WHOI-86-24

A SUMMARY OF HISTORICAL SOFAR FLOAT DATA
IN THE WESTERN NORTH ATLANTIC 1972-81

by

Theresa K. McKee

Woods Hole Oceanographic Institution
Woods Hole, MA 02543

July 1986

Technical Report

Funding was provided by the National Science Foundation under Grant Nos. OCE-8109145, OCE-8117467, OCE-8214066, OCE-8600055.

Reproduction in whole or in part is permitted for any purpose of the United States Government. This report should be cited as: Woods Hole Oceanographic Institution, Technical Report, WHOI-86-24 .

Approved for public release, distribution unlimited.

Approved for Distribution:

James Luyte for
Robert C. Beardsley, Chairman
Department of Physical Oceanography

ABSTRACT

SOFAR float observations from the years 1972 to 1981 have been edited and analyzed to produce a uniform and error-free data set suitable for archiving. These data were collected from the western North Atlantic during three major experiments directed by H. T. Rossby of the University of Rhode Island. The data are shown here in plots of the composite and individual trajectories, as time series plots of velocity components, and for the LDE floats, as time series plots of temperature, pressure, vertical velocity, and vertical displacement. These data comprise about 72 years of SOFAR float observations, and are a unique resource for Lagrangian studies of the North Atlantic circulation.

TABLE OF CONTENTS

	PAGE
Abstract	1
Table of Contents	2
List of Tables	3
List of Figures	3
 I. Introduction	 4
II. Float Tracking and Data Processing	5
a. Tracking	6
b. Final Data Processing	6
III. Calculation of Vertical Velocity	7
IV. Data Presentations	9
a. Composite Trajectory	9
b. Float Statistics	9
c. Individual Float Plots	9
Acknowledgements	11
References	11
Composite Trajectory Figures	12
Summary Tables	17
 Appendix A, FLOATER Format	 27
Appendix B, Individual Float Plots	34
Description of:	
MODE	35
PRE-LDE	209
LDE	451

LIST OF FIGURES

Figure 1	All MODE Floats at 1500 m Depth (nominal)	12
Figure 2	All PRE-LDE Floats at 700 m Depth	13
Figure 3	All PRE-LDE Floats at 2000 m Depth	14
Figure 4	All LDE Floats at 700 m Depth	15
Figure 5	All LDE Floats at 1300 to 1500 m Depth	16

LIST OF TABLES

Table 1	Summary Statistics for MODE Floats	17
Table 2	Summary Statistics for PRE-LDE Floats	20
Table 3	Summary Statistics for LDE Floats	23
Table 4	Float Day Number to Julian Day Conversion	26
Table 5	FLOATER Format Code Table	33

I. Introduction

This report describes a set of SOFAR float data that have recently been contributed to the archive of North Atlantic Lagrangian data maintained at Woods Hole Oceanographic Institution. The data were originally collected by H. T. Rossby and his collaborators at the University of Rhode Island during the period 1972 to 1981. They were part of one of three experiments to observe North Atlantic circulation:

Mid-Ocean Dynamics Experiment (MODE): 1972-1976

The MODE experiment was a synoptic study of ocean currents and their variability in the Western North Atlantic. Twenty floats of a new design were built for the experiment. They were launched near 28N, 70W. All were ballasted for 1500 m depth. These floats were tracked from land stations on Bermuda, Eleuthera, Puerto Rico, and Grand Turk. The floats were recovered and relaunched to provide forty-eight different float tracks. A report by Dow, D. L., H. T. Rossby, and S. R. Signorini (1977) describes these data in detail. (Floats that provided less than a week of data were not included in the plot section.)

SOFAR Float Pilot Studies (PRE-LDE): 1975-1981

The SOFAR float pilot study data has been relabelled PRE-LDE for easier identification. These exploratory studies tested the design and performance of the floats used. The floats were launched over many years on many different cruises with numerous scientific objectives. Tracking accuracy was not of primary importance, since the data was expected to show wide area geographical properties of Lagrangian motion. Twenty floats were deployed - six at 2000 m depth and fourteen at 700 m depth. A technical report by O'Gara, R. M., H. T. Rossby, and D. L. Spain (1982) describes these data.

Local Dynamics Experiment (LDE): 1978-1979

The primary purpose of LDE was to explore the dynamics of the mesoscale eddy field in a region more energetic than MODE. A secondary purpose was to observe the interaction between mesoscale eddies and the mean flow. Forty SOFAR floats were deployed - twenty at 1300 dbars and twenty at 700 dbars - in

a $2^\circ \times 2^\circ$ area centered at 31N, 70W. Five "post-LDE" floats are also included. Spain, D. L., R. M. O'Gara, and H. T. Rossby (1980) described these data in a technical report.

The data presented here are organized by experiment. For each experiment we show a composite trajectory plot of all floats at a particular depth (Figures 1 - 5). For each of the 102 floats, there is (1) an individual trajectory plot, (2) a stick plot of velocity, (3) a time series plot of the east and north components of velocity, (4) an overplot of temperature versus time and, for the LDE floats, (5) a time series plot of vertical velocity and vertical displacement. These last two types of plots appear only for those floats that successfully measured temperature and pressure. Floats that provided less than a week of data were not included in the plot section. Tables of statistics give information summarizing the data from each float.

In the archive and throughout this report the following naming convention is used to identify the float files. A float name is up to six characters long and is made up of three parts:

1. A two letter code to indicate the experiment.
 MO = MODE
 PL = PRE-LDE
 LD = LDE
2. A one- to three-digit identifier assigned to the float before its launch.
3. A single letter suffix [A, B, C, ... Z] that was added to the file name if the float record was broken into sections due to gaps in the data.

An example is float name PL13B - experiment PRE-LDE, Float 13, Section B.

II. Float Tracking and Data Processing

Data processing took place in two stages. Float tracking and initial data processing took place at the University of Rhode Island under H. T.

Rossby's supervision. The float tracks then underwent final processing at Woods Hole Oceanographic Institution. Both stages of processing are described briefly here.

a. Tracking

The tracking procedure used for these data was described in detail by Spain, O'Gara, and Rossby (1980). It consisted of extracting the signals from the listening station records, and then tracking individual floats in two steps.

1. The three listening stations that best surrounded a float geographically were used to obtain an initial offset and drift rate for the float's clock.
2. The clock and sound speed corrections were applied to the signals from the best pair of receivers, and, using circular (range-range) navigation, positions were calculated.

During tracking, the three daily times of arrival (TOA) of each SOFAR float's acoustic signal were low passed filtered and smoothed using a least squares polynomial fit averaged over eleven observations ($3 \frac{2}{3}$ days) which corresponds to a half power of 1.5 days. The float trajectories were also smoothed with a filter similar to that used on the TOAs.

A tape containing individual float trajectories of three positions per day was sent to Woods Hole Oceanographic Institution (WHOI), and these data were used for our subsequent processing. The data included smoothed velocities and forty-eight hour averages of temperature and pressure for each position. In addition, temperature and pressure telemetered from the float on alternate days, were recorded with the positions for those days.

b. Final Data Processing

Editing and final processing were performed at Woods Hole Oceanographic Institution. Tests on various methods of editing, subsampling, and filtering the data had been done during the processing of the GUSREX (Gulf Stream

Recirculation Experiment) data to determine the best processing sequence. The same process was used for these floats, with occasional special treatment given to floats with tracking problems.

Only the first of the three daily positions was used here since the smoothing already had eliminated frequencies higher than a day (inertial and tidal). Velocity components were derived from the daily fixes using a cubic spline curve fit. This method produced velocities that are different from the URI velocities which are smoothed independently of the positions. The forty-eight hour average temperature and pressure, rather than the smoothed temperature and pressure, were also selected.

The data was reformatted into VAX ASCII files in FLOATER format (see Appendix A). East and North components of velocity, direction and speed, and first differences between consecutive temperature and pressure values were calculated. Listings of these derived values were produced along with preliminary trajectory and time series plots. These were reviewed to identify erroneous values. Radical changes in temperature that were not accompanied by a similar change in pressure (or vice versa) were presumed to indicate an erroneous value. Temperature and pressure values that drifted outside the range of the sensors were also removed from the data and flagged as erroneous. Gaps of less than ten days duration in position, temperature, and pressure were then linearly interpolated. Daily values of temperature and pressure were interpolated from the bi-daily values recorded. Files with gaps of greater than ten days in position were broken into sub-files and labelled A, B, C, etc. Temperature and pressure values that were not associated with a position were deleted. If a file had a large gap (> thirty days) that was interrupted by a few days of good data, these were omitted. These series were plotted and reviewed once again for incongruities. Finally, a cubic spline was fitted to the time series of east and north components of position, and velocity components were calculated to coincide with the positions.

III. Calculation of Vertical Velocity

Vertical velocity of water was calculated from the float data using the following temperature equation:

$$\frac{\delta T_n}{\delta t} + w \frac{\overline{\delta T}}{\delta z} = 0 \quad \text{or} \quad w = \frac{-\frac{\delta T_n}{\delta t}}{\frac{\overline{\delta T}}{\delta z}}$$

where

w = vertical velocity of water

$\frac{\delta T_n}{\delta t}$ = time rate of change of temperature at the nominal pressure level (n)

$\frac{\overline{\delta T}}{\delta z}$ = mean temperature gradient

The nominal pressure levels for the floats are: 700 m, 1300 m, 1500 m, and 2000 m. Values for $\delta T/\delta z$ were calculated using data from the Climatological Atlas of the World Ocean by Levitus (1982) with $\delta z = 200$ m, e.g.

$$\frac{\overline{\delta T}}{\delta z_{700 \text{ m}}} = \frac{T_{600} - T_{800}}{200 \text{ m}}$$

The Levitus Atlas provided $1^\circ \times 1^\circ$ resolution, and $\delta T/\delta z$ for a particular location was interpolated. At locations where there were no values for the mean temperature gradient (i.e., near coasts) the value of the previous (in time) gradient was used in the calculations. Actual conditions encountered by a float could have a $\delta T/\delta z$ significantly different from the gradient given by the Levitus Atlas data and thus calculated vertical water velocities could be in error.

Temperature was corrected to the nominal pressure level using:

$$T_n = T_o + (P_o - P_n) \frac{\delta T}{\delta z}$$

T_o = observed temperature by a float

P_o = observed pressure by a float

P_n = nominal pressure level

The time rate of change was then calculated as the first difference

$$\frac{\delta T_{n(i)}}{\delta t} = \frac{T_{n(i+1)} - T_{n(i-1)}}{2\Delta t} \quad i = 2, 3, 4 \dots$$

The float data had been smoothed to one measurement per day. If pressure or temperature was missing, then vertical velocities and vertical displacements could not be calculated.

SOFAR floats are nearly isobaric rather than isopycnic, so a float track is not an exact water particle path. Variations in measured temperature and pressure suggest that floats in the thermocline move vertically about one third of the deflection of the thermocline. For example, if the thermocline were to descend about 300 m, the float would descend about 100 m (depending on the actual vertical temperature and density gradients). The 2000 m floats remain more nearly isobaric because the vertical temperature and density gradients are much weaker at this depth.

IV. Data Presentations

a. Composite Trajectories

Composite trajectories of all floats at a particular depth are presented for each experiment (Figures 1 - 5). Arrows are drawn every thirty days. The map is a mercator projection.

b. Float Statistics

Tables 1 - 3 give basic statistics for each FLOATER format file. A float may have more than one entry in the table, indicating that the file has been broken into pieces due to gaps. The table gives start and stop times in calendar and truncated Julian day, first position, last position, nominal depth, duration in days, initial and average temperature, and initial and average pressure--for each section of the file. In the last column, the float lifetimes (in days) are given. This number represents the time between launch and death or retrieval. It therefore appears only with the last subfile for a particular float.

c. Individual Float Plots

A trajectory plot and a group of time series plots are presented for each float in Appendix B. The order of the time series plots is stick diagram, u and v velocity component overplot, vertical velocity and vertical

displacement overplot, temperature and pressure overplot (where data are available). The plots were created for this section with the objective of best presenting the data for a particular float, not for comparison between floats. For the time series plots, a common scale has been used for the time axis, but the y axis varies for each float according to the minima and maxima of the variable plotted. Two hundred days of data were plotted on each page. Float files of lengths greater than 200 days were continued on subsequent pages. The time axis is annotated with the last four digits of the Julian day and with calendar months. Refer to the conversion chart (Table 4) to convert Julian day to calendar day. Data points are marked daily.

A trajectory for each float is plotted on a linear projection with latitude and longitude scales adjusted to create a page-size plot. Open circles denote the first float position. Small dots mark the daily positions, large dots the tenth day, and every twentieth day is annotated with the last four digits of the Julian date.

Stick plots show velocity for every day of data. The stick length indicates the speed in cm s^{-1} , and the angle the stick makes with the horizontal axis represents the direction. North is toward the top of the page. The east and north components of velocity can be seen separately in overplots plotted to the same scale as the stick plots.

Vertical velocity and vertical displacement are presented for floats that successfully measured temperature and pressure. Vertical velocity is plotted in units of meters per day. Integrated vertical velocity, or vertical displacement, is plotted in meters.

Temperature and pressure are overplotted, temperature on a centigrade scale marked on the left y axis, pressure in decibars marked on the right y axis. Pressure is plotted with deeper values at the bottom of the scale.

ACKNOWLEDGEMENTS

This report was made possible with funds provided by the National Science Foundation. Thomas Rossby of the University of Rhode Island provided the data. Diane Spain and Renee O'Gara of the University of Rhode Island did the initial processing of the float tracks. Roger Goldsmith developed many of the programs for analyzing the float data. Brechner Owens, James Price, and Philip Richardson oversaw the data processing at Woods Hole Oceanographic Institution and the production of the data report. Maureen Kennelly calculated vertical velocity and vertical displacement. Chan Hilliard, Chris Wooding, Catherine Herry, and Eileen Deary all contributed to the completion of this data report and deserve thanks.

REFERENCES

- Dow, D. L., H. T. Rossby, and S. R. Signorini, 1977. SOFAR floats in MODE. Final Report of Float Trajectory Data. University of Rhode Island Graduate School of Oceanography, Technical Report 77-3, 108 pp.
- Kennelly, M. A. and T. K. McKee, 1984. Gulf Stream Recirculation Experiment (GUSREX) and Line Experiment SOFAR Float Data 1980-1982. Woods Hole Oceanographic Institution, Technical Report 84-45, 444 pp.
- Levitus, S., 1982. Climatological Atlas of the World Ocean. NOAA Professional Paper 13.
- O'Gara, R. M., H. T. Rossby, and D. L. Spain, 1982. SOFAR Float Pilot Studies in the western North Atlantic 1975 - 1981 Data Report. University of Rhode Island Graduate School of Oceanography, Technical Report 82-3, 160 pp.
- Richardson, P. L., J. J. Wheat, and D. Bennett, 1979. Free-Drifting Buoy Trajectories in the Gulf Stream System 1975-1978. Woods Hole Oceanographic Institution, Technical Report 79-4, 159 pp.
- Spain, D. L., R. M. O'Gara, and H. T. Rossby, 1980. SOFAR float data report of the POLYMODE Local Dynamics Experiment. University of Rhode Island Graduate School of Oceanography, Technical Report 80-1, 200 pp.

Figure 1: MODE floats at a nominal depth of 1500 m. Arrows mark every 30 days for Figures 1 through 5.

Figure 2: PRE-LDE floats at a nominal depth of 700 m.

Figure 3: PRE-LDE floats at a nominal depth of 2000 m.

Figure 4: LDE floats at a nominal depth of 700 m.

Figure 5: LDE floats at a nominal depth of 1300 to 1500 m.

TABLE 1

EXPERIMENT	FLOAT	START		STOP		MODE		NOMINAL	NO.	FLOAT
		yymmdd	julian	yymmdd	julian	FIRST	LAST			
						POSITION	POSITION	DEPTH	DAYS	LIFE(days)
MODE	2	720928	[1589]	721224	[1676]	26.7 -69.1	26.3 -70.0	1500	88	88
MODE	3	720928	[1589]	721117	[1639]	26.7 -69.0	26.6 -69.2	1500	51	51
MODE	4	721120	[1642]	721121	[1643]	27.6 -68.3	27.6 -68.3	1500	2	2
MODE	5A	721124	[1646]	730219	[1733]	27.9 -68.0	28.6 -67.1	1500	88	---
MODE	5B	730524	[1827]	730730	[1894]	28.4 -68.1	28.0 -67.0	1500	68	249
MODE	6	721119	[1641]	721130	[1652]	28.0 -68.0	28.3 -67.6	1500	12	12
MODE	7	721119	[1641]	721122	[1644]	27.8 -68.2	27.8 -68.1	1500	4	4
MODE	8	721124	[1646]	730314	[1756]	28.2 -68.0	28.2 -67.1	1500	111	111
MODE	9	730315	[1757]	730407	[1780]	27.7 -71.0	27.6 -71.3	1500	24	24
MODE	10	730318	[1760]	730602	[1836]	28.8 -70.6	29.1 -70.5	1500	77	77
MODE	11	730318	[1760]	730604	[1838]	29.3 -69.7	28.7 -69.5	1300	79	79
MODE	12	730315	[1757]	730317	[1759]	28.8 -68.6	28.7 -68.7	1500	3	3
MODE	13	730318	[1760]	730409	[1782]	28.1 -69.9	28.8 -70.3	1500	23	23
MODE	14	730315	[1757]	730316	[1758]	26.9 -70.2	26.9 -70.2	1500	2	2
MODE	15	730318	[1760]	730505	[1808]	27.2 -69.2	27.1 -70.8	1500	49	49
MODE	16	730320	[1762]	730613	[1847]	27.6 -68.5	29.0 -69.1	1500	86	86
MODE	17	730320	[1762]	730411	[1784]	26.8 -70.2	26.5 -70.0	1500	23	23
MODE	18	730325	[1767]	730327	[1769]	28.7 -68.5	28.7 -68.5	1800	3	3
MODE	19	730407	[1780]	730717	[1881]	27.7 -70.1	26.6 -71.7	1500	102	102
MODE	20	730407	[1780]	730610	[1844]	28.1 -70.1	27.8 -69.9	1500	65	65

TABLE 1, cont.

EXPERIMENT FLOAT		START		STOP		MODE		NOMINAL DEPTH	NO. DAYS	FLOAT LIFE(days)
		yymmdd	Julian	yymmdd	Julian	FIRST POSITION	LAST POSITION			
MODE	22	730408	[1781]	730430	[1803]	28.0 -69.3	27.7 -69.6	1500	23	23
MODE	23	730408	[1781]	730414	[1787]	28.0 -69.6	27.9 -69.8	1500	7	7
MODE	24	730408	[1781]	730416	[1789]	28.0 -69.2	27.8 -69.3	1500	9	9
MODE	25	730410	[1783]	730414	[1787]	28.2 -68.5	28.3 -68.5	1500	5	5
MODE	26	730411	[1784]	730417	[1790]	28.5 -69.8	28.6 -69.9	1500	7	7
MODE	27	730414	[1787]	730605	[1839]	26.4 -69.9	25.1 -69.8	1500	53	53
MODE	28	730420	[1793]	730421	[1794]	26.9 -68.9	27.0 -68.9	1500	2	2
MODE	29	730422	[1795]	730603	[1837]	28.4 -68.6	28.9 -69.2	1500	43	43
MODE	30	730423	[1796]	730531	[1834]	27.6 -69.5	27.7 -70.7	1500	39	39
MODE	31	730423	[1796]	731023	[1979]	28.6 -70.1	29.3 -73.3	1500	184	184
MODE	32	730424	[1797]	730610	[1844]	27.6 -71.4	28.0 -72.0	1500	48	48
MODE	33	730504	[1807]	730609	[1843]	27.2 -68.9	27.1 -68.9	1500	37	37
MODE	34	730530	[1833]	730629	[1863]	28.0 -69.2	27.7 -69.0	1500	31	31
MODE	35	730531	[1834]	740527	[2195]	27.5 -69.5	23.3 -72.9	1500	362	362
MODE	36	730531	[1834]	740114	[2062]	27.7 -70.0	28.4 -72.6	1500	229	229
MODE	37A	730601	[1835]	751225	[2772]	28.1 -70.2	26.1 -76.0	1500	938	---
MODE	37B	760112	[2790]	760331	[2869]	24.7 -75.0	26.2 -75.7	1500	80	---
MODE	37C	760417	[2886]	760521	[2920]	26.4 -75.9	26.2 -76.3	1500	35	1086
MODE	38	730603	[1837]	730703	[1867]	29.1 -70.5	28.2 -70.0	1500	31	31
MODE	39	730605	[1839]	750817	[2642]	28.7 -69.5	25.7 -74.5	1500	804	8041

TABLE 1, cont.

EXPERIMENT	FLOAT	START		STOP		MODE		NOMINAL	NO.	FLOAT
		yyymmdd	Julian	yyymmdd	Julian	FIRST	LAST			
						POSITION	POSITION	DEPTH	DAYS	LIFE(days)
MODE	40	730607	[1841]	731030	[1986]	27.7 -68.6	28.1 -68.2	1500	146	146
MODE	41A	730610	[1844]	740614	[2213]	27.1 -68.9	23.8 -73.5	1500	370	---
MODE	41B	740905	[2296]	750209	[2453]	24.3 -74.1	23.7 -73.0	1500	158	610
MODE	42	730611	[1845]	730626	[1860]	28.0 -72.0	27.9 -72.4	1500	16	16
MODE	43	730614	[1848]	730730	[1894]	29.0 -69.2	29.1 -71.1	1500	47	47
MODE	44A	730618	[1852]	740307	[2114]	27.2 -70.0	22.4 -69.7	1500	263	---
MODE	44B	740321	[2128]	740328	[2135]	22.2 -70.0	22.1 -70.0	1500	8	---
MODE	44C	740415	[2153]	740430	[2168]	22.0 -69.7	21.8 -69.4	1500	16	---
MODE	44D	740617	[2216]	741026	[2347]	21.8 -69.2	22.1 -70.4	1500	132	495
MODE	45	730704	[1868]	760608	[2938]	28.1 -70.0	27.3 -69.1	1500	1071	1071
MODE	46A	730708	[1872]	750529	[2562]	28.1 -69.6	26.3 -76.5	1500	721	---
MODE	46B	750618	[2582]	750628	[2592]	24.6 -74.5	23.5 -73.1	1500	11	---
MODE	46C	750930	[2686]	751114	[2731]	21.8 -70.0	21.3 -70.1	1500	46	860
MODE	47	730708	[1872]	740412	[2150]	27.3 -69.5	21.9 -71.1	1500	279	279
MODE	48	730711	[1875]	740629	[2228]	28.4 -69.0	23.6 -73.1	1500	354	354
MODE	49	740419	[2157]	760621	[2951]	28.2 -69.8	26.4 -65.0	1500	795	7951

TABLE 2

PRE-LDE

EXPERIMENT	FLOAT	START yyymmdd	Julian	STOP yyymmdd	Julian	FIRST POSITION	LAST POSITION	NOMINAL DEPTH	NO. DAYS	INIT. TEMP.	AVE. TEMP.	INIT. PRES.	AVE. PRES.	FLOAT LIFE(days)
PRE LDE	1A	751001	[2687]	751018	[2704]	31.2 -62.7	31.3 -63.3	2000	18	----	----	----	----	----
PRE LDE	1B	751030	[2716]	751221	[2768]	31.5 -63.6	32.0 -65.4	2000	53	----	----	----	----	----
PRE LDE	1C	760210	[2819]	760510	[2909]	33.0 -67.1	32.7 -68.1	2000	91	----	----	----	----	----
PRE LDE	1D	760601	[2931]	770203	[3178]	33.3 -67.8	29.6 -70.8	2000	248	----	----	----	----	----
PRE LDE	1E	770215	[3190]	780411	[3610]	29.4 -71.5	27.8 -72.3	2000	421	3.9	3.9	----	----	----
PRE LDE	1F	780509	[3638]	781215	[3858]	27.5 -72.4	30.5 -73.5	2000	221	3.7	3.7	----	----	1172
PRE LDE	6A	760304	[2842]	760708	[2968]	24.0 -62.0	24.2 -55.6	700	127	10.6	11.6	732.	704.	----
PRE LDE	6B	760809	[3000]	761202	[3115]	24.7 -54.8	22.5 -49.5	700	116	11.4	10.8	697.	699.	274
PRE LDE	7A	760306	[2844]	770125	[3169]	24.2 -62.0	23.7 -59.8	2000	326	3.6	3.6	2048.	2002.	----
PRE LDE	7B	770218	[3193]	780428	[3627]	23.6 -59.4	23.0 -64.8	2000	435	3.5	3.5	2000.	2000.	786
PRE LDE	8A	760306	[2844]	760701	[2961]	24.2 -62.1	23.4 -63.5	2000	118	----	----	2120.	2041.	----
PRE LDE	8B	760910	[3032]	770124	[3168]	23.3 -61.7	23.5 -60.8	2000	137	----	----	1999.	1999.	----
PRE LDE	8C	770225	[3200]	770317	[3220]	23.4 -59.8	23.6 -60.0	2000	21	----	----	2000.	1999.	----
PRE LDE	8D	770402	[3236]	711015	[3432]	23.7 -60.5	23.2 -61.4	2000	197	4.0	4.0	2000.	1999.	197
PRE LDE	8E	771202	[3480]	780420	[3619]	23.6 -61.4	22.7 -64.1	2000	140	3.9	3.9	1993.	1994.	140
PRE LDE	8F	780516	[3645]	780621	[3681]	22.2 -65.0	22.4 -66.1	2000	37	4.0	4.0	1994.	1999.	37
PRE LDE	8G	780703	[3693]	781104	[3817]	22.1 -66.5	22.1 -68.1	2000	125	----	----	1999.	1999.	125
PRE LDE	8H	781126	[3839]	781213	[3856]	21.5 -68.9	22.4 -69.7	2000	18	----	----	----	----	18
PRE LDE	9A	760302	[2840]	760621	[2951]	24.1 -62.1	22.9 -57.8	700	112	11.1	11.9	764.	713.	----
PRE LDE	9B	760805	[2996]	770121	[3165]	23.9 -57.3	21.9 -57.5	700	170	11.7	10.8	700.	699.	----
PRE LDE	9C	770226	[3201]	780414	[3613]	20.9 -58.3	18.9 -59.0	700	413	10.2	10.1	698.	699.	----
PRE LDE	9D	780519	[3648]	781025	[3807]	18.3 -58.8	18.5 -59.0	700	160	----	----	698.	699.	----
PRE LDE	9E	790504	[3998]	790830	[4116]	19.7 -60.8	22.5 -62.5	700	119	----	----	699.	699.	----

TABLE 2,cont.

EXPERIMENT	FLOAT	PRE-LDE		FIRST POSITION	LAST POSITION	NOMINAL DEPTH	NO. DAYS	INIT. TEMP.	AVE. TEMP.	INIT. PRES.	AVE. PRES.	FLOAT LIFE(days)
		START yymmdd	STOP julian									
PRE LDE	9F	800418 [4348]	800813 [4465]	20.2 -66.5	19.7 -68.6	700	118	----	----	699.	699.	----
PRE LDE	9G	800830 [4482]	801004 [4517]	20.3 -69.5	20.7 -69.7	700	36	----	----	699.	699.	1678
PRE LDE	10A	760307 [2845]	760311 [2849]	24.0 -62.1	24.0 -62.2	2000	5	----	----	2055.	2052.	----
PRE LDE	10B	760430 [2899]	760602 [2932]	23.6 -63.5	23.3 -63.8	2000	34	----	----	1996.	1999.	----
PRE LDE	10C	760629 [2959]	760709 [2969]	23.4 -63.6	23.5 -63.4	2000	11	----	----	1999.	1999.	----
PRE LDE	10D	760910 [3032]	761031 [3083]	23.3 -61.7	23.4 -62.4	2000	52	----	----	1999.	2000.	----
PRE LDE	10E	761115 [3098]	770120 [3164]	23.2 -62.5	23.7 -60.3	2000	67	----	----	2000.	1999.	----
PRE LDE	10F	770227 [3202]	770310 [3213]	23.9 -59.9	24.0 -60.1	2000	12	----	----	2000.	2000.	----
PRE LDE	10G	770403 [3237]	770411 [3245]	24.3 -60.9	24.3 -61.2	2000	9	----	----	2000.	2000.	----
PRE LDE	10H	770425 [3259]	770526 [3290]	24.1 -61.6	23.7 -61.5	2000	32	----	----	2000.	2000.	----
PRE LDE	10I	770606 [3301]	770821 [3377]	23.8 -61.2	22.7 -61.2	2000	77	----	----	2000.	2000.	----
PRE LDE	10J	771222 [3500]	780114 [3523]	24.0 -62.7	23.5 -62.7	2000	24	----	----	2000.	2000.	----
PRE LDE	10K	780218 [3558]	780308 [3576]	23.4 -63.8	23.6 -64.7	2000	19	----	----	2000.	2000.	732
PRE LDE	11A	761014 [3066]	761204 [3117]	24.3 -69.5	22.4 -71.8	700	52	----	----	858.	858.	----
PRE LDE	11B	770217 [3192]	781026 [3808]	23.5 -71.8	21.6 -65.9	700	617	----	----	846.	813.	743
PRE LDE	12A	761004 [3056]	761207 [3120]	24.4 -69.0	23.1 -72.6	700	65	11.2	10.4	----	----	----
PRE LDE	12B	77Q306 [3209]	770608 [3303]	24.6 -74.4	22.0 -72.4	700	95	6.5	6.8	----	----	----
PRE LDE	12C	770831 [3387]	780211 [3551]	22.6 -72.2	22.8 -74.2	700	165	7.0	6.7	----	----	----
PRE LDE	12D	810116 [4621]	810713 [4799]	19.6 -68.7	21.3 -67.9	700	179	5.4	5.9	----	----	1744
PRE LDE	13A	761001 [3053]	770126 [3170]	25.2 -69.2	23.8 -64.1	700	118	12.0	11.9	713.	700.	----
PRE LDE	13B	770217 [3192]	770320 [3223]	23.9 -63.3	24.6 -63.1	700	32	11.8	11.5	697.	696.	171

TABLE 2, cont.

EXPERIMENT	FLOAT	PRE-LDE		FIRST POSITION	LAST POSITION	NOMINAL DEPTH	NO. DAYS	INIT. TEMP.	AVE. TEMP.	INIT. PRES.	AVE. PRES.	FLOAT LIFE(days)
		START yymmdd	STOP Julian									
PRE LDE	14	761004 [3056]	770913 [3400]	24.7 -68.9	22.6 -72.2	700	345	13.4	11.5	668.	688.	345
PRE LDE	15	760930 [3052]	761014 [3066]	25.5 -70.0	25.0 -69.1	700	15	11.9	11.8	715.	704.	15
PRE LDE	16	761005 [3057]	761102 [3085]	24.8 -70.5	23.6 -69.7	700	29	----	----	728.	712.	29
PRE LDE	21A	770124 [3168]	770820 [3376]	27.3 -75.7	27.0 -77.2	700	209	5.5	6.4	900.	900.	----
PRE LDE	21B	770918 [3405]	771008 [3425]	26.6 -76.9	26.1 -77.1	700	21	7.7	8.1	866.	856.	----
PRE LDE	21C	771115 [3463]	780123 [3532]	24.5 -74.1	23.1 -72.4	700	70	9.0	10.2	792.	756.	----
PRE LDE	21D	781015 [3797]	781027 [3809]	23.9 -75.2	24.4 -74.9	700	13	10.6	10.6	695.	695.	----
PRE LDE	21E	781110 [3823]	790126 [3900]	24.6 -73.7	25.4 -75.9	700	78	12.0	12.2	700.	698.	----
PRE LDE	21F	790228 [3933]	790814 [4100]	27.3 -74.4	29.7 -70.6	700	168	10.1	12.0	682.	697.	----
PRE LDE	21G	800419 [4349]	800927 [4510]	28.1 -69.6	26.8 -77.1	700	162	12.3	12.5	711.	726.	----
PRE LDE	21H	801203 [4577]	810729 [4815]	33.3 -75.6	32.8 -61.5	700	239	7.8	10.3	692.	760.	1648
PRE LDE	22	770127 [3171]	770921 [3408]	26.5 -72.9	25.0 -69.2	700	238	10.6	11.8	724.	700.	238
PRE LDE	24	770408 [3242]	770416 [3250]	29.7 -70.0	29.6 -69.9	700	9	----	----	----	----	9
PRE LDE	25	770418 [3252]	790319 [3952]	26.1 -70.1	24.9 -75.7	700	701	12.0	12.5	715.	689.	701
PRE LDE	26A	770417 [3251]	771003 [3420]	29.5 -70.1	31.4 -74.4	700	170	12.5	14.3	763.	702.	----
PRE LDE	26B	780509 [3638]	781019 [3801]	32.1 -70.4	38.5 -66.7	700	164	15.9	15.3	670.	679.	551
PRE LDE	27	770406 [3240]	781027 [3809]	30.0 -70.0	24.6 -74.8	2000	570	3.6	3.7	2100.	2006.	570
PRE LDE	29	770415 [3249]	791018 [4165]	29.5 -69.9	26.3 -67.8	2000	917	3.6	3.6	2101.	2006.	917
PRE LDE	30	771002 [3419]	781230 [3873]	29.2 -70.0	31.2 -76.5	700	455	14.0	13.9	638.	653.	455

TABLE 3.

EXPERIMENT FLOAT		LDE		FIRST POSITION	LAST POSITION	NOMINAL DEPTH	NO. DAYS	INIT. TEMP.	AVE. TEMP.	INIT. PRES.	AVE. PRES.	FLOAT LIFE(days)
		START yyymmdd Julian	STOP yyymmdd Julian									
LDE	32	780516 [3645]	780727 [3717]	31.0 -69.3	29.8 -70.6	1460	73	0.0	0.0	0.	0.	73
LDE	33	780515 [3644]	780521 [3650]	31.1 -68.6	31.2 -68.4	1460	7	4.5	4.3	1459.	1456.	7
LDE	34	780515 [3644]	780725 [3715]	30.7 -68.9	28.9 -73.3	1400	72	4.5	4.7	1430.	1396.	72
LDE	35	780515 [3644]	780725 [3715]	30.4 -69.2	28.9 -72.7	1400	72	4.5	4.6	1449.	1404.	72
LDE	36	780514 [3643]	780928 [3780]	30.4 -69.8	31.9 -70.4	1500	138	----	----	----	----	138
LDE	37	780511 [3640]	781101 [3814]	31.1 -70.2	30.0 -73.8	1330	175	4.8	4.9	1380.	1318.	175
LDE	38	780511 [3640]	791012 [4159]	31.4 -70.1	38.4 -61.4	1350	520	4.7	5.0	1420.	1313.	520
LDE	39	780511 [3640]	781213 [3856]	31.8 -69.9	37.7 -71.4	1330	217	5.1	5.3	1364.	1306.	217
LDE	40	780511 [3640]	781024 [3806]	31.8 -69.2	32.3 -70.9	1300	167	5.0	5.0	1329.	1302.	167
LDE	41	780512 [3641]	790326 [3959]	31.5 -69.5	31.2 -70.6	1350	319	4.7	4.8	1387.	1345.	319
LDE	42	780511 [3640]	781022 [3804]	31.2 -69.6	32.5 -72.1	1300	165	5.1	4.9	1268.	1296.	165
LDE	43	780512 [3641]	781009 [3791]	31.1 -69.9	31.9 -70.9	1400	151	4.8	4.5	1357.	1323.	151
LDE	44	780512 [3641]	781024 [3806]	30.7 -70.1	32.4 -71.4	1300	166	5.1	5.0	1323.	1301.	166
LDE	45	780512 [3641]	781102 [3815]	30.9 -69.7	30.8 -72.1	1360	175	4.6	4.8	1426.	1343.	175
LDE	46	780512 [3641]	780729 [3719]	31.1 -69.5	31.3 -70.0	1300	79	4.8	4.8	1353.	1311.	79
LDE	47	780512 [3641]	781022 [3804]	31.2 -69.3	32.8 -72.0	1300	164	4.8	4.9	1354.	1308.	164
LDE	48	780513 [3642]	790518 [4012]	31.4 -68.9	28.5 -71.2	1300	371	5.3	5.0	1277.	1300.	371
LDE	50	780513 [3642]	780728 [3718]	30.9 -69.4	29.7 -72.5	1300	77	4.8	4.8	1299.	1299.	77
LDE	51	780515 [3644]	780724 [3714]	30.8 -69.4	28.9 -72.6	1250	71	5.1	5.0	1244.	1261.	71
LDE	52	780513 [3642]	780726 [3716]	31.0 -69.5	28.0 -72.7	700	75	11.9	12.2	761.	748.	75
LDE	53	780512 [3641]	780724 [3714]	31.0 -69.7	28.0 -73.6	700	74	10.5	11.5	842.	791.	74

TABLE 3, Con't.

		LDE												
EXPERIMENT	FLOAT	START yyymmdd julian	STOP yyymmdd julian	FIRST POSITION	LAST POSITION	NOMINAL DEPTH	NO. DAYS	INIT. TEMP.	AVE. TEMP.	INIT. PRES.	AVE. PRES.	FLOAT LIFE(days)		
LDE	54	780512 [3641]	790830 [4116]	31.1 -69.9	32.3 -60.4	700	476	12.0	14.6	769.	696.	476		
LDE	55	780512 [3641]	790707 [4062]	31.2 -69.7	34.9 -69.3	700	422	11.2	14.0	793.	713.	422		
LDE	56	780511 [3640]	780717 [3707]	31.5 -69.5	31.6 -74.4	700	68	12.7	13.6	730.	705.	68		
LDE	57	780724 [3714]	781111 [3824]	31.4 -68.9	34.0 -67.9	700	111	13.1	13.2	670.	686.	111		
LDE	58	780514 [3643]	781115 [3828]	31.0 -69.2	32.1 -72.3	700	186	----	----	----	----	186		
LDE	59A	780514 [3643]	790804 [4090]	30.7 -69.5	36.7 -60.6	700	448	13.0	12.0	724.	687.	---		
LDE	59B	790826 [4112]	791006 [4153]	39.3 -60.7	36.8 -49.1	700	42	10.9	11.5	678.	690.	511		
LDE	60	780513 [3642]	781104 [3817]	31.1 -69.1	27.3 -70.5	700	176	12.5	12.6	758.	703.	176		
LDE	61	780512 [3641]	780729 [3719]	31.3 -69.4	30.9 -73.9	700	79	13.6	14.6	690.	696.	79		
LDE	62	780724 [3714]	790323 [3956]	31.4 -69.4	29.8 -76.6	700	243	11.8	12.2	718.	750.	243		
LDE	63	780723 [3713]	781117 [3830]	31.4 -69.7	29.7 -77.0	700	118	11.6	12.8	727.	702.	118		
LDE	64A	780724 [3714]	790610 [4035]	31.6 -69.3	31.3 -65.1	700	322	13.2	13.2	674.	696.	322		
LDE	64B	790625 [4050]	791017 [4164]	31.9 -65.7	31.9 -71.3	700	115	14.0	13.7	713.	705.	451		
LDE	65	780724 [3714]	781110 [3823]	31.1 -69.4	34.3 -68.0	700	110	12.5	13.1	680.	700.	110		
LDE	66	780802 [3723]	781110 [3823]	31.0 -69.4	33.8 -67.4	700	101	----	----	737.	703.	101		
LDE	67	780803 [3724]	781108 [3821]	31.1 -69.0	32.6 -62.2	700	98	13.7	13.0	689.	691.	98		
LDE	68	780802 [3723]	781025 [3807]	31.0 -69.8	32.7 -66.0	700	85	12.2	13.3	702.	701.	85		
LDE	69	780803 [3724]	781106 [3819]	31.3 -69.6	31.3 -64.8	700	96	12.6	13.2	688.	700.	96		
LDE	84	780801 [3722]	781113 [3826]	31.5 -69.9	34.5 -73.9	700	105	12.8	12.6	699.	699.	105		
LDE	85	780731 [3721]	781104 [3817]	31.6 -69.8	32.3 -71.7	1300	97	4.8	4.9	1291.	1300.	97		
LDE	86	780801 [3722]	781018 [3800]	31.6 -69.4	30.5 -69.4	1300	79	4.8	5.0	1263.	1279.	79		

TABLE 3, Con't.

EXPERIMENT FLOAT		LDE		FIRST POSITION	LAST POSITION	NOMINAL DEPTH	NO. DAYS	INIT. TEMP.	AVE. TEMP.	INIT. PRES.	AVE. PRES.	FLOAT LIFE(days)
		START yyymmdd julian	STOP yyymmdd julian									
LDE	87	780801 [3722]	781101 [3814]	31.6 -69.4	33.2 -75.4	700	93	13.5	14.1	643.	658.	93
LDE	88	780802 [3723]	781101 [3814]	31.0 -69.3	30.3 -70.7	1300	92	----	----	----	----	92
LDE	89	780801 [3722]	781017 [3799]	31.1 -69.3	30.6 -62.1	700	78	13.5	13.6	664.	674.	78
LDE	90	780802 [3723]	781113 [3826]	30.9 -69.5	32.1 -71.1	1300	104	4.9	4.9	1328.	1304.	104
LDE	91	780802 [3723]	781101 [3814]	31.0 -69.7	30.4 -73.5	1300	92	4.8	5.0	1293.	1299.	921

TABLE 4
 FLOAT DAY NUMBER TO CALENDAR DATE CONVERSION
 1972 - 1981

YEAR	1Jan.	1Feb.	1Mar.	1Apr.	1May	1Jun.	1Jul.	1Aug.	1Sep.	1Oct.	1Nov.	1Dec.
1972	1318	1349	1378	1409	1439	1470	1500	1531	1562	1592	1623	1653
1973	1684	1715	1743	1774	1804	1835	1865	1896	1927	1957	1988	2018
1974	2049	2080	2108	2139	2169	2200	2230	2261	2292	2322	2353	2383
1975	2414	2445	2473	2504	2534	2565	2595	2626	2657	2687	2718	2748
1976	2779	2810	2839	2870	2900	2931	2961	2992	3023	3053	3084	3114
1977	3145	3176	3204	3235	3265	3296	3326	3357	3388	3418	3449	3479
1978	3510	3541	3569	3600	3630	3661	3691	3722	3753	3783	3814	3844
1979	3875	3906	3934	3965	3995	4026	4056	4087	4118	4148	4179	4209
1980	4240	4271	4300	4331	4361	4392	4422	4453	4484	4514	4545	4575
1981	4606	4637	4665	4696	4726	4757	4787	4818	4849	4879	4910	4940

APPENDIX A

FLOATER FORMAT AND FILE ORGANIZATION

FLOATER format files consist of a series of ASCII records, one for each observation, that contain time and position information for one or more floats. The basic record consists of an experiment id, a float id, date (yymmdd), time (hhmm), latitude, longitude, validity field, and east and north components of velocity. Each record may also contain up to twenty additional fields to store temperature, pressure, and other recorded or derived values. These are stored in an F9.3 format and are preceded by a single digit alphanumeric parameter code used by FLOATER programs to locate the field. Only those codes recognized by the FLOATER programs may be used, although, in special cases, the user may override FLOATER code assignments. Table 5 lists the parameter code table. To identify gaps in the data, appropriate "missing" data values have been established for latitude, longitude, east, north, and the auxiliary parameters. When encountered by a FLOATER program, these values are excluded from plots or calculations. These are also listed in Table 5.

FLOATER format presently allows for 20 auxiliary fields and a maximum record length of 260 characters on the VAX. On the IBM, it allows for 19 auxiliary fields and a maximum record length of 250 characters. A sample record is shown below. The headings identify the parts of the sample record; they are not part of a file of real data.

EXP	ID	DATE	TIME	LAT.	LON.	VALIDITY	EAST	NORTH	AUX.	FIELDS
-----	----	------	------	------	------	----------	------	-------	------	--------

Sample Record:

SO	SL124	821105	1406	33.932	-69.758	5 1	3.204	7.980T	16.01P	-999.00
----	-------	--------	------	--------	---------	-----	-------	--------	--------	---------

Each field is discussed in detail on the next few pages.

Field	Position	Description
EXPID	001-003	Experiment identifier; character.
source	001-002	This field is used to indicate the source or type of data. The first two (2) characters (001-002) contain a code, such as "CG" for Coast Guard.
active	003-003	The last character of the field (003) contains a character which indicates whether or not the float is still active. If data are still being received from the float or buoy, this field will contain a "T" for TRUE. If the current experiment is no longer active, the field will be blank or contain the character "F" for FALSE. This field is currently in use for drifter buoys only.
BUOYID	004-009	Buoy or float identifier; character. This field contains six (6) character identifiers to be associated with the float. The identifier must be left justified in the field and may not contain any embedded blanks. Trailing blanks are acceptable.
DATE	010-015	Date; integer.
iyear	010-011	The "DATE" field contains the date of the data observation. The date is stored as a year/month/day combination. Only the last two digits of the year are used. Thus October 4, 1981 is stored as 811004. The zero is significant as a place holder.
imonth	012-013	
iday	014-015	

TIME	016-019	Time; integer.
i hour	016-017	The "TIME" field contains the time of the data observation (GMT). The time is stored as an hour/minute combination. The hour component is taken from 00 to 24 hours. Thus, 3:08 p.m. is stored as 1508. The zero is significant as a place holder.
i minute	018-019	
LATITUDE	020-026	Latitude, degrees positive for North; real. This field contains the latitude position of the float at the time of the data observation.
LONGITUDE	027-034	Longitude, degrees positive for East; real. This field contains the longitude position of the float at the time of the data observation.
VALIDITY	035-040	Validity codes; character. This field is to be used for various validity codes. Each character contains a code that gives information pertinent to the category it represents. Presently only 3 of the 6 characters have been assigned categories. They are:
PROCESS	035	Category: Processing Method. Codes: 1 - interpolated 3 - splined 4 - manual 5 - averaged

POSITION

036

Category: Position validity.

This field is used to specify a code for those records that have a quality value associated with the position computation. A drifter buoy position is usually determined by satellite (Richardson, Wheat and Bennett, 1979). Float positions are derived from the signals recorded by Listening Stations (Kennelly and McKee, 1984). There are a number of methods used in computing the position. This field contains a relative qualitative value for the reliability of the measurement. The valid range of values is currently 1 (poor) to 5 (excellent). A blank field or a zero is the default and represents unassigned. Because the code is relative, specific satellite measurements are mapped into the code in a method such as described below:

Codes

ARGOS: -1 observation ignored
0 observation ignored
1 one satellite, two passes;
excellent = 5
2 two satellites, one pass each;
good = 3
3 one satellite, one pass;
poor = 1

FLOATS: 1 heard by > 2 ALSs; RMS range errors > 10 km
 2 heard by 2 ALSs
 3 heard by > 2 ALSs; RMS range errors < 10 km
 4 heard by > 2 ALSs; RMS range errors < 5 km
 5 heard by > 2 ALSs; RMS range errors < 2 km

Velocity 040

Velocity Algorithm

- 1 - backward differencing
- 2 - forward differencing
- 3 - splined
- 4 - Chebyshev
- 5 - averaged

XEAST 041-050

East component of water velocity, cm/sec; real. This and the following field are reserved for storage of the water velocity components. The velocity may be computed in any of a variety of methods; the method used is described in the appropriate validity field.

A westerly direction of the velocity is negative.

YNORTH 051-060

North component of water velocity, cm/sec; real. This field contains the local north component of the water velocity. Velocities to the South are considered negative.

FIELD01	.061-070	Parameter; real.
field02	071-080	The remainder of the record contains various fields of data associated with the instrument and position. (Note that this causes the records to be variable length, although all records should be the same length for a given experiment and float. Missing data is indicated by a code value, obtained from the file "PCODTABLE.DAT". On the IBM, this file is named "PCODTABL.DAT"). See Table 5. Each field is ten (10) characters long. The first character of the field will always contain an indicator of the data field type. The codes are specified in the file "PCODTABLE.DAT". Once the field type has been determined the remainder of the field may be processed accordingly. Nominally the data will be stored in a G9.3 format.

TABLE 5

24 Parameter	Units	Form	Missing
A WIND_SPEED	M/SEC	F9.3	-999.0
B WIND_HEAD	DEGREES	F9.1	-999.0
C VALIDITY		F6.0	0.0
D VERT_DISP	METERS	F9.1	-9999.0
E EAST	CM/SEC	G9.1	-9999.0
F WIND_SP_(H)	M/SEC	F9.1	-999.0
G WIND_VA_(H)	(M/SEC)**2	F9.1	-999.0
H HEADING	DEGREES	G9.1	-999.0
I Reserved		G8.0	
J JULIAN_DAY	DAYS	G9.0	-999.0
K UNSMOOTHED_T	CENTIGRADE	G9.2	-999.0
L WIND_SP_(8)	M/SEC	F9.1	-999.0
M WIND_VA_(8)	(M/SEC)**2	F9.1	-999.0
N NORTH	CM/SEC	G9.1	-9999.0
O Reserved		F9.1	
P PRESSURE	DECIBARS	G9.2	-999.0
Q UNSMOOTHED_P	DECIBARS	G9.2	-999.0
S SALINITY	PPM.	G9.3	-999.0
T TEMPERATURE	CENTIGRADE	G9.2	-999.0
V SPEED	CM/SEC	G9.1	-9999.0
W VERT_VEL	METERS/DAY	F9.4	-999.0
X LONGITUDE	DEGREES	F8.3	-999.0
Y LATITUDE	DEGREES	F7.3	-99.0
Z DEPTH	METERS	F9.3	-999.0

APPENDIX B

INDIVIDUAL FLOAT PLOTS

Colored Pages indicate the beginning of each experiment

MODE 2

MODE 2

MODE 2

MODE 3

MODE 3

39

MODE 3

MODE 5

DECEMBER 1972 JANUARY 1973 FEBRUARY MARCH APRIL MAY JUNE

MODE 5

JULY 1973 AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER

MODE 5

MODE 5

MODE 6

MODE 6

47

MODE 6

DECEMBER 1972 JANUARY 1973 FEBRUARY MARCH APRIL MAY JUNE

MODE 8

MODE 8

MODE 8

MODE 9

52

MODE 9

53

MODE 9

MODE 10

MODE 10

MODE 11

MODE 11

MODE 13

APRIL 1973 MAY JUNE JULY AUGUST SEPTEMBER OCTOBER

MODE 13

MODE 15

MODE 15

65

MODE 15

MODE 16

MODE 16

MODE 17

MODE 17

MODE 19

MAY
1973

JUNE

JULY

AUGUST

SEPTEMBER

OCTOBER

MODE 19

MODE 20

MODE 20

77

MODE 20

MODE 22

MODE 22

MODE 27

MODE 27

83

MODE 27

MODE 29

MODE 29

MODE 29

MODE 30

MODE 30

MODE 30

MODE 31

MODE 31

MODE 31

MODE 32

MODE 32

MAY 1973 JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

MODE 33

MODE 33

MODE 34

MODE 34

MODE 34

JUNE
1973

JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

MODE 35

MODE 35

MODE 35

MODE 36

MODE 36

MODE 36

MODE 36

MODE 37

MODE 37

JULY 1974 AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY 1975

MODE 37

118

SEPTEMBER 1975 OCTOBER NOVEMBER DECEMBER JANUARY 1976 FEBRUARY

MODE 37

MODE 37

JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY
1974

MODE 37

MODE 37

MODE 37

SEPTEMBER 1975 OCTOBER NOVEMBER DECEMBER JANUARY 1976 FEBRUARY

MODE 38

MODE 38

MODE 39

MODE 39

JUNE 1973 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER

MODE 39

MODE 39

MODE 39

MODE 39

MODE 39

JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY
1974

MODE 39

MODE 39

MODE 39

MODE 40

MODE 40

141

MODE 40

DECEMBER

NOVEMBER

OCTOBER

SEPTEMBER

AUGUST

JULY
1972

MODE 41

MODE 41

JULY 1973 AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER

MODE 41

MODE 41

NORTH [o] cm/s

MODE 41

MODE 41

MODE 41

MODE 42

MODE 42

MODE 43

MODE 43

MODE 44

MODE 44

MODE 44

FEBRUARY MARCH APRIL MAY JUNE JULY
1974

MODE 44

MODE 44

MODE 44

MODE 45

MODE 45

JULY 1973	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY
--------------	--------	-----------	---------	----------	----------	---------

MODE 45

MODE 45

MODE 45

MODE 45

OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH
1975			1976

MODE 45

MODE 45

MODE 45 •

AUGUST 1974 SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY 1975 FEBRUARY

MODE 45

MODE 45

MODE 46

MODE 46

AUGUST 1973	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY 1974

MODE 46

MODE 46

MARCH 1975 APRIL MAY JUNE JULY AUGUST SEPTEMBER

MODE 46

MODE 46

NORTH [○] cm/s

EAST [●] cm/s

JANUARY
1974

DECEMBER

NOVEMBER

OCTOBER

SEPTEMBER

AUGUST
1973

MODE 46

MODE 46

MODE 47

MODE 47

192
NORTH [°] cm/s

AUGUST 1973 SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY 1974

MODE 48

MODE 48

MODE 48

MODE 48

FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST
1974

MODE 49

MAY 1974 JUNE JULY AUGUST SEPTEMBER OCTOBER

MODE 49

MODE 49

JUNE 1975 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER

MODE 49

MODE 49

MODE 49

205

MODE 49

PRE LDE 1

PRE LDE 1

OCTOBER 1975 NOVEMBER DECEMBER JANUARY 1976 FEBRUARY MARCH APRIL

PRE LDE 1

PRE LDE 1

NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY
1976 1977

PRE LDE 1

PRE LDE 1

JANUARY FEBRUARY MARCH APRIL MAY JUNE
1978

PRE LDE 1

PRE LDE 1

PRE LDE 1

PRE LDE 1

PRE LDE 1

PRE LDE 1

JANUARY FEBRUARY MARCH APRIL MAY JUNE
1978

PRE LDE 1

221

PRE-LDE 1

NOVEMBER 1976 DECEMBER JANUARY 1977 FEBRUARY MARCH APRIL MAY

PRE-LDE 1

JANUARY 1978 FEBRUARY MARCH APRIL MAY JUNE

PRE-LDE 6

APRIL 1976 MAY JUNE JULY AUGUST SEPTEMBER

PRE-LDE 6

OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL
1976			1977

NORTH [°] cm/s

EAST [°] cm/s

PRE-LDE 6

PRE-LDE 6

PRE-LDE 7

PRE-LDE 7

PRE-LDE 7.

NORTH [°] cm/s

EAST [•] cm/s

239

PRE-LDE 7

MAY 1977 JUNE JULY AUGUST SEPTEMBER OCTOBER

PRE-LDE 7

PRE-LDE 7

APRIL 1070 MAY JUNE JULY AUGUST SEPTEMBER

PRE-LDE 7

PRE-LDE 7

PRE-LDE 7

PRE-LDE 8

PRE LDE 8

PRE LDE 8

OCTOBER 1976 NOVEMBER DECEMBER JANUARY 1977 FEBRUARY MARCH APRIL

PRE LDE 8

PRE LDE 8

NOVEMBER 1977 DECEMBER JANUARY 1978 FEBRUARY MARCH APRIL MAY

PRE LDE 8

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

PRE LDE 8

DECEMBER 1978 JANUARY 1979 FEBRUARY MARCH APRIL MAY JUNE

PRE LDE 8

PRE LDE 8

OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL
1976			1977

PRE LDE 8

PRE LDE 8

PRE LDE 8

PRE LDE 8

PRE LDE 8

PRE LDE 8

PRE LDE 8

PRE LDE 8

PRE LDE 9

APRIL 1976 MAY JUNE JULY AUGUST SEPTEMBER

PRE LDE 9

PRE LDE 9

MAY 1977 JUNE JULY AUGUST SEPTEMBER OCTOBER

PRE LDE 9

PRE LDE 9

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

PRE LDE 9

PRE LDE 9

JULY 1979	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY 1980

PRE LDE 9

JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY
1980

PRE LDE 9

AUGUST 1980	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY 1981	FEBRUARY
----------------	-----------	---------	----------	----------	-----------------	----------

PRE-LDE 9

PRE-LDE 9

277

PRE-LDE 9

PRE-LDE 9

DECEMBER 1978 JANUARY 1979 FEBRUARY MARCH APRIL MAY JUNE

PRE-LDE 9

283

PRE-LDE 9

PRE-LDE 9

PRE-LDE 9

PRE-LDE 9

PRE-LDE 9

PRE-LDE 9

PRE-LDE 9

AUGUST 1980 SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY 1981 FEBRUARY

PRE LDE 10

APRIL 1976 MAY JUNE JULY AUGUST SEPTEMBER

PRE LDE 10

PRE LDE 10

MAY 1977 JUNE JULY AUGUST SEPTEMBER OCTOBER

PRE LDE 10

PRE-LDE 10

PRE-LDE 10

PRE-LDE 10

PRE-LDE 10

APRIL 1976

MAY

JUNE

JULY

AUGUST

SEPTEMBER

PRE-LDE 10

PRE-LDE 10

MAY 1977 JUNE JULY AUGUST SEPTEMBER OCTOBER

PRE-LDE 11

PRE-LDE 11

PRE-LDE 11

311

NORTH [°] cm/s

JULIAN DAY

NOVEMBER 1976 DECEMBER 1976 JANUARY 1977 FEBRUARY 1977 MARCH 1977 APRIL 1977

PRE-LDE 11

PRE-LDE 11

NORTH [°] cm/s

EAST [•] cm/s

PRE-LDE 11

MAY 1977 JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

PRE--LDE 11

PRE--LDE 11

PRE LDE 12

OCTOBER 1976	NOVEMBER	DECEMBER	JANUARY 1977	FEBRUARY	MARCH	APRIL
-----------------	----------	----------	-----------------	----------	-------	-------

PRE LDE 12

PRE LDE 12

DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY
1977	1978				

PRE LDE 12

PRE LDE 12

325

PRE-LDE 12

MAY 1977

JUNE

JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

PRE-LDE 12

AUGUST 1980 SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY 1981 FEBRUARY

PRE-LDE 12

329

331

PRE-LDE 12

DECEMBER 1977 JANUARY 1978 FEBRUARY MARCH APRIL MAY

PRE-LDE 12

MARCH 1981 APRIL MAY JUNE JULY AUGUST SEPTEMBER

PRE LDE 13

OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL
1976			1977

PRE-LDE 13

OCTOBER 1976 NOVEMBER 1976 DECEMBER 1976 JANUARY 1977 FEBRUARY 1977 MARCH 1977 APRIL 1977

PRE-LDE 14

OCTOBER 1976 NOVEMBER DECEMBER JANUARY 1977 FEBRUARY MARCH APRIL

PRE-LDE 14

PRE-LDE 14

OCTOBER 1976 NOVEMBER DECEMBER JANUARY 1977 FEBRUARY MARCH APRIL

PRE-LDE 14

PRE-LDE 15

PRE-LDE 15

PRE-LDE 16

PRE-LDE 16

PRE LDE 21

PRE LDE 21

PRE LDE 21

SEPTEMBER 1977 OCTOBER NOVEMBER DECEMBER JANUARY 1978 FEBRUARY

PRE LDE 21

PRE LDE 21

OCTOBER 1978	NOVEMBER	DECEMBER	JANUARY 1979	FEBRUARY	MARCH
-----------------	----------	----------	-----------------	----------	-------

PRE LDE 21

APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER
1979

PRE LDE 21

NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL
1979 1980

PRE LDE 21

PRE LDE 21

DECEMBER 1980	JANUARY 1981	FEBRUARY	MARCH	APRIL	MAY	JUNE
------------------	-----------------	----------	-------	-------	-----	------

PRE LDE 21

PRE-LDE 21

365

PRE-LDE 21

367

PRE-LDE 21

PRE-LDE 21

MAY 1980 JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

PRE-LDE 21

TEMPERATURE [°C] (+)

3160 3180 3200 3220 3240 3260 3280 3300 3320 3340 3360

FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST 1977

373

PRESSURE [dB] (x)

670 690 710 730 750 770 790 810 830 850 870 890 910

PRE-LDE 21

PRE-LDE 21

PRE-LDE 21

TEMPERATURE [°C] (+)

PRESSURE [db] (x)

JULIAN DAY

JULIAN DAY	TEMPERATURE [°C] (+)	PRESSURE [db] (x)
4160	12.0	695
4200	12.5	705
4240	13.0	715
4280	13.5	725
4320	14.0	735
4360	14.5	745

NOVEMBER 1979	DECEMBER	JANUARY 1980	FEBRUARY	MARCH	APRIL
------------------	----------	-----------------	----------	-------	-------

PRE-LDE 21

PRE-LDE 21

PRE-LDE 21

PRE-LDE 22

SEPTEMBER 1977 OCTOBER NOVEMBER DECEMBER JANUARY 1978 FEBRUARY MARCH

385

PRE-LDE 22

PRE-LDE 22

389

PRE-LDE 24

PRE-LDE 25

PRE-LDE 25

394

PRE-LDE 25

PRE-LDE 25

PRE-LDE 25

JANUARY FEBRUARY MARCH APRIL MAY JUNE
1979

PRE-LDE 25

PRE-LDE 25

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER

PRE-LDE 25

JANUARY FEBRUARY MARCH APRIL MAY JUNE
1979

PRE LDE 26

MAY 1977 JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

PRE LDE 26

PRE LDE 26

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER

PRE-LDE 26

LINE LEVEL 20

PRE LDE 26

PRE LDE 26

PRE-LDE 27

PRE-LDE 27

PRE-LDE 27

PRE-LDE 27

MAY 1977 JUNE JULY AUGUST SEPTEMBER OCTOBER

PRE-LDE 27

424

PRE-LDE 29

PRE-LDE 29

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

PRE-LDE 29

PRE-LDE 29

433

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

PRE-LDE 29

PRE-LDE 29

MAY 1977 JUNE JULY AUGUST SEPTEMBER OCTOBER

PRE-LDE 29

PRE-LDE 29

PRE--LDE 30

PRE-LDE 30

LINE-LINE 30

445

PLOT 1 OF 3
.FIN

4-DEC-83 18:29:42

PRE-LDE 30

PRE-LDE 30

PRE-LDE 30

PRE-LDE 30

LDE 32

LDE 32

452

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

LDE 33

LDE 33

JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER
1978

LDE 33

LDE 34

LDE 34

JUNE 1978

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

463

LDE 35

464

LDE 35

LDE 35

LDE 36

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

LDE 37

LDE 37

LDE 38

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

LDE 38

LDE 38

LDE 38

LDE 38

LIVE 300

LDE 38

LDE 39

LDE 39

LDE 39

LDE 39

DECEMBER 1978 JANUARY 1979 FEBRUARY 1979 MARCH 1979 APRIL 1979 MAY 1979 JUNE 1979

LUE 39

LDE 39

LDE 40

LDE 40

502

LDE 41

LDE 41

LDE 41

LDE 41

LDE 41

LDE 42

LDE 42

LDE 43

LDE 43

LDE 43

LDE 44

LDE 44

526
VERTICAL DISPLACEMENT [x] M

VERTICAL VELOCITY [■] M/DAY

LDE 44

LDE 45

LDE 45

530

NORTH [o] cm/s

JULIAN DAY

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

LDE 45

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

LDE 46

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

LDE 46

LDE 47

LDE 47

JUNE 1970 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

LDE 47

LDE 48

LDE 48

LDE 48

LDE 48

LDE 50

LDE 50

LDE 50

LDE 50

LDE 51

LDE 51

LDE 52

LDE 52

LDE 52

LDE 53

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

LDE 53

LDE 53

LDE 54

DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
1978						
	1979					

LDE 54

LDE 54

LDE 54

LDE 54

LDE 54

LDE 54

LDE 55

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

DECEMBER 1978 JANUARY 1979 FEBRUARY MARCH APRIL MAY JUNE

LDE 55

LDE 55

LDE 55

LDE 55

LDE 55

LDE 55

DECEMBER 1978 JANUARY 1979 FEBRUARY MARCH APRIL MAY JUNE

LDE 56

LDE 56

JUNE
1978

JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

LDE 56

LDE 57

603

LDE 57

604

AUGUST 1978 SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY 1979 FEBRUARY

605

LDE 57

909

LDE 57

LDE 58

608

LDE 58

PLOT 1 OF 1
.FIN

LDE 58

LDE 59

DECEMBER 1978 JANUARY 1979 FEBRUARY MARCH APRIL MAY JUNE

LDE 59

JULY 1979 AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY 1980

615

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

LDE 59

LDE 59

LDE 59

LDE 59

JULY
1979

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

JANUARY
1980

LDE 59

LDE 59

LDE 59

LDE 60

LDE 60

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

LDE 60

LDE 60

LDE 60

LDE 61

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

LDE 61

LDE 61

JUNE 1978 JULY AUGUST SEPTEMBER OCTOBER NOVEMBER

LDE 61

LDE 62

LDE 62

635

LDE 62

MARCH 1979 APRIL MAY JUNE JULY AUGUST

LDE 62

637

LDE 62

LDE 62

LDE 62

LDE 62

LDE 63

643

LDE 63

AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY
1978					1979	

LDE 63

645

LDE 63

AUGUST 1978 SEPTEMBER 1978 OCTOBER 1978 NOVEMBER 1978 DECEMBER 1978 JANUARY 1979 FEBRUARY 1979

LDE 63

LDE 64

648

LDE 64

LDE 64

LDE 64

LDE 64

MARCH 1979
APRIL
MAY
JUNE
JULY
AUGUST

LDE 64

LDE 64

SEPTEMBER 1979	OCTOBER	NOVEMBER	DECEMBER	JANUARY 1980	FEBRUARY	MARCH
-------------------	---------	----------	----------	-----------------	----------	-------

LDE 65

LDE 65

663

LDE 65

AUGUST 1978 SEPTEMBER 1978 OCTOBER 1978 NOVEMBER 1978 DECEMBER 1978 JANUARY 1979 FEBRUARY 1979

LDE 65

LDE 66

LDE 66

LDE 66

LDE 66

LDE 67

LDE 67

LDE 67

LDE 67

LDE 68

676

AUGUST 1978	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY 1979	FEBRUARY
----------------	-----------	---------	----------	----------	-----------------	----------

LDE 68

LDE 68

AUGUST 1978 SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY 1979 FEBRUARY

LDE 68

LDE 69

LDE 69

LDE 69

LDE 69

AUGUST 1978 SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY 1979 FEBRUARY

LDE 84

686

AUGUST 1978	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY 1979	FEBRUARY
----------------	-----------	---------	----------	----------	-----------------	----------

LDE 84

687

LDE 84

AUGUST 1978 SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY

LDE 84

LDE 85

LDE 85

LDE 85

LDE 85

LDE 86

LDE 86

696

AUGUST 1978 SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY 1979 FEBRUARY

LDE 86

697

LDE 86

LDE 86

LDE 87

LDE 87

LDE 87

LDE 87

AUGUST 1978 SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY 1979 FEBRUARY

LDE 88

LDE 89

708

LDE 89

709

LDE 89

LDE 89

LDE 90

LDE 90

AUGUST 1978 SEPTEMBER OCTOBER NOVEMBER DECEMBER JANUARY 1979 FEBRUARY

LDE 90

715

LDE 90

LDE 90

LDE 91

718

LDE 91

LDE 91

LDE 91

DOCUMENT LIBRARY

April 9, 1985

DISTRIBUTION LIST FOR TECHNICAL REPORT EXCHANGE

Institute of Marine Sciences Library
University of Alaska
O'Neill Building
905 Koyukuk Ave., North
Fairbanks, AK

Attn: Stella Sanchez-Wade
Documents Section
Scripps Institution of Oceanography
Library, Mail Code C-075C
La Jolla, CA 92093

Hancock Library of Biology & Oceanography
Alan Hancock Laboratory
University of Southern California
University Park
Los Angeles, CA 90089-0371

Gifts & Exchanges
Library
Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, NS, B2Y 4A2, CANADA

Office of the International
Ice Patrol
c/o Coast Guard R & D Center
Avery Point
Groton, CT 06340

Library
Physical Oceanographic Laboratory
Nova University
8000 N. Ocean Drive
Dania, FL 33304

NOAA/EDIS Miami Library Center
4301 Rickenbacker Causeway
Miami, FL 33149

Library
Skidaway Institute of Oceanography
P.O. Box 13687
Savannah, GA 31416

Institute of Geophysics
University of Hawaii
Library Room 252
2525 Correa Road
Honolulu, HI 96822

Library
Chesapeake Bay Institute
4800 Atwell Road
Shady Side, MD 20876

MIT Libraries
Serial Journal Room 14E-210
Cambridge, MA 02139

Director, Ralph M. Parsons Laboratory
Room 48-311
MIT
Cambridge, MA 02139

Marine Resources Information Center
Bldg. E38-320
MIT
Cambridge, MA 02139

Library
Lamont-Doherty Geological Observatory
Columbia University
Palisades, NY 10964

Library
Serials Department
Oregon State University
Corvallis, OR 97331

Pell Marine Science Library
University of Rhode Island
Narragansett Bay Campus
Narragansett, RI 02882

Working Collection
Texas A&M University
Dept. of Oceanography
College Station, TX 77843

Library
Virginia Institute of Marine Science
Gloucester Point, VA 23062

Fisheries-Oceanography Library
151 Oceanography Teaching Bldg.
University of Washington
Seattle, WA 98195

Library
R.S.M.A.S.
University of Miami
4600 Rickenbacker Causeway
Miami, FL 33149

REPORT DOCUMENTATION PAGE		1. REPORT NO. WHOI-86-24	2.	3. Recipient's Accession No.
4. Title and Subtitle A Summary of Historical SOFAR Float Data in the Western North Atlantic 1972-81				5. Report Date July 1986
				6.
7. Author(s) Theresa K. McKee				8. Performing Organization Rept. No. WHOI-86-24
9. Performing Organization Name and Address Woods Hole Oceanographic Institution Woods Hole, Massachusetts 02543				10. Project/Task/Work Unit No.
				11. Contract(C) or Grant(G) No. OCE-8214066 (C) OCE-8600055 (G) OCE-8117467 OCE-8109145
12. Sponsoring Organization Name and Address National Science Foundation				13. Type of Report & Period Covered Technical
				14.
5. Supplementary Notes This report should be cited as: Woods Hole Oceanog. Inst. Tech. Rept. WHOI-86-24.				
6. Abstract (Limit: 200 words) SOFAR float observations from the years 1972 to 1981 have been edited and analyzed to produce a uniform and error-free data set suitable for archiving. These data were collected from the western North Atlantic during three major experiments directed by H. T. Rossby of the University of Rhode Island. The data are shown here in plots of the composite and individual trajectories, as time series plots of velocity components, and for the LDE floats, as time series plots of temperature, pressure, vertical velocity, and vertical displacement. These data comprise about 72 years of SOFAR float observations, and are a unique resource for Lagrangian studies of the North Atlantic circulation.				
7. Document Analysis a. Descriptors 1. SOFAR floats 2. Lagrangian Data 3. North Atlantic circulation b. Identifiers/Open-Ended Terms c. COSATI Field/Group				
18. Availability Statement: Approved for publication; distribution unlimited.		19. Security Class (This Report) UNCLASSIFIED		21. No. of Pages 722
		20. Security Class (This Page)		22. Price