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OCEANOGRAPHIC REPORT No. CG 373-65

OCEANOGRAPHY IN THE GULF OF MAINE AND ADJACENT WATERS IN SUPPORT OF THE INTERNATIONAL COMMISSION FOR NORTHWEST ATLANTIC FISHERIES January 1968; January-February 1969

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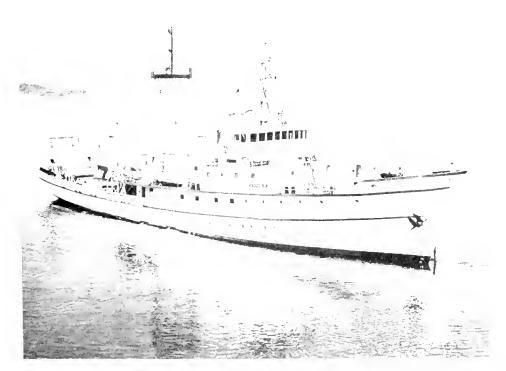


United States Coast Guard Oceanographic Unit Washington, D.C.

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USCGC EVERGREEN (WAGO-295). ICNAF CRUISE 68-1



BCF R/V ALBATROSS IV. ICNAF CRUISE 69-1

ABSTRACT

The physical oceanography of the Gulf of Maine and adjacent waters in January 1968 and January-February 1969 is described. Temperature, salinity, and density data are presented in surface contours and profiles. Dissolved oxygen and chlorophyll data are presented in section profiles. Climatic conditions of the region were reflected in the temperature and salinity of the surface waters. Intrusion of Gulf Stream water into the Gulf of Maine is inferred from T-S relations and dissolved oxygen data.

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OCEANOGRAPHY IN THE GULF OF MAINE AND ADJACENT WATERS IN SUPPORT OF ICNAF

January 1968; January-February 1969

by

MELVIN LIGHT AND SCOTT J. HENDERSON¹

INTRODUCTION

This is the second report on a series of oceanographic surveys of Northwest Atlantic coastal waters conducted by the U.S. Coast Guard in cooperation with the Bureau of Commercial Fisheries (BCF; now the National Marine Fisheries Service). These surveys were carried out in support of a fisheries research program planned by the International Commission for the Northwest Atlantic Fisheries (ICNAF). Whitcomb (1970) reported on two earlier surveys (ICNAF Cruises 67-2 and 67-3) which encompassed the waters of the Mid-Atlantic Bight. This report presents the physical oceanographic data observed on two later surveys (ICNAF Cruises 68-1 and 69-1) which included the Gulf of Maine and adjacent waters (Figs. 1-3). Coast Guard oceanographers and marine science technicians aboard the USCGC EVERGREEN (WAGO-295) conducted ICNAF Cruise 68-1 (15-26 January 1968). ICNAF Cruise 69-1 (28 January-27 February 1969) was conducted by Coast Guard and BCF personnel aboard the BCF ALBATROSS IV.

The purpose of these surveys was to describe the physical and chemical environment of the region to gain a better understanding of the factors affecting the seasonal and annual distribution and abundance of living marine resources. Shortly after each oceanographic cruise, BCF and other ICNAF research groups conducted groundfish surveys of the same areas.

PROCEDURES

Oceanographic Sampling

Oceanographic sampling procedures, sample analyses, bathymetric and meteorological observation methods, and quality control procedures employed during these two cruises were generally the same as those described by Whitcomb (1970). Oceanographic parameters measured at each station included temperature, salinity, dissolved oxygen, and chlorophyll. Beginning with ICNAF cruise 69-1, water samples were routinely analyzed for nutrients. As on the previous two ICNAF cruises, drift bottles and sea-bed drifters were released for the Woods Hole Oceanographic Institution. Expendable bathythermograph (XBT) casts were generally made midway between oceanographic stations.

Rosette Multi-Sampler

For the first time during a Coast Guard oceanographic survey, a General Oceanics Rosette Multi-Bottle Array sampler was used during ICNAF Cruise 69–1 with the Salinity-Temperature-Depth Measuring System (STD) to obtain salinity samples and temperature measurements. This sampler allowed for calculation of thermometric depths for quality control of the STD system. This device enables one or more of a cluster of 12 Niskin sampling bottles to be triggered and their deep-sea thermometers (installed on every other bottle) to be reversed upon command from a deck control unit via the electrical conducting STD cable. Because of the configuration of the A-frames and oceanographic

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winches aboard the R/V ALBATROSS IV, the rosette multi-sampler was clamped to the protective cage of the STD "fish", rather than directly to the STD cable immediately above the "fish". This arrangement allowed a maximum of 9 sample bottles to be used. Since this device could be triggered to collect water samples for chemical analyses from selected depths, the need for separate Nansen casts was eliminated.

Nutrient Analyses

Water samples collected during ICNAF Cruise 69–1 for nutrient determination were frozen and stored aboard ship for later analyses ashore. The samples were analyzed at the U.S. Coast Guard Academy, using a Beckman DU–2 spectrophotometer. Inorganic phosphorous was determined by the method of Murphy and Riley (1962), using an ascorbic acid single-solution reagent. Inorganic nitrate-nitrogen was analyzed by reduction with cadmium-mercury amalgam and the development of an azo dye complex with sulfanilamide (Morris and Riley, 1963). Silicatesilicon was determined by the method of Grasshoff (1965).

The nutrient data are included in the oceanographic data listings in appendix A.

Shipboard Operational Summary

	1968	1969
Oceanographic stations occup	ied 56	66
STD easts	56	19
Nansen casts	56	48
Bathythermograph casts	15	46
Dissolved oxygen analyses	465	560
Chlorophyll extractions	403	472
Nutrient samples processed		561
Drift bottles released	280	325
Sea-bed drifters released	215	195

DATA PRESENTATION

Data listings for ICNAF cruises 68–1 and 69–1 are contained in Tables I and II of Appendix A. Surface isotherms, isohalines and isopycnals are presented in figures 9 through 14. Profiles of temperature, salinity, sigma-t, oxygen, and chlorophyll are depicted in figures 15 through 79.

RESULTS

Temperature Distribution Gulf of Maine Basin : Surface Layer (0–100 meters)

Surface waters in the Gulf of Maine Basin (that region north of the 50 fathom (91.4 m.) isobath along the Eastern and South Channel slopes) tended to be slightly warmer in 1969 than in 1968. In 1968 surface isotherms ranged from 3°-4° C., whereas in 1969 they ranged from 4°-5° C. This 1.0° C. difference (in surface waters) was also evident in the upper 100 meters in the same region as shown by temperature profiles (figs. 15-17 and 47-49). Both years were characterized by weak temperature gradients. However, the gradients in 1968 tended to be vertical. whereas in 1969. they were more horizontal. On ICNAF 68-1, a pocket of very cold water (2.0° C.) was observed at station 8, extending from the surface down to 50 meters. Other than this small pocket, waters in this region appeared to be very well mixed.

The temperature of the upper 100 meters of water is governed mainly by local climatic influences. "The gulf owes the particular temperatures proper to it, and especially the wide seasonal range of temperature, chiefly to its geographic location to the leeward of the continent and to the rigorous land climate. Only to a much smaller degree is it influenced by warm or cold currents flowing into it," (Bigelow, 1927). Weather records (Local Climatological Data Annual Summaries 1967, 1968, 1969, Mariners Weather Logs, and U.S. Coast Guard Weather Observation Logs for various light vessels and light stations) were examined for months preceding and during both eruises. These records show that the 1969 winter season was 1°-2° C. warmer than that of 1968. The 1°-2° C. deviation is significant in view of the ninety day observation period, the temperature difference between the two years being reflected by the surface water temperatures. Table 1 summarizes air temperatures, wind data, and precipitation observed at selected inland, coastal, and offshore stations.

The surface radiates out very large amounts of heat from September on, whenever the air is colder than the water. The coldest winter winds of the region blow from land out over the gulf, and these cold westerly winds predominate in the western side of the gulf during the three winter months (Bigelow, 1927).

	π	Average* Temperature (°C) '67-'68 '68-'69		Average* Precipitation** (In.) 67-68 68-69		Average Wind*			
LOCATION	Type of Sta,					Dir. Speed (kn.) '67-'68		Dir. Speed (kn.) `68-`69	
Concord, N.H.	Inl	- 6.4	- 5.2	2.80	5.61	30	4.6	31	4,8
Gorham, N.H.	Inl	-15.4	-13.3	5.69	16.75				
Portland, Me.	Coast	- 6.0	- 4.0	4.50	5.87	30	3.8	31	4.8
Boston, Mass.	Coast	-1.7	-1.2	5.13	5.19	31	6.8	31	9.1
Milton, Mass.	Coast	-3.4	-2.9	6.06	5.98				
Nantucket, Mass.	Coast	0.7	0.9	3.34	3.90	34	14.2	32	15.2
Mt. Desert L/V	Off Sh.		- 0.9						
Portland L/Sta	Off Sh.	- 0.8	- 0.4			330	10.0	330	9.0
Boston L/Sta	Off Sh.	1.1	1.1			316	7.0	306	10.0
Nantucket L/Sta	Off Sh.	4.4	3.5			324	4.0	321	9.0

 TABLE 1—Meteorological data averages for the Gulf of Maine region and New England coast, December, 1967-February 1968 and December, 1968-February, 1969.
 * Averages are taken over 90 day periods (Dec.-Feb.).

Table 1 summarizes precipitation data from the New England Climatological Data Summaries (1967 through 1969). It can be seen that total precipitation for New England inland and coastal weather stations in December 1967 and January-February 1968 was not significantly higher than the total precipitation for the same period one year later.

Shore and inland stations showed northeasterly winds while the offshore light stations recorded northwesterly winds. The latter would thus explain the colder temperatures found in the gulf in 1968.

Intermediate and Bottom Waters (100 meters to bottom)

A distinct region of cold ($<5^{\circ}$ C.) mid layer water extending from 100 to 150 meters is generally observed during most of the year in the Gulf of Maine Basin except during winter months when thorough mixing occurs (Hachey et al., 1954). As expected, no distinct mid layer was observed during the periods of these surveys.

Mid and bottom waters (150 to 250 meters) in the basin were also found to be approximately $1^{\circ}-2^{\circ}$ C. warmer in 1969 than in 1968. In 1968, temperatures of these waters ranged from approximately $4.5^{\circ}-6.3^{\circ}$ C., whereas in 1969, they ranged from $5.5^{\circ}-8.0^{\circ}$ C.

Transition Zone

The surface layer waters overlying the shelf edge represent a transition zone between Coastal (Gulf of Maine Basin) and Slope Waters. As can be seen from examinations of the profiles of temperature for sections 1, 2, and 3 for ICNAF 68–1 (figs. 15, 16, and 17) and for sections 3, 4, and 5 for ICNAF 69–1 (figs. 47, 48, and 49), the temperature gradients in this zone tend to be strong and horizontal. On ICNAF 68–1 a marked increase in temperature from about 5° –10° C, was observed over a horizontal distance (to the south) of approximately 30 nautical miles. This same phenomenon was again observed on the 1969 survey, but with temperatures ranging approximately 1.0° C, higher.

Slope Water

Slope Water along the east coast of the United States is considered to be a mixture of Gulf Stream and Coastal Waters (McLellan, 1957) (fig. 4). ICNAF cruise 68-1 stations 1, 2, and 24-27, and ICNAF cruise 69-1 stations 16-20 and 41–46 are considered to lie within the Slope Water region adjacent to the Gulf of Maine Basin. Temperature-Salinity curves constructed from 1968 temperature and salinity data (figs. 6 and 8) were shown to be characteristic of Slope Water as determined by McLellan (1957) (fig. 5). However, the warmer temperatures and higher salinity values of the 1969 observations indicated the presence of Gulf Stream water in the region normally occupied by Slope Water. Comparison of T-S profiles constructed from the 1969 data (figs. 7 and 8), again with McLellan's T-S relations for Gulf Stream water (fig. 5) further confirmed the intrusion of Gulf Stream water over the slope region. This intrusion is examined further in the forthcoming discussion.

Surface Layer

ICNAF 68-1 profiles for temperature in the surface layer of the slope water region (figs. 15, 16 and 17) show strong horizontal gradients with little apparent mixing. Temperatures in this region ranged approximately from $6^{\circ}-14^{\circ}$ C.

Vertical sections of ICNAF 69-1 temperature data in this region disclose a somewhat different picture. Moderate mixing was evident as portrayed by the weak gradients of sections 3 and 5 (figs. 47 and 49). Temperature data for most stations showed an increase of $2^{\circ}-3^{\circ}$ C. over temperatures observed at the same locations in 1968. Inspection of the sea surface temperature chart for 1969 (fig. 10) revealed a band of dense temperature gradients extending roughly along the 1000 fathom (1829 m.) isobath; in 1968 (fig. 9) however, this band extended shoreward only as far as the 3000 fathom (5486 m.) isobath.

A region of extremely warm water was found in the southeastern section of the Gulf of Maine off Georges Bank during ICNAF 69–1 (sections 1–3; figs. 45–47). In this region temperatures increased some 15° C. over a horizontal span (southerly direction) of approximately 40 nautical miles. Temperatures as high as 19° C. were observed at the surface as well as to a depth of 80 meters. A pocket of very warm water centered around station 20 in section 3 (fig. 47) was also characterized by strong surrounding gradients with temperatures of adjacent stations as much as $4^\circ-5^\circ$ C. lower at the surface and $2^\circ-3^\circ$ C. lower at 50–75 meter depths. Analysis of these anomalies indicated Gulf Stream influence.

According to Bigelow (1927), at most times there is no dominant drift of the Gulf Stream across Georges Bank into the Gulf of Maine, but on rare occasions overflows of tropic waters take place at the surface, probably via that route. Small amounts of Gulf Stream water have been known to drift as far west as the coastline bounded by Martha's Vineyard and Narragansett Bay. Although the data in this report do not encompass that immediate area. evidence that such an intrusion occurred in 1969 is apparent by examination of surface contours and T-S diagrams of the Slope Water region.

Intermediate and Bottom Waters

Warmer temperatures were also evident in the deeper waters off the shelf in 1969. Water tem-

peratures of the 150 to 300 meter depth range $(9^{\circ}-18^{\circ} \text{ C.})$ were approximately 2° C. higher than those observed in 1968.

This increase in temperature at these lower depths was probably attributable to horizontal mixing of coastal water overlying the shelf with Gulf Stream-influenced offshore waters, and the subsequent sinking of the products of the mixing—a process known as caballing.

Mixing takes place most efficiently along surfaces of constant sigma-t where exchange is not inhibited by buoyant forces. When two different water types—coastal and Gulf Stream in this case—each with the same sigma-t value mix, the product, represented by a straight line on a T-S diagram, will be of greater density (sigma-t) than either of the two parent water types. This resultant "heavy water", having a greater density, will thus tend to sink. This is the caballing process.

Caballing can potentially contribute to vertical circulation. As indicated by relatively weak isopycnals, the vertical stability in the Gulf of Maine is quite low as expected during the winter months (Bigelow, 1927). Accordingly, the "heavy water" formed, as outlined above, will sink and flow under lighter waters. In the shelf region this is probably seen as what McLellan (1953) has called underrunning shoreward (fig. 4). This process might then help explain the increase in temperature at the greater depths.

McLellan (1957) discussed the three distinctly different oceanographic regions found off the New England and Nova Scotian coasts—Coastal Slope, and Gulf Stream waters. These waters are not only separated by sharp geographical boundaries, but are also well defined graphically through T-S plots. Temperature-Salinity relations as presented by McLellan (1957) for the upper 150 meters of water off the Scotian shelf are shown in figure 5. The three groups indicated on this T-S plot do not overlap and, in addition, are separated by blank areas into which no observations fall.

A fourth water mass, Nova Scotian Current Water, is often included in discussions of the Gulf of Maine region. This cold $(2^{\circ}-8^{\circ} \text{ C}.)$, low saline $(\langle 32^{\circ}/_{\circ\circ} \rangle)$ water is usually restricted to the coast off Cape Sable. Bigelow (1927) has noted that this Nova Scotian Current Water exerts its chief thermal effect to the eastward of Cape Sable, although for only a few weeks during the spring, it can act to retard vernal warming in the Gulf of Maine.

Hayes (in press) identifies Gulf of Maine Bottom Water (below 150 m.) as Slope Water, which, on entering the Gulf of Maine through the Eastern Channel, is slightly modified. However, for the purposes of the present discussion, this Bottom Water will be considered to be in the realm of Slope Water.

T-S diagrams were constructed from data observed during ICNAF cruises 68-1 and 69-1 for selected offshore stations (figs. 6, 7, and 8). It is readily apparent from examination of figures 7 and 8 that the 1969 T-S curves fall within McLellan's boundaries for Gulf Stream Water as well as within his limits for Coastal Water and Slope Water. The T-S curves drawn for 1968 data do not fall within the boundaries for Gulf Stream Water. However, it should be noted that the 1968 station locations do not extend quite as far seaward as those for 1969. This is not to say that a Gulf Stream intrusion did occur in 1968, for as previously noted water temperatures of this region in this year were significantly lower than those of 1969. It should be emphasized that the ICNAF cruise data were observed in midwinter (January-February), whereas McLellan's data were collected during June when vernal warming is well in progress.

The T-S curves for 1968 and 1969 did not reveal the presence of distinct bounded regions with blank areas between them, thus indicating thorough horizontal mixing throughout the region. In both years the distribution of T-S points for the surface layer (0-150 meters) was confined to a relatively narrow band nearly parallel with the isopycnals. McLellan (1957) presents a detailed discussion of "isopycnic mixing" and stirring as determined from T-S diagrams.

"The distinction between 'stirring' and 'mixing' as brought out by Eckart (1948) is important. Stirring obviously can, and probably always does, take place on surfaces of equal density, since low internal friction in the fluid makes hydrostatic equilibrium (or quasi-equilibrium) the only state admissible. The very nature of mixing, however, implies a change in entropy. At the same time, the physical nature of sea water is such that the mixing of waters of equal density is accompanied by an increase in density in the product (except for the trivial case where the original constituents are identical as to temperature and salinity) . . . but it must be remembered that the products are represented by a straight line on the T-S plot and not by the curve of equal sigma-t."

When points at like depths for several stations within the narrow band are joined, a straight line relationship is apparent. This strengthens the above inference to horizontal mixing.

Dissolved oxygen measurements were made at most stations occupied during both ICNAF cruises. Water types can be identified as Coastal, Slope, or Gulf Stream according to their characteristic dissolved oxygen values (McLellan, 1957). Table 2 compares typical dissolved oxygen values observed by McLellan with dissolved oxygen data from selected ICNAF stations. It is evident that Gulf Stream Water was present at the 1969 stations, while the 1968 data indicated only Slope and Coastal Water.

Depth (m)	McLellan's Stations (ml/l)			ICN	ICNAF 68-1 Stations (ml/l)				ICNAF 69-1 Stations (ml/l)			
,	Gulf	Slope	Coast	1	$\hat{2}$	24	25	1	2	15	16	
0				6,6	7.0	7.1	5.7	4.7	4.7	5.0	5.0	
50				6.0	5.8	6.8	5.4	4.7	4.8	4.7	4.7	
100	4.9	4.4	6.3	5.5	4.6	5.2	5.3	4.7	4.8	4.6	4.5	
150	5.0	4.8	6.5	3.9	4.0	3.5	5.2	4.6	4.5	4.7	4.8	
200	4.7	4.1	5.5	5.3	3.8	3.6	5.2	4.6	4.5	5.4	4.3	
250				4.0	4.0	3.7	3.9	4.8		5.2	5.0	
300	4.7	3.9	5.7									
400		3.3	6.1									
500		3.9	6.1									

TABLE 2-Dissolved oxygen values for selected ICNAF stations, 1968 and 1969.

stations.											
	Jan	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1967		6.64	5.87	2.24	0.84	0.51	0.73	2.22	1.95	2.37	
1968	0.72	7.61	4.14	4.07	1.34	0.43	0.47	0.44	1.04	1.77	
1969	0.61										

TABLE 3—Pemigwasset River runoff (in inches) Plymouth, N.H. Higher values in late 1967 and early 1968 are typical of most New England stations.

Hachey et al. (1954) claim that an incursion of warm Slope Water into the Gulf of Maine would adversely affect the haddock and cod fisheries on Georges Bank. Examination of catch statistics for these species could prove to be interesting.

Salinity Distribution Gulf of Maine Basin

Surface Layer

Comparison of surface salinity and temperature contours for 1968 and 1969 (figs. 9, 10, 11, and 12) showed that the surface isohaline distribution resembled that of surface isotherms during both years. The areas of strong surface salinity gradients were located further northwest in 1969 than in 1968. The average surface salinity in 1968 $(31.5^{\circ}/_{00}-33^{\circ}/_{00})$ was approximately $0.5^{\circ}/_{00}-1^{\circ}/_{00}$ lower than the 1969 average.

Salinity gradients of the surface layer in 1969 (figs. 54, 55 and 56) were stronger and tended to be more horizontal than those in 1968 (figs. 21, 22, and 23).

River runoff for the major New England rivers in 1968-1969 appeared to have a more conclusive effect than did precipitation on surface salinity. Table 3 summarizes the runoff for the Pemigwasset River extracted from "Water Resources Data-Surface Water Records" (1967, 1968, and 1969). The flow for the Pemigwasset River is considered to be typical of the major New England rivers (Chase, 1972). These data show that the monthly flows for the major rivers during the period of September December 1967 were from two to five times as great as the runoff observed for the same four month period in 1968. It has been estimated that it takes approximately 3 to 4 months for flow conditions observed upstream on major New England rivers to be reflected in offshore salinity conditions (Bigelow, 1927; Ketchum and Keen, 1955). Thus, the lower salinity conditions observed in the surface layer of the Gulf of Maine in January 1968 were

at least partially influenced by the high river runoff of the preceding few months.

Wind conditions observed for the periods of December 1967 through February 1968 and December 1968 through February 1969 for selected coastal, inland, and offshore stations of the Gulf of Maine region were also studied. Inland and coastal observation station data showed that the predominant direction of wind set for both years was from the northeast with an average speed of 4 to 6 knots. Wind observations recorded at Coast Guard offshore light stations and light vessels showed that the resultant average wind set was from the northwest with average speeds of 6 knots for the 1968 season and 9 to 10 knots for 1969.

Undoubtedly, weather conditions immediately preceding and during the cruise periods did affect the surface salinity conditions in the Gulf of Maine in both years.

Intermediate and Bottom Waters

Comparison of salinity vertical profiles for the midwater layer inside Georges Bank for both years revealed similar salinity values and distribution of salinity gradients (figs. 21–23 and 54–56). The salinity gradients showed a weak to moderate vertical distribution throughout the region, with values ranging from $32.8^{\circ}/_{\circ\circ}$ at 100 meters to $34.3^{\circ}/_{\circ\circ}$ at 150 meters. Bottom waters within the Gulf of Maine Basin were well mixed and had a salinity approximately $0.5^{\circ}/_{\circ\circ}$ higher than that of the midwater layer directly above.

Transition Zone

Salinity gradients of transition zone waters approximated those of temperature for both 1968 and 1969. Again, a narrow band of strong horizontal gradients was observed for both years. For example, in 1968 between stations 3 and 4 of section 1 (fig. 21), there was a change of $>2^{\circ}/_{\circ\circ}$ within a distance of 15 nautical miles.

Slope Water Surface Layer

In 1969 the pocket of warm water centered around station 20 noted under the temperature discussion was also characterized by salinity values typical of Gulf Stream water $(>36^{\circ}/_{oo})$ (fig. 54). Vertical gradients are apparent in the surface layer waters in section 1 of the 1968 salinity profiles. However, to the west (sections 2 and 3) there was a shift to moderate horizontal gradients. This feature is similarly exhibited in the temperature and sigma-t profiles.

Intermediate and Bottom Waters

Both years were manifest of weak gradients. Salinity values ranged from $35.3^{\circ}/_{\circ\circ}$ at the 150 meter level to $34.9^{\circ}/_{\circ\circ}$ in the deeper waters in 1968 while 1969 values averaged $0.2^{\circ}/_{\circ\circ}$ higher.

SIGMA-T

Examination of profiles of sigma-t for both cruises revealed one feature of particular interest. Isopycnals for ICNAF 69–1 sigma-t section 4 (fig. 62) indicated a moderate current through the Eastern Channel. Isopycnals with a slope of one meter per nautical mile or greater were observed in this vicinity. Salinity and temperature profiles for the same section (figs. 48 and 55) also suggested this same movement as the isohalines and isotherms were nearly congruent with the isopycnals.

The comparatively warm $(6^{\circ}-7^{\circ} \text{ C.})$ and highly saline $(>34^{\circ}/_{\circ\circ})$ bottom water in the Gulf of Maine basin alludes to an origin of Slope Water or even, perhaps. Gulf Stream Water. Dissolved oxygen content of the water in the basin (4.3-5.4ml/l) (fig. 68) was typical of Gulf Stream Water.

The distribution of density along the edge of the continental slope is probably the motive power that brings water of these characteristics into the Gulf of Maine via the Eastern Channel. A considerable body of evidence has been accumulated to the effect that the zone along which coastal and oceanic waters mix and where Slope Water is formed averages somewhat higher in density than water on the continental slope. Bigelow (1927) confirmed the findings of several earlier surveys in this region. He concluded that lower densities exist along the outer edge of the offshore banks, abreast of the Gulf of Maine and off Nova Scotia, than along the continental slope that bounds the banks on the offshore sides.

Examination of sigma-t profiles for stations 2-5 of section 1, and for stations 12-14 of section 2, reveals strikingly steep density gradients down to 250 meters, with the higher values toward the offshore side of the slope. Consequently, the mass of water on the shelf above 250 meters had a tendency to drift seaward (to the south).

With dynamic forces tending to drive Slope Water out to sea from the continental shelf (southerly off Cape Sable and La Have Bank), the Coriolis force would deflect this drift to the right. In this manner a dominant drift from east to west develops along the upper part of the continental slope off La Have and Browns Banks.

So long as the dynamic motion for this drift persists, the entrance of the Eastern Channel is supplied with the Slope Water from the east. In this fashion, the current that flows into the bottom of the Gulf of Maine basin draws from Slope Water formed at approximately equal depths on the Nova Scotian slope. This is confirmed by the fact that temperatures and salinities proved to be very nearly the same in the bottom of the Channel (7°–8° C, and 33.50°/₀₀– $34.75^{\circ}/_{00}$ at 150–200 meters) as at equal depths on the slope off La Have and Browns Banks $(6.5^{\circ}-9^{\circ} C, and 33.50^{\circ}/_{00}-35.25^{\circ}/_{00})$.

The Slope Water, moving westward is forced against Browns Bank by the earth's rotation (Coriolis force). Consequently with the Eastern Channel offering an open route for this water to the right, Bigelow (1927) has suggested that "... it is reasonable to think of a screwing motion as taking place into the Eastern Channel..." so long as the necessary density gradients exist off the Scotian Slope.

CIRCULATION

A knowledge of the circulation patterns in the Gulf of Maine should provide further insight into the seasonal variance of isothermal and isohaline conditions.

Circulation patterns in this region have been described by various authors. Bigelow (1927) determined the circulation pattern in the Gulf of Maine to be a general counterclockwise eddy augmented by an inflow of water on the eastern side from over the Nova Scotian banks. The inflow causes a displacement of water south and east across the end of Georges Bank (fig. 80). This counterclockwise eddy is fed by the inflow of water from without the Gulf of Maine in the winter and early spring. Cold water ($<5^{\circ}$ C.) shown in ICNAF 69-1 temperature sections 3, 4, and 5 (figs. 47, 48, and 49) suggests a similar pattern. Bumpus (1969) and Bumpus and Lauzier (1965), from analysis of surface current observations, suggested that, in the winter, the northward flow from Browns Bank into the Bay of Fundy will be considerably diminished, and that some of the water will be deflected along the southeastern coast of Nova Scotia.

Pronounced southerly movement along the western shore of the Gulf of Maine for late February and early March was noted by Day (1958). He also noted indications of a strong seaward movement east of Cape Cod through South Channel during this same period. It is not possible from the present data to evaluate the outflow movement from the Gulf of Maine eddy. However, the presence of water with a temperature of less than 5° C. and salinity near $33^{\circ}/_{00}$ in slope areas of sections (ICNAF 69-1) 4, 5 and 7 (figs. 48, 49 and 51) supports Day's premise.

Although poorly defined at this time of the year, the cyclonic circulation of the inshore areas appears to be present. A more definitive analysis of circulation patterns cannot be made because of insufficient data.

CONCLUSIONS

As a result of variances in climatic conditions between 1968 and 1969 coupled with pronounced Gulf Stream influences in 1969, oceanographic features of the Gulf of Maine differed for those years. Water temperatures throughout the Gulf were 1°-2° C. warmer in 1969, reflecting an unusually mild winter and an apparent intrusion of Gulf Stream water. The higher salinities and characteristic dissolved oxygen values observed in the same year apparently were also a result of a Gulf Stream influx. The considerably heavier river runoff for the 1968 season resulted in lower salinity values for that year. Surface temperature and salinity maxima in 1969 extended as far shoreward as the 1000 fathom (1829 m.) isobath, whereas in 1968 these maxima extended shoreward only to the 3000 fathom (5486 m.) isobath.

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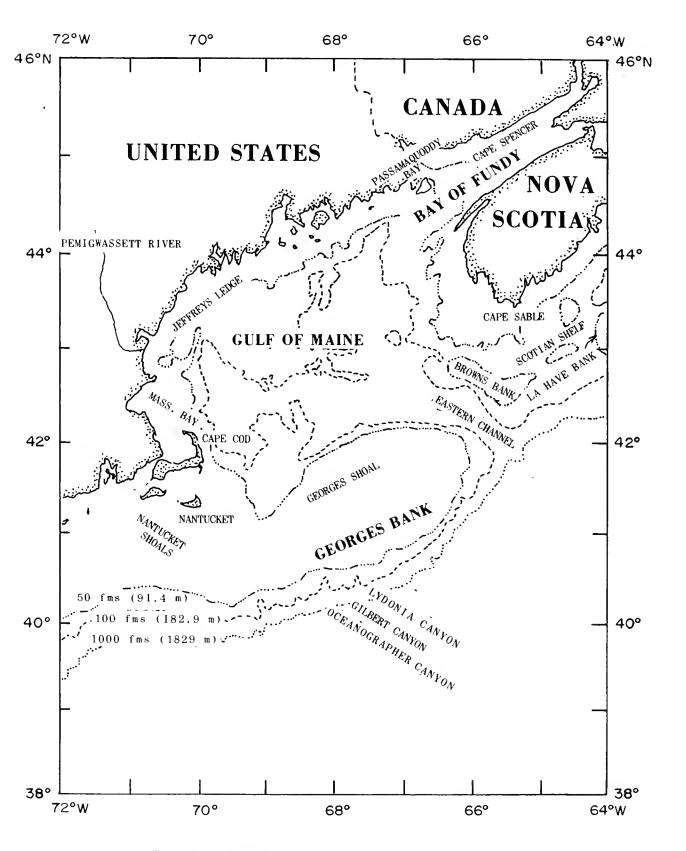


FIGURE 1.--Orientation chart of the Gulf of Maine (Colton, J. B., 1964).

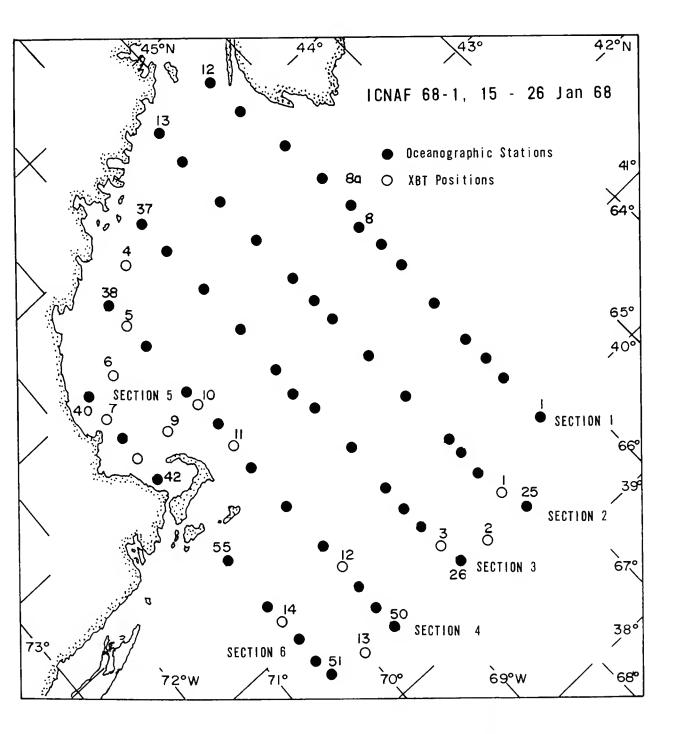


FIGURE 2.—Oceanographic stations and XBT locations, JCNAF 68-1, 15-26 January 1968.

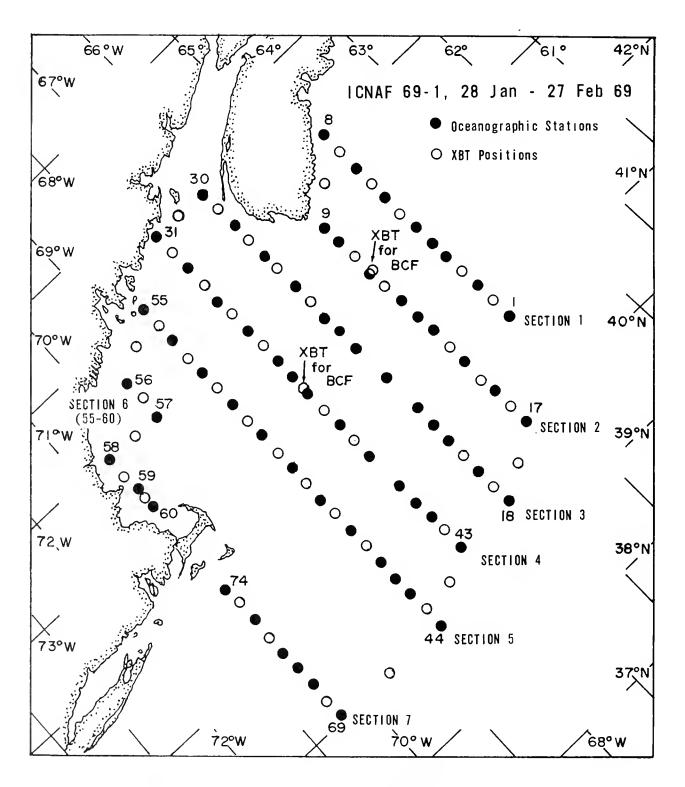


FIGURE 3.—Oceanographic stations and XBT locations, ICNAF 69-1, 28 January-27 February 1969.

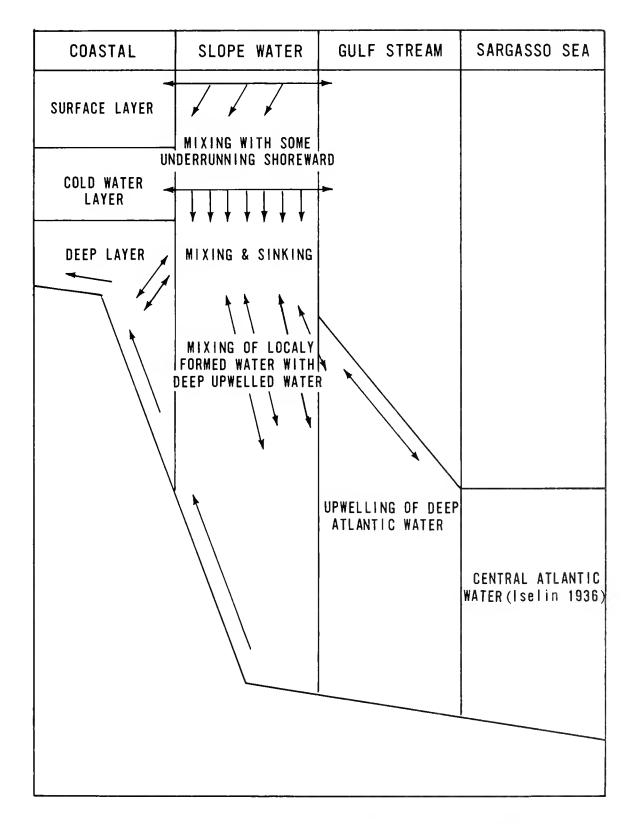


FIGURE 4.-Schematic diagram showing the way in which Slope Water may be formed (McLellan et al., 1953).

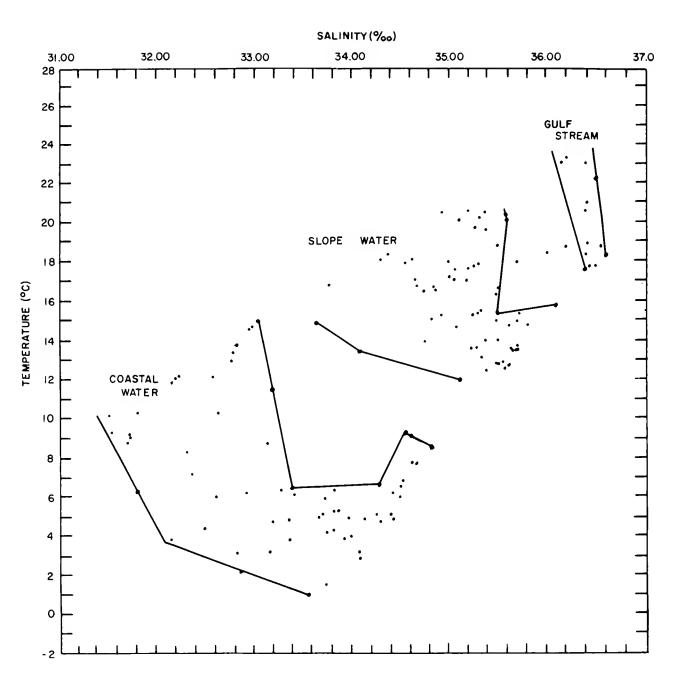


FIGURE 5.--T-S relations in the upper 150 m off the Scotian Shelf as observed during June 1952, (McLellan, 1957).

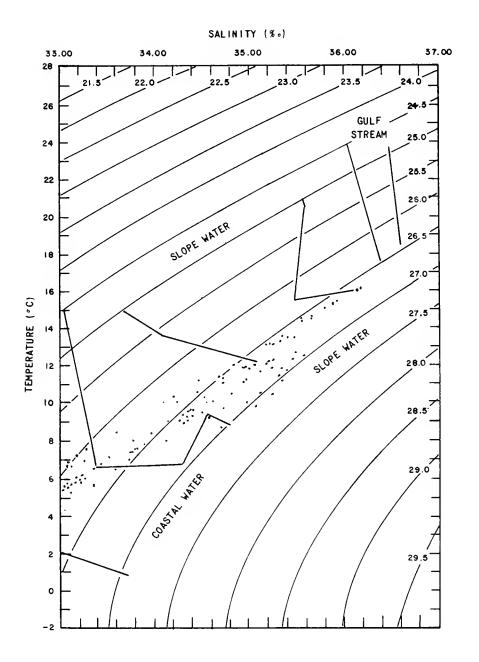


Figure 6.—T-S relations for the upper 150 m for stations 1–4, 22–28, 49, 50 (Sections 1–4) ICNAF 68–1, 15–26 January 1968.

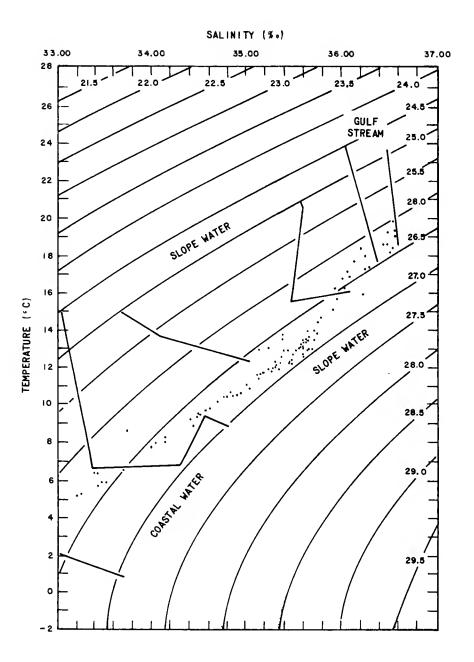


FIGURE 7.—T-S relations for the upper 150 m for stations 1-3, 14-21, 41-46, 48 (Sections 1-5), ICNAF 69-1, 28 January-27 February 1969.

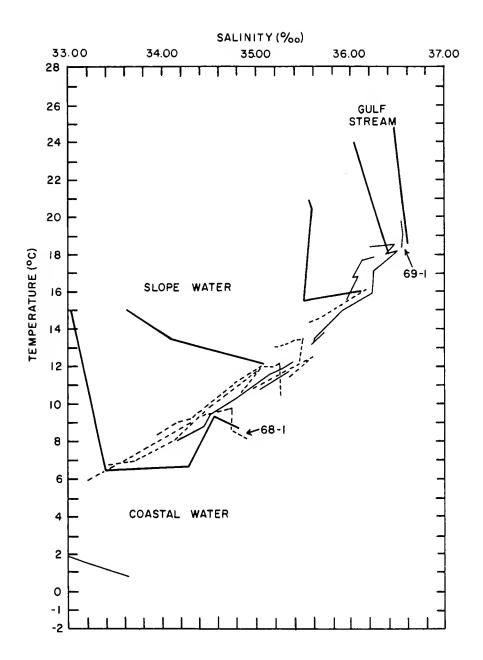


FIGURE 8.—T-S distribution in upper 150 m over the Eastern Channel and Georges Bank; stippled lines are drawn for stations 1, 2, 3, 4, 25, 26 (Sections 1-3) ICNAF 68-1, 15-26 January 1968 and solid lines are drawn for stations 1, 2, 15, 16, 17, 20, 42, 46 (Sections 1-5) ICNAF 69-1, 28 January-27 February 1969.

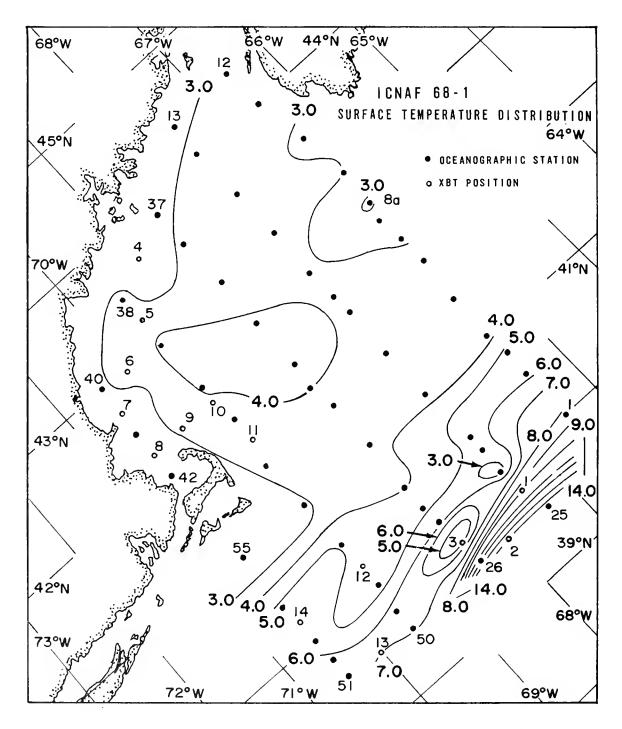


FIGURE 9.—Surface temperature (°C.) distribution, ICNAF 68-1, 15-26 January 1968.

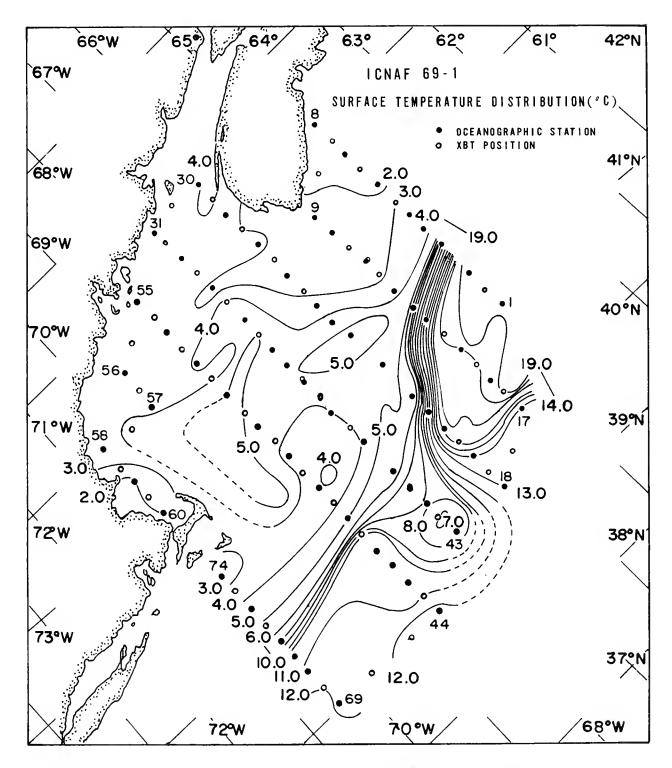


FIGURE 10.-Surface temperature (°C.) distribution, ICNAF 69-1, 28 January-27 February 1969.

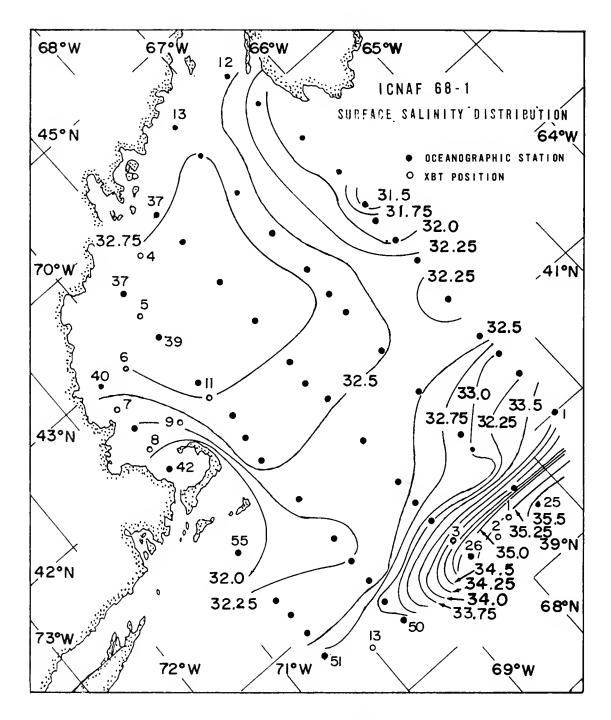


FIGURE 11.—Surface salinity (°/ $_{\rm oo}$) distribution, ICNAF 68-1, 15-26 January 1968.

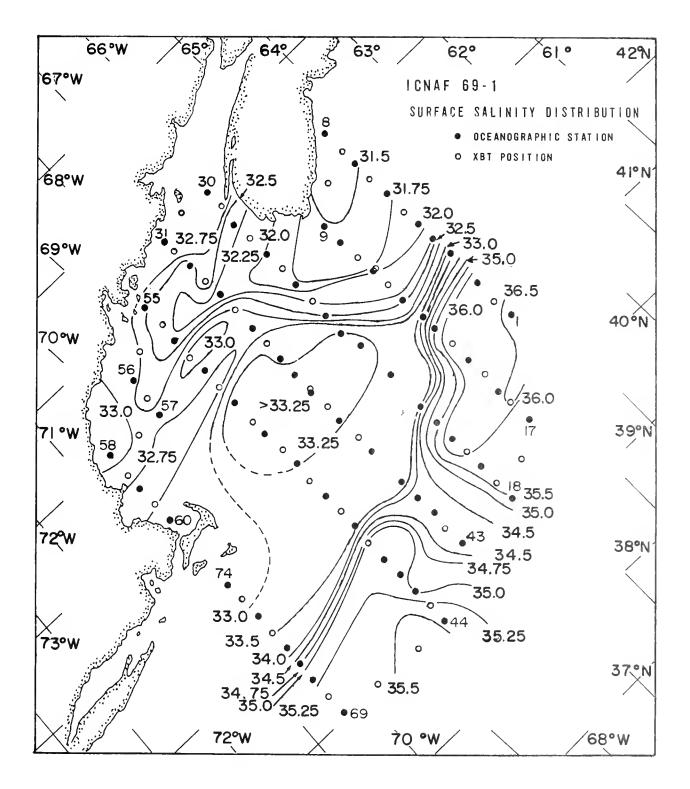


FIGURE 12.—Surface salinity (°/ $_{00}$) distribution, ICNAF 69–1, 28 January-27 February 1969.

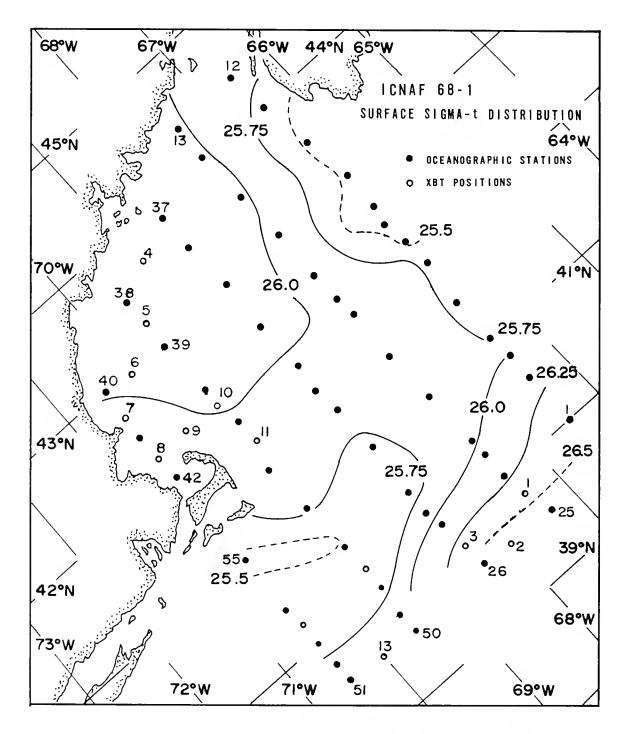


FIGURE 13.--Surface sigma-t (g/l) distribution, ICNAF 68-1, 15-26 January 1968.

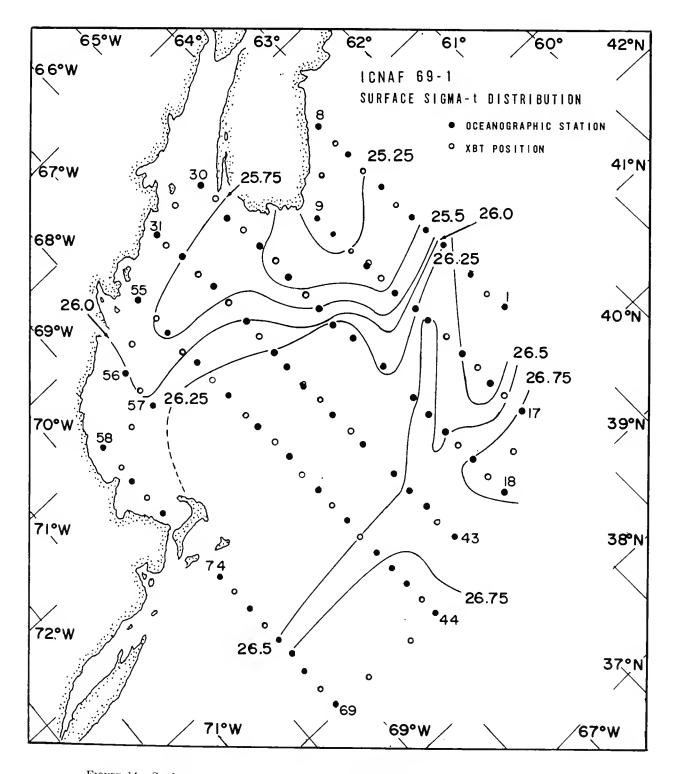


FIGURE 14.—Surface sigma-t (g/l) distribution, ICNAF 69-1, 28 January-27 February 1969.

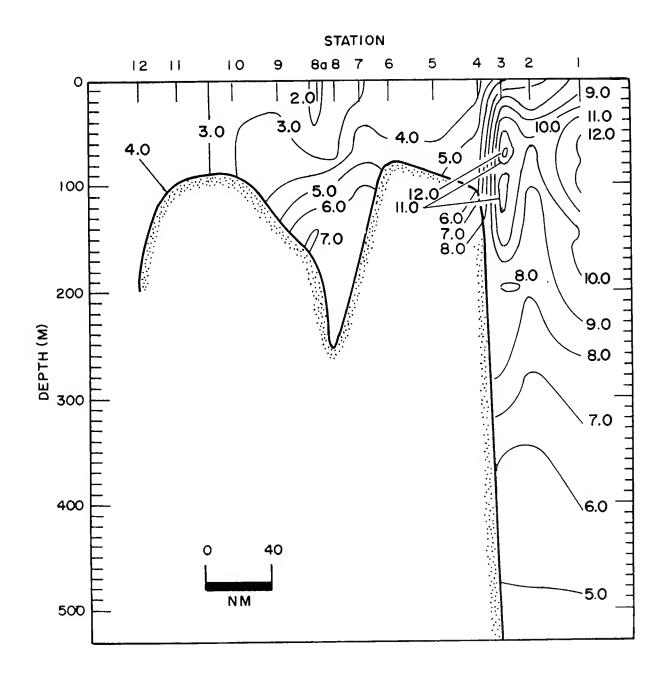


FIGURE 15.—Profile of temperature (°C.) section 1, ICNAF 68-1, 15-26 January 1968.

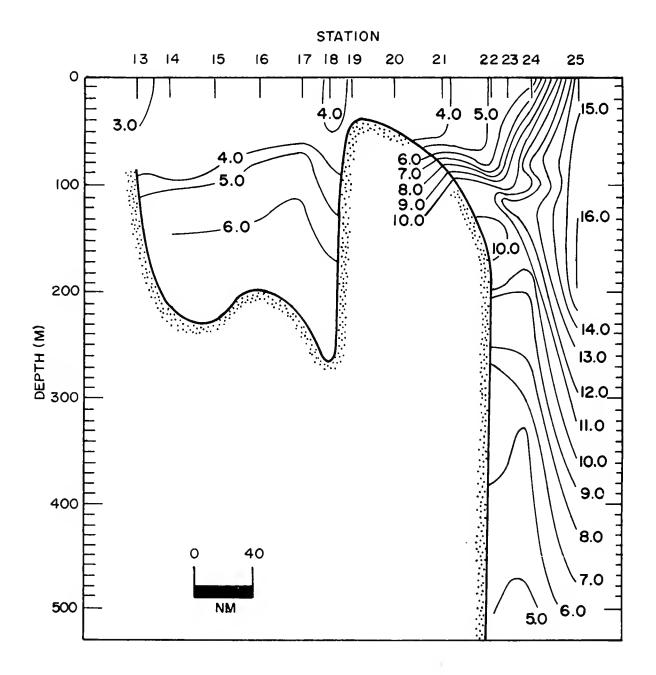


FIGURE 16.--Profile of temperature (°C.) section 2, ICNAF 68-1, 15-26 January 1968.

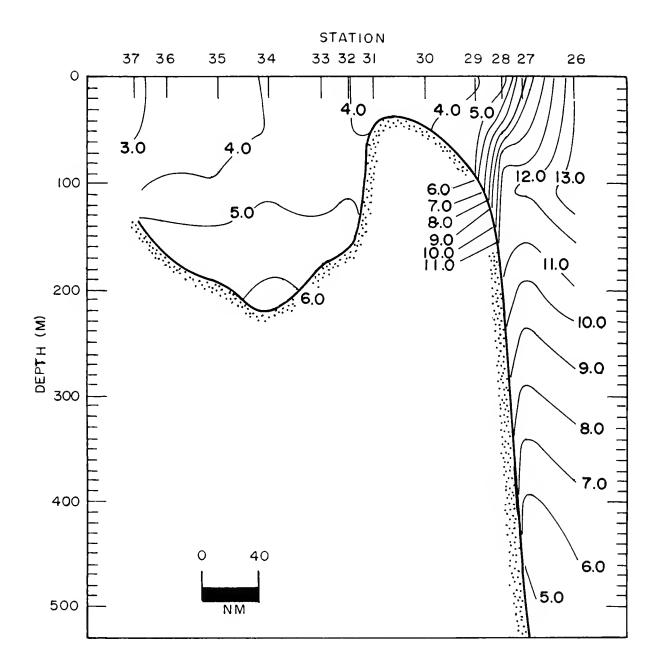


FIGURE 17.—Profile of temperature (°C.), section 3, ICNAF 68-1, 15-26 January 1968.

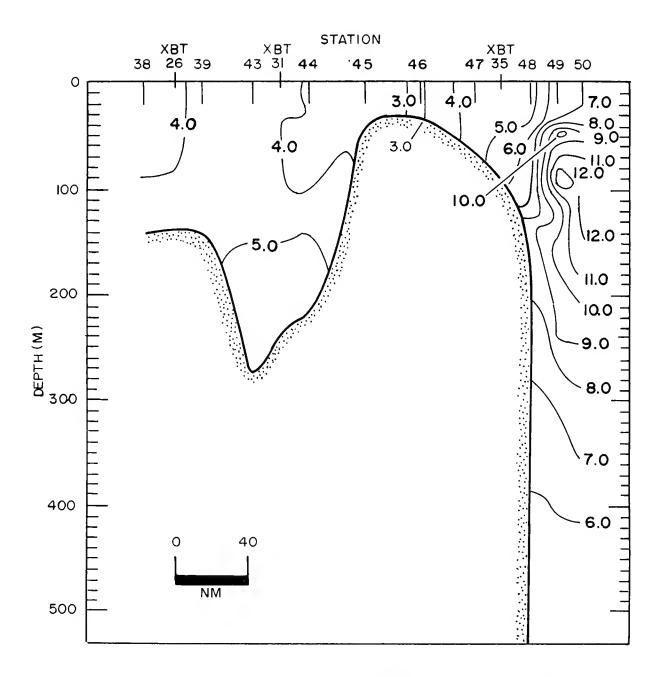


FIGURE 18.—Profile of temperature (°C.), section 4, ICNAF 68-1, 15-26 January 1968.

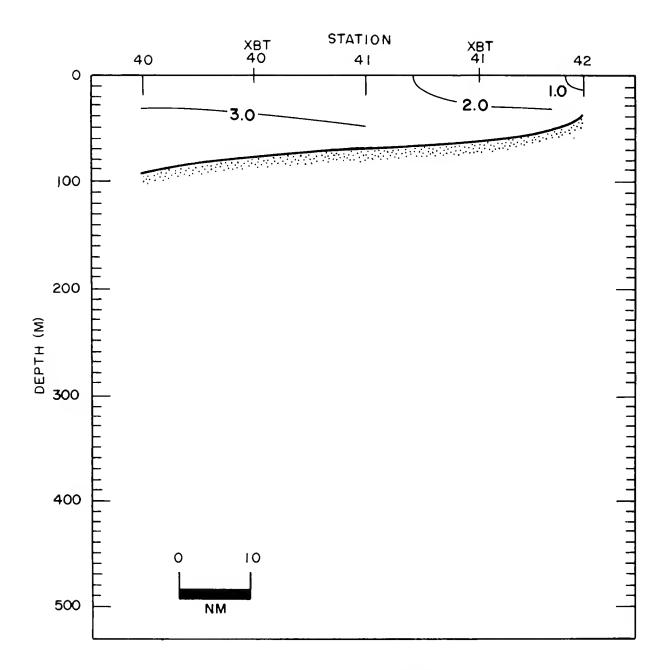


FIGURE 19.—Profile of temperature (°C.), section 5, ICNAF 68-1, 15-26 January 1968.

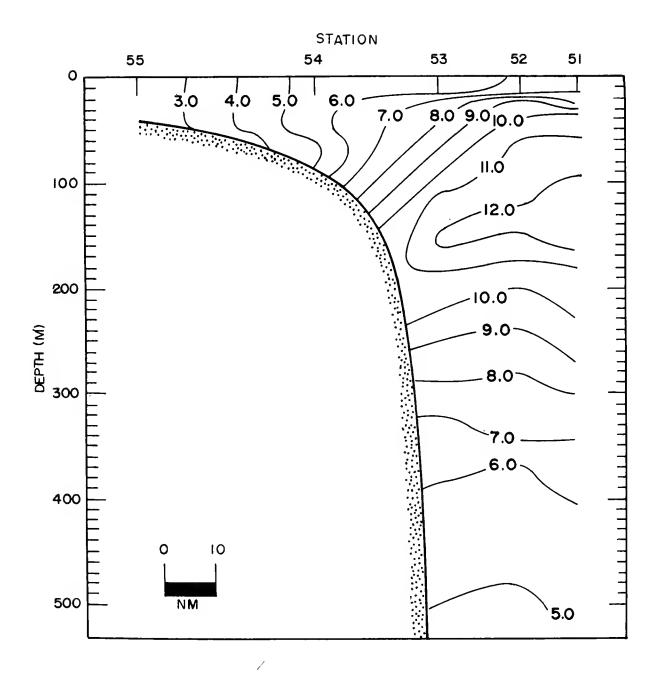


FIGURE 20.—Profile of temperature (°C.), section 6, ICNAF 68-1, 15-26 January 1968.

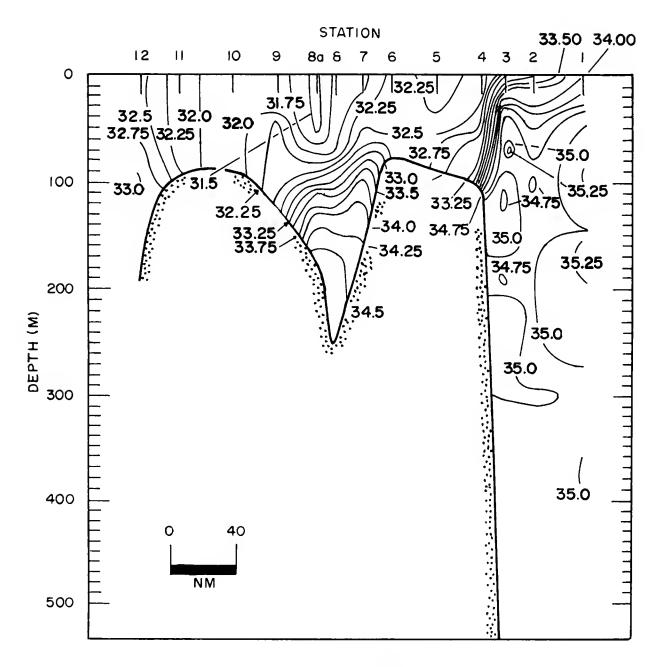


FIGURE 21.—Profile of salinity (°/ $_{\rm oo}$), section 1, ICNAF 68–1, 15–26 January 1968.

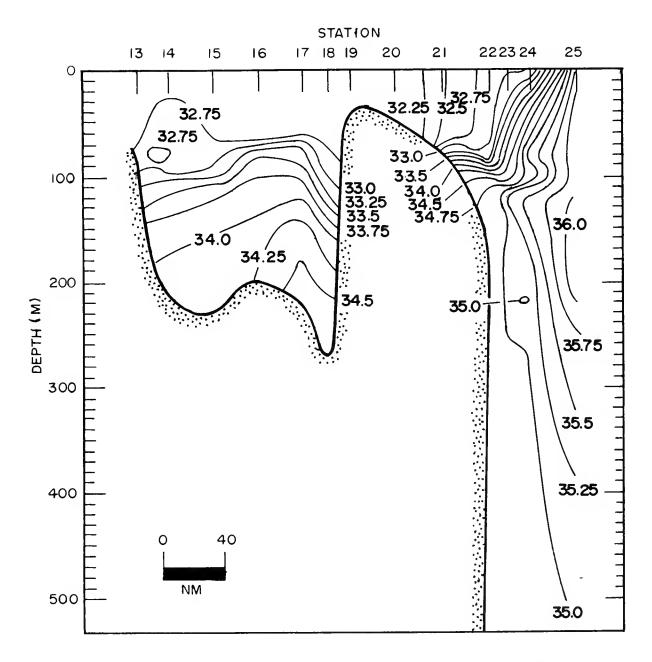


FIGURE 22.—Profile of salinity (°/ $_{oo}$), section 2, ICNAF 68-1, 15-26 January 1968.

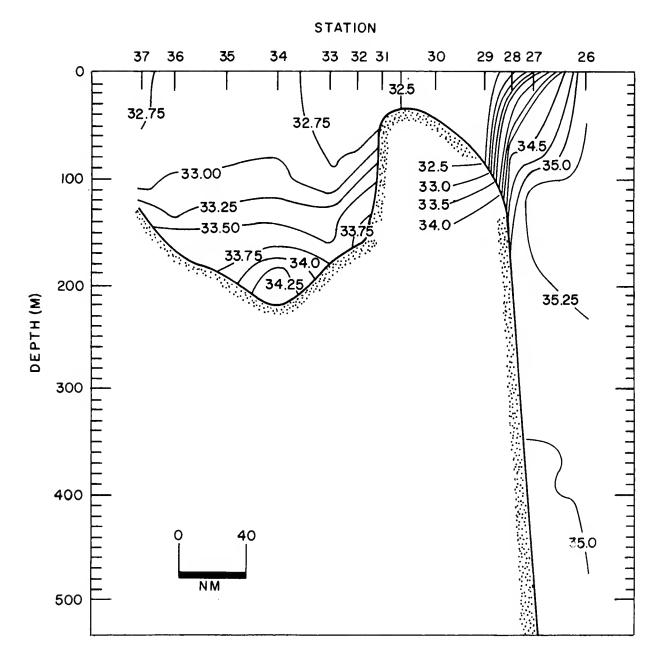


FIGURE 23.—Profile of salinity (°/ $_{\rm oo}$), section 3, ICNAF 68-1, 15-26 January 1968.

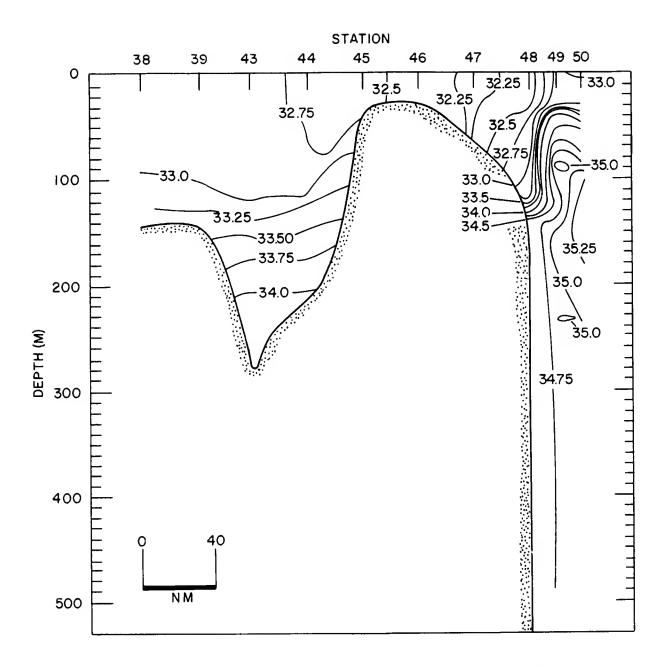


FIGURE 24.—Profile of salinity (°/ $_{\rm oo}$), section 4, ICNAF 68-1, 15-26 January 1968.

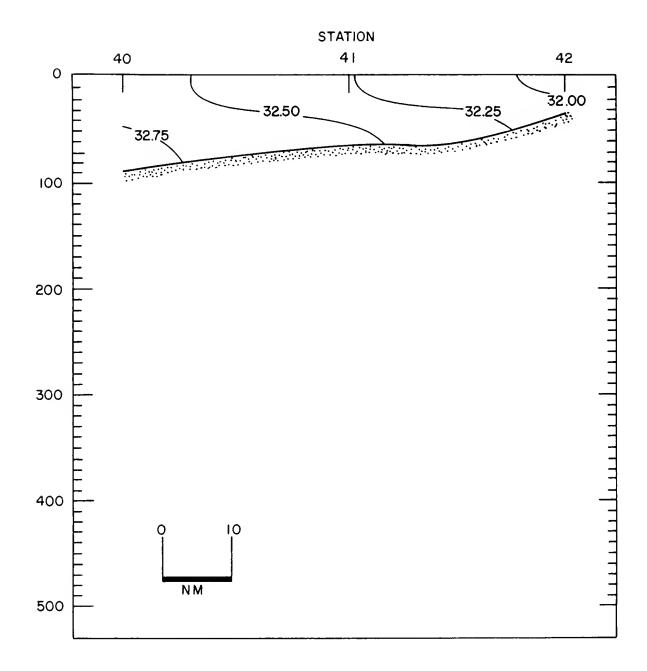


Figure 25.—Profile of salinity (°/ $_{\rm oo}$), section 5, ICNAF 68-1, 15-26 January 1968.

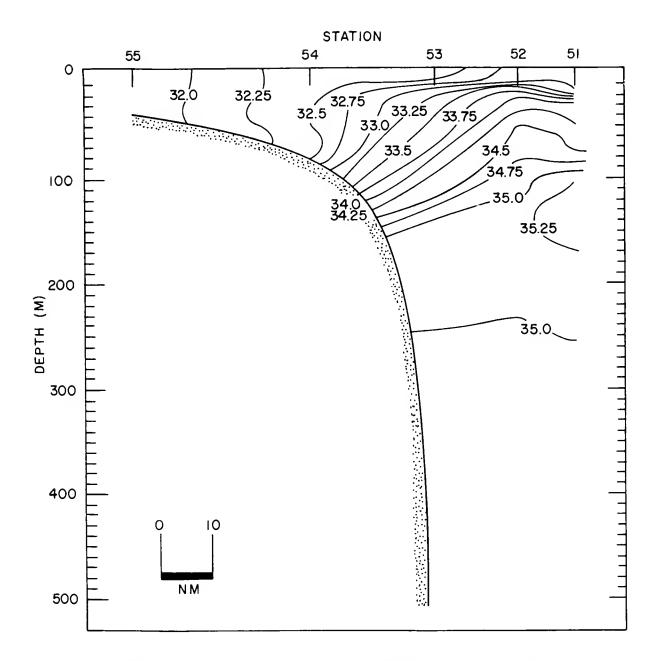


FIGURE 26.—Profile of salinity (°/ $_{\rm oo}$), section 6, ICNAF 68-1, 15-26 January 1968.

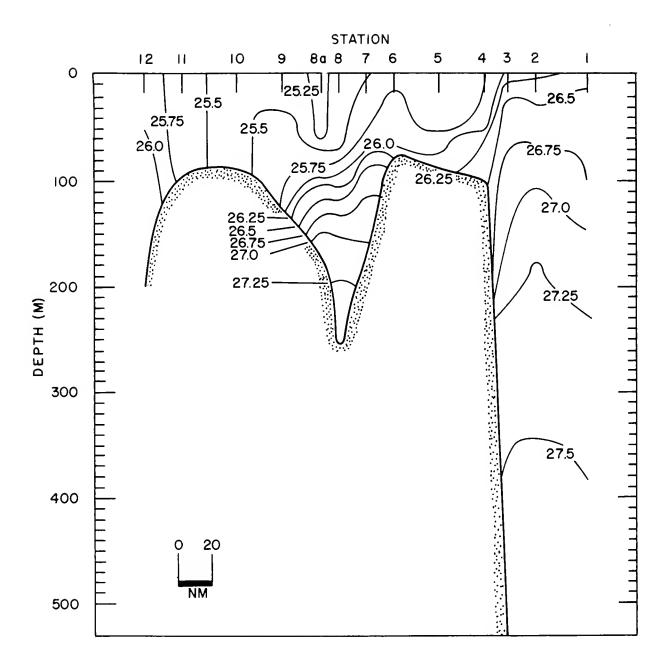


FIGURE 27.—Profile of sigma-t (g/l), section 1, ICNAF 68-1, 15-26 January 1968.

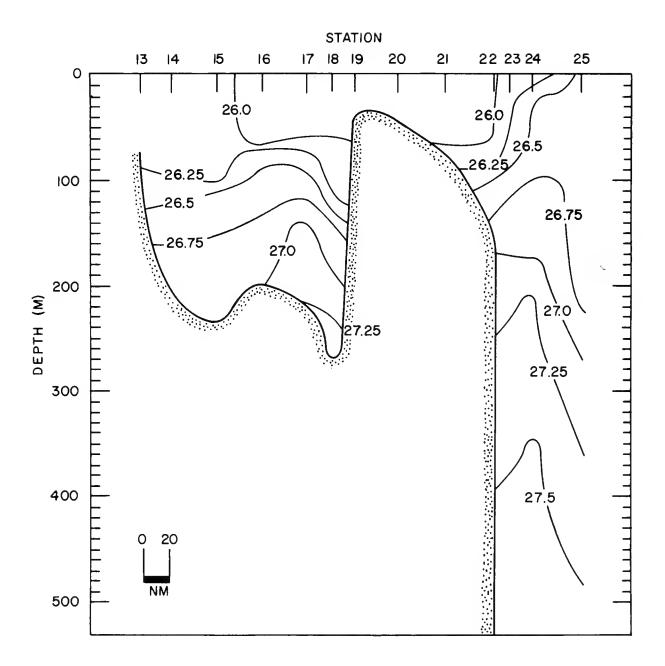


FIGURE 28.-Profile of sigma-t (g/l), section 2, ICNAF 68-1, 15-26 January 1968.

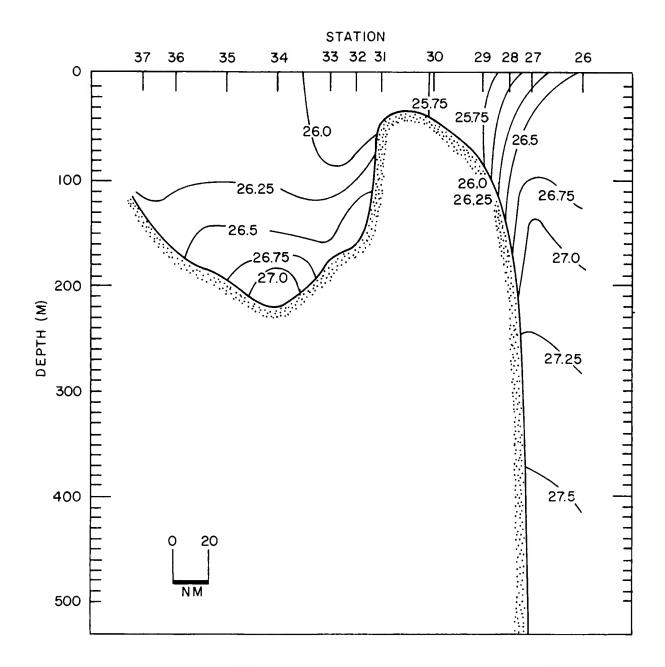


FIGURE 29.—Profile of sigma-t (g/l), section 3, ICNAF 68-1, 15-26 January 1968.

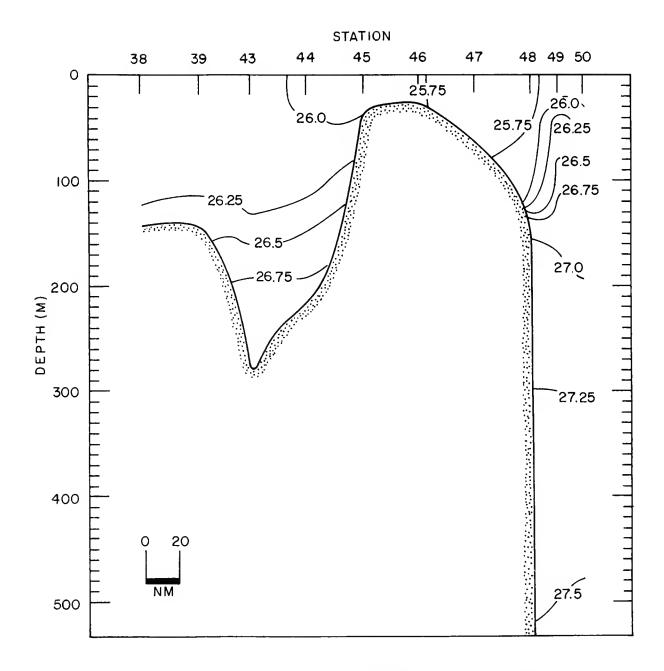


FIGURE 30.—Profile of sigma-t (g/l), section 4, ICNAF 68-1, 15-26 January 1968.

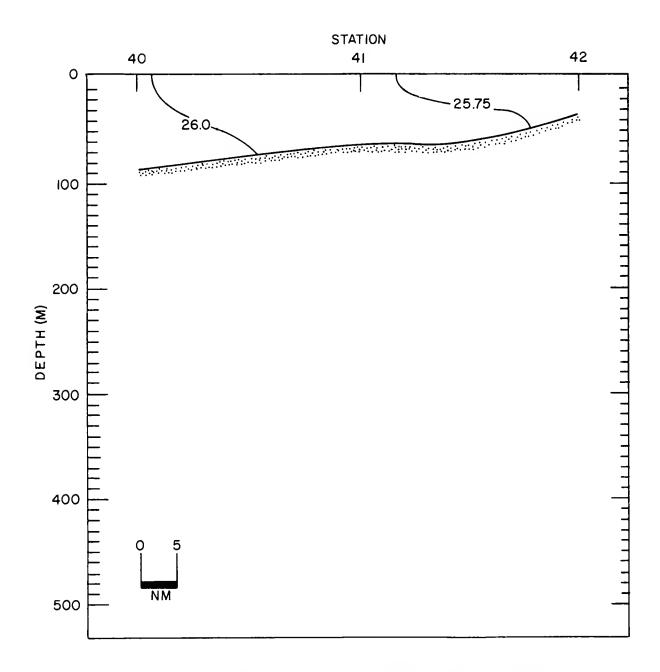


FIGURE 31.—Profile of sigma-t (g/l), section 5, ICNAF 68-1, 15-26 January 1968.

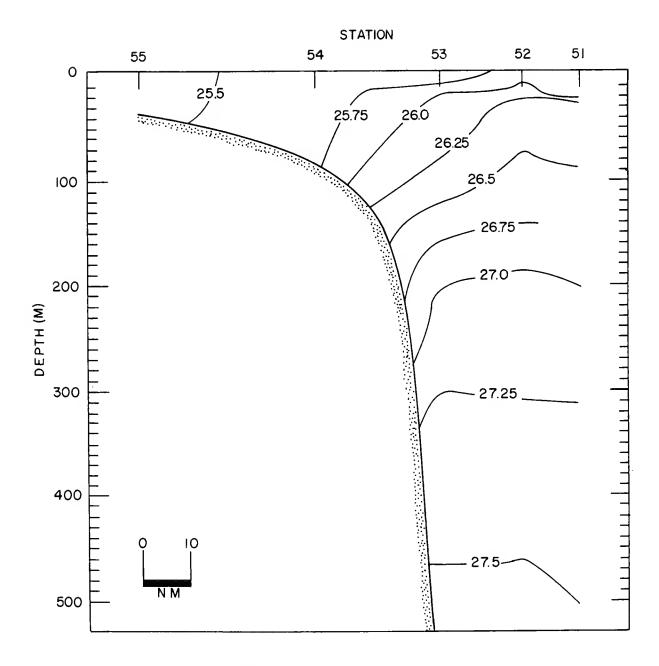


FIGURE 32.—Profile of sigma-t (g/l), section 6, ICNAF 68-1, 15-26 January 1968.

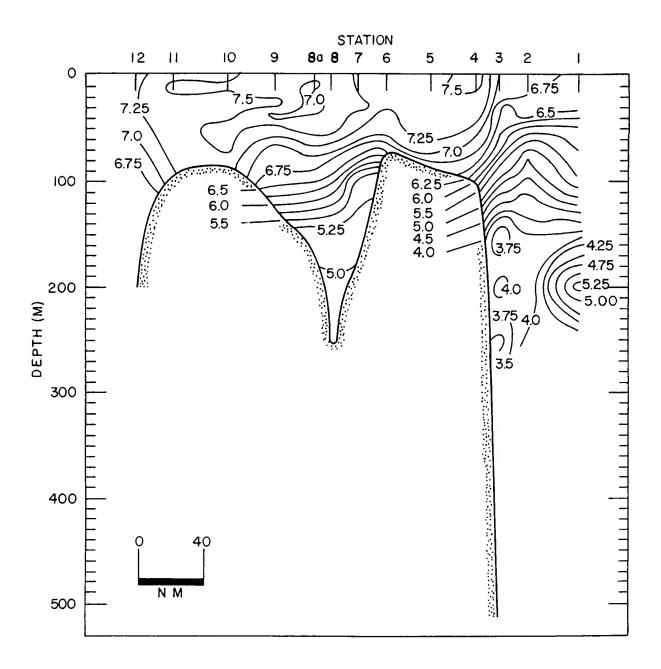


FIGURE 33.-Profile of dissolved oxygen (ml/1), section 1, ICNAF 68-1, 15-26 January 1968.

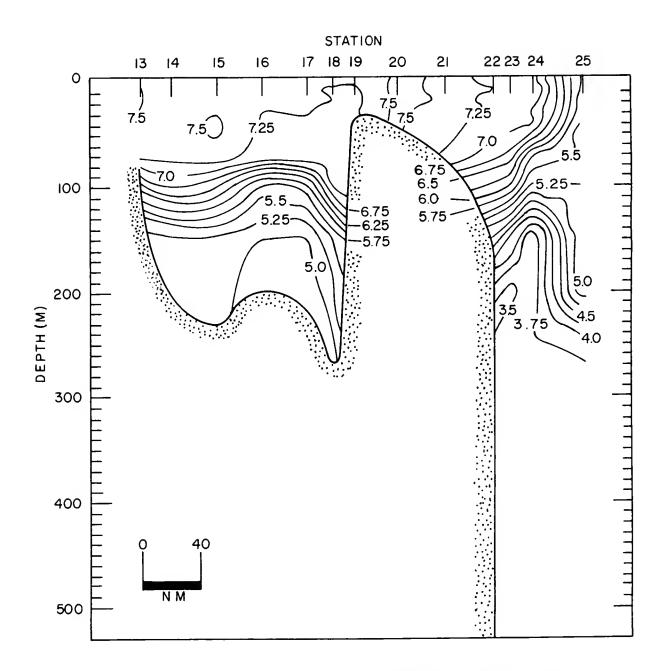


FIGURE 34.-Profile of dissolved oxygen (ml/l), section 2, ICNAF 68-1, 15-26 January 1968.

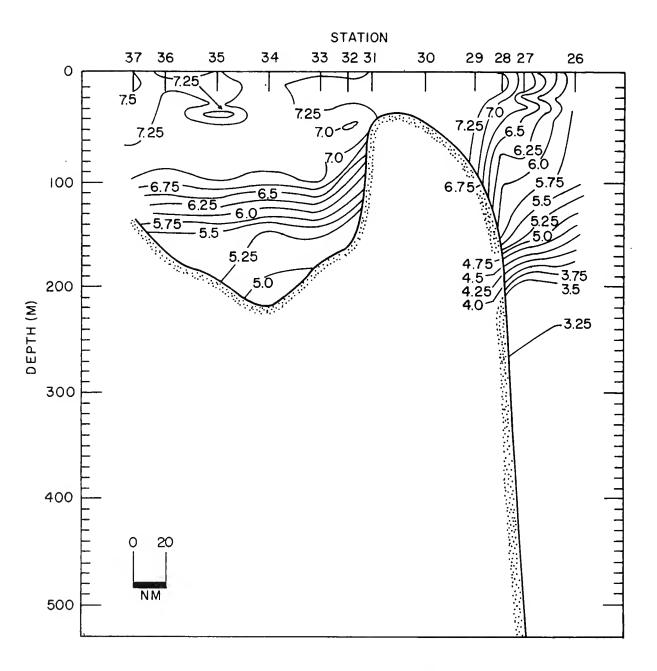


FIGURE 35.—Profile of dissolved oxygen (ml/l), section 3, ICNAF 68-1, 15-26 January 1968.

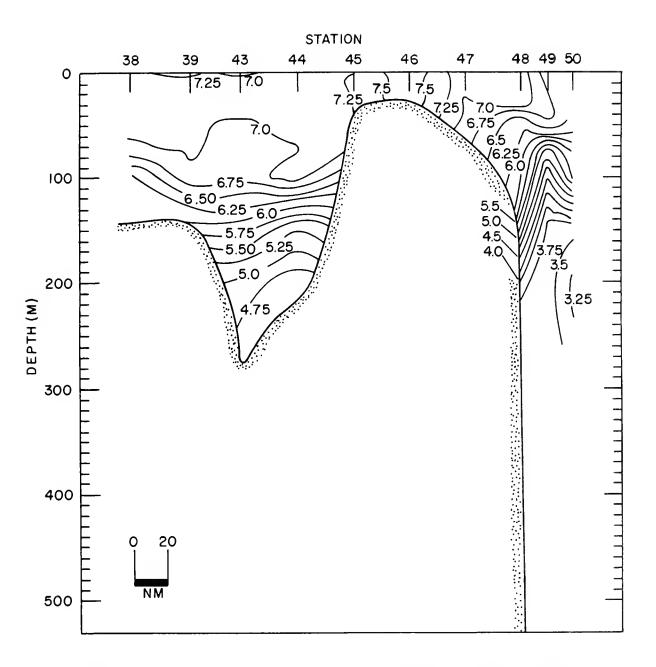


FIGURE 36.-Profile of dissolved oxygen (ml/l), section 4, ICNAF 68-1, 15-26 January 1968.

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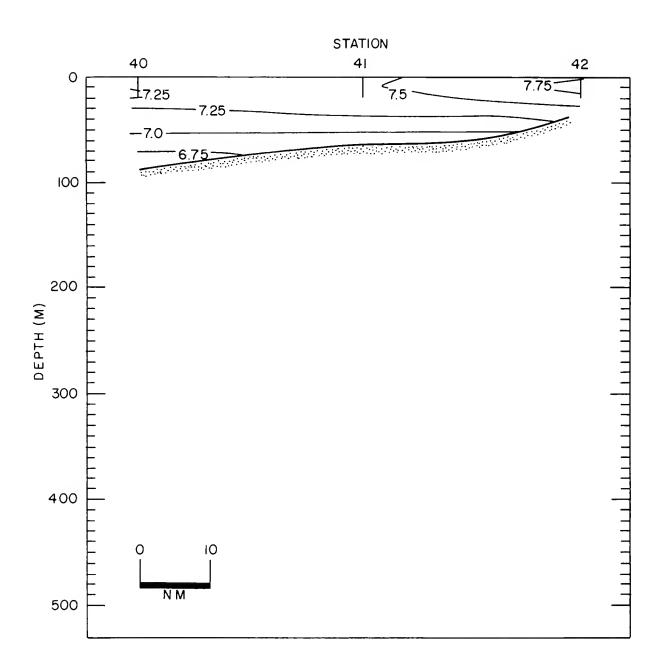


FIGURE 37.—Profile of dissolved oxygen (ml/l), section 5, ICNAF 68-1, 15-26 January 1968.

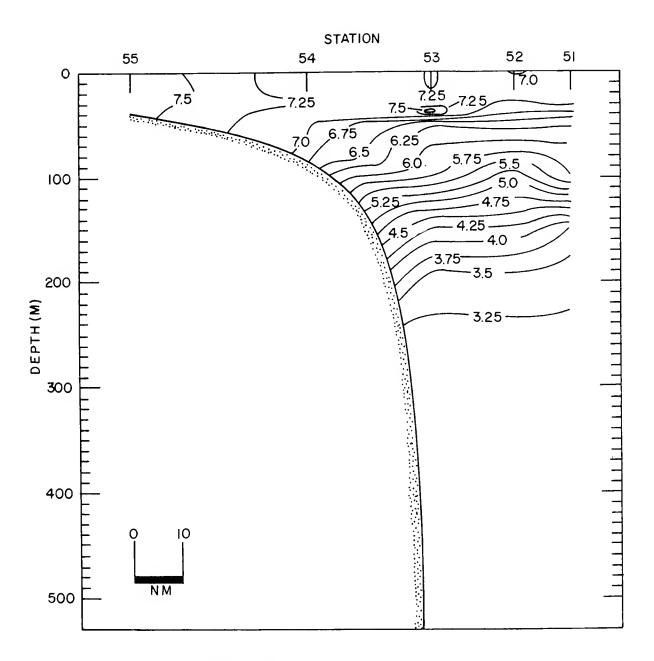
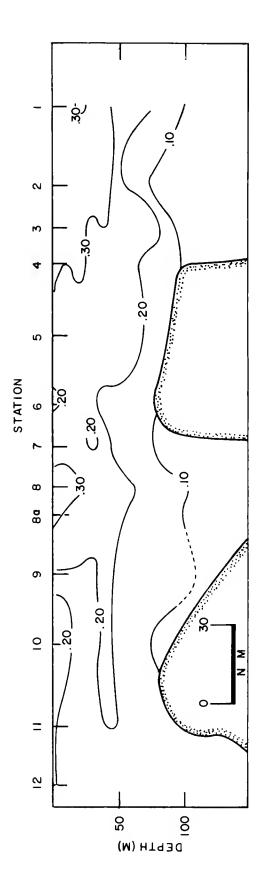
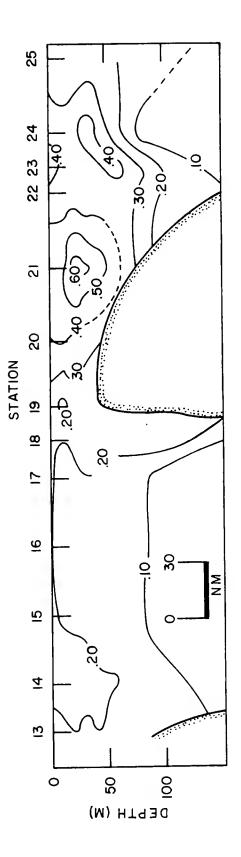


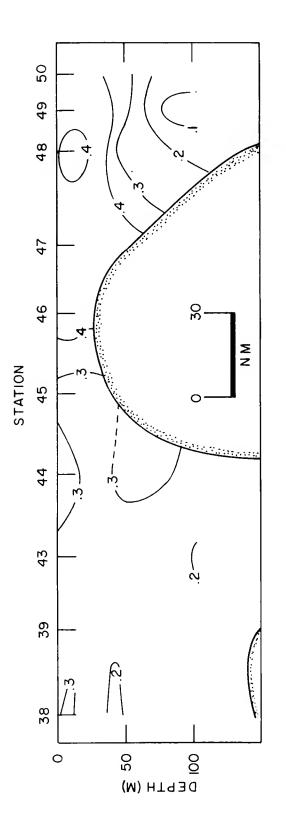
FIGURE 38.-Profile of dissolved oxygen (ml/l), section 6, ICNAF 68-1, 15-26 January 1968.

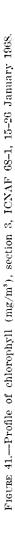


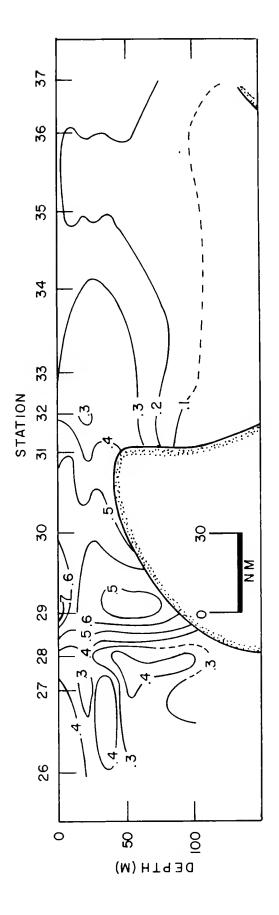














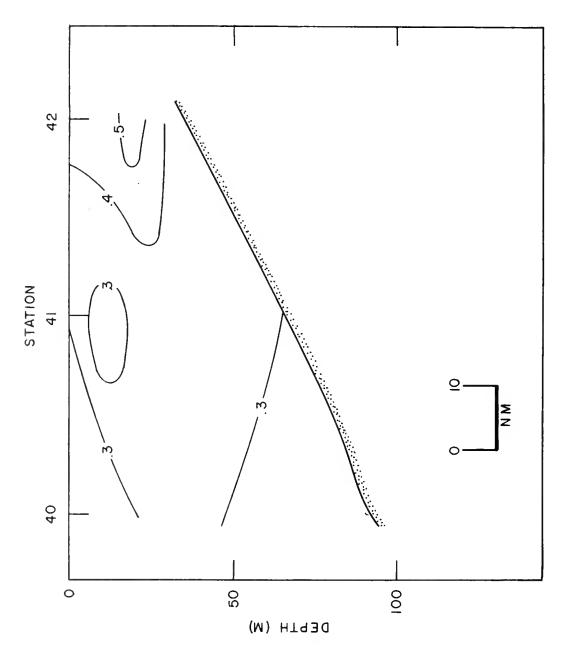
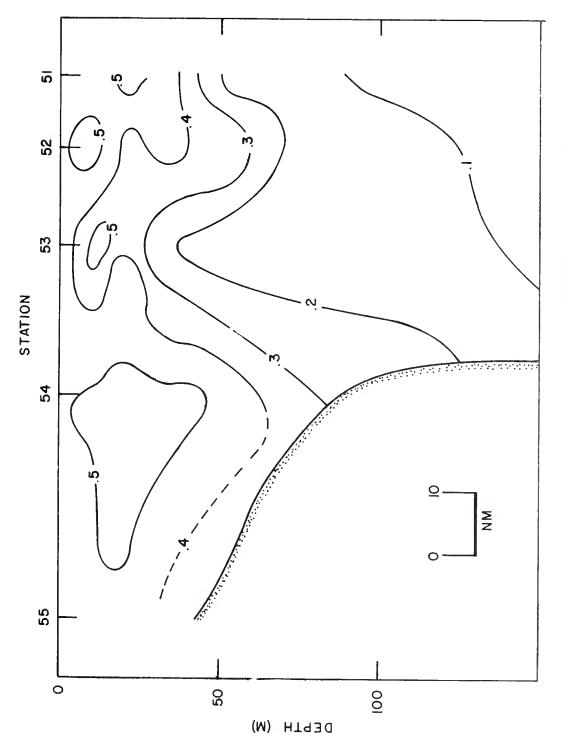


FIGURE 43.—Profile of chlorophyli (mg/m³), section 5, ICNAF 68-1, 15-26 January 1968.



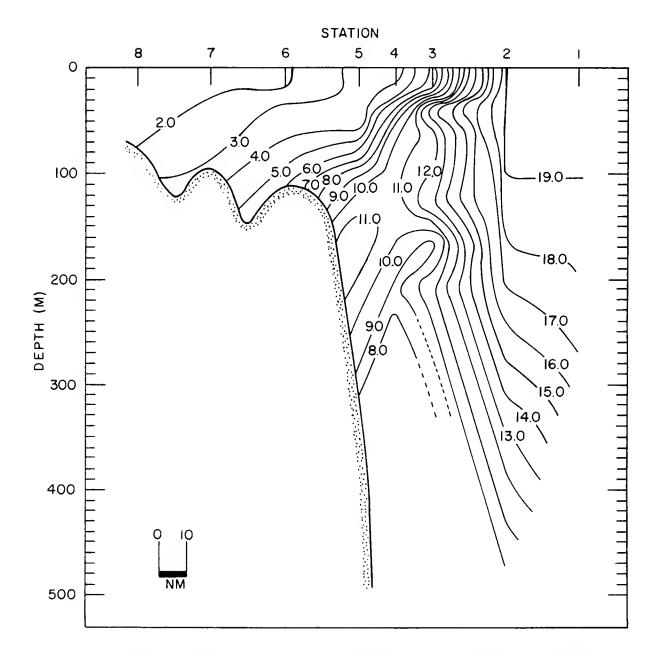


FIGURE 45.—Profile of temperature (°C.), section 1, ICNAF 69-1, 28 January-27 February 1969.

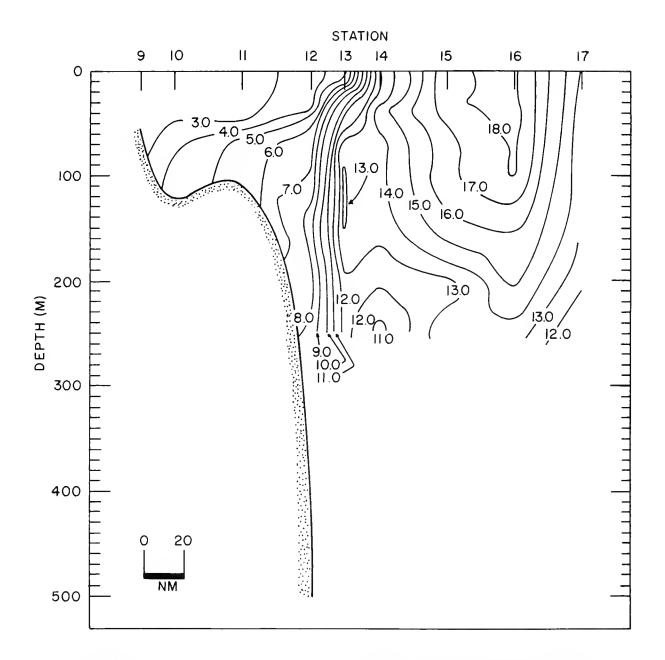


FIGURE 46.—Profile of temperature (°C.), section 2, ICNAF 69-1, 28 January-27 February 1969.

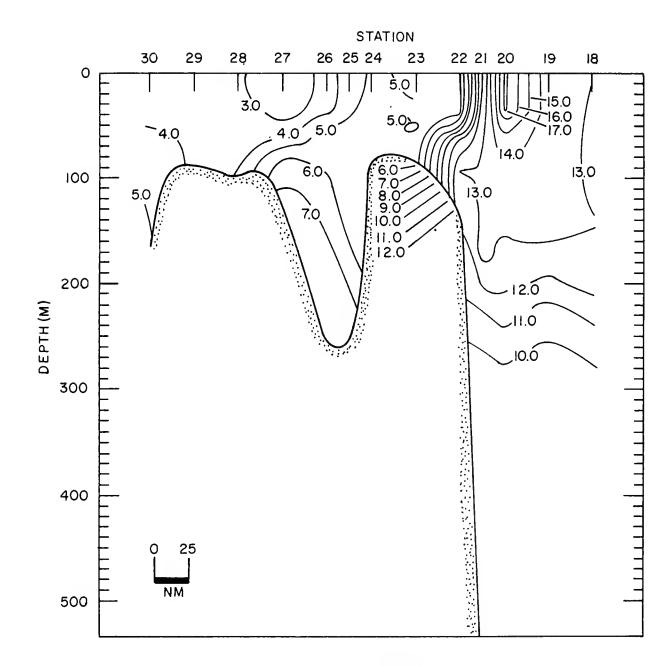


FIGURE 47.—Profile of temperature (°C.), section 3, ICNAF 69-1, 28 January-27 February 1969.

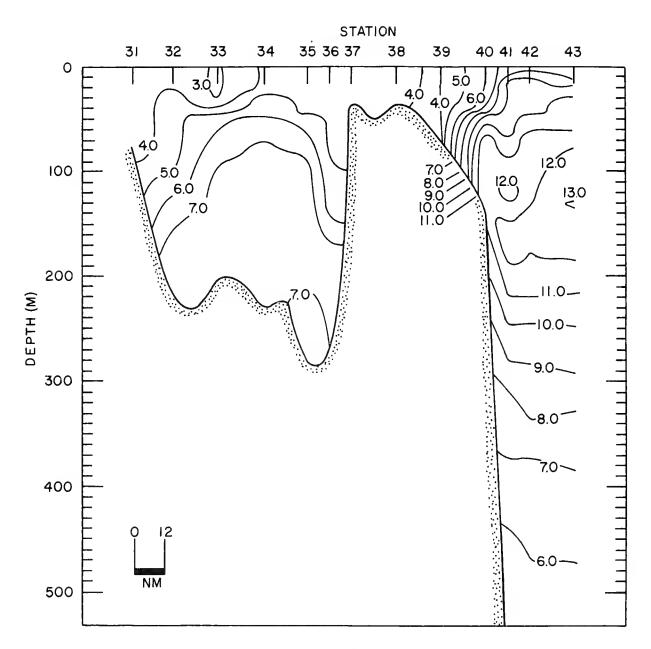


FIGURE 48.--Profile of temperature (°C.), section 4, ICNAF 69-1, 28 January-27 February 1969.

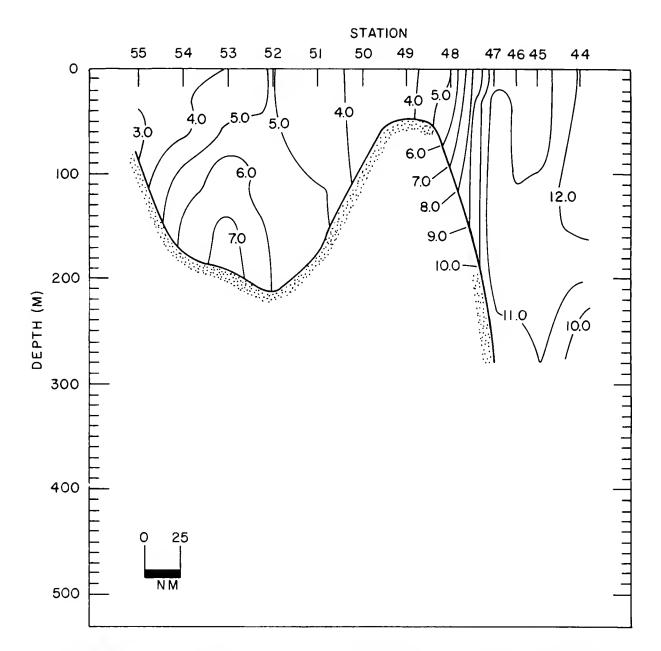


FIGURE 49.—Profile of temperature (°C.), section 5, ICNAF 69-1, 28 January-27 February 1969.

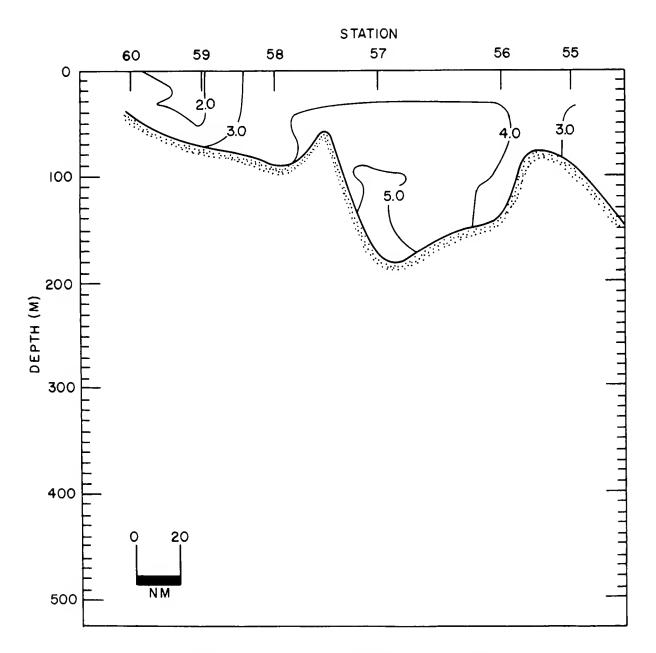


FIGURE 50.—Profile of temperature (°C.), section 6, ICNAF 69-1, 28 January-27 February 1969.

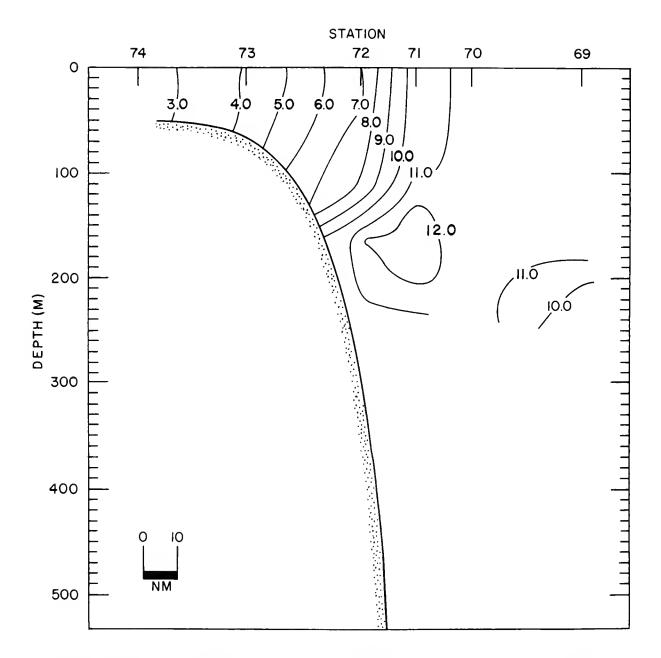


FIGURE 51.—Profile of temperature (°C.), section 7, ICNAF 69-1, 28 January-27 February 1969.

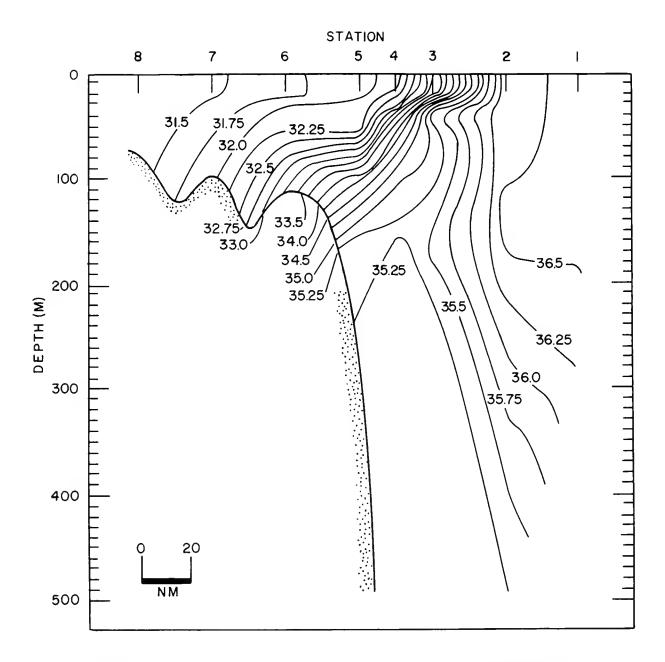


FIGURE 52.—Profile of salinity (°/ $_{00}$), section 1, ICNAF 69-1, 28 January-27 February 1969.

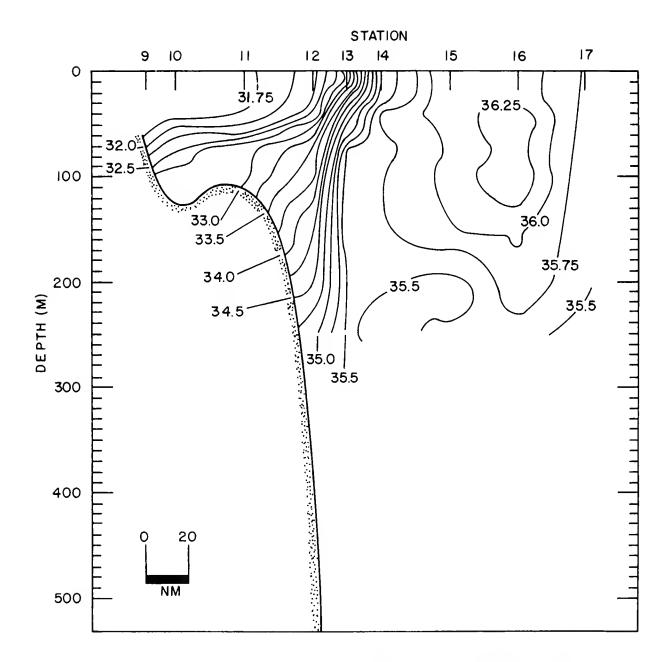


Figure 53.—Profile of salinity (°/ $_{\rm oo}$), section 2, ICNAF 69–1, 28 January-27 February 1969.

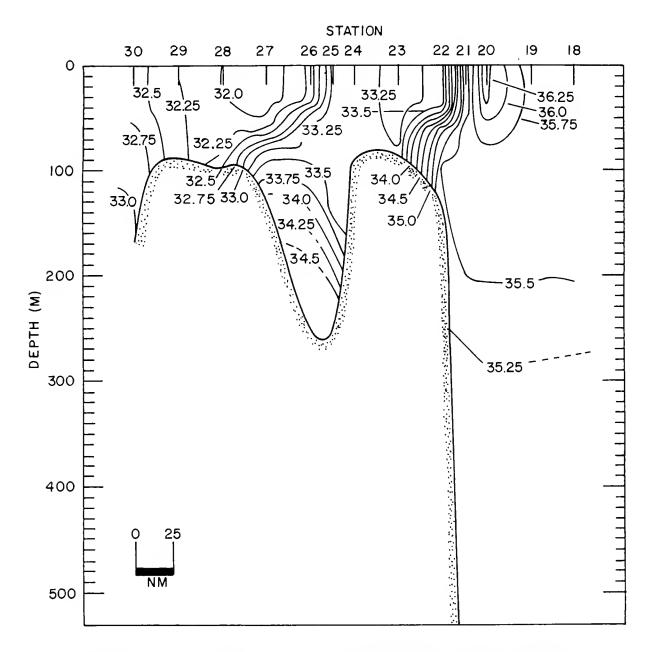


FIGURE 54.—Profile of salinity (°/ $_{00}$), section 3, ICNAF 69-1, 28 January-27 February 1969.

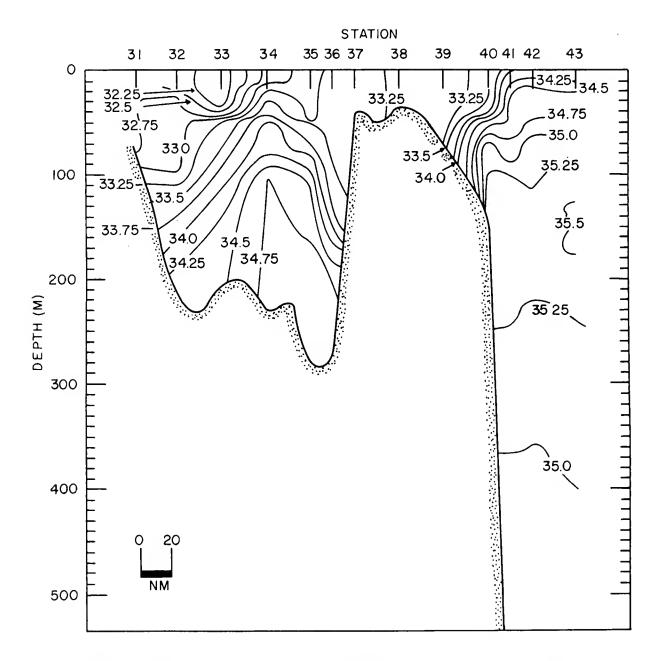


FIGURE 55.—Profile of salinity (°/ $_{00}$), section 4, ICNAF 69-1, 28 January-27 February 1969.

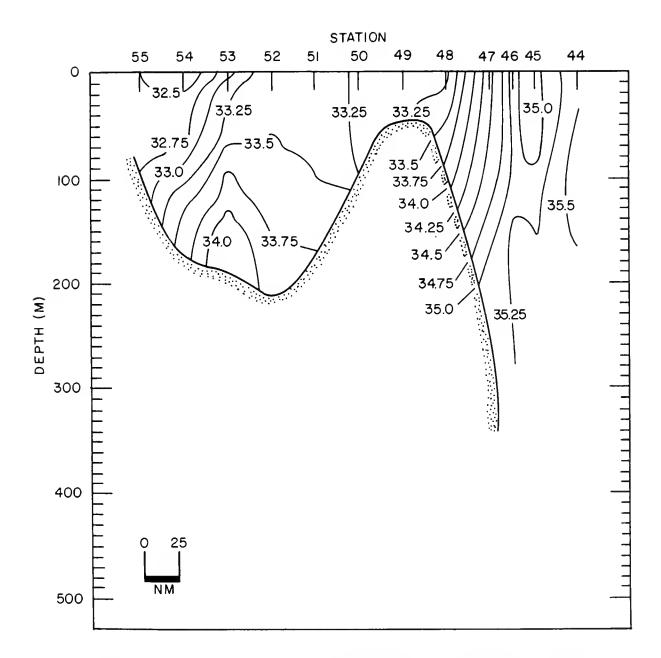


FIGURE 56.—Profile of salinity (°/ $_{00}$), section 5, ICNAF 69–1, 28 January-27 February 1969.

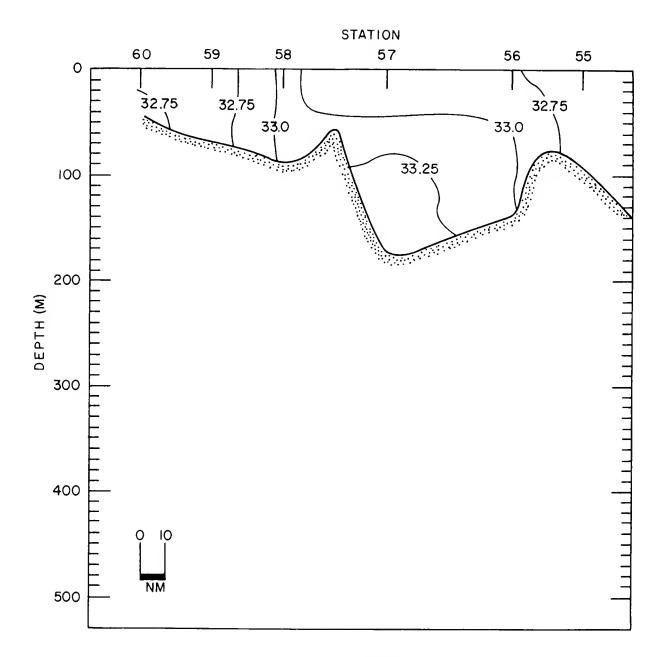


Figure 57.—Profile of salinity (°/ $_{\rm oo}$), section 6, ICNAF 69–1, 28 January-27 February 1969.

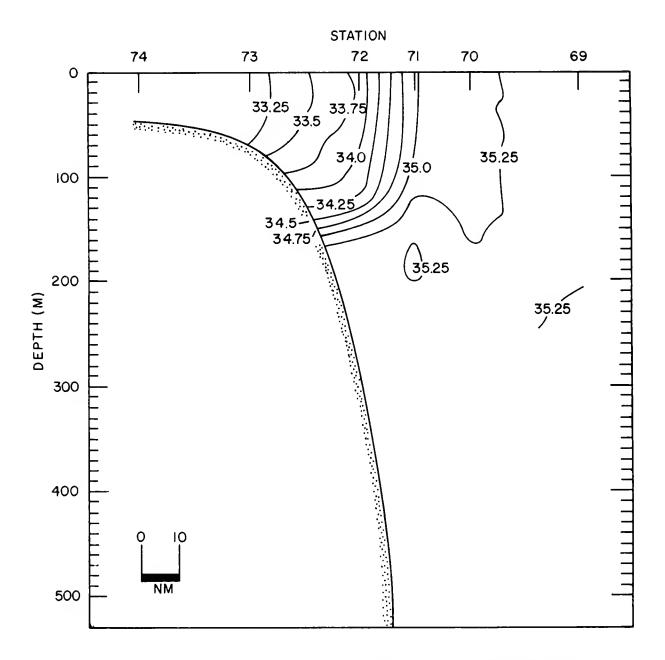


FIGURE 58.—Profile of salinity ($^{\circ}/_{00}$), section 7, ICNAF 69-1, 28 January-27 February 1969.

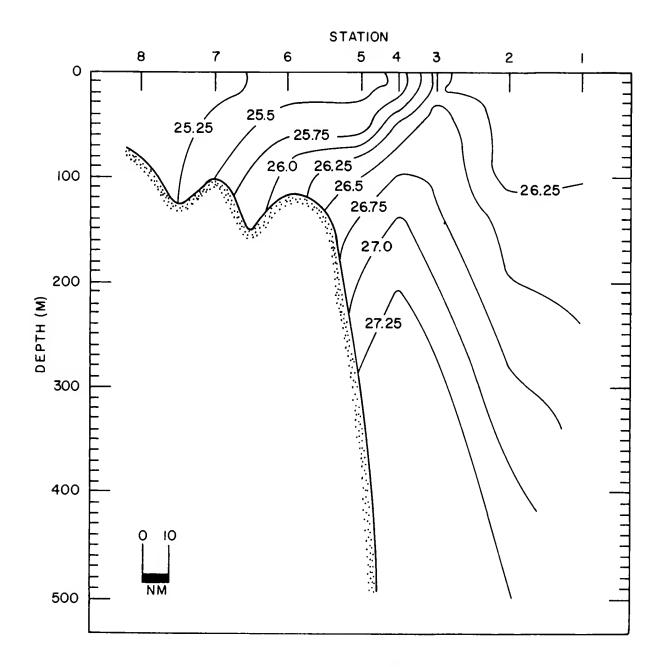


FIGURE 59.--Profile of sigma-t (g/1), section 1, ICNAF 69-1, 28 January-27 February 1969.

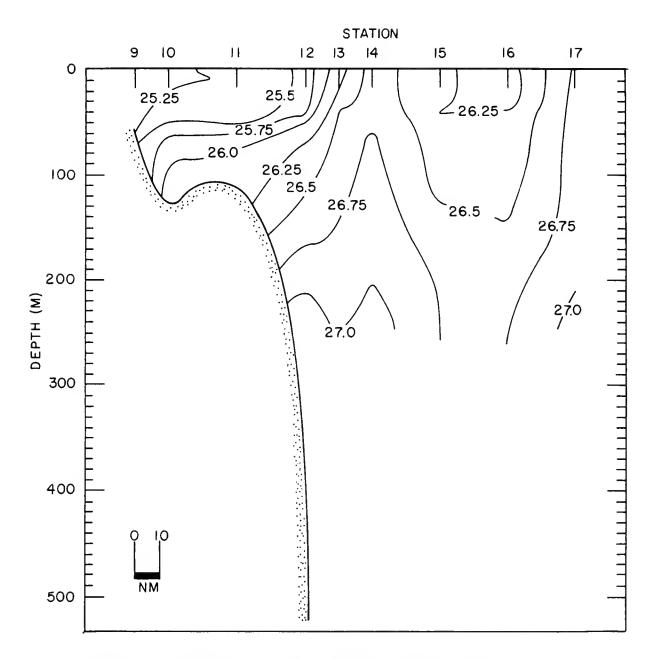


FIGURE 60.—Profile of sigma-t (g/l), section 2, ICNAF 69-1, 28 January-27 February 1969.

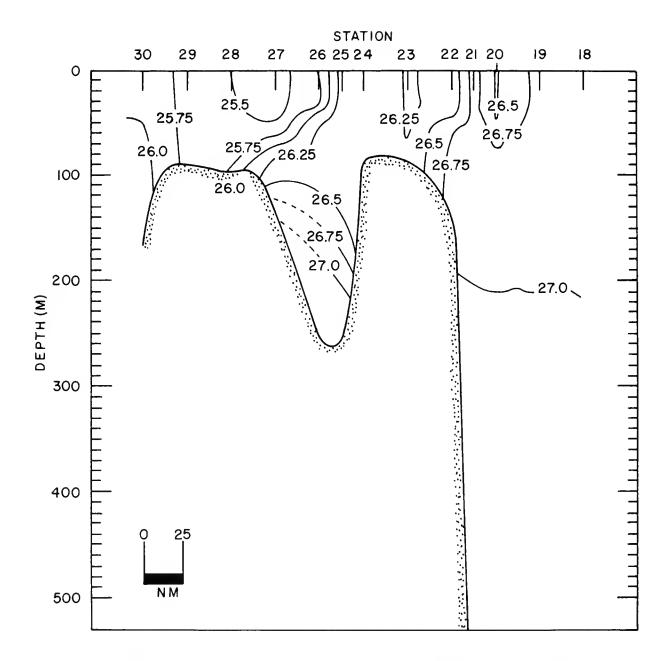


FIGURE 61.—Profile of sigma-t (g/l), section 3, ICNAF 69-1, 28 January-27 February 1969.

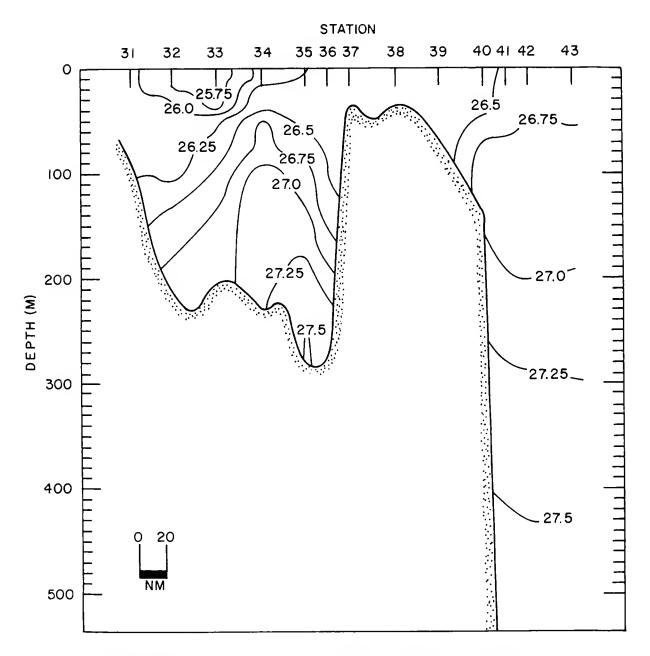


FIGURE 62 .- Profile of sigma-t (g/l), section 4, ICNAF 69-1, 28 January-27 February 1969.

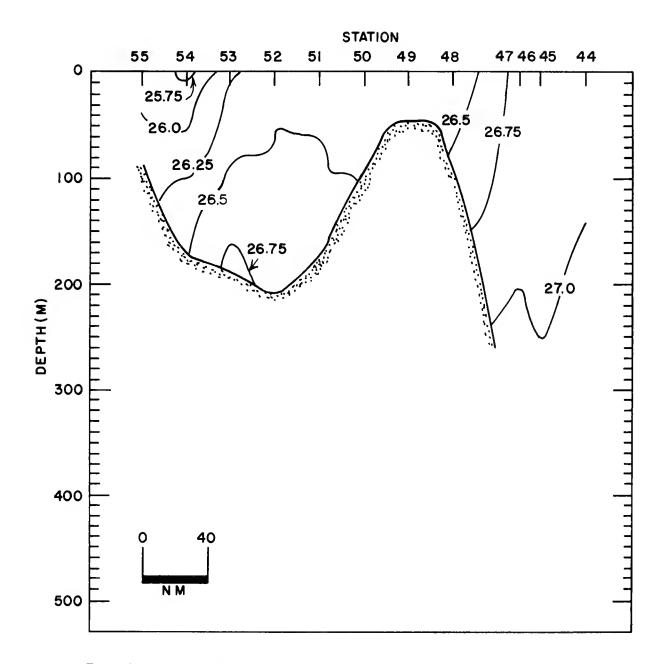
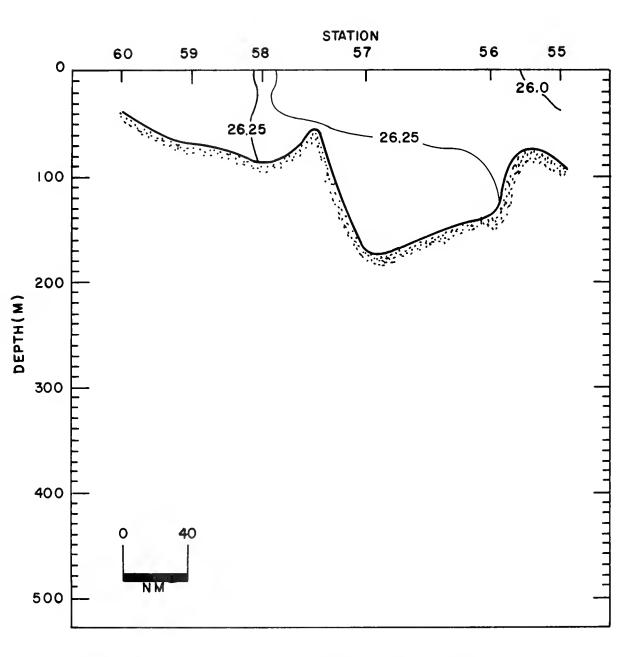


FIGURE 63.—Profile of sigma-t (g/l), section 5, ICNAF 69-1, 28 January-27 February 1969.



FIOURE 64.—Profile of sigma-t (g/l), section 6, ICNAF 69-1, 28 January-27 February 1969.

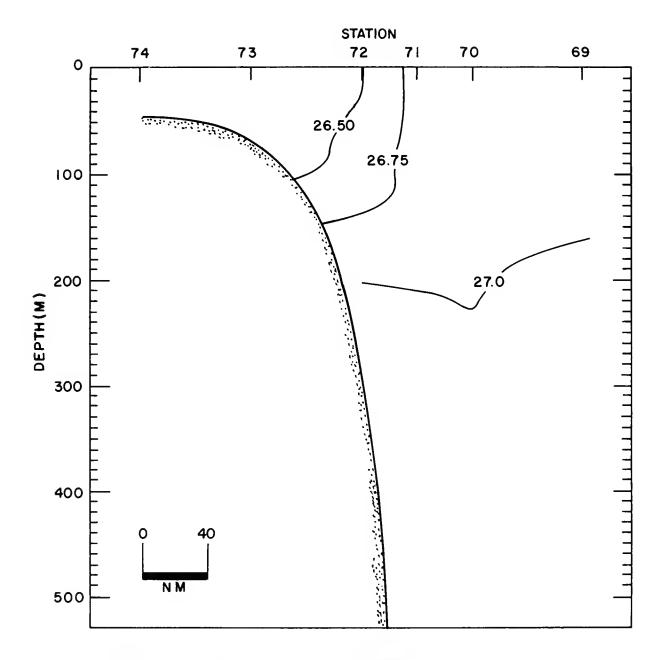


FIGURE 65.—Profile of sigma-t (g/l), section 7, ICNAF 69-1, 28 January-27 February 1969.

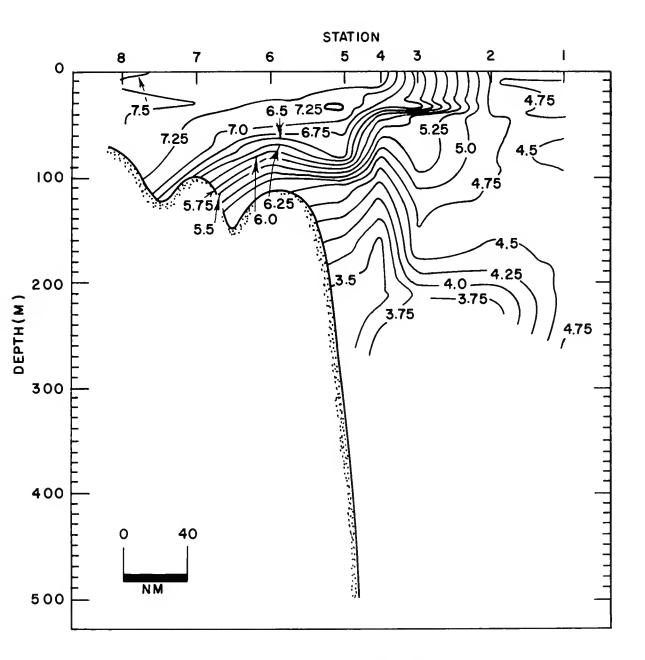


FIGURE 66 .-- Profile of dissolved oxygen (ml/l), section 1, ICNAF 69-1, 28 January-27 February 1969.

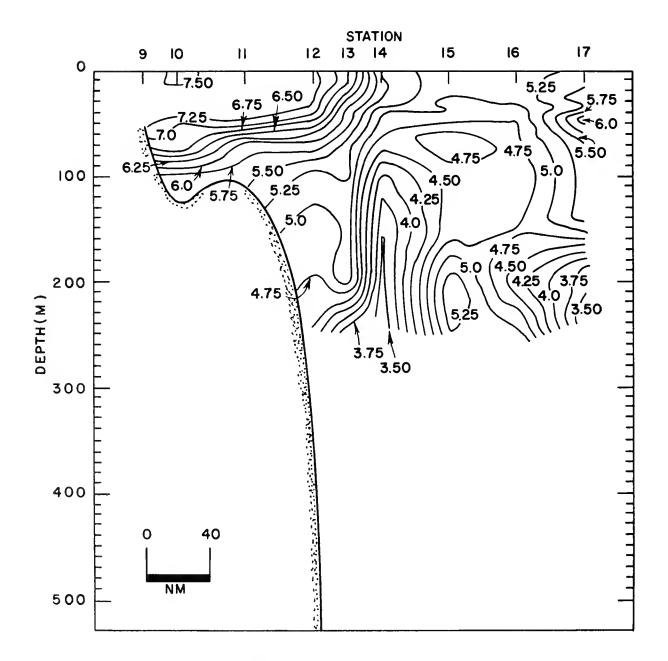


FIGURE 67,-Profile of dissolved oxygen (ml/l), section 2, ICNAF 69-1, 28 January-27 February 1969.

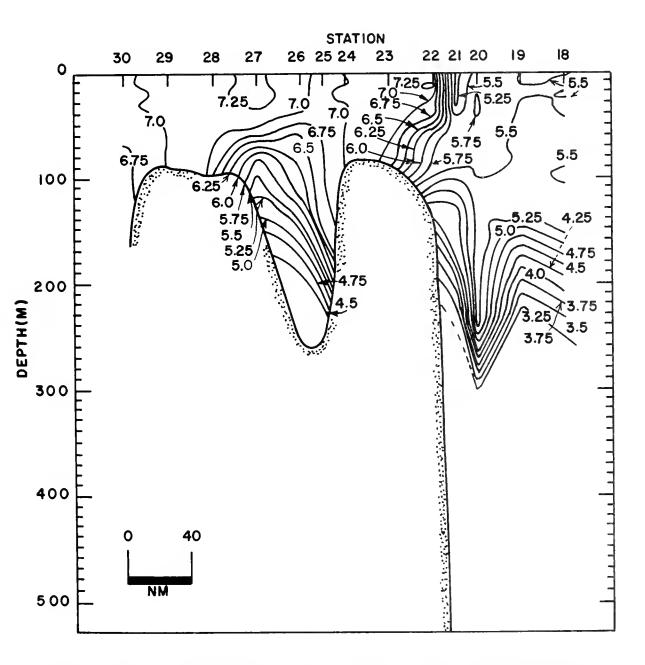


FIGURE 68 .--- Profile of dissolved oxygen (ml/l), section 3, ICNAF 69-1, 28 January-27 February 1969.

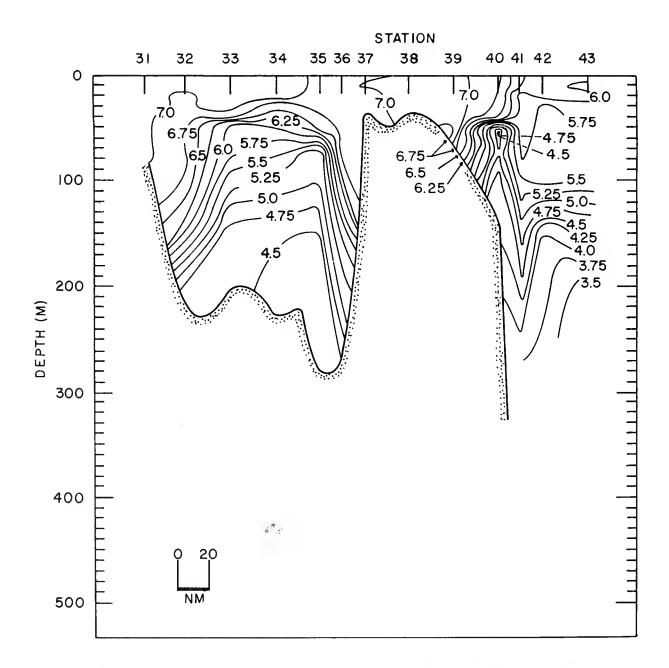


FIGURE 69.-Profile of dissolved oxygen (ml/l), section 4, ICNAF 69-1, 28 January-27 February 1969.

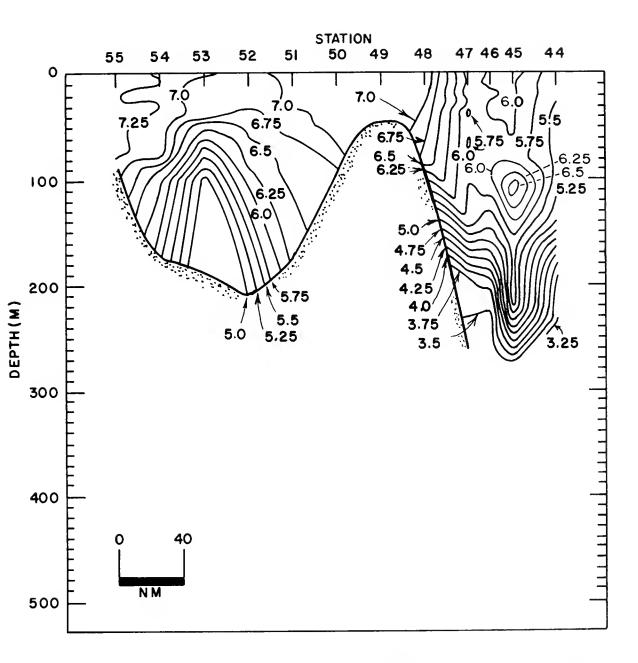


FIGURE 70.-Profile of dissolved oxygen (ml/l), section 5, ICNAF 69-1, 28 January-27 February 1969.

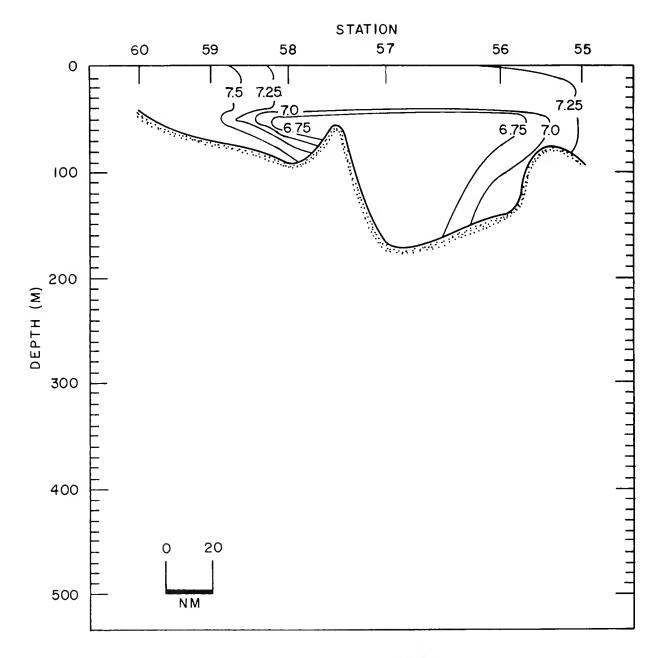


FIGURE 71.--Profile of dissolved oxygen (ml/l), section 6, ICNAF 69-1, 28 January-27 February 1969.

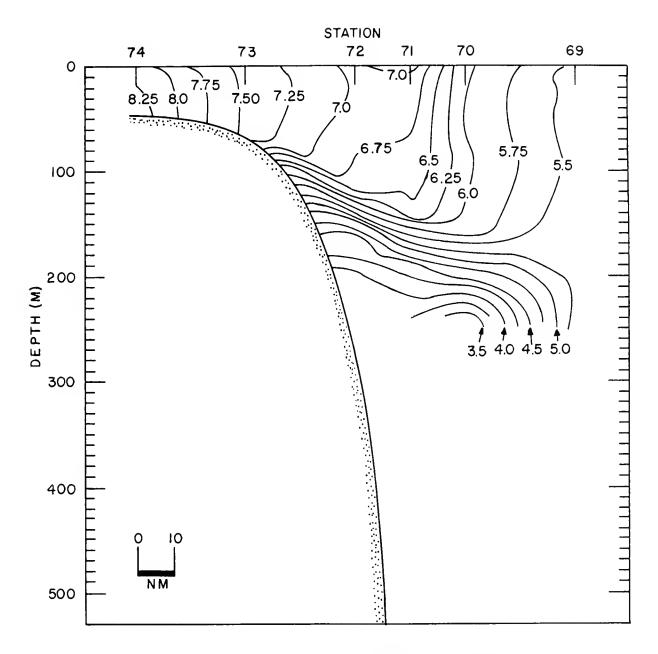
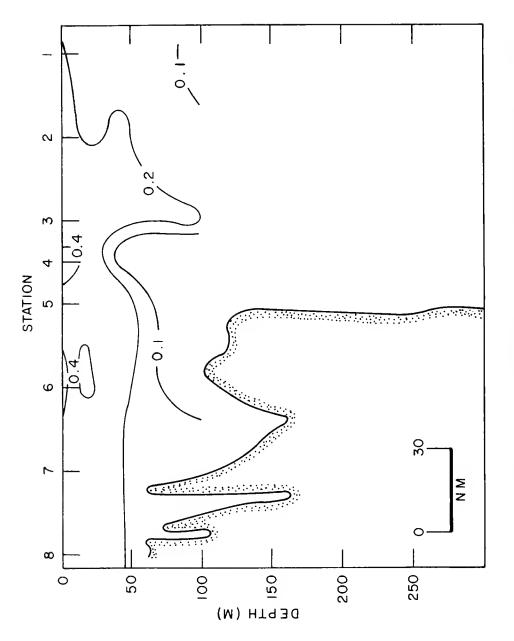
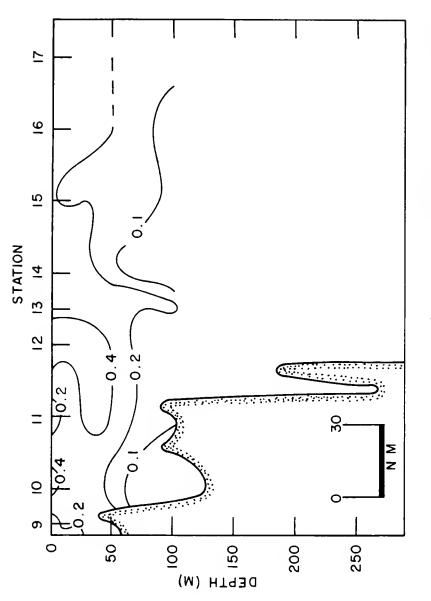
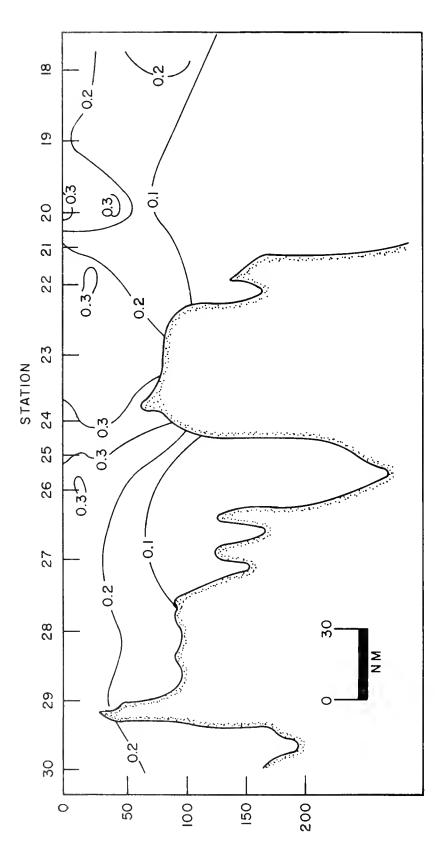


FIGURE 72.--Profile of dissolved oxygen (ml/l), section 7, ICNAF 69-1, 28 January-27 February 1969.

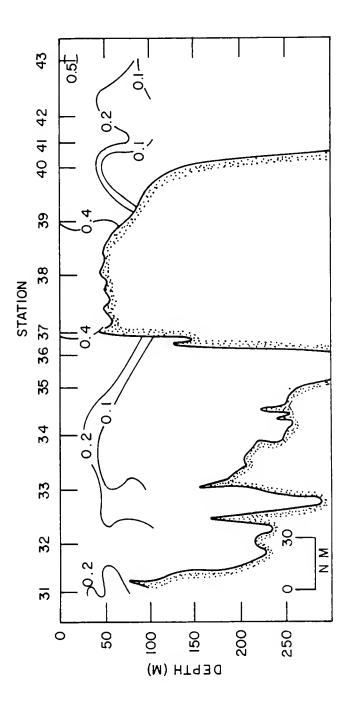




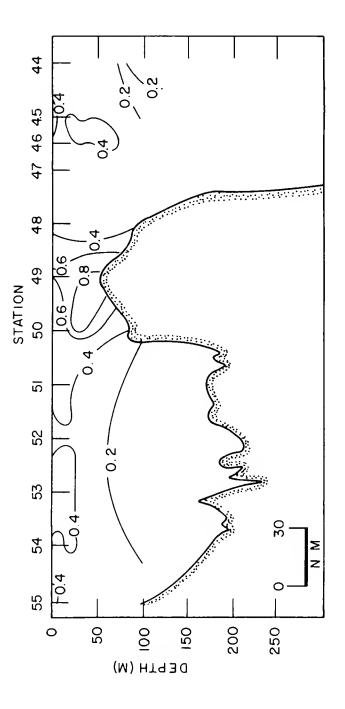




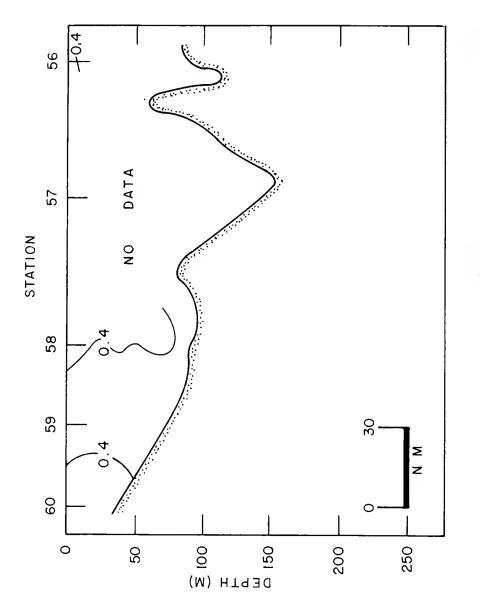




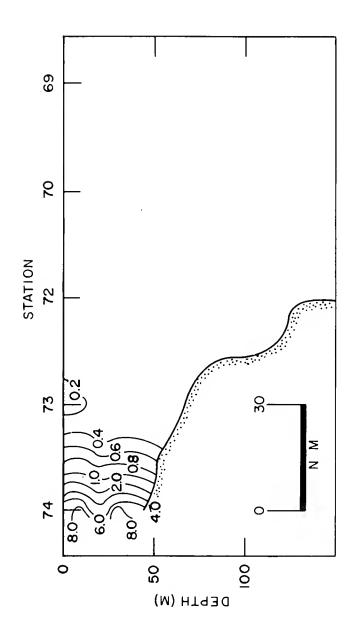














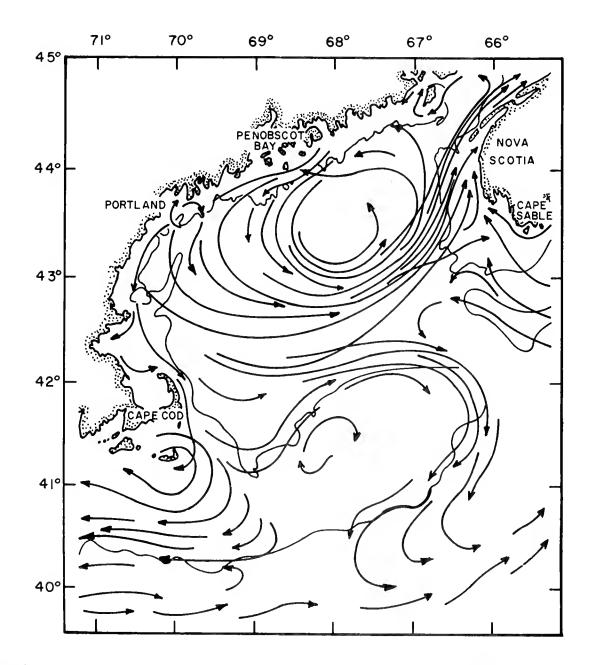


FIGURE 80.--Schematic representation of the dominant nontidal circulation of the Gulf of Maine (Bigelow, 1927).

APPENDIX A OCEANOGRAPHIC DATA

Cruises Listed

Table

I.	Observed and interpolated oceanographic data taken by USCG EVERGREEN, 15–26 January 1968,	
	on ICNAF Cruise 68-1; prepared from NODC Listing No. 31-84034.	92

 II.
 Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27

 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.
 123

A complete description of the codes utilized in the tabulation of oceanographic station data can be found in National Oceanographic Data Center publication M-2, Processing Physical and Chemical Data from Oceanographic Stations. (Rev. August 1964, supplement issued May 1966.)

To facilitate use of the oceanographic station data listing, entry headings which are not selfexplanatory are described below.

Depth to Bottom	Corrected or uncorrected sounding in meters.
Max. Depth of Samples	Depth of deepest sample to nearest multiple of one hundred meters.
Wave observations	
	Rounded to nearest multiple of 10 degrees.
	In increments of ½ m. Sum of 5 meters plus increments of ½ m if 50 is added to direction.
PER	If numerals 2 through 9 are entered, period in seconds is twice the numeric entry or $2X$ (numeric entry) +1. For other entries see WMO Code 3155.
SEA	Sea state according to WMO Code 3700.
Weather Code	If preceded by X, weather according to WMO Code 4501. If a two-digit entry, weather according to WMO Code 4677.
Cloud Code	
Туре	Cloud type according to WMO Code 0500.
Amount	Cloud amount in eights. Entry of the numeral 9 indicates cloud amount could not be estimated.
Water	
Color Code	Color according to Forel-Ule scale.
Trans	Transparency in whole meters as determined by Seechi disc.
Wind	
Dir	Rounded to nearest multiple of 10 degrees.
	If preceded by letter S, wind speed in knots; if preceded by letter F, wind force according to Beaufort scale.
Barometer	Barometric pressure given in 10, units and tenths of millibars.
Air Temp. °C	Air temperature to tenths of a degree centigrade.
Vis. Code	Visibility according to WMO Code 4300.
No obs. depths	Number of observed levels associated with the station.
	Entered in hours and tenths of an hour GMT. For Nansen casts, indicates time of release of messenger applicable to the observational level. For STD easts, indicates the starting time of lowering the sensor.
Card type	OBS designates observed levels. STD indicates the values at this standard level were interpolated by a modified 3-point LaGrange formula.

Depth (m)	Depth to nearest meter. A postscript T indicates depth was obtained thermo- metrically; Z indicates uncorrected "wire out" depth. Postscript Q indicates
	value was marked doubtful by originator; P indicates value was considered
	doubtful by NODC. Postscripts P and Q retain this meaning throughout the
	following entries.
т °С.	Temperature to hundredths of a degree Centigrade.
S °/00	Salinity in parts-per-thousand.
SIGMA-T	Entered to hundredths.
Specific-volume	Multiply entry by 10^{-7} to obtain specific-volume anomly in cubic centimeters per
	gram.
ΣΔD Dyn. M. x 10 ³	Multiply entry by 10^{-3} to obtain anomly of dynamic height in dynamic meters
	referenced to the sea surface.
Sound Velocity	Sound velocity according to Wilson's formula entered to tenths of a meter per second.
O ₂ ml/1	Dissolved oxygen in milliliters per liter entered to hundredths.
PO ₄ -P ug-at/1	Inorganic phosphate in microgram-atoms per liter entered to hundredths.
Total-P ug-at/1	Total phosphorus in microgram-atoms per liter entered to hundredths.
NO ₂ -N ug-at/1	Nitrite-nitrogen in microgram-atoms per liter entered to hundredths.
NO ₃ -N ug-at/1	Nitrate-nitrogen in microgram-atoms per liter entered to tenths.
SiO ₄ -Si ug-at/1	Silicate-silicon in microgram-atoms per liter entered to whole units.
CHL-A	Chlorophyll-A (total pigment) in milligrams per cubic meter entered to hundredths.

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TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15-26 January 1968, on ICNAF Cruise 68-1; prepared from NODC Listing No. 31-8034.

TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15-26 January 1968, on ICNAF Cruise 68-1; prepared from NODC Listing No. 31-8034.—Continued

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TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15-26 January 1968, on ICNAF Cruise 68-1; prepared from NODC Listing No. 31-8034.—Continued

FFFENCE	SHIP			-	MATSOEN	STATION T	ME		0	DRIGIN.			OFFTH	OFFTH		WAVE	WEA-	CLOUD			NODC
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			510		0900	3416	26		001	560	6 0	034		860	681				041		
			085	0020	0900	34163	26						14	860	681				034		
			085	0025	0960	34487	26							887							
			510 085	0030	1000 1000	3462 34622	260		001	380	1 0	048		904 904	643 643				028		
			085	0040	1112	34942	26							950	648				031		
			5 1 1	0050	1125	3498	26	73	001	331	3 0	075	14	957	629						
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			510		1251	35323	26		001	311	5 0	108		975	599						
			085	0075	1161	35103	26		001					975	599				029		
			085	0082	1063	34884	26							939							
			085	0090	1166	35158	26							980							
			510		1180	3523	26		001	260	9 0	141		987	510						
			085 085	0100	1180	35227 35161	26							987	510				008		
			085	0102	1141 1157	35282	26							973 980							
			513		1150	3525	26		001	194	6 0	171		981	405						
			570	0150	1079	3522	27	00	001	101	1 0	200	14	960	353						
			085	0150	1079	35217	27							960	353						
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			571		0558	3490	27		000	603	8 0	404		798							
			085	0400	0558	34896	27							798							
			510		0482	3491	27		000	509	5 0	460		784							
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			085	1100	0403	34967			0.07	0440				852							
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TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15–26 January 1968, on ICNAF Cruise 68–1; prepared from NODC Listing No. 31–8034.—Continued

187	ID.	SHIP	LATITU	DE	LONGITUD	t ž		SDEN		IDN 1 GMTI	IME	TEAR			ATO STATI		1	DEPTH TO	DEPTH		WAVE	WEATTHE			\$1	ATION	
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TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15–26 January 1968, on ICNAF Cruise 68-1; prepared from NODC Listing No. 31-8034.—Continued

	b. 2	ODE	LATITU		ONGITUON	10	SDU	ARE		TI©N IG₩T		TEAR	Ceuise HO.		1410FS	-		TO	MAR. DEFTH D?	1	WAVE SERVAD	0~5	WEA- THER CODE	CLDUD		5	NODC TATION
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		098)	085	000			359		347		574						146		728					019		
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				085 510				386		377		575 576	003	245		0045			524 531	727					023		
				085	002			386		403		576			- `				531	727					022		
				OBS	002	5	0	389	32	416	2 2	577						140	533						•		
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				085	004			391		443		579				• · · ·			637	719					018		
				511				390		44		579	002	2220	8 (0112			638	714							
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					OB	s	00	36		0	391	3	239	0	25	74						146	36												
					08	S	00	40	1	0	401	3	241	5	25	75						146	41	735								022			
					S	TD	00	50		0	416	3	253		25	63	00	2180	00	012	0	146	50	730)										
					OB			50			416		253		25							146		730	1							015			
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					-	TD) 75			487		299		26		00	1910	6	017	1	146		668											
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TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15–26 January 1968, on ICNAF Cruise 68–1; prepared from NODC Listing No. 31–8034.—Continued

FRENCE	SHIP	Ļ	ATITU	- 1	LONG	-		M AR	ARE		IGM 1		YEA		ONG	STATIC	N	TO BOTTO	01	085	WAVE		COOL		51	ATION UMBER
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									COLOR			1.41		w ETER	ORT	WI		DEPTH	Louis	ATIONS						
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					τO	000			221		176		540 540		00290	01	0000		4548	771				034		
	13	35		08		000			221		1775 179		54U 541		00257	79	002		4549	768						
					TD	001			220		1789		541		00201	• •			4549	768				034		
				08		001			220		160		241 542		00256	69	005		4551	767						
					12	002			220		1791		542			•	-	1	4551	767				032		
				08		002			220		180		542						4552							
					5 TD	003			224		181		543		00256	20	007	71	4555	770						
				00		003				-														026		
				08		004			0235	3	1829	52	543						4561	773				026		
					10	00			246	3	185	2	544		00255	17	012		4569	758						
				08		00			0248	3	184	7 2	544	•					4569	758				024		
				08		00			0260	3	187	72	545	5					4576							
				0.6		00	70		0270	3	192	92	549	,					4583							
					τo	00			0298	3	205	2	556	5	00244	02	019		4597	702				017		
				08		00			0298		204		556						4597	702				017		
				08		00	90		0460		266		589						4677	636						
					UT D	01	00		05 00		289		60		00200	003	024		4698	636				011		
				08	15	01			0500		286		60						4756	0.30	'					
				Ō		01			0608		364		650				~ 2 ~		4757	559	,					
				5	570	01			0608		370		654		0015	160	029		4757	,,,,						
				06		01			8040		370		65						4777							
				08		01			0645		399		67						4767							
				08		01			0618		396		67		0011		032		4776	510)					
					510	01			0625		426		269		0011		0.72		4776	510						
				06		01			0625		3426		269						4789							
					35	01			0637		3458		272		0008	606	037		4792		,					
					570	02			0632		3467		272		0000				4792							
					35	02			0632		3466 3467		272						4796							
				0	85	0 2	40		0630		540 <i>1</i>	'	2	a												

IP LOODA	LATITU			50U		STAT	ON TH		TEAR	CPUISE	UGINATO STAT	OH	01	0	OEPTH OF		WAVE ERVATIONS	- COC	a CODI	\$	51	100C
NO CODI	-	1/10	1/18	10"	1.1	#0 C	AT H	1/10		NO	NUM	0(1	1.01		S.WHL.2	DR	HG1 M8 1	14	1791 41			
3034 EV	4237	5N 0.6	5625 W	151	26	01 1	8 1	50 1	968		008A		010	65	01	09	0 2 1	X1	1 0 3	1	- I (000
034 64 1	4231				WA			IND	LARO	1 41	R TEMP	С VIS	N		5010	1.4.1						
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					DT	50	24	510	30	8 00	0 0	00 8	1	1						T	T	
MESSENGE TIME D	CAST NO.	CARD	DEPTH MI	1	τ		•4.	SIGM	A-T	-		103	A .	SOUR		03 ml/1	PO4++ 28 - 81/1	70YAL- #8 • #1/		08-A	\$1 04-5 28 - 61/1	
10 17 10						+		1	_									1				1
	1	510	0000		168	314	.1	251	. '	0028	361	0000	່ເ	145	26	768	,					
150		085	0000		108		414	251		00				145	26	768				034		
190	·	510	0010		188	314		251		0028	3366	0021	8	145	30	778						
		OBS	0010		188		-16	251						145	30	778				030		
		ÓBS	0017		192		432	251	5					145	33							
		570	0020		190	314	44	251	5	0028	8196	005		145		767						
		085	0020	0	190	314	440	251	15					145		767				028		
		085	0025	0	192	314	442	251	5					145								
		510	0030	c	194	31-		251		0020	8176	008		145		782						
		085	0030	0	194		446	251						145		782				024		
		085	0040		195		447	251						145		774				025		
		510	0050		1197	31		251		0020	8044	014		145		767				022		
		OBS	0050)197		466	251						145		767				022		
		0B5	0058		209		484	251						145		710						
		510	0075		320	32		255		0024	4464	020		146		710				013		
		085	0075		320		063	255			9877	046		146		659						
		510	0100		448	32		260		001	9811	040		146		659				010		
		OB5	0100		448		833	260						147		577						
		OBS	0107		0569 0581		549 608	26						147								
		085	0115		0616	33		26		0014	4786	030		147		592						
		510	0125		0627		835	266		001		0.0		147								
		085	0120		683		162	261						147								
		085 085	0140		0713		297	261						148								
		510			0070	- 34		270		001	0490	033	7	148	908	508						
		085	0150		0070		497	270			-			146		508						

97

TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15–26 January 1968, on ICNAF Cruise 68–1; prepared from NODC Listing No. 31–8034.—Continued

FERENCE IT ID NO	SHIP CODE	LA 11TU	DE LO	NGITUDE 17/10	Der C	ARSDEN GUARE		IGMT	1ME 48.1/10	TEAP	CRUISE NO	DRIGINATO STAT NUN	ION	DEPTH TO EDITOM	DEPTH OF S'MPL'	1 085	WAVE ERVATIONS [HGT] NF[3]	COD	CODE	2	5	NODC
8034	EV	4301	ON OF	6235w	1 1	51 36		18	183 1	968		009		0128	01	06	021	×1	03			0010
						0100	I IRANS	+	SHID	METE		ar v		NO OBS CEPTHS	OBSER	ECIAL VATIONS						
						DT	SD	23	510	15	9 -00	06 -0	06 8	12	1 -							
	HISSING	CAST NO.	CARD	DEPTH (τ	\$	•4.	SIGM	A - 1		VOLUMP	103		UND OCHTY	02 =1/1	PO4=P +8 - 01/1	1074 L-P +2 - 81/1	NO2-N 29 - 01/1		SEC4-5- 40-01/1	
	[510	000		0300	31	9.6	254	,	0.0.21	5187	0000		585	747						
	183	3	085	0000		0300		942	254		002	518/	0000		585	747				019		
			STO	001		0300			254		002	5191	0025		586	769				017		
			085	001	0	0300	31	942	254						586	769				019		
			STD	002	0	0300	31	94	, 254	7	0025	5194	0050	14	588	757						
			085	002		0300		942	254					14	588	757				019		
			OBS	002		0299		947	254						588							
				ST0 003		0302			255		0024	4948	0075		591	740						
			OBS	003		0302		977	255						591	740				018		
			085	003		0302		977	255						592							
			OBS	0040		0338		227	256						611	781				023		
			085 ST0	004		0356		269	256		001	1106	0114		621	7.0						
			085	0050		0362	32	29 290	256		002.	3105	0124		624 624	748 748				010		
			510	007		0393			256		002	2839	0181		624 642	679				019		
			085	007		0393		365	257		0024	2039	0101		642	679				014		
			STO	0100		0400			257		0022	2770	0238		650	670				014		
			OBS	0100		0400		385	257		0021		0.00		650	670				014		
			085	011		0400		386	257						652	070				014		

AEFER	NO.	SHIP	L	LA TI	1	E 1/10	ιO	NGI	1 1	ŧ /10	DBIET		6 A R S SQU	DEN ARE	ST MO	ſĢ	AATI		1	AR		UISE NO		STAT	0N		-	10 10 10 10	DEPTI OF S'MPL	•	08564	VA VE		WEA THE COD		\$			51.4	ODC ATION MBIR
318	1034	+ EV	14	432	8	N	06	62	28	7 w		1	51	36	01	1	8 .	235	19	968			01	Ð		- b	00	91	01	0	5 1	2		XI	03			- 1	0	011
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		MISSING TIME HE 1/1	알	CASI NO		C A I 1 1 1			DEP	14 1	no i		r	°c		5.	4.	sic	; A	-1	1 PI - A	NCINC NCIMA	votu	0'	DY		I	SOU		02 m	121	PO4-1 +9 **		014L-8	03~N 01/1		-	510. VP		рн
		1	I		1								_																				T						1	
							r D			201				290		18			539		0	025	91	0	00	00		145		74	9									
		23	55			08				201				290		18			539									145		74	9					0 Z	Э			
							0			21				290		18			539		0	025	591	3	00	26		145	80	75	0									
						08				010				290		18			539									145	80	75	0					02	2			
						S				220			0,	290		18		2 !	535	9	0	025	91	6	00	52		145	82	74	9									
						08				250			0.	290	3	18	36	2 !	539	>								145	82	74	9					01	6			
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• [•	ENCE	SHIP			-	MARSOEN	STATION T		ORIGINATS	0.2	GEPTH GEP		WAVE	WEA			,	100c
;	10	CODE	1.81110		ONGITUDE	7	(G.M.f.)	YEAR	CELISE STAT		O DITON O	- UB3	ERVATIONS					ATION UN BER
-+	_	+ +		1/10	1 10	10. 1-	MO 041 H		+ +	-			1 1 1		+ +		- + .	
1.8	5034	EV	4410	24 1 0	56315w	151 46		10 1968	011		0101 0	1 07	1		0 3		1.1	0012
								SPEED METE		17 015	085	PECIAL EVATIONS						
						CODE		10101 (01)		LE COOR	OEPTHS CROE	I CANCERS						
						10	SD 24	512 26	1 033 0	53 8	08							
		MESSINGE	¥ NO	CAGO TTPE	DEPTH Imi		\$ 14.	SIGMANT	SHE HE POLUME	₹ △ 0 8 / N A 1 10 ³	SOUND VELOCITY	07 * 1	704-7 +9 - 4777	107AL-8	NO2-N V9 - 81	CHL-A	51 Og = 5- vg = 61/1	14
			1					1					1					
				STO		0317	3212	2560	0023994	0000	14594	738						
		010	0	085	0000	0317	32118	2560			14594	738				020		
				STD	0010	0317	3212	2560	0023998	0024	14596	759						
				085	0010	0317	32118	2560			14596	759				015		
				STD	0020	0317	3212	2560	0023994	0048	14598	750						
				085	0020	0317	32119	2560			14598	750				018		
				085	0025	0317	32119	2560			14598							
				STO	0030	0317	3213	2560	0023953	0072	14599	744						
				085	0030	0317	32125	2560			14599	744				018		
				0 B S	0040	0317	32126	2560			14601	744				020		
				STD	0050	0317	3213	2560	0023946	0120	14603	744						
				OBS	0050	0317	32127	∠560			14603	744				020		
				STO	0075	0318	3213	2560	0023956	0180	14607	743						
				085	0075	0318	32128	2560			14607	743				017		

10 10 NO	SHIP CODE	LATITU -	DE 1/10		2.2		AP2		TION IGMT		ft a B	C 4 J 51 N O		tatio tatio	·••	0687H 10 801104	DEPT OF S'M PL	er 085	WAVE EEVATIONS	1000	1000 F	5	5	000C 14110N
31603	4 EV	4423	0 N	066330	w ⁱ	:51	46	01	19	030	1968		01ž	2		0201	01	07	1	×1	03			0013
							WAT			WIND		ю. L	A IN TEN	11 8		NO		ECIAL						
							C0100 C001	184 H	0.4	5911 01 101			C41	W E II U L	r 1455	E CRS DEPTHS	OBSER	ATIONS						
							DT	50	23	51	2 2 5	64 0	39	د ن	98	0 4								
	MISSING TIME HIR 1710		C A FC TYPE		H Imi	,	.с	3	÷.,	51	544-1	SPICIE ANDA	C 2010	o'			IVNO OCITI	0; #1/1	10 j = 1 - 2 - 1		+ NO1=N		51 0 4 - 5 #9 + 01/1	
			ST	i o	00		24.1		5.0			1								1				
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		9	ST		10		364		59		593	20.	0.66	1	0021		622	721				020		
			085		10		364		587		593						622	721				016		
			ST	0 00	20	G	366	32	60		594	00	077	1	0042		625	724				• • •		
			085	00	20	G	366	32	602	2	594					14	625	724				017		
			085	00	25	C	369	32	606	2	594					14	627	_				• -		
			ST	D 00	1Ū	G	369	32	261	2	594	00	076	7	0062	14	628	725						
			085	5 00	30	C	369	32	601	1 2	594					14	628	725				013		
			085	5 04	40	U	374	32	641	7 2	596					14	632	722				015		
			51	D 00	5 J	C	375	32	67	2	598	00.	0391	6	0104	14	635	713						
			085		50		375		665	5 Z	598					14	635	713				013		
			S T		75		405	32	89	2	613	00	902	4	0153	3 14	655	685						
			065		75		405		883		613					14	655	685				013		
			ST		00)458		3 Ü B		618	00	852	3	Q 4 0 0) 14	683	660						
			089	5 01	00	C	458	33	3Ú 21	7 2	618					14	683	660				012		

E SHIP CODE	LATITU	1/10 L0	DNGITUOE	100 A	UARE	STATION 1	75.4.8	OBIGINATO	10 N	TO DEPTH		WAVE HEVATIONS	WEA- THEP CODE	CLOUD COORS		23	0000 #11012 J.M.888
34 EV	4422	ON U	67310W	15	1 47	01 19 0	1968	013		0041 0	01		*0	03		i c	0014
					WA.	ren d	VIND	O- AIR TEACP	T VIS	NO.	SPECIAL						
					COLOP	TRANS DIR	SHID AFT				EEVATIONS						
					DT	52 30		0 220 0	22 8	04							
HE 1/10	CAST NO	CARD	01914 14	n	5 1	s =4.	51G M & -1	INCRE VOLUNT	€ △ 0 D*N ↔ ∎ 10 ²	SOUND	02 ml/l	104-1 18 - 11	тота ₁ + +у+	NO2-N 29 - 61/1	CHL - A	51 G g = 5 μg - αι	0 H
		ST.)	0000	2	0254	3259	2602	0019922	0000	14573	3 739]	ł	
0 * 2		085	1000		0254	32590	2612			1457:					017		
		510	0010)	0260	3261	2603	0019842	0020	14578	8 751						
		085	0010)	0260	32607	2603			14576	3 751				017		
		STD	0020		0272	3262	2604	0019826	0040	14585	5 752						
		OBS	002	J	0272	32622	2604			14585	5 75Z				020		
		OBS	0025	>	U277	32634	2604			14588							
		STU			6280	3264	2604	0019757	0460								
		055	ر ف ∪ ت		028U	32640	2604			14590					016		
		060	0040		0289	32655	2605			14596					020		
		STU			0317	3269	2615	0014634	0499								
		031	3050		0307	32686	2606			14606					016		
		055	005		0317	32707	2607			14611							
		STJ			0318	3271	2607	0019571	0148								
		085	067	5	0318	32769	2611			14615	5 720				014		

E SHIP CODE		LA TITU	DI LO		SOUA			IGN TI					DP'S FION		DEPTH 10 1011044	MAI DLPTH O' S'APL"	D\$5	WAVE LEVATIONS HSTREET	WLA- THU CODI	CLOUD COOM		5	N000
4 EV	4	431	0N 0	6732JN		WA COLDP		+	UND UNIO	968 1480 MET					0214 NO. OBS DEFTHS	01 SPEI OISSINV			×2	03			001
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	-					01	5D	22	507	55			44	1		L		1		r			
HE 17		NO	E ARO	OEPTH Imi	1	τ	s	·4	SIG M.	A - T	ANOMA	VOLUMI	8 / 0 * N	101		0011 00111	0 2 mi/l	PO4=F 28 - 61/1	7014L-P +8 - 67/I	NO2N xg - 01/1	CHL -A	\$104-\$1 49-81/1	•
	1				ſ		1]
			STD	0000		345	32		260		001	9472	00	0 0		615	734						
0 '	46		065	2000		145		748	260							615	734				023		
			STO	0010		345	32	15 749	260		001	9470	00	19		617	736						
			085 510	0010		345	32		260			9475	00	•		617 618	738 740				028		
0	16		065	0020		345		749	260		001	9415	00	,,,		618	740				023		
	.0		085	0025		345		749	260							619	140				023		
			STU	0010		945	32		261		001	8734	Qυ	58		621	730						
			OBS	0030		345		848	261							621	730				026		
			085	0040	03	345		850	261							623	736				021		
			STO	0050	0 3	345	32	85	261	5	0014	8730	00	96	14	624	734				• • •		
			085	0050	03	345	32	850	261	5					14	624	734				021		
			085	0068	03	945	32	850	261	5					14	627							
			STO	0075		332	32		260	8	001	9413	01	43	14	622	732						
			085	0075		332		746	260							622	732				018		
			085	0093		127		759	261							623							
			STU	0100		61	33		263		001	7271	01	89		686	689						
			085 085	0100		61 21		198 332	263							686	689				012		
			085	0106		21		332	263							714 715							
			085	0117		>21 >81		612	263 265							744							
			STD	0125		596	33		265		001	5586	02	30		752	619						
			085	0126		97		639	265		001	//30	52	.0		752	017						
			085	0146		97		879	266							759							
			STD	0150		508	33		267		001	3518	02	66		764	521						
			085	0150		08		931	267					- •		764	521						

IN 10 CODE		/10		50U	ARE	_	5 AN 11		EAR	CIUS ND		ATOR STATIC	N	DEPTH FD ED110A	DEPT OF S"MPL	0.1	WAVE EPVATIO	WIA THIE CODE	CLOL COD	15		NOOC STATION NUMBER
318034 EV	43310	N 06	7315W	151	37	011	9 1	25 1	968		01	5		0224	02	02	12	×1	0	3		0016
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					0000	184.H1	0:4	0110	METE		DBY EULB	**	1 (COC	DUTHS		ATIONS						
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HISING INT OF	CASI NO	C 480 7799	DEPTH INI	r	τ	1	·	fig wa		- MOR	C V116	~1	₹ △ 0	50	UND OCITE	02 m1/1	•0.	07#1-#	NO 2-1		SI 0	
				1		1		1				I										
		STU	0000		342	327		2601	5	00	271	7	0000	14	613	735						
125		085	2000		342	327		260						14	613	735				022		
		STD	0110	0	342	327		260	5	00	970	5	0020	14	615	749						
		085	0.010	0	342	327		2605	5					14	615	749				016		
		STU	31750	0	342	327		2605	5	00	971	3	0039	14	616	751						
		085	2020		342	327		260						14	616	751				019		
		085	0025		342	327		260				•	-	14	617							
		STU	0030		342	327		260		00	971	1	0055	14	618	749						
		OBS	00 10		342	327		2605							618	749				017		
		085	0040		342	327		2605							620	756				014		
		5 T D	0050		342	327		2605		00	972	2	0099	14	621	754						
		085	0050		342	327		260						14	621	754				016		
		STO	0075	0	353	327		2601	9	00	936	6	0147	14	631	742						
		085	0075	0	353	327		2609	9					14	631	742				011		
		085	0071	0	353	327	95	2610)					14	632							
		085	0090	0	389	326		2614	•					14	649							
		085	0091	0.	403	329	35	261	7					14	657							
		085	0097		498	330		2618						14	700							
		510	0100		495	331		262		001	627	7	0194	14	699	658						
		085	0100		495	331		262						14	699	658				006		
		DBS	0102		\$95	332		2632						14	702							
		0BS	0110		81	336		2654							743							
		STD	0125		84	337		2664		001	424	1	0235		749	573						
		085	0140		96	339		2671							758							
		510	0150		509	339		2675		001	324	С	0469		765	521						
		08s	0150		509	339		2675							765	521						
		085	0170		533	340		2678							779							
		STD	0200		25	341		2688		00	203	9	0333		783	513						
		OBS	0200		525	341		2688						14	783	513						
		36s	0210	0.6	525	341	67	2688	3					14	784							

	RENO	5.	5HIP CODE	LAT	1001 1/10	LON	GHUDE	Delif	MAR SOU	ARE		GMT		TEAR				N		0	MAR. DEPTN OF S'MPL"	·	WAN SERVA	TIONS	WE 1H CO		CODE			NOI STAT	ION
.1	1-	-	٤٧	4.20	108	0.6	7315W	+	151	37	01	10	159	1968	1	01	6		019	9.8	02	03		2	X	- I	03			00	017
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										COLOR	IRANS.	Q IR.	5010 00	MET	ÉR	DAY ULU	90 W E		01			A TION S									
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				NO NO	C A	ARD F#E	DEPTH	(m.)	,	τ	s	•4,,	şıg	M A ~1		MIC VOLI		¥ ∆ 0 07N. W 10 ³		SOUN		0, ml/		0 ↓~ ₽ • •1/1	IOTAL- PRIM		NO2~N rg = 01/1		51 O 10 - 0		рH
		ſ		1							T								-							1			l	Ì	
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						510	001			360	32			93	00	2082	25	0021		146		730									
					Oł		001			360		587		93				0042		146 146		730						019			
						510	002			360	32			93	00	2083	51	0042		146		728						018			
					06		002			360		587 590		93						146		120						010			
					08		002			360 360		59 59		93	0.0	2081	14	0062		146		725									
						STD	003			360		29 590		93	00	12001		0004		146		725						016			
					08		003			360		589		93						146		722						018			
						85 510	000			360		59		94	04	2080	2	0104		146		720									
						B S	005			360		593		94	•	/2000		0-0		146		720						016			
						85	000			360		61		95						146											
						STD	00			482	33			42	0	0162	77	0150)	146	93	708	3								
						85	00			482		351	7 26	42						146	593	708	3					013			
						85	008			541	33	49	7 20	46						147	720										
						STO	010			592		78		62	01	0144	24	018	}	147	748	565	5								
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						STD	01			593	33	88	20	70	0	0136	83	0224	•	147	754	532	2								
						85	01		(0000	33	97.	2 21	576						147	759										
						510	01		4	0619	34	16	20	89	0	0119	62	0250	5	147		499									
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						BS	01			0619	34	171	8 20	90						147	775										

REFERENCE CTAT IC	0. CODE		1/10	LONGITUD	/10	SOU 10	501N A11			IAE	YE A B			STATO NUM	ON		10 10 0110M	DEPTH OI S'MPL		WAVE SERVATION			CLOUD CODES				ION
3180	34 EV	4231	5N	06731	w1 -	151	27	01	19	195	196	e ! -	0	17		0	220	02	03	22	x	1	03			00	18
							WA			VIND	-	•0-		INP			NO		CIAL	1 -			• •			•••	
							C001	18,4 % 5	014	54440 04 4040	ME	TER	ORY BULB	N	ET CC		OBS. EPTHS		VATIONS								
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	HTSUN 1041 HT-17	" NO	C A 1		TH Imi	T	۲	s	•4.	SIG	M A - T		NOMAL*-		а Д 07н	*	SON AETO		0.2 #1/	104-1 41 11/			NQ 2~N #8 - 181/1	08-A	51 O # = #8 = #P		₽н
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	1.	95	08		000		371		587		92						146		724					020			
					010		370		57		92	0	0203	07	002	21	146		729								
			08		010		370		585		42						146		729					020			
					020		370		54		92	(002-9	0.6	004	• 2	140		730								
			00		020		370		284		92						140		730					018			
			08		025		369		590		92						140										
					030		369		59		93	(0260	65	006	53	140		729								
			08		030		369		594		93						140		729					020			
			08		040		366		595 60		6.9				010		140		723					018			
			08		050		368		00 595		93	(00208	60	010	14	140		724					017			
			08		057		368		595 604		94						14		124					017			
			08		071		530		289		31							711									
					075		530		29		531		30173		015			712	715								
			08		075		530		289		31		10113	11	043	2	14		715					014			
					100		592		201		58	,	00147	63	014	2 2		747	568					014			
			08		100		592		121		58			03	U.F.	76		747	598					003			
					125		1572		14		20 20 20		00119	8.4	022	26		765	533					003			
					150		013		42		708 708		01101		049			776	497								
			08		150		626		414		108			~ ~				778	497								
					200		629		58		120	4	00090	37	030	5.1		740	480								
			08		200		629		577		120			. .	0.01			790	486								
			CB		210		629		608		723							792	- 50								

TERENCE T TD. NO	SHIP CODE	LATITU	DE L	ONGITUDE	SOU	DEN VE	6	GN 11 GM11		72 A 8	CEUISE NO.		TOR'S ATION UMBER		DEPTH 10 10110M	DEPTH OF S'MPL'S			/E TIONS PER[_SE	WEA THER CODE	CODES		5	NODC TATION UMBE
18034	EV	4214	5N 0	6731 W		27 WA COLOI CODE	1ER	9 2 w	08 1 3410 09 10101	968 AAC METE Imba	" -	018		VIS	0 2 7 1 055 DEPTHS	03 SPEC		2	2	1 X 1	03	1		001
						DĨ	50	21	518	15	9 0	67	067	7_	15									
	MESSENGE TIME HE 1/10	* NO	CARD	DEPTH (m)	1	٣	s	•/	SIGM	A =1		ALT-DI	, 01	△ D 10 ³		UND CITT	03 -1/1		04-F - #1/1	101A (P 29 - 61/)	NO3-N #8- 21/1	01-A	\$1.0 ±=\$1 #8 - #1/1	
			STO	0000	0.	•09	327	n	259		002	0380		000	14	642	735				[I
	200	6	085	0000		09	321		259		002	0.000				542	735					026		
			STO			09	321		259		002	0387	0	20		643	722							
			085	0010		09	327		259							643	722					019		
			STO			09	327		259		002	0394	0	041		645	726							
			085	0020		•09	327		259							545	726					022		
			085	0025		•09	321		259							546								
			STO	0030		09	327		259		002	0401	0	061		646	715							
			085	0040		09	321		259							646	715 716					022		
			085 STD			00	327		259		~~ ~	0352				648 646						028		
			085	0050		00	327		259		002	0332	U U	102		546 546	717					021		
			510			.00	321		260		0.02	0082	0	152		650	716					021		
			085	0075		00	321		260		000					550	716					025		
			085	0083		00	327		260							652								
			STO		04	•58	329		261		001	8973	0	201		682	706							
			085	0100	04	\$58	329	67	261						14	682	706					025		
			OBS	0110	04	60	3 30	57	262	0					144	686								
			STO	0125	0	513	334	5	264	6	001	5967	0	245	14	715	612							
			STO	0150	0 5	681	339	6	267	8	001	2987	0	281	14	754	548							
			085	0150	0 :	81	339	58	267	8					14	754	548							
			STO	0200	06	535	344	4	270	9	001	0142	0	339	14	790	513							
			085	0200	00	535	344		270	9						790	513							
			STD	0250	06	519	347		273		000	7805	0	384		796	497							
			085	0250	06	519	347		273	4						796	497							
			OBS	0262	06	514	347	50	273	6					14	796								

AEFE OD1	10	ō.	SHIP CODE	LATITU	01	LONGITUDE	Delet INOC16	M A 8 5	UE .	_	GMT	TIME HE 1/10	¥6 . B			STATI NUM	0N		DEPTH TD BOTTOM	DEPTH OF		WAVE SERVATIO		WEA- THEA CODE	COD	ES	1	NDDC
31	80	34	ΕV	4200		067310W	+ +	151	<u> </u>		-		1968	+	01	-	£ K	-+	0040	5'MPL"	04	2 2	514	×1	0	3		00.30
								[WAT	ER	T	WIND	. IAI		AIR TE	MP .	сŤ		NO.		*	1	1	(^ *	101		1	0020
								C	CODE	TRANS Imi	DIR	5H10 01 1010	MET	ĒR	D#T BULB	₩I €U		008 19	OBS DEPTHS	ONSERV	A BONS							
		-		·, · · ·				. [DT	SD	22	522	15	2	061	00	51	7	05									
			MESSENCE TIME HR 1/10	CAST NO	CARD		#1	ŧ	٣	s	•4.	\$1G	M A - T		CIFIC VOLU		\$ / DYN 1	м		ND CITY	03 =1/	PO		0741-P			51 D 4 - 5 98 + 91 - 1	
					51	0000	`		99	321		1	95	Γ.												1		1
			22	9	085				99		561		95	U	02061	1	00	00		537	729							
					ST				99	320			95	0	02062		0.0	2 1		537	729					024		
					OBS				99		561		95	0	02002	4	00	<i>c</i> 1		538	720							
					ST				99	320			95	0	02063	,	00			38	720					018		
					OBS	0020			99	320				0	02003	1	00	* 1	146	540	715							
					085	002	5		99	326		25							146		112					025		
					510			03		326		25		0	02063	7	00	62	146		720							
					085	0030)	03	99	326		25							146		720					022		

EF ENI	ID.	SHIP CODE	LATITU	DE	LONGITUDE	50	MARSO SOUAR	IE		IG M 1			4	CRUISE	NATOR'S		DEFT: TO	1 06		WAVE SERVATION	w E TH E				NODC
16	8034	EV	4131		067310₩	+		-	-	-	HR 1/1 025	+	6.9	ND 02	NUMBER	-	10170	- S'M	PLS DH	- C . + I + 3	-	1041 14			NUMBE
								WAT		Ť,	WIND			4 10 77	MPT	T -4	0044	15	2 27	3 2 1	1 × 3	0	3	1	002
							C C	OLD.	18ANS	014	5M 0 FOI	10	A 80-	DRY	W E1 1011	¢00	DEFTH	1.044	SPECIAL ERVATIONS						
			, — ,				1	DT	50	24	52	0	169	050	050	7	05	-							
		MISSINGE TIME S HR 1/10	CAST NO	CAR			1 1	c	s	•4.	\$I	G M A -	, ,	ANDWALT-1	0	A D.		UND OCITY	02 **	102~1 V8 - 811	1014	NO7=1	CH 4	SI D	
	1	0.36		51			032		32	53	2	591		002097	9 0	000	14	605	756			1	1		
		025	>	085	0 0010	l I	032	8 \$	32	53	2	591 592		002094		021	14	605	756				040		
				085 ST 085	0 0020		032	28	329	64	2	592 592		002092	8 0	042	14	606 608					041		
				085	0025		032	2.8	325	640	2	592 592						608 609					037		
				085			032		325			592 592	1	002090	3 00	063		610 610					034		

TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15-26 January 1968, on ICNAF Cruise 68-1: prepared from NODC Listing No. 31-8034.—Continued

REFERENC CTAT ID COOR NO	SHIP CODE		DE LO 1/10		MARSDEN SQUARE	STATION TO IGMT	TEAR		TION	10	OF OF	WAVE EVATIONS HGTPII STA	WEA- THER CODE			51	
3180	34 EV	4059	5N 0	67310W		01 20 0				0075	20 07	2 2	l xo	03			00221
					TAW 1		IND BAR		VII.	NO	SPECIAL						
					COLDE	INAN L DIL	DI (mb)			DEPTHS	SEEVATIONS						
					DT	SO 28	512 18	3 050	050 7	07							
	HISSTNGE TIME D HR 1/10	C AST ND	CARD	DEPTH IMI	5 1	\$ *4.	SIGMA-T	SHCINC VOLUM	₹ △ D 01N M ₹ 10 ⁷	SDUN VELOC			0141-F		04A	\$1 D a = \$1 #8 - #1/5	
					Ī	[1		1	1							[
			510		0376	3248	2583	0021793	0000								
	056		085	0000	0376 0376	32477 3248	2583	0031700	00.23	146.					050		
			51D 085	0010	0376	3248	2583 2583	0021799	0022	146							
			510	0020	0376	3248	2583	0021805	0044						046		
			OBS	0020	0376	32477	2583	0021007	0044	146.					065		
			OBS	0025	0376	32477	2583			146.					•••		
			5T0	0030	0376	3248	2583	0021811	0065	146.	29 738						
			OBS	0030	0376	32477	2583			146.	29 738				062		
			085	0040	0376	32477	2583			146	31 736				056		
			510	0050	0376	3248	2583	0021822	0109								
			OBS	0050	0376	32477	2583			146	33 738				050		

	ни 00{		DE LO	NGITUDE		A16		MTI		TEAD			TIDN MEER	_	DEFTH TO IDTIOM	MAX DEPIN OF S'MPL"	015	WAVE RVATION	00	COOE	s	5	NDDC TATION UMBE	
318034 E	EV	4027	ONOO	7300W	151	07	01 2		86 J	968		022 IF TEM	2) 155 NO.	01	09 CML	1 2 1	l xo	103	1	I	0023	
						CDLD	TRANS.	OR	1411D D# FOICI	M ET E	. 0	87 21.6	W ET BULB	CODE	DEP1HS	OBSERV	ATIONS							
						OT	50	27	509	16	3 0	56	050	7	12								-	_
	SSENGE	CAST HO	CA10 TYPE	DIFTH INI	'	٣	5	·	SIGM	A - 1	MC//C		01				0 ; ml/t	P04-P	101AL- +8 - 41/			\$1 Og=\$1 98 - 91/5		200
					1								1-									T	1	Π
			510	0000	0	507	328	5	259	8	0020	0315	00	000	14	684	708							
	086		085	0000	0	507	328	45	259	8					14	684	708				033			
			510	0010	0	500	328		259		0020	299	00	02C	14	686	726							
			OBS	0010	0	506	328		259							666	726				036			
			STD	0020		506	328		259		002	0308	00	041		687	710							
			085	0020	0	500	328		259							687	710				034			
			085	0025		506	328		259							688								
			\$70	0030		507	328		260		0021	0223	00	061		689	723							
			085	0030		507	328		26(689	723				031			
			OBS	0040		507	326		260							691	706				034			
			510	0050		510	328		260		002	0222	0	101		694	705							
			085	0050		510	328		260							694	705				034			
			085	0066		511	328		261							697								
			510	0075		581	331		26		001	8928	0	150		731	687							
			085	0075		581	331		26							731	687				031			
			085	0085		607	332		26							744								
			OBS	0093		949	342		26					1.0.5		B91								
			510	0100		084	345		26		001	2041	0	193		945	536							
			085	0100	1	084	345	84	26	50					14	945	536				017			

ID.	SHIP	LATITU			MARSDEN SOUARE	STATIO			1.41	ORGI CRUISE ND.	STATION	N	0171H 10 10110M	DIPTH		WAVE EBVA TIONS	WEA-	CLOUD CODES		3. N	NODC TATION
18034	EV	4016		67300W		-	10	1	968	02			1554	15	· · ·	iz	x1	03	1		0024
					WAT	{ 8	WIN	0	BARD	AIRT	w) (C		ND.	5940	IAL.						
					COLD	10.15		08	M ETER Umbai		WE1 BULI	000	DIS. DEPTHS	DESERV	ATIONS						
		-		,	01	50 Z	9 5	10	19	3 056	25		41	L						,	
	HR 1/10	CAST NO.	CARD TYPE	DEPTH INI	тъ	5.4	.	SIGMA	-1	MICHIC VOL	<u>, 1</u>	ar≙ B		DOIT	02 =1/1	PO4=7	101A (-P	NO3-N	04A	SI D S-	g M
	HR 1/10	4		+			-+				-+	£ 10 ³	+								
			510	0000	0530	3301		260	9	001934	່ຢ່	0000	14	696	700	1 1				1	ļ
	10	1	085	0000	0530 0554	3300		260		001030				696	700				045		
			510 085	0010	0554	3305		260 [.] 260 [.]		001928		0019		708 708	715				036		
			STD	0020	0560	3307		2610	0	001924	6 (0039	14	712	709						
			085 085	0020	0560 0565	3306		261) 261.						712 716	709				036		
			510	0030	0600	3326		262		001832	1 0	0057		733	709						
			085 085	0030	0600 0641	3325		262) 262						733 752	709				037		
			510	0050	0715	3351		262		001787	0 0	094		785	723 708				036		
			085 085	0050 0060	0715	3351 3364		262 263						785	708				047		
			510	0075	0828	3402		203 2641		001572	1 0	136		800 839	666						
			OBS	0075	0828	3401		264						839	666				034		
			085 510	0081	0819 0952	3400 3435		264) 265!		001516	4 ()174		B37 894	810						
			085	0100	0952	3435	3	265	5				14	894	610				018		
			085 085	0105	0960 1328	3447 3549		2660						907 043							
			510	0125	1106	3507		2684		001250	4 (209		963	506						
			085 510	0133	1000 0983	3489 3498		2681		001113		238		924 922	426						
			085	0150	0983	3498	0	2691		001113	9 (12.30	14	922	426						
			085 085	0158	0972 1061	3496 3518		2699 2700						919 956							
			OBS	0188	1010	3508		2702						930 939							
			085	0198	1017	3510	9	2703	3				149	944							
			510 085	0200	0900	3510 3510		2727 2727		000902	7 (289	144	901 901	342 342						
			065	0221	0838	3500	0	2724	4					880							
			570 085	0250	0815 0815	3500 3500		2721		000856	2 0	333		976 976	365 365						
			085	0275	0695	3478	ο.	272	7				146		507						
			085 510	0289	0695 0683	3494 3497		274(2744		000698		372	146 146								
			OBS	0300	0683	3497		2744		000098	5 (1212	146								
			085	0308	0658	3494		2749					148								
			085 085	0369 0373	0611 0580	3490 3490		2748 2752					146								
			510	0400	0536	3489		2757	7	000580	9 0	435	147	789							
			085 510	0400	0536 0494	3489		2757 2764		000523	9 0	491	141								
			QBS	0500	0494	3491	4	2764	•				147	789							
			51D 085	0600 0600	0465 0465	3492	3	2768 2768	3	000493	6 0	542	147								
			510	0700	0450	3492		2770)	000482	6 0	590	148								
			085	0700	0450 0445	3492 3494	8	2770)				146	304							
			085	0800	0445	3494		2771 2771		000475		638	148								
			STD	0900	0438	3496		2773	3	00046B	7 0	686	148	33							
			085 510	0900 1000	0438 0424	3495 3496		2773		000457	7 0	732	148								
			085	1000	0424	3496	0	2775	5		-		148	344							
			510 085	1100 1100	0413 0413	3496 3496		2776 2776		000452	2 0	777	148								
			510	1200	0401	3496		2778	3	000446	5 0	622	148	67							
			085 510	1200 1300	0401 0400	3496 3496		2778		000454		867	148								
			085	1300	0400	3496		2778 2778		000494	→ U	001	148								
			085	1360	0399	3496	2	2778		000/5-		<u></u>	148	93							
			510 085	1400 1400	0389 0389	3496 3496		2779		000450	1 0	913	148 148								
			510	1500	0378	3496	2	2780)	000445	2 0	957	149	08							
			085	1500	0378	3496	0 2	2780)				149	808							

TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15–26 January 1968, on ICNAF Cruise 68–1; prepared from NODC Listing No. 31–8034.—Continued

REFERENCE	SHIP	Latitu		LONGI	-	5 %		STATION IGMT	TIME	YEAR		ORIGIN	A 101'S		01190 01	DEPTH	0.05	WAVE ERVATIO	~ S	WEA- THER	CLOUE	s		N000	~
ODI NO.	C001	LATITU •	1/10	LONGI	1/10	SO 50		NO DAY			C=UIS NO		NUMBE		0110M	OF S'MPL	S DIR	HG7 PI 4	114	CODE	11PI A.	-1		NUMI	•
318034	EV	4001		0673		15			124	1968	1	02	4		2191	15	0.2	12		x2	03		1	002	5
51603-		4001					WAT	ER	WIND			AIR TE	M# 70		NO.	SPE	CIAL								
							COLON	ILANS OIR	01 01	METE (mba		DRY	WE1	CODI	DEPTHS	085581	A TIONS								
							DT	SD 29			3 (056	0.5	7	37										
	MISSING					·	-		1	1	SPECH	C YOLU			Ť.	UND	01/	PO 4-	, ,	0741-0	N02-N		5104	-5	
	10MI HR 1/10	S NO. 1	C A B C TYPE		оерти н	•	1 10	5 %.	SIG	1-AM	ANO	VAL!-I	107	10 ²	vft	DCITT	0; m1/1	14.1.81	4	·# - 6175	¥₿ · 01/	CHL-A	48 - 1	171 P	<u> </u>
	H# 1710	+				-			-					_										1	
	1	, ,	51	D	0000	, ¹	0491	3287		0.2	00	1995	1	0000		678	716								
	12	4	085		0000	1	0491	32871		02						678	716					036			
			ST		0010		0670 0670	3342		24	00	1788	9	0419		760 760	732 732					036			
			085 085		0016		0675	33470		27						763						0-0			
			OBS		0018	•	0708	33600	26	33						778									
			51		0020		0695	3373		45	00	1596	2	0036		775	720					036			
			085		0020		0695 0686	33727		45						172	120					0.20			
			085		0025		0750	33898		50						800									
			51	D	0030)	0080	3413		61	00	1442	4	0051		823	698 698					047			
			OBS		0030		0800 0895	34121		61						823	698 714					047			
			085 51		0040		1000	3455		62	00	1441	3	оова	14	906	679								
			oas		0050)	1000	34545	26	62						906	679					029			
			51		0075		1200	3506 35058		65	00	1415	> 3	0116		988	565 565					008			
			085 085		0075		1200	3508		66						991	101					V OU			
			OBS		0097		1018	3464		67						922									
			51		0100		1040	3481		75	00	1325	0	0150		932	522								
			OBS		0100		1040	3480		75						932	522					004			
			OBS		0105		1182 1249	35200 3558		80						019									
			065		0125		1237	3556		97	0.0	1128	34	0181		015	416								
			ST		0150	2	1142	3533		97	00	1131	13	0209		983	354								
			OBS		0150		1142 1057	3532		97 700						955	354								
			085		0175		0941	3502		709						912									
			OBS		018		0967	3508		110						924									
			51		0200		0898	3504		717	00	0944	+6	0261		906	363								
			085		0200		0898	35031 3498		717 727						900 868	363								
			089 089		0222		0848	3506		727						885									
			51		0250		0821	3505	2	730	00	0830	04	0105		879	374								
			OBS		0250		0821	3504		730						+879	372								
			OBS		026		0785	3502		734 735						4867 4854									
			083 083		026		0740	3496		736						4853									
				TO TO	0300	0	0700	3495	2	740	00	073	58	034		+839									
			OBS		0300		0700	3495		740						4839 4823									
			0B9 0B9		0320		0652	3491 3488		744 749						+623									
				5 T D	040		0527	3486		755	0.0	059	2.2	041	1 14	4785									
			OBS	5	040	0	0527	3486		755						+785									
				TD	050		0490	3491 3490		764 764	00	1052	28	046		4787 4787									
			OB	5 10	050		0490 0467	3490		764 768	00	049	01	051		4795									
			OB		060		0467	3493	1 2	76B					1.4	4795									
				T D	070		0453	3494		770		047		056		4805 4817									
				TO C	080		0440	3495 3495		773	00	046	1 /	001		4817									
			OB	5 TO	080		0440	3495		775	00	044	78	065		4829									
			S	тD	100	0	0420	3498	2	777		044		070		4842									
			OB		100		0420	3497 3498		777 776		043	6.5	074		484∠ 4855									
				10 10	110	-	0411 0402	3498		775 779		043		078		486B									
			OB		120		0402	3498	2 2	779					1	4668									
				TD	130	0	0394	3498		760		043		083		4881									
				10 10	140 150		0386 0379	3498 3498		781 782)∪43)042		087		4895 4909									

TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15-26 January 1968, on ICNAF Cruise 68-1; prepared from NODC Listing No. 31-8034.—Continued

ERENCE SHIP				MARSOEN	STATION	IME		0	RIGINA	tors		OFFIN	MAR	1	WAV		Τ.	* EA-	CLOUD			
NO. CODI	۲ (China)	1/10	ONGITUDE	10' 1'	MO DAT		TEAD	CRUISE	\$1 N	ATION	_	TO NOTION	OF S'MPL	1 0	ISERVA		11	NE	000	s		NODC STATION NUMEER
18034 EV	3929	NO	6722 W	115 97	01 20	156	1968	+-+	025	-			SWPL	5 DW	1-1	11 11	<u>+</u>		1171 4.4		-+	
				w.e		WIND			R TEM		- +	<u>3658</u> [NO. [1 15	1_00		I		x1	0 3	1		0026
				COLO	TRANS OIR	1911D 00 101C1	MIT (mb)	0	#1	WET BULS	400 1000	0.000	OBSERV	CIAL ABONS								
				DT	50 27	510	20	0 11	11	106	7	27		_	1							
40155EP	CAST	CARD		1 2		1-		SPECIFIC				500			1 1.:	-		- 1		-		T
NI 1/	/10 NO	1776	Other May		\$ %.	SIGN	A-1	ANOMA	17-318	i on	103	VELO		02 ml/		ε−₽ - ε1/1	1014	17 41/1	NO2-N FE - 01/I	OH A	St O a 1 wg = gh	
						+									-	- +				 		+
		\$10	0000	1435	3556	265	6	0014	616	່ວດ	00	150	160	570				1		1	1	1
1	56	085	0000	1435	35560	265		•••		••	••	150		570						024		
		510	0010	1455	3567	266		0014	•451	00	15	150		578						024		
		085 510	0010	1455	35670	266						150		576						021		
		085	0020	1498 1498	3580 35800	266		0014	426	00	29	150		563								
		085	0025	1508	35840	266						150		563						024		
		510	0030	1522	3589	266		0014	304	0.0	43	150		6 7 7								
		085	0030	1522	35890	266		0014		00	-	150		573								
		085	0040	1532	35920	266						151		555						023		
		510	0050	1534	3593	266		0014	303	00	72	151		536						024		
		085 510	0050	1534	35934	266						151		536						022		
		085	0075	1535 1535	3594	266		0014	359	01	08	151		542								
		STD	0100	1535	35940 3594	266		0.014				151		542						017		
		085	0100	1535	35937	266		0014	458	01	44	151		527								
		085	0110	1540	35954	266						151		527						013		
		510	0125	1599	3613	266		0014	523	01	an	151		523								
		085	0127	1604	36145	266					00	151		525								
		510	0150	1609	3616	266	4	0014	606	02	17	151		520								
		085	0150	1609	36160	266						151		520								
		085 570	0190 0200	1623	36202	266						151										
		085	0200	1616 1616	3618 36181	266		0014	770	02	90	151		516								
		085	0219	1498	35940	266						151		518								
		STD	0250	1329	3573	269		0012	170	03	6.7	151 150		201								
		085	0250	1329	35727	269		0011	,	0,0	,,	150		386 386								
		510	0300	1180	3561	271		0010	335	04	14	150		100								
		085	0300	1180	35606	271						150										
		5TD 085	0400	0869	3519	273		0008	294	051) 7 C	149										
		510	0400	0869 0650	35187 3503	273						149										
		085	0500	0650	35033	275		0006	512	05	50	148										
		085	0550	0581	35017	276						148										
		STO	0600	0555	3500	276		0005	525	064	-0	148										
		085	0600	0555	34995	276					••	148										
		085	0630	0515	34977	276						148										
		STO	0700	0492	3499	2770		0004		069	2	148										
		510 085	0800	0466	3500	277		00046	626	073	39	148.										
		510	0800	0466 0453	34996	277			_			148.										
		510	1000	0439	3500 3500	217		0004		078		148										
		OBS	1000	0439	34998	2770		00044	482	063	0	1485										
		STO	1100	0424	3499	277		00044	454	087	75	148										
		510	1200	0412	3499	2779		00044		091		148										
		085	1200	0412	34988	2779			• •			148										
		510	1300	0405	3499	2779		00044	25	096	4	1488										
		STO	1400	0399	3499	2780)	00044		100		1490										
		085	1400	0399	34986	2780						1490	00									
		085	1470	0395	34987	2780	`					1491										

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TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15–26 January 1968, on ICNAF Cruise 68–1; prepared from NODC Listing No. 31–8034.—Continued

7 CAC	-	SHIP	LATITU	01	ONGITUDE	MARSDEN SQUARE	STATION IG MT	IME		CRUISE	_	ATOR'S	_	Dert	100		0150		WEA	•	CLOUD			NOOC
	NO.	CODE	·	1/10	· '1/10 ° ī	10" 1"	MO DAY	NR 1/10		NO.	ĥ	UMBER		10110			par H	G Pia 31/	000	1	1PL A.M	1		NUMBER
10	034	Εv	3932	NO	6823 W	115 96		210	1968		02			292	6 1	5	ابع	1 2	X1		دا ه			0027
						COLOR	T	59110 DB F010			ev.	WET BULS	COD	DEPTH		SPECIAL ERVATIO	SNS							
						DT	50 27	508		3 01	8	072	7	21	+-									
		MESSENGE TIME HR 1/16		CARD TYPE	06PTH (m)	τt	\$ *%.	SIG	MA-1	SPECIFIC ANOMA	VOLU	47 WO	∆ 0 10 ³	s vi	LOCITI	02	m1/1	204-1 48 - 81/1	101AL-		03-N e-al/l	04-4	SI Q4=1 µg - al.	Hq PH
	1						T	I.								T				T			Ţ	I
			_	510		1303	3520		56	0014	86	5 0	000		5012		82							
		21	0	085	0000	1303 1304	35197 3521		56 56	0014			015		5012 5014		82 81					044		
				510	0010	1304	35207		56	0014	•03	0 U	015		5014		81 81					047		
				510		1306	3523		58	0014	. 7 2	0 0	030		501		79					0-1		
				085	0020	1306	35232		58	001-					501		79					040		
				085	0025	1308	35238		58						5010									
				ST	0030	1308	3524	26	58	0014	•74	2 0	044	• 1	501	95	83							
				OBS	0030	1308	35238	- 26	58					1	5019	95	83					039		
				085	0040	1309	35241		58						502		69					041		
				ST		1309	3525		58	0014	475	7 0	074		502		71							
				085	0050	1309	35246		58						502		71					034		
				ST		1320	3533		62	001	44	5 0	110		503		61					0.14		
				085	0075	1320	35327		562 564	0014		1 0	146		503. 504		61 58					024		
				085	0100	1339	35404		64	001	• > 2		140		504		58					023		
				085	0120	1344	35495		570						504							023		
				ST		1321	3549		75	001	340	8 0	181		504		11							
				ST	0150	1221	3546	20	592	001	178	3 0	212	2 1	501	2 4	60							
				085	0150	1221	35460		92						501		60							
				51		1105	3534		705	001	070	2 0	269		497		43							
				OBS	0200	1105	35331	-	705						497		43							
				51		0962	3521		720	000	931	.э о	319		493		19							
				OBS	0250	0962	35210		720						493		19							
				51	0300	0865 0865	3511 35112		728 728	000	029	0 0	363		490 490									
				085		0679	3501		748	000	6 7 5		44(484									
				085	0400	0679	35014		748	0000		., .			484									
				51		0560	3500		762	000	545	2 0	501		481									
				085	0500	0560	34996		762						481									
				51	0 0600	0501	3499	2	769	000	487	6 0	55	э 1	480	9								
				085	0600	0501	3499(769						480									
				ST		0472	3500		773	000			600		481									
				ST		0449	3500		776	000	437	r2 C	64		482									
				085	0800	0449	3500		776						482									
				51		0435	3499 3499		776 777	000			68) 73		483									
				51 085	1000	0422	3498		777	000	~ > 0				484									
				51		0409	3499		779	000	429	96 C	770		485									
				ST		0399	3499		760	000			81		486									
				085	1200	0399	3498		780						486									
				ST	0 1300	0391	3498	2	780	000			86		486									
				ST		0384	3498		781	000			90		489									
				5 T		0380	3498		781	000	434	•6 (94		490									
				085	1500	0380	3497	32	781					1	490	9								

REFERENCE	1				MARSOEN	STATION TI	ME	1	Otici	NATORS		OFFIH	MAE		WAVE	WEA-	CLOUD			
1av 10.	SHIP	LATITU		LONGITUOE	SOUARE	IGANTI		YEAR	CRUISE	STATION		10 10	OF		WAVE ERVATIONS	THER	coors	1		NOOC
NO.		-	1/10	1/10 5		MO OAY H	1/10		NO.	NUMBER	-+		S'MPL'S	Die	HGT MI 314	CODI	11 PT A.M.	1		NUMBER
318034	ΕV	4002	N	06828 w	151 08		11 1 NO	968				2250	15	9	1 2	×0	03			0028
					COLOR	1 1 1	17110	METER	ORY	WET	VIL	NO. 085.	SPEC							
					COOL	UNI CIR,	POLCE	tmbal	BULB	BULE		OBS. DEPTHS								
					TQ	SD 27	516	179	050	050	7	34						_		
	MESSING	CAST NO.	CARO	OEPTH (m)	1 2	5 -4.	SIGM	A-1	ANOMALT-	UMI 8	A D.	501		02 -1/1	PO4-P	1014L-P	NO3-N	CHL-A	5104-	
	HR 1/1	0 NO.	1466						ANDMALT-	14° -	∎ 10 ³	. AFFC	CHA		¥8 · 41/1	FR \$1/6	ug - a+/1		¥8 × 61	1
				1				1				1							Į	
			ST		0600	3316	261		00190	2 0	000		726	693						
	01	1	085 085	0000	0600 0860	33158 33716	261						726 836	693				043		
			51		0800	3376	263		00170	a7 0	018		815	705						
			OBS	0010	0800	33763	263					14	815	705				038		
			ST		0839	3395	264		001628	99 0	035	14	834	641						
			0185 0185	0020	0839 0900	33949 34227	264						834 861	641				022		
			51		0907	3425	265		001510	0 90	050		865	682						
			085	0030	0907	34247	265	4				14:	865	682				050		
			0185 ST	0040	0931	34297	265		00150				876	649				043		
			0185	0050	0966 0966	3438 34382	265		00150	0 0	081		892 892	642 642				018		
			51	0 0075	1020	3454	265	8	00148	24 0	118	14	918	630				J 10		
			085	0075	1020	34541	265						918	630				024		
			5 T 1 0 B 5	0100	1202 1202	3519 35187	267 267		001330)6 Q	1\$3		994 994	596 596				035		
			OBS	0110	1257	35400	268						017	590				660		
			085	0115	1163	35387	269						986							
			5TI 085	0 0125	1164 1164	3540 35407	269		001110	0 0	184		988	582						
			51		1114	3535	269		00106	75 0	211		989 974	533						
			085	0150	1114	35346	270	4				14	974	533						
			5TI 085	0 0200	0979	3520	271		00095	29 0	261		932	327						
			51		0979 0868	35204 3511	271		00085		307		932 897	327 327						
			OBS	0250	0868	35106	272				- 0 .		897	327						
			51		0783	3505	273		00078	31 0	348		873							
			085 085	0300	0783	35047	273						873							
			085	0340 0360	0721 0650	35047 34944	274						855 829							
			51		0592	3499	275		00057	5 0	416		813							
			085	0400	0592	34991	275						813							
			085	0420	0527 0541	34905 34954	275						789 800							
			085	0465	0501	34922	276						78£							
			ST		0487	3493	276		00050	58 0	470		786							
			085 511	0500 0 0600	0487	34927	276		00043		610		786							
			085	0600	0462 0462	3495 34945	277		00047	0 10	519		793 793							
			51	0 0700	0441	3494	277		000460	0 0	565		800							
			085	0700	0441	34944	277	2				14	800							
			51 085	00800 0800	0439 0439	3496 34960	277		00045	50 0	611		816							
			ST		0439	34960	277		00045	27 0	657		816 830							
			085	0900	0431	34965	277	5				14	830							
			51 085	0 1000 1000	0420 0420	3497	277		00044	59 0	702		842							
			51		0420	34968 3497	277		00045	23 0	747		842 857							
			OBS	1100	0416	34967	277		Q0049				857							
			51		0408	3497	277	7	00045	10 0	792	14	870							
			085 57	1200 D 1300	0408	34968 3497	277		000450	18 0	837		870 884							
			085	1300	0400	34967	277		000-01	,5 Ų	551		884 884							
			57	D 1400	0391	3497	277	9	00044	32 0	882	14	897							
			085 ST	1400 0 1500	0391 0384	34967 3497	271		00044		927		897 911							
			31		V J 0 4	2471														

 TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15-26 January 1968, on ICNAF Cruise 68-1; prepared from NODC Listing No. 31-8034.—Continued

EFERI	NCT	SHIP	LA	111006		ONGITUOE	Dent	SOU	ARE		ON TI SM11		YEAR		RIGINA 1	OF'S		DEPTH TO	MAX OEPTN	01	WAV SIRVA		WEA THE	000		5	NODC
50	NO.	COOE	•	1,	/10	* 171	0 2	10*	11	MOD	AYH	4 1/10		NO.	NU	MBLP		MOTTOM	S'MPL'	\$ 010	NGT	10 11	A COOL	7983 4	AA 1		UMIN
	0.24	EV	40	150	. 0	68290		151	08	01 2	10	130 1	968		028		6	174	01	06	24		xo	1 0	3		0029
	0.0.54	-		1 7 0		002,00			WA			INO	BAR		I TEMP	7		NO.			1						••
									COLO4 COOI	I BANS	014	SPEED OR FORCE	ALETE IMb.	• D		WET	CODI	ONS OEPTHS		CIAL /ATIONS							
									DT	50	26	514	17	9 05	50	050	7	14			1						
		MESSING	9 N		C & 80 1176	OFFIN	i lm i	T	τ	1	•/	SIGM	A-1	ANONA	VOLUM	01	∆ 0 N M 10 ³	SOL VELC	UNO DCITY	02 =1/		4-2 • 01/1	1014L=7 vg - 41/1	NO2~ #8 - #1		\$1 O 5 +9 - 01/	₽Н
			T							1		1				I		T									
					510				475	326		258		002	1544	00	00		668	725							
		03	0		085	00			475	326		258							668	725					034		
					5 T O				475	326		258		002	1364	00	21		670	740							
					085	00			475	326		258							670	740					033		
					510				559	330		260		001	9452	00	142	14		723							
					085	00			559	330		260							711	723					040		
					510				581	33		261		001.	9221	00	061		723	679					022		
					085	00			581 600	33		26							734	017	·				022		
					085	00			648	335		264							758	683					019		
					510				760	338		26		001	6331	00	97		806	671					•••		
					085	, 00			760	338		264		001					806	671					020		
					085	00			959	34		26							888						• - •		
					510				065	34		264		001	6248	01	137		933	624	,						
					085	00			065		50	26							933	624					023		
					085	00			094		570	264						14	945								
					STO	* -			129	341		26		001	5718	01	177	14	962	604							
					085	01			129		580	264							962	604					020		
					STO				174	34		266		001	4809	0	216		985	591							
					085	01			186		940	26	59					14	991								
					085	01			181	34		260						14	990								
					510			1	181	34	95	266	51	001	4787	0	253	14	992	584							
					085	01	50	1	181	34	950	264	51					14	992	584							

attrated SHIP Coor NO. COOI 318034 EV 40310	1/10 1/10	W		YE A P	D. AIE TEMP		DEPTH DEPT TO DEPT OTTOM DEPT S'MPL 1088 01 NO. SPI OES. DESER		S THER CODE	CLOUD COOIS PTI +++1 0 3	NODC STATION NUM018
		0 T	50 27	508 17	6 050 0	50 7	08		· · · ·		
MISTING CAST	CAPD DEPTH IM	י ד ד	s */	SIG MA-T	THEINC VOLUME	₹ △ 0 01N M 10 ³	SOUND VELOCITY	* PO4=P 2 m1/F 24 + 1/		02-N 8 · 81/1 CHL -A	51 O 4 - 51 pH 2
							Ţ				
	5TD 0000	0397	3231	2567	0023268	0000	14631	735			
047	085 0000	0397	32307	2567			14631	735		074	
	510 0010			2568	0023198	0023	14633	738			
	085 0010	0397	32317	2568			14633	738		057	
	STD 0020	0397	3232	2568	0023182	0046	14635 14635	749 749		068	
	085 0020	0397		2568 2568			14638	147		000	
	085 0025 5T0 0030	0402		2569	0023103	0070	14639	742			
	085 0030	0404		2569	0019109	00.0	14639	742		068	
	085 0040	0415		2570			14646	740		076	
	STD 0050	0421	3237	2570	0023030	0116	14650	733			
	085 0050			2570			14650	733		074	
	510 0075	0425		2570	0023018	0173	14656	722			
	085 0075	0425	32382	2570			14656	722		071	

-	INCE	SHIP	LATITU		LDN	GITUDE	110	SQU		\$1.	TION IGM		Ι,	EAR	CRU		ATOP'S		01PT	н .	MAR. DEPTH		WAVE	WEA THER					ATION	ĺ –
C001	NO.	000	•	1/10		1/16	0.5	10"	111	MO	DAY	HE 1/	10		N		HUME		10110	·* s	01 5'MPL'!	0.	HOTHE	(00)	1111	L N T		H	#38ML	1
31	8034	Ev	4100	ION		2606w	1-	213	12		21	0.7		968	_	03	O MF TC		004 NO.		00		1 2	×O	0	3		0	0031	
									COLO#	1 BAR		R		A ET	in [ORT RULE	WIT BULS	C00	0.44	1.		CIAL ATIONS								
									DT	5	2	7 5	24	16	6	050	050	7	06											
		HE 1/10	NO NO	C AI		OFFTH	(m)	1	τ	Τ	s •/		GM	- 1	5PE 0	OMALT-	187 1			OUN		0 2 ml/l	PO4=8 #8 * #1/1	101AL-1			R-A	\$) 04-5) 48 - 01/1	рH	100
				1							-										T		T	[1			1		
				` ۵	סז '	000	0	0	395	ં ૩	239		257	4	0	02264	6 (000	1	46	31	733								
		07	5	0 B		000			395		238		257							46		733				0	58			
					10	001			395		239		257		0	02265	2 (023		46		738					e .			
				08		001			395		238		257 257		~	02265		045		46 46		738 738				0	52			
				08	10	002			395		239 238		257		0	02205	00 (10 4 5		46		738				0	56			
				08		002			395		238		257							46		, ,0				0	20			
					TD	003			395		239		257		0	02266	4 (84.00		46		748								
				08		003			395		238		257							46		748				a	59			
				- òa		004	• 0	C	395	3	238	7	257	4					1	46	38	733				0	52			

EFERENCE CTAT IO CODE NO	SHIP	LA IN U	DF 1	ONGITUOE	MDC I	SQU		51	(GN	2 TIM 131		TÊAB	CRUISE		101 1ATIO	N	1011	0	OLATH OLATH OL	· · ·	WAVE SERVAT	IONS	WEA TNEE	000	5	5	NODE TATION
318034	EV	4131	ON 0	68255W		151	18		-	-		968		03	1		00		00	<u> </u>	0 2	+	x 2	1013	1		
							WA		1	WIN		FARC	<u>'</u>	A IS TEA		<u> </u>	- HC	_			10.12		1 4 6	10.3		1	0032
							COLO#	TRAN	* o	IR.	01 01	M ETE		ULB	WE1 BUL			5.		TIONS							
							01	51	2 2	1 5	504	19	0 0	50	05	0 7	0	5									
	MESSINGE FIME H.R. 1/10	CAST NO.	CABD 7798	OE#TH G	n 1	r	τ		s -<	•	SIGM	A-1	SPECIFIC	+LP-11		5 A D 07N A		SOU		0; =1/1	10,		101A L-P			\$1 0 - 5- ## + #1/2	
								Τ.							1		T								1	1	
			510				387		257		258		002	121	5	0000		46	30	726							
			085	0000			387		256		258						1	146	30	726					048		
			510				387		257		258		002	122:	1	0021	1	146	32	727							
			085	0010			387		256		258						1	146	32	727					051		
			510				387		257		258	9	002	175.	7 -	0042		146		730							
			085	0020			387		256		258	9					1	146	34	730					038		
			085	0025	>	0	387	3.	256	7	258	9					1	146	34								
			STD	0030)	0	387	- 37	257		258	9	002	1233	3	0064	1	46	35	726							
			085	0030)	0	387	Эй	256	7	,258	9					1	46	35	726					043		
			085	0040)	0	387	32	256	7	258	9					1	146	37	724					044		

BLFEBENCE CTAT 10 CODE NO	SHIP COOE	LATIT	1/10 1/10	LONGITUDE	5QU			ION TI GATI		TEAN			TOR'S		01/1H 10 10110/	000	005	WAVE ENVATIONS	1000	COORS			NOOC STATION NUMEE
31803	4 EV	414	50N	068305wl	151	18	01	21	118	1968	[032	_		0166	01	09	0 2	x2	03		1	0033
						WAT	1.	Y	VINO	FAR	». L_	AIR TEM	τ.	- 40	NO.		ICIAL						
						CO104 COD1	TRANS	OIR.	19140 00 104C1	MET		Dar BULB	W [1 6U L B	000	OFF	0.000	VATIONS	•					
						ΟT	50	21	504	18	3 (050	050	7	14					_			
	MESSING TIME HE 1/10	NO NO	C AB		,	۲	s	•4.	SIGA	1-44		C VOLUM				00117	0; =1/1	104-1 18 - 11/1	1014 (P 	NO7-N 89 - 01/l	01-A	51 O	
		1					1		T				T		1							1	
			51	0000 01	0	400	326	٤٥	25	93	00	0830	(0000	14	637	720						
	11	8	08	5 0000	0	400	326	534	25	93					14	637	720				039		
			51	10 0010	0	400	326	53	25	93	004	0837	(1 5 0 0	14	638	734						
			065	5 0010	0	400	326	534	25	93					14	638	734				033		
			51	10 0020	0	402	326	54	25	93	00	20802	0)042	14	641	738						
			08			402		542	25							641	738				029		
			08		-	403		545	25							642							
			51			404	326		25		00	20790	(0 6 2		644	723						
			08			404	326		25							644	723				031		
			085			403		645	25							645	717				031		
				10 0050		404	326		25		007	20804	(0104		647	726						
			085			404	326		25							647	726				038		
			085			405		666	25							651							
			- 51	0075		415	32	13	25		00/	0325	0)155		657	699				021		

0017967 0203

0015200 0245

0013801 0281

14692

625 625

0477 0477

0518

510

2624

ID NO	SHIP	LATITU 1	DE LO	NGPUOF 1/10		ASOEN UARE		GMTI		78 A R	C RUISE NO		08'5 110 N M 81 B	_	DEPTH TO FOTTOM	DEPTH OF S'MIPL	065	WAVE ENVATE		WEA THE	000	61	5	NODC TATION
18034	E₩	4200	5N 01	58275w	15	1 28			137 1	968		033			9177	02	1.00	0 1	I	x2	0	3		0034
						COLOR	÷ –		3 MIG		o. }	IN TEMP		vi1 coor	NO OIS		CIAL A NON S							
						CODE	1-1	Dik	10101	tmb			UL.	000	DEPTHS	OFILES	ATIONS							
						DT	SD	21	512	12	5 05	06 0	056	7	13									
	MESSENGA TIME H.F. 1/10	I CASI	CARD	OEPTH O	-	, ,	5	•/	SIGM	A-1	141CIPIC		1 01		SOU VELO		02 mi/i	10.		1014L-1			\$i 0\$. #9 - al/l	61
		1 1					+		+				+ -		+			+	-+			+		+
		, ,	510	0000	, ' .	0405	326	. 1	259	0	0023	0.41	6	000	141		722	1	ļ		1	1	1	
	13	7	085	0000		0405	326		259		002	1 OH 1	00	,000	146		722					029		
			510	0010		0405	326		259		0020	959	0.0	21	146		735					029		
			085	0010)	0405	326	24	255						144		735					039		
			510	0020	1	0405	326		259	2	0020	936	00	42	146	42	730					• - ·		
			OBS	0020		0405	326	28	259	2					146	42	730					036		
			085	0025		0405	326		255	12					140	43								
			STD	0030		0405	326	3	259	2	0020	928	00	63	146	44	731							
			085	0030		0405	326		259						146	44	731					039		
			085	0040		0405	326		259						146	46	720					035		
			510	0050		0405	326		259		002.	610	01	04	146	48	721							
			085	0050		0405	326		259						146	48	721					037		
			STO	0075		0405	327		259		0020	356	01	56	146	52	705							
			085	0075		0405	327		259						146	52	705					021		
			STO	0100		0418	327		260		0020	019	02	0.0	146	63	708							
			085	0100		0416	327		260						146		70 B					018		
			085	0120		0453	330		262						146									
			510	0125		0474	332		263		0017	415	04	53	146		652							
			085 510	0135		0501	333		264						147									
			085	0150		0508 0508	334		264		0016	027	02	95	141		538							
			085	0150		0509	334		264						147		538							

TABLE I,—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15–26 January 1968, on ICNAF Cruise 68–1; prepared from NODC Listing No. 31–8034.—Continued

	H1#	LATITU	04 1/10	LONGITUOE				TION IGMT	11 M E	TEAR	CRUISE NO.		TOP'S		DEPTH TO IOTTOM	MAX OEPTH OF S'MPL"	0.015	WAVE LEVATIONS	wEA- THE CODE	CLOUD CODES		5	NOOC TATION
318034 E	v	4231	SN I	068270w	15		01		169 WIND	1968		034		-	0216	T	03	0 2	x 2	03	I		0035
						C010			5PL1 04 7080	MET	ER C	UL9	WET BULB	C001	0.47	OTTEN	CTAL A TIONS						
						01	SE	21	512	09	1 0	50	044	7	20								
1	551NG4 11M5 of 1/10	CAST NO.	C A FO TYPE	OEPTH	-	12		s •/	sig	MA-1	SPECIFIC	VOLUA		A 0 10 ³		UND OCITY	Q7 m1/l	P04=P 23 - 81/1	1074 L	NO2-N V9- 01/1	CH A	51 O = - 51 #9 - 01/1	
					1		-								Į.			1					
			ST			0407		86		10	001	9223	3 0	000		643	713						
	169		085	000	-	0407		2856 285		10						643	713				036		
			5TI 085	001		0403		2853		10	001	9215	o u	019		643	722				027		
			ST			0403		285		10	001	9223	2 0	038		644	720				021		
			OBS	002		0403		853		10						644	720				031		
			085	002	5	0403	32	853		10						645					•••		
			51	D 003	כ	0403	32	286	26	10	001	9199) 0	058	14	646	720						
			085	003	כ	0403	32	857	26	10					14	646	720				033		
			OBS	004		0401		857	26	11					14	647	710				030		
			ST			0401		88		13	001	9000	5 O	096		649	715						
			OBS	005		0401		2882		13						649	715				027		
			OBS	007		0415		927		15						659							
			ST			0428		297		17	001	8641	8 0	143		665	724						
			OBS	007		0428		967		>17						665	724				020		
			OBS	800		0460		3026		18				1.00		681							
			51 085			0476		308 3062		>21 >21	001	829	9 C	189		691	690 690				014		
			51			0514		332		35	001	694		233		714	587				014		
			OBS	012		0519		350		37	001		· ·			717	20.						
			085	013		0500		3347		39						710							
			085	013		0507		3417		44						715							
			085	014		0527		480		46						724							
			ST	D 015	0	0529	33	953	20	50	001	558	3 0	274		727	520						
			085	015	3	0529	3 3	3529	20	50					14	727	520						
			085	016	2	0529		3706		64					14	731							
			OBS	017	0	0540	33	9818	20	71					14	739							
			085	019		0601	34	+417		11						775							
			ST			0603	34	48		116	000	946	B C	336		778	495						
			085	020	C	0603	- 34	475	2	716					14	778	495						

REFERENCE	SHIP	LATIT	UOF	LONGI	1001				STATION IGMT		TEAP	CPUIS		TATION		01 10	" <	MAT DEPTH OF	0.61	WAV SERVA		TH	U I	CLOU			NOC	ION
001 NO.		·	1/10	•	1/10	1	0. 1	•	MO DAY	ня сла	1	NO		UMBE		10110	5	MPL'S	C II	HGT #	11 51	• • • •		122 4	44 T		NUN	HEP
318034	EV	430	10N	0682	260₩	11		8		213 WINO	10,000		03			019 NO	6	02		2	2	X	2	0	,		00	36
								DE	184115 01P	50		10	ORY	WE1 BULB				SPEC BSERVA	TIONS									
							D	т	5D 25	51	5 09	54 ()44	044	• 7	14	1											
	MESSING TIME HR 1/10	약 NO.	C A 11		06PTH (#		τt		s =4,	\$1	5 M A - T		c volu						02 - 1/1		1 1-7 - 11-7	101+L ≥₽		103-1 1 - 01/		\$10		рн
	1									T													1					
			5	TD	0000		037	5	3291	2	617	00	854	0 0	0000	1	46	30	727									
	21	3	08	5	0000		037	5	32907		617					1	463	30	727						022			
				ТD	0010		037	5	3291		617	00	854	7 (0019	1	463	31	729									
			OB		0010		037		32907		617						463	31	729						019			
			s	TD	0020		037	5	3291		617	00	855	3 (0037		46		729									
			0 B	5	0020)	037	5	32907	2	617					1	46	33	729						020			
			0 B	S	0025	>	037	6	32910	1 2	617					1	463	34										
			s	10	0030		037	6	3292		618	00	850	9 (0056	1	46	35	726									
			OB	\$	0030)	037	6	32915	2	618					1	46	35	726						016			
			OB	5	0040)	038	0	32924	2	618					1	46	39	751						022			
			S	TD	0050)	038	0	3293	2	618	00	846	9 (093	1	464	40	713									
			OB	\$	0050)	038	0	32927	2	618					1	464	40	713						018			
			s	TD	0075	6	038	9	3297	2	620	00	828	4 (0139	1	464	- 9	714									
			OB	5	0075	>	038	9	32965	2	620					1	464	49	714						019			
			5	TO	0100)	040	1	3303	2	624	00	1796	5 (184	1	46	59	704									
			08	5	0100)	040	1	33025	2	624					1	46	59	704						012			
			08	5	0124		044	1	33252	2	638					1	468	83										
			s	TD	0125	,	045	2	3328	2	639	00	1658	3 (0227	1	468	88	650									
			08	5	0127	7	047	0	33317	2	640					1	46	96										
			OB	5	0141	L	049	5	33436	2	646					1	47	10										
			S	TD	0150	0	053	0	3362	2	657	00	493	6 (266	1	47	29	552									
			08	s	0150)	053	0	33617	2	657					1	47	29	552									
			08	5	0180	0	055	1	33705	5 2	661					1	47.	43										

ID. ND. CODE		LATITU	DE 1/10	LONG	TUDE 1/10	Desir MOC Te	50U		1	GMT		YEAR	CAUIS NO.			N	0671H	000	085	WAVE ERVATION		WEA- THER CODE	CLOUD CODI	1	51	NODC
034 EV	4	331	ON	0682	285¥	1	151	38			33	1968		O 3			0168 NO.			1 2		X 1	03			003
								CDLDA CODE	TRANS.	Dik.	37210 01 1010	ME	0	DRY BULB	WE NUL			0.8116	VATIONS							
								0 T	50	29	\$18	0:	8 ()44	04	4 7	14	1						,		
MESSENC TIME Hit 1/1	말	ND.	CAR		DEPTH		'	۲	\$	•/	SIG	× = 1		C VOLU VAL7-1				UND DCITY	0 2 m1/1	PO4-P		TA (P	NO3-N 29 - 41/1	08-4	\$1 04-51 pg = et/1	**
	ł	j	ST		000)) 0:	367	328	4	26	12	001	9008	- 1 1	1000	14	625	715		I	[
23	3		085		0000		0	367	328	36	26							625	715					021		
			<u>s</u> T		0010			367	328		26		001	901	4 f	1019	-	627	729					021		
			085		0010			367 367	328		26							627	729					018		
			085		1020			367 367	328		26		001	9020		1038		629	722							
			OBS		0029			567	328		26							629 630	722					021		
			ST	D	0030			367	328		26		001	902	7 (0057		630	720							
			OBS		2030)	0	367	328	36	26							630	720							
			0 H S		0040			367	328		26	12					14	632	708					019		
			51		0050			374	328		26		001	8951	9 1	1095	14	637	718					020		
			085		0050			374	328		26							637	718					021		
			51 085		0075			980	328		26		001	8894	+ f	142		644	717							
			085		0075			380 395	328		26							644	717					018		
			51		0100			55	330		26		0.01	8142		188		653	(
			085		0100			455 ·	330		26		001	014,	2 1	100		682 682	689 689							
			OBS		0120			-8z	331		26							698	003					010		
			ST		0125			57	331		26		001	7633	L r	1233		701	633							
			085		0137			000	332		26							709	000							
			ST	0	0150)	0	573	335		26		001	6132	2 (1275		745	549							
			085		0150			573	335	25	26	4						745	549							
			085		0160)	0	590	335	67	26	-6					14	754								

REFERENCE CTRY ID CODE NO, CODE	LATITU	DE 1/10	LONGITUDE 1/10		ISDEN JARE		GAT		TEAR	CPUIS ND		STATI NUM	ON	0871 TO 80110	D	H 08	WAVE ISERVATION	45 75	EA-	CLDUD CDDES			NODC TATION NUMBER
318034 EV	4350	ION	68280 W	213	32	01	22	016	1968		03	7		013	1 0	1 12	3 2	x	0	03		1	0038
					**			WIND		o. [AIP TE		۲	NO.	1	RCIAL	}						
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AK2558AK TIANB H B 171		C ABD TYPE	DEPTH IA	n i 1	1 2	5	•/	\$IG	× 4 - 1		U.OV 3:		\$∆0 D7N N 1 10 ³	4 L	0 C I T	D 2 mi/	PO			N03-011	04-4	51 D.a5 wa - 48/	
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		085	0010		254		714	26		00	1040	0	0014		+577	758					026		
		510			257		72	26		00	1899	0	0036		+580	747					020		
		085	0020		257		717	26			,	•	0000		4580	747					022		
		OBS	0025		260		720	26							4582						0		
		ST	0 0030) (260	32	72	26		00	1898	6	0051	1 1	4583	756							
		OBS	0030) (260	32	721	26	12					1	4583	756					025		
		085	0034		261		722	26	12					1	÷584								
		085	0037		275		737	26							4591								
		085	0040		273		737	26						1	4590	742					021		
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		085)338)340		830 83	26		~~	1883		0142		4624	716							
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141 IO.	SHIP	LATITU	DE LO	NGITUOL		STATION TIME	10	ORIGINATO	ION	DEPTH DEPTH TO OF BOTTOM STMPL	ONSE	WAVE EVATIONS	WEA- 1HER CODI	CLOUD COOLS		5.	NODC ATION UMBER
31803	L4 EV	4330	N 06	930 W	151 39 WA COLOB CODE	TRANS OIR		O- AIR TEMP			11 VATIONS	2 2	xo	03		1	0039
					OT	5D 29 5	18 1	9 506 5	06 8	12							
	M151FNG	9 NO.	CARD	089191 (m)	3 1	s •4.	SIGMA-T	INCHIC VOLUME	5 A 0 01N M 1 10 ³	SOUND VELOCITY	0 2 m1/1	POy-P va = #1/1	1014L-P		01-4	\$1 0 + - 51 + 9 + 01	5Н
	1		510	0000	0375	3283	2611	0019151	0000	14629	724	1		1	l	1	
	06	5	085	0000	0375	32826	2611			14629	724				030		
	••	-	STO	0010	0375	3283	2611	0019158	0019		717				0.01		
			085	0010	0375	32826	2611			14630	717				031		
			STD	0020	0376	3283	2611	0019151	0038		715				024		
			085	0020	0376	32829	2611			14632	715				024		
			085	0025	0376	32829	2611			14633	7.0.7						
			5TD	0030	0376	3283	2611	0019157	0057		702 702				028		
			085	0030	0376	32829	2611			14634 14636	713				010		
			085	0040	0376	32829	2611		0096		706				0.0		
			510	0050	0376	3283	2611	0019170	00.46	14637	706				023		
			085	0050	0376	32829	2611	0019186	0144		697						
			510	0075	0376	3283 32829	2611	0019100	0144	14642	697				025		
			085	0075	0376	32829	2611 2611			14645	0,77						
			085	0082	0382	32927	2615			14660							
		-	085	0090	0410	33019	2615			14680							
	06	>5	OBS	0093	0454	3307	2620	0018369	019		613						
			STD	0100	0472	33067	2620	001000		14689	613				022		
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REFERENCE SMIP CODI NO, CODE 318034 EV 4256	1/10	NGITUOR 50 1/10 10 930 W 15	+		1710 195 1968 1910 348 1910 441 1910 (mb	ON AIR TEMP. ER ORT Y RI RULR R	NON ABER		OBSET	CT PEA SEA			NODC STATION NUMER
MISSENGE CASE TIME OF NO HE 1/10	CARD	OEPTH (m)	12	30 30	SIGMA-T	INCIFIC VOLUME	\$ ∆ 0 DYN. ₩ \$ 10 ³	101110	02 m1/1	PO4=P 101A v8 - 01/1 eg - 1		CH	51 Од ~ \$r ид + ө1/1 рн С
095	5TD 085 5TD	0000	0410 0410 0410	3294 32944 3294	2617 2617 2617 2617	0018589	0000	14645	734 734 716	I	1	029	
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	510 085 085	0030 0030 0040	0410 0410 0411	3294 32944 32945	2617 2617 2617	0018611	0056	14650 14650 14652	700 700 704			028 027	
	510 085 510 085	0050	0412 0412 0415 0415	3295 32947 3295 32951	2617 2617 2617 2617	0018623 0018640	0093	14654	706 706 704 704			025 027	
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NEP EN	IEN:	_	SHIP	LATIT	101	LON	GITUGE	ě v	SOU		\$7.4	TION IGM1		YEAR	CRUIS	ORIGIN	A708		08010 10	000	TN		NAVE EVATIO		WE TH	ER	CLO			5	NOOC
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										WAT	E		WIND			AIR 11	MP 7	VIS	NO.		PECIA										
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		_		_						DT	50	36	50	5 22	0	006	00	6 8	12												
			FESSENG TIME HR 1/10	CAST	C A 17		DEPTH	len i	1	٣		s •4.	51	GMA-1		IC VOLL		\$ A 0 07N A 3 10 ³	6 L	DUND LOCITY	0,	=1/I	104		107AL		NO3- *# * #		H A	5:04-5 +8 - 87	₽Н
		F			T	Ī			T	_	1										T		[
						10	000			265		260	-	602	00	1993	1	0000		4578		32									
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						10	002			272		261		602	00	1993	2	0040		4585		24									
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					08		002			273		262		604						4586											
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					08		003			279		263		604						4590											
					06		003			326		268		604						4611											
					OE		004			340		270		604						4619		13							031		
					06		004			340		270		604						4619											
						510	005			379		276		605	00	1974	0	0099		4638		10									
					06		005			379		275		605						4638		10							030		
						510	001			395		282		608	00	1946	2	014	-	4649		72									
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					06	55	007	18	c	395	3	281	6 2	608					1	4650)										

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TABLE I.—Observed and interpolated oceanographic data taken by USCGC EVERGREEN, 15-26 January 1968, on ICNAF Cruise 68-1; prepared from NODC Listing No. 31-8034.—Continued

_		SHIP	LATITU				UARE		ION TI GMTI		TEAR	Ceu	ONIGIN	STATE	-	_	OLFTH TO	DEPT	H 015	WAVE		COOL		51	NOOC A 1ION
	ND.	1000	+	1/10	1/10	0 Z 10	10	MOT	DAT H	R 1/10		NO		NUM			10110 A	SMP		HG! FIE 3		1191 A.M	<u>a</u>	н	UMBER
i	034	ΕV	4229	4N 0	70302W	15	2 20	01			968		04				0064	00	00	o x	×1	03			0042
							WAI	LA	× 1	VINO	BARC	>- L	A # 78	MP 1		VII.	NQ.	۱.,	REIAL						
							COLON	TRAN S	OR.	SPLEO OR FORCE	M ETE Um la		ORY BULE	8U	1 C		OBS OEPTHS	i ancin	VATIONS						
							DT	SD	00	500	21	7	017	0	7	8	07								
		HE 1/10	CAST NO.	CARD TYPE	DEPTH 4	-	1 7	\$	•/	SIGM	A-1		NIC VOLU			10 ³		UND 0C117	02 ml/1	PO 4P 28 - 61/1	101AL=1 #8 * +1/0			51 O = - 51 198 + 97/1	pН
								Ι		Ι											1		i		[
				STP	0000	2	0232	32		257	8	00	2220	7 (00	00		559	743						
		166		085	0000	2	0232	32	267	257	8						14	559	743				030		
				510	001)	0232	32	27	257	8	00	2220	9	00	22	14	561	747						
				085	001	כ	0232		267	257	8						14	561	747				026		
				510	002	כ	0232	32		257	9	00	2220	3	00	44	14	563	740						
				085	002	2	0232	32	268	257	9						14	563	740				031		
				085	002	5	0231	- 32	283	258	0						14	563							
				STD	003	2	0235	32	32	256	12	00	2185	56	00	66	14	566	736						
				085	003	D	0235	32	317	258	2						14	566	736				032		
				OBS	004	D	0281	32	459	259	0						14	590	724				030		
				510	005	2	0308	32		259	2	00	2092	24	01	09	14	604	705						
				085	005	D C	8060	32	517	259	2						14	604	705				031		

ILITEPENCE	SHIP	LATIT	/DE	LONGITUOL	ON11 MDC 1	\$OU	ARE		TION IG M T		TE A E			A 10 P'S		01# 70		AFAR DEFTH OF	085	WAVE ERVATIO	÷ .	WEA- THER CODE	CLOU COOL	5	5	NOOC TATION UMBER
318034	4 EV	415		07030>W		152	+ +				1968	-	04.			003		00	-	0 X	, 1 -	×1	03			0043
						[WA	TER	T	WIND			AIR 1EA	J W	- 10	NO	T	SPECI								
							COLO#	7 RA H (m)	L Dik	19410 01 1010	METE	ER j	OP7 OULE	WET BULB	cop	01		BSEKAN.								
							DT	s	00	500	20	7 0	022	022	8	05	,									
	M9351HG 1949 HF 1/10	* ND	C 4 5 1 7 71		(m)	1	۲		·/.,	\$1G	MA-1		IC VOLU	D			SOUNC (LOCI		2 m1/1	404- 18 - 4		0141-P PB 81/1			\$1 Da = \$1 #9 = 01/1	
	19	3	51 08 9	000	0	0	089	31	92 921	25	60 60		23931		000	1	449	91	772		1	Ì		043	Į	
			51 085 51	001 D 002	0	0	092 092 141	31 32	94 940 02	25	62 62 65		23806 2348	-	024 048	1	449 449 451	94 19	783 783 767					048		
			089 089 51	002	5	0	141 169 186	32	019 087 10	25	65 69 69	002	2314:	1 0	071	1	451 453 454	33	767 745					055		
			085	003	0	0	186	32	102	25	69					1	454	• Z ·	745					036		

	CE 3NIP 0 CODE		A 111 U C	1/10		No.	MARSO SQUAR	HE	STATION IGM		TEAR	CRUISE		TION MEET		OEFTH TO BOTTOM	MAX OLPTN OF S'MPL'S	0 OIR	I SERV			W (A- 1N(P CODE	C	000			NDDC STATION NUMBER
81180)34 EV	4	231	N	06929	•	C	29 #AT		002 WIND	1.77	0- A1		WE1 BULE	v/1 c 000	NO 085 0811HS	QZ SPEC D#SERV	IAL	0	4	1	× 1	0	3			0044
								ρт	SD 1	7 51.	2 20	0 02	2	022	8	18			1								
	MISIN TIAN NE 17		A ST NO	C & 8 1991		[m]	1 7	- · ·	5 *4.	- 1			V0LU#	1 \$ 07	∆ 0 N M 10 ¹	30U VELO		03 ml		PO 4- P		14 t = P = 19171		2−N 81/I	04A	51 O g = 5 vg = p1/	
				51	0 00	10	04	14	3296	Τ.	517	0018	545	1	000	146	. 4.7	692	1					1		1	Ī
				085			04	-	32959		517	0010	141	00	000	146		692							026		
				51			04	-	3296		517	0018	530	00	219	146		716							020		
				085			0.4		3295		517	0010				146		716							028		
				51			04		3297		517	0018	527	00	37	146		707							0-0		
				089			04		3296		517	0010				146		707							023		
				06			04		3296		517					146									020		
				SI			0.4		3697		517	0018	535	00	56	146		701									
				085			04		3296		517					146		701							028		
				089			04.		3296		517					146		715							026		
				51	0 00	50	04.	20	3297		517	0018	550	00	93	146		694									
				OBS	5 00	50	0.4	20	3296		517					146		694							028		
				51	0 00	75	04.	20	3297	21	518	0018	539	01	139	146	62	687									
				085	5 OŬ	75	04.	20	3297	L 21	518					146	62	687							025		
				S 1	0 01	00	04.	21	3297	21	518	0018	553	01	85	146	67	686									
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				085	5 01	2.0	04	26	3299	3 20	519					146	72										
				51	D 01	2.5	04	32	3303	21	521	0018	254	04	231	146	76	636									
				085	5 01	30	04	4 () · ·	3308	5 20	525					146	81										
				51		50	04	95	3339	26	542	0016	280	04	275	147	11	586									
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				085	5 - 540	59	05.	2 t	3361	7 20	557					147	30										
				0.8 9	5 1	74	05	46	33721	3 24	564					147	41										
				51			05	59	3396	21	580	0012	770	03	347	147	153	489									
				085	0.0	0.0	05	59	33960	2 (580					147	53	489									
				081			0.5	69	3104	2 (586					147	61										
				51		50	05	73	3407	2 (587	0:112	172	04	10	147	69	472									
				_ R ≤	6. 0.21	50	0.5	73	3407	21	587					147	69	472									

887 E1	ID.	SHIP	LATIT			SOU	ATE .	STATH	N TI		TEAR	CIUISE	GRIGIN	A TOR'S	_	DEPTH	DEPT		WAVE INVATIONS	WEA				NODC
001	NO.	CDDE	•	1/10	1/10	10	1 1	WO D	TH	1/10		NO.		UMAL		1011D	M 5.4.PL	S Dia	×G1 H4 1	cool	1 TTPL AA	41	1	NUMBER
31	803	4 EV	4200	05N 0	69265w	151				-	968		04	4		0210	0 02			×1	03			0045
							WA		÷.	IND	-		AIR SEA	10 5	T.	NO.	T							
							COLON		DIR	1010	METE		D #1	WET	COD	DEPTH	015	VATIONS						
							CODI			TOPCE	(1	UL.	BULB		ULT IN	*							
							OT	50	19	512	190	6 0	28	028	3 B	20	1						_	
		MESSING	CAST	CATO								SPECIES	C V010				DUND		104-1	10741-7	N02-N		5105	
		Time I	ND.	TTPE	DEPTN UNI	1 1	٣	5.	4.	51G M	A=1	ANON	ALT-1	21	0 10 ³	^ vi	LOCITY	0 2 m1/1	PR = 41/1			CHL - A	10.01	
		H 1/10	<u> </u>		+			+		+	-			+	• ••	+			+		+	+	+	+
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				510			398	326		259		002	087	9 (0000		636	723						
		03	5	085	0000		398	326		259							4636	723				037		
				STD			398	326		259		002	088	0 (0021		4637	722						
				085	0010		398 399	326		259		~~ ~	2088	- ,			4637	722 714				031		
				085	0020		399	326		259		002	000	<i>'</i> '	0042		4640	714				028		
				085	0025		399	326	-	259							4640	/14				028		
				085	0028		402	326		259							4642							
				510			392	326		259		002	2089		0063		4638	710						
				085	0030		392	326		259		002	.009	• •			4638	710				024		
				085	0032		381	326		259							4634	110				014		
				085	0040		381	327		260							4636	703				030		
				STD			383	327		260		001	988	3 (0103		4639	712				• • •		
				085	0050	0	383	327	43	260	3					1.	4639	712				031		
				STD	0075	0	387	327	6	260	4	001	979	3 (0153	3 14	4645	698						
				085	0075	0	387	327	62	260	4					1.	4645	698				031		
				085	0098		388	327		260	7						4650							
				STD	0100		392	328		260		001	941	3 1	0202		4652	714						
				085	0100		392	328		260	-						4652	714				027		
				065	0112		430	329		261							4672							
				085	0122		480	331		262						-	4698							
				5 T D			487	332		262		001	748	0 (0248		4701	604						
				085	0131		498	332		263							4708							
				STO			509	335		265		001	558	Z	0289		4718	524						
				085	0150		509	334		265	-						4718	524						
				085	0182		529	337		267							4736							
				085	0190		530	338		267							4738							
				085	0195		545	339		267			200	. .			4746	450						
				51D 085	0200		546 546	339		268 268		001	280	9	0360		4748	458 458						
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REFERENCE	SHIP	LATITU	DE	LONGITUDE	20	MAPSDE SQUAR	E	- 1				EAR		A1DP STATIO NUMB	N	٦.	DEPTH TD DTTOM	DEPTH DF S MPL"	-	WAV HOVA	tion!	1.60	10	CLOU CODI	3		NOO STATI NUM	DN,
318034	4 EV	4130	ON	069310w	П	151 1	19 (51.	23	069	1	968	04	5		0	7600	00	34	0.	2	x	<u>o</u>	0 3	3		00	46
						É	WAT			WIND		TAPD	AIR TE	MP 7		15	NO	147	CIAL]								
							010 8	t BANKS SHILL	0.1			METE Imbe		#E BUL	1 100	and.	DBS DEPTHS	DESERV										
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	HISSING	및 NO	CAP			1 1	c	1	•/	5	i G AL A	⊾-t	SPECIFIC VOL		\$∆ ртн з ∣	*	SDU VELC	ND CITY	Q2 ml		- #1/1	10741		ND3-1 V8 - 01/		51 Q		вн
	06	9	08	TD 001	0	03 03 03	52 52	32	63 630 630		259	7	002042		000		14	616 616 618 618	723 723 726 726						025			
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			08			03			632	2	259	7					14	621	726						024			

CODI NO 3 180 34	SMI CODE + EV	4100	1/10	LONGITUDE 11/10 069310W		1 19	*0 01	23 Dir.	1099 NIND SMIND 1010	1968 MET		S	EATION UMBER	v 15 CODI	0026	00	005		weat 1402 CODI XQ		•7	STA NU	047
	HESSENG	CAST NO	C #1		-	12	1	•4.	sig	; M A - 1		- VOLU ALF-11	, o			UND DCIT7	D3 m1/1	PO4=P x8 - 41/1	1014 L=P +8 = 81/1	NO3-N vg - 61/1	DR-A	51 D a - 5+ #8 - 8+/1	рн о
	09	9	08 5 08	TD 001 5 001 TO 002	0	0284 0284 0284 0284 0284 0284	32 32 32	330 33 330	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	579 579 579 579 579 579	002	212 212 212 212	7 0	000 022 044	14 14 14 14	583 583 585 585 585 586	773 773 764 764 772 772	, 1		I	048 048 044	1	

EFER	INCE	SHIP		_			ASOLN		ION T			ORIG	INATO	#"S	1	DEPTH	MAX DEFTH		WAVE	WEA-	CLOUD			NOOC
21	10 NO	1005	L# 111U	1/10 L	0NGITUDE 1/18	10 X	14 A 9 E	MOTO	GM11 DAT (H		teat.	C=UISE ND	STAT			10	OF S'MPL'S		EVAJON	 17 ER 2006	COOES	1		UMBE
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		126	5	085	0000		0491		218	255						146	69	70B				045		
				OBS	0000		0491	32		255						146	70							
				STD			0470	32		255		00247	35	002	5	146	62	712						
				085	0010		0470	32		255						146		712				Q 4 B		
				OB5	001		0452	32		255						146								
				STD			0450	32		255		00244	52	004	9	146		702						
				085	0020		0450		219	255						146		702				049		
				085	002		0448		230	255						146								
				STD			0448	32		255		00243	34	007	4	146		697						
				OBS	0030		0448		233	255						146		697				042		
				OBS	0040		0446	32		255					~	146		699				046		
				STD			0446	32		255		00242	91	012	2	146		693						
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#2#28E	ID ID	5HI#	4	TITUDE	LONGITUDE	oci.	SOU	SDEN	\$1.4	TION IGMT		TE.	A 2	CRUIS	O NG I	NATO STAT			0871N	100	ITAL O	SERV.	VEATIONS	WEA	i [1	1000			NODC	4 I.
001	NO	1000	1.1	1/10	1/18	5	10*	1 1*	M0	OAT	HR 1/10			NO		NUM	87.8		\$0110A	S'M		HG	111 314	COD	1	PI	1		NUMIE	•
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					TD 001			451		29		560		00.	2395	58	00	024		655										
				OB				451		285		560				-				655							035			
					TD 002			451		29		560		00	2394	+Z	00	048		657										
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				08				462		343		564								664		7					046			
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				OB				545		640		578								704							032			
					TD 005			608		75		579		00,	221	8	0	118		732										
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				08				679		080		596		v04			0.	0		773							015			
				08				688		121		598								780		,					012			
				08				830		790		530								846										
				08				887		403		569								876										

REFERENCE	- 5H1	LATT		100	ITUDE	1.5	SOUARE	STATION TO	ME				ATO#'S	1	-	DEPT		WAVE	WEA-	CLOUD			NOOC TATION
10. 001 NO.	coc		1/10	LONG	1/10			MO OAT H	1/10	TEAR	CEUISE NO.		TATION		10 10110 M	SIMP		HGT PEL 187		CO 065	-	5' N	UMBER
31803	4 E)	3945		060	315w				76	1968		-			10//	1		1 2		1			
51005		1 2 7 4 .		007		1 1	117 77 WA		100	1900		04		T	1966 ND.	19		11 2	I x 2	03	1		0050
							COLOR	BANL DIL	1/110 01 FD10	MITE		ANY I	WET	CODE	OIS. DEPTHS	01510	ECIAL VATIONS						
							001					JL#	ULE	+	UCTINS								
							101	50 15	517	7 14	2 0	94	094	7	33								
	MESSI TIA	NGI CAST	CAN		-	(m)	12	5.4.	1 316	MA-T	SPECIFIC		<u>.</u>	A D		JND	0, -1/1	104-1	TO TA L-P	NO2-N	06A	St Od = St	PH
	H	/10 1	111	·				-			**0*	AL7-81	°	a 10 ³	VELO	00171		HE + 87/1	#8 × 07/1	4g = 01/1	Q	µg - 87/I	
	1					1		}															
				TD	000		0659	3309		99	002	026	3 (0000		749	661						
		76	08	5 T0	000		0659 0659	33086 3309		599 599	003					749 751	661				049		
			OB		001		0659	33087		599	002	026	A (020		751	673 673				044		
				TD	002		0659	3311		501	002	013	3 (040		753	673				044		
			oв		002		0659	33107		501					14	753	673				043		
			OB		002		0675	33168		503						761							
			08	τ⊃	003		0690 0690	3326 33257		508	001	941	8 (060		769	678						
			08		003		1025	34210		508 531						769 909	678 684				045 040		
			00	ŝ	004	2	1005	34200		534						902	004				0-0		
			08		004		1042	34284		534						917							
			08	5 T0	004		0988	34168		534						897							
			08		005		1010 1010	3423 34227		535 535	001	092	> (097		906 906	665 665				033		
				TD	007		1185	3482		549	001	565	1 0	137		979	511				0 3 3		
			OB		007		1185	34817		549						979	511				010		
			¢В		009		1279	35100		553						018							
				TD	010		1120	3471		553	001	\$36	1 (176		959	449						
			08		010		1120 0937	34707 34566		653 574						959 893	449				007		
				TD	012		0922	3457		576	001	315	9 (212		890	393						
			08		012		0919	34567		677						889							
			08		013		1004	34750		677						925							
			OB	5 TD	014		0945 1050	34627 3512		577 596	0.01					903							
			08		015		1050	35121		598 598	001	121	9 (242		948 948	360 360						
			08		015		1051	35127		598						949	,00						
				τD	020		0928	3495		705	001	059	9 (2297		910	360						
			08		020		0928	34947		05						910	360						
			08 08		022		0890 0923	34868 35013		705 711						898 914							
				TD TO	025		0855	3489		712	000	997	9	348		890							
			08		025		0855	34890		712						890							
				τO	030		0703	3477		725	000	874	1 (395	14	838							
			08	ş	030		0703	34770		725						838							
			00	5 T0	033		0659 0610	34784 3480		733 740	000	741	, ,	0476		826							
			00		040		0610	34800		740	000	· • 1		, - 10		618							
			оB		046	5	0518	34764		749						791							
				τD	050		0502	3476	2	750	000	648	0 (545		790							
			08		050		0502	34760		750			~			790							
			08	10	060		0466 0466	3477 34768		755 755	000	609	9	0608		792							
				5 TD	070		0450	3479		758	000	587	3	0668		792							
				TO	080		0440	3480		761		572		0726		815							
			08		080		0440	34804	2	761					14	815							
				TD	090		0430	3481		762		566		0783		827							
			08	TD	100		0421 0421	3481 34813		764 764	000	\$62	5	0839		840							
				TD	110		0421	34813		764	000	563	0	0896		840							
			s	TO	120	0	0408	3482		765		562		0952		868							
			08		120		0408	34816		765					14	868							
				TO	130		0401	3482		766		562		1008		882							
				T0 T0	140 150		0394 0387	3482 3482		767		561		1064		896							
			08		150		0387	3482		768 768	000	560	4	1120		910							

REFERENCE	T				-		RSDEN	STATION	TIME		0	RGINA	tors		DEPTH	MAL. DEPTH		WAVE	WIA-			NDDC	
01 10	CODE	LATITUT		LONGITU	or B	ŝ s	UARF	IGN		78.41	CRUISE		ATION		10 BOTTOM	01	1	ERVATIONS	CODI	CODES		STATIO	N
001 ND	++		1/10		1/10	10		MD DAT	-	1				-+		S.W.P.L.		HGT PER 584	·+	1171 441	+		-
318034	u εν Ι	3931	SNIC	06931	wl	1 1	5 99	01 23	199		4	050)	-	2423	15	33	1 2	x 2	0 3	1	005	11
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	MESSENCE	CAST	CAID		PTH Imi	T	1 7	5.4		GMA-1	MORE	VOLU ~	4 3	A D.	501	IND	0	104-1	101AL-P	H02-N	01-A	5104-51	
	MESSENCE TIME HE 1/10	ND.	1116	1 0	r (m. 149)				• •		ANONS	417-818		103	VELO	00111	07 moi	*# * #1/l	+# + #1/1	¥₿ = 01/1		¥8 - 81/1	
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	199	9	085		000		0639	3293		589						739	669				037		
			ST		010		0679	3308		595	0020	0609	9 00	221		759	671						
			085	-	010		0679	3307		595	00.3/					759	671				043		
			ST(085		020		0709	3317		599 599	0020	0283	, QI	941		773 773	666 666				043		
			085		025		0728	3321		599						782	000				042		
			ST		030		0760	3327		600	002	0245	5 00	062		796	666						
			085	0	030		0760	3327	0 2	600					14	796	666				041		
			085		040		0846	3360		613						835	647				037		
			ST		050		1004	3408		625	001	7884	• 0	100		902	643						
			085 085		050		1004	3408		625						902 925	643				034		
			51		075		1120	3446		634	001	7113	3 0	143		952	580						
			OBS		075		1120	3446		634			· •			952	580				015		
			ST	o c	100		1204	3518		674	001	3394	• 0	182	14	995	549						
			085	C	100		1204	3518	0 2	674					14	995	549				012		
			085		110		1245	3529		675						012							
			085		121		1262	3549		687						022							
			ST		125		1250	3546		687	001			214		018	434						
			51 085		150		1186 1186	3534		690 690	001	2016	5 0	244		999 999	357						
			085		170		1150	3528		692						989	357						
			ST		200		1019	3510		702	001	096	1 0	301		945	320						
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			085		250		0687	3495		712						903	329						
			ST		300		0765	3485		723	000	9004	4 Q	402		863							
			085)300)329		0765	3485		723						863 861							
			ST		400		0616	3483		742	000	7299	5 0	483		821							
			085		400		0616	3482		742						821							
			085		456		0553	3480		747						804							
			ST		500		0540	3485		753	000	6266	5 0	551		807							
			085		500		0540	3485		753						807							
			085		532		0490	3477		753						791							
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			51		1700		0465	3481		761	000	563	1 0	668		806							
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			085	0	0080		0445	3483	9 2	763					14	817							
			ST		900		0425	3483		765		545		779		826							
			ST		000		0411	3482		765	000	546	50	833		836							
			085		1000		0411	3481		765						836							
			5 T 5 T		1100		0404	3482		766		5480 5524		888 943		850							
			085		1200		0398	3481		766	000	1221	- 0	, 4 9		864 864							
			51		1300		0392	3482		767	000	552	z 0.	998		878							
			ST		1400		0387	3482		768		552		054		893							
			ST		1500		0382	3482		768		552		109		908							
			085		1500		0382	3482	0 2	768					14	908							

10770	RENCE	<u>-</u>				-	-	NARION		the time a	T.		· · ·	OBGIN	ATOPS			MAL	1	WAVE		WEA	CLOVE		- 1	
CODE	ID. NO.	SNIP CODE	LATITU		LONGI			SOUARE	1	STATION TI IGMTI		TEAR	CRUISE	- 1	TATION	_	DEATH TO IDTTOM	DEPTH	1	eeva no		INTR CODE	CODE	s		NDDC STATION NUMBER
				1/10		1/10	-	10" 1	-	MÓ DAY H			NO.	-	UMREI			S'MPL	-	HGT PL	3/ 4	-	1 101			NUMBER
31	B034	EVI	3934	NI	0702	9 W					109	1968	L	OS ABL TEX	1	l	2468	115	36	1 2		x2	103	ţ	1	0052
								co	LOR	TEANS OF	1MID De	METE		DIT	WET	COD	ND. 005.	SPE OBSERV	CIAL							
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	r		1	1				10	11	50 19	512	14		00	100		35	L			_			.		
		MESSINGE TIME (HE 1/10	CAST ND.	CAR		DEPTH O	m1	1 2		s •4.	siga	T-AN	ANDM	ALT-I	;;		. SDI	DCITY	03 #1/1	PO 4-		07AL-P	NO3~N #8 = 91/1	04A	\$1 O - •	
	1		I	' 51	0	0000	. 1	0618	8	3276	257	9	002	2170	່າ	000	147	28	708	ļ			ſ	1	1	1
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				085		0010 0020		064		32865 3310	258		002	1275	5 0	043	147		708 700					042		
				085		0020		074		33098	258						14		700					055		
				085		0025		087		33730	261						148									
				51 085		0030 0030		1010		3415 34151	262		001	7450	0	062	149		713 713					048		
				51		0050		105		3426	262		001	7616	5 0	097	149		630					033		
				085	i	0050)	106	6	34260	262	8					149	26	630							
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				085		0135		129		35440	26				,		150									
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				085		0400		0, 0		34809	27		000					818								
				083	5	0437		054	1	34778	27							796								
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TABLE II.—Observed and interpolated oceanographic data taken by BCF R_V ALBATROSS IV. 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.

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TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69–1; prepared from NODC Listing No. 31–8084.—Continued

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5TD 0125 1071 3513 2695 0011454 0214 14952 382 STD 0150 1038 3523 2708 0010212 0241 14945 351 132 085 0159 1021 35247 2713 14941 344 138 000 062 008 3TO 0200 0907 3514 2724 0008841 0/89 14904 343 132 085 T0212 0871 35116 2727 14892 343 130 000 053 007 132 085 T0212 0871 35116 2727 14892 343 130 000 053 007 132 085 T0212 0871 35116 2727 14892 343 130 000 053 007	1 2 2				-							14	951	421	098	002	105	007	000
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	132								00073		0110						• • •		
310 0250 0751 009		STO							00073	- 0	0329				134	000	051	009	
132 OBS 0265 0702 35011 2745 14835 394 134 000 051 009	132	085	0265	0702	350	11	214	• 2						274		000			

 TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27

 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

HIPENCE SHIP	1/10 LC		1 SDIN SOUARE	TATION TI (GMT) MD DAT H	TEAL		DR'S TION MBER	DEPTH DEPT TO DT DT DT S'MPT	H 005	WAVE ERVATIONS	TNU COOL	CLOUC CODE			NOOC
18084 44 42	300 06	4300W	151 24	01 30 1	54 1969	691 005		0311 03	•	3	× 2				000
			WAT	ien v	IND BAR	0- AIR TENT	2	NO GA	ECIAL						
			COLON	ILANS OIL	OF MET		VET COD	OBS OBSER	VATIONS						
				04	515 31	++-	7	11							
MISSINGE	01/1 T	1	T. I		317 71	THERE VOLUME	1 1 1 0	SOUND							T
Himt of p	0. TTPE	DEPTH UNI	7 12	3 %.	SIGMA-1	ANOMALT-110	DYN M 1 10 ³	VELOCITY	0 2 ml/1	P04-F 28 - 81/1	1018L=F 	NO2-N #9 - 01/1	NO3-14 28 81/1	51 Da=\$1 99 - 97/	
	510	0000	0326	3194	2544	0025445	1	1.000							1
154	085	0000	0326	31936	2544	0023445	0000	14596	741	06.2		aa (
174	STO	0010	0332	3193	2543	0025578	0026		735	062		004	012	002	036
154	085	0011	0332	31924	2543	0020010	0020	14600	734	066		004	033	003	034
	STO	0020	0328	3192	2543	0025568	0051		712	000		004	0,0,0	005	0.0
154	OBS	0021	0327	31923	2543			14599	711	066		002	012	000	03
	STO	0030	0320	3203	2552	0024696	0076	14599	728			•••			
154	OBS	0032	0319	32048	2554			14599	729	057		004	009	001	030
154	085	0942	0321	32082	2556			14602	717	058		000	010	000	03
	510	0050	0325	3210	2557	0024243	0125	14606	706						
154	085	0053	0327	32102	2557			14607	6810	066		002	023	003	023
	STD	0075	0547	3311	2615	0018843	0179		671						
154	085	0080	0603	33328	2625			14743	664	094		000	033	004	00
	STO	0100	0871	3415	2652	0015415	0222	14862	513						
154	085	T0107 0125	0946	34391	2659			14894	473	065		000	011	001	000
	510 510	0125	1078	3486 3529	2673 2687	0013563	0258	14951 14997	443						
154	085	0160	1200	35387	2691	0012321	0290	15006	406 392	099			044		
194	STD	0200	1088	3529	2704	0010748	0348		3392	099		000	044	009	
154	085	10211	1060	35270	2708	0010/40	0.544	14964	331	116		000	044	000	
•••	STD	0250	0973	3520	2717	0009568	0 399		334			000	0.14	000	
154	085	10267	0940	35175	2721	2001000		14928	335	118		000	039	000	

REFERENCE SHIP		1/10	LONGHUDE	DBIT				HON IGM1 DAY		-148			STAT NUM	ON	1.	10 C	MAT IEPTH OI MPL'S		WAVE ERVATI	IONS	WEA THER COD	CO	000		5	NODC TATION UMBER
318084 A4	4300	0	064300	1	151	34	01	30	208	1969	69	1 00	6		01	113	01		2		ХZ					0006
						WA	TER	T	WIND	24		A IR TE	мŧ		1	NO	SPEC									
						COLDR	18AN	L 01		ME	TER	DRY		LT COL		OFTHS OF		ATIONS								
							1	02	509	29	1	011	Γ	7	C	30										_
	HGE CAST	() 18 177		len I	т	٣		• • • •	SIG	M A - 1	IPEC AN	IFIC VOLI	187	2 A C O'N 10 ¹	M	SOUN		0 2 m1/1	10.		101AL-1			NO3=N vg = s ^{1/1}	SI Dia – S 1 Pia – B1/	CHL - A
					T		Γ				1				1					1		1				1
		5.1	n 000	0	0	184	٦1	6.A	2.	15	0.0	2634	1	000	n	1457	0	742								
2	08	OB:	5 964	10	U	184	31	660	3 25	3						1453	10	742	0.6	5		00	4	014	0.05	045
		S		C.		185	31	67	2 5	34	00	2631	16	0.021	6	1453		747								
2	0.8	OB:	s n. i	0	0	185	31	610	4 21	3.4						145		747	07	4		0.0	n	038	003	037
		S	in 003	0.0	0	1H7	- 31	68	2 5	, 7 -	00	2638	٩ <i>۴</i> .	00 °	2	1453		741								
2	0.8	OB!	5 01.	10	0	187	31	6.78	5 21	- E C						145	15	741	07	4		00	2	014	001	041
		5	to oct	3	0	282	31	97	21	×1	- 0).48'	÷ 4	n C 7	в	1458	52	715								
2	0.8	083	S JJ	8 L	U	282	31	16	9 Z'	5-1						1458	52	715	0,6			01		010	000	033
7	0.8	08	5 0.4	۰ñ	0	112	32	2101	R 21	ςε Q						1450		712	n e	n (0.0	0	011	000	025
		5	TD OF	5.6	0	333	- 32	21 H	21	64	0()2164	+ č -	012	6	146	10	2113								
2	0.8	OB.	s or	51	C	135	- 32	2181	9 2	104						146	11	701	-∩€	n		61	1	012	0.03	021
		5	1D 0 -	19	C	115												596								
	0.8	08	5 00	76	C	419	3.	2691	P 2	59'P								592	ŋ (92		00	\cap	023	003	008
			10 21		C	1510												501								
	0.0	UR.			0	114												497	10	7 ר		00	2	070	007	006

CHEF ID CO		LATITUDE		GITUDI	100	SDU	-		1ION (GART	1	TEAR	CRUISE		ATOR'S	-	DEFTH TO IOTTOM	OIP1H DI		WA ZE SERVAT	ID NS	W EA- TH ER	CC			NOOC
318084 A	4	43300	064	300W	ľ	151	+ +	01	-	002		691		7	-	0097	5'44 PL'S	Die	1	• 5t+	x2	1101	A ¥ 1		0007
							COLO#	· · · · · · · · · · · · · · · · · · ·	+	WIND SPLIC			A IR TE		COD AI2	ND OBS DEPTHS	SPEC							, ,	0001
									36	507	28	8 C	17	_		07									

FISINGE CA.1 FINE EL NG	118	DEPTH UNI	1 2	\$ 14.	SIGMA-T	SPECIFIC VOLUME	103	SOUNO VELDCITE	D2 m1/1	104-1 18 11 1	1014 LP		NO3-N VE PL1	51 O 4 - 51 vg = 0111	
1	STO	0000	0179	3145	2517	0028042	0000	14525	741						
002	085	0000	0179	31451	2517	0020042	0000	14525	741	068		008	013	001	
	STD	0010	0176	3145	2517	0028015	0028	14525	744	000		000	015	001	032
002	085	0010	0176	31452	2517		0020	14525	744	075		004	016	000	033
	STD	0020	0178	3147	2519	0027905	0056	14528	744	0.7		004	010	000	055
002	085	0020	0178	31468	2519			14528	744	071		015	009	001	035
	STO	0030	0197	3155	2524	0027429	0084	14539	751	•••		0.0	007	001	0.5.5
002	085	0030	0197	31547	2524			14539	751	075		002	015	009	030
002	085	0040	0215	31621	2528			14550	727	075		000	023	004	028
	STO	0050	0245	3170	2533	0026578	0138	14566	720			000	0	004	010
002	085	0050	0245	31704	2533			14566	720	072		000	010	004	017
	STD	0075	0247	3175	2536	0026279	0204	14571	715	0.2		000	0.0	004	01,
002	085	0075	0247	31746	2536			14571	715	063		000	013	003	017

TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

T IO.	SHIP	LATITU			1/ 25 SQU-	ARE		IGM	11		YE AR	CRUISE NO	SINATO STAT	ION	-	0671H TO 10110A	DEP OF	H 045	WAVE ERVATIONS	WEA- THER CODE	CLOUD COOLS	1	51	ATION UMBER
+			1/10	1/10	151		_		0		96.9	691 0	008		1	0077	0	0	2	×2			T	000B
18084	A4	4400	0 0	64300W	121	94 VA1	1		- U		1	1 4 10	TEMP	τ	- 1	NO.	- <u>-</u>	·	- • •					
							_	1 01		5110 08 10101	BARC METE Umbe	8 OR1		V ET ULB	C001	OES OEFTHS	1	PECIAL EVA TION S						
								0.	4 !	510	26	1 022	2		8	06								
	MESSENGE	CAST NO.	C ARD TTPE	OEPTH INT	,	٣		s •4.		SIG M	-A-1	SPICING V		07	≙°° 10,2		000 00117	02 ml/l	40±=+ +t = +1/1	101AL-1		NO3-N 48 - 61/1	\$1.0 \$ 1 95 - 61/1	Сн
	NE 17 10		+		+		t		_					Τ									1	
	I	1	510	0000	<u>'</u> 0	150		26		250		0029	287	00	000		509					a 1 (
	032		085	0000		150		126		250							509		078		006	014	004	02
			STO			149		127		250		0029	264	00	29		•510 •510		079		002	017	000	02
	032		085	0010		149		126		250		0029	288	00)59		513	752	0.,		001	• • •		•
			510	0020		152 152		126		250		0029	200				513		075		000	017	000	029
	032		085			151		126		250		0029	288	00	880		+515							
	032		085	0030		151		126		250						14	\$515		07B		000	023	005	021
	032		OBS	0040		149	3	126	8	250	04						\$15		077		000	010	004	02
			STO	0 0050	0	150		127		25		0029	256	0	146		+518							~ 1
	032		OBS	0050	0	150	3	126	7	25	04					14	4518	751	079		000	011	001	01

REFERENC	SHIP	LATITUOE	LONGITU		sau			TION IGM1	1		EAR	CIUISE	1	A TOP'S		0170		[^H 01	WAVE ISERVATIONS	CODE	COORS		5	NOBC TATION
TON NO). COUL	1/10	- <u> </u>	1/10	10"	+ +		-	HE 171	+	_	NO	<u>+ – '</u>	NUMBE	+		+,	-+	NG* 111 1		1111	<u>'</u>		
31806	34 A4	43150	06530	OW	151	35	02	02	195	11	969					0056	0	0	11			ŧ.	1	0009
						WA.	ER	1	WIND		BAR). L	A IB TE	7 9W	- 215	NO	1	PECIAL						
						COLOR	18,4 %			•	INDE			WET BULD	COD	OBS OFFTH	5 045	PVATIONS						
								1			20	0 0	56	Ι-	7	06				_				
	MESSEN C TIME	NO I I	10 01	PTN (m)	,	τ		<u>،</u> ۹.	5	GM	x-1		C VOLU				0011	0 2 ml	PO1-P	101#L=F #8 * e ¹¹		NO3-N VB - 61/1	\$1 0 a - 5 #8 - 01/1	
	PIR 177				+		+	_			_			-		1		1						
) i	5TD 0	0000	' o	210	់ខា	51	2	52	ο '	002	778	12 0	0000	14	\$539	742						
	19	5 0	Bs c	0000	0	210		514		52							539				000	010	000	018
				010		208		51		51		002	2782	2 0	028		•540							
	19	5 0		010		208		50		51							540				000	012	003	023
				020		207		50		51		002	2782	3 (0056		541							0.20
	19	5 0		020		207		150		51							541				000	022	003	020
				030		207		151		52		002	2779	13 (0 8 3		54							
	19	5 0	B5 (030		207		50		52							-543				013	011	005	024
	19	5 0	Bs (040	0	205		50		52							-544				019	006	002	022
			STD (050	0	205	31	151	2	52	0	00	2778	10 (0139		545							
	19	5 0	B5 (0050	0	205	31	1501	B 2	52	0					1.	545	739	081		027	011	005	024

IO. CODE	1/10 LOI	NGITUDE 1/10	ĕĕ	SOUALE	JATION TI IGMTI		OBIGINATO CEUISE STAT NO NUM	IDN		[¹¹ 045	WAVE ERVATIONS	w[4 1HE0 COOI	CLOUD CODES		s	NODC
084 A4 430	00 06	5300W	1	51 35 0	2 02 2	213 1969	691 010		0126 0	1	1	×1				0010
				WAT	18 V		All TEMP		NO .	ALC: AL						
						0		ti cope	013 0							
				CODE												
					31	505 20	/ 028		08	-					· · · · · · ·	,
WESSINGE CO	1 0 180			. ~			TRONC VOLUME	100	SOUND	0.1	104-1	10141-1	NG2-N			04
1 1 M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1196	Dirin 0	·)			310	#NOP#L7-810*	1 101	VELDCITE		141.41	48.91	49.1.01	19.00	18 01	
		1	+-						-	1						
	STD	0000)	0243	3160	2524	0027368	0000	14555	753						
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213	085	0010)	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$			002	03								
	510	0020	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$													
213	085	0020	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$			015	024	002	03							
	510	0030		0233	3164	2528	0026996	0082	14556							
213	085	0030	כ	0233	31637	2528			14556		077		015	010	004	03
213	085	0040	כ	0232	31648	2529			14557							03
	510	0050	כ	0302	3203	2554	0024585	0133								
213	085	0050)	0302	32026	2554			14595		071		008	009	002	01
	51D	0075	5	0394	3266	2596	0020620	0190	14647	696						
213	085	0075	5	0394	32661	2596			14647		105		015	017	007	00
	510	0100)	0440	3284	2605	0019780	0240								
213	085	10103	3	0443	32856	2606			14675	556	104		000	015	010	004

 TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27

 February 1969, on ICNAF Cruise 69–1; prepared from NODC Listing No. 31–8084,—Continued

187 10.	SHIP	LATITUS	08 LO	NGITUDE	10UALE	TATION TI IGATI			TION	01410 10	DEPTH OF	DISE		WEA-	CLOUG		1.5	ATION
	+	4230	1/10	1/10	151 25		1	+ · · + · · · · ·			S'MPL'S	++	+ +	+				
10004	1 1	42.50			COLOR			D- APE TEANP	T VIS	N0 285	5000			1 11				
					CDOF	·#1 0.12			UL.	0.8								
	MISSING TONE		C NRO TYPE	DEPTH (M)	7 2	s •/	SIGMA-T	SPECIFIC VOLUME	\$∆0 0'N M 1'0'	SOI VELO		03 mi/i	102+1 +8 + 01/1	1014L-P	N07-N F8 - 971	NO3-N VB 11/1	11 04=5 28 - 61/2	Сна –
			STD	0000	0259	3165	2527	0027121	0000	14	563	744	1					1
			085	0000	0259	31645	2527					744 744	071		006	016	005	
			5TD	0010	0261	3164 31646	2526	0027168	0027	14	565	744	072		000	005		
The set of																		
			STO	0030	0260	3168	2530	0026865	0081	14	568	747						-
			085	0047	0268	31836	2541			14	577	740						
	01	6						0024670	0133				103		000	059	010	01
			5 TD				2601	0020154	0189									
EFEPENCE		LATITU	ie Lo	NGITUOR	AV /SQEN SQUAFE	TATION TI	ME			10	DEPTH	0.0	WAVE	THE	CODIS		Τ.	NOOC
+		•						NO NU	M #E#		STAN PL 1	1 1		CODE	1101 4.00	1		
	5 1144	9 N 4	C VAD	OfFTH Imi	_	4 . L	515 21		7 \$ _ 0 0 N _ W	50		07 =1/1						
	5 1144	9 N 4	TER		1 2	s .4,	515 21 SIGMA-T	0 022	7	20 20	0017							
	HL 1/10	Q NJ	STO	0000	t ۳ 0340	s ·4. 3210	515 21 signa-t 2556	0 022	7	50 VIL	604	727	28 - 91/I		¥9 - 91	49 - 91/I	vi - 017	-
	0.74	9	5T0 085 5T0	0000 0000 0010	ττ 0340 0340 0342	s ·4. 3210 32098 3209	515 21 SIGMA-T 2556 2556 2555	0 022	7 ≩ △ 0 0 7 N W ■ 10 ³ 0000	14 14	604 604 606	727 727 738	068		008	004	003	04
	074 075	9 9	5T0 085 5T0 085 085 085	0000 0000 0010 0010 0010	r rc 0340 0340 0342 0342 0342 0342	s *4. 3210 32098 3209 32093 32102	515 21 515 21 516MA-T 2556 2556 2555 2555 2556	0 022 STECIFIC VOLUME AND ALT-PIP 0024338 0024398	7 \$ \(\triangle \) 0 0 0 0 0 0 0 2 4	50 vitu 14 14 14 14	604 604 606 606 606	727 727 738 738 738	068		000	004 003	003	04
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TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

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 TABLE II.—Observed and interpolated oceanographic data taken by BCF RIV ALBATROSS IV, 28 January-27

 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

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19						0018874	0038				015		019	010	000	023
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	3 065	0040	1851	36445	2627			15	203	481						
19		0050	1849			0017522	0093				019		015	008	000	020
19						0017326	0137				020		013	0.06	000	
	510	0100	1812	3651	2641	0016595	0179	15	203	450						
19		0125		3624			0220				021		000	010	002	002
19						0015829	0260				034		015	028	001	
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229		0030				0013443	0030	160								
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TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

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TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

876	RE	VCE	SHIP					- 5	-		STA	TION				ONGI				01111	DEPTH		WAYE		WEA-	CLDUD			NODC
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			5TO 0030		302	331		26 23		001	7995	005	4	146		710								
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		2	570 0050		0499	331	15	262	3	001	7979	009	0	-146	593	712								
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utre	EREN	*CE	SHIP		<u> </u>		L	-	SORN	514	TION	TIME		-	OBGIN	ATOP		Γ.	DEPTH	MAL	1	WAY	•	Т			· · · · ·		
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TABLE IL—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

87	ENENCE				1				-	DEN		NON '			Т	OBGI	-	rs	DEPTH	OLAT		WAV		we		CLOUD			NODC
1001	HD.	100	112	LATTU	- 1			28				GMT		YEAR			STAT		TO BOTTON	OF	1	ERVAT			ā 🗠	CODIS			UMPER
001	HO.	1		<u> </u>	1/10		· 1/1		10*	1 "	MO	DAT	на,1/10		+	NO.	NUM	\$61		SWIL	SOR	HGTP	10 30	A	" "	TPL A.M.			UMPTE
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			189		08		000			484		252		533					14	682	686	07	18		0	00	019	013	029
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			189		08	s	001	8	0	486	33	252	20	633						684	687	0.6	82		0	00	015	009	033
					5	TD	002	0	0	487	33	26	20	633	0	001703	35	0034		685	687								
			189		08	s	002	6	0	490	33	273	20	634						687	686	0	92		0	000	029	014	034
					S	τo	003	0	C	494	33	29	2	635	0	01680	32	0051	-	690	686								
			189		08	s	003	5		498		307		636						692	685		72			000	008 021	012	020
			189		08	\$	004			505		344		638						697	683	0	93		0	02	021	010	047
					S	τD	005	0		510	33		-	638	(001656	50	0084		700	681		94		~	02	018	007	020
			189		08		006			522		395		640						709	676 676	0	74		0	002	010	00.	
						TD	007			523	33	40	2	641	(00163	89	0125	14	111	674	0	93		0	000	020	007	007
			189		08		009			527						00162		0166	10	717	673	0	,,		0	.00	020		
						TO	010			528	33			642		00162		0206		724	670								
						TO	012			1533		46	-	644		00101	• •	0206		727	668	0	97		c	202	036	006	
			189		08		1013			1536		473		645 650		00155		0246	-	736	654	0					- /0		
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					-	TO	020			658		24		715		00119	,,	0.11		839	441		17		c	000	021	008	
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1 1	SID	0000	0324	3230	2572	0022705	0000	14600	710)	l	ł	1
211	085	0000	0324	32297	2573			14600	710	07.6		500	010	0.03	028
	510	0(10	0323	3279	2573	0022716	0.022	14601	710						
Z] 1	OBS	0011	0323	32794	2573			14601	710	072		002	011	100	033
	SID	0.020	0326	3279	2573	002275	0045	14604	710						
211	085	0.21	0326	32294	2573			14604	710	078		0.0.4	011	004	028
	SID	0030	0329	3229	2573	0022782	0068	14607	710						
211	OBS	0.32	0330	32295	2573			14508	710	075		019	015	004	029
211	085	0042	0449	32845	2605			14667	685	J86		017	011	006	026
	SID	0050	0505	3313	2621	0018233	0109	14695	659						
211	08 S	0.153	0522	33210	2626			14704	651	382		000	011	002	016
	SID	0:74	0560	3338	2635	0016974	0163	14725	642						
211	OB 5	0181	0571	33425	2637			14731	638	0.83		000	011	001	009
	SID	0100	0610	3356	2643	0016236	0194	14752	620						
211	OBS	0109	0628	33619	2645			14761	610	091		0.00	017	0.0.5	006

ENCE SP	HIP	LATITUOE	LONGITUDE	10		SOEN	14	TION IGM			-	DRIGINA	-		DEFTH	DEPI		WAVE		WEA				NODC
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	023					248		780								560	729	٦ ۵	7		000	800	007	01
			10 001			245		78	25		002	5998	0	026	14	560	730							
	023				-	245		780								560	730	08	0		000	010	006	02
			TO 002			249		78	25		002	6009	0	052		563	736							
	023					249		782				-				564	737	08	0		000	009	006	02
			TO 003			250		80	25		002	5922	0	078		566	731							
	023					256		799								569	727	08			004	018	006	02
	023					294		919								589	710	08	3		000	800	007	01
			TD 005			308		98	25		002	4982	0	129		597	704							
	023				-	325		052								606	696	08	5		000	009	006	014
			TO 001			563		11	26		001	9026	0	184		723	588							
	023					618		363								750	565	10	1		00 Z	012	007	00
			10 010			701		80	26		001	5614	0	227		792	534							
	023	08	S T010	9	0	712	33	1899	26	56					14	799	534	10	3		000	018	011	00

 TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27

 February 1969, on ICNAF Cruise 69–1; prepared from NODC Listing No. 31–8084.—Continued

ID.	SHIP	LATITU		NGITUDE	- 50 SQ-U A		TATIC (G)	N TIME HTI	TEAR	CAUIS	DEIGINATO		DEPTH	L DEFT		WAVE	WEA-	CLOUD			NDDC
NO.	CODE	•	1/10	1/10	·0*	1*	MOIDA	Y (HIL 121	0	ND	NU		101104	SMPL	5 0.2	HGT PLA 1	A CODE	178 44	T	Ň	UMBER
18084	A4	4330	0 06	6300W	151	36	02 01	058	1969	691	028		0098	01		2	×1	6	Ì		0026
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	HIS11HG THMJ HR 3/10	" NO	C ARD 17PE	DEPTH UNI	1	τ	ş •/	s. 5	IGM 4 - 1		C VOLUME	\$ ∆ 0 01N. A 3 10 ¹	1	DCITY	D 2 m1/l	PO4~P #8 * 41/1	70741-2 28 - 81/1	ND2~N #8 = 01/1	ND-3-N 28 - 81/1		
		1 ;	510	0000	0.0	314	320;		551	003	4824	0000	, ₁₄	591	722					ł	1
	05	6	085	0000		314	3200		551			00000		591	722	082		000	017	006	02
			510	0010		310	3200		551	002	4810	0025		591	719						
	05	8	085	0010		310	3200		551				14	591	719	081		006	006	006	02
			510	0020		317	320		551	002	4826	0050		596	719						
	05	8	085	0020		317	3200		551					1596	719	081		000	800	006	02
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	05	6	085	0041		343	320		554					612	708	083		000	011	006	02
			510	0050		345	3204		555	004	4463	0124		614	711						
	05	8	085	0051		345	3204		555					614	711	074		000	009	006	01
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	05	8	085	0076	03	358	321	29 2	557				- 14	625	701	085		000	019	006	01

IT ID.	SNIP CODE	LATITU	DE	LONGITUDE	192	30U		14	GA1			CRUN	-	STATID		DEFIN TD	DEPTH	0	WAVE		WEA	CO			NODC
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			51				372		27	25		00	2334	5	047		623	705							
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	0.9		085				378		278								628	705	07			000		012	023
	09	5	085				375		278								628	702	07	1		006	023	016	014
		_	ST				374		28	25		00	2329	1	0117		629	701							
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atr		INCE	SHIP			- =	4/25		1		TIME		[DEGINATORS		EPTH	MAR		WA			WEA-			NODC
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				BA ID-		mr c		ND.	SPECIAL	i -
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HISSINGE TIME OF	CAST C	ARD	DEFTH (m)	7 T	5 %.	SIG MA +1	SPECHIC VOLUME	₹ △ D DYN. M K 10 ³	SOUND	03 mU/I	PO 4-P		N07-N	NC 3-N	51 04=5- 48 - 41/1	04-A 2
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1.25	-						0020293	0000								
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		T D	0010	0395	3270		0020283	0020	14637	699						
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	5	10	0020	0388	3270	2599	0020271	0040	14636	692						
135	08	5	0020	0388	32696	2599			14636	692	065		000	010	007	022
	5	TD	0030	0390	3269	2599	0020314	0060	14638	698						
135	08	5	0030	0390	32693	2599			14638	698	068		200	014	009	026
135	08	5	0040	0:90	32690	2598			14640	695	069		002	007	005	026
	5	τo	0050	0400	3273	2601	0020147	0101	14646	691						-
135	08		0050	0400	32730	2601			14646	691	070		000	010	010	022
		TD	0075	0493	1293		0019519	0150	14688	668					•••	•••
135	08		0076	0485	32932	2608	001-010		14689		063		000	008	009	018
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190		тр		0500	3301		0019153	0247	14704	668	010		0110		014	014
			0125													
		TD .	0150	0502	3302		0019068	0295	14709	665						
135	08	5	10153	0502	33024	2613			14710	664	076	1	002	015	009	

TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

REFE	INCI						ASOLN			TIME					r	MAX				-			
C187	10.			LATITUDE	LONGITUDE	188 1	DUANE		GAT		TEAR		ATOP'S	-	DEPTH	DEPT		WAVE	WEA				NDDC
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			166				0342	327		260	17				14	617	714	077		000	008	010	025
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			186				0341	327							14	610	711	075		008	011	011	019
			186				0336	327							14	617	709	085		000	013	011	021
					70 0050		0335	327		260	7	001951	6 0	098	14	619	706				•••		041
			66				0335	327		260					14	619	706	075		000	013	009	016
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			166	08:	5 0076	• •	0337	327	31	260	7				14	624	706	068		000	012	01+	021

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217		OBS	0036		0454		28		260		00	1445	Υ.	006	5	1466		693								• •
217		n85	0046		0466		290		260							1466		690	06			0	000	004	007	02
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		510	0075		0470		29		260					010		1467		678								
217		OBS	0092		0472		294		261		00	1934	5	015	5	1465	-	678								
		510	0100		0512		313		262			836				1465		678	06	8		0	202	000	004	02
		sto	0125		0620		361		264					020		1470		673								
217		085	10136		0659		378		265		00.	605	4	024	3	1476	-	642								
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TABLE II.-Observed and interpolated oceanographic data taken by BCF R V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.-Continued

CE SHIP					ARSDE		STATE	ON TI		TEAR		DRIGIN	_		DEFTH	DEP		ERVAT		WEA		B I		NDDC
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TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

10. 0	SHIP SDDE	LATTU	01	LONGITUD		50		tn It	STAT	ON 11 GMT)		TEAR	CRUIS	e 1	ATORS	4	1 1		MAX. DEPTH		WAVE ERVATIONS	WEA- THE	CLOUD		5	HOOC
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			OBS		198		076		346		270							146								
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TABLE IL.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

	IENCE	SHIP	 ι.Α.ΠΤΙ		NGITUOL	E MAR	SDIN	STA	TION	TIME .	TEAL			A1083			ертн То	DEPTH		WAVE		WEA-	CLOUD			ноос
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		003		085	0020		398		053		26						140		714	06	9		008	013	004	033
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				085	0030	0	398	33	054	26	26						146	546	714	08	2		006	013	004	043
				085	0040		397		036		27						146		716	09	3		013	009		040
				510	0050		397		06		27	001	764	3 0	088		146		726							
				085	0050		397		056		27						146		726	08	2		015	020	007	04
				085	0060	0	397	- 33	056	- 26	27						146	551								

COD MUT LOHORUDE Bit ISULAT IOURIN TAA CLUIE STARDA OID Define OHIEVATIONS THE CODI 200 HD VIB TVIB IP T MO COT FILT MO COT STARDA	000 STATON HUMEER 0040
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COLOR TANKE OR STOR ATT DET WEI CODE OF SUSSEVATIONS	04-54 00 -4
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008 0B5 0020 0597 33407 2632 14732 672 077 008 016 (05 032
570 0030 0607 3343 2633 0017073 0051 14738 670	
	08 030
	06 027
570 0030 0987 3445 2657 0014697 0063 14900 443	
	07 005
085 0058 1016 34661 2660 14915	
085 0060 1069 34813 2670 14936	
085 0062 1071 34833 2672 14937 5T0 0075 1165 3519 2682 0012362 0118 14977 479	
	004 004
065 0092 1177 32273 2686 14985	
570 0100 1173 3530 2689 0011924 0148 14986 434	
	07 005
570 0125 1170 3332 2691 0011644 0178 14989	
085 0125 1170 39315 2691 14989	

TABLE II.—Observed	and	interpolated	oceanographic	data	taken	by I	BCF I	R/V .	ALBATROSS	IV,	28	January-27
February	1969,	on ICNAF 0	ruise 69–1; pr	epared	\mathbf{from}	NOD	C List	ting N	vo. 31-8084.—0	Conti	inue	d

NO.	CODE	LATIT		LONGITU		SQUA	1	.TATIO			-	ORIGI CRUISE NO,	STATIO		0691N	MAL DEPTH OF S'MPL'S	015	WAVE EEVATIONS	WEA THER	CLOUE	5		NODC
18084	AL	4015	1/10	06730	1710	10	-+-	MO 0A	<u> </u>		_	NO. 691 04	NUMR				DR.	HG1 PIE 10		1111 44	+	-+'	NUMBE
	1			00150		[WAT	U	W	ND			MP. 70		1646 NO.	1	L	0	X 4	03	I		004
						[0104 0001	18AH1 (Da.	5410 01 10101	BARD- METER	DEV	WET	C00	NO. OES. DEPTHS	OBSERV	ATIONS						
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	MISSING	CAST	CAR		TH (m)	1 7		5.,	. 1		T	INCINC VOL		-	1 50			P04-P	10141-1	N03-N	NO3-N	5104-5	1
	MESSINGE TIME N.E. 1/10	T NO.	CARC			1	C C	, , ,		SIGM	A-T	ANDMALT-	ite?		· VIU	0.0111	0 2 mL/I	PE = 41/1	20 · 01/1	va + et/l	μο - ei/l	104-5	(OL
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	047	,	085		000		66 66	3401 3401	0	265 265		001471	10 0	0000		803	632						·
			OBS	0	203		66	3401		265						803 804	632	071		006	009	006	03
	013	3	085 085	. 01	004		92	3406		265						615							
			085		007		74 98	3406		266						808 816							
			085		009		80	3408		266					14	611							
			5T 085		010 010	08	11	3416		266 266		001433	8 (015		824 824	629	064					
			OBS	0	014		28	3448		266						873	629	064		004	011	006	
			ST	D 00	020	09		3449		267		001354	2 (0 2 8	14	872	591						
			085 ST		020 030	09	22	3448 3451		267		001351	7 (042		872 878	591 596	068		011	013	005	03
			085	0	060	09	32	3451	.4	267	1				14	878	596	058		011	014	006	02
			085 ST		040 050	09 09	38 41	3453		267	1	001351		069		882 885	590						
			OBS	00	50	09	41	3453	9	267		VU 1991		,009		885 885	590 590	069		006	011	007	03
			085 085	00)60)65	09 09		3454	8	267	1				14	887							•••
			085		070	10		3464		267	5				14	898 933							
			ST	D 00	75	10	38	3480		267	5	001320	5 (102	14	927	580						
			085		075 082	10	38 5.8	3480 3486		267						927 937	580	066		011	010	004	02
			OBS	00	95	11		3516		268						975							
			OBS		96	11		3522		268						983							
			51 085		100	11		3526		268		001246	2 (135		989 989	546						
			OBS	01	16	12	17	3534	0	268	4				15	004							
			51 085		25	12		3532		268		001252	2 (166		002 002	514						
			085	01	134	11		3526		268						994							
			085 51		146 150	11		3529		268					14	999							
			085		150	12		3537 3536		268		001231	6 (197	15		485 485	087		002	013	008	
			085	01	72	12		3543	9	269	1				15	016	405			001	017	000	
			085 STI	0 01 D 02	84	12		3546 3545		269 270	3	001091	7 0	255		018	436						
			085	02	200	- 11	62	3544	7	270	3	0010/1		.,,,		000	4 30						
			085 085		205	11		3539		270						990							
			ST	D 02	50	11		3539 3523		270		000954	0 0	306	14	990 943	398						
			085		50	09		3523		271							398	142		000	027	014	
			511 085	0 03	00	08 08		3509 3509		273		000842	2 0	351	14:	897 897							
			085	03	33	07	44	350 i	6	273	9				14	863							
			085 510		00	07		3502 3496		274		000670		427	141	858							
			OBS	04	00	06		3495		274		0000.0			14								
			518 085		00	05		3496		276		000538	70	467	14								
			OBS	05	55	05		3496 3496	3	2762					141	806 799							
			ST	D 06	00	04	92	3496		276	7 (000500	4 0	539	148	305							
			085 510		00	04		3495 3496		276		000476	1 0	588	148								
			085	07	00	04	63	3495	8	277	1				148	910							
			511 085		00	04		3496 3496		2773		000463	6 0	635	148								
			ST	0 09	00	04	39	3497		2774	4 (000458	2 0	681	148								
			085		00	04		3497 3496		2774		00457	د ،	727	146	333							
			085	10	00	04		3496		2775		000455	<i>y</i> 0	121	148								
			STO		00	04	11	3496		2776	5 (000451	z o	772	148	355							
			085 510		00	04		3496 3496		2776		000454		817	148								
			085	12	00	040	7 0	3496	1	2773	7			-11	148								
			510		00	03		3496		2778	9 (000452	60	863	148	883							
			065 510		00 00	031		3496 3496		2778		000450	7 0	908	148								
			085	14	00	031	89	3496	0	2779	,				148	396							
			STC 085) 15 15	00	034	56	3496		2779	, (000454	z 0,	953	149	211							

TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

THERENCE			LATTU		LONG			SOUAR	_	ON TIM		141	CILUISE HO.	GINA TO		_	TO TO NOTION	DEPTH DF S'MPL'S		WAVE		CLOUD	• }	1 1	UMBER
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	HE 1/		6431	TTP		DEPTH B	"	15	1	•4.	BGM	·-1	ANOMAL	1-8147	1	10 ³	VEL	00177	0,00	M - 11/1	Pg - el/	Pg - 64/1	FG - 61/	149 - 64/l	
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				51		0000		0800	341		266		00142	210	00	00		618 616	627 627	077		011	011	006	02
	0.	73		085		0000		0800	341 341		266							819		0		•••			•-
				51		0010)	0882	344	0	267	0	0013	560	00	13		854 854	615 615	069		008	015	008	02
	0	15		085		0010		0682 0539	344		267							878	015	,		•••	•••		
				51		0020		0947	345	4	267	0	00135	554	00	27		882	610	066		006	009	006	02
				085		0020		0947 0962	345 345		267		00134	45 B	00	040		882 890	610 570	000		000			
				083		0030		0962	345		267				•		14	890	570	065		011	008	005	02
				08	5	0040)	0977	346 346		267							897							
				083		0044		0969 1023	340		267						14	917							
				5	то	0050)	1032	346		267		0013	010	00	067		921	567 567	066		006	012	007	01
				08		0050		1032 1072	34E 34E		267						14	937							
				08		0059	9	1079	349	918	267							941							
				08	5 TO	006		1150 1159	351	132	268		0012	704	0	099		975	562						
				08		007		1159	35	155	268	1						975	562	061		002	013	004	\$1
					TD	0100		1170 1170	35;	20 199	268		0012	642	0	131		983 983	561 561	058		006	015	004	01
				08	5 10	0100		1168	35		268		0012	356	0	162	14	995	507						
				08	5	012		1188		291	268							995 5006							
				08	5 TO	013		1211 1214	35	378 39	268		0012	129	0	193	1	5009	401						
				08	5	015	0	1214	35	395	266							5009	401	103		000	017	011	
				5 08	TO	020		1187 1187	35	47 473	270		0011	142	0	251		\$009							
				08		023		1041	35	153	270	2						4959 4958							
				08		024		1029		272	271							4948							
					10	025	0	0992	35	22	27	6	0009	713	0	303		4945							
				08		025	0	0992 0858	35 35	223	271		0006	1580	0	349		4945							
				08	10	030		0858		099	27				Ŭ		1	4902							
				08	15	035		0776		022	27:							4879							
				08	15 1 T O	035		0720		97	27		0006	5806	0	420	5 1	4840							
				OB	35	040	0	0660	34	973	27		000			49		4640							
				08	TD	050		0575		95 953	27		0003	,,0,			1	4822							
				5	STD	060	0	0517		95	27		000	5356	0	540		4815							
				08	35 5 T D	060		0517		952	27		0004	4915		59		4814							
					35	070	0	0474	34	956	27	69						4614							
					STO	080		0455		96 961	27		000	4/4	, ()64		4823							
					85 STD	090		0436		96	27	74	000	464 9		069		4833							
				01	85	090		0438		960	27	74 76	000			573		4833							
					STD BS	100		0421	34	97 968	27	76					1	4642							
					570	110	00	0410	- 34	96	27		000	447	7 (078		4854							
					85 57D	110		0410		963 96	27	יד	000	4504		082	8 1	4868							
					85	120	00	0402	34	958	27	77					3	4868							
					STD	130		0194		96 956		76 78	000	49U'	y (087		4881							
					BE STD	130		0367	3	495	27	78	000	452	2	091		4895							
				0	85	14	00	0361		4954 493		78 179	000	451		096		14895 14909							
					STD SS	15		0380		4955		79						4909							

TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

REPERENCE	SHIP	ωmu	01 10	ONGTUON	MARIDEN SQUARE	STAT	ON TI		TRAB		_	ATORS		OEPTH	OFTH		WAVE	. 1	WEA-	CLOU			HOOC
006 NO.	C001	•	1/10		10" 1"	#0 0				CBUISE NO.		NUMBER		ID TO M			HGI MI	· 1	THE	CODE	1		STATION
318084	A4	3930	0 0	47300w	115 97				969	691				3720	11	1	10111			TTPI AN		+	
					. w	ATER		INO	6A RO		AM TE		Γ,	NO.	- ÷ -	L		- 1		013	1	1	004
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					DT			POICI	imbel	1 81	ULO	6018		OUPTHS									
1		TT		· · · · · · · · · · · · · · · · · · ·	- 101	50			I					30									
	MEISENGE TIME	CASI NO.	CARD	OEPTH INI	1.6	1 1	•4.	SIGM		Incre	VOLU	mt 2		500	INO		10,-1	1.0.	AL-2			Ter	
	HR 1/10							1		ANON	AL7-81		"ie ³ "	VELO		03 =1/1	40 41/1			NQ2-N 59 - 61/i	NO3-H		
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			STD	0000	0770	340		265	6 [′]	0014	4810	່ວ	00	148	305		ſ	1	1		ŧ	1	1
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			570 085	0010	0787	340		265		0014	477;	2 00	15	148	314						011	004	031
	012		085	0010	0787	340		265						148		5060	074			006	009	005	043
			STO	0020	0916	343 344		266						146									
			085	0020	0916	344		266		0013	2011	c 00	29	146									
			STD	0030	1012	347		267		0013	328	7 00	43	148			058			006	014	005	038
			085	0030	1012	347		267						149		593 593	066						
			085	00 34	1035	347		267						149			000			006	015	003	035
			085	0040	1036	347		267						149									
			570 085	0050	1059	348		2674		0013	3214	00	69	149	31	571							
			STD	0075	1059	348		2674						149		571	061			011	018	006	039
			085	0075	1157 1157	351 351		2679		0012	2869	01	02	149		556							
			085	0078	1203	352		2679						149		556	061			000	014	007	026
			STD	0100	1253	353		2680		0012		01	• •	149									
			085	0100	1253	353		2680		0012	.040	01	34	150		546							
			510	0125	1280	354	6	266)		0012	834	01	**	150		546 494	054			006	017	001	003
			OBS	0125	1280	354	60	2601				•••	~	150		- 7 -							
			085	0131	1319	355	55	2681						150									
			085	0136	1290	355		2684						150									
			ST0 085	0150	1267	355		2688		0012	249	01	97	150	29	442							
			085	0166	1267	355		2688						150		442	083		6	002	015	006	
			085	0188	1166	3554		2691						150									
			STD	0200	1169	354		2699		0011	001	~ 2		150									
			OBS	0200	1169	354		2702		011	001	02	>>	150		341							
			085	0238	1007	352		2716						1500		341	122		c	00	033	007	
			STD	0250	0999	3525	5	2717		009	639	03	07	1494									
			085	0250	0999	3524		2717						149									
			5TD 085	0300	0879	3511		2726		0008	838	03	53	149									
			085	0300	0879	3510	-	2726						1491									
		```	570	0400	0672	3508	-	2731						1485									
		(	085	0400	0672	3500		2748	C	006	/66	04:	51	1484									
			510	0500	0573	3496	-	2758		005	4 4 8	049		1484									
		0	<b>08</b> 5	0500	0573	3496		2758			203	049	•	1482									
			STD	0600	0494	3497		2768	٥	004	969	054	9	1480									
		(	085	0600	0494	3496	6	2768			- /			1480									
			STO	0700	0466	3496		2771	0	004	761	055	7	1481									
		C	085	0700	0466	3496		2771						1401									
			5TD 085	0080	0449	3497		2773	0	004	586	064	4	1482									
			STD	0800	0449 0433	3497		2773						1402									
		c	85	0900	0433	3497		2775	0	0045	500	066	9	1483									
			STD	1000	0419	3496		2776	•	0044		073		1483									
		c	BS	1000	0419	3496		2776	0	0044	100	073		1484									
		c	85	1087	0407	3496		2777						1484	1								

ID. COOL	LATITUOE	LONGITUDE	19	100	ARE	\$1A7	GAT	TIANE	TEAR		ORIGIN	ATOR'S		01714	MAL	T	WAV		-	WEA-	CLOU		r	
	1/10	• 17	10	10*	1.1-	MOID	DAT	HR. 1/10		CIUIS NO.		UMBER		10 101104		0	SERVA	-	. 1	148	CODE	s		NOOC STATION
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					WA	TER		WIND	-	0.	AIR TEN	5 %	<b>1</b> - 4	NO.	102		10		- 1	X 2	1 1	1		0044
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HR 1/10					<u> </u>	ľ	·••	\$1G.M	A=T	AHOM	AL7-118	01	103	VILO		03 ml/i	10	4-P		ALEP	NO2-N	NO3-N		
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136		10 000			219	354		269	3 '	001	1340	່ດດ	000	149		555				- 1		1	1	
1 70					19	354		269						149		555	06							
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136					16	354		269						149		552	05							
-	S					354		269						149		556	06				800	013	010	028
136			-		18	354		269		001	1383	00	23	149		555	00	•			015	014	011	030
	51				24 25	354		269	-					149		550	05	7						
136				12		354		269		001	1452	00	34	149		549		'			008	010	005	033
136	085			12		3560		269						149		543	06	۵			013	013		
	51			12		3561		2696						150		5410					015	010	009	023
136	085			12		3565		2699		0011	265	00	57	150		543					,,,	010	010	030
	ST	0 007	5	12		3567		2695						150.		544	060	D		(	800	019	006	019
136	OBS	T 0 0 9	5	12		3569		2697		0011	313	00	85	150.		545						0.7	000	019
	5 T	D 010	0	12		3569		2691						150		546	060	)		0	19	017	009	022
	51	D 012	5	12		3565		2697		0011		01		150		541						•••	009	022
136	OBS	T014.	2	12		3561		2699		0011	210	014	41	2502		519								
	51	D 015	2	12		3558		2700		0011	0.7.2	~ 1		150	-	603	073	1		0	17	019	012	
136	085	1018		- 11.		3543		2707		0011	072	016	2 2	1501		69								
	ST			110		3539		2709		0010	277	022		1498		53	103			0	04	024	011	
136	085	023	7	094	15	3525	1	2719		0010		022		1497		135								
							-	~						1494	0 3	23	118			0	08	019	014	

TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

EFERENCE	SHIP		πυαε	LON	GITUDE	DC 1	SOU		STAT	ION T	IME	TEAN	6	RUISE	INATO STAT	NON	0110		^H 0		ATIONS	0.00	CODES		51	ATION
NO.	000	· ·	1/1	•	• 1/10	- •	10*	1.	MO	TAC	12,1/1	<u> </u>	$\rightarrow$	NO.	NUM			3 1011		-	11	<u>~</u>	1171 4.0	1	- +-	
318084	A4	39	300	06	8300W		115	98	02	22	183	196	9	691 0	45		3292	2 03	3	4	1 I	X2	1 1	1	1	0045
	•							WA	TER	<u> </u>	WIND		ARO-	AIR	ILMP.	τ vis	NO.	5,	ICIAL							
							1	COLON	TRANE	OR.	17		ETEA nboi	BUL!		ET CODE	DEPTH	5 015EF	VATIONS	5						
								000		04	51		20		-	7	11			4						
									-	04	121	<u>,                                    </u>	20	100		<u> </u>	<u> </u>			4-		T	T	T	1	τ
	1 1144			ARO	GEPTH	(m 1	,	v	5	•⁄	5	GMA -1		ANDMALT		1 03		LOCITY	0 2 ml		104-1 8 - 11/1	101AL-0		NO3-N 49 - 01/t	\$1 D4\$1 #8 - 01/1	
	HE 1/	10				_	+ -		+-		-+-		+							-1-					1	
	1	1	1	STD	000	0	' 1	042	34	90	' 2	662	1	00123	50	0000	1.	4918	618	э '						
	1	83		85	000	0		042	34	903	2	682						4918	618		041		011	008	800	044
	-		-	510	001	0	1	040	- 34	86	2	661		00125	13	0012		4919	604							
	1	83	0	65	001	1	1	040		878	2	681						4919	60	-	047		013	009	006	025
				5TD	002	0		042	- 34			680		00125	77	0025		4921	60							
	1	83	0	85	002			042		878		680						4921	60		059		019	014	014	043
				5 T D	003	-		042	34			682		00124	10	00 3 7		4923 4923	60 60		055		011	013	007	035
		83		85	003	-		042		900		662						4925	60		052		013	012	005	034
	1	83	0	85	004			043		897		682		00125		0062		4927	60		072		012		005	••
				STD	005			044		90	_	682		00125	21	0002		4927			049		017	010	007	03
	1	83	0	85	005			044		699 93		683		00124	47	0094		4934	59		• • •		0	• • •	•••	
				STD	007			051		941		663		0012-	•••	00,1		4936			060		017	014	007	03
	1	83	0	85	008			109		03		680		0012	791	0125		4960							••	
		• •		510	T010			131		150		6850	0						67	0	053		011	010	011	01
	1	83	U.	85 510	012			144		14		682	•	00126	561	0157	7 1	4977								
				510	015			161		23		686		0012		0188		4989	57	5						
	,	83	0	85	1016			170		27		8868					1	4995			048		011	009	009	
		•		STO	020			177		30		8663		0012	268	0250		5003								
	1	83	c	BS	1022		1	182	35	32	2 3	2689						5009			052		011	013	007	
			•	STD	025		1	1156	35	35		2696		0011	644	0310		5005								
	1	83	c	85	1026	33	1	1096	35	384	۱. I	2710					1	4990	33	2	115		000	136	014	

RI CO	7	NCE ID.	SHIP	LATITUDE		10			STA	TION		YEAR	Ceuisi	ORIGINA	. FLOW	1 .	TO	MAE. DEPTH	01	w/	VE A TIQ	NS	WEA-		NOOC
co.		NO.		1/10			10*	1.	MO	DAY	HR.1/10		NO.		IMBER	80	MOTIO	OF S'MPL'S	04.	NG	[ PEB ]	17A	COOL		NUMBER
3	18	084	84	39450	068300₩		115	98	02	22	205	1969	691	046		26	651	03		4	ŀΤ		X2		0046
								wA	TEN		WIND	-		AIF TEMP		Τ,	NO.			ו					
								COLO	TRAN'	LOR	01 01	METE	• •		WET CD	6 d (	OBS. EPTHS	OBSERVI							

					04	516	22	4 078	7	11							
HISSENCE TIME	CAST NO.	C ARD TYPE	DEPTH (m)	7 7	s -/	SIGMA	<b>↓</b> -1	SPECIFIC VOLUME ANOMALT-2107	₹ △ 0 DYN, M ¥ 10 ³	SOUND VELOCITY	0 2 m1/)	PO4-P +8 - 41/1	101AL-P #8 - #1/1	HC3-N 98 - et/l	NO3-N #8 - at/1	51 O a - 51 96 - 61/1	
		510	0000	1081	3505	268		0011945	0000	14934	603						
205		085	0000	1081	35047	268				14934	603	058		002	044	011	039
		STD	0010	1076	3505	268	7	0011883	0012	14934	605						
205		085	0010	1076	35047	266	7			14934	605	044		004	038	800	031
		STD	0020	1079	3505	268	7	0011951	0024	14936	597						
205		085	0020	1079	35048	268	7			14936	597	064		002	061	009	039
		5TD	0030	1079	3503	268	5	0012129	0036	14938	605						
205		085	0030	1079	35027	268	5			14938	605	061		000	046	004	043
205		085	0040	1081	35046	268	6			14940	604	044		000	033	004	040
		STD	0050	1080	3504	266	6	0012069	0060	14941	592						
205		085	0051	1080	35044	268	6			14942	591	059		000	061	007	043
		5TD	0075	1080	3505	268	7	0012097	0090	14946	598						
205		085	0077	1080	35048	268	7			14946	598	060		002	047	009	039
		5TD	0100	1083	3504	268	6	0012258	0121	14951	601						
205		085	10101	1084	35041	268	6			14951	601	040		002	066	006	035
		STO	0125	1140	3521	268	8	0012075	0151	14977	567	•			*		<b>V</b>
		STD	0150	1174	3533	269	1	0011869	0181	14994	521						
205		085	10159	1160	35359	269	2			14998	502	074		002	074	009	
		STD	0200	1164	3539	269		0011365	0239	15000	361	<b>*</b> · <b>*</b>		001	0.4	007	
205		085	T0214	1146	35402	270				14996	355	099		000	061	009	
		510	0250	1073	3533	271		0010309	0293	14975	339	<i>,,,</i>		000	0.01	007	
205		085	T0269	1018	35261	271			//	14958	330	137		000	123	018	

 TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27

 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

ID.	SHIP CODE	μтι	1/10	LONGIT	1/10	DC.	SOU			IGMT	11ME	TLA	- K-	ORK RUISE NO.	SIN ATO		┥	DEPTH 10 NOTTOM	OEPT OF S'MPI	N 06	WAVE SERVAT	ONS	THE		DUO		1 1	NODC TATION
18084	Â4	4000	0	0683	00w	-	151	08	-	-	226	196	9 6	591 C	47		-1	2250	0	-	4	1	X2					0041
							1	WA		T 1	WIND	1	RO-	_	TEMP.		-	ND.			1.1	·	1	'			ſ	0041
								COLOR	TRAHS	0.	1MI Di PDI	P MI	TEA			ULO	000	DES. DEPTHS		ECIAL VATIONS								
										04			27	072	:		7	11										
	M1111HG (IM) HR 1/1(	NO.	CARC 1TH		DEPTH IN	u.	T	٦	5	•4.	\$10	-1 MA		ANDMALT			10 ³		ND CITT	0, #1/1	10,		101AL-			ND3-N #8 - #V1	11 Da-51 #2 • M/1	
			ST		0000			078								1		1			1			1				1
	22	6	085		0.000			076												580 388	04	2			•	023		
	22		085		0009			073												394	08			00		061	004	039
			51	0	0010			074												391	••	•			•		004	03
	22	6	OBS		0019			087												582	03	7		00	•	045	007	02
			57	0	0020		10	096												586	•••	•			•			~
	22	6	085		0028		1	146												600	05	3		00	0	033	004	03
			57		0030		1	193												392		-		•••	•	•••		•••
	22		085		0038		1	164												573	04	4		00	•	032	093	03
	22	6	085		0047			164												378	04	4		00	ó i	030	007	02
			\$T		0030			163												377								
	22	Б	OBS		0072			161												574	05	9		00	0	042	800	020
	2.2		57		0075			161												373								
	22	•	085		0098			162												578	06	0		00	0	086	005	033
			57		0100			166												977								
			37		0125			182												370								
	22	5	005		0144			188												364	06	1		00	0	051	011	
	22		ST		0130			186												333								
	22	•	085		0197			173												374	11	3		00	0	007	012	
	22		51		0200			169												364								
	22	•	085		0249		10	> 57												339	13	3		00	0	121	024	

TET ID.	- 3HIP	<b>и</b> т,	.or	LONGITUD	. k	2 MAI		\$7.4	TION			Т	OBGIN	ATOR		OFFIN	1."	AL	WAVE	_	WEA	CLOUG			
TET ID.	C001		1/18		н <b>В</b>				IGM		17.48	F		TATIO		TO			SERVA D	ONS	THE	COOL			TATION
	1					10.	<u>.</u>	_	-	HR 1/10	· · · · ·	-	NO. 1	NUMBE	•	101101	^M 5'M	PL'S DE	NG1 M	1 11/	-  cooi	1771 44			UMBER
31808	4 A4	4030	00	068300	DWİ	191	<b>_</b>		23	024	196	9	691 04	8		0097		n –	3	T	X2	T	-		0048
							WA			WIND		-180	AR TE	MP. T	<b>—</b>	NO.	<u>+</u>		1 1	•	1	• •		1	0040
							COLOR	1844	L De	10	M	TTER (im)	ORT BULS	W ET				SPECIAL ERVATIONS							
			<u> </u>			_			02	\$2	2	40	044		+	07									
	H8 1/10	NO.	CAU		TH tel	,	- T	,	• •4.	510	MA-T	3	ANDMALT-I				UND OCITY	03 ml/1	10,-		101AL-P	K01-N	NO3-N P3 - 81/1	\$1 Da-\$1 #8 + #4/1	
	1	ł	l s'	70 OC	000	1	302	1,1	22		29	T	001743		000	1.			1	+			<u> </u>	┝──	<del> </del>
	02	•	OB:	s ōc	000	ō	302	- 33	221	20	29				0000		687		08	0		013	041	014	035
	02	6	00		010		500 300		23		29		001738	9 (	017		680	715		-		-			035
					20	Ó	516	33	27	20	31		001722	7 0	035		688		07	1		011	053	014	031
	024	•	089		20		516 558		272		i31 40		001642:				897		08	3		011	052	016	031
	02		08	s oc	30	0	358	33	443	28	40	`	001042	5 6	0 32		718		064	4		004	026	010	033
	024	•	085		940 950		374 378	33	493		42					- 14	727	692	08	-		015	064	013	028
	02	•	OBS	5 00	30		578		535		45		001599	1 0	48 0		731 731		083			013			
	024		51 085		175		645	33		26	51	¢	001543	ιo	123	14	764	672	563	,		013	032	014	024
		•	003	5 UU	113	0	645	33	723	26	51					14	764	672	082	2		013	043	013	030

ALTERENCE												
CTET ID. CODE LATTUDE	LONGITUDE 28 50	ISOEN S UARE	IGMTI	TAI	CIUISE	STATION	DEFTN	OLPTH OF	WAVE DESERVATIONS	WEA-	CODIS	NOOC
318084 A4 41000		1° MO		_	HO.		NOTTOM	SAPLS	DE HOT PR STA	CODI	1941 A MT	NUMSER
1 310004 24 1 41000	000300#  [13]	18 02	23 054	1969			0049	00	2	x2	03	0049
		COLOR TRA	INL OR DI	17.0		RT WET COD	ND. DES. DEPTHS		nu Nons			

				COOL		1	10101	1	I BULE		<b>UL</b>	19	100,021							
	_			07	50	04	510	23	4 033		7	+	06							
MB197H04 TIME MB 1/10	CAST NO.	CARD TYPE	OLPTH (m)	ττ	1	•4.	1IGM	A-1	IFICIPE VOLU	41ª	3 Δ 1 07N. 10		SOU VELD		03 ml/l	P0+-++	ND2-N 48 - 11/1	ND3-N #2 - 11/1	5: 04-5: 48 - 41/1	
0 54		ST0 083 ST0 085	0000 0000 0010 0010	0362 0362 0362 0362	33 33	155 16 197	263 263 263 263	8	001633		000		146 146 146	29	746 746 747	086	011	067	014	041
004		STO 085 STO 085	0020 0020 0030 0030	0362 0362 0362	33 33 33	160	263 263 263	8	001652		003		146	31	747 747 747	096	800	047	015	068
		085	0040	0362 0362 0362	33) 33) 33)	163	263 263 263	9					146 146 146	34	747	086	011	041	010	080

TABLE IL.—Observed and interpolated oceanographic data taken by BCF R V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084,--Continued

MPTRENCE SN		ATTUDE	LONG		MAR SOU	ARE	57	GMTI	-1	TEAR	CRUIS		IOR'S	_	TO	MAT OLFTH O	OISE	NAVE EVATIONS	WEA	COC	10		53	000C
10 IO. CO	01	1/10			10"	+	M0	OAT H			NO	NU	MEER	-+-	M 0110	S'MPL'S	- 1	-GT MIL 33		+	_			
318084 A	4   4	1 3 0 0	068	300₩	151		02		84   INO	1969	69	1 050	5		NO.	01	<u>'</u> '	2	×2	1 0	3		1 1	0050
						0100	1841	+	57610	- ALL		Der				ORZERV	ATIONS							
						1000 1C	S	1	507			022			08									
<b></b>					T	<u> </u>	4-		1		<u> </u>	NC VOLUM		4 0 N M	100	NO		PO4-P	101AL-	NO2-	N NC	),-H ( 1	5100-51	04 - A
	52MG4 C	AST   1	ARO 1771	OFFIN MI	1	τ.		\$ %.	SIG	MA-1	ANO	MALT-1197	. 07	10 ³	VELO	CITY	0.2 m1/1	## * #1/I	#E * #17	+B - 4	V1 98	- +1/3	#8 - #1/1	5 m - 10
r.							1						Γ				_	1		1				i l
			STO	0000		136U 136C		320 3203		642 642	00	16171	00	000		627 627	745 745	072		006	0	36	006	054
	084	06	510	0010		360		321		42	00	16163	00	016	14	629	745							
		06	BS	0010		360		3205 321		542		16169		32	14	629	744							
	007		STD BS	0020		)360 )360		3205	26	42	00				14	631	744	061		002	2 0	21	006	075
	•••	3	STO	0030		360		321 3205		542 542	00	16176	0	)49		632 632	729 729	070		011	ιo	45	004	081
			85 85	0030		)360 )360		3206		542					14	634								
		:	STD	0050	(	360		321 3207		542 542	00	16174	0	081		636 636	711 711	073		000	5 0	40	006	
			BS STD	0050 0075		0360 0361		321		543	00	16154	• 0	121	14	640						•		
		0	BS	0075		361		3213		643						640 642								
		0	85	0084	(	0361	3	3213	21	643						044								
APPENINCE			1		MA	SOEN	- 5	ATION T	ME	-	1	ORGINA	1085	-	OIPIN	DEPT		WAVE	WE	CLC	uo		Τ.	NODC
cter 10. 5		ATTUOL		GITUDE	1	UABE		IGMTI		TEAB	CIU		UMBER		01 NOTIO	OF STAFL	1 011	HEATIONS						UMBER
		2000		1/10 -	10	1 28	02	1-1	117	1969	+			0	174	02	-	2	X		3		-	0051
314044		2000	1000		1	WA			OHIN	- BAR		AIR TEN		VIL	ND OFS	50	ECIAL							
						COLOR	1	NE 08.	3PE1 04 PD1	10 ALET 1 UMB		ORV GULE	WET BULB	CODE	DEPTHS	0#52#	VATIONS							
						DT	s	0 04	51	0 23	4	028		7	11									. –
-	SSENGE	CASE	AND	DEPTH MI	Τ	1 2	T	\$ 14.	su	GMA-T	1910	OMALT-PI	ti a	∆ 0 ™. ₩			01 m1/1	PO4-P	101AL-			03-N	\$1 O 4 = 5 ug + 61/	04-A
	TIME of	NO	TPR .		-				-					103	-									
Γ			STD	0000	1	0462	١,	341	1 2	64B	00	1562	1 [†] 0	000	14	673	712	1	1	1				
	117		BS	0000		0462	3	3407		648						673	712	105		00	0 0	50	020	046
			5T0 85	0010		0463 0463		342 3417		648 648	00	01556	6 0	016		675	707	102		00	2 0	76	016	044
			STD	0020		0463	3	342	2	648	00	01557	5 0	031		677	707	106		00		58	810	047
	007		BS	0020 0030		0463 0463		33417 3342		648 648	0	01558	4 0	047		677	707	105		00	2 0		010	
			STD BS	0030		0463	:	33417	2	648						679	713	102		00		)49 )97	021 019	033 035
			BS	0040		0467		33427 3344		649 649	0	01555	7 0	078		+682 +686	683 690	103		00	2 (	, , ,	017	
			STD	0050		0473		33437	2	649						686	690	103		00	2 (	061	017	029
			STD	0075		0487		3348 33482		651 651	0	01539	2 0	117		+697 +697	662 6 <b>6</b> 2	079		00	4 0	<b>344</b>	013	025
			085 STD	0100		0494		3350	2	652	0	01534	з (	155		\$704	660							
		c	BS	0100		0494 0547		33502 3373		652	0	01428	1 0	192		4704 4733	658							
		c	510 385	0125		0547		33727		663					14	\$733								
			510	0150		0547		3373 33730		664	0	01428	7 (	228		4737 4737	656 656			00	0	115	024	
			DBS	0150 0163		0547		33730		2664						4739								
				-																				
REFERENCE						MARSDIN		STATIO				OBG	INATO	<del></del>	087		AL	WAVE			CLOUD	1-		NOOC
CIII 10.	SHIP	LATTUD		ONGITUOL	88	SQUARE		(G)	(14	11/	AR R	EUISE NO.	STATE	ON	11 1104		01	OBSERVA TO	I SHC	THE	COOLS	-		NOOD STATION NUMBER
			1/10	68300W		10° 1 51 2	+	MD DA	-		69		52		02		02	в. нстри 3			0 3	1		0052
318084	A4	42300	. 10	0000#	1		WAT	·	WIN	0	BARO-		TEMP		. NO	5. T	SPECIAL	' 'ך						
						COL	LON	1 LANS (	- 88,	SPEED /	M ETER (m bal	DRV BULS	W BU	t ico	DEP	5. 1HS 08	SERVATO	NS						
						D	_	SD C			247	044		6	1	2								
	MESSING	A CAN	C 480	DIPIN H	. 1	1 2		5.7		SIGMA-		SPECIFIC VO		A C		SOUNC		nu 10,	-1 101	A L	103-N	но,-	N 510.	-s 04-
	TEME HB 1/1	NO.	1174	DIFTN V								ANDMALT	~1107	x 1¢		AFFOCH	n	** -	e1/t 20	• ••// •	9 - #12)	18 - 91	/1 /1 -	et/1
		1		-		0.5.0	2	23.64	Ţ	2640	ļ	00154	50	000		1469	1 65	12	1			l	ł	I.
	15	0	510 085	0000		050		3349		2649 2649						1469	1 69	2 09	2	(	006	071	01	7 037
			510	0010	)	050	12	3349	9	2650	1	00154	51	001		1469 1469			8	,	006	085	01	7 037
			085 510	0010		050		3348		2650 2650	1	00154	54	003	1	1469	4 6	7 B						
	00	9	085	0020	c	050	2	3341	8-8	2650		00154	67	004		1469 1469			2		000	077	01	6 039
			510 085	0030		050 050		334		2650		00124	101	004		1469	6 6		3	(	800	066	01	6 034
			085	0040	¢	050	2	334	92	2650	)					1469	7							
			510 085	0050		050		3350		2650		00154	• 7 4	007		1470 1470								
			510			051	4	335	2	2651		00154	+40	011	6	1470	8 6	51						
			OBS	007	5	051	4	335 335	15	2651 2652		00153	13.B	016		1470		16						
			510	010	0	052	C 🖷 🗌	222	2	2022		00105	0	v • >				16 10			000			

33547 3363

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STD OBS STD OBS

5T0 085

STD OBS OBS

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ł	+	o	

000 093 018

TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

FERENCE	SHIP		LATTU		LONG			MARS	ARE		IGMT		TLA		O NUISE NO.		TATIO		1	OLPTH TO DTTOM	MAT. DEPTH OF S'MPL"	085		TIONS	WEA- THER COOR	00015		5	HOOC TATION UMBER
DE HD.		+-		1/10		1/10	-	10*	1.	_	DAY			-					t	100	1		1		x1	+ + -	1		0053
18084	A   A	4	300	ום	066	300W	II	151	38	02		186	196	9	691	05			뿌	190	02	<u> </u>	tr t	1	1	1 013	•	1	0033
									COLDE	<u> </u>		541		ARD-		DRT	WE	- l vi		NO. OBS.	578	CIAL A TIDHS							
									CODE	164		101		nbel		ULE	TUL		7	DEPTHS									
								1	DT	s	0 07	50	6 2	27	0	33		7	Т	21									
		-1								+		÷		T.	SHICIPIC			¥۵	0	1 101	лно		Ter	· ·	10141-	H02-N	H03-H	5104-51	
	MESSEP TIM		CAST NO.	CA		DEPTN I	lm I	1	τ		s •/	\$14	5MA-1	' l'	ANON	AL7-81	7	01N.	м.	VILO		03 =1/1		- 1/1	10 - 01/1		19 . 01/1	¥6 • 01/1	
	HR 1/	101					_			+		+		-+-			-+-		_	+			+-	+			+		
				-	- 1		~	1	413	1	290	1	612		001	897	, I	000	0	1.	646 ⁱ	709	1	1		·	1	1	4
					io ,	000			413		2897		612			• • •	•		•		646	709	0	77		000	054	013	040
	1	66		08		000			411		2897		613								645		-						
					TD	001			471		315		626		001	767	0	001	8	14	675	665							
	0	oe		oa		001			471		3146	2	626							14	675	685	0	80		006	054	015	
	Ŭ	••		ōa	-	001		ō	495	3	3194	2	627							14	666								
					TD	002	ò	0	480	3	321	2	630		001	733	7	003	6		681	678							
				08		002	0	0	480	3	3206	2	630							- 14	661	678	0	75		008	056	014	04
				S	TD	003	0		477		323		632		001	712	0	00 5	3		682	682		<b>.</b> .					
				08	S	003	0		477		3232		632								682	662	-	76		002	058	013	03
				08		004			490		3272		634				-				690	685	Q	87		008	061	016	03
					TD	005			510		333		636		001	678	7	008	17		700	624		93		000	072	014	02
				90	-	003			510		3326		636								700	624		73		000	012	014	02
				08		003	-		516		3342		637								704								
				08		006			592		3496		640			. 1 .		012			744	521							
				-	TD	007			600		355		643		001	014		011			744	221							
				08		007			600 604		3554		643 644								746								
				06		007			637		3696		650								762								
				0	STD	010			658		380		655		001	509	3	016	57		774	490							
				0		010			658		379		635								774	490		17		002	086	021	01
				08		011			647		3819		638							14	773								
					STO	012			661		391		664		001	425	4	020	14	14	781								
				0		012			661		391	2 2	664							- 14	781								
				0		019		c	683	1	400	7 2	668								792								
				Ō	35	013	9		691		\$403		669								797								
				08	35	014			723		412		672				_				612								
				:	STD	015			735		417		674		001	1336	57	021	30		616								
					85	015			735		3417		674								616								
				01	85	017	0	<b>c</b>	3745	- 1	3423:	<b>a</b> 2	677							14	626								

	SHIP OOE	LA MU	01	LONGITUO	E 3	50 SQ	RSDEN UARE		TION IGMT	TIME 1 HR 1/10	TEAR	CRU	158	STATIO	H	DEPTN TD IDITOM	MAL DEPTH DF	0.	WAVE	IOH S	WEA-	CLOUD		5	NOOC TATION
-					-	10.		1 1	· ·			-			-+		2 411	S DR	HGT P	11 JJA	<u> </u>		1		
318064	A4	4330	0 1	068300	W	15		02	42	221 WINO	196	9 69		MP T		0174	01		11	1	X2	03	1		0054
							COLD	1	1	1.100		10-	DRT	wer	- V/L	NO. 085.									
							CODE		OR	FOR		hal	BULE	BUL		DEPTHS	017.11								
							Dĭ	SO	04	51	2 2	34	006		7	15									
	1148 1148	ND.	CAR		'N (mi	1	12		•4.	510	5MA-T		OWALT-		₹ △ 0 01H. M 2 10 ³		UND DCITT	0; #1/	10		101AL-F	NO3-N 88 - 81/1	NO3-N #8- #1/1	51 Da-Si 89 - 81/1	04-
		1	[									Ι							T						T
			51		00		0320		25		570	00	2299	1	0000		597	724							
	22	1	083		000		0320		254		370						597	724	07	19		006	052	014	039
			51		010		0320		256 30		570 573	~	2275		0023		399 604	727							
	00	7	085		010		0330		297		573	00	12212	•	0023		604	727	07			000	041	011	03
	•••	•	51		20		0355		49		565	00	2154		0045		619	712				000	041	011	0,0
			08		20		0355		486		585						619	712	08			006	046	015	04
			085		24		0364	32	542		569						624						• • •		
			083	5 00	26		0387	32	580	2	590					14	635								
			51		030		0380		60		592	00	2092	20	00 66	14	633	726							
			083		30		0380		600		592						633	726	06	7		006	036	014	03
			083		40		0365		616		595						626	724	06	92		002	051	015	03
			\$1		050		0361		63		597	0	02050	2	0106		626	717							
			083		050		0361		634		597						628	717	07	/1		008	039	014	02
			083		)60 )63		0369 0427		660 807		600 604						634								
			51		75		0435		83		605	0	01973	12	0158		661 666	719							
			08		075		0435		632		603				0.90		666	719	08			011	059	014	03
			51		00		0540		19		622	0	51816	.1	0205		719	631				011	0.79	014	05
			065		100		0540		194		622						719	631	09	20		000	062	014	01
			51		125		0590		47		636	00	01667	19	0249		747	614	•••	•		000		014	
			085	5 Ö.	125		0590		474		636			-	,		747								
			51	ro o:	150		0617	33	60	2	644	00	01613	36	0290		764	597							
			08;	5 0	150		0617	33	595	5 2	644					14	764	597	10	00		006	064	017	

TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

FEFERENCE	Bit of the units         Units         Use units																
					1						01 1		1.0004			,	UMBER
											-	+-+-+	+			-+-	
318084	<b>A4</b>	44000	106	8300₩			with I				01	3	X2	1 0 3	1	ļ	0055
							1110 448	0.		085							
										0121HS	Strokilows	Ì					
					DT	SD 04	\$25 22	7 028	6	07		]					
	MISSING	T	C 140				T	LINE VOLUM	\$ A D	LOUN		10.00		NON	NOVEN	SI Cues	
	TIME 0	# NO.		OFFTH (m)	1 2	\$ %.	SIGMA-T		1 01 N. M			22 * 01/1		+g + el/1	µg 61/1		
	1/10	<u>├</u>			<u> </u>							++			_		
	I	1 1	STD	0000	0340	3252	2589	0021173	0000	1461	ວ່ 730					1	· · ·
	020	J										075		000	048	010	043
								0021178	0021								
												075		000	038	014	037
								0020769	0042			077		~~~	060	010	0.34
	004	1						0020480	0063			017		000	0.74	010	034
								0010400	0000			083		000	048	010	027
																	030
			510			3261	2601	0020042	0103								
												085		000	062	014	028
								0020021	0153			0.00					0.74
			085	0075	0289	32617	2602			1400	1 120	000		000	050	010	020
+	+ -	· · ·		1/10				+ + +				NGT 011 51	T	1.11			
31808	4 44	4330	0   0	68300W						1 - I	01		1	1 0 3		1	0056
						T	T SHID MI	RO+		045.	SPECIAL						
					COOL				IULE	DEPTHS		_					
					0T	S0				11							
	MESSING	+ CAST	CAND		T	1	1	INCINC VOLU	1 1 4	SOU!	0	104=P	10141-1	NO2=N	N01-N	si 0	.5
	11441	S NO.		OFFIN CAL	1	3	SIGMAT	ANOMAL-1	1 DTN. 4	VELOG	117 0.3 m	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	+2 * #1/1	ug - e1/l	48 - 01/	1 10-0	// <b>U</b>
		+		1		1		-	-		_			1			
	1		STD	0000	0368	3279	2608	001938	2 '0000	) 146	25 72	9 ' '			,		
	07	2												006	036	010	059
								001925	5 001								
								001873	0.021					000	020	009	044
	00	~						001073	0030					002	044	007	041
		•						001865	005					•	-		
			OBS	0030	0398		2616										
			OBS											002	050	009	031
					• • -			001833	7 0094								
			OBS	0050	0419							y 079		006	044	012	032
					04.20					**0							
			OBS	0064				001802	0120			1					
			OBS STO	0064	0407	3302	2623	001802	0139	146	57 68	1					
			OBS STO OBS	0064 0075 0075	0407 0407	3302 33022	2623 2623			) 146 146	57 68 57						
			085 510 085 510	0064 0075 0075 0100	0407 0407 0395	3302 33022 3303	2623 2623 2625			146 146 146	57 68 57 56 70	3		008	062	011	031
			OBS STO OBS STD OBS	0064 0075 0075 0100 0100 0114	0407 0407 0395 0395 0369	3302 33022 3303 33032 33032 33012	2623 2623 2625 2625 2625 2626	001785	5 0184	146 146 146 146 146	57 68 57 56 70 56 70 47	3		008	062	011	031
			OBS STO OBS STD OBS	0064 0075 0075 0100 0100	0407 0407 0395 0395	3302 33022 3303 33032	2623 2623 2625 2625		5 0184	146 146 146 146 146	57 68 57 56 70 56 70 47 48	3		008	062	011	031

TABLE H.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69–1; prepared from NODC Listing No. 31–8084,—Continued

IT IO.	SNIP	LATI	10 OE 1/10	LON	GITU 01 1/10			STAT	GMTI		EAR	C RUISE NO.	STAT	ION	01/ 10 10110	0	HAR. IPTN OF WPL'S	0856	WAVE IVATION	15 1	NER OOE	CLOUG COOLS		1	NOOC TATION
18084	A 4	430	00	06	9300w	15	· _ · · ·	02 2		107 1	r	T	057	* T -	017		02					0 3	1	-   -	005
							COLO	TRAHL	OR.		BARC METE Umbs		17 4	ET COD	OIS OFL		SPEC LA								
							DT	50							17	1-									
	443331HG 11M2 H 8 1/1	H CAS	С. А Т У		OFFIN IN		5 1	,	•%.	SIGMA	-1	INCIPIC ANOMA	VOLUME	¥ △ 0 01N. W 3 10 ¹		SOUND		n m (/3	PO4-P			NO2-N #8 - 91/1	NO3N #8 - 81/1	51 O e = 51 #9 - a1/1	04-
		1						-							+		-+-			+	+	_			
				TO	0000		387	327		260	5 🧋	0019	699	0000	1	463	3'7	12	1	1				t i	1
	10	7	OB		0000		387	327		260						463		12	072			000	039	007	
				TO	0010		387	327		260		0019	706	0020		463		13							
			08	5 TO	0010		387	327		260						463		13	058			000	021	800	
	00	7	08		0020		387	327		260		0019	667	0039		463		14							
	00	'		то То	0030		393	327		260		0019	6.7.0	0059		463		14	060			000	030	006	
			08		0030		393	327		260		0019	219	0059		464		08 08	049						
			0B		0040		410	328		260						4650		78				000	024	003	
			08		0046		478	330		262						468			066			000	029	007	
			5	TD	0050		480	331		262.		0018	131	0097		468		74							
			08	5	0050		480	331	04	262						4685		74	075			000	050	007	
			OB.	5	0072		480	331	79	262						468		• •				000	0-0	007	
			5	TD	0075		465	331	9	2630	)	0017	388	0141		4684		65							
			08		0075		465	331	85	2630	)					4684		65	074			000	039	007	
			08		0078	(	485	332	54	2633	3				1	4693	3						•		
				10	0100		503	333		2639	9	0016	588	0184		4706									
			OB;		0100		503	333		2639	9				1	4706	66	660	088			002	040	011	
			OB;		0104		533	333		2639	•				1	4719	9							•••	
			08		0113		531	334		2640					1	4720	0								
			08		0115		515	333		2640					1	4714	6								
			5		0125		520	334		2641		0016	442	0225		4718									
			OB		0125		520	333		2641						4718									
			5		0150		511	334		2642		0016	367	0266		4716									
			OBS		0150		511	333		2642						4718									
			08;	>	0162	C	520	334	34	2643	,				1.	4724	4								

IFERENCE	SNIP	LATTL	101		100	SOU	ANE	\$TA.	TION IGMT		TEAR	Citu		STATE	-	-	10	DEPTH				WEA	CLOUC			NOOC
+	+		1/10	1710	-	10"	1.	HO	DAT	HR. 1/10				NUM		80	MOTTOM	S'MPL	i	INGS		1		·		TATION
318084	4 A4	4300	ю	070300W		152	30		24	156	969	69	1 05	8		0	091	01			1		100 44	"		
							WÁ	÷	_	W IN O	BAR	o. [	AIL T	MP. T		T	NO.		-	• •		1	· ·	1	1	0058
							COLOR	TEANS INT	OR	3PE10 08 FORCE	MET		OFT	WE BUL	t ko		OBS. EPTHS		CIAL A BONS							
													-	1	1	1	07	-	-							
	MESSINGI TIMJ HR 1/10	NO.	CA8 177		m1	'	٢	\$	٠4.	SIGM	A-1	IPEC ANI	MALE-		₹ △ 0YN. 1 10	м.	SOL		03 mL/l	PO4-			NO2-N #8 • et/1	NO3-N #9- 81/1	51 O4-51 20 - 01/1	
	I.	1	51	000	,		381	331	16	262			1754						-	1	1	-			1	
	154	5	085				381	330		262		00	11.24	U	000	0	140		715							
			51	0 0010	)	0	378	330		262		00	1753		001		146	534	715	08	1		002	048	016	046
	156	5	085	6 0010	•	0	378	33(	145	262		••		-		0	146		720 720	071						
			51				382	330	4	262		00	1758	5	00.3	5	146		716	071			000	032	012	043
	156		085				362	330		262							146		718	085	5		002	062	013	
	156		51				361	330		262		00	1759	8	005	3	146		720				002	0.02	013	041
	156		085				881	330		262							146	39	720	082	2		000	045	014	038
	4.74		51				379 382	330		262							146		720	080	)		006	038	014	043
	154		085				182	330		262		00	1747	0	0084	5	146		722							
			51				175	330		262		~~	1760		.1		146		6560	085	•		006	064	012	037
	156		085				75	330		262		00	1759	2 (	5132	2	146		735							
						•.		2.20	~ 7	202	0						146	44	735	075	•		000	029	010	042

REPERENCE	SNIP		LONGITUDE	NOCT	MARS SQU			IGM	1)	YEAR		STATION	OEPTH TO BOTTOM	MAR OFTH OF	08		A TIO		WEA- THER COOL	co	000	NODC STATION
318084	A4	42300	070300W		152	20	1	-	196	1969	691		0071	00	0.	HG	141	MA		TYPE	• • •	0059

						<u> </u>			1 00 1
WAT	28	γ	INO	84.80-	AIR TE	WF T		NC.	
COLO	TRANS	OR.	17110 08 10101	METER (mba)	DRY AULI	WET	C001	OIS. DEPTHS	SPECIAL DESERVATIONS

			_					06							
MESSENGE CAST TIME & NO. NE 1/10	CARO TTPE	DEPTN (m)	7.1	s •/	SIGMA-T	SPECIFIC VOLUME	¥∆0 01N M x 10 ³	SOUND	02 mU/I	PO4=P +4 - +1/1	101AL-P			51 04-51 49 - 81/1	
	510	0000	0182	3256	2605	0019642	0000	14541	765					1	
196	085	0000	0182	32559	2605			14541	765	081		002	028	013	031
	STD	0010	0188	3258	2606	0019562	0020	14546	172			001	010	015	0.51
196	085	0010	0186	32575	2606			14546	772	102		800	067	019	033
	570	0020	0187	3258	2607	0019511	00 3 9	14547	765			000		017	055
196	085	0020	0187	32581	2607			14547	765	100		002	054	020	034
	STD	0030	0187	3257	2606	0019566	0059	14549	762			002	0.24	020	0.54
196	085	0030	0187	32574	2606			14549	762	105		006	042	023	037
196	085	0040	0192	32584	2607			14553	765	083		000	026		
	510	0050	0199	3262	2609	0019303	0098	14558	760	000		000	020	011	030
196	085	0050	0199	32620	2609	0000000	00,0	14558	760	092		000	036	016	033

TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

TET IO.	SHIP	LAΠU	01	LONGITUDE		AN	<b>STA</b>	TICH IGM	TIME T)	TEAR	-		A TOP'S		1	0 1	DEPTH		WAVE		WEA-	CLOU		11	HODC
006 NG.	0001	•	1/18	1/10	10*	11	MD	QAY	HIL 171	6			NUMBE		101	MOT	SHALL	OR	HOIP	1 51	CODE	TYN AA	AT.	+	UMBER
318084	A4	4200	0 0	70300w	152	20	02	25	004	196	9 0	691 06	0		00	37	00		Т	1	T		]		0060
						WA.	118	T	WING		10-	AR TE	MP. T	1		io, T	1980								
						COLON	TEAN	- 01	L	10 MI	TER.	BULS	BULS	C00		es. PTHS	ossitv	ATIONS							
								1							0	4									
	MESSENGE TUME HB 1/10	ND.	CARO	DIFTH (m)	,	t				IGMA-T		MCIPE VOL				SDU VELD		07 =1/1	40. 78 -		101AL-P	HO3-N 28 - 91/1		51 Oz=5 20 - 01/	
			STO	0000	0	205	32	73	1	618	١,	001849			,	145	i54	762	1					I	1
	00	4	085	0000	Ó	205	32	73		618						145		762	10	12		011	063	016	045
			STO	0010	0	211	32	74	2	618		001849	13 (	001	3	145		760		-		•	• • •	***	• •
	00	4	OBS	0010	0	211	32	73	72	618						145	558	760	10	4		600	050	020	048
			STO	0020	0	223	32	75	2	618		001848	4 0	003	7	145	65	759							
	00	•	OBS	0020	0	223	- 32	75	0 2	618						145	65	759	- 10	)7		011	052	019	05
			510			208		181		624	•	001791	5 (	00 5 5	5	145		755							
	00	•	0B5	0030	0	208	- 32	81	12	624						145	561	735	- 10	9		011	064	021	04

AEPERSMOE SHIP			IGH TIME		C	RIGINATOR'S	DEPTH	DEPTH		VAVE	 WTA-	CLOUD	NODC
CTIV ID. CODE LATITUOE	LOHGITUGE 82 50		DAY HE 1/10	YEAR	CRUISE NO.	STATION HUMBER	ADITON				 CODE	CODES	STATION HUMBER
318084 A4 39300	070300w 116	90 02	21 145	1969	691	070	2467	02	50	5	X 2		0061
		WATER COLOR ILANS	WIND 3MIC			IT WET COD		SPEC					

				CODE	(m)		POICE	imb	N) BULE		uu	DEFTHS								
						04	\$30	20	067		6	11								
MISSINGE TIME OF HR 1/10	CAST NO.	C AND TYPE	DEPTH (M)	7 7	s	·/.	SIGM	A - T	THEHE VOLU	#E 87	\$ △ D DIN M 1 10 ³	SOUN VILOC		D2 mi/1	PO4-P #2 - 41/1	1014L-F		ND3-N VB - 01/1	51 D 4 51 29 - 01/1	OR A
			1		1		1			_		1							ļ	
146		STD	0000	1122	35		269	-	001165	9	0000	1495		605						
145		OBS		1122		182	269					1495		605	044		000	023	004	030
145		OBS	0009	1120	35		268					1495		602	055		000	040	006	026
		SID	0010	1120	35	1.6	268	9	001170.	2	0011	1495	51	602						
145		OBS	0017	1120										602	045		000	034	009	029
		510	0020	1121	35:		268		0011791	8	0023	1495		604						
145		OB S	0026	1122		163	268					1495		604	063		000	043	011	029
		510	0030	1121	35:		269	0	0011714	4	0635	1495	55	601						
145		OBS	0034	1121	35:	194	269	1				1495	55	599	040		000	020	006	028
145		085	0043		35;	185								599	040		000	024	006	033
		STD	0050	1123	35	18	268	9	0011844	4	0058	1495	58	599						
145		OBS	0065	1124	35	168	268	8				1496	5.1	600	054		000	037	010	029
		STD	0075	1124	35	18	26B	G.	001191	3	0388	1496	63	603						0.
145		OBS	0087	1123		182	268	9				1496		605	043		000	0.36	006	027
		STO	0100	1122	35		268	9	001194	7	0118	1496		604				+ .0		02.
		510	0125	1121	35		268		001205		0148	1497		600						
149		OBS	T0134	1120		164	268			_		1491		598	036		000	020	008	
		STD	0150	1126	35		269		001192		0178	1491		597			000	010	0.00	
145		OBS	T0159	1129		228	269	-	001172	-		1491		590	0.59		0.00	039	009	
		STO	0200	1144	35		269	-	001145		0236	1499		501	0.4		()	() 1 1	004	
145		OBS	T0238	1157			270		001143	0	1220				120		0.00			
142		003	104.38	112/	304	416	< (0	1				1500	J4	333	130		000	111	009	

ITELINCE	SHIP	LATITU		LONGITUDE	L D	SQUARE	STATION IGAT		CRUIS	ORIGIN	ATDR		02#1H	DEPTH		WAVE EXVATION	5 11HE			NODC STATIO
10. 10. HD.	CODI		1/16	1/10		10" 11"	MD DAY		NO		NUMB		DITOM	SMPL	S DIL	HGT PER	LEA COD	1741 4.4		NUME
31808	4 A4	3945		70300w	+ +				9 69	1 07	,	-	1829	02			-			006
51000	41	3947	0 10	)/0300w	1 11			WIND I		AIR TE		- T 1	NQ.		-		,			,
						COLO	TRANS DUL	INID M		DIT	we	1 000	OFS.		CIAL VATIONS					
						CODE		POICE U	nbs1	TULE	101		DEPTHS							
													11							
		M NO.	C ARD	DEPTH	(m.)		\$ %.	SIG MA-T		HC VOLU		103		IND DCITT	0,2 m1/1	PO4-P	101AL-		HD3-N	51.0y=54 yg=n1/1
	H# 1/1	<u>1</u>							-+		-+		+			+	+	-	+	+ +
					_	10//	3499	2684	1 00	1214	, I	0000	1.6	928	714	1	1	1	l.	1 1
	10	~	511 085	000		1066	34985		00	1214	0	0000		928	714	052		000	038	006
	10		085	000		1063	34981	2685						928	697	050		000	030	005
	10	0	510			1063	3498	2684	00	1216	.2	0012		928	697	010		000	0.20	005
	10	0	085	001		1066	34978		•••		-		14	930	694	053		000	048	006
	10	•	ST			1066	3498	2684	00	1223	5	0024	14	931	694					
	10	0	085	002	8	1067	34983	2684					14	932	692	048		000	034	800
			ST	0 003	0	1067	3498	2684	00	1224	9	0037		933	692					
	10	0	OBS	003	8	1067	34983						14	934	691	045		000	027	009
	10	0	085	004			34990								683	044		000	036	004
			STI			1070	3499	2684	00	1228	7	0061		937	681					
	10	0	085	007		1075	35001							943	674	050		000	032	004
			ST			1076	3501	2684	00	1234	8	0092	-	944	674					
	10	0	085	1009		1082	35026							949	673	048		000	044	001
			ST			1107	3509	2685		1231		0123		960	670					
			ST			1206	3535	2687	00	1224		0153		002	654 644	054		000	041	001
	10	0	085	1014		1244	35462 3550	2688 2690		1197		0184		019	593	054		000	041	001
			ST			1247	35544		00	1171	-	0104		032	442	051		000	023	001
	10	0	085	7019		1257	3553	2692	0.0	1168	1	0243		026	418	0-1		500		
		•	ST1 085	D 020 T024		1230	35335		00	1100		0-43		974	374	122		000	101	008
	10	0	005	1024	0	1014	روررر	2710						,						

TABLE II.—Observed and interpolated oceanographic data taken by BCF R/V ALBATROSS IV, 28 January-27 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

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EFERENCE	SHIP					- 2	MAP	DEN		ION .				DRIGINA	OF'S		DEPTH	MAI.		WAVE		WEA	CLOUC			
T ID.	CODE	LATITU		LONGI			SOU	A71		IG MTI		TEAB	CAUISE		TION		TO IOTTOA	DEPTH OP	061	ERVA T		THE	CODE		\$	TATION
++			1/10		1/10	-	10*	1.		-	HE 1/10		NO	NU	MEEP		101104	S'MPL	DIB	NGT	1 SP 1	C001	1791 4.4	<del>ه</del>	^	NUMBER
318084	A4	4000	0	0703	00¥		152			21	063	1969	691	072			0302	02		8	1	X2		1		0063
								WA			WIND	- BAR	0.	AIR TEM	τ	- VHL	ND.		TAL							
								COLDE	TRANS.	OR	3911D 04	MET (mb)			W ET BULB	C001	DEPTHS	OBSERV	A TION S							
									1	04	530	18		44		7	11									
[	MISSING	CAST	C 14				Γ.	τ.	1.		1	- L	341 (10)			0		UND		10.						
	H# 1/10	NO.	1.179	E	08PTH 6			C	1,	•/	SIGA	4 A - T		ALT-110	1 0	YN, M 5 10 ³		DCITY	D 2 m1/1	1.8.		101AL-P		HD3-N V8-01/1	51 D g = \$1 yg - q1/1	
ſ	-		57		0000			587	338		1		0.01	6.204	+		-	+		+	- +				+	+
	063		085		0000			587	337		265		001	5296	0	000		770	694		-					-
	063		085		0007			584	338		261							770 770	694 694	08			000	040	004	02
	00.		ST		0010			584	337		264		001	< 3 8 3	~	015		770	695	06	<i>'</i>		000	035	003	03
	063		085		0014			584	337		264	-	001	26.3	00	019		770	696	06	e		000	0 3 B		
			ST		onzo			84	337		26		0.0.1	5488	0.0	n a n		771	698	U O	2		000	UAH	001	03
	063		nes		0021			584	337		26		001	1400		10		772	698	06	7		000	033	002	
	063		OBS		0028			591	331		261							776	694	06			000	044	001	02
			S T		0030			32	338		26'		001	5403	0.0	046		776	694	00			000	044	001	02
	063	1	085	i i	0035	5		596	338		26					• • •		779	694	0.6	n		0.00	041	004	03
			ST	0 1	0050	)	0	727	338	36	264	a	001	5455	0.0	077	14	794	689				000	0.41	0	03
	063	1	085	i i	0054	,	0	734	336	276	26	1					14	798	687	06.	2		0.00	0.36	004	02
	063	i	085		0073	5	0	764	340	29	264	4					14	815	677	0.5	9		000	028	001	02
			51	0	0075	,	0	767	340	3	264	Q.	001	4722	0	114	14	816	677							0,
			ST	n 1	0100	1	0	744	341	1	264	4	001	4689	0	151	14	834	671							
	063	Ļ	085	T T	0116	,	ΰł	121	341	52	266	0					14	845	668	0.5	1		000	034	003	
			5 T	0	0125	,	C 4	.26	344	8	266	9	001	3889	01	187	14	890	611				-			
			51	D 1	0150	۱	1	36	351	5	268	4	001	2513	0.2	220	14	979	4 R 5							
	16.3	l.	0R S		0163		11	97	355	67	269	n -					15	0.05	439	07	7		000	054	004	
			ST	D (	0200	1	1	87	357	6	200	21	001	2031	02	281	15	8.00	396							
	63	1	ORS	t t	n 2 1 Z		11	26	353	156	270	2					14	988	382	10	8		000	068	006	

REF	FLENČ	L	SHIP				10/25		1	A110H				DEIGI	HATOPS		DEFTN	MAR.	WA		WEA-			NDOC
000	NO NO		001	LATITUDE	LONGITUDE	88	SQU 10"	A 4 6 7 - 7 - 7	m0	IGM1	HR. 1710	TTAR	CRU		STATION NUMBER		ID IDTTOM		SE VA	N TION	CODE	C0		STATION NUMER
3	808	34	A4	40300	070300	-	152	00			010	-	69	1 0			0068	00	6		×2			0064
									TEAN	1 04	WIND SPEE		ER	AIR T DRT BULR	WET BULS	V/L C 00		SPEC Deserv						

				1001			+0+CE	-		1.1	014	1									
			Γ			04	\$35	19	3 033		6	Τ	06								
HESSENGE CAST	C NOD TTPE	DEPTH (m)	,	τ	\$	•4.	SIGM	4-T	INCINE VE			₩.	SOUND	0 2 m1/1	P04-P	101AL-P #8 81/1	NÖ 2- N #9 - at/1	NO3-N vi - 01/1	\$1 Da=\$1 98 - 67/1		2
							1		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~												1
	STD	0000	04	14	331	1	263	0	00173	55	000	0	14649	741	•						
010	085	0000	04	14	331	13	263	0					14649	741	070		000	036	004	019	
	STD	0010	04	17	331	11	262	9	00174	52	001	7	14652	746							
010	085	0010	04	17	331	05	262	9					14652	746	076		000	040	009	017	
	510	0020	04	19	331	11	262	9	00174	34	003	5	14654	746							
010	085	0020	04	+19	331	11	262	9					14654	746	092		000	038	006	030	
	STD	0030	04	17	331	11	262	9	00173	99	005	2	14655	746							
010	085	0030	04	+17	331	14	262	9					14655	746	093		004	053	009	025	
010	085	0040	04	415	33)	123	263	0					14656	746	097		008	045	011	036	
	STO	0050	04	-19	331	13	263	1	00172	99	008	7	14660	746					• • •	•	
010	085	0050	04	419	33	132	263	1					14660	746	096		015	031	016	028	

RIERENCE	SHIP			2 47 350		TATIC				I	DBGINA	D#'5	. 1	DEFIN	OFFTH		WAVE		WEA-	CLOUD			NODC	
C187 ID.	CODI	LATTUDE	LONGITUDE	2			MTI		TEAB	CRUISE		TION		10 MOTTOM	01		ERVA D		CODE	CODES			STATION	
+-+	+	1/10	1/10	10'	1° M	0 0	AT NI	1/10		ND	NU	MEL			S.M.P.L.	SOR	HG1 PI	SPA	1000	1791 4.41	1		10 MIII	
31808	4 A4	41000	070300₩	152	10 0	2 21	0 2	00 1	1969	691	074			0046	00		4		×2			1	0065	
				Ľ	WATE		w	IND	1 1480		I TEMP			NO.										
				0	CODE	4 H 1 107	0 11.	14110 01 101C1	METE	* ( (			000	OES. DEPTHS		VATIONS								
		_					04	520	16	9 0	28		6	05										
	MESTERG TIME HR 1/1	CAST CA	RD DIFTH (m	T	۲	· ·	4.	\$IG N	A-T		ALT-119	OTH	103		JND CITY	0 g m1/1	ю. , .			NO3-N VE - 41/1	ND3-N			- 40
			10 0000	02		3 3 0		263	39	001	6498	1 00	00	14	574	812							1	Π
	20		S 0000 TO 0010	02		330: 330:		263		001	6464	00	16		574 575	812 821	05	6		006	007	015	6.64	•
	20		5 0010 TD 0020	02		330 330		263		001	6505	00	33	14	575	8260 828	04	7		000	009	012	8.06	3
	20	0 08		02	42	330	30	263	39		_			14	577	628	04	6		000	006	013	4.23	
	20	0 08	5 0030	02	40	330 330	40	264 264	0	001	6417	00	49		578 578	834 834	06	1		006	011	012	8.84	
	20	0 08	5 0040	02	43	330	27	263	38					14	581	638	04	9		000	006	011	6.84	

 TABLE II.—Observed and interpolated oceanographic data taken by BCF R V ALBATROSS IV, 28 January-27

 February 1969, on ICNAF Cruise 69-1; prepared from NODC Listing No. 31-8084.—Continued

FRAENCE					Lel	-		STAT	ION TI	ME			DIGINAT	053		DEPTH	MAX		WAVE		WEA	- CLOUD	-I		NODC
r IQ.	CODE	LA TTU	οι   ⊔		50	SOU:	ARE	1	GMTI		YEAS	CAUISE		TION		TO	01/10		STRVAT	ONS	COD			1 1	TATIOH
NO.		•	1/10	· 1/10		10*	1.	MO	H YAC			NO,	NU	M814	-	SOTIOM	SHPL	5 OW.	HGIM	5 544	COD	TTPI AM	1	'	104616
18084	A4	3900	ONO	70300W	1	16	90	02	21 2	206	969	691	06	9		2896	1	1	17		X2			0	066
						- (	WAT	169	۲.	(INO	BAR	- L	AR TEMP		VII.	NO.		CIAL							
							COLON	TRANE	OR.	SMID	MET	int		WET C	0.04	ONS. OTPTHS		ATONS							
						- 1	000		-	PORCE	(mb)	-+-			-										
								L	04	\$30	21	7 0	89		7	11	L								
	MEISINGA TUME	CAST NO.	CARO	DEPTH		t	t	5	·4.	SIGA	A-T	secon	VOLUMI	A L	<u>م</u>		UNO	0; =V	10.		TOTA L-1		NO3-н		
	HB 1/10	но.	TYPE									ANOS	AL1-110		103	Ville	DCITY			•1/2	<b>FB</b> - 41/1	#8 - et/1	<b>µ§ − 61/</b> 1	×8 - 81/	
														1		1			I						]
	206		085	. 0000	· ·		87	354	26	269	6					149	276	546	06	7		002	051	012	032
	200		STO	0000			87	354		269		001	1026	000	0.0	149		546	00	•		001	0 / 1	011	0.56
			STD	0010			84	354		269			0998	001		149		535							
	206		OBS	0011		11	84	354	27	269	7					149	976	535	06	5		000	041	010	035
			STO	0020	)	11	87	354	3	269	6	001	1066	002	2 2	149	979	540							
	206		085	0020	)		87	354		269						149		540	05	3		000	041	006	036
			STD	0030			87	354		269		001	1112	003	33	149		540							
	206		085	0031			87	354		269						149		540	06	-		000	037	009	036
	206		085	0041			89	354		269						144		539	05	2		000	032	007	034
			STD	0050			88	354		269		001	1216	00	55	141		538							
	206		0B S	0051			88	354		269						144		538	07.	2		004	056	010	031
			STD	0079			87	354		269		001	1263	001	34	14		540							
	206		085	0071			87	354		269							988	540	06	5		000	045	008	032
			STO	0100	)	11	189	354	2	269	15	001	1363	01	12	14	993	543							
	206		OBS	T0101	!	11	89	354	20	269	5						993	543	06	0		002	064	010	029
			STD	0129	5	11	187	354	3	269	6	001	1336	014	+0	14	996	532							
			STO	0150	)	11	86	354	4	269	17	001	1309	010	59	150	000	526							
	206		OBS	T0160	)	11	85	354	40	269	8					150	001	525	05	1		000	031	009	
			STO	0200	)	10	20	352	8	271	5	000	9687	02	21	14	947	531							
	206		085	T0204		10	7 00	352	262	27)	6					14	943	532	11	7		000	067	015	
			STD	0250	)	0 9	905	35)	5	272	5	000	8850	02	57		912	543							
	206		OBS	T0255	5	01	899	351	41	272	5					14'	910	545	15	1		000	138	020	

