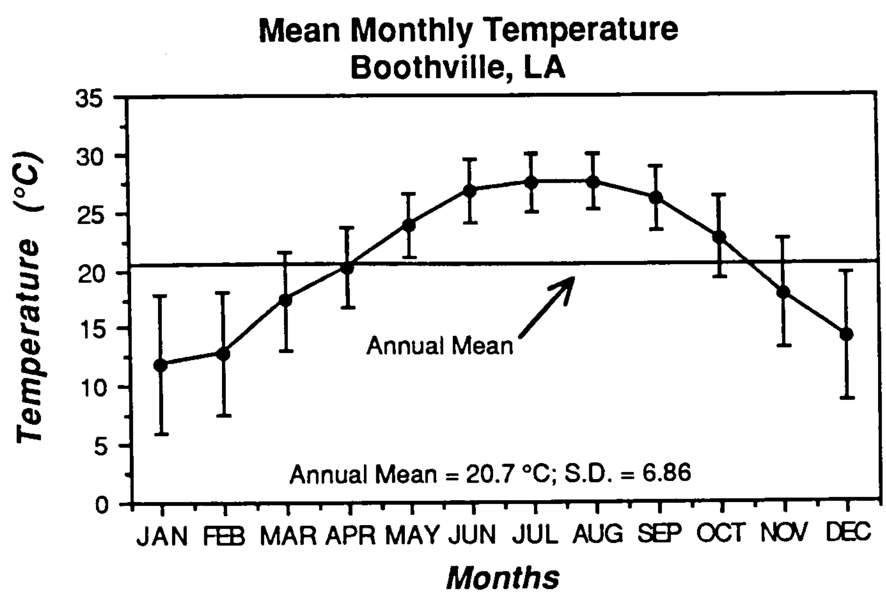


Figure 2.4.1-1e-f Monthly mean air temperatures with standard deviation and annual mean for (e) Mobile, Alabama and (f) Boothville, Louisiana.

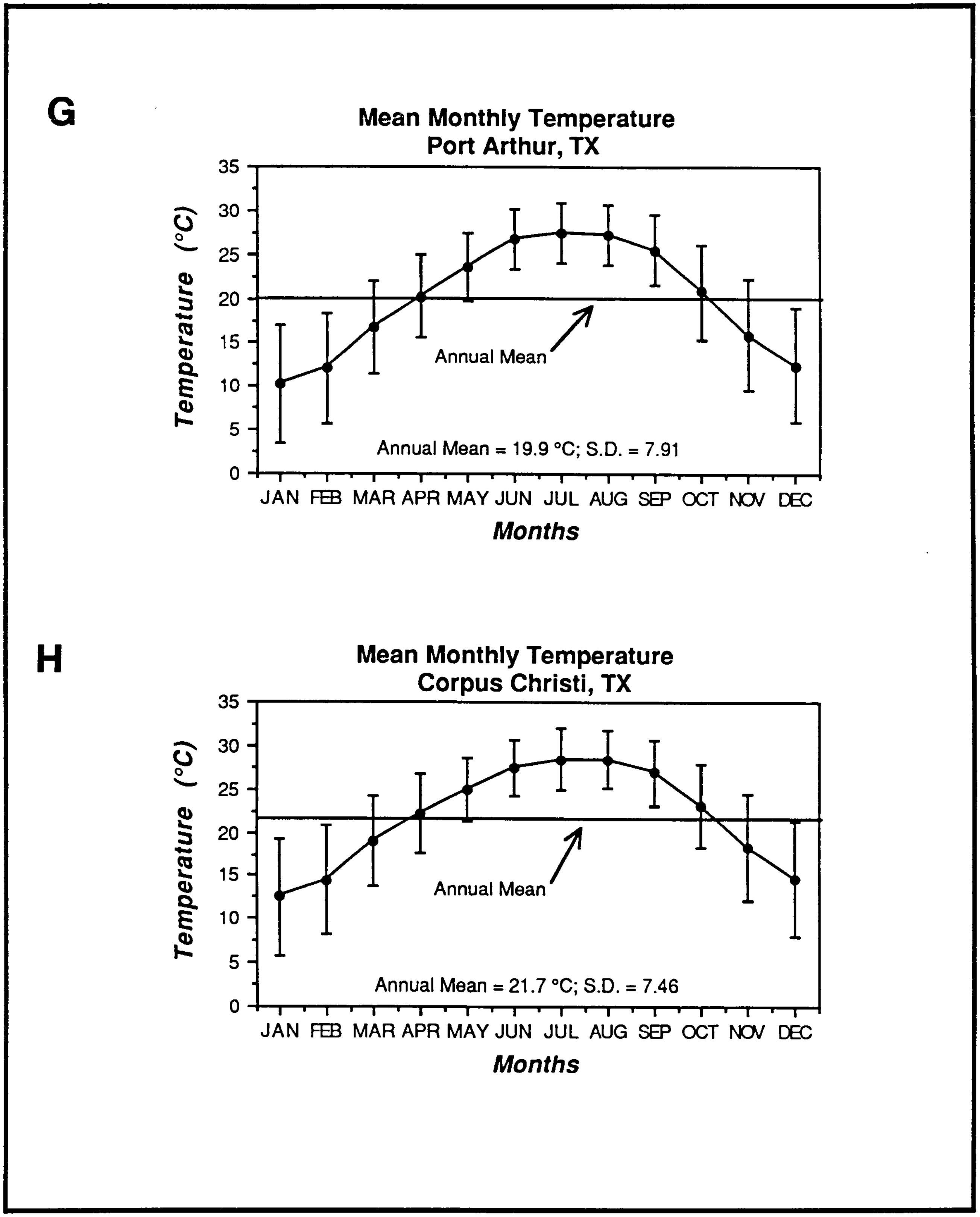


Figure 2.4.1-1g-h Monthly mean air temperatures with standard deviation and annual mean for (g) Port Arthur, Texas and (h) Corpus Christi, Texas.

I

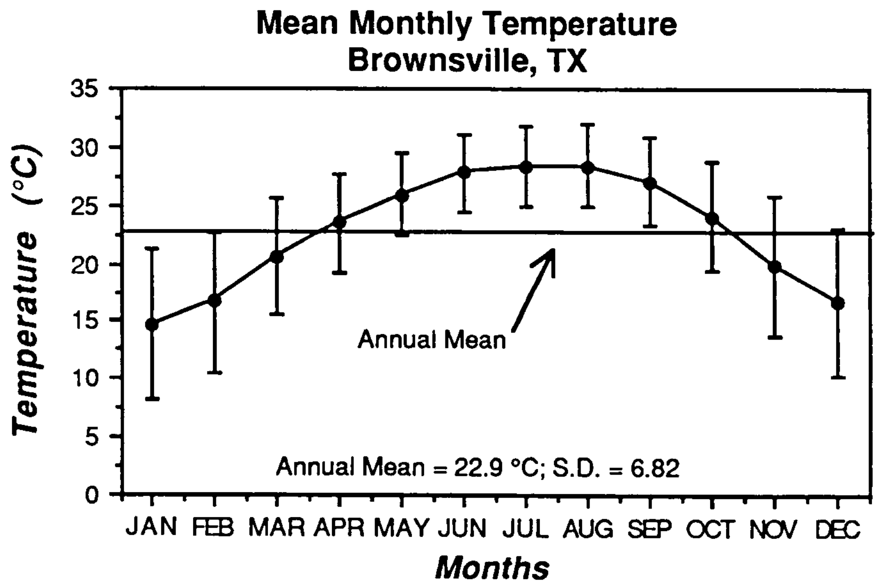


Figure 2.4.1-1i Monthly mean air temperatures with standard deviation and annual mean for (i) Brownsville, Texas.

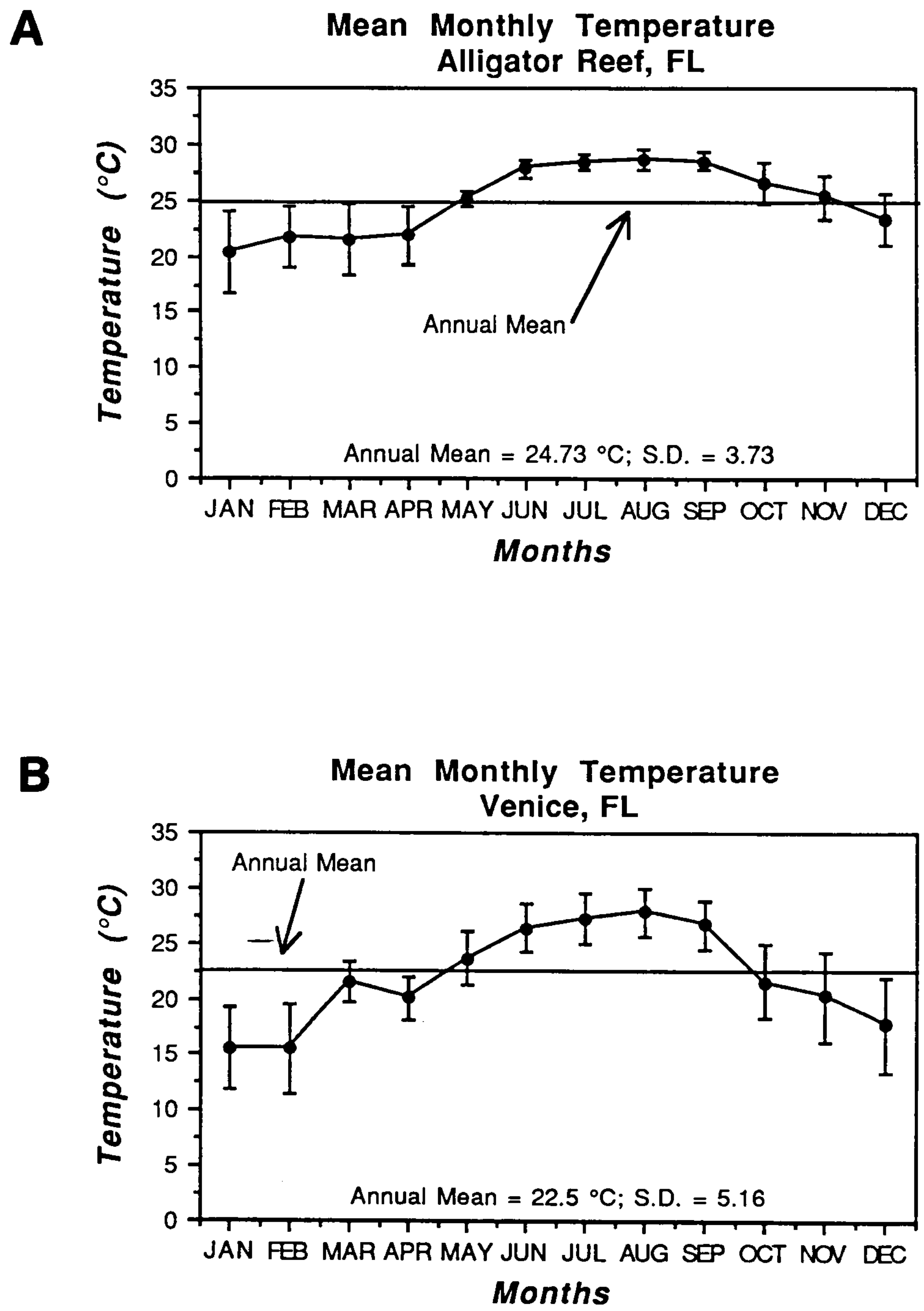


Figure 2.4.1-2a-b Monthly mean air temperatures with standard deviation and annual mean for (a) Alligator Reef, Florida (b) Venice, Florida.

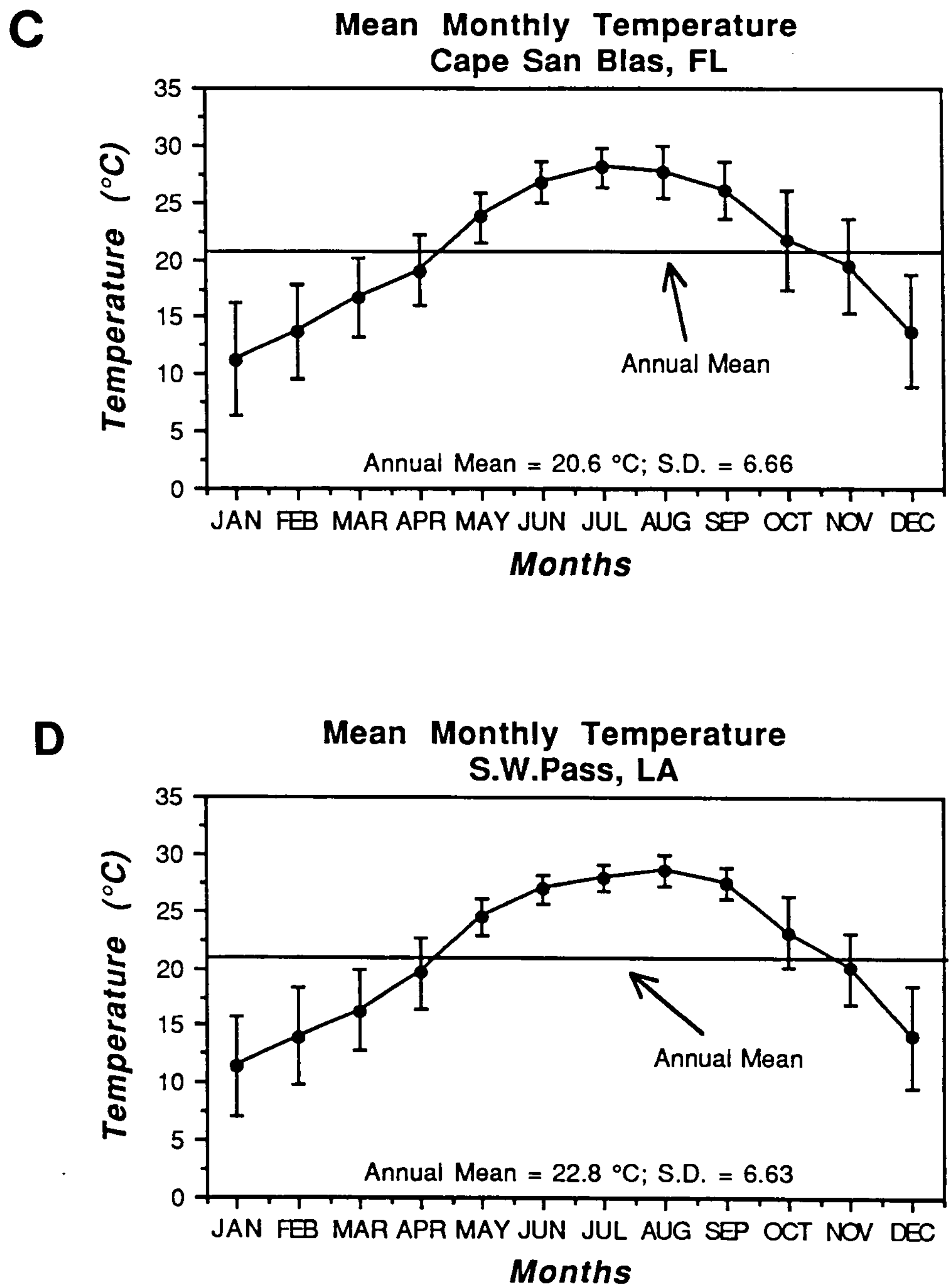


Figure 2.4.1-2c-d Monthly mean air temperatures with standard deviation and annual mean for (c) Cape San Blas, Florida and (d) Southwest Pass, Louisiana.

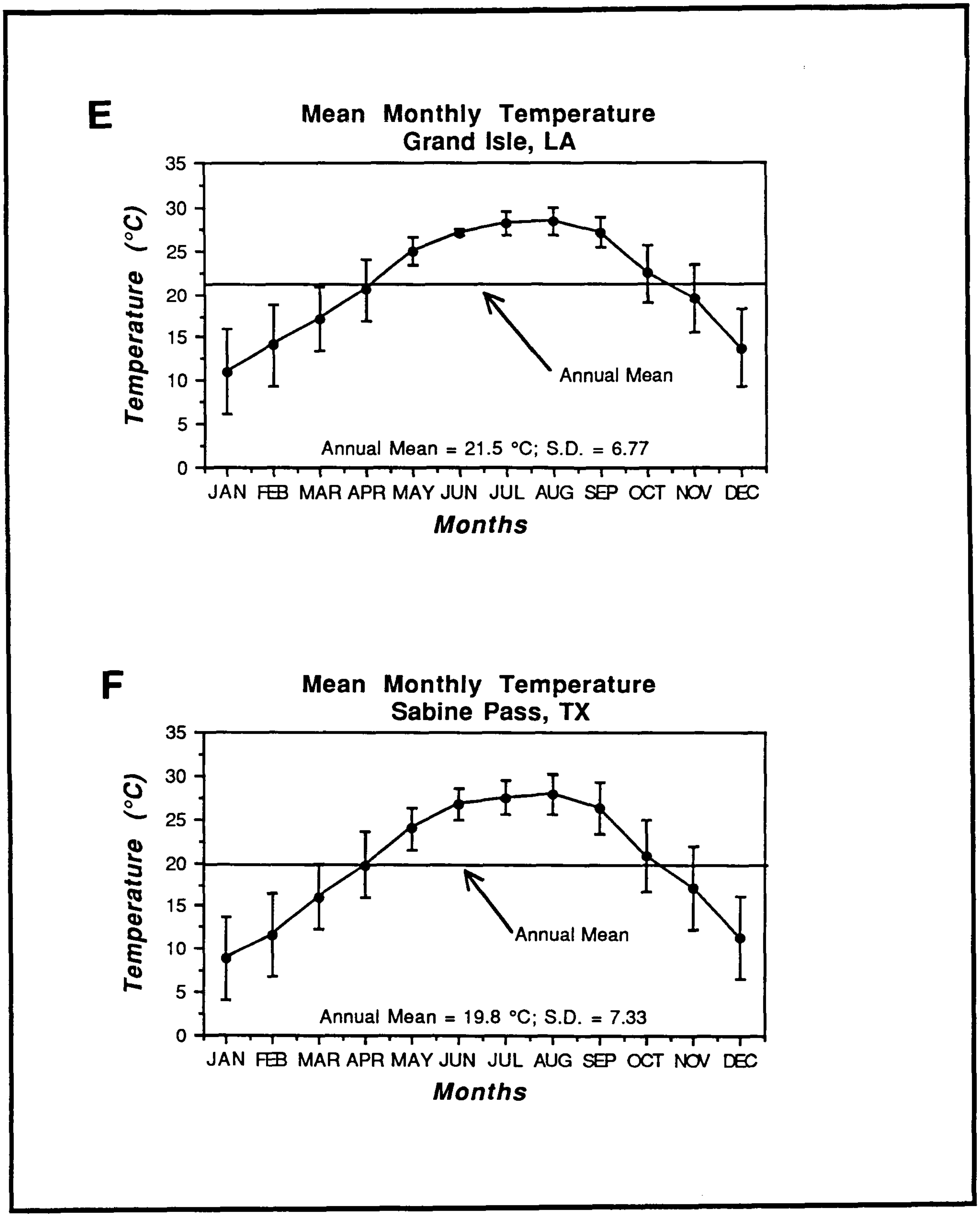


Figure 2.4.1-2e-f Monthly mean air temperatures with standard deviation and annual mean for (e) Grand Isle, Louisiana and (f) Sabine Pass, Texas.

G

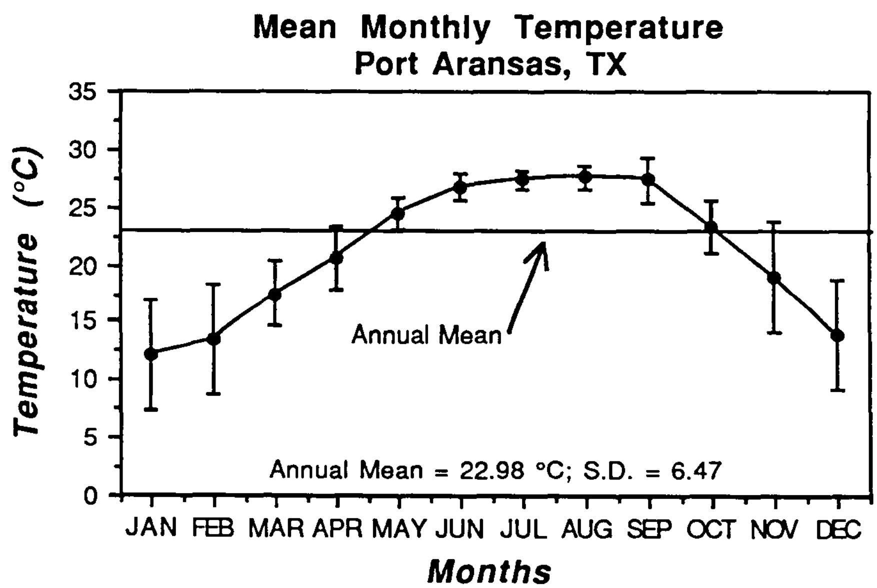


Figure 2.4.1-2g Monthly mean air temperatures with standard deviation and annual mean for (g) Port Aransas, Texas.

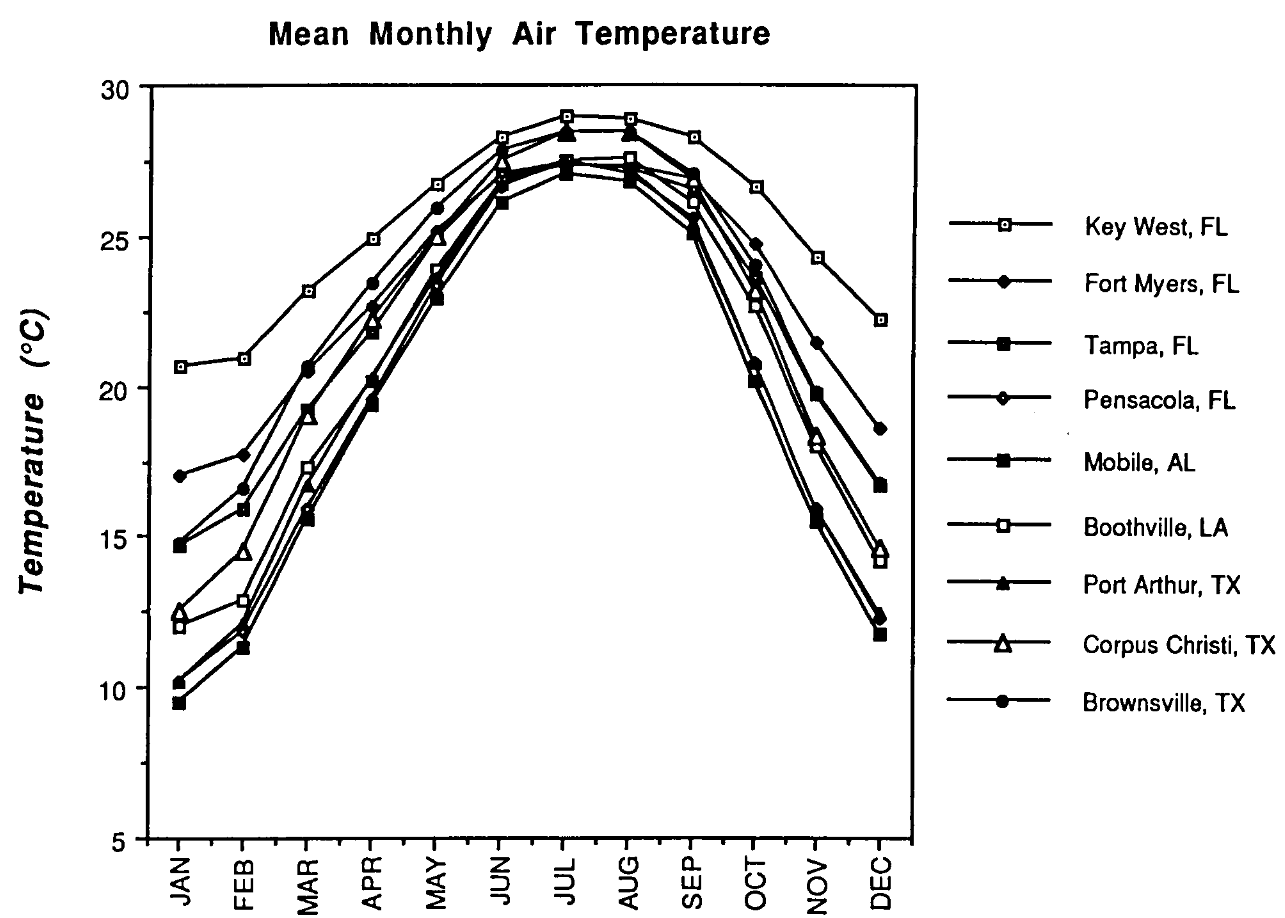


Figure 2.4.1-3 Composite mean monthly air temperatures for the 9 NWS coastal stations surrounding the Gulf of Mexico.

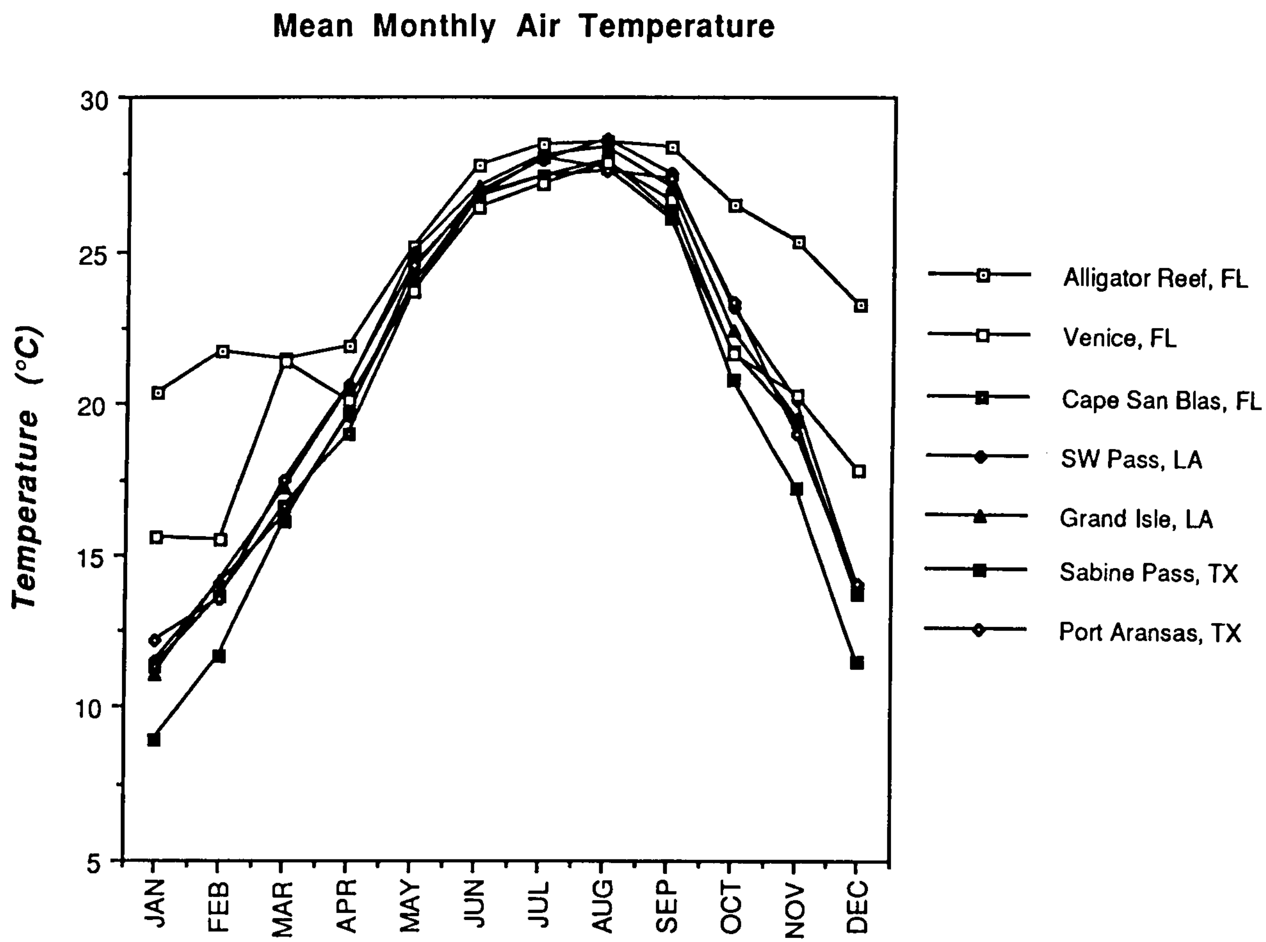


Figure 2.4.1-4 Composite mean monthly air temperatures for the 7 NDBC CMAN stations surrounding the Gulf of Mexico.

Temperature variation in the spring was north-south again, with the Mobile-Key West difference of 5.58°C being the largest for the NWS coastal stations. However, including the shorter NDBC CMAN records, the largest difference was found between Cape San Blas and Key West (5.89°C). East-west differences for both data sets were on the order of 1°C. In the fall transition period (November), the temperature variability pattern was similar. However, the north-south difference from Key West-Mobile was 8.81°C. The Mobile-Alligator Reef difference was 9.89°C; however, the mean value for Alligator Reef is based only on a 2-year record (1986-1987). Also, given that November 1986 was considerably warmer than the long-term mean for that month, this latter north-south difference (9.89°C) may be considered erroneous. Both Boothville and Southwest Pass were approximately 2°C and 0.5°C warmer respectively, than the stations east and west along the northern Gulf coast. This phenomena being attributed to the buffering effect of the warmer water surrounding these stations.

2.4.2 Sea Surface Temperature Climatology

The winter sea surface temperature climatology is presented for December through March in Figures 2.4.2-1 through 2.4.2-4. In these figures, the Loop Current is easily discerned, penetrating to as far as approximately 27°N in the eastern Gulf. Surface temperatures range from around 26.0°C-27.0°C in the Yucatan Straits to 23.0°C-24.5°C near 27°N. Western central Gulf waters are generally 2-2½° cooler than Loop Current core waters, and strong thermal gradients are observed on the northern continental shelf. The coolest central Gulf waters are observed in February and March, and January and February shelf gradients appear to show the influence of river runoff in some areas.

The summer sea surface temperature climatology is presented for May through October in Figures 2.4.2-5 through 2.4.2-10. In these figures, the Loop Current is only discernable in May and suggested in October as the Gulf-wide sea surface temperatures are generally characterized by less than 1° of variability, east to west and north to south. No significant shelf features are discernable.

Seasonally, April and November are regarded as transition months. As such, the sea surface temperature climatology for these months is presented in Figures 2.4.2-11 and 2.4.2-12. These figures are similar to the winter months, with the same general trends, except that surface temperatures throughout the Gulf are warmer in November and April than in the subsequent or preceding months of December or March, respectively. In November the shelf gradients are well-established, particularly off the Texas/Louisiana border and around Tampa, Florida. In April, these same gradients have decreased significantly. Referring back to the May-October climatology (Figures 2.4.2-5 and 2.4.2-10), these shelf gradients are gone in May, and begin reappearing in October.

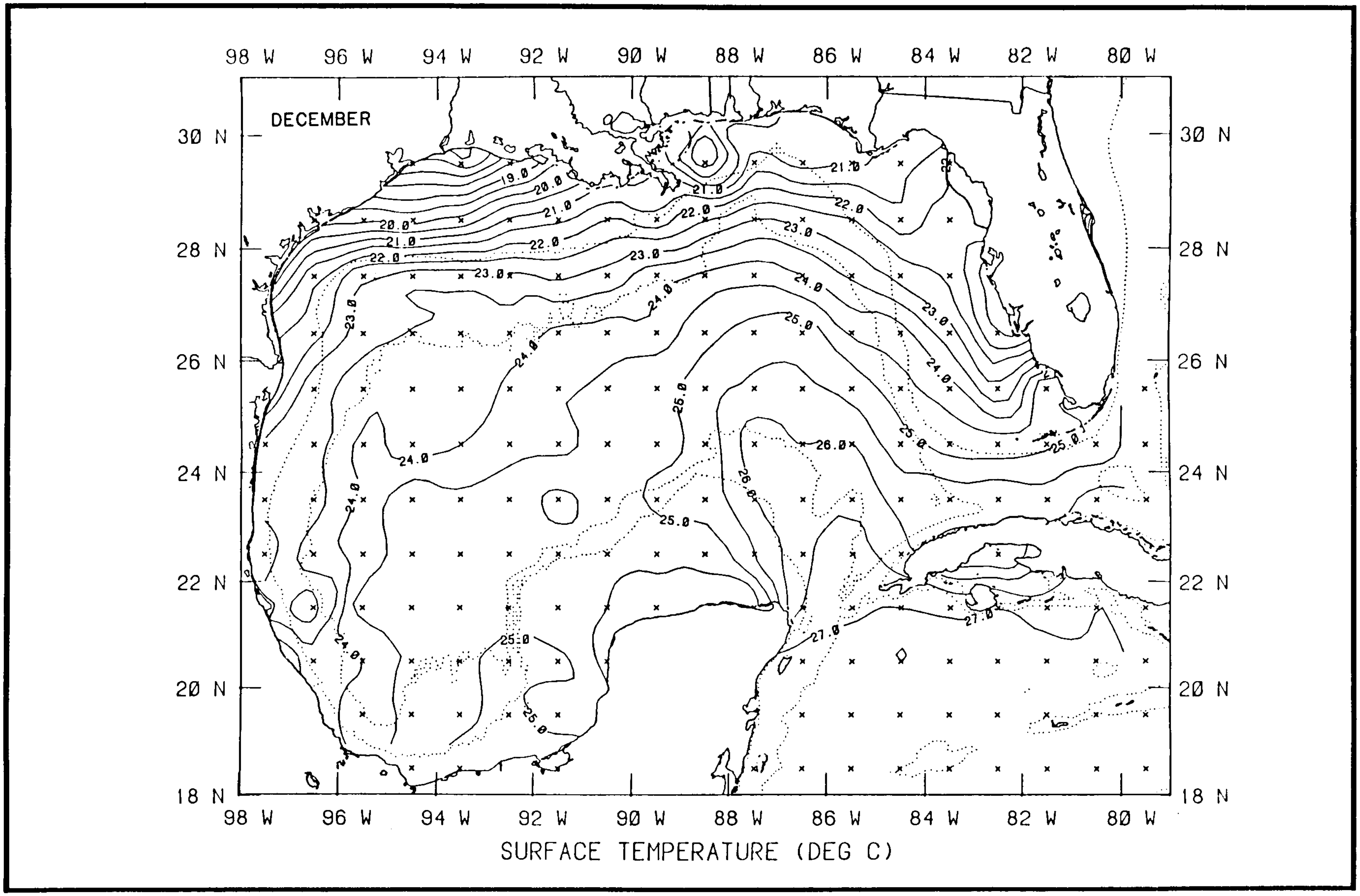


Figure 2.4.2-1 Computer-generated sea surface temperature (SST) climatology derived from the data set compiled by Baltz (1978) for December.

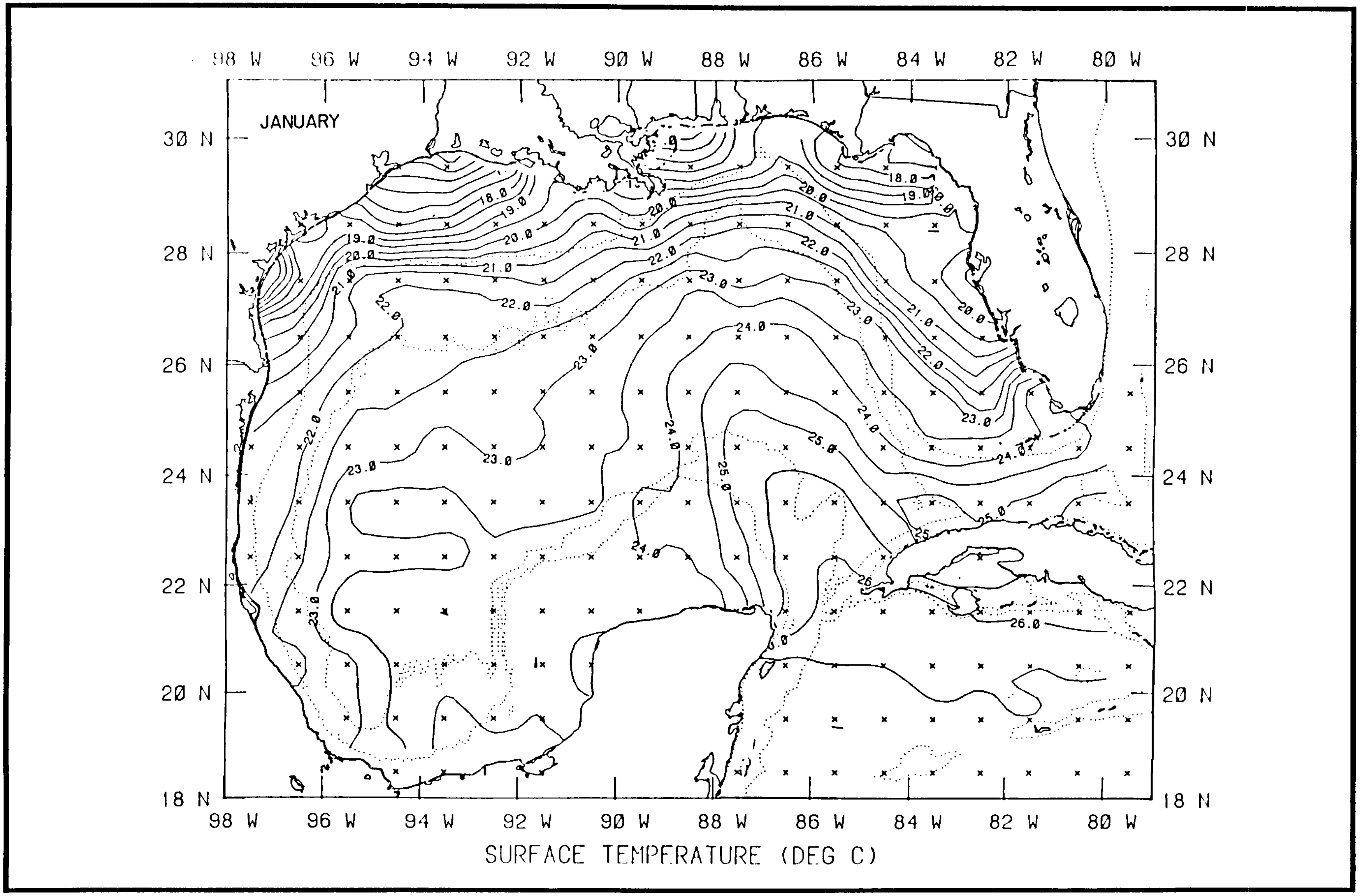


Figure 2.4.2-2 Computer-generated SST climatology derived from the data set compiled by Baltz (1978) for January.

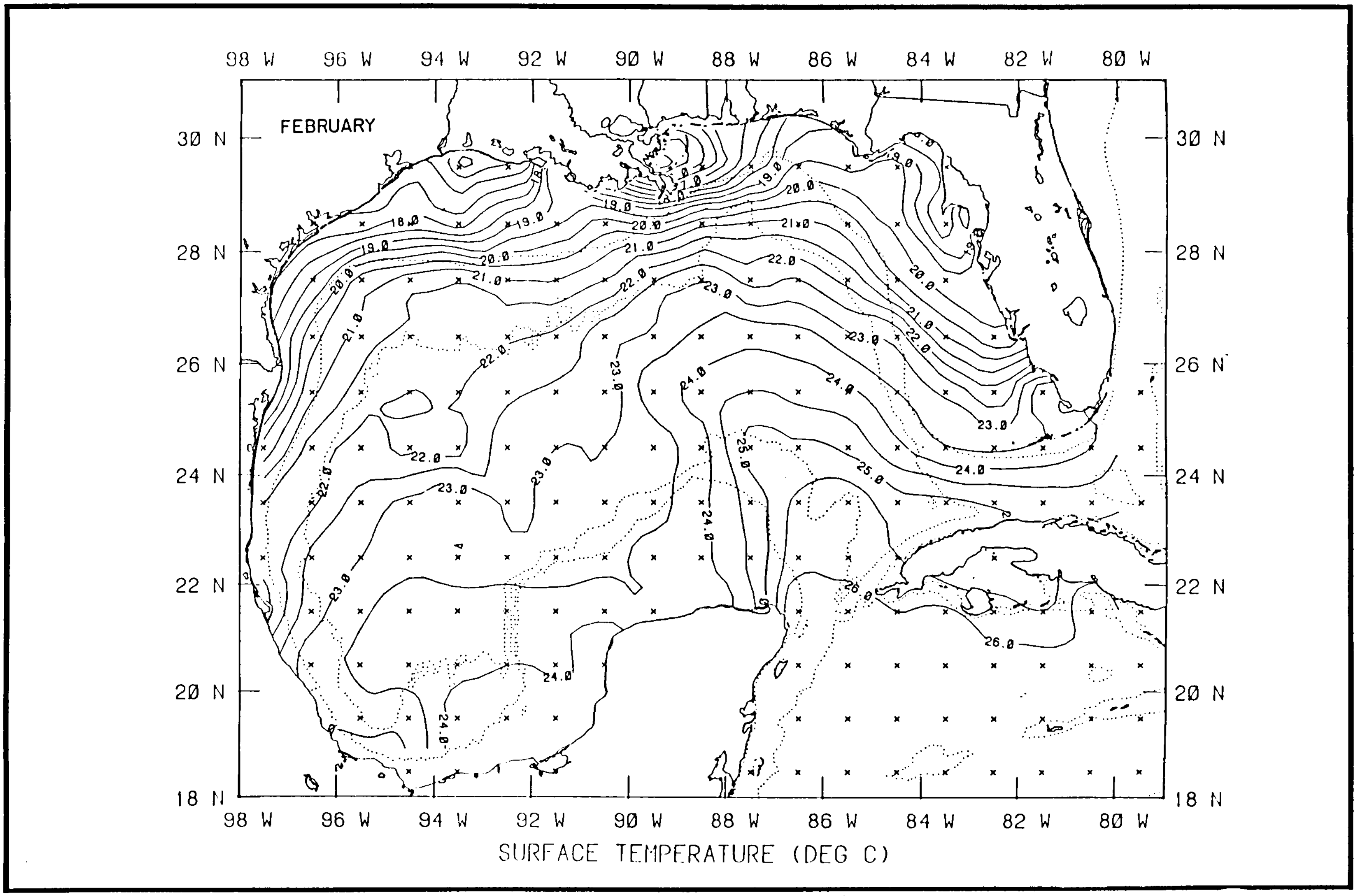


Figure 2.4.2-3 Computer-generated SST climatology derived from the data set compiled by Baltz (1978) for February.

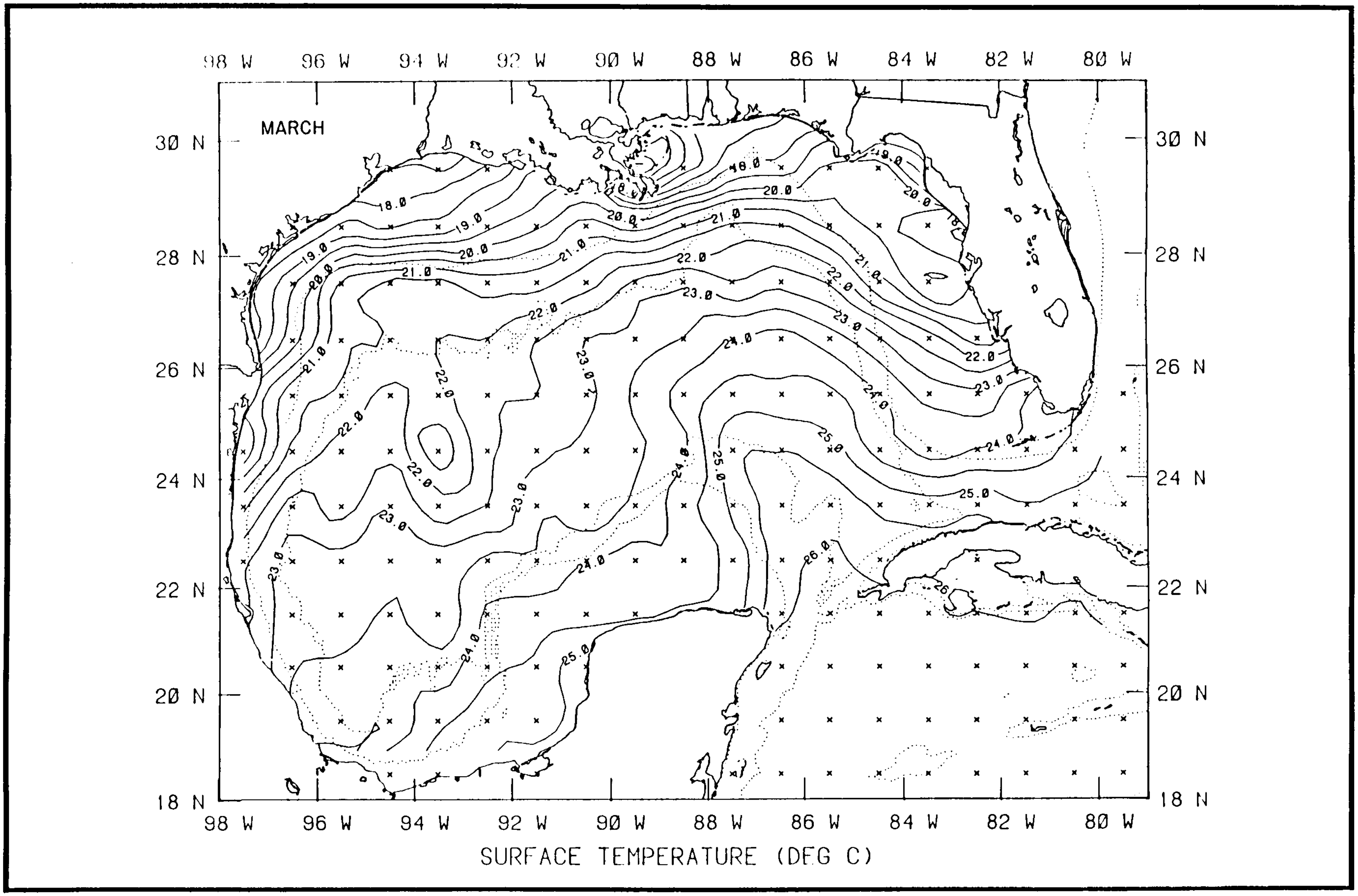


Figure 2.4.2-4 Computer-generated SST climatology derived from the data set compiled by Baltz (1978) for March.

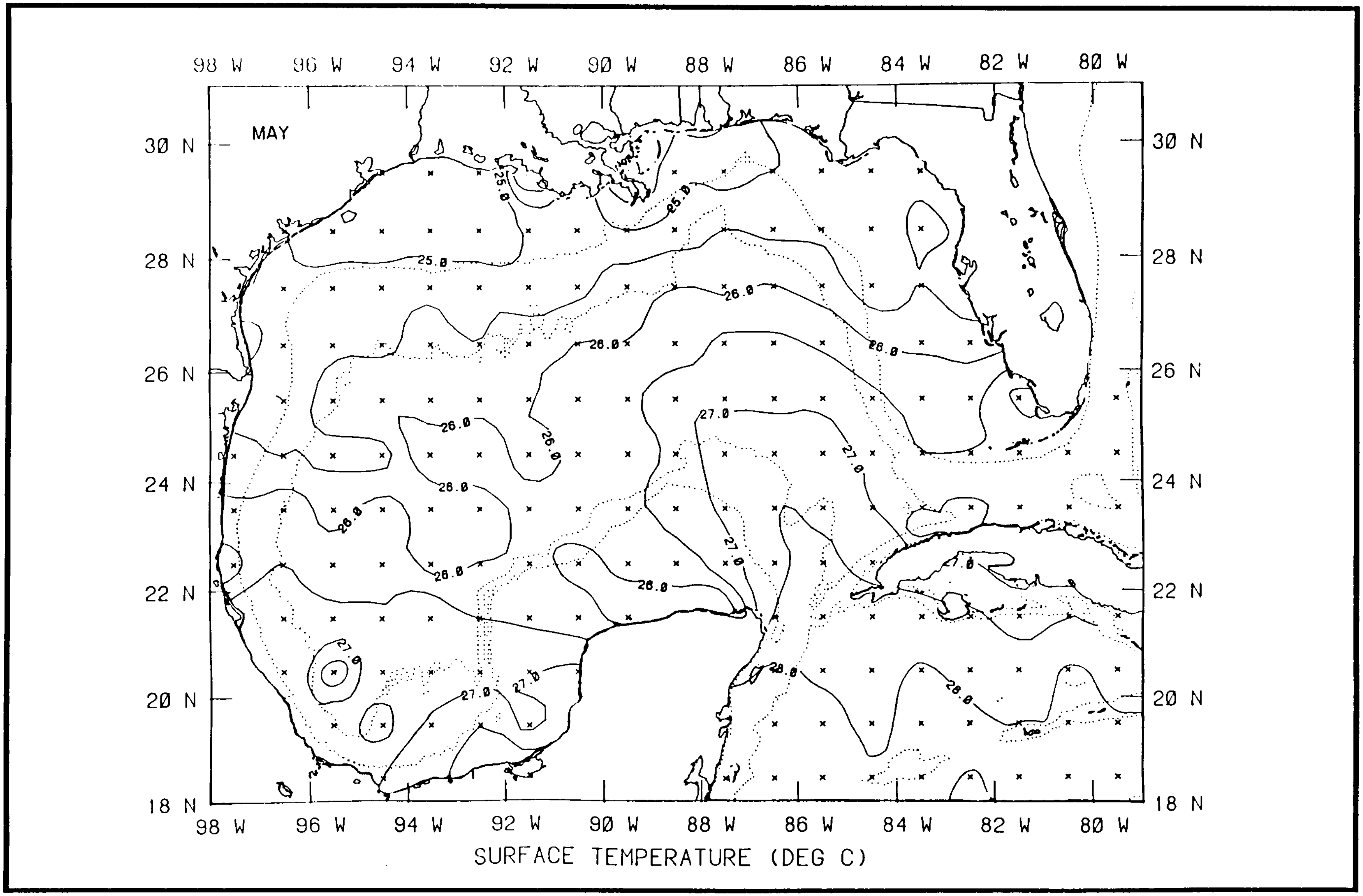


Figure 2.4.2-5 Computer-generated SST climatology derived from the data set compiled by Baltz (1978) for May.

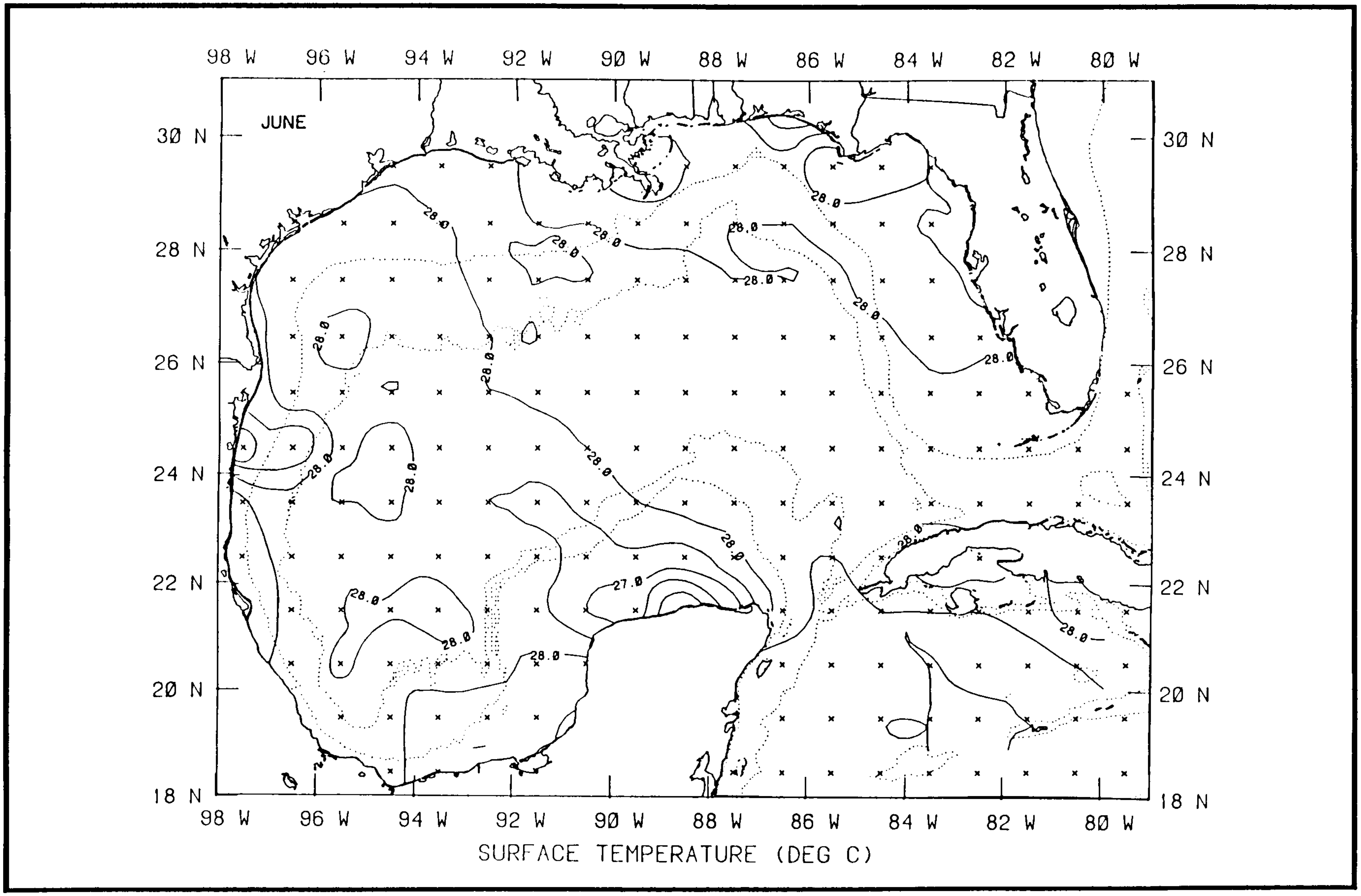


Figure 2.4.2-6 Computer-generated SST climatology derived from the data set compiled by Baltz (1978) for June.

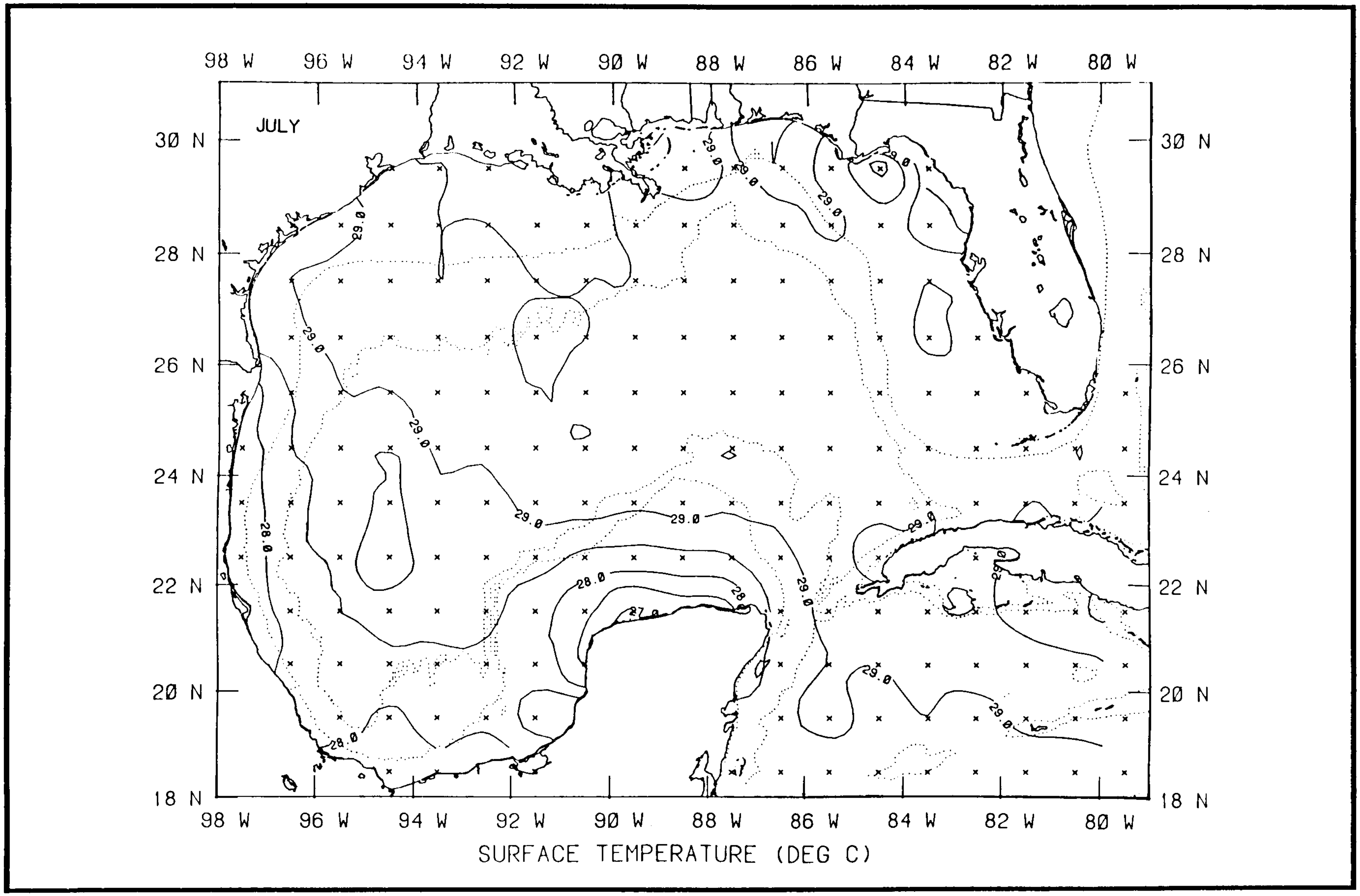


Figure 2.4.2-7 Computer-generated SST climatology derived from the data set compiled by Baltz (1978) for July.

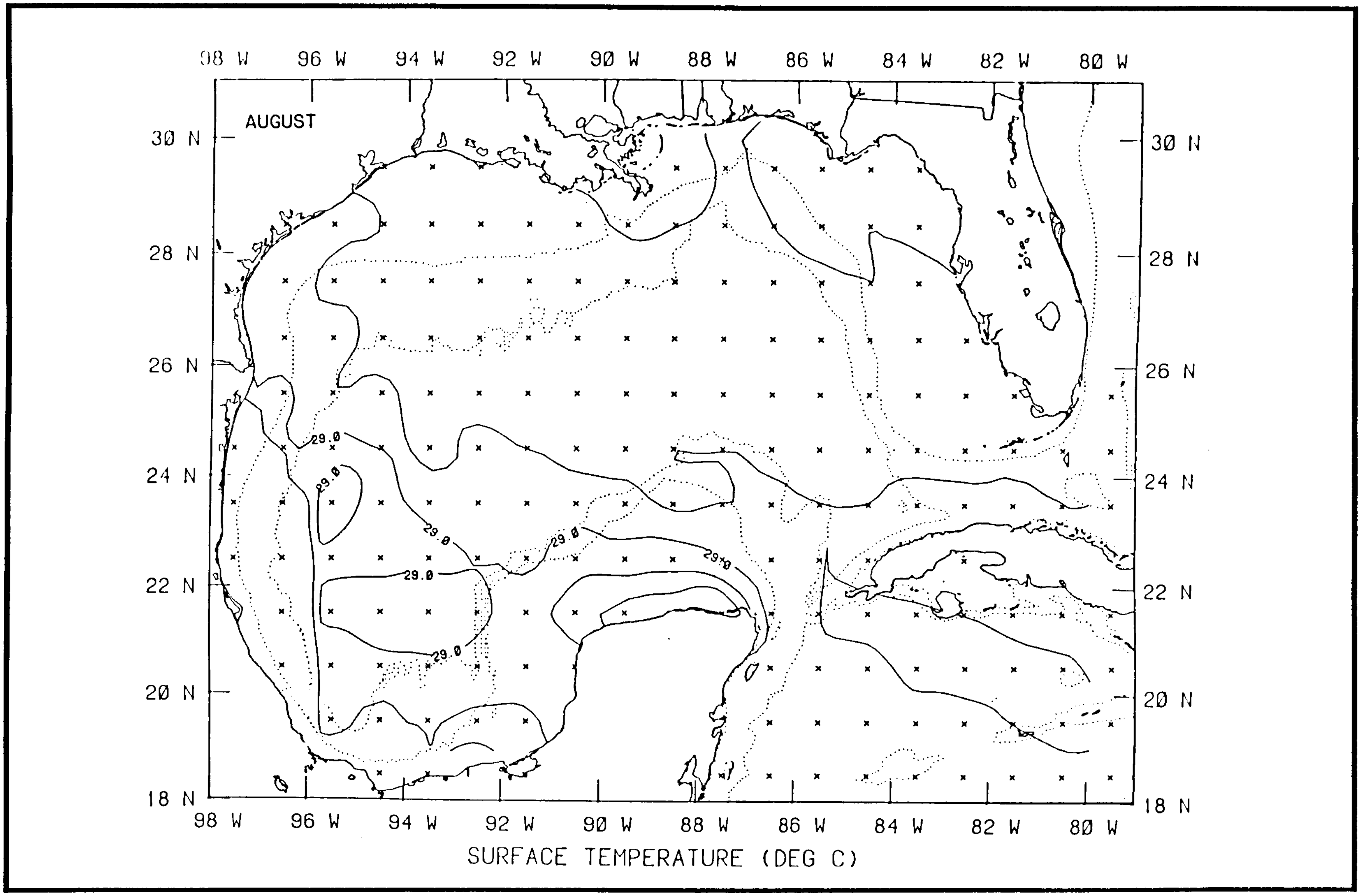


Figure 2.4.2-8 Computer-generated SST climatology derived from the data set compiled by Baltz (1978) for August.

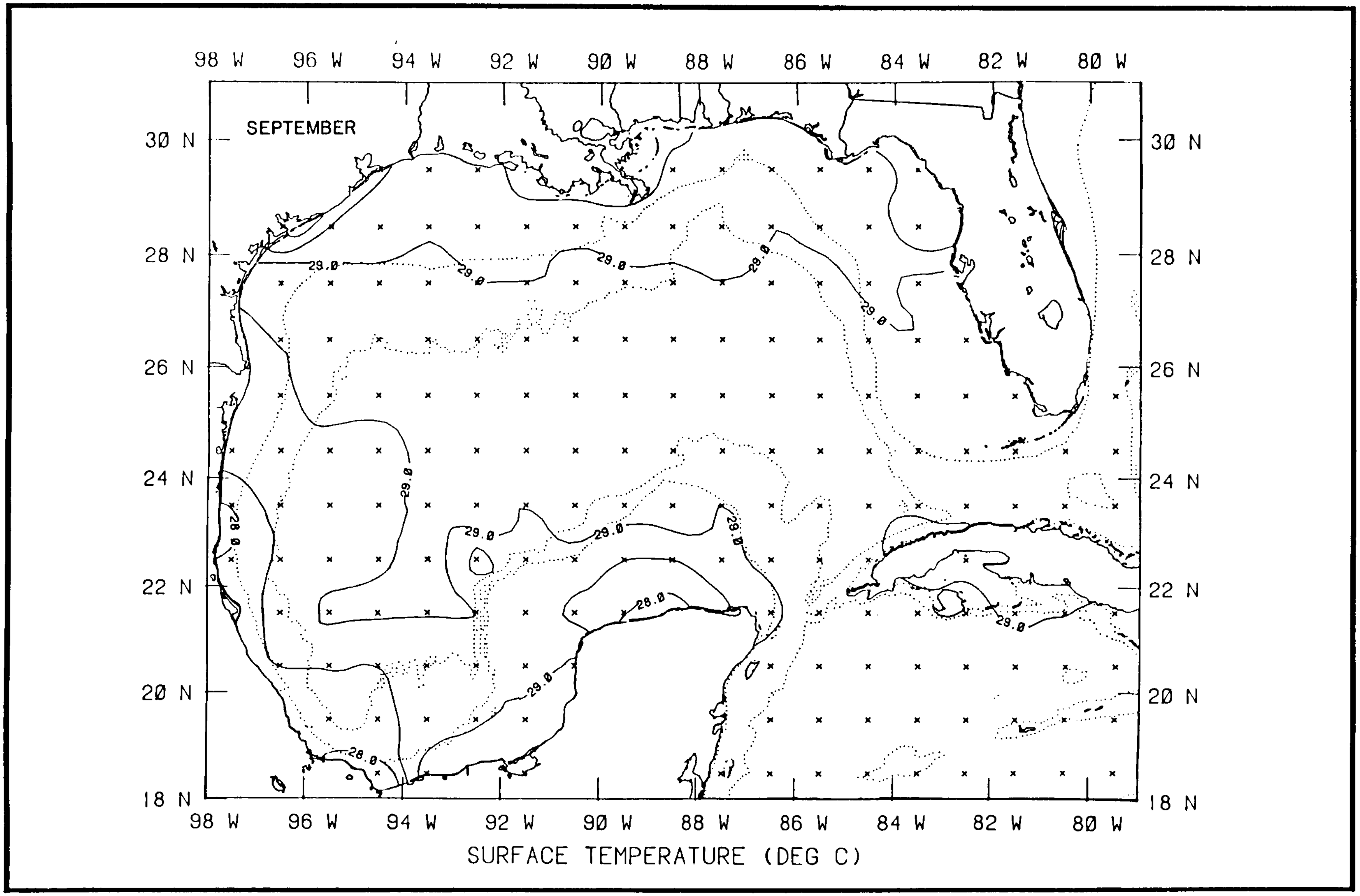


Figure 2.4.2-9 Computer-generated SST climatology derived from the data set compiled by Baltz (1978) for September.

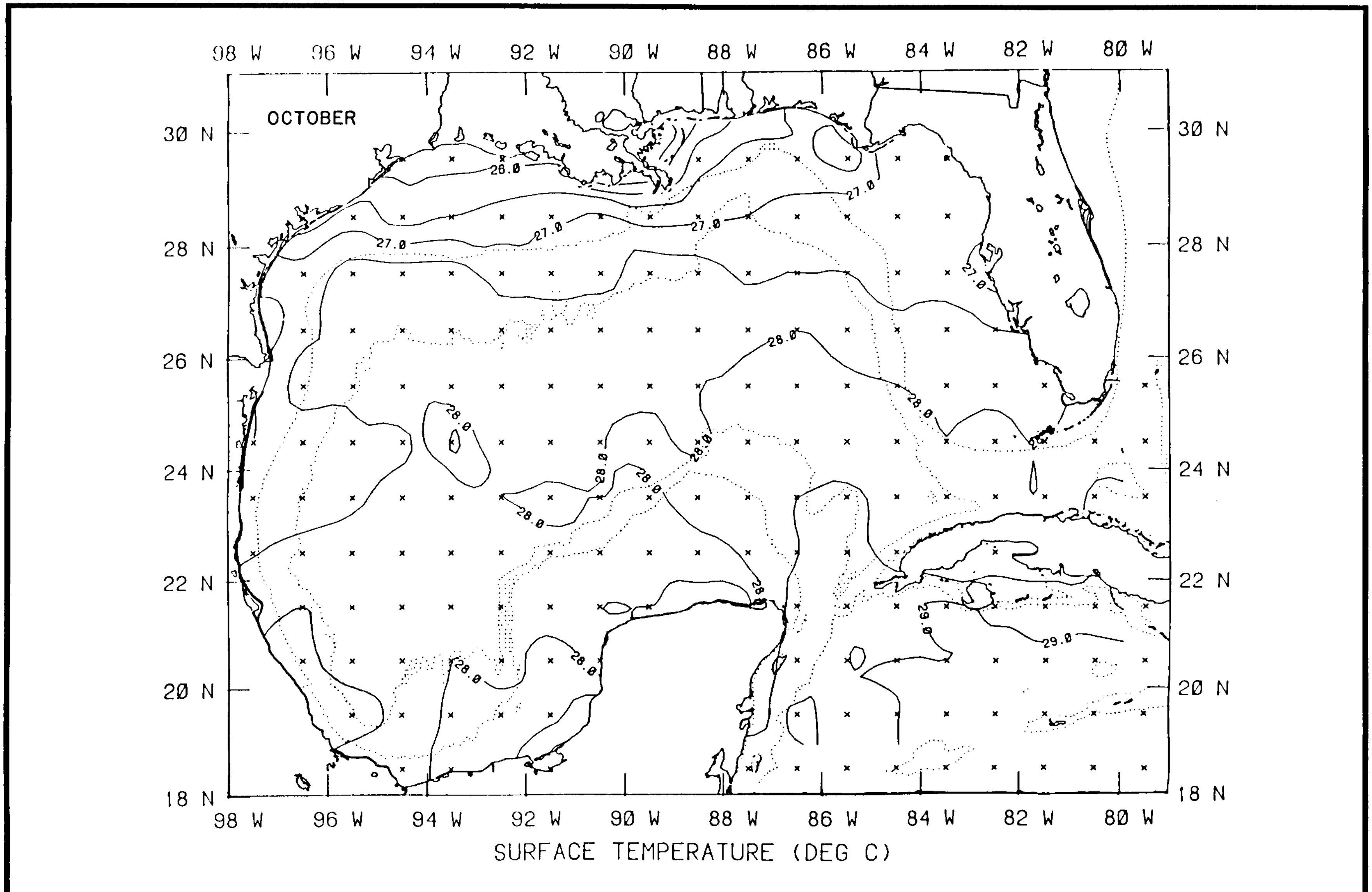


Figure 2.4.2-10 Computer-generated SST climatology derived from the data set compiled by Baltz (1978) for October.

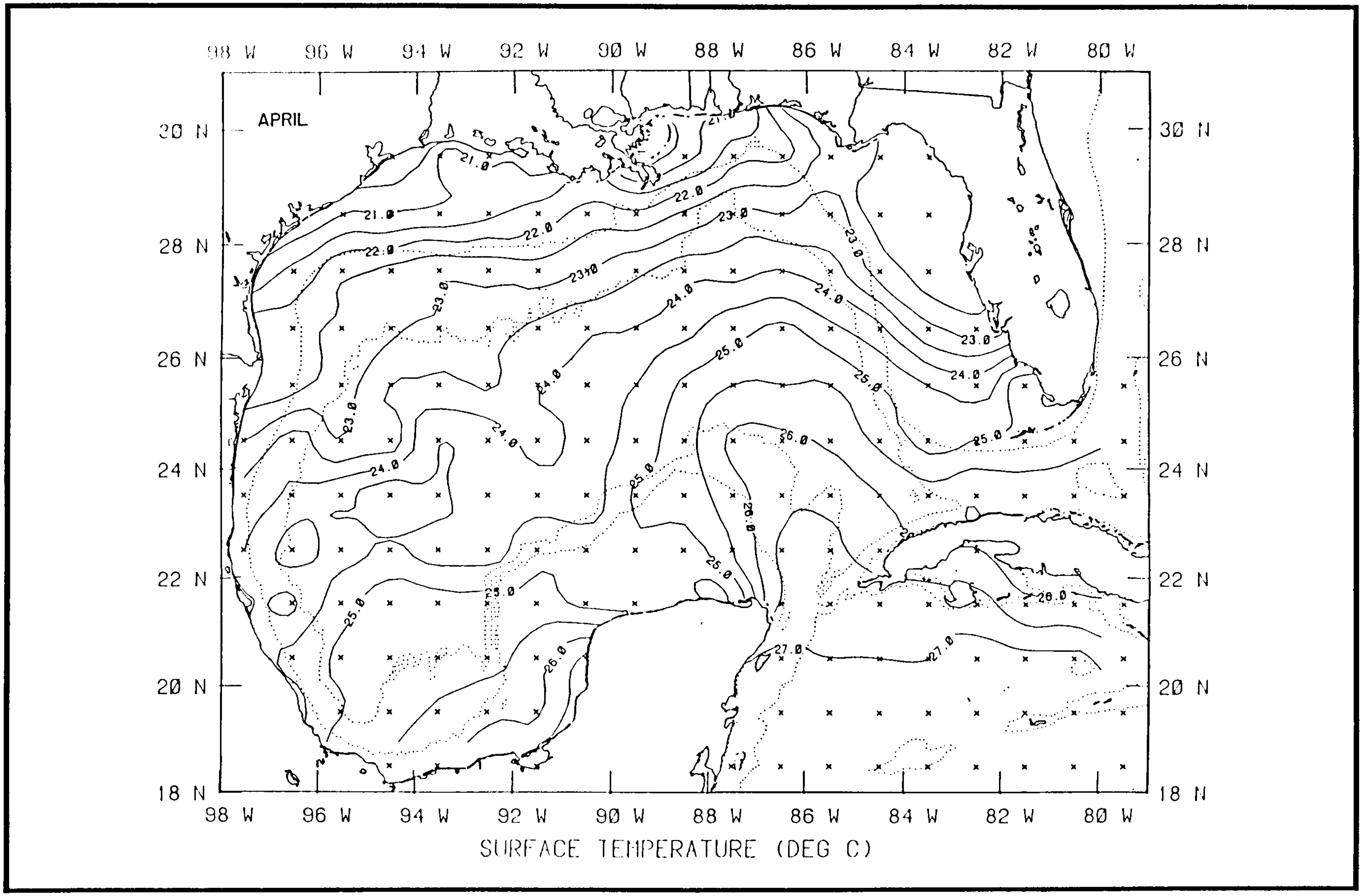


Figure 2.4.2-11 Computer-generated SST climatology derived from the data set compiled by Baltz (1978) for April.

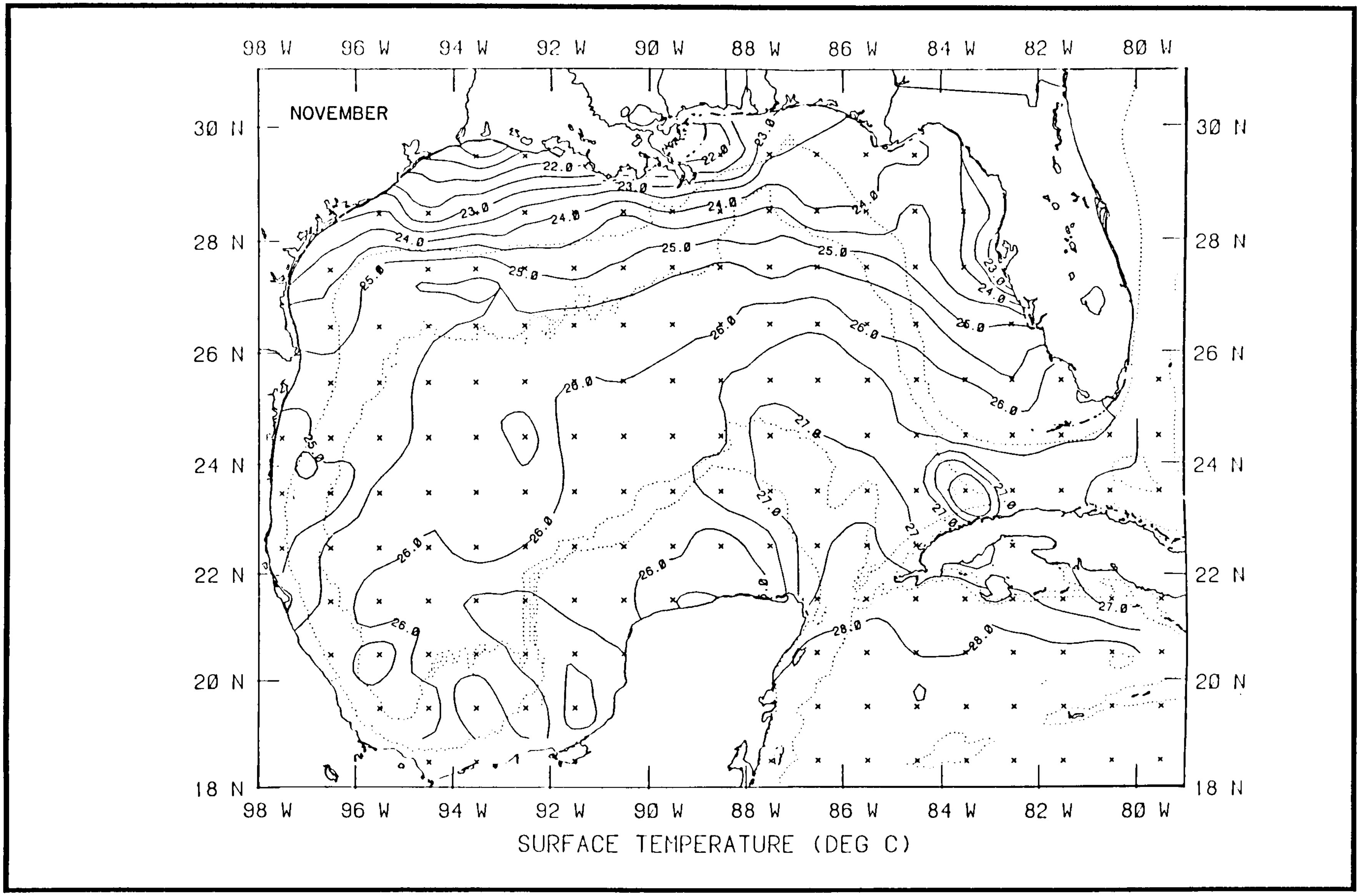


Figure 2.4.2-12 Computer-generated SST climatology derived from the data set compiled by Baltz (1978) for November.

2.4.3 <u>Sensible Heat Flux</u>

Sensible heat flux is one measure of energy transfer between the ocean and atmosphere. The standard formulation is: $Q_H = -\rho_a C_H c_p |W| (T_a - T_w)$
where

Q_H = sensible heat flux (Wm^{-2})
ρ_a = air density, here 1.275 Kg m^{-3}
C_H = bulk transfer coefficient of sensible heat
C_p = specific heat at constant pressure, here 1004.0 J kg^{-1} K^{-1}
$|W|$ = windspeed (ms^{-1})
T_a-T_w = air sea temperature difference (°C)

The values for the bulk transfer coefficient, C_H, are taken from Isemer and Hasse (1987). No correction for anemometer height has been made. Anemometer positions on the oceanographic data buoys are approximately 7.0 m above sea level.

Time series of sensible heat flux were computed from wind speed and air-sea temperature differences from buoys 42001, 42002, 42003, 42007 and 42008 and from CMAN stations at Alligator Reef, Florida; Venice, Florida; and Grand Isle, Louisiana. Buoys 42001, 42002 and 42003 yielded eight year-long data records beginning in 1979 with approximately 87% coverage in terms of sensible heat flux. Buoy 42007 gave a time series from 10 March 1984 to mid-December 1986 with approximately 90% coverage. Buoy 42008 gave a 2-year time series from October 1980 through September 1982 with 97.5% coverage. Wind speed and sea surface temperature data were collected at CMAN stations at Alligator Reef in 1986 and 1987 with 84.5% return, at Grand Isle from 1985 to 1987 with 96.9% return, and at Venice in 1987 with 85.8% return. Figure 2.2-5 shows the location of the buoys and the CMAN stations. Monthly means and variances of sensible heat flux were then computed from the time series. The statistical data are presented in tabular form in Appendix C (Sections C.2.4 and C.3.5). Figures 2.4.3-1a-e and 2.4.3-2a-c show the monthly mean and standard deviation for each buoy and CMAN station, respectively.

The seasonal pattern is for a peak in mean value and variance in December and January because of higher winds and greater air-sea temperature difference to a minimum in summer, caused by generally weak winds and small air-sea temperature differences. Strong interannual differences can occur. In 1982 there were periods early in the year of significant negative heat flux at buoy 42001, although these values were within the limits of one standard deviation from the mean. In contrast, the summer of 1984 showed higher than normal positive heat flux, which was outside the range at 42001. Because the records from buoys 42007 and 42008 and from the CMAN stations are short, they are of limited value in showing long term patterns (1979-1986), although they are consistent with the patterns in the longer records. The 1-year record of the CMAN station at Venice, Florida, is not consistent with the long term pattern and probably represents an anomalous year at that location.

Seasonal variations were examined after computing a mean winter and a mean summer sensible heat flux from the monthly mean data. The winter value is the mean of monthly means for December through March and the summer value is the mean of

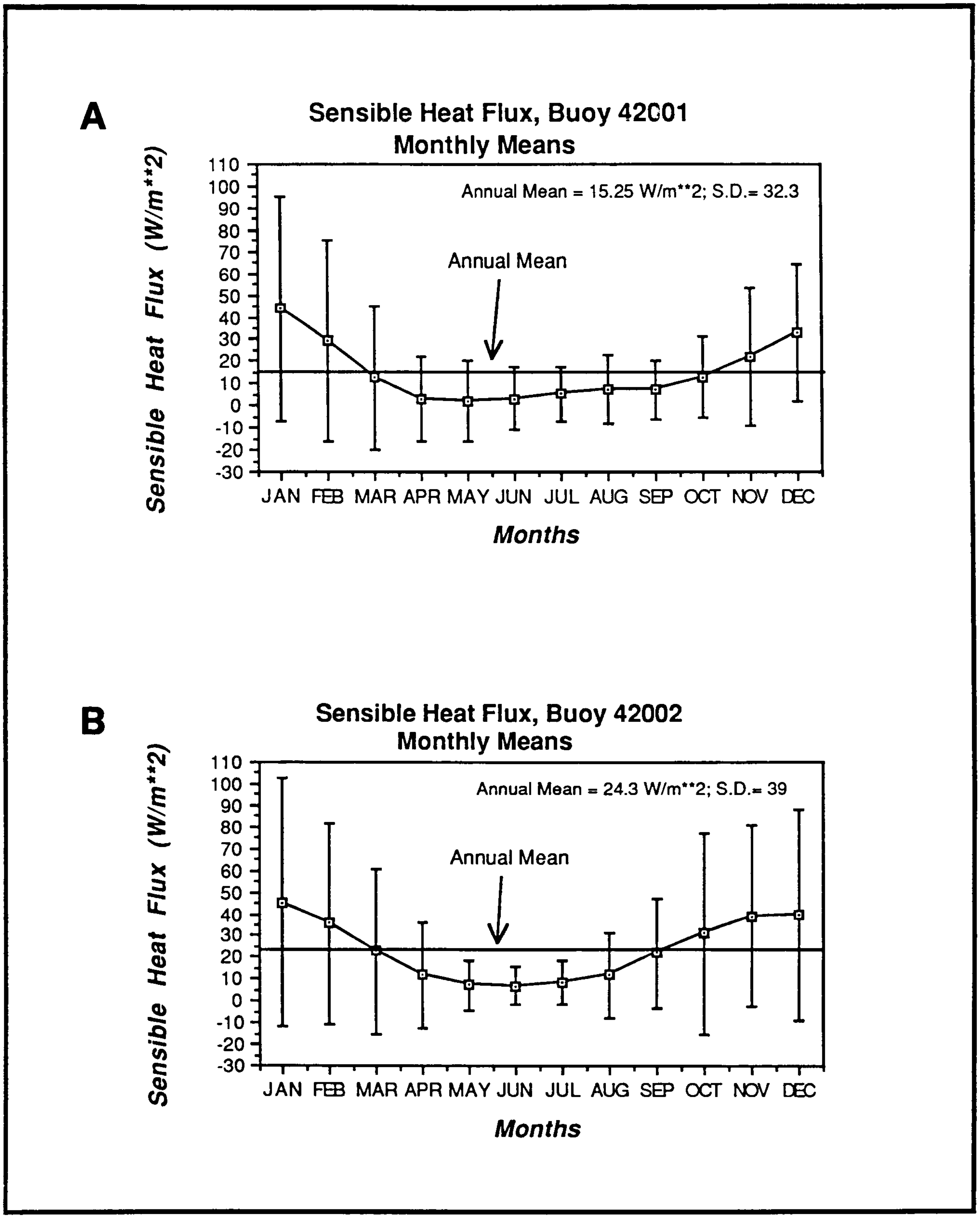


Figure 2.4.3-1a-b Monthly mean sensible heat flux (positive is vertically upwards or flux directed from water to air) with standard deviations and annual mean for NDBC buoys (a) 42001 and (b) 42002.

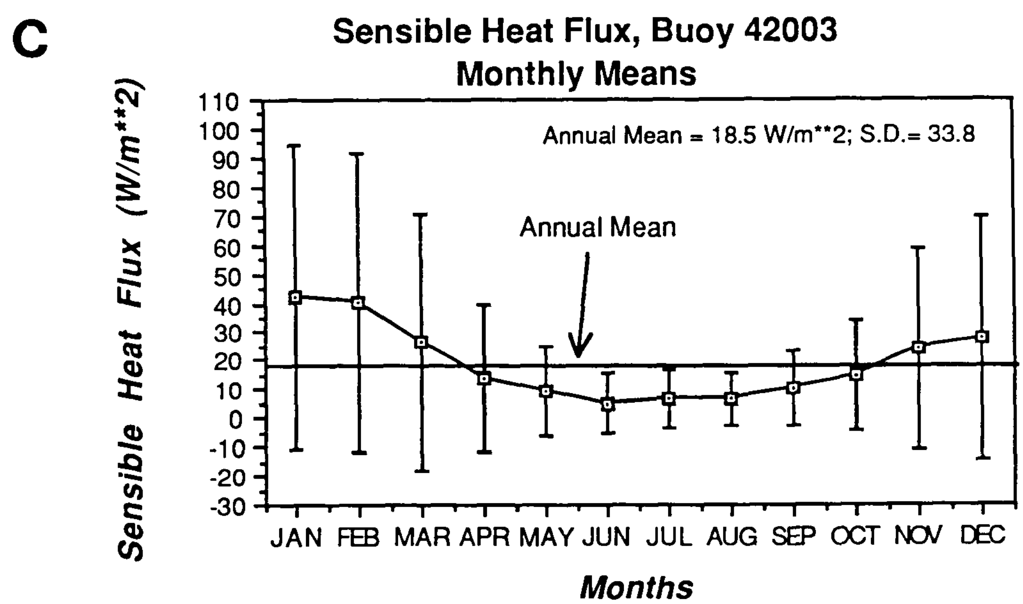
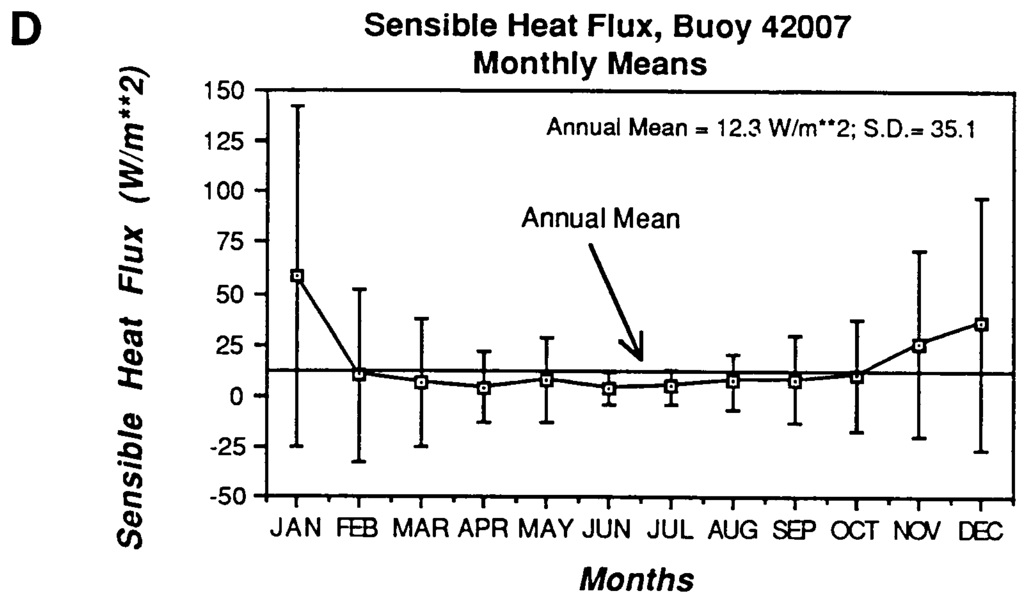


Figure 2.4.3-1c Monthly mean sensible heat flux (positive is vertically upwards or flux directed from water to air) with standard deviations and annual mean for NDBC buoy (c) 42003.



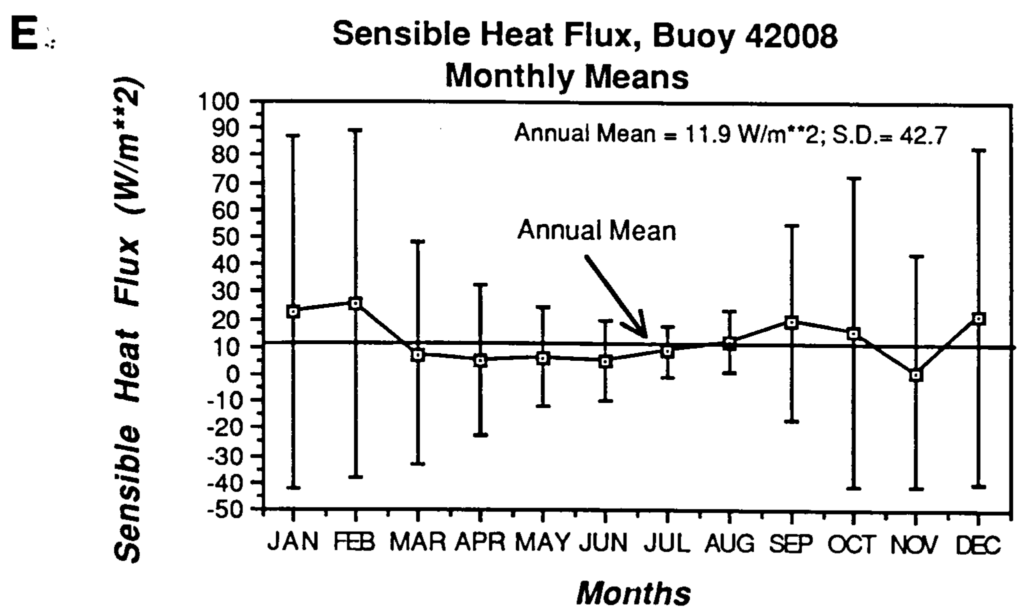


Figure 2.4.3-1d-e Monthly mean sensible heat flux (positive is vertically upwards or flux directed from water to air) with standard deviations and annual mean for NDBC buoys (d) 42007 and (e) 42008.

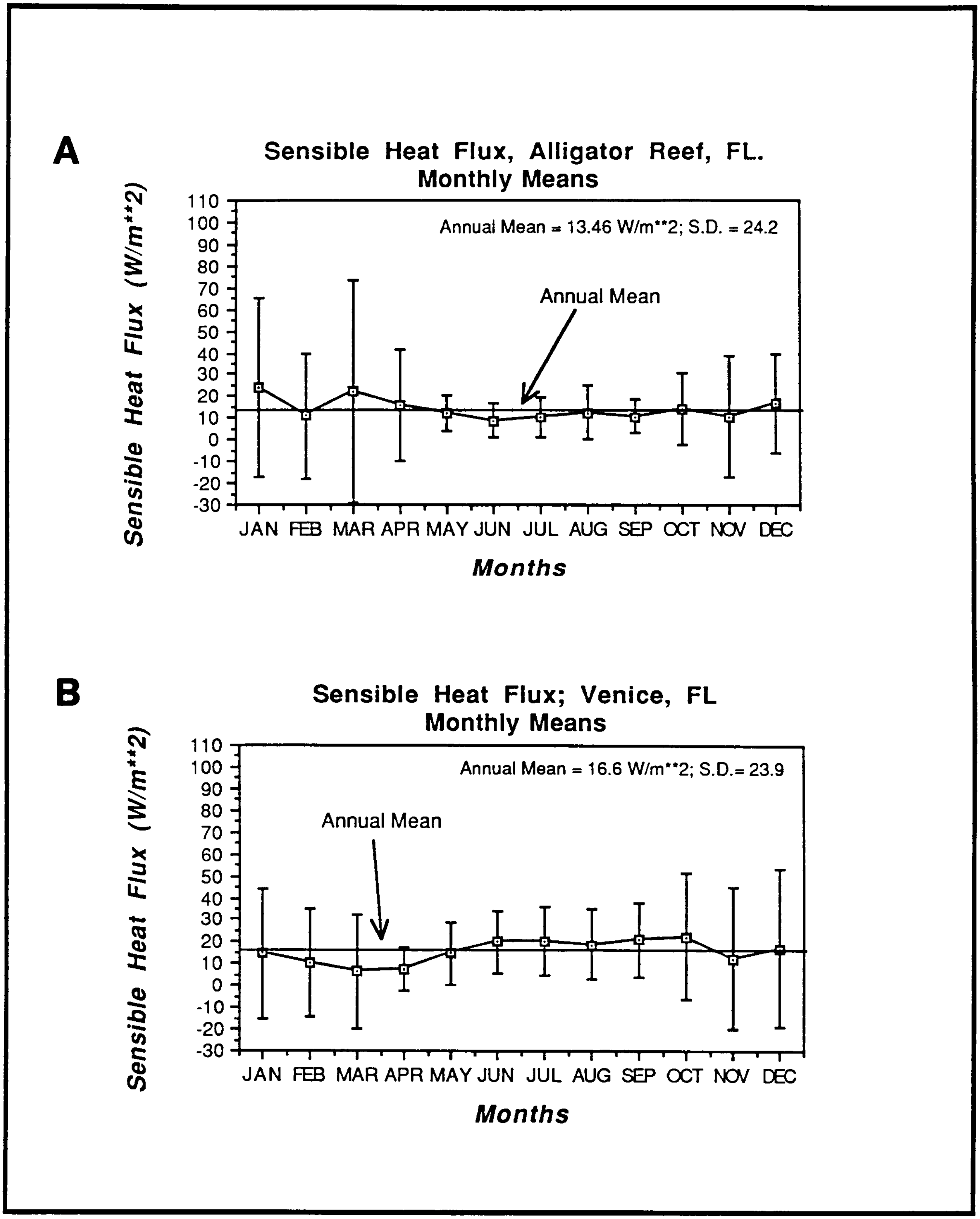


Figure 2.4.3-2a-b Monthly mean sensible heat flux (positive is vertically upwards or flux directed from water to air) with standard deviations and annual mean for NDBC CMAN stations (a) Alligator Reef, Florida and (b) Venice, Florida.

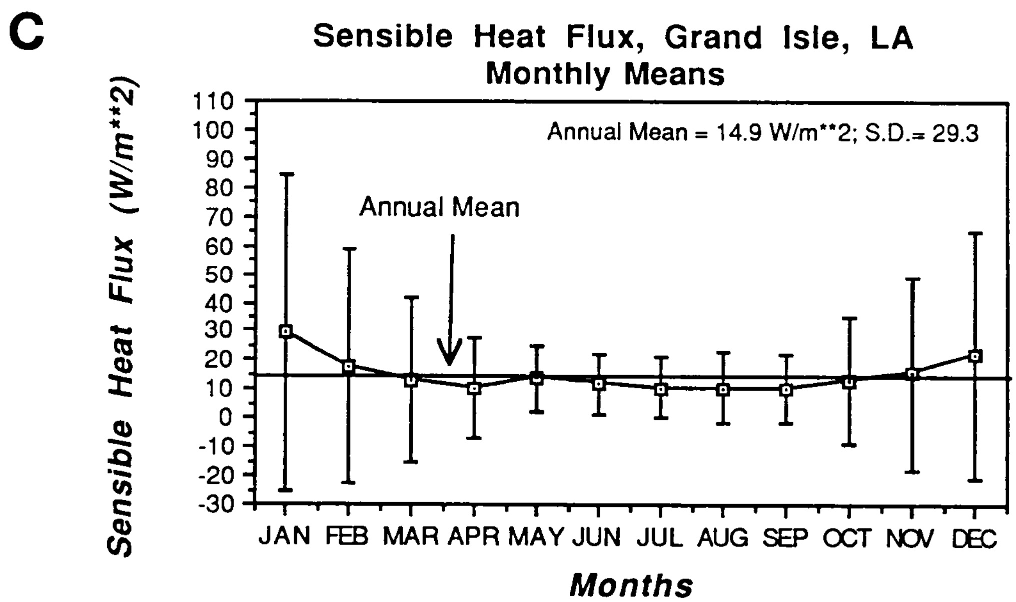


Figure 2.4.3-2c Monthly mean sensible heat flux (positive is vertically upwards or flux directed from water to air) with standard deviations and annual mean for NDBC CMAN station (c) Grand Isle, Louisiana.

monthly means for May through October. Table 2.4.3-1 shows these values and the transition months of April and November for each of the buoys and the CMAN stations.

The winter values of sensible heat flux show a pattern with a minimum in the central Gulf (42001) and higher values to the east (42003) and west (42002). Center-west differences is 9.8 Wm^{-2} and center-east is 8.18 Wm^{-2}. Values at 42007 and 42008 are consistent with this pattern, but should also be viewed with some caution since the records are short and do not overlap. Winter values from the CMAN stations at Alligator Reef and Grand Isle are consistent with the pattern at the deep water buoys in that the eastern station at Alligator Reef has a higher mean than the central station at Grand Isle. Mean values at buoy 42008 and at the Grand Isle and Alligator Reef CMAN station are about (~21 Wm^{-2}) 66% of the median (~31 Wm^{-2}) of the value at 42001, 42002, 42003, and 42007. Based on the tabular monthly data, the winter time variability is higher than the summer or transition months.

Summertime mean sensible heat flux tends to be low, as the atmosphere and ocean are both warm and winds are light. Table 2.4.3-1 shows a pattern of east-west differences similar to that of winter, wherein the minimum value is found in the central Gulf (42001), the highest in the west (42002) and a lesser peak in the east (42003). The center-west difference is 8 Wm^{-2}, while the center-east difference is 2.2 Wm^{-2}. Buoy 42007 is consistent with the pattern but 42008 is not. The caveat about 42007 and 42008 previously mentioned for the winter season applies here. Summertime values at the CMAN stations at Grand Isle and Alligator Reef conform to the pattern noted above. Stations close to land, except 42007, have higher mean values than the deep water buoys.

The transition periods of April and November show some variation in the winter and summer patterns of east-west variability at 42001, 42002 and 42003. During April the eastern buoy (42003) has the warmest SSTs, while in November the difference between the central and eastern buoys is only 1.32 Wm^{-2}, lower than the summer difference of 2.23 Wm^{-2}. The center-west difference is constant at about 9 Wm^{-2}, except in November when it increases to 16 Wm^{-2}. Values at 42007 and 42008 are consistent with the pattern in both months. However, the November value at 42008 is anomalously low for that month (Figure 2.4.3-1e). Means for November at the CMAN stations are about 50% of the values at the buoys.

2.5 Atmospheric Pressure

Pressure observations around the Gulf of Mexico were compiled from 3 different sources of varying lengths. A 17-year time series of hourly pressure observations was constructed from 9 NWS coastal stations and a 7-year record was compiled from pressure observations at 3 buoys spanning the Gulf along 26°N. Finally, a time series of hourly pressure observations was generated for the 7 NDBC CMAN stations, ranging in length from 1-3 years, depending on the stations' length of operation. Seasonal means for the coastal stations and buoys are presented in Table 2.5-1, while the CMAN data is contained in Table 2.5-2. Figures 2.5-1a-i, 2.5-2a-c and 2.5-3a-g represent the monthly mean atmospheric pressure (mb) for the NWS coastal stations, NDBC buoys and the NDBC CMAN locations, respectively. Each figure contains error bars indicating the standard deviation from the monthly mean for that particular month and the annual mean pressure for the duration of each record.

Table 2.4.3-1 Seasonal means of sensible heat flux, Q_H, (W_m^{-2}) for each of 5 NDBC buoys: 3 along 26°N, and 2 shelf buoys.

Buoy	April	Summer	November	Winter
42001	3.15	6.45	22.47	25.93
42002	11.85	14.48	38.98	35.73
42003	13.95	8.68	23.79	34.11
42007	4.19	6.84	25.41	27.80
42008	4.93	11.07	1.44	19.19
ALR	15.61	11.33	10.49	22.34
GDI	10.16	11.51	15.32	20.70
VEN	7.58	19.47	12.32	11.98

Table 2.5-1 Seasonal means of atmospheric pressure minus 1000.0 (mb) for each of the 9 NWS coastal stations and 3 NDBC buoys located across 26°N which were analyzed in this study.

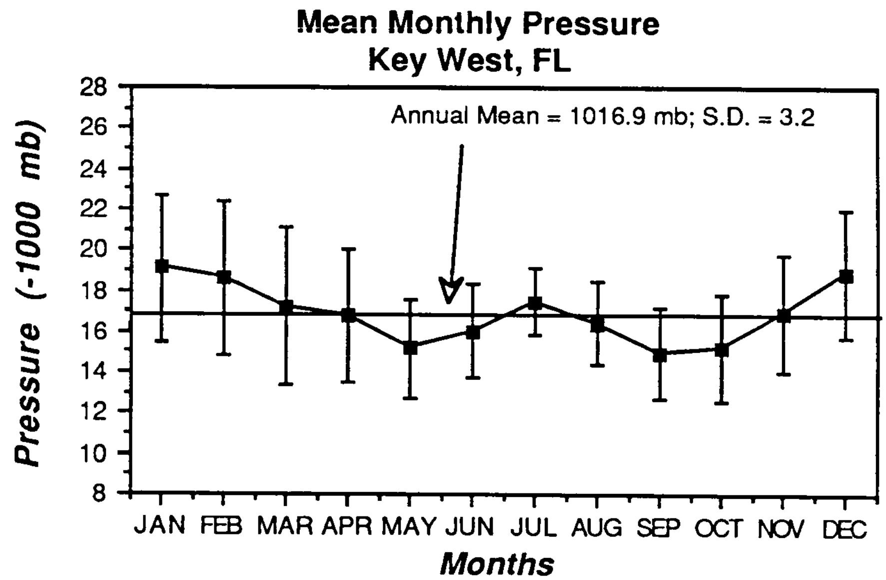
Sta	April	May-Oct. Summer	November	Dec.-Mar. Winter
42001	15.57	15.73	17.51	18.05
42002	14.91	15.08	17.24	18.07
42003	16.09	16.13	17.26	18.31
KW	16.79	15.85	16.92	18.41
FM	17.26	16.36	17.95	19.06
TA	17.53	16.67	18.58	19.42
PE	16.98	16.51	19.23	19.46
MO	16.42	16.12	18.90	19.08
BO	16.31	16.03	19.07	19.45
PA	15.52	15.84	18.96	19.16
CC	13.37	14.27	17.80	18.03
BV	12.91	13.85	17.29	18.94

Table 2.5-2 **Seasonal means of atmospheric pressure minus 1000.0 (mb) for each of the 7 NDBC CMAN stations analyzed. Note these records have maximum lengths of 1-3 years.**

STA	April	May-Oct. Summer	November	Dec.-Mar. Winter
ALRF1[2]	16.65	17.03	16.97	17.86
VENF1[1]	15.71	17.01	17.52	17.27
CSBF1[3]	16.82	16.95	18.79	19.15
BURL1[3]	17.09	16.37	18.02	19.46
GDIL1[3]	17.60	16.53	17.85	19.30
SRST2[3]	17.38	15.86	18.12	19.23
PTAT2[3]	15.70	14.79	17.15	18.73

[1] One year record
[2] Two year record
[3] Three year record

A



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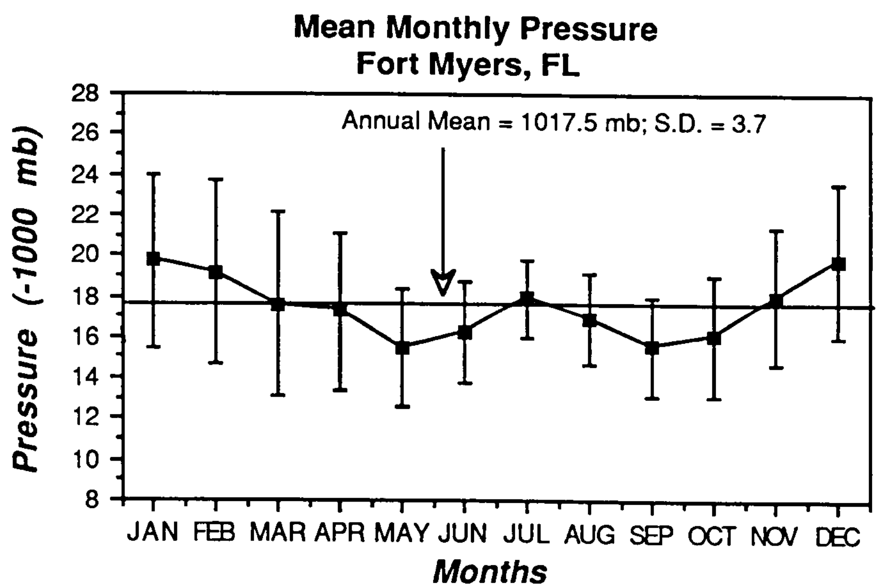
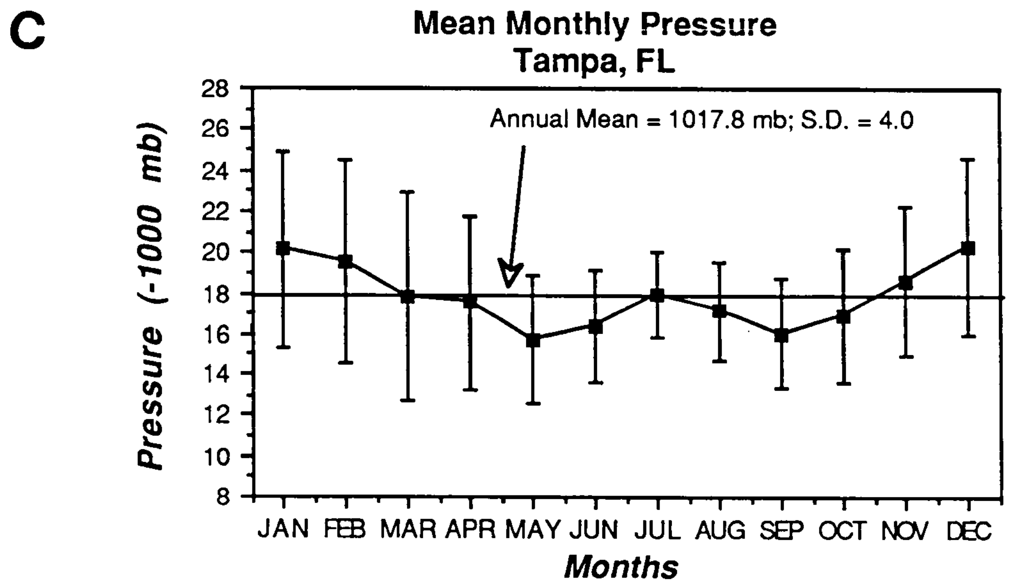


Figure 2.5-1a-b Monthly mean atmospheric pressure with standard deviations and annual mean for NWS coastal stations (a) Key West, Florida and (b) Fort Myers, Florida.



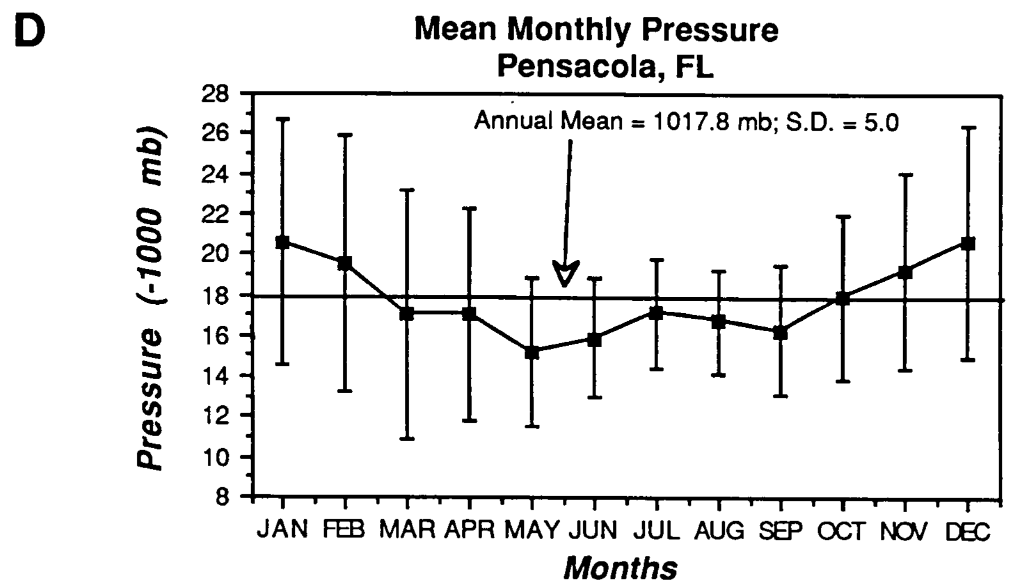


Figure 2.5-1c-d Monthly mean atmospheric pressure with standard deviations and annual mean for NWS coastal stations (c) Tampa, Florida and (d) Pensacola, Florida.

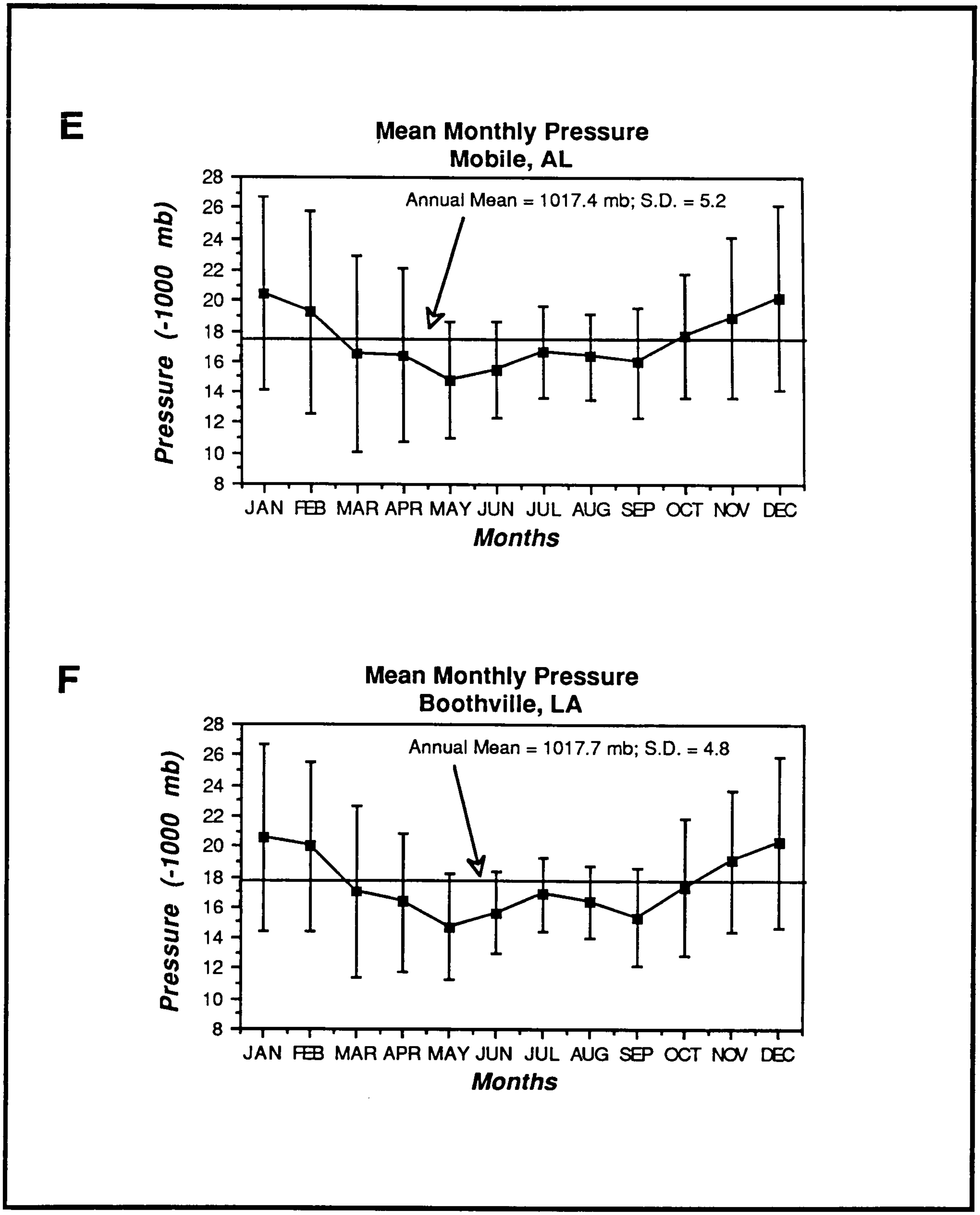


Figure 2.5-1e-f Monthly mean atmospheric pressure with standard deviations and annual mean for NWS coastal stations (e) Mobile, Alabama and (f) Boothville, Louisiana.

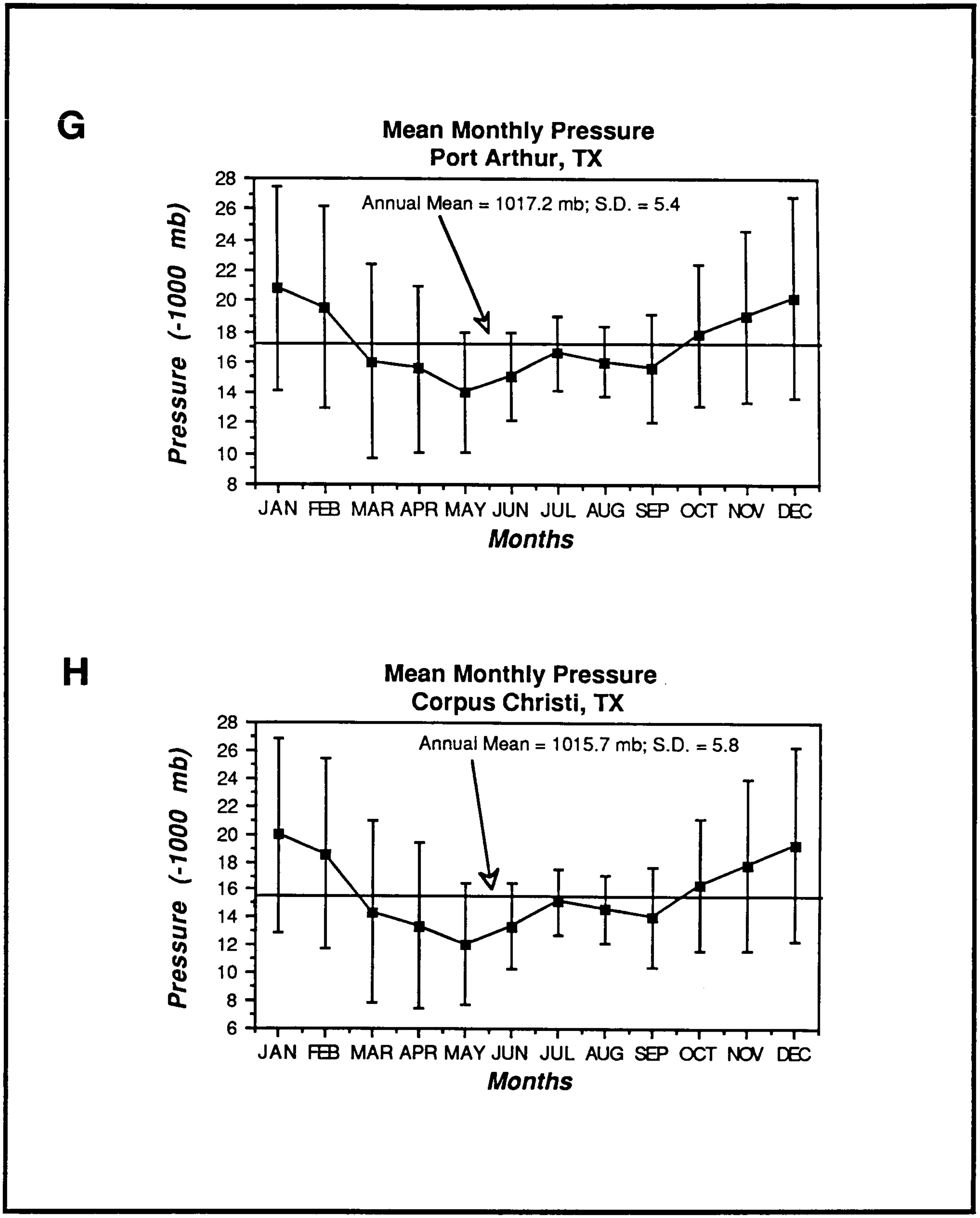


Figure 2.5-1g-h Monthly mean atmospheric pressure with standard deviations and annual mean for NWS coastal stations (g) Port Arthur, Texas and (h) Corpus Christi, Texas.

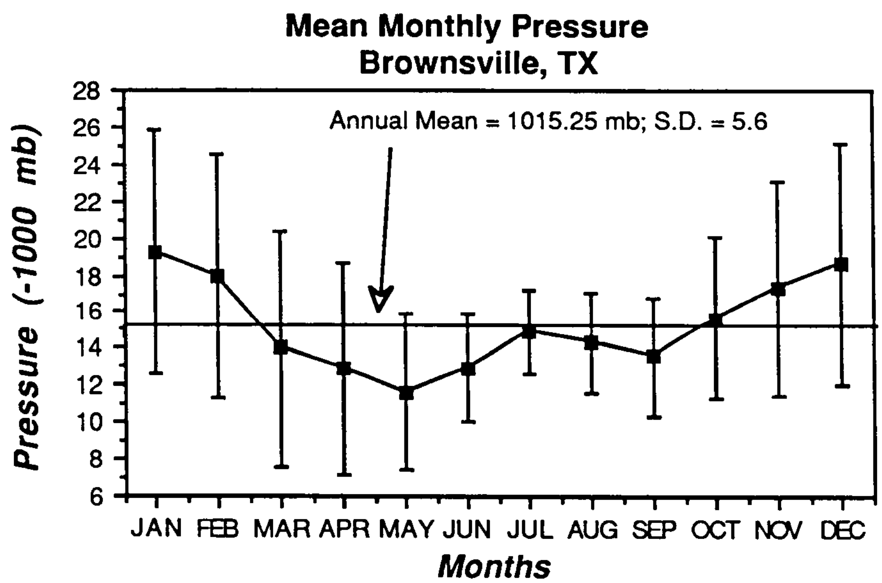


Figure 2.5-1i Monthly mean atmospheric pressure with standard deviations and annual mean for NWS coastal station (i) Brownsville, Texas.

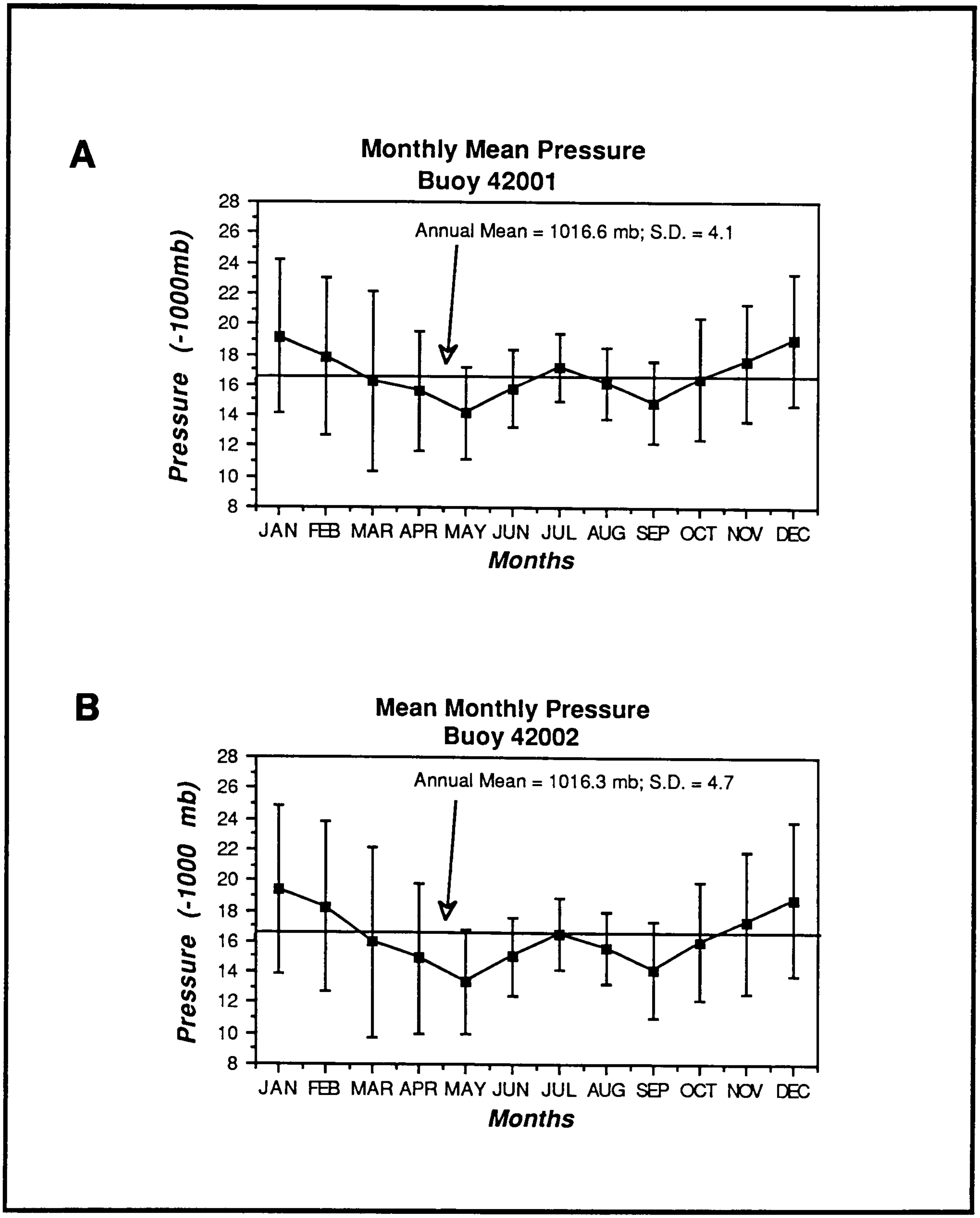


Figure 2.5-2a-b Monthly mean atmospheric pressure with standard deviations and annual mean for NDBC buoys (a) 42001 and (b) 42002.

C

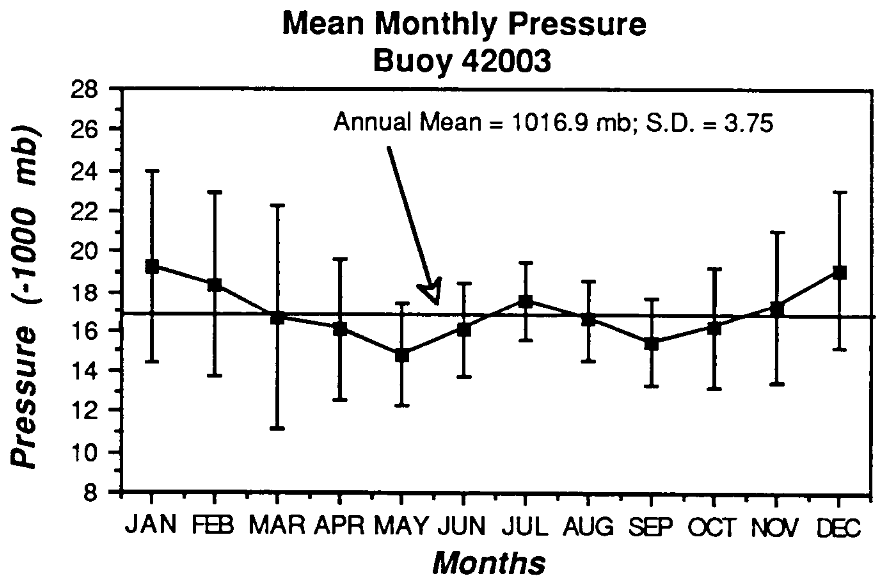


Figure 2.5-2c Monthly mean atmospheric pressure with standard deviations and annual mean for NDBC buoy (c) 42003.

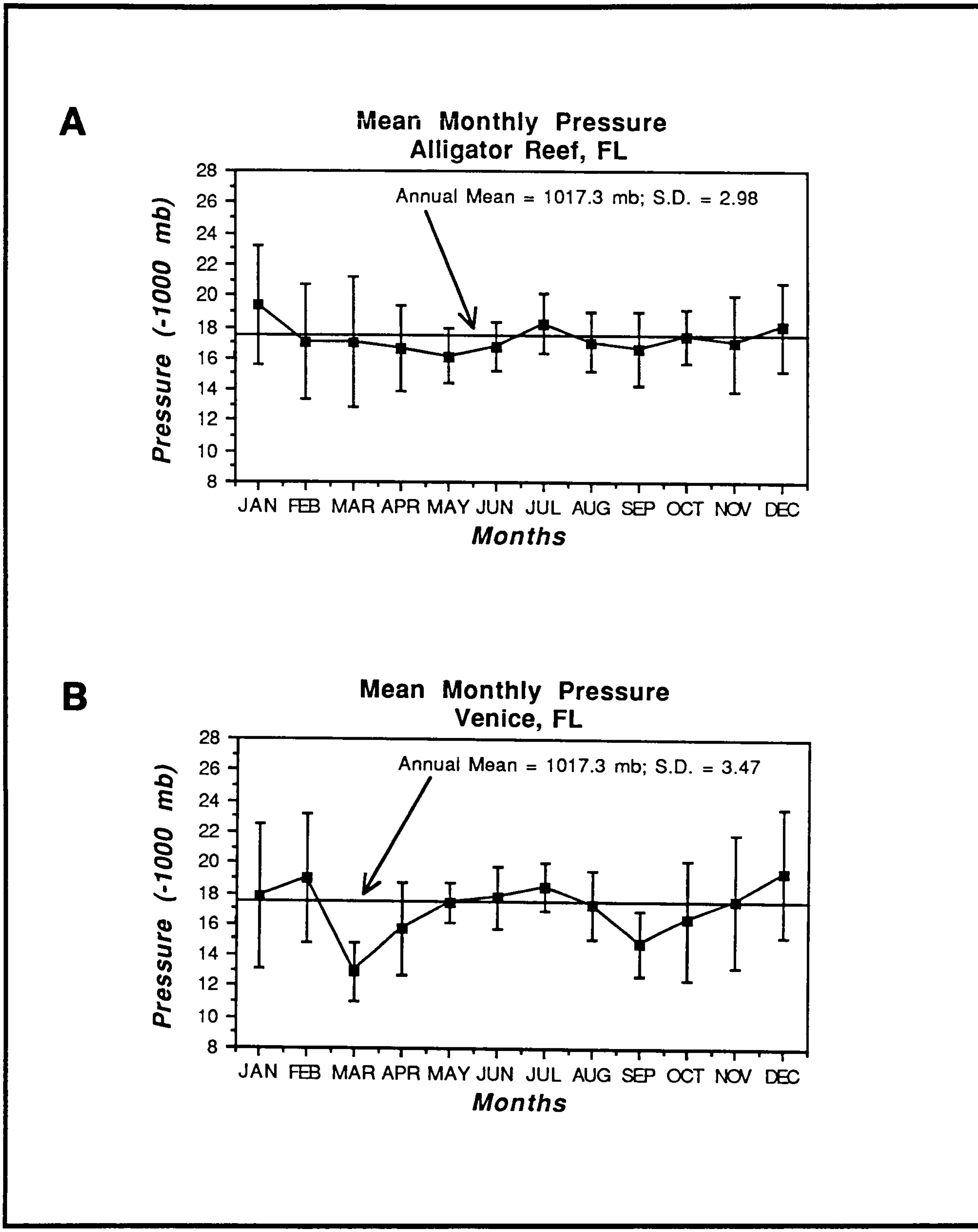
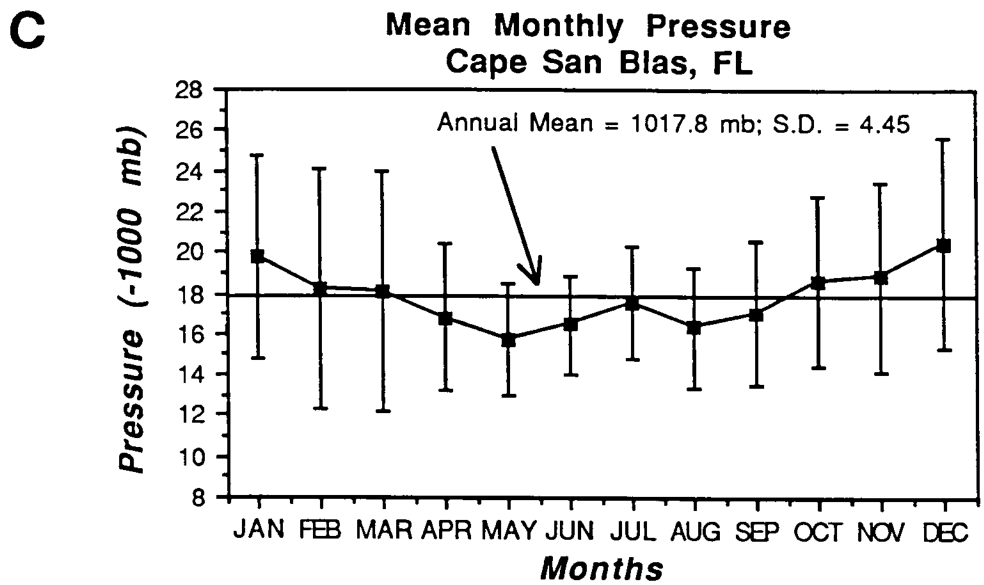


Figure 2.5-3a-b Monthly mean atmospheric pressure with standard deviations and annual mean for NDBC CMAN stations (a) Alligator Reef, Florida and (b) Venice, Florida.



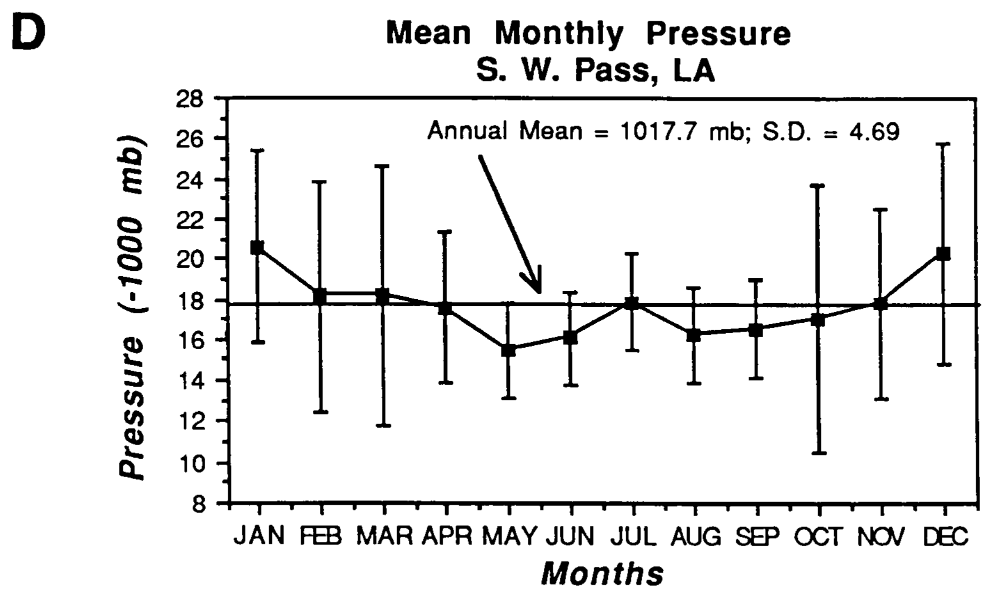
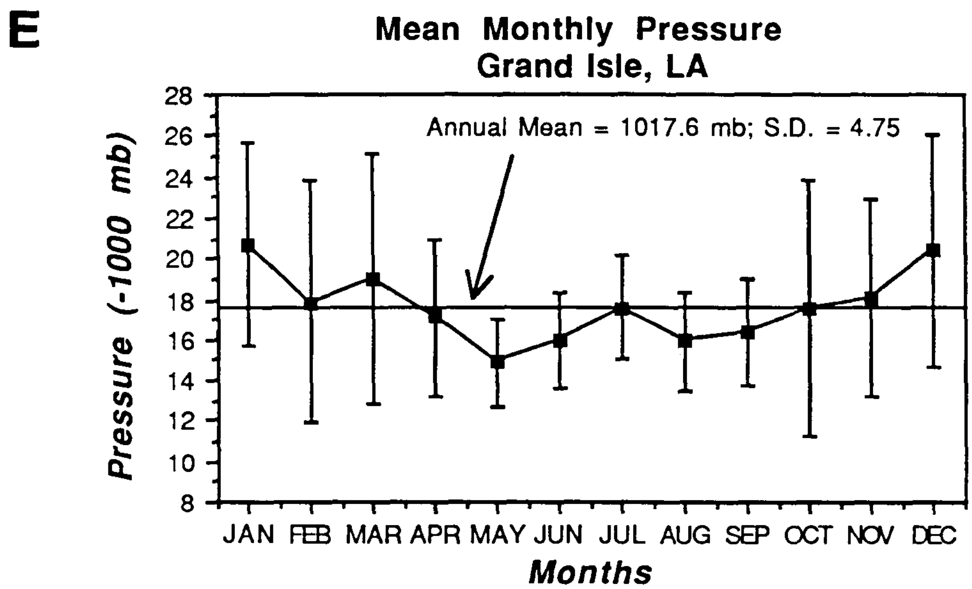


Figure 2.5-3c-d Monthly mean atmospheric pressure with standard deviations and annual mean for NDBC CMAN stations (c) Cape San Blas, Florida and (d) Southwest Pass, Louisiana.



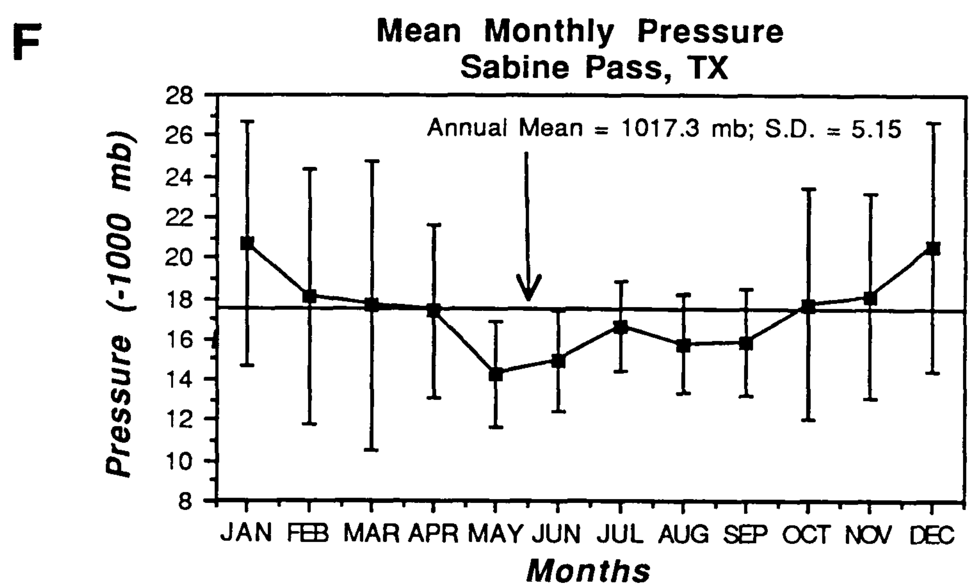


Figure 2.5-3e-f Monthly mean atmospheric pressure with standard deviations and annual mean for NDBC CMAN stations (e) Grand Isle, Louisiana and (f) Sabine Pass, Texas.

G

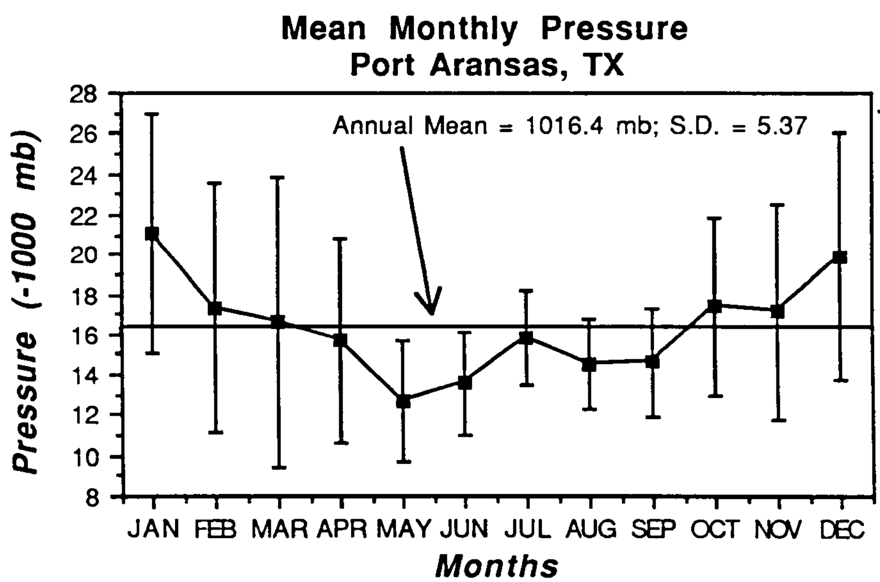


Figure 2.5-3g Monthly mean atmospheric pressure with standard deviations and annual mean for NDBC CMAN station (g) Port Aransas, Texas.

The annual variations in atmospheric pressure across the Gulf of Mexico are similar at all 17 stations analyzed. However, as was discussed with air temperature, this does not imply that significant variations do not occur from year to year. These variations are best recognized by utilizing the monthly/annual statistical summaries provided in Appendix C (Sections C.1.1, C.2.1 and C.3.2). The annual cycle shows a peak during winter, a decline to a minimum in May, a mid-summer peak in July, followed by a decline into September, which is trailed by a smooth increase into the winter months. This scenario is extremely uniform across the entire Gulf region for all stations considered.

The winter season is characterized by a maxima in the pressure field at all stations. When considering only the coastal stations and the buoys, the winter pressure field has a range of approximately 1.4 mb, generally increasing toward the north. A similar trend is observed in the CMAN data; however, the records at ALRF1 (2 year duration) and VENF1 (1 year duration) show somewhat lower annual mean pressures, resulting in ranges of near 1.5 and 2.2 mb, respectively. Again, these latter 2 records are of very short duration and do not represent climatologically stable statistics. The east-west pressure variation is negligible in all 3 data sets. Corpus Christi has almost 1 mb lower mean pressure than the station to its north (Port Arthur) and south (Brownsville). A similar difference (0.5 mb) can be seen in the mean values between Port Aransas and Sabine Pass.

The summer season is characterized by a much higher degree of variability in the mean pressure field. The pressure range in summer is 2.82 mb between Brownsville and Tampa, with higher pressure towards the north and east. The annual range is less in the eastern Gulf as opposed to the western Gulf. The mean summer pressure value is misleading, in that it masks the distinct summer pattern noted earlier of a minimum in May, a mid-season maximum in July and a late season minimum in September. It is important to note that all 17 stations exhibited this distinct pattern (Figures 2.5-1a-i, 2.5-2a-c and 2.5-3a-g).

The range of monthly mean pressures during the spring (April) transition period was greater than during the fall (November). The difference between Brownsville and Tampa was 4.62 mb, with pressure increasing towards the east during spring. This trend was not as observable in the CMAN stations, as ALRF1 and VENF1 were once again anomalously low during the transition periods. The spring pressure maximum was along the west Florida coast near Tampa/Fort Meyers. However, this finding was not supported by the CMAN station at Venice, possibly due to its short-term record (1-year duration). The pressure difference between Key West and Pensacola during fall was 2.31 mb, with this difference increasing toward the north. During fall, east-west differences across the Gulf were on the order of 2 mb, with the highest pressure along the northern coast of the Gulf from Tampa around to Port Arthur.

2.6 Mean Wind and Wind Stress Climatology

Since wind stress is a forcing mechanism for coastal and deep ocean circulations and since it is also useful to compare mean wind stress fields with mean wind fields, wind stress was calculated from the wind records using the formulation drag coefficient from Large and Pond (1981). Wind stress is calculated from:

$$\underline{\tau} = c\rho_a|\underline{W}|\underline{W}$$

where $\underline{\tau}$ is the wind stress (in dynes cm^{-2}), ρ_a is air density, $\underline{W}$ is the wind vector and C the drag coefficient is given by

$$c = \begin{cases} 0.0012 & \underline{W} < 11 \text{ m/s} \\ 0.00049 + 0.000065(\underline{W}) & \underline{W} > 11 \text{ m/s} \end{cases}$$

The northern Gulf of Mexico annual cycle may be divided into two seasons, winter and summer, connected by short transitions of about a month. The winter period, December through March, is characterized by frequent storms producing strong, rapidly changing winds, large atmospheric pressure and temperature fluctuations due to cyclones moving eastward across the Gulf. The northern Gulf shelf water is a region of cyclogenesis during cold air outbreaks.

Summer months are characterized by generally low wind conditions with small pressure fluctuations as weather becomes dominated by the western side of the Bermuda High. There are generally large diurnal changes in air temperature at coastal stations, along with associated sea breeze systems. The summer season, May through October, may be interrupted by a small number of tropical storms or hurricanes, originating in Gulf waters or moving in from the tropical Atlantic. Transitions between seasons occur quite rapidly and a distinct spring and fall is not characteristic of these latitudes. There is some interannual variability in the start and ending of the seasons. Thus, April and November are sometimes more characteristic of one season or the other in different years.

Figures 2.6-1a-c illustrate seasonal differences in coastal station data for three representative stations--Tampa, Mobile and Corpus Christi. Marked changes in seasonal characteristics are seen in these (a) 40-HLP filtered winds, (b) atmospheric pressure (c) hourly air temperatures from 1983. Winter months correspond to Julian days 335-365 and 0-90, the summer months to days 120-300, respectively. Note the difference in character of summer 40-HLP winds between east (Tampa and Mobile) and west (Corpus Christi). Relatively strong summer winds at Corpus Christi are consistently southeasterly and are related to seasonal circulation around the Bermuda High. Interannual variability of seasons can be illustrated by reference to the monthly means and variances for the pressure given in Appendix C (Sections C.1.1, C.2.1 and C.3.2). Winter months are characterized by high variances and the summer low, except for the occasional large values occurring due to hurricanes or tropical storms.

Winter season mean winds averaged over years for the NWS coastal stations, NDBC buoys and NDBC CMAN stations are shown as vectors on the Gulf of Mexico map (Figure 2.6-2a). The coastal stations contain data from 17 years. The 3 NDBC buoys along 26°N use about 10-year records and the shelf buoys and platforms use

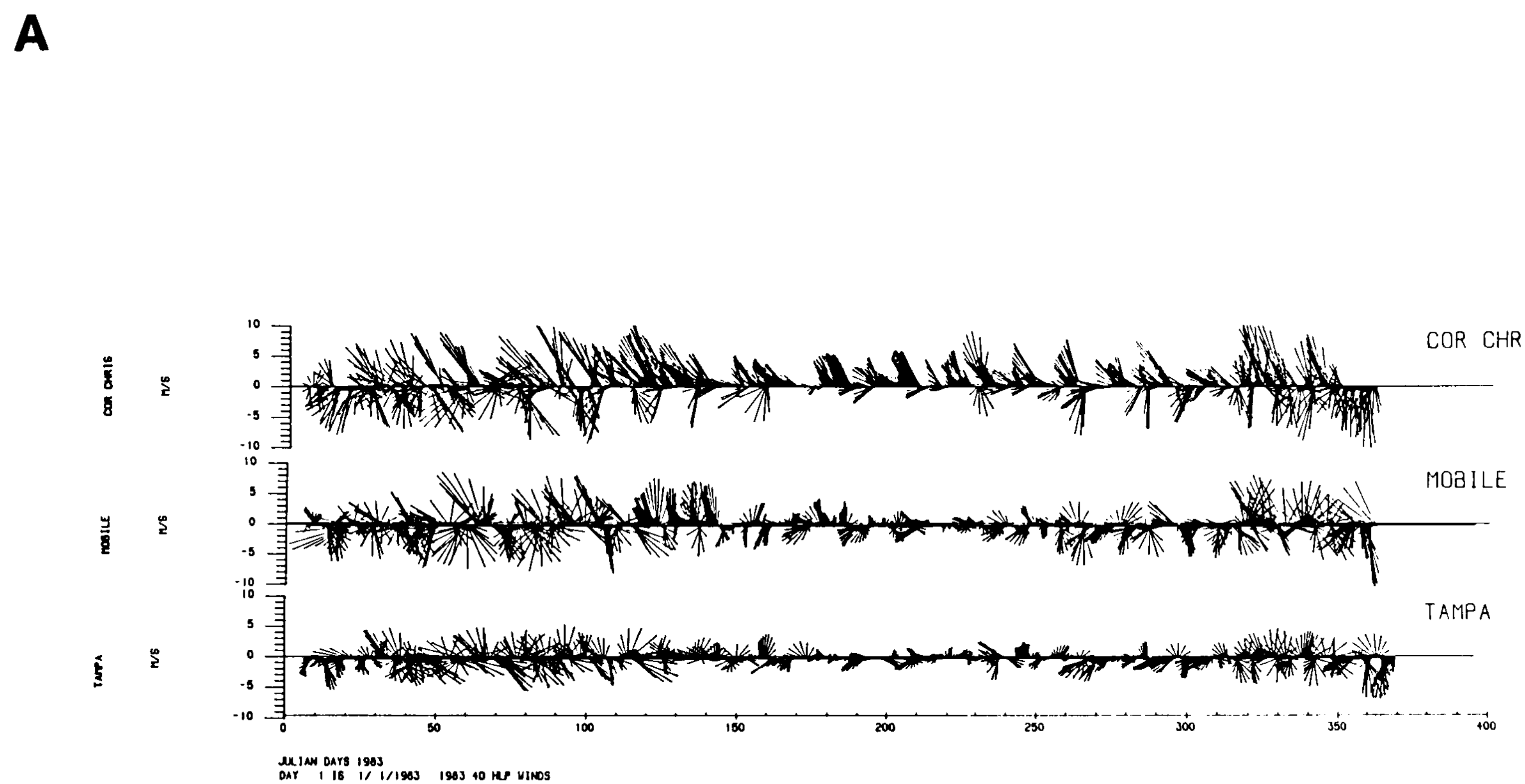


Figure 2.6-1a 1983 40-HLP winds from Tampa, Mobile, and Corpus Christi NWS stations. Sticks are vectors with north vertically upwards, directed towards the direction which the wind blows.

B

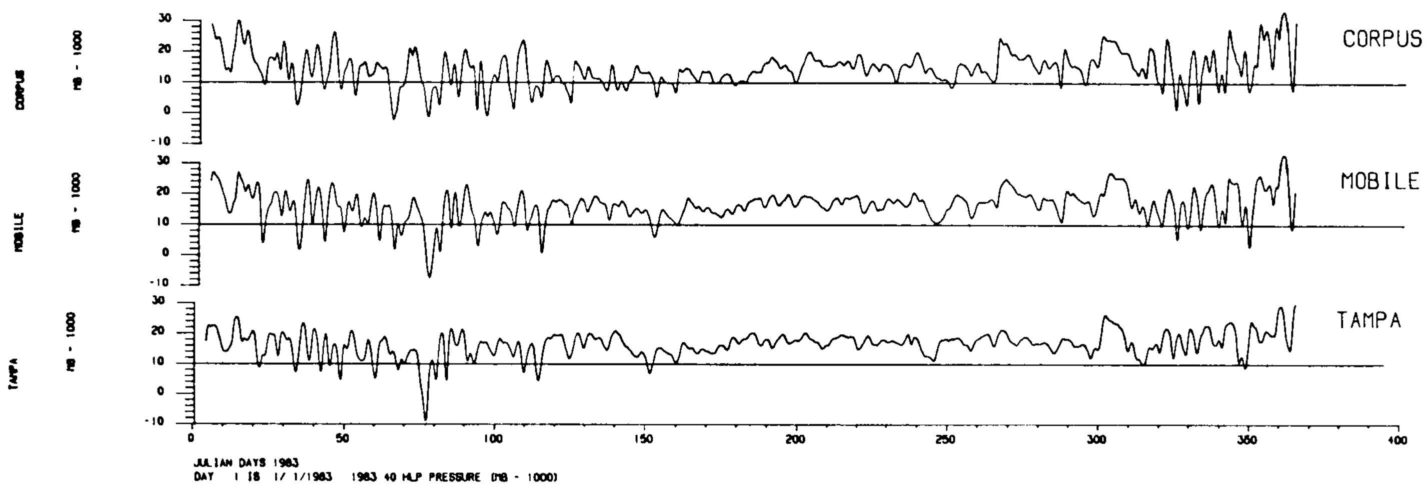


Figure 2.6-1b 1983 40-HLP atmospheric pressure records (mb-1000) from stations Tampa, Mobile, and Corpus Christi.

C

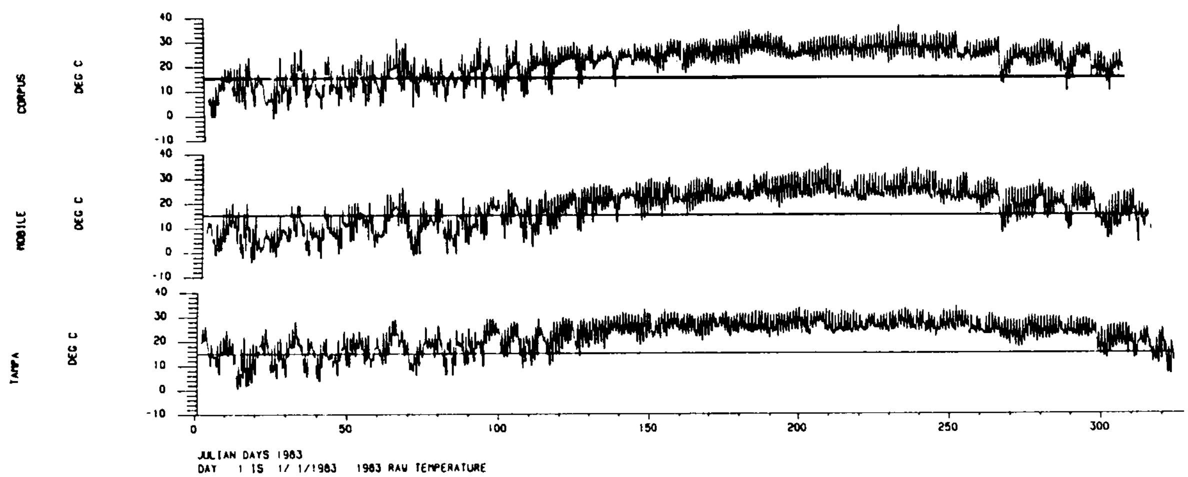


Figure 2.6-1c 1983 one hour air temperature records from stations Tampa, Mobile, and Corpus Christi.

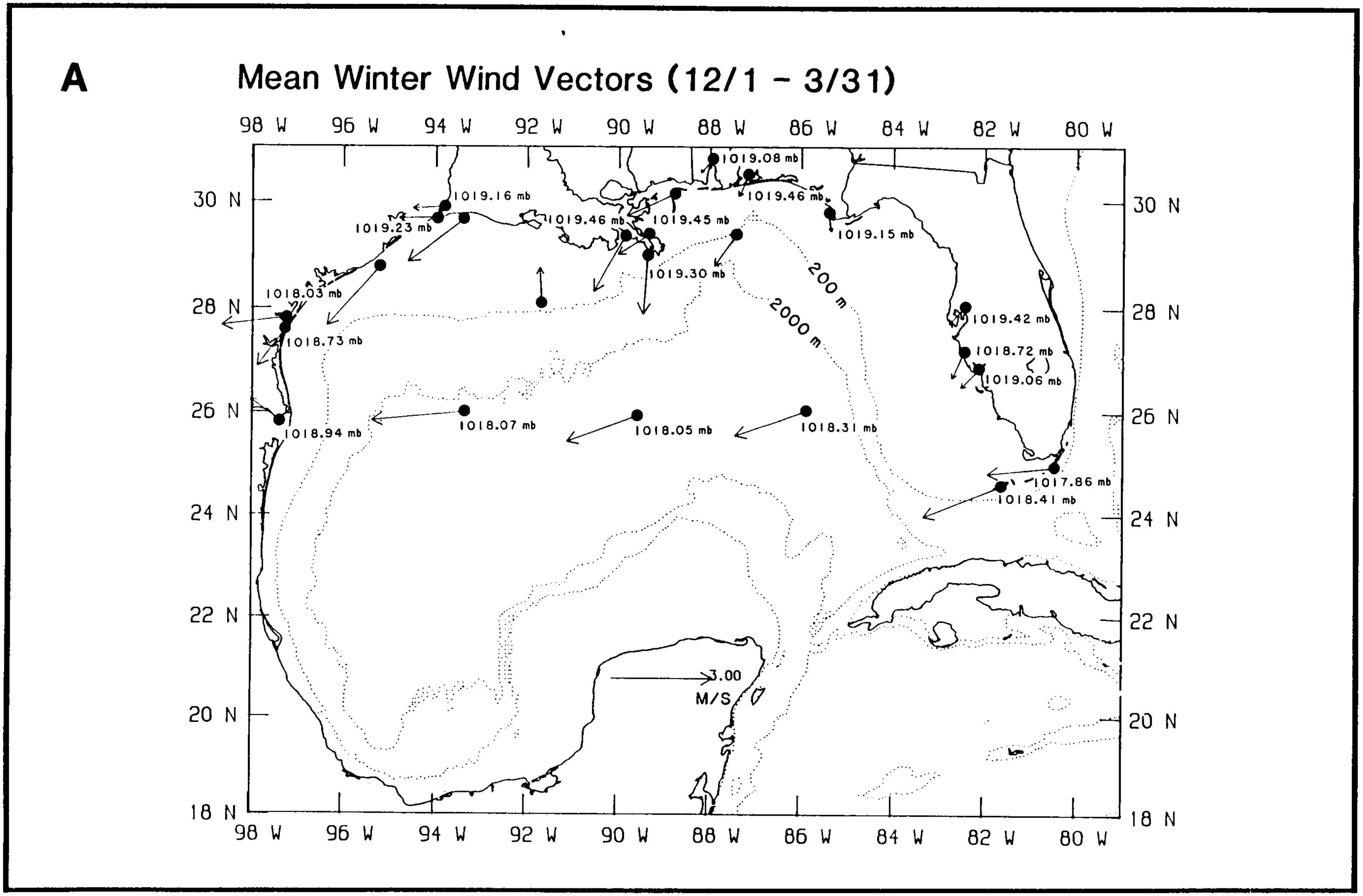


Figure 2.6-2a

Winter mean seasonal wind maps of vectors from buoys, CMAN and coastal stations. The station position is at the junction of the tail of the vector and the large dot. Mean atmospheric pressure (mb) is noted next to each station.

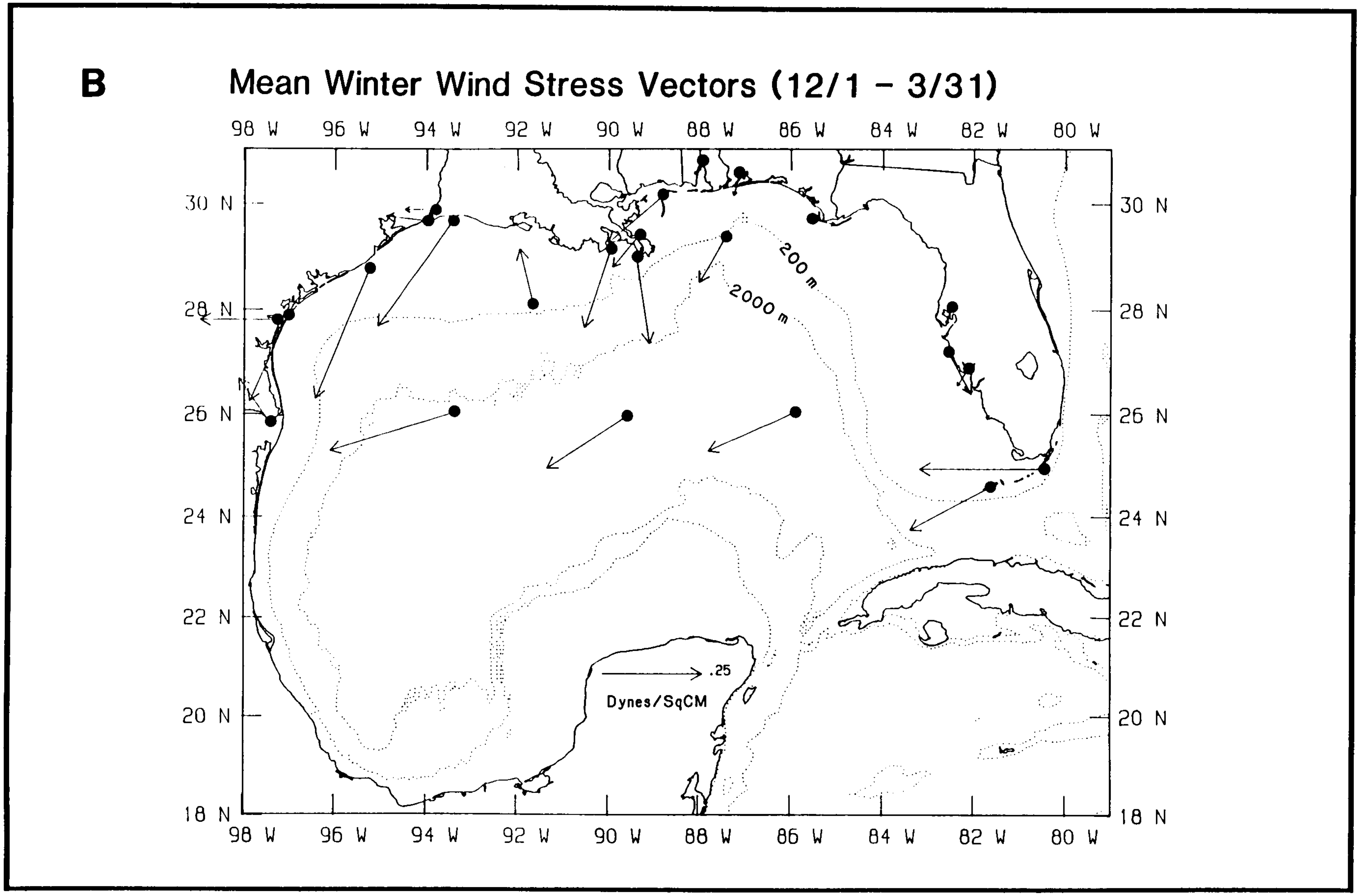


Figure 2.6-2b Winter mean seasonal wind stress maps of vectors from buoys, CMAN and coastal stations. The station position is at the junction of the tail of the vector and the large dot.

2- to 3- year records. The 7 NDBC CMAN stations use records varying in length from 1- to 3- years (1-year records: VENF1; 2-year records: ALRF1 and 3-year records: CSBF1, GDIL1, BURL1, PTAT2 and SRST2). The OCMP station (EI331) data record spans a 5-year period. However, the data return was very intermittent and sparse during certain time periods. Also, for reasons not completely understood, the wind data collected at this location is suspect. Possible causes for the contamination of the data set include instrument/data recorder malfunction, transcription errors and frequent helicopter-induced noise. The data is presented here merely as a convenience to readers and to show the locations of available data sets. The percentage of valid data, i.e., disregarding gaps, is given in frequency distribution tables which are located in Appendix D (Section D.1). Equivalent mean wind stress vectors are shown in Figure 2.6-2b. Patterns are similar except for a greater difference in strength between land and water and from east to west in the wind stress than in the mean wind vectors. An interesting feature is delineated along the Texas shelf/coast where the mainland stations are primarily easterly, while the coastal/shelf stations (CMAN and buoy locations) are predominantly northeasterly or alongshelf. Most of the wind stress vectors are rotated about 5°-15°counterclockwise from the mean wind vectors. These differences are due to the quadratic, and thus, nonlinear relation between wind and wind stress. The relatively large rotation of Texas shelf wind stress compared to the wind vectors, therefore, is due to the influence of strong northerlies during cold air outbreaks.

Mean winter winds have a dominant easterly component that strengthens towards the west. Fort Meyers, Tampa, Pensacola, Cape San Blas and Venice mean wind vectors have small magnitudes, < 1 ms^{-1}, and are directed offshore. Boothville, Port Arthur, Corpus Christi, Sabine Pass and Brownsville, in contrast, have substantial mean easterly winds. Shelf mean winds tend to parallel the trend of the Louisiana and Texas coastlines. Compared with the direction of the 26°N winds, these shelf mean winds imply a convergence of streamlines towards the south Texas coast between Corpus Christi and Brownsville. The relatively strong mean easterly wind at Corpus Christi is consistent with converging flow in this region. Key West and Alligator Reef mean winds are east-northeasterly and are clearly more characteristic of ocean conditions represented by the 26°N buoys than other stations on the west coast of Florida.

Wind roses for the winter season at each station are given in Figure 2.6-3. The west Florida coastal stations show a fairly uniform distribution around the compass, with a slight predominance of winds with an easterly component. Easterlies dominate Key West and the 26°N buoys. The influence of cold air outbreaks on this region is evident in the northern coastal/shelf stations, where strong northerlies are dominant. Moving from the Florida panhandle to southern Texas, easterlies and southeasterlies show higher percentages and have wind speeds similar to northerlies and northwesterlies. Frequency distributions corresponding to the roses are given in Appendix D (Section D.1).

The mean summer wind and wind stress vectors for all stations are shown in Figures 2.6-4a-b. Mean winds are easterly to southeasterly and generally stronger than in winter, except along the northeast coast. The accelerating mean flow across the central and northwestern Gulf is driven by the pressure gradient between the Bermuda High and the southwestern Rockies Low. Wind stress vectors show the same pattern and, unlike the winter, the wind stress vectors are almost exactly parallel to wind vectors indicating that the wind fluctuations are fairly consistent in direction throughout the summer. This consistency of wind

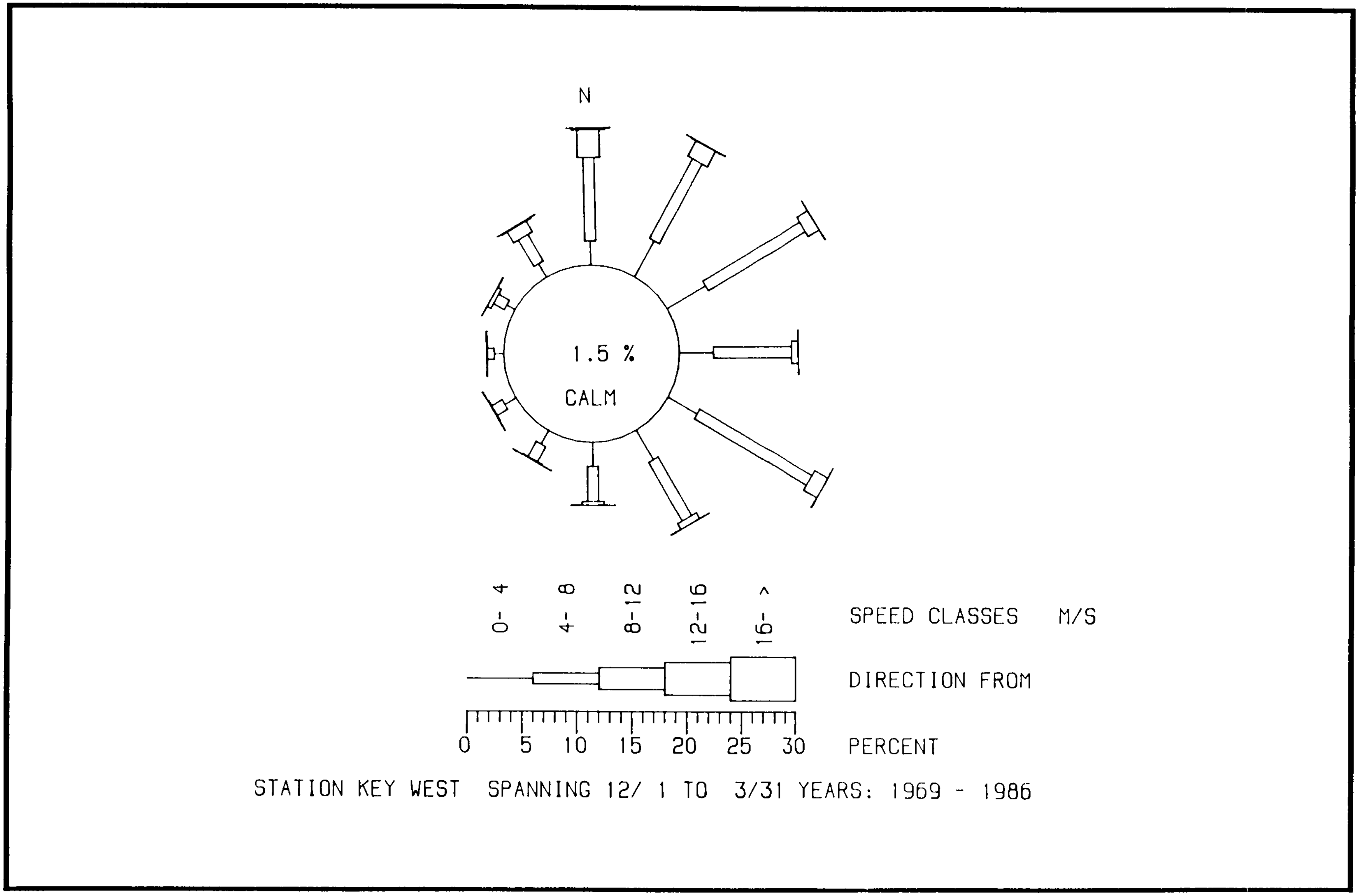


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

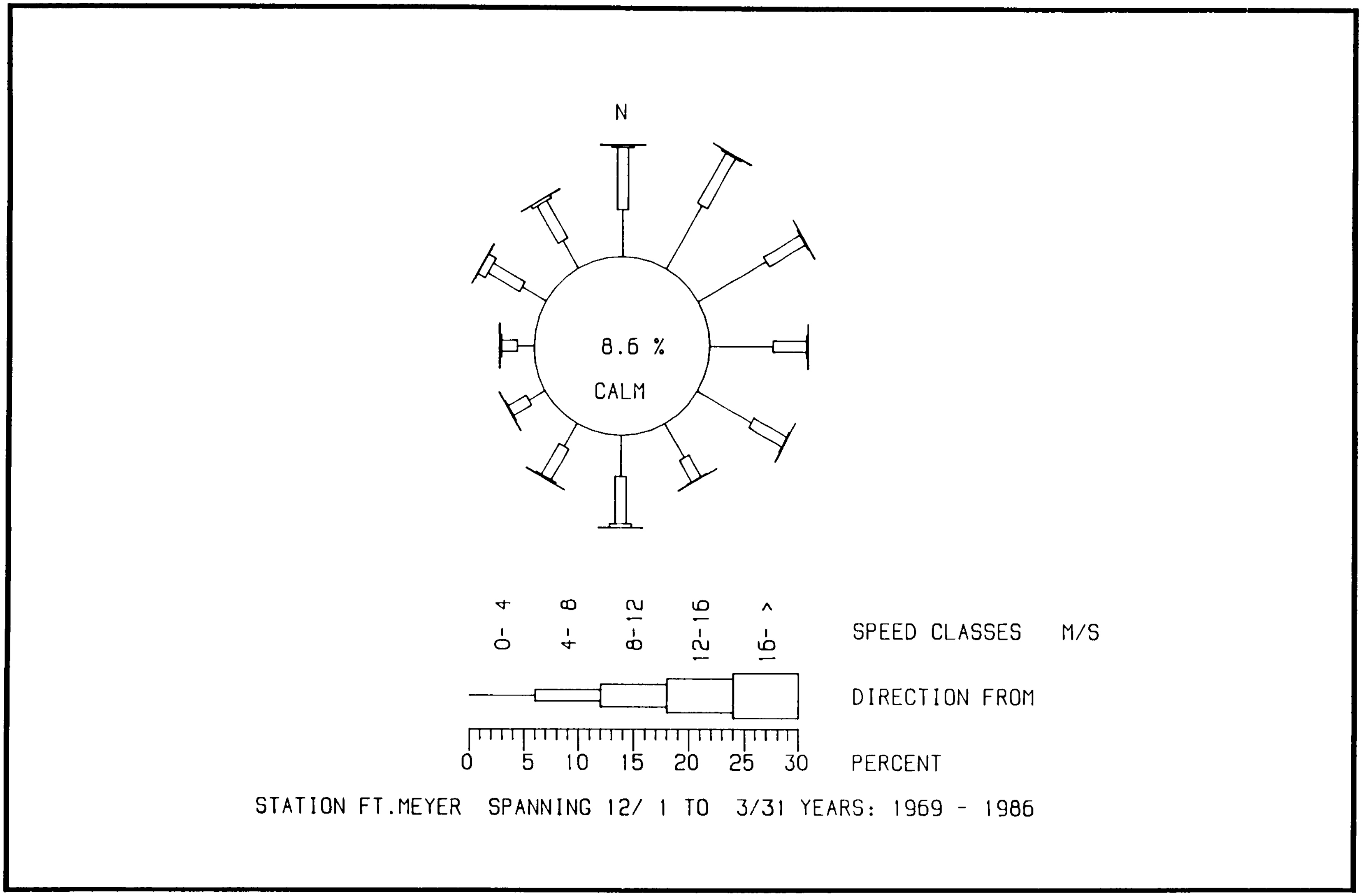
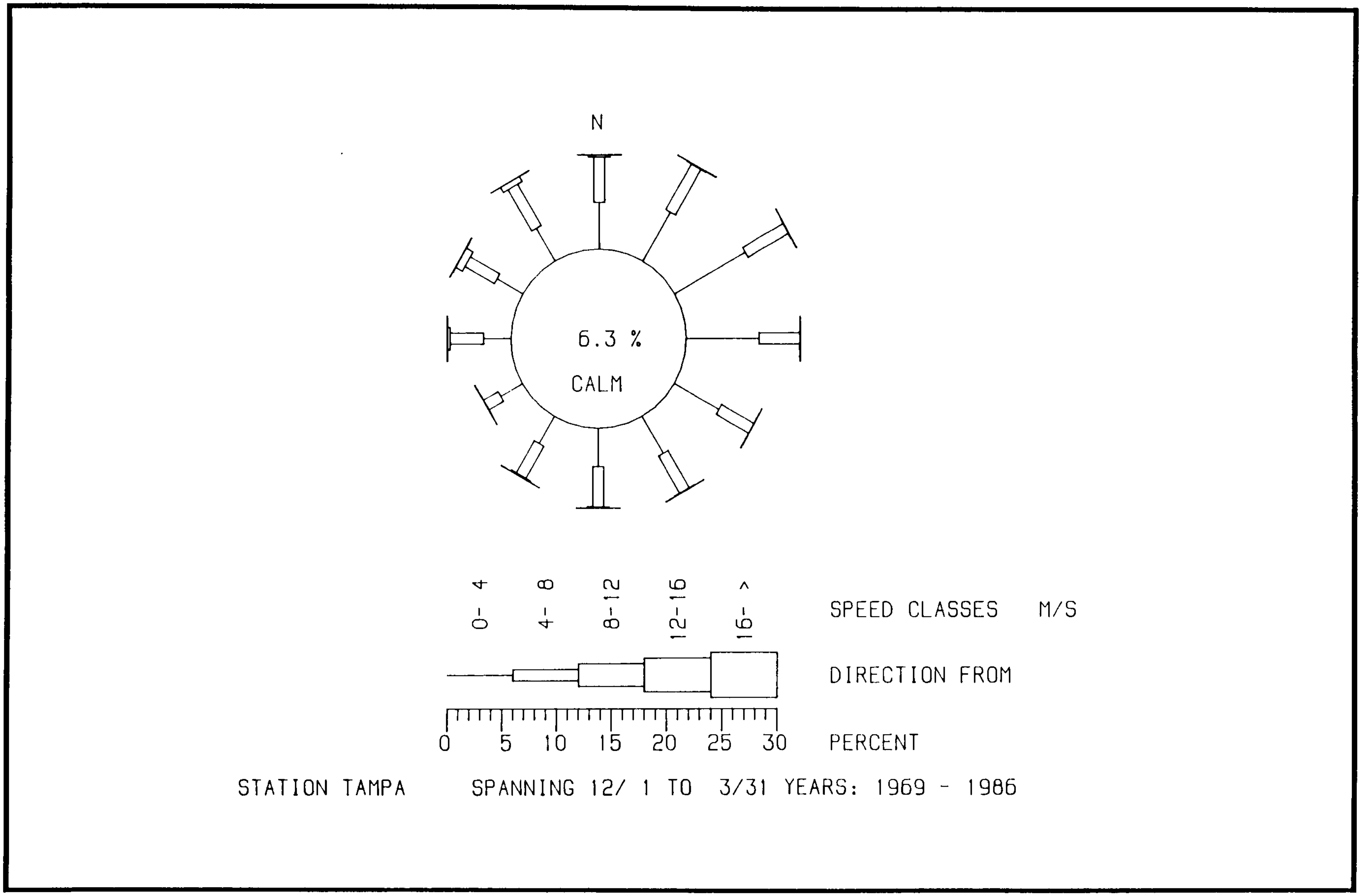


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.



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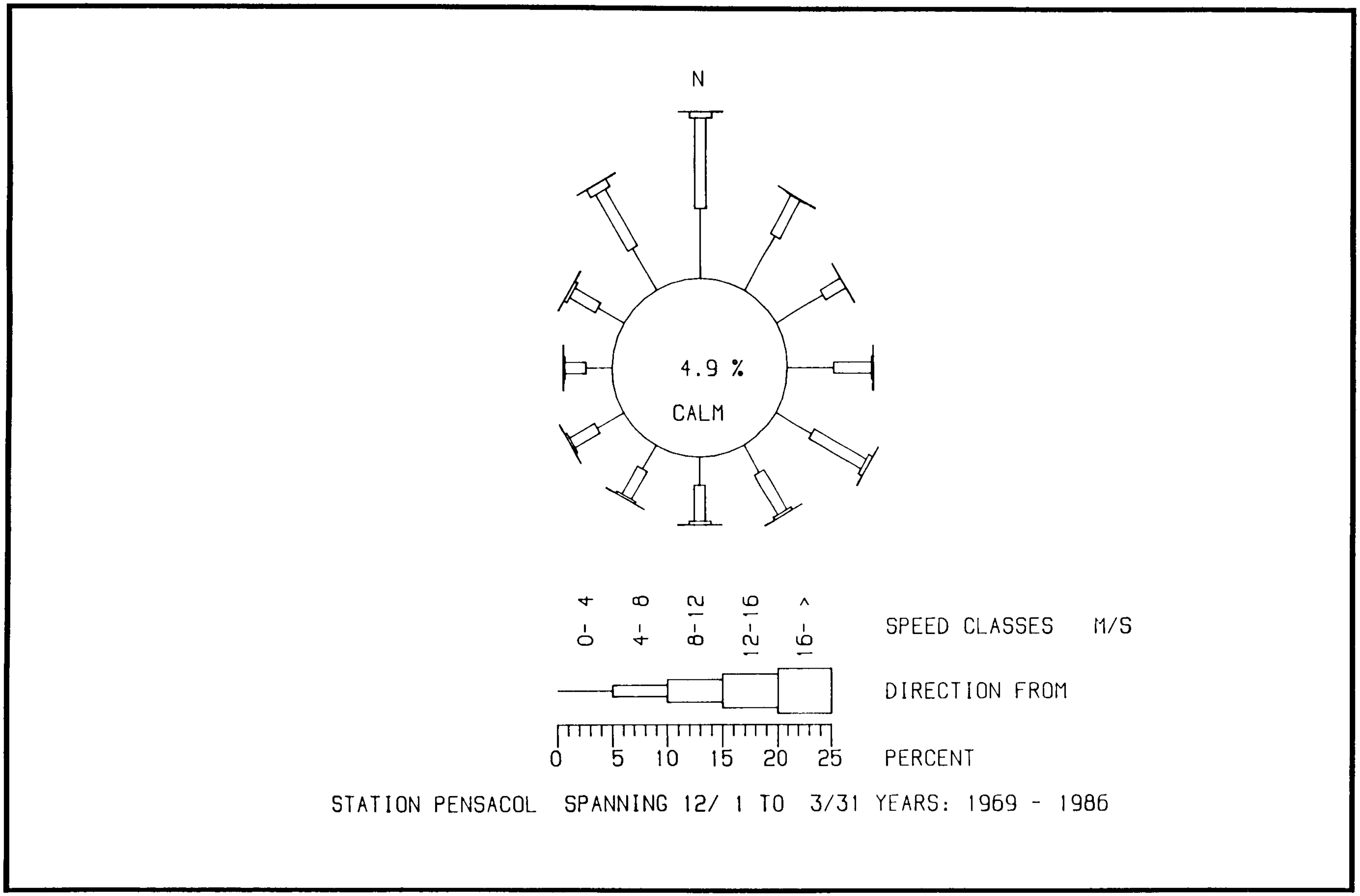


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

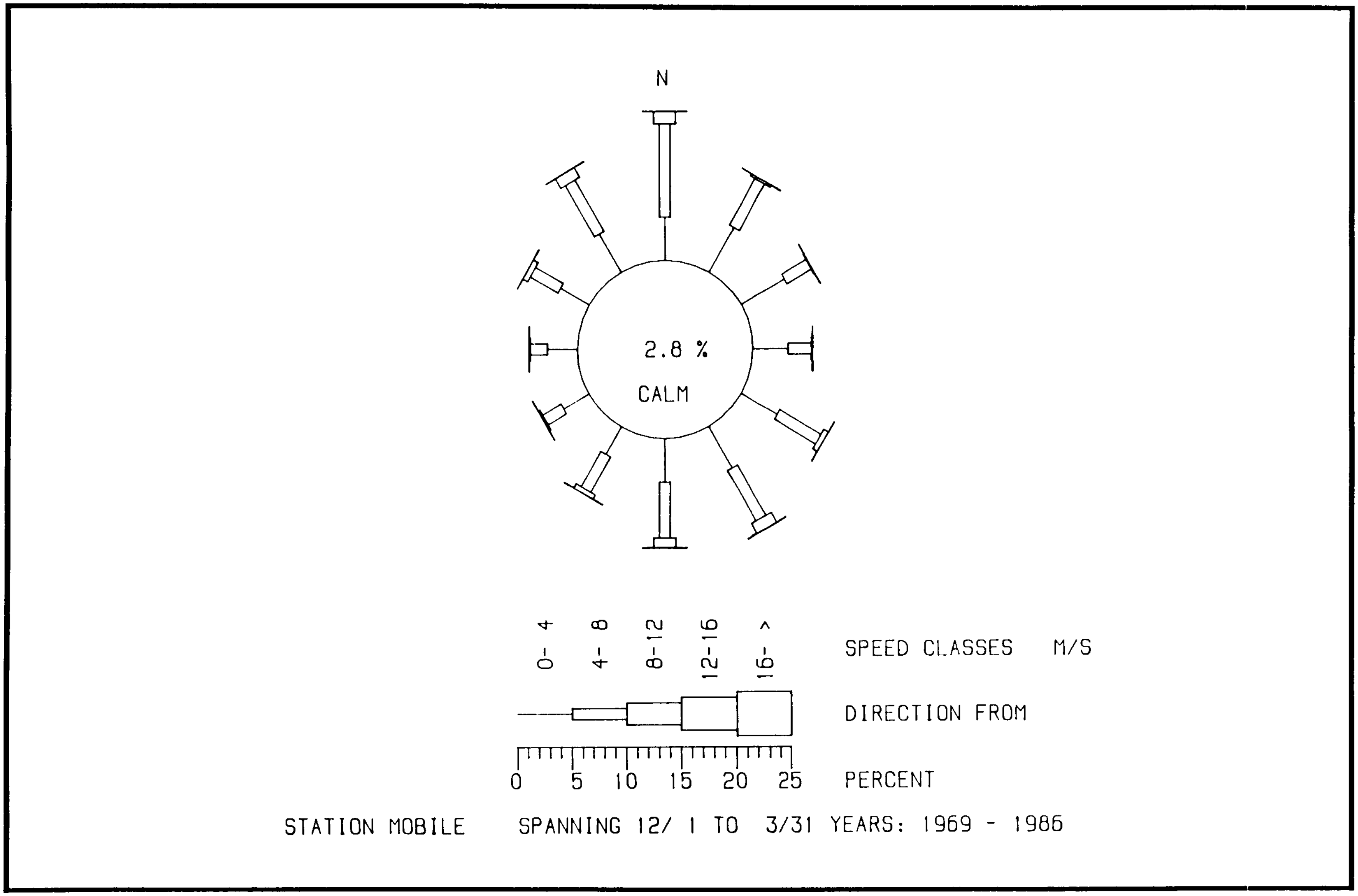


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

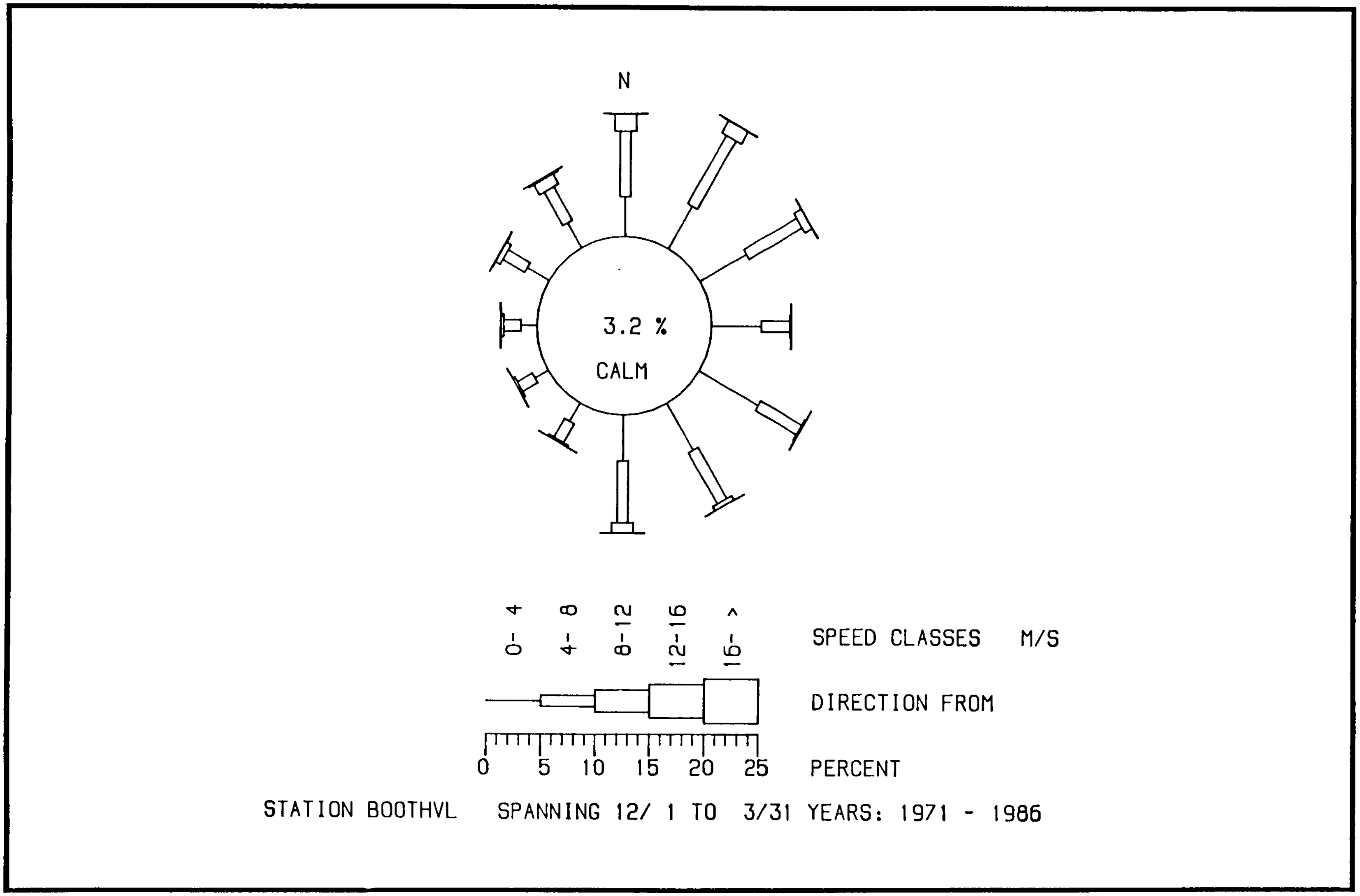


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

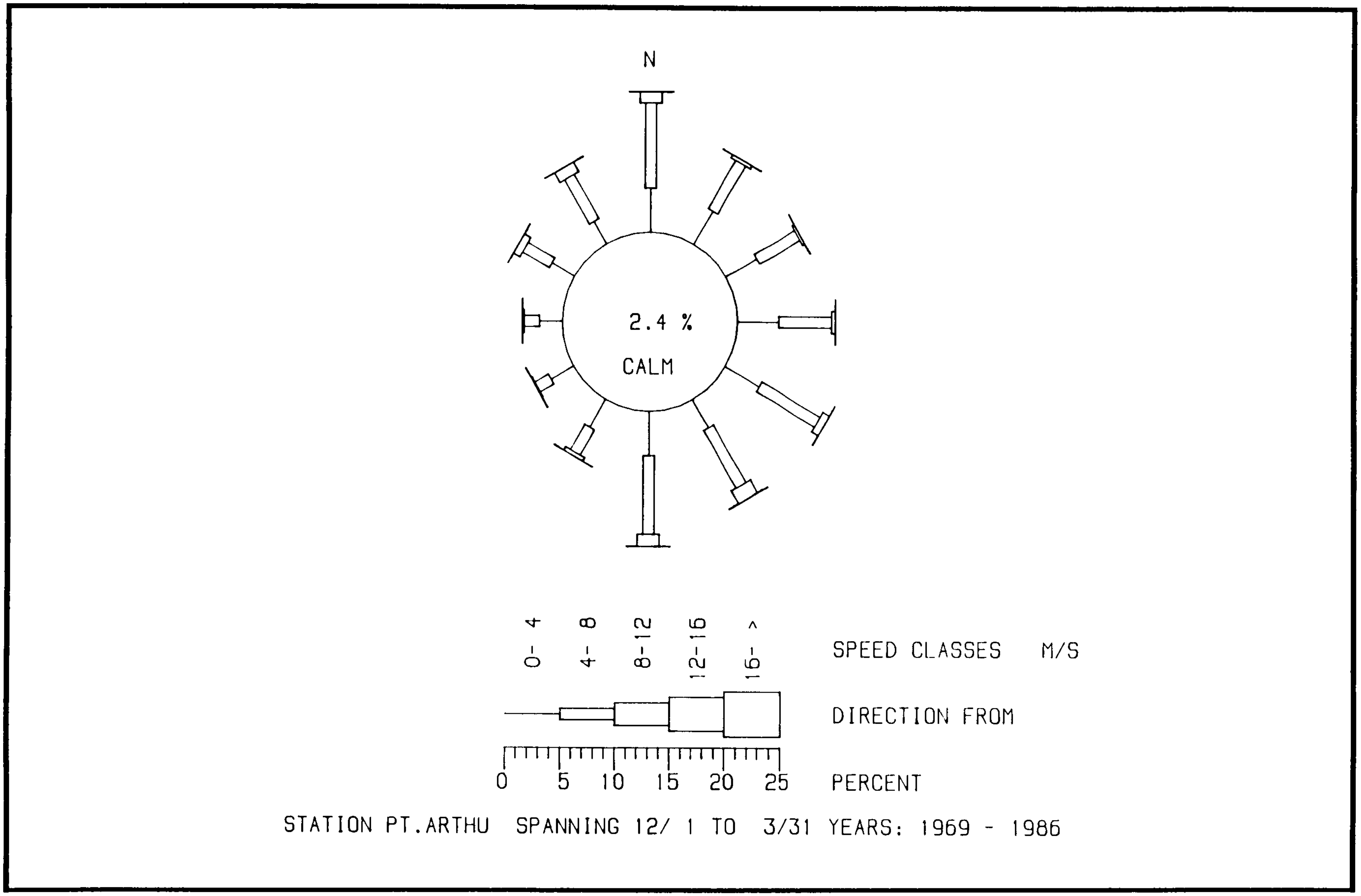


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

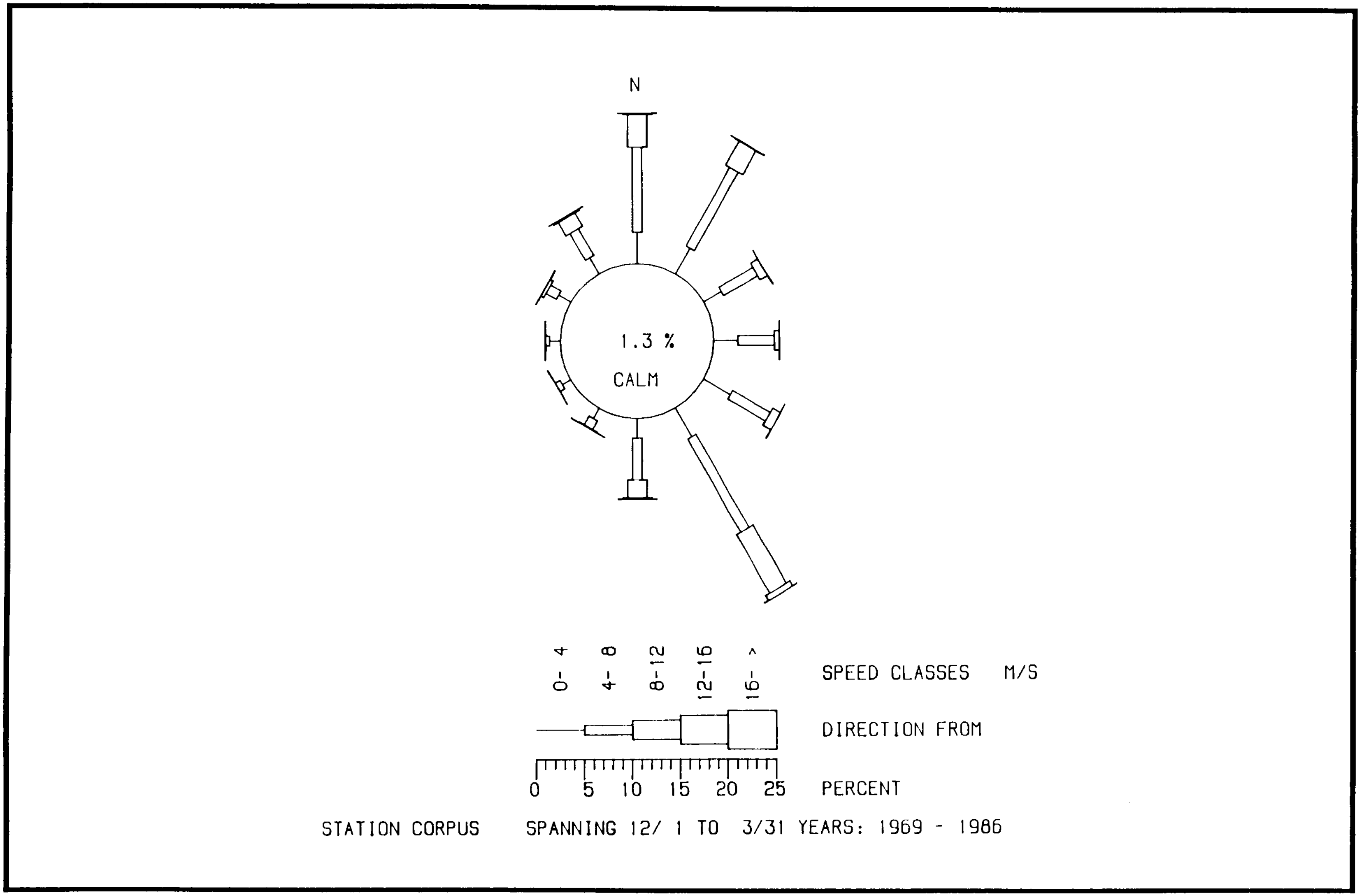


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

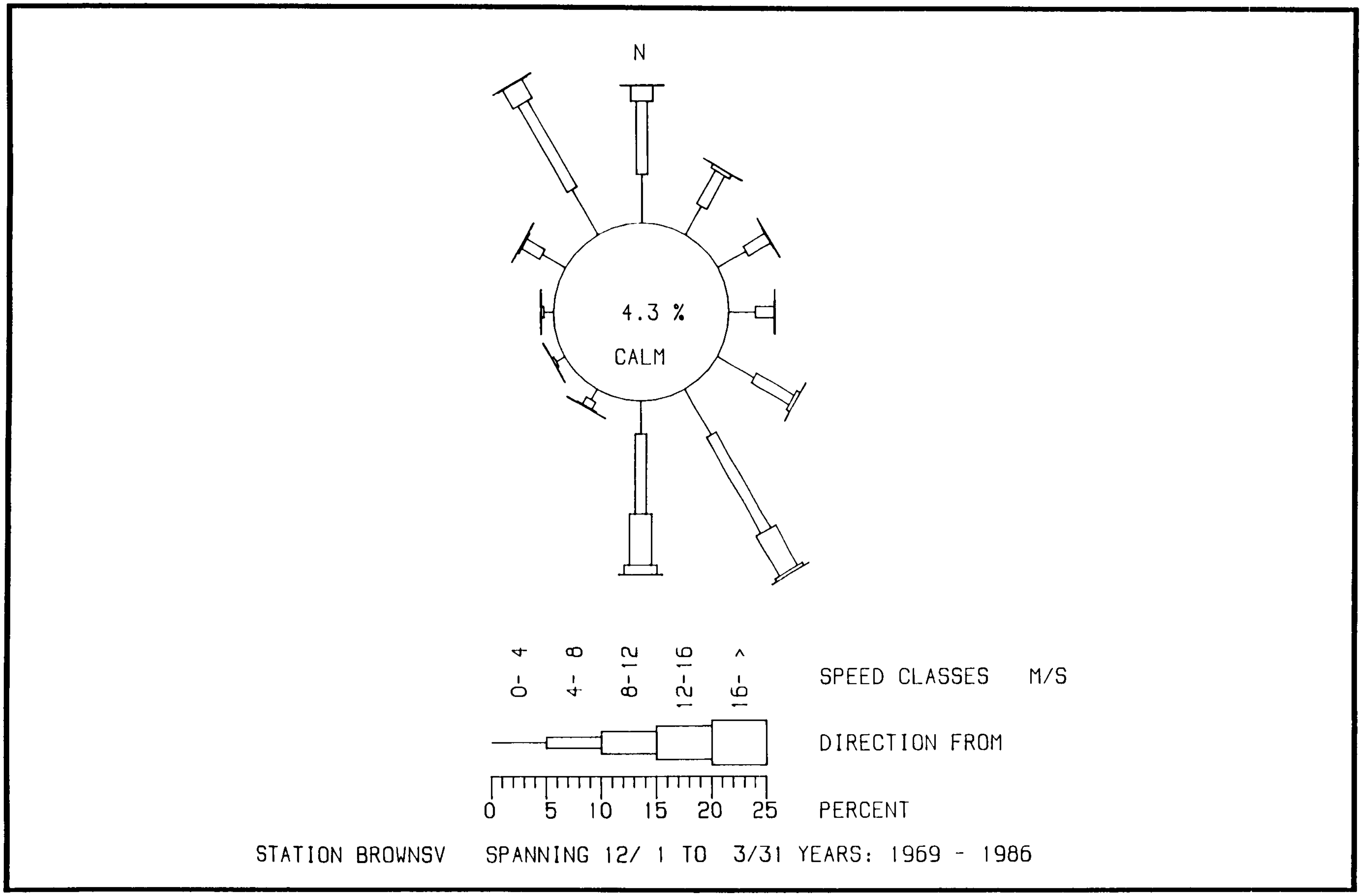


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

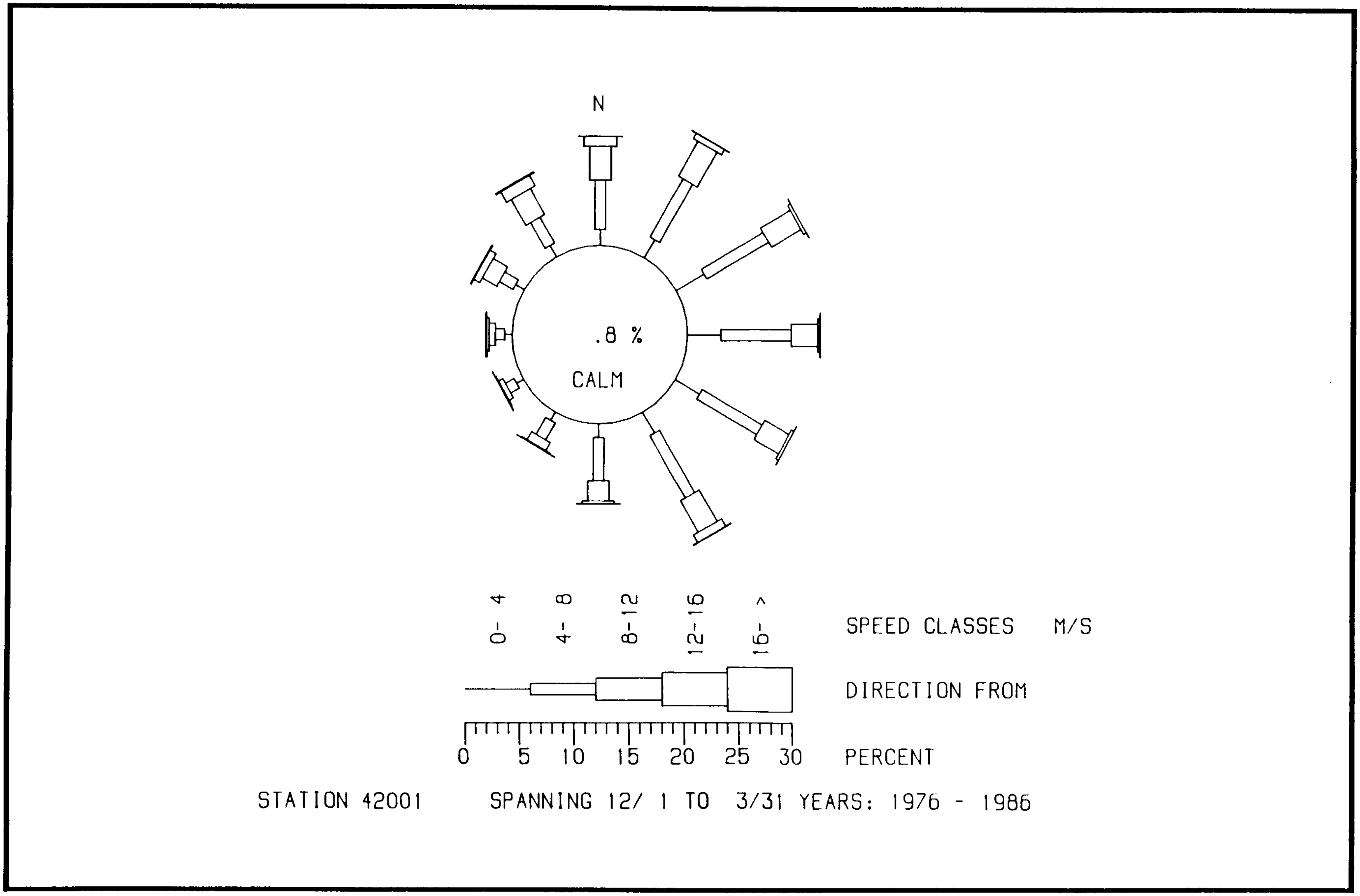
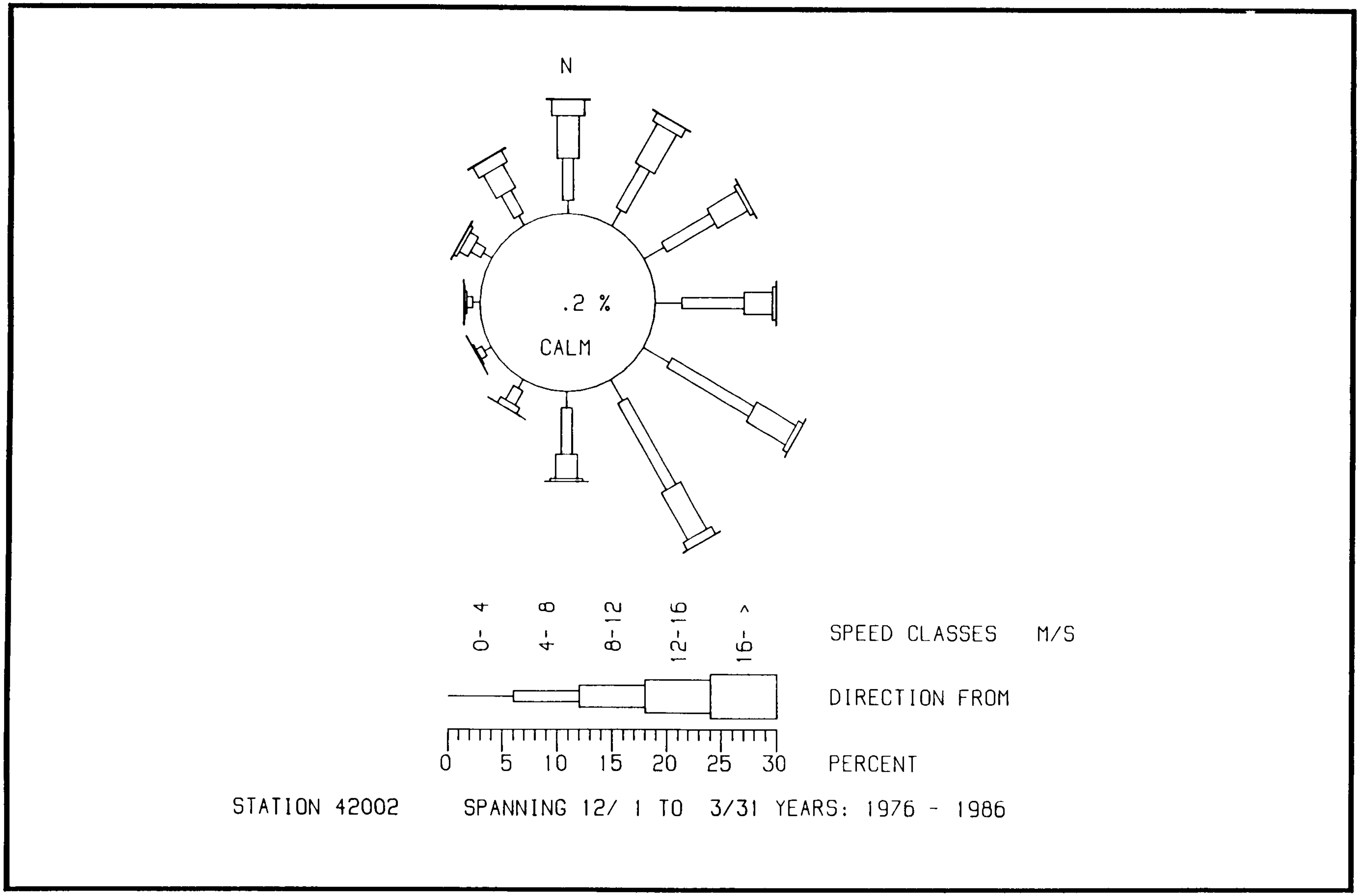


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.



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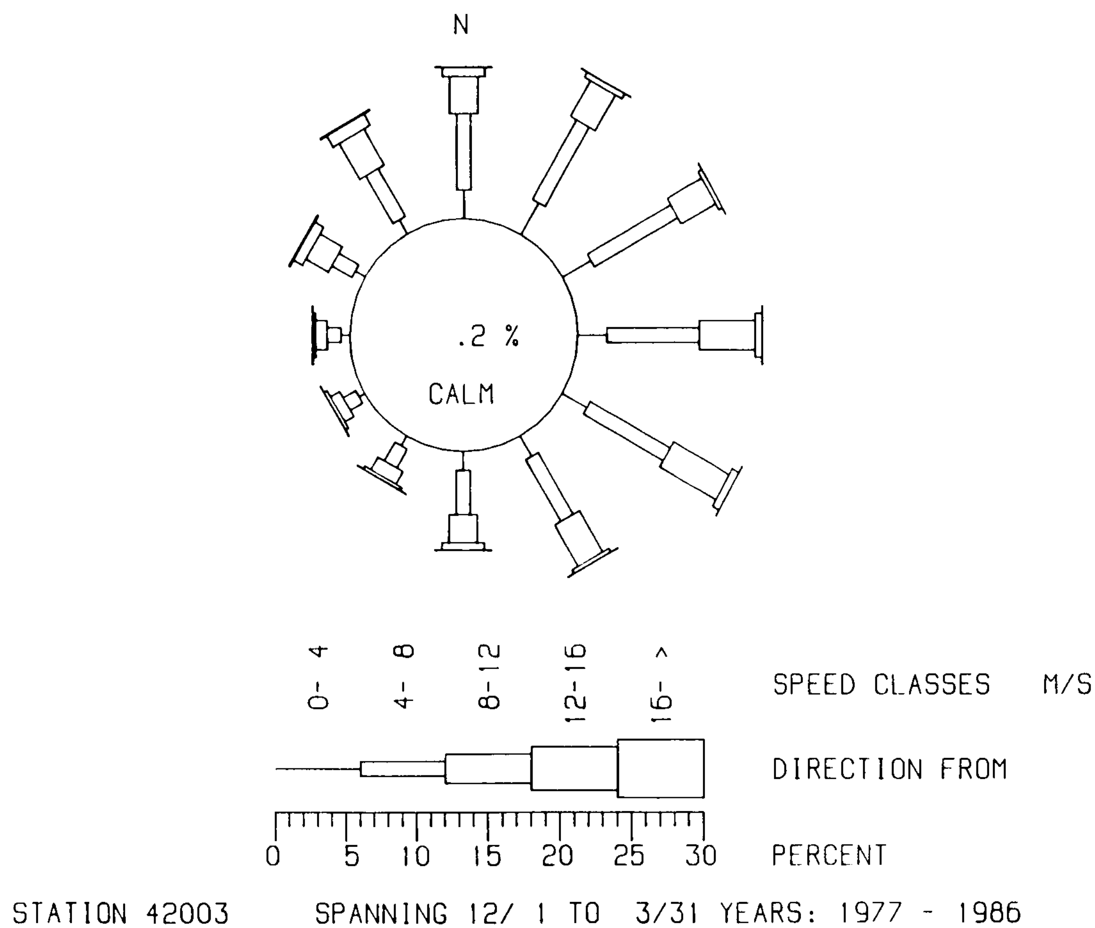


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

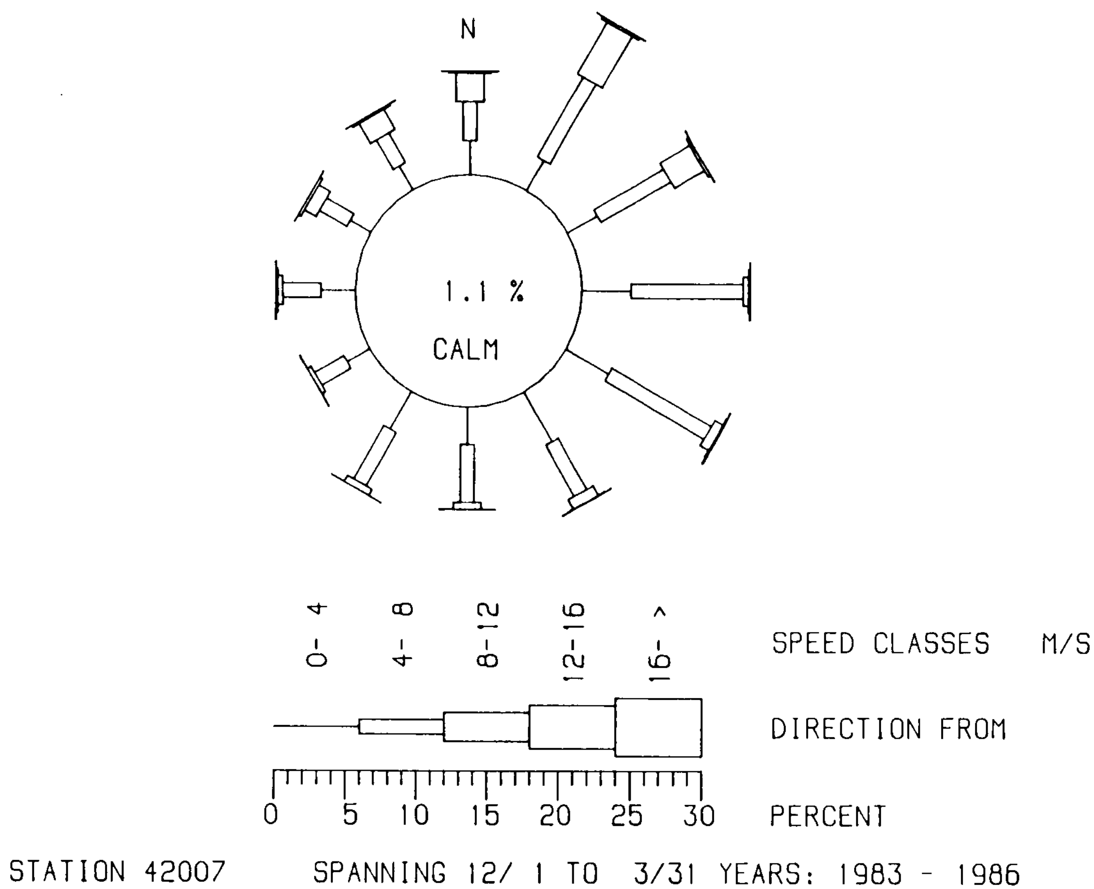


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

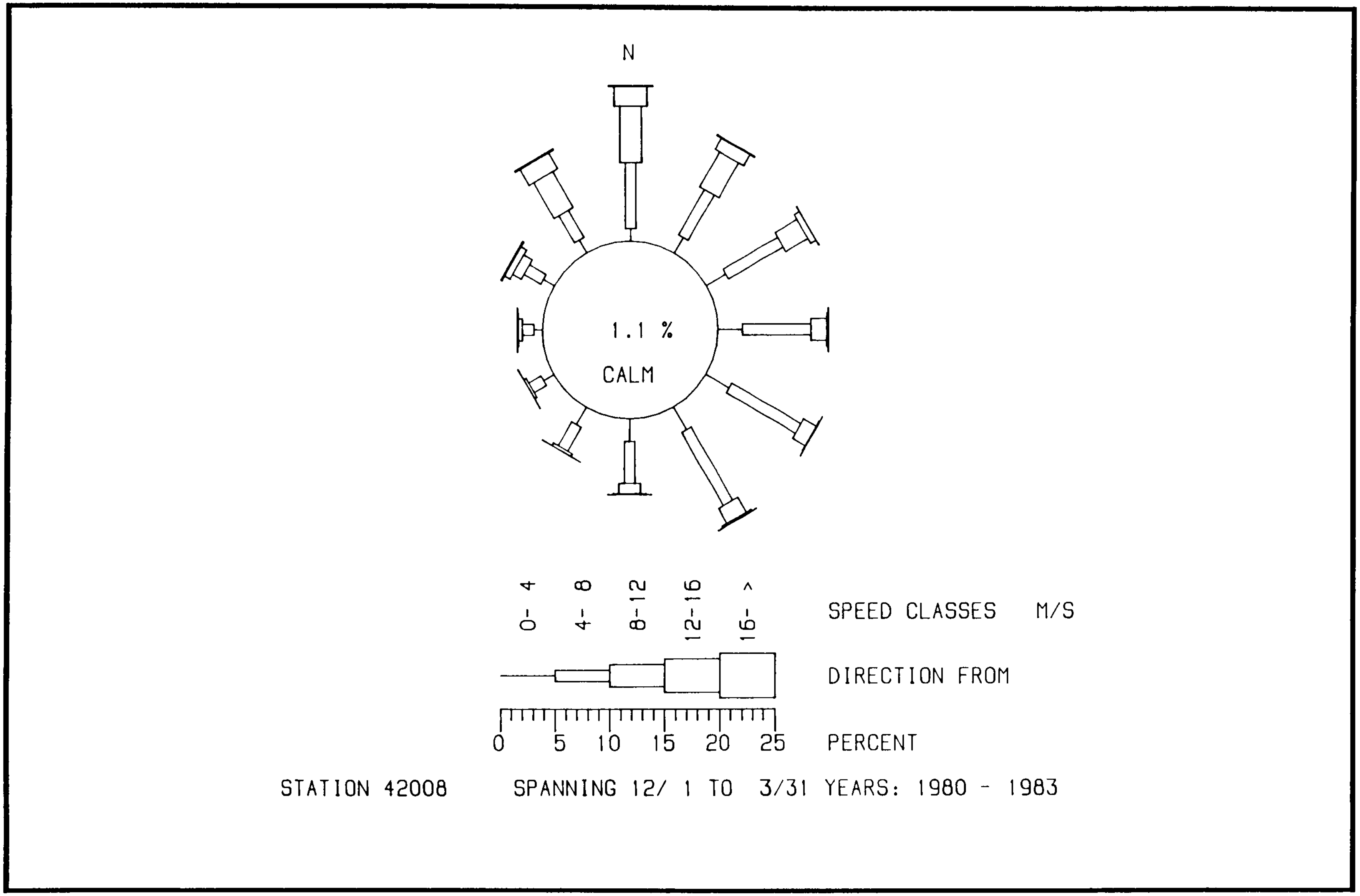


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

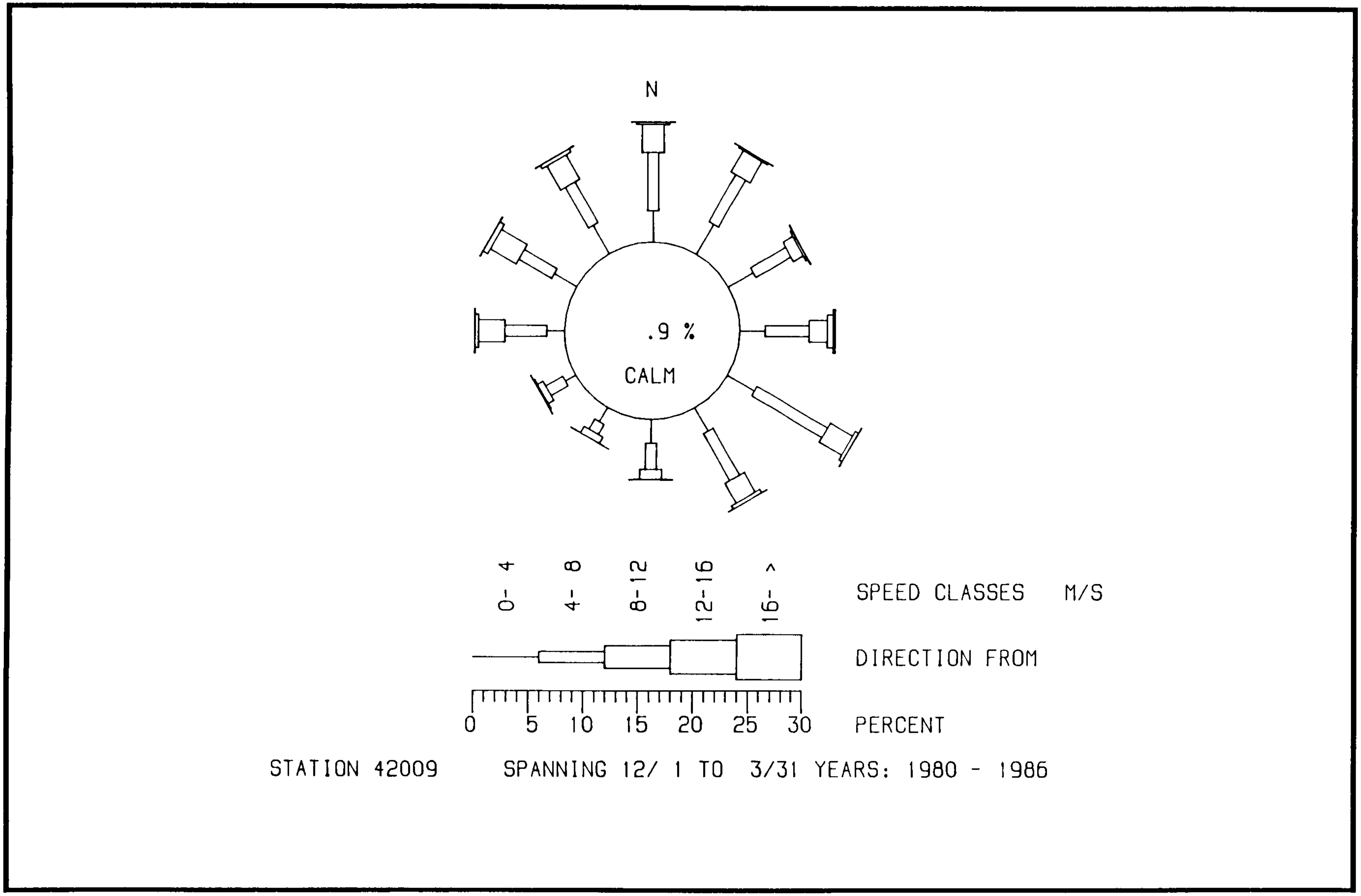


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

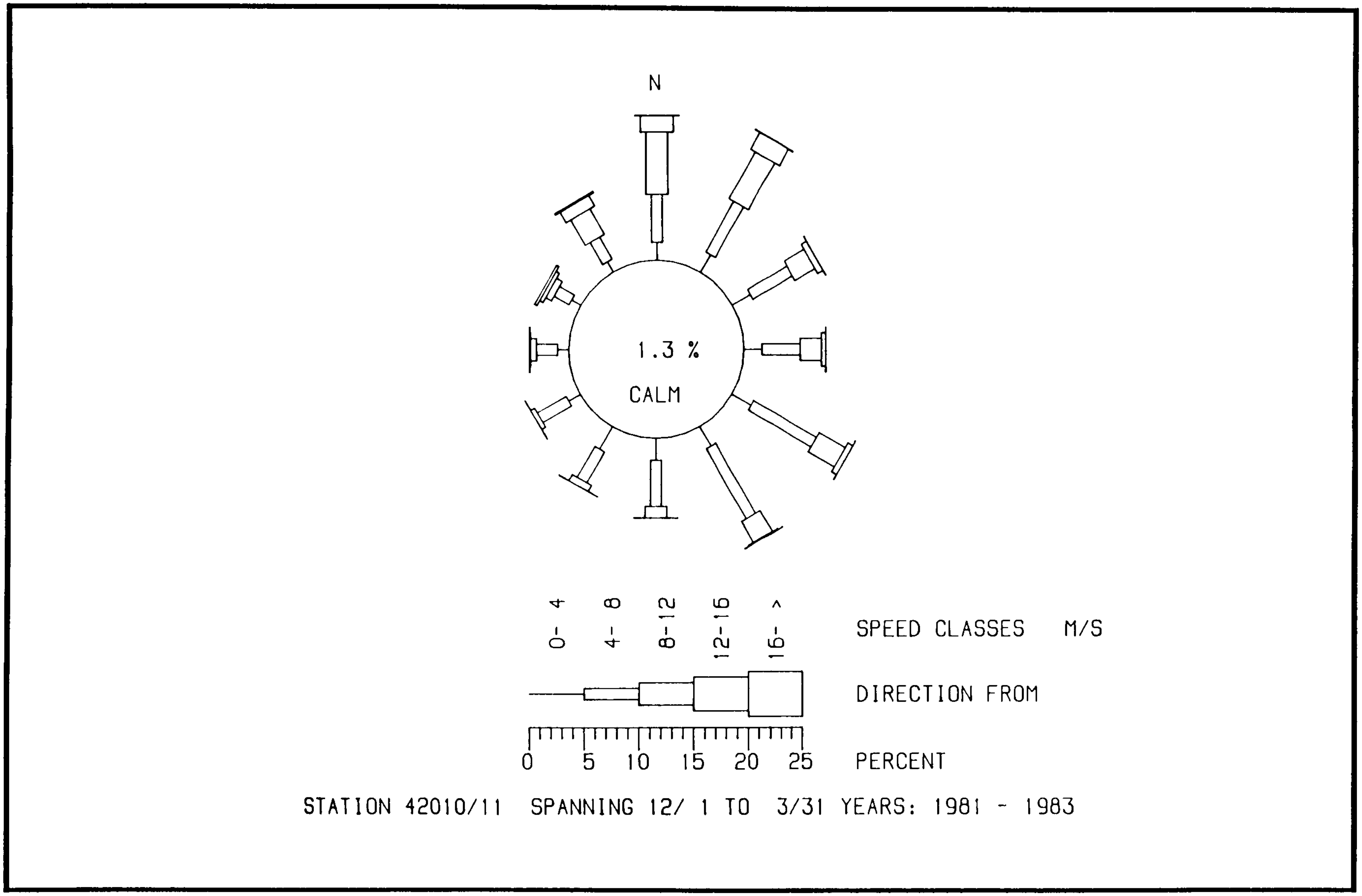
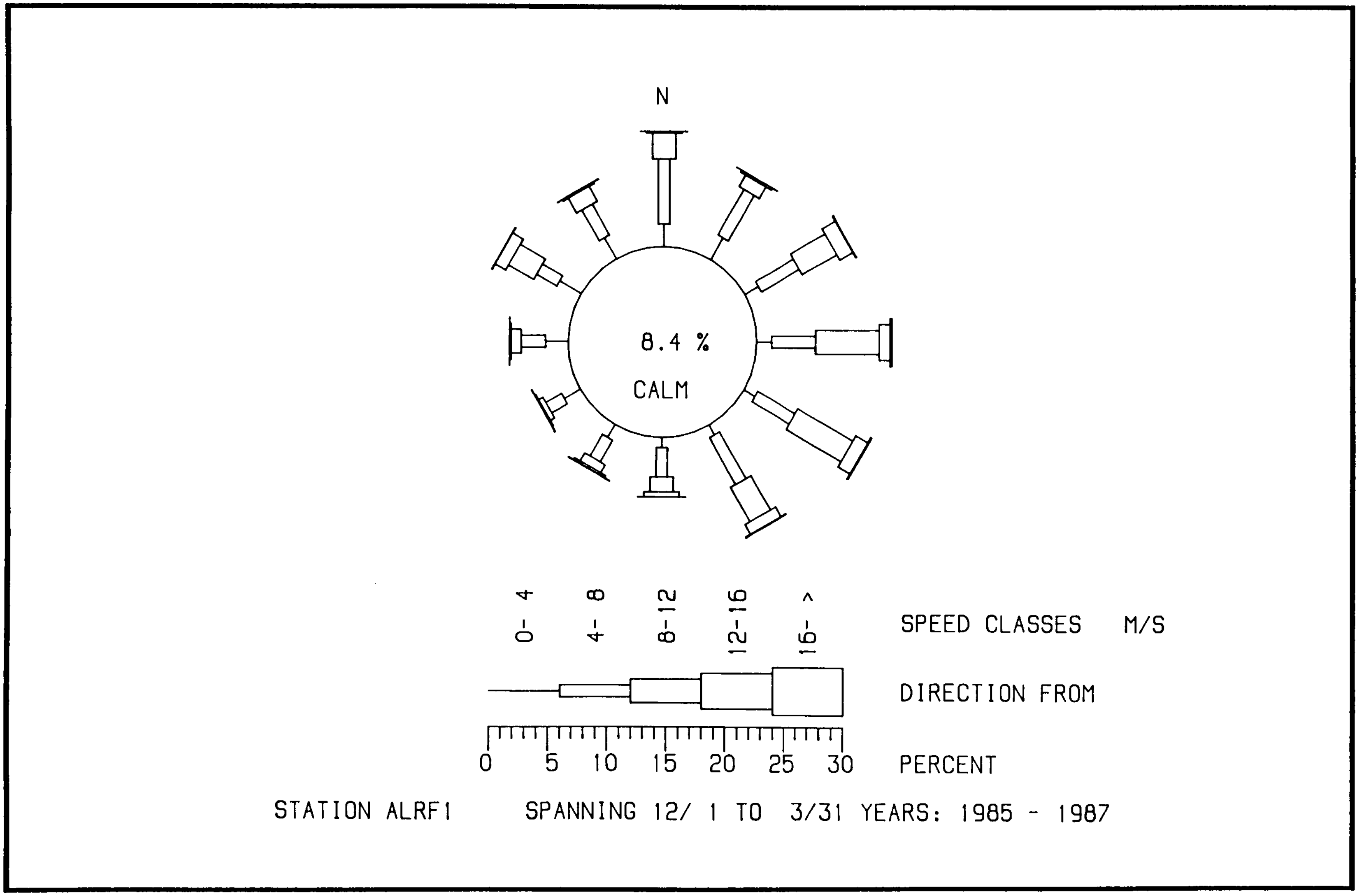


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.



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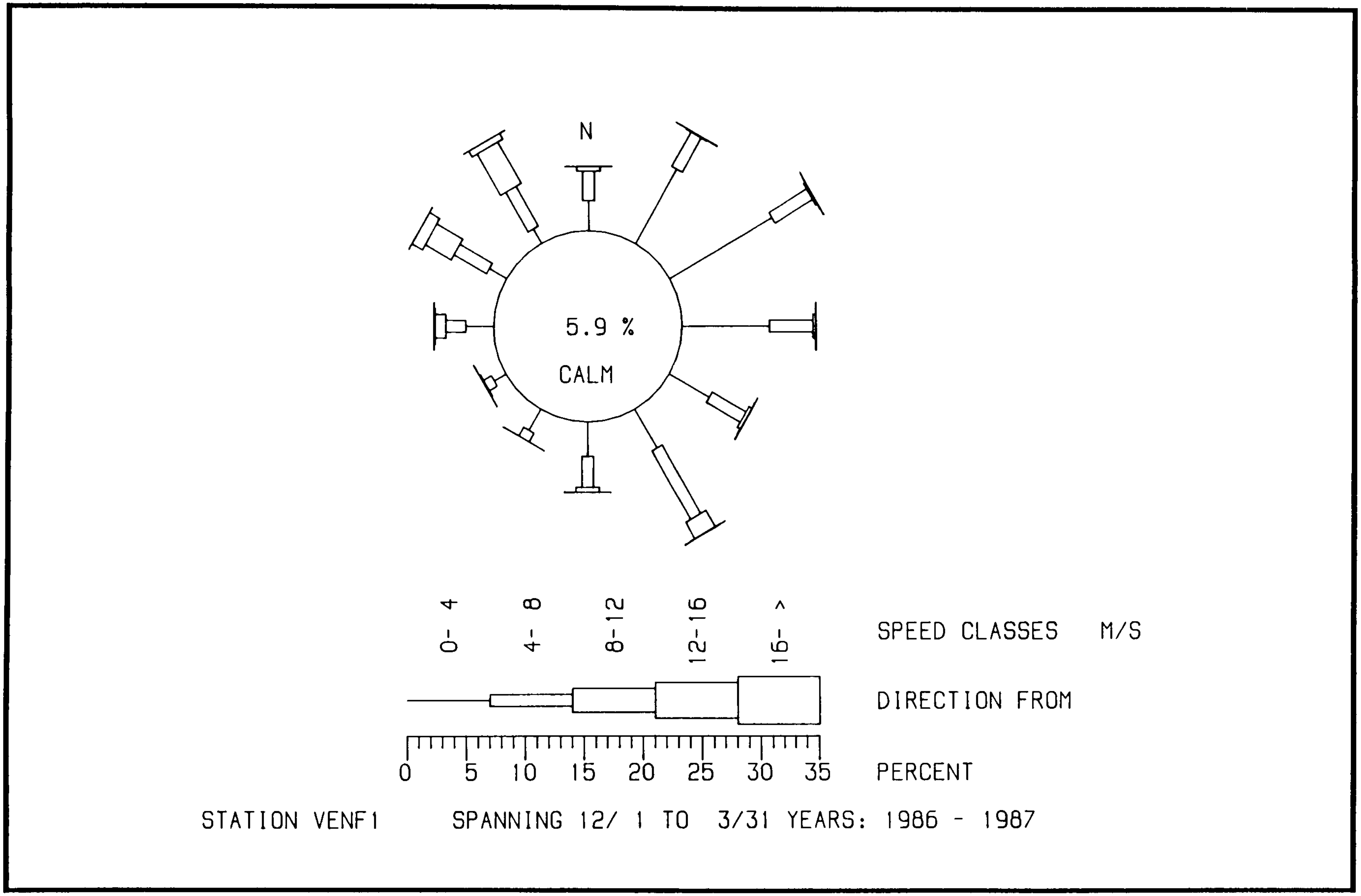


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

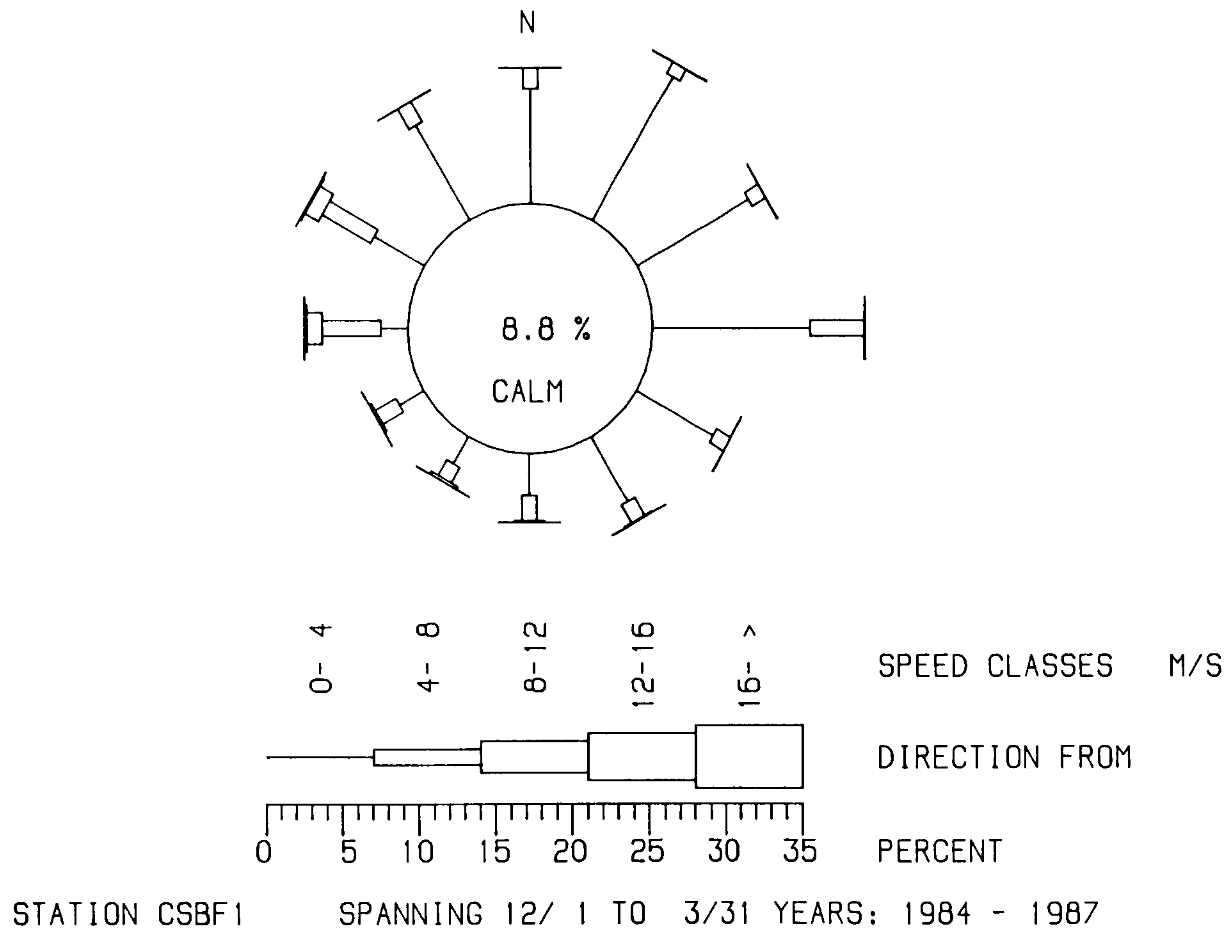


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

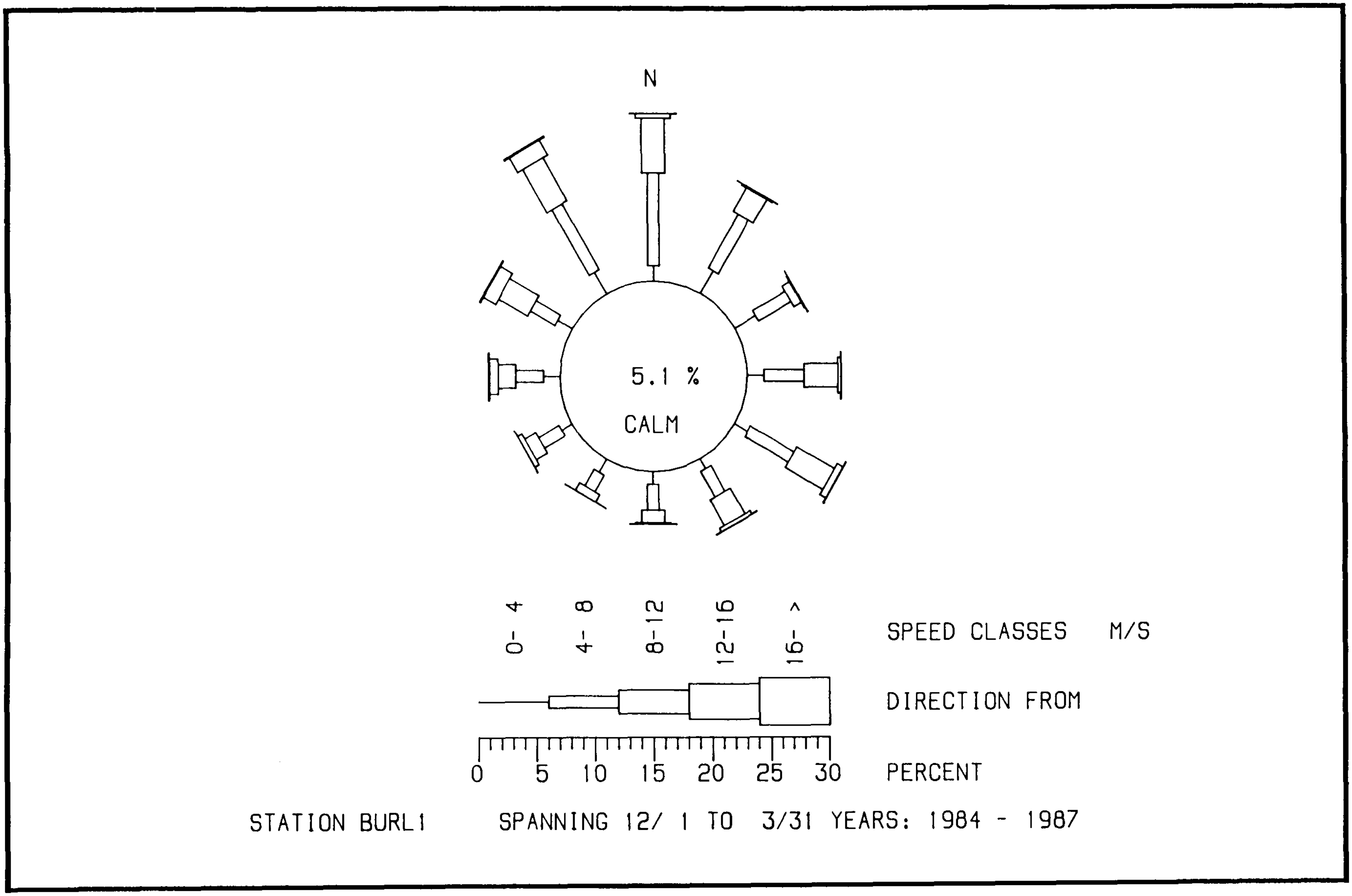


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

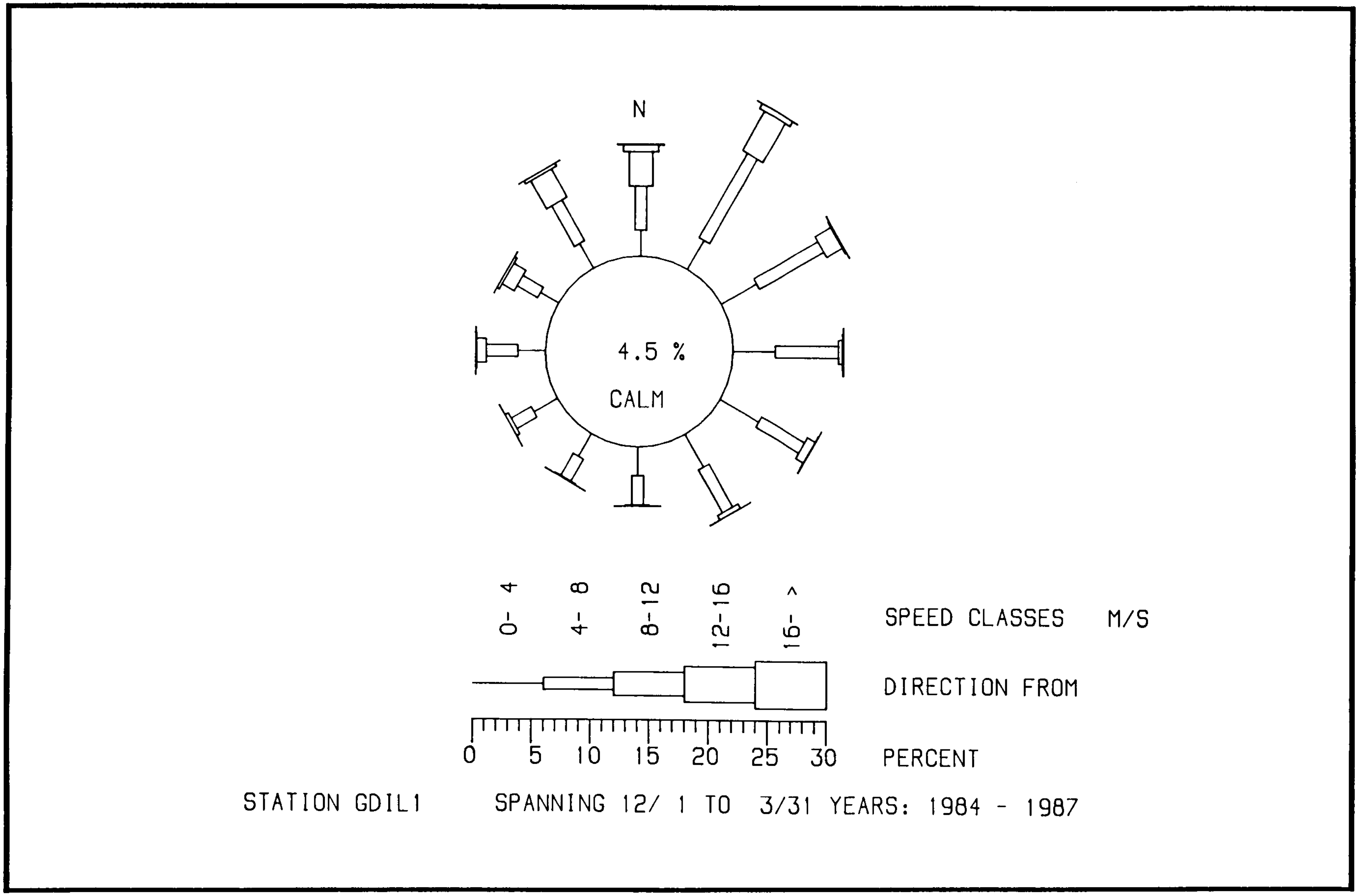


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

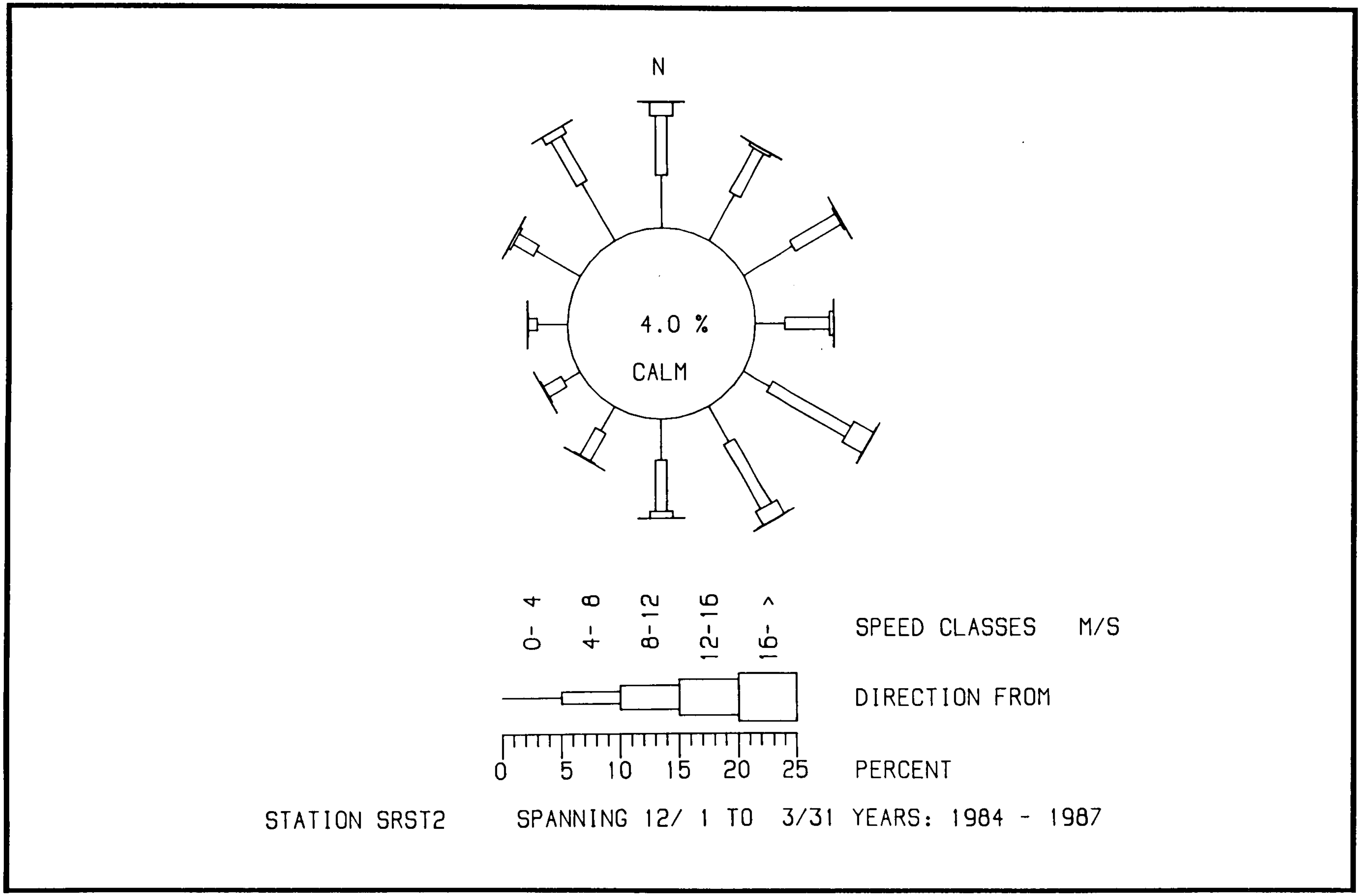


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

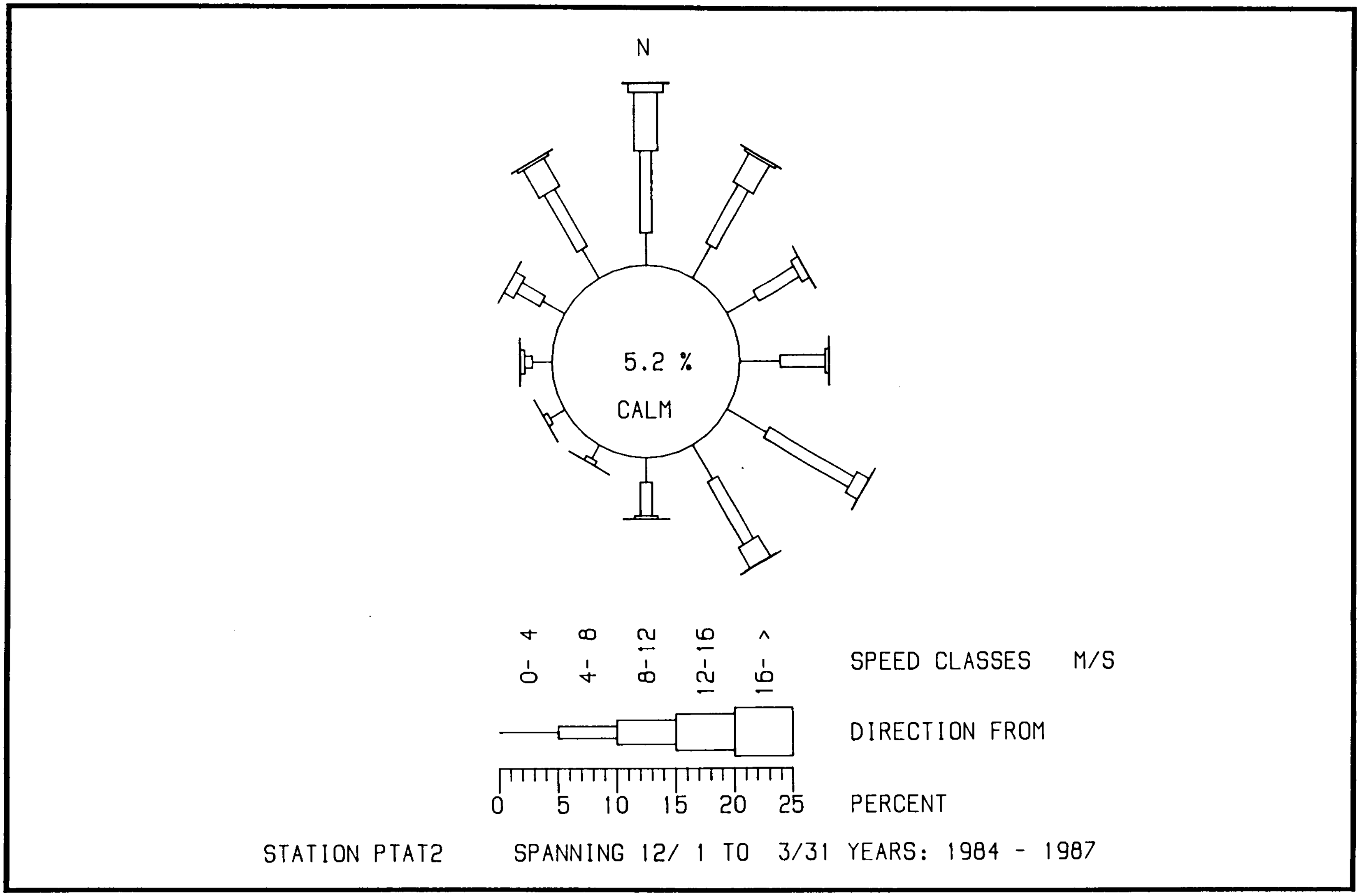


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

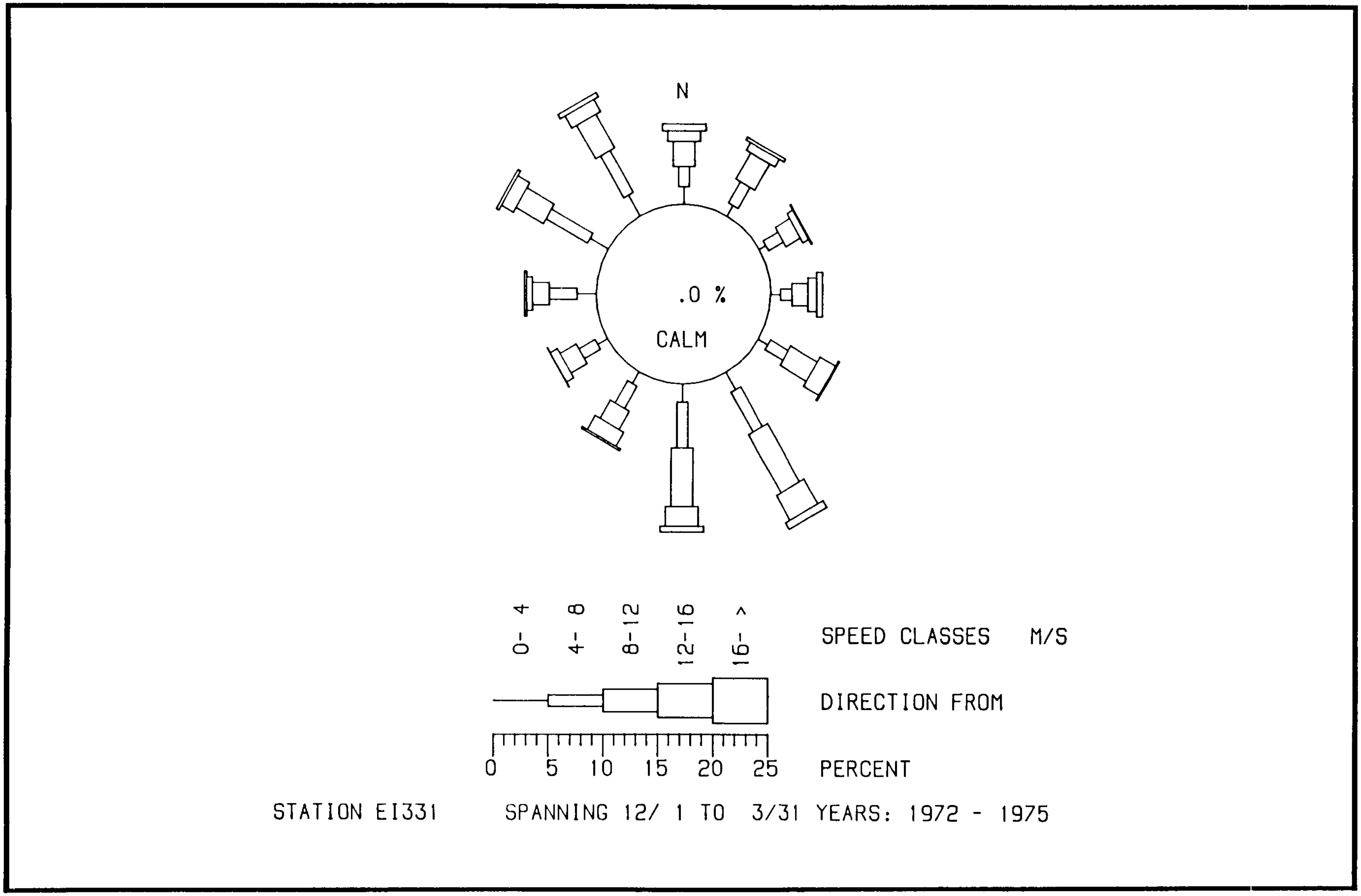


Figure 2.6-3 Winter seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

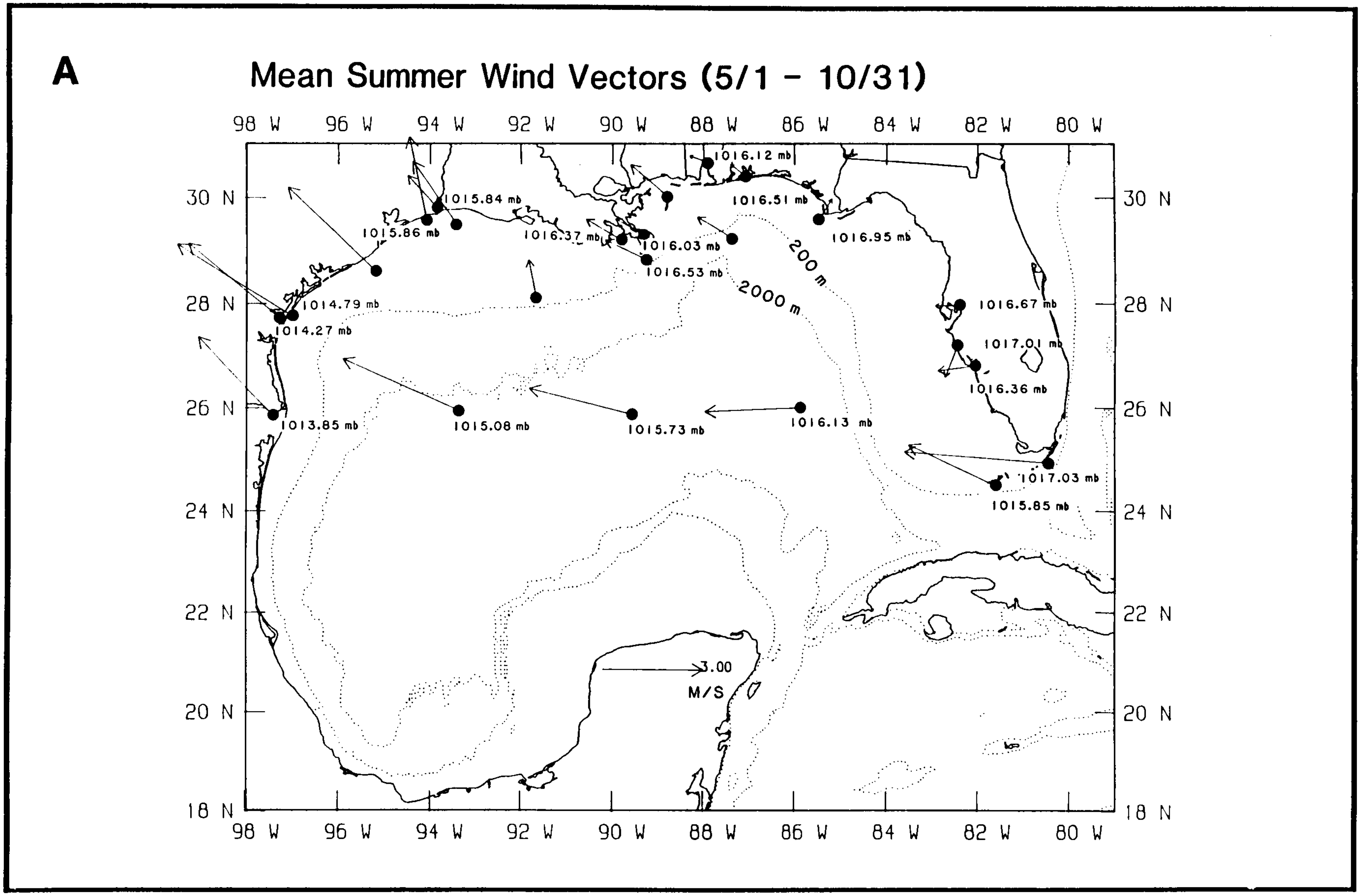


Figure 2.6-4a

Summer mean seasonal wind maps of vectors from buoys, CMAN and coastal stations. The station position is at the junction of the tail of the vector and the large dot. Mean atmospheric pressure (mb) is noted next to each station.

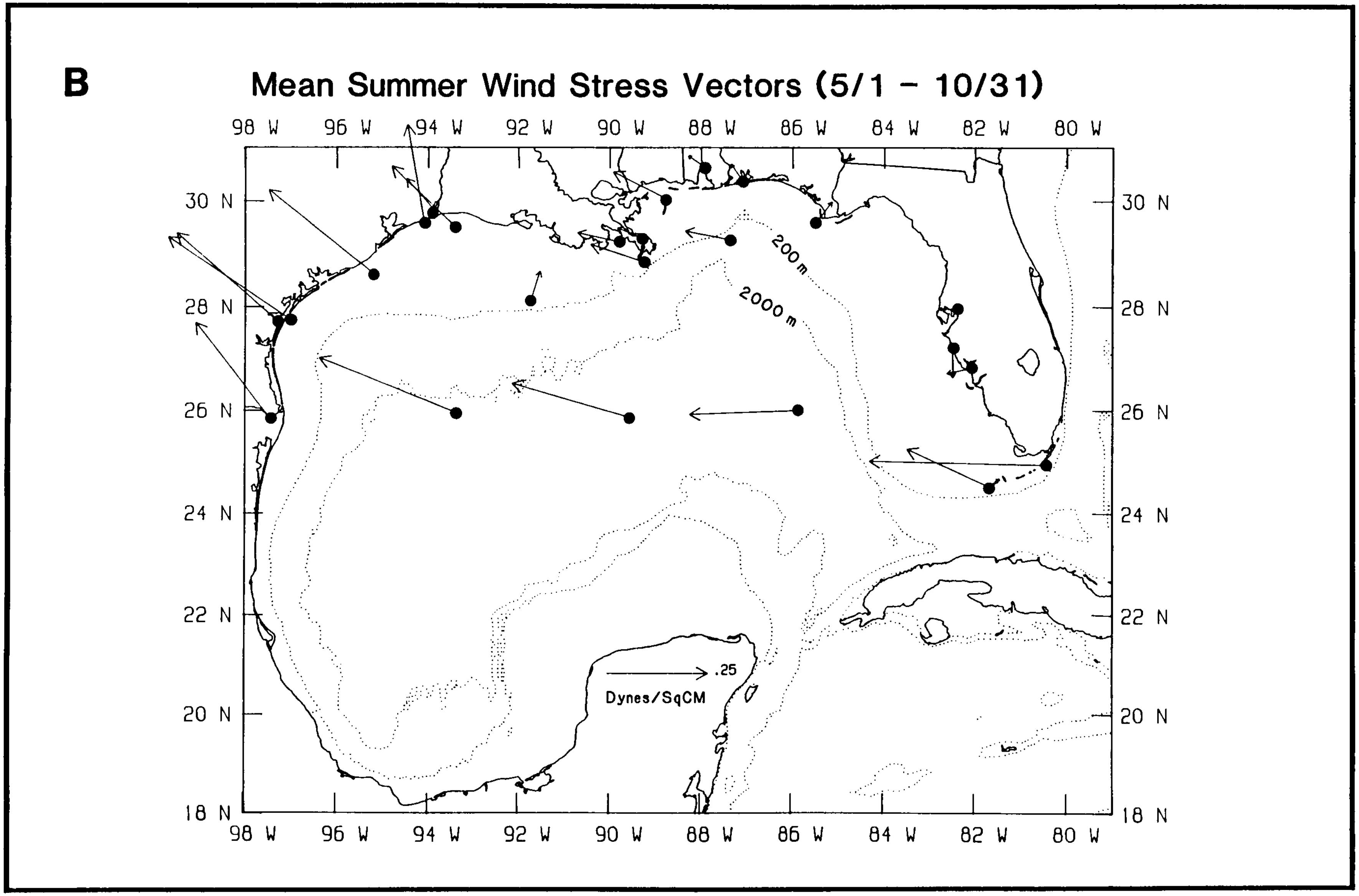


Figure 2.6-4b Summer mean seasonal wind stress maps of vectors from buoys, CMAN and coastal stations. The station position is at the junction of the tail of the vector and the large dot.

direction in the western Gulf is clearly seen in the wind time series given in Figure 2.6-1a, for Corpus Christi. In addition, this consistency clearly contrasts with the diversity found between mainland and coastal/shelf stations during the winter season. Mean atmospheric pressure for each station is also given on Figure 2.6-4a, with high pressure along the northern and western coast, compared with those along 26°N, producing pressure gradients geostrophically consistent with the mean wind directions. The largest change in wind direction between winter and summer is seen at the buoy off Freeport, Texas (42008) and at the CMAN stations along the Texas-Louisiana coast, where there is about a 90° change from northeasterly to southeasterly, respectively.

The summer wind roses (Figure 2.6-5) again show a marked change between the Florida coast and the buoys and the Texas coastal stations. Thus, the Tampa and Pensacola summer wind roses are similar to their respective winter roses but with a higher percentage of values in the lowest speed category (0-4 ms^{-1}). The 26°N buoys, Brownsville, Corpus Christi and Texas-Louisiana shelf buoys show the predominance of a small range of directions ranging from east-southeast to south-southeast. Mean wind speeds also increase from east to west and from north to south in the eastern Gulf. The Key West rose is again similar to the roses for the 26°N buoys and is strongly influenced by the southeast trade winds. Frequency distributions corresponding to the roses are given in Appendix D (Section D.2).

The transitional months, April and November, can show characteristics of either season. Thus, April in Florida is very similar to March with generally weaker winds and fewer storms. April in south Texas, however, tends to show characteristics of the summer season, with winds predominantly from the southeast. November tends to be more variable, depending on the first winter storms and whether the jet stream shifts to south over the Great Plains. Thus, for completeness, the wind roses for April and November are shown in Figures 2.6-6 and 2.6-7, respectively. Because of shorter periods and fewer data values, particularly for shelf buoys, mean wind vectors are not displayed. However, the mean east and north wind components for April and November are given in the Appendix D (Section D.3) frequency distribution tables.

2.7 Synoptic-Scale Atmospheric Systems

2.7.1 Extratropical Cyclones

The winter season storm track climatology is influenced strongly by the extratropical cyclone tracks in the Gulf of Mexico. The maximum (4.2 storms during the 4-month period in a 2½° latitude by 5° longitude cell) value is found in grid cell 4, located in the north central Gulf, using the 100-year data set (initially described by Hayden, 1980). This data is presented graphically in Figure 2.7.1-1. This analysis delineates the Texas-Louisiana shelf area as a most prominent region for storm tracks during the winter season in the Gulf of Mexico. As one would expect, the mean and standard deviation of the storm frequencies tend to decrease in the southerly and easterly direction. Below approximately 25°N, the mean storm frequencies fall below 1 occurrence during the winter period. Following the earlier work of Bosserman and Dolan (1968), these two regions (i.e. Texas-Louisiana shelf, north central Gulf) have been shown to represent areas of cyclogenesis for storm tracks passing in the vicinity of Cape Hatteras. These two storm tracks are classified as types 4 and 5 in Bosserman and Dolan's (1968) original manuscript.

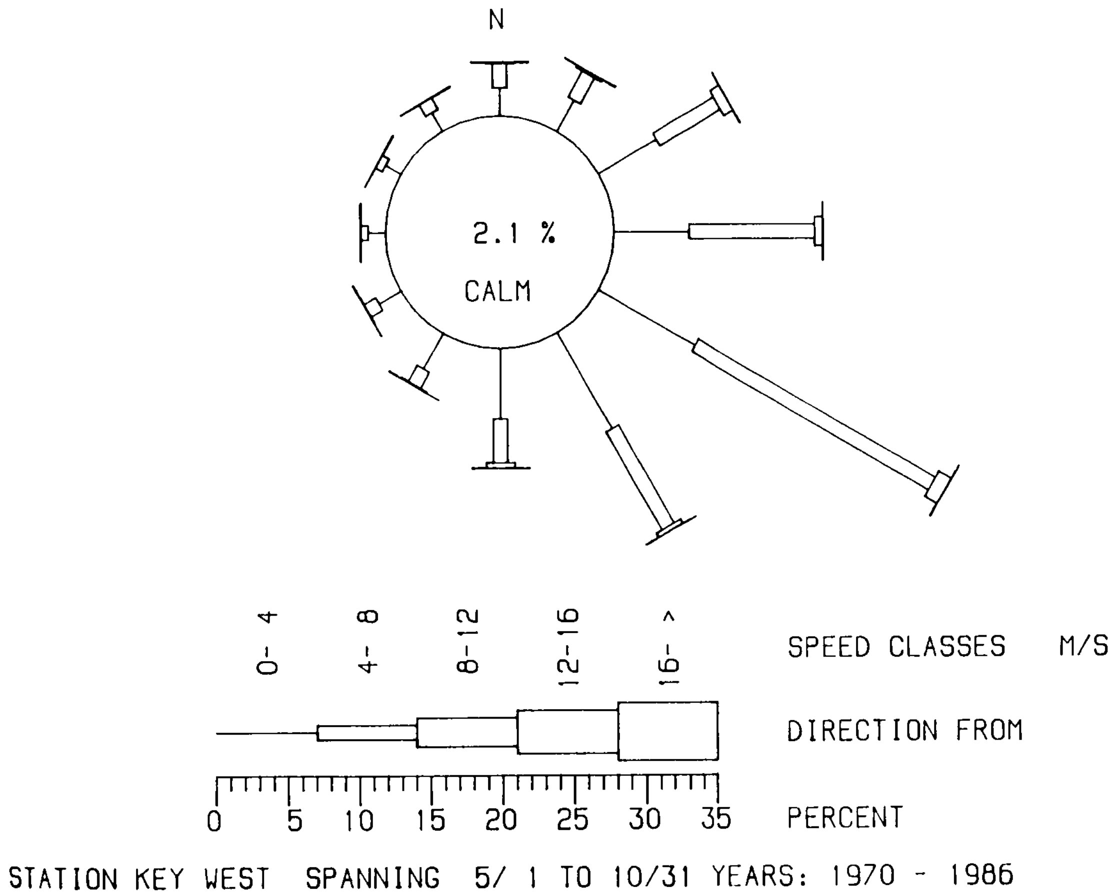
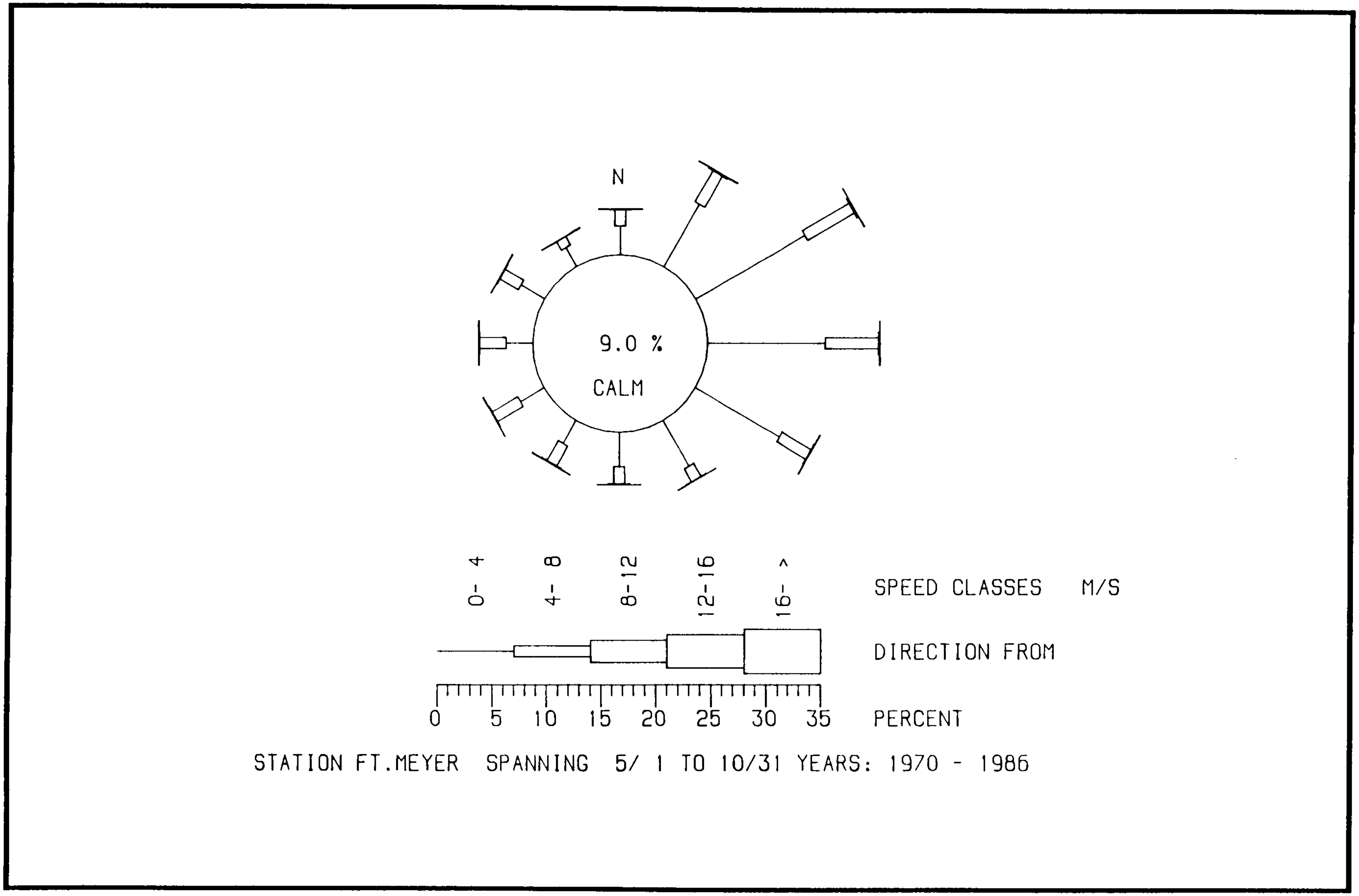


Figure 2.6-5 Summer seasonal wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.



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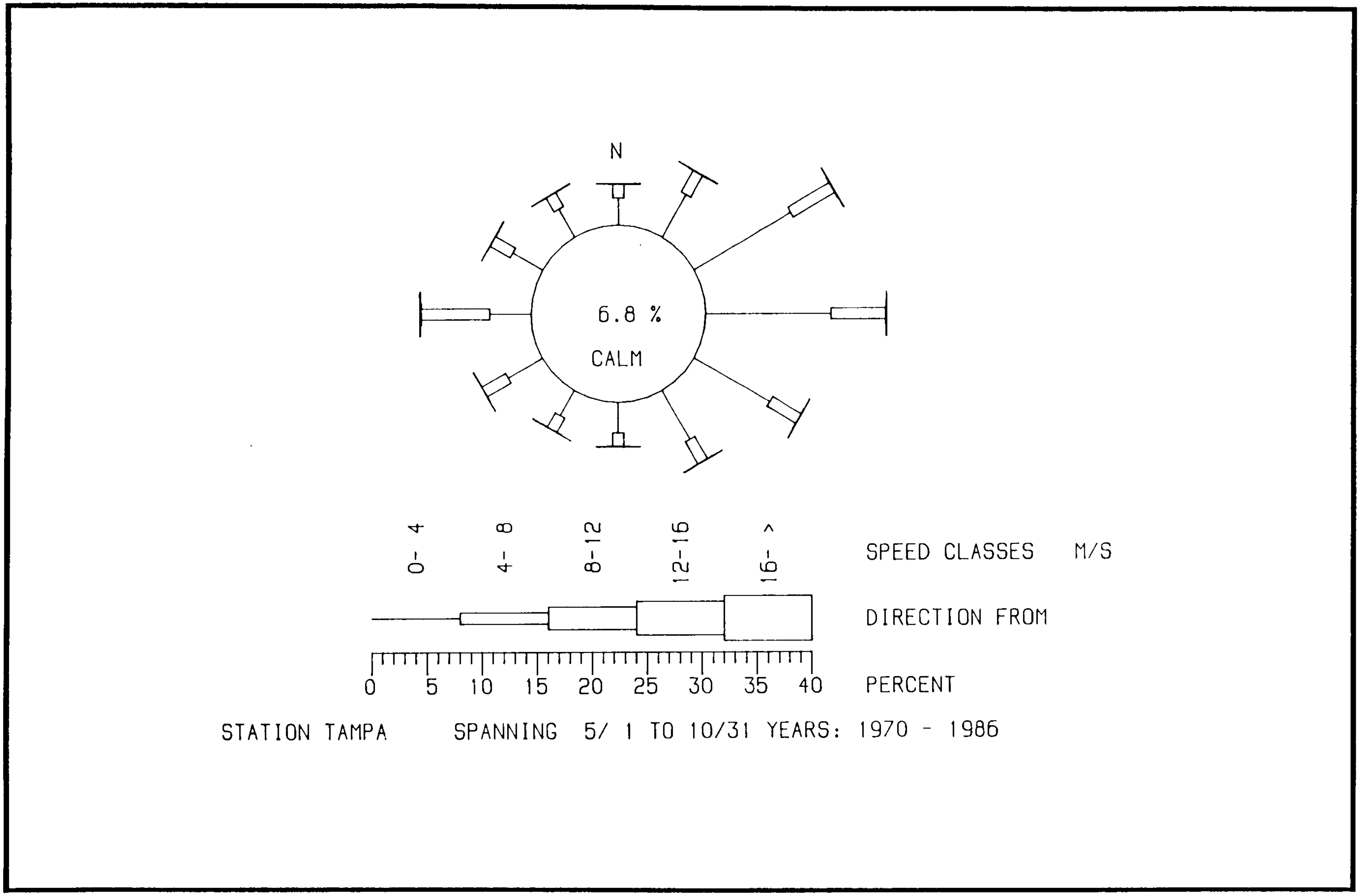

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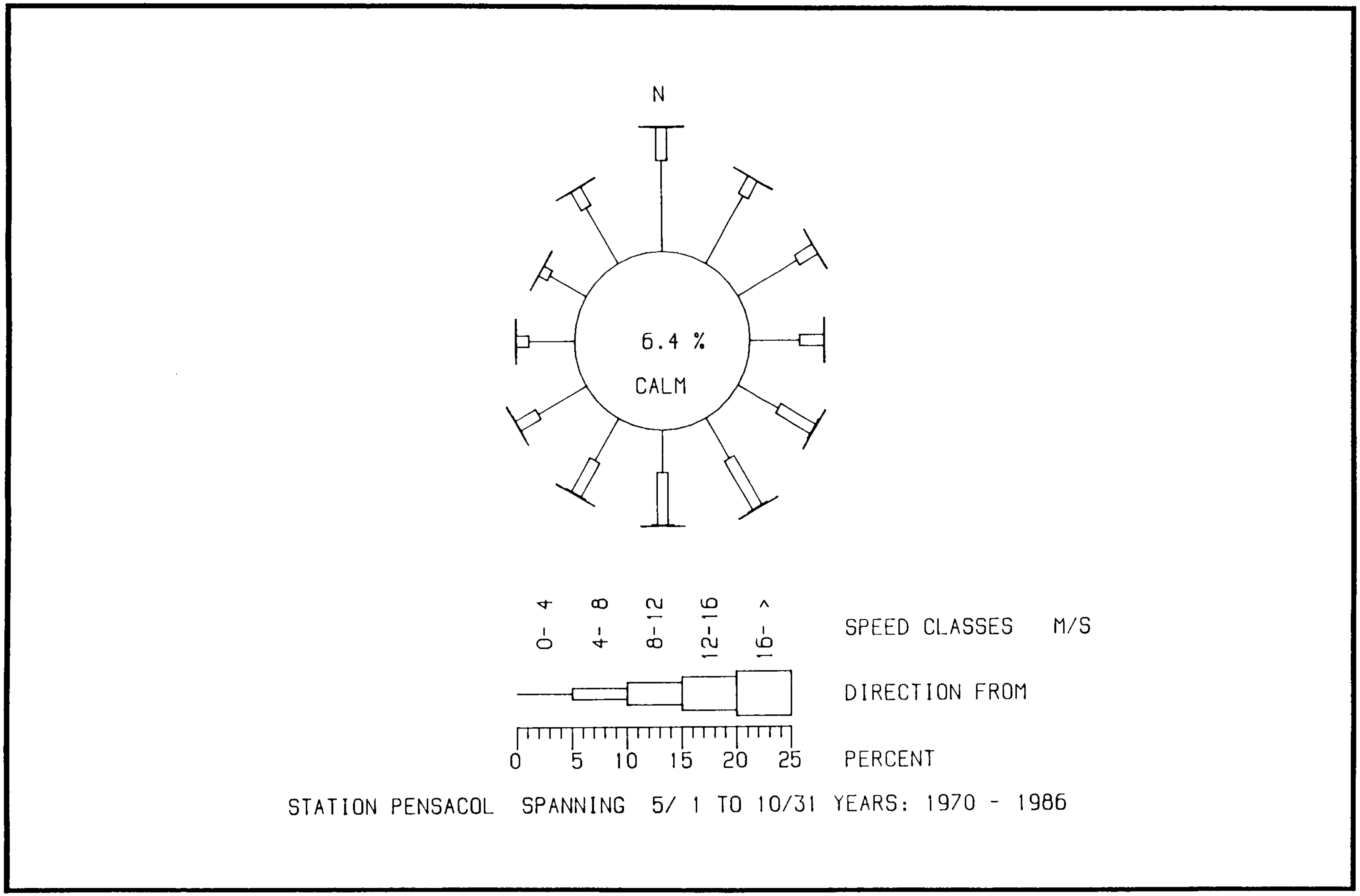

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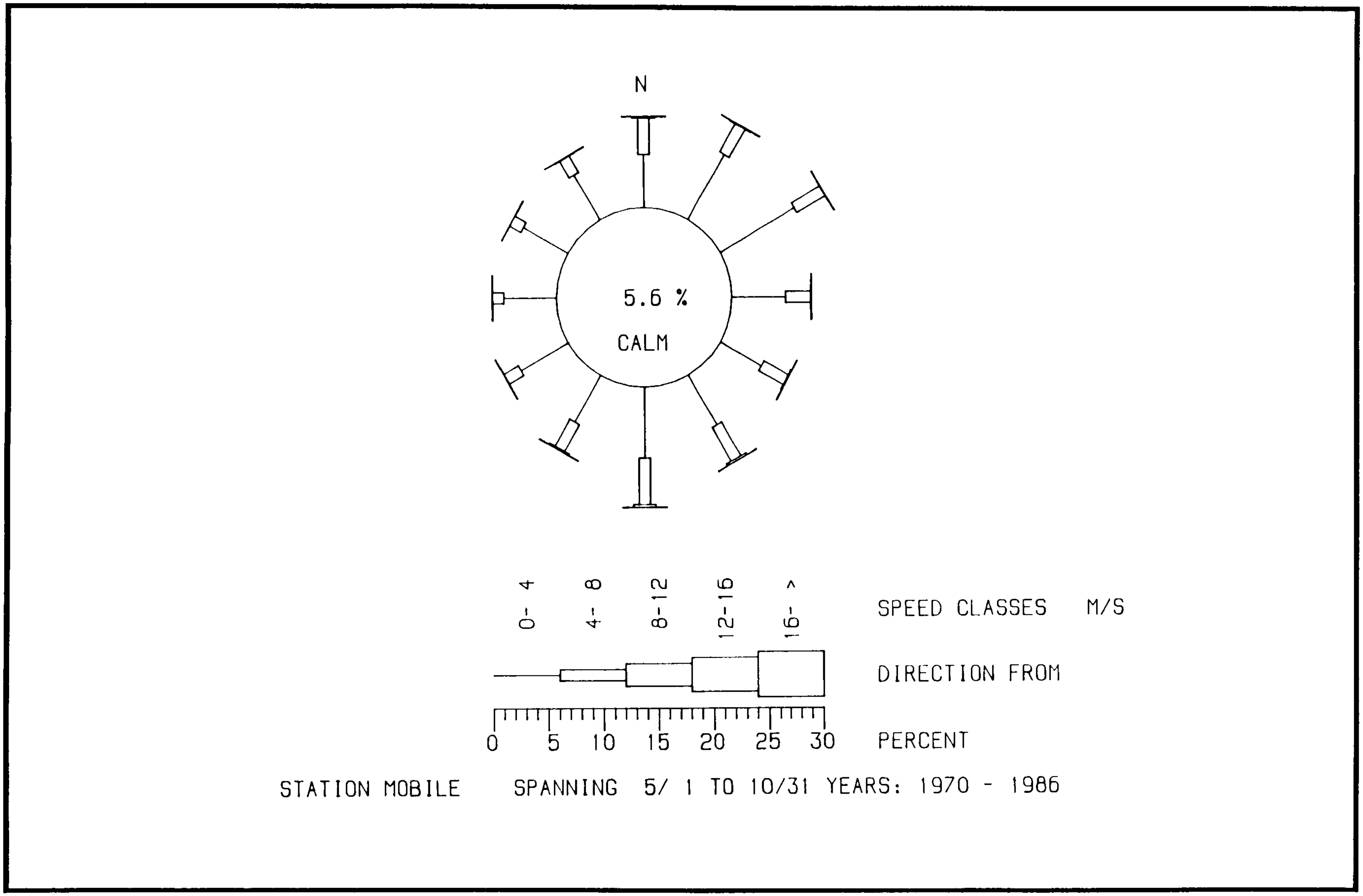

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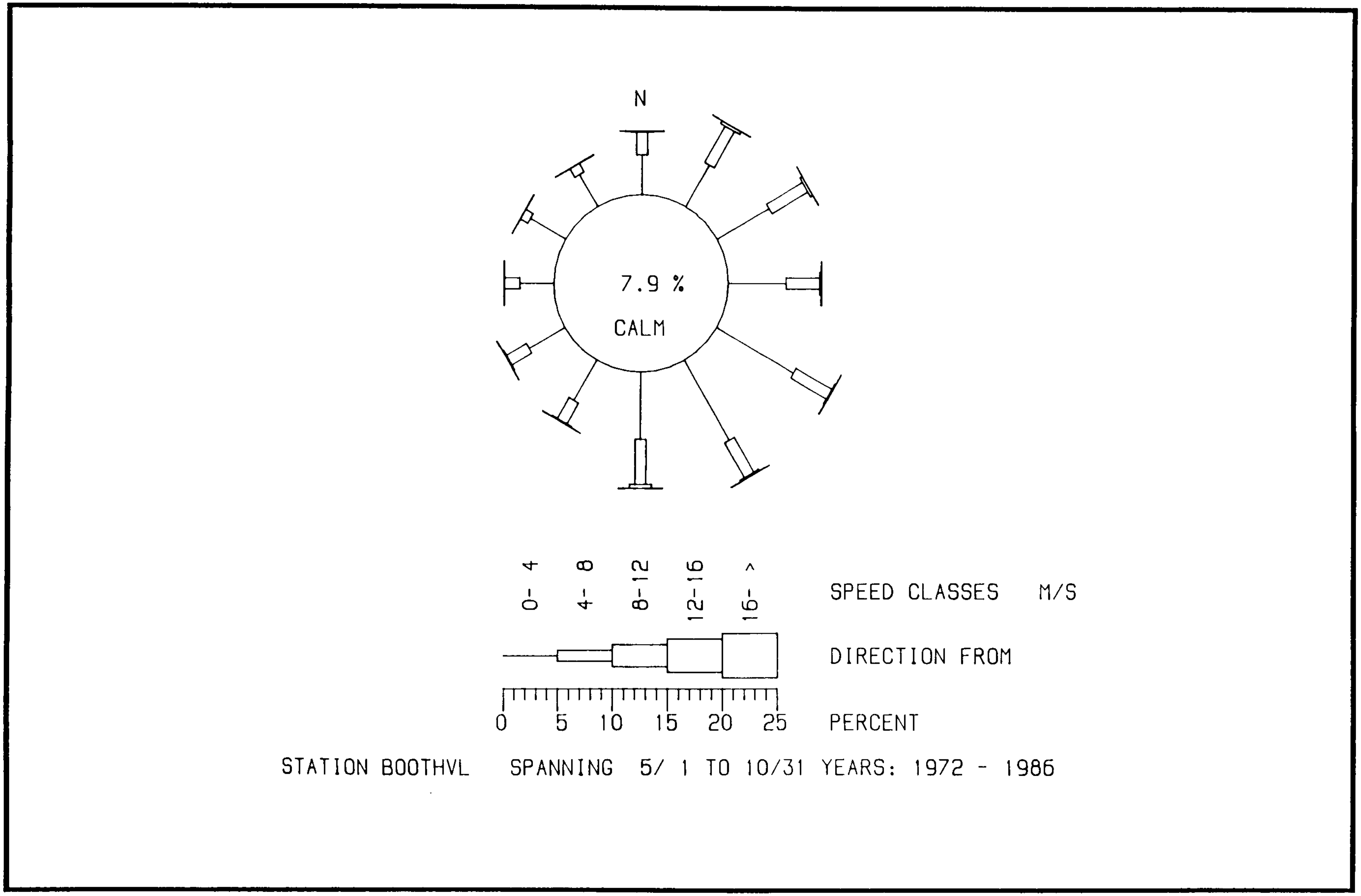

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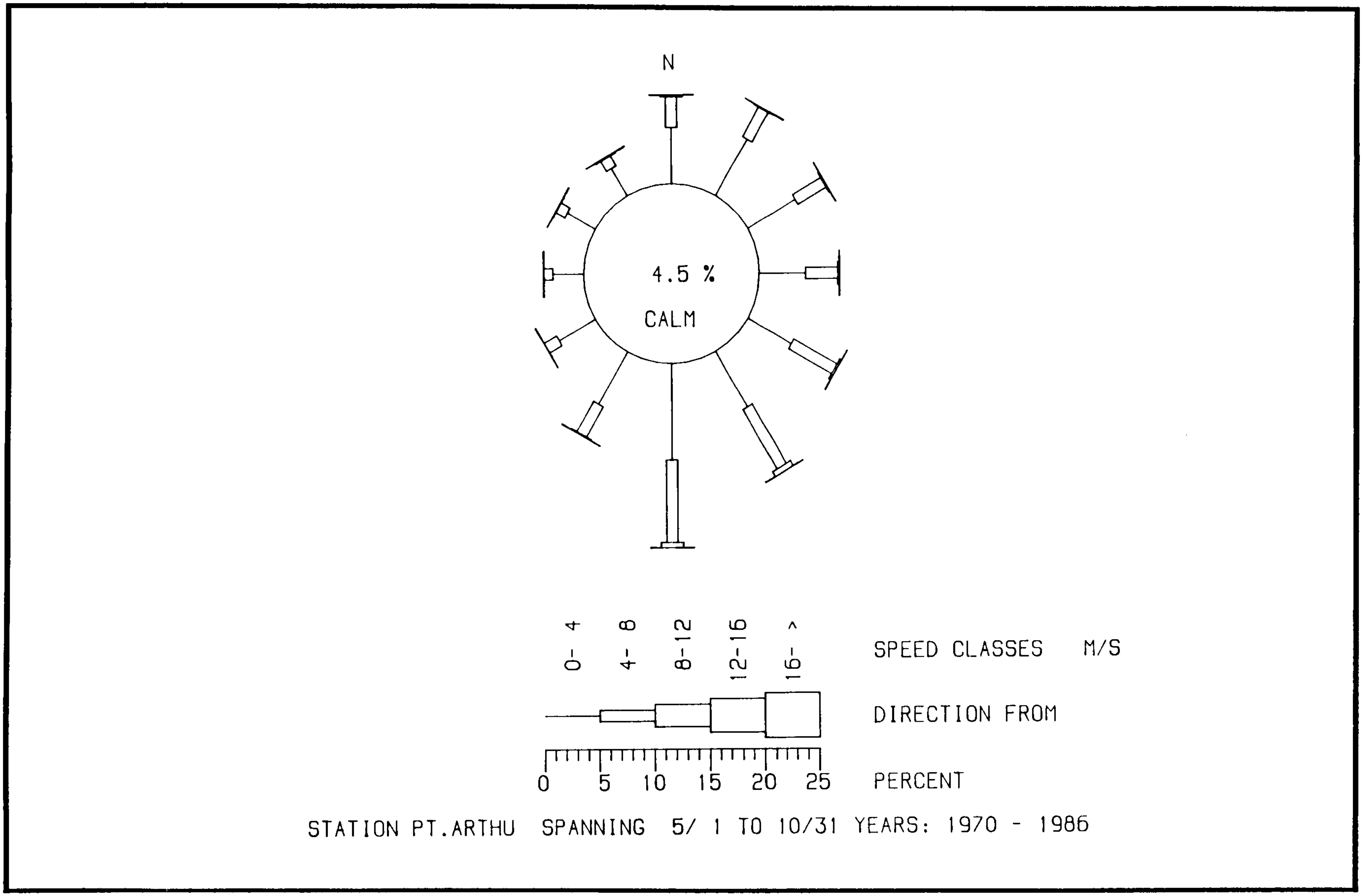

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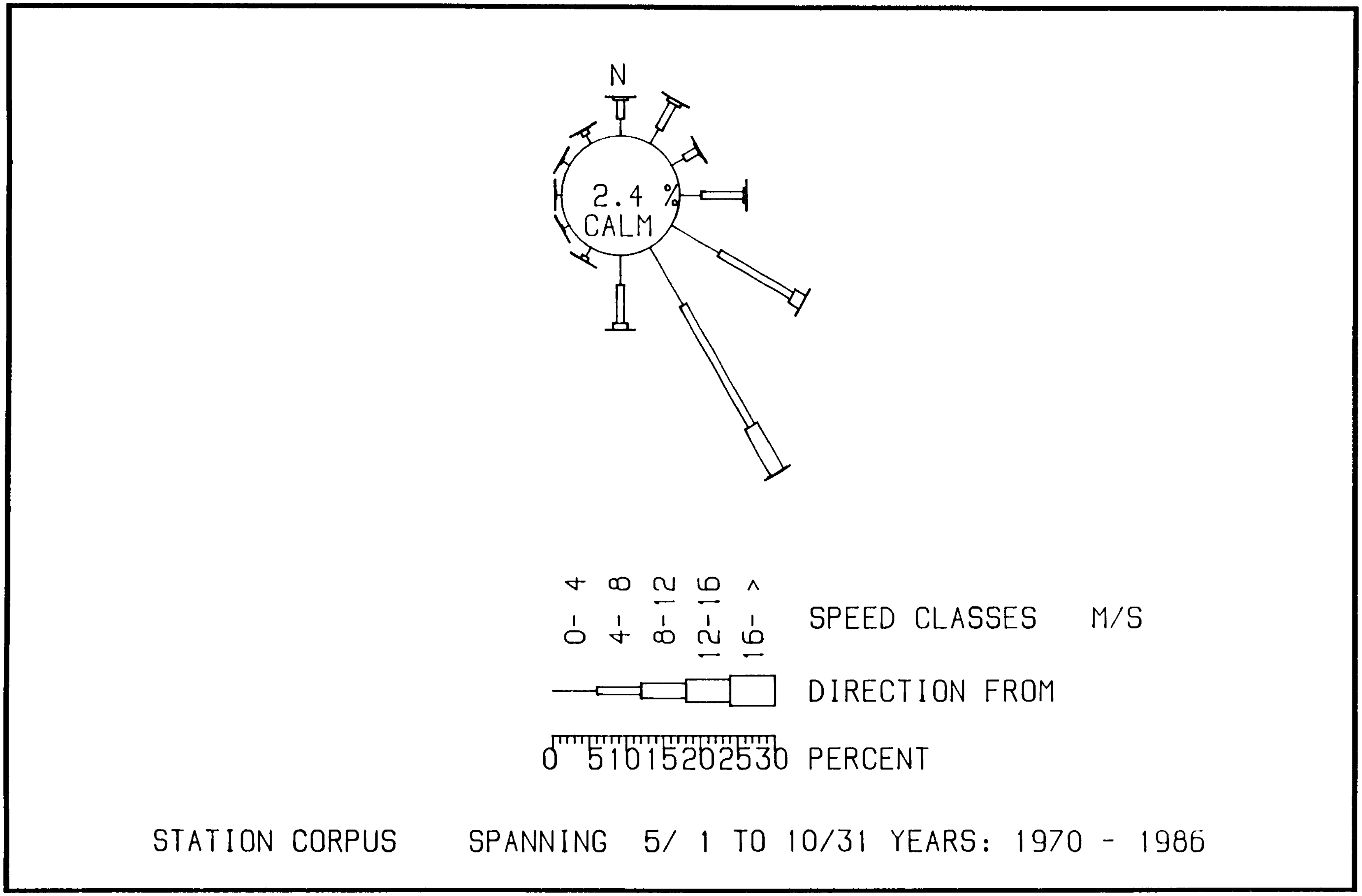

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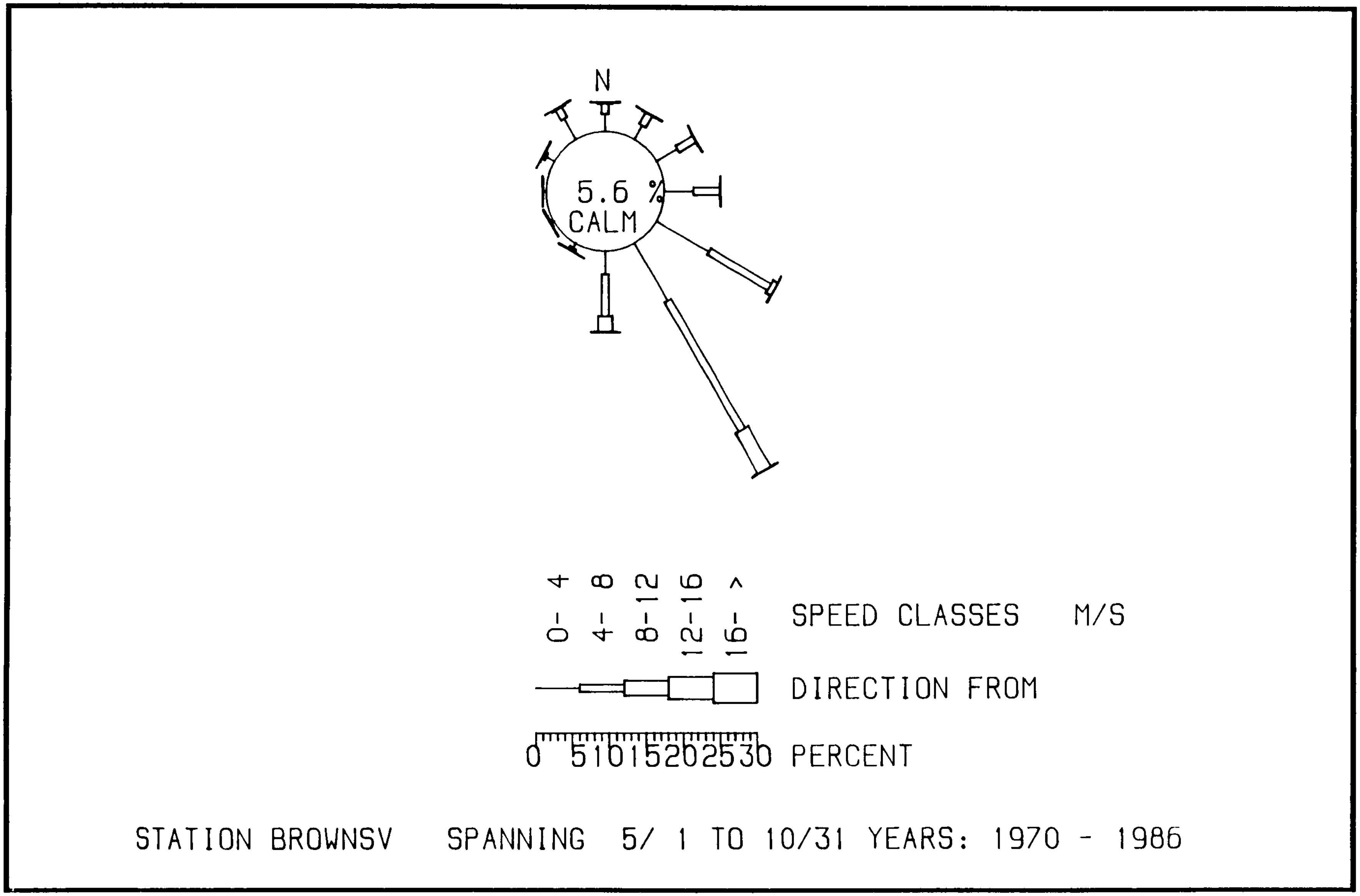

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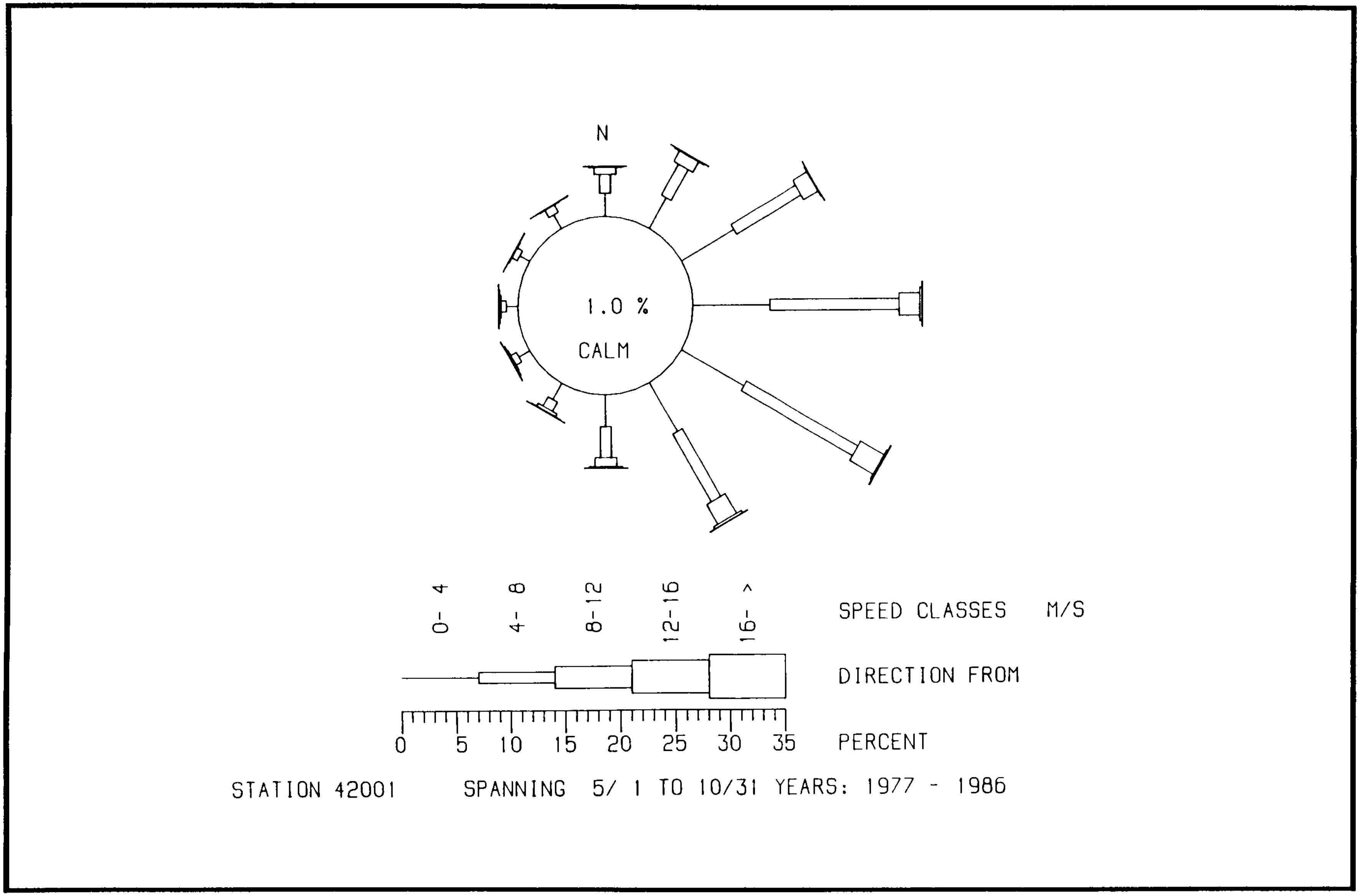

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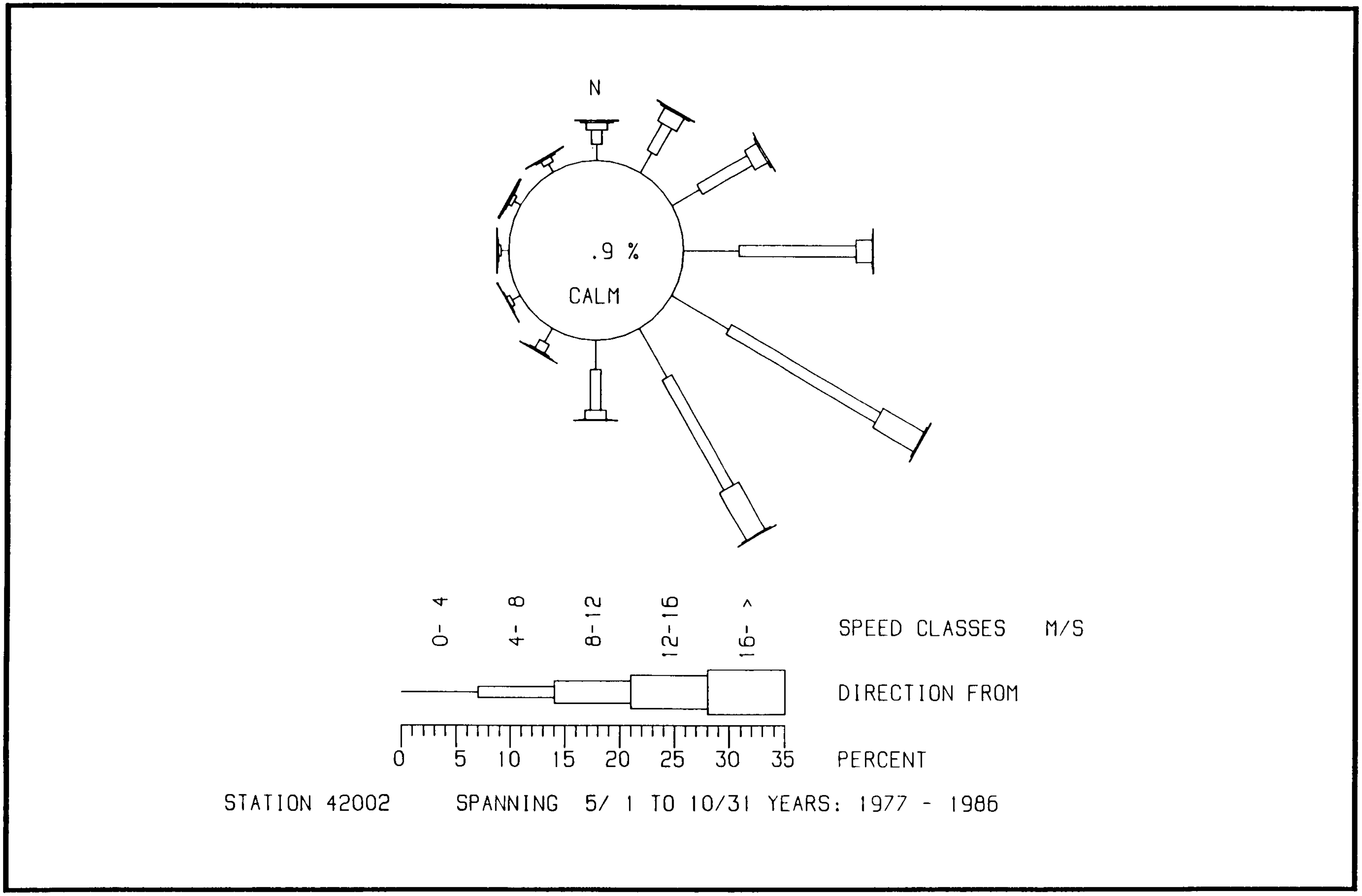

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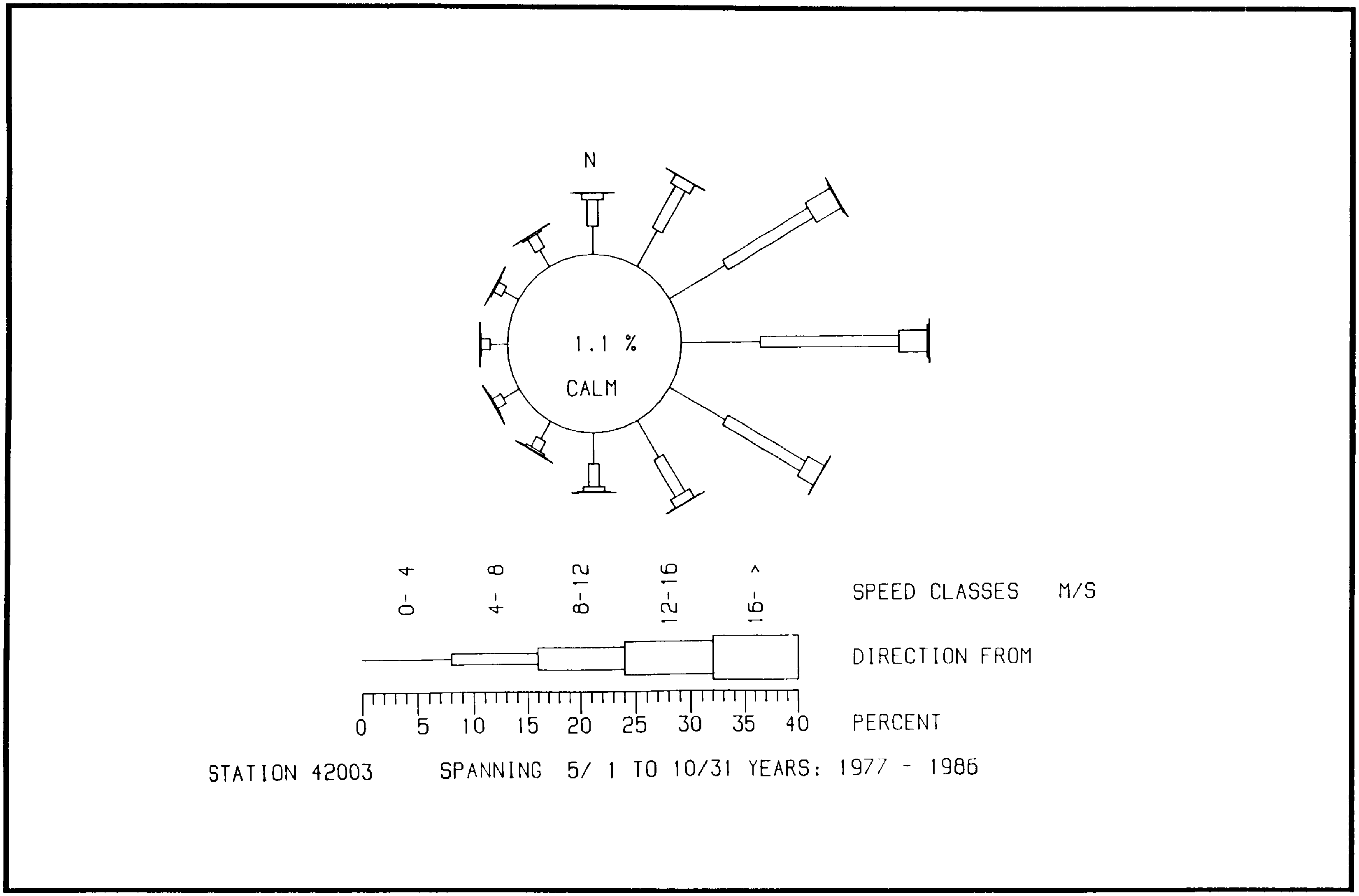

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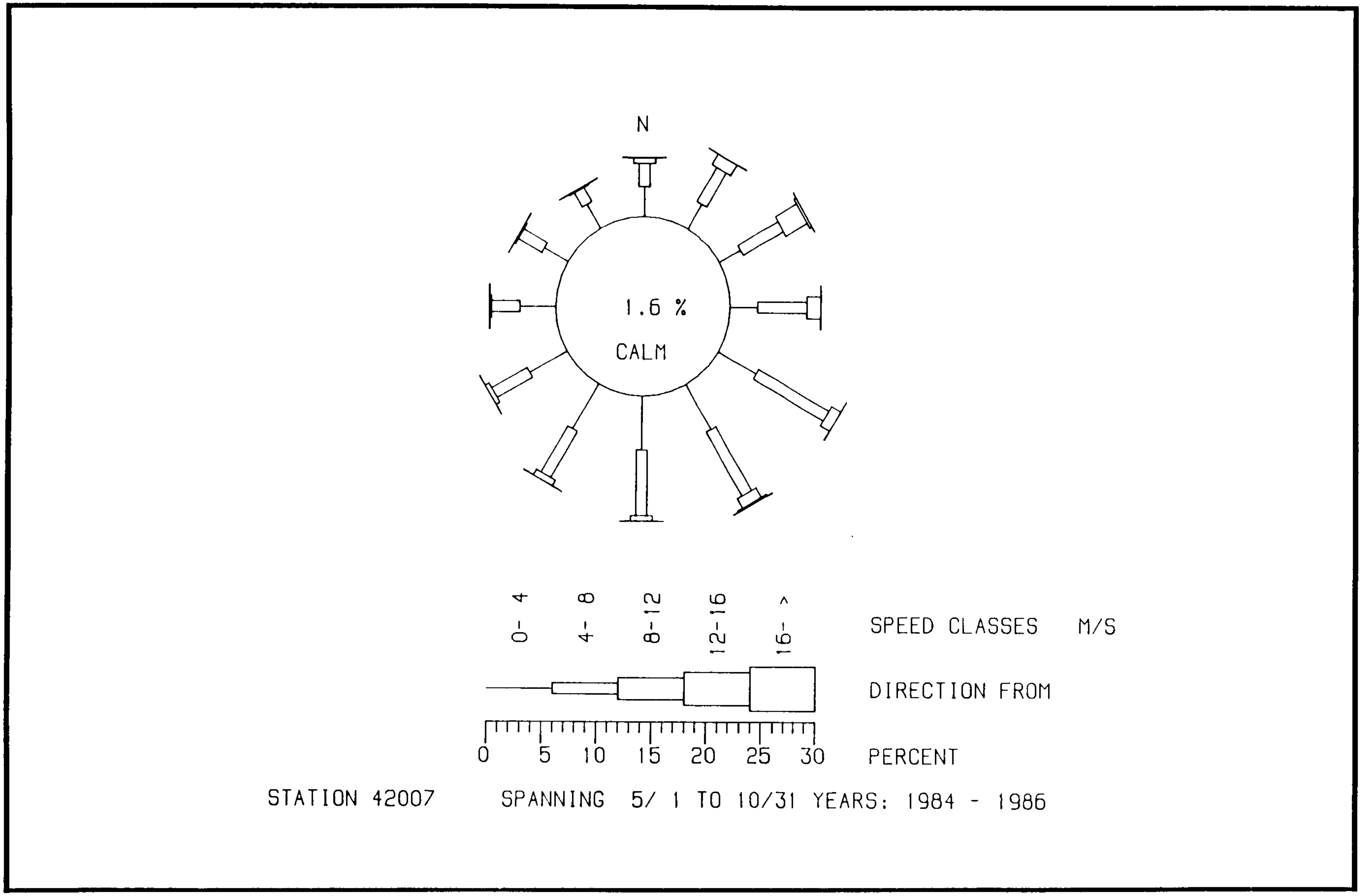

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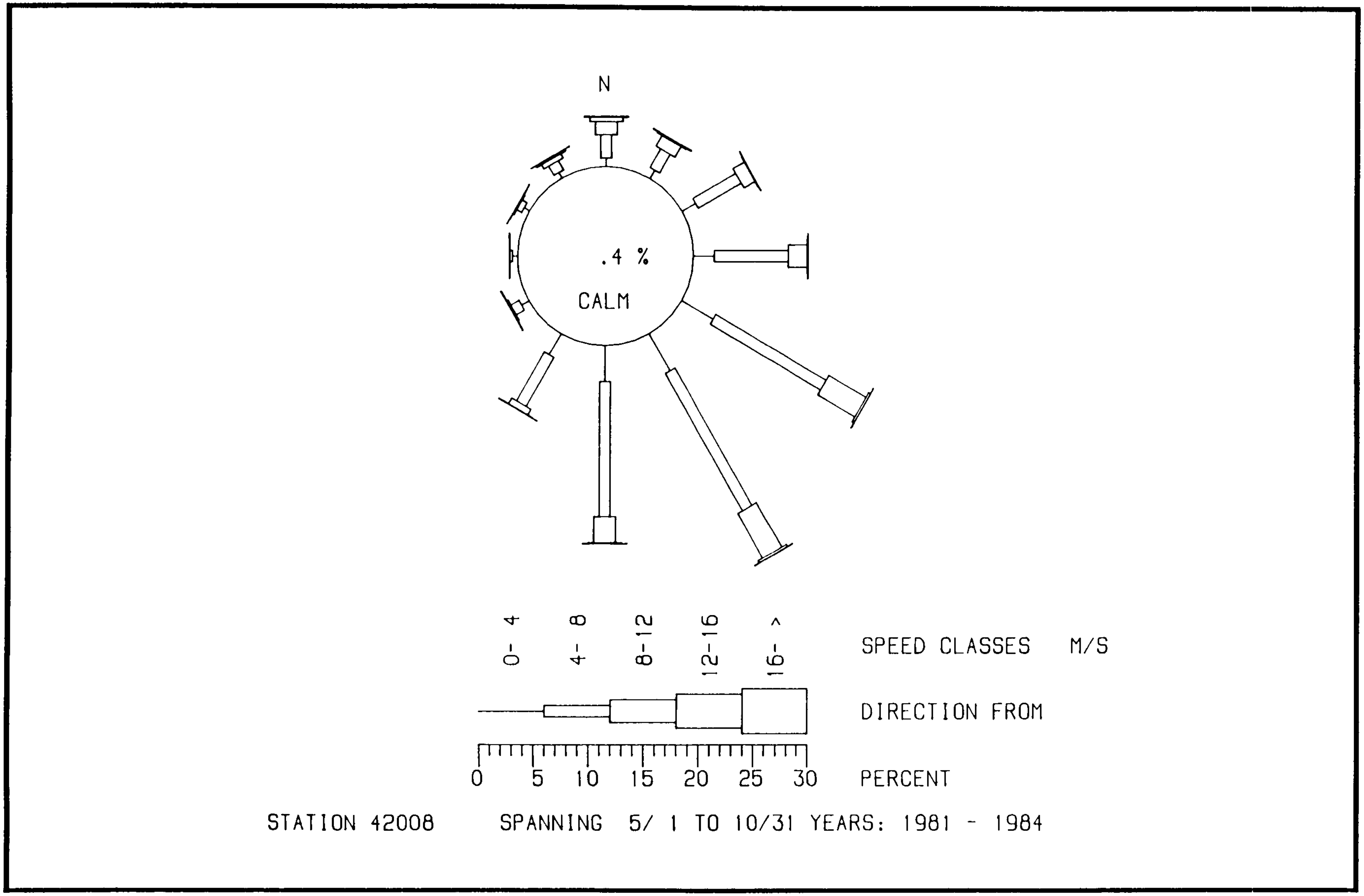

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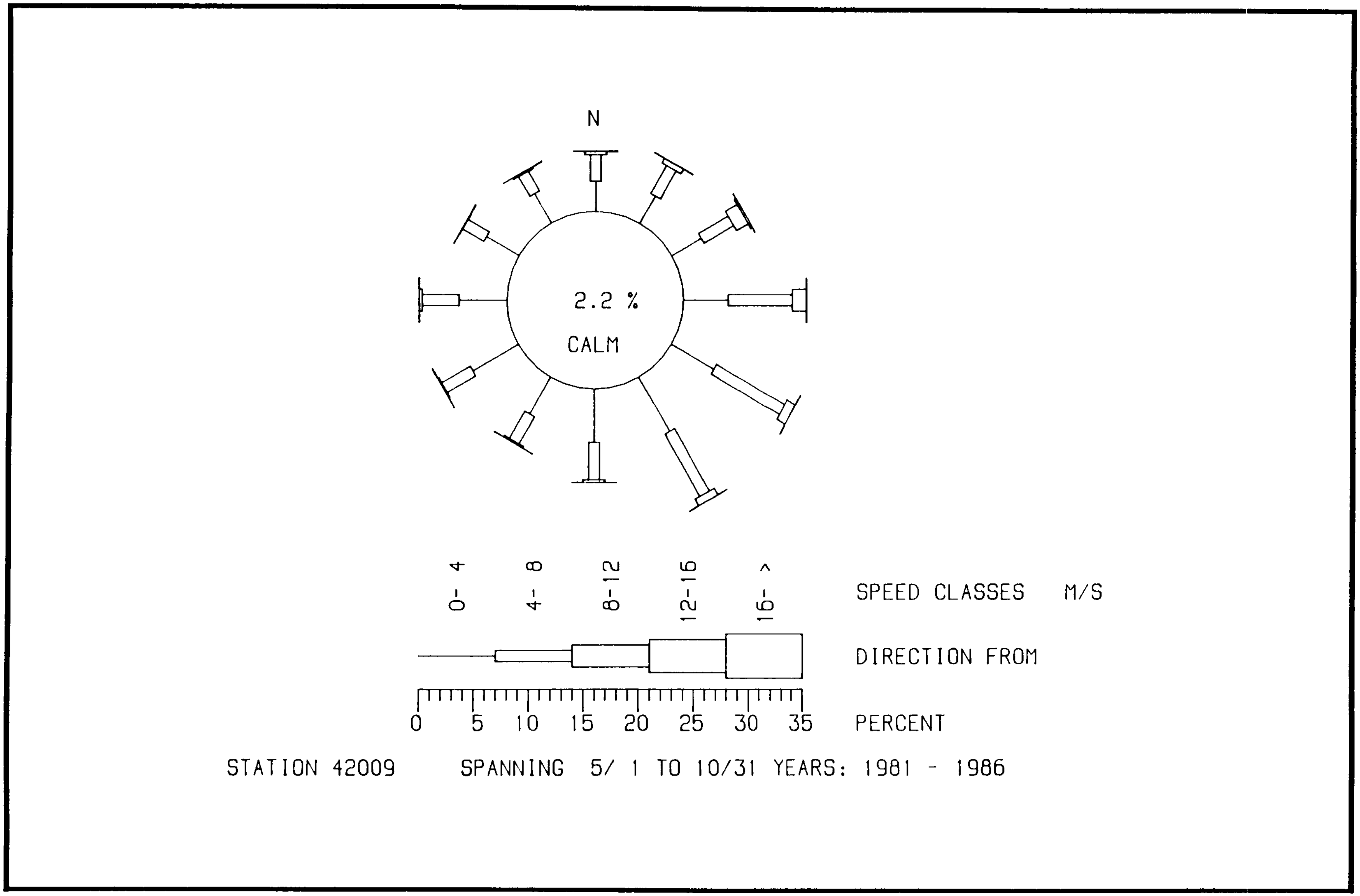

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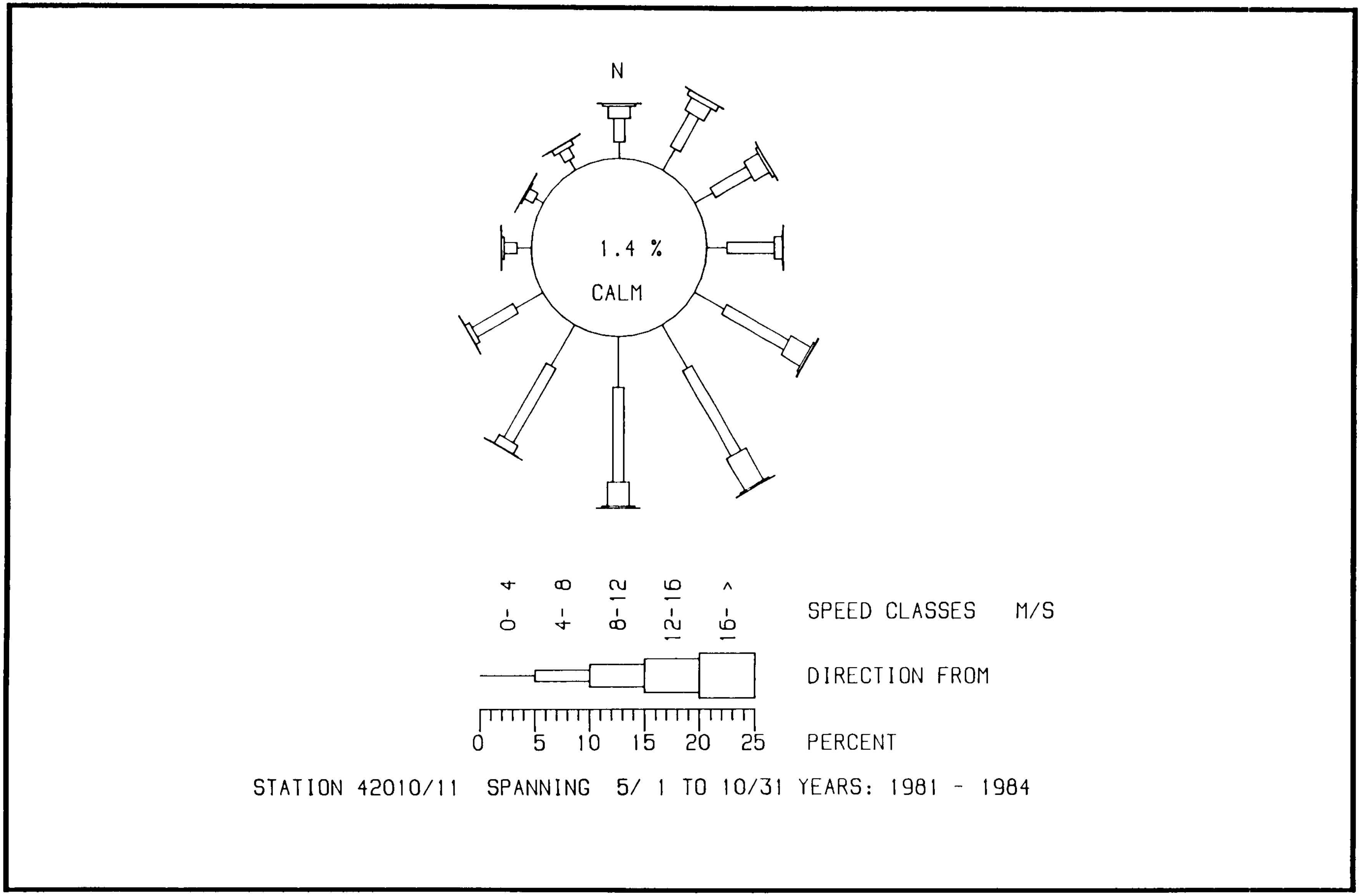

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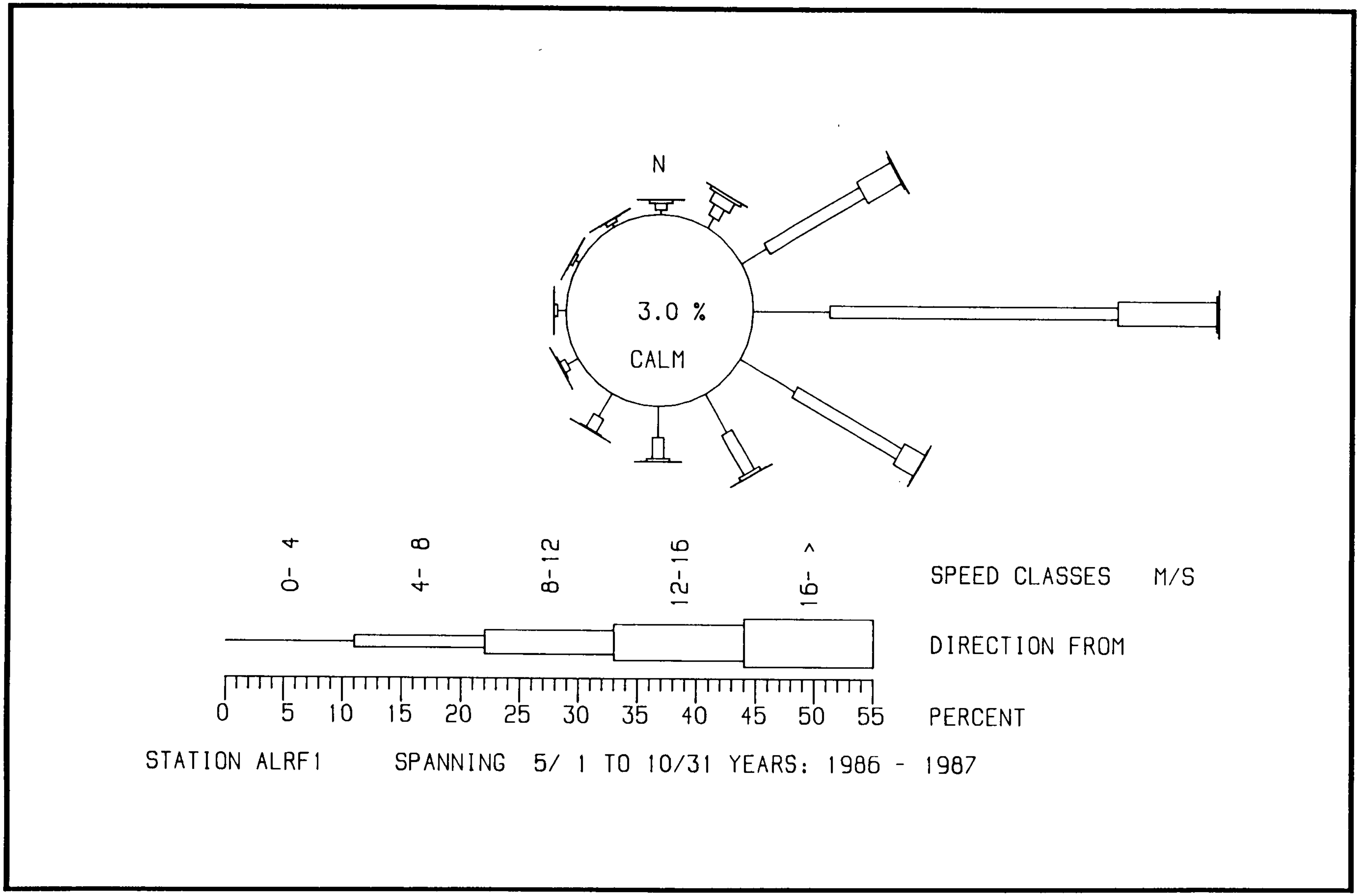

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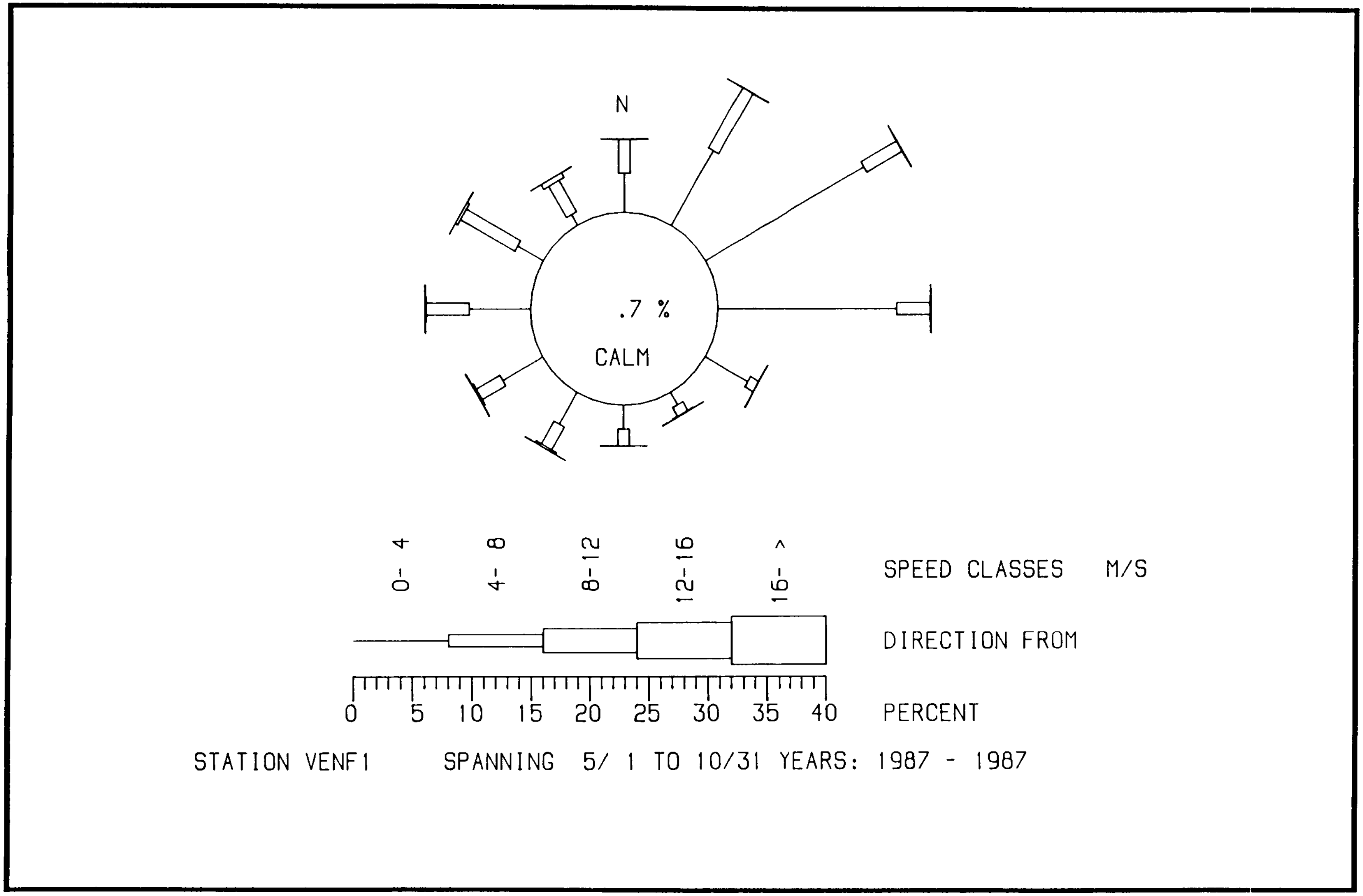

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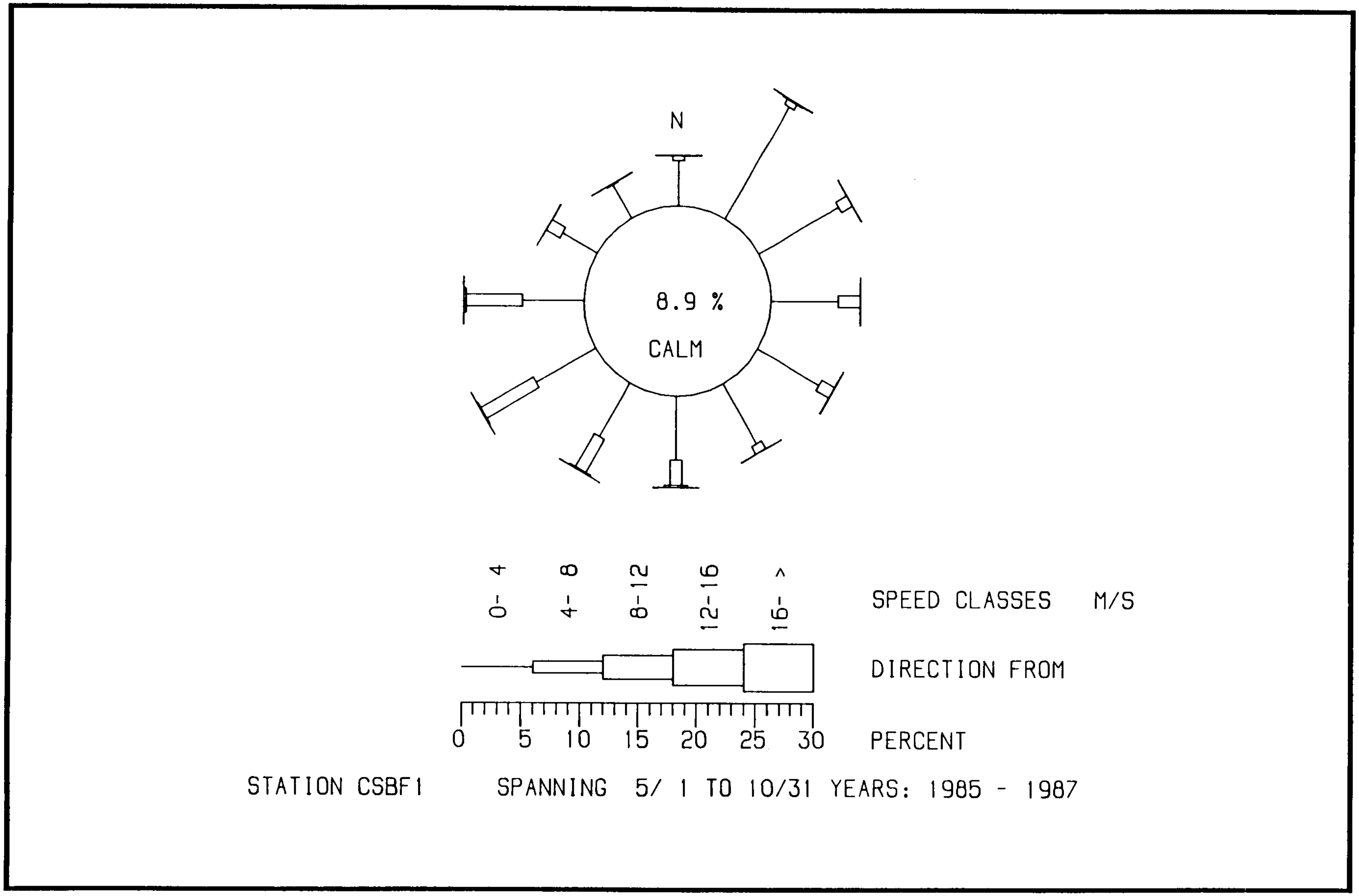

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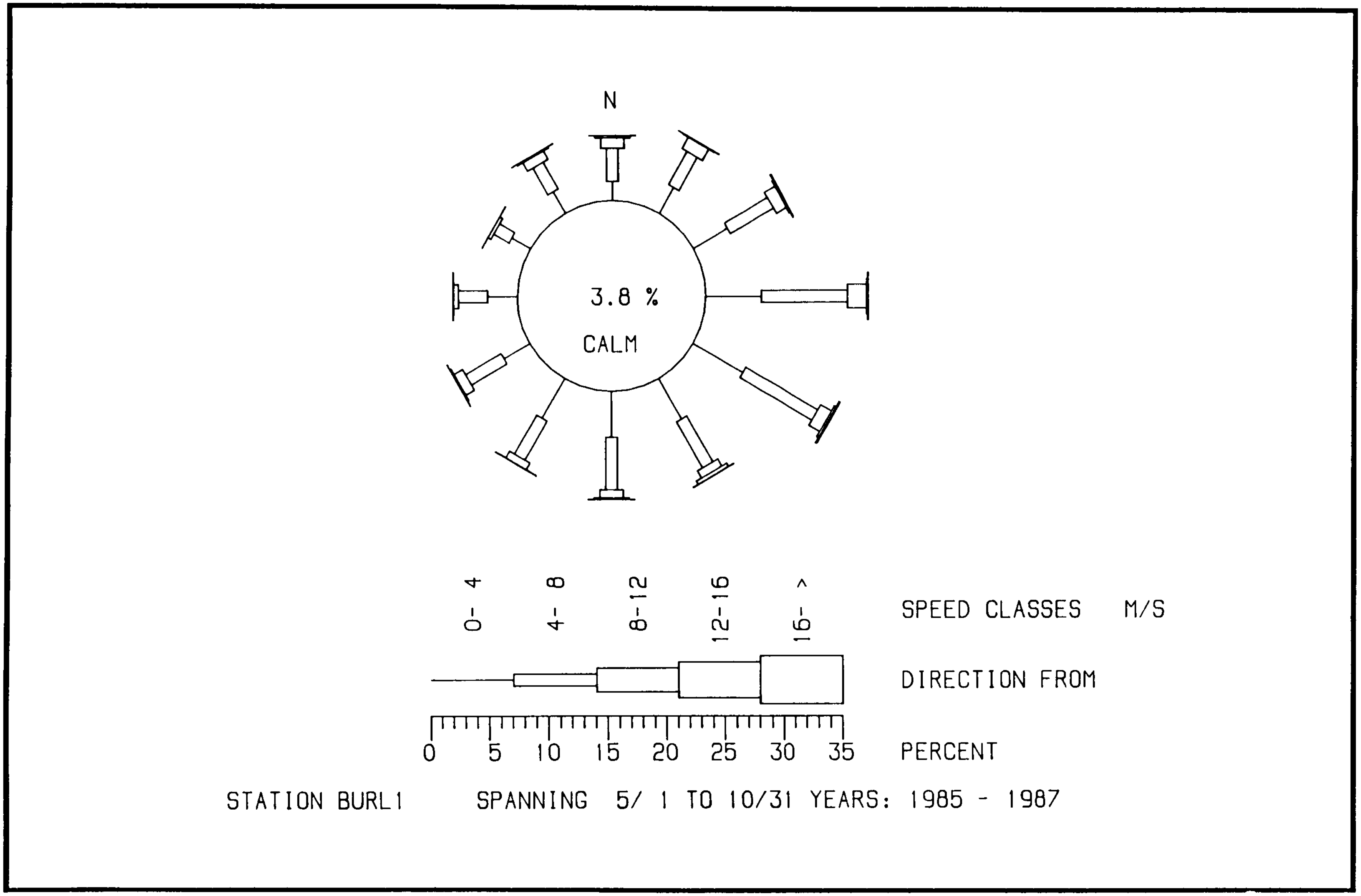

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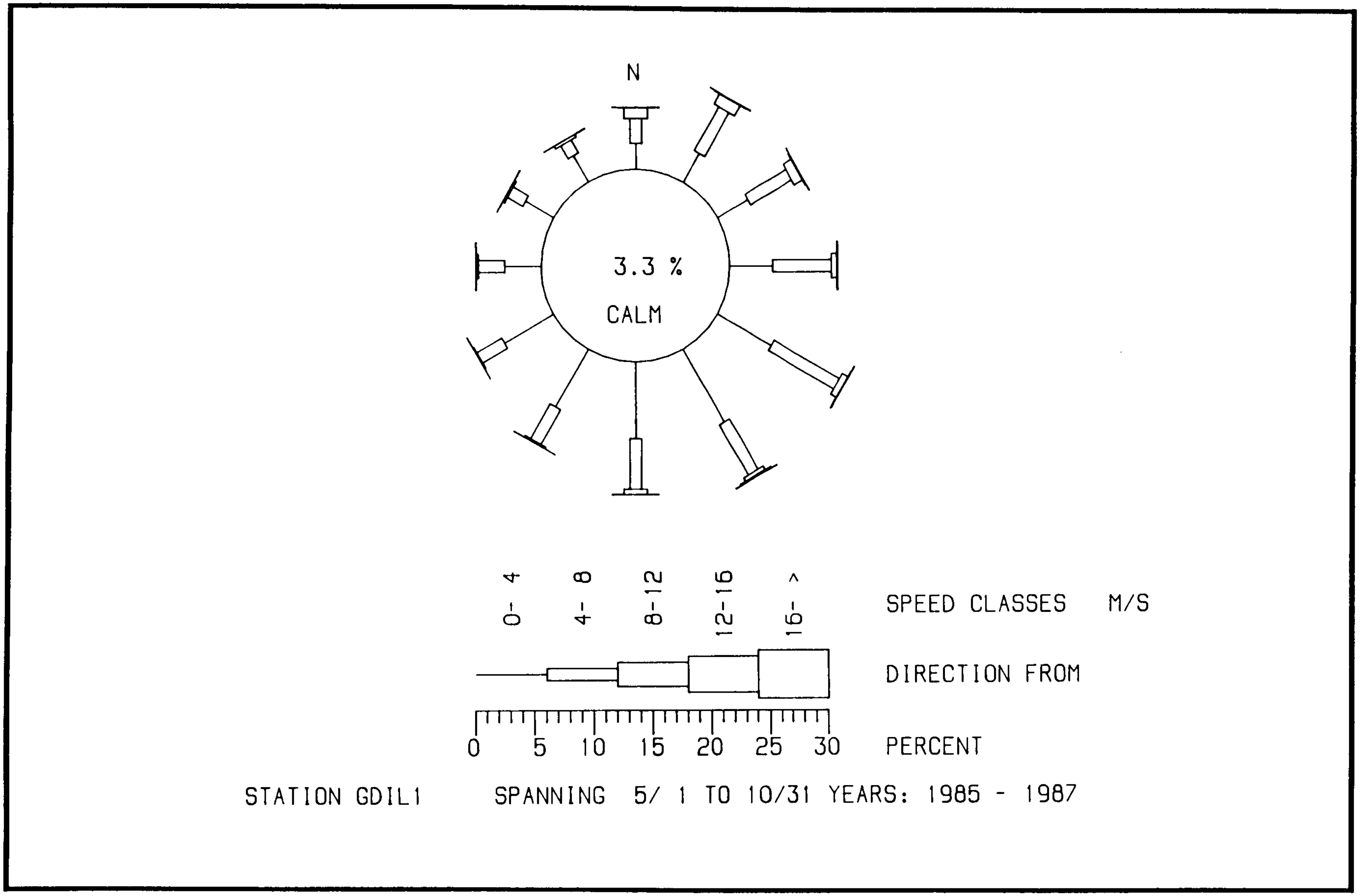

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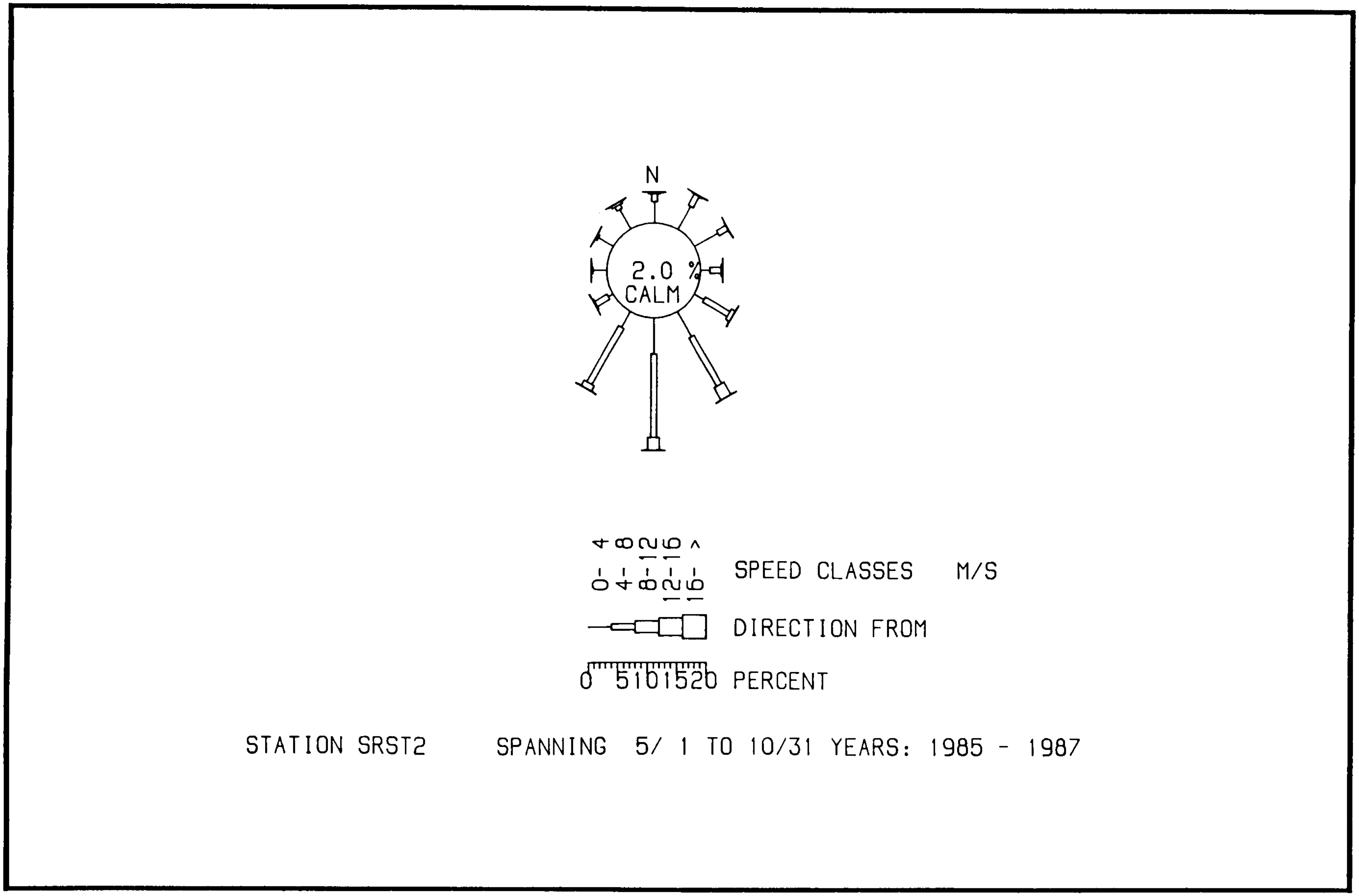

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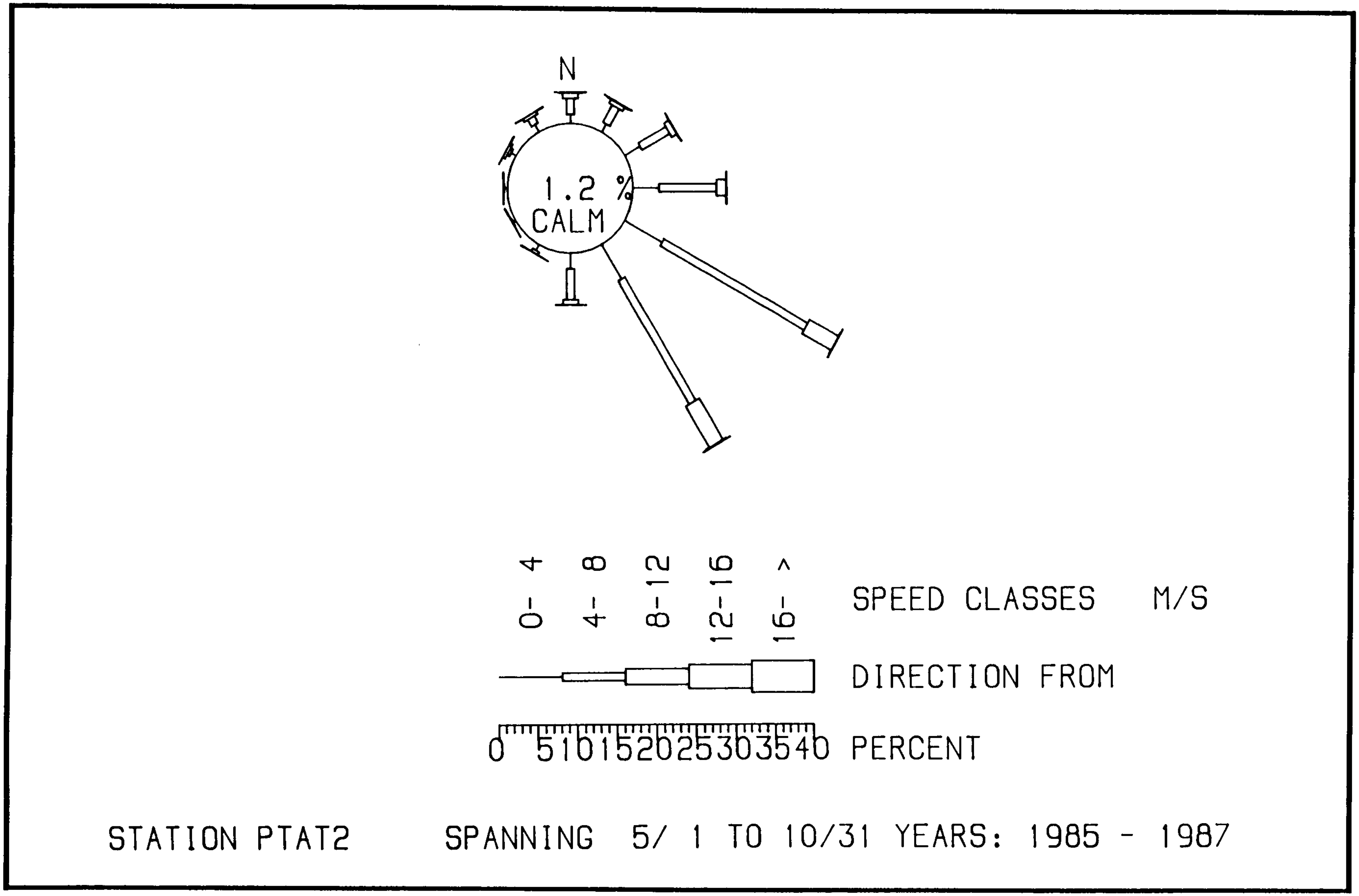

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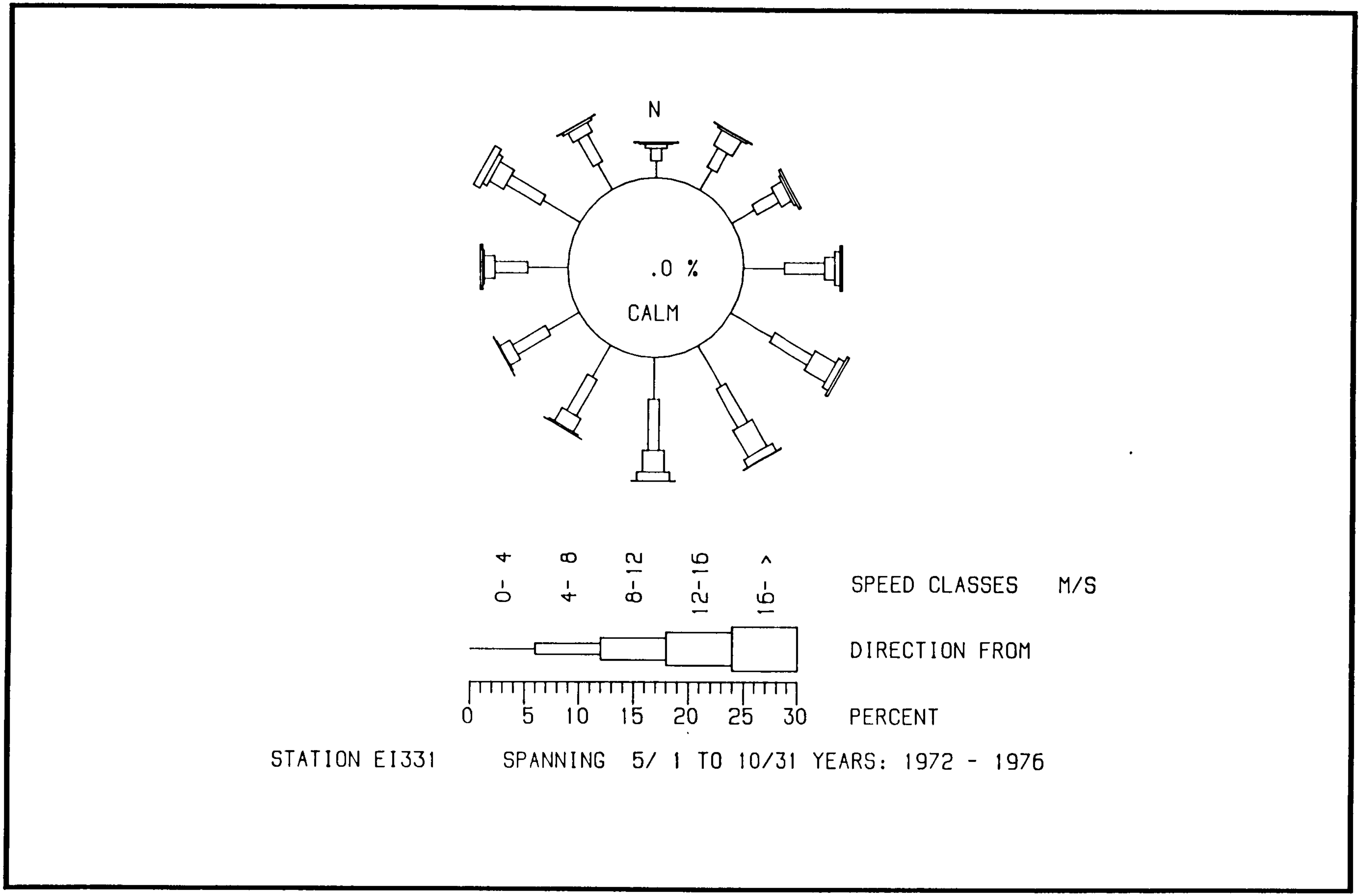

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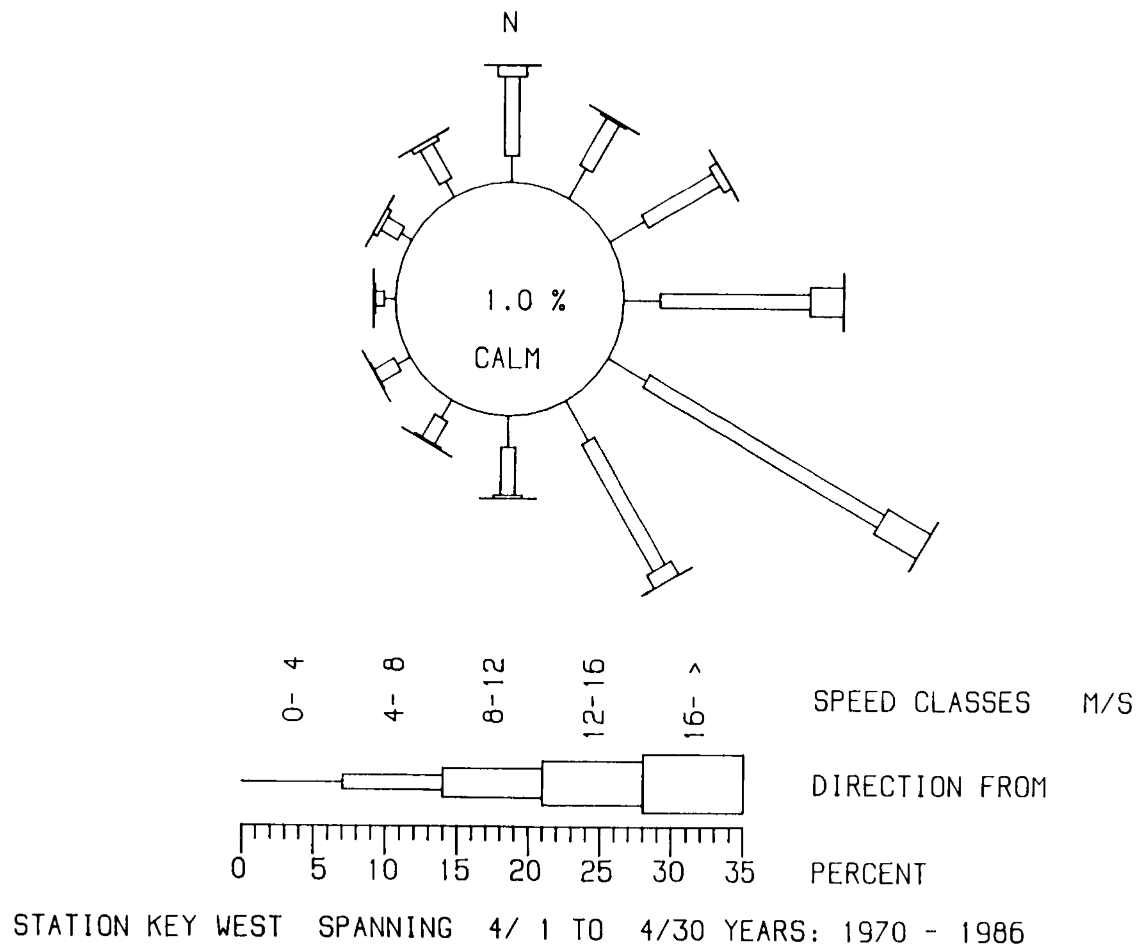
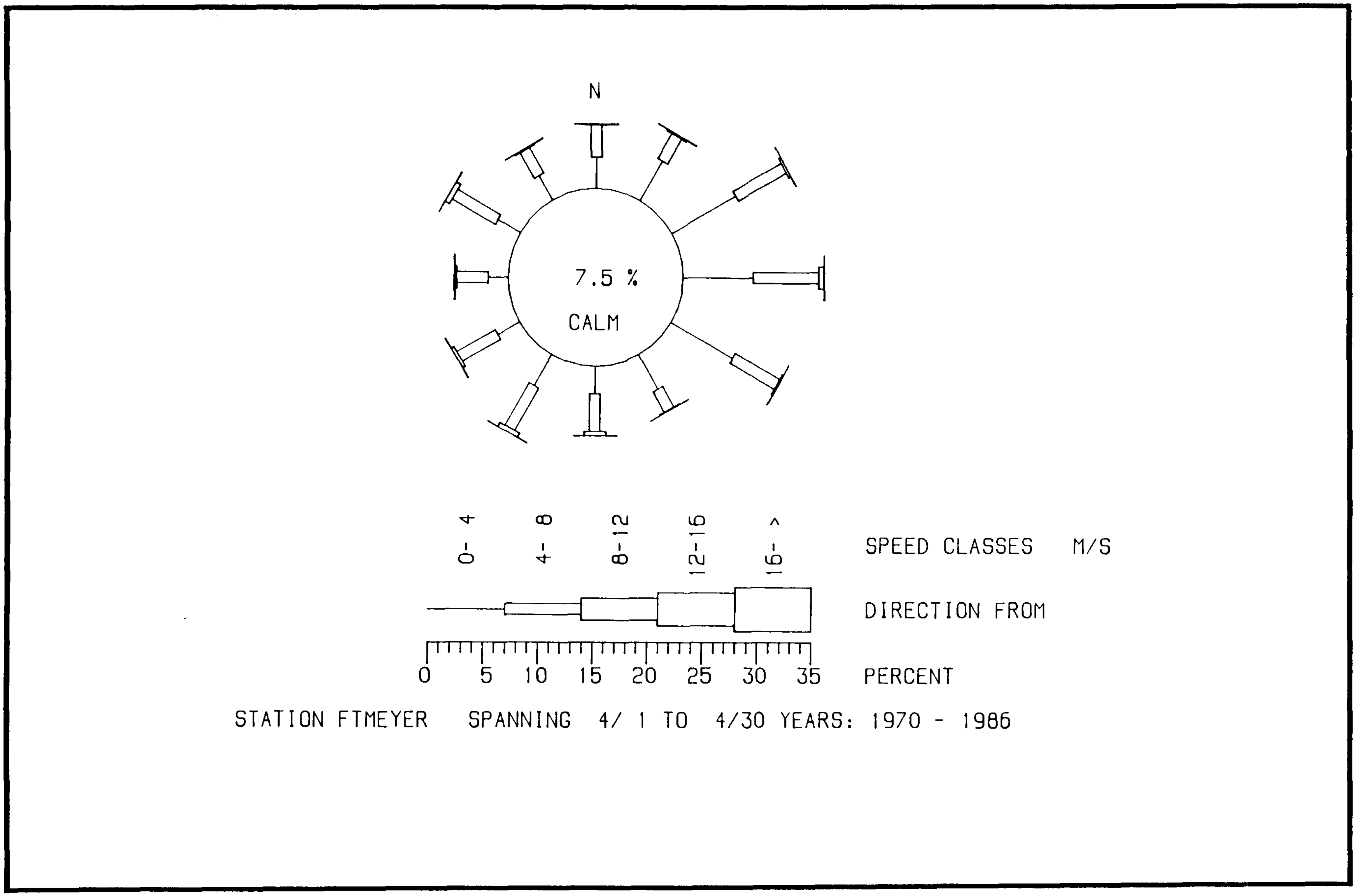


Figure 2.6-6 April transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.



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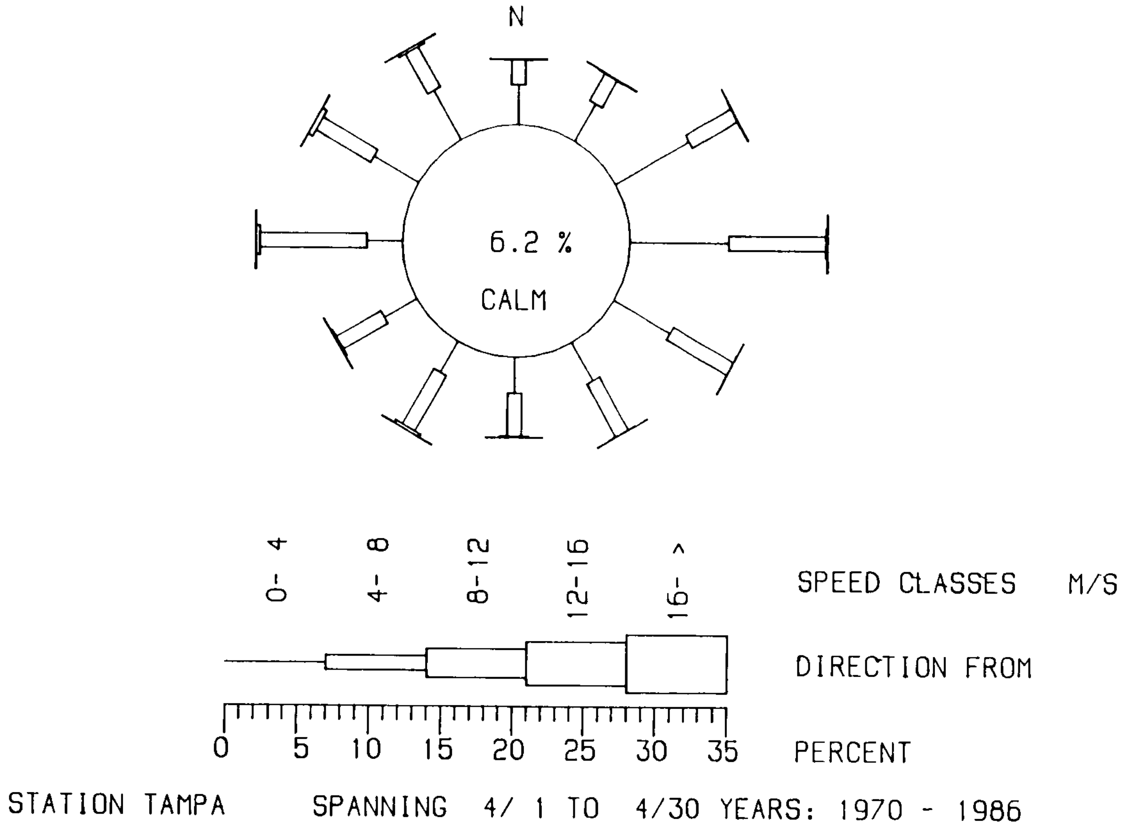

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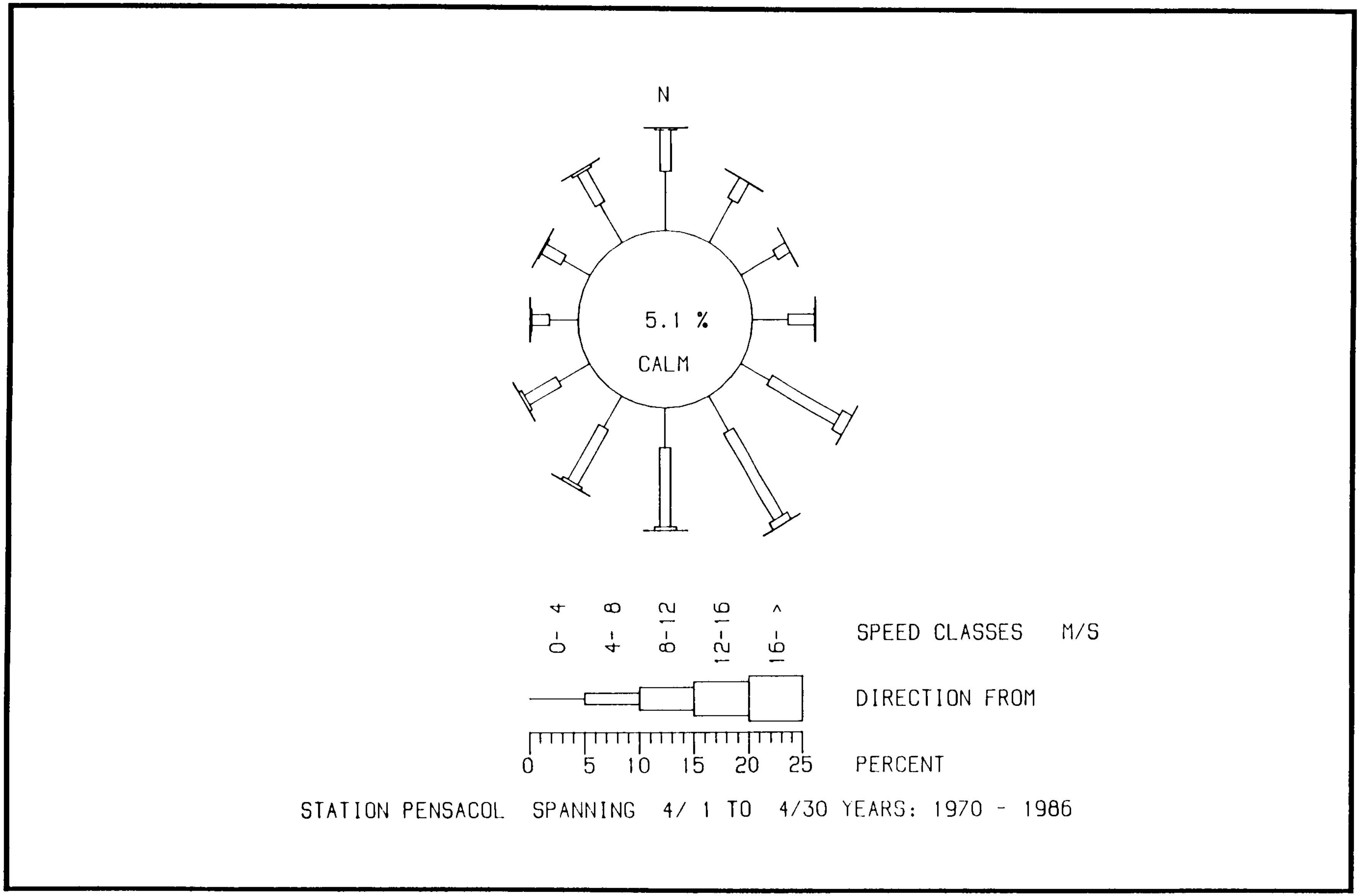

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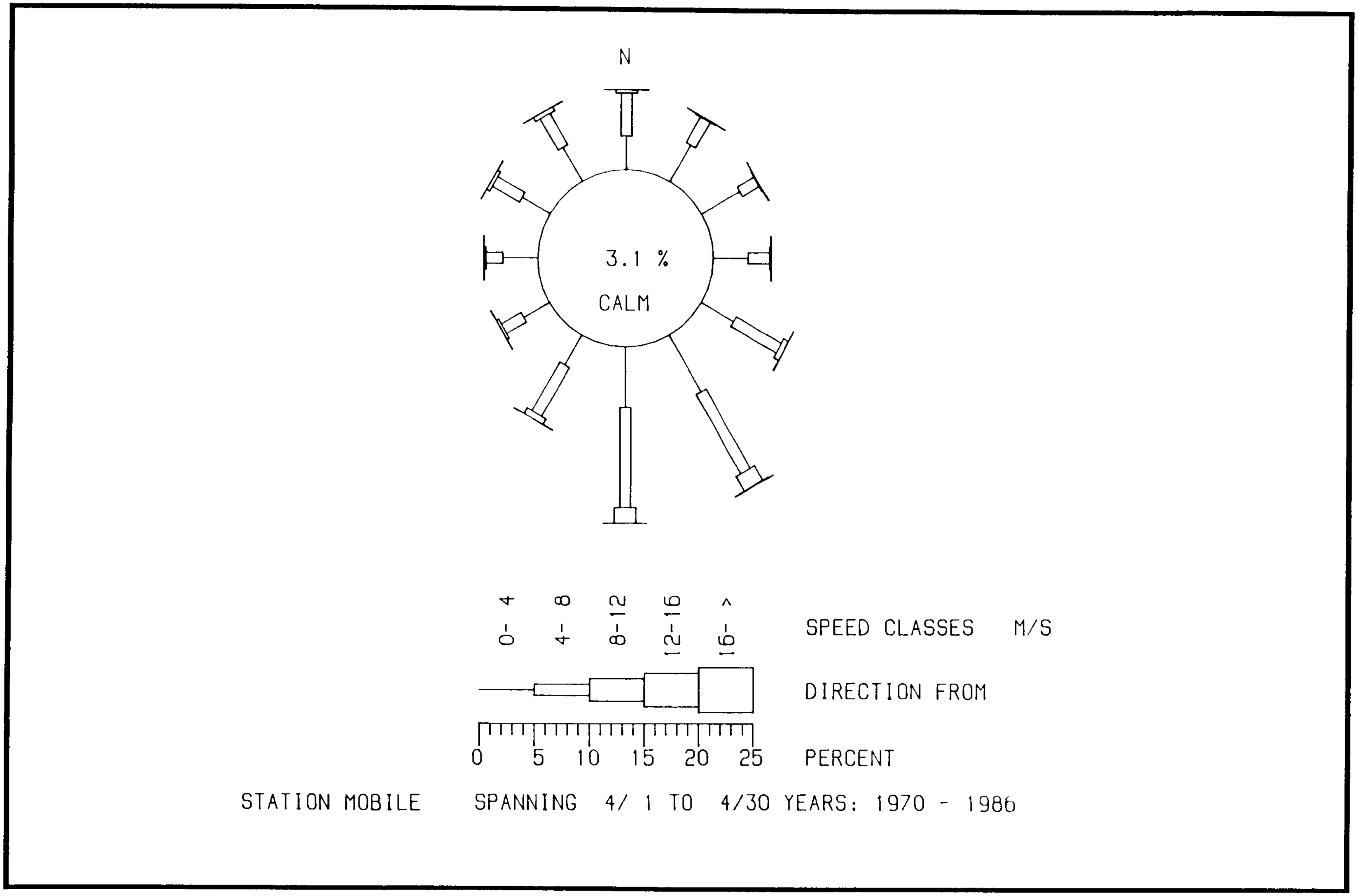

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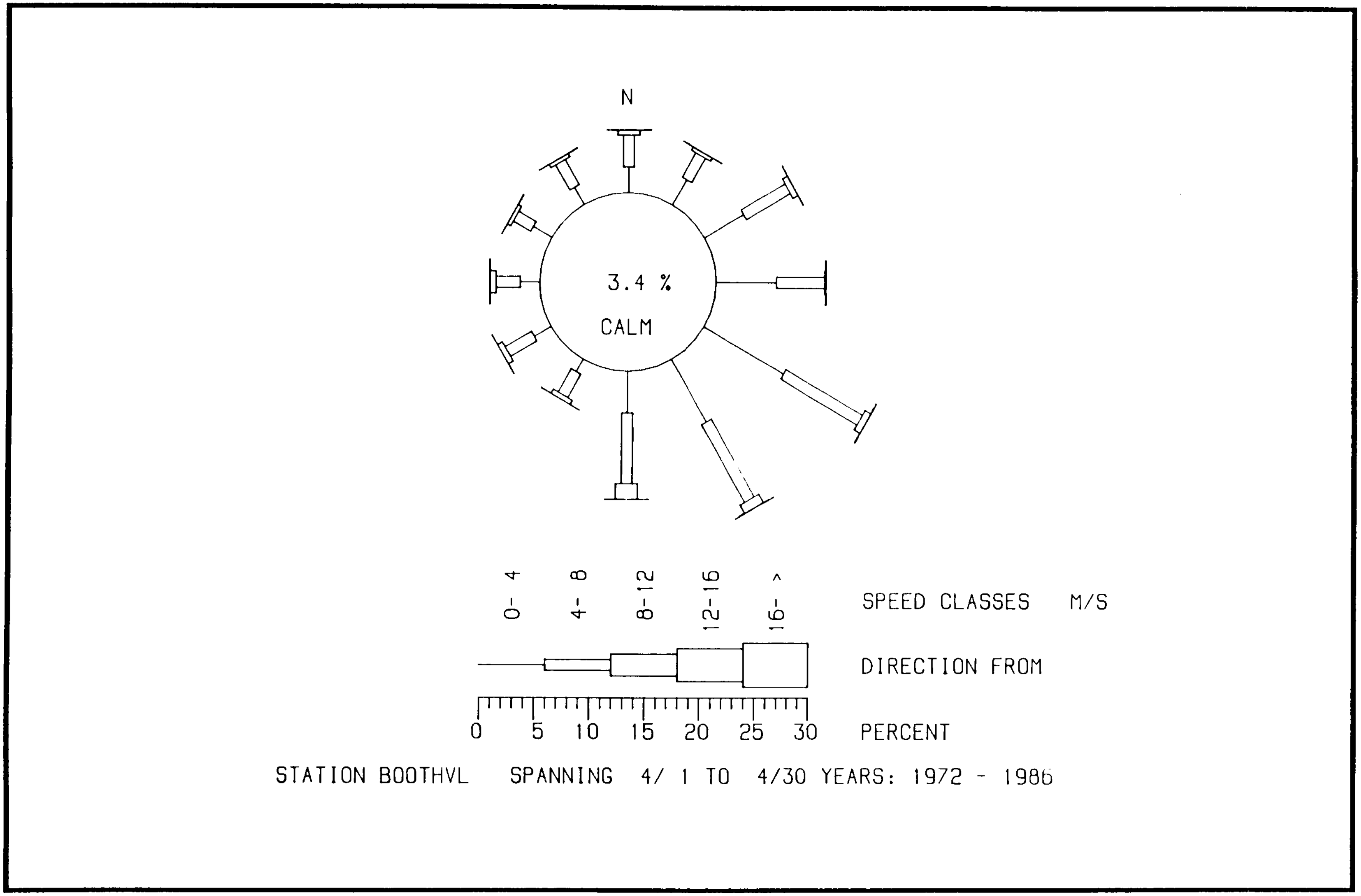

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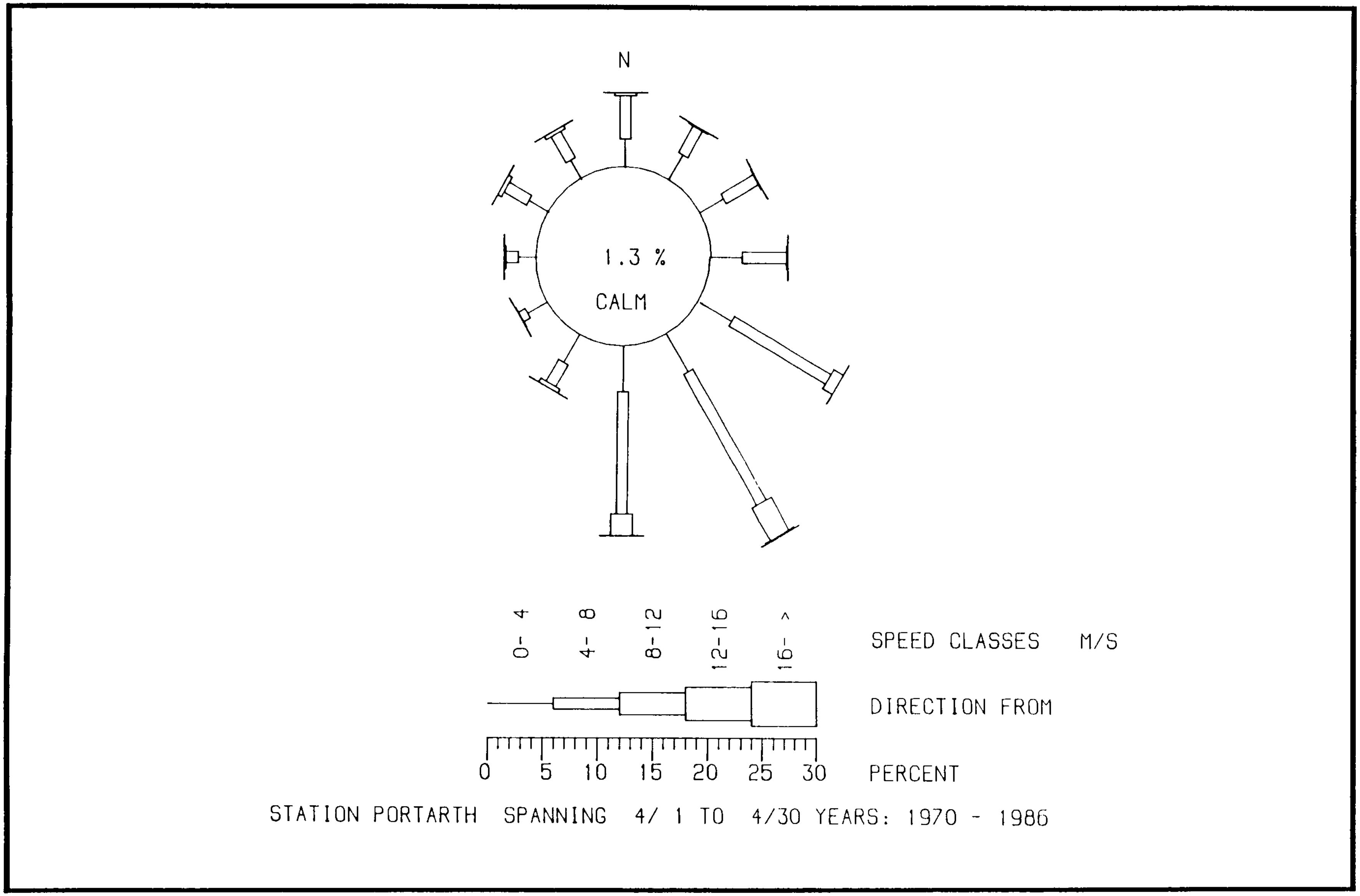

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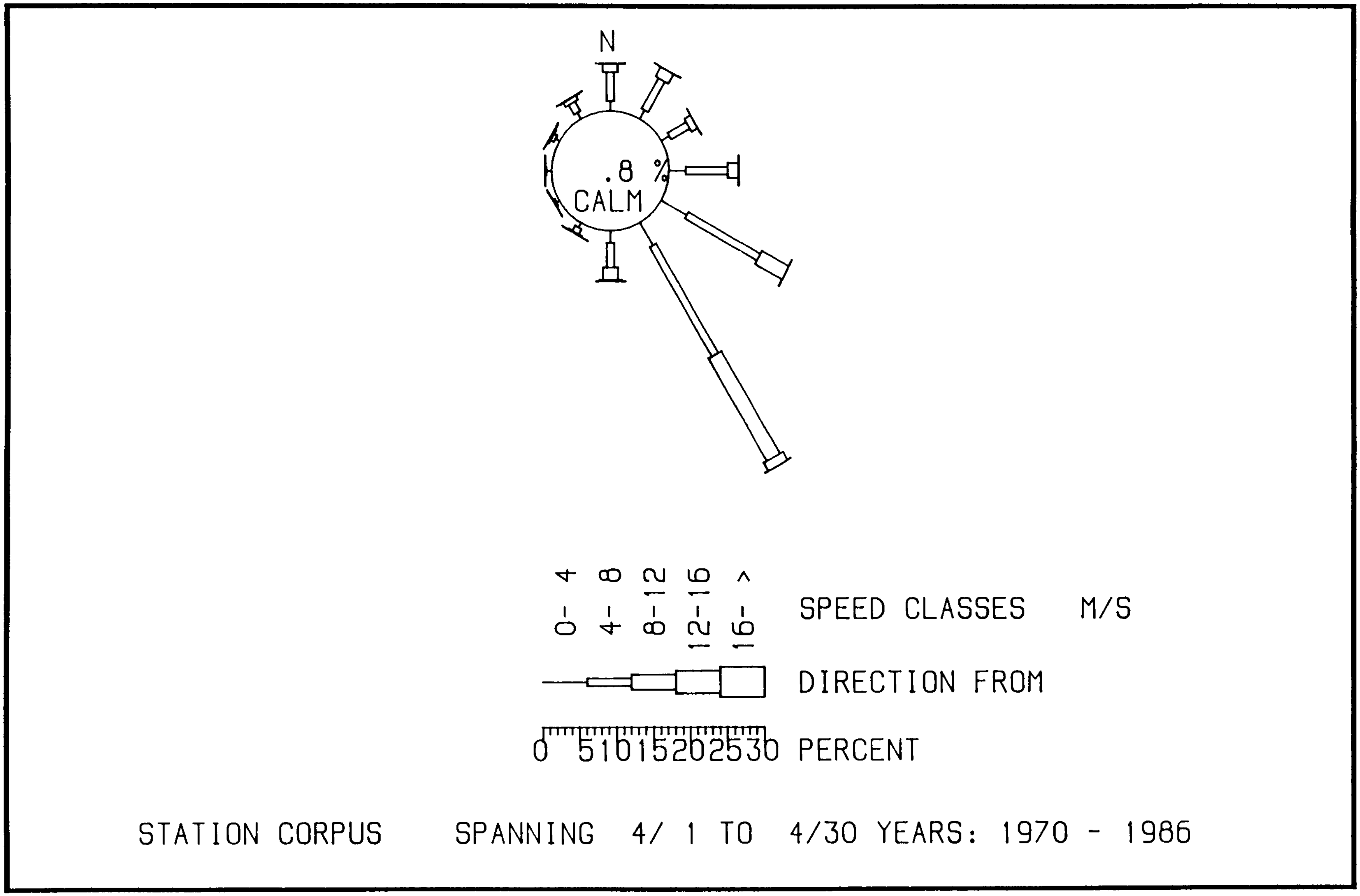

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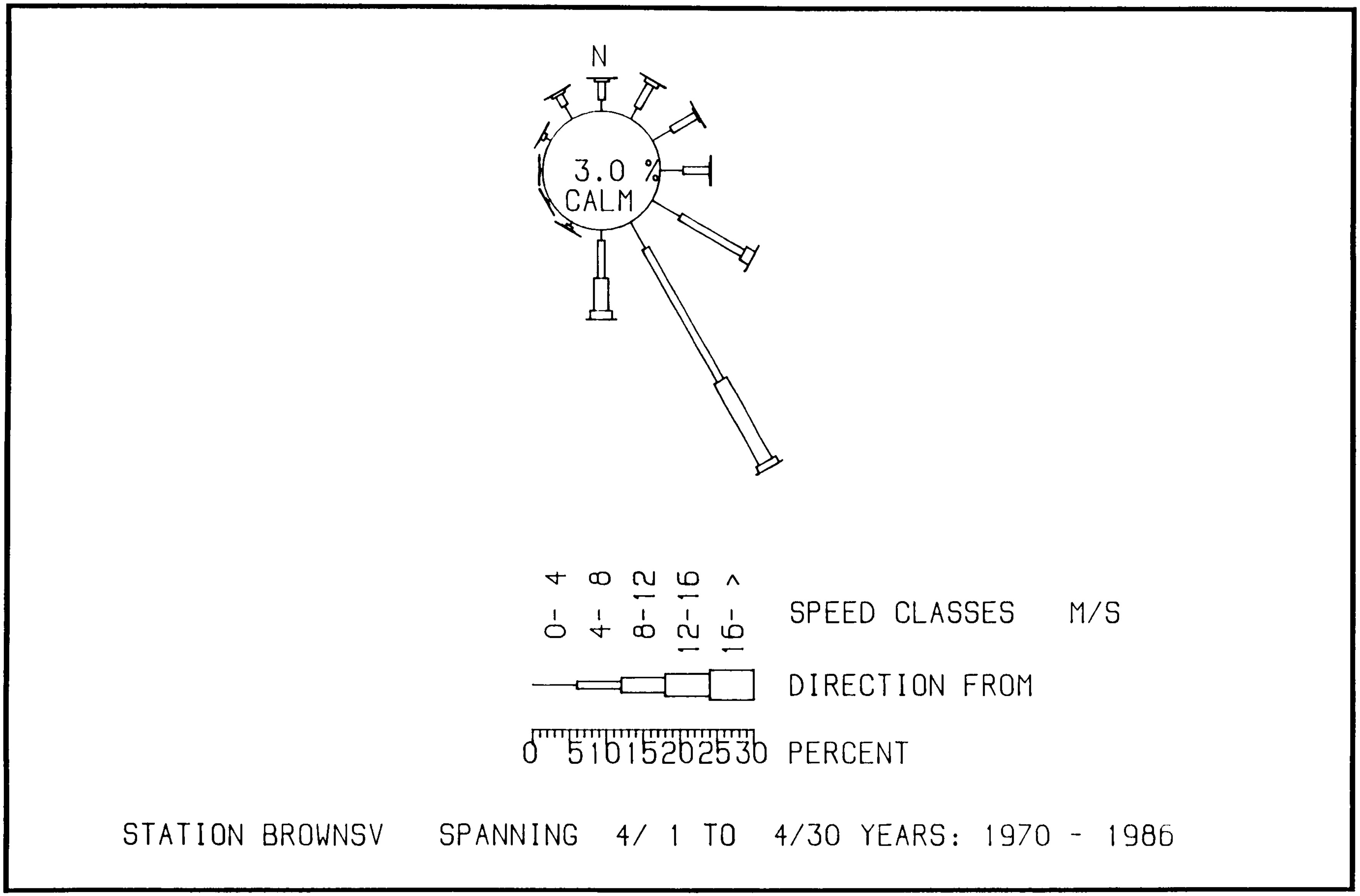

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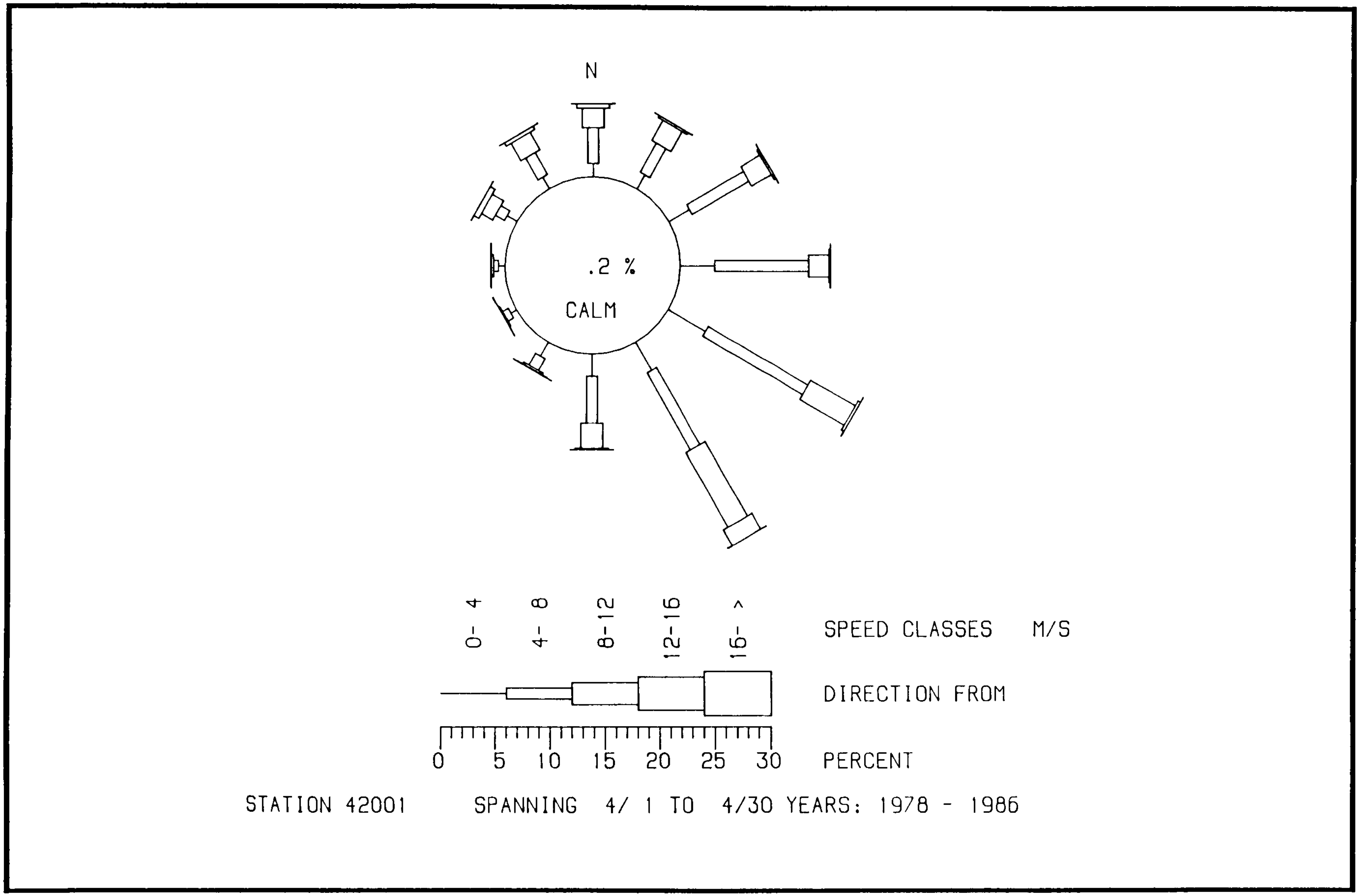

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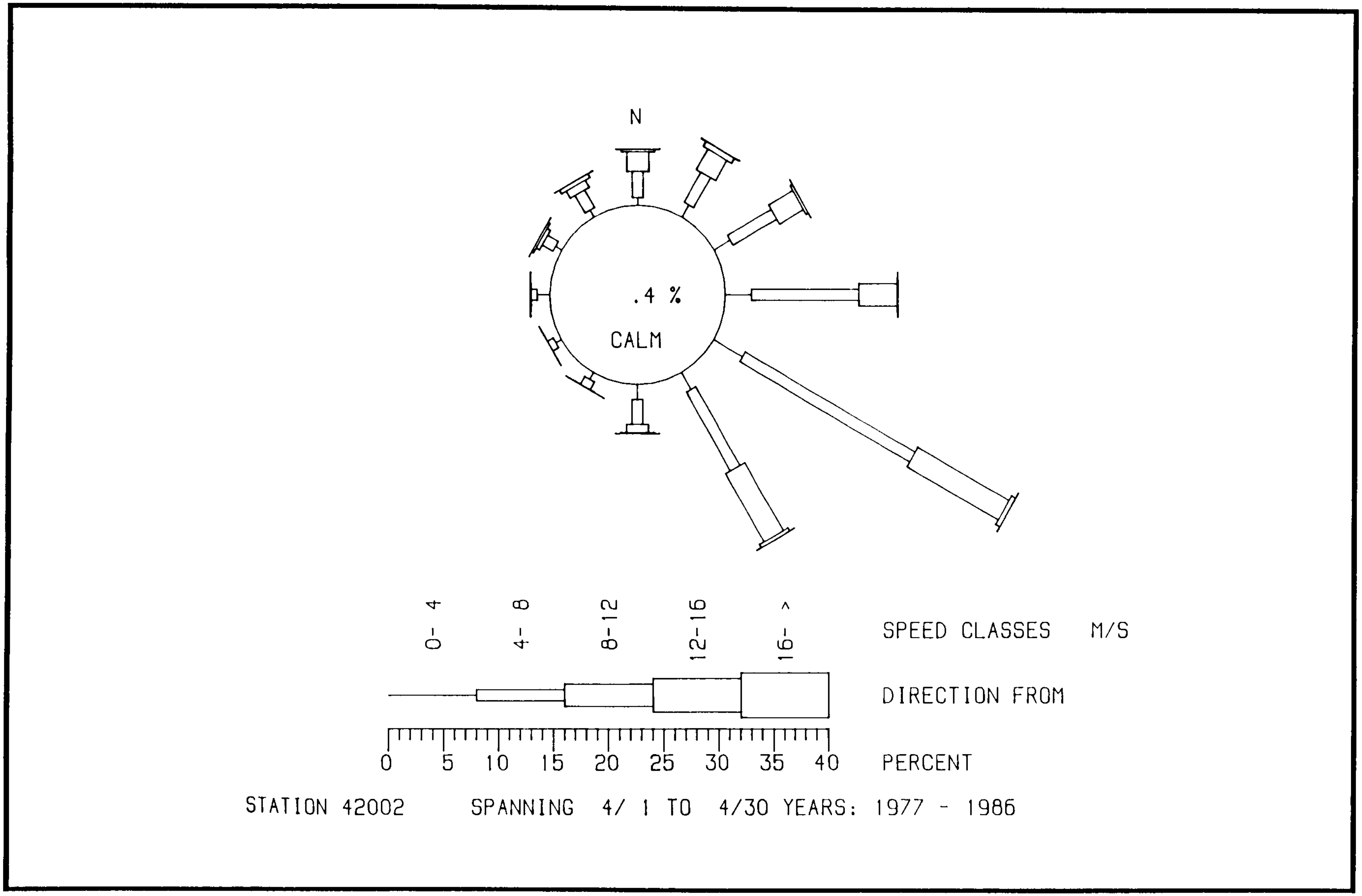

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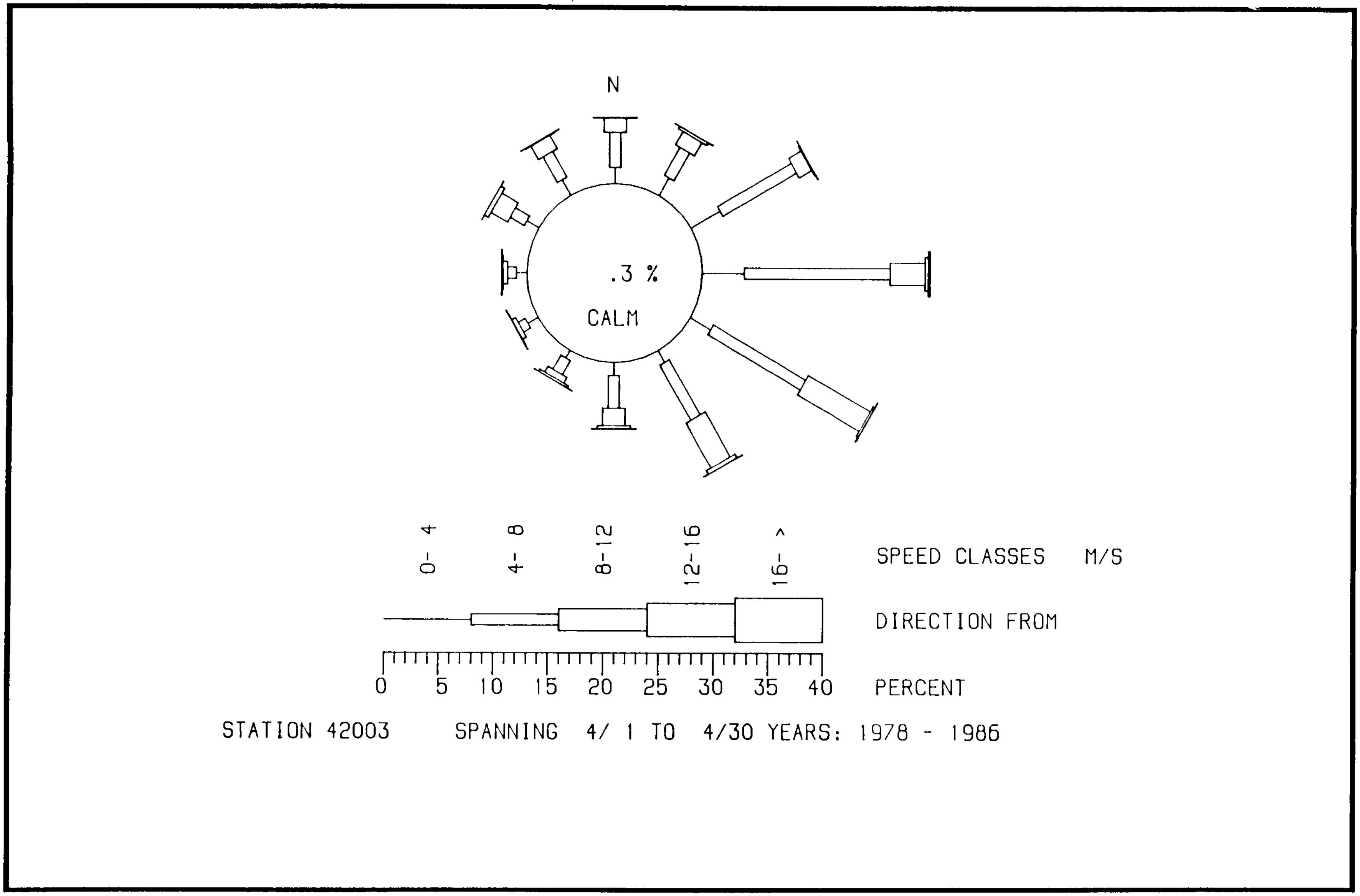

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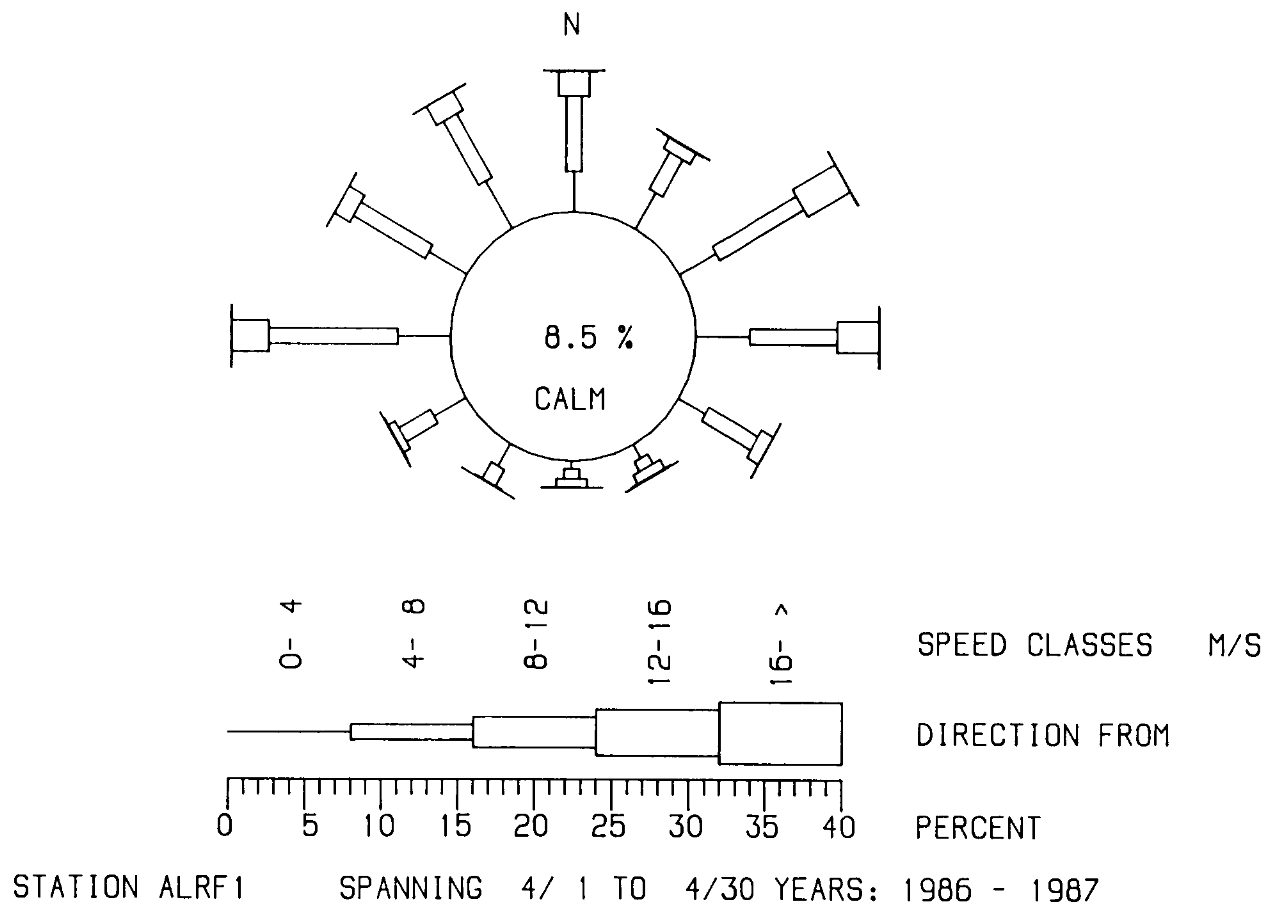

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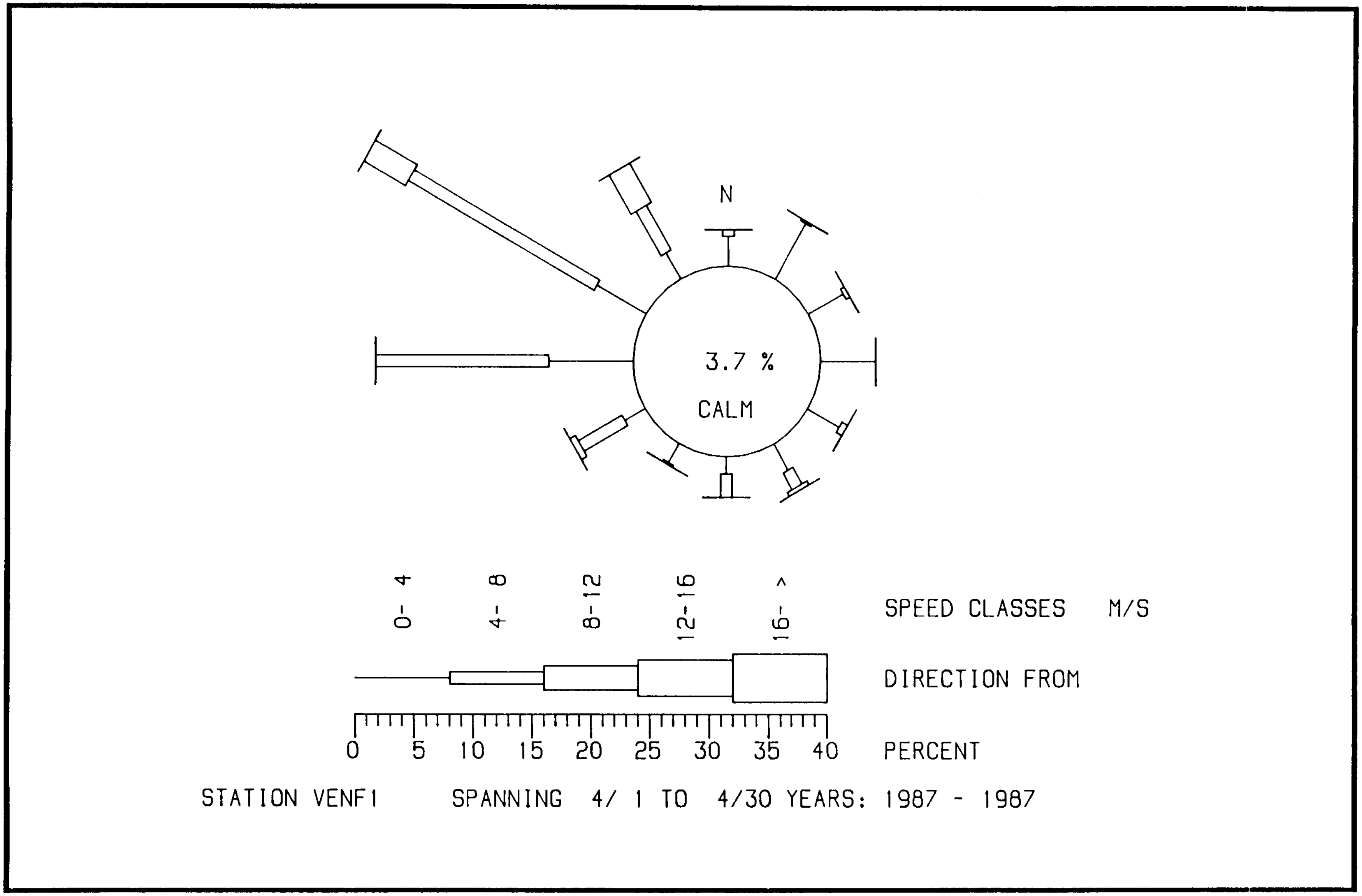

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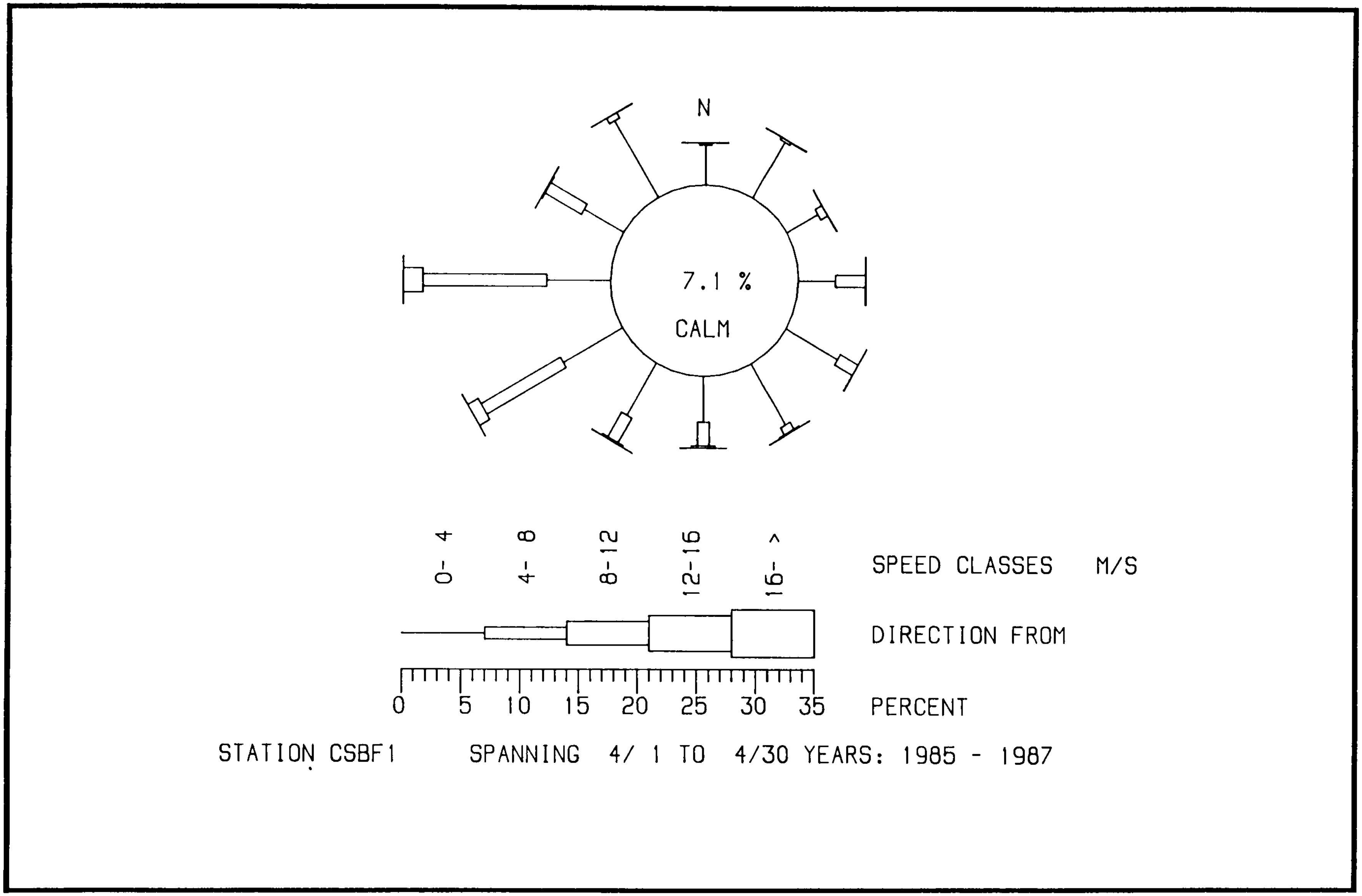

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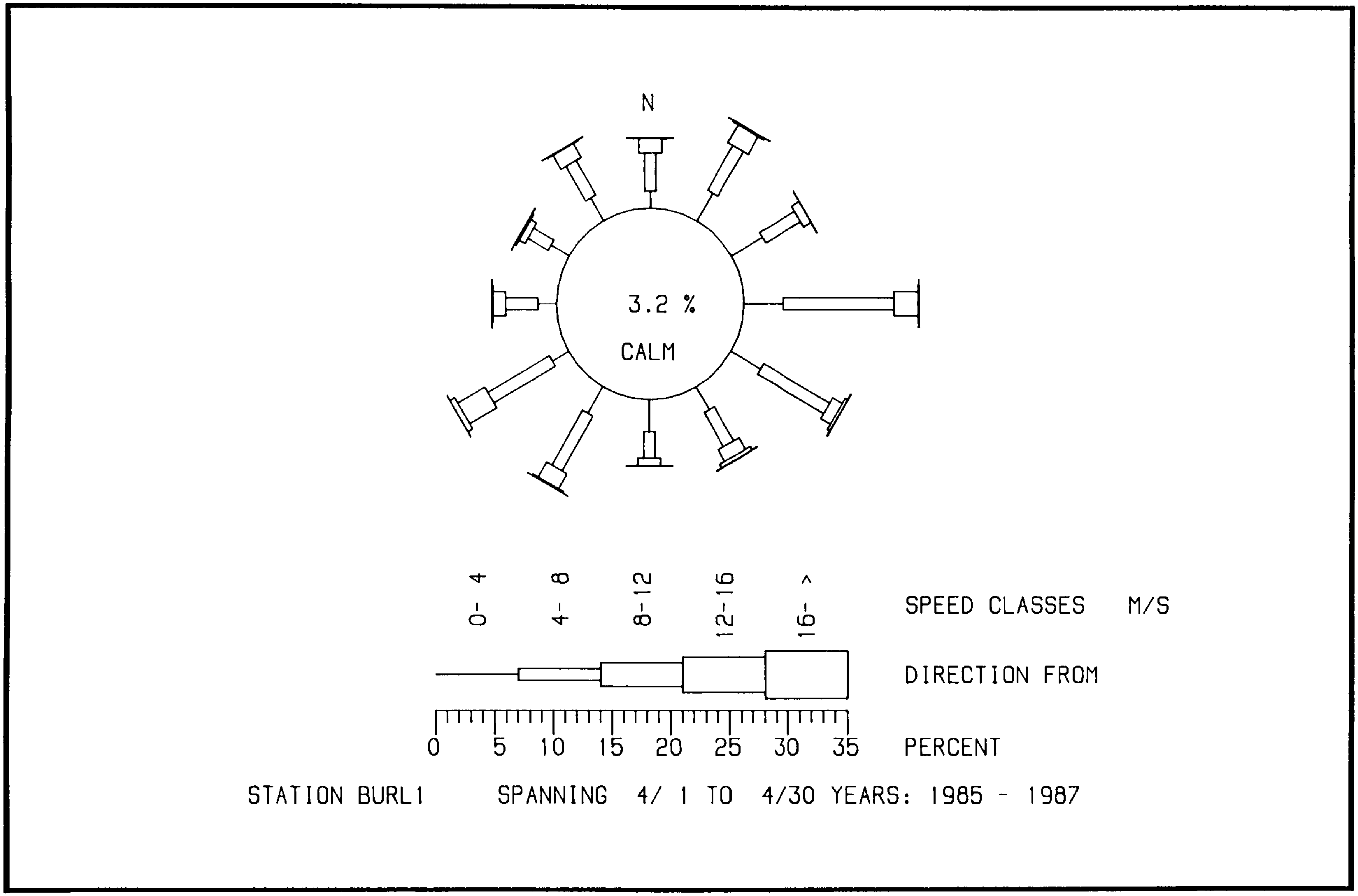

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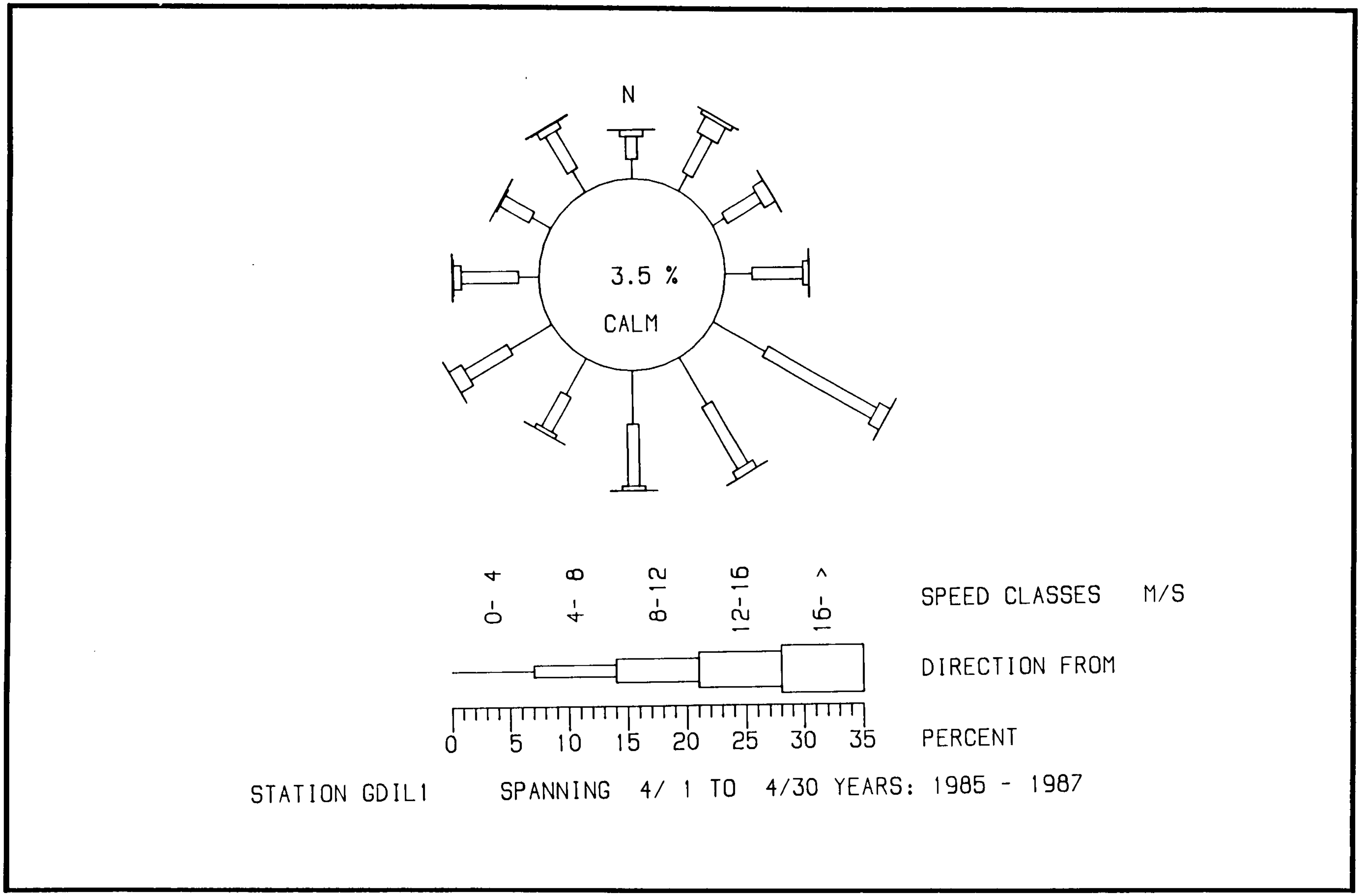

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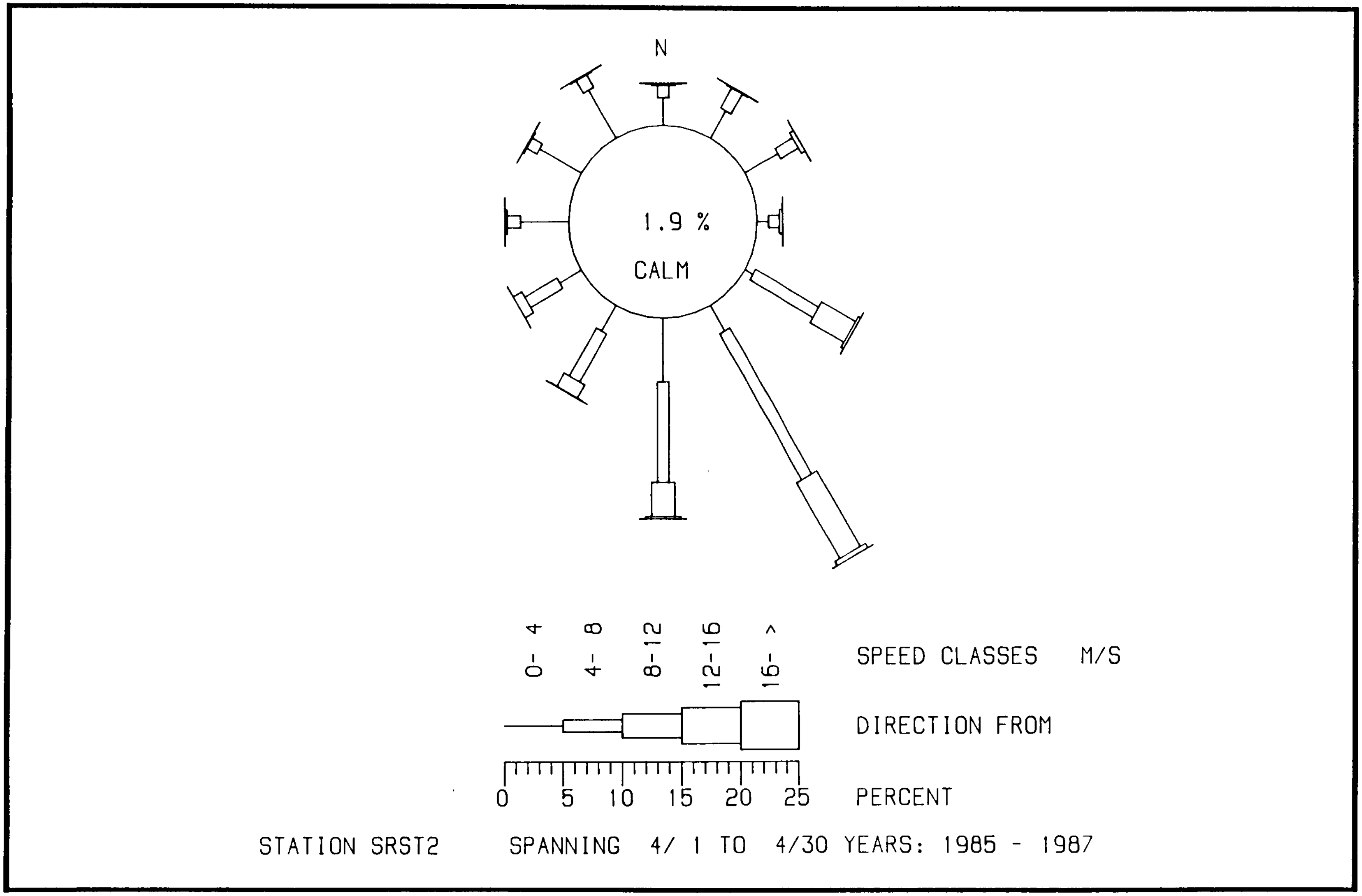

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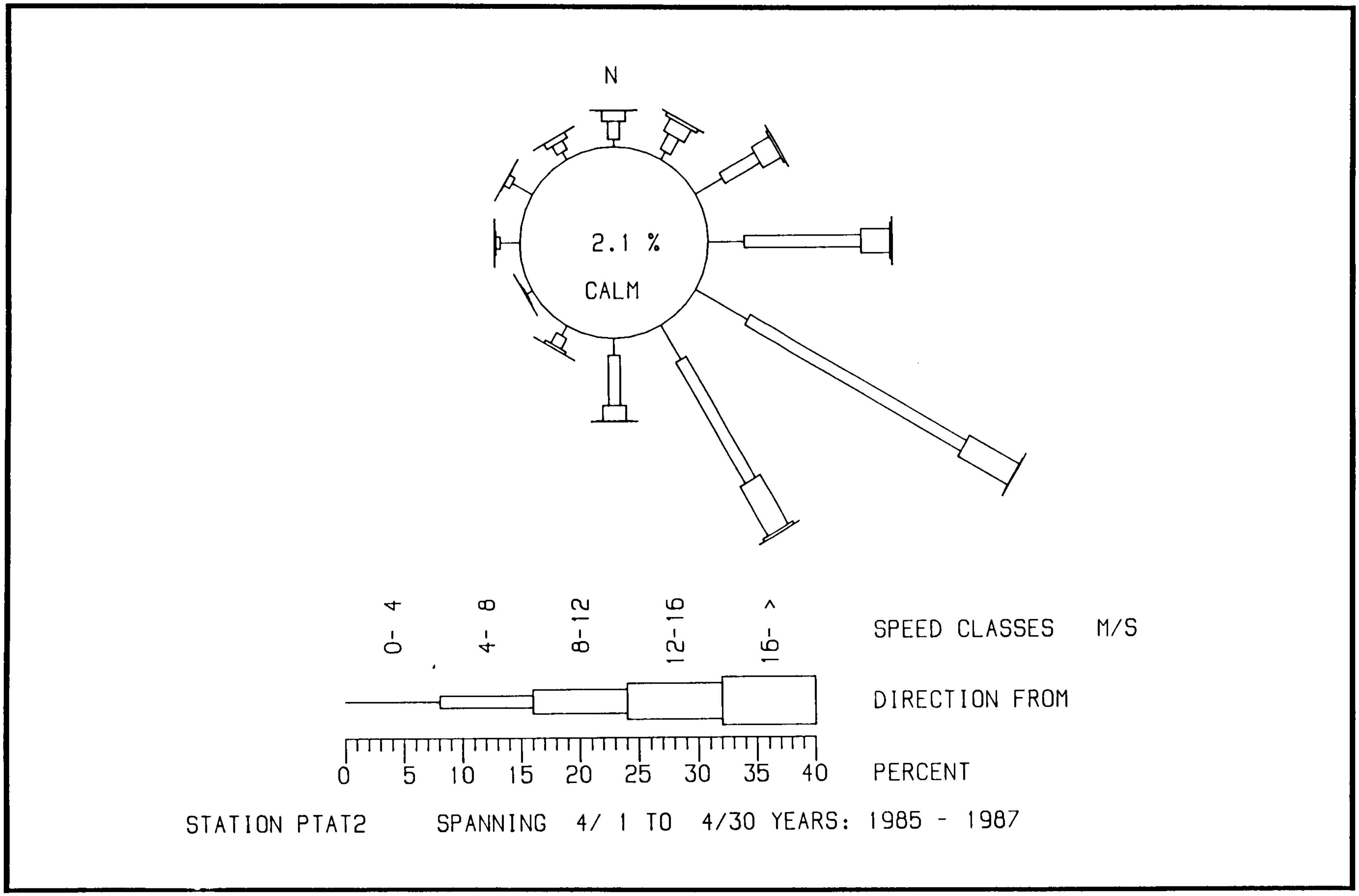

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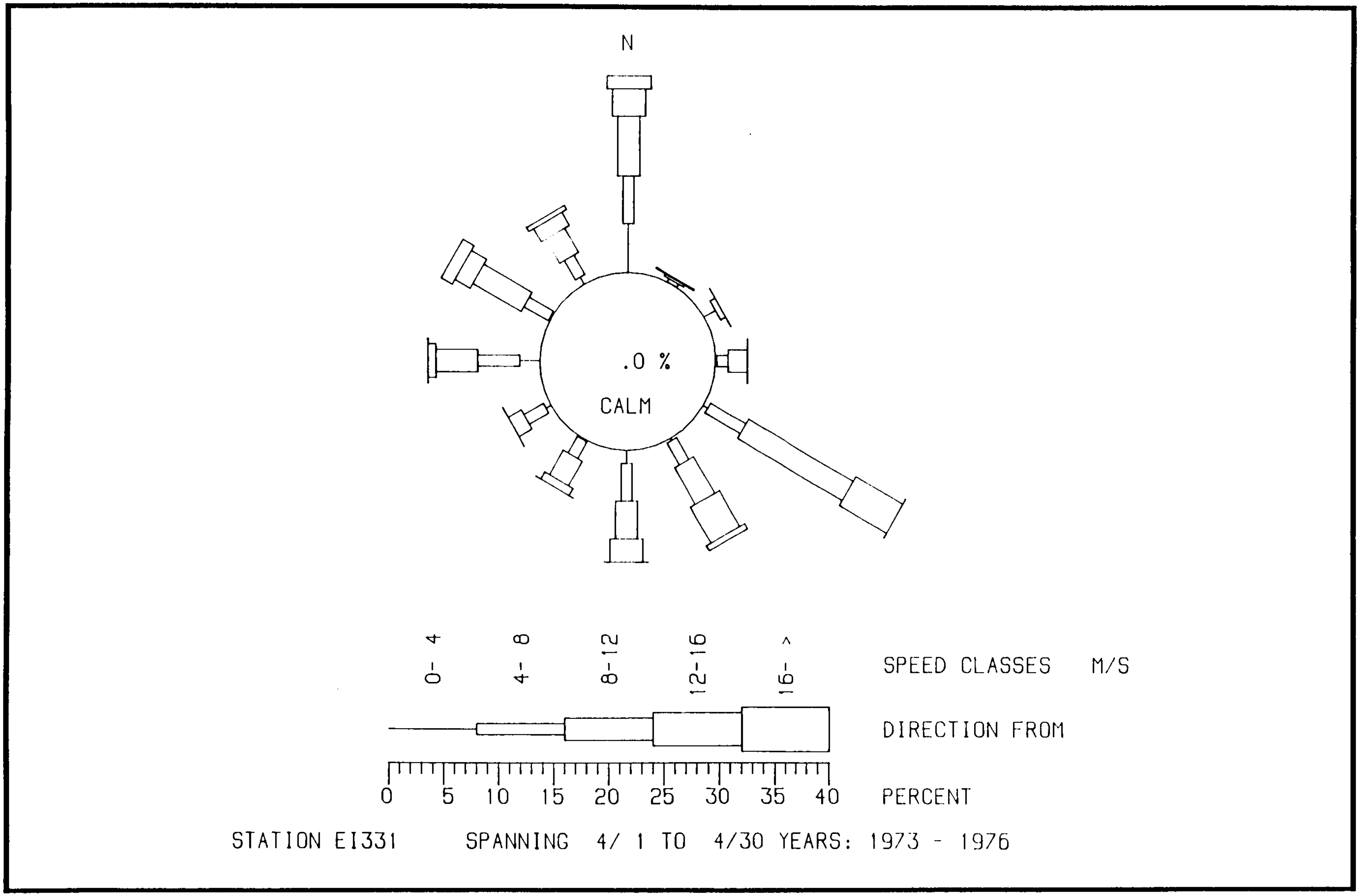

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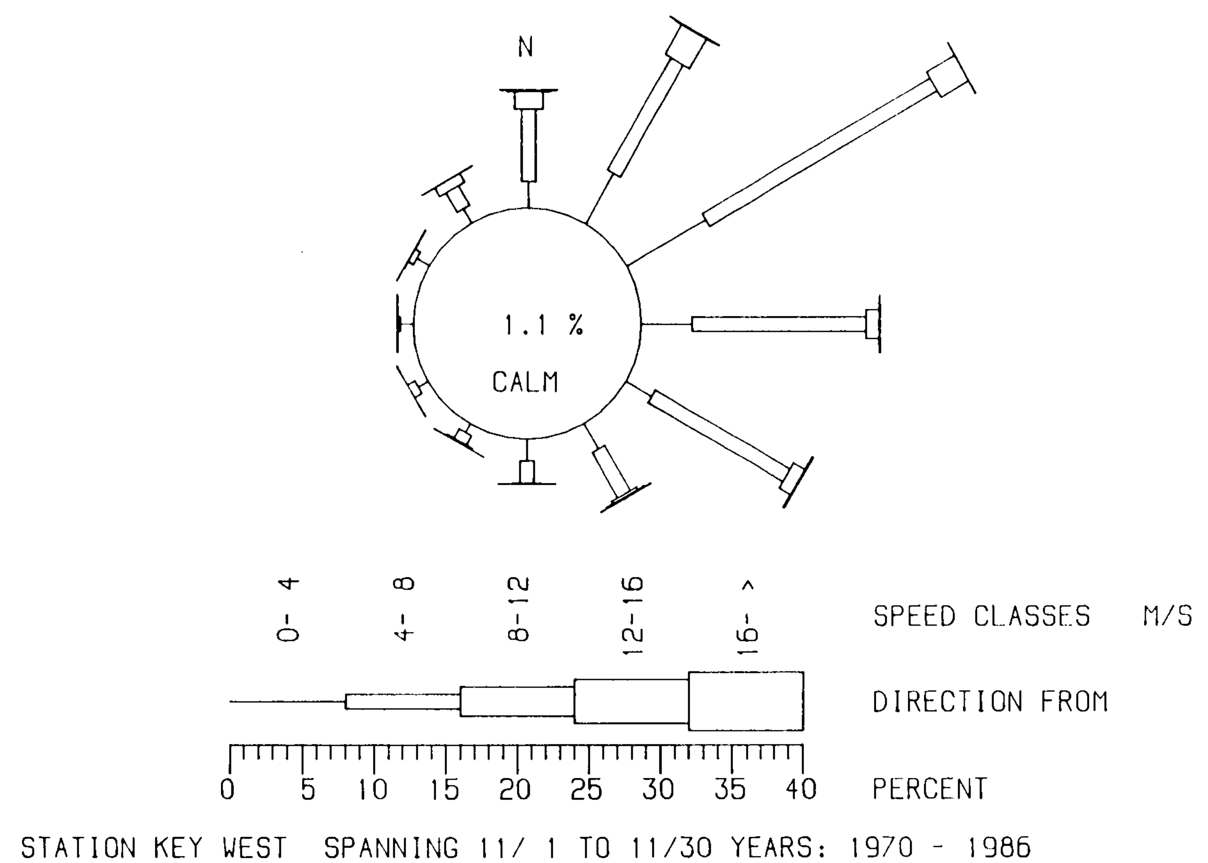
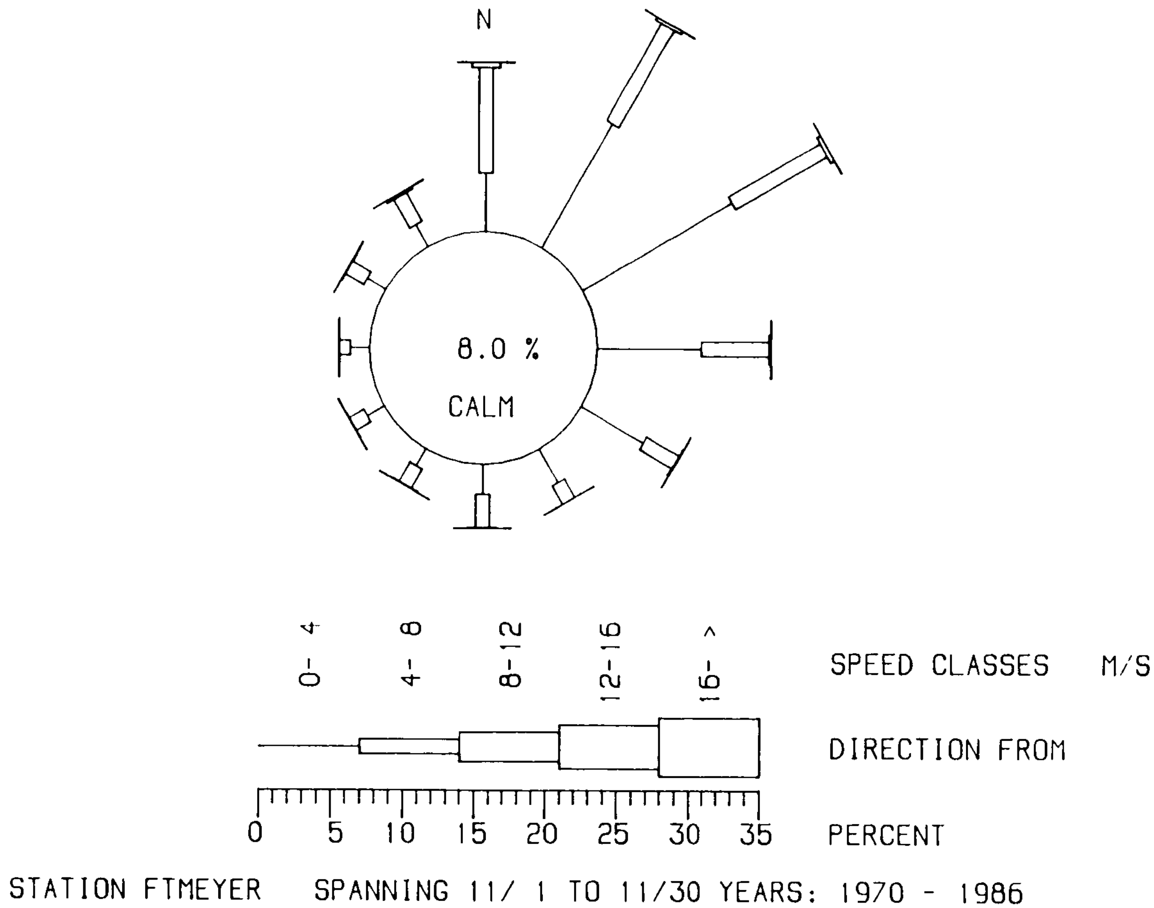


Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.



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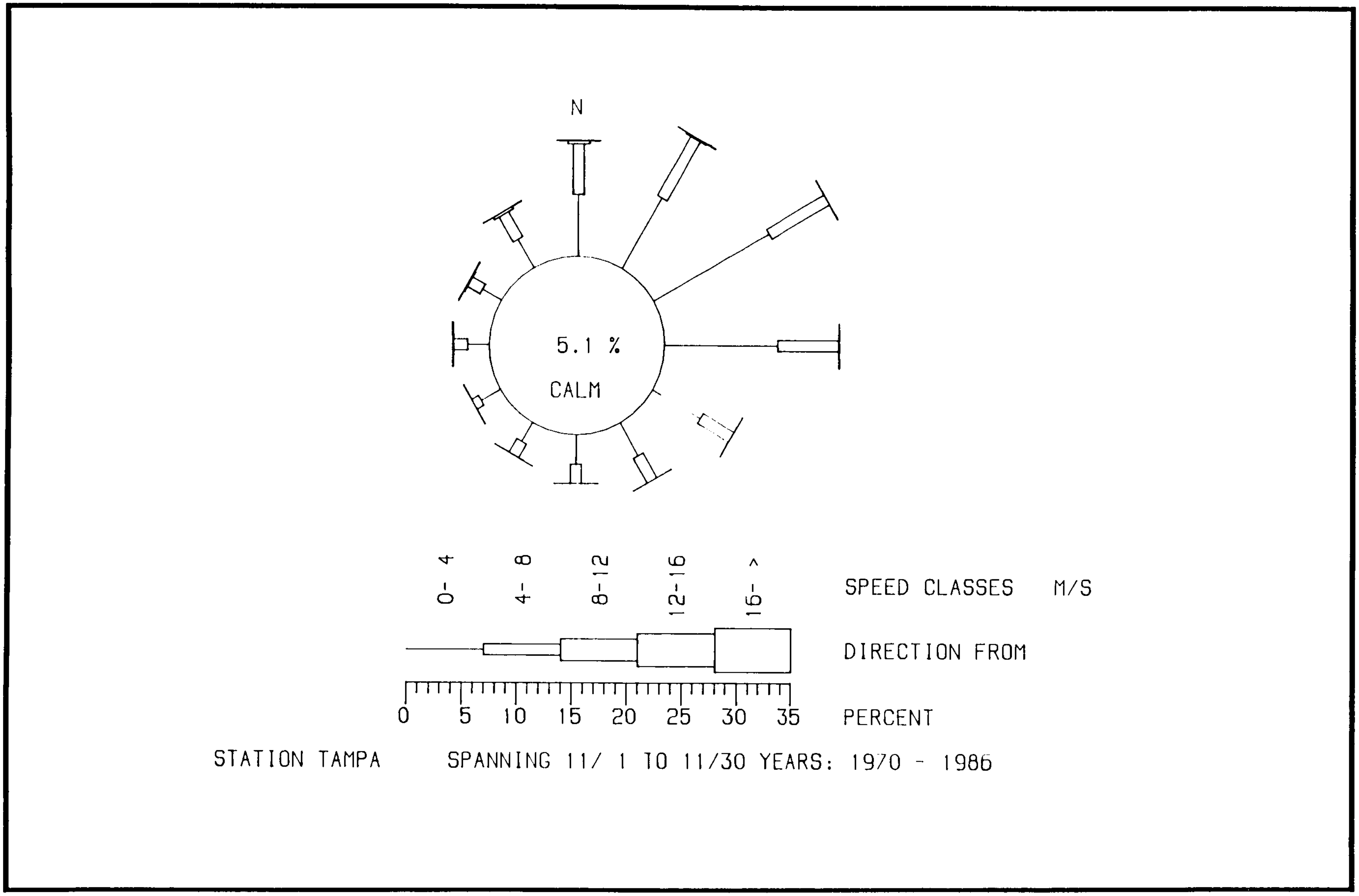
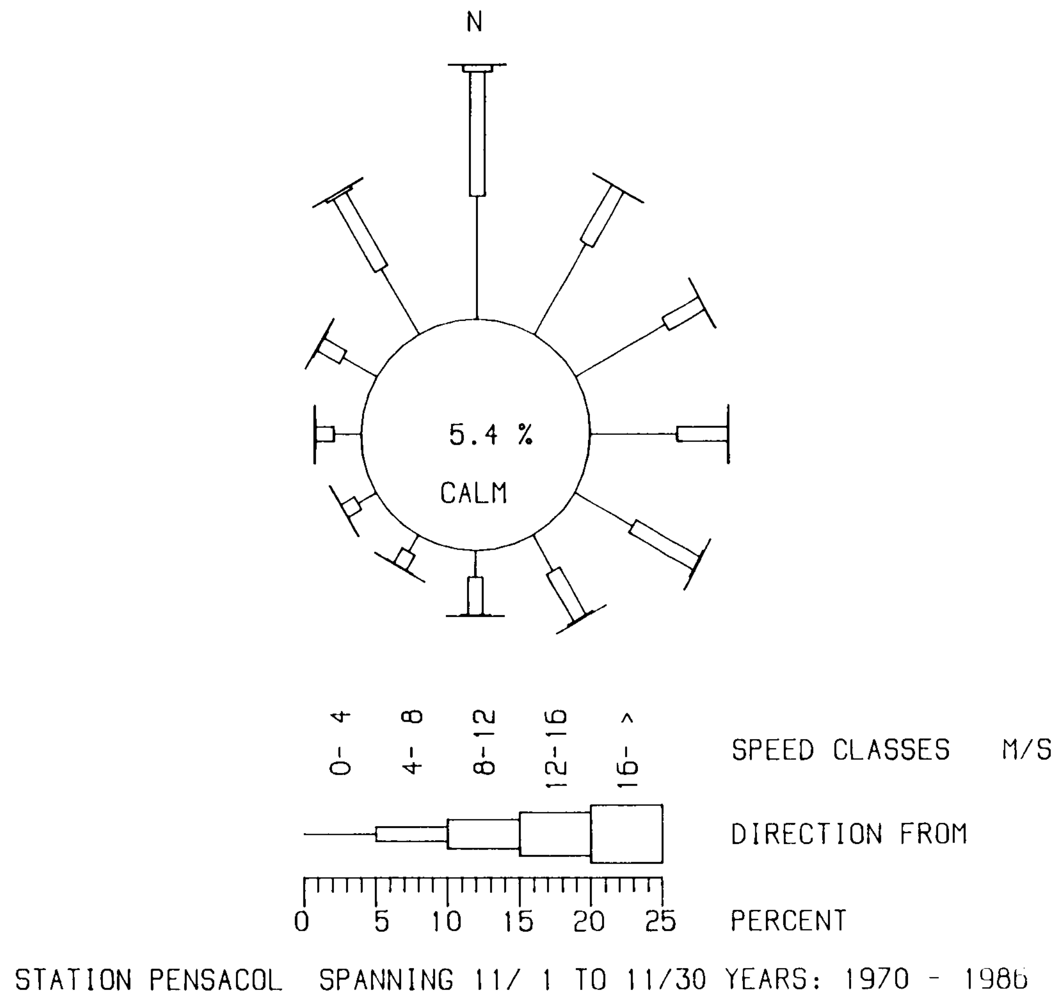


Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.



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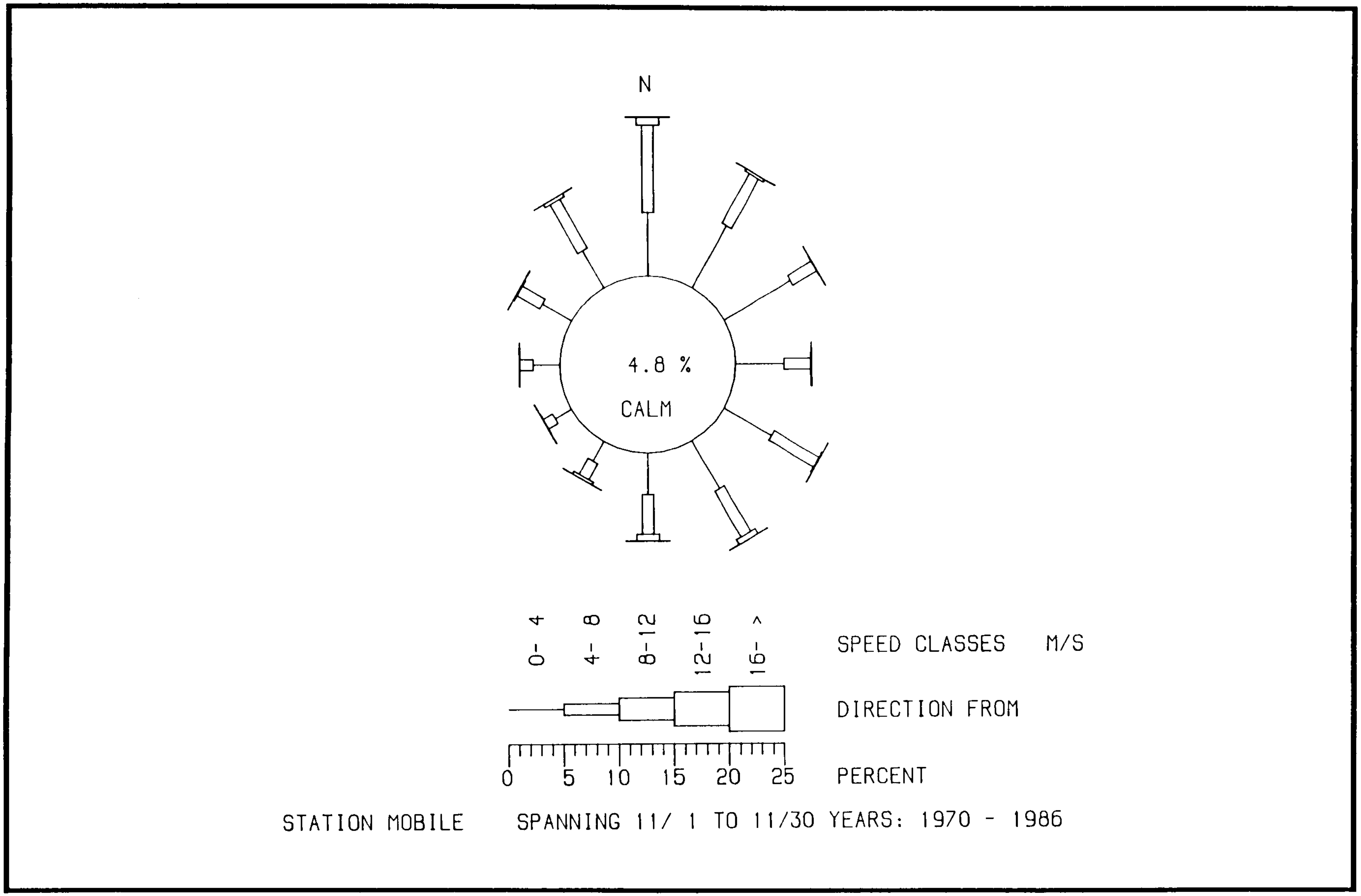

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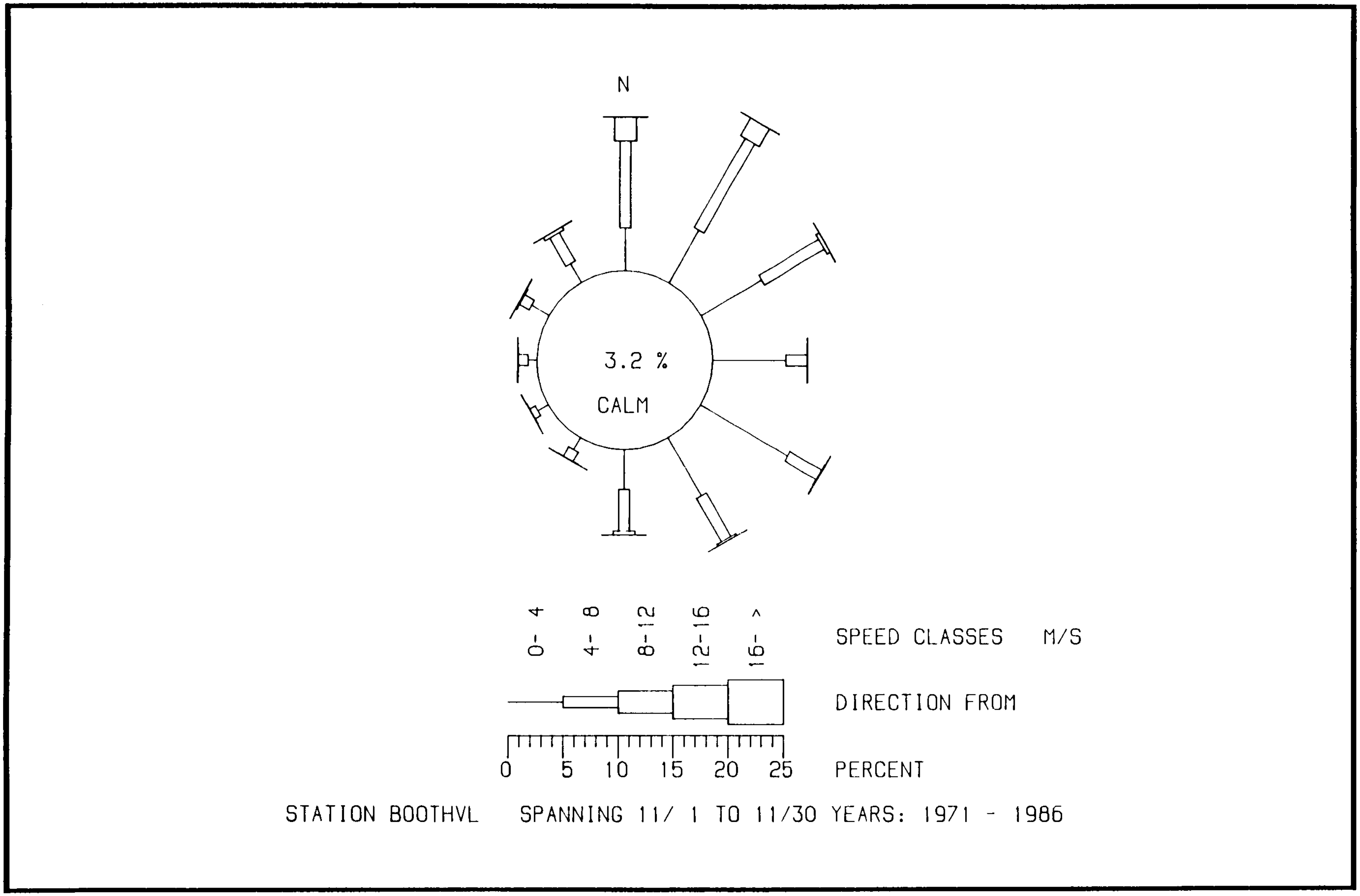

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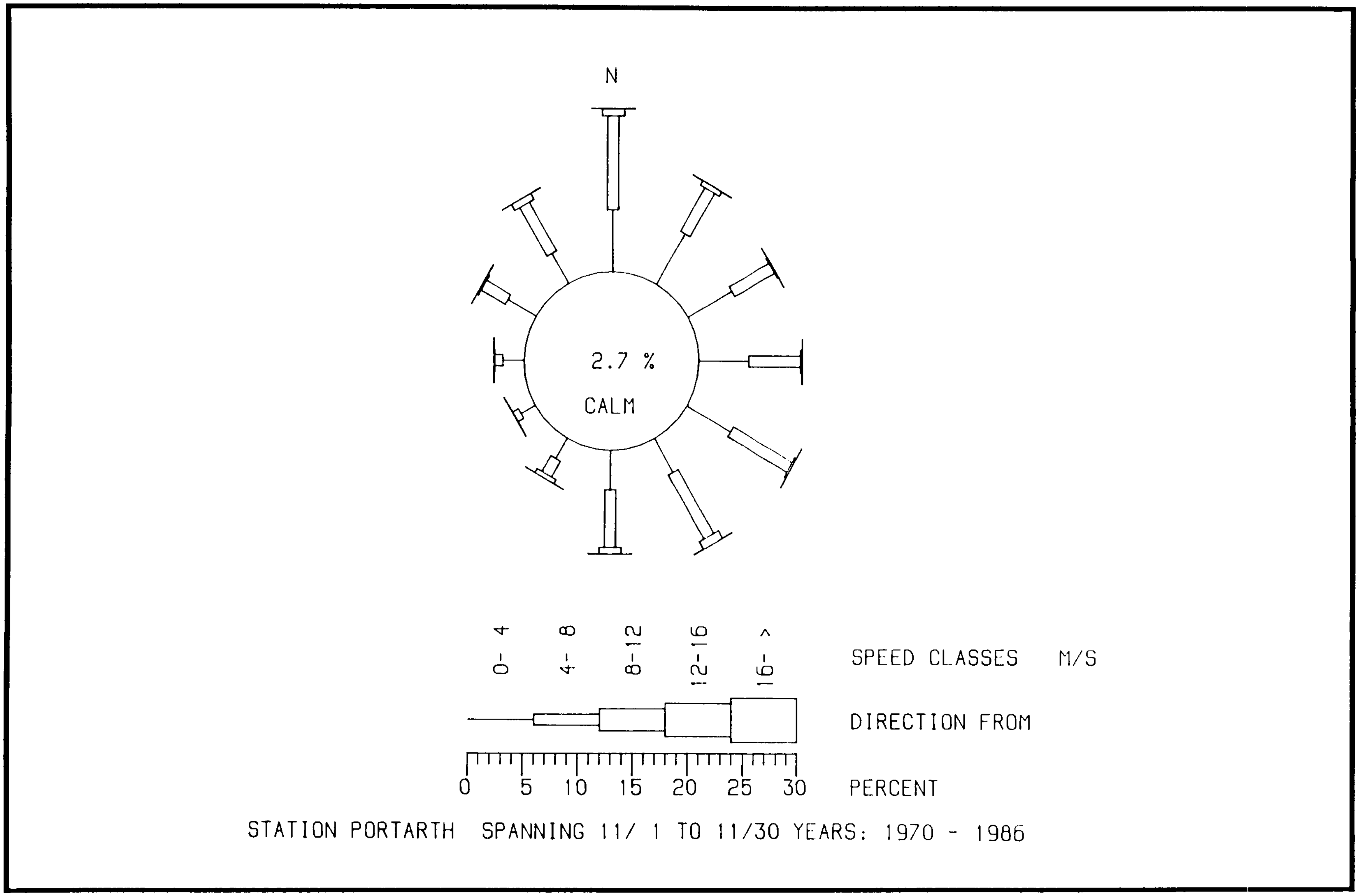

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

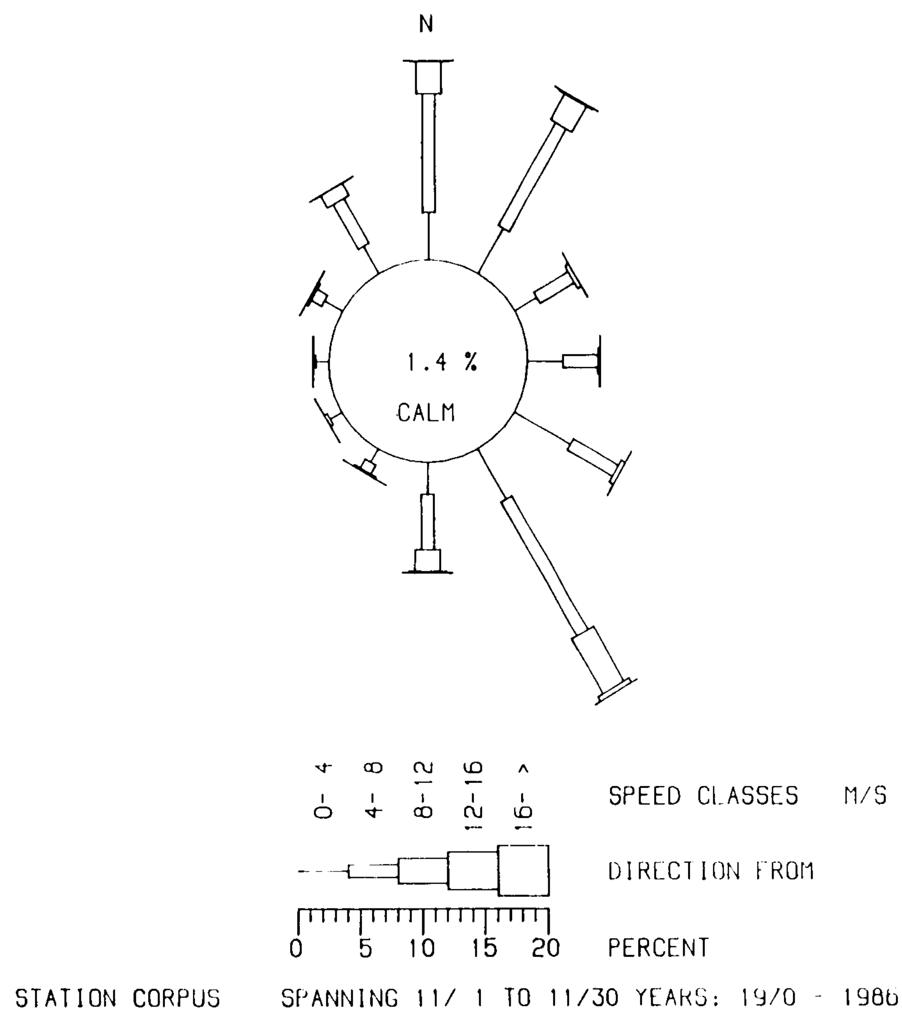

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

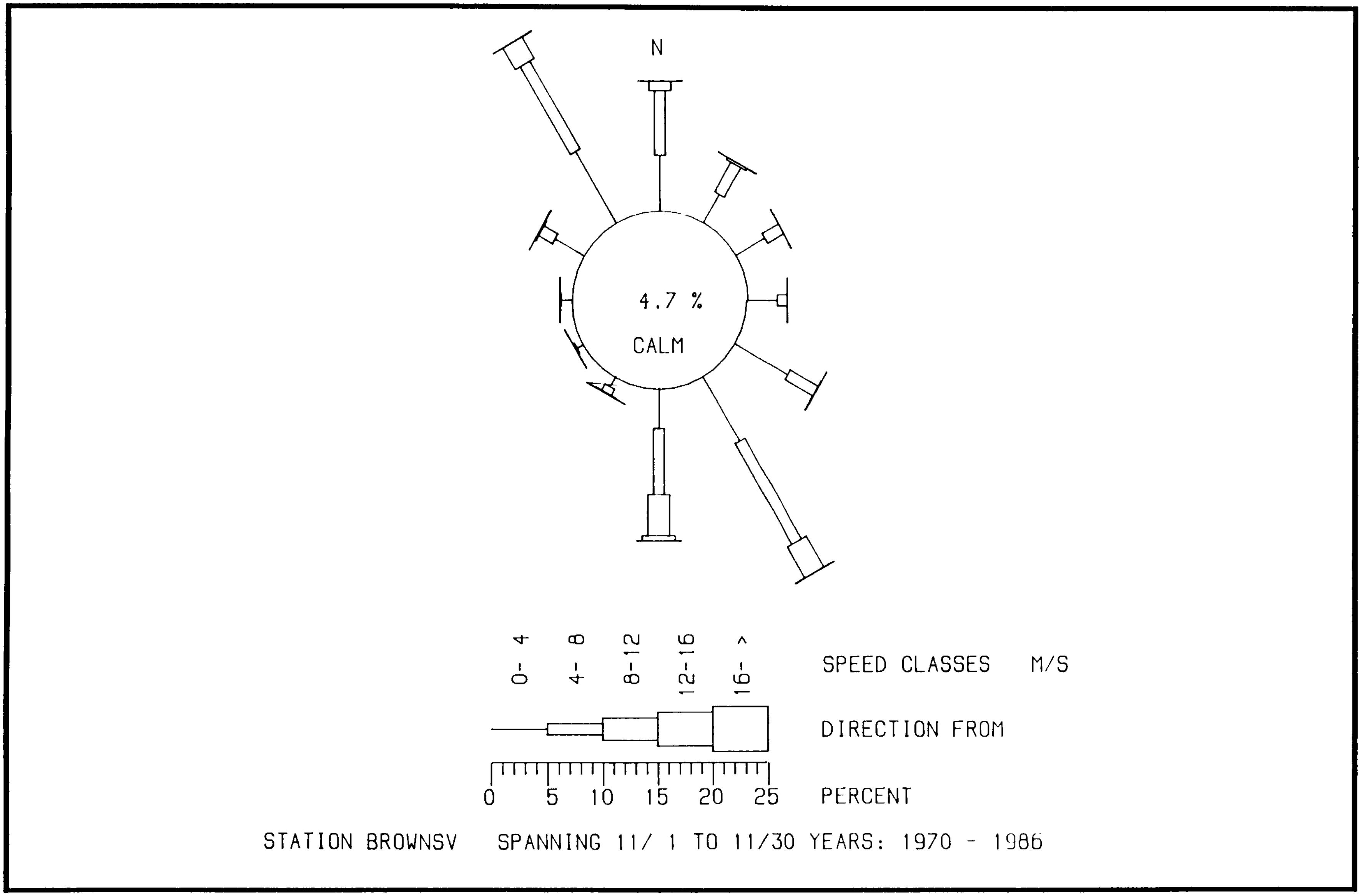

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

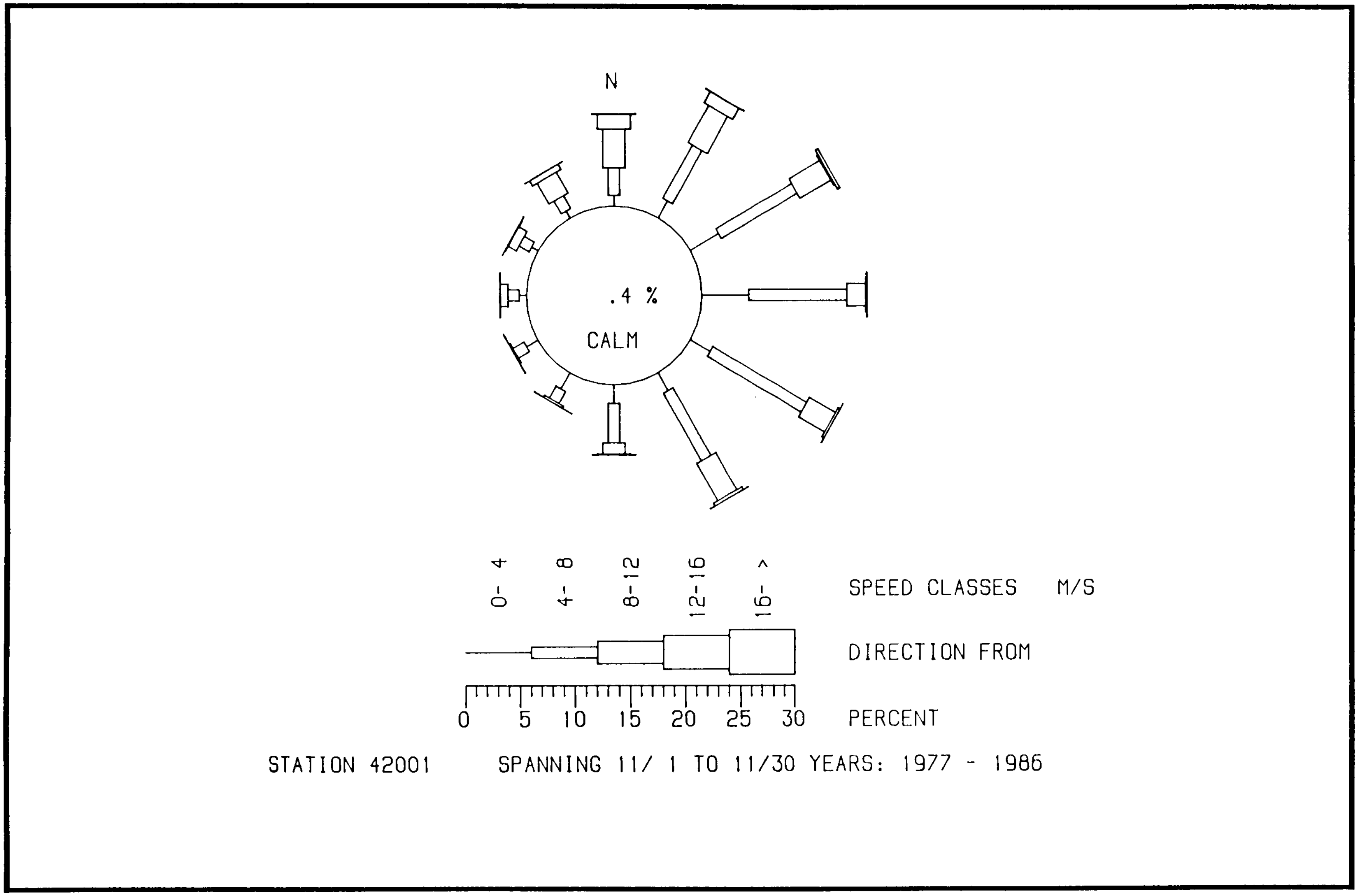

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

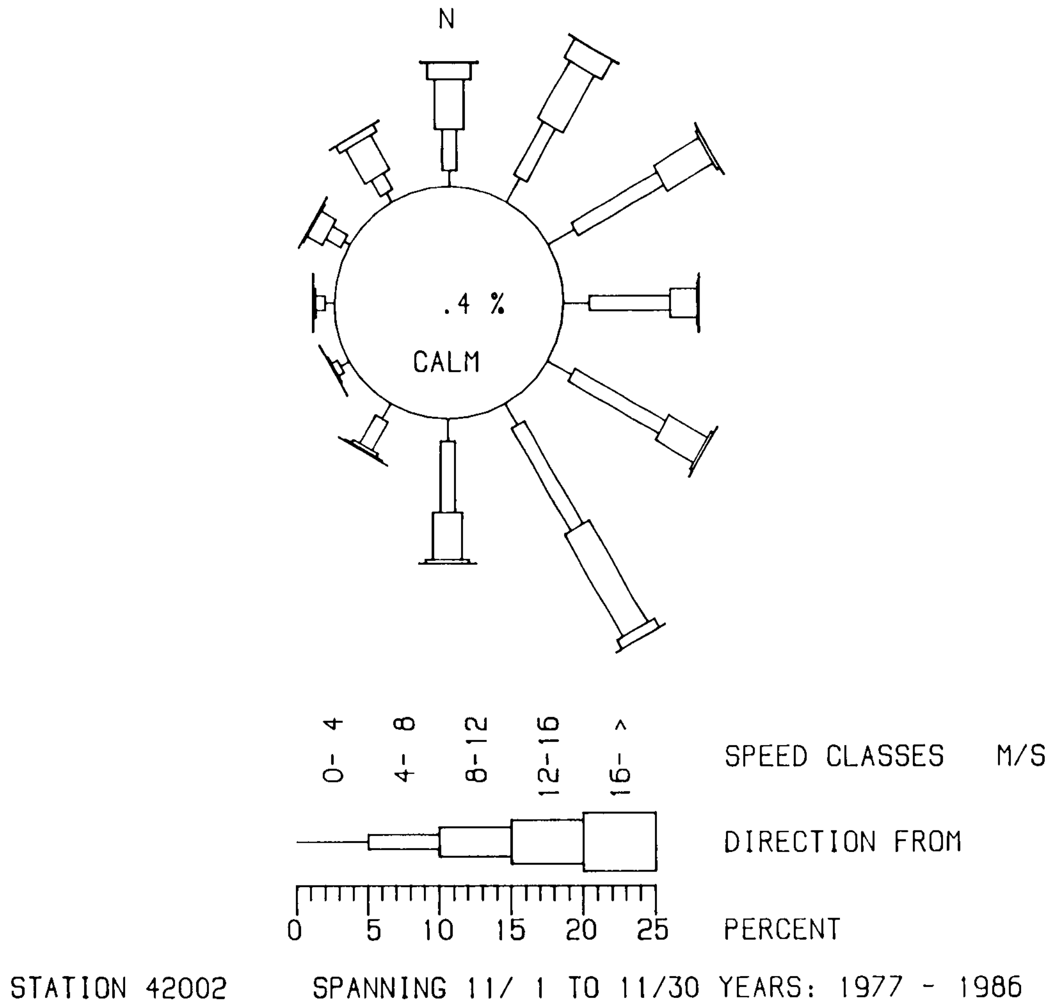

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

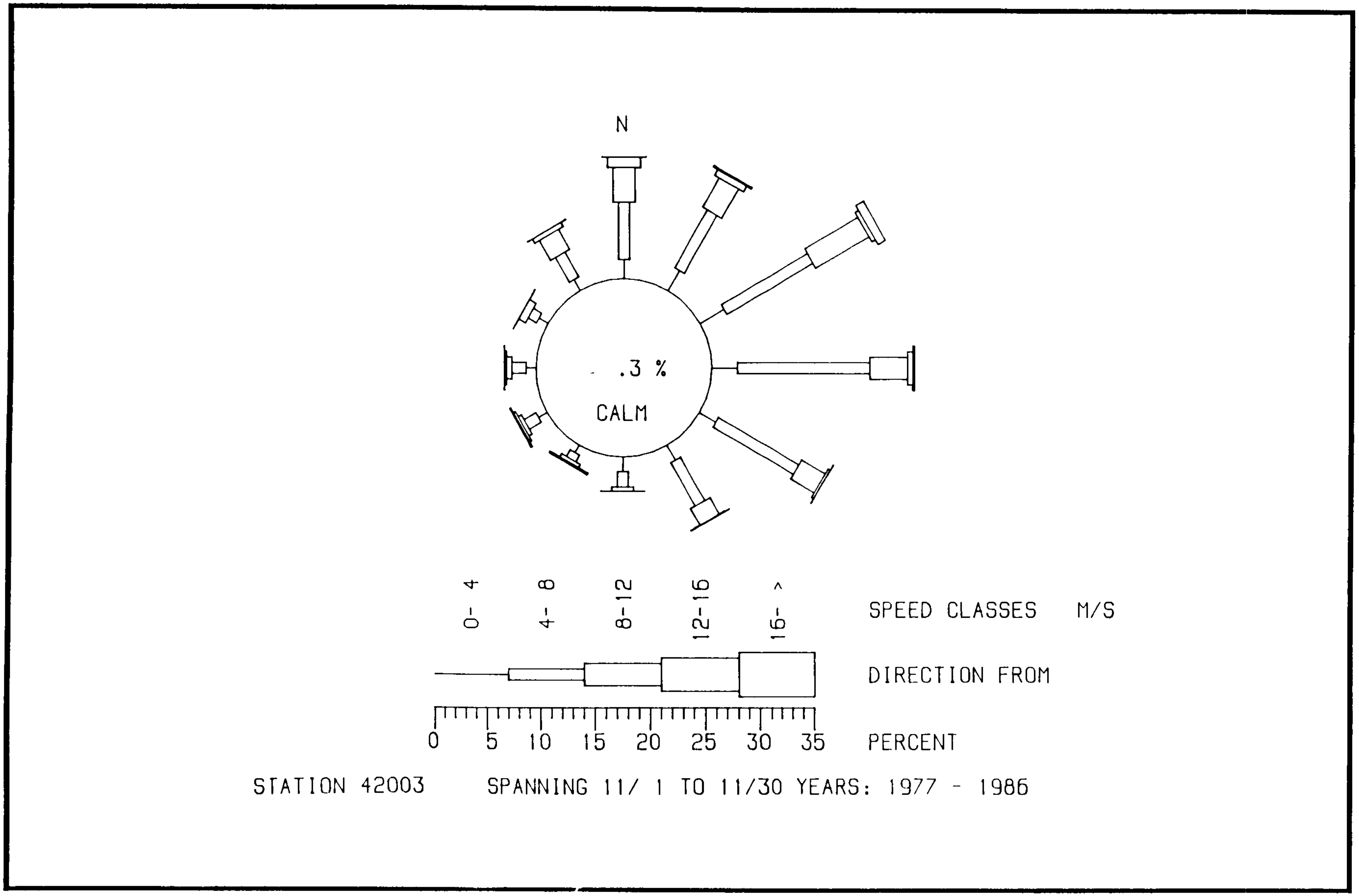

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

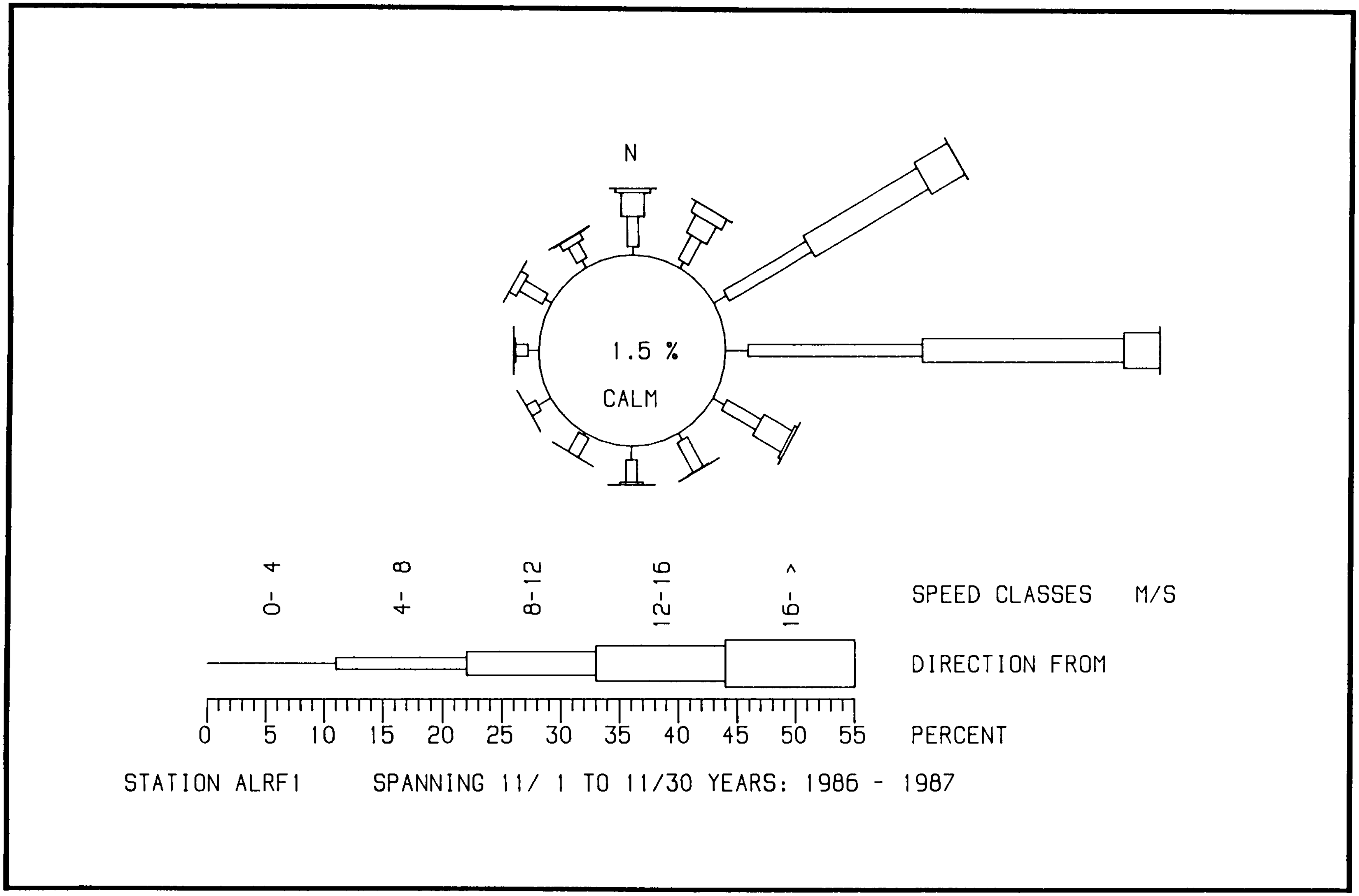

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

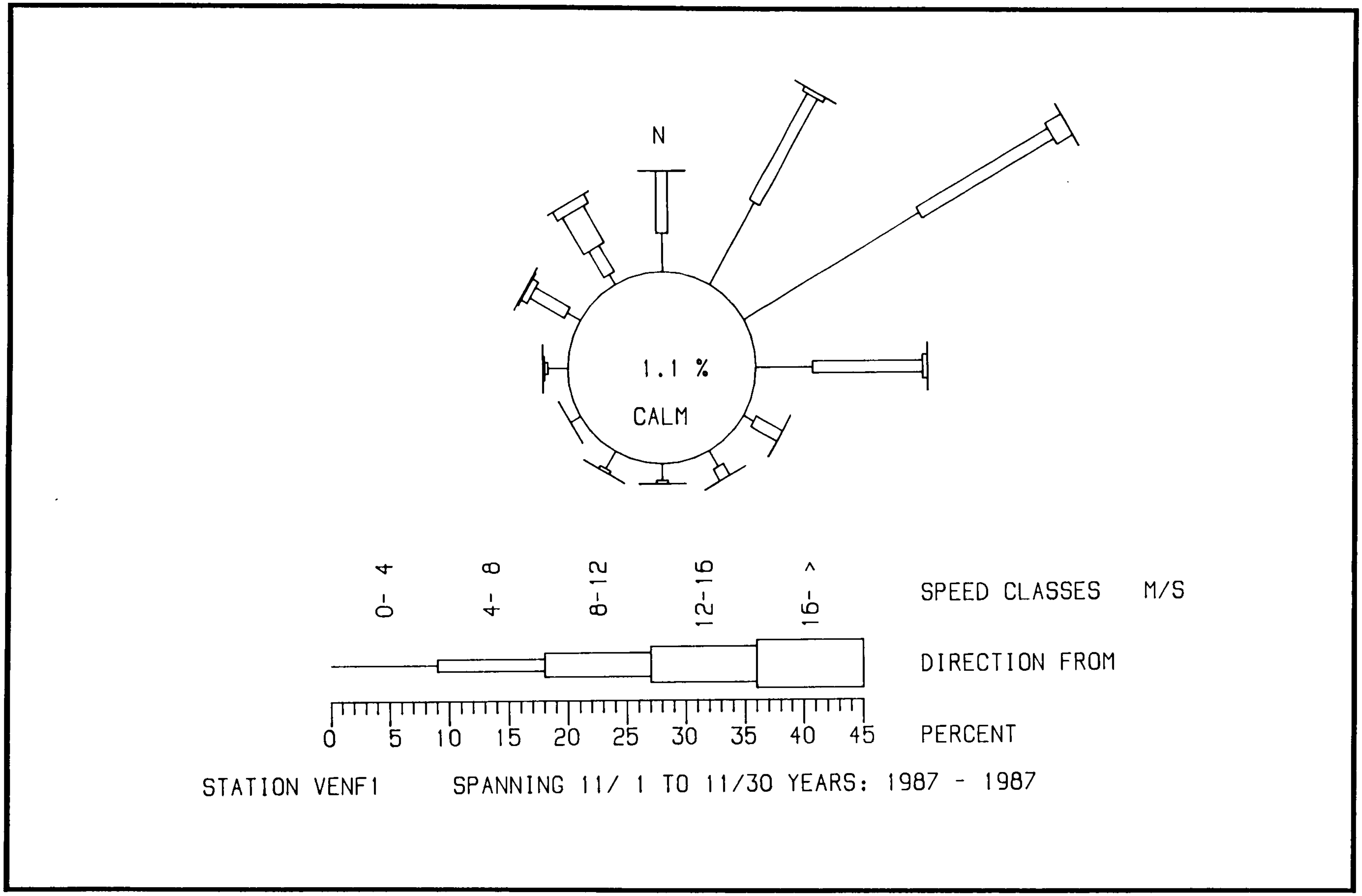

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

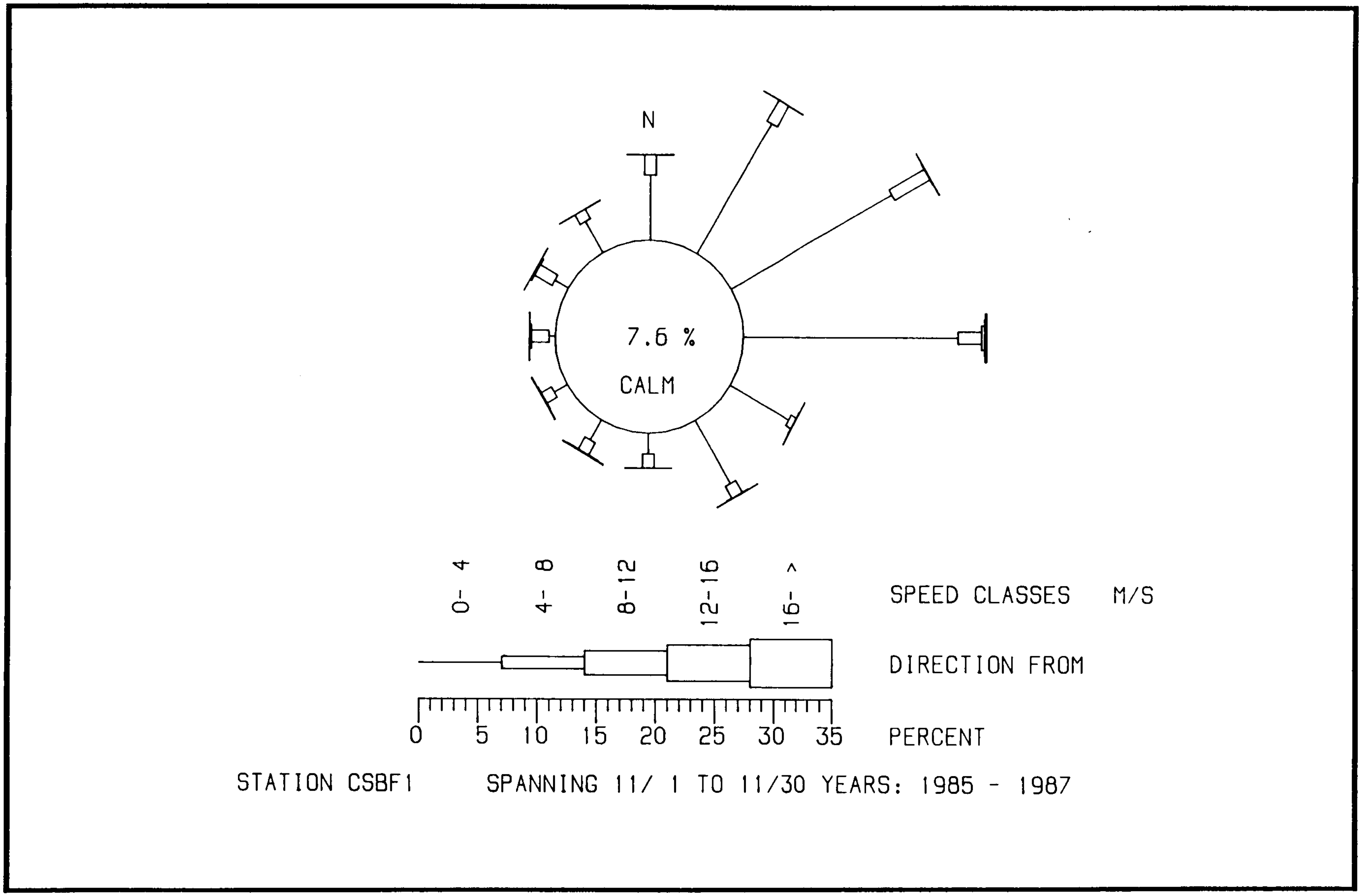

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

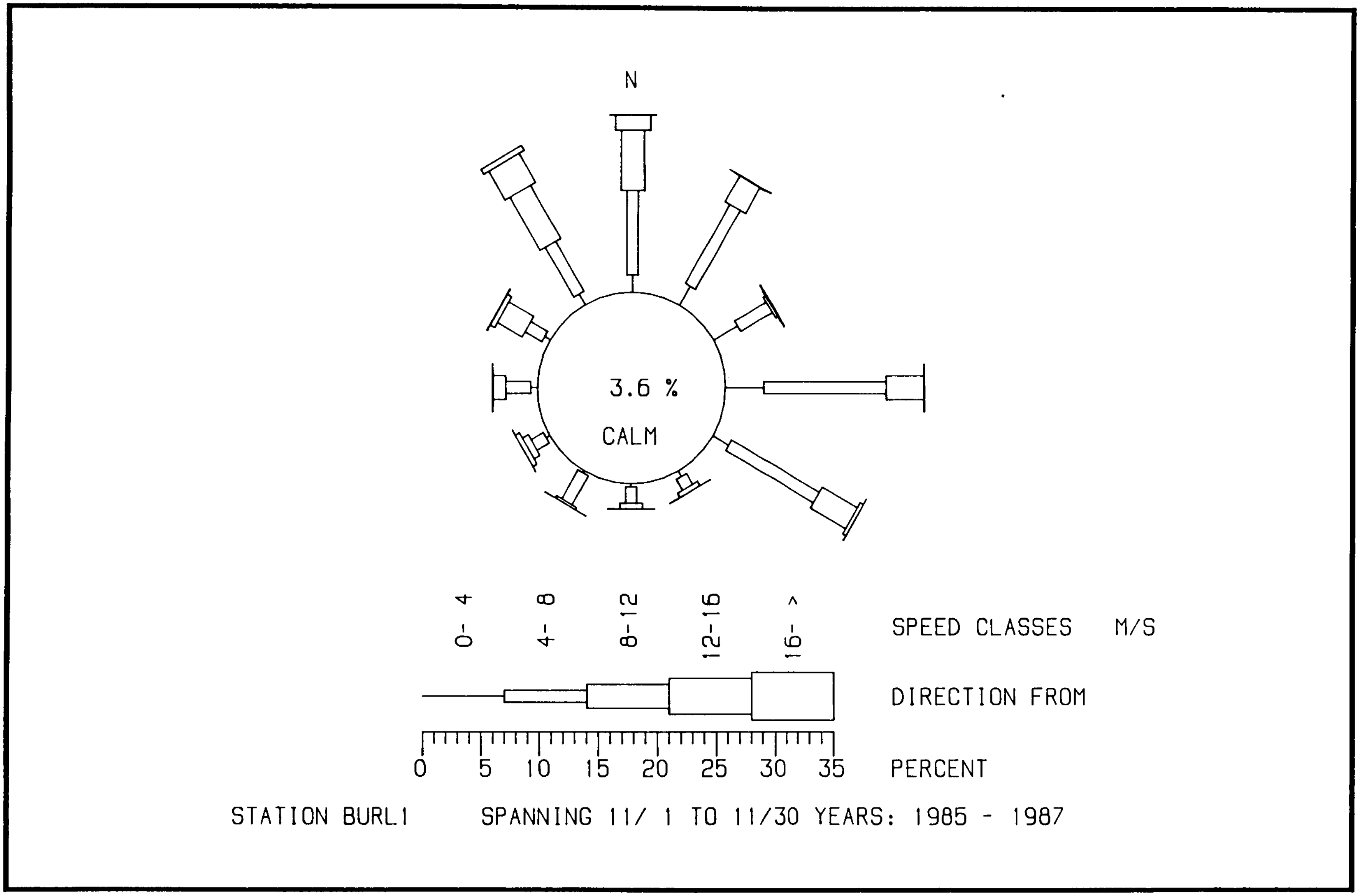

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

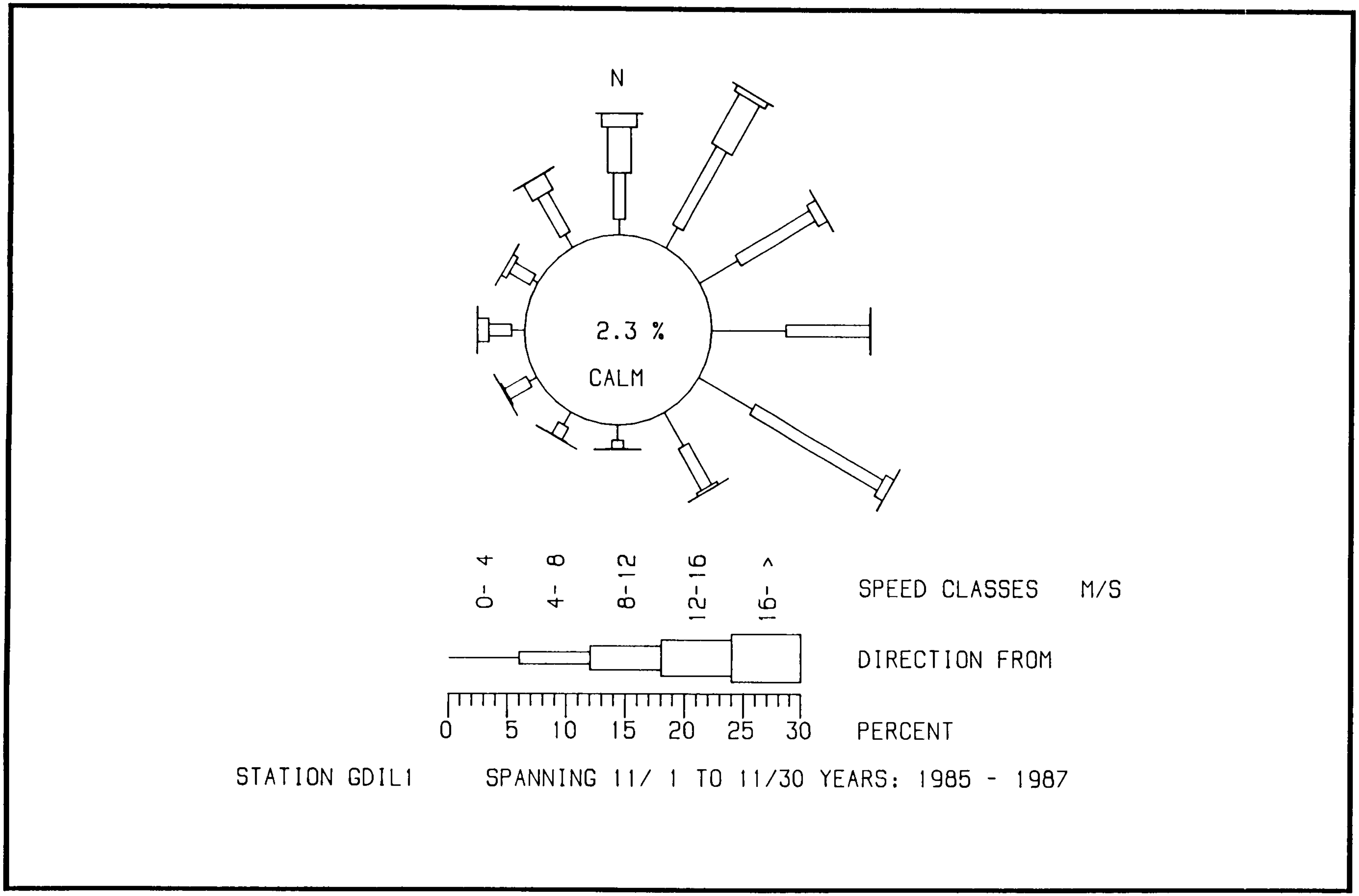

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

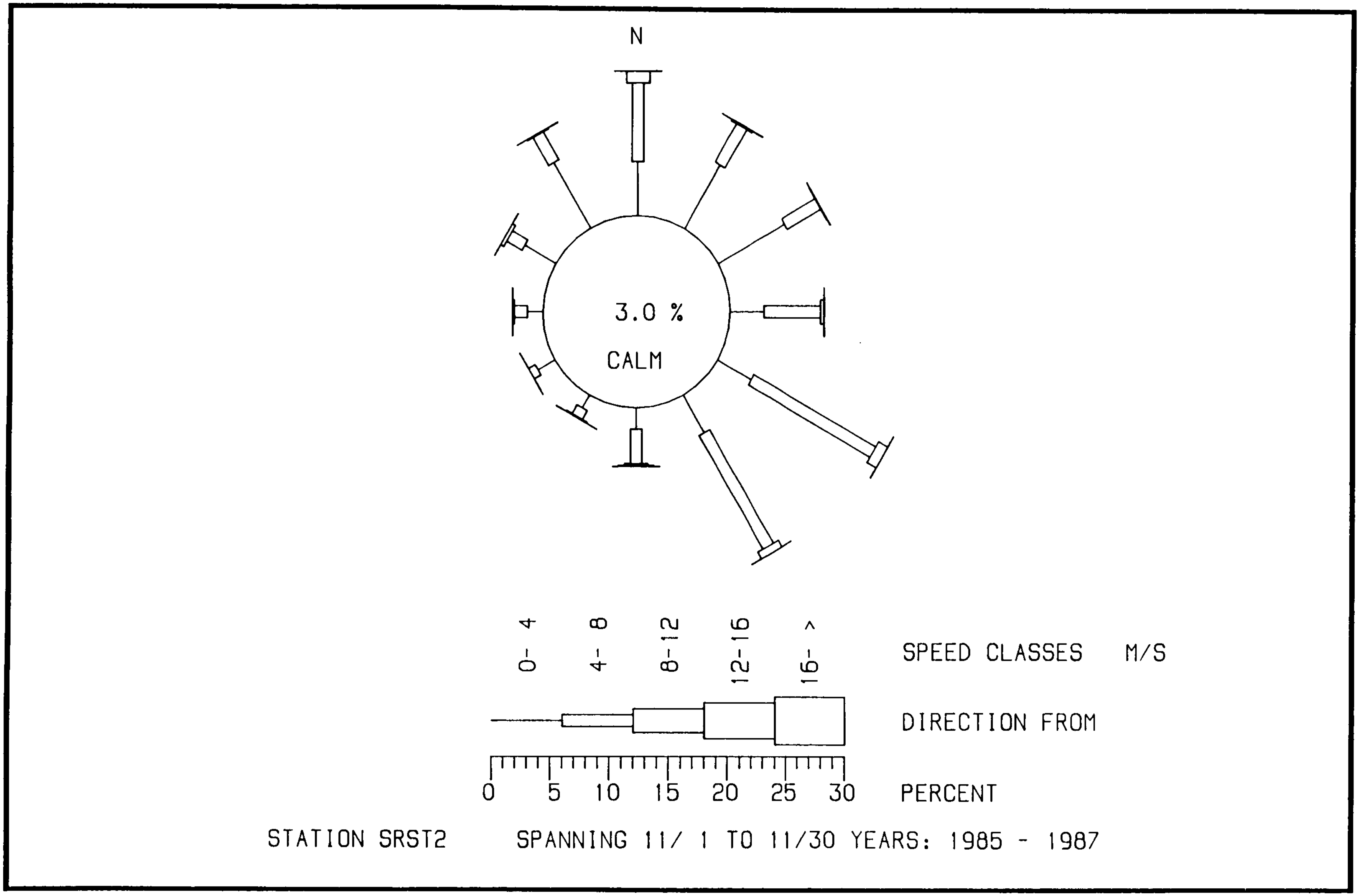

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

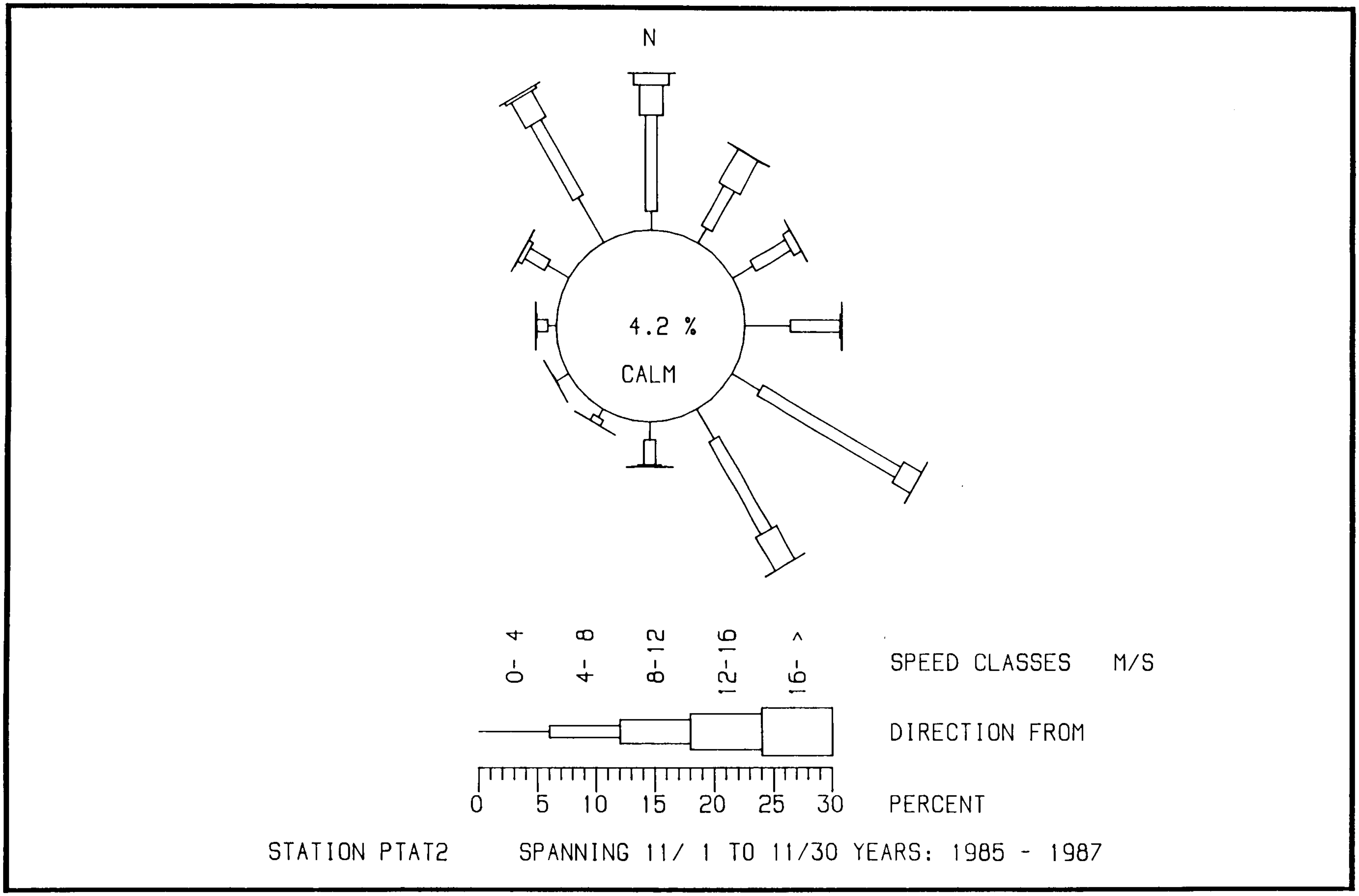

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

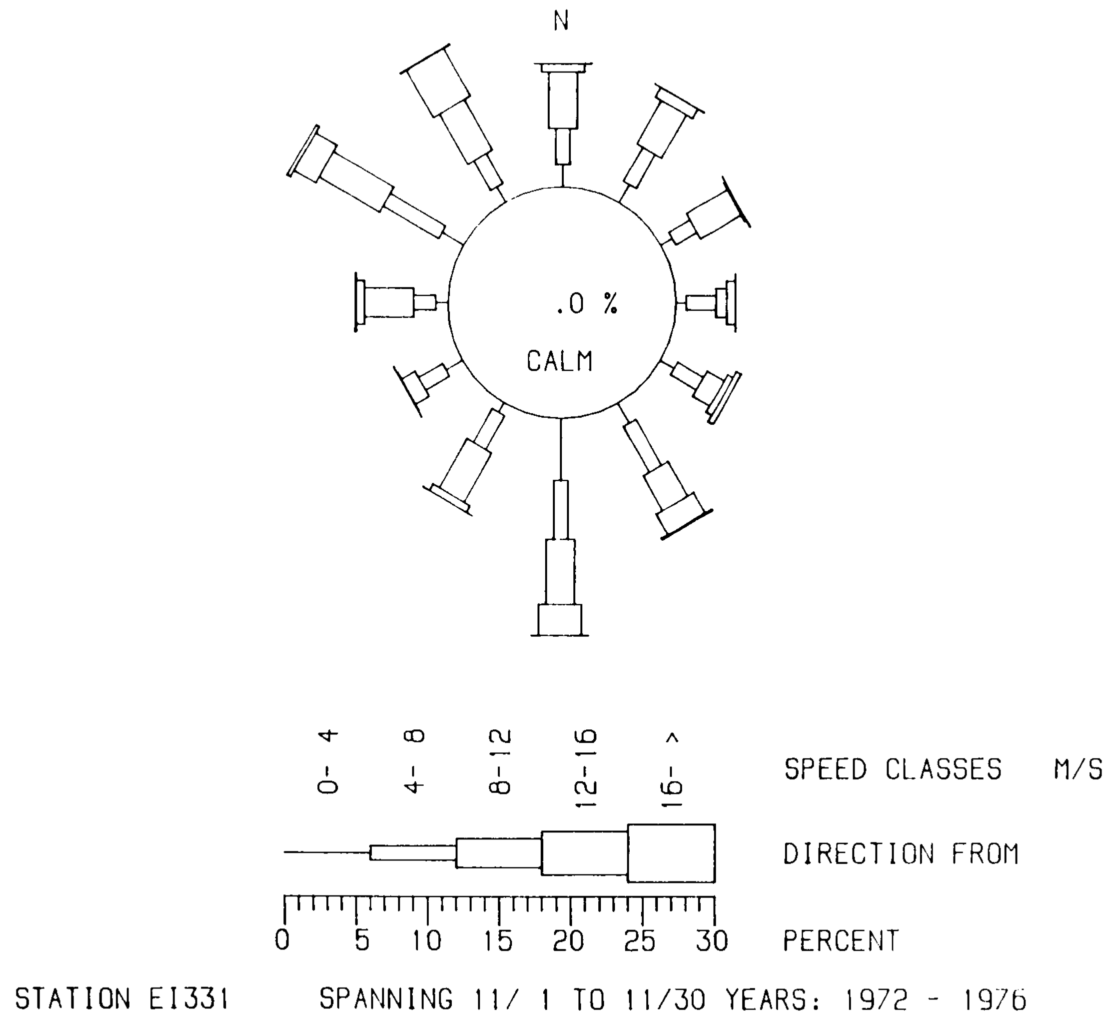

Figure 2.6-7 November transitional season wind roses for the indicated station. The percentage of the record in each speed and direction class is given by the length of the appropriate box.

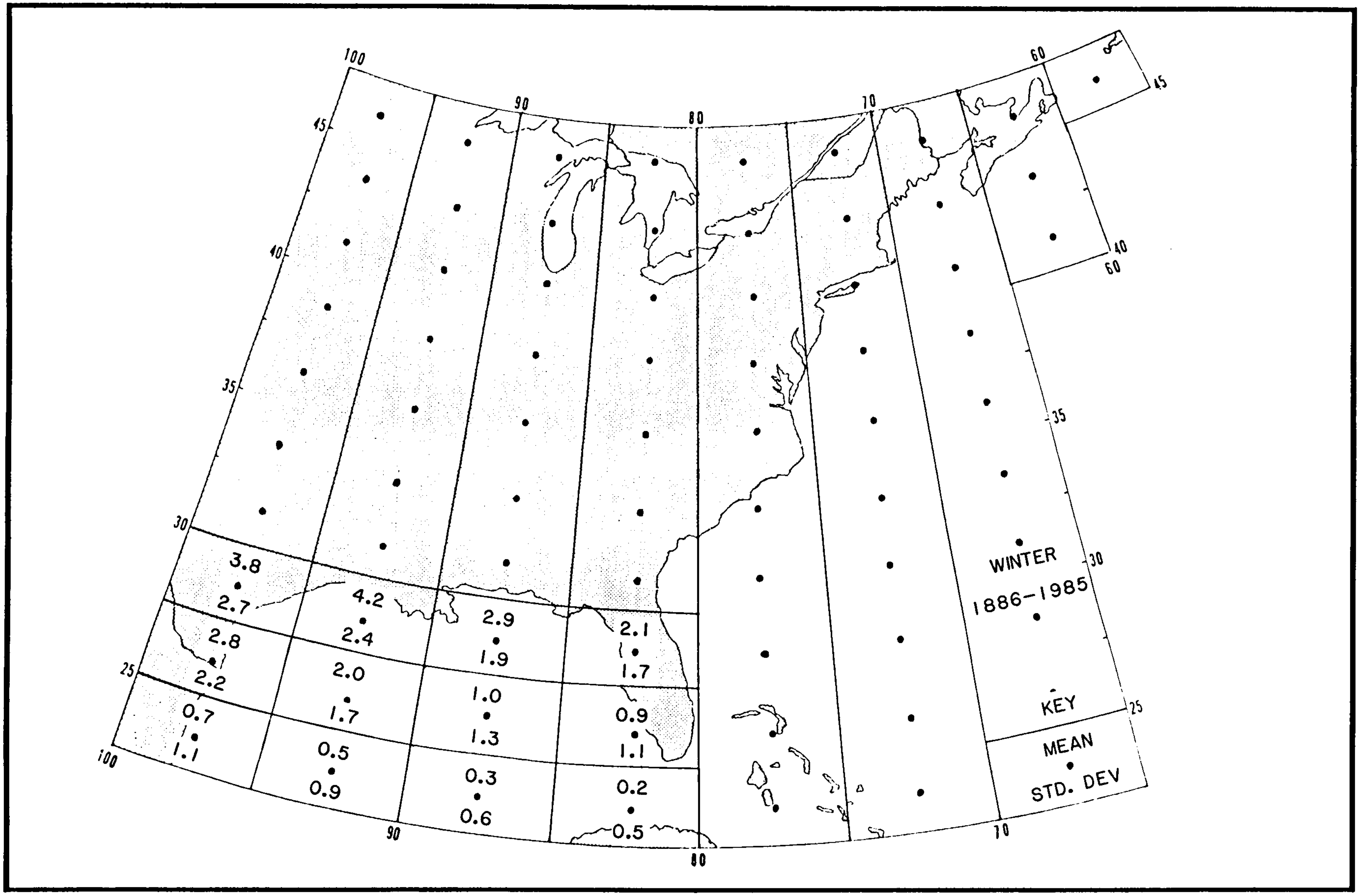

Figure 2.7.1-1 Mean and standard deviation for each of 12 grid cells identified for this study for the winter season for the 100-year period 1886-1985 (base map adapted from Hayden, 1981).

Class 4 and 5 storms are generally low pressure centers, which originate west of 85°W and south of 35°N, most frequently associated with cyclogenesis along a cold or stationary front positioned over the Gulf of Mexico. These storms usually form in conjunction with a strong, southeasterly moving continental anticyclone, and thus traverse the Gulf, crossing the Florida panhandle into the Atlantic Ocean. However, due to the presence of the anticyclone, these storms generally move rapidly through the Gulf, deepening quickly in the Atlantic before moving up the east coast (Bosserman and Dolan, 1968). This concept agrees favorably with the winter frontal frequencies of DiMego et al. (1976) presented in Section 2.7.3, where early winter months were characterized by a trough in the frequency patterns over the western Gulf, which gradually gave way to a more zonal pattern in late winter. This shift in frequency patterns details the move of the storm tracks (cyclogenesis) from the western Gulf to the central Gulf during the winter season.

In a more recent study, Johnson et al. (1986) used winter cyclogenesis data from the years 1972-1983 to quantify conditions surrounding cyclogenesis in the Gulf of Mexico region. Cyclogenesis was defined as occurring when there was at least 1 closed isobar in a 2 mb analysis. The study found an average of 11.9 cyclones per year occurred, slightly higher than the 11 storms per year found by Saucier (1949) in his landmark paper on Texas, West Gulf cyclones. The difference in the 2 numbers (11.0 and 11.9) was attributed most likely to better data quality, greater data quantity and/or the shortness of the data set used in their study. The regions of cyclogenesis agree favorably with the findings presented earlier (Saucier, 1949), where Johnson et al. (1986) found 71% of the storms identified formed in an area between 23°N, 96°W and 29°N, 90°W. In addition, approximately half (48%) of the total number of cyclones studied developed in a smaller region between 25°N, 98°W and 28°N and 93°W. (Johnson et al., 1986).

Using principal components analysis (PCA), described in Section 2.3.4, on the 100-year 12-grid cell data matrix of cyclone data for the winter season, 56.6% of the total system variance could be explained by the first 2 principal component eigenvectors (E1 and E2, respectively). Eigenvector 1 (E1) explained 38.1% of the variance in the cyclone track data, while E2 accounted for 18.5%. Both of these eigenvectors passed the significance test guidelines provided by Overland and Priesendorfer (1982). The first principal component (or Empirical Orthogonal Function, EOF) can be classified as a presence/absence function for cyclones in the Gulf of Mexico. Figure 2.7.1-2 shows the spatial distribution of E1, which is positive over the entire study region. Analysis of the secular trends (Figure 2.7.1-3) in the eigenvector case weightings details that during years having positive loadings, cyclone numbers are increased in the Gulf, while during years having negative weightings, storm numbers are somewhat reduced. Eigenvector 1 also shows the preferred storm track across the western to central Gulf, implying a crossing of the Florida panhandle, as was delineated earlier in work performed by Bosserman and Dolan (1968). This finding most closely resembles their storm track 4.

Eigenvector 2 displays a mixed sign convention over the region, being strongly negative in the western and north-central Gulf, while remaining very positive in the central and southeastern regions (Figure 2.7.1-4). The secular case weightings (Figure 2.7.1-5) show some type of cyclical behavior in E2, ranging from predominantly negative values between approximately 1885 and 1925, and becoming totally positive in the last 25 years of the time series. The cyclicity

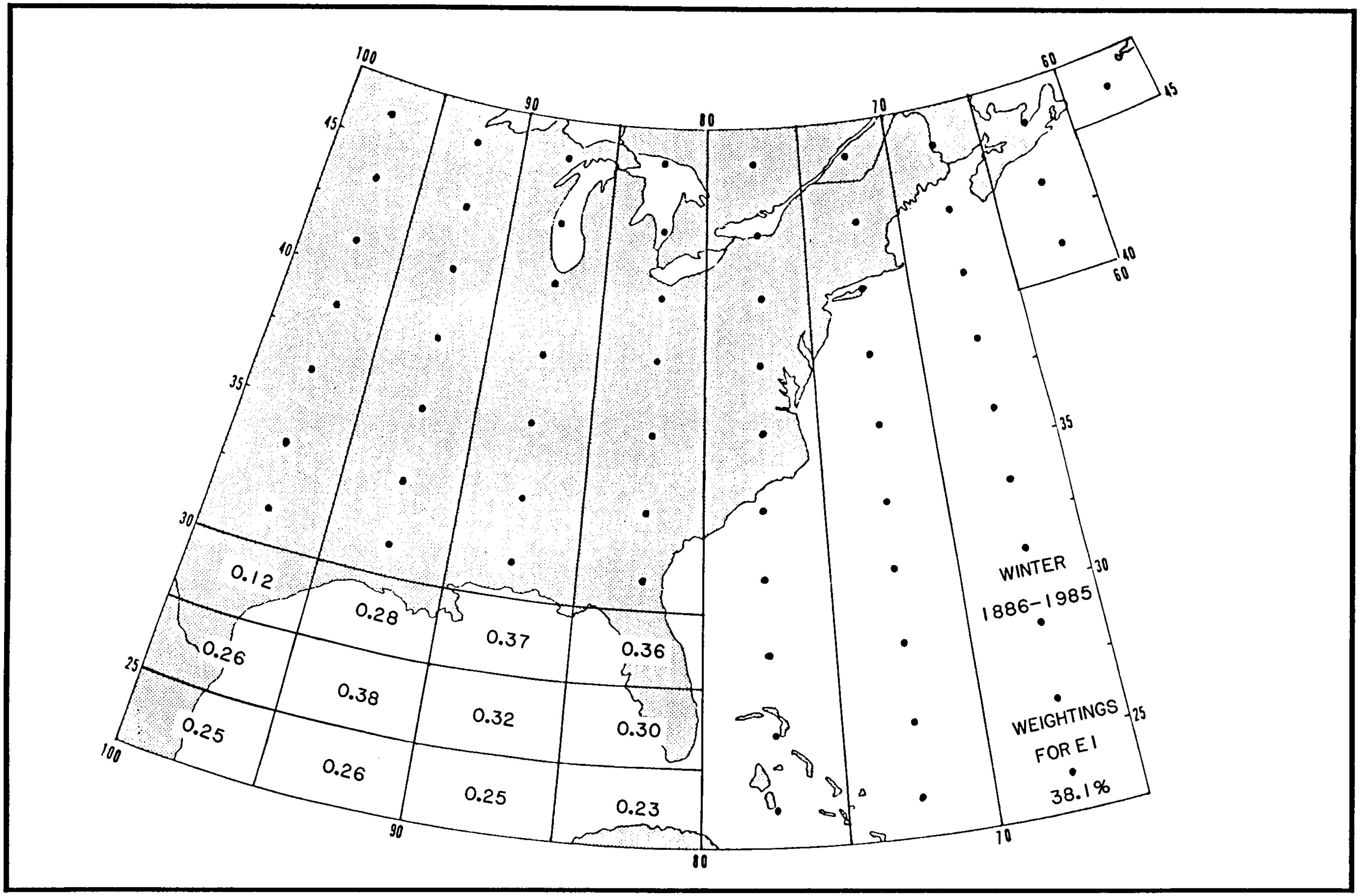

Figure 2.7.1-2 Scores for the first principal component eigenvector (E1) for the winter season for the 100-year period 1886-1985. E1 accounts for 38.1% of the total variance (base map adapted from Hayden, 1981).

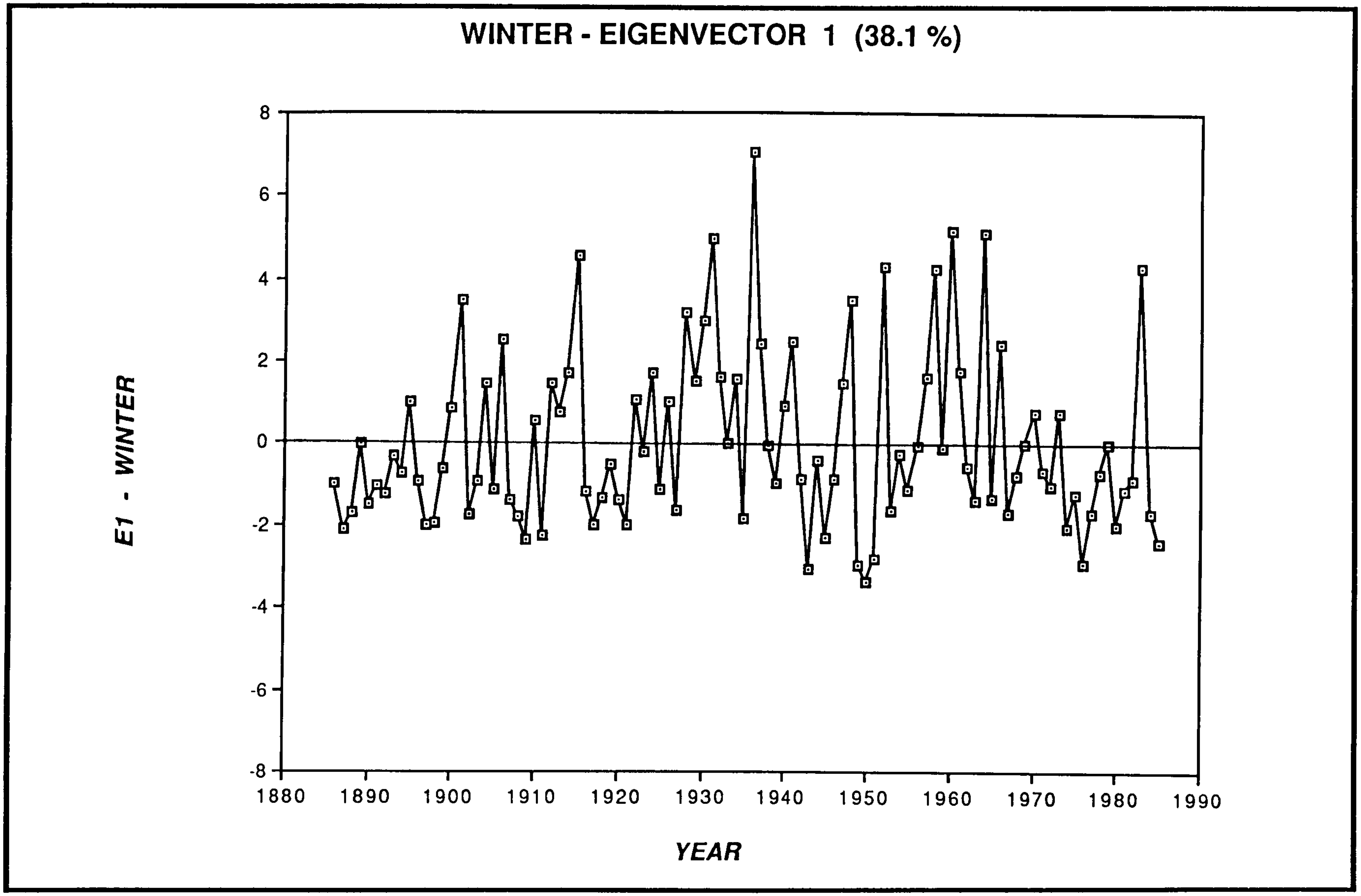

Figure 2.7.1-3 Secular trends in E1 over the 100 year-period 1886-1985.

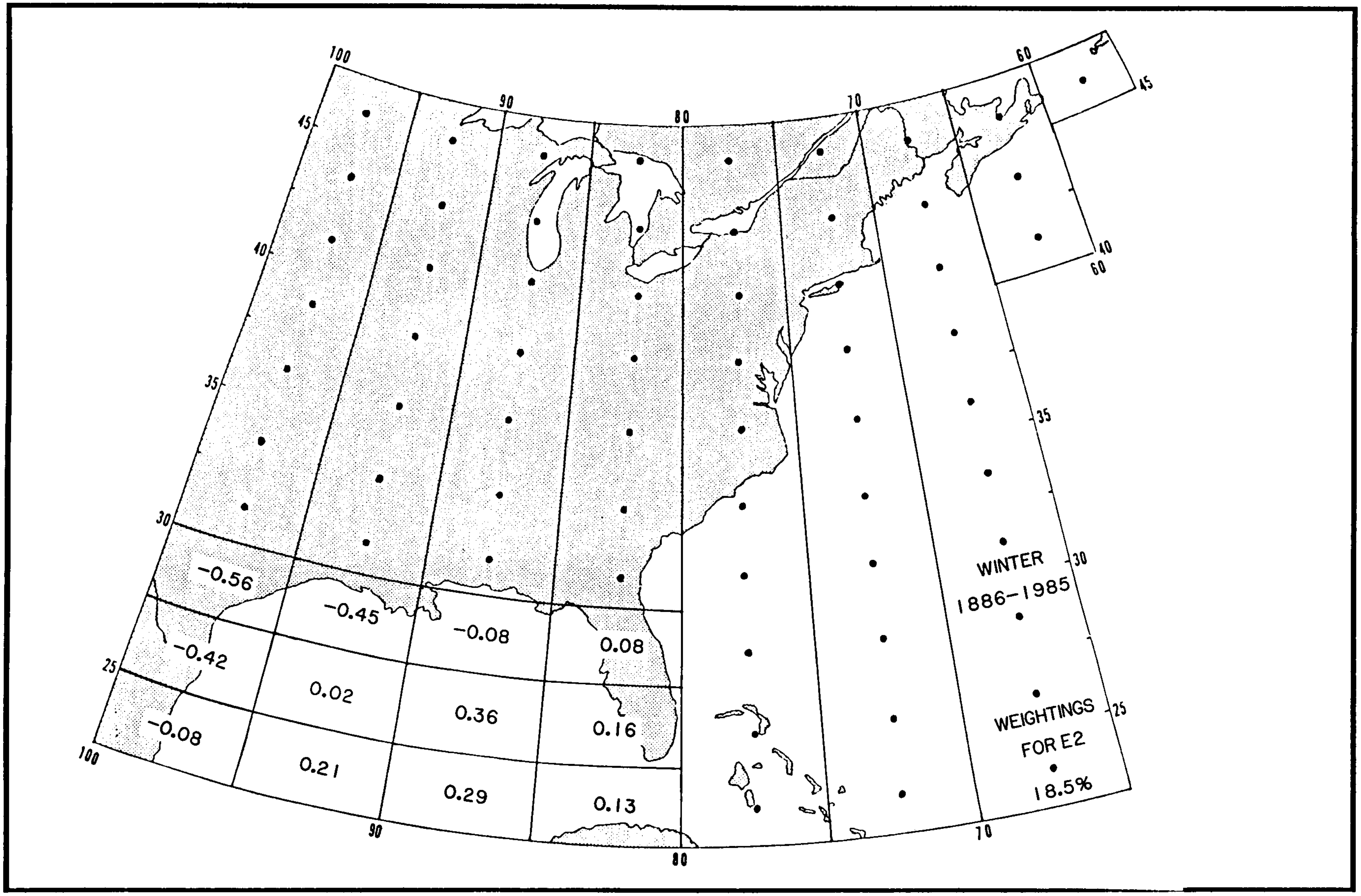

Figure 2.7.1-4 Scores for the second principal component eigenvector (E2) for the winter season for the 100-year period 1886-1985. E2 accounts for 18.5% of the total variance (base map adapted from Hayden, 1981).

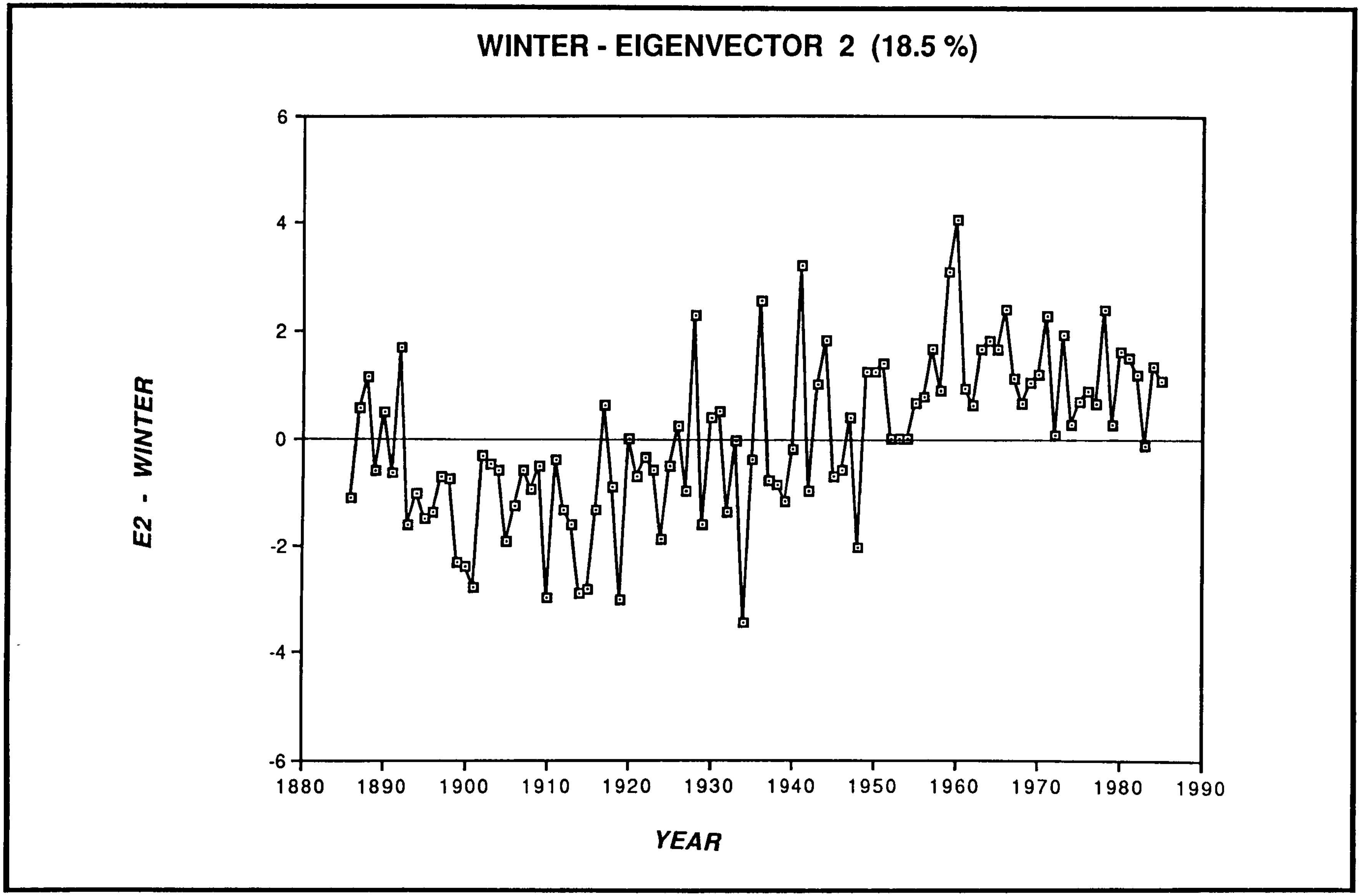

Figure 2.7.1-5 Secular trends in E2 over the 100-year period 1886-1985.

of this vector is best approximated by an 11-point (year) moving average (Figure 2.7.1-6). The physical interpretation of this vector shows that when E2 is negative, the western Gulf tends to be more active in terms of cyclones, while when E2 is positive, the central and Gulf tend to be more active. Thus, E2 can be classified as the "see-saw" vector of cyclonic activity during the winter months in the Gulf of Mexico.

In analyzing the summer cyclone data, using the 100-year 12-grid cell matrix, with PCA, the frequency maxima have all shifted into the central and southeastern Gulf of Mexico, reflecting the importance of tropical systems to the storm track climatology (Figure 2.7.1-7). Once again, as in the winter months, the first principal component eigenvector (E1) shows the relative frequency of storms in the Gulf region (Figure 2.7.1-8), where years with positive weightings reflect higher frequency counts and negative case weightings show a reduced number of storms influencing the region (Figure 2.7.1-9). Eigenvector 1 can account for 30.2% of the total system variance, while E2 explains 19.0%. Once again, both eigenvectors pass the significance test guidelines outlined by Overland and Priesendorfer (1982). Eigenvector 2 (Figure 2.7.1-10), showing spatial variation in sign convention across the Gulf (i.e., negative in the western Gulf and positive in the eastern Gulf), explains the relative contribution of tropical cyclones to overall system variance (Figure 2.7.1-11). Figure 2.7.1-12 shows the secular case weightings for E2 with an 11-point (year) running average superimposed on the graph. From this figure it is easily discernible that a cycle exists between years of positive and negative secular case weightings. During negatively weighted years, E2 becomes positively weighted in the western and central Gulf showing increased extratropical influence, while becoming negatively weighted in the southeastern Gulf, reflecting the decreased importance of tropical systems. When the secular weightings are positive, E2 becomes strongly positive in the southeastern Gulf, showing the increased importance of tropical cyclones. The negative values over the past 2 decades (Figure 2.7.1-11) in the secular weightings on E2, correspond nicely to the decrease in tropical cyclone frequencies discussed earlier in this section.

In analyzing the 100-year, 12-grid cell data matrix, both transitional months April (Figure 2.7.1-13) and November (Figure 2.7.1-14) showed frequencies < 1 in each grid cell. Across the northernmost grid cells (1, 4, 7 and 10), the November frequencies were greater than or equal to the April values because of the penetration of frontal systems into the Gulf during November and the ensuing cyclogenetic activity. The central 4 grid cells (2, 5, 8 and 11) have identical frequencies in both months, except for cell 11, which is slightly higher in November. The increase over the southeastern Gulf of Mexico is most likely due to the minimal influence tropical cyclones have in this region during November. The lowest 4 grid cells (3, 6, 9 and 12) have varying values over the 100-year period. The eastern-most 2 cells (9 and 12) show the November increase in frequency, while the western-most grid cell (3) is slightly higher in April. The former is probably related to tropical cyclone activity in the Florida Straits, and the latter to late winter extratropical activity along the Texas coast. Grid cell 9 shows no change in frequency between April and November. However, storm tracks during the transition months are clearly not as important to the climatology as they are in the summer and winter months.

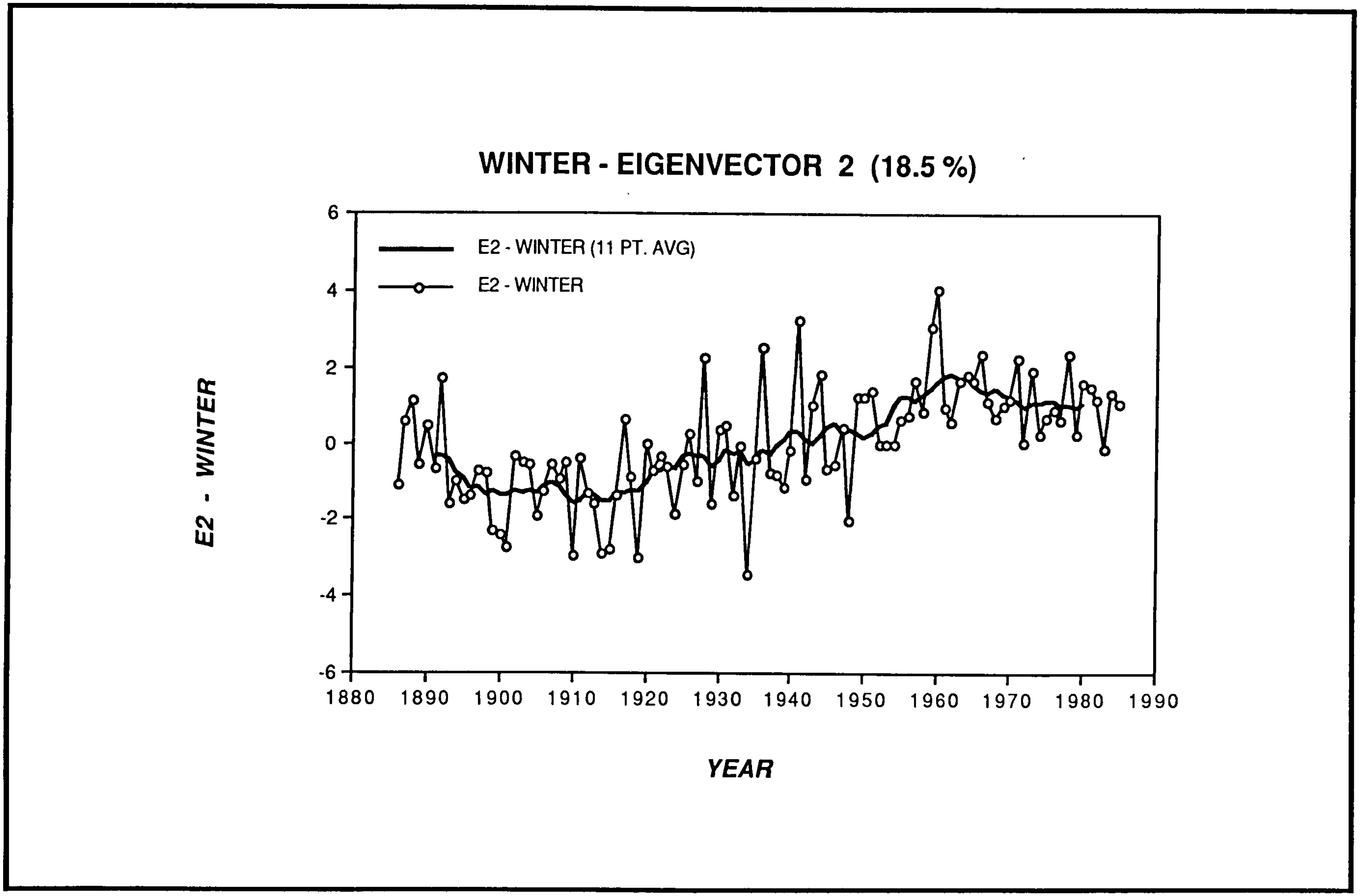

Figure 2.7.1-6 Secular trends in E2 over the 100-year period 1886-1985 with an 11 point running average (smooth line) superimposed over the secular case weightings (open circles).

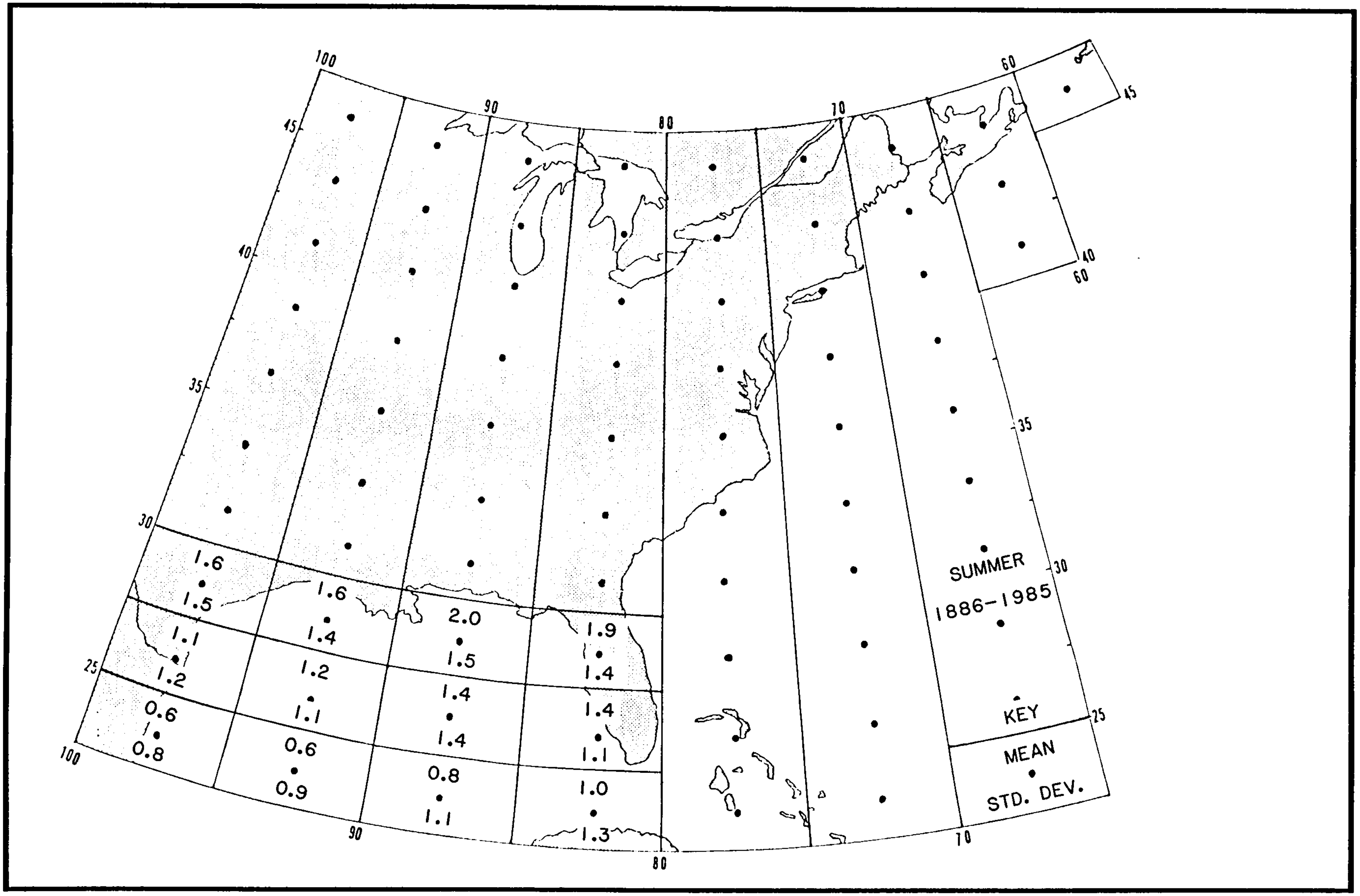

Figure 2.7.1-7 Mean and standard deviation for each of 12 grid cells identified for this study for the summer season for the 100-year period 1886-1985 (base map adapted from Hayden, 1981).

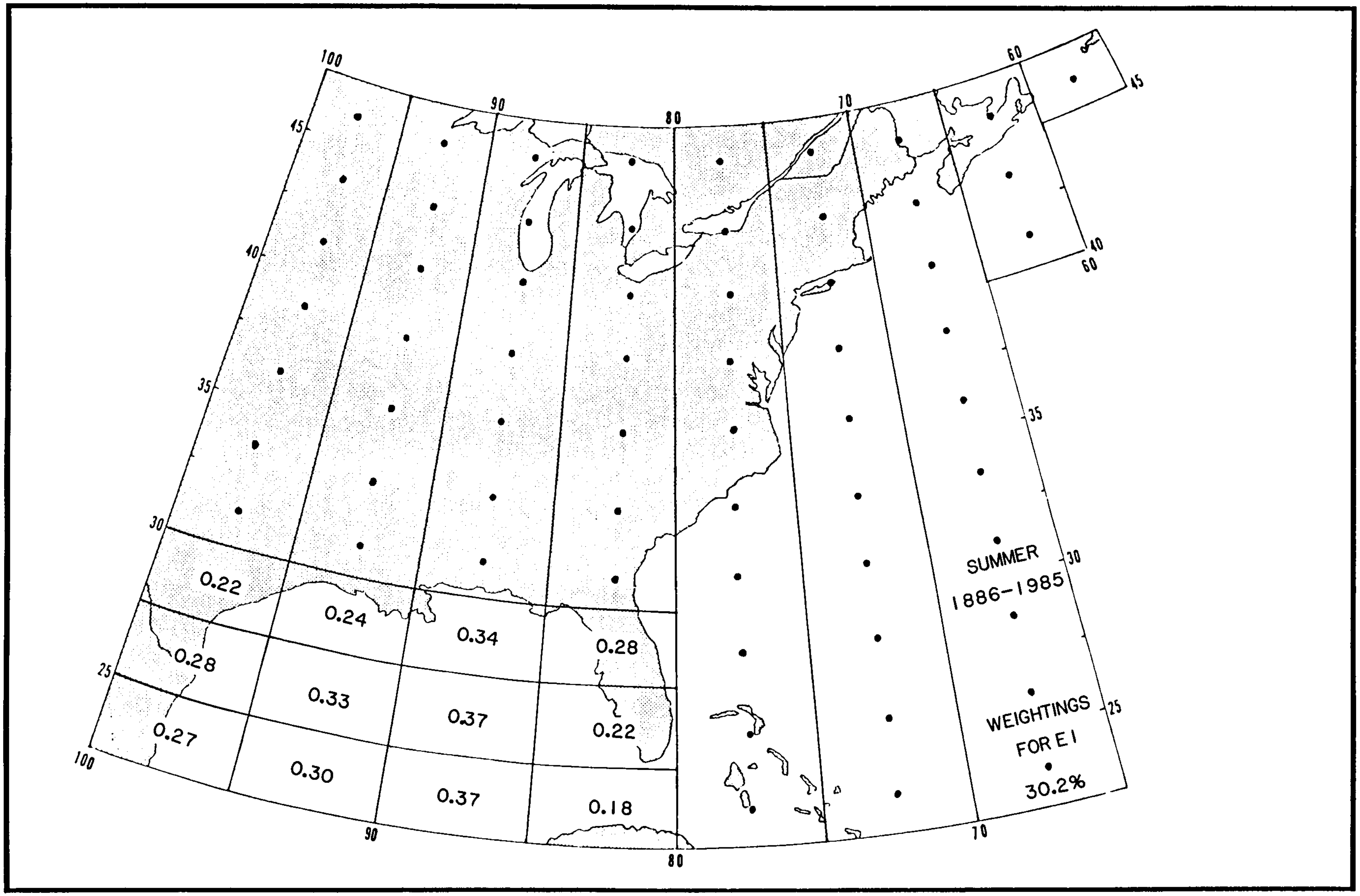

Figure 2.7.1-8 Scores for the first principal component eigenvector (E1) for the summer season for the 100-year period 1886-1985. E1 accounts for 30.2% of the total variance (base map adapted from Hayden, 1981).

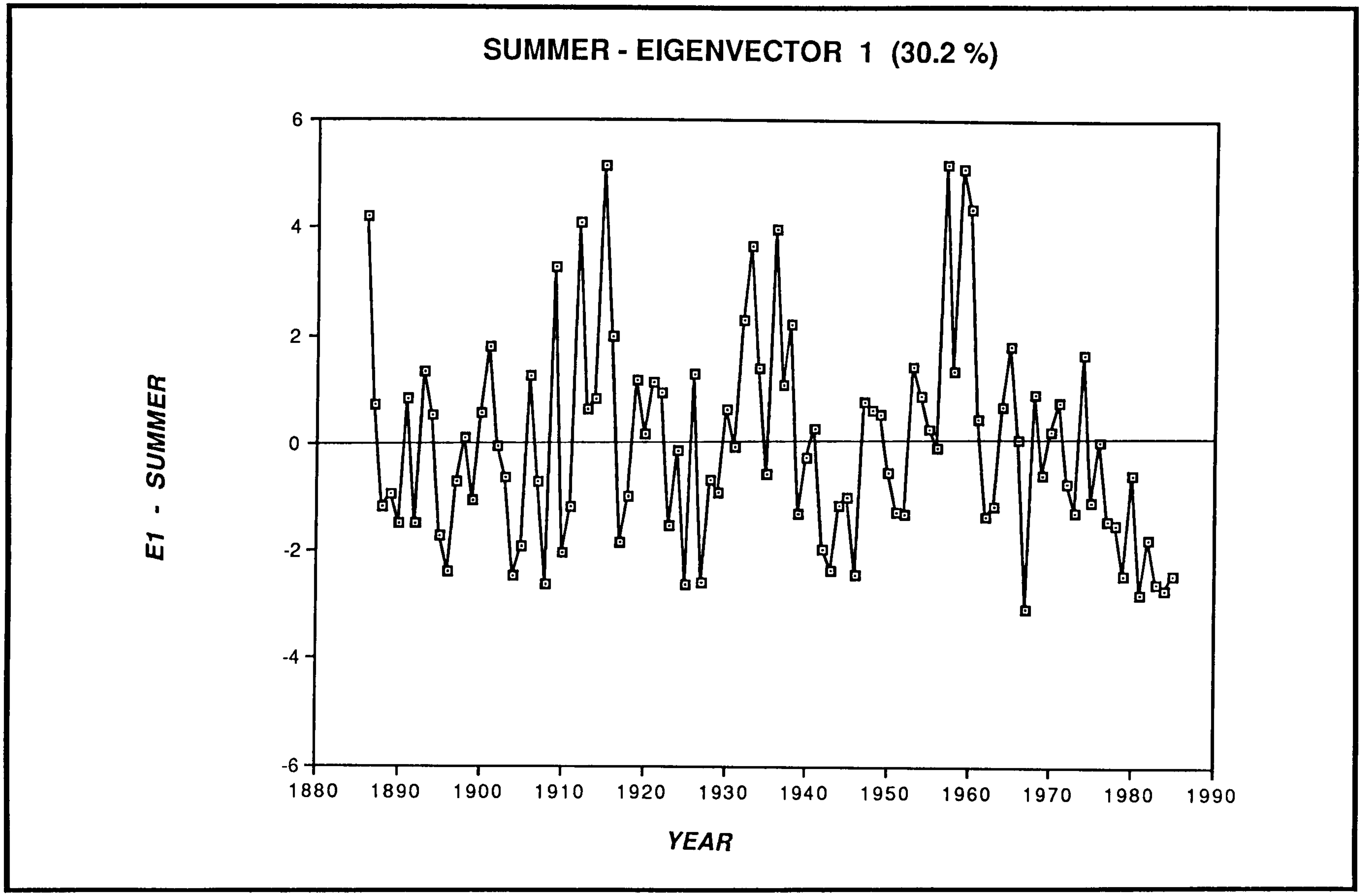

Figure 2.7.1-9 Secular trends in E1 over the 100-year period 1886-1985.

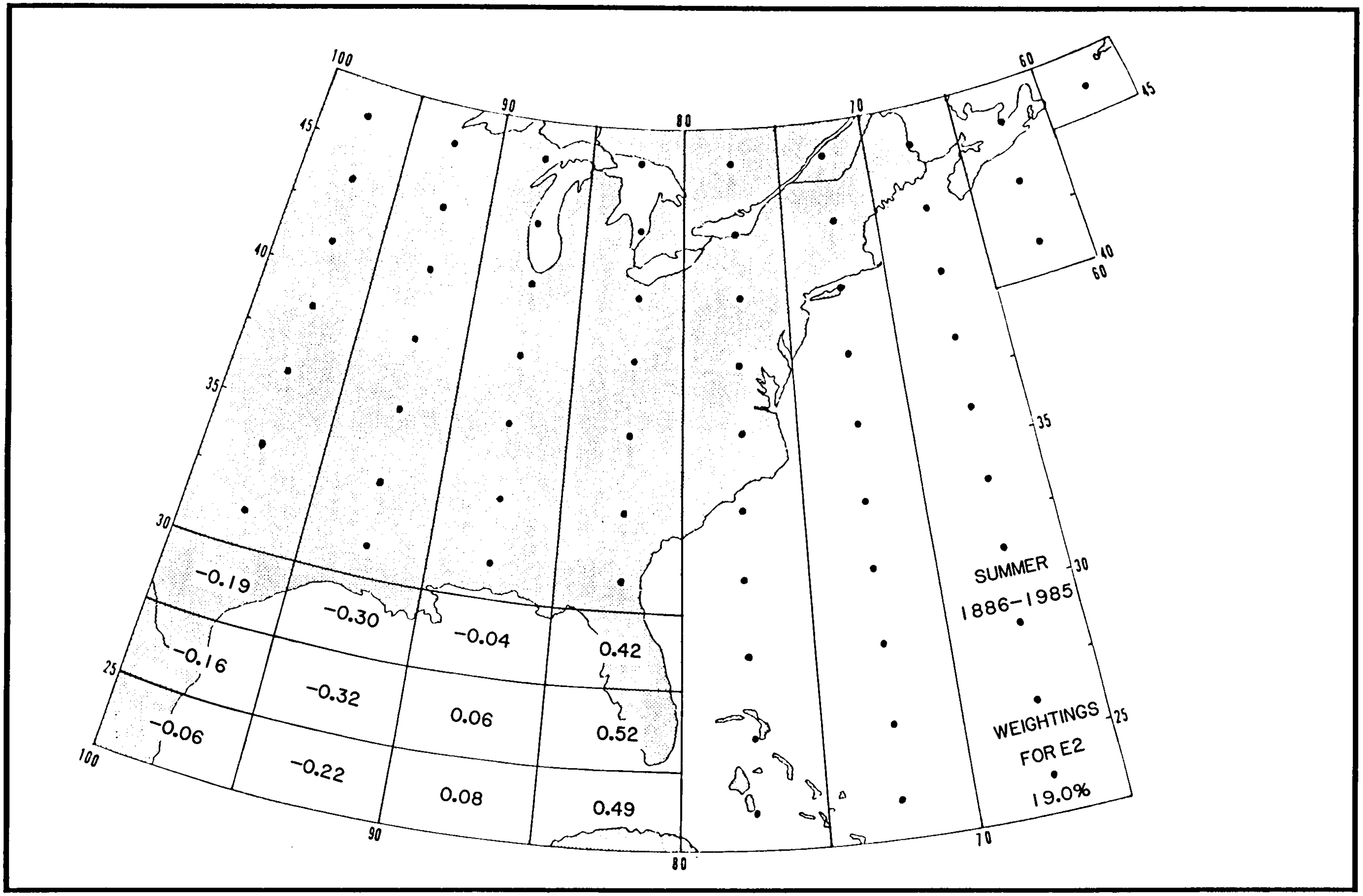

Figure 2.7.1-10 Scores for the second principal component eigenvector (E2) for the summer season for the 100-year period 1886-1985. E2 accounts for 19.0% of the total variance (base map adapted from Hayden, 1981).

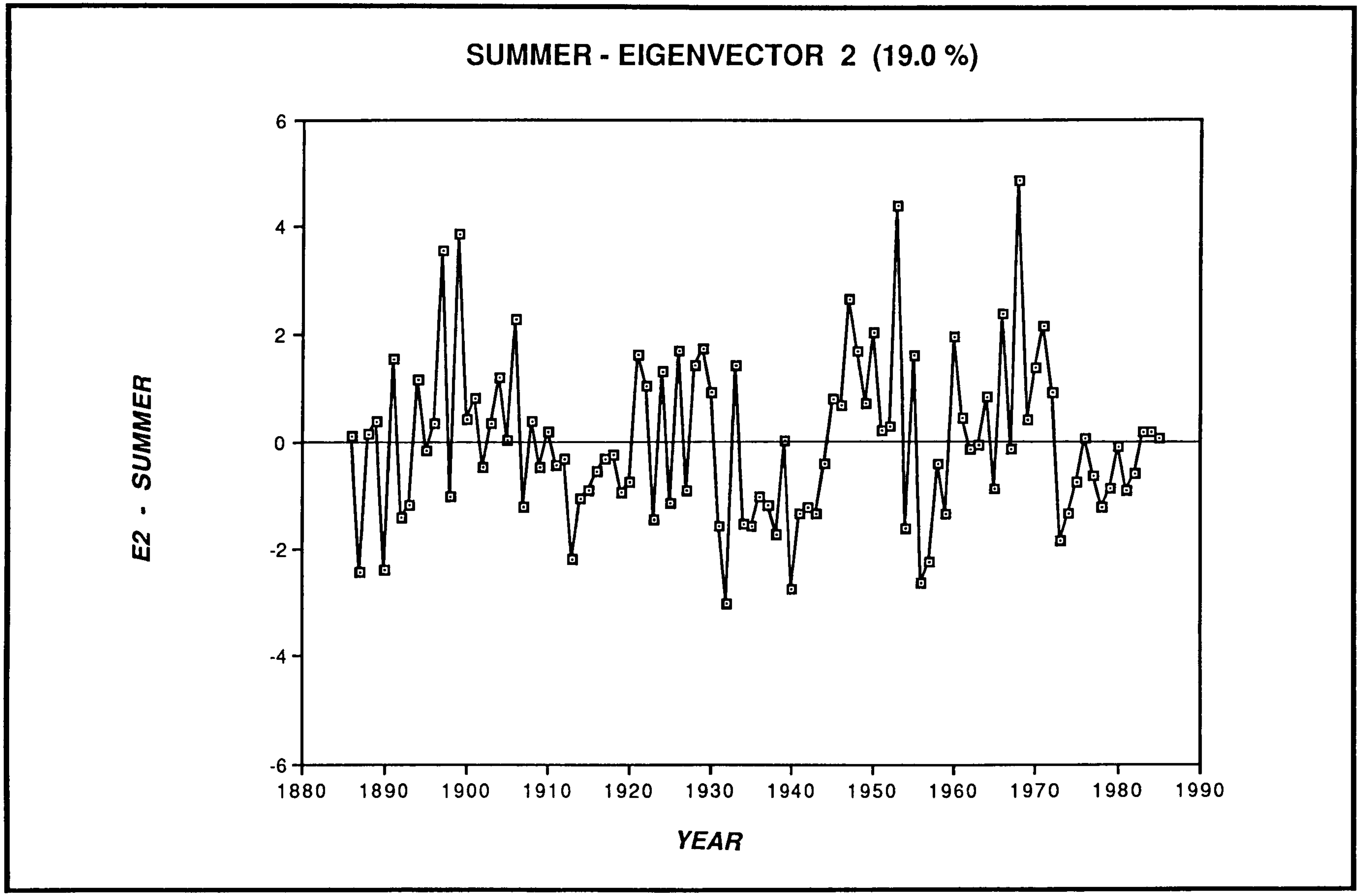

Figure 2.7.1-11 Secular trends in E2 over the 100-year period 1886-1985.

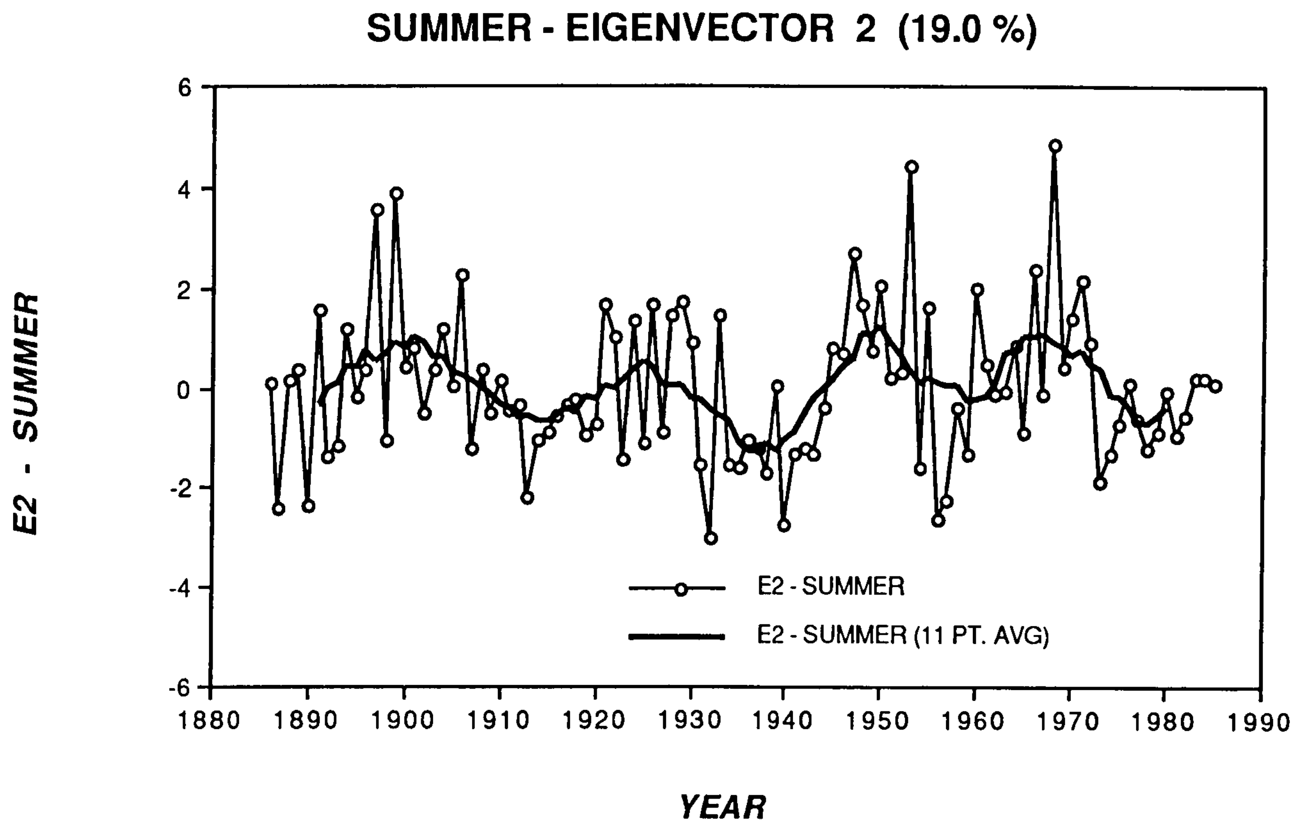

Figure 2.7.1-12 Secular trends in E2 over the 100-year period 1886-1985, with an 11 point running average (smooth line) superimposed over the secular case weightings (open circles).

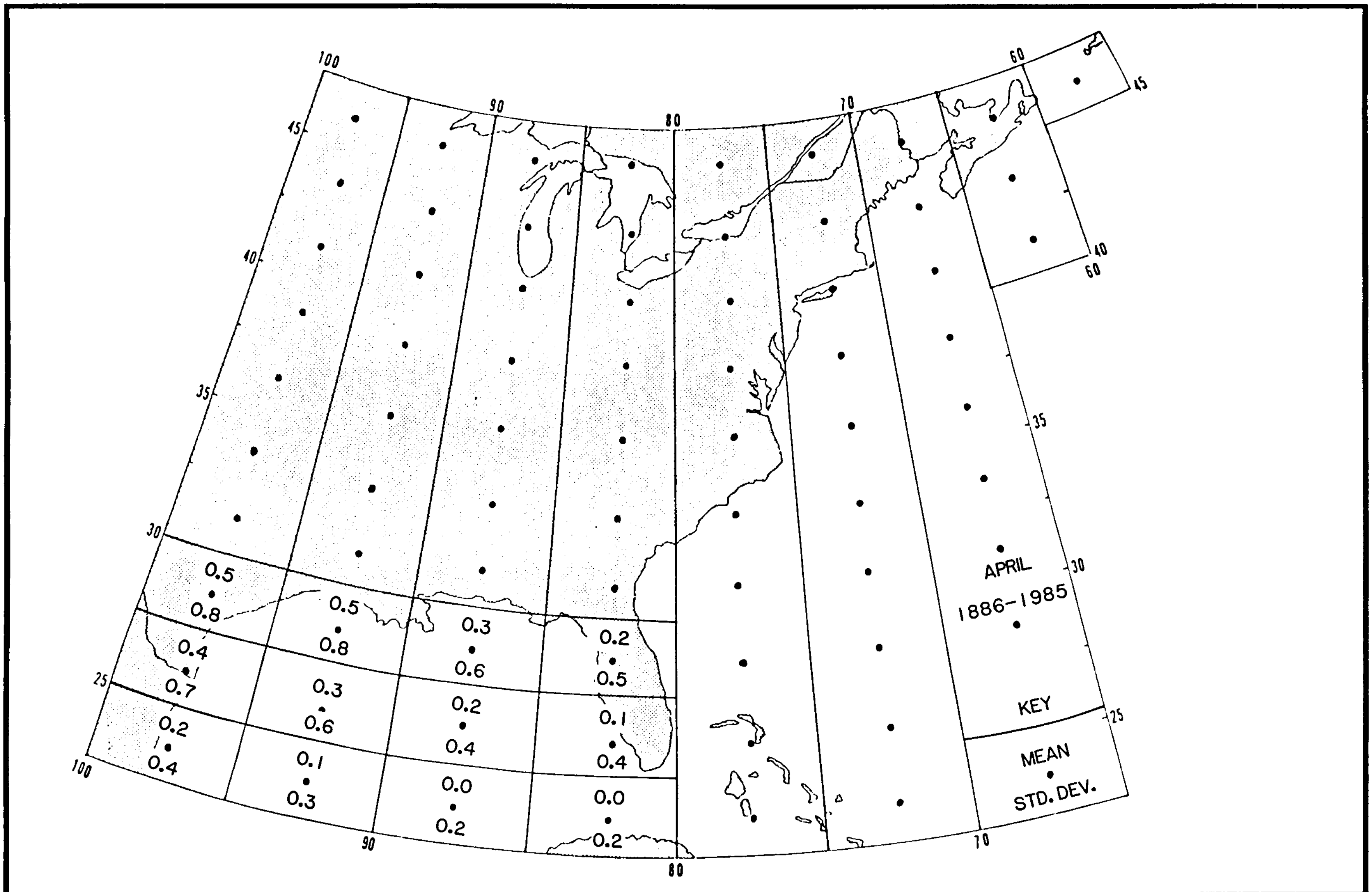

Figure 2.7.1-13 Mean and standard deviation for each of 12 grid cells identified for this study for the April transition period for the 100-year period 1886-1985 (base map adapted from Hayden, 1981).

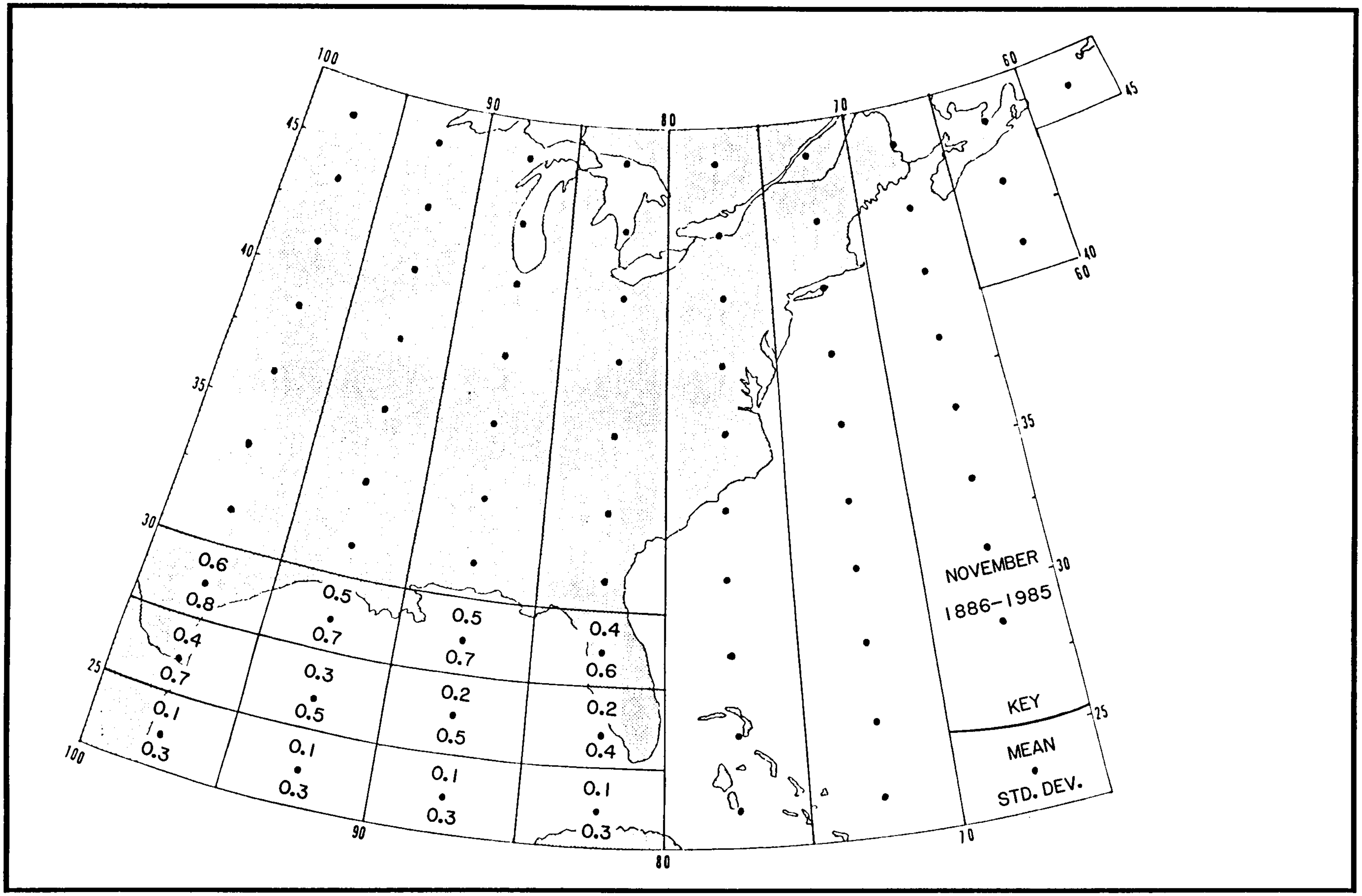

Figure 2.7.1-14 Mean and standard deviation for each of 12 grid cells identified for this study for the November transition period for the 100-year period 1886-1985 (base map adapted from Hayden, 1981).

2.7.2 Tropical Cyclones

The summer storm track climatology is determined by the frequency and direction of the tropical cyclone systems. These systems, much less frequent than their wintertime extratropical counterparts, are much more intense and generally slower moving. Figure 2.7.2-1 shows the distribution of hurricanes versus all tropical cyclones for the entire North Atlantic Basin for the period 1886-1986. A total of 845 topical cyclones comprise the current version of HURDAT used in this study, giving an annual average of 8.37 storms. Of the 845 systems studied, 496 (or 58.7%) of these reached hurricane intensity at some stage during their life cycle. Figure 2.7.2-2 is a graph depicting the total number of storms, with an 11-point running average superimposed on the data. This clearly shows the decline in tropical activity during the late 1800's and its rapid increase between approximately 1925-1940. The cyclone frequency appears to have been relatively stable up through the mid-1970's, where evidence for a decrease in tropical cyclone frequencies appears. A similar pattern is recognizable in the number of storm days per year (Figure 2.7.2-3). A total of 5,449 storm days were calculated for the 101-year data series, yielding a mean value of 53.95 storm days per year, or the average storm lasting approximately 6.45 days (from 5,449 storm days divided by 845 total storms.) Figure 2.7.2-4 shows the number of all tropical systems crossing the U.S. coastline (i.e., making landfall) during the 101-year period, plotted versus the total number of systems detected. The general increase in storm frequency in the 1920's-1930's almost masks the near constant trend in the number of landfalling storms. However, during the past 2-2½ decades, a definite decrease in landfalling storms is apparent.

Of the total number of storms reported (845), 376 of these tropical systems entered the 10° latitude by 20° longitude box (20°N, 100°W; 30°N, 80°W) defined as our Gulf of Mexico data window (Figure 2.3.4-1). Partitioning between inside/outside the window yielded an annual mean of 3.72 storms per year entering the Gulf. Thus, approximately half (44.5%) of all tropical systems over this 101-year period have affected the Gulf of Mexico. Figure 2.7.2-5 shows this distribution graphically. The recent trend shows a general decrease in the percentage of total storms affecting the Gulf region over approximately the last 40-45 years. The period between 1910-1935 shows the strongest percentage of total storms affecting the Gulf, while prior to this time, the agreement is somewhat less. Of the 5,449 total storm days registered for the North Atlantic Basin over the period 1886-1986, 1,784 days (or 32.7%) were when tropical systems were inside the data window in this study (Figure 2.7.2-6). Based on this calculation, the Gulf of Mexico experiences on average 17.66 storm days per year, with the average storm residing in the basin for approximately 4.75 days. Thus, it can easily be seen that the tracks, motion and intensity of these tropical systems play a crucial role in the overall climatology of the Gulf of Mexico.

Following the work of Neumann and Pryslak (1981), a detailed analysis of tropical cyclone frequency, motion and track is presented in Figures 2.7.2-7 through 2.7.2-9a-b. This analysis covers the period May 1 through November 30 for 1899-1978, for all storms having 1-minute maximum sustained winds > 34 knots. The motion figure details the vector speed (knots) and direction toward which the storms are moving, averaged over each 2½° latitude/longitude box. The storm track diagram shows all storm tracks used in the computations, where the dashed lines refer to portions of the cyclone tracks which do not meet either the wind speed or temporal criteria. The tabular data is organized as follows: column A, index number of each 2½° latitude/longitude box (see Figure 2.3.4-2); column

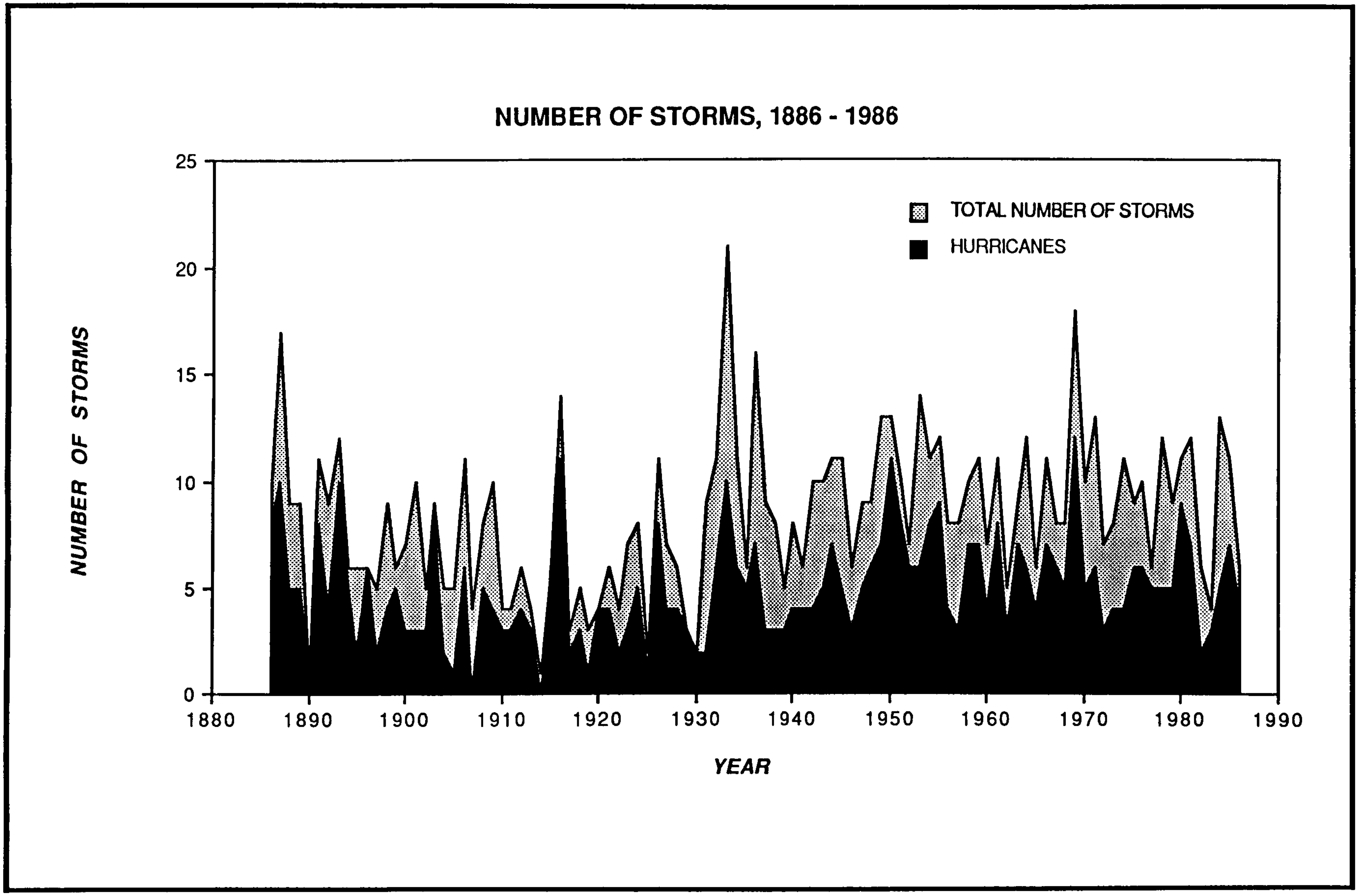

Figure 2.7.2-1 Distribution of all tropical cyclones in the North Atlantic Basin versus only hurricanes for the 101-year period 1886-1986.

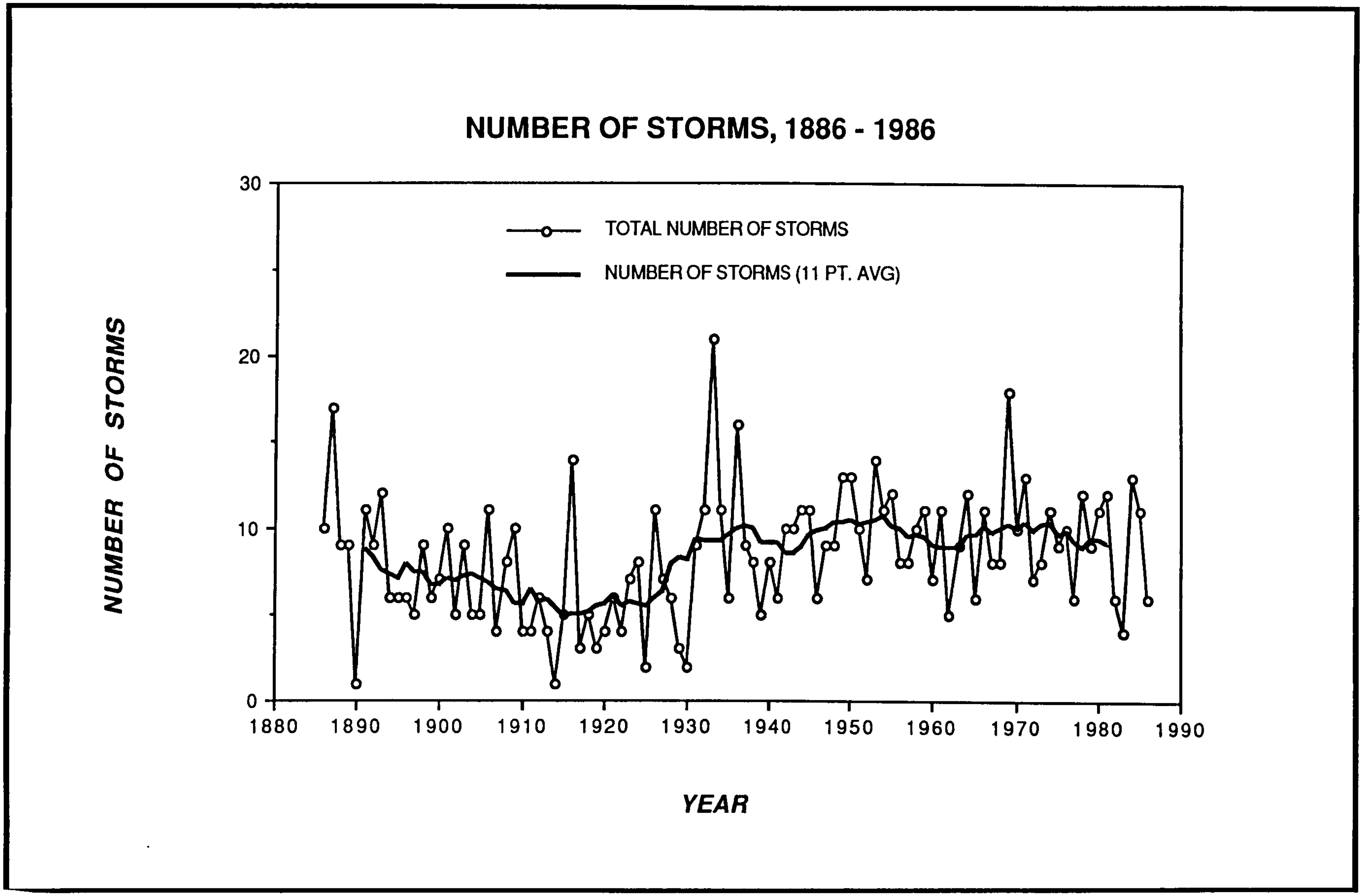

Figure 2.7.2-2 Distribution of all tropical cyclones in the North Atlantic Basin (open circles) with an 11-point moving average (smooth line) superimposed on the graph for the 101-year period 1886-1986.

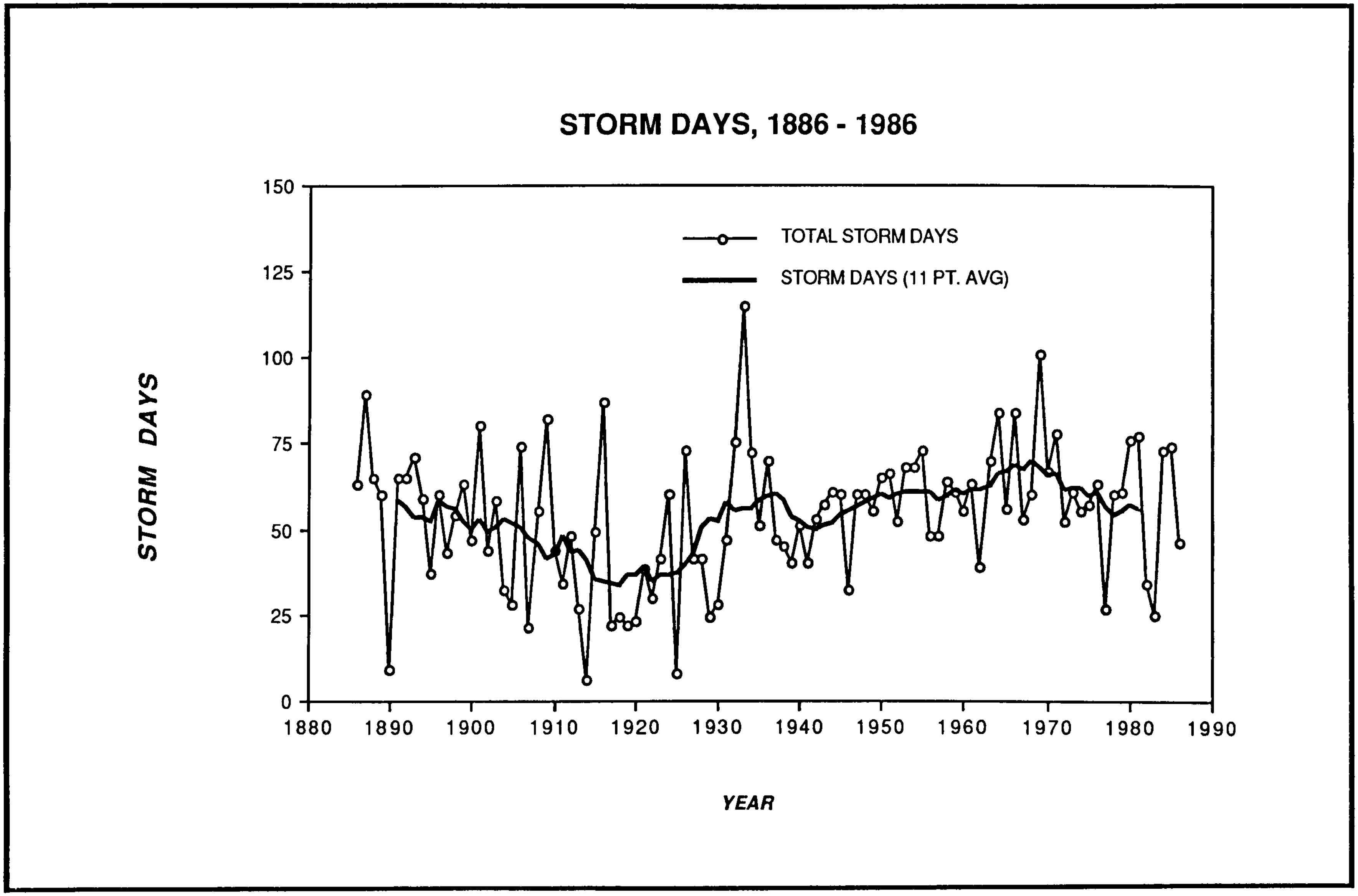

Figure 2.7.2-3 Distribution of the total number of storm days within the North Atlantic Basin for the period 1886-1986, with an 11-point moving average superimposed on the graph.

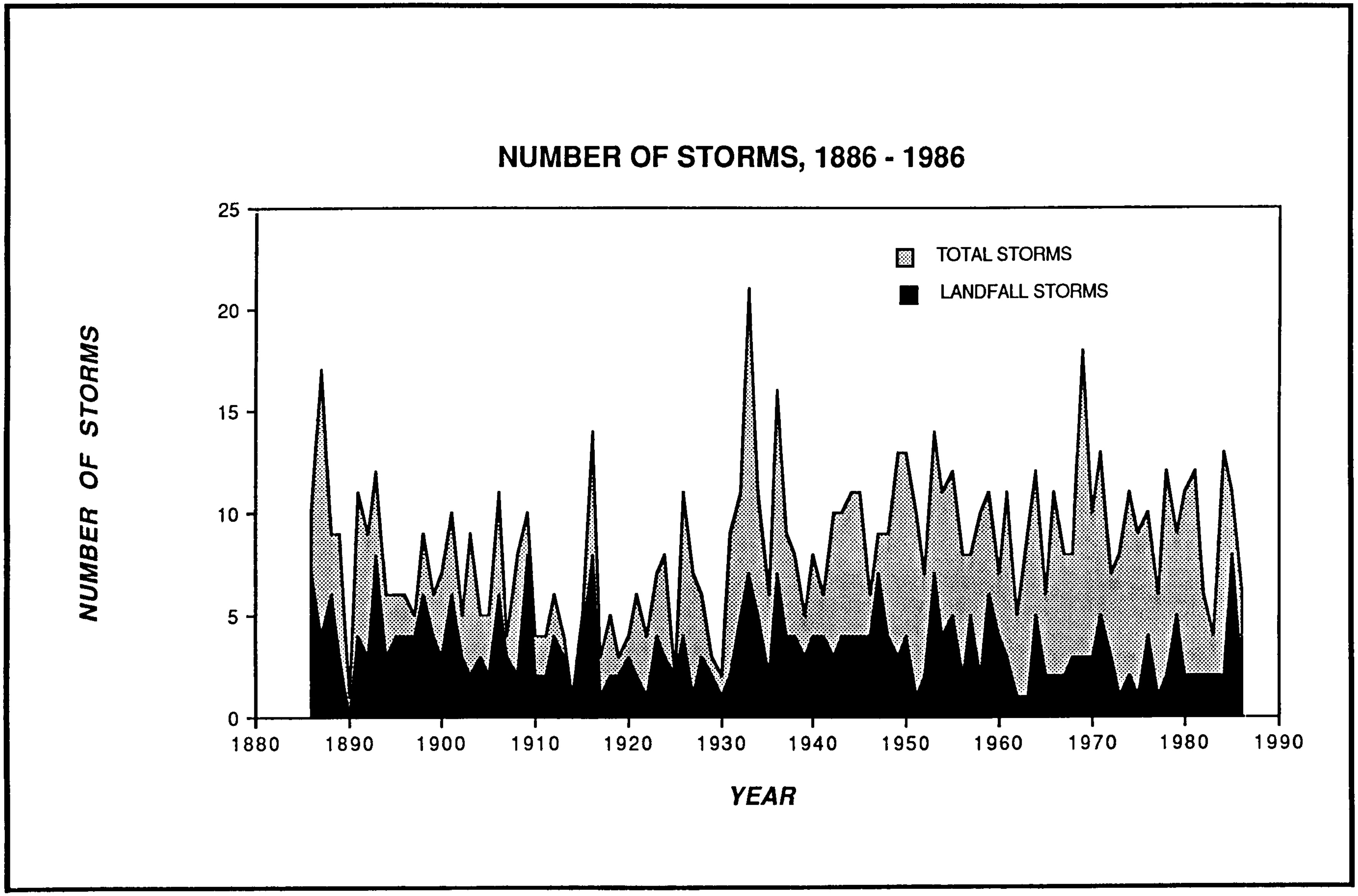

Figure 2.7.2-4 Distribution of all tropical cyclones in the North Atlantic Basin versus the number of storms making landfall (crossing the U. S. coastline) during the period 1886-1986.

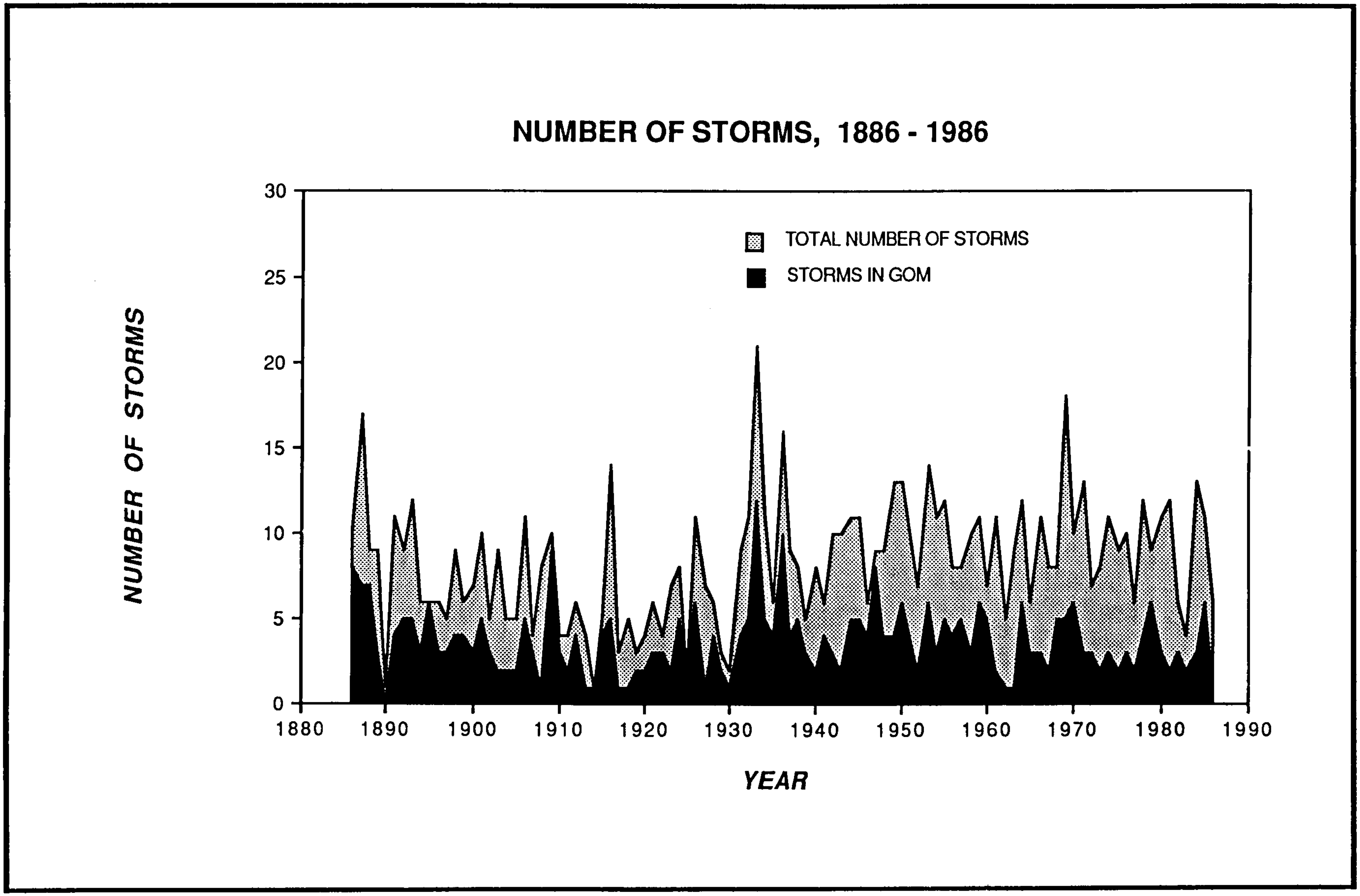

Figure 2.7.2-5 Distribution of all tropical cyclones in the North Atlantic Basin versus the number of cyclones entering the Gulf of Mexico data window (20°N, 100°W; 30°N, 80°W) for the period 1886-1986.

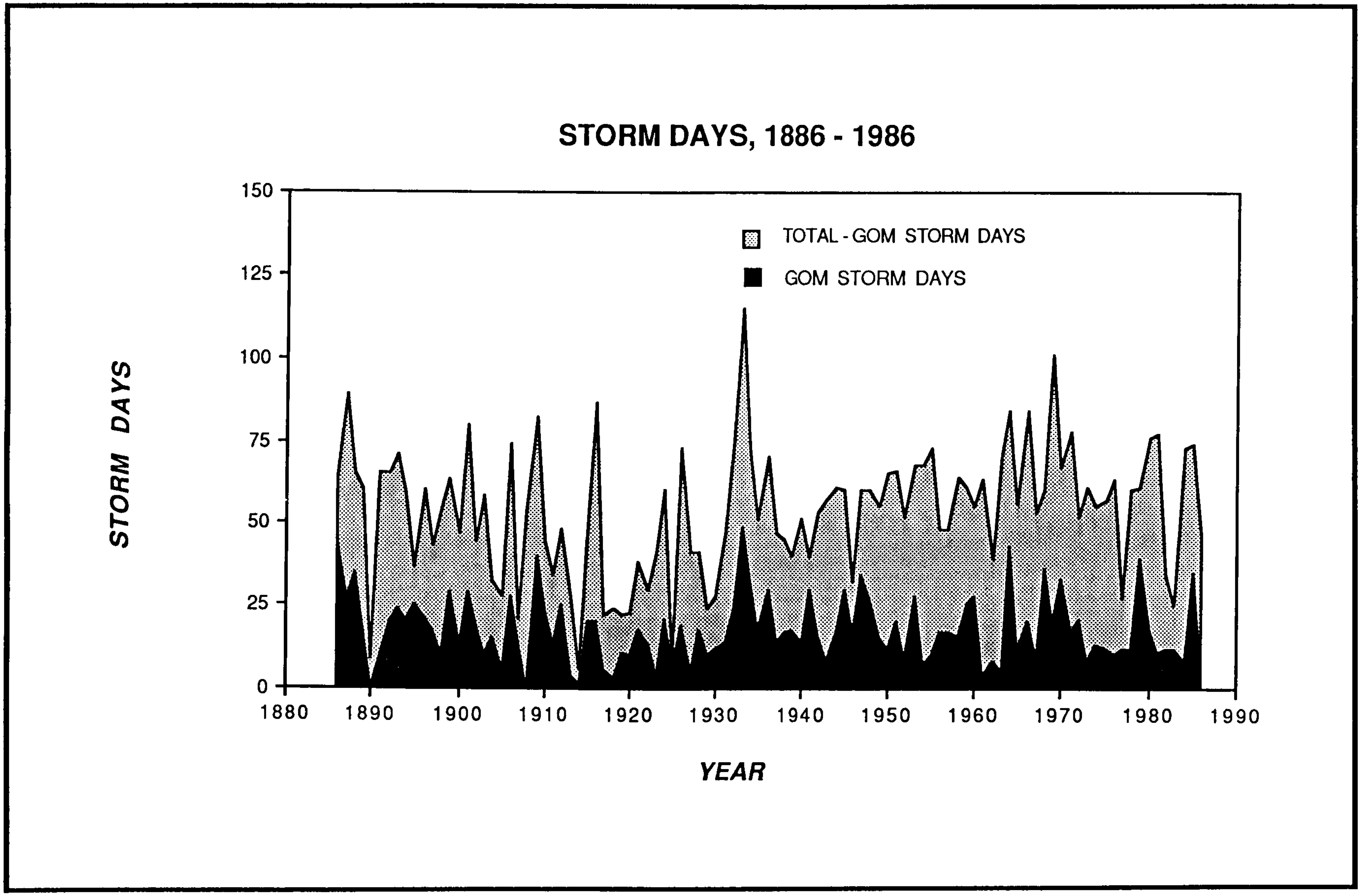

Figure 2.7.2-6 Distribution of the total number of storm days within the North Atlantic Basin versus the number of storm days inside the Gulf of Mexico window (20°N, 100°W; 30°N, 80°W) for the period 1886-1986.

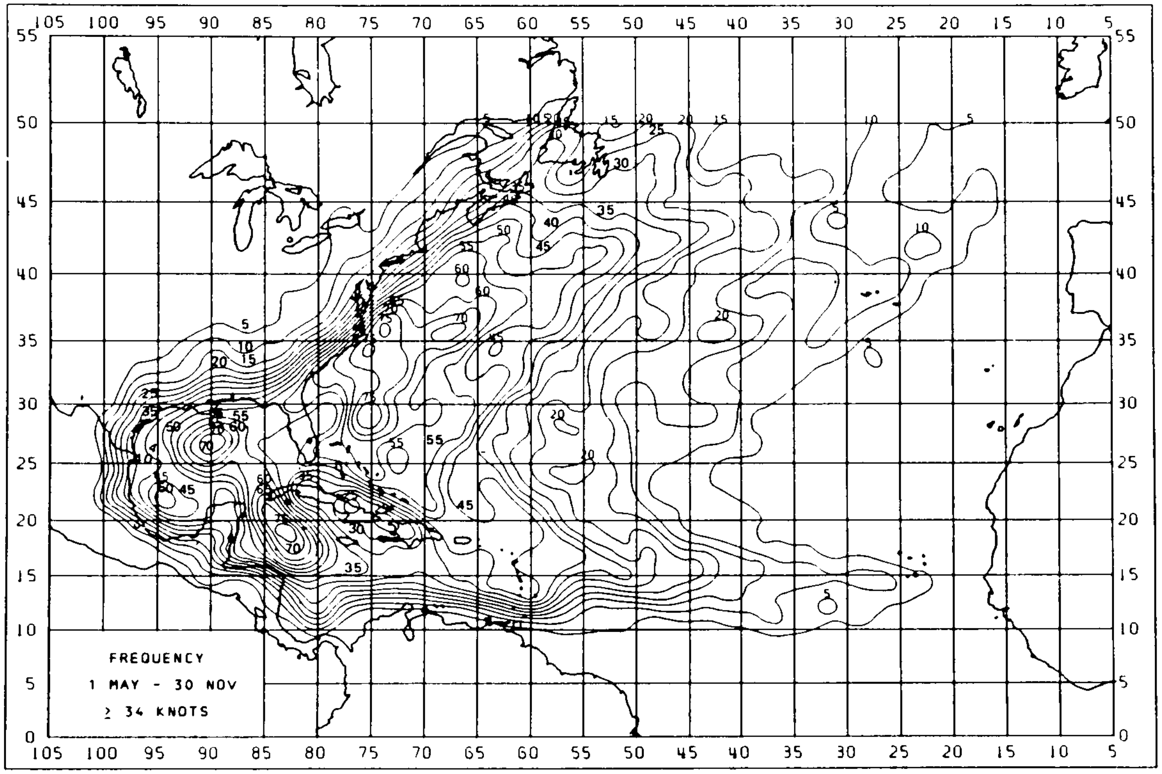

Figure 2.7.2-7 The frequency of storms (1 May - 30 Nov) passing within 139 km per 100 years for storms with 1-minute maximum sustained winds ≥ 34 knots, averaged over 2½° latitude/longitude grid cells (from Neumann and Pryslak, 1981).

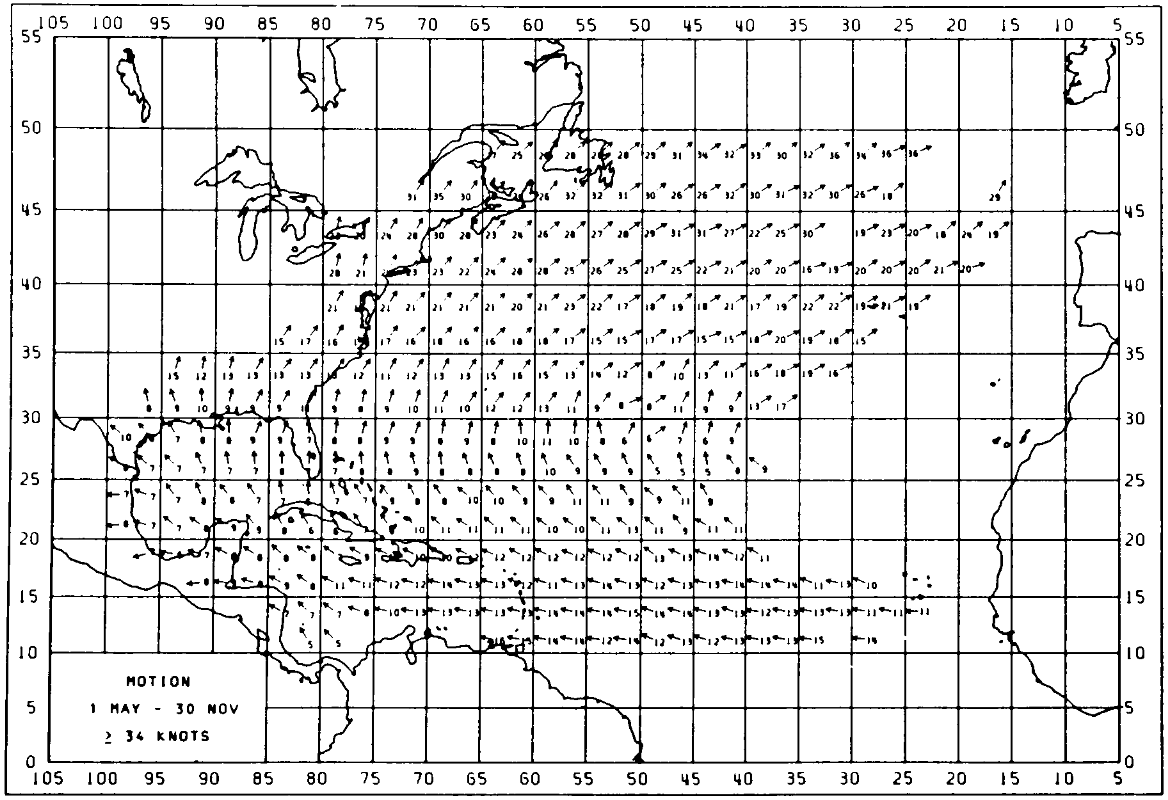

Figure 2.7.2-8 The direction of motion and vector speeds of storms (1 May - 30 Nov) passing within 139 km per 100 years for storms with 1-minute maximum sustained winds ≥ 34 knots, averaged over 2½° latitude/longitude grid cells (from Neumann and Pryslak, 1981).

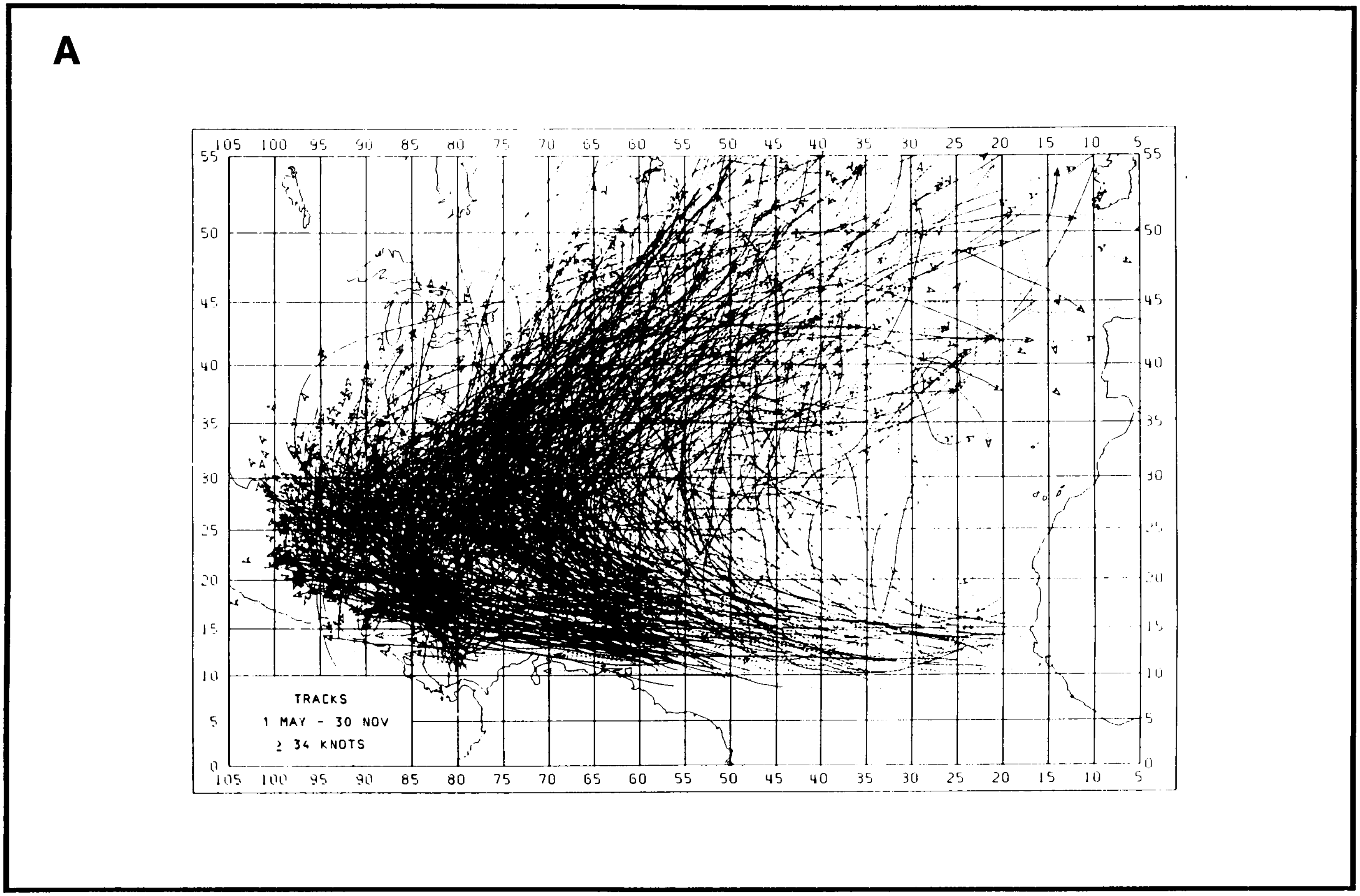

Figure 2.7.2-9a Storms tracks utilized in computations for Figures 2.7.2-7 and 2.7.2-8 (from Neumann and Pryslak, 1981).

B

A	B	C	D	E	F
82	18	327	5	6	4.05
83	16	313	5	8	4.66
89	9	281	16	16	4.61
90	16	282	15	15	4.66
91	17	281	16	14	5.09
92	12	281	14	14	5.59
93	7	278	12	13	5.17
94	8	278	16	14	5.44
95	5	293	12	13	4.07
96	7	288	13	14	2.87
97	6	288	12	12	3.52
98	8	282	13	13	3.97
99	10	281	13	16	3.83
100	11	282	13	13	4.29
101	7	276	15	15	4.56
103	7	276	14	15	4.85
117	15	297	7	9	3.50
118	35	316	7	8	4.00
119	29	306	7	9	4.12
120	25	286	8	11	4.23
121	25	283	10	12	4.42
122	25	279	13	13	4.77
123	31	279	13	14	4.34
124	37	282	13	13	4.21
125	46	282	13	13	3.80
126	47	284	13	13	4.16
127	40	283	14	15	5.43
128	26	281	14	14	4.23
129	25	280	14	15	4.46
130	29	282	15	16	4.89
131	27	288	14	15	4.35
132	23	284	14	16	4.28
133	20	284	13	14	3.46
134	18	287	13	13	3.55
135	11	276	12	13	4.15
136	10	282	13	14	2.34
137	9	279	13	14	3.55
138	9	280	13	13	4.45
139	10	281	11	12	4.54
140	9	282	11	12	3.62
141	8	270	11	12	4.67
150	10	264	8	11	3.97
151	25	276	9	10	3.66
152	35	285	9	10	3.88
153	53	298	9	10	4.09
154	62	305	8	10	4.10
155	45	294	11	12	4.92
156	42	287	11	13	5.56
157	36	287	12	15	4.75
158	38	284	12	14	4.55
159	38	282	14	14	4.92
160	43	285	13	14	4.35
161	44	285	13	13	4.05

A	B	C	D	E	F
162	43	288	12	13	4.46
163	43	288	11	12	4.16
164	42	288	13	13	5.73
165	37	288	14	14	5.68
166	32	287	13	13	5.59
167	30	290	12	13	4.30
168	25	288	13	13	4.05
169	24	283	13	14	4.46
170	17	282	14	15	6.19
171	15	284	14	14	6.77
172	9	284	14	15	4.31
173	10	291	11	13	4.37
174	5	281	13	14	4.30
175	7	291	10	11	4.22
184	8	254	7	10	2.35
185	23	279	6	8	3.87
186	24	285	7	9	4.08
187	29	296	9	10	3.64
188	48	303	8	10	3.58
189	72	311	8	10	3.97
190	67	304	8	10	4.19
191	43	304	7	11	5.05
192	34	299	9	12	5.31
193	30	294	10	12	3.63
194	28	296	10	13	2.71
195	44	300	10	12	3.36
196	48	296	12	13	3.27
197	50	292	12	13	3.54
198	50	298	12	13	4.41
199	44	296	12	12	4.28
200	34	290	12	12	3.28
201	25	293	12	13	3.87
202	22	294	12	13	4.87
203	25	305	13	14	5.08
204	14	294	13	14	6.75
205	8	290	14	15	5.23
206	7	292	12	13	3.85
207	5	300	11	12	3.32
219	18	264	8	9	4.49
220	35	283	7	9	3.70
221	52	308	7	9	3.45
222	45	303	8	10	3.36
223	38	297	9	11	3.06
224	59	319	9	10	3.76
225	66	333	8	10	3.81
226	38	328	6	9	3.54
227	30	346	6	11	3.58
228	25	325	7	10	5.40
229	32	325	8	11	4.44
230	48	312	10	12	4.24
231	55	310	11	13	4.47
232	43	301	11	12	4.59
233	45	308	11	13	4.36

A	B	C	D	E	F
234	47	308	11	12	4.16
235	35	305	10	11	4.35
236	25	304	10	11	3.63
237	24	310	11	13	4.78
238	19	308	13	14	5.04
239	14	310	11	12	3.84
240	10	322	9	13	4.62
241	7	300	11	14	3.62
242	7	306	11	12	2.77
255	20	269	7	9	3.49
256	40	291	7	9	2.74
257	43	324	7	10	4.06
258	47	336	8	10	4.23
259	47	321	8	10	3.87
260	59	328	7	9	3.46
261	50	350	7	10	3.52
262	38	359	6	11	3.43
263	44	341	7	10	4.00
264	52	327	7	11	4.34
265	60	324	9	12	4.35
266	57	330	8	12	4.55
267	52	326	8	12	4.46
268	42	309	10	11	4.54
269	45	319	10	12	4.38
270	32	319	9	11	4.20
271	22	317	9	11	4.43
272	18	325	11	12	3.05
273	21	322	11	13	5.78
274	17	328	9	13	5.19
275	10	307	9	12	4.54
276	9	319	11	13	4.34
277	6	332	9	11	4.37
291	21	302	8	9	3.41
292	41	312	7	9	3.06
293	47	314	7	10	3.87
294	68	336	7	10	4.29
295	65	348	7	11	4.76
296	50	354	7	10	5.56
297	50	357	8	11	5.21
298	51	002	7	12	4.03
299	60	000	7	12	5.52
300	63	355	8	12	6.29
301	56	346	8	12	5.73
302	57	345	9	12	5.57
303	56	352	8	12	5.37
304	46	339	8	11	4.74
305	36	334	8	11	3.93
306	28	341	8	12	4.34
307	26	335	10	13	5.10
308	23	324	9	12	4.24
309	20	329	9	13	5.57
310	17	336	9	13	5.26
311	13	327	5	13	5.78

A	B	C	D	E	F
312	13	347	5	13	7.29
313	10	351	5	12	4.02
314	8	322	8	15	3.77
315	7	306	9	12	4.73
327	16	306	10	11	3.84
328	32	318	8	11	4.46
329	44	333	7	9	3.98
330	54	347	8	10	4.41
331	56	357	8	12	4.35
332	55	021	9	13	7.45
333	54	021	9	13	7.37
334	47	356	7	12	5.27
335	45	005	8	12	5.74
336	77	015	8	12	5.91
337	73	021	9	13	6.71
338	60	019	9	13	6.67
339	60	009	8	13	6.06
340	57	013	9	13	5.95
341	40	010	8	14	5.73
342	34	353	10	13	5.24
343	21	003	11	14	6.78
344	22	004	10	15	6.47
345	21	347	8	12	5.40
346	15	025	6	11	4.00
347	13	054	6	12	5.41
348	16	019	7	15	8.78
349	16	014	6	15	9.01
350	13	024	9	15	5.07
364	19	347	8	9	3.85
365	18	340	9	11	4.85
366	30	356	10	13	3.87
367	36	011	9	12	4.99
368	39	026	9	12	6.31
369	46	031	9	14	7.14
370	57	029	11	16	8.36
371	57	010	9	13	7.14
372	67	011	8	12	6.34
373	70	017	9	12	5.97
374	62	019	10	14	6.55
375	56	024	11	14	6.78
376	52	034	10	14	7.67
377	54	039	12	16	6.80
378	42	038	12	16	7.38
379	29	038	13	17	6.69
380	26	024	11	16	6.02
381	22	039	9	14	7.22
382	16	068	8	14	9.21
383	15	055	8	15	8.58
384	17	031	11	17	10.15
385	12	015	9	13	8.15
386	11	033	9	12	8.35
387	10	060	13	15	7.37
388	7	054	17	17	5.02

A	B	C	D	E	F
401	7	016	15	16	9.13
402	16	008	12	13	5.45
403	16	013	13	15	7.86
404	14	029	13	15	8.06
405	15	039	13	14	7.67
406	35	037	13	15	8.06
407	61	037	13	17	9.18
408	74	037	12	15	8.16
409	71	029	11	15	8.06
410	67	034	12	16	8.21
411	61	030	13	15	6.71
412	54	032	13	15	6.39
413	46	035	15	18	7.08
414	45	038	16	18	7.26
415	36	044	15	17	7.42
416	33	046	13	16	6.15
417	22	058	14	16	7.92
418	19	056	12	15	9.21
419	18	048	8	14	9.51
420	18	032	10	14	7.96
421	15	046	13	15	11.46
422	11	059	11	16	12.05
423	9	064	16	19	11.68
424	7	066	18	20	8.85
425	9	063	19	21	8.68
426	7	065	16	17	8.85
441	6	036	15	17	6.51
442	11	038	17	19	7.21
443	21	031	16	19	8.79
444	47	035	15	18	8.80
445	76	038	17	19	8.10
446	64	046	16	18	8.25
447	71	046	18	20	8.98
448	73	044	16	18	8.13
449	61	048	16	18	8.97
450	49	046	18	19	9.39
451	52	051	18	20	8.83
452	43	053	17	19	8.58
453	33	055	15	18	8.10
454	26	063	15	19	8.74
455	27	057	17	21	10.26
456	22	062	17	20	10.77
457	21	069	15	17	9.77
458	21	068	15	17	9.93
459	16	065	18	19	8.80
460	9	065	20	21	6.62
461	9	063	19	22	7.91
462	11	057	18	20	9.45
463	8	055	15	18	9.02
479	9	029	21	23	10.97
480	22	032	19	22	8.57
481	40	033	21	23	9.93
482	56	043	21	23	9.39

A	B	C	D	E	F
483	60	042	21	23	9.35
484	59	044	21	23	10.86
485	56	047	21	23	10.66
486	55	049	20	22	9.33
487	52	051	21	23	10.36
488	46	053	23	24	9.65
489	41	053	22	23	9.97
490	29	055	17	19	10.12
491	22	052	18	21	9.13
492	21	047	19	22	11.07
493	18	057	18	19	11.35
494	15	058	21	22	10.68
495	9	053	17	19	7.70
496	10	051	19	21	8.44
497	6	054	22	23	10.52
498	9	058	22	24	8.79
499	12	061	19	22	10.46
500	13	063	21	24	10.24
501	7	058	19	22	11.51
515	6	013	28	31	16.54
516	10	014	21	23	12.21
517	19	028	24	26	11.25
518	31	037	23	24	10.86
519	46	041	23	24	10.37
520	59	044	22	24	9.09
521	54	048	24	26	11.40
522	46	050	28	30	11.72
523	46	054	28	29	11.85
524	48	057	25	27	10.81
525	51	057	26	28	10.52
526	45	059	25	27	11.21
527	35	062	27	29	11.08
528	27	060	25	27	9.87
529	22	064	22	24	11.01
530	18	062	21	23	10.87
531	20	057	20	22	11.02
532	12	063	20	23	12.85
533	11	073	16	19	9.64
534	11	071	19	21	10.55
535	10	058	20	25	10.66
536	10	065	20	23	12.57
537	10	058	20	24	11.15
538	9	066	21	26	10.93
539	6	074	20	26	10.64
551	6	014	23	29	16.02
552	5	025	20	24	16.50
553	7	032	24	25	12.36
554	14	030	28	29	10.83
555	21	034	30	31	14.39
556	32	036	28	29	11.87
557	44	044	23	24	9.10
558	46	045	24	25	9.54
559	38	053	26	28	11.11

A	B	C	D	E	F
560	40	050	28	31	12.43
561	36	051	27	29	8.97
562	38	054	28	30	9.88
563	31	060	29	31	11.28
564	31	065	31	33	10.53
565	29	066	31	32	10.66
566	26	066	27	29	12.48
567	25	063	22	25	12.24
568	20	064	25	27	12.66
569	12	060	30	32	12.05
571	7	067	19	27	13.12
572	8	065	23	29	12.88
573	7	068	20	28	10.30
574	7	048	18	25	12.16
575	6	052	24	27	12.05
576	5	052	19	25	14.93
590	6	034	31	34	7.18
591	10	039	35	37	12.14
592	20	035	30	32	11.80
593	25	042	26	28	12.62
594	32	039	24	26	9.72
595	31	039	26	28	8.87
596	25	049	32	35	15.80
597	29	052	32	34	15.56
598	32	054	31	33	14.19
599	31	053	30	33	15.02
600	25	057	26	29	17.01
601	20	057	26	28	9.30
602	23	056	32	34	9.55
603	20	058	30	32	12.82
604	16	066	31	33	13.52
605	19	062	32	35	9.45
606	15	060	30	34	8.36
607	7	067	26	28	10.39
608	5	051	18	25	16.25
612	6	032	29	33	12.05
629	9	042	27	28	10.24
630	16	050	25	26	13.10
631	29	041	26	28	10.25
632	28	048	28	29	7.87
633	20	050	28	30	7.84
634	23	051	28	31	8.53
635	26	050	29	32	10.34
636	27	049	31	34	11.92
637	17	057	34	36	9.09
638	13	062	32	34	9.27
639	13	051	33	35	7.64
640	14	050	30	31	10.81
641	9	060	32	33	16.64
642	15	049	36	39	15.33
643	11	052	34	36	12.99
644	6	068	36	36	5.94
645	6	070	36	36	4.26

TABULAR DATA
1 MAY - 30 NOV
≥ 34 KNOTS

Figure 2.7.2-9b Statistics associated with Figures 2.7.2-7 and 2.7.2-8. See text for a detailed explanation (from Neumann and Pryslak, 1981).

B, expected number of cyclones passing with 139 km of given box center per 100 years; column C, resultant vector direction in degrees toward which the storm is expected to move on the average; column D, resultant vector speed in knots; column E, average translation speed without regard to direction (in knots) and column F, standard deviation (knots) of column E data (Neumann and Pryslak, 1981).

The basin summary tropical storm charts (> 34 knots) show frequency maxima in the southeastern and central Gulf regions. The Yucatan Straits appear to be the most likely entry point into the Gulf of Mexico, as opposed to the Florida Straits. This may be, in part, due to storms earlier in the hurricane season entering the Gulf from the former position, while storms occurring later in the season which track toward the Florida Straits often times recurve northward and never enter the Gulf region. Finally, translation speeds in the Gulf of Mexico are lower than those in the region surrounding the basin, implying slightly longer residence times for systems that enter the Gulf. Figures 2.7.2-10 through 2.7.2-12a-b summarize the same parameters, except where the maximum 1-minute sustained winds are > 64 knots (hurricane intensity). As expected, the number of potential cases is greatly reduced over the previous set of diagrams. The central Gulf maximum still exist; however, the Yucatan Straits and Florida Straits now show approximately equal storm frequencies. When analyzing the data where maximum sustained 1-minute winds are ≥ 100 knots (Figures 2.7.2-13 through 2.7.2-15a-b), the frequency maximum in the central Gulf remains. However, the maximum over the Yucatan Straits has diminished, while the region around the Florida Straits and Southern Florida has become the highest frequency area on the map. In addition, average storm speeds are faster for this latter storm classification in the Gulf of Mexico than for the former 2 types.

The data set of Neumann and Pryslak (1981) for the November transitional period shows that tropical cyclones (maximum sustained 1-minute winds > 34 knots) have very little influence on the Gulf of Mexico during this month. The maximum frequency (Figure 2.7.2-16 through 2.7.2-18a-b) of 3 storms per 100 years is located in the far southeastern corner of the Gulf of Mexico. There are no storm motion vectors (Figure 2.7.2-17) since fewer than 5 storms in the 80-year record met both the temporal and wind speed criteria. Figure 2.7.2-18b shows the relative sparsity of storm tracks in this region for the November transitional period. Obviously, no tropical cyclone activity is documented for the April transitional period since it occurs two months prior to the beginning of the hurricane season.

2.7.3 Frontal Passages

DiMego et al. (1976) presented a general description of frontal intrusions into the Gulf of Mexico-Caribbean Sea region. Granted, frontal intrusions into this area are not as common as regions located north of 35°N. However, no real description of these meteorological phenomena existed, with the exception of a study for Mexico (Hill, 1969) and a general estimate by Trewartha (1966) prior to this work by DiMego et al. (1976). The data base utilized consisted of six-hourly Northern Hemisphere Surface Charts for the period 1965-1972. These charts (at 00, 06, 12, and 18 GMT) were used to compile both frequency and duration statistics for each 2½° latitude/longitude grid cell within the region. The data set does not differentiate between frontal type (e.g., warm, cold, stationary or occluded), and thus, represents a summary of all frontal activity in the Gulf

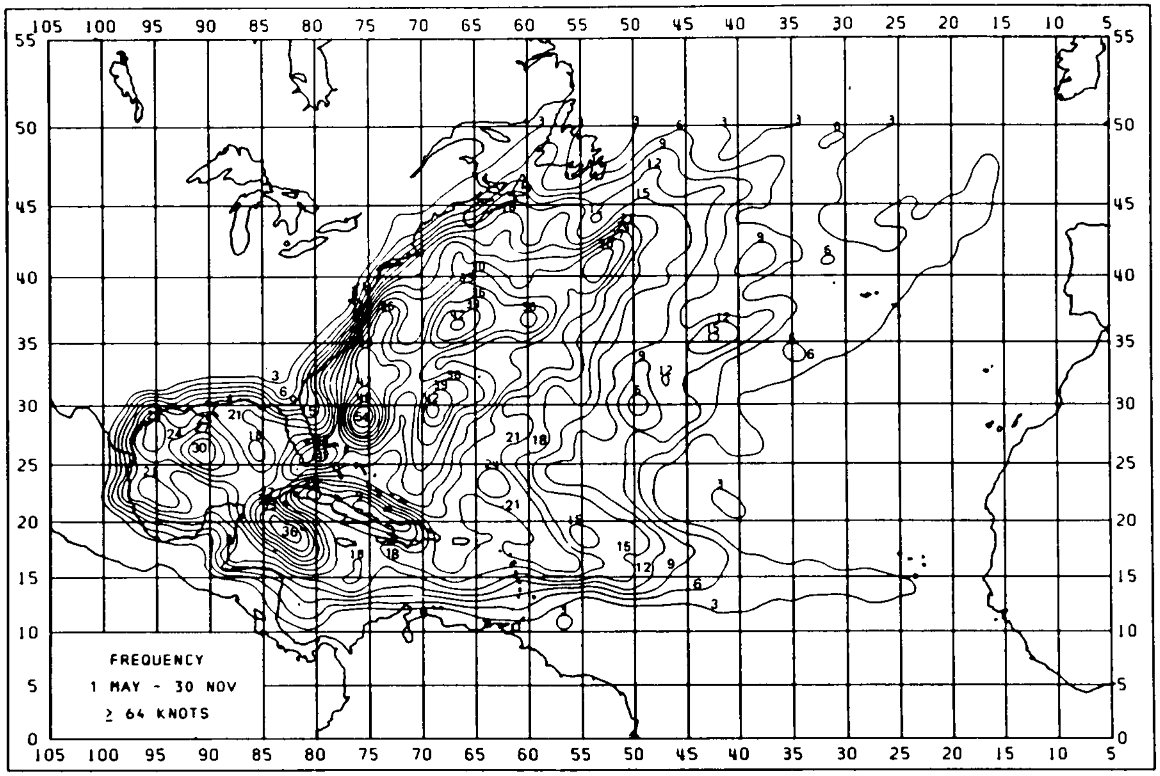

Figure 2.7.2-10 The frequency of storms (1 May - 30 Nov) passing within 139 km per 100 years for storms with 1-minute maximum sustained winds ≥ 64 knots, averaged over 2½° latitude/longitude grid cells (from Neumann and Pryslak, 1981).

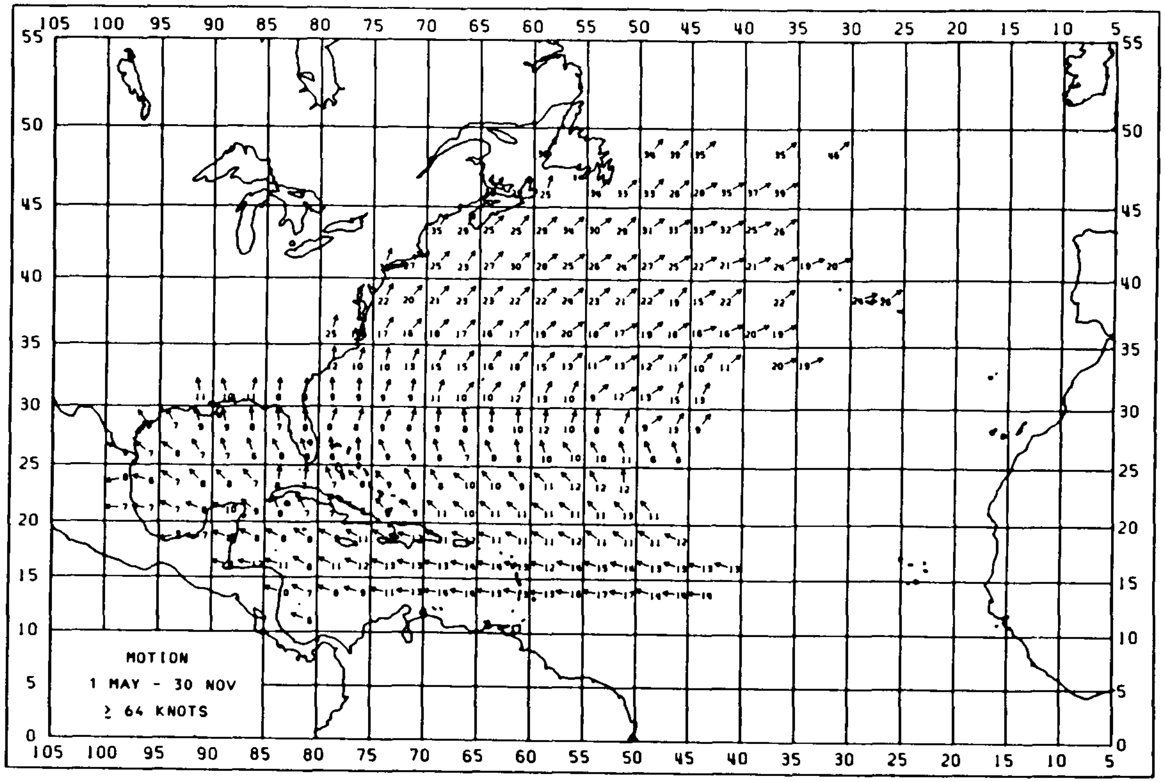

Figure 2.7.2-11 The direction of motion and vector speeds of storms (1 May - 30 Nov) passing within 139 km per 100 years for storms with 1-minute maximum sustained winds ≥ 64 knots, averaged over 2½° latitude/longitude grid cells (from Neumann and Pryslak, 1981).

A

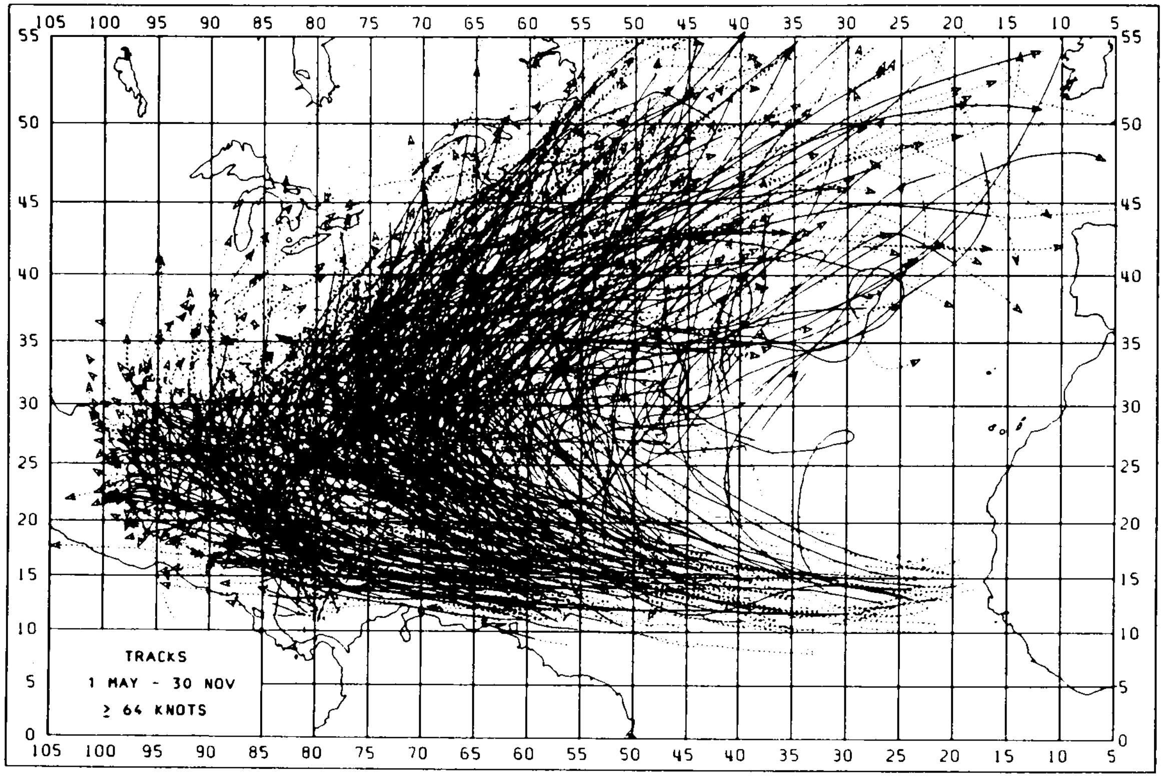

Figure 2.7.2-12a Storms tracks utilized in computations for Figures 2.7.2-10 and 2.7.2-11 (from Neumann and Pryslak, 1981).

B

A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F	A	B	C	D	E	F
82	6	291	6	6	3.62	200	16	297	12	12	2.79	298	31	341	8	11	3.58	382	10	064	12	17	10.40	494	6	050	22	22	14.08
117	7	289	10	11	4.32	201	15	305	11	12	3.70	299	36	352	6	11	4.11	383	8	055	13	20	9.38	496	5	051	22	22	9.22
118	11	296	7	9	5.28	202	15	303	11	12	4.18	300	31	357	8	11	6.10	384	12	023	15	20	11.09	499	5	070	24	27	14.47
119	13	291	8	10	5.21	203	15	305	11	12	4.24	301	30	333	9	11	4.76	385	6	028	13	14	10.88	500	6	052	26	27	14.77
120	15	285	9	11	4.99	204	9	292	12	13	7.04	302	32	337	9	12	3.66	407	18	005	12	14	8.39	517	7	020	30	32	11.27
121	11	282	11	12	4.56	219	7	271	7	8	3.02	303	35	343	8	11	4.57	408	39	017	10	12	5.78	518	16	036	27	28	11.91
122	11	274	13	13	4.90	220	14	277	7	9	3.71	304	26	338	7	11	4.77	409	37	011	10	13	5.91	519	22	041	25	26	11.83
123	13	275	14	14	4.57	221	20	296	7	8	2.48	305	22	334	8	10	4.23	410	35	024	13	16	7.42	520	28	035	23	25	8.76
124	15	280	14	14	3.90	222	16	292	8	9	2.78	306	19	350	8	13	4.74	411	33	026	15	17	6.28	521	27	041	27	29	10.68
125	15	279	13	14	4.54	223	18	290	10	11	3.10	307	19	342	10	14	5.18	412	30	034	15	17	6.60	522	24	044	30	32	10.08
126	9	283	13	13	2.58	224	26	309	9	10	3.49	308	14	322	10	13	4.11	413	29	037	16	18	6.67	523	24	051	28	29	13.01
127	7	275	13	14	1.63	225	31	336	8	10	3.43	309	10	329	10	12	4.26	414	25	039	18	19	6.89	524	24	054	25	27	12.32
128	6	278	16	17	5.42	226	16	332	7	10	3.68	310	9	338	11	14	4.98	415	25	041	15	17	7.64	525	31	053	26	28	11.94
129	7	280	17	17	5.03	227	13	353	7	11	4.30	311	7	336	6	12	6.51	416	25	047	13	15	6.64	526	27	051	24	26	11.61
130	12	280	17	17	4.22	228	8	296	6	9	4.53	312	6	340	8	16	7.07	417	16	061	11	14	7.15	527	16	055	27	28	10.64
131	9	286	14	15	4.00	229	13	319	6	11	3.13	328	21	324	8	10	4.14	418	12	061	13	16	8.44	528	15	057	25	27	9.12
132	6	275	14	15	3.41	230	24	312	9	11	4.55	329	21	330	7	9	4.53	419	9	054	12	17	11.37	529	12	061	22	23	13.65
133	6	275	14	14	2.58	231	26	309	11	12	4.79	330	23	343	9	11	4.99	420	11	045	11	15	9.41	530	7	070	21	22	13.46
151	12	283	8	10	3.19	232	21	306	10	12	5.04	331	20	346	9	11	4.29	421	12	039	10	12	7.65	531	11	063	21	24	10.53
152	15	280	12	12	4.06	233	20	307	11	12	3.89	332	21	354	8	11	5.45	422	6	050	11	13	8.05	532	8	064	24	26	12.73
153	16	287	11	12	4.58	234	23	306	11	12	4.08	333	21	354	7	10	3.45	424	5	071	20	22	9.39	533	6	070	19	21	11.49
154	25	302	8	10	4.45	235	20	303	11	12	4.60	334	20	357	8	11	4.03	425	7	067	19	22	10.38	534	6	068	20	22	12.98
155	20	295	11	12	4.86	236	16	305	11	12	3.58	335	22	017	8	12	4.97	443	5	014	25	26	11.75	555	7	030	35	35	14.54
156	18	291	12	13	5.62	237	16	316	11	13	4.95	336	53	016	8	11	5.82	444	17	026	16	18	10.21	556	14	036	29	30	12.39
157	15	289	13	15	4.81	238	12	314	13	14	5.45	337	42	020	9	13	6.17	445	39	030	17	18	8.29	557	18	044	25	26	10.79
158	19	284	13	14	3.74	239	6	319	11	12	3.25	338	30	015	8	13	6.31	446	25	042	16	18	8.35	558	20	038	25	27	10.48
159	22	282	13	14	3.78	255	8	258	8	9	3.46	339	43	003	9	12	5.55	447	38	043	18	20	7.49	559	19	047	29	31	12.55
160	21	284	14	14	3.83	256	21	285	6	8	2.40	340	29	354	8	12	4.42	448	45	042	17	18	7.28	560	18	048	34	37	13.49
161	20	281	14	14	3.99	257	18	305	7	10	4.40	341	24	001	9	13	5.48	449	37	048	16	18	7.77	561	11	052	30	33	11.75
162	19	283	13	13	4.06	258	18	317	8	11	4.62	342	24	000	10	13	5.45	450	34	047	17	19	8.17	562	20	044	29	31	11.68
163	21	283	12	13	3.86	259	22	316	8	10	3.31	343	18	006	12	15	7.09	451	34	049	19	20	8.97	563	17	053	31	32	12.04
164	23	286	14	15	5.59	260	23	318	7	9	2.02	344	16	017	10	15	6.72	452	24	053	20	21	8.44	564	16	060	33	34	9.92
165	18	287	15	16	6.15	261	24	005	8	10	3.35	345	14	003	8	13	6.26	453	20	052	18	21	7.62	565	12	065	33	34	10.66
166	15	286	14	14	6.00	262	23	006	7	11	3.52	346	9	019	6	11	4.21	454	16	064	17	20	8.20	566	9	064	32	34	11.70
167	12	290	13	14	5.16	263	22	336	7	10	4.32	347	8	053	9	12	6.33	455	13	051	19	23	10.83	567	7	068	25	28	10.92
168	10	288	13	14	4.72	264	23	313	8	12	4.56	348	11	031	13	16	9.29	456	11	055	18	22	11.70	568	5	055	26	27	8.53
169	8	282	13	13	2.82	265	27	314	9	11	3.85	349	8	036	9	16	9.43	457	11	070	16	18	9.77	593	5	038	36	37	14.55
170	6	286	13	13	3.18	266	32	332	8	11	3.85	366	10	349	11	13	3.85	458	14	065	16	18	8.09	594	11	039	29	30	12.36
185	5	256	9	10	4.64	267	30	328	8	12	4.27	367	11	343	10	11	3.77	459	10	063	20	21	6.42	595	6	017	25	26	10.95
186	7	271	7	8	5.14	268	24	306	10	11	4.53	368	11	011	11	13	7.14	460	7	067	19	20	5.97	597	8	043	34	36	8.73
187	9	289	10	11	5.55	269	25	318	10	13	4.77	369	6	003	8	10	4.27	481	23	027	22	24	9.75	598	11	046	33	34	9.68
188	21	296	8	10	4.23	270	22	318	9	11	4.54	370	10	004	9	13	3.68	482	27	040	20	22	9.25	599	13	043	33	35	9.89
189	31	298	8	10	4.12	271	13	312	11	12	4.81	371	27	357	9	12	5.89	483	27	042	21	23	9.39	600	10	048	28	30	9.84
190	37	303	8	10	4.30	272	10	316	12	13	3.20	372	40	000	9	11	4.73	484	36	041	23	25	10.99	601	11	060	28	30	8.80
191	18	297	9	12	5.48	273	11	326	12	14	5.56	373	40	019	9	12	5.88	485	33	042	23	25	9.71	602	12	059	35	37	10.01
192	16	296	11	13	5.10	274	9	355	12	15	5.37	374	34	009	9	14	6.75	486	28	044	22	24	8.17	603	9	060	37	38	9.88
193	14	299	10	12	3.68	291	7	299	9	10	3.37	375	38	020	11	15	6.79	487	29	049	22	23	10.72	604	5	062	39	40	13.24
194	9	286	12	12	2.58	292	23	308	7	9	3.72	376	38	036	10	13	7.47	488	26	050	24	25	9.68	631	6	041	30	31	11.99
195	22	296	11	12	3.40	293	23	304	8	10	3.75	377	33	037	10	14	6.41	489	25	048	23	24	9.46	635	6	039	34	36	13.19
196	23	293	12	13	2.84	294	31	328	7	10	3.98	378	24	027	12	16	7.26	490	19	052	21	22	9.81	636	8	043	39	41	10.46
197	22	290	11	12	3.35	295	26	341	7	10	3.08	379	19	026	13	16	7.09	491	14	053	22	24	8.47	637	6	048	35	36	7.35
198	21	295	11	12	3.26	296	17	338	6	10	3.57	380	17	023	10	15	6.12	492	12	040	19	21	10.78	640	5	052	35	36	12.54
199	22	299	11	12	3.37	297	22	332	8	10	3.98	381	17	047	9	15	7.72	493	9	056	15	16	11.01	642	6	048	46	49	15.10

Figure 2.7.2-12b Statistics associated with Figures 2.7.2-10 and 2.7.2-11. See text for a detailed explanation (from Neumann and Pryslak, 1981).

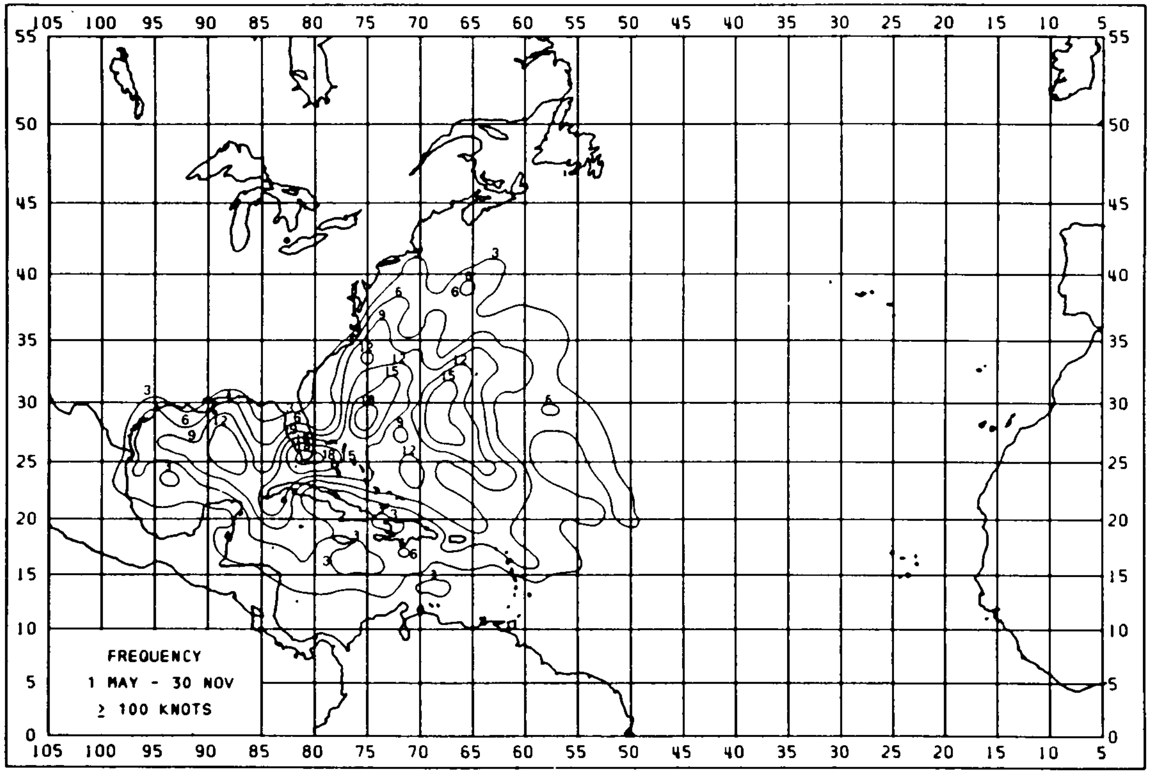

Figure 2.7.2-13 The frequency of storms (1 May - 30 Nov) passing within 139 km per 100 years for storms with 1-minute maximum sustained winds ≥ 100 knots, averaged over 2½° latitude/longitude grid cells (from Neumann and Pryslak, 1981).

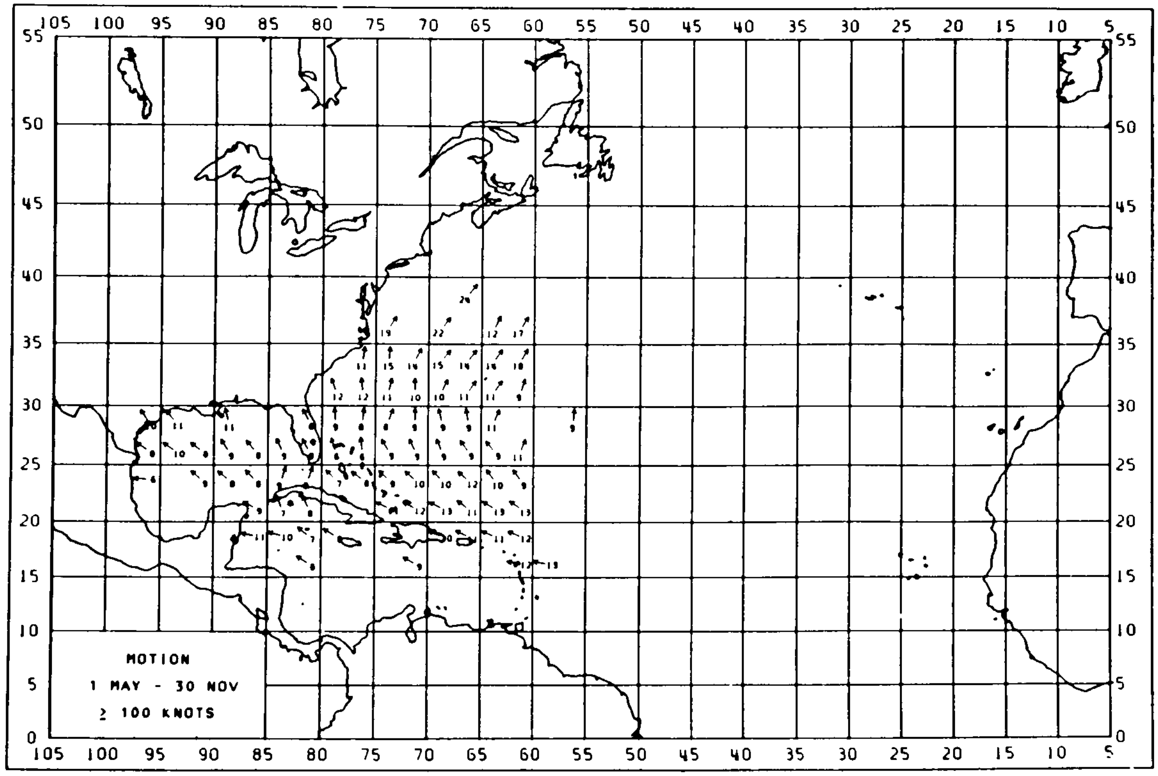

Figure 2.7.2-14 The direction of motion and vector speeds of storms (1 May - 30 Nov) passing within 139 km per 100 years for storms with 1-minute maximum sustained winds ≥ 100 knots, averaged over 2½° latitude/longitude grid cells (from Neumann and Pryslak, 1981).

A

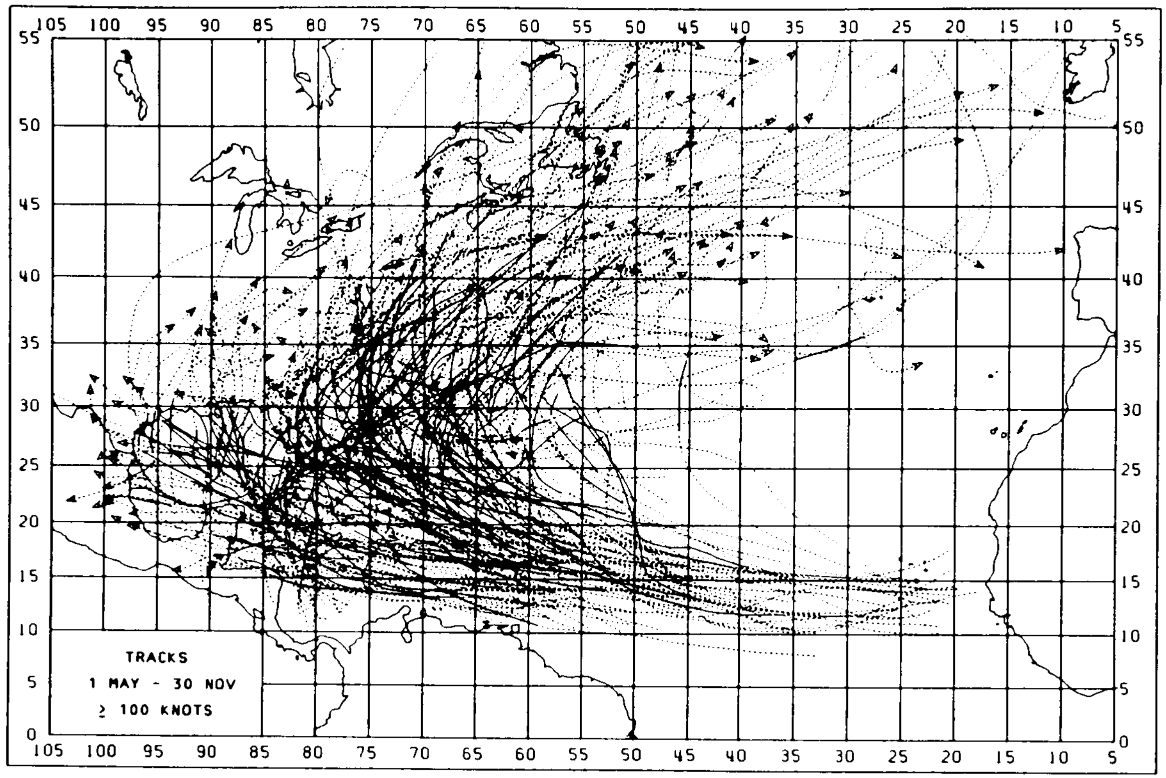

Figure 2.7.2-15a Storms tracks utilized in computations for Figures 2.7.2-13 and 2.7.2-14 (from Neumann and Pryslak, 1981).

B

A	B	C	D	E	F
154	6	304	8	11	5.69
158	5	300	9	11	2.18
162	6	280	12	13	4.64
163	6	281	13	14	4.04
188	7	281	11	11	5.09
189	9	286	10	10	4.44
190	7	310	7	8	3.57
191	6	302	9	10	4.19
195	5	291	10	10	2.02
196	7	295	11	12	3.77
197	10	293	11	11	2.56
198	6	291	12	13	3.08
224	7	301	9	11	3.68
225	15	340	7	10	3.35
226	6	336	8	10	3.45
229	6	296	11	11	2.91
230	7	296	12	12	3.50
231	10	298	13	13	4.96
232	12	307	11	13	5.50
233	6	302	13	13	4.93
234	7	305	13	14	5.29
256	6	274	6	7	2.04
258	7	312	9	11	5.21
259	10	312	8	10	2.91
260	11	316	8	9	1.72
261	12	017	9	11	3.14
262	13	017	8	11	3.32
263	12	316	7	9	4.06
264	13	308	8	10	3.62
265	11	314	9	12	3.50
266	13	311	10	10	3.82
267	10	316	10	11	4.28
268	7	310	12	12	4.58
269	12	324	10	14	5.72
270	10	325	9	12	5.88
292	8	306	8	10	4.97
293	9	306	10	11	4.57
294	10	307	8	9	2.51
295	15	329	9	11	2.23
296	8	321	8	10	2.96
297	8	337	9	12	3.93
298	17	332	9	12	3.81
299	16	342	6	12	5.25
300	13	354	6	11	5.84
301	12	329	9	10	2.72
302	10	335	9	11	5.29
303	14	338	9	10	3.47
304	15	324	9	10	4.60
305	10	319	9	10	4.83
306	5	022	11	12	7.47
328	6	328	10	11	5.83
329	5	322	11	12	2.33
331	10	348	11	12	3.29
334	6	334	8	10	3.13
335	5	356	9	12	5.80
336	18	007	8	12	6.30
337	17	019	8	13	6.62
338	12	000	9	14	5.86
339	17	346	9	11	4.00
340	13	351	9	12	4.99
341	9	021	11	15	7.39
344	5	006	9	15	6.86
371	6	341	12	13	8.96
372	13	354	12	13	5.35
373	14	013	11	12	6.73
374	12	358	10	13	6.73
375	13	025	10	14	6.50
376	15	036	11	13	7.75
377	8	034	11	13	7.32
378	6	017	9	11	6.52
408	11	009	11	13	4.40
409	11	004	15	17	6.88
410	10	026	14	17	10.41
411	7	039	15	15	7.62
412	9	038	14	15	4.12
413	10	035	14	15	4.38
414	6	030	18	18	8.18
445	10	034	19	20	6.98
447	7	039	22	22	6.04
449	5	025	12	12	2.94
450	5	032	17	17	5.50
484	6	039	24	25	13.38

Figure 2.7.2-15b Statistics associated with Figures 2.7.2-13 and 2.7.2-14. See text for a detailed explanation (from Neumann and Pryslak, 1981).

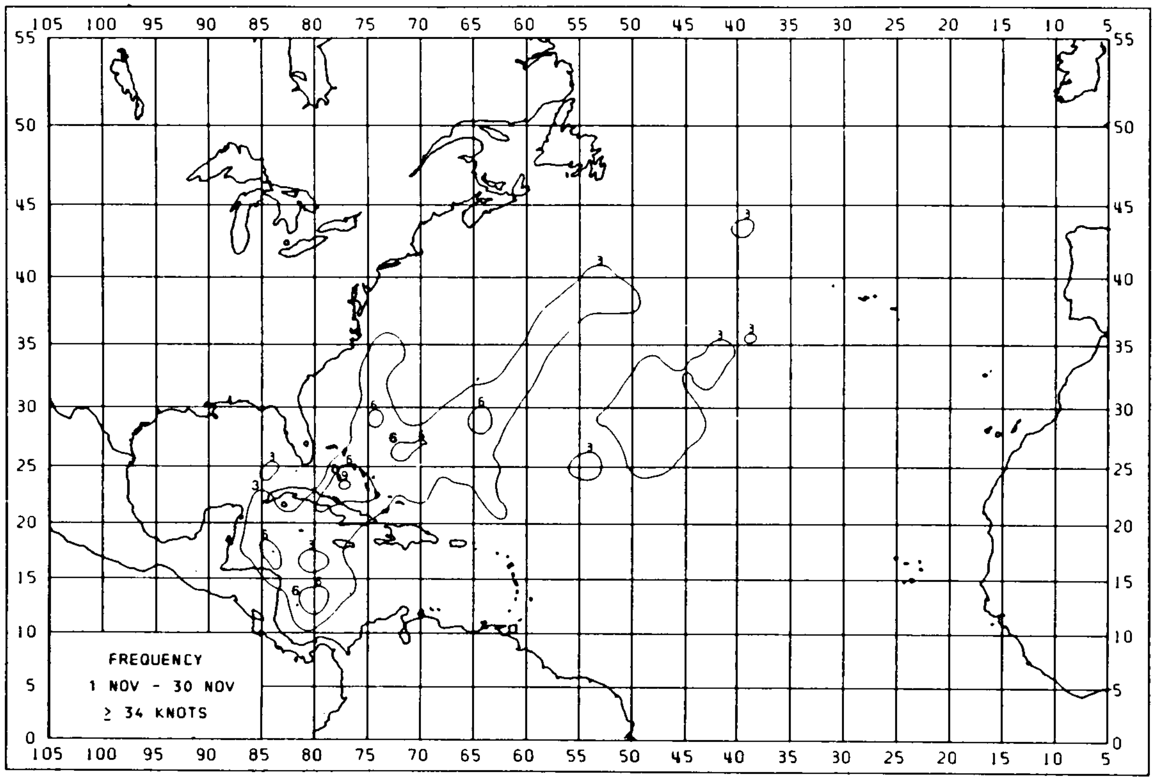

Figure 2.7.2-16 The frequency of storms (1 Nov - 30 Nov) passing within 139 km per 100 years for storms with 1-minute maximum sustained winds ≥ 34 knots, averaged over 2½° latitude/longitude grid cells (from Neumann and Pryslak, 1981).

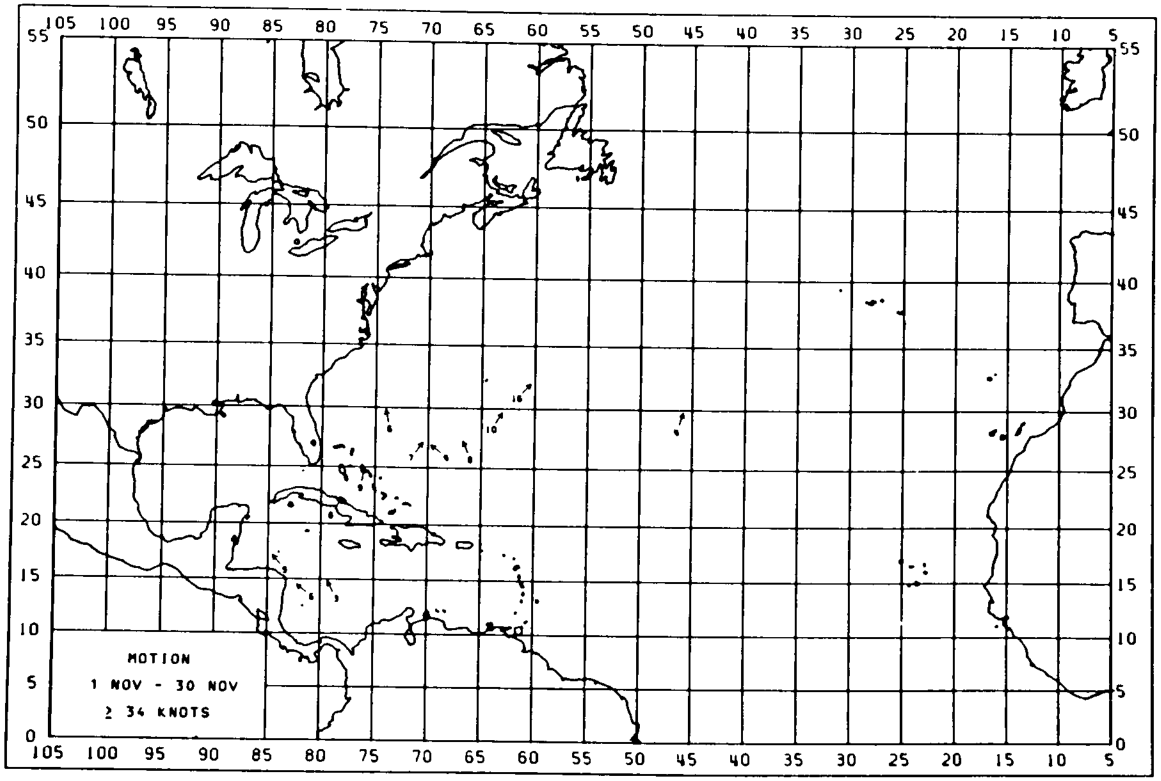

Figure 2.7.2-17 The direction of motion and vector speeds of storms (1 Nov - 30 Nov) passing within 139 km per 100 years for storms with 1-minute maximum sustained winds ≥ 34 knots, averaged over 2½° latitude/longitude grid cells (from Neumann and Pryslak, 1981).

A

A	B	C	D	E	F
118	6	307	6	6	3.83
119	6	332	3	6	2.05
153	6	319	9	11	3.94
227	6	030	8	14	3.11
264	9	011	9	14	5.32
302	6	036	7	14	5.42
303	6	307	4	14	4.46
304	6	337	8	14	4.63
337	6	347	6	14	5.73
341	6	033	10	13	6.65
348	5	018	4	19	11.70
378	5	043	16	17	5.49

B

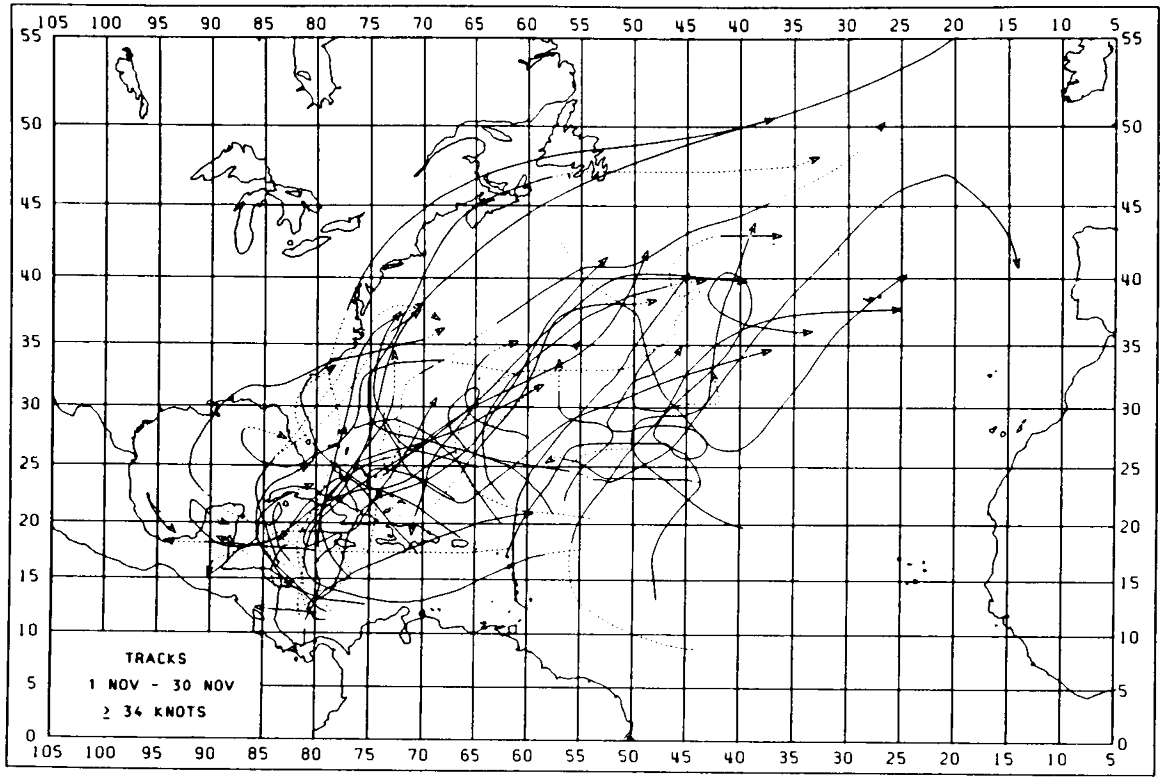

Figure 2.7.2-18a-b (a) Statistics associated with and (b) Storm tracks utilized in computations for Figures 2.7.2-16 and 2.7.2-17. See text for a detailed explanation (from Neumann and Pryslak, 1981).

of Mexico region. The reader is referred to the original manuscript (DiMego et al., 1976) for the mechanics and details of the data collection.

The winter frontal frequency for the Gulf of Mexico is characterized by almost identical patterns for each of the 4 months. The maximum frontal activity experienced during this season is easily explained by the region of maximum westerlies (i.e., the polar jet stream) acting as the dividing barrier between cold, dry continental polar air and warmer, moist maritime tropical air, which is at its southernmost reach during this time period. This scenario is best illustrated by a cold air outbreak in this region, where the frontal zone acts as a sharp baroclinic zone separating the highly baroclinic mid-latitude air mass from the more barotropic tropical air (DiMego et al., 1976). These type intrusions into the Gulf region have been detailed by Fernandez-Partegas and Mooers (1975).

During the months of December-March, the region of frontal influence extends down to approximately 10°N, well out of the desired study area. The December frequency pattern is essentially zonal in the Gulf, with the maximum located just west of the Louisiana delta. January shows a trough in the frequency pattern developing in the western Gulf, with a general zonality experienced elsewhere. Maximum frequency is experienced in February, when 9 frontal passages per month can be expected above approximately 28°N. The western trough deepens and a ridge begins to develop along the west Florida shelf in the frequency contours of DiMego et al. (1976). March represents the breakdown in the western Gulf trough and the development of a southeastward trend in all frequency contours. During March the northern half of the Gulf of Mexico is influenced by approximately 7 frontal passages per month. The frequency maximum (eight fronts per month) at this time is located in the northeastern Gulf of Mexico.

Maximum frontal duration for the winter season is shown to be during December and January by DiMego et al. (1976). The duration maximum tends to shift from the western Gulf in December across the central Gulf over to the Florida Straits by March. Their analysis showed a maximum frontal duration of approximately 30-36 hours for the majority of the Gulf region for December-January, decreasing to 24-30 hours for the western and northern Gulf during February. March details a general increase to 30 hours for the central Gulf, while the Texas and Florida coastal regions remain in the 24-hour duration range. The general minimum in duration experienced along Gulf coastal regions has been attributed to the enhancement of frontal movement along the Gulf coast (DiMego et al., 1976).

Following the winter frontal passage analysis, the summer (May-October) frontal frequencies and durations were analyzed using once again, the data presented by DiMego et al. (1976). May shows a general zonal frequency pattern; however, the magnitudes have decreased by a factor of 2 (March maximum frequency = 8, April maximum frequency = 4). During this time period, the entire Gulf region experiences a minimum of at least 1 frontal passage per month. Also, the level of southernmost frontal influence has retreated northward to approximately 15°N. The months of June-August are characterized by almost no frontal activity south of 20°N, while penetrations below 25°N are rare. The maximum (2-3 fronts per month) frequency during these months is found in the northeastern Gulf of Mexico. September shows the general southerly migration of the frontal activity line, caused by the increasing influence of the Bermuda or sub-tropical anticyclone. The period of September-October shows the general transition from summer into winter as the frequency over the entire study area nearly doubles. This shift is concomitant with increase in the strength of the mid-latitude westerlies (polar jet stream) (DiMego et al., 1976).

Fronts during the inactive summer period are generally longer than those experienced during the winter regime. The region of greatest duration appears to be in the western Gulf of Mexico, as was found for the cooler, winter months. This shows the lack of topographic influence for fronts penetrating south of 30°N. Generally, the oscillations experienced in duration are controlled by terrain, strength of the jet stream in any given month and the ability of the warmer tropical waters to modify the overlying air mass such that it slows its equatorward motion (DiMego et al., 1976).

As discussed previously, the actual increase (or transition) in frontal frequency occurs in October; however, during November, the strong zonal frequency pattern begins to entrench itself throughout the Gulf of Mexico. In contrast, April does mark the onset of the northerly excursion of the frequency contours throughout the Gulf. In terms of duration, April and November are true transition months for the Gulf of Mexico. April begins the transition of long frontal duration in the southeast corner of their study area, while November is the onset of the typical winter frontal duration pattern. In general, the inclusion of these months, April and November, into the summer and winter climatologies, respectively, would have been possible in terms of the frontal analyses presented by DiMego et al. (1976).

III. SUMMARY

3.1 Summary

This meteorological summary consists of a compilation of data from a number of sources and a statistical description by month, season and year of the dominant wind, pressure, air temperature, sea surface temperature (SST), storm tracks, and frontal occurrence patterns in the Gulf of Mexico. The primary sources of data are meteorological time series from NWS coastal stations, NDBC buoys, NDBC CMAN stations, OCMP data from Shell Oil Company, SST maps compiled from ship observations, storm tracks compiled by the National Hurricane Data Center, the University of Virginia Extratropical Cyclone data and the frontal occurrences analyzed by DiMego et al. (1976). The period of the statistical analysis of the time series overlaps the 10-year ocean circulation model calculations for the Gulf of Mexico, which use Limited Fine Mesh (LFM) model derived winds as forcing (Rhodes et al., 1985). The NWS coastal station data covers the period 1970-1986, the NDBC buoy data covers 1976-1986 and the NDBC CMAN data set includes 1985-1987, depending on the location. The OCMP platform station spans the period 1972-1976, but is very intermittent in nature. Storm track data have been analyzed over the 100-year historical record, 1886-1986, and the ship based-SST data is analyzed by 1° quadrangles for the period 1854-1973.

Hopefully, the analyses included in this report will provide useful information on the variability of meteorological conditions in the Gulf of Mexico. The data have been analyzed by winter and summer season, December through March and May through October, respectively, and by multi-year monthly statistics (means and variances). Sensible heat flux has been calculated for the NDBC buoys and CMAN stations, while wind stress was calculated for all (NWS coastal stations, NDBC buoy and CMAN stations and the OCMP platform) the wind records.

Primary results emphasize the difference between winter and summer means and the significant variability; particularly over the central and northwestern Gulf. Winter is characterized by high variability associated with the occurrence of storms and cold air outbreaks over the northern Gulf, along with cyclogenesis, and the movement of cold fronts down from the north. In summer, the variability is much weaker, except for the occasional occurrence of a tropical storm or hurricane. Frontal activity is weak and the fronts are generally warm and move slowly up from the south. Winds are weak off west Florida; however, Key West, Alligator Reef, the central and western Gulf and the Texas coast show a moderate to strong southeasterly flow, which persists most of the summer. This summer wind system is partly the result of the well-defined stationary Bermuda High and the Rockies Low and the SE trade winds funneling warm, moist air northwestwards across the Gulf.

Transition between the 2 seasons occur within a few weeks over most of the Gulf, and therefore, a distinct spring and fall is not apparent at these latitudes. The separately analyzed transition months of April and November can show characteristics of either season, depending on the regions and years considered.

Monthly SST maps show strong north-south gradients across the northern shelf areas in winter, along with contrasts between the Loop Current and the western Gulf basin. By middle and late summer, SST's are a fairly uniform 29°C throughout the Gulf, and no major features are discernable. Similarly, sensible heat flux is larger in winter and smaller from May through October. The largest heat fluxes occur during strong cold outbreaks, which reach the warm deep water of the western Gulf.

Thus, this report summarizes a compilation of meteorological data for the Gulf of Mexico, which shows how varying atmospheric conditions can affect oceanographic processes in the region. Furthermore, this report identifies a data set which is currently stored in one location and is readily available to the Gulf of Mexico scientific community for inclusion in any future research.

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APPENDIX A

SUMMARY DATA CATALOG

DATA CATALOG

The data sets collected and used in this study represents the composite data from a number of studies and observational activities conducted in the Gulf over a number of years. All data were evencually reduced to 1600 BPI on 9 tract tape using ASCII, UNLABELED, BLOCKED format and are archived as such at FAMU. Other user-specified formats may be requested. The data include buoy, ship, and platform data. The data sets collected are:

Set #1 — **NDBC BUOY DATA SET**

DESCRIPTION: National Data Buoy Center (NDBC) data for the Gulf of Mexico in standard National Oceanographic Data Center (NODC) format for the period 1973-1983. Wind speed and direction, air and sea surface temperature, and in some cases significant wave height and period was recorded.

Set #2 — **NCDC SHIP DATA**

DESCRIPTION: National Climatic Data Center (NCDC) ship data for Marsden Squares 81 and 82 (Gulf of Mexico) in TD-1129 format for the period January 1970-Dececber 1983.

Set #3 — **NWS COASTAL WIND STATION DATA**

DESCRIPTION: National Weather Service (NWS) Coastal Wind Station Surface Airways Observations for 9 stations around the Gulf of Mexico the the period 1970-1987. Data obtained from NCDC. The following stations are included:

1. Key West, FL
2. Fort Myers, FL
3. Tampa, FL
4. Pensacola, FL
5. Boothville, LA
6. Mobile, AL
7. Port Arthur, TX
8. Corpus Christi, TX
9. Brownsville, TX

Set #4 — **Tropical Cyclone Data for the North Atlantic Basin (HURDAT)**

DESCRIPTION NCDC cyclone track data for the Gulf of Mexico for the period 1886-present.

Set #5 — **Extratropical Cyclone Track Data**

DESCRIPTION Extratropical cyclone track data for the Gulf of Mexico provided by the University of Virginia, Department of Environmental Sciences for the period 1886-1986.

Set #6 **OCMP Station Data**

DESCRIPTION

Ocean Current Meausrement Program (OCMP) digitized meteorological data from the analog observation records of station 2 of the OCMP study conducted from September 1972 - November 1977.

APPENDIX B

LIST OF CONTACTS/SOURCES

The sources used to conduct this project are as indicated:

NAME	INFORMATION
Mr. Harold Kilpatric Department of Meteorology Love Building Florida State University (FSU) Tallahassee, FL 32306 (904) 644-6205	General Meteorology Information
Dr. Jordan FSU Meteorology Library (904) 644-3222	Reference Books
Dr. Shu Department of Marine Science Louisiana State University (504) 388-2395/2396	Oil Co. Wind Data
Mr. Dana Thompson National Ocean Research & Development Activity (NORDA) (Code 324) NSTL, MS 39529	Gulf Buoy Data
Mr. Ben Davis National Climatic Data Center Federal Building Asheville, NC 28801-2696 (904) 259-0682	General Wx Data MARSDEN SQUARE Data
Mr. Bob Lobel Acting Chief Branch of Environmental Modeling MS 644 12201 Sunrise Valley Drive Reston, VA 22091 (703) 860-6730	Reference Literature
Pennsylvania State University Department of Meteorology University Park, PA 16802	Reference Material
Mr. Mike McDermit U.S. Naval Postgraduate School Department of Meteorology Monterey, CA 93940 (408) 646-2516	Reference Material

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Thomas Mitchell SAIC Office Alpha 13140 Coit Road Suites 207 and 219 Dallas, TX 75240	Senior Scientist
Gene Berek AMOCO Oil Co. Tulsa, Oklahoma (918) 660-3000	Chief Meteorologist
Tony Fallon CHEVRON Oil Co. Los Angeles, CA (213) 694-7787	Chief Meteorologist
Mike Spalane GULF Oil Col (713) 754-0321	Chief Meteorologist
George Z. Forristall SHELL Development Co. Houston, TX 77001 (713) 663-2404	Chief Meteorologist
Bob Hamilton Evans/Hamilton 7214 S. Kirkwood Houston, TX 77072 (713) 495-0883	Digitize Data Sets has ODGP Meteo Data
Elgin Landry Minerals Management Service New Orleans, LA 70123 (504) 736-2866	MMS Meteorologist
Dr. (Capt.) Glen Hamilton National Data Buoy Center NSTL, MS 39529 (601) 688-2836	C-MAN data set

APPENDIX C

MONTHLY AND ANNUAL STATISTICAL TABLES FOR ATMOSPHERIC PRESSURE, AIR TEMPERATURE, SEA SURFACE TEMPERATURE, AIR - SST AND SENSIBLE HEAT FLUX

ORGANIZATION OF THE MONTHLY AND ANNUAL STATISTICAL TABLES:

- Each month is listed across the top of each page, including a column for annual totals.
- Each year is listed down the left-hand side of each page. Each year has the following computed statistics:
  - mean value for each column,
  - variance for each column,
  - number of points used in the calculations for that particular column,
  - number of possible points within each column.
- A summary of all years is presented at the end of each series, showing the long-term values for each parameter described above.

C.1 NATIONAL WEATHER SERVICE (NWS) COASTAL STATIONS

C.1.1 ATMOSPHERIC PRESSURE (mb - 1000.0)

KEY WEST VARIABLE : PRESSURE MB-1000 DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 4
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	18.358	20.211	16.153	16.801	16.775	16.752	17.210	15.442	15.040	14.018	17.783	18.994	16.938
	23.87	18.18	19.38	8.24	3.47	2.45	2.27	1.92	3.95	4.11	8.99	6.79	11.25
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	18.865	18.133	17.572	17.103	15.376	17.173	17.348	15.590	14.165	13.885	16.086	18.737	16.663
	13.39	14.69	7.93	20.13	3.73	3.05	1.06	3.50	2.44	3.02	5.67	3.75	9.30
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	18.518	18.174	16.448	17.113	13.379	13.587	18.003	16.669	15.478	15.281	15.479	18.517	16.388
	7.07	22.97	19.83	5.67	7.59	10.81	2.17	3.64	3.61	9.11	4.40	16.59	12.35
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	18.263	19.025	16.222	16.180	16.043	15.958	16.247	15.728	14.813	13.413	18.365	19.036	16.591
	14.05	10.60	7.99	18.64	5.33	3.47	2.55	3.95	2.79	5.80	5.12	9.10	10.15
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	20.407	18.459	18.048	18.645	15.225	14.779	17.529	16.940	14.020	17.032	17.192	18.882	17.265
	3.51	15.19	7.74	4.94	6.15	5.70	3.22	2.03	3.05	11.00	4.85	9.21	9.45
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	19.649	18.072	17.001	17.295	14.759	16.542	16.889	17.379	14.759	15.720	17.870	19.505	17.118
	6.66	5.72	5.37	4.81	2.18	2.76	1.18	2.04	4.50	3.30	8.85	7.85	6.86
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	20.475	20.678	18.552	17.018	15.788	15.667	18.383	15.735	15.248	14.361	17.177	17.319	17.191
	8.08	11.51	4.18	16.09	7.03	3.51	1.62	6.83	3.66	5.25	7.59	10.02	10.76
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	18.126	19.197	17.335	18.331	14.790	16.879	17.969	16.538	15.186	15.458	16.377	17.785	16.983
	13.12	8.94	4.95	10.97	8.93	6.15	1.58	2.25	3.37	3.55	10.92	14.57	9.12
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	19.766	17.649	17.658	16.006	14.360	16.519	17.029	16.817	14.613	13.987	17.012	17.995	16.615
	18.28	12.82	16.22	12.90	6.97	1.28	2.66	1.69	2.01	2.90	2.99	8.75	10.02
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

KEY WEST VARIABLE : PRESSURE MB-1000 DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 4
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	18.090	19.699	18.885	16.232	15.055	15.828	17.300	16.396	11.669	13.857	16.303	19.174	16.531
	32.67	7.37	15.02	7.90	2.00	8.02	2.85	4.35	8.86	2.36	10.98	7.39	14.03
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	18.062	18.648	17.133	15.383	14.174	16.988	16.658	15.857	15.282	14.945	16.501	18.897	16.538
	7.35	12.24	11.39	5.08	4.26	2.52	1.46	3.10	2.62	5.21	9.84	7.87	8.08
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	19.433	19.490	16.124	19.067	12.552	15.877	17.089	15.075	14.747	15.451	16.224	18.070	16.770
	10.37	13.43	19.23	9.29	5.72	1.84	2.36	9.39	3.07	3.52	5.42	7.03	11.08
	744	672	744	720	343	720	744	744	720	744	720	744	8359
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	19.447	18.563	16.922	16.193	15.139	15.151	17.643	17.234	14.453	15.297	17.432	19.073	16.877
	8.68	7.24	9.63	4.24	3.58	5.42	1.79	3.11	3.51	6.47	6.56	5.49	7.97
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	16.947	14.311	13.026	14.561	15.542	14.378	17.360	17.146	16.443	15.917	16.228	18.770	15.905
	10.68	10.84	28.51	6.49	7.14	3.24	1.90	2.77	2.27	7.30	6.29	11.32	10.62
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	19.753	17.366	17.218	15.329	17.079	17.304	17.411	17.330	14.933	17.586	17.645	21.289	17.534
	9.17	15.44	21.25	10.61	4.61	2.22	2.31	3.21	5.78	2.55	12.08	5.92	10.48
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	19.903	20.524	18.880	17.279	14.581	16.637	17.729	16.624	15.565	14.842	16.704	20.258	17.446
	8.71	5.41	10.24	4.0	4.48	2.56	3.88	2.30	4.10	12.29	14.78	9.48	10.71
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	19.990	17.439	18.876	16.969	15.138	15.950	19.307	16.718	17.325	16.729	17.176	17.794	17.459
	9.15	11.12	13.88	6.39	4.41	8.34	3.40	2.54	2.81	2.95	4.17	7.64	8.14
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	10.760												10.760
	1.28												1.28
	5												5
	744												8760
TOTAL	19.059	18.568	17.179	16.794	15.126	15.998	17.477	16.425	14.926	15.164	16.915	18.829	16.871
	12.98	14.11	15.01	10.54	6.11	5.32	2.71	3.93	4.93	6.67	8.16	9.60	10.20
	12647	11520	12648	12240	12247	12240	12648	12648	12240	12648	12240	12648	148614
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

FORT MYERS   VARIABLE : PRESSURE MB-1000   DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 4
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	19.375	21.193	16.756	17.427	18.013	17.292	18.063	16.136	16.282	15.109	18.860	19.888	17.843
	28.54	27.65	25.37	11.48	4.56	2.36	2.84	2.93	3.58	5.23	12.74	9.77	14.03
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	19.614	19.189	18.527	17.831	15.835	17.730	18.274	16.039	15.034	14.657	17.672	20.197	17.542
	17.01	21.36	10.86	27.30	5.53	4.44	1.25	5.41	4.07	3.19	8.09	5.83	12.38
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	19.696	18.884	16.867	17.781	13.631	13.851	18.960	17.250	16.558	16.377	16.323	19.925	17.178
	12.89	30.28	28.20	8.35	11.11	8.87	2.05	4.47	4.85	12.96	6.55	26.10	16.84
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	19.326	20.119	16.957	17.090	16.487	16.463	16.810	16.591	15.457	14.757	19.814	20.152	17.484
	16.62	14.13	11.68	25.39	7.27	5.18	3.30	4.72	4.25	5.08	8.28	13.34	13.03
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	21.409	19.201	18.545	19.511	15.680	15.145	17.901	17.553	14.513	18.639	18.566	19.817	18.043
	4.55	21.57	11.55	7.43	6.87	7.09	4.59	1.57	3.30	16.23	5.71	12.33	12.27
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	20.639	18.476	17.361	17.817	14.838	16.787	17.347	18.256	15.695	16.792	19.433	20.880	17.860
	10.35	8.10	7.38	6.88	2.24	3.84	1.63	2.50	5.15	4.63	10.50	12.52	9.36
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	21.692	21.576	19.455	17.544	15.993	16.462	18.754	16.015	15.478	15.183	18.241	18.296	17.881
	12.81	16.15	6.59	20.72	10.47	4.13	2.21	7.10	4.69	8.14	12.55	17.16	14.65
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	18.555	19.790	18.051	19.425	15.646	17.144	18.694	17.554	15.820	16.347	17.370	18.436	17.722
	17.74	12.56	7.60	15.69	12.65	7.37	2.03	2.22	3.21	5.40	15.75	21.83	11.93
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	20.241	17.896	17.948	16.402	14.599	16.897	17.354	17.312	15.018	15.110	17.994	18.793	17.130
	25.40	14.62	22.03	15.80	9.07	1.85	3.52	1.69	2.54	4.24	3.93	12.54	12.29
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

FORT MYERS VARIABLE : PRESSURE MB-1000 DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 4
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	18.706	20.275	19.545	16.640	15.522	16.326	17.645	16.931	12.199	14.627	17.569	20.149	17.168
	48.40	11.47	21.20	10.89	2.54	8.28	2.92	4.14	9.94	2.83	13.39	11.81	17.43
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	18.594	19.258	17.498	15.605	14.572	17.304	16.816	16.476	16.000	15.663	17.681	20.077	17.122
	10.93	16.29	15.37	6.67	6.55	2.19	2.22	3.41	3.83	6.08	10.77	12.68	10.44
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	20.025	20.402	16.266	20.040	13.951	16.371	17.325	15.521	15.406	16.247	17.017	18.569	17.237
	13.41	22.43	27.28	13.29	6.40	3.06	3.67	12.35	4.18	5.27	5.63	10.61	14.46
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	19.974	18.957	17.378	16.377	15.838	15.006	17.987	17.601	15.020	16.326	18.627	20.152	17.438
	13.26	10.42	14.20	6.13	5.19	6.20	1.78	3.84	4.77	9.32	7.97	7.60	10.41
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	17.593	14.327	12.508	14.558	15.692	14.255	17.395	16.999	16.753	16.419	16.367	19.192	16.025
	13.38	16.91	37.91	10.29	10.17	4.00	2.26	3.28	3.64	9.81	11.01	18.39	14.83
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	20.450	17.778	17.463	15.214	17.544	17.536	17.942	17.591	15.558	18.706	18.624	22.401	18.083
	14.93	22.97	29.93	13.43	6.59	4.97	2.28	5.11	5.94	3.86	15.36	9.13	14.57
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	19.659	20.895	19.007	17.347	14.044	16.161	17.330	16.577	15.957	15.041	17.156	20.743	17.475
	12.40	9.20	14.83	7.02	6.49	3.35	7.30	3.40	5.59	17.00	19.43	12.72	14.22
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	20.118	17.205	19.130	16.808	15.384	16.041	19.185	16.699	17.708	17.322	17.746	18.339	17.652
	14.22	16.96	18.55	9.07	5.06	8.26	5.67	4.48	4.43	3.95	6.91	11.62	10.80
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	7.180												7.180
	.63												.63
	5												5
	744												8760
TOTAL	19.740	19.144	17.604	17.260	15.486	16.281	17.870	16.888	15.556	16.078	17.945	19.765	17.463
	17.91	20.09	20.78	14.73	8.28	6.21	3.51	4.76	5.83	8.75	11.15	14.37	13.40
	12647	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149015
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

TAMPA VARIABLE :PRESSURE MB-1000 DATES : 70/ 1/ 1: 5 TO 86/12/31:22
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	19.441	21.042	16.252	16.947	17.971	16.833	17.658	15.673	16.550	15.327	18.662	19.675	17.645
	31.46	35.75	29.80	13.92	6.02	2.79	4.09	4.36	3.49	5.96	16.02	12.87	16.47
	739	672	744	720	744	720	744	744	720	744	720	744	8755
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	19.428	18.943	18.067	17.435	15.667	17.344	18.041	15.719	15.161	14.851	18.205	20.707	17.456
	20.03	28.31	13.88	32.56	7.03	5.75	1.91	7.33	7.09	3.56	11.62	8.27	15.15
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	19.943	19.157	16.902	17.980	13.770	13.793	19.431	17.449	17.268	17.252	16.112	20.804	17.559
	18.66	36.89	37.49	10.93	13.60	11.21	2.25	5.48	6.40	17.26	9.56	35.15	21.38
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	20.089	20.484	17.106	17.217	16.336	16.436	16.714	16.772	15.594	15.776	20.296	20.344	17.746
	19.32	18.16	15.14	33.43	9.81	6.26	4.51	6.34	6.40	4.95	12.19	18.24	16.22
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	21.882	19.395	18.596	20.098	15.760	14.687	17.869	17.941	14.935	19.716	19.053	19.947	18.327
	6.07	27.71	15.97	9.87	8.51	10.41	6.30	2.24	4.30	18.99	6.46	15.27	15.37
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	20.820	18.508	17.484	18.086	14.928	16.942	17.242	18.379	15.846	17.275	20.069	21.355	18.078
	14.85	10.49	11.42	9.29	2.74	4.76	3.12	2.99	6.81	6.09	12.23	16.61	11.83
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	22.136	21.909	19.674	17.743	15.631	16.353	18.486	16.356	15.639	15.976	19.177	19.030	18.166
	18.04	20.23	9.45	22.62	15.30	4.39	2.96	7.53	6.00	12.02	17.12	24.75	18.15
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	18.989	20.408	18.481	20.131	16.138	17.134	19.103	18.111	16.099	16.970	17.976	19.013	18.199
	23.51	16.39	10.86	20.99	15.95	9.45	2.52	3.46	3.70	7.76	19.85	27.97	15.31
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	20.718	18.471	18.322	16.851	15.051	17.396	17.700	17.965	15.757	16.372	18.882	19.562	17.755
	33.04	15.69	27.39	7.81	12.29	3.17	4.57	1.85	3.27	6.40	5.21	17.42	14.74
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

TAMPA VARIABLE :PRESSURE MB-1000 DATES : 70/ 1/ 1: 5 TO 86/12/31:22
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	19.214	20.845	20.081	17.011	16.079	17.100	18.000	17.437	12.746	15.531	18.733	20.985	17.804
	64.14	15.49	26.73	13.95	3.90	8.62	3.46	4.57	10.47	4.33	15.75	16.73	20.85
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	19.024	19.955	17.780	15.970	15.023	17.655	16.987	17.095	16.798	16.043	18.092	20.457	17.566
	14.41	19.42	19.44	9.15	8.55	3.06	3.15	4.22	4.68	6.76	12.25	16.86	12.55
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	20.157	20.778	16.064	20.317	13.941	16.419	1.278	15.694	15.828	16.999	17.637	18.754	17.461
	15.72	30.91	33.35	16.05	7.02	4.01	4.59	11.07	5.44	6.65	5.79	13.79	16.85
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	20.146	19.297	17.732	16.663	16.280	14.863	18.038	17.700	15.314	17.077	19.411	20.498	17.752
	17.16	12.51	17.73	8.45	6.40	7.15	1.85	4.16	5.21	10.30	9.46	9.69	12.19
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	18.085	14.460	12.205	14.712	16.149	14.840	17.911	17.336	17.524	17.578	17.030	20.086	16.516
	14.44	21.49	44.70	13.29	11.62	4.57	2.43	4.01	5.75	11.16	14.68	24.83	18.52
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	21.559	18.416	18.079	15.542	18.062	17.708	18.339	17.812	16.089	19.626	19.639	23.164	18.686
	21.54	28.90	36.84	14.96	7.77	6.51	2.81	6.09	6.83	4.51	16.55	10.29	17.69
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	19.927	21.450	19.402	17.977	14.414	16.430	17.612	16.693	16.673	15.711	17.628	21.619	17.942
	15.31	12.95	17.13	9.16	7.45	3.83	6.74	6.11	8.66	20.62	24.74	16.00	16.94
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	20.764	17.368	19.698	17.310	16.018	16.408	19.203	16.928	18.467	18.157	18.471	19.198	18.179
	18.05	21.66	24.07	11.10	5.70	7.51	7.64	5.86	5.34	4.88	9.49	16.04	13.23
	744	672	744	720	744	720	744	744	720	744	720	743	8759
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	20.137	19.467	17.760	17.529	15.719	16.373	17.977	17.121	16.017	16.837	18.581	20.306	17.814
	22.60	24.94	26.20	17.96	10.09	7.32	4.36	5.86	7.32	10.75	13.77	18.85	16.30
	12643	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12647	149010
	12648	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149016

PENSACOLA VARIABLE : PRESSURE MB-1000 DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 5
MEAN/VARIANEE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	21.009	21.741	15.730	16.616	18.766	16.807	17.565	15.086	17.592	16.413	20.100	20.250	18.112
	39.52	53.69	29.26	17.51	8.70	5.09	6.62	8.95	3.28	9.89	25.38	20.90	23.16
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	20.029	18.749	18.208	17.439	15.935	17.221	17.353	16.174	15.437	16.319	19.842	20.538	17.766
	29.34	45.63	22.71	48.37	7.57	8.05	3.51	4.96	10.66	4.72	19.71	20.90	21.27
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	19.866	19.934	16.548	17.485	14.199	13.387	19.307	17.115	17.327	17.991	17.229	20.499	17.574
	42.66	49.37	53.74	13.81	13.18	14.88	3.09	6.45	7.39	19.75	17.29	52.50	28.87
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	20.157	21.144	15.147	16.179	15.165	16.186	15.992	16.812	15.409	17.497	20.157	19.786	17.444
	28.83	18.43	21.56	46.50	21.02	6.22	6.08	5.35	7.43	7.43	25.83	36.32	23.66
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	20.597	18.945	17.866	19.371	14.558	14.493	17.177	17.529	15.427	22.223	20.284	19.833	18.194
	13.52	48.21	20.39	18.92	12.55	8.13	7.24	2.33	7.79	20.31	10.83	17.61	21.04
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	20.280	17.791	16.557	18.105	14.171	16.416	15.842	18.170	16.383	18.500	20.883	21.990	17.963
	33.93	16.69	24.48	17.17	6.51	7.72	9.23	4.44	16.71	14.24	17.33	28.46	21.34
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	23.293	21.769	18.904	18.045	14.762	16.217	18.105	16.901	16.103	17.580	21.070	20.487	18.594
	34.22	29.75	17.90	17.28	23.15	5.01	4.12	5.45	8.85	19.54	27.10	36.34	25.10
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	20.269	20.938	17.512	20.154	16.505	16.814	18.647	17.489	15.706	18.437	17.798	19.134	18.269
	40.77	29.29	24.57	30.40	16.86	8.29	2.62	6.20	5.32	10.71	33.16	44.26	23.32
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	21.643	19.612	18.127	16.437	14.120	16.992	16.302	17.586	16.181	18.485	19.336	20.411	17.930
	56.21	20.94	32.82	19.24	22.89	6.26	7.09	2.10	3.56	10.62	11.71	37.35	23.37
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

PENSACOLA VARIABLE : PRESSURE MB-1000 DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 5
MEAN/VARIANEE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	20.185	21.003	19.343	16.006	15.698	17.833	17.118	17.234	12.902	16.263	20.155	22.428	18.004
	99.05	28.51	39.94	20.09	7.14	8.39	4.89	5.92	15.86	7.09	26.56	30.11	31.06
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	19.021	20.820	16.809	15.266	14.356	16.881	16.282	17.222	16.740	17.971	20.025	22.878	17.847
	17.65	30.78	33.55	16.91	7.98	3.68	4.04	5.06	6.32	10.07	16.51	21.70	19.89
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	21.991	21.871	16.468	20.858	14.281	16.323	17.048	15.870	17.044	18.818	18.830	19.427	18.206
	30.63	59.44	45.29	20.04	7.52	6.64	6.34	8.28	8.93	12.70	7.40	30.95	25.67
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	20.645	20.308	18.648	17.243	16.739	14.292	17.706	17.788	16.681	18.732	21.030	20.787	18.380
	24.35	22.70	28.47	17.12	9.58	4.88	2.48	3.54	6.92	13.77	19.24	17.31	17.95
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	19.480	14.905	11.835	13.960	15.353	14.592	17.817	17.007	17.869	18.746	16.703	20.943	16.624
	21.71	35.95	52.69	21.07	10.71	5.33	2.73	5.67	14.78	15.06	23.26	59.44	28.45
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	18.885	14.384	13.206	9.883	13.820	13.571	13.360	13.577	13.777	16.090	17.362	19.135	14.768
	39.92	39.15	5.89	13.36	15.28	8.51	4.36	7.63	5.54	9.32	25.48	18.26	26.66
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	20.496	21.556	19.024	18.104	14.043	15.617	16.878	16.121	17.643	15.765	17.683	22.538	17.935
	29.36	26.08	24.41	16.72	6.05	4.24	6.21	6.02	12.13	52.47	36.61	27.86	26.63
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	21.898	16.371	19.954	17.512	15.857	16.000	18.015	16.201	18.641	19.099	18.474	20.581	18.239
	17.47	35.93	43.99	12.79	6.75	6.46	9.92	6.63	5.45	11.40	23.00	32.97	21.12
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	7744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	13.567												13.567
	1.11												1.11
	6												6
	744												8760
TOTAL	20.596	19.518	17.052	16.980	15.196	15.861	17.089	16.699	16.286	17.937	19.233	20.685	17.755
	36.39	40.06	38.01	27.45	13.52	8.57	6.99	6.77	10.63	16.92	23.47	32.50	24.77
	12648	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149016
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

MOBILE VARIABLE : PRESSURE MB-1000 DATES : 70/ 1/ 1: 6 TO 87/ 1/ 3: 4
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	21.350	22.060	15.609	16.040	18.537	16.509	17.229	14.891	17.418	16.271	19.864	19.869	17.941
	37.94	52.60	26.07	16.65	8.95	5.20	5.97	8.06	3.15	10.73	25.32	20.93	23.17
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	19.686	18.116	17.946	17.229	15.776	17.094	17.135	16.071	15.587	16.747	20.195	20.215	17.647
	29.82	45.05	24.11	49.10	7.94	7.78	3.61	4.15	11.09	4.37	21.77	23.23	21.56
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	19.714	19.789	16.299	17.025	14.007	13.261	18.966	16.849	17.033	17.923	17.246	20.333	17.371
	46.73	50.84	54.28	13.82	11.98	10.46	3.28	6.64	7.35	19.06	18.29	51.99	28.91
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	20.078	21.083	14.359	15.679	14.734	15.995	15.951	16.816	15.226	17.501	19.832	19.467	17.201
	31.73	18.50	22.10	45.20	24.02	6.00	5.49	4.87	7.90	7.91	28.86	39.82	25.02
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	20.222	18.739	17.555	18.863	14.133	14.436	17.112	17.188	15.394	22.198	20.145	19.492	17.958
	14.11	50.24	19.38	20.81	12.21	7.41	6.57	2.00	9.02	18.86	11.14	17.61	21.11
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	20.355	17.283	16.003	17.715	13.739	16.051	15.558	17.875	16.439	18.365	20.510	21.632	17.633
	35.19	17.15	25.72	18.43	7.48	7.72	8.84	4.45	12.98	14.82	16.92	28.63	21.44
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	23.126	21.295	18.313	17.716	14.541	16.025	18.066	16.827	15.992	17.571	21.138	20.456	18.414
	36.19	29.38	17.94	15.89	20.76	5.21	3.79	4.63	9.04	18.20	28.17	35.64	24.74
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	20.455	20.689	16.963	19.778	16.257	16.615	18.356	17.113	15.343	18.398	17.447	19.071	18.027
	42.56	32.73	28.26	31.56	15.74	7.55	2.72	5.71	6.48	11.33	33.18	46.10	24.53
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	21.939	19.870	18.255	16.424	14.073	17.014	16.333	17.647	16.376	18.383	19.847	20.098	18.030
	54.19	21.66	32.05	17.53	22.49	6.39	6.65	2.12	3.77	10.14	11.74	41.09	23.53
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

MOBILE VARIABLE : PRESSURE MB-1000 DATES : 70/ 1/ 1: 6 TO 87/ 1/ 3: 4

MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	20.749	21.094	18.943	16.163	15.701	17.644	16.661	17.185	12.816	16.216	19.309	23.040	17.951
	99.12	29.52	39.62	22.30	7.76	9.34	5.97	5.97	29.18	6.71	28.99	31.71	33.51
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	18.492	20.865	17.008	14.868	13.544	16.802	16.154	16.818	16.995	17.247	19.929	23.165	17.645
	16.75	31.73	30.67	20.72	6.64	3.63	3.98	4.24	4.95	10.58	17.82	20.43	20.60
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	21.851	21.751	16.712	20.343	14.049	15.567	17.140	15.744	16.692	18.451	18.909	19.235	18.008
	34.34	63.29	45.96	20.54	7.34	5.79	6.57	8.00	9.26	12.37	6.90	33.43	26.49
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	20.449	20.022	18.332	17.154	16.805	13.438	16.804	17.100	16.397	18.033	20.627	19.443	17.877
	26.10	26.55	29.49	19.31	8.06	5.21	2.34	2.73	7.45	13.51	19.41	19.63	18.75
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	19.360	14.838	11.048	13.038	15.580	13.786	17.614	17.361	17.392	18.437	16.826	19.952	16.292
	24.35	30.14	50.63	21.10	5.40	7.58	2.85	3.27	16.49	11.62	27.65	49.62	27.45
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	16.927	10.738	9.529	5.919	9.874	10.369	9.479	9.796	10.311	12.036	13.925	14.767	11.152
	66.16	37.07	55.46	10.94	16.55	6.65	4.94	6.95	5.16	10.19	24.17	20.46	29.81
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	20.886	20.757	19.310	17.657	14.039	15.412	16.499	16.300	17.123	17.036	16.318	22.241	17.787
	29.32	28.69	24.64	18.71	5.24	4.26	6.21	5.01	12.58	26.74	65.07	31.91	27.03
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	21.719	17.275	19.007	17.555	15.792	15.764	18.169	15.829	18.341	18.894	19.174	20.145	18.151
	16.38	36.83	54.89	13.11	7.36	6.53	7.85	5.60	4.87	11.17	19.51	40.93	21.77
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	18.636												18.636
	4.32												4.32
	53												53
	744												8760
TOTAL	20.425	19.183	16.544	16.421	14.775	15.399	16.660	16.318	15.934	17.630	18.897	20.154	17.357
	39.45	43.39	41.06	31.82	14.64	9.78	9.15	8.15	12.84	16.48	27.22	35.83	27.28
	12695	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149063
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

BOOTHVILLE VARIABLE : PRESSURE MB-1000 DATES : 71/ 5/ 1: 6 TO 86/ 1/ 1: 3
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1971					14.747	16.404	16.181	14.830	13.330	15.251	19.025	19.060	16.103
					6.56	6.23	3.83	3.27	11.36	3.07	20.68	20.35	13.01
					738	720	744	744	720	744	720	744	5874
					744	720	744	744	720	744	720	744	8760
1972	19.086	19.886	16.263	16.771	14.130	13.498	18.788	16.986	16.753	17.569	17.032	19.949	17.225
	41.30	48.64	49.83	10.77	8.50	7.52	2.57	6.32	6.22	16.03	16.65	50.58	25.80
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	19.885	21.274	13.981	15.671	15.030	16.137	16.070	16.601	14.604	17.058	19.443	19.762	17.099
	31.61	18.99	19.30	41.65	22.38	4.88	4.80	3.75	8.57	6.83	26.85	41.10	24.30
	744	672	744	220	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	19.704	19.061	17.444	18.484	14.377	14.752	17.360	16.870	15.094	21.594	19.903	19.626	17.869
	12.29	48.83	14.81	22.48	11.63	7.20	5.82	2.01	7.14	14.04	8.97	15.49	18.77
	744	672	744	720	744	720	744	744	673	744	720	744	8713
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	20.066	17.323	15.616	17.156	13.589	15.807	15.717	17.550	16.073	17.906	19.895	21.468	17.349
	33.03	16.52	22.65	18.43	7.72	5.83	5.98	3.60	9.54	13.71	17.94	25.85	19.70
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	23.100	21.323	17.657	17.617	14.283	15.479	17.848	16.183	15.171	16.987			17.556
	34.19	27.69	15.94	14.31	18.44	3.69	3.30	3.79	8.62	15.44			21.29
	744	696	744	720	744	720	744	744	720	721			7297
	744	696	744	720	744	720	744	744	720	744			8784
1977												19.020	19.020
												40.83	40.83
												720	720
												744	8760
1978	21.880	19.924	18.430	16.412									19.187
	46.53	21.20	32.59	15.44									33.38
	744	672	744	697									2857
	744	672	744	720									8760
1979	20.216	20.947	18.969	15.093	15.74	17.306	15.916	16.371	12.277	15.496	19.626	21.776	17.417
	90.03	28.10	31.80	19.42	8.08	6.94	9.18	6.45	8.33	5.68	29.37	30.70	30.32
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

BOOTHVILLE   VARIABLE : PRESSURE MB-1000   DATES : 71/ 5/ 1: 6 TO 86/ 1/ 1: 3
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	18.139	20.417	15.999	14.937	13.547	17.255							16.587
	16.33	29.51	32.79	17.05	5.72	1.13							25.31
	744	696	744	720	744	97							3745
	744	696	744	720	744	720							8784
1981								14.717	16.367	17.616	17.963	18.632	17.073
								6.25	8.52	12.27	6.51	32.20	15.16
								720	720	744	720	744	3648
								744	720	744	720	744	8760
1982	19.614	19.775	17.371	16.118	15.547	13.808	16.967	17.069	15.576	17.527	19.524	19.120	17.326
	23.08	21.88	27.93	15.54	10.19	4.77	2.24	2.90	5.48	14.20	19.91	19.46	17.16
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	20.475												20.475
	.58												.58
	4												4
	744												8760
1984	23.227	18.688	17.485	13.823	17.551	17.639	17.188	17.556	17.388	19.389	21.402	22.592	18.667
	33.02	35.83	51.42	9.40	16.93	5.53	4.09	5.99	6.08	10.67	24.70	18.64	24.83
	734	696	744	720	744	720	744	744	720	744	720	744	8774
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	21.050	21.085	18.175	17.280	13.701	15.345	16.319	15.076	16.389	14.098	16.857	21.724	17.233
	30.39	20.79	23.97	16.28	4.38	4.24	7.36	5.66	8.90	70.42	26.33	30.74	27.72
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	72	744	720	744	720	744	744	720	744	720	744	8760
1986	14.375												14.375
	.26												.26
	4												4
	744												8760
TOTAL	20.536	19.974	17.035	16.305	14.698	15.639	16.835	16.351	15.367	17.318	19.067	20.252	17.444
	37.92	30.35	31.23	19.91	12.16	7.28	5.77	5.51	10.17	20.32	21.54	31.29	23.35
	8176	7488	8184	7897	8178	7297	7440	8160	7873	8161	7200	8160	94214
	11160	9504	10416	10080	11160	10800	11160	11160	10800	11160	10800	11160	140256

PORT ARTHUR VARIABLE : PRESSURE MB-1000 DATES : 70/ 1/ 1:10 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	21.665	21.999	15.155	13.815	17.569	15.818	16.774	13.924	15.878	16.236	20.049	18.968	17.288
	44.59	49.97	23.52	19.10	14.16	7.43	3.71	5.93	7.20	24.31	36.29	19.85	28.08
	734	672	744	720	744	720	744	744	720	744	720	744	8750
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	18.985	16.776	17.405	16.331	14.644	16.351	16.214	15.854	13.916	16.355	19.459	18.334	16.721
	42.73	43.36	32.92	67.39	8.36	5.45	4.63	2.35	16.28	4.08	27.38	29.63	25.91
	744	672	744	720	744	720	744	444	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	18.952	19.746	15.829	15.335	14.521	13.310	18.093	17.000	16.027	17.657	17.846	19.898	17.019
	58.52	52.26	48.34	14.92	6.92	5.22	3.24	6.26	6.11	17.35	27.61	61.48	29.53
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	20.187	22.129	12.118	14.703	14.002	15.339	15.747	16.506	13.269	16.889	17.866	18.684	16.419
	50.36	25.43	21.77	39.64	35.95	8.19	4.75	2.85	20.99	12.73	46.26	61.80	35.12
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	18.680	18.297	15.844	16.760	12.309	13.747	17.043	16.091	14.821	21.772	19.842	18.947	17.010
	18.39	61.04	16.61	35.00	11.65	12.79	5.54	2.77	18.99	16.35	14.41	19.78	25.67
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	19.356	17.029	14.594	16.052	12.426	14.894	15.640	16.782	16.886	18.266	19.540	21.643	16.925
	44.56	21.31	30.39	28.11	10.58	9.69	5.92	4.07	8.01	16.80	25.62	31.70	25.54
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	23.061	20.736	16.527	16.808	14.221	15.019	17.975	16.912	15.808	18.502	22.209	20.521	18.186
	50.78	29.84	22.39	11.09	17.93	4.93	3.94	3.29	8.62	17.90	32.18	29.89	26.85
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	20.897	20.293	11.095	18.437	15.099	15.824	17.536	15.377	14.114	18.276	16.548	18.368	17.139
	41.96	37.46	43.91	42.50	9.02	4.80	2.41	3.70	7.30	18.22	38.81	52.10	29.32
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	22.529	20.684	18.525	15.456	12.585	16.238	15.571	16.363	15.451	19.236	18.811	19.209	17.541
	41.07	31.97	35.53	14.38	23.52	7.80	4.51	7.20	7.44	14.90	17.36	54.41	28.63
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

PORT ARTHUR VARIABLE : PRESSURE MB-1000 DATES : 70/ 1/ 1:10 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	21.068	20.728	17.997	13.757	14.301	17.004	14.791	16.308	13.681	15.303	20.869	22.406	17.334
	90.41	35.95	32.86	24.54	15.95	9.72	15.96	7.73	13.78	13.71	38.58	41.91	37.65
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	18.233	20.759	15.529	14.956	12.700	16.108	15.630	15.564	15.317	18.463	20.564	23.079	17.231
	18.43	39.57	43.31	24.95	7.46	2.40	4.47	4.70	4.57	20.88	21.89	25.84	26.38
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	22.682	21.858	16.328	18.612	12.738	14.068	16.149	14.728	16.620	17.499	18.204	18.740	17.320
	42.81	71.89	43.59	18.55	7.38	9.73	4.92	5.88	13.89	17.27	18.00	43.02	32.29
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	19.297	20.850	16.653	15.557	14.539	13.304	16.650	16.967	16.092	18.177	19.312	18.372	17.129
	37.15	31.40	32.34	25.98	12.64	4.54	2.21	3.27	10.52	19.94	28.61	41.58	24.96
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	19.429	14.807	11.738	12.269	13.411	13.056	17.334	16.281	17.020	18.605	15.479	21.692	15.952
	30.56	27.42	46.27	25.76	7.24	3.55	2.63	5.52	17.51	15.49	27.49	94.19	34.00
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	23.911	18.100	16.176	11.915	15.777	16.114	16.253	16.371	17.145	17.020	20.721	20.759	17.529
	37.24	39.14	42.82	15.79	30.98	5.28	3.74	4.72	12.65	20.49	39.37	31.58	32.24
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	22.162	21.731	17.633	16.569	13.697	15.070	16.385	15.359	16.590	14.892	16.788	22.873	17.458
	44.15	20.25	29.16	27.78	5.19	3.95	6.20	5.89	8.71	54.70	18.34	33.02	30.14
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	22.776	16.009	19.289	16.483	14.021	14.777	17.904	16.135	16.881	18.572	18.151	21.281	17.716
	18.13	37.42	64.73	12.14	8.03	7.91	6.55	3.18	4.54	14.27	30.98	28.27	25.61
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	18.400												18.400
	.33												.33
	6												6
	744												8760
TOTAL	20.814	19.563	16.026	15.519	14.033	15.061	16.572	16.031	15.619	17.748	18.956	20.222	17.172
	44.88	43.40	39.61	29.52	15.41	8.03	5.88	5.31	12.47	21.19	31.61	43.77	29.53
	12644	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149012
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

CORPUS CHRISTI VARIABLE : PRESSURE MB-1000 DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	20.423	20.726	13.951	11.342	15.604	14.413	15.351	12.391	13.870	14.926	19.171	17.405	15.766
	44.77	48.07	30.65	24.36	21.50	11.09	2.97	9.06	9.99	31.39	49.79	18.30	33.22
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	17.430	15.046	15.573	14.101	12.101	14.159	14.822	14.634	11.512	14.755	17.695	16.825	14.893
	49.20	48.08	44.13	76.33	14.83	4.88	5.32	2.89	32.13	8.14	30.89	34.39	32.26
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	17.466	18.438	14.049	12.644	13.221	12.015	16.176	15.514	14.483	15.812	16.773	19.019	15.468
	55.77	45.05	43.63	18.33	6.97	4.39	4.03	6.83	6.13	16.43	31.77	64.34	29.88
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	19.459	21.117	10.459	12.577	12.637	13.373	14.490	15.313	12.311	15.509	16.096	18.216	15.098
	58.03	27.79	23.80	43.83	44.95	12.21	4.53	2.50	15.79	17.21	50.04	67.78	39.79
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	17.995	17.889	13.971	14.601	10.468	12.337	15.962	14.367	14.221	20.162	18.930	18.455	15.771
	23.71	70.86	18.94	42.03	12.52	18.45	4.66	3.59	11.19	16.96	22.41	25.18	30.05
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	18.358	16.229	12.347	12.793	10.295	13.060	14.671	15.492	15.725	16.881	18.141	20.615	15.382
	51.54	30.76	37.54	32.08	12.11	13.46	4.88	3.95	8.47	20.93	37.84	38.14	32.22
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	22.243	19.333	14.160	14.073	13.186	13.271	16.317	16.076	14.786	17.684	21.709	20.172	16.915
	58.43	40.41	29.12	14.44	20.20	6.88	4.01	3.11	8.48	19.25	32.89	30.75	32.01
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	20.241	19.408	13.298	16.879	12.813	14.183	16.345	13.564	12.667	16.916	15.732	17.125	15.744
	39.91	39.81	51.82	50.82	7.99	4.13	2.33	4.41	6.66	21.85	45.97	48.79	32.69
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	21.569	19.923	17.575	13.211	10.323	14.610	13.899	14.904	13.630	18.165	17.439	18.190	16.104
	31.59	47.74	42.23	14.69	26.73	7.48	4.51	5.76	11.92	17.18	22.61	67.67	34.37
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

CORPUS CHRISTI   VARIABLE : PRESSURE MB-1000   DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	20.488	19.698	16.123	12.028	12.638	15.703	13.588	14.974	13.248	14.173	20.039	21.869	16.196
	88.30	43.47	32.98	24.92	27.80	13.99	11.12	7.56	12.98	20.25	44.51	49.65	42.15
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	17.177	19.710	14.225	14.302	10.802	14.372	14.500	13.327	13.804	17.582	20.183	22.383	16.014
	21.61	45.11	49.81	34.18	11.86	2.92	4.55	15.68	4.02	29.80	25.63	32.28	33.55
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	21.761	20.664	15.534	16.349	10.961	12.054	14.844	13.616	15.426	15.689	17.240	17.612	15.948
	41.77	70.46	39.93	20.72	10.75	11.93	4.55	6.20	16.33	21.87	27.86	43.10	34.91
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	18.128	19.882	14.444	13.472	12.084	11.979	15.179	15.526	14.295	16.319	17.762	17.450	15.520
	48.34	38.56	39.66	31.29	15.26	5.03	2.28	2.80	9.89	26.02	34.18	49.93	30.62
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	18.934	14.411	11.084	11.017	11.088	11.473	15.574	15.355	15.207	17.211	14.197	21.484	14.775
	37.13	24.74	42.48	35.62	10.59	4.13	5.31	5.16	18.30	17.44	31.69	102.71	38.29
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	22.468	16.859	13.764	9.409	12.805	13.268	14.247	14.250	14.596	13.707	18.462	17.578	15.121
	35.67	43.66	40.24	29.85	39.26	6.27	3.88	3.93	16.35	23.18	43.86	43.00	37.47
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	22.269	20.711	15.912	14.466	12.487	13.455	15.175	14.362	14.519	14.800	15.193	22.403	16.297
	53.02	27.34	32.03	35.36	9.00	6.15	6.36	4.24	7.55	17.90	20.06	34.77	31.96
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	22.477	15.375	17.942	14.009	11.981	13.424	16.709	14.677	14.769	17.201	17.749	20.635	16.436
	28.31	35.91	68.33	16.38	12.05	9.65	6.77	3.17	5.90	17.14	31.45	19.80	29.63
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	18.350												18.350
	.25												.25
	6												6
	744												8760
TOTAL	19.933	18.554	14.377	13.369	12.088	13.362	15.168	14.608	14.063	16.323	17.795	19.261	15.732
	48.63	47.22	42.94	35.26	19.62	9.62	5.60	6.20	13.06	22.70	37.70	48.90	34.14
	12648	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149016
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

BROWNSVILLE VARIABLE : PRESSURE MB-1000 DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	19.551	20.293	13.566	11.110	15.051	14.144	15.055	12.312	13.288	14.463	19.103	17.065	15.385
	39.44	43.74	32.37	22.53	21.47	9.96	2.61	5.06	9.25	26.58	47.12	15.38	30.61
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	17.151	14.642	15.358	13.439	11.845	13.896	14.892	14.360	11.364	14.367	17.070	16.350	14.567
	42.47	47.03	42.38	78.05	13.96	4.45	4.71	2.64	17.92	7.04	27.75	30.87	29.38
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	16.981	18.018	13.494	12.284	12.392	11.537	15.725	15.235	14.042	15.090	15.866	18.424	14.923
	48.40	42.65	38.30	16.30	7.59	3.99	3.68	6.19	5.40	13.40	26.78	57.99	27.10
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	18.869	20.191	10.045	12.005	12.313	12.815	14.195	14.802	11.994	14.870	15.608	17.832	14.599
	53.49	26.40	25.04	42.40	41.82	9.17	4.09	2.31	12.63	15.25	44.89	61.33	36.75
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	17.375	17.760	13.464	13.891	9.915	11.772	15.806	14.069	13.212	19.024	18.126	17.846	15.177
	20.33	67.10	15.77	38.39	12.26	16.31	4.12	3.51	8.26	14.80	20.52	20.48	27.38
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	18.077	15.753	12.042	12.246	9.694	12.560	14.231	14.990	15.163	16.356	17.554	20.185	14.903
	45.38	29.12	32.94	27.82	11.54	11.22	3.92	4.21	7.80	18.11	33.04	30.72	29.36
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	21.699	19.313	13.591	13.818	12.699	12.860	15.748	15.671	14.281	16.896	20.745	19.587	16.404
	22.29	37.58	22.67	13.16	18.23	6.09	4.13	2.62	7.45	17.83	28.65	28.76	29.23
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	19.265	19.012	12.789	16.288	12.315	13.951	16.012	13.375	12.510	16.313	15.504	16.780	15.321
	36.63	31.63	48.28	51.44	7.39	3.64	1.94	4.20	6.11	18.61	42.19	40.97	29.50
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	20.476	19.088	17.093	12.743	9.852	14.262	13.817	14.738	12.815	17.257	16.754	17.467	15.515
	26.72	48.41	43.91	14.04	26.80	7.11	4.20	5.26	9.92	15.29	19.54	59.53	31.65
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

BROWNSVILLE VARIABLE : PRESSURE MB-1000 DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	19.414	18.772	15.672	11.164	12.042	15.093	13.203	14.479	12.396	13.630	18.977	21.032	15.474
	82.81	39.81	29.83	24.14	26.53	13.30	9.38	7.81	11.97	18.11	38.22	44.65	38.75
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	16.513	19.039	13.596	13.937	10.145	14.158	14.177	12.289	13.470	15.851	20.050	21.573	15.380
	20.73	39.47	46.22	34.71	11.85	2.28	4.25	42.47	3.95	18.53	29.70	27.02	33.72
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	21.199	19.981	15.223	15.608	10.876	11.192	14.480	13.666	14.347	15.236	17.139	16.685	15.442
	30.41	60.22	32.35	21.16	9.52	10.97	4.11	5.13	15.42	17.70	21.72	39.11	30.51
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	17.579	17.995	14.523	12.638	11.937	11.401	14.700	15.294	14.080	15.391	17.262	16.466	14.926
	39.48	37.71	47.01	26.16	12.14	5.54	2.38	2.33	7.56	24.35	27.30	41.21	26.96
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	18.308	13.723	10.655	10.783	10.508	11.083	15.155	15.125	14.617	16.707	13.867	20.198	14.249
	36.50	22.93	39.29	35.83	9.48	4.29	5.18	4.77	14.62	15.49	27.79	90.06	34.76
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	22.104	17.284	14.253	10.116	13.294	13.878	14.837	14.955	14.546	14.371	18.729	17.887	15.525
	30.16	38.60	39.11	26.57	33.37	5.33	3.21	3.51	13.06	20.31	36.84	38.70	32.66
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	21.017	19.468	15.290	13.969	12.114	12.900	15.009	14.138	13.854	14.186	14.632	21.239	15.640
	47.39	25.70	27.64	30.64	7.80	5.75	5.62	3.41	5.40	13.71	19.15	29.51	27.34
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	21.590	14.787	17.222	13.362	11.377	12.986	16.571	14.237	14.366	16.525	16.932	19.334	15.796
	26.46	29.77	68.07	15.13	11.37	9.22	5.53	2.38	5.11	15.25	24.83	17.85	26.74
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	18.550												18.550
	.36												.36
	6												6
	744												8760
TOTAL	19.245	17.952	13.993	12.906	11.669	12.970	14.919	14.337	13.550	15.678	17.289	18.585	15.249
	43.05	43.16	40.68	33.02	18.49	9.00	5.00	7.22	10.54	18.85	33.60	42.56	30.98
	12648	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149016
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

C.1.2 AIR TEMPERATURE

KEY WEST VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 4
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	19.295	19.206	22.546	25.772	25.880	27.980	28.745	28.290	27.244	26.027	21.915	22.139	24.622
	14.57	8.24	7.02	2.86	2.00	2.56	2.12	2.22	2.74	3.31	10.63	5.57	15.92
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	21.424	22.020	22.484	23.934	26.905	28.208	28.934	28.600	28.125	27.262	24.237	24.403	25.567
	14.49	14.57	10.20	8.65	2.82	2.56	2.17	2.69	2.51	2.87	4.24	2.59	12.76
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	23.646	22.059	24.035	25.301	26.960	27.446	28.690	29.112	28.236	27.004	25.426	22.990	25.923
	4.78	8.56	4.17	3.87	2.67	3.06	2.42	2.22	2.83	2.78	6.64	11.42	9.63
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	22.411	19.296	24.117	24.660	26.532	28.195	28.373	28.424	28.331	26.616	25.370	21.238	25.328
	11.15	10.88	5.59	3.93	3.70	2.12	2.49	2.89	2.00	3.77	4.44	13.58	13.90
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	24.560	21.588	24.131	25.080	26.764	28.133	28.583	28.940	29.035	25.829	23.824	22.133	25.740
	1.64	11.53	4.87	3.67	3.16	1.52	1.98	1.85	1.56	2.79	4.61	7.27	9.93
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	23.455	24.033	24.549	26.027	27.782	29.046	28.972	29.167	28.262	27.359	24.067	21.721	26.213
	5.84	4.48	6.00	3.44	1.91	2.20	2.04	1.82	1.60	3.17	10.03	8.28	10.28
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	19.768	21.266	24.715	24.339	26.626	26.841	28.849	29.026	28.537	26.309	23.408	21.471	25.110
	11.56	7.23	2.30	3.48	1.85	2.38	1.79	2.16	2.21	4.01	6.94	9.46	13.62
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	18.799	19.903	24.494	24.808	26.072	28.168	28.797	28.502	28.354	25.488	23.561	20.721	24.829
	14.37	9.86	5.08	3.30	2.83	2.28	2.04	2.35	2.22	5.57	6.45	14.28	16.98
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	17.970	17.169	21.285	24.899	27.455	28.839	29.423	29.344	28.566	26.532	25.094	24.226	25.112
	14.28	10.96	9.11	4.40	2.89	2.68	1.85	2.66	2.17	3.27	2.72	5.37	21.51
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

KEY WEST VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 4
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	20.662	20.371	22.346	25.622	27.054	28.595	29.344	29.157	28.330	26.752	24.627	22.104	25.440
	9.81	12.52	5.09	2.37	2.48	2.35	2.07	2.49	1.96	2.17	5.40	6.28	14.60
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	21.482	19.023	23.725	25.215	26.994	28.673	29.324	29.518	28.875	27.344	24.066	20.137	25.384
	8.80	13.70	13.59	5.12	4.61	2.63	2.82	2.01	2.51	2.75	7.02	7.82	18.48
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	16.246	20.361	21.511	25.401	26.218	29.242	29.558	28.779	28.234	27.088	23.110	21.251	24.696
	11.39	9.75	6.46	2.70	3.62	2.20	1.78	3.20	2.96	3.22	6.01	14.50	22.86
	744	672	744	720	343	720	744	744	720	744	720	744	8359
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	21.568	24.121	24.936	26.811	26.457	28.386	29.645	28.819	27.814	25.591	23.678	22.714	25.884
	14.12	4.77	7.24	3.00	3.42	2.58	2.42	2.92	3.36	5.76	3.66	9.64	11.27
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	19.653	20.094	20.818	23.147	25.759	27.725	28.465	28.828	27.981	26.670	24.218	22.479	24.677
	8.42	4.88	5.87	5.87	3.08	2.48	2.33	2.76	2.78	2.71	4.46	18.99	15.82
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	20.349	21.391	22.613	24.582	26.818	27.258	28.260	28.627	27.297	26.419	23.462	23.101	25.028
	11.94	8.81	9.98	5.47	2.24	2.89	1.93	2.14	2.07	1.47	5.40	6.88	12.26
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	19.621	21.883	23.878	24.509	27.347	29.473	28.504	29.028	27.914	27.578	25.565	20.485	25.496
	15.01	11.38	4.09	5.51	3.81	3.41	3.44	3.26	3.07	2.15	3.80	15.22	16.79
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	19.839	22.200	21.812	23.544	26.671	28.615	29.438	28.752	28.782	27.316	26.843	23.772	25.645
	10.58	12.13	19.32	5.38	2.86	2.53	2.49	3.19	2.65	4.06	1.84	4.58	15.64
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	21.778												21.778
	1.76												1.76
	5												5
	744												8760
TOTAL	20.633	20.940	23.176	24.918	26.740	28.284	28.935	28.877	28.231	26.658	24.263	22.181	25.337
	15.01	12.65	9.05	5.07	3.19	2.96	2.43	2.62	2.64	3.68	6.78	10.98	15.02
	12647	11520	12648	12240	12247	12240	12648	12648	12240	12648	12240	12648	148614
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

FORT MYERS VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 4
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	14.254	15.343	19.200	23.526	23.676	26.464	27.251	27.352	26.660	25.089	18.990	18.866	22.266
	29.80	22.65	18.02	13.06	13.27	8.70	8.71	7.62	7.46	10.75	34.77	24.73	36.63
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	18.138	18.661	18.951	21.189	24.957	26.031	26.808	26.818	26.011	25.410	21.529	21.820	23.055
	37.63	36.99	31.65	27.77	18.64	10.80	9.86	7.63	6.92	9.56	16.88	14.11	29.10
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	20.948	18.507	21.208	23.043	25.236	26.703	27.143	27.258	26.960	24.801	21.358	19.049	23.534
	20.80	27.03	22.91	19.97	13.00	8.95	9.61	9.87	10.50	12.77	22.61	36.42	27.41
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	18.114	15.507	21.587	22.003	25.473	27.130	26.713	26.616	26.920	24.331	22.263	16.681	22.817
	30.38	26.44	19.64	18.33	19.37	11.48	9.53	7.74	7.45	15.95	20.53	37.30	34.25
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	22.056	18.639	21.756	23.323	25.405	25.760	26.505	26.845	27.435	23.244	20.822	18.047	23.347
	14.45	34.57	24.78	26.23	16.30	9.27	6.59	7.54	7.84	13.89	21.56	27.67	26.48
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	20.373	20.975	21.478	23.404	26.510	27.236	26.905	27.643	26.213	25.424	21.161	17.392	23.740
	25.64	23.92	28.30	23.83	14.35	12.73	8.52	8.91	6.48	9.23	30.11	28.58	28.82
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	15.824	17.838	21.584	21.657	24.527	25.112	26.818	26.994	25.470	22.258	19.086	16.749	22.006
	32.80	29.32	18.94	22.87	13.27	8.36	9.54	9.41	7.82	14.51	22.08	27.84	32.08
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	13.334	15.943	21.039	21.674	24.074	26.414	26.414	26.400	26.894	22.998	20.693	17.280	21.957
	33.47	27.75	21.54	24.58	14.89	9.57	7.82	6.76	7.03	18.70	23.62	35.40	37.83
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	14.947	13.740	18.268	22.288	25.440	26.841	27.522	27.535	27.048	24.822	22.722	20.432	22.684
	32.25	23.50	23.84	19.88	14.21	10.41	9.03	8.71	9.33	12.56	16.71	20.29	38.01
	744	672	744	720	744	720	744	744	720	744	720	744	7760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

FORT MYERS VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 4
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	16.938	17.223	19.789	24.110	25.372	27.521	28.866	27.697	27.708	25.518	22.701	18.775	23.548
	28.13	31.34	19.88	15.41	13.42	13.73	10.70	10.24	6.58	11.79	21.47	19.68	33.95
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	17.846	15.638	21.699	22.404	25.215	28.486	28.304	27.908	28.542	25.355	21.178	16.661	23.291
	28.40	33.61	32.35	18.49	15.96	12.05	10.83	10.17	10.25	13.53	23.20	24.66	39.99
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	12.609	18.547	19.506	24.306	26.199	28.971	29.365	28.216	27.698	26.069	20.370	18.113	23.348
	34.69	33.17	23.20	21.37	20.82	15.62	10.25	8.55	10.15	14.06	31.22	43.11	48.60
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	18.203	21.911	22.500	24.412	24.381	28.458	28.206	27.307	25.960	23.509	21.576	19.895	23.862
	43.53	20.77	23.87	16.09	19.81	9.18	10.35	10.36	8.99	16.72	15.66	27.26	28.28
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	16.608	16.901	18.522	21.081	24.379	25.992	27.010	26.823	25.763	24.321	20.176	18.608	22.213
	25.43	14.19	17.89	19.53	15.48	10.88	10.95	9.46	9.93	12.43	16.30	38.33	31.05
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	16.287	17.927	19.311	22.112	25.592	26.990	26.718	27.992	26.449	24.815	20.603	20.240	22.934
	25.24	24.69	25.20	20.37	13.64	14.56	11.30	11.40	10.43	13.64	21.50	25.84	32.70
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	15.737	19.024	21.807	22.944	26.338	28.165	27.016	27.842	27.586	27.012	23.566	17.157	23.700
	37.88	35.22	20.75	21.27	16.84	13.96	12.93	11.44	10.69	9.46	14.98	34.55	37.75
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	17.064	19.438	19.407	22.086	25.258	26.380	27.468	27.024	27.473	25.405	24.879	20.504	23.546
	29.42	24.50	33.48	24.04	18.28	10.69	10.89	11.00	11.58	15.65	10.83	17.05	30.32
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	17.019	17.748	20.448	22.680	25.178	26.980	27.355	27.310	26.870	24.728	21.393	18.604	23.050
	36.14	31.73	25.62	21.79	16.53	12.28	10.51	9.47	9.41	14.57	23.52	30.64	34.09
	12647	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149015
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

TAMPA VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1: 5 TO 86/12/31:22
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	12.058	13.809	18.131	22.559	24.225	26.313	27.720	27.490	26.660	24.120	16.291	16.496	21.372
	36.86	28.52	22.42	20.06	17.51	12.85	10.63	8.82	10.72	14.98	44.75	34.95	50.95
	739	672	744	720	744	720	744	744	720	744	720	744	8755
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	15.186	16.896	17.116	20.681	24.344	26.971	27.053	26.732	26.075	24.490	19.421	20.212	22.128
	44.34	44.15	35.07	30.64	20.86	11.46	10.86	9.75	10.38	14.11	26.33	16.01	40.04
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	19.014	15.588	19.450	21.991	24.429	26.724	26.879	26.827	26.715	23.880	19.985	18.116	22.489
	28.00	27.53	21.99	21.93	13.32	10.12	12.21	12.00	13.70	15.72	30.23	41.96	35.05
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	16.026	13.927	20.812	20.852	24.790	27.335	27.753	26.797	26.681	23.996	21.380	15.250	22.180
	38.94	32.54	20.63	22.01	18.54	9.64	8.86	9.64	7.32	20.03	21.09	39.50	42.70
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	21.147	16.451	21.192	21.975	25.225	26.420	26.851	27.192	27.484	22.397	19.675	16.309	22.731
	10.13	36.04	22.12	23.21	15.08	10.16	8.75	9.11	8.11	19.51	26.67	28.89	32.40
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	17.992	19.020	19.862	23.074	26.952	27.502	27.790	27.690	26.789	24.855	19.881	15.679	23.111
	29.79	26.55	32.50	25.13	14.02	10.63	8.38	10.77	8.82	14.41	42.11	38.96	39.58
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	13.650	17.087	21.225	21.651	24.454	25.602	27.313	26.962	25.898	21.697	16.748	15.042	21.456
	39.48	32.29	20.75	19.78	11.52	9.72	8.35	9.52	9.03	20.41	30.28	33.14	41.55
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	10.818	14.066	21.209	22.075	24.662	28.191	27.436	27.337	27.179	22.163	19.366	14.771	21.640
	35.59	33.57	25.51	25.11	15.82	12.13	9.79	7.51	9.04	27.54	25.20	40.35	53.46
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	12.495	11.521	17.550	22.392	25.741	27.626	27.675	27.545	26.916	23.628	21.535	18.817	22.010
	38.39	23.34	29.90	20.51	11.08	8.41	7.16	8.97	9.31	15.99	17.10	26.44	48.05
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

TAMPA VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1: 5 TO 86/12/31:22
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	14.416	14.793	18.349	23.216	24.209	26.859	28.324	27.112	27.170	23.934	20.246	16.730	22.150
	35.39	36.46	20.15	15.05	12.76	10.17	6.74	8.42	5.13	15.14	27.43	26.08	41.32
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	16.542	13.453	19.792	21.265	25.020	27.408	28.421	27.655	26.545	22.905	18.893	13.839	21.839
	26.80	35.94	32.63	16.82	12.60	9.75	6.97	9.53	9.41	17.20	26.93	28.59	45.67
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	9.505	15.983	16.920	22.425	23.849	26.849	27.317	26.537	25.331	23.135	17.460	14.705	20.850
	33.20	32.06	21.93	15.88	17.49	12.15	10.12	10.28	13.70	15.29	32.43	42.86	51.91
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	15.147	19.454	19.716	21.802	23.545	27.025	26.942	27.176	26.150	23.157	21.181	19.538	22.579
	43.97	17.86	24.51	15.71	16.34	7.54	8.22	6.51	10.53	22.01	17.64	34.55	32.15
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	14.448	15.666	17.342	20.394	24.721	26.762	27.118	27.152	25.591	23.690	18.743	15.388	21.449
	30.76	20.15	22.52	22.74	14.35	8.57	9.77	7.16	10.91	14.52	19.58	50.76	41.87
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	13.922	16.759	18.539	21.561	25.353	26.768	26.615	27.510	26.081	23.805	17.864	19.100	22.007
	34.36	31.93	31.95	19.11	13.71	11.61	8.46	8.42	10.32	14.76	32.78	33.53	40.53
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	13.185	17.061	20.588	22.287	26.243	28.114	27.199	27.521	26.240	25.546	22.776	14.765	22.649
	44.20	35.56	20.50	19.37	15.34	10.68	8.87	8.44	10.22	10.72	14.96	41.99	44.74
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	14.742	18.056	18.310	20.827	24.881	26.816	27.884	27.410	27.071	24.371	24.057	18.639	22.773
	27.61	23.31	33.83	20.04	16.43	9.59	8.73	9.91	10.14	16.93	11.47	19.07	35.51
	744	672	744	720	744	720	744	744	720	744	720	743	8759
	744	672	744	720	744	720	744	744	720	744	720	74	8760
TOTAL	14.724	15.857	19.183	21.825	24.861	27.017	27.429	27.214	26.505	23.633	19.735	16.670	22.083
	41.87	34.53	27.94	21.38	15.77	10.68	9.23	9.21	10.13	17.90	30.24	37.69	42.54
	12643	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12647	149010
	12648	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149016

PENSACOLA VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	8.107	10.661	15.320	21.504	24.336	26.802	27.896	27.335	27.436	21.874	13.977	13.731	19.972
	35.70	25.52	20.04	18.29	15.63	11.59	9.71	7.08	10.82	14.24	36.08	34.16	66.95
	738	67	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	11.756	11.744	14.640	19.181	22.832	26.771	26.831	26.521	25.592	22.362	15.504	16.853	20.097
	41.46	43.07	28.69	29.95	15.67	9.51	7.41	7.65	6.99	18.83	28.10	25.62	52.81
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	14.627	12.514	16.442	20.455	23.239	26.421	27.307	28.371	27.478	21.789	14.586	13.570	20.593
	49.10	28.48	24.02	17.91	10.68	12.71	9.12	10.47	9.46	22.18	39.61	41.61	56.03
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	11.257	11.029	18.022	18.775	23.709	27.146	28.371	27.273	26.493	22.547	18.861	12.157	20.522
	33.86	35.95	14.62	17.87	12.89	9.02	7.58	8.20	8.07	23.66	27.82	46.12	58.38
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	18.251	13.575	18.796	20.059	25.034	26.284	27.528	26.750	25.312	19.632	15.816	13.339	20.913
	15.37	43.49	20.20	19.03	10.67	11.15	10.43	7.30	11.09	20.37	30.56	35.60	43.74
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	13.906	16.023	16.413	19.191	24.873	26.879	27.262	27.333	23.993	21.146	16.059	11.481	20.403
	32.91	30.14	35.71	20.76	10.00	8.47	6.74	7.40	23.81	17.19	48.30	38.69	52.41
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	10.655	14.820	17.675	20.471	21.559	25.353	26.678	26.396	24.431	17.221	10.891	9.783	18.833
	36.01	24.68	17.57	18.66	10.52	10.68	9.33	9.84	9.07	26.15	29.26	28.80	55.53
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	5.299	10.774	16.670	19.623	23.223	27.376	27.176	26.176	26.152	19.276	16.871	11.656	19.222
	40.07	33.34	25.05	18.00	13.47	13.18	8.66	5.42	6.21	26.26	21.14	40.55	68.96
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	6.294	8.066	14.280	20.229	24.220	27.563	27.987	27.910	27.124	20.727	18.890	12.903	19.737
	32.65	25.44	25.85	13.44	11.97	10.46	7.18	8.35	11.15	24.79	17.63	48.16	74.90
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

PENSACOLA VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	7.603	10.109	15.328	20.639	23.062	26.755	27.343	27.007	25.165	20.670	14.759	10.792	19.147
	40.55	35.83	19.36	12.58	11.65	11.40	6.73	8.05	11.30	24.97	29.35	27.87	66.56
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	12.719	10.325	15.783	18.630	23.757	27.190	29.191	28.311	26.996	18.669	13.952	9.847	19.643
	21.78	46.45	33.58	18.38	10.07	10.32	13.17	8.99	9.64	26.01	32.98	33.18	69.70
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	6.924	11.359	14.280	20.514	21.476	27.232	27.811	26.409	23.761	19.232	15.636	10.073	18.752
	31.46	41.11	23.54	15.83	15.04	7.52	11.96	7.71	22.09	28.76	32.19	37.22	68.53
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	9.966	12.130	15.805	18.504	22.608	26.569	26.215	26.238	23.719	20.066	15.873	13.944	19.341
	60.25	26.69	35.24	17.40	16.91	10.80	7.79	8.82	19.79	29.22	27.36	38.45	55.83
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	8.498	10.740	12.478	16.307	22.146	24.155	27.788	27.354	23.714	20.464	15.340	9.974	18.291
	23.55	18.78	26.11	17.97	11.63	7.46	10.76	10.44	18.56	20.71	29.96	63.86	65.53
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	8.644	11.694	14.967	18.897	23.303	26.160	26.658	26.432	25.316	23.409	14.792	16.280	19.739
	27.14	28.38	30.45	17.64	16.81	14.39	7.76	8.30	12.99	16.12	33.99	26.26	56.52
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	7.892	11.987	18.134	20.258	24.096	26.951	26.801	27.302	25.304	22.955	19.323	10.313	20.145
	48.79	41.59	16.94	19.38	11.21	12.44	7.46	8.07	13.67	14.24	19.78	49.71	64.39
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	10.615	14.087	15.582	19.146	23.582	27.500	28.636	26.877	26.303	20.985	19.161	11.463	20.350
	27.78	33.24	35.61	19.73	10.84	8.14	11.43	14.49	8.80	28.07	22.03	21.73	57.50
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	6.204												6.204
	.30												.30
	6												6
	74												8760
TOTAL	10.176	11.865	15.918	19.552	23.356	26.653	27.499	27.058	25.546	20.766	15.900	12.245	19.746
	45.75	36.49	27.91	19.72	13.66	11.21	9.57	9.05	14.16	24.98	34.35	41.87	61.34
	12648	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149016
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

MOBILE VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1: 6 TO 87/ 1/ 3: 4
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	7.245	10.164	14.700	21.554	23.452	26.015	27.434	27.459	26.724	20.902	12.900	13.672	19.408
	45.42	29.81	21.67	24.26	19.80	15.21	10.31	6.64	14.94	17.50	38.46	36.29	71.40
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	11.843	11.723	15.377	19.542	22.460	26.775	27.024	26.927	25.634	22.107	15.094	16.964	20.173
	48.29	51.77	35.06	34.75	20.89	14.53	9.33	9.24	8.39	22.36	35.50	31.59	57.62
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	14.333	12.457	16.499	20.578	23.210	26.320	26.461	27.519	26.687	21.083	13.672	12.761	20.155
	55.56	35.58	30.54	25.80	17.76	17.96	15.29	14.53	14.17	29.69	43.39	45.86	61.04
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	10.107	10.496	17.849	18.308	23.393	26.772	27.852	26.421	25.917	22.443	18.329	11.707	20.018
	39.14	41.74	20.43	25.02	20.21	14.69	10.18	11.46	10.27	28.67	36.35	52.19	64.56
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	17.133	12.878	17.646	18.986	23.887	25.320	27.055	26.602	23.917	18.241	15.090	12.632	19.997
	24.55	45.28	25.32	23.75	13.32	12.27	11.72	9.54	12.61	26.73	33.62	41.09	47.94
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	13.504	15.129	15.684	18.598	24.115	26.319	26.527	26.508	23.380	20.671	15.494	10.858	19.757
	38.89	37.61	41.66	28.52	13.68	10.42	9.67	10.17	24.93	21.77	54.13	41.30	56.36
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	9.253	14.657	17.624	20.447	22.127	25.934	27.497	26.298	23.552	16.149	9.999	8.959	18.547
	42.64	34.79	23.61	24.47	13.80	13.86	12.79	13.57	11.48	28.78	33.07	33.12	66.41
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	4.892	10.832	16.720	19.866	23.857	27.401	27.651	27.651	26.416	18.170	15.917	10.739	19.210
	40.59	40.16	32.41	24.16	16.76	14.60	10.55	6.18	9.15	28.80	24.03	44.59	78.40
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	5.285	7.001	13.515	20.061	23.854	26.913	27.556	27.747	27.267	20.650	18.517	12.053	19.258
	35.70	30.76	34.96	20.76	15.67	11.59	9.87	9.90	9.57	26.37	22.43	50.52	82.60
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

MOBILE VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1: 6 TO 87/ 1/ 3: 4
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	8.062	9.011	14.809	20.531	22.230	25.720	26.249	26.603	24.309	19.720	14.985	10.075	18.572
	50.04	41.02	25.80	15.24	18.07	14.56	8.86	11.34	10.99	31.08	30.39	38.35	68.30
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	13.058	9.531	16.243	18.322	22.873	26.281	28.538	27.686	27.093	19.678	14.263	10.585	19.545
	28.45	51.56	42.18	24.03	14.99	15.91	16.37	12.76	14.29	31.07	38.20	42.05	70.98
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	6.931	11.195	14.754	21.189	21.659	27.464	28.011	27.170	24.553	20.580	17.029	10.432	19.277
	34.57	45.15	26.68	20.24	20.97	11.58	15.86	10.11	25.98	31.71	32.00	44.39	73.71
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	9.821	12.081	16.095	19.390	22.762	26.299	26.346	26.413	23.980	19.796	15.818	14.602	19.489
	69.61	36.47	45.93	21.18	21.09	14.25	10.39	11.42	23.07	35.07	37.65	42.98	61.47
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	7.718	10.759	12.106	15.855	21.820	23.927	26.875	26.356	23.084	19.460	14.863	..643	17.743
	22.93	23.12	32.87	24.06	16.90	11.66	15.31	11.61	22.70	25.14	31.32	58.59	66.76
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	6.600	11.244	13.467	17.877	22.874	24.517	25.810	24.949	24.181	21.505	14.225	14.462	18.496
	38.64	34.46	41.20	25.50	18.35	25.68	12.33	10.00	16.10	21.14	41.57	35.43	63.89
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	6.392	10.121	17.168	19.355	22.710	25.849	25.433	26.459	24.273	21.467	18.529	9.398	18.968
	56.73	52.93	22.13	26.13	17.08	16.21	10.54	10.37	16.94	19.50	23.96	56.41	71.00
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	9.561	13.372	14.775	18.385	22.823	26.466	27.240	26.649	25.059	20.297	17.883	10.895	19.472
	34.24	39.65	44.04	26.34	16.79	12.49	13.25	14.90	12.99	32.45	28.13	23.36	61.51
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	6.184												6.184
	7.75												7.75
	53												53
	744												8760
TOTAL	9.501	11.338	15.590	19.344	22.948	26.135	27.033	26.789	25.060	20.172	15.447	11.790	19.294
	52.53	43.32	34.61	26.18	17.92	15.33	12.53	11.26	17.01	29.22	38.97	46.57	66.57
	12695	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149063
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

BOOTHVILLE VARIABLE : AIR TEMPERATURE C DATES : 71/ 5/ 1: 6 TO 86/ 1/ 1: 3
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1971					23.702	27.057	27.499	27.576	26.461	23.698	18.185	18.678	24.110
					7.96	6.12	4.59	3.74	2.98	8.47	15.92	14.75	20.86
					738	720	744	744	720	744	720	744	5874
					744	720	744	744	720	744	720	744	8760
1972	16.036	14.293	17.927	21.479	24.087	27.182	27.584	28.516	27.845	23.572	16.086	14.107	21.583
	31.76	20.56	17.23	10.97	6.76	6.94	5.30	5.52	4.29	10.44	34.61	26.74	43.99
	744	696	744	720	744	720	744	74	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	11.318	11.961	18.185	19.032	23.772	27.735	29.007	27.569	26.705	23.821	20.523	13.436	21.138
	25.89	23.19	10.13	12.23	7.21	4.65	3.85	3.64	3.92	11.86	12.99	34.40	49.70
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	17.280	14.311	19.196	20.423	24.762	26.790	27.652	27.564	26.393	21.604	17.743	14.285	21.519
	12.94	27.94	11.30	12.03	4.98	4.64	4.31	3.82	4.15	5.76	16.66	27.08	34.32
	744	672	744	720	744	720	744	744	673	744	720	744	8713
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	14.642	15.965	17.301	19.358	24.484	27.238	27.269	27.322	24.863	21.963	17.863	12.776	20.946
	25.85	23.13	20.18	15.79	4.89	3.09	3.21	4.54	11.21	6.37	33.37	26.88	40.36
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	10.938	15.335	18.850	20.941	22.808	26.105	27.493	27.444	25.773	19.278			21.517
	23.21	19.08	11.81	9.24	5.36	4.85	4.14	3.16	4.57	13.41			37.40
	744	696	744	720	744	720	744	744	720	721			7297
	744	696	744	720	744	720	744	744	720	744			8784
1977												13.349	13.349
												25.07	25.07
												720	720
												744	8760
1978	7.867	8.978	14.722	20.072									12.891
	25.19	16.72	17.17	7.91									40.52
	744	672	744	697									2857
	744	672	744	720									8760
1979	9.031	11.318	16.017	20.833	23.166	26.550	28.094	27.772	25.977	22.200	15.861	12.282	19.970
	29.99	25.17	12.97	6.41	5.47	4.08	3.65	3.75	4.77	11.36	19.46	18.85	54.37
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

BOOTHVILLE VARIABLE : AIR TEMPERATURE C DATES : 71/ 5/ 1: 6 TO 86/ 1/ 1: 3
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	13.644	11.485	16.717	19.049	23.941	25.573							17.247
	16.85	33.19	26.38	10.77	5.93	5.00							38.24
	744	696	744	720	744	97							3745
	744	696	744	720	744	720							8784
1981								28.146	25.729	22.513	18.602	13.185	21.585
								4.92	10.46	17.56	18.29	25.14	43.55
								720	720	744	720	744	3648
								744	720	744	720	744	8760
1982	12.852	12.704	17.668	20.262	23.919	28.022	27.822	27.798	25.790	22.857	18.576	16.141	21.250
	48.42	18.02	26.23	11.85	12.07	7.27	6.25	6.44	11.16	14.47	15.07	22.93	45.87
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	11.806												11.806
	1.11												1.11
	4												4
	744												8760
1984	9.351	12.954	15.326	19.602	23.654	25.874	27.001	26.902	25.971	24.276	16.930	16.814	20.423
	16.92	25.52	20.03	15.45	8.49	10.84	6.07	6.58	5.97	8.43	21.59	23.24	47.41
	734	696	744	720	744	720	744	744	720	744	720	744	8774
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	8.834	12.016	18.113	20.569	23.867	25.567	25.633	26.305	25.261	23.347	19.094	10.940	20.006
	35.21	30.18	12.75	16.54	13.49	13.14	13.46	15.12	11.54	11.07	19.77	34.38	54.70
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	17.083												17.083
	.90												.90
	4												4
	744												8760
TOTAL	11.989	12.856	17.275	20.148	23.833	26.796	27.505	27.536	26.068	22.658	17.946	14.184	20.694
	35.53	27.55	18.77	12.34	7.77	7.11	6.13	5.87	7.40	12.57	22.52	29.87	47.12
	8176	7488	8184	7897	8178	7297	7440	8160	7873	8161	7200	8160	94214
	11160	9504	10416	10080	11160	10800	11160	11160	10800	11160	10800	11160	140256

PORT ARTHUR VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1:10 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	8.349	12.108	15.160	21.620	23.377	26.815	28.318	28.871	27.170	20.783	14.944	16.549	20.395
	41.10	25.12	23.05	22.98	18.89	16.18	13.50	12.23	14.11	25.68	35.70	30.20	66.17
	734	672	744	720	744	720	744	744	720	744	720	744	8750
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	13.785	13.597	15.963	20.329	23.642	27.040	26.614	25.805	24.822	21.713	15.044	15.056	20.322
	50.46	38.45	29.50	24.84	12.40	10.70	10.31	10.78	10.04	16.15	33.18	26.07	48.37
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	12.679	12.585	17.115	20.998	22.752	26.415	25.877	26.274	25.902	20.308	12.389	11.036	19.544
	54.55	41.63	25.70	19.89	15.80	13.21	8.12	10.56	9.14	29.95	39.74	39.02	59.70
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	8.343	10.148	17.358	17.553	22.484	25.919	27.070	25.882	25.407	21.971	19.081	11.405	19.432
	43.04	34.32	15.15	28.53	17.59	9.03	9.05	8.83	7.54	23.72	32.50	44.28	62.13
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	13.267	13.011	18.499	20.092	24.219	25.687	26.473	26.266	23.278	19.630	14.901	11.080	19.741
	41.02	39.82	28.03	20.20	11.78	15.13	12.43	11.35	18.61	21.92	38.29	38.01	53.16
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	13.151	13.141	15.835	19.130	23.881	26.096	26.620	26.302	23.445	20.549	15.384	10.853	19.568
	38.71	37.66	36.57	23.92	10.28	10.39	10.55	9.37	20.54	21.76	49.56	40.78	55.94
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	9.698	14.897	17.056	20.078	21.841	25.328	26.330	26.527	25.082	16.198	11.022	10.149	18.686
	45.45	33.16	22.11	16.54	17.28	13.90	9.50	15.03	15.56	32.80	42.13	26.66	61.97
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	6.488	12.586	17.089	19.925	24.623	27.990	28.495	28.457	27.417	21.506	17.515	12.899	20.451
	29.43	32.66	25.03	18.36	11.74	11.62	10.41	6.60	10.40	25.38	25.80	39.28	69.49
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	6.420	7.841	15.042	21.052	25.676	28.142	28.695	28.837	27.038	21.464	19.135	13.701	20.317
	38.50	30.58	33.31	17.57	18.33	10.07	9.35	9.95	9.95	26.30	28.61	0.20	81.56
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

PORT ARTHUR VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1:10 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	7.560	10.897	16.931	20.706	22.808	26.587	27.372	26.955	24.419	21.326	13.295	11.114	19.210
	40.99	42.19	20.66	12.57	15.05	10.40	6.29	6.84	13.18	29.13	38.61	35.67	67.32
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	12.596	10.549	16.416	18.930	24.454	28.192	29.133	28.622	27.732	19.441	13.954	12.262	20.221
	22.79	50.18	33.08	27.08	13.20	14.82	13.73	11.04	9.93	36.31	40.52	36.29	72.01
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	9.819	11.954	16.019	22.255	23.206	27.375	27.893	27.605	24.116	21.141	17.051	12.933	20.153
	25.09	44.34	20.09	12.23	16.02	9.10	11.45	10.97	21.73	34.83	26.53	34.90	59.64
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	11.871	11.188	17.767	19.847	23.948	27.110	27.602	27.703	25.336	20.765	16.633	14.207	20.386
	67.65	38.59	34.43	24.05	15.04	9.96	9.86	9.62	20.29	35.20	32.19	39.22	61.40
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	10.061	12.073	14.806	17.681	22.755	25.767	27.633	27.274	24.360	21.107	17.357	9.164	19.205
	24.72	19.52	24.82	20.71	12.89	7.72	8.08	7.30	16.25	23.78	34.35	73.25	63.16
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	8.923	13.054	16.582	20.315	23.716	26.363	26.968	26.996	24.886	23.443	16.113	17.459	20.425
	27.97	33.16	24.06	22.09	15.53	14.86	8.97	9.56	14.13	17.55	39.41	31.45	53.99
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	8.592	10.985	18.937	21.943	24.232	26.789	26.878	27.650	25.393	21.733	18.837	10.473	20.246
	34.34	41.67	16.88	19.15	14.80	13.02	14.17	12.48	16.32	22.23	25.83	41.72	64.98
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	11.533	14.869	16.532	21.044	23.663	26.949	28.525	27.070	26.941	20.294	17.379	10.633	20.470
	32.45	38.28	32.04	17.00	13.52	8.60	10.72	13.32	7.98	29.89	31.90	17.13	57.47
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	5.370												5.370
	5.14												5.14
	6												6
	744												8760
TOTAL	10.184	12.093	16.653	20.206	23.605	26.739	27.441	27.241	25.456	20.787	15.884	12.410	19.927
	44.19	39.40	27.33	22.07	15.50	12.36	11.22	11.30	15.65	28.73	40.10	42.92	62.55
	12644	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149012
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

CORPUS CHRISTI VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	10.302	14.751	16.051	22.451	23.645	26.404	27.774	28.442	26.780	22.230	17.055	18.924	21.274
	33.54	21.61	27.46	25.18	19.76	11.52	10.27	10.13	16.18	26.56	39.00	27.66	53.33
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	16.294	16.658	20.239	21.471	25.257	27.818	28.917	27.623	26.771	24.420	19.502	17.688	22.759
	49.31	41.87	36.28	23.26	13.07	8.06	14.27	9.42	13.35	12.37	27.01	29.46	42.58
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	15.870	15.679	20.732	24.436	24.748	27.306	28.253	28.392	28.118	24.357	15.780	12.936	22.235
	52.31	36.58	18.43	16.88	9.49	10.89	9.63	10.40	9.66	21.67	39.42	48.16	53.88
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	10.509	12.897	20.356	20.632	24.912	27.052	28.839	27.540	26.930	24.158	22.505	15.442	21.862
	45.53	36.91	17.93	22.60	19.09	7.32	10.30	7.50	7.70	15.29	24.66	42.85	54.79
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	13.825	16.344	20.861	22.770	26.721	26.908	28.433	29.009	25.588	23.041	17.654	13.917	22.124
	47.59	42.63	28.73	18.34	10.36	12.88	13.51	10.71	16.15	18.66	33.03	33.69	51.80
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	14.845	15.641	19.581	23.262	26.527	28.245	28.631	27.905	25.617	23.095	19.116	14.212	22.258
	47.31	35.48	34.87	19.49	8.88	11.44	11.35	8.08	14.80	21.43	38.21	42.71	51.09
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	13.611	17.856	20.289	22.778	23.457	27.334	27.195	27.876	27.061	19.515	13.807	12.575	21.113
	40.84	37.28	22.10	12.71	14.59	10.09	7.70	12.05	10.48	28.51	39.64	21.73	51.61
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	9.978	14.395	18.922	21.708	25.653	27.832	28.864	29.931	29.286	24.232	19.590	16.265	22.260
	28.18	27.09	23.26	18.54	6.86	9.07	10.51	9.86	11.65	20.62	28.11	37.60	58.00
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	9.596	10.787	17.508	22.051	26.732	28.390	29.458	28.822	27.170	22.638	19.964	14.939	21.561
	43.19	36.02	35.23	18.42	11.95	8.91	11.05	9.26	8.02	19.69	30.14	43.27	67.84
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

CORPUS CHRISTI VARIABLE : AIR TEMPERATURE C DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	10.588	13.279	19.610	23.226	24.533	27.334	29.159	28.817	25.516	24.069	17.205	14.476	21.532
	43.16	44.22	22.23	12.45	17.17	13.09	8.65	10.19	11.91	24.51	37.44	38.46	60.03
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	15.280	13.904	19.219	20.699	25.031	28.506	29.418	28.091	27.679	21.653	15.123	14.002	21.577
	31.13	50.14	36.82	26.40	10.15	11.86	13.21	8.10	9.89	31.28	38.76	33.24	58.58
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	12.426	14.478	17.439	23.147	24.759	27.793	28.402	28.425	26.815	23.588	19.624	15.134	21.869
	24.01	37.40	21.34	9.49	12.19	6.57	9.95	11.26	16.98	35.29	23.40	34.69	51.08
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	13.822	13.073	18.802	21.126	24.530	27.706	28.860	28.924	27.506	22.819	17.822	14.496	21.673
	65.10	45.28	32.37	24.16	9.55	11.58	13.55	13.12	16.95	26.59	39.88	36.62	60.45
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	12.372	14.250	17.419	20.284	24.135	27.032	27.992	28.663	25.934	22.999	19.914	9.633	20.913
	31.71	22.88	22.51	27.88	11.04	13.98	9.37	11.42	15.65	18.08	29.25	86.92	62.41
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	10.367	14.785	18.737	22.505	24.806	27.187	28.155	28.306	25.479	24.237	18.188	18.504	21.792
	30.52	32.72	29.35	25.76	16.44	13.63	13.19	13.01	13.94	14.90	35.14	32.14	52.05
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	9.269	11.930	19.321	21.959	25.063	26.520	27.298	28.601	26.768	23.532	20.257	12.711	21.147
	42.99	51.14	15.63	15.80	11.84	9.21	13.33	14.27	13.84	17.82	25.96	37.33	61.88
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	13.517	16.011	18.857	23.253	24.682	27.265	28.451	28.123	27.982	22.590	17.698	12.916	21.801
	33.05	43.14	25.96	10.55	10.22	8.81	14.24	11.70	8.70	25.81	41.24	22.34	52.06
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	10.000												10.000
	2.72												2.72
	6												6
	744												8760
TOTAL	12.498	14.521	19.056	22.221	25.011	27.449	28.476	28.441	26.882	23.128	18.283	14.634	21.749
	45.61	40.77	28.13	20.46	13.34	10.86	11.81	10.92	13.72	23.72	37.79	43.20	55.71
	12648	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149016
	13392	11520	12648	12240	12648	12240	12448	12648	12240	12648	12240	12648	157776

BROWNSVILLE VARIABLE : AIR TEMPRATURE C DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	13.830	17.355	18.810	23.921	24.297	27.372	28.322	29.138	27.407	23.672	18.626	20.581	22.812
	30.27	21.58	26.60	18.57	18.35	9.94	12.00	11.43	17.77	20.75	34.87	24.60	42.62
	738	672	744	720	744	720	744	744	720	744	720	744	8754
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1971	18.286	19.525	22.100	23.106	25.564	27.522	27.809	27.535	26.762	24.639	20.726	19.146	23.583
	50.43	32.18	28.40	16.95	11.36	7.19	9.67	10.69	12.28	10.35	20.10	25.30	31.08
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1972	18.323	17.598	22.194	24.840	25.164	26.704	27.151	27.523	27.428	24.963	17.463	15.327	22.905
	39.74	29.95	13.08	13.06	7.39	8.06	7.36	10.07	8.87	14.39	36.78	43.86	37.97
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1973	12.372	14.692	21.122	21.866	24.945	26.783	28.127	26.658	26.905	24.274	23.390	17.384	22.414
	47.71	32.54	11.60	20.11	15.03	7.12	8.91	8.62	9.53	13.42	20.70	34.86	43.00
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1974	15.865	17.685	22.047	23.650	26.884	26.674	27.246	28.777	26.410	22.785	19.099	15.976	22.787
	42.77	30.22	26.02	16.84	9.40	12.00	10.60	11.28	13.75	16.79	30.68	30.62	40.56
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1975	16.229	17.751	21.275	24.083	27.037	27.741	27.621	27.486	25.363	23.598	19.921	15.933	22.863
	39.45	28.81	26.02	16.27	8.41	9.98	10.55	9.66	13.81	18.51	33.03	38.75	39.65
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1976	14.913	18.400	21.436	22.962	24.023	27.100	26.851	27.175	27.012	21.062	15.684	13.970	21.718
	32.00	30.18	16.69	10.08	12.14	10.58	6.89	9.00	8.64	23.02	37.58	25.44	41.37
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1977	12.431	16.424	20.360	22.714	26.236	27.704	28.868	29.291	28.527	24.611	20.797	17.697	23.004
	33.63	26.09	22.88	17.82	7.49	9.72	12.06	12.35	13.17	22.65	28.11	37.82	48.20
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	12.389	12.846	18.941	23.152	27.721	29.020	29.910	29.047	27.403	23.744	21.365	16.841	22.751
	43.02	38.39	31.47	17.48	12.01	13.00	13.09	13.84	9.81	17.66	28.50	42.54	59.25
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	772	744	720	744	720	744	744	720	744	720	744	8760

BROWNSVILLE VARIABLE : AIR TEMPRATURE C DATES : 70/ 1/ 1: 6 TO 87/ 1/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	13.257	14.947	20.284	24.020	24.830	27.654	29.172	28.401	24.958	24.474	18.614	15.354	22.205
	43.46	43.42	21.66	12.51	17.70	14.92	10.63	12.93	13.87	24.70	34.27	35.05	51.57
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	17.206	15.570	20.379	22.087	27.248	30.130	30.343	28.745	28.787	23.849	16.538	16.036	23.104
	28.75	40.12	31.64	25.03	11.51	12.37	13.80	9.18	1..27	30.53	38.26	37.87	55.44
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	14.454	16.719	19.604	24.330	26.390	28.571	29.077	29.149	27.504	25.097	21.162	18.734	23.433
	27.78	28.40	20.55	10.62	13.42	8.22	11.78	13.49	16.11	35.30	30.06	36.38	44.88
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	16.210	16.448	20.184	23.840	25.936	29.217	29.930	29.721	28.052	24.547	20.046	17.398	23.499
	62.99	48.74	45.13	25.39	8.89	10.49	12.45	12.52	16.70	25.79	43.98	31.62	53.78
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	14.901	16.823	19.696	22.083	25.970	28.074	28.584	29.126	26.667	23.863	21.842	13.055	22.581
	27.38	23.75	25.03	28.47	11.48	13.58	9.49	12.02	15.88	22.06	29.72	95.78	53.96
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	12.888	16.490	20.508	24.000	26.004	27.833	28.396	28.570	25.742	25.681	20.411	20.739	23.126
	36.94	34.09	28.41	26.61	15.00	12.40	13.82	13.89	13.37	13.31	29.44	29.02	44.71
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	12.053	14.670	21.480	23.887	26.674	27.721	27.717	28.860	27.339	24.298	22.209	15.318	22.723
	55.51	52.22	18.44	18.17	14.05	10.17	10.70	12.04	12.15	17.16	25.72	36.22	53.58
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	15.231	18.129	20.158	24.394	25.776	27.893	28.657	28.575	28.414	23.919	18.781	15.214	22.947
	36.27	38.35	24.45	11.19	11.11	8.40	12.36	12.12	9.94	27.01	47.20	24.01	46.59
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	10.926												10.926
	4.77												4.77
	6												6
	744												8760
TOTAL	14.754	16.596	20.622	23.467	25.924	27.865	28.458	28.457	27.099	24.063	19.804	16.747	22.850
	43.81	36.56	25.59	18.66	13.04	11.28	11.91	12.17	13.88	21.75	36.18	41.32	46.57
	12648	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	149016
	13392	11520	12648	12240	12648	12240	12648	12648	12240	12648	12240	12648	157776

C.2 NATIONAL DATA BUOY CENTER (NDBC) BUOYS AND PLATFORMS

C.2.1 ATMOSPHERIC PRESSURE (mb - 1000.0)

42001 VARIABLE : PRESSURE MB-1000 DATES : 76/12/ 6: 1 TO 86/ 9/30:21
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1976												17.783	17.783
												19.35	19.35
												623	623
												744	8784
1977	18.357	19.095	14.989		15.007	17.252	18.750	16.380	15.530	16.852	16.299	17.474	17.105
	24.91	16.71	26.98		5.95	5.70	1.84	6.29	7.06	9.01	17.66	20.76	14.64
	744	672	493		312	720	744	744	537	744	720	688	7118
	744	672	744		744	720	744	744	720	744	720	744	8760
1978				15.422	13.452	16.669	16.766	16.725	14.743	16.598	17.860	17.616	16.209
				13.71	17.95	4.01	3.63	3.52	2.77	6.71	6.80	24.22	11.06
				699	744	720	744	744	720	744	720	744	6579
				720	744	720	744	744	720	744	720	744	8760
1979	17.997	19.561	18.236	14.206	14.315	16.893	15.976	14.585	10.124			18.841	16.200
	59.45	17.36	18.10	13.71	6.88	6.87	11.47	7.68	6.02			18.50	24.22
	744	672	744	720	744	720	744	399	604			647	6738
	744	672	744	720	744	720	744	744	720			744	8760
1980	16.564	20.269		15.219	12.923	16.599	15.966	15.408	15.355	16.659	18.050	21.436	16.577
	13.04	13.33		16.48	4.99	2.18	3.72	9.11	2.89	6.33	18.03	7.70	13.37
	416	286		646	744	720	744	744	720	744	720	744	7228
	744	696		720	744	720	744	744	720	744	720	744	8784
1981	20.987	20.805	16.692	19.326	11.611	14.990	16.913	15.085	14.501	17.051	18.379	18.799	17.556
	19.78	30.55	24.02	13.12	4.27	3.79	2.71	5.49	2.10	7.38	3.75	20.30	17.41
	744	672	744	720	206	720	744	744	368	744	720	744	7870
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	19.393	18.614	16.270	15.215	14.670	14.475	17.529	17.244	14.690	16.275	18.208	18.117	16.721
	14.17	11.43	22.15	8.45	7.45	6.02	2.25	3.24	3.46	12.38	11.14	12.10	12.15
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	18.217	13.232	11.906	13.242	14.156	13.465	17.529	16.919	16.324	18.382	15.875	17.921	15.444
	26.32	24.17	44.86	15.15	5.20	3.52	2.21	3.34	5.59	8.86	13.11	16.28	18.67
	662	672	744	720	744	720	744	744	720	415	720	581	8186
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	20.693	17.177	17.578	17.152	15.820	16.668	16.481	16.927	14.775	17.816	19.513	20.946	17.925
	21.47	25.97	21.43	2.06	10.46	2.04	2.62	4.11	9.63	6.40	15.16	13.29	15.20
	744	696	318	29	744	720	516	739	241	744	720	744	6955
	744	696	744	720	744	720	744	744	720	744	720	744	8784

42001 VARIABLE : PRESSURE MB-1000 DATES : 76/12/ 6: 1 TO 86/ 9/30:21
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985							16.455	15.053	15.020	12.524	15.891	20.850	15.727
							4.10	5.15	4.41	47.12	21.49	18.58	22.37
							700	744	720	744	720	540	4168
							744	744	720	744	720	744	8760
1986	19.905	15.378	18.183	16.268	13.822	14.976	18.645	15.780	16.609				16.640
	9.22	20.86	46.36	7.91	5.01	7.73	3.91	2.46	2.90				15.18
	744	672	744	720	744	720	744	744	718				6550
	744	672	744	720	744	720	744	744	720				8760
TOTAL	19.171	17.839	16.212	15.572	14.119	15.776	17.125	16.079	14.847	16.411	17.510	18.983	16.654
	25.82	26.49	34.62	15.73	8.94	6.20	4.80	5.65	7.27	15.89	14.93	19.08	16.69
	5542	5014	4531	4974	5726	6480	7168	7090	6068	5623	5760	6799	70775
	7440	6768	7440	7200	7440	7200	7440	7440	7200	6696	6480	7440	96432

42002 VARIABLE : PRESSURE MB-1000 DATES : 76/ 9/19: 0 TO 86/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1976									12.425	16.559	19.504	18.589	17.537
									4.07	10.91	23.19	20.57	21.27
									288	744	720	744	2496
									720	744	720	744	8784
1977	18.605	19.278	13.899	17.619	14.107	15.237	16.896	14.365	13.333	16.468	15.904	14.905	15.922
	28.90	20.96	33.49	41.01	6.81	4.14	1.89	5.58	12.36	10.80	28.08	20.65	21.10
	744	672	744	720	744	720	744	744	720	744	720	217	8233
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1978	19.456	17.965	17.472	13.999	11.384	15.693	15.580	15.214	14.133	17.303	17.093	17.806	15.921
	30.03	32.08	37.20	14.46	22.48	5.78	3.03	8.22	4.69	8.24	10.64	36.10	22.04
	243	672	744	720	744	720	559	364	720	744	720	744	7694
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1979	19.168	19.756	17.912	13.123	13.816	16.846	14.530	15.178	10.608	14.076	17.886	19.816	16.045
	64.51	25.96	21.87	17.48	13.59	8.85	13.17	8.74	9.21	9.48	29.67	26.74	28.61
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	16.374	18.341	13.785	14.002	11.397	15.561	15.155	15.567	13.968	16.184	17.404	21.325	15.756
	12.49	22.87	28.43	25.80	7.79	1.83	5.19	6.24	3.48	11.17	27.14	13.03	20.35
	744	696	744	720	744	720	744	294	720	744	720	744	8334
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	22.072	21.725	17.154	19.076	13.532	14.421	17.042	15.336	16.140	16.391	17.353	17.036	17.358
	24.51	41.82	26.56	16.90	5.15	8.01	3.26	6.02	6.21	8.81	9.08	25.98	21.17
	744	672	744	720	478	720	744	744	720	744	720	744	8494
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	17.781	18.228	14.997	13.815	13.535	13.565	16.906	16.622	12.751	16.046	17.812	17.392	15.944
	20.98	16.56	29.35	12.96	8.93	4.22	2.04	1.15	1.09	18.16	15.65	24.24	17.99
	744	672	744	720	744	720	744	159	150	744	720	744	7605
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	18.309	13.678	11.665	12.918	13.339	13.370	17.556	17.018	16.354	18.051	15.877	18.228	15.503
	31.84	26.74	40.22	24.83	5.46	3.60	3.13	4.72	7.47	10.11	19.24	21.75	21.68
	744	672	744	720	744	720	744	744	720	744	720	576	8592
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	21.828	18.044	16.303	12.470	15.444	16.695	16.002	16.257	14.339	16.059	18.931	19.223	16.806
	23.39	29.22	38.14	14.19	18.91	3.14	3.14	3.48	11.28	13.12	23.37	23.29	22.48
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784

42002 VARIABLE : PRESSURE MB-1000 DATES : 76/ 9/19: 0 TO 86/12/31:23

MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	19.876	20.126	17.771	16.960	13.503	14.321	17.361	15.103	14.741	13.183	15.894	20.651	16.567
	24.59	20.36	18.94	17.27	4.80	3.67	8.05	3.35	4.38	32.61	20.31	20.98	21.78
	744	672	744	720	744	720	288	744	720	744	720	744	8304
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	20.747	15.219	18.129	15.139	13.148	14.585	18.250	15.532			15.845	18.243	16.538
	11.44	24.01	60.80	10.16	5.76	7.78	3.71	1.71			11.35	18.92	20.54
	744	672	744	652	744	720	744	694			627	744	7085
	744	672	744	720	744	720	744	744			720	744	8760
1987													
TOTAL	19.419	18.236	15.909	14.910	13.313	15.029	16.498	15.552	14.084	16.032	17.244	18.731	16.277
	30.11	30.91	37.85	24.10	11.48	6.38	5.75	5.59	9.86	15.15	21.33	25.28	22.18
	6939	6768	7440	7132	7174	7200	6799	5975	6198	7440	7827	7489	84381
	8184	6768	7440	7200	7440	7200	7440	7440	7920	8184	7920	8184	105192

42003 VARIABLE : PRESSURE MB-1000 DATES : 77/ 7/ 7: 0 TO 86/12/31:19
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1977							17.906	16.554	15.236	16.581	16.807	17.969	16.815
							1.91	2.53	4.47	4.63	16.33	20.82	9.48
							600	744	720	744	720	744	4272
							744	744	720	744	720	744	8760
1978	19.904	17.691		16.035	14.250	16.966	17.584	17.637	15.644	16.111	18.471	18.598	17.172
	28.86	18.16		14.22	12.57	2.37	3.94	2.12	2.29	5.15	4.36	17.66	12.44
	744	670		720	744	720	744	744	720	744	720	744	8014
	744	672		720	744	720	744	744	720	744	720	744	8760
1979	18.309	20.094	19.027	15.864	15.324	17.228	17.454	18.565					17.647
	55.79	13.76	18.52	11.38	4.47	7.50	5.55	2.11					18.24
	744	672	744	720	744	720	744	319					5407
	744	672	744	720	744	720	744	744					8760
1980	17.465	19.484	16.714	15.719	14.493	17.706	17.625		15.118	15.560	16.734	19.976	16.945
	12.27	15.51	17.13	9.16	4.37	2.36	1.31		3.22	4.82	15.06	9.63	12.33
	462	691	742	711	744	719	93		442	744	720	744	6812
	744	696	744	720	744	720	744		720	744	720	744	8784
1981	19.969	20.001	16.066	19.346	13.688	15.581	17.041	15.096	15.356	16.515	17.448	18.262	17.008
	17.00	25.46	24.16	11.20	5.38	2.40	2.78	6.58	3.56	5.24	3.29	14.50	13.81
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	19.321	18.730	17.047	16.191	15.512	15.075	17.925	16.749	13.963	15.644	18.157	18.614	16.880
	13.59	9.90	17.32	6.97	5.70	8.48	1.52	4.35	3.93	12.48	7.88	7.71	11.42
	744	672	744	720	744	720	469	390	720	744	720	744	8131
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	17.629	13.450	11.864	13.933	15.315	14.078	17.660	17.090	16.618	16.757	16.110	18.016	15.691
	17.71	20.47	47.60	11.40	6.85	3.88	1.96	3.24	4.09	8.10	11.13	13.42	15.97
	744	672	744	720	744	720	744	744	720	744	720	581	8597
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984			11.580	13.755	16.126	16.509	16.576	16.727	14.724	17.605	18.333	21.085	16.656
			28.68	10.60	6.71	2.37	2.56	3.90	6.70	3.68	12.28	9.12	11.93
			241	720	744	720	744	744	720	744	720	744	6841
			744	720	744	720	744	744	720	744	720	744	8784
1985	19.545	19.906	18.365	16.910	14.327	16.175	17.110	15.759	15.304	14.258	16.329	20.976	17.158
	13.02	10.47	14.05	6.44	4.26	2.02	6.07	1.36	3.32	27.69	41.20	14.12	17.01
	744	672	744	720	744	720	744	581	412	744	720	744	8289
	744	672	744	720	744	720	744	744	720	744	720	744	8760

42003 VARIABLE : PRESSURE MB-1000 DATES : 77/ 7/ 7: 0 TO 86/12/31:19
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1986	20.636	17.027	19.165	17.064	14.445	15.392	18.761	16.102	17.276	17.226	16.952	18.181	17.362
	10.14	17.37	29.60	7.16	4.42	7.78	4.89	3.26	3.08	3.04	8.74	5.34	12.14
	744	672	744	720	744	720	744	744	720	744	720	740	8756
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	19.179	18.302	16.657	16.091	14.831	16.079	17.535	16.583	15.497	16.251	17.260	19.102	16.914
	22.56	20.83	30.60	12.33	6.61	5.53	3.91	4.12	4.83	9.20	14.04	15.00	13.83
	5670	5393	5447	6471	6696	6479	6370	5754	5894	6696	6480	6529	73879
	6696	6096	6696	6480	6696	6480	7440	7440	7200	7440	7200	7440	87648

42008 VARIABLE : SST DEG C DATES : 80/10/ 1: 0 TO 84/ 7/29: 0
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980										25.700	19.316	15.242	20.094
										3.72	4.95	.96	21.91
										744	720	744	2208
										744	720	744	8784
1981	12.666	12.118	15.682	21.361	24.822	28.245	29.875	30.542	28.522	26.295	20.931	18.848	22.663
	1.03	1.34	.91	4.20	.50	1.25	.48	.1	2.09	4.19	.87	1.07	41.63
	744	672	744	720	744	720	744	744	720	744	720	489	8505
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	12.746	12.962	17.008	19.653	24.315	27.798	28.876	29.533	30.212				21.915
	1.12	1.52	4.74	2.93	3.20	.46	.30	.26	.02				43.67
	629	672	744	657	744	720	744	744	6				5660
	744	672	744	720	744	720	744	744	720				8760
1983													
1984	9.214	13.190	16.192	20.157	23.485	26.278	28.021						19.412
	14.84	11.42	6.27	4.84	3.15	2.35	.42						47.61
	743	696	744	720	744	720	673						5040
	744	696	744	720	744	720	744						8784
TOTAL	11.478	12.762	16.294	20.412	24.207	27.440	28.954	30.037	28.536	25.997	20.123	16.672	21.435
	8.67	5.04	4.27	4.53	2.59	2.06	.96	.46	2.10	4.04	3.56	4.12	43.35
	2116	2040	2232	2097	2232	2160	2161	1488	726	1488	1440	1233	21413
	2976	2712	2976	2880	2976	2880	2976	2232	2160	2976	2880	2976	43848

C.2.2 SEA SURFACE TEMPERATURE (DEG C)

42001 VARIABLE : SST DEG C DATES : 78/12/31:23 TO 86/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1978													
1979	21.697	20.637	20.508	22.108	25.378	27.486	28.467	29.231	28.901			25.678	24.749
	1.57	1.65	1.37	1.48	3.61	.29	.87	.39	.40			.33	11.90
	744	672	744	720	744	720	744	399	604			647	6738
	744	672	744	720	744	720	744	744	720			744	8760
1980	25.013	23.906		23.552	26.036	28.435	29.498	29.368	29.212	27.653	24.785	23.447	26.689
	.21	.32		1.46	1.11	.64	.53	.58	.11	.54	.53	.98	6.07
	456	286		646	744	720	744	744	720	744	720	744	7268
	744	696		720	744	720	744	744	720	744	720	744	8784
1981	21.614	20.966	21.033	23.651	25.363	27.501	28.843	29.514	29.239	27.058	25.234	23.765	25.163
	.56	.42	.92	1.24	.43	.40	.51	.32	.38	.43	.06	.54	9.92
	744	672	744	720	206	720	744	744	368	744	720	744	7870
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	22.557	22.262	22.653	24.173	24.817	27.772	29.290	29.398	28.697	26.992	26.766	26.038	25.972
	.22	.57	.89	.24	1.14	.28	.45	.22	.21	1.23	.30	.29	6.82
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	25.529	24.652	22.969	23.208	25.138	28.487	29.835	30.473	29.080	27.765	25.702	25.592	26.531
	.67	.77	.50	.33	2.45	.58	.27	.15	.26	.63	.51	1.05	6.86
	662	672	744	720	744	720	744	744	720	415	720	581	8186
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	25.509	23.693	21.688	22.910	25.710	27.306	29.360	29.061	28.576	27.433	25.681	23.988	25.664
	.72	1.04	.50	.82	.42	1.34	.16	3.43	.02	.11	.92	.10	6.31
	744	696	744	720	744	720	516	744	238	744	720	744	8074
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985		21.802	23.557	25.003	27.156		29.051	29.956	29.026	27.940	26.206	25.439	26.540
		.56	.24	1.28	2.48		.45	.35	.33	.48	.70	1.26	7.21
		672	744	720	352		700	744	720	744	720	540	6656
		672	744	720	744		744	744	720	744	720	744	8760
1986	25.137	24.233	23.495	23.426	25.555	28.429	29.424	29.357	29.356	28.555	27.311	26.160	26.719
	.29	.03	.29	.13	.73	.74	.48	.40	.23	.40	.04	.17	5.27
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

42001 VARIABLE : SST DEG C DATES : 78/12/31:23 TO 86/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. D POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1987													
TOTAL	23.769	22.686	22.272	23.503	25.556	27.917	29.217	29.564	29.041	27.619	25.955	24.968	26.020
	3.55	2.85	1.93	1.51	1.92	.84	.64	.94	.30	.80	1.09	1.67	7.90
	4838	5014	5208	5686	5022	5040	5680	5607	4810	4879	5040	5488	62312
	6696	5424	5952	5760	5952	5760	5952	5952	5760	5952	5760	6696	87648

42002 VARIABLE : SST DEG C DATES : 79/ 1/ 1: 0 TO 86/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	21.595	20.176	20.291	22.390	24.700	27.647	28.999	29.567	28.427	27.101	24.985	22.383	24.880
	.67	.13	.34	.84	.78	.48	.22	.21	.51	.29	.65	.19	11.28
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	21.540	21.191	21.893	23.465	25.502	28.753	29.980	29.515	29.127	27.520	24.963	22.702	25.306
	.25	.23	.59	.16	2.03	.64	.25	.51	.15	.39	.66	.24	10.44
	744	696	744	720	744	720	744	294	720	744	720	744	8334
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	21.706	21.107	21.684	23.267	25.559	27.975	29.577	30.462	29.672	28.167	25.737	23.749	25.752
	.19	.25	.08	1.27	.35	.56	.37	.29	.35	.69	.49	.48	11.37
	744	672	744	720	478	720	744	744	720	744	720	744	8494
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	22.171	22.453	23.632	25.646	26.143	29.281	30.549	30.671	29.514	28.897	26.648	25.433	26.272
	.33	.41	.86	.17	.60	.51	.37	.10	.10	.50	.30	.68	8.13
	744	672	744	720	744	720	744	159	150	744	720	744	7605
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	23.114	22.664	22.595	22.224	25.074	28.191	29.972	30.534	29.561	27.993	26.030	24.987	26.124
	.29	.22	.48	.40	.72	1.30	.35	.34	.47	.38	.26	.05	9.33
	744	672	744	720	744	720	744	744	720	744	720	568	8584
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	21.830	21.217	20.957	21.636	24.417	27.182	29.340	29.450	28.519	27.331	25.982	24.212	25.187
	.79	.27	.75	.53	.69	1.72	.25	.11	.12	.10	.68	.08	10.07
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	22.483	21.919			26.954	28.748	28.544	30.998	30.249	28.963	26.620	23.954	27.005
	.75	.03			1.17	.63	.86	.57	.31	.47	.42	.95	7.64
	744	15			698	720	233	154	720	744	720	744	5492
	744	672			744	720	744	744	720	744	720	744	8760
1986	22.943	23.052	22.609	23.978	26.406						26.540	24.943	24.326
	.43	.35	.47	.57	1.38						.28	.83	2.93
	744	672	744	652	743						627	744	4926
	744	672	744	720	744						720	744	8760
1987													
TOTAL	22.173	21.690	21.952	23.219	25.585	28.254	29.677	30.036	29.268	27.996	25.928	24.017	25.599
	.79	1.18	1.58	2.11	1.67	1.28	.63	.55	.72	.86	.88	1.49	9.85
	5952	4767	5208	4972	5639	5040	4697	3583	4470	5208	5667	5776	60979
	6696	5424	5952	5760	5952	5760	5952	5952	5760	5952	5760	5952	78888

42003 VARIABLE : SST DEG C DATES : 79/ 1/ 1: 0 TO 86/12/31:16
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	25.800	25.593	25.448	25.420	26.992	28.275	29.421	295558					26.888
	.29	.11	.10	.11	1.73	1.96	.15	.12					3.11
	744	672	744	720	744	720	744	319					5407
	744	672	744	720	744	720	744	744					8760
1980	22.202	24.594	25.908	26.143	27.604	28.799	29.401		29.105	28.590	27.487	25.982	26.756
	.42	1.78	.10	.07	.53	.30	.05		.13	.06	.25	.28	3.85
	462	696	744	720	744	720	93		442	744	720	744	6829
	744	696	744	720	744	720	744		720	744	720	744	8784
1981	24.176	23.697	23.282	25.823	26.022	28.433	29.300	29.630	29.331	28.486	27.657	26.226	26.851
	2.22	1.61	.76	.57	.31	.96	.46	.18	2.69	.08	.09	.21	5.62
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	25.720	26.969	27.029	27.274	27.295	28.875	30.651	29.502	29.111	28.551	27.024	26.242	27.693
	.11	.10	.14	.14	.36	.71	.41	.63	.21	.23	.08	.13	1.98
	744	672	744	720	744	720	469	390	720	744	720	744	8131
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	25.053	24.576	24.464	25.819	27.191	27.931	29.146	29.962	29.033	28.577	27.597	26.692	27.197
	.67	.43	1.58	.42	.41	.61	.37	.29	.14	.12	.10	.09	3.70
	744	672	744	720	744	720	744	744	720	744	720	575	8591
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984			26.151	25.868	26.881	27.684	28.836	28.897	28.306	26.926	25.859	23.514	26.946
			.15	.40	.32	.99	.44	.41	.45	.13	1.38	.36	3.13
			241	720	744	720	744	744	720	744	720	744	6841
			744	720	744	720	744	744	720	744	720	744	8784
1985	24.376	25.216	25.507	24.887	27.039	28.749	29.139	29.899	28.458	28.112	25.442	23.309	26.558
	.91	.21	.24	.94	.72	.70	.67	.57	.19	.29	.61	.83	4.78
	744	672	744	720	744	720	744	581	412	744	720	744	8289
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	22.767	23.048	23.022	24.817	27.204	28.538	29.479	29.539	29.414	28.066	26.912	25.070	26.509
	.51	.44	1.59	1.76	.16	.38	.52	.17	.11	1.02	.06	.47	6.98
	744	672	744	720	744	720	744	744	720	744	720	737	8753
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	24.419	24.812	25.005	25.756	27.029	28.410	29.357	29.564	28.992	28.187	26.854	25.244	26.926
	2.24	2.08	2.39	1.08	.75	.99	.64	.45	.77	.58	1.03	1.96	4.39
	4926	4728	5449	5760	5952	5760	5026	4266	4454	5208	5040	5032	61601
	5952	5424	5952	5760	5952	5760	5952	5952	5760	5952	5760	5952	70128

42007 VARIABLE : SST DEG C DATES : 84/ 1/ 1: 0 TO 86/12/19: 1
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	10.834	12.797	15.428	19.211	24.546	26.872	28.288	27.988	26.432	24.373	19.720	15.861	21.052
	.59	2.19	3.66	2.47	1.57	4.02	.94	.68	1.53	.58	7.14	3.38	37.64
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	13.182	12.224	18.462	21.285	25.296	26.606	27.821	28.791	26.812	23.249	20.697	16.787	21.766
	6.21	4.02	2.52	5.67	1.37	2.07	1.16	.62	1.59	1.16	1.14	6.80	31.76
	744	672	744	720	623	720	744	598	720	744	720	553	8302
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986		14.476	15.848	20.141	24.409	28.586	29.282	28.608	27.679	24.553	19.894	16.277	23.924
		.20	1.99	.96	1.53	.62	.38	.78	.31	7.93	.60	1.07	25.03
		222	485	720	744	720	744	744	720	744	572	434	6849
		672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	12.008	12.789	16.675	20.212	24.719	27.355	28.464	28.439	26.974	24.058	20.119	16.261	22.122
	4.78	3.21	4.78	3.75	1.64	3.00	1.20	.82	1.41	3.55	3.32	4.05	33.38
	1488	1590	1973	2160	2111	2160	2232	2086	2160	2232	2012	1731	23935
	2232	2040	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	26304

42008 VARIABLE : SST DEG C DATES : 80/10/ 1: 0 TO 82/ 9/ 1: 5

MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980										25.700	19.316	15.242	20.094
										3.72	4.95	.96	21.91
										744	720	744	2208
										744	720	744	8784
1981	12.666	12.118	15.682	21.361	24.822	28.245	29.875	30.542	28.522	26.295	20.931	18.848	22.663
	1.03	1.34	.91	4.20	.50	1.25	.48	.15	2.09	4.19	.87	1.07	41.63
	744	672	744	720	744	720	744	744	720	744	720	489	8505
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	12.746	12.962	17.008	19.653	24.315	27.798	28.876	29.533	30.212				21.915
	1.12	1.52	4.74	2.93	3.20	.46	.30	.26	.02				43.67
	629	672	744	657	744	720	744	744	6				5660
	744	672	744	720	744	720	744	744	720				8760
TOTAL	12.703	12.540	16.345	20.546	24.569	28.021	29.376	30.037	28.536	25.997	20.123	16.672	22.058
	1.07	1.60	3.27	4.32	1.91	.91	.64	.46	2.10	4.04	3.56	4.12	40.39
	1373	1344	1488	1377	1488	1440	1488	1488	726	1488	1440	1233	16373
	1488	1344	1488	1440	1488	1440	1488	1488	1440	1488	1440	1488	26304

C.2.3 AIR - SEA SURFACE TEMPERATURE (DEG C)

42001 VARIABLE : AIR - SST DEG C DATES : 78/12/31:23 TO 86/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1978													
1979	-3.329	-1.413	-.178	.567	-.053	-.293	-.315	-1.053	-1.045			-3.183	-1.001
	10.69	7.96	4.60	1.01	3.64	.27	1.09	.59	.71			3.75	5.21
	744	672	744	720	744	720	744	399	604			647	6738
	744	672	744	720	744	720	744	744	720			744	8760
1980	-3.301	-5.511		-1.396	-.394	-.600	-1.094	-.760	-1.074	-1.991	-2.475	-2.992	-1.699
	6.43	6.54		3.24	.73	.23	.78	.55	.88	1.35	3.97	6.03	3.86
	456	286		646	744	720	744	744	720	744	720	744	7268
	744	696		720	744	720	744	744	720	744	720	744	8784
1981	-3.578	-1.866	-.977	-.242	-.766	.704	.229	-.061	.390	.436	-.365	-.792	-.600
	5.54	5.37	3.00	.29	.42	.31	.42	.60	.55	1.82	1.53	4.73	3.61
	744	672	744	720	206	720	744	744	368	744	720	744	7870
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	.364	1.268	1.340	1.847	2.308	1.342	.799	1.199	1.148	-.625	-2.696	-2.774	.454
	5.87	1.97	2.68	.64	.54	.63	.90	.58	.79	1.01	2.51	3.70	4.35
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	-4.953	-3.319	-1.367	.044	.736	-.286	-.182	-.523	-.765	-.958	-1.218	-1.905	-1.174
	3.63	3.95	4.27	2.29	1.12	.71	.46	.53	1.01	1.54	3.84	7.40	4.74
	662	672	744	720	744	720	744	744	720	415	720	581	8186
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	-4.269	-3.104	-1.258	-.272	-1.484	-1.971	-2.930	-2.716	-1.126	-1.004	-2.460	-.729	-1.964
	5.98	7.61	4.78	1.81	1.93	3.05	3.80	3.36	.55	1.43	2.89	2.99	4.79
	744	696	744	720	744	720	516	744	238	744	720	744	8074
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985		-1.181	-.309	-.645	-1.344		-1.079	-1.552	-1.496	-1.551	-1.488	-4.645	-1.455
		4.90	.86	1.79	.75		.62	.89	.64	1.30	2.67	6.47	3.08
		672	744	720	352		700	744	720	744	720	540	6656
		672	744	720	744		744	744	720	744	720	744	8760
1986	-4.063	-2.112	-2.854	-1.182	-.529	-.931	-1.254	-1.145	-.964	-2.196	-1.415	-3.662	-1.865
	5.99	6.13	8.68	.76	.30	.79	.53	.95	.32	1.46	1.04	3.82	3.76
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760

42001 VARIABLE : AIR - SST DEG C DATES : 78/12/31:23 TO 86/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1987													
TOTAL	-3.277	-1.901	-.800	-.144	-.039	-.291	-.637	-.812	-.629	-1.138	-1.731	-2.518	-1.145
	9.02	8.15	5.55	2.38	2.70	1.85	1.96	2.22	1.45	2.14	3.25	6.33	4.79
	4838	5014	5208	5686	5022	5040	5680	5607	4810	4879	5040	5488	62312
	6696	5424	5952	5760	5952	5760	5952	5952	5760	5952	5760	6696	87648

42002 VARIABLE : AIR - SST DEG C DATES : 79/ 1/ 1: 0 TO 86/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	-3.576	-1.389	-.431	.134	-.219	-.521	-.761	-1.213	-1.366	-1.672	-3.298	-2.073	-1.366
	13.19	5.85	1.77	.68	.79	.24	.48	.77	.46	1.74	6.45	4.78	4.32
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	-1.247	-2.468	-.780	-1.366	-.355	-.732	-.987	-.792	-.888	-2.291	-3.096	-2.268	-1.467
	5.02	7.62	7.08	3.08	.35	.16	.62	.36	.31	2.91	5.15	4.53	3.93
	744	696	744	720	744	720	744	294	720	744	720	744	8334
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	-3.491	-2.257	-1.667	-.342	-.527	-.402	-.960	-1.453	-1.590	-1.863	-1.872	-1.970	-1.564
	4.53	5.34	2.76	.27	.66	.23	.38	.57	.92	2.25	3.10	4.67	2.90
	744	672	744	720	478	720	744	744	720	744	720	744	8494
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	-1.864	-1.595	-1.323	-1.038	-.649	-.683	-1.068	-.878	-1.543	-1.977	-2.019	-2.543	-1.466
	9.23	5.60	5.37	1.46	.46	.15	.25	.14	.44	2.02	4.12	6.95	3.77
	744	672	744	720	744	720	744	159	150	744	720	744	7605
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	-3.338	-2.939	-2.160	-.76	-.301	-.624	-.935	-1.080	-1.450	-2.197	-2.512	-2.585	-1.718
	4.20	3.48	3.99	1.92	.50	.35	.61	.69	1.05	2.03	4.74	4.47	3.21
	744	672	744	720	744	720	744	744	720	744	720	568	8584
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	-3.025	-2.344	-1.091	.169	-.207	-.687	-1.384	-1.317	-1.349	-.890	-2.988	-1.130	-1.350
	5.64	7.15	4.28	1.15	.98	.28	.63	.29	1.01	1.30	5.47	4.31	3.59
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	-3.666	-2.619			-1.966	-1.951	-2.322	-8.115	-4.886	-5.541	-4.935	-6.054	-4.194
	10.41	6.81			.46	1.02	1.50	19.01	.78	1.41	1.54	5.36	6.19
	744	15			698	720	233	154	720	744	720	744	5492
	744	672			744	720	744	744	720	744	720	744	8760
1986	-5.580	-4.807	-4.720	-3.698	-1.321						-2.210	-3.696	-3.740
	3.64	4.49	3.24	.35	.60						4.12	3.78	4.87
	744	672	744	652	743						627	744	4926
	744	672	744	720	744						720	744	8760
1987													
TOTAL	-3.224	-2.542	-1.739	-.950	-.690	-.800	-1.081	-1.504	-1.909	-2.347	-2.877	-2.796	-1.913
	8.44	6.74	5.82	2.71	.95	.58	.66	3.33	2.49	3.83	5.19	6.89	4.85
	5952	4767	5208	4972	5639	5040	4697	3583	4470	5208	5667	5776	60979
	6696	5424	5952	5760	5952	5760	5952	5952	5760	5952	5760	5952	78888

42003 VARIABLE : AIR - SST DEG C DATES : 79/ 1/ 1: 0 TO 86/12/31:16
MEAN/VARIANE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	-5.498	-4.556	-3.551	-1.240	-1.821	-1.324	-1.102	-1.012					-2.615
	10.43	9.19	3.85	1.16	1.44	.97	.52	.18					6.43
	744	672	744	720	744	720	744	319					5407
	744	672	744	720	744	720	744	744					8760
1980	-1.219	-5.413	-2.807	-2.346	-1.557	-1.086	-.753		-.987	-2.307	-3.983	-4.877	-2.748
	2.88	14.92	9.83	3.21	.91	.44	.24		.52	1.15	4.67	4.50	6.69
	462	696	744	720	744	720	93		442	744	720	744	6829
	744	696	744	720	744	720	744		720	744	720	744	8784
1981	-6.086	-3.285	-2.180	-1.707	-1.223	-.541	-.958	-1.238	-1.550	-2.182	-3.665	-4.341	-2.412
	7.25	4.95	2.78	1.17	1.30	.55	.37	.83	.77	1.18	2.91	9.17	5.23
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	-3.734	-2.775	-2.956	-1.888	-1.488	-.995	-1.627	-.888	-1.502	-2.318	-2.434	-2.640	-2.171
	8.27	2.39	6.02	1.93	.84	.45	.30	1.12	1.32	2.45	3.48	5.00	3.61
	744	672	744	720	744	720	469	390	720	744	720	744	8131
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	-4.505	-4.387	-3.744	-3.207	-2.011	-1.181	-.894	-1.142	-1.657	-1.964	-3.169	-2.928	-2.546
	5.35	3.70	6.81	2.94	.96	.82	.52	.79	1.48	1.39	3.76	4.19	4.17
	744	672	744	720	744	720	744	744	720	744	720	575	8591
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984			-1.159	.450	1.361	-.256	-1.939	-1.628	-1.425	-.723	-1.685	.622	-.598
			3.84	2.29	.81	3.33	.83	.71	.79	.73	2.62	2.30	2.90
			241	720	744	720	744	744	720	744	720	744	6841
			744	720	744	720	744	744	720	44	720	744	8784
1985	-2.257	-1.724	-.270	.594	.706	.542	.543	.525	.554	.742	1.324	.563	.141
	7.17	5.51	1.07	2.27	.72	.76	.80	.97	.56	.77	1.94	3.20	3.28
	744	672	744	720	744	720	744	581	412	744	720	744	8289
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	1.009	2.115	1.807	-.356	-1.452	-1.023	-1.157	-1.033	-.943	-1.611	-.867	-2.457	-.514
	3.15	3.18	7.80	11.27	.63	.48	.67	.54	.37	.86	.51	3.13	4.49
	744	672	744	720	744	720	744	744	720	744	720	737	8753
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	-3.297	-2.874	-1.922	-1.212	-.936	-.733	-.981	-.964	-1.191	-1.480	-2.068	-2.273	-1.639
	12.07	11.73	8.75	4.87	2.32	1.31	1.11	1.15	1.24	2.31	5.79	8.64	5.69
	4926	4728	5449	5760	5952	5760	5026	4266	4454	5208	5040	5032	61601
	5952	5424	5952	5760	5952	5760	5952	5952	5760	5952	5760	5952	70128

42007 VARIABLE : AIR - SST DEG C DATES : 84/ 1/ 1: 0 TO 86/12/19: 1
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	-1.693	-.322	-.567	.037	-.917	-.715	-.920	-.850	-.938	-.202	-3.069	.178	-.831
	13.44	9.42	5.74	2.17	3.48	.68	.98	1.31	4.13	3.23	13.61	12.79	6.58
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	-4.270	-.741	-.154	-.322	-.556	-.062	-.480	-.709	-.624	.168	-.608	-4.306	-1.004
	28.52	13.82	2.90	1.65	2.20	1.06	1.17	1.20	2.57	7.00	5.38	26.01	9.63
	744	672	744	720	623	720	744	598	720	744	720	553	8302
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986		.636	.408	-.506	-.648	-.772	-.507	-.660	.070	-1.492	-1.145	-2.557	-.694
		8.24	8.21	2.78	1.11	.78	.99	2.47	.57	5.27	11.39	11.35	4.53
		222	485	720	744	720	744	744	720	744	572	434	6849
		672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	-2.981	-.365	-.172	-.264	-.716	-.516	-.636	-.742	-.497	-.509	-1.642	-1.940	-.852
	22.63	11.30	5.41	2.25	2.28	.94	1.09	1.70	2.60	5.67	11.21	20.45	7.07
	1488	1590	1973	2160	2111	2160	2232	2086	2160	2232	2012	1731	23935
	2232	2040	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	26304

42008 VARIABLE : AIR - SST DEG C DATES : 80/10/ 1: 0 TO 82/ 9/ 1: 5
MEAN/VARIANCE/NO. OF DATA POINTS/NO..OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980										1.089	3.386	1.651	2.027
										7.24	4.60	28.74	14.56
										744	720	744	2208
										744	720	744	8784
1981	-.775	.214	.373	.329	-.350	-.623	-1.135	-1.524	-1.573	-2.047	-.998	-2.167	-.828
	8.11	13.04	2.90	1.00	2.07	1.12	.74	.68	3.59	10.88	8.86	14.52	5.99
	744	672	744	720	744	720	744	744	720	744	720	489	8505
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	-.353	-1.104	-.121	-.226	-.638	-.355	-.731	-1.145	-.928				-.589
	28.64	17.58	8.41	4.99	.74	.68	.24	.57	.03				7.37
	629	672	744	657	744	720	744	744	6				5660
	744	672	744	720	744	720	744	744	720				8760
TOTAL	-.582	-.445	.126	.064	-.494	-.489	-.933	-1.335	-1.568	-.479	1.194	.137	-.360
	17.55	15.74	5.71	2.98	1.43	.92	.53	.66	3.56	11.52	11.53	26.58	8.52
	1373	1344	1488	1377	1488	1440	1488	1488	726	1488	1440	1233	16373
	1488	1344	1488	1440	1488	1440	1488	1488	1440	1488	1440	1488	26304

C.2.4 SENSIBLE HEAT FLUX, QH, (Wm^{-2})

42001 VARIABLE : QH W/M**2 DATES : 79/ 1/ 1: 0 TO 86/12/31:23

MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	48.199	19.560	6.716	-3.711	3.197	1.952	2.922	8.101	11.872			37.587	13.655
	3464.04	970.66	318.39	68.05	176.80	27.61	89.87	108.85	195.85			1086.18	950.92
	744	672	744	720	744	720	744	399	604			647	6738
	744	672	744	720	744	720	744	744	720			744	8760
1980	41.097	76.625		15.567	2.980	4.185	8.169	5.350	9.120	21.624	33.537	38.743	19.367
	1958.33	2453.83		642.33	74.92	15.35	157.45	134.84	105.52	384.78	1065.37	1560.19	933.88
	416	286		646	744	720	744	744	720	744	720	744	7228
	744	696		720	744	720	744	744	720	744	720	744	8784
1981	43.111	25.601	12.399	1.901		-5.746	-.901	.426	-1.663	-.660	3.031	13.574	9.149
	1538.59	2157.55	571.68	58.74		38.52	32.92	51.89	31.57	128.14	184.35	1174.99	800.29
	744	672	744	229		720	744	744	368	744	720	744	7173
	744	672	744	720		720	744	744	720	744	720	744	8760
1982	3.783	-6.339	-5.675	-12.283	-14.208	-6.684	-1.691	-3.727	-6.511	6.773	38.683	39.202	2.676
	1577.89	188.39	388.63	133.12	139.83	51.61	15.16	27.07	71.84	138.90	1733.97	1462.74	791.39
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	63.613	52.202	18.153	.401	-7.318	2.243	1.027	3.292	11.342	11.223	16.387	31.778	16.441
	1745.43	1823.61	1028.94	474.62	169.92	77.15	30.01	58.33	275.54	402.47	972.04	4649.56	1379.14
	662	672	744	720	744	720	744	744	497	415	720	581	7963
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	60.450	48.495	17.207	4.020	19.700	20.289	24.105	24.715	15.997	11.901	34.159	9.167	24.596
	2819.20	3006.37	1053.48	423.50	789.10	350.20	386.14	267.58	178.14	261.71	1028.35	821.12	1264.02
	744	696	744	720	744	720	516	744	238	744	720	744	8074
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985		21.412	3.626	9.014	11.784		6.668	13.182	15.159	20.640	15.643	54.864	16.430
		1811.05	204.03	300.82	64.14		69.81	548.32	136.29	481.98	512.45	2577.03	803.65
		672	744	720	352		700	744	720	744	720	540	6656
		672	744	720	744		744	744	720	744	720	744	8760
1986	49.419	25.236	35.741	10.734	4.036	7.238	7.662	7.969	6.661	20.270	15.823	48.783	20.029
	2617.99	1270.62	2669.98	80.96	19.02	292.97	67.38	165.68	24.66	209.06	295.79	1387.87	1010.17
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987													
TOTAL	44.123	29.554	12.595	3.153	2.157	3.354	5.263	7.371	7.323	13.238	22.466	33.457	15.246
	2625.37	2101.37	1037.84	360.05	326.42	191.69	143.74	243.87	175.45	341.64	973.33	1961.20	1041.97
	4798	5014	5208	5195	4816	5040	5680	5607	4587	4879	5040	5488	61352
	6696	5424	5952	5760	5952	5760	5952	5952	5760	5952	5760	5952	78888

42002 VARIABLE : QH W/M**2 DATES : 79/ 1/ 1: 0 TO 86/12/31:23

MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	59.256	18.642	6.305	-1.033	2.495	4.367	7.402	9.557	17.197	14.985	49.294	26.386	17.903
	5489.84	967.74	289.00	87.60	130.39	27.08	97.30	143.36	202.25	338.25	2481.18	1073.35	1269.83
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1980	16.149	35.321	15.955	19.046	2.905	6.198	6.746	7.549	7.368	28.024	40.673	24.684	17.980
	1125.04	2362.62	2601.99	1512.73	60.47	19.47	62.71	106.78	40.03	1301.50	1702.56	977.17	1170.35
	744	696	744	720	744	720	744	294	720	744	720	744	8334
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1981	42.962	33.845	19.348	3.532	5.124	3.002	6.757	9.239	14.905	19.807	16.997	25.225	17.027
	1377.77	2756.53	574.26	66.96	77.95	21.66	47.66	58.96	274.17	469.78	473.31	1183.31	761.02
	744	672	744	720	478	720	744	744	720	744	720	744	8494
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	28.991	22.637	17.047	11.846	6.249	4.316	6.096	6.146	13.754	21.571	27.995	35.986	17.923
	3456.89	1145.11	1240.55	251.80	55.41	7.03	19.93	16.64	76.71	471.23	1499.33	2129.45	1097.75
	744	672	744	720	744	720	744	159	150	744	720	744	7605
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	40.139	37.273	25.521	9.780	3.221	4.867	7.102	8.145	16.311	22.728	36.180	36.124	20.201
	1173.35	991.32	837.99	380.26	68.00	31.96	94.76	182.03	334.74	581.92	1827.30	1481.93	826.43
	744	672	744	720	744	720	744	744	720	744	720	568	8584
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1984	36.077	31.809	13.415	-1.796	3.781	5.390	9.421	9.607	14.835	8.477	40.126	13.434	15.299
	1529.71	2011.34	754.35	99.51	213.62	21.20	68.86	46.99	233.78	176.97	1620.99	1111.25	813.12
	744	696	744	720	744	720	744	744	720	744	720	744	8784
	744	696	744	720	744	720	744	744	720	744	720	744	8784
1985	57.462	56.295			19.585	20.568	24.216	79.022	61.681	101.337	64.625	96.190	59.685
	5386.61	4816.36			130.01	167.06	510.49	2094.43	763.31	5791.37	951.73	4000.24	3297.93
	744	15			698	720	233	154	720	744	720	744	5492
	744	672			744	720	744	744	720	744	720	744	8760
1986	82.280	68.274	60.901	44.702	14.397						35.527	56.629	52.103
	3925.57	3133.18	1908.51	209.77	75.07						1979.68	2035.25	2349.49
	744	672	744	652	743						627	744	4926
	744	672	744	720	744						720	744	8760
1987													
TOTAL	45.415	35.447	22.642	11.854	7.216	6.958	8.095	11.878	21.771	30.990	38.983	39.430	24.268
	3297.59	2137.26	1444.07	585.15	137.40	73.88	101.73	391.75	615.64	2160.60	1734.98	2373.77	1518.43
	5952	4767	5208	4972	5639	5040	4697	3583	4470	5208	5667	5776	60979
	6696	5424	5952	5760	5952	5760	5952	5952	5760	5952	5760	5952	78888

42003 VARIABLE : QH W/M**2 DATES : 79/ 1/ 1: 0 TO 86/12/31:16

MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1979	80.657	50.712	42.898	12.024	19.686	11.016	10.148	5.489					30.800
	3898.06	2092.02	919.38	149.88	251.78	75.47	173.78	11.34					1635.01
	744	672	744	720	744	720	744	319					5407
	744	672	744	720	744	720	744	744					8760
1980	13.817	71.452	42.205	25.523	14.805	7.551	4.733		6.780	22.232	55.302	60.541	33.267
	462.66	4131.00	4088.05	657.67	116.07	48.40	19.65		41.94	236.49	1329.60	1693.32	1834.68
	462	696	744	720	744	720	93		442	744	720	744	6829
	744	696	744	720	744	720	744		720	744	720	744	8784
1981	66.979	46.854	24.290	18.530	9.259	3.272	5.337	8.596	11.453	21.531	35.958	51.155	25.178
	2074.63	2223.19	575.97	329.45	97.30	40.12	41.72	125.02	145.65	359.20	440.72	2413.90	1120.67
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	46.487	30.422	35.869	18.591	15.536	6.125	7.259	4.295	11.597	24.944	32.071	33.007	23.440
	2598.33	580.15	1484.18	380.43	126.93	75.35	23.47	60.73	154.59	478.21	1336.22	1279.29	931.02
	744	672	744	720	744	720	469	390	720	744	720	744	8131
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1983	48.144	63.742	49.709	37.760	19.048	9.290	5.085	5.234	16.255	19.134			27.042
	1237.90	1830.96	1743.65	621.30	153.48	73.53	54.93	43.07	294.76	298.63			1012.02
	744	672	744	720	744	720	744	744	720	744			7296
	744	672	744	720	744	720	744	744	720	744			8760
1984			13.118	-5.152	-12.577	.576	14.347	11.757	13.646	9.275	23.325	-5.396	5.765
			1233.44	405.04	170.29	274.37	124.51	56.34	111.40	154.41	673.88	365.94	411.59
			241	720	744	720	744	744	720	744	720	744	6841
			744	720	744	720	744	744	720	744	720	744	8784
1985	34.288	30.910	3.784	-1.579	-3.228	-3.110	-2.583	-2.443	-5.989	-8.854	-12.531	-1.933	2.517
	2415.89	2687.50	265.01	302.28	33.97	64.06	38.30	68.09	94.90	160.47	636.37	474.87	825.55
	744	672	744	720	744	720	744	581	365	744	720	744	8242
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	-8.000	-13.493	-8.303	5.915	11.997	6.210	6.518	7.767	7.156	15.422	8.600	29.084	5.866
	695.25	438.77	1935.85	1095.65	58.08	25.82	36.47	54.56	29.18	170.60	85.67	656.99	560.60
	744	672	744	720	744	720	744	744	720	744	720	737	8753
	744	672	744	720	744	720	744	744	720	74	720	744	8760
TOTAL	41.857	40.245	26.584	13.951	9.316	5.116	6.516	6.288	10.004	14.812	23.788	27.741	18.484
	2782.35	2686.26	1956.59	669.35	240.22	103.55	95.92	81.76	164.94	381.24	1209.62	1753.32	1140.11
	4926	4728	5449	5760	5952	5760	5026	4266	4407	5208	4320	4457	60259
	5952	5424	5952	5760	5952	5760	5952	5952	5760	5952	5760	5952	70128

42007 VARIABLE : QH W/M**2 DATES : 84/ 3/10: 0 TO 86/12/19: 1
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984			9.496	2.494	11.770	5.126	6.461	5.894	13.519	2.955	40.609	14.803	11.267
			1030.51	395.20	971.70	50.07	83.32	86.56	768.04	412.20	2695.78	2454.69	982.78
			528	720	744	720	744	744	720	744	720	653	7037
			744	720	744	720	744	744	720	744	720	744	8784
1985	59.095	12.928	5.202	4.352	5.493	1.663	3.568	7.072	9.077	8.483	12.210	56.554	15.006
	6994.36	2207.88	403.37	240.94	164.69	84.62	65.63	162.88	498.35	923.60	748.10	5970.89	1829.29
	744	429	744	720	623	720	744	598	720	744	720	553	8059
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986		3.891	5.429	5.710	6.409	4.967	4.069	8.491	.301	17.373	22.875	40.582	10.094
		954.24	1788.69	323.46	122.32	54.90	64.92	334.34	30.85	822.10	2445.55	2016.09	779.03
		222	485	720	744	720	744	744	720	744	572	434	6849
		672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	59.095	9.846	6.555	4.185	8.028	3.918	4.700	7.158	7.632	9.603	25.405	35.703	12.274
	6994.36	1796.63	976.68	321.31	441.55	65.69	72.82	197.83	462.19	753.94	2072.62	3847.07	1234.50
	744	651	1757	2160	2111	2160	2232	2086	2160	2232	2012	1640	21945
	1488	1344	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	26304

42008 VARIABLE : QH W/M**2 DATES : 80/10/ 1: 0 TO 82/ 9/ 1: 5

MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980										-3.738	-15.290	10.459	-2.721
										886.57	607.58	2837.39	1562.08
										744	720	744	2208
										744	720	744	8784
1981	14.329	16.074	-.305	-.885	5.634	6.741	11.347	15.416	19.441	34.921	18.176	38.484	14.279
	1314.37	3479.84	416.00	186.47	492.05	321.83	142.55	187.48	1293.23	4820.31	2499.00	4830.55	1684.59
	744	672	744	720	744	720	744	744	720	744	720	489	8505
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1982	32.530	34.330	14.948	11.301	6.659	2.909	5.853	8.457	8.337				14.103
	7334.69	4505.56	2836.45	1270.15	179.34	82.23	20.24	48.02	.60				2034.54
	629	672	744	657	744	720	744	744	6				5660
	744	672	744	720	744	720	744	744	720				8760
TOTAL	22.667	25.202	7.321	4.929	6.147	4.825	8.600	11.936	19.350	15.591	1.443	21.574	11.925
	4151.36	4073.11	1683.33	740.04	335.73	205.56	88.89	129.78	1283.54	3225.41	1832.39	3812.69	1822.27
	1373	1344	1488	1377	1488	1440	1488	1488	726	1488	1440	1233	16373
	1488	1344	1488	1440	1488	1440	1488	1488	1440	1488	1440	1488	26304

C.3 NATIONAL DATA BUOY CENTER (NDBC) CMAN STATIONS

C.3.1 AIR TEMPERATURE (DEG C)

ALLIGATOR REEF, FLA   VARIABLE : AIR TEMPERATURE C   DATES : 86/ 1/ 1: 0 TO 87/12/ 4:15
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1986	20.080	21.787	20.893	22.606	24.644		28.426	28.224	28.194	26.848	26.419	23.675	24.603
	12.36	7.55	16.39	2.66	.52		.53	1.06	.39	2.22	.39	4.08	13.67
	744	672	744	720	384		490	744	720	744	720	744	7426
	744	672	744	720	744		744	744	720	744	720	744	8760
1987	20.810	21.697	22.089	21.147	25.453	27.795	28.485	28.867	28.682	23.307	24.269	19.844	24.859
	14.31	7.19	4.59	9.90	.36	.70	.41	.54	.90	2.90	5.16	.98	14.14
	489	672	744	720	705	510	744	744	582	75	720	88	6793
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	20.369	21.742	21.491	21.877	25.167	27.795	28.461	28.546	28.412	26.524	25.344	23.270	24.725
	13.25	7.37	10.84	6.81	.56	.70	.46	.91	.68	3.32	3.93	5.14	13.91
	1233	1344	1488	1440	1089	510	1234	1488	1302	819	1440	832	14219
	1488	1344	1488	1440	1488	1440	1488	1488	1440	1488	1440	1488	17520

VENICE, FLA   VARIABLE : AIR TEMPERATURE C   DATES : 87/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1987	15.587	15.485	21.404	20.079	23.676	26.404	27.183	27.837	26.654	21.605	20.262	17.758	22.503
	13.90	16.56	3.40	3.97	6.29	5.05	5.56	4.60	4.97	10.57	15.78	18.03	26.60
	744	210	161	562	744	720	744	744	683	744	720	744	7520
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	15.587	15.485	21.404	20.079	23.676	26.404	27.183	27.837	26.654	21.605	20.262	17.758	22.503
	13.90	16.56	3.40	3.97	6.29	5.05	5.56	4.60	4.97	10.57	15.78	18.03	26.60
	744	210	161	562	744	720	744	744	683	744	720	744	7520
	1488	672	744	720	744	720	744	744	720	744	720	744	17544

CAPE SAN BLAS, FLA VARIABLE : AIR TEMPERATURE C DATES : 85/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	10.025	12.817	17.897	20.013	23.622	25.879	27.211	27.305	25.306	24.253	21.345	12.472	20.691
	39.14	20.63	6.29	6.66	2.90	2.89	2.36	4.56	7.80	7.15	8.60	35.30	47.23
	744	672	744	667	744	720	744	744	720	710	515	744	8468
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	11.973	14.594	16.218	19.312	23.658	27.698	28.563	27.301	26.878	22.367	20.425	13.937	21.118
	15.67	19.81	15.92	5.58	6.86	2.53	1.83	7.22	3.69	19.18	12.94	15.74	42.51
	744	672	744	720	744	720	744	744	720	744	720	726	8742
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	11.933	13.457	15.82	17.837	23.864	26.775	28.432	28.457	26.049	18.763	17.038	14.900	20.045
	15.83	9.02	10.30	13.83	4.03	2.73	4.63	2.82	5.31	12.75	16.90	18.05	42.75
	744	672	744	720	744	667	531	744	683	744	720	744	8457
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	11.310	13.623	16.645	19.030	23.715	26.784	28.030	27.688	26.078	21.756	19.420	13.768	20.624
	24.35	17.01	11.63	9.56	4.60	3.28	3.15	5.16	6.02	18.28	16.68	24.07	44.34
	2232	2016	2232	2107	2232	2107	2019	2232	2123	2198	1955	2214	25667
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

S.W. PASS, LA   VARIABLE : AIR TEMPERATURE C   DATES : 85/ 1/ 1: 1 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	10.079	12.342	17.761	20.433	24.378	26.465	26.825	28.567		25.053	20.771	12.431	19.790
	29.38	22.47	7.26	7.48	2.13	1.61	1.64	.97		2.77	6.07	23.56	47.70
	743	672	744	720	744	720	546	389		486	720	744	7228
	744	672	744	720	744	720	744	744		744	720	744	8760
1986	12.701	15.394	15.953	19.941	23.972	27.522	28.397	28.226	28.047	23.481	20.138	13.315	21.446
	12.01	18.24	16.21	3.44	2.34	1.30	.92	2.25	.70	11.21	10.49	10.46	40.74
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	11.555	14.308	15.145	18.355	24.762	26.743	28.439	28.995	26.933	20.990	18.976	16.846	21.119
	14.12	8.98	10.50	14.60	2.84	.99	1.52	1.06	2.37	4.80	11.97	17.20	42.58
	744	672	744	720	744	720	744	744	683	516	486	655	8172
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	11.446	14.015	16.286	19.576	24.371	26.910	27.990	28.601	27.504	23.182	20.082	14.087	20.840
	19.64	18.14	12.51	9.28	2.54	1.50	1.3	1.63	1.82	9.39	9.69	20.54	43.93
	2231	2016	2232	2160	2232	2160	2034	1877	1403	1746	1926	2143	24160
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

GRAND ISLE, LA   VARIABLE : AIR TEMPERATURE C   DATES : 85/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	9.222	12.279	18.985	21.372	24.823	26.601	27.630	28.154	26.487	24.030	21.263	12.391	20.940
	35.83	25.76	5.95	8.47	3.30	2.62	1.83	2.12	3.79	7.24	5.91	26.10	50.68
	744	672	719	720	721	720	586	650	720	744	657	744	8397
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	12.713	15.623	16.812	20.381	24.940	27.858	28.306	28.014	28.058	22.945	19.799	12.987	21.489
	13.88	23.77	18.18	3.52	1.98	1.34	1.74	3.32	.95	12.48	16.89	9.86	42.76
	744	672	744	696	561	720	744	744	720	744	720	744	8553
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	11.156	14.378	14.632	19.693	25.095	26.807	28.279	28.859	26.752	20.225	17.562	15.855	21.002
	17.43	9.66	8.09	22.55	2.24	1.36	2.39	1.75	3.05	5.83	14.33	17.42	43.96
	744	672	413	703	695	720	744	744	683	744	720	744	8326
	744	672	744	7720	744	720	744	744	720	744	720	744	8760
TOTAL	11.030	14.093	17.165	20.490	24.952	27.089	28.105	28.351	27.105	22.400	19.490	13.744	21.146
	24.40	21.62	13.99	11.98	2.56	.07	2.09	2.55	3.06	11.07	14.85	20.06	45.84
	2232	2016	1876	2119	1977	2160	2074	2138	2123	2232	2097	2232	25276
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

SABINE PASS, TX   VARIABLE : AIR TEMPERATURE C   DATES : 85/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	7.868	9.273	17.225	20.698	24.131	26.344	27.058	27.704	25.736	21.676	19.482	10.706	19.883
	26.83	27.07	7.87	8.29	4.62	4.13	3.73	4.27	10.03	13.00	13.37	29.39	59.70
	744	672	744	720	744	720	744	744	720	744	580	744	8620
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986		13.351	16.501	20.319	23.428	27.273	28.466	27.474	27.626	21.013	16.874	10.531	20.697
		22.07	13.63	6.34	6.33	2.37	1.97	5.82	2.34	21.23	25.41	12.50	45.54
		672	744	720	744	720	208	744	720	744	720	744	7480
		672	744	720	744	720	744	744	720	744	720	744	8760
1987	9.945	12.404	14.586	17.179	24.172	26.846	27.836	28.560	25.457	19.755	15.690	13.110	18.767
	17.21	12.53	17.33	27.36	5.29	3.97	4.02	3.70	10.96	12.09	22.10	23.28	52.96
	744	672	744	461	744	230	291	744	683	744	720	744	7521
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	8.907	11.676	16.104	19.701	23.910	26.814	27.476	27.913	26.287	20.814	17.201	11.449	19.785
	23.08	23.57	14.17	14.22	5.52	3.53	3.80	4.81	8.65	16.06	23.10	23.09	53.67
	1488	2016	2232	1901	2232	1670	1243	2232	2123	2232	2020	2232	23621
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

PORT ARANSAS, TX VARIABLE : AIR TEMPERATURE C DATES : 85/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	9.621	10.748	17.773	20.685	24.737	26.284	26.961	27.387	27.227	23.600	20.714	13.197	20.797
	32.00	28.92	5.29	4.75	1.39	.94	.45	.72	4.80	8.70	13.42	26.33	50.63
	744	672	744	475	744	720	744	744	720	744	720	744	8515
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	13.720	14.948	18.657	22.128	24.309	27.302	27.184	27.289	28.018	22.612	17.680	13.290	21.177
	14.45	16.94	4.55	1.19	2.41	.48	.39	1.10	.56	2.91	31.53	14.97	37.28
	744	672	744	720	744	720	744	744	437	393	720	744	8126
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	13.148	14.862	16.036	19.009	24.514	26.797	28.059	28.314	26.885	23.490	18.649	15.595	20.977
	12.06	10.74	10.76	11.33	2.23	2.44	.60	.27	4.69	2.61	18.17	25.10	37.41
	744	672	744	720	744	720	744	556	452	744	720	744	8304
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	12.163	13.519	17.489	20.598	24.520	26.794	27.401	27.603	27.346	23.350	19.014	14.027	20.981
	22.78	22.70	8.05	7.71	2.04	1.46	.71	.93	3.80	5.22	22.62	23.35	41.90
	2232	2016	2232	1915	2232	2160	2232	2044	1609	1881	2160	2232	24945
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

C.3.2 ATMOSPHERIC PRESSURE (mb - 1000.0)

ALLIGATOR REEF, FLA   VARIABLE : PRESSURE MB-1000   DATES : 86/ 1/ 1: 0 TO 87/12/ 4:15
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1986	20.098	17.677	19.148	17.107	15.729		19.535	17.425	18.045	17.369	17.900	18.110	18.078
	10.41	11.90	13.93	7.16	6.02		3.91	2.87	2.99	3.11	4.33	7.61	7.99
	744	672	744	720	384		490	744	720	744	720	744	7426
	744	672	744	720	744		744	744	720	744	720	744	8760
1987	18.159	16.422	14.887	16.199	16.314	16.751	17.398	16.719	14.792	18.020	16.036	17.334	16.358
	18.07	13.66	11.15	7.28	1.41	2.40	1.62	4.20	2.79	1.88	13.34	11.15	8.30
	489	672	744	720	705	510	744	744	582	75	720	88	6793
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	19.329	17.049	17.018	16.653	16.108	16.751	18.247	17.072	16.591	17.429	16.968	18.028	17.256
	14.33	13.16	17.07	7.42	3.11	2.40	3.62	3.66	5.51	3.03	9.70	8.03	8.88
	1233	1344	1488	1440	1089	510	1234	1488	1302	819	1440	832	14219
	1488	1344	1488	1440	1488	1440	1488	1488	1440	1488	1440	1488	17520

VENICE, FLA VARIABLE : PRESSURE MB-1000 DATES : 87/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1987	17.744	18.979	12.916	15.709	17.438	17.741	18.448	17.292	14.798	16.351	17.517	19.423	17.257
	22.18	17.82	3.56	8.97	1.79	3.98	2.62	4.71	4.40	14.95	18.74	17.51	12.07
	744	210	161	562	744	720	744	744	683	744	720	744	7520
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	17.744	18.979	12.916	15.709	17.438	17.741	18.448	17.292	14.798	16.351	17.517	19.423	17.257
	22.18	17.82	3.56	8.97	1.79	3.98	2.62	4.71	4.40	14.95	18.74	17.51	12.07
	744	210	161	562	744	720	744	744	683	744	720	744	7520
	1488	672	744	720	744	720	744	744	720	744	720	744	17544

CAPE SAN BLAS, FLA VARIABLE PRESSURE MB-1000 DATES : 85/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	20.636	22.072	19.833	18.148	14.752	16.244	17.369	16.246	17.487	17.098	18.663	21.455	18.308
	24.56	21.87	21.95	10.03	7.11	4.03	6.33	9.69	17.58	21.06	24.23	25.49	20.73
	744	672	744	667	744	720	744	744	720	710	515	744	8468
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	21.017	15.651	19.201	16.538	14.690	16.344	18.243	16.359	18.872	19.180	18.304	20.267	17.906
	19.25	28.97	36.92	12.35	6.46	4.93	9.54	7.33	5.74	9.72	18.71	26.37	18.93
	744	672	744	720	744	720	744	744	720	744	720	726	8742
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	17.719	16.907	15.276	15.872	17.737	16.821	16.956	16.370	14.679	19.353	19.358	19.710	17.260
	24.65	30.40	32.03	14.17	3.09	8.12	5.13	9.40	5.20	17.80	22.75	25.31	19.27
	744	672	744	720	744	667	531	744	683	744	720	744	8457
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	19.791	18.210	18.103	16.820	15.726	16.461	17.582	16.325	17.053	18.566	18.787	20.479	17.826
	24.97	34.78	34.34	13.12	7.57	5.69	7.47	8.80	12.57	17.14	21.84	26.23	19.82
	2232	2016	2232	2107	2232	2107	2019	2232	2123	2198	1955	2214	25667
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

S.W. PASS, LA VARIABLE : PRESSURE MB-1000 DATES : 85/ 1/ 1: 1 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	21.492	21.442	19.037	18.040	14.519	16.324	17.534	15.229		11.884	17.252	22.159	18.023
	27.84	20.05	22.92	15.75	3.94	3.62	7.59	2.63		94.22	26.01	25.73	30.45
	743	672	744	720	744	720	546	389		486	720	744	7228
	744	672	744	720	744	720	744	744		744	720	744	8760
1986	21.687	16.658	20.267	18.048	15.410	15.793	18.414	16.150	17.893	18.437	17.805	20.032	18.068
	12.17	29.92	50.25	9.98	6.54	6.66	7.39	3.90	3.88	8.86	19.35	27.71	18.85
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	18.661	16.325	15.205	16.706	16.503	16.020	17.557	16.736	15.096	19.954	18.801	18.459	17.053
	23.32	30.98	36.29	14.13	3.64	5.89	2.70	7.90	3.83	9.08	19.11	29.53	17.36
	744	672	744	720	744	720	744	744	683	516	486	655	8172
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	20.613	18.142	18.170	17.598	15.477	16.046	17.864	16.191	16.531	17.061	17.850	20.289	17.711
	23.00	32.43	41.10	13.67	5.36	5.43	5.90	5.53	5.81	43.38	22.12	29.81	22.03
	2231	2016	2232	2160	2232	2160	2034	1877	1403	1746	1926	2143	24160
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

GRAND ISLE, LA   VARIABLE : PRESSURE MB-1000   DATES : 85/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	21.395	21.326	18.476	17.843	14.429	16.296	16.886	15.482	16.566	13.999	17.233	22.378	17.719
	31.21	20.76	22.37	17.29	4.11	3.49	6.92	5.34	8.33	76.77	26.89	27.73	28.53
	744	672	719	720	721	720	586	650	720	744	657	744	8397
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	21.921	16.119	19.631	17.334	14.117	16.057	18.517	15.949	17.625	18.421	17.639	20.122	17.888
	12.57	32.24	54.04	10.52	4.04	6.70	8.11	3.68	4.05	10.44	21.22	30.50	20.70
	744	672	744	696	561	720	744	744	720	744	720	744	8553
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	18.651	16.123	18.588	16.078	15.932	15.451	17.148	16.310	14.815	20.170	19.111	18.630	17.238
	24.11	34.22	31.54	14.41	4.03	6.27	2.84	8.29	4.08	11.42	20.82	30.64	18.15
	744	672	413	703	695	720	744	744	683	744	720	744	8326
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	20.656	17.856	18.959	17.090	14.869	15.934	17.565	15.933	16.362	17.530	18.017	20.377	17.618
	24.67	35.07	37.21	14.65	4.68	5.61	6.39	5.90	6.83	39.59	23.49	31.97	22.54
	2232	2016	1876	2119	1977	2160	2074	2138	2123	2232	2097	2232	25276
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

SABINE PASS, TX VARIABLE : PRESSURE MB-1000 DATES : 85/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	22.379	21.957	18.064	17.039	14.056	15.464	16.936	15.775	16.093	14.476	17.279	22.702	17.670
	42.63	20.44	28.44	27.09	5.46	4.26	6.05	5.05	8.38	53.44	15.42	31.55	29.39
	744	672	744	720	744	720	744	744	720	744	580	744	8620
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986		16.173	19.382	16.408	13.787	14.392	15.591	15.766	16.328	18.158	17.701	20.828	16.872
		35.74	64.97	1.39	8.03	8.20	3.39	2.85	5.28	14.18	29.29	27.44	24.49
		672	744	720	744	720	208	744	720	744	720	744	7480
		672	744	720	744	720	744	744	720	744	720	744	8760
1987	19.030	16.019	15.492	19.427	15.012	14.921	16.520	15.714	15.116	20.518	19.217	17.979	17.193
	23.18	38.57	50.61	5.97	5.65	3.50	2.84	9.97	5.98	9.68	27.03	43.09	25.05
	744	672	744	461	744	230	291	744	683	744	720	744	7521
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	20.705	18.050	17.646	17.379	14.285	14.927	16.614	15.752	15.859	17.717	18.120	20.503	17.265
	35.69	39.19	50.57	17.80	6.65	6.09	5.09	5.95	6.82	31.93	25.17	37.77	26.56
	1488	2016	2232	1901	2232	1670	1243	2232	2123	2232	2020	2232	23621
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

PORT ARANSAS, TX VARIABLE : PRESSURE MB-1000 DATES : 85/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	22.204	20.860	16.474	16.099	12.063	13.044	14.881	14.132	14.156	14.292	15.016	21.804	16.236
	49.05	24.77	29.67	42.18	7.97	5.45	5.92	3.80	6.68	18.41	19.24	31.74	31.01
	744	672	744	475	744	720	744	744	720	744	720	744	8515
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	21.948	15.261	17.959	14.365	12.286	13.687	17.157	15.073	15.319	19.437	17.725	20.488	16.687
	25.09	34.11	67.04	15.30	10.20	9.37	6.13	2.70	4.52	11.61	29.78	19.38	28.42
	744	672	744	720	744	720	744	744	437	393	720	744	8126
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	18.995	15.899	15.441	16.779	13.728	13.979	15.631	14.311	14.619	19.510	18.697	17.381	16.349
	25.80	37.15	57.72	24.02	7.56	4.79	1.89	8.45	8.56	8.28	31.65	53.51	26.91
	744	672	744	720	744	720	744	556	452	744	720	744	8304
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	21.049	17.340	16.624	15.703	12.693	13.570	15.890	14.523	14.602	17.431	17.146	19.891	16.421
	35.41	38.24	52.50	26.36	9.11	6.68	5.54	4.84	6.84	19.42	29.29	38.28	28.83
	2232	2016	2232	1915	2232	2160	2232	2044	1609	1881	2160	2232	24945
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

C.3.3 SEA SURFACE TEMPERATURE (DEG C)

ALLIGATOR REEF, FLA   VARIABLE : SST DEG C   DATES : 86/ 1/ 1: 0 TO 87/12/ 4:15
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1986	22.367	22.804	22.851	24.327	26.599	28.516	29.690	29.525	29.347	28.313	27.073	25.428	26.423
	.97	2.48	3.81	.51	.35	.39	.28	.22	.11	.88	.11	1.40	8.01
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	23.097	22.773		23.074	26.511	28.260	29.512	30.231	30.320	25.249	25.380	25.192	26.637
	.94	1.48		1.12	.33	.68	.26	.16	.12	.24	.74	.18	8.94
	489	672		720	744	720	744	744	582	75	720	88	6298
	744	672		720	744	720	744	744	720	744	720	744	8760
TOTAL	22.657	22.789	22.851	23.700	26.555	28.388	29.601	29.878	29.782	28.032	26.226	25.403	26.512
	1.09	1.98	3.81	1.21	.34	.55	.28	.31	.35	1.60	1.14	1.28	8.41
	1233	1344	744	1440	1488	1440	1488	1488	1302	819	1440	832	15058
	1488	1344	1488	1440	1488	1440	1488	1488	1440	1488	1440	1488	17520

GRAND ISLE, LA   VARIABLE : SST DEG C   DATES : 85/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	12.167	13.716	20.050	22.442	26.608	28.286	29.116	29.472	27.648	25.300	22.117	14.165	22.430
	13.57	8.84	3.01	7.50	1.66	2.17	.79	1.77	2.98	3.45	2.17	9.73	41.24
	744	672	744	720	721	720	585	650	720	744	658	744	8422
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	13.715	16.714	18.177	22.247	26.529	29.958	29.982	29.833	29.373	24.286	21.031	14.943	23.089
	3.30	5.67	7.23	1.62	1.91	.50	.92	1.06	.53	11.20	6.19	3.57	38.46
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	12.933	15.237	15.908	20.383	27.097	28.182	30.277	30.531	28.287	21.376	18.278	16.631	22.327
	5.30	2.21	1.37	12.75	1.74	.88	1.13	1.51	2.17	2.20	4.72	5.15	41.66
	744	672	413	698	695	720	744	744	683	744	720	744	8321
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	12.938	15.222	18.417	21.704	26.738	28.808	29.843	29.966	28.439	23.654	20.427	15.246	22.623
	7.78	7.06	6.74	8.08	1.83	1.84	1.18	1.63	2.40	8.38	7.03	7.20	40.53
	2232	2016	1901	2138	2160	2160	2073	2138	2123	2232	2098	2232	25503
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

VENICE, FLA VARIABLE : SST DEG C DATES : 87/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1987	16.873	17.546	20.059	21.217	25.928	29.480	30.609	31.023	30.185	24.049	21.064	19.228	24.003
	1.20	1.14	1.24	1.64	2.69	1.46	.50	.54	.55	3.63	.89	.98	27.61
	744	672	733	562	744	720	744	744	683	744	720	744	8554
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	16.873	17.546	20.059	21.217	25.928	29.480	30.609	31.023	30.185	24.049	21.064	19.228	24.003
	1.20	1.14	1.24	1.64	2.69	1.46	.50	.54	.55	3.63	.89	.98	27.61
	744	672	733	562	744	720	744	744	683	744	720	744	8554
	1488	672	744	720	744	720	744	744	720	744	720	744	17544

C.3.4 AIR - SEA SURFACE TEMPERATURE (DEG C)

ALLIGATOR REEF, FLA   VARIABLE : AIR - SST DEG C   DATES : 86/ 1/ 1: 0 TO 87/12/ 4:15
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1986	-2.287	-1.083	-1.997	-1.720	-1.290	-1.147	-1.394	-1.301	-1.153	-1.465	-.655	-1.789	-1.446
	8.83	5.99	8.89	1.85	.42	.53	.41	.88	.31	1.27	.41	2.75	2.88
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	-2.287	-1.076		-1.927	-1.035	-.769	-1.028	-1.364	-1.638	-1.943	-1.111	-5.348	-1.405
	9.44	3.30		6.16	.32	.44	.41	.44	.73	2.91	4.37	.68	3.09
	489	672		720	705	510	744	744	582	75	720	88	6049
	744	672		720	744	720	744	744	720	744	720	744	8760
TOTAL	-2.287	-1.079	-1.997	-1.824	-1.166	-.991	-1.211	-1.332	-1.370	-1.508	-.883	-2.165	-1.429
	9.06	4.64	8.89	4.01	.38	.52	.44	.66	.55	1.44	2.44	3.73	2.97
	1233	1344	744	1440	1449	1230	1488	1488	1302	819	1440	832	14809
	1488	1344	1488	1440	1488	1440	1488	1488	1440	1488	1440	1488	17520

GRAND ISLE, LA   VARIABLE : AIR - SST DEG C   DATES : 85/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	-2.945	-1.437	-1.121	-1.071	-1.785	-1.685	-1.486	-1.317	-1.161	-1.270	-.860	-1.774	-1.504
	16.24	10.73	3.40	1.37	1.59	1.46	1.57	1.92	1.96	2.40	3.24	14.55	5.42
	744	672	719	720	721	720	585	650	720	744	657	744	8396
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	-1.002	-1.067	-1.364	-1.783	-2.003	-2.100	-1.676	-1.819	-1.315	-1.341	-1.232	-1.956	-1.558
	7.23	11.15	5.92	1.40	1.04	1.28	1.50	2.18	.89	3.00	7.39	5.65	4.13
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	-1.777	-.859	-1.275	-.656	-2.002	-1.375	-1.998	-1.672	-1.535	-1.151	-.716	-.776	-1.321
	8.79	5.75	4.64	4.67	.96	1.20	1.60	1.39	1.25	3.46	8.15	9.04	4.47
	744	672	413	698	695	720	744	744	683	744	720	744	8321
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	-1.908	-1.121	-1.251	-1.175	-1.930	-1.720	-1.738	-1.615	-1.333	-1.254	-.938	-1.502	-1.463
	11.38	9.26	4.68	2.67	1.21	1.40	1.60	1.87	1.39	2.96	6.39	10.01	4.68
	2232	2016	1876	2138	2160	2160	2073	2138	2123	2232	2097	2232	25477
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

VENICE, FLA VARIABLE : AIR - SST DEG C DATES : 87/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1987	-1.286	-1.195	-.278	-1.138	-2.253	-3.075	-3.426	-3.186	-3.531	-2.444	-.802	-1.470	-2.208
	10.54	13.76	3.48	2.33	5.33	3.96	4.36	3.83	4.20	8.74	13.60	15.97	8.51
	744	210	161	562	744	720	744	744	683	744	720	744	7520
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	-1.286	-1.195	-.278	-1.138	-2.253	-3.075	-3.426	-3.186	-3.531	-2.444	-.802	-1.470	-2.208
	10.54	13.76	3.48	2.33	5.33	3.96	4.36	3.83	4.20	8.74	13.60	15.97	8.51
	744	210	161	562	744	720	744	744	683	744	720	744	7520
	1488	672	744	720	744	720	744	744	720	744	720	744	17544

C.3.5 SENSIBLE HEAT FLUX, QH, (Wm^{-2})

ALLIGATOR REEF, FLA   VARIABLE : QH W/M**2   DATES : 86/ 1/ 1: 0 TO 87/12/ 4:15
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1986	23.352	11.857	22.234	14.338	14.156	9.466	10.603	13.008	10.485	13.920	5.832	12.445	13.526
	1820.22	1185.30	2632.95	312.42	79.84	71.36	78.76	240.47	32.11	277.00	40.23	336.62	614.70
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	25.860	9.773		16.886	10.492	7.453	9.300	11.501	10.980	14.191	15.154	50.722	13.370
	1517.08	500.59		1003.11	46.19	40.60	90.36	70.92	101.67	339.97	1262.02	784.93	544.21
	489	672		720	705	510	744	744	582	75	720	88	6049
	744	672		720	744	720	744	744	720	744	720	744	8760
TOTAL	24.347	10.815	22.234	15.612	12.373	8.631	9.951	12.255	10.706	13.945	10.493	16.494	13.462
	1700.17	843.41	2632.95	658.94	66.78	59.55	84.92	156.16	63.21	282.37	672.42	521.90	585.88
	1233	1344	744	1440	1449	1230	1488	1488	1302	819	1440	832	14809
	1488	1344	1488	1440	1488	1440	1488	1488	1440	1488	1440	1488	17520

GRAND ISLE, LA   VARIABLE : QH W/M**2   DATES : 85/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	48.941	24.796	12.470	9.337	13.369	11.412	7.701	9.060	10.282	13.984	12.004	29.053	17.190
	6203.26	2069.01	526.04	164.18	182.83	101.26	55.29	182.70	247.35	480.20	512.92	2843.30	1307.57
	744	672	719	720	720	720	585	650	720	744	657	744	8395
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1986	16.321	17.899	14.041	12.882	15.845	13.577	10.770	12.374	8.715	10.379	17.823	21.065	14.290
	885.56	2327.69	1212.21	141.44	115.72	132.19	79.50	205.91	49.67	298.53	1343.52	658.54	620.19
	744	672	744	720	744	720	744	744	720	744	720	744	8760
	744	672	744	720	744	720	744	744	720	744	720	744	8760
1987	23.621	11.111	11.548	8.215	11.543	10.090	12.308	9.763	10.765	15.171	15.840	17.491	13.257
	1334.67	560.35	492.79	579.87	69.76	86.80	187.32	74.17	125.96	633.41	1372.74	1990.19	654.84
	744	672	413	698	695	720	744	744	683	744	720	744	8321
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	29.628	17.935	12.890	10.164	13.634	11.693	10.456	10.458	9.906	13.178	15.319	22.536	14.908
	3000.78	1681.94	791.07	295.92	126.31	108.72	114.67	154.91	141.89	474.45	1098.00	1852.41	860.69
	2232	2016	1876	2138	2159	2160	2073	2138	2123	2232	2097	2232	25476
	2976	2016	2232	2160	2232	2160	2232	2232	2160	2232	2160	2232	35064

VENICE, FLA   VARIABLE : OH W/M**2   DATES : 87/ 1/ 1: 0 TO 87/12/31:23
MEAN/VARIANCE/NO. OF DATA POINTS/NO. OF POINTS IN MONTH

	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	ANNUAL
1987	14.436	10.209	6.418	7.575	14.407	19.905	20.286	18.705	20.843	22.614	12.319	16.850	16.583
	872.58	615.76	673.56	96.68	202.73	198.41	247.50	255.13	280.88	805.91	1063.83	1301.35	569.20
	744	210	161	562	744	720	744	744	683	744	720	744	7520
	744	672	744	720	744	720	744	744	720	744	720	744	8760
TOTAL	14.436	10.209	6.418	7.575	14.407	19.905	20.286	18.705	20.843	22.614	12.319	16.850	16.583
	872.58	615.76	673.56	96.68	202.73	198.41	247.50	255.13	280.88	805.91	1063.83	1301.35	569.20
	744	210	161	562	744	720	744	744	683	744	720	744	7520
	1488	672	744	720	744	720	744	744	720	744	720	744	17544

APPENDIX D

WIND SPEED AND DIRECTION FREQUENCY DISTRIBUTION TABLES

D.1

WINTER SEASON (DECEMBER - MARCH)

D.1.1 NATIONAL WEATHER SERVICE (NWS) COASTAL STATIONS

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: KEY WEST   SPANNING 12/ 1 TO 3/31 YEARS: 1969 - 1986   49463 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.5	2.9	5.1	4.7	2.2	.6	.1	.0	.0	.0	.0	.0	.0	16.2	5.90	.37	15.43	2.54
30- 60	.5	3.9	6.1	4.5	1.2	.2	.0	.0	.0	.0	.0	.0	.0	16.4	5.28	.48	13.37	2.18
60- 90	.4	2.9	4.6	2.9	.5	.0	.0	.0	.0	.0	.0	.0	.0	11.5	5.00	.26	12.31	2.00
90-120	.3	2.5	5.4	5.0	1.2	.1	.0	.0	.0	.0	.0	.0	.0	14.5	5.57	.54	16.96	2.04
120-150	.3	3.0	5.1	3.8	.8	.1	.0	.0	.0	.0	.0	.0	.0	13.0	5.26	.17	15.42	2.05
150-180	.3	2.3	2.7	1.3	.3	.1	.0	.0	.0	.0	.0	.0	.0	6.9	4.66	.26	13.37	2.13
180-210	.2	1.1	1.1	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	3.1	4.70	.45	13.37	2.17
210-240	.2	1.4	1.1	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	3.1	4.14	.24	12.86	2.01
240-270	.2	.7	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.6	4.04	.26	17.48	2.17
270-300	.1	.6	.4	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.5	4.42	.51	12.15	2.39
300-330	.2	.8	.9	.9	.5	.2	.1	.0	.0	.0	.0	.0	.0	3.5	5.75	.34	13.89	2.78
330-360	.3	1.3	1.9	2.0	1.1	.4	.1	.0	.0	.0	.0	.0	.0	7.1	6.01	.40	16.98	2.60
CALM	1.5													1.5				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	5.1	23.3	34.9	26.5	8.2	1.6	.3	.1	.0	.0	.0	.0		100.00				
MEAN DIR	149	133	118	116	126	150	151	79	243	0	0	0	0					
STD DEV	104	92	87	93	117	141	148	128	93	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.25 M/S   MAXIMUM = 17.48 M/S   MINIMUM = .00 M/S   RANGE = 17.48 M/S
STANDARD DEVIATION = 2.20 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.19 M/S   STANDARD DEVIATION = 3.17 /S
MEAN Y COMPONENT = -.85 M/S   STANDARD DEVIATION = 4.10 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: FT.MEYER   SPANNING 12/ 1 TO 3/31 YEARS: 1969 - 1986   49463 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.9	5.6	5.1	1.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	13.8	4.09	.37	22.12	2.13
30- 60	1.1	611	3.1	1.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	11.7	3.68	.17	11.31	1.97
60- 90	1.1	5.1	2.5	1.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.8	3.66	.34	12.86	1.99
90-120	1.2	4.6	2.4	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.3	3.59	.36	10.29	2.03
120-150	.9	3.2	2.0	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.8	3.66	.18	13.36	2.02
150-180	.7	3.2	2.1	1.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	7.4	4.01	.34	11.32	2.22
180-210	.4	1.8	2.0	1.4	.2	.0	.0	.0	.0	.0	.0	.0	.0	5.8	4.63	.43	11.83	2.16
210-240	.5	2.0	2.0	1.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	5.7	4.33	.17	11.32	2.21
240-270	.2	.8	.7	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.1	4.11	.24	12.86	2.14
270-300	.4	1.6	1.3	.8	.2	.1	.0	.0	.0	.0	.0	.0	.0	4.4	4.64	.17	14.40	2.54
300-330	.5	2.2	2.0	1.6	.5	.1	.0	.0	.0	.0	.0	.0	.0	7.1	4.90	.34	15.93	2.60
330-360	.5	2.7	2.9	1.4	.2	.0	.0	.0	.0	.0	.0	.0	.0	7.8	4.41	.34	16.86	2.11
CALM	8.6													8.6				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	17.0	38.9	28.4	12.9	2.3	.4	.1	.0	.0	.0	.0	.0	.0	99.99				
MEAN DIR	144	137	154	175	208	256	266	285	180	0	0	0	0					
STD DEV	96	101	112	113	109	92	104	134	234	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 3.72 M/S   MAXIMUM = 22.12 M/S   MINIMUM = .00 M/S   RANGE = 22.12 M/S
STANDARD DEVIATION = 2.14 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.46 M/S   STANDARD DEVIATION = 2.82 M/S
MEAN Y COMPONENT = -.45 M/S   STANDARD DEVIATION = 3.16 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: TAMPA   SPANNING 12/ 1 TO 3/31 YEARS: 1969 - 1986   49464 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.6	5.9	4.3	1.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	12.4	3.94	1.03	10.29	2.01
30- 60	.8	5.6	3.7	1.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	11.2	3.73	.51	9.77	1.98
60- 90	.9	6.7	3.1	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	11.5	3.45	1.03	11.82	1.87
90-120	.6	4.2	2.6	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	8.1	3.65	.51	14.39	1.93
120-150	.5	3.8	3.2	1.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	8.5	3.97	1.03	11.83	1.99
150-180	.3	2.8	2.2	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.2	4.02	1.03	13.37	2.03
180-210	.2	2.1	2.3	1.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.6	4.44	1.03	15.43	2.09
210-240	.3	2.9	2.0	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.8	3.87	1.03	11.83	1.96
240-270	.2	1.3	1.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.8	3.90	1.03	12.34	1.99
270-300	.3	2.2	2.1	1.1	.3	.1	.0	.0	.0	.0	.0	.0	.0	6.0	4.63	1.03	15.43	2.41
300-330	.4	2.9	2.1	1.6	.5	.1	.0	.0	.0	.0	.0	.0	.0	7.6	4.77	1.03	16.46	2.58
330-360	.3	2.9	2.6	1.6	.4	.1	.0	.0	.0	.0	.0	.0	.0	7.8	4.60	.51	11.83	2.32
CALM	6.3													6.3				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	11.8	43.1	31.4	11.4	1.8	.4	.1	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	143	144	157	186	251	286	267	250	300	0	0	0	0					
STD DEV	100	102	106	117	112	80	82	98	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 3.78 M/S   MAXIMUM = 16.46 M/S   MINIMUM = .00 M/S   RANGE = 16.46 M/S
STANDARD DEVIATION = 1.95 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.36 M/S   STANDARD DEVIATION = 2.91 M/S
MEAN Y COMPONENT = -.37 M/S   STANDARD DEVIATION = 3.06 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: PENSACOL SPANNING 12/ 1 TO 3/31 YEARS: 1969 - 1986 49464 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.9	6.6	5.6	2.2	.3	.0	.0	.0	.0	.0	.0	.0	.0	15.5	4.17	.34	12.86	2.01
30- 60	.6	4.5	2.2	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	7.6	3.46	.51	12.85	1.67
60- 90	.5	4.1	2.2	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	7.3	3.65	.40	13.36	1.76
90-120	.5	3.6	3.4	1.8	.3	.0	.0	.0	.0	.0	.0	.0	.0	9.7	4.47	.28	12.86	2.10
120-150	.4	2.7	3.0	1.5	.3	.1	.0	.0	.0	.0	.0	.0	.0	7.9	4.63	.17	14.39	2.08
150-180	.5	2.3	2.4	1.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	6.8	4.52	.34	15.42	2.20
180-210	.3	1.5	1.5	.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	4.2	4.51	.17	11.83	2.12
210-240	.5	2.8	2.3	1.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	6.9	4.23	.00	12.86	2.21
240-270	.2	1.7	1.3	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	3.9	4.23	.34	13.51	2.11
270-300	.4	2.1	1.3	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.5	4.07	.34	15.43	2.15
300-330	.5	2.6	2.0	1.4	.4	.1	.0	.0	.0	.0	.0	.0	.0	7.0	4.56	.34	18.52	2.41
330-360	.6	4.8	4.1	3.2	.8	.1	.0	.0	.0	.0	.0	.0	.0	13.7	4.76	.51	14.40	2.35
CALM	4.9													4.9				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	10.8	39.1	31.3	15.3	3.0	.4	.0	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	166	157	162	195	221	226	201	230	0	310	0	0	0					
STD DEV	111	115	113	117	113	97	96	107	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.08 M/S MAXIMUM = 18.52 M/S MINIMUM = .00 M/S RANGE = 18.52 M/S
STANDARD DEVIATION = 2.06 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.28 M/S STANDARD DEVIATION = 2.91 M/S
MEAN Y COMPONENT = -.57 M/S STANDARD DEVIATION = 3.47 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: MOBILE SPANNING 12/ 1 TO 3/31 YEARS: 1969 - 1986 49464 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.6	4.6	5.8	3.0	.7	.1	.0	.0	.0	.0	.0	.0	.0	14.8	4.74	.34	13.37	2.19
30- 60	.6	4.8	2.9	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.1	3.74	.17	13.88	1.91
60- 90	.5	2.9	1.6	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.5	3.71	.37	13.89	1.94
90-120	.4	2.9	2.4	1.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	7.0	4.24	.34	15.43	2.17
120-150	.5	3.7	3.5	2.1	.8	.2	.0	.0	.0	.0	.0	.0	.0	10.9	4.84	.34	15.42	2.45
150-180	.6	3.7	3.0	1.8	.7	.2	.0	.0	.0	.0	.0	.0	.0	9.9	4.67	.17	23.66	2.53
180-210	.3	1.9	2.0	1.2	.4	.1	.0	.0	.0	.0	.0	.0	.0	5.8	4.79	.37	13.37	2.34
210-240	.6	3.1	2.4	1.2	.3	.1	.0	.0	.0	.0	.0	.0	.0	7.7	4.34	.51	22.63	2.32
240-270	.3	1.5	.7	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.8	3.65	.24	11.31	2.05
270-300	.5	2.1	1.1	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.4	3.82	.51	12.34	2.23
300-330	.6	3.3	2.6	1.7	.7	.1	.0	.0	.0	.0	.0	.0	.0	8.9	4.63	.34	13.37	2.48
330-360	.5	2.9	3.3	2.6	.9	.2	.0	.0	.0	.0	.0	.0	.0	10.4	5.09	.34	13.89	2.46
CALM	2.8													2.8				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	8.8	37.4	31.3	16.4	5.1	.9	.2	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	173	162	158	179	194	197	169	156	0	179	0	205	0					
STD DEV	106	106	111	116	112	101	80	61	0	99	0	79	0					

SUMMARY STATISTICS

MEAN SPEED = 4.35 M/S MAXIMUM = 23.66 M/S MINIMUM = .00 M/S RANGE = 23.66 M/S
STANDARD DEVIATION = 2.15 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.25 M/S STANDARD DEVIATION = 2.87 M/S
MEAN Y COMPONENT = -.26 M/S STANDARD DEVIATION = 3.90 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: BOOTHVL SPANNING 12/ 1 TO 3/31 YEARS: 1971 - 1986 34931 DATA POINTS - 78.6 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.9	4.0	4.5	3.7	1.3	.5	.0	.0	.0	.0	.0	.0	.0	15.1	5.22	.17	14.92	2.57
30- 60	.8	3.9	3.9	2.6	.8	.2	.0	.0	.0	.0	.0	.0	.0	12.3	4.82	.17	12.50	2.35
60- 90	1.0	3.3	2.4	1.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	8.1	4.00	.00	15.43	2.19
90-120	1.2	4.4	2.4	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	8.7	3.52	.24	12.86	1.83
120-150	1.0	4.8	4.0	1.6	.2	.0	.0	.0	.0	.0	.0	.0	.0	11.7	4.13	.29	14.39	2.02
150-180	.8	3.8	4.0	2.0	.8	.1	.0	.0	.0	.0	.0	.0	.0	11.5	4.69	.17	1.93	2.30
180-210	.5	1.8	1.6	.8	.3	.0	.0	.0	.0	.0	.0	.0	.0	5.0	4.44	.26	14.08	2.26
210-240	.5	1.4	1.2	.7	.2	.0	.0	.0	.0	.0	.0	.0	.0	4.0	4.35	.34	11.82	2.32
240-270	.3	.8	.9	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.5	4.58	.26	14.40	2.33
270-300	.4	1.3	1.1	.7	.3	.1	.0	.0	.0	.0	.0	.0	.0	3.9	4.66	.26	15.43	2.68
300-330	.5	2.0	1.6	1.2	.5	.1	.1	.0	.0	.0	.0	.0	.0	6.0	4.87	.24	15.43	2.68
330-360	.4	2.1	2.2	1.9	1.0	.2	.1	.0	.0	.0	.0	.0	.0	8.0	5.45	.05	15.43	2.69
CALM	3.2													3.2				
SPEED - M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	11.6	33.7	29.9	17.1	5.9	1.4	.3	.1	.0	.0	.0	.0	.0	100.00				
MEAN DIR	148	145	144	145	163	146	250	248	0	0	0	0	0					
STD DEV	96	96	100	114	126	134	132	104	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.45 M/S MAXIMUM = 15.93 M/S MINIMUM = .00 M/S RANGE = 15.93 M/S
STANDARD DEVIATION = 2.34 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.85 M/S STANDARD DEVIATION = 2.97 M/S
MEAN Y COMPONENT = -.52 M/S STANDARD DEVIATION = 3.93 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: PT.ARTHU   SPANNING 12/ 1 TO 3/31 YEARS: 1969 - 1986   49464 DATA POINS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.6	4.2	4.9	3.1	.7	.1	.0	.0	.0	.0	.0	.0	.0	13.5	4.84	.31	16.45	2.19
30- 60	.4	2.7	3.1	1.6	.2	.0	.0	.0	.0	.0	.0	.0	.0	8.1	4.56	.20	15.42	2.08
60- 90	.5	3.0	3.1	1.4	.3	.0	.0	.0	.0	.0	.0	.0	.0	8.3	4.47	.17	13.37	2.07
90-120	.5	3.3	3.9	1.9	.3	.0	.0	.0	.0	.0	.0	.0	.0	10.0	4.61	.34	13.37	2.05
120-150	.4	2.3	3.1	2.5	1.0	.2	.0	.0	.0	.0	.0	.0	.0	9.6	5.39	.17	14.39	2.45
150-180	.5	3.4	4.4	3.2	1.1	.2	.0	.0	.0	.0	.0	.0	.0	12.9	5.20	.31	13.89	2.33
180-210	.5	2.0	2.0	1.4	.5	.0	.0	.0	.0	.0	.0	.0	.0	6.4	4.79	.17	12.35	2.29
210-240	.6	2.7	1.4	.7	.2	.0	.0	.0	.0	.0	.0	.0	.0	5.6	3.96	.24	22.63	2.21
240-270	.4	1.3	.7	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.7	3.84	.12	14.40	2.22
270-300	.4	1.7	1.1	.5	.2	.1	.0	.0	.0	.0	.0	.0	.0	4.1	4.25	.27	13.88	2.31
300-330	.4	1.9	2.1	1.6	.7	.2	.0	.0	.0	.0	.0	.0	.0	6.8	5.19	.24	13.89	2.51
330-360	.5	2.3	2.9	2.8	.8	.2	.0	.0	.0	.0	.0	.0	.0	9.6	5.33	.18	12.86	2.39
CALM	2.4													2.4				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	8.2	30.8	32.5	21.1	6.0	1.2	.2	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	176	158	150	164	182	201	190	150	10	0	230	210	0					
STD DEV	103	102	103	108	106	105	96	94	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.71 M/S   MAXIMUM = 22.63 M/S   MINIMUM = .00 M/S   RANGE = 22.63 M/S
STANDARD DEVIATION = 2.21 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.77 M/S   STANDARD DEVIATION = 3.14 M/S
MEAN Y COMPONENT = -.04 M/S   STANDARD DEVIATION = 4.08 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: CORPUS SPANNING 12/ 1 TO 3/31 YEARS: 1969 - 1986 49464 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.4	3.6	5.9	6.1	3.4	.8	.1	.0	.0	.0	.0	.0	.0	20.3	6.06	.24	16.46	2.53
30- 60	.3	2.3	3.2	3.0	1.4	.3	.0	.0	.0	.0	.0	.0	.0	10.4	5.64	.34	14.40	2.42
60- 90	.3	1.9	2.3	1.4	.5	.0	.0	.0	.0	.0	.0	.0	.0	6.5	4.93	.42	11.83	2.23
90-120	.3	2.6	2.1	1.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	6.7	4.60	.00	15.95	2.13
120-150	.4	3.3	4.5	4.7	3.4	1.1	.3	.0	.0	.0	.0	.0	.0	17.7	6.33	.26	18.52	2.73
150-180	.4	2.2	3.7	4.0	3.2	1.5	.4	.1	.0	.0	.0	.0	.0	15.4	6.74	.28	16.98	2.87
180-210	.2	.9	.8	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	2.6	4.74	.26	12.86	2.49
210-240	.3	1.1	.7	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.3	3.70	.17	12.85	2.00
240-270	.2	.6	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.1	3.48	.28	15.42	2.25
270-300	.2	1.0	.4	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.8	3.82	.17	14.40	2.36
300-330	.3	1.4	1.1	.9	.5	.3	.1	.0	.0	.0	.0	.0	.0	4.5	5.49	.17	17.48	3.09
330-360	.3	2.0	2.5	2.3	1.6	.5	.1	.0	.0	.0	.0	.0	.0	9.4	5.99	.34	14.92	2.74
CALM	1.3													1.3				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	4.9	22.8	27.4	24.6	14.6	4.6	1.0	.2	.0	.0	.0	.0	.0	100.00				
MEAN DIR	167	149	129	125	135	156	166	198	190	150	0	0	0					
STD DEV	106	104	101	100	101	99	91	86	95	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.73 M/S MAXIMUM = 18.52 M/S MINIMUM = .00 M/S RANGE = 18.52 M/S
STANDARD DEVIATION = 2.63 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.76 M/S STANDARD DEVIATION = 2.93 M/S
MEAN Y COMPONENT = -.21 M/S STANDARD DEVIATION = 5.29 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: BROWNSV   SPANNING 12/ 1 TO 3/31 YEARS: 1969 - 1986   49464 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.8	3.7	3.2	2.6	.9	.2	.0	.0	.0	.0	.0	.0	.0	11.4	4.83	.51	13.37	2.52
30- 60	.5	2.4	1.8	1.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.0	4.21	.20	12.86	2.18
60- 90	.4	2.0	1.1	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.0	3.70	.51	12.35	1.95
90-120	.5	2.6	1.8	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.9	4.04	.17	11.83	2.13
120-150	.6	4.3	4.1	3.6	1.8	.5	.1	.0	.0	.0	.0	.0	.0	15.0	5.37	.37	13.89	2.67
150-180	.5	3.4	5.0	5.3	4.0	2.1	.9	.1	.0	.0	.0	.0	.0	21.3	6.73	.20	18.52	3.07
180-210	.3	.8	.9	.8	.5	.3	.1	.0	.0	.0	.0	.0	.0	3.6	5.83	.34	14.40	3.16
210-240	.4	.8	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.6	3.10	.24	15.93	2.00
240-270	.2	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8	2.90	.17	15.95	1.92
270-300	.3	.9	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.6	3.19	.00	10.79	1.84
300-330	.5	2.8	2.6	1.5	.4	.1	.0	.0	.0	.0	.0	.0	.0	7.9	4.59	.43	18.00	2.42
330-360	.7	4.1	4.8	4.7	1.8	.5	.1	.0	.0	.0	.0	.0	.0	16.6	5.44	.17	15.43	2.57
CALM	4.3													4.3				
SPEED ! M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	9.9	28.4	26.2	21.0	9.5	3.7	1.2	.1	.0	.0	.0	.0	.0	100.00				
MEAN DIR	167	168	178	184	186	184	182	188	171	235	0	0	0					
STD DEV	110	112	112	111	92	68	32	37	51	126	0	0	0					

SUMMARY STATISTICS

MEA SPEED = 5.03 M/S   MAXIMUM = 18.52 M/S   MINIMUM = .00 M/S   RANGE = 18.52 M/S
STANDARD DEVIATION = 2.75 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.73 M/S   STANDARD DEVIATION = 2.59 M/S
MEAN Y COMPONENT = .52 M/S   STANDARD DEVIATION = 5.03 M/S

D.1.2 NATIONAL DATA BUOY CENTER (NDBC) BUOYS AND PLATFORMS

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: 42001 SPANNING 12/ 1 TO 3/31 YEARS: 1976 - 1986 24522 DATA POINTS - 82.4 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.5	1.2	2.3	2.7	2.1	1.3	.7	.2	.0	.0	.0	.0	.0	10.9	7.25	.06	17.00	3.13
30- 60	.6	1.7	3.2	3.5	2.4	1.5	.3	.1	.0	.0	.0	.0	.0	13.3	6.73	.02	17.20	2.92
60- 90	.8	2.4	3.3	3.3	1.9	.6	.2	.0	.0	.0	.0	.0	.0	12.6	5.95	.06	18.45	2.75
90-120	.7	1.9	3.1	3.3	1.7	.6	.1	.0	.0	.0	.0	.0	.0	11.4	5.98	.03	21.00	2.73
120-150	.6	2.0	3.5	3.5	2.1	1.2	.5	.2	.0	.0	.0	.0	.0	13.5	6.63	.14	20.79	3.01
150-180	.5	1.1	2.6	2.4	1.5	1.2	.4	.1	.0	.0	.0	.0	.0	9.8	6.90	.12	20.32	3.3
180-210	.2	.8	1.2	1.5	.9	.4	.1	.0	.0	.0	.0	.0	.0	5.1	6.48	.16	19.07	2.96
210-240	.2	.5	.6	.6	.4	.2	.1	.0	.0	.0	.0	.0	.0	2.7	6.12	.06	15.99	3.06
240-270	.2	.5	.4	.4	.3	.1	.1	.0	.0	.0	.0	.0	.0	2.0	6.07	.19	19.61	3.67
270-300	.2	.5	.6	.6	.5	.4	.3	.1	.1	.0	.0	.0	.0	3.3	7.56	.13	20.07	4.09
300-330	.3	.7	.8	1.0	1.3	1.0	.6	.3	.1	.0	.0	.0	.0	6.1	8.19	.15	19.34	3.93
330-360	.4	.9	1.6	1.9	1.6	1.1	.8	.1	.0	.0	.0	.0	.0	8.6	7.51	.13	17.10	3.40
CALM	.8													.8				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	6.1	14.3	23.1	24.7	16.6	9.4	4.1	1.2	.4	.1	.0	.0	.0	100.00				
MEAN DIR	148	141	133	135	146	158	189	200	228	255	171	0	0					
STD DEV	102	96	93	97	108	114	126	118	104	63	82	0	0					

SUMMARY STATISTICS

MEAN SPEED = 6.70 M/S MAXIMUM = 21.00 M/S MINIMUM = .00 M/S RANGE = 21.00 M/S
STANDARD DEVIATION = 3.18 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.96 M/S STANDARD DEVIATION = 4.51 M/S
MEAN Y COMPONENT = -.71 M/S STANDARD DEVIATION = 5.50 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: 42002   SPANNING 12/ 1 TO 3/31 YEARS: 1976 - 1986   28636 DATA POINTS - 96.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.4	1.0	1.8	2.5	2.3	1.8	1.0	.3	.1	.0	.0	.0	.0	11.1	7.99	.07	18.05	3.42
30- 60	.4	1.4	2.2	2.5	2.5	1.3	.4	.1	.0	.0	.0	.0	.0	10.9	7.14	.14	17.89	3.05
60- 90	.6	1.8	2.5	2.6	1.8	.9	.3	.0	.0	.0	.0	.0	.0	10.4	6.37	.15	18.32	2.98
90-120	.6	2.0	3.3	3.5	2.2	.8	.4	.0	.0	.0	.0	.0	.0	12.9	6.41	.07	20.02	2.86
120-150	.6	2.0	4.6	5.5	3.3	1.8	.5	.2	.0	.0	.0	.0	.0	18.5	6.89	.09	18.28	2.75
150-180	.4	1.3	3.0	3.3	2.3	1.4	.6	.1	.0	.0	.0	.0	.0	12.4	7.05	.21	19.60	2.94
180-210	.4	.8	1.2	1.3	.7	.3	.0	.0	.0	.0	.0	.0	.0	4.9	5.94	.07	13.14	2.79
210-240	.2	.5	.5	.3	.2	.1	.0	.0	.0	.0	.0	.0	.0	1.9	5.08	.19	12.95	2.83
240-270	.3	.4	.4	.2	.1	.1	.0	.0	.0	.0	.0	.0	.0	1.4	4.20	.21	12.63	2.63
270-300	.3	.5	.4	.2	.3	.2	.1	.0	.0	.0	.0	.0	.0	2.1	6.10	.07	19.24	4.04
300-330	.3	.6	.8	.9	.8	.7	.5	.2	.1	.0	.0	.0	.0	4.8	7.89	.17	17.81	3.83
330-360	.3	.8	1.4	1.6	1.7	1.5	.9	.4	.1	.0	.0	.0	.0	8.5	8.32	.21	18.65	3.61
CALM	.2													.2				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	5.0	13.1	22.1	24.4	18.1	10.9	4.7	1.4	.3	.0	.0	.0	.0	100.00				
MEAN DIR	157	144	139	134	135	149	161	183	210	196	99	0	0					
STD DEV	97	93	87	87	98	112	126	138	138	116	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 6.96 M/S   MAXIMUM = 20.02 M/S   MINIMUM = .00 M/S   RANGE = 20.02 M/S
STANDARD DEVIATION = 3.15 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.59 M/S   STANDARD DEVIATION = 4.14 M/S
MEAN Y COMPONENT = -.24 M/S   STANDARD DEVIATION = 5.87 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: 42003 SPANNING 12/ 1 TO 3/31 YEARS: 1977 - 1986 22456 DATA POINTS - 83.4 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.6	1.6	2.9	3.0	1.7	.9	.4	.2	.0	.0	.0	.0	.0	11.2	6.60	.04	17.90	3.09
30- 60	.6	2.0	3.1	3.1	2.2	.7	.2	.0	.0	.0	.0	.0	.0	11.9	6.30	.16	17.38	2.79
60- 90	.5	1.6	3.1	3.9	2.0	1.0	.3	.1	.0	.0	.0	.0	.0	12.5	6.59	.06	15.54	2.73
90-120	.4	1.5	2.6	3.5	3.2	1.4	.4	.1	.0	.0	.0	.0	.0	13.2	7.12	.22	16.40	2.90
120-150	.3	1.6	2.8	3.4	2.9	1.2	.3	.1	.0	.0	.0	.0	.0	12.7	6.99	.11	17.85	2.79
150-180	.3	1.1	1.9	1.8	1.9	.8	.3	.1	.0	.0	.0	.0	.0	8.1	6.98	.15	18.02	3.03
180-210	.2	.8	1.1	1.3	.6	.6	.2	.1	.0	.0	.0	.0	.0	4.9	6.88	.07	18.23	3.35
210-240	.2	.4	.5	.6	.5	.4	.1	.1	.0	.0	.0	.0	.0	2.8	7.05	.09	16.39	3.58
240-270	.2	.3	.4	.5	.5	.2	.1	.1	.0	.0	.0	.0	.0	2.2	6.93	.15	16.26	3.57
270-300	.3	.4	.4	.7	.7	.6	.4	.1	.1	.0	.0	.0	.0	3.6	7.94	.06	17.40	3.90
300-330	.3	.6	1.1	1.6	1.4	1.0	.6	.3	.1	.0	.0	.0	.0	6.8	8.07	.09	19.27	3.66
330-360	.4	1.1	2.0	2.7	1.7	1.1	.5	.1	.0	.0	.0	.0	.0	9.7	7.12	.15	17.69	3.15
CALM	.2													.2				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	4.5	13.0	21.9	25.8	19.2	9.8	3.9	1.5	.3	.0	.0	.0	.0	100.00				
MEAN DIR	152	139	135	144	149	171	190	191	234	266	0	0	0					
STD DEV	110	102	102	105	102	107	114	114	107	86	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 6.93 M/S MAXIMUM = 19.27 M/S MINIMUM = .00 M/S RANGE = 19.27 M/S
STANDARD DEVIATION = 3.06 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.00 M/S STANDARD DEVIATION = 4.91 M/S
MEAN Y COMPONENT = -.67 M/S STANDARD DEVIATION = 5.37 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: 42007 SPANNING 12/ 1 TO 3/31 YEARS: 1983 - 1986 4805 DATA POINTS - 70.9 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.9	2.1	2.4	2.6	2.3	1.1	.1	.0	.0	.0	.0	.0	.0	11.6	6.23	.07	13.79	3.00
30- 60	.6	1.6	2.4	3.6	2.7	.7	.1	.0	.0	.0	.0	.0	.0	11.7	6.52	.09	13.05	2.63
60- 90	.7	2.0	3.0	2.9	.8	.2	.1	.0	.0	.0	.0	.0	.0	9.9	5.47	.07	16.47	2.64
90-120	.9	2.0	5.4	3.4	.5	.1	.1	.0	.0	.0	.0	.0	.0	12.5	5.24	.07	17.16	2.13
120-150	1.4	2.8	3.4	2.6	.5	.1	.0	.0	.0	.0	.0	.0	.0	11.0	4.82	.26	17.21	2.32
150-180	.7	2.2	2.3	.9	.5	.1	.0	.0	.0	.0	.0	.0	.0	6.7	4.56	.15	13.49	2.22
180-210	.6	2.4	3.0	1.9	.4	.0	.0	.0	.0	.0	.0	.0	.0	8.4	4.82	.07	12.40	2.17
210-240	.7	1.4	2.0	.8	.4	.0	.0	.0	.0	.0	.0	.0	.0	5.3	4.56	.09	9.25	2.23
240-270	.6	1.4	1.5	1.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	4.9	4.57	.07	15.66	2.51
270-300	.7	1.5	1.6	1.0	.3	.2	.1	.0	.0	.0	.0	.0	.0	5.3	4.97	.07	14.30	2.77
300-330	.7	1.0	1.0	1.0	1.2	.5	.2	.0	.0	.0	.0	.0	.0	5.6	6.26	.09	14.79	3.36
330-360	.7	1.2	1.0	1.5	.9	.6	.1	.0	.0	.0	.0	.0	.0	6.0	6.00	.15	13.00	3.06
CALM	1.1													1.1				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	10.4	21.7	29.1	23.1	10.8	3.6	1.0	.2	.1	.0	.0	.0	.0	100.00				
MEAN DIR	172	162	14	137	133	147	175	191	104	0	0	0	0					
STD DEV	103	95	87	99	118	137	129	104	35	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.36 M/S MAXIMUM = 17.21 M/S MINIMUM = .00 M/S RANGE = 17.21 M/S
STANDARD DEVIATION = 2.67 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.30 M/S STANDARD DEVIATION = 3.96 M/S
MEAN Y COMPONENT = -.58 M/S STANDARD DEVIATION = 4.27 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: 42008 SPANNING 12/ 1 TO 3/31 YEARS: 1980 - 1983 11475 DATA POINTS - 98.6 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.2	1.1	2.3	3.1	2.4	1.8	.9	.3	.1	.0	.0	.0	.0	12.1	7.81	.08	16.84	3.18
30- 60	.4	1.4	2.6	2.3	1.9	1.2	.5	.3	.1	.0	.0	.0	.0	10.8	7.13	.08	17.13	3.27
60- 90	.4	1.8	3.7	2.3	1.2	.7	.3	.1	.0	.0	.0	.0	.0	10.5	6.10	.08	15.80	2.86
90-120	.4	1.9	4.3	2.8	1.2	.1	.1	.0	.0	.0	.0	.0	.0	10.7	5.56	.06	12.62	2.17
120-150	.6	1.9	4.3	3.5	1.0	.4	.1	.0	.0	.0	.0	.0	.0	11.8	5.74	.13	16.26	2.36
150-180	.4	1.9	3.4	2.0	1.0	.3	.1	.0	.0	.0	.0	.0	.0	9.0	5.61	.12	14.97	2.38
180-210	.3	1.5	2.0	1.0	.4	.1	.0	.0	.0	.0	.0	.0	.0	5.4	5.01	.14	13.82	2.29
210-240	.4	1.2	1.0	.9	.3	.0	.0	.0	.0	.0	.0	.0	.0	3.8	4.77	.15	11.41	2.32
240-270	.2	.6	.7	.4	.1	.1	.0	.0	.0	.0	.0	.0	.0	2.0	4.83	.14	12.56	2.59
270-300	.3	.6	.9	.4	.3	.3	.1	.1	.0	.0	.0	.0	.0	3.1	6.06	.12	16.99	3.55
300-330	.3	1.0	1.0	1.2	1.1	1.0	.7	.4	.1	.1	.0	.0	.0	6.9	8.04	.26	20.72	4.07
330-360	.3	.9	1.9	2.5	2.5	2.4	1.8	.5	.1	.0	.0	.0	.0	12.9	8.63	.08	19.33	3.47
CALM	1.1													1.1				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	5.3	15.7	28.2	22.4	13.4	8.3	4.5	1.7	.4	.1	.0	.0	.0	100.00				
MEAN DIR	173	159	144	145	159	182	214	205	205	316	300	0	0					
STD DEV	98	93	91	105	125	141	142	144	145	49	0	0	0					

SUMMARY STATISTICS

MEAN SPEDD = 6.53 M/S MAXIMUM = 20.72 M/S MINIMUM = .00 M/S RANGE = 20.72 M/S
STANDARD DEVIATION = 3.20 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.47 M/S STANDARD DEVIATION = 4.22 M/S
MEAN Y COMPONENT = -1.62 M/S STANDARD DEVIATION = 5.51 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: 42009   SPANNING 12/ 1 TO 3/31 YEARS: 1980 - 1986   7860 DATA POINTS - 43.2 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.0	2.2	3.0	2.4	1.7	1.1	.2	.0	.0	.0	.0	.0	.0	11.6	5.95	.13	13.71	3.02
30- 60	.7	2.1	2.0	1.9	1.0	.4	.1	.0	.0	.0	.0	.0	.0	8.2	5.52	.18	13.38	2.72
60- 90	.9	1.4	2.0	2.0	.8	.4	.3	.2	.1	.0	.0	.0	.0	8.2	6.27	.07	19.18	3.64
90-120	.8	1.9	2.8	2.3	1.2	.5	.4	.0	.1	.1	.0	.0	.0	10.0	5.99	.06	19.06	3.21
120-150	.7	1.8	3.5	3.8	1.7	1.0	.3	.0	.0	.0	.0	.0	.0	12.8	6.23	.15	14.88	2.75
150-180	.7	1.7	2.1	1.4	.8	.5	.2	.0	.0	.0	.0	.0	.0	7.4	5.63	.39	14.09	2.92
180-210	.6	1.2	1.0	.4	.5	.3	.0	.0	.0	.0	.0	.0	.0	4.0	4.98	.13	12.48	2.88
210-240	.4	.8	.7	.4	.3	.2	.1	.0	.0	.0	.0	.0	.0	2.9	5.05	.09	13.26	3.11
240-270	.4	.7	1.3	1.6	1.0	.5	.2	.1	.0	.0	.0	.0	.0	5.8	6.68	.20	16.64	3.05
270-300	.6	1.4	2.0	1.8	1.7	.9	.3	.1	.0	.0	.0	.0	.0	8.7	6.61	.06	17.38	3.29
300-330	.8	2.0	1.8	1.7	1.6	.9	.3	.1	.0	.0	.0	.0	.0	9.1	6.25	.09	18.78	3.29
330-360	.7	2.1	2.4	2.5	1.5	.8	.3	.0	.0	.0	.0	.0	.0	10.4	6.14	.14	14.08	2.95
CALM	.9													.9				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	9.2	19.3	24.4	22.3	13.9	7.5	2.5	.5	.2	.1	.0	.0	.0	100.00				
MEAN DIR	168	170	165	168	184	184	187	178	148	118	0	0	0					
STD DEV	109	112	108	110	113	115	110	105	91	83	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.98 M/S   MAXIMUM = 19.18 M/S   MINIMUM = .00 M/S   RANGE = 19.18 M/S
STANDARD DEVIATION = 3.09 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.59 M/S   STANDARD DEVIATION = 4.86 M/S
MEAN Y COMPONENT = -.78 M/S   STANDARD DEVIATION = 4.56 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: 42010/11   SPANNING 12/ 1 TO 3/31 YEARS: 1981 - 1983   7212 DATA POINTS - 82.6 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.4	1.5	2.4	2.7	2.9	2.4	1.7	.3	.0	.0	.0	.0	.0	14.3	8.02	.06	17.16	3.39
30- 60	.4	1.4	2.4	2.5	1.7	2.2	1.0	.2	.0	.0	.0	.0	.0	11.9	7.65	.44	20.52	3.40
60- 90	.5	1.4	1.9	1.6	1.1	.5	.2	.0	.0	.0	.0	.0	.0	7.2	6.05	.08	14.65	3.01
90-120	.3	1.3	2.8	2.6	1.8	.8	.6	.2	.0	.0	.0	.0	.0	10.3	6.87	.41	15.56	3.01
120-150	.4	1.7	3.6	3.6	1.8	.7	.1	.0	.0	.0	.0	.0	.0	12.0	6.26	.10	13.66	2.37
150-180	.4	1.5	3.3	2.8	1.1	.4	.0	.0	.0	.0	.0	.0	.0	9.6	5.90	.03	14.29	2.28
180-210	.3	1.7	1.9	1.1	.6	.1	.0	.0	.0	.0	.0	.0	.0	5.8	5.13	.17	11.66	2.24
210-240	.3	1.8	2.1	1.5	.4	.0	.0	.0	.0	.0	.0	.0	.0	6.2	4.97	.16	12.25	2.17
240-270	.3	.6	1.3	.8	.3	.1	.0	.0	.0	.0	.0	.0	.0	3.4	5.28	.29	13.07	2.45
270-300	.2	.7	.9	.9	.3	.3	.0	.1	.1	.0	.0	.0	.0	3.6	6.13	.24	18.67	3.51
300-330	.2	.8	1.0	.8	.9	.7	.6	.4	.1	.1	.0	.0	.0	5.7	8.35	.49	20.71	4.32
330-360	.2	.8	1.4	1.5	2.3	1.6	.6	.2	.0	.0	.0	.0	.0	8.8	8.09	.57	20.97	3.31
CALM	1.3													1.3				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	5.3	15.4	25.0	22.4	15.5	9.7	4.8	1.4	.2	.2	.1	.0	.0	100.00				
MEAN DIR	156	160	155	146	151	133	119	176	283	290	255	0	0					
STD DEV	102	96	93	96	116	127	127	142	90	91	141	0	0					

SUMMARY STATISTICS

MEAN SPEED = 6.71 M/S   MAXIMUM = 20.97 M/S   MINIMUM = .00 M/S   RANGE = 20.97 M/S
STANDARD DEVIATION = 3.25 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES COCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.53 M/S   STANDARD DEVIATION = 4.47 M/S
MEAN Y COMPONENT = -1.14 M/S   STANDARD DEVIATION = 5.66 M/S

D.1.3 NATIONAL DATA BUOY CENTER (NDBC) CMAN STATIONS

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: ALRF1 SPANNING 12/ 1 TO 3/31 YEARS: 1985 - 1987 4899 DATA POINTS - 95.1 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.3	2.1	4.1	3.0	1.2	.3	.1	.0	.0	.0	.0	.0	.0	11.1	5.64	.52	13.92	2.55
30- 60	.4	1.0	1.2	1.9	1.1	1.0	.5	.4	.0	.0	.0	.0	.0	7.6	7.60	.52	16.49	3.74
60- 90	.2	1.1	1.9	2.3	2.7	2.4	.8	.2	.0	.0	.1	.0	.0	11.7	8.16	.52	21.13	3.31
90-120	.3	.9	1.3	2.2	3.4	2.4	1.0	.3	.0	.0	.1	.0	.0	11.8	8.64	.52	22.68	3.18
120-150	.2	.8	2.1	2.4	2.4	1.5	.9	.2	.1	.0	.0	.0	.0	10.6	7.87	.52	17.01	3.20
150-180	.2	.6	1.5	1.7	.9	.8	.3	.0	.0	.0	.0	.0	.0	6.0	7.04	.52	16.49	3.08
180-210	.1	.8	.7	.5	.4	.4	.2	.2	.0	.0	.0	.0	.0	3.4	6.96	1.03	17.01	3.99
210-240	.3	1.2	1.4	1.2	.4	.2	.1	.0	.0	.0	.0	.0	.0	4.9	5.45	.52	20.62	3.25
240-270	.3	.9	.4	.3	.1	.1	.1	.0	.0	.0	.0	.0	.0	2.3	4.43	.52	14.95	3.06
270-300	.6	1.6	1.4	.8	1.1	.5	.3	.1	.0	.0	.0	.0	.0	6.5	6.08	.52	15.46	3.64
300-330	.3	1.4	1.2	1.1	1.0	.9	.4	.3	.0	.0	.0	.0	.0	6.7	7.00	.52	19.07	3.90
330-360	.6	1.8	2.2	1.8	1.4	1.0	.1	.1	.0	.0	.0	.0	.0	9.1	6.24	.52	17.01	3.20
CALM	8.4													8.4				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	12.3	14.3	19.4	19.2	16.2	11.5	4.7	1.9	.3	.1	.2	.0	.0	100.00				
MEAN DIR	204	187	157	147	152	154	145	164	165	130	114	120	0					
STD DEV	112	116	114	103	96	94	82	106	89	110	34	0	0					

SUMMARY STATISTICS

MEAN SPEED = 6.47 M/S MAXIMUM = 22.68 M/S MINIMUM = .00 M/S RANGE = 22.68 M/S
STANDARD DEVIATION = 3.85 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.88 M/S STANDARD DEVIATION = 5.40 M/S
MEAN Y COMPONENT = -.18 M/S STANDARD DEVIATION = 4.90 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: VENF1   SPANNING 12/ 1 TO 3/31 YEARS: 1986 - 1987   2893 DATA POINTS - 99.6 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.5	4.4	2.6	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.4	3.44	.52	9.28	2.08
30- 60	1.9	7.5	3.6	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	13.8	3.35	.52	8.76	1.94
60- 90	1.2	7.7	2.8	.7	.1	.1	.1	.0	.0	.0	.0	.0	.0	12.6	3.53	.52	12.37	1.94
90-120	1.0	3.9	2.7	.9	.2	.0	.0	.0	.0	.0	.0	.0	.0	8.7	3.83	.52	9.79	2.06
120-150	1.1	2.6	3.0	2.8	.8	.2	.0	.0	.0	.0	.0	.0	.0	10.5	4.97	.52	14.43	2.68
150-180	.7	2.4	2.4	1.6	.8	.2	.0	.0	.0	.0	.0	.0	.0	8.1	4.81	1.03	11.86	2.72
180-210	.4	1.2	.4	.4	.0	.1	.0	.0	.0	.0	.0	.0	.0	2.5	3.73	.52	10.82	2.52
210-240	.4	1.5	.6	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.8	3.35	.52	10.82	2.20
240-270	.3	1.1	.5	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	2.3	4.05	.52	11.34	2.58
270-300	.6	1.4	.9	.9	1.0	.2	.2	.0	.0	.0	.0	.0	.0	5.2	5.77	.52	14.95	3.27
300-330	.5	1.3	1.6	2.6	2.3	1.4	1.0	.2	.0	.0	.0	.0	.0	11.0	7.57	.52	15.98	3.35
330-360	.6	.8	1.3	1.6	1.4	1.2	.1	.1	.0	.0	.0	.0	.0	7.2	6.93	.52	14.95	3.34
CALM	5.9													5.9				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	16.1	35.8	22.5	13.3	7.1	3.4	1.4	.4	.0	.0	.0	.0	.0	100.00				
MEAN DIR	133	117	139	199	257	292	291	301	0	0	0	0	0					
STD DEV	101	85	96	103	94	84	90	77	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.39 M/S   MAXIMUM = 15.98 M/S   MINIMUM = .00 M/S   RANGE = 15.98 M/S
STANDARD DEVIATION = 2.93 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.30 M/S   STANDARD DEVIATION = 3.68 M/S
MEAN Y COMPONENT = -.64 M/S   STANDARD DEVIATION = 3.71 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: CSBF1   SPANNING 12/ 1 TO 3/31 YEARS: 1984 - 1987   8694 DATA POINTS - 99.8 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	4.8	6.7	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	12.6	2.26	.52	6.19	1.50
30- 60	4.0	4.9	.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	9.8	2.26	.52	6.19	1.49
60- 90	3.0	7.4	2.6	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	13.3	2.86	.52	7.73	1.74
90-120	2.0	5.2	1.8	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	9.3	2.91	.52	8.25	1.80
120-150	1.6	2.8	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.0	2.50	.52	7.73	1.63
150-180	1.1	2.5	1.6	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.8	3.53	.26	10.31	2.17
180-210	.4	1.0	.6	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.3	3.67	.52	12.37	2.36
210-240	.8	1.7	1.1	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	4.3	3.77	.52	12.37	2.43
240-270	.3	.7	1.0	.5	.3	.1	.0	.0	.0	.0	.0	.0	.0	2.9	4.91	.52	13.40	2.56
270-300	.5	1.9	2.6	2.0	1.0	.4	.2	.0	.0	.0	.0	.0	.0	8.6	5.71	.52	14.43	2.99
300-330	1.3	3.1	1.6	.9	.3	.1	.0	.0	.0	.0	.0	.0	.0	7.3	3.76	.52	11.34	2.36
330-360	2.7	5.4	1.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	9.8	2.65	.52	7.73	1.70
CALM	8.8													8.8				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	31.3	43.4	17.0	5.5	2.0	.6	.3	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	132	149	188	242	261	281	277	283	0	0	0	0	0					
STD DEV	113	112	107	81	64	35	30	38	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 2.91 M/S   MAXIMUM = 14.43 M/S   MINIMUM = .00 M/S   RANGE = 14.43 M/S
STANDARD DEVIATION = 2.10 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = .05 M/S   STANDARD DEVIATION = 2.88 M/S
MEAN Y COMPONENT = -.36 M/S   STANDARD DEVIATION = 2.10 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: BURL1   SPANNING 12/ 1 TO 3/31 YEARS: 1984 - 1987   8622 DATA POINTS - 99.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.4	1.6	3.1	4.3	2.5	.8	.1	.0	.0	.0	.0	.0	.0	12.8	6.40	.00	14.43	2.66
30- 60	.8	1.5	2.2	1.3	.7	.4	.1	.0	.0	.0	.0	.0	.0	7.1	5.37	.28	15.46	3.09
60- 90	.5	1.1	1.6	1.9	1.5	.5	.1	.0	.0	.0	.0	.0	.0	7.2	6.35	.52	16.49	2.99
90-120	.4	.9	1.3	2.8	2.1	1.0	.5	.1	.0	.0	.0	.0	.0	9.0	7.37	.51	17.01	3.02
120-150	.3	.	1.4	1.6	2.4	1.0	.3	.1	.0	.0	.0	.0	.0	8.0	7.52	.52	18.04	3.09
150-180	.3	.6	1.0	1.3	1.1	.4	.2	.0	.0	.0	.0	.0	.0	4.9	6.73	.52	18.04	3.07
180-210	.2	.6	.6	.6	.3	.2	.0	.0	.0	.0	.0	.0	.0	2.5	5.56	.24	18.04	3.35
210-240	.4	1.1	1.4	1.1	.7	.5	.2	.0	.0	.0	.0	.0	.0	5.3	6.08	.52	18.04	3.21
240-270	.3	.5	.8	.5	.6	.4	.4	.1	.0	.0	.0	.0	.0	3.6	7.07	.27	17.53	3.74
270-300	.4	1.2	1.3	1.2	1.0	1.0	.7	.3	.1	.0	.0	.0	.0	7.0	7.49	.24	20.10	4.00
300-330	.5	1.0	1.5	1.5	1.4	1.3	.9	.3	.1	.0	.0	.0	.0	8.5	7.73	.49	17.01	3.78
330-360	.4	1.7	3.9	5.2	4.0	2.2	1.0	.4	.1	.0	.0	.0	.0	18.9	7.48	.49	18.56	3.14
CALM	5.1													5.1				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	10.0	12.5	20.1	23.3	18.4	9.7	4.3	1.3	.3	.1	.0	.0	.0	100.00				
MEAN DIR	172	176	179	177	186	214	250	260	259	258	280	0	0					
STD DEV	110	116	122	124	119	115	100	101	90	83	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 6.57 M/S   MAXIMUM = 20.10 M/S   MINIMUM = .00 M/S   RANGE = 20.10 M/S
STANDARD DEVIATION = 3.50 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.12 M/S   STANDARD DEVIATION = 5.12 M/S
MEAN Y COMPONENT = -1.56 M/S   STANDARD DEVIATION = 5.17 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: GDIL1 SPANNING 12/ 1 TO 3/31 YEARS: 1984 - 1987 8381 DATA POINTS - 96.2 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.0	2.2	3.3	3.8	2.9	1.6	.7	.1	.0	.0	.0	.0	.0	15.7	6.64	.52	17.53	3.43
30- 60	.6	2.6	4.3	3.5	1.8	.5	.1	.0	.0	.0	.0	.0	.0	13.4	5.60	.29	16.49	2.81
60- 90	.5	3.0	3.6	1.4	.3	.1	.1	.0	.0	.0	.0	.0	.0	9.1	4.57	.22	17.53	2.42
90-120	.8	2.9	3.1	1.8	.5	.0	.0	.0	.0	.0	.0	.0	.0	9.2	4.54	.52	15.98	2.57
120-150	.7	2.6	2.8	1.6	.5	.2	.0	.0	.0	.0	.0	.0	.0	8.3	4.67	.52	13.92	2.59
150-180	.5	2.1	2.3	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.9	4.11	.52	12.37	2.27
180-210	.2	1.4	.8	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.7	3.75	.52	8.76	1.99
210-240	.7	2.0	1.8	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.6	4.00	.52	10.82	2.40
240-270	.3	1.3	1.0	.8	.4	.0	.0	.0	.0	.0	.0	.0	.0	3.9	4.62	.52	11.34	2.73
270-300	.5	1.5	1.1	1.2	.6	.2	.1	.0	.0	.0	.0	.0	.0	5.2	5.18	.51	14.43	3.20
300-330	.8	1.5	1.4	1.2	1.1	.6	.2	.0	.0	.0	.0	.0	.0	6.8	5.74	.34	14.95	3.49
330-360	.7	1.5	1.7	2.4	2.1	1.0	.3	.1	.0	.0	.0	.0	.0	9.8	6.62	.40	16.49	3.42
CALM	4.5													4.5				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	11.8	24.6	27.3	19.7	10.5	4.2	1.5	.3	.1	.0	.0	.0	.0	100.00				
MEAN DIR	172	159	141	148	160	159	147	177	71	0	0	0	0					
STD DEV	109	96	98	118	137	147	151	153	124	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.07 M/S MAXIMUM = 17.53 M/S MINIMUM = .00 M/S RANGE = 17.53 M/S
STANDARD DEVIATION = 2.94 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .0 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.86 M/S STANDARD DEVIATION = 3.74 M/S
MEAN Y COMPONENT = -1.48 M/S STANDARD DEVIATION = 4.17 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: SRST2 SPANNING 12/ 1 TO 3/31 YEARS: 1984 - 1987 7968 DATA POINTS - 91.5 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.5	3.8	3.3	2.1	.8	.2	.1	.0	.0	.0	.0	.0	.0	11.7	4.49	.50	13.92	2.62
30- 60	1.1	4.1	3.7	1.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	10.3	3.96	.34	10.82	2.06
60- 90	.7	2.5	2.0	1.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	6.7	4.22	.40	10.31	2.28
90-120	.6	1.6	3.9	2.7	1.2	.2	.0	.0	.0	.0	.0	.0	.0	10.1	5.46	.52	12.37	2.41
120-150	.5	2.9	3.9	3.5	1.3	.4	.1	.0	.0	.0	.0	.0	.0	12.5	5.48	.51	14.43	2.57
150-180	.6	2.9	3.4	1.5	.8	.2	.0	.0	.0	.0	.0	.0	.0	9.3	4.79	.51	11.86	2.52
180-210	.5	1.6	1.4	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.3	4.07	.52	8.76	2.09
210-240	.7	1.7	2.1	1.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.7	4.17	.18	9.79	2.25
240-270	.3	.6	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.4	3.29	.52	8.25	1.97
270-300	.7	2.5	.7	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.4	3.44	.52	13.92	2.19
300-330	1.2	3.4	1.6	.8	.3	.1	.0	.0	.0	.0	.0	.0	.0	7.4	3.79	.28	12.89	2.40
330-360	1.3	4.5	3.3	2.2	.7	.1	.0	.0	.0	.0	.0	.0	.0	12.1	4.39	.00	13.40	2.46
CALM	4.0													4.0				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	13.6	32.3	29.6	17.4	5.7	1.2	.2	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	177	177	155	157	152	162	146	150	0	0	0	0	0					
STD DEV	121	116	100	11	98	93	107	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.32 M/S MAXIMUM = 14.43 M/S MINIMUM = .00 M/S RANGE = 14.43 M/S
STANDARD DEVIATION = 2.37 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.96 M/S STANDARD DEVIATION = 3.08 M/S
MEAN Y COMPONENT = -.02 M/S STANDARD DEVIATION = 3.73 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: PTAT2   SPANNING 12/ 1 TO 3/31 YEARS: 1984 - 1987   8712 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.7	2.4	3.6	3.6	3.1	1.4	.4	.2	.0	.0	.0	.0	.0	15.4	6.61	.34	17.01	3.11
30- 60	.7	2.1	3.0	1.6	1.0	.2	.0	.0	.0	.0	.0	.0	.0	8.7	5.08	.35	12.89	2.61
60- 90	.4	2.9	2.5	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.8	4.10	.52	10.31	2.01
90-120	.7	3.1	4.0	3.1	.8	.0	.0	.0	.0	.0	.0	.0	.0	11.7	4.92	.52	12.37	2.35
120-150	.8	2.7	4.4	3.2	1.5	.4	.1	.0	.0	.0	.0	.0	.0	13.1	5.47	.52	13.92	2.62
150-180	.6	1.8	2.2	1.5	.6	.2	.0	.0	.0	.0	.0	.0	.0	6.8	4.97	.52	11.34	2.53
180-210	.3	.8	.6	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.9	3.51	.52	7.73	2.00
210-240	.5	1.2	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.3	2.97	.52	9.28	1.89
240-270	.3	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.2	2.58	.52	7.22	1.76
270-300	.6	1.3	.6	.5	.4	.1	.0	.0	.0	.0	.0	.0	.0	3.4	4.59	.14	14.95	3.04
300-330	.7	1.7	1.7	1.7	1.1	.4	.1	.0	.0	.0	.0	.0	.0	7.4	5.59	.45	15.46	2.95
330-360	.8	2.6	3.4	4.1	2.8	1.7	.5	.1	.0	.0	.0	.0	.0	16.0	6.65	.52	18.56	3.17
CALM	5.2													5.2				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	12.3	23.5	26.4	20.3	11.5	4.5	1.1	.3	.1	.0	.0	.0	.0	100.00				
MEAN DIR	178	162	149	165	168	192	204	163	183	347	0	0	0					
STD DEV	108	105	105	120	134	147	153	165	177	42	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.17 M/S   MAXIMUM = 18.56 M/S   MINIMUM = .00 M/S   RANGE = 18.56 M/S
STANDARD DEVIATION = 2.96 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.10 M/S   STANDARD DEVIATION = 3.30 M/S
MEAN Y COMPONENT = -1.43 M/S   STANDARD DEVIATION = 4.63 M/S

D.1.4 OCEAN CURRENT MEASUREMENT PROGRAM (OCMP) PLATFORM

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: E1331 SPANNING 12/ 1 TO 3/31 YEARS: 1972 - 1975 6160 DATA POINTS - 52.9 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.6	.7	1.0	1.3	1.4	.8	.5	.2	.1	.2	.0	.0	.0	6.9	8.19	.00	27.71	4.63
30- 60	.3	.6	.6	.8	1.2	1.3	.8	.2	.1	.0	.0	.0	.0	5.9	8.72	.04	21.92	3.95
60- 90	.3	.5	.6	.9	.9	.4	.3	.2	.1	.2	.2	.0	.0	4.6	8.61	.13	22.09	5.18
90-120	.4	.4	.5	.8	1.1	.9	.7	.5	.1	.0	.0	.0	.0	5.5	8.91	.00	18.34	4.17
120-150	.8	.5	1.0	1.6	2.5	1.3	1.3	.9	.4	.0	.0	.0	.0	10.4	9.03	.01	20.40	4.17
150-180	.9	1.0	1.5	3.3	3.8	2.9	1.7	.5	.3	.1	.0	.1	.0	16.2	8.71	.01	25.67	3.94
180-210	.4	1.0	1.5	1.9	1.9	1.8	1.0	.5	.3	.0	.0	.0	.0	10.3	8.59	.02	24.79	3.98
210-240	.4	.6	1.0	.6	.6	.5	.7	.6	.1	.0	.0	.0	.0	5.0	8.07	.00	17.43	4.57
240-270	.4	.9	.8	1.2	1.0	.9	.3	.2	.0	.0	.0	.0	.0	5.8	7.19	.09	24.97	3.92
270-300	.6	1.2	1.6	1.9	.9	.8	.4	.1	.0	.0	.1	.1	.1	7.8	7.31	.02	28.30	4.65
300-330	1.1	1.2	1.9	2.6	1.9	1.5	.9	.7	.3	.1	.0	.0	.0	12.3	7.79	.01	24.21	4.35
330-360	.8	.7	1.4	1.5	1.8	1.4	.6	.4	.1	.2	.1	.1	.1	9.3	8.36	.01	25.45	4.81
CALM	.0													.0				

SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24	
	!	!	!	!	!	!	!	!	!	!	!	!	!	
M/S	2	4	6	8	10	12	14	16	18	20	22	24	28	
PERCENT	7.2	9.3	13.4	18.2	19.0	14.5	9.2	5.1	1.8	1.0	.6	.4	.3	100.00
MEAN DIR	202	202	208	198	183	187	176	192	179	159	192	231	238	
STD DEV	105	102	101	100	98	98	94	93	85	119	121	112	111	

SUMMARY STATISTICS

MEAN SPEED = 8.33 M/S MAXIMUM = 28.30 M/S MINIMUM = ..00 M/S RANGE = 28.30 M/S
STANDARD DEVIATION = 4.35 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.05 M/S STANDARD DEVIATION = 5.96 M/S
MEAN Y COMPONENT = .84 M/S STANDARD DEVIATION = 7.21 M/S

D.2

SUMMER SEASON (MAY - OCTOBER)

D.2.1 NATIONAL WEATHER SERVICE (NWS) COASTAL STATIONS

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: KEY WEST SPANNING 5/ 1 TO 10/31 YEARS: 1970 - 1986 74671 DATA POINTS - 99.5 PERCENT OF TOTAL

DIRECTION FROM DEGREES / SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.6	1.9	1.6	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.8	3.97	.17	13.88	2.13
30- 60	.7	3.0	2.4	1.5	.6	.1	.0	.0	.0	.0	.0	.0	.0	8.3	4.53	.00	22.63	2.42
60- 90	.7	4.6	4.4	2.2	.4	.1	.0	.0	.0	.0	.0	.0	.0	12.3	4.48	.26	12.86	2.08
90-120	.7	5.4	10.1	6.3	.9	.1	.0	.0	.0	.0	.0	.0	.0	23.5	5.07	.00	15.43	1.98
120-150	.7	7.8	9.6	3.4	.4	.1	.0	.0	.0	.0	.0	.0	.0	22.2	4.53	.17	16.98	1.89
150-180	.8	4.9	3.2	.9	.2	.1	.0	.0	.0	.0	.0	.0	.0	10.0	3.94	.31	18.00	1.97
180-210	.5	2.4	1.0	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.6	3.73	.24	12.35	2.04
210-240	.5	2.3	.9	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.1	3.56	.33	12.35	1.88
240-270	.2	.9	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.9	3.55	.17	11.83	2.02
270-300	.3	.7	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.5	3.28	.28	9.77	1.90
300-330	.5	1.0	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.1	3.22	.17	14.39	1.99
330-360	.4	1.2	1.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.7	3.68	.31	10.99	1.88
CALM	2.1													2.1				
PERCENT	8.6	36.2	35.6	16.2	2.9	.5	.1	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	158	142	129	116	109	131	133	145	86	180	0	40	0					
STD DEV	96	73	60	46	47	51	23	80	73	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.31 M/S MAXIMUM = 22.63 M/S MINIMUM = .00 M/S RANGE = 22.63 M/S
STANDARD DEVIATION = 1.94 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.43 M/S STADDARD DEVIATION = 2.76 M/S
MEAN Y COMPONENT = 1.13 M/S STANDARD DEVIATION = 2.74 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: FT.MEYER SPANNING 5/ 1 TO 10/31 YEARS: 1970 - 1986 75072 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.9	4.2	2.4	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	8.1	3.55	.00	13.37	2.00
30- 60	1.8	8.2	3.3	1.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	14.4	3.41	.00	12.35	2.01
60- 90	2.1	9.6	4.0	1.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	17.2	3.40	.00	12.35	1.94
90-120	2.0	7.7	3.0	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	13.6	3.24	.17	12.35	1.91
120-150	1.3	4.7	1.5	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	7.8	3.05	.24	12.86	1.85
150-180	.9	2.8	1.1	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.1	3.22	.24	10.29	1.98
180-210	.5	1.4	.8	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	3.2	3.22	.31	11.32	2.11
210-240	.6	2.4	2.2	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.2	3.99	.17	13.37	2.08
240-270	.4	1.4	1.5	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.8	4.01	.24	12.86	1.95
270-300	.5	1.9	1.7	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.9	3.96	.00	10.29	2.04
300-330	.5	1.8	1.2	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.8	3.59	.17	18.00	2.05
330-360	.4	1.6	.7	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.9	3.27	.00	11.32	1.88
CALM	9.0													9.0				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	21.0	47.7	23.4	6.9	.8	.1	.0	.0	.0	.0	.0	.0	.0	99.99				
MEAN DIR	135	126	144	146	141	140	112	0	0	300	0	0	0					
STD DEV	87	86	96	95	95	89	88	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 3.15 M/S MAXIMUM = 18.00 M/S MINIMUM = .00 M/S RANGE = 18.00 M/S
STANDARD DEVIATION = 1.84 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.96 M/S STANDARD DEVIATION = 2.69 M/S
MEAN Y COMPONENT = -.12 M/S STANDARD DEVIATION = 2.27 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: TAMPA SPANNING 5/ 1 TO 10/31 YEARS: 1970 - 1986 75072 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD DEV.
0- 30	.6	3.5	1.6	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	6.1	3.43	1.03	12.86	1.92
30- 60	1.0	7.1	3.0	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0	12.1	3.41	1.03	11.32	1.91
60- 90	1.4	10.7	4.0	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	17.1	3.34	1.03	12.86	1.87
90-120	1.2	7.8	2.9	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	12.7	3.29	1.03	15.43	1.87
120-150	.6	5.4	2.3	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	8.8	3.40	1.03	12.86	1.91
150-180	.3	2.9	1.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.6	3.37	1.03	12.86	1.92
180-210	.1	1.3	.7	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.4	3.77	.51	12.35	2.05
210-240	.3	3.9	2.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	6.5	3.54	1.03	12.35	1.75
240-270	.1	2.2	2.1	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.8	4.05	1.54	13.37	1.79
270-300	.3	3.2	4.3	1.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.3	4.41	1.03	13.37	1.95
300-330	.4	3.0	1.4	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.0	3.48	.51	11.32	1.87
330-360	.3	2.1	1.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.8	3.50	1.03	11.32	1.95
CALM	6.8													6.8				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	13.5	53.1	26.6	6.3	.4	.1	.0	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	133	143	167	172	168	197	157	100	0	0	0	0	0					
STD DEV	90	91	100	106	103	91	82	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 3.30 M/S MAXIMUM = 15.43 M/S MINIMUM = .00 M/S RANGE = 15.43 M/S
STANDARD DEVIATION = 1.65 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.58 M/S STANDARD DEVIATION = 2.94 M/S
MEAN Y COMPONENT = -.01 M/S STANDARD DEVIATION = 2.16 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: PENSACOL   SPANNING 5/ 1 TO 10/31 YEARS: 1970 - 1986   75072 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.5	7.8	2.5	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	12.3	3.15	.00	12.86	1.81
30- 60	1.0	5.4	1.7	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	8.3	3.09	.17	19.55	1.69
60- 90	.8	4.7	1.7	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	7.5	3.28	.18	20.58	1.62
90-120	.7	3.4	2.2	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	7.0	3.83	.17	23.66	2.00
120-150	.6	3.6	3.7	1.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.4	4.20	.17	22.68	2.01
150-180	.6	3.4	3.7	1.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.0	4.16	.17	15.91	1.95
180-210	.5	2.3	2.4	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.9	4.01	.34	12.35	1.93
210-240	1.1	5.0	2.7	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.7	3.57	.17	15.95	1.99
240-270	.7	2.8	1.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.8	3.21	.00	12.35	1.78
270-300	.9	3.0	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.8	2.90	.24	13.37	1.71
300-330	.8	3.2	.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.1	2.97	.28	13.37	1.81
330-360	1.3	5.9	2.1	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.8	3.23	.33	14.40	1.89
CALM	6.4													6.4				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	17.0	50.5	25.3	6.4	.6	.1	.0	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	178	165	164	171	170	178	192	190	80	111	116	115	0					
STD DEV	115	113	92	82	84	88	96	112	61	16	13	13	0					

SUMMARY STATISTICS

MEAN SPEED = 3.27 M/S   MAXIMUM = 23.66 M/S   MINIMUM = .00 M/S   RANGE = 23.66 M/S
STANDARD DEVIATION = 1.75 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.32 M/S   STANDARD DEVIATION = 2.38 M/S
MEAN Y COMPONENT = .24 M/S   STANDARD DEVIATION = 2.82 M/S

FREUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: MOBILE   SPANNING 5/ 1 TO 10/31 YEARS: 1970 - 1986   75072 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.1	5.7	3.2	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	11.1	3.63	.24	15.95	1.97
30- 60	1.4	7.	2.8	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	12.1	3.25	.18	16.57	1.76
60- 90	1.2	4.4	2.2	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	8.2	3.38	.00	22.63	1.88
90-120	1.0	3.2	1.7	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.4	3.48	.00	18.52	2.00
120-150	.8	4.0	2.4	.9	.2	.0	.0	.0	.0	.0	.0	.0	.0	8.3	3.82	.20	20.58	2.10
150-180	1.1	5.2	2.9	1.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	10.6	3.76	.24	20.58	2.09
180-210	.7	3.0	1.8	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.3	3.76	.34	16.49	2.13
210-240	1.2	5.0	2.2	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.2	3.43	.17	13.36	1.97
240-270	.8	2.5	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.1	2.84	.24	9.26	1.72
270-300	1.0	3.5	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.5	2.83	.18	10.29	1.71
300-330	1.2	4.1	1.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	6.8	3.01	.24	11.83	1.83
330-360	.8	3.0	1.5	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.8	3.48	.26	20.58	2.07
CALM	5.6													5.6				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	18.0	51.1	23.4	6.4	1.0	.1	.0	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	173	161	150	155	161	152	150	120	118	99	213	70	0					
STD DEV	104	103	98	93	84	83	81	72	67	40	118	0	0					

SUMMARY STATISTICS

MEAN SPEED = 3.24 M/S   MAXIMUM = 22.63 M/S   MINIMUM = .00 M/S   RANGE = 22.63 M/S
STANDARD DEVIATION = 1.74 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.38 M/S   STANDARD DEVIATION = 2.35 M/S
MEAN Y COMPONENT = .13 M/S   STANDARD DEVIATION = 2.81 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: BOOTHVL   SPANNING 5/ 1 TO 10/31 YEARS: 1972 - 1986   47115 DATA POINTS - 71.1 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.3	3.6	2.6	1.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	8.9	3.89	.17	12.86	2.18
30- 60	1.2	4.0	2.8	1.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	9.5	3.91	.00	12.86	2.14
60- 90	1.3	3.7	2.5	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	8.5	3.75	.00	11.82	2.08
90-120	1.9	4.8	2.4	1.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	10.2	3.45	.24	15.43	2.05
120-150	2.6	6.4	2.8	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	12.8	3.24	.14	14.92	1.97
150-180	1.7	5.2	3.1	1.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	11.5	3.74	.15	16.46	2.15
180-210	.8	2.9	1.6	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.0	3.66	.26	13.89	2.06
210-240	1.2	3.7	2.0	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	7.5	3.50	.12	13.37	1.97
240-270	.6	1.9	1.1	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.0	3.53	.26	12.34	1.97
270-300	1.0	2.2	.9	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.4	3.08	.00	12.35	1.84
300-330	1.3	2.4	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.6	2.75	.22	11.82	1.75
330-360	.9	2.3	.8	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.2	3.15	.26	10.80	1.82
CALM	7.9													7.9				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!		!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	23.7	43.1	23.2	8.2	1.4	.2	.0	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	165	159	143	128	123	140	173	154	180	0	0	0	0					
STD DEV	94	92	87	84	75	79	74	30	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 3.25 M/S   MAXIMUM = 16.46 M/S   MINIMUM = .00 M/S   RANGE = 16.46 M/S
STANDARD DEVIATION = 1.98 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.73 M/S   STANDARD DEVIATION = 2.50 M/S
MEAN Y COMPONENT = .40 M/S   STANDARD DEVIATION = 2.74 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: PT.ARTHU SPANNING 5/ 1 TO 10/31 YEARS: 1970 - 1986 75072 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEE	MAX SPEED	STD. DEV.
0- 30	1.4	5.5	2.8	1.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	10.9	3.59	.17	11.83	2.01
30- 60	.9	4.5	2.5	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	8.8	3.64	.17	13.37	1.90
60- 90	.9	3.6	2.2	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	7.5	3.73	.00	15.42	1.93
90-120	.8	3.5	2.7	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	8.1	3.96	.00	14.40	1.99
120-150	1.0	4.0	3.5	1.9	.3	.1	.0	.0	.0	.0	.0	.0	.0	10.8	4.35	.17	17.99	2.21
150-180	1.3	7.3	5.2	2.7	.5	.1	.0	.0	.0	.0	.0	.0	.0	17.0	4.21	.17	15.43	2.16
180-210	1.0	4.1	2.8	1.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.1	3.88	.17	11.83	1.95
210-240	1.4	4.1	1.8	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	7.9	3.29	.17	14.40	1.96
240-270	.7	1.7	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.1	2.98	.18	8.74	1.68
270-300	.8	1.9	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.6	3.00	.00	23.13	1.88
300-330	.9	2.0	.7	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.0	3.20	.17	15.43	2.09
330-360	.9	2.4	.9	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.8	3.41	.17	13.89	2.18
CALM	4.5													4.5				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	16.4	44.7	26.4	10.5	1.6	.3	.1	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	175	154	145	149	157	150	183	176	130	0	270	290	0					
STD DEV	103	94	80	75	76	71	93	79	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 3.60 M/S MAXIMUM = 23.13 M/S MINIMUM = .00 M/S RANGE = 23.13 M/S
STANDARD DEVIATION = 1.93 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.74 M/S STANDARD DEVIATION = 2.40 M/S
MEAN Y COMPONENT = .81 M/S STANDARD DEVIATION = 3.12 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: CORPUS SPANNING 5/ 1 TO 10/31 YEARS: 1970 - 1986 75072 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.5	2.5	2.7	1.6	.5	.1	.0	.0	.0	.0	.0	.0	.0	7.9	4.84	.28	18.00	2.33
30- 60	.3	1.7	1.8	1.0	.3	.1	.0	.0	.0	.0	.0	.0	.0	5.1	4.77	.37	18.52	2.36
60- 90	.4	1.9	2.2	1.5	.3	.0	.0	.0	.0	.0	.0	.0	.0	6.4	4.75	.00	23.15	2.32
90-120	.8	4.3	4.4	3.5	.6	.1	.0	.0	.0	.0	.0	.0	.0	13.7	4.79	.00	23.15	2.26
120-150	1.0	8.7	9.1	10.3	5.6	.9	.1	.0	.0	.0	.0	.0	.0	35.7	5.72	.26	17.08	2.50
150-180	.8	5.2	5.4	4.2	2.0	.5	.1	.0	.0	.0	.0	.0	.0	18.2	5.30	.17	25.72	2.58
180-210	.3	1.2	.7	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.7	3.95	.17	12.85	2.22
210-240	.3	1.0	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.6	2.96	.00	8.74	1.75
240-270	.2	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.7	2.71	.00	9.06	1.82
270-300	.3	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	2.69	.17	11.83	1.77
300-330	.3	.9	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.5	3.48	.24	23.66	2.65
330-360	.3	1.3	.6	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	3.0	4.33	.17	16.85	2.50
CALM	2.4													2.4				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	7.8	29.6	27.6	23.3	9.7	1.7	.2	.1	.0	.0	.0	.0	.0	100.00				
MEAN DIR	158	144	126	130	138	142	140	137	166	129	105	129	170					
STD DEV	88	74	57	4	37	38	65	96	137	113	51	69	0					

SUMMARY STATISTICS

MEAN SPEED = 4.98 M/S MAXIMUM = 25.72 M/S MINIMUM = .00 M/S RANGE = 25.72 M/S
STANDARD DEVIATION = 2.43 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.56 M/S STANDARD DEVIATION = 2.41 M/S
MEAN Y COMPONENT = 2.10 M/S STANDARD DEVIATION = 3.73 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: BROWNS SPANNING 5/ 1 TO 10/31 YEARS: 1970 - 1986 75072 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.7	2.0	1.1	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.7	3.86	.00	22.63	2.50
30- 60	.6	2.2	1.7	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.4	3.96	.00	13.37	2.22
60- 90	.7	2.7	2.1	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.4	3.90	.34	12.85	2.10
90-120	1.1	5.2	3.7	2.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	12.5	4.14	.34	15.95	2.19
120-150	1.2	8.5	9.2	9.3	3.6	.4	.0	.0	.0	.0	.0	.0	.0	32.2	5.30	.34	15.43	2.46
150-180	.6	4.7	5.5	6.0	3.8	.9	.1	.0	.0	.0	.0	.0	.0	21.7	5.92	.17	15.43	2.67
180-210	.2	.6	.5	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.8	4.59	.24	21.60	2.80
210-240	.2	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9	3.01	.17	11.32	2.05
240-270	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	3.20	.31	21.09	3.36
270-300	.2	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	2.96	.34	15.43	2.13
300-330	.5	1.6	.5	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.9	3.46	.17	13.89	2.23
330-360	.7	2.3	1.0	.6	.2	.0	.0	.0	.0	.0	.0	.0	.0	4.8	3.76	.12	25.72	2.38
CALM	5.6													5.6				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	12.5	30.8	25.6	21.2	8.3	1.4	.2	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	152	147	138	144	156	162	166	142	172	32	192	0	330					
STD DEV	100	83	58	43	28	20	41	76	159	81	101	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.58 M/S MAXIMUM = 25.72 M/S MINIMUM = .00 M/S RANGE = 25.72 M/S
STANDARD DEVIATION = 2.53 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.12 M/S STANDARD DEVIATION = 2.21 M/S
MEAN Y COMPONENT = 2.25 M/S STANDARD DEVIATION = 3.60 M/S

D.2.2 NATIONAL DATA BUOY CENTER (NDBC) BUOYS AND PLATFORMS

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: 42001   SPANNING 5/ 1 TO 10/31 YEARS: 1977 - 1986   39491 DATA POINTS - 89.4 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.9	1.5	1.3	.9	.6	.3	.1	.0	.0	.0	.0	.0	.0	5.6	5.13	.03	13.84	3.08
30- 60	1.5	2.8	2.8	2.0	.9	.3	.1	.0	.0	.0	.0	.0	.0	10.4	4.88	.02	13.85	2.66
60- 90	1.6	4.9	5.6	3.6	1.4	.3	.1	.0	.0	.0	.0	.0	.0	17.5	4.97	.06	17.68	2.46
90-120	1.6	5.3	7.5	5.5	1.9	.4	.2	.0	.0	.0	.0	.0	.0	22.5	5.25	.03	20.87	2.47
120-150	1.6	4.2	5.5	3.8	1.8	.6	.2	.0	.0	.0	.0	.0	.0	17.7	5.32	.03	22.77	2.75
150-180	1.3	2.6	2.9	2.0	1.0	.4	.1	.0	.0	.0	.0	.0	.0	10.3	5.14	.06	20.65	2.86
180-210	.8	1.4	1.0	.6	.3	.2	.1	.0	.0	.0	.0	.0	.0	4.3	4.60	.03	18.89	3.03
210-240	.6	.8	.5	.2	.1	.1	.1	.1	.0	.0	.0	.0	.0	2.3	4.16	.03	19.49	3.43
240-270	.5	.5	.4	.1	.1	.0	.1	.1	.0	.0	.0	.0	.0	1.8	4.34	.04	16.40	3.65
270-300	.5	.6	.3	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.6	3.63	.03	16.60	2.54
300-330	.4	.8	.4	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.9	3.56	.03	10.95	2.21
330-360	.7	1.0	.8	.3	.1	.1	.0	.0	.0	.0	.0	.0	.0	3.1	3.91	.06	14.43	2.51
CALM	1.0													1.0				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	13.0	26.4	29.0	19.2	8.2	2.7	1.0	.3	.1	.1	.0	.0	.0	100.00				
MEAN DIR	145	129	120	113	113	117	126	183	149	139	131	128	0					
STD DEV	93	80	68	59	60	73	75	56	49	34	37	53	0					

SUMMARY STATISTICS

MEAN SPEED = 4.94 M/S   MAXIMUM = 22.77 M/S   MINIMUM = .00 M/S   RANGE = 22.77 M/S
STANDARD DEVIATION = 2.70 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.92 M/S   STANDARD DEVIATION = 3.18 M/S
MEAN Y COMPONENT = .73 M/S   STANDARD DEVIATION = 3.54 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: 42002 SPANNING 5/ 1 TO 10/31 YEARS: 1977 - 1986 39744 DATA POINTS - 90.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.6	1.2	1.0	.9	.8	.4	.2	.0	.0	.0	.0	.0	.0	5.2	5.96	.07	26.22	3.53
30- 60	.7	1.6	1.9	2.0	.9	.4	.1	.1	.0	.0	.0	.0	.0	7.7	5.88	.02	37.29	2.97
60- 90	.8	3.0	4.4	3.2	.9	.3	.0	.0	.0	.0	.0	.0	.0	12.7	5.26	.11	17.54	2.32
90-120	1.3	4.7	7.7	5.9	2.1	.4	.1	.0	.0	.0	.0	.0	.0	22.2	5.43	.06	34.15	2.33
120-150	1.2	4.7	7.8	7.1	4.4	1.2	.2	.0	.0	.0	.0	.0	.0	26.6	6.02	.07	20.08	2.53
150-180	.9	2.7	3.9	3.1	1.8	.6	.1	.0	.0	.0	.0	.0	.0	13.0	5.68	.07	17.51	2.63
180-210	.7	1.3	1.2	.6	.2	.1	.0	.0	.0	.0	.0	.0	.0	4.1	4.34	.04	16.14	2.62
210-240	.4	.7	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.8	4.03	.08	16.06	2.85
240-270	.3	.4	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.1	3.83	.11	14.26	3.07
270-300	.3	.4	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.1	4.72	.07	22.02	4.72
300-330	.3	.4	.3	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0	1.3	5.00	.06	20.33	4.70
330-360	.4	.7	.5	.3	.2	.1	.0	.0	.0	.0	.0	.0	.0	2.2	5.21	.11	20.72	3.80
CALM	.9													.9				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	37					
PERCENT	8.7	21.7	29.4	23.4	11.5	3.8	.8	.3	.2	.1	.0	.0	.0	100.00				
MEAN DIR	150	131	123	117	121	121	118	149	226	229	263	147	68					
STD DEV	90	73	57	51	54	71	92	119	128	135	59	65	40					

SUMMARY STATISTICS

MEAN SPEED = 5.51 M/S MAXIMUM = 37.29 M/S MINIMUM = .00 M/S RANGE = 37.29 M/S
STANDARD DEVIATION = 2.74 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -3.31 M/S STANDARD DEVIATION = 3.06 M/S
MEAN Y COMPONENT = 1.45 M/S STANDARD DEVIATION = 3.93 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: 42003   SPANNING 5/ 1 TO 10/31 YEARS: 1977 - 1986   37892 DATA POINTS - 89.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.2	1.9	1.8	1.2	.5	.2	.0	.0	.0	.0	.0	.0	.0	6.8	4.62	.06	13.79	2.70
30- 60	1.4	3.2	..8	2.5	1.3	.3	.0	.0	.0	.0	.0	.0	.0	12.5	5.02	.02	13.75	2.50
60- 90	1.7	5.3	7.1	5.0	2.4	.7	.2	.0	.0	.0	.0	.0	.0	22.4	5.31	.03	16.15	2.54
90-120	1.9	5.1	6.3	4.5	1.6	.3	.1	.0	.0	.0	.0	.0	.0	19.7	5.02	.06	15.98	2.39
120-150	1.4	3.2	3.6	2.3	1.1	.2	.0	.0	.0	.0	.0	.0	.0	11.8	4.89	.09	15.21	2.51
150-180	1.5	1.9	1.9	1.0	.5	.1	.1	.0	.0	.0	.0	.0	.0	6.9	4.31	.06	20.7	2.72
180-210	1.0	1.1	.8	.5	.2	.1	.1	.0	.0	.0	.0	.0	.0	3.7	4.18	.07	17.02	3.06
210-240	.8	1.0	.7	.3	.1	.0	.1	.0	.0	.0	.0	.0	.0	3.0	3.89	.09	18.26	2.96
240-270	.8	.8	.6	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.7	3.67	.08	17.51	2.66
270-300	.7	.8	.5	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.4	3.53	.06	14.25	2.40
300-330	.8	.8	.8	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.8	3.64	.09	13.23	2.42
330-360	.8	1.2	1.2	.6	.3	.1	.0	.0	.0	.0	.0	.0	.0	4.2	4.34	.10	13.75	2.57
CALM	1.1													1.1				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	15.1	26.3	29.0	18.7	8.2	2.1	.6	.1	.0	.0	.0	..0	.0	100.00				
MEAN DIR	155	129	119	110	107	102	135	163	220	228	170	0	0					
STD DEV	97	87	81	73	72	75	78	66	74	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.74 M/S   MAXIMUM = 20.73 M/S   MINIMUM = .00 M/S   RANGE = 20.73 M/S

STANDARD DEVIATION = 2.57 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.73 M/S   STANDARD DEVIATION = 3.34 M/S
MEAN Y COMPONENT = -.12 M/S   STANDARD DEVIATION = 3.24 M/S

FREQUENCY DISTRIBUTION
1.00 HORLY DATA STATION: 42007 SPANNING 5/ 1 TO 10/31 YEARS: 1984 - 1986 12982 DATA POINTS - 98.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.7	1.7	1.8	.9	.6	.2	.0	.0	.0	.0	.0	.0	.0	6.0	4.97	.07	16.96	2.65
30- 60	.8	1.6	2.0	2.0	1.1	.4	.0	.1	.0	.0	.0	.0	.0	8.0	5.64	.09	16.17	2.85
60- 90	.8	1.4	2.0	2.3	1.6	.4	.1	.0	.0	.0	.0	.0	.0	8.8	6.04	.07	14.89	2.89
90-120	.9	2.3	3.3	2.3	.9	.1	.0	.0	.0	.0	.0	.0	.0	9.9	5.05	.07	11.59	2.34
120-150	1.1	3.8	5.0	2.9	.9	.1	.1	.0	.0	.0	.0	.0	.0	14.0	4.92	.09	16.26	2.35
150-180	1.3	3.0	3.7	2.0	.7	.2	.1	.0	.0	.0	.0	.0	.0	10.9	4.72	.07	16.47	2.38
180-210	1.4	3.5	3.8	1.6	.4	.1	.0	.0	.0	.0	.0	.0	.0	10.8	4.34	.07	12.21	2.16
210-240	1.2	3.2	3.0	1.2	.3	.0	.0	.0	.0	.0	.0	.0	.0	9.0	4.21	.09	12.88	2.10
240-270	1.2	2.4	2.0	.9	.2	.0	.0	.0	.0	.0	.0	.0	.0	6.9	4.02	.07	11.95	2.20
270-300	.9	1.7	1.9	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.5	4.14	.07	12.32	2.16
300-330	.8	1.6	1.4	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.3	3.81	.09	15.58	2.11
330-360	1.0	1.7	1.1	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.5	3.71	.7	18.79	2.44
CALM	1.6													1.6				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	13.7	27.8	31.2	17.8	7.1	1.8	.3	.2	.0	.0	.0	.0	.0	100.00				
MEAN DIR	188	181	168	143	116	103	135	93	100	350	0	0	0					
STD DEV	94	90	85	81	77	81	91	57	63	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.66 M/S MAXIMUM = 18.79 M/S MINIMUM = .00 M/S RANGE = 18.79 M/S
STANDARD DEVIATION = 2.47 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.98 M/S STANDARD DEVIATION = 3.66 M/S
MEAN Y COMPONENT = .82 M/S STANDARD DEVIATION = 3.57 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: 42008 SPANNING 5/ 1 TO 10/31 YEARS: 1981 - 1984 14144 DATA POINTS - 91.9 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.1	.6	1.1	.9	.6	.5	.2	.1	.0	.0	.0	.0	.0	4.1	7.30	.36	25.03	3.52
30- 60	.3	.9	1.5	1.5	.9	.4	.1	.0	.0	.0	.0	.0	.0	5.6	6.29	.04	21.57	2.85
60- 90	.3	1.3	2.9	2.5	1.1	.2	.0	.0	.0	.0	.0	.0	.0	8.4	5.85	.08	13.12	2.22
90-120	.4	2.1	4.3	5.1	2.0	.4	.1	.0	.0	.0	.0	.0	.0	14.3	6.05	.08	15.30	2.30
120-150	.7	2.9	6.3	6.7	4.0	1.2	.2	.0	.0	.0	.0	.0	.0	22.0	6.37	.10	19.14	2.46
150-180	.6	3.3	6.9	7.2	2.9	.7	.1	.1	.0	.0	.0	.0	.0	21.8	6.06	.12	18.37	2.31
180-210	.5	2.2	4.8	3.9	.9	.2	.1	.0	.0	.0	.0	.0	.0	12.7	5.54	.28	16.73	2.19
210-240	.4	1.0	1.4	.7	.2	.0	.0	.0	.0	.0	.0	.0	.0	3.8	4.96	.04	29.42	2.98
240-270	.1	.4	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9	4.42	.14	29.87	3.24
270-300	.2	.3	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8	3.68	.03	13.45	2.47
300-330	.2	.4	.5	.2	.2	.1	.1	.0	.0	.0	.0	.0	.0	1.8	5.58	.10	21.73	3.67
330-360	.2	.5	.8	.8	.4	.3	.2	.1	.0	.0	.0	.0	.0	3.4	7.05	.08	27.86	3.87
CALM	.4													.4				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	30					
PERCENT	4.5	15.7	31.1	29.7	13.3	4.1	1.0	.3	.1	.1	.1	.0	.1	100.00				
MEAN DIR	170	155	147	142	136	135	168	192	160	87	154	243	240					
STD DEV	85	71	65	60	64	87	118	123	121	76	151	175	92					

SUMMARY STATISTICS

MEAN SPEED = 6.03 M/S MAXIMUM = 29.87 M/S MINIMUM = .00 M/S RANGE = 29.87 M/S
STANDARD DEVIATION = 2.58 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.48 M/S STANDARD DEVIATION = 3.38 M/S
MEAN Y COMPONENT = 2.37 M/S STANDARD DEVIATION = 4.46 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: 42009   SPANNING 5/ 1 TO 10/31 YEARS: 1981 - 1986   9578 DATA POINTS - 36.1 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.9	1.7	1.6	.9	.4	.0	.0	.0	.0	.0	.0	.0	.0	5.6	4.33	.07	12.34	2.36
30- 60	1.1	2.2	2.1	1.0	.6	.2	.1	.0	.0	.0	.0	.0	.0	7.3	4.67	.09	12.54	2.60
60- 90	1.1	2.3	2.1	1.8	.5	.6	.1	.0	.0	.0	.0	.0	.0	8.6	5.15	.02	12.95	2.97
90-120	1.3	3.0	4.5	2.9	.9	.3	.0	.0	.0	.0	.0	.0	.0	12.9	5.02	.13	11.79	2.29
120-150	1.5	3.6	4.7	2.5	.7	.3	.0	.0	.0	.0	.0	.0	.0	13.1	4.70	.13	12.45	2.30
150-180	1.7	3.9	3.3	1.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	10.6	4.01	.04	15.44	2.18
180-210	1.2	2.6	2.1	.7	.2	.0	.0	.0	.0	.0	.0	.0	.0	6.7	3.76	.07	10.62	2.05
210-240	1.4	3.0	2.3	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	7.4	3.68	.09	14.18	1.95
240-270	1.0	3.5	2.5	.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	8.1	3.92	.06	10.29	1.88
270-300	1.1	3.0	1.9	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.8	3.79	.13	11.47	1.84
300-330	1.0	2.0	1.7	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.4	3.73	.09	10.59	2.06
330-360	1.0	1.9	1.1	1.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	5.1	4.01	.06	11.37	2.32
CALM	2.2													2.2				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	16.6	32.6	30.0	14.6	4.3	1.5	.2	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	179	182	166	151	130	99	70	202	0	0	0	0	0					
STD DEV	97	93	89	91	87	49	42	64	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.22 M/S   MAXIMUM = 15.44 M/S   MINIMUM = .00 M/S   RANGE = 15.44 M/S
STANDARD DEVIATION = 2.33 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.90 M/S   STANDARD DEVIATION = 3.55 M/S
MEAN Y COMPONENT = .54 M/S   STANDARD DEVIATION = 3.10 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: 42010/11 SPANNING 5/ 1 TO 10/31 YEARS: 1981 - 1984 14595 DATA POINTS - 91.1 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.4	1.5	1.7	.9	.6	.5	.2	.1	.0	.0	.0	.0	.0	6.0	5.99	.25	18.21	3.39
30- 60	.8	1.3	2.2	1.6	.8	.7	.4	.1	.0	.0	.0	.0	.0	7.9	6.16	.20	15.59	3.44
60- 90	.5	1.3	2.3	1.8	.8	.3	.1	.0	.0	.0	.0	.0	.0	7.1	5.67	.07	15.95	2.55
90-120	.5	1.8	2.8	2.2	.9	.3	.1	.1	.0	.0	.0	.0	.0	8.6	5.60	.21	18.10	2.66
120-150	.9	2.9	4.0	3.9	2.1	.7	.1	.1	.1	.0	.0	.0	.0	14.7	5.94	.09	17.80	2.72
150-180	1.2	3.9	5.3	3.5	2.3	.7	.2	.0	.0	.0	.0	.0	.0	17.1	5.55	.03	17.33	2.65
180-210	.8	3.6	5.3	2.9	1.2	.2	.1	.0	.0	.0	.0	.0	.0	14.1	5.13	.06	13.49	2.23
210-240	.8	2.8	4.2	2.1	.4	.1	.0	.0	.0	.0	.0	.0	.0	10.4	4.82	.04	14.86	2.13
240-270	.5	1.3	1.7	.8	.3	.1	.0	.0	.0	.0	.0	.0	.0	4.6	4.77	.20	14.17	2.30
270-300	.5	.6	.7	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.1	4.05	.02	14.98	2.47
300-330	.3	.6	.6	.3	.1	.1	.0	.0	.0	.0	.0	.0	.0	2.0	4.56	.18	12.53	2.64
330-360	.3	.9	.9	.7	.5	.4	.1	.0	.0	.0	.0	.0	.0	3.9	6.05	.12	14.28	3.27
CALM	1.4													1.4				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	8.8	22.5	31.5	21.0	10.3	4.0	1.3	.5	.1	.0	.0	.0	.0	100.00				
MEAN DIR	167	166	162	152	150	135	119	82	123	61	0	0	0					
STD DEV	87	80	77	74	76	97	101	74	38	61	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.41 M/S MAXIMUM = 18.21 M/S MINIMUM = .00 M/S RANGE = 18.21 M/S
STANDARD DEVIATION = 2.71 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.21 M/S STANDARD DEVIATION = 3.66 M/S
MEAN Y COMPONENT = 1.70 M/S STANDARD DEVIATION = 4.34 M/S

D.2.3 NATIONAL DATA BUOY CENTER (NDBC) CMAN STATIONS

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: ALRF1   SPANNING 5/ 1 TO 10/31 YEARS: 1986 - 1987   8025 DATA POINTS - 90.9 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.3	.5	.4	.6	.5	.2	.1	.0	.0	.0	.0	.0	.0	2.7	6.46	.52	17.53	3.37
30- 60	.4	1.2	1.8	2.2	1.3	.5	.2	.0	.0	.0	.0	.0	.0	7.7	6.30	.52	16.49	2.97
60- 90	1.1	4.7	10.2	12.6	6.1	1.8	.2	.0	.0	.0	.0	.0	.0	36.6	6.27	.52	15.46	2.46
90-120	1.1	4.9	8.4	7.1	3.2	.8	.1	.0	.0	.0	.0	.0	.0	25.7	5.63	.52	13.40	2.51
120-150	1.0	3.2	3.5	1.7	.4	.1	.0	.0	.0	.0	.0	.0	.0	10.0	4.47	.52	14.95	2.33
150-180	.8	1.8	1.5	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	4.8	3.99	.52	20.10	2.75
180-210	.6	1.4	.8	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	3.3	3.75	.52	14.95	2.37
210-240	.7	1.4	.7	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	3.3	3.58	.26	10.82	2.43
240-270	.2	.3	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8	3.30	.52	10.31	2.44
270-300	.1	.5	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9	3.65	.52	8.25	1.3
300-330	.1	.3	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.7	3.72	.52	9.79	2.64
330-360	.1	.2	.2	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.7	4.56	.52	9.28	2.73
CALM	3.0													3.0				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	9.5	20.3	28.1	25.7	12.2	3.5	.6	.1	.0	.0	.0	.0	.0	100.00				
MEAN DIR	144	132	111	97	91	84	69	103	35	160	170	0	0					
STD DEV	68	57	41	30	31	22	27	57	14	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.39 M/S   MAXIMUM = 20.10 M/S   MINIMUM = .00 M/S   RANGE = 20.10 M/S
STANDARD DEVIATION = 2.68 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -4.19 M/S   STANDARD DEVIATION = 3.32 M/S
MEAN Y COMPONENT = .32 M/S   STANDARD DEVIATION = 2.75 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: VENF1   SPANNING 5/ 1 TO 10/31 YEARS: 1987 - 1987   4379 DATA POINTS - 99.2 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.8	5.7	4.7	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	13.2	3.66	.52	8.25	1.90
30- 60	2.1	9.0	3.7	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	15.8	3.30	.52	8.25	1.89
60- 90	3.3	15.1	2.8	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	21.6	2.81	.52	13.40	1.66
90-120	1.8	5.3	1.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	8.5	2.79	.52	9.28	1.68
120-150	.5	.9	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.2	3.44	.52	10.31	2.21
150-180	.4	1.3	1.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.9	3.55	.52	9.28	1.90
180-210	.4	1.1	1.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.6	3.70	.52	10.31	2.16
210-240	.7	3.9	2.5	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	7.8	3.77	.51	18.04	2.26
240-270	.4	3.1	1.5	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.3	3.61	.52	9.79	1.77
270-300	.6	3.7	3.7	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	8.7	3.90	.52	9.79	1.79
300-330	.2	1.5	3.1	2.2	.3	.1	.0	.0	.0	.0	.0	.0	.0	7.4	5.25	.52	11.86	2.20
330-360	.4	.6	1.2	.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	3.2	4.77	.52	10.31	2.39
CALM	.7													.7				

SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	
PERCENT	13.3	51.2	26.9	7.2	1.1	.2	.0	.0	.0	.0	.0	.0	.0	100.00
MEAN DIR	115	122	163	201	254	282	155	0	0	240	0	0	0	
STD DEV	86	90	117	128	97	54	91	0	0	0	0	0	0	

SUMMARY STATISTICS

MEAN SPEED = 3.49 M/S   MAXIMUM = 18.04 M/S   MINIMUM = .00 M/S   RANGE = 18.04 M/S
STANDARD DEVIATION = 1.71 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.32 M/S   STANDARD DEVIATON = 2.91 M/S
MEAN Y COMPONENT = -.78 M/S   STANDARD DEVIATION = 2.44 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: CSBF1 SPANNING 5/ 1 TO 10/31 YEARS: 1985 - 1987 12911 DATA POINTS - 97.5 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	4.6	4.1	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	9.4	2.07	.51	13.92	1.58
30- 60	5.3	5.4	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	11.6	2.17	.40	19.07	1.65
60- 90	2.0	3.4	1.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	6.9	2.76	.36	17.53	1.86
90-120	1.9	4.7	1.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	8.5	2.92	.36	19.59	1.78
120-150	2.0	2.9	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.3	2.22	.44	10.82	1.69
150-180	1.6	4.5	1.4	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	8.1	3.12	.52	12.89	1.97
180-210	.9	2.4	1.3	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.2	3.52	.52	11.34	2.09
210-240	1.6	5.9	4.6	1.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	13.4	3.73	.52	12.37	1.98
240-270	.7	2.6	2.5	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.5	3.94	.47	10.31	2.01
270-300	1.0	3.9	3.0	1.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	9.1	3.85	.51	9.79	2.05
300-330	1.3	1.5	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.3	2.32	.52	7.73	1.71
330-360	2.3	1.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.0	1.71	.52	9.28	1.48
CALM	8.9													8.9				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	34.2	42.7	18.1	4.1	.7	.1	.1	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	137	159	197	224	208	138	81	115	80	80	0	0	0					
STD DEV	109	93	79	57	76	92	80	66	0	16	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 2.68 //S MAXIMUM = 19.59 M/S MINIMUM = .00 M/S RANGE = 19.59 M/S
STANDARD DEVIATION = 1.82 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = .29 M/S STANDARD DEVIATION = 2.48 M/S
MEAN Y COMPONENT = .46 M/S STANDARD DEVIATION = 2.02 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: BURL1 SPANNING 5/ 1 TO 10/31 YEARS: 1985 - 1987 11681 DATA POINTS - 88.2 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.9	1.7	2.3	1.8	.9	.3	.1	.0	.0	.0	.0	.0	.0	8.0	5.37	.52	15.98	2.87
30- 60	1.0	2.1	2.1	1.5	.7	.2	.1	.0	.0	.0	.0	.0	.0	7.9	4.93	.48	17.01	2.94
60- 90	1.1	3.2	3.3	2.6	1.3	.2	.0	.0	.0	.0	.0	.0	.0	11.7	5.14	.26	22.68	2.92
90-120	1.2	4.0	5.0	2.9	1.1	.3	.1	.1	.0	.0	.0	.0	.0	14.6	5.01	.32	23.20	2.85
120-150	1.0	2.9	3.5	1.7	.5	.2	.2	.1	.0	.0	.0	.0	.0	10.1	4.92	.52	20.62	2.98
150-180	1.4	2.6	2.9	1.6	.5	.3	.2	.1	.0	.0	.0	.0	.0	9.4	4.73	.52	18.04	2.94
180-210	.8	1.9	1.7	.9	.3	.1	.0	.0	.0	.0	.0	.0	.0	5.6	4.22	.52	14.43	2.44
210-240	1.3	2.8	3.4	1.8	1.0	.2	.1	.0	.0	.0	.0	.0	.0	10.6	4.78	.43	20.62	2.74
240-270	.6	1.1	1.1	.6	.2	.1	.1	.0	.0	.0	.0	.0	.0	3.8	4.59	.05	14.95	2.93
270-300	.6	1.7	1.5	.9	.3	.0	.0	.0	.0	.0	.0	.0	.0	5.0	4.39	.52	16.49	2.59
300-330	.4	1.2	1.0	.3	.2	.2	.0	.0	.0	.0	.0	.0	.0	3.3	4.50	.52	12.89	2.85
330-360	.7	1.4	1.6	1.3	.6	.4	.2	.0	.0	.0	.0	.0	.0	6.1	5.49	.52	15.98	3.14
CALM	3.8													3.8				

SPEED ! M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	
PERCENT	14.8	26.5	29.2	18.0	7.5	2.4	1.0	.3	.1	.1	.1	.0	.0	100.00
MEAN DIR	164	161	156	149	145	176	169	130	140	119	128	88	0	
STD DEV	92	89	87	92	96	113	101	74	78	32	42	7	0	

SUMMARY STATISTICS

MEAN SPEED = 4.72 M/S MAXIMUM = 23.20 M/S MINIMUM = .00 M/S RANGE = 23.20 M/S
STANDARD DEVIATION = 2.84 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWSSE FROM TRUE NORTH
MEAN X COMPONENT = -1.07 M/S STANDARD DEVIATION = 3.84 M/S
MEAN Y COMPONENT = .49 M/S STANDARD DEVIATION = 3.77 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: GDIL1   SPANNING 5/ 1 TO 10/31 YEARS: 1985 - 1987   12890 DATA POINTS - 97.3 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.9	2.0	2.5	1.7	1.0	.3	.1	.0	.0	.0	.0	.0	.0	8.5	5.15	.52	14.95	2.92
30- 60	.8	2.4	2.4	1.6	.8	.1	.1	.0	.0	.0	.0	.0	.0	8.2	4.83	.27	14.43	2.71
60- 90	.7	2.6	3.0	1.8	.3	.2	.0	.0	.0	.0	.0	.0	.0	8.6	4.74	.40	21.65	2.53
90-120	1.2	3.5	3.6	2.5	.4	.1	.0	.0	.0	.0	.0	.0	.0	11.3	4.50	.25	18.04	2.54
120-150	1.4	5.5	4.1	1.6	.3	.1	.1	.0	.0	.0	.0	.0	.0	13.1	4.06	.33	20.10	2.44
150-180	1.2	5.3	3.5	.9	.3	.1	.0	.0	.0	.0	.0	.0	.0	11.4	3.84	.26	15.46	2.26
180-210	.9	3.0	2.4	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	7.0	3.77	.12	12.37	2.20
210-240	1.9	5.3	2.5	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	10.6	3.39	.34	11.86	1.96
240-270	.8	1.6	1.2	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.1	3.69	.26	9.28	2.27
270-300	.9	1.9	1.5	.4	.1	.1	.0	.0	.0	.0	.0	.0	.0	5.0	3.85	.46	15.46	2.45
300-330	.9	2.2	1.0	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.6	3.50	.52	14.95	2.25
330-360	.5	1.7	.9	.6	.4	.1	.0	.0	.0	.0	.0	.0	.0	4.2	4.39	.52	13.40	2.75
CALM	3.3													3.3				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	15.4	36.9	28.5	13.4	4.3	1.1	.3	.1	.0	.0	.0	.0	.0	100.00				
MEAN DIR	178	173	152	131	128	119	109	143	87	120	110	0	0					
STD DEV	90	83	83	86	107	104	89	72	11	44	19	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.03 M/S   MAXIMUM = 21.65 M/S   MINIMUM = .00 M/S   RANGE = 21.65 M/S
STANDARD DEVIATION = 2.34 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.89 M/S   STANDARD DEVIATION = 3.16 M/S
MEAN Y COMPONENT = .52 M/S   STANDARD DEVIATION = 3.27 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: SRST2   SPANNING 5/ 1 TO 10/31 YEARS: 1985 - 1987   13211 DATA POINTS - 99.7 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.5	3.4	1.5	.7	.2	.1	.0	.0	.0	.0	.0	.0	.0	7.3	3.40	.51	12.37	2.34
30- 60	1.2	4.1	1.9	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	7.7	3.37	.52	13.40	1.98
60- 90	.5	1.6	.9	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	3.6	3.75	.00	15.46	2.30
90-120	.3	1.1	2.2	1.9	.5	.1	.0	.0	.0	.0	.0	.0	.0	6.1	5.48	.52	17.53	2.37
120-150	.5	3.2	4.1	2.7	1.4	.3	.0	.0	.0	.0	.0	.0	.0	12.4	5.32	.52	19.07	2.62
150-180	.8	5.4	8.3	6.0	2.1	.3	.1	.0	.0	.0	.0	.0	.0	23.1	5.29	.52	16.49	2.38
180-210	.5	2.7	4.4	3.7	1.0	.1	.0	.0	.0	.0	.0	.0	.0	12.4	5.32	.26	32.47	2.29
210-240	.4	1.9	4.9	4.1	.6	.1	.0	.0	.0	.0	.0	.0	.0	12.1	5.47	.17	21.13	2.17
240-270	.2	.4	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8	3.39	.52	15.46	2.35
270-300	.7	2.4	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.4	2.56	.48	5.67	1.52
300-330	1.5	1.5	.3	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	3.6	2.63	.17	11.34	2.35
330-360	1.7	2.4	.6	.4	.2	.2	.1	.1	.0	.0	.0	.0	.0	5.6	3.43	.33	15.46	3.05
CALM	2.0													2.0				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	32					
PERCENT	11.9	30.1	29.6	20.4	6.4	1.2	.2	.1	.1	.0	.0	.0	.0	99.99				
MEAN DIR	186	162	163	170	170	182	216	240	151	150	210	0	200					
STD DEV	126	100	60	49	51	81	101	113	39	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.58 M/S   MAXIMUM = 32.47 M/S   MINIMUM = .00 M/S   RANGE = 32.47 M/S
STANDARD DEVIATION = 2.42 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.48 M/S   STANDARD DEVIATION = 2.75 M/S
MEAN Y COMPONENT = 2.30 M/S   STANDARD DEVIATION = 3.71 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: PTAT2   SPANNING 5/ 1 TO 10/31 YEARS: 1985 - 1987   12792 DATA POINTS - 96.6 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.2	1.1	1.6	1.1	.5	.2	.1	.0	.0	.0	.0	.0	.0	4.9	5.67	.52	17.01	2.90
30- 60	.5	1.5	2.0	1.2	.4	.2	.0	.0	.0	.0	.0	.0	.0	5.9	5.02	.13	14.95	2.60
60- 90	.5	2.2	3.7	2.0	.8	.3	.0	.0	.0	.0	.0	.0	.0	9.5	5.22	.52	15.46	2.48
90-120	.6	4.1	9.0	7.1	2.1	.4	.1	.0	.0	.0	.0	.0	.0	23.2	5.55	.52	15.46	2.27
120-150	.8	4.8	10.4	11.6	5.8	1.2	.1	.0	.0	.0	.0	.0	.0	34.7	6.14	.52	16.49	2.37
150-180	.5	2.1	3.9	3.6	1.4	.4	.1	.0	.0	.0	.0	.0	.0	11.9	5.72	.52	13.92	2.40
180-210	.2	.6	.4	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.5	3.95	.52	14.43	2.27
210-240	.2	.6	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.1	3.06	.52	8.76	1.89
240-270	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	1.93	.52	4.12	1.63
270-300	.2	.3	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.7	4.11	.52	10.82	2.81
300-330	.2	.6	.3	.2	.2	.1	.0	.0	.0	.0	.0	.0	.0	1.7	5.16	.52	17.53	3.44
330-360	.4	.8	.8	.7	.4	.2	.0	.0	.0	.0	.0	.0	.0	3.3	5.41	.44	15.46	3.12
CALM	1.2													1.2				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	5.6	18.8	32.5	27.8	11.7	2.9	.5	.1	.0	.0	.0	.0	.0	100.00				
MEAN DIR	159	137	125	131	138	140	135	139	160	0	0	0	0					
STD DEV	91	69	48	41	51	71	98	125	143	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.57 M/S   MAXIMUM = 17.53 M/S   MINIMUM = .00 M/S   RANGE = 17.53 M/S
STANDARD DEVIATION = 2.41 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -3.32 M/S   STANDARD DEVIATION = 2.71 M/S
MEAN Y COMPONENT = 2.08 M/S   STANDARD DEVIATION = 3.75 M/S

D.2.4 OCEAN CURRENT MEASUREMENT PROGRAM (OCMP) PLATFORM

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: E1331 SPANNING 5/ 1 TO 10/31 YEARS: 1972 - 1976 13386 DATA POINTS - 70.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.8	.9	.7	.7	.7	.3	.1	.0	.0	.0	.0	.0	.0	4.3	5.85	.02	37.49	3.94
30- 60	.8	1.2	1.3	1.0	.8	.7	.2	.1	.1	.0	.0	.0	.0	6.2	6.13	.03	30.14	3.89
60- 90	1.2	1.7	1.7	1.0	.5	.4	.2	.2	.2	.1	.0	.0	.0	7.1	5.73	.01	22.40	4.22
90-120	1.7	2.8	2.5	1.7	1.1	.4	.3	.2	.2	.0	.0	.0	.0	10.9	5.46	.01	22.25	3.68
120-150	1.5	2.5	2.1	1.8	1.4	1.1	.4	.2	.1	.1	.0	.0	.0	11.1	6.06	.01	19.91	3.79
150-180	1.5	2.8	2.5	2.0	1.3	1.3	.9	.2	.0	.0	.0	.0	.0	12.5	6.16	.01	21.40	3.80
180-210	1.1	2.5	2.5	1.7	1.0	.6	.2	.1	.0	.0	.0	.0	.0	9.7	5.45	.00	15.75	3.16
210-240	1.1	2.0	2.2	1.3	.9	.3	.1	.0	.0	.0	.0	.0	.0	7.9	5.05	.01	20.90	2.96
240-270	1.2	2.1	1.7	1.5	.9	.1	.1	.1	.0	.0	.0	.0	.0	7.7	4.95	.01	20.73	3.08
270-300	1.4	2.6	1.9	1.3	1.0	.4	.3	.2	.2	.2	.1	.1	.4	9.9	6.74	.01	33.66	5.53
300-330	1.4	2.1	2.1	1.7	.7	.5	.2	.1	.0	.0	.0	.0	.0	8.8	5.22	.02	17.79	3.30
330-360	.9	.9	.9	.7	.4	.1	.1	.1	.0	.0	.0	.0	.0	4.0	4.94	.01	19.68	3.51
CALM	.0													.0				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	37					
PERCENT	14.6	24.1	22.1	16.3	10.6	6.2	3.0	1.4	.7	.4	.1	.1	.4	100.00				
MEAN DIR	183	186	185	184	175	162	166	174	154	199	237	232	241					
STD DEV	97	90	89	91	91	87	80	86	95	100	66	87	95					

SUMMARY STATISTICS

MEAN SPEED = 5.70 M/S MAXIMUM = 37.49 M/S MINIMUM = .00 M/S RANGE = 37.48 M/S
STANDARD DEVIATION = 3.94 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGRES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.19 M/S STANDARD DEVIATION = 5.09 M/S
MEAN Y COMPONENT = .94 M/S STANDARD DEVIATION = 4.61 M/S

D.3

TRANSITION PERIODS (APRIL AND NOVEMBER)

D.3.1 NATIONAL WEATHER SERVICE (NWS) COASTAL STATIONS

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: KEY WEST SPANNING 4/ 1 TO 4/30 YEARS: 1970 - 1986 12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.4	2.0	3.3	2.5	.6	.1	.0	.0	.0	.0	.0	.0	.0	8.8	5.24	.34	15.43	2.16
30- 60	.4	2.5	2.7	2.2	.4	.0	.0	.0	.0	.0	.0	.0	.0	8.2	4.85	.51	10.29	2.22
60- 90	.3	2.3	4.2	3.5	1.1	.0	.0	.0	.0	.0	.0	.0	.0	11.4	5.45	.26	10.80	2.09
90-120	.2	2.5	7.1	10.0	3.7	.3	.0	.0	.0	.0	.0	.0	.0	23.8	6.26	.51	12.86	2.04
120-150	.2	3.2	8.0	6.5	1.6	.3	.0	.0	.0	.0	.0	.0	.0	19.8	5.64	.74	12.35	2.07
150-180	.3	2.3	3.4	1.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	8.0	4.80	.38	11.83	1.95
180-210	.1	1.2	1.1	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	3.2	4.63	.17	11.19	1.89
210-240	.2	1.3	1.4	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	3.6	4.41	.51	12.86	2.03
240-270	.1	.6	.7	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.8	4.58	.38	11.54	2.25
270-300	.2	.6	.3	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	1.6	4.63	.51	11.64	2.70
300-330	.2	.8	1.1	.7	.2	.1	.0	.0	.0	.0	.0	.0	.0	3.2	5.09	.86	11.29	2.47
330-360	.1	1.3	2.2	1.7	.4	.0	.0	.0	.0	.0	.0	.0	.0	5.7	5.31	.60	10.77	1.99
CALM	1.0													1.0				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	3.8	20.5	35.3	30.7	8.7	1.0	.0	.0	.0	.0	.0	.0	.0	99.99				
MEAN DIR	154	145	136	127	127	155	125	0	0	0	0	0	0					
STD DEV	105	91	82	74	71	80	77	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.40 M/S MAXIMUM = 15.43 M/S MINIMUM = .00 M/S RANGE = 15.43 M/S
STANDARD DEVIATION = 2.03 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.76M/S STANDARD DEVIATION = 3.44 M/S
MEAN Y COMPONENT = .72 M/S STANDARD DEVIATION = 3.65 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: KEY WEST   SPANNNG 11/ 1 TO 11/30 YEARS: 1970 - 1986   12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.3	2.8	4.2	3.9	1.8	.4	.1	.0	.0	.0	.0	.0	.0	13.6	5.81	.51	16.46	2.49
30- 60	.6	5.4	8.7	7.8	2.2	.3	.0	.0	.0	.0	.0	.0	.0	25.0	5.46	.51	11.32	2.18
60- 90	.3	4.3	8.5	5.6	1.2	.1	.0	.0	.0	.0	.0	.0	.0	19.9	5.32	.26	15.43	1.91
90-120	.3	2.1	6.2	5.5	1.0	.0	.0	.0	.0	.0	.0	.0	.0	15.2	5.63	.24	18.09	1.96
120-150	.2	2.0	3.7	2.7	.3	.1	.0	.0	.0	.0	.0	.0	.0	9.1	5.36	.49	19.55	2.36
150-180	.3	1.6	1.6	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.9	4.12	.51	11.96	1.97
180-210	.2	.7	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.6	4.04	.45	8.89	1.88
210-240	.1	.7	.7	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.7	4.17	.51	10.29	2.24
240-270	.1	.5	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	3.26	.51	6.69	1.87
270-300	.2	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	2.90	.51	8.87	1.47
300-330	.2	1.1	.7	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	2.5	4.35	.47	10.43	2.28
330-360	.2	1.1	1.2	1.1	.8	.1	.0	.0	.0	.0	.0	.0	.0	4.5	5.69	.51	12.86	2.62
CALM	1.1													1.1				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	4.1	22.9	36.4	27.5	7.6	1.1	.2	.1	.0	.1	.0	.0	.0	100.00				
MEAN DIR	146	119	99	89	98	84	129	78	106	126	0	0	0					
STD DEV	103	93	71	67	99	98	124	51	65	20	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.28 M/S   MAXIMUM = 19.55 M/S   MINIMUM = .00 M/S   RANGE = 19.55 M/S
STANDARD DEVIATION = 2.11 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -3.20 M/S   STANDARD DEVIATION = 2.85 M/S
MEAN Y COMPONENT = -1.28 M/S   STANDARD DEVIATION = 3.51 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: FTMEYER SPANNING 4/ 1 TO 4/30 YEARS: 1970 - 1986 12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.6	3.1	2.2	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.9	3.89	.00	10.79	2.06
30- 60	.7	5.5	2.9	1.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	10.5	3.82	.24	10.29	2.03
60- 90	.8	5.7	4.0	2.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	12.9	4.15	.51	10.80	2.13
90-120	1.1	5.4	3.8	1.7	.3	.0	.0	.0	.0	.0	.0	.0	.0	12.3	3.98	.34	10.80	2.15
120-150	1.0	3.6	1.9	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	7.3	3.55	.34	9.26	2.03
150-180	.8	2.0	1.7	.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	5.4	4.03	.24	10.80	2.22
180-210	.4	1.7	1.9	1.5	.4	.0	.0	.0	.0	.0	.0	.0	.0	5.8	4.84	.48	10.79	2.26
210-240	.7	2.7	3.4	1.8	.4	.0	.0	.0	.0	.0	.0	.0	.0	9.1	4.61	.24	23.64	2.28
240-270	.2	1.3	1.7	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.1	4.63	.53	14.85	2.21
270-300	.2	1.7	2.1	1.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	5.7	4.81	.00	20.58	2.20
300-330	.4	2.1	2.4	1.5	.3	.0	.0	.0	.0	.0	.0	.0	.0	6.9	4.68	.47	11.82	2.35
330-360	.4	2.4	2.2	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.7	4.05	.43	9.26	1.96
CALM	7.5													7.5				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	14.9	37.3	30.3	14.6	2.7	.2	.0	.0	.0	.0	.0	.0	.0	99.99				
MEAN DIR	149	145	169	178	183	194	0	266	0	0	270	230	0					
STD DEV	90	98	101	98	93	107	0	108	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 3.88 M/S MAXIMUM = 23.64 M/S MINIMUM = .00 M/S RANGE = 23.64 M/S
STANDARD DEVIATION = 2.14 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.44 M/S STANDARD DEVIATION = 3.31 M/S
MEAN Y COMPONENT = .09 M/S STANDARD DEVIATION = 2.91 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: FTMEYER   SPANNING 11/ 1 TO 11/30 YEARS: 1970 - 1986   12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.7	7.9	7.2	2.9	.3	.0	.0	.0	.0	.0	.0	.0	.0	19.0	4.23	.24	11.82	2.05
30- 60	1.3	10.9	5.3	1.8	.3	.0	.0	.0	.0	.0	.0	.0	.0	19.6	3.70	.51	11.32	2.01
60- 90	1.3	8.3	4.6	1.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	16.2	3.78	.51	10.29	1.98
90-120	.8	4.3	2.3	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	8.3	3.65	.34	10.29	2.05
120-150	.6	3.0	1.6	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.5	3.37	.51	8.74	1.88
150-180	.4	1.9	1.3	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.1	3.76	.51	9.26	2.06
180-210	.2	.8	1.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.7	4.34	.17	9.25	2.17
210-240	.3	1.4	1.4	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	3.6	3.99	.51	10.80	2.08
240-270	.2	.7	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.3	3.27	.47	8.22	1.91
270-300	.5	1.0	1.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.7	3.55	.34	10.29	2.00
300-330	.3	1.1	1.1	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	3.2	4.34	.51	12.35	2.23
330-360	.4	1.8	2.3	1.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	5.8	4.62	.51	11.31	2.17
CALM	8.0													8.0				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	15.1	43.1	29.4	10.9	1.3	.2	.0	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	137	102	116	118	142	154	310	0	0	0	0	0	0					
STD DEV	96	87	105	111	127	137	0	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 3.59 M/S   MAXIMUM = 12.35 M/S   MINIMUM = .00 M/S   RANGE = 12.35 M/S
STANDARD DEVIATION = 1.94 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.34 M/S   STANDARD DEVIATION = 2.43 M/S
MEAN Y COMPONENT = -1.14 M/S   STANDARD DEVIATION = 2.77 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: TAMPA   SPANNING 4/ 1 TO 4/30 YEARS: 1970 - 1986   12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.5	3.3	2.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	6.3	3.62	1.54	10.80	1.96
30- 60	.7	3.6	2.0	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	7.2	3.68	1.54	9.26	2.05
60- 90	1.0	6.5	4.5	1.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	13.5	3.80	1.03	8.74	2.00
90-120	.5	4.6	4.0	1.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	11.0	4.17	.51	9.26	2.08
120-150	.3	3.1	3.5	1.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	8.1	4.24	1.54	8.23	1.98
150-180	.2	2.5	2.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.4	4.02	1.03	11.31	1.94
180-210	.1	1.3	1.7	1.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	4.6	4.95	1.54	9.77	2.09
210-240	.1	3.3	3.3	1.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	8.4	4.43	1.54	11.32	2.04
240-270	.1	1.5	2.4	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.7	4.46	1.03	9.26	1.89
270-300	.2	2.2	4.7	2.6	.4	.0	.0	.0	.0	.0	.0	.0	.0	10.1	5.08	1.54	10.80	1.95
300-330	.3	4.3	2.9	1.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	9.0	4.14	1.03	11.32	2.18
330-360	.4	2.5	1.6	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.6	4.02	1.03	11.32	2.16
CALM	6.2													6.2				

SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24	
	!	!	!	!	!	!	!	!	!	!	!	!	!	
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26	
PERCENT	10.5	38.9	34.5	14.5	1.5	.1	.0	.0	.0	.0	.0	.0	.0	100.00
MEAN DIR	141	163	179	192	226	261	0	0	0	0	0	0	0	
STD DEV	108	103	98	98	99	103	0	0	0	0	0	0	0	

SUMMARY STATISTICS

MEAN SPEED = 3.94 M/S   MAXIMUM = 11.32 M/S   MINIMUM = .00 M/S   RANGE = 11.32 M/S
STANDARD DEVIATION = 1.91MM/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.07 M/S   STANDARD DEVIATION = 3.41 M/S
MEAN Y COMPONENT = .19 M/S   STANDARD DEVIATION = 2.74 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: TAMPA   SPANNING 11/ 1 TO 11/30 YEARS: 1970 - 1986   12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.9	7.8	5.1	1.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	15.9	3.92	1.03	10.79	2.05
30- 60	.9	9.7	5.4	1.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	17.4	3.62	1.03	13.37	1.92
60- 90	1.1	10.8	4.9	1.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	18.0	3.46	1.03	8.74	1.89
90-120	.6	5.5	2.9	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	9.6	3.52	1.03	8.23	1.84
120-150	.3	3.5	2.6	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	7.0	3.77	1.54	8.23	1.92
150-180	.2	2.5	1.4	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.5	3.58	1.03	8.23	1.82
180-210	.2	1.2	1.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.8	3.85	1.54	8.74	1.90
210-240	.3	2.2	.9	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.7	3.34	1.54	8.23	1.87
240-270	.1	1.2	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.9	3.57	1.54	9.77	1.68
270-300	.2	1.6	1.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.1	3.78	1.03	8.74	1.89
300-330	.3	2.3	1.1	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.3	3.83	1.03	10.29	2.23
330-360	.3	2.9	2.1	1.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	6.7	4.32	1.03	11.83	2.19
CALM	5.1													5.1				

SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	
PERCENT	10.7	51.3	29.1	8.1	.8	.1	.0	.0	.0	.0	.0	.0	.0	100.00
MEAN DIR	128	120	123	134	197	223	60	0	0	0	0	0	0	
STD DEV	99	95	99	119	150	175	0	0	0	0	0	0	0	

SUMMARY STATISTICS

MEAN SPEED = 3.51 M/S   MAXIMUM = 13.37 M/S   MINIMUM = .00 M/S   RANGE = 13.37 M/S
STANDARD DEVIATION = 1.68 M/S

IN A COORDIATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.25 M/S   STANDARD DEVIATION = 2.45 M/S
MEAN Y COMPONENT = -.81 M/S   STANDARD DEVIATION = 2.63 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: PENSACOL SPANNING 4/ 1 TO 4/30 YEARS: 1970 - 1986 12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.1	5.0	2.6	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.7	3.64	.00	10.80	1.97
30- 60	.6	3.2	1.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.1	3.19	.31	7.72	1.70
60- 90	.5	2.9	1.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.2	3.46	.51	7.72	1.63
90-120	.4	2.6	3.2	2.0	.6	.1	.0	.0	.0	.0	.0	.0	.0	8.8	4.89	.51	11.32	2.34
120-150	.3	3.0	5.4	4.0	.8	.1	.0	.0	.0	.0	.0	.0	.0	13.6	5.26	.51	12.85	2.15
150-180	.6	3.2	5.1	2.3	.4	.0	.0	.0	.0	.0	.0	.0	.0	11.7	4.72	.51	12.34	2.02
180-210	.4	2.2	3.5	1.6	.2	.0	.0	.0	.0	.0	.0	.0	.0	7.8	4.68	.45	10.79	1.92
210-240	.5	3.3	3.4	2.1	.4	.1	.0	.0	.0	.0	.0	.0	.0	9.8	4.62	.51	13.37	2.27
240-270	.3	1.9	1.1	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.1	4.14	.52	10.28	2.18
270-300	.6	2.0	1.1	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.2	3.63	.44	12.34	2.09
300-30	.5	2.5	1.6	.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	5.7	4.05	.51	10.29	2.16
330-360	.6	4.2	2.6	1.4	.3	.0	.0	.0	.0	.0	.0	.0	.0	9.1	4.09	.28	10.29	2.23
CALM	5.1													5.1				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	11.8	35.9	32.2	16.5	3.0	.5	.1	.0	.0	00	.0	.0	.0	99.99				
MEAN DIR	168	171	174	181	184	166	199	0	0	0	0	0	0					
STD DEV	112	110	87	81	78	77	59	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.14 M/S MAXIMUM = 13.37 M/S MINIMUM = .00 M/S RANGE = 13.37 M/S
STANDARD DEVIATION = 2.11 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.37 M/S STANDARD DEVIATION = 2.96 M/S
MEAN Y COMPONENT = .94 M/ STANDARD DEVIATION = 3.44 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: PENSACOL   SPANNING 11/ 1 TO 11/30 YEARS: 1970 - 1986   12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.2	8.4	6.0	2.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	17.8	3.93	.51	9.77	1.95
30- 60	.9	6.4	2.9	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	10.4	3.33	.51	8.23	1.65
60- 90	.8	6.5	2.8	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	10.5	3.40	.51	9.26	1.58
90-120	.6	4.1	3.8	1.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	9.8	4.11	.51	10.29	1.89
120-150	.6	3.2	3.0	1.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	8.1	4.19	.51	9.25	1.85
150-180	.4	1.7	1.7	1.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.2	4.52	.51	9.26	2.15
180-210	.2	.8	.9	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.5	4.46	.67	10.29	2.14
210-240	.3	1.4	.8	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.2	3.88	.51	10.29	2.24
240-270	.3	.9	.4	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	3.69	.48	9.77	2.23
270-300	.5	1.3	.9	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.3	3.81	.51	8.74	2.11
300-330	.7	2.9	1.8	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.4	3.85	.34	11.31	2.15
330-360	.8	6.1	5.4	2.7	.4	.1	.0	.0	.0	.0	.0	.0	.0	15.4	4.38	.24	12.35	2.08
CALM	5.4													5.4				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	12.8	43.8	30.5	11.6	1.2	.1	.0	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	161	141	154	188	212	276	350	0	0	0	0	0	0					
STD DEV	116	118	120	121	128	92	0	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 3.73 M/S   MAXIMUM = 12.35 M/S   MINIMUM = .00 M/S   RANGE = 12.35 M/S
STANDARD DEVIATION = 1.87 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.73 M/S   STANDARD DEVIATION = 2.52 M/S
MEAN Y COMPONENT = -.99 M/S   STANDARD DEVIATION = 3.10 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: MOBILE SPANNING 4/ 1 TO 4/30 YEARS: 1970 - 1986 12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.5	3.6	3.1	1.4	.3	.0	.0	.0	.0	.0	.0	.0	.0	8.9	4.23	.26	10.29	2.18
30- 60	.8	4.0	1.7	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.9	3.41	.34	9.26	1.85
60- 90	.6	2.9	1.7	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.5	3.61	.51	11.31	1.89
90-120	.4	2.6	2.1	.9	.3	.0	.0	.0	.0	.0	.0	.0	.0	6.3	4.32	.51	12.35	2.17
120-150	.5	4.4	4.4	3.3	1.1	.2	.0	.0	.0	.0	.0	.0	.0	13.9	4.97	.64	13.89	2.49
150-180	.8	5.4	5.0	3.9	1.2	.2	.1	.0	.0	.0	.0	.0	.0	16.5	4.89	.34	13.88	2.47
180-210	.4	2.4	2.8	2.0	.7	.1	.0	.0	.0	.0	.0	.0	.0	8.4	5.03	.36	11.32	2.38
210-240	.5	3.2	2.9	1.6	.4	.0	.0	.0	.0	.0	.0	.0	.0	8.	4.52	.51	14.39	2.25
240-270	.5	1.7	.8	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	3.3	3.66	.28	13.36	2.33
270-300	.6	2.2	1.4	.4	.2	.0	.0	.0	.0	.0	.0	.0	.0	4.8	3.73	.48	9.77	2.18
300-330	.6	3.0	2.1	1.5	.4	.0	.0	.0	.0	.0	.0	.0	.0	7.7	4.42	.51	10.29	2.32
330-360	.5	2.4	1.9	1.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	6.0	4.33	.20	12.35	2.32
CALM	3.1													3.1				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	9.6	37.7	29.7	17.1	5.0	.7	.1	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	176	166	168	177	185	181	178	210	0	0	0	0	0					
STD DEV	104	98	93	82	77	51	45	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.30 M/S MAXIMUM = 14.39 M/S MINIMUM = .00 M/S RANGE = 14.39 M/S
STANDARD DEVIATION = 2.15 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.30 M/S STANDARD DEVIATION = 2.84 M/S
MEAN Y COMPONENT = 1.08 M/S STANDARD DEVIATION = 3.71 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DAT STATION: MOBILE SPANNING 11/ 1 TO 11/30 YEARS: 1970 - 1986 12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.0	6.3	6.5	2.5	.6	.1	.0	.0	.0	.0	.0	.0	.0	16.9	4.38	.34	11.32	2.09
30- 60	1.1	7.1	2.8	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	11.7	3.43	.34	9.26	1.76
60- 90	.7	4.2	2.1	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	7.3	3.47	.69	10.29	1.80
90-120	.4	3.7	2.5	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	7.6	3.92	.94	9.25	2.04
120-150	.8	4.7	3.9	1.4	.4	.0	.0	.0	.0	.0	.0	.0	.0	11.2	4.19	.17	13.36	2.14
150-180	.6	3.8	2.9	1.5	.5	.1	.0	.0	.0	.0	.0	.0	.0	9.4	4.41	.51	15.42	2.34
180-210	.2	1.7	.8	.6	.3	.0	.0	.0	.0	.0	.0	.0	.0	3.7	4.39	.85	14.39	2.46
210-240	.4	1.8	1.1	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.0	3.97	.69	9.26	2.13
240-270	.3	1.1	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.2	3.41	.51	9.26	1.97
270-300	.5	1.8	1.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.7	3.59	.55	8.74	1.98
300-330	.8	3.2	2.6	1.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	7.9	4.06	.18	10.79	2.13
330-360	.6	3.2	3.5	1.8	.4	.1	.0	.0	.0	.0	.0	.0	.0	9.6	4.57	.51	10.29	2.21
CALM	4.8													4.8				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	4	6	8	10	12	14	16	18	20	22	24	26						
PERCENT	12.2	42.6	30.1	12.0	2.8	.3	.0	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	162	143	149	167	166	172	173	185	0	0	0	0	0					
STD DEV	110	106	114	118	112	107	58	57	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 3.87 M/S MAXIMUM = 15.42 M/S MINIMUM = .00 M/S RANGE = 15.42 M/S
STANDARD DEVIATION = 1.96 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.64 M/S STANDARD DEVIATION = 2.51 M/S
MEAN Y COMPONENT = -.53 M/S STANDARD DEVIATION = 3.44 M/S

FREQUENCY DISTRIBUTION

1.00 HOURLY DATA STATION: BOOTHVL SPANNING 4/ 1 TO 4/30 YEARS: 1972 - 1986 8617 DATA POINTS - 79.8 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.8	2.4	2.3	1.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	7.0	4.40	.26	13.37	2.20
30- 60	.8	2.8	2.3	1.5	.4	.0	.0	.0	.0	.0	.0	.0	.0	7.9	4.42	.17	10.29	2.31
60- 90	1.0	3.5	3.4	1.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	9.2	4.14	.51	10.80	1.98
90-120	1.5	6.0	4.3	2.0	.3	.1	.0	.0	.0	.0	.0	.0	.0	14.1	4.04	.26	12.35	2.18
120-150	1.6	6.3	5.5	2.6	.5	.2	.0	.0	.0	.0	.0	.0	.0	16.8	4.27	.18	12.86	2.25
150-180	.7	4.1	4.3	3.8	1.4	.3	.0	.0	.0	.0	.0	.0	.0	14.6	5.25	.34	12.86	2.40
180-210	.2	1.4	1.6	1.2	.4	.1	.0	.0	.0	.0	.0	.0	.0	4.8	5.08	.34	11.32	2.20
210-240	.3	1.4	1.6	1.2	.3	.1	.0	.0	.0	.0	.0	.0	.0	4.9	4.92	.52	11.32	2.40
240-270	.3	1.1	1.1	1.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	3.8	5.01	.15	10.80	2.38
270-300	.6	1.4	1.2	.7	.4	.1	.0	.0	.0	.0	.0	.0	.0	4.5	4.6	.26	12.35	2.66
300-330	.5	1.3	1.3	1.1	.3	.1	.0	.0	.0	.0	.0	.0	.0	4.6	4.87	.26	12.34	2.54
330-360	.3	1.3	1.5	.9	.3	.1	.0	.0	.0	.0	.0	.0	.0	4.4	4.88	.26	12.86	2.49
CALM	3.4													3.4				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	12.0	32.9	30.3	18.3	5.2	1.2	.1	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	145	144	151	165	180	190	189	0	0	0	0	0	0					
STD DEV	89	82	85	85	87	85	114	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.41 M/S MAXIMUM = 13.37 M/S MINIMUM = .00 M/S RANGE = 13.37 M/S

STANDARD DEVIATION = 2.28 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH

MEAN X COMPONENT = -1.04 M/S STANDARD DEVIATION = 3.22 M/S

MEAN Y COMPONENT = .92 M/S STANDARD DEVIATION = 3.52 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: BOOTHVL   SPANNING 11/ 1 TO 11/30 YEARS: 1971 - 1986   7920 DATA POINTS - 68.8 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.3	4.9	6.4	5.0	2.6	.6	.0	.0	.0	.0	.0	.0	.0	20.8	5.33	.26	11.83	2.59
30- 60	1.0	4.5	5.2	3.1	.7	.1	.0	.0	.0	.0	.0	.0	.0	14.6	4.66	.29	11.31	2.26
60- 90	1.4	5.1	2.6	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	9.5	3.28	.34	7.72	1.73
90-120	1.5	6.9	2.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	10.8	3.13	.34	15.42	1.77
120-150	1.6	6.2	3.4	1.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	12.3	3.55	.22	11.83	1.87
150-180	1.0	3.7	3.2	1.5	.5	.0	.0	.0	.0	.0	.0	.0	.0	9.9	4.32	.29	12.86	2.22
180-210	.1	1.4	1.0	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.8	3.99	1.03	8.74	1.94
210-240	.3	1.2	.6	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.4	3.68	.29	9.77	2.07
240-270	.1	.5	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.1	4.16	.24	8.74	2.29
270-300	.4	.8	.4	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.9	3.69	.51	8.74	2.20
300-330	.6	1.3	1.2	.6	.2	.0	.0	.0	.0	.0	.0	.0	.0	3.9	4.16	.26	10.80	2.41
330-360	.5	1.8	2.4	1.6	.5	.1	.0	.0	.0	.0	.0	.0	.0	6.9	4.88	.29	10.53	2.42
CALM	3.2													3.2				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	13.0	38.1	28.7	14.6	4.7	.8	.0	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	134	126	122	115	93	59	141	110	0	0	0	0	0					
STD DEV	93	84	101	115	119	96	37	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.11 M/S   MAXIMUM = 15.42 M/S   MINIMUM = .00 M/S   RANGE = 15.42 M/S
STANDARD DEVIATION = 2.18 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.36 M/S   STANDARD DEVIATION = 2.31 M/S
MEAN Y COMPONENT = -1.00 M/S   STANDARD DEVIATION = 3.68 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: PORTARTH   SPANNING 4/ 1 TO 4/30 YEARS: 1970 - 1986   12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.5	2.7	2.7	1.3	.2	.1	.0	.0	.0	.0	.0	.0	.0	7.5	4.47	.43	13.37	2.14
30- 60	.5	2.1	2.1	1.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.9	4.35	.51	9.26	2.03
60- 90	.6	1.8	2.3	1.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.1	4.41	.51	8.74	2.03
90-120	.4	2.8	4.0	2.8	.4	.0	.0	.0	.0	.0	.0	.0	.0	10.4	4.97	.00	11.32	1.99
120-150	.5	2.9	6.1	7.3	2.1	.6	.0	.0	.0	.0	.0	.0	.0	19.4	5.92	.18	12.86	2.25
150-180	.5	4.1	6.6	7.4	2.2	.5	.1	.0	.0	.0	.0	.0	.0	21.4	5.74	.51	14.92	2.38
180-210	.4	..0	2.2	1.8	.7	.0	.0	.0	.0	.0	.0	.0	.0	7.1	5.07	.51	12.34	2.32
210-240	.6	2.4	.9	.5	.2	.1	.0	.0	.0	.0	.0	.0	.0	4.6	3.76	.36	11.83	2.43
240-270	.4	1.0	.4	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.1	3.28	.51	8.23	2.03
270-300	.4	1.3	1.0	.4	.2	.0	.0	.0	.0	.0	.0	.0	.0	3.3	4.21	.45	11.82	2.42
300-330	.5	1.6	1.5	1.2	.4	.1	.0	.0	.0	.0	.0	.0	.0	5.4	4.81	.34	11.32	2.46
330-360	.4	1.8	1.8	1.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	5.4	4.69	.64	10.28	2.12
CALM	1.3													1.3				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	7.0	26.4	31.6	26.6	6.7	1.5	.1	.0	.0	.0	.0	.0	.0	99.99				
MEAN DIR	177	163	152	157	170	167	151	162	0	0	0	0	0					
STD DEV	99	95	84	70	62	50	23	34	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.01 M/S   MAXIMUM = 14.92 M/S   MINIMUM = .00 M/S   RANGE = 14.92 M/S
STANDARD DEVIATION = 2.22 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.36 M/S   STANDARD DEVIATION = 3.01 M/S
MEAN Y COMPONENT = 1.75 M/S   STANDARD DEVIATION = 4.01 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: PORTARTH   SPANNING 11/ 1 TO 11/30 YEARS: 1970 - 1986   12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.0	5.9	5.0	2.8	.7	.1	00	.0	.0	.0	.0	.0	.0	15.5	4.49	.20	25.72	2.25
30- 60	.8	4.0	3.3	1.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	9.7	4.07	.34	17.99	2.09
60- 90	.6	3.7	3.3	1.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	9.0	4.13	.24	11.83	2.02
90-120	.6	4.0	4.0	1.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	10.1	4.21	.28	9.77	1.86
120-150	.8	3.2	4.0	2.9	.5	.1	.0	.0	.0	.0	.0	.0	.0	11.5	4.80	.51	11.32	2.22
150-180	.7	3.0	3.5	2.7	.6	.1	.0	.0	.0	.0	.0	.0	.0	10.7	4.93	.00	12.35	2.29
180-210	.5	1.5	1.4	.8	.3	.0	.0	.0	.0	.0	.0	.0	.0	4.6	4.58	.34	10.79	2.35
210-240	.6	1.4	.6	.4	.2	.0	.0	.0	.0	.0	.0	.0	.0	3.2	3.82	.17	10.79	2.46
240-270	.4	1.0	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.9	3.15	.69	8.23	1.95
270-300	.6	1.7	.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.3	3.36	.37	9.77	1.81
300-330	.6	2.5	1.9	1.5	.4	.0	.0	.0	.0	.0	.0	.0	.0	6.9	4.52	.51	10.29	2.34
330-360	.8	3.0	3.6	3.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	10.9	4.83	.34	10.80	2.23
CALM	2.7													2.7				

SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24	
	!	!	!	!	!	!	!	!	!	!	!	!	!	
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26	
PERCENT	10.6	35.1	31.8	18.3	3.8	.4	.0	.0	.0	.0	.0	.0	.0	100.00
MEAN DIR	169	146	145	166	169	153	90	0	30	29	0	0	30	
STD DEV	109	108	106	113	111	93	106	0	0	0	0	0	0	

SUMMARY STATISTICS

MEAN SPEED = 4.31 M/S   MAXIMUM = 25.72 M/S   MINIMUM = .00 M/S   RANGE = 25.72 M/S
STANDARD DEVIATION = 2.08 M/S

IN A COORDINATE SYSEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.97 M/S   STANDARD DEVIATION = 2.75 M/S
MEAN Y COMPONENT = -.37 M/S   STANDARD DEVIATION = 3.77 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: CORPUS SPANNING 4/ 1 TO 4/30 YEARS: 1970 - 1986 12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.3	1.5	2.9	2.7	1.3	.4	.0	.0	.0	.0	.0	.0	.0	9.0	5.93	.00	12.86	2.40
30- 60	.1	1.0	1.9	1.9	1.0	.2	.0	.0	.0	.0	.0	.0	.0	6.1	5.94	.17	12.35	2.46
60- 90	.3	1.4	199	2.0	1.2	.2	.0	.0	.0	.0	.0	.0	.0	7.0	5.81	.30	12.35	2.51
90-120	.3	3.0	3.9	4.1	1.6	.1	.0	.0	.0	.0	.0	.0	.0	12.9	5.54	.48	11.32	2.24
120-150	.3	3.7	6.7	11.4	10.3	3.9	.6	.1	.0	.0	.0	.0	.0	37.1	7.27	.24	17.49	2.60
150-180	.3	2.0	2.8	4.4	4.4	1.6	.6	.1	.0	.0	.0	.0	.0	16.3	7.24	.69	15.43	2.89
180-210	.1	.6	.7	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.0	4.87	.69	14.40	2.44
210-240	.2	.5	.4	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.4	4.17	.36	11.31	2.57
240-270	.1	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	3.13	.69	6.17	1.45
270-300	.2	.4	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9	3.32	.51	8.79	2.12
300-330	.1	.8	.4	.3	.2	.2	.1	.0	.0	.0	.0	.0	.0	2.1	5.70	.69	15.42	3.47
330-360	.1	.8	1.1	1.2	.5	.1	.0	.0	.0	.0	.0	.0	.0	3.9	5.88	.51	15.42	2.75
CALM	.8													.8				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	3.1	16.2	22.8	28.7	20.8	6.7	1.4	.3	.0	.0	.0	.0	.0	100.00				
MEAN DIR	154	144	127	129	135	146	164	185	150	0	0	0	0					
STD DEV	93	83	74	63	49	46	39	59	75	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 6.45 M/S MAXIMUM = 17.49 M/S MINIMUM = .00 M/S RANGE = 17.49 M/S
STANDARD DEVIATION = 2.65 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -3.24 M/S STANDARD DEVIATION = 2.87 M/S
MEAN Y COMPONENT = 2.44 M/S STANDARD DEVIATION = 4.88 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: CORPUS   SPANNING 11/ 1 TO 11/30 YEARS: 1970 - 1986   12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	20–22	22–24	24–26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.5	4.4	6.6	6.0	2.6	.9	.1	.0	.0	.0	.0	.0	.0	21.2	5.81	.34	16.46	2.51
30- 60	.3	2.3	3.2	2.0	.7	.1	.0	.0	.0	.0	.0	.0	.0	8.6	5.16	.69	12.35	2.29
60- 90	.4	2.2	1.9	1.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	5.7	4.38	.30	9.77	2.09
90-120	.4	3.3	1.7	.7	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.3	3.95	.51	9.77	1.91
120-150	.6	5.2	5.6	5.0	2.5	.9	.2	.0	.0	.0	.0	.0	.0	20.0	5.65	.17	14.40	2.63
150-180	.3	2.9	4.2	3.5	2.3	1.1	.3	.0	.0	.0	.0	.0	.0	14.7	6.19	.37	17.48	2.85
180-210	.2	.9	.8	.6	.3	.0	.0	.0	.0	.0	.0	.0	.0	2.9	496	.64	11.82	2.57
210-240	.3	1.0	.4	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.9	3.47	.24	9.25	2.05
240-270	.2	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8	2.72	.63	7.72	1.34
270-300	.3	.9	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.7	3.12	.48	8.74	1.85
300-330	.3	1.5	1.0	1.0	.4	.2	.0	.0	.0	.0	.0	.0	.0	4.4	5.00	.34	15.93	2.76
330-360	.5	2.8	2.9	2.7	1.3	.2	.0	.0	.0	.0	.0	.0	.0	10.4	5.44	.42	12.34	2.41
CALM	1.4													1.4				

SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	
PERCENT	5.6	28.1	28.7	22.9	10.6	3.4	.7	.1	.0	.0	.0	.0	.0	100.00
MEAN DIR	173	148	129	133	142	138	131	142	90	0	0	0	0	
STD DEV	107	102	102	107	103	91	63	99	106	0	0	0	0	

SUMMARY STATISTICS

MEAN SPEED = 5.28 M/S   MAXIMUM = 17.48 M/S   MINIMUM = .00 M/S   RANGE = 17.48 M/S
STANDARD DEVIATION = 2.49 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.56 M/S   STANDARD DEVIATION = 2.58 M/S
MEAN Y COMPONENT = -.21 M/S   STANDARD DEVIATION = 5.00 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: BROWNSV SPANNING 4/ 1 TO 4/30 YEARS: 1970 - 1986 12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.4	1.5	1.6	1.8	.8	.1	.0	.0	.0	.0	.0	.0	.0	6.2	5.33	.51	12.35	2.62
30- 60	.4	2.2	2.2	2.2	.3	.0	.0	.0	.0	.0	.0	.0	.0	7.2	4.82	.55	10.29	2.33
60- 90	.4	2.6	1.9	1.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.4	4.29	.53	9.77	2.09
90-120	.4	3.5	3.3	2.7	.4	.0	.0	.0	.0	.0	.0	.0	.0	10.5	4.79	.51	14.40	2.17
120-150	.5	4.0	8.1	10.8	6.4	1.7	.3	.0	.0	.0	.0	.0	.0	31.8	.50	.69	15.43	2.54
150-180	.3	1.9	3.8	7.3	6.1	3.3	1.4	.4	.0	.0	.0	.0	.0	24.5	7.75	.18	17.49	2.90
180-210	.1	.4	.4	.4	.2	.2	.0	.0	.0	.0	.0	.0	.0	1.8	5.87	.51	14.19	3.24
210-240	.1	.5	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	3.68	.51	10.29	2.41
240-270	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	2.60	.24	7.20	1.84
270-300	.1	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	2.87	.53	8.23	2.06
300-330	.4	.9	.6	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.5	4.28	.51	13.89	2.75
330-360	.4	1.6	1.1	.8	.3	.1	.0	.0	.0	.0	.0	.0	.0	4.4	4.67	.51	13.37	2.69
CALM	3.0													3.0				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	6.7	19.5	23.2	28.1	14.8	5.4	1.8	.4	.0	.0	.0	.0	.0	100.00				
MEAN DIR	160	140	134	137	149	162	170	168	180	0	0	0	0					
STD DEV	107	88	68	56	38	12	11	37	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.89 M/S MAXIMUM = 17.49 M/S MINIMUM = .00 M/S RANGE = 17.49 M/S
STANDARD DEVIATION = 2.84 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.61 M/S STANDARD DEVIATION = 2.40 M/S
MEAN Y COMPONENT = 2.89 M/S STANDARD DEVIATION = 4.68 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: BROWNSV   SPANNING 11/ 1 TO 11/30 YEARS: 1970 - 1986   12240 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.9	3.9	3.2	2.2	.4	.1	.0	.0	.0	.0	.0	.0	.0	10.6	4.43	.51	15.43	2.39
30- 60	.6	2.3	1.7	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.3	3.79	.51	9.77	2.04
60- 90	.6	2.0	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.6	3.16	.30	7.72	1.75
90-120	.6	3.5	1.3	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.8	3.31	.51	8.22	1.85
120-150	.9	5.9	4.7	3.1	1.1	.2	.0	.0	.0	.0	.0	.0	.0	15.9	4.63	.51	13.89	2.39
150-180	.5	4.8	4.5	4.8	3.8	1.5	.4	.1	.0	.0	.0	.0	.0	20.3	6.20	.51	17.48	2.99
180-210	.3	.9	.7	.5	.4	.1	.0	.0	.0	.0	.0	.0	.0	3.1	5.01	.51	12.86	3.11
210-240	.2	.5	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.2	3.44	.51	9.26	2.14
240-270	.2	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.7	2.67	.51	8.74	1.66
270-300	.3	.9	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.3	2.58	.51	8.23	1.62
300-330	.6	4.4	2.5	1.6	.5	.1	.0	.0	.0	.0	.0	.0	.0	9.7	4.29	.51	12.35	2.38
330-360	.8	5.8	4.7	4.1	1.9	.3	.0	.0	.0	.0	.0	.0	.0	17.6	5.04	.40	12.35	2.60
CALM	4.7													4.7				

SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	
PERCENT	11.2	35.5	24.7	17.6	8.2	2.2	.5	.1	.0	.0	.0	.0	.0	99.98
MEAN DIR	164	179	178	192	207	191	189	152	170	0	0	0	0	
STD DEV	110	112	113	111	91	68	13	31	50	0	0	0	0	

SUMMARY STATISTICS

MEAN SPEED = 4.53 M/S   MAXIMUM = 17.48 M/S   MINIMUM = .00 M/S   RANGE = 17.48 M/S
STANDARD DEVIATION = 2.58 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.53 M/S   STANDARD DEVIATION = 2.35 M/S
MEAN Y COMPONENT = .32 M/S   STANDARD DEVIATION = 4.61 M/S

D.3.2 NATIONAL DATA BUOY CENTER (NDBC) BUOYS AND PLATFORMS

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: 42001   SPANNING 4/ 1 TO 4/30 YEARS: 1978 - 1986   5894 DATA POINTS - 91.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.5	1.0	1.5	1.4	1.1	1.0	.3	.0	.0	.0	.0	.0	.0	6.9	6.82	.13	15.81	3.26
30- 60	.4	1.2	1.6	2.0	1.0	.8	.2	.1	.0	.0	.0	.0	.0	7.3	6.55	.39	15.42	3.04
60- 90	.5	2.2	4.1	3.5	1.3	.8	.0	.0	.0	.0	.0	.0	.0	12.5	5.90	.13	12.97	2.48
90-120	.6	3.0	5.2	4.8	1.7	.5	.2	.0	.0	.0	.0	.0	.0	15.9	5.75	.03	13.69	2.36
120-150	.6	3.0	4.8	4.8	4.4	3.2	.7	.4	.0	.0	.0	.0	.0	22.0	7.18	.13	15.84	3.03
150-180	.6	1.5	2.8	3.9	3.2	1.7	.8	.1	.0	.0	.0	.0	.0	14.6	7.16	.19	14.54	3.10
180-210	.6	1.2	1.3	.8	.7	.1	.1	.0	.0	.0	.0	.0	.0	4.7	5.08	.14	13.78	2.86
210-240	.4	.6	.6	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.9	4.11	.15	9.26	2.28
240-270	.1	.3	.2	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.9	4.75	.07	12.39	2.60
270-300	.4	.4	.3	.2	.3	.4	.2	.0	.0	.0	.0	.0	.0	2.2	6.49	.06	13.64	4.00
300-330	.4	.8	1.0	.7	.8	.9	.6	.0	.0	.0	.0	.0	.0	5.2	7.22	.21	14.45	3.63
330-360	.3	.8	1.3	1.6	.9	.6	.2	.0	.0	.0	.0	.0	.0	5.7	6.63	.07	13.55	2.87
CALM	.2													.2				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	5.5	16.2	24.7	24.2	15.6	10.1	3.3	.5	.0	.0	.0	.0	.0	100.00				
MEAN DIR	164	144	135	135	146	150	175	124	0	0	0	0	0					
STD DEV	96	85	82	82	83	93	100	51	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 6.48 M/S   MAXIMUM = 15.84 M/S   MINIMUM = .00 M/S   RANGE = 15.84 M/S
STANDARD DEVIATION = 2.96 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.81 M/S   STANDARD DEVIATION = 3.90 M/S
MEAN Y COMPONENT = 1.02 M/S   STANDARD DEVIATION = 5.15 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: 42001   SPANNING 11/ 1 TO 11/30 YEARS: 1977 - 1986   6480 DATA POINTS - 90.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.2	1.0	1.8	2.5	2.1	1.5	1.0	.1	.0	.0	.0	.0	.0	10.3	7.86	.10	16.12	3.15
30- 60	.2	2.1	3.6	3.3	2.5	1.3	.5	.2	.1	.1	.0	.0	.0	13.8	7.00	.03	19.66	3.07
60- 90	.8	3.0	3.6	4.2	1.9	.4	.1	.0	.1	.0	.0	.0	.0	14.1	5.86	.19	17.60	2.66
90-120	.6	2.8	5.4	5.1	1.5	.2	.0	.0	.0	.0	.0	.0	.0	15.7	5.64	.13	14.70	2.09
120-150	.3	1.6	3.4	4.8	3.2	.9	.3	.1	.0	.0	.0	.0	.0	14.6	6.89	.06	15.79	2.47
150-180	.5	1.3	2.3	3.3	1.4	.8	.1	.0	.0	.0	.0	.0	.0	9.6	6.43	.19	13.12	2.55
180-210	.5	1.0	1.4	.7	.4	.1	.0	.0	.0	.0	.0	.0	.0	4.1	4.93	.28	13.66	2.47
210-240	.5	1.0	.9	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.8	3.98	.14	16.26	2.28
240-270	.5	.5	.6	.3	.3	.1	.0	.0	.0	.0	.0	.0	.0	2.3	4.75	.26	11.98	2.86
270-300	.3	.3	.6	.6	.4	.1	.0	.0	.0	.0	.0	.0	.0	2.3	5.99	.06	12.33	2.80
300-330	.3	.4	.5	.6	.7	.9	.3	.0	.0	.0	.0	.0	.0	3.8	7.74	.10	14.35	3.56
330-360	.3	.5	.8	.8	1.3	1.7	.7	.3	.0	.0	.0	.0	.0	6.3	8.71	.19	15.65	3.60
CALM	.4													.4				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	5.3	15.5	24.7	26.5	15.8	8.0	3.1	.8	.3	.1	.0	.0	.0	100.00				
MEAN DIR	172	128	124	118	131	167	148	186	70	54	0	0	0					
STD DEV	92	84	80	76	98	131	139	144	39	34	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 6.51 M/S   MAXIMUM = 19.66 M/S   MINIMUM = .00 M/S   RANGE = 19.66 M/S
STANDARD DEVIATION = 2.97 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.74 M/S   STANDARD DEVIATION = 3.95 M/S
MEAN Y COMPONENT = -.61 M/S   STANDARD DEVIATION = 5.26 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: 42002 SPANNING 4/ 1 TO 4/30 YEARS: 1977 - 1986 7140 DATA POINTS - 99.2 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	PERCENT	MEN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.1	.7	1.3	1.4	.8	.6	.3	.1	.0	.0	.0	.0	.0	5.4	7.11	.58	15.60	3.10
30- 60	.4	1.1	1.7	1.5	1.7	.9	.3	.1	.0	.0	.0	.0	.0	7.6	6.98	.57	16.96	3.27
60- 90	.3	1.8	3.9	3.2	2.1	.8	.1	.0	.0	.0	.0	.0	.0	12.3	6.30	.69	13.11	2.51
90-120	.5	2.2	5.3	8.6	4.7	.9	.1	.0	.0	.0	.0	.0	.0	22.3	6.59	.27	14.20	2.27
120-150	.4	2.1	5.8	9.6	7.8	3.2	.6	.0	.0	.0	.0	.0	.0	29.5	7.30	.19	14.23	2.47
150-180	.3	1.1	1.8	2.0	1.5	1.0	.2	.0	.0	.0	.0	.0	.0	8.0	6.75	.72	12.97	2.86
180-210	.4	.6	.9	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.5	4.65	.36	12.53	2.19
210-240	.2	.4	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.1	3.79	.19	7.42	1.85
240-270	.4	.3	.4	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.3	3.62	.42	7.16	2.18
270-300	.6	.5	.4	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.8	3.68	.07	14.66	2.71
300-330	.3	.4	.9	.9	.4	.1	.1	.3	.0	.0	.0	.0	.0	3.3	6.96	.24	16.53	3.68
330-360	.3	.5	.8	1.1	1.1	.5	.2	.0	.0	.0	.0	.0	.0	4.5	7.17	.68	14.86	3.00
CALM	.4													.4				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	4.6	11.7	23.5	29.3	20.3	8.1	1.9	.6	.1	.0	.0	.0	.0	100.00				
MEAN DIR	185	137	129	128	128	125	133	205	108	0	0	0	0					
STD DEV	97	84	76	70	70	77	106	136	140	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 6.67 M/S MAXIMUM = 16.96 M/S MINIMUM = .00 M/S RANGE = 16.96 M/S
STANDARD DEVIATION = 2.71 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -3.93 M/S STANDARD DEVIATION = 3.64 M/S
MEAN Y COMPONENT = 1.14 M/S STANDARD DEVIATION = 4.68 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: 42002 SPANNING 11/ 1 TO 11/30 YEARS: 1977 - 1986 7107 DATA POINTS - 98.7 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.4	1.1	1.4	2.4	2.3	1.6	.9	.4	.1	.0	.0	.0	.0	10.6	8.02	.06	17.97	3.41
30- 60	.3	1.6	2.4	2.7	2.5	2.2	.7	.2	.0	.0	.0	.0	.0	12.6	7.53	.23	17.50	3.11
60- 90	.5	1.5	3.3	3.8	2.3	.6	.1	.0	.0	.0	.0	.0	.0	12.0	6.36	.21	21.21	2.50
90-120	.3	1.6	2.9	2.7	1.0	.3	.1	.0	.0	.0	.0	.0	.0	8.9	5.93	.07	17.20	2.37
120-150	.4	1.4	3.7	5.7	5.2	1.7	.4	.0	.0	.0	.0	.0	.0	18.5	7.22	.28	16.15	2.48
150-180	.3	1.2	2.7	3.3	3.8	2.5	.5	.0	.0	.0	.0	.0	.0	14.3	7.59	.54	14.20	2.81
180-210	.4	1.2	2.1	1.8	.7	.4	.3	.0	.0	.0	.0	.0	.0	6.9	6.08	.04	14.69	2.88
210-240	.3	.6	.5	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.0	4.49	.43	16.26	2.70
240-270	.2	.5	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.3	4.27	.34	11.12	2.39
270-300	.2	.4	.3	.5	.3	.2	.0	.0	.0	.0	.0	.0	.0	1.9	6.14	.53	12.56	3.03
300-330	.2	.4	.5	.8	1.5	.8	.3	.1	.0	.0	.0	.0	.0	4.5	8.25	.38	15.93	3.02
330-360	.2	.7	.9	.8	1.4	1.3	.7	.2	.0	.0	.0	.0	.0	6.1	8.44	.30	18.51	3.61
CALM	.4													.4				

SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24	
	!	!	!	!	!	!	!	!	!	!	!	!	!	
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26	
PERCENT	4.1	12.1	21.1	24.9	21.2	11.6	3.9	1.0	.2	.0	.0	.0	.0	100.00
MEAN DIR	152	140	132	127	141	145	147	138	114	342	74	0	0	
STD DEV	95	92	79	80	94	108	125	143	133	0	17	0	0	

SUMMARY STATISTICS

MEAN SPEED = 7.08 M/S MAXIMUM = 21.21 M/ MINIMUM = .00 M/S RANGE = 21.21 M/S
STANDARD DEVIATION = 2.99 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.66 M/S STANDARD DEVIATION = 3.93 M/S
MEAN Y COMPONENT = .11 M/S STANDARD DEVIATION = 6.04 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: 42003   SPANNING 4/ 1 TO 4/30 YEARS: 1978 - 1986   6480 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.5	1.2	1.3	1.0	.7	.3	.0	.	.0	.0	.0	.0	.0	5.1	5.53	.21	12.49	2.97
30- 60	.4	1.9	3.2	2.2	1.0	.4	.3	.0	.0	.0	.0	.0	.0	9.4	5.78	.09	13.89	2.76
60- 90	.6	3.3	5.6	5.4	2.1	.3	.2	.1	.1	.0	.0	.0	.0	17.7	5.87	.17	17.78	2.57
90-120	.6	2.3	5.8	6.5	3.3	1.1	.1	.0	.1	.0	.0	.0	.0	19.8	6.40	.13	17.92	2.41
120-150	.4	.9	3.2	4.9	4.9	1.4	.3	.0	.0	.0	.0	.0	.0	15.9	7.27	.46	14.45	2.47
150-180	.4	.9	1.5	2.2	1.9	1.0	.4	.0	.1	.0	.0	.0	.0	8.3	7.20	.27	17.29	3.20
180-210	.4	.5	1.0	1.2	.6	.3	.2	.1	.0	.0	.0	.0	.0	4.2	6.42	.21	14.79	3.29
210-240	.3	.7	.4	.5	.2	.1	.1	.0	.0	.0	.0	.0	.0	2.3	5.49	.09	14.11	3.22
240-270	.3	.7	.4	.3	.3	.1	.0	.0	.0	.0	.0	.0	.0	2.1	4.93	.40	12.09	2.90
270-300	.2	.8	.6	.4	.4	.4	.2	.1	.0	.0	.0	.0	.0	3.1	6.54	.20	17.33	3.84
300-330	.7	1.0	1.0	1.0	1.5	.5	.2	.1	.0	.0	.0	.0	.0	5.9	6.45	.15	15.35	3.42
330-360	.6	.7	1.7	1.4	1.0	.4	.0	.0	.0	.0	.0	.0	.0	5.9	6.04	.21	13.65	2.80
CALM	.3													.3				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	5.7	146	25.7	27.0	17.8	6.4	2.0	.4	.3	.0	.0	.0	.0	100.00				
MEAN DIR	174	140	130	133	150	163	161	219	125	0	0	0	0					
STD DEV	110	98	89	81	87	91	94	84	43	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 6.33 M/S   MAXIMUM = 17.92 M/S   MINIMUM = .00 M/S   RANGE = 17.92 M/S
STANDARD DEVIATION = 2.79 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -2.85 M/S   STANDARD DEVIATION = 4.37 M/S
MEAN Y COMPONENT = .55 M/S   STANDARD DEVIATION = 4.50 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: 42003 SPANNING 11/ 1 TO 11/30 YEARS: 1977 - 1986 5760 DATA POINTS - 80.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES	SPEED M/S 0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 47	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.5	1.6	2.4	2.7	1.9	.8	.5	.5	.0	.0	.0	.0	.0	10.8	6.91	.16	16.15	3.48
30- 60	.5	1.6	3.1	4.7	4.0	1.1	.3	.0	.2	.1	.0	.1	.1	15.7	7.25	.23	35.93	3.19
60- 90	.6	2.0	4.4	6.3	3.3	.6	.1	.2	.5	.2	.0	.0	.0	18.3	6.91	.38	47.30	3.24
90-120	.5	1.3	4.4	6.9	2.6	.5	.3	.2	.0	.0	.0	.0	.0	16.7	6.63	.07	16.49	2.35
120-150	.2	1.4	2.7	3.4	1.4	.6	.1	.0	.0	.0	.0	.0	.0	9.9	6.33	.10	16.59	2.40
150-180	.5	1.2	1.6	1.5	1.0	.2	.0	.0	.0	.0	.0	.0	.0	6.0	5.75	.24	14.24	2.53
180-210	.4	.4	.5	.4	.1	.0	.0	.0	.0	.0	.0	.0	.1	1.9	5.40	.13	36.49	4.32
210-240	.5	.5	.5	.5	.3	.2	.0	.0	.0	.0	.1	.0	.0	2.5	6.10	.17	22.25	4.70
240-270	.3	.6	.7	.5	.4	.1	.2	.1	.1	.0	.0	.0	.0	3.0	6.51	.24	22.70	4.34
270-300	.3	.5	.5	.6	.5	.1	.0	.0	.0	.0	.0	.0	.0	2.5	5.51	.07	12.97	3.10
300-330	.5	.5	.8	.7	.7	.4	.1	.0	.0	.0	.0	.0	.0	3.6	6.27	.42	16.50	3.40
330-360	.2	1.1	1.8	2.0	1.8	1.2	.6	.2	.0	.0	.0	.0	.0	8.8	7.42	.24	15.87	3.35
CALM	.3													.3				
PERCENT	5.3	12.8	23.3	30.1	18.0	5.7	2.2	1.3	.8	.3	.1	.1	.1	100.00				
MEAN DIR	162	139	127	118	125	156	163	123	94	74	191	146	107					
STD DEV	101	103	95	89	103	126	135	124	68	44	80	113	72					

SUMMARY STATISTICS

MEAN SPEED = 6.70 M/S MAXIMUM = 47.30 M/S MINIMUM = .00 M/S RANGE = 47.30 M/S
STANDARD DEVIATION = 3.23 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -3.08 M/S STANDARD DEVIATION = 4.60 M/S
MEAN Y COMPONENT = -1.39 M/S STANDARD DEVIATION = 4.76 M/S

D.3.3 NATIONAL DATA BUOY CENTER (NDBC) CMAN STATIONS

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: ALRF1 SPANNING 4/ 1 TO 4/30 YEARS: 1986 - 1987 1440 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.4	2.1	1.7	1.7	.4	.1	.1	.0	.0	.0	.0	.0	.0	6.5	4.87	.52	12.89	2.65
30- 60	.7	1.8	2.2	2.8	2.3	.3	.0	.0	.0	.0	.0	.0	.0	10.0	5.84	1.03	10.82	2.93
60- 90	.6	3.3	4.3	2.8	3.0	.6	.0	.0	.0	.0	.0	.0	.0	14.5	5.66	.52	10.82	2.86
90-120	1.0	1.2	2.5	2.3	1.2	.1	.0	.0	.0	.0	.0	.0	.0	8.3	5.42	.52	10.31	2.57
120-150	.3	1.0	.6	.6	.1	.2	.1	.0	.0	.0	.0	.0	.0	2.8	4.97	.52	12.37	3.31
150-180	.1	.4	.3	.2	.6	.1	.0	.0	.0	.0	.0	.0	.0	1.7	5.92	1.03	11.34	3.04
180-210	.3	.4	.1	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	1.2	4.09	.52	9.28	3.20
210-240	1.0	1.7	1.7	.9	.5	.1	.1	.0	.0	.0	.0	.0	.0	6.0	4.47	.52	12.37	2.75
240-270	.7	1.0	1.6	1.2	.6	.1	.0	.0	.0	.0	.0	.0	.0	5.2	4.93	.52	10.31	2.79
270-300	.8	2.8	4.7	4.0	1.7	.3	.0	.0	.0	.0	.0	.0	.0	14.2	5.48	.52	11.34	2.40
300-330	.4	2.4	2.6	2.0	1.2	.1	.0	.0	.0	.0	.0	.0	.0	8.7	5.28	.52	10.82	2.34
330-360	1.2	2.8	2.9	3.1	1.7	.7	.1	.0	.0	.0	.0	.0	.0	12.4	5.44	.52	12.37	3.01
CALM	8.5													8.5				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	15.9	21.1	25.2	21.6	13.4	2.5	.3	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	196	189	191	189	173	193	185	0	0	0	0	0	0					
STD DEV	109	118	115	121	115	124	131	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.90 M/S MAXIMUM = 12.89 M/S MINIMUM = .00 M/S RANGE = 12.89 M/S
STANDARD DEVIATION = 2.85 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.09 M/S STANDARD DEVIATION = 4.50 M/S
MEAN Y COMPONENT = -1.22 M/S STANDARD DEVIATION = 3.22 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: ALRF1   SPANNING 11/ 1 TO 11/30 YEAR: 1986 - 1987   1440 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.2	.9	1.5	2.3	1.7	.4	.0	.1	.0	.0	.0	.0	.0	7.2	6.60	1.03	14.43	2.75
30- 60	.2	.8	2.3	3.0	2.5	2.9	2.0	.6	.0	.0	.0	.0	.0	14.3	8.74	1.03	15.46	3.28
60- 90	.2	1.2	5.0	8.7	9.6	8.0	3.1	.8	.0	.0	.0	.0	.0	36.5	8.66	1.03	15.98	2.64
90-120	.5	.9	3.2	4.5	5.0	3.5	.8	.3	.0	.0	.0	.0	.0	18.7	7.88	.52	15.46	3.06
120-150	.3	.8	2.3	.5	.3	.1	.0	.0	.0	.0	.0	.0	.0	4.2	4.80	1.03	11.34	2.31
150-180	.3	.6	1.0	.7	.2	.0	.0	.0	.0	.0	.0	.0	.0	2.8	4.77	.52	8.76	2.51
180-210	.1	.2	.8	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.4	4.82	.52	7.73	2.10
210-240	.3	.6	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.9	4.91	1.55	7.73	2.06
240-270	.3	.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.3	2.58	.52	5.15	1.84
270-300	.0	.6	.9	.9	.5	.1	.0	.0	.0	.0	.0	.0	.0	3.1	5.94	2.06	10.82	2.64
300-330	.1	.5	1.2	.6	.2	.1	.0	.0	.0	.0	.0	.0	.0	2.6	5.34	1.03	11.34	2.23
330-360	.1	.5	1.0	.3	.8	.4	.4	.0	.0	.0	.0	.0	.0	3.5	7.18	1.55	13.92	3.74
CALM	1.5													1.5				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	4.0	8.4	20.6	22.8	20.8	15.6	6.2	1.7	.0	.0	.0	.0	.0	100.00				
MEAN DIR	150	159	137	105	96	88	91	70	0	0	0	0	0					
STD DEV	79	100	91	70	64	50	66	5	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 7.51 M/S   MAXIMUM = 15.98 M/S   MINIMUM = .00 M/S   RANGE = 15.98 M/S
STANDARD DEVIATION = 3.26 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -5.26 M/S   STANDARD DEVIATION = 4.94 M/S
MEAN Y COMPONENT = -1.27 M/S   STANDARD DEVIATION = 3.67 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: VENF1   SPANNING 4/ 1 TO 4/30 YEARS: 1987 - 1987   562 DATA POINTS - 78.1 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	2.5	2.7	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.5	2.11	.52	4.64	1.42
30- 60	1.6	1.8	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.7	2.23	1.03	4.64	1.49
60- 90	1.2	4.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.7	2.42	1.03	3.61	1.21
90-120	2.0	.5	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	1.88	.52	5.67	1.82
120-150	1.8	.4	.4	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	2.8	2.67	.52	10.82	3.32
150-180	.7	1.8	2.3	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.2	3.93	.52	6.70	1.58
180-210	.4	.5	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.6	3.32	1.55	4.64	1.93
210-240	.9	1.8	.0	2.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	5.0	4.62	1.03	8.25	2.48
240-270	.2	1.8	3.9	1.4	.4	.0	.0	.0	.0	.0	.0	.0	.0	7.7	4.83	1.55	8.25	2.14
270-300	.5	7.3	13.2	5.5	.9	.0	.0	.0	.0	.0	.0	.0	.0	27.4	4.77	.52	8.76	2.04
300-330	.4	2.7	6.6	6.9	6.0	.9	.0	.0	.0	.0	.0	.0	.0	23.5	6.46	1.03	10.82	2.51
330-360	1.8	1.4	.9	1.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.2	3.31	.52	7.73	2.56
CALM	3.7													3.7				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	17.6	27.0	29.2	17.4	7.7	1.1	.0	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	144	192	263	286	301	290	0	0	0	0	0	0	0					
STD DEV	107	114	76	54	45	44	0	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.32 M/S   MAXIMUM = 10.82 M/S   MINIMUM = .00 M/S   RANGE = 10.82 M/S
STANDARD DEVIATION = 2.44 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = 2.66 M/S   STANDARD DEVIATION = 3.07 M/S
MEAN Y COMPONENT = -1.01 M/S   STANDARD DEVIATION = 2.67 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: VENF1 SPANNING 11/ 1 TO 11/30 YEARS: 1987 - 1987 720 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.5	6.0	8.1	2.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	18.1	4.26	.52	7.73	1.70
30- 60	.7	14.7	7.9	4.2	1.4	.0	.0	.0	.0	.0	.0	.0	.0	28.9	4.28	1.03	9.79	2.02
60- 90	.7	8.3	8.6	3.5	.8	.0	.0	.0	.0	.0	.0	.0	.0	21.9	4.40	.52	9.28	2.19
90-120	.3	1.4	3.1	1.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.1	4.61	.52	9.79	2.31
120-150	.6	.8	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.4	3.51	1.50	6.70	1.72
150-180	.4	.8	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.8	3.21	1.55	6.19	1.98
180-210	.7	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.3	1.98	.52	3.61	.84
210-240	.6	1.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.9	2.43	1.03	4.64	1.83
240-270	.6	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.1	2.00	.52	3.09	1.07
270-300	.6	1.3	.7	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.9	3.45	.26	8.25	2.64
300-330	.0	.6	2.4	1.8	1.3	.6	.7	.0	.0	.0	.0	.0	.0	7.2	7.17	2.06	13.40	3.08
330-360	.3	.7	1.1	.7	1.0	1.3	.3	.0	.0	.0	.0	.0	.0	5.3	7.34	1.55	12.37	3.45
CALM	1.1													1.1				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	7.9	36.8	33.3	14.4	4.7	1.8	1.0	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	140	86	93	111	191	327	321	0	0	0	0	0	0					
STD DEV	99	76	91	104	138	81	43	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.49 M/S MAXIMUM = 13.40 M/S MINIMUM = .00 M/S RANGE = 13.40 M/S
STANDARD DEVIATION = 2.28 M/S

IN A COORDINATE SYSTEM WHOSE Y AXI IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.75 M/S STANDARD DEVIATION = 3.28 M/S
MEAN Y COMPONENT = -2.14 M/S STANDARD DEVIATION = 2.65 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: CSBF1 SPANNING 4/ 1 TO 4/30 YEARS: 1985 - 1987 2107 DATA POINTS - 97.5 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	2.2	3.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.6	2.19	.52	4.64	1.39
30- 60	2.4	1.9	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.5	1.94	.52	5.15	1.35
60- 90	1.0	1.7	1.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.3	3.26	.52	7.22	2.11
90-120	1.0	4.2	2.8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	8.0	3.29	.52	6.70	1.71
120-150	1.9	3.1	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.4	2.21	.52	5.67	1.58
150-180	.8	3.7	1.4	.8	.2	.0	.0	.0	.0	.0	.0	.0	.0	6.9	3.67	.52	9.28	2.12
180-210	.5	2.4	.6	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	3.7	3.30	.52	11.86	2.08
210-240	1.5	5.6	4.6	2.1	.6	.1	.0	.0	.0	.0	.0	.0	.0	14.5	4.16	.52	10.82	2.37
240-270	.5	3.0	3.8	2.6	.8	.2	.0	.0	.0	.0	.0	.0	.0	10.9	5.04	.52	11.34	2.33
270-300	1.2	4.1	5.6	3.8	1.0	.0	.0	.0	.0	.0	.0	.0	.0	15.8	4.82	.52	10.31	2.34
300-330	1.9	2.3	1.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.9	2.76	.52	8.25	2.07
330-360	3.2	3.9	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	7.5	2.12	.52	4.64	1.39
CALM	7.1													7.1				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	25.1	39.1	22.7	10.0	2.7	.4	.0	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	184	193	219	246	250	237	0	0	0	0	0	0	0					
STD DEV	121	98	80	53	51	43	0	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 3.34 M/S MAXIMUM = 11.86 M/S MINIMUM = .00 M/S RANGE = 11.86 M/S
STANDARD DEVIATION = 2.17 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = 1.34 M/S STANDARD DEVIATION = 3.09 M/S
MEAN Y COMPONENT = .54 M/S STANDARD DEVIATION = 2.07 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: CSBF1   SPANNING 11/ 1 TO 11/30 YEARS: 1985 - 1987   1955 DATA POINTS - 90.5 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	4.7	6.4	2.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	13.2	2.49	.52	6.70	1.62
30- 60	6.8	9.1	3.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	19.2	2.50	.43	7.73	1.78
60- 90	5.1	13.5	2.1	.3	.3	.1	.1	.0	.0	.0	.0	.0	.0	21.3	2.74	.52	12.37	1.81
90-120	2.5	7.3	1.0	.0	.0	.1	.0	.0	.1	.1	.0	.0	.0	10.9	2.70	.52	18.04	2.20
120-150	2.5	3.4	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	6.2	2.22	.52	7.22	1.48
150-180	.6	1.6	1.1	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	3.8	3.81	.52	9.15	2.09
180-210	.3	.9	.5	.2	.0	.0	.1	.0	.0	.0	.0	.0	.0	1.9	3.54	.52	12.30	2.64
210-240	.4	1.9	1.5	.1	.1	.0	.0	.0	.0	.1	.0	.0	.0	3.9	3.78	.52	18.56	2.57
240-270	.0	.4	.6	.2	.0	.0	.0	.0	.0	.0	.0	.1	.0	1.2	5.13	2.06	23.71	4.44
270-300	.2	.5	.7	.7	.3	.0	.0	.0	.0	.0	.0	.0	.0	2.3	5.31	1.55	9.28	2.27
300-330	.5	1.0	1.5	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	3.2	3.64	.52	10.82	2.17
330-360	1.2	2.7	1.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.2	2.77	.52	5.15	1.80
CALM	7.6													7.6				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	32.1	48.6	15.8	2.4	.6	.2	.1	.0	.1	.1	.0	.1	.0	100.00				
MEAN DIR	94	108	150	180	183	167	146	0	100	160	0	250	0					
STD DEV	79	82	112	96	99	128	34	0	0	102	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 2.63 M/S   MAXIMUM = 23.71 M/S   MINIMUM = .00 M/S   RANGE = 23.71 M/S
STANDARD DEVIATION = 1.83 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.99 M/S   STANDARD DEVIATION = 2.28 M/S
MEAN Y COMPONENT = -.41 M/S   STANDARD DEVIATION = 1.97 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: BURL1 SPANNING 4/ 1 TO 4/30 YEARS: 1985 - 1987 2160 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES \ SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.7	1.8	2.0	2.3	1.3	.6	.2	.0	.0	.0	.0	.0	.0	8.8	5.82	.52	12.89	3.06
30- 60	.8	1.9	3.3	1.1	.8	.6	.0	.0	.0	.0	.0	.0	.0	8.5	5.08	.52	11.86	2.89
60- 90	1.1	2.4	4.6	2.4	.9	.1	.0	.0	.0	.0	.0	.0	.0	11.4	4.90	.52	10.82	2.38
90-120	.7	2.5	4.0	4.5	1.5	.3	.1	.0	.0	.0	.0	.0	.0	13.7	5.74	.52	16.49	2.55
120-150	.5	1.7	1.5	1.3	.5	.5	.4	.0	.0	.0	.0	.0	.0	6.4	5.89	.35	16.49	3.46
150-180	.4	2.0	1.8	1.5	.6	.2	.0	.0	.0	.0	.0	.0	.0	6.7	5.12	.52	12.89	2.66
180-210	.8	1.0	1.1	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	3.6	3.98	.52	10.31	2.73
210-240	1.0	2.1	4.7	4.5	2.3	1.2	.5	.1	.0	.0	.0	.0	.0	16.5	6.27	.52	15.46	3.06
240-270	.4	.6	.9	1.2	.3	.3	.0	.0	.0	.0	.0	.0	.0	3.8	5.80	.52	12.37	2.98
270-300	.5	1.1	1.3	.8	.8	.1	.0	.0	.0	.0	.0	.0	.0	4.7	5.47	.52	13.92	2.74
300-330	.5	.9	1.0	1.1	.7	.3	.1	.0	.0	.0	.0	.0	.0	4.6	5.90	.40	16.49	3.45
330-360	.7	1.9	2.6	1.5	.8	.4	.1	.0	.0	.0	.0	.0	.0	8.0	5.32	.52	13.40	2.74
CALM	3.2													3.2				
PERCENT	11.3	19.9	28.8	22.8	10.9	4.5	1.5	.2	.1	.0	.0	.0	.0	100.00				
MEAN DIR	166	164	160	164	172	174	179	255	190	0	0	0	0					
STD DEV	103	97	97	93	102	103	91	55	100	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.36 M/S MAXIMUM = 16.49 M/S MINIMUM = .00 M/S RANGE = 16.49 M/S
STANDARD DEVIATION = 2.88 M/S

N A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.48 M/S STANDARD DEVIATION = 4.47 M/S
MEAN Y COMPONENT = .33 M/S STANDARD DEVIATION = 4.09 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: BURL1   SPANNING 11/ 1 TO 11/30 YEARS: 1985 - 1987   1926 DATA POINTS - 89.2 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MI SPEED	MAX SPEED	STD. DEV.
0- 30	.4	1.4	6.0	4.3	3.7	1.1	.2	.3	.0	.0	.0	.0	.0	17.4	6.66	1.03	15.98	2.82
30- 60	.3	1.8	2.0	1.8	.5	.1	.0	.1	.1	.0	.0	.0	.0	6.6	5.27	.52	17.01	3.04
60- 90	.6	2.8	4.8	2.3	2.0	.2	.0	.0	.0	.0	.0	.0	.0	12.6	5.34	.52	11.86	2.56
90-120	.2	1.7	5.1	6.7	2.5	1.3	.3	.1	.0	.0	.0	.0	.0	17.8	6.63	.52	14.95	2.43
120-150	.2	.9	1.1	.9	.7	.2	.0	.0	.0	.0	.0	.0	.0	4.0	5.80	1.03	11.86	2.79
150-180	.1	.2	.3	.6	.4	.1	.0	.0	.0	.0	.0	.0	.0	1.7	6.33	.36	10.31	2.43
180-210	.0	.2	.8	1.1	.3	.0	.0	.0	.0	.0	.0	.0	.0	2.3	6.40	3.09	9.28	.95
210-240	.2	.3	1.2	1.2	.2	.3	.2	.1	.0	.0	.0	.0	.0	3.5	6.41	1.03	14.43	3.10
240-270	.1	.1	.8	.3	.1	.7	.3	.0	.0	.0	.0	.0	.0	2.2	7.85	.52	13.92	3.41
270-300	.2	.4	1.3	1.0	1.0	.2	.0	.0	.0	.0	.0	.0	.0	4.0	6.50	.52	11.34	2.17
300-330	.2	.7	.7	1.3	1.5	1.3	.5	.2	.2	.0	.0	.0	.0	6.5	8.48	.99	17.01	3.52
330-360	.3	.9	2.5	3.8	3.6	2.8	2.2	1.1	.3	.1	.0	.0	.0	17.5	8.89	.52	18.04	3.51
CALM	3.6													3.6				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	6.2	11.3	26.6	25.3	16.4	8.3	3.5	1.8	.5	.1	.0	.0	.0	100.00				
MEAN DIR	151	127	128	153	168	226	293	256	299	330	0	0	0					
STD DEV	113	101	106	112	130	130	103	140	105	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED =   6.3 M/S   MAXIMUM = 18.04 M/S   MINIMUM =   .00 M/S   RANGE = 18.04 M/S
STANDARD DEVIATION = 3.27 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED   .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT =   -.96 M/S   STANDARD DEVIATION =   4.82 M/S
MEAN Y COMPONENT = -2.27 M/S   STANDARD DEVIATION =   5.03 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: GDIL1 SPANNING 4/ 1 TO 4/30 YEARS: 1985 - 1987 2143 DATA POINTS - 99.2 PERCENT OF TOTAL

DIRECTION FROM DEGREES / SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.6	1.2	1.4	1.7	1.0	.4	.3	.0	.0	.0	.0	.0	.0	6.6	6.14	.52	13.92	3.15
30- 60	.4	.8	1.2	2.4	1.0	.0	.0	.0	.0	.0	.0	.0	.0	5.8	6.07	.52	12.37	2.46
60- 90	.4	1.5	2.0	1.9	.7	.0	.0	.0	.0	.0	.0	.0	.0	6.5	5.30	.52	9.79	2.23
90-120	.6	3.6	5.6	3.8	1.0	.0	.0	.0	.0	.0	.0	.0	.0	14.6	5.10	.28	10.31	2.11
120-150	.9	4.1	5.2	2.7	.2	.5	.0	.0	.0	.0	.0	.0	.0	13.7	4.68	.52	11.86	2.37
150-180	.8	3.6	3.5	.7	.5	.0	.0	.0	.0	.0	.0	.0	.0	9.3	4.14	.37	10.31	2.25
180-210	.6	2.2	2.0	1.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	6.2	4.28	.37	8.25	2.17
210-240	1.3	3.7	3.0	1.4	.8	.1	.0	.0	.0	.0	.0	.0	.0	10.2	4.28	.41	11.34	2.50
240-270	.7	1.0	2.1	1.9	.7	.2	.1	.0	.0	.0	.0	.0	.0	6.9	5.38	.52	12.89	2.91
270-300	.2	1.1	1.8	1.9	.3	.0	.0	.0	.0	.0	.0	.0	.0	5.4	5.25	.52	10.31	2.38
300-330	.6	1.8	2.2	1.0	.2	.1	.0	.0	.0	.0	.0	.0	.0	5.9	4.49	1.03	10.31	2.30
330-360	.5	1.6	1.4	1.2	.4	.2	.0	.0	.0	.0	.0	.0	.0	5.5	5.04	.52	17.01	3.11
CALM	3.5													3.5				
PERCENT	11.1	26.3	31.5	21.8	7.0	1.7	.5	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	185	181	175	161	148	165	72	330	330	0	0	0	0					
STD DEV	89	80	82	95	98	118	95	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.77 M/S MAXIMUM = 17.01 M/S MINIMUM = .00 M/S RANGE= 17.01 M/S
STANDARD DEVIATION = 2.45 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.58 M/S STANDARD DEVIATION = 3.89 M/S
MEAN Y COMPONENT = .63 M/S STANDARD DEVIATION = 3.59 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: 6DIL1   SPANNING 11/ 1 TO 11/30 YEARS: 1985 - 1987   2098 DATA POINTS - 97.1 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.6	1.5	3.1	4.1	4.2	2.0	1.0	.2	.0	.0	.0	.0	.0	16.8	7.38	1.0	15.46	3.36
30- 60	.4	2.9	5.0	3.6	2.0	.3	.0	.0	.0	.0	.0	.0	.0	14.2	5.53	.52	11.34	2.62
60- 90	.3	5.3	4.7	.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	11.3	3.90	.52	13.40	2.19
90-120	.3	5.7	8.1	3.2	.4	.0	.0	.0	.0	.0	.0	.0	.0	17.7	4.62	.52	9.28	1.90
120-150	.5	3.7	6.7	1.9	.6	.1	.0	.0	.0	.0	.0	.0	.0	13.5	4.55	.53	11.34	2.41
150-180	.0	1.4	.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.4	3.69	1.55	8.25	1.86
180-210	.1	.7	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.3	3.34	1.03	8.25	2.34
210-240	.1	1.2	1.6	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.5	4.22	1.03	7.22	2.32
240-270	.1	.5	.5	.9	.4	.0	.0	.0	.0	.0	.0	.0	.0	2.4	5.49	1.03	9.79	2.93
270-300	.3	.7	1.0	.6	.6	.2	.0	.0	.0	.0	.0	.0	.0	3.4	5.68	.52	11.86	2.98
300-330	.1	.5	1.8	1.4	.8	.1	.0	.0	.0	.0	.0	.0	.0	4.7	5.88	1.03	10.82	2.48
330-360	.1	1.0	1.6	1.6	1.0	.7	.5	.0	.0	.0	.0	.0	.0	6.5	6.94	1.47	13.92	3.07
CALM	2.3													2.3				

SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	
PERCENT	5.2	25.1	35.3	18.9	10.1	3.	1.5	.2	.0	.0	.0	.0	.0	100.00
MEAN DIR	132	128	129	130	113	113	120	23	0	0	0	0	0	
STD DEV	99	75	85	111	126	142	154	20	0	0	0	0	0	

SUMMARY STATISTICS

MEAN SPEED = 5.23 M/S   MAXIMUM = 15.46 M/S   MINIMUM = .00 M/S   RANGE = 15.46 M/S
STANDARD DEVIATION = 2.61 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.78 M/S   STANDARD DEVIATION = 3.39 M/S
MEAN Y COMPONENT = -1.42 M/S   STANDARD DEVIATION = 4.18 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: SRST2 SPANNING 4/ 1 TO 4/30 YEARS: 1985 - 1987 2160 DATA POINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.9	1.9	1.3	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	4.7	3.59	.52	12.37	2.44
30- 60	.7	3.0	1.7	.6	.4	.0	.0	.0	.0	.0	.0	.0	.0	6.4	4.01	.52	10.31	2.29
60- 90	.1	1.1	.6	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.9	3.68	.52	9.79	1.77
90-120	.3	.3	1.8	1.9	1.4	.0	.0	.0	.0	.0	.0	.0	.0	5.7	6.30	.25	10.82	2.37
120-150	.1	1.8	5.6	6.9	5.0	1.7	.6	.0	.0	.0	.0	.0	.0	21.7	7.04	.52	13.40	2.42
150-180	.4	3.8	5.6	5.4	4.5	.6	.0	.0	.0	.0	.0	.0	.0	20.4	6.20	.36	14.95	2.37
180-210	.5	2.4	2.3	1.3	.5	.3	.2	.0	.0	.0	.0	.0	.0	7.5	5.06	.52	12.89	2.83
210-240	.4	2.6	3.7	1.9	1.4	.3	.0	.0	.0	.0	.0	.0	.0	10.4	5.32	.52	10.82	2.59
240-270	.3	1.3	.7	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.5	3.49	1.03	7.73	1.87
270-300	.6	3.6	.6	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	5.3	3.34	.52	9.79	1.95
300-330	1.1	3.3	.6	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	5.5	3.09	.52	8.25	2.03
330-360	1.3	3.0	1.3	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	6.1	3.20	.52	10.82	2.04
CALM	1.9													1.9				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	8.7	28.2	25.7	19.6	13.8	3.1	.9	.0	.0	.0	.0	.0	.0	100.00				
MEAN DIR	204	201	168	163	157	161	145	170	0	0	0	0	0					
STD DEV	125	105	71	46	34	27	32	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.21 M/S MAXIMUM = 14.95 M/S MINIMUM = .00 M/S RANGE = 14.95 M/S
STANDARD DEVIATION = 2.72 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -.94 M/S STANDARD DEVIATION = 3.34 M/S
MEAN Y COMPONENT = 2.69 M/S STANDARD DEVIATION = 3.90 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: SRST2 SPANNING 11/ 1 TO 11/30 YEARS: 1985 - 1987 2020 DATA POINTS - 93.5 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	1.6	4.7	5.2	1.7	.9	.1	.0	.0	.0	.0	.0	.0	.0	14.3	4.32	.52	10.82	2.41
30- 60	1.2	5.9	2.9	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	10.4	3.47	.52	14.43	1.79
60- 90	.5	3.2	2.4	1.3	.0	.1	.0	.0	.0	.0	.0	.0	.0	7.6	4.18	1.03	11.34	2.20
90-120	.2	2.5	6.1	4.5	.8	.0	.0	.0	.0	.0	.0	.0	.0	14.2	5.34	.52	11.86	2.11
120-150	.5	3.5	7.4	4.4	.4	.0	.0	.0	.0	.0	.0	.0	.0	16.3	4.99	.52	9.28	1.96
150-180	.4	2.3	4.2	1.3	.3	.2	.0	.0	.0	.0	.0	.0	.0	8.7	4.93	.52	14.43	2.25
180-210	.2	.4	.6	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.5	4.29	.52	8.25	2.27
210-240	.2	1.8	.8	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	3.52	1.03	8.25	1.78
240-270	.3	.7	.5	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.8	3.72	.52	8.76	2.09
270-300	.3	1.3	.5	.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	2.9	4.17	.52	9.28	2.71
300-330	1.0	2.7	1.1	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	5.3	3.35	.52	11.34	2.19
330-360	1.7	4.9	2.9	1.4	.1	.0	.0	.0	.0	.0	.0	.0	.0	10.9	3.61	.52	9.28	2.17
CALM	3.0													3.0				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	11.3	33.8	34.7	16.3	3.2	.5	.0	.1	.0	.0	.0	.0	.0	100.00				
MEAN DIR	174	156	137	141	125	117	170	115	0	0	0	0	0					
STD DEV	132	117	91	83	94	89	0	53	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 4.23 M/S MAXIMUM = 14.43 M/S MINIMUM = .00 M/S RANGE = 14.43 M/S
STANDARD DEVIATION = 2.07 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.53 M/S STANDARD DEVIATION = 2.82 M/S
MEAN Y COMPONENT = .06 M/S STANDARD DEVIATION = 3.45 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: PTAT2 SPANNING 4/ 1 TO 4/30 YEARS: 1985 - 1987 1915 DATA POINTS - 88.7 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.2	.3	.7	1.0	.6	.6	.3	.0	.0	.0	.0	.0	.0	3.8	7.38	.52	12.89	3.35
30- 60	.4	1.6	1.1	1.4	1.1	.5	.1	.0	.0	.0	.0	.0	.0	6.2	5.86	1.03	12.37	3.15
60- 90	.5	2.2	3.9	3.6	1.5	.9	.3	.0	.0	.0	.0	.0	.0	13.0	6.11	.52	13.40	2.77
90-120	.7	4.6	8.1	9.5	2.3	.7	.1	.1	.0	.0	.0	.0	.0	26.1	5.77	.52	15.98	2.31
120-150	.3	3.2	6.7	10.0	5.3	1.3	.3	.0	.0	.0	.0	.0	.0	27.1	6.52	1.55	13.40	2.42
150-180	.2	2.0	2.9	2.9	1.1	.5	.1	.0	.0	.0	.0	.0	.0	9.5	5.86	.52	12.37	2.49
180-210	.0	.2	.5	.4	.7	.0	.0	.0	.0	.0	.0	.0	.0	1.8	6.61	2.06	9.28	2.58
210-240	.3	.8	.6	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.1	3.99	.52	8.76	2.04
240-270	.3	.5	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.9	3.06	.52	8.25	2.39
270-300	.5	1.3	.5	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.3	3.17	.52	8.76	2.00
300-330	.6	1.0	.4	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.1	2.90	.52	8.25	1.97
330-360	.1	.8	.4	.9	.4	.4	.0	.0	.0	.0	.0	.0	.0	3.0	6.28	1.55	11.86	2.87
CALM	2.1													2.1				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	6.2	18.5	25.7	30.4	13.2	4.9	1.0	.1	.0	.0	.0	.0	.0	100.00				
MEAN DIR	178	153	129	128	127	120	82	100	0	0	0	0	0					
STD DEV	104	80	47	44	52	77	40	0	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.82 M/S MAXIMUM = 15.98 M/S MINIMUM = .00 M/S RANGE = 15.98 M/S
STANDARD DEVIATION = 2.65 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -3.53 M/S STANDARD DEVIATION = 3.18 M/S
MEAN Y COMPONENT = 1.77 M/S STANDARD DEVIATION = 3.89 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: PTAT2   SPANNING 11/ 1 TO 11/30 YEARS: 1985 - 1987   2160 DATA OINTS - 100.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.4	1.0	1.6	4.0	2.7	.8	.2	.1	.0	.0	.0	.0	.0	10.9	7.10	.52	15.98	2.77
30- 60	.5	1.3	2.2	1.6	1.3	.4	.0	.0	.0	.0	.0	.0	.0	7.3	5.74	.52	11.34	2.85
60- 90	1.1	2.6	2.7	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	7.5	3.93	.52	9.79	1.99
90-120	.8	2.4	4.9	4.7	.7	.1	.0	.0	.0	.0	.0	.0	.0	13.6	5.30	.52	11.34	2.19
120-150	.4	2.4	5.8	7.8	3.7	.4	.0	.0	.0	.0	.0	.0	.0	20.4	6.22	.52	10.82	2.23
150-180	.4	1.4	1.0	2.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	5.2	5.21	.52	12.37	2.59
180-210	.1	.6	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.1	3.53	1.55	6.19	2.00
210-240	.4	.9	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.7	2.78	.52	5.67	2.00
240-270	.3	.5	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	1.0	3.01	1.03	8.25	2.38
270-300	.5	.4	.4	1.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	2.4	4.94	.52	9.28	2.62
300-330	.8	2.1	1.8	1.6	.4	.2	.0	.0	.0	.0	.0	.0	.0	6.9	4.78	.52	12.89	2.66
330-360	.7	3.4	4.1	5.4	2.4	1.0	.8	.1	.0	.0	.0	.0	.0	17.9	6.33	.52	14.95	2.99
CALM	4.2													4.2				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	10.4	18.9	25.4	29.3	11.8	2.9	1.1	.3	.0	.0	.0	.0	.0	100.00				
MEAN DIR	179	184	162	165	149	178	267	182	0	0	0	0	0					
STD DEV	111	109	105	111	118	144	138	179	0	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 5.44 M/S   MAXIMUM = 15.98 M/S   MINIMUM = .00 M/S   RANGE = 15.98 M/S
STANDARD DEVIATION = 2.79 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = -1.57 M/S   STANDARD DEVIATION = 3.36 M/S
MEAN Y COMPONENT = -.84 M/S   STANDARD DEVIATION = 4.78 M/S

D.3.4 OCEAN CURRENT MEASUREMENT PROGRAM (OCMP) PLATFORM

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA   STATION: EI331   SPANNING 4/ 1 TO 4/30 YEARS: 1973 - 1976   948 DATA POINTS - 32.9 PERCENT OF TOTAL

DIRECTION FROM DEGREES	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26	PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.1	.1	.1	.4	.3	1.1	.5	.1	.5	.4	.0	.0	.0	3.7	11.83	1.36	19.41	4.68
30- 60	.0	.5	.0	.0	.1	.4	.0	.0	.0	.0	.0	.0	.0	1.1	7.05	2.52	11.99	3.55
60- 90	.1	.6	.0	.1	.1	.1	.0	.0	.0	.0	.0	.0	.0	1.1	.54	.55	10.64	3.33
90-120	.1	.1	.4	2.7	2.4	5.5	.9	.4	.0	.0	.0	.0	.0	12.7	9.65	1.82	15.08	2.58
120-150	.1	.2	.3	2.3	5.3	1.9	4.4	1.1	.2	.0	.0	.0	.0	15.8	10.32	.10	16.77	3.01
150-180	.2	.6	.7	2.5	2.1	1.5	2.7	.8	.3	.0	.0	.0	.0	11.6	9.76	.97	17.74	3.45
180-210	.0	.4	.5	1.5	1.7	.8	.3	.0	.0	.0	.0	.0	.0	5.3	8.13	2.45	12.81	2.54
210-240	.4	.1	.5	.6	.7	.8	.7	.0	.0	.0	.0	.0	.0	4.0	8.38	1.33	13.52	3.60
240-270	.6	.6	.5	3.5	1.5	.6	.1	.2	.0	.0	.0	.0	.0	7.7	7.05	.57	15.96	3.02
270-300	.0	.6	.7	2.0	3.9	2.2	.3	.7	.5	.0	.0	.0	.0	11.1	9.30	2.52	17.71	3.31
300-330	.1	.1	.9	1.4	1.8	.7	1.4	.4	.6	.3	.0	.0	.0	7.8	10.28	1.48	19.84	4.05
330-360	1.2	3.7	2.4	2.5	2.8	2.8	1.6	.7	.3	.1	.0	.0	.0	18.2	7.64	.20	18.13	4.01
CALM	.0													.0				
SPEED M/S	0 ! 2	2 ! 4	4 ! 6	6 ! 8	8 ! 10	10 ! 12	12 ! 14	14 ! 16	16 ! 18	18 ! 20	20 ! 22	22 ! 24	24 ! 26					
PERCENT	3.0	7.8	7.3	19.6	22.8	18.6	13.1	4.5	2.5	.8	.0	.0	.0	100.00				
MEAN DIR	260	253	265	216	213	187	188	219	216	158	0	0	0					
STD DEV	85	108	78	85	88	103	91	86	125	176	0	0	0					

SUMMARY STATISTICS

MEAN SPEE = 9.08 M/S   MAXIMUM = 19.84 M/S   MINIMUM = .10 M/S   RANGE = 19.74 M/S
STANDARD DEVIATION = 3.65 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = .02 M/S   STANDARD DEVIATION = 6.62 M/S
MEAN Y COMPONENT = .74 M/S   STANDARD DEVIATION = 7.17 M/S

FREQUENCY DISTRIBUTION
1.00 HOURLY DATA STATION: EI331 SPANNING 11/ 1 TO 11/30 YEARS: 1972 - 1976 1568 DATA POINTS - 54.0 PERCENT OF TOTAL

DIRECTION FROM DEGREES														PERCENT	MEAN SPEED	MIN SPEED	MAX SPEED	STD. DEV.
0- 30	.2	.8	1.9	1.8	1.9	1.1	.1	.4	.0	.0	.0	.0	.0	8.3	7.55	.42	15.53	3.14
30- 60	.7	.8	.6	1.2	2.5	1.2	.3	.2	.0	.0	.0	.0	.0	7.4	7.59	.01	15.08	3.48
60- 90	.4	.4	.8	1.1	1.0	1.3	.3	.1	.0	.0	.0	.0	.0	5.4	7.64	.14	14.69	3.75
90-120	.3	.3	.6	1.8	.5	.1	.3	.4	.2	.0	.0	.0	.0	4.5	7.90	1.16	16.30	3.88
120-150	.6	.8	.3	2.7	1.0	.6	.3	.3	.3	.0	.0	.0	.0	6.7	7.54	.74	17.40	3.76
150-180	.7	1.7	1.0	2.1	2.6	1.7	2.2	.6	.1	.0	.0	.0	.0	12.6	8.52	.76	16.04	3.70
180-210	2.0	1.4	1.6	2.4	2.6	2.7	1.0	.1	.0	.0	.0	.0	.0	13.8	7.24	.04	14.52	3.58
210-240	.3	.4	.8	1.1	.8	.7	.0	.1	.0	.0	.0	.0	.0	4.3	7.06	.86	14.97	2.71
240-270	.4	.7	.8	1.1	.8	.4	.0	.0	.0	.0	.0	.0	.0	4.3	6.19	.05	11.82	2.94
270-300	.3	1.0	.4	2.2	2.4	2.7	1.1	.3	.1	.1	.0	.0	.0	10.6	8.93	.88	19.40	3.44
300-330	.5	1.1	1.8	2.1	1.7	2.0	2.0	.6	.1	.0	.0	.0	.0	11.9	8.53	.90	16.99	3.84
330-360	.8	.8	.5	.8	2.5	2.2	1.5	1.0	.1	.0	.0	.0	.0	10.2	9.20	.02	17.10	4.00
CALM	.0													.0				
SPEED	0	2	4	6	8	10	12	14	16	18	20	22	24					
	!	!	!	!	!	!	!	!	!	!	!	!	!					
M/S	2	4	6	8	10	12	14	16	18	20	22	24	26					
PERCENT	7.3	10.0	11.0	20.6	20.2	17.0	8.9	4.0	.8	.1	.0	.0	.0	100.00				
MEAN DIR	188	191	174	178	189	208	236	208	199	279	0	0	0					
STD DEV	97	100	112	96	109	106	94	118	91	0	0	0	0					

SUMMARY STATISTICS

MEAN SPEED = 8.00 M/S MAXIMUM = 19.40 M/S MINIMUM = .01 M/S RANGE = 19.39 M/S
STANDARD DEVIATION = 3.69 M/S

IN A COORDINATE SYSTEM WHOSE Y AXIS IS POSITIONED .00 DEGREES CLOCKWISE FROM TRUE NORTH
MEAN X COMPONENT = .75 M/S STANDARD DEVIATION = 5.57 M/S
MEAN Y COMPONENT = -.23 M/S STANDARD DEVIATION = 6.79 M/S

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. The includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.