

NANSEN REF #

3/0015

9100142

MULDARS TRACK #

TW0399

MONITOR: CONTACT

M LEWIS

LOCATION OF F022 SOURCE

Archives

RECORD ALL ERRORS FOUND

CONSEC(S)

ERRORS FOUND

CONSEC(S)	ERRORS FOUND
0006	Change day from 18 to 19
0009	Change longitude from 165 to 167
0012	Change day from 22 to 21

M. Lewis
11/30/92

NANSEN REF #

3/0016

MULDARS TRACK #

TW0400

MONITOR: CONTACT

M. Lewis

LOCATION OF F022 SOURCE

ARCHIVES

RECORD ALL ERRORS FOUND

CONSEC(S)

ERRORS FOUND

0015

change Hour from 101 to 102

M/L
7/29/92

NANSEN REF #

310017

MULDARS TRACK #

Two 398

MONITOR: CONTACT

M Lewis

LOCATION OF F022 SOURCE

Archives

RECORD ALL ERRORS FOUND

CONSEC(S)

ERRORS FOUND

0009 ✓

Change log from 132
to 137

~~0010~~

0016 ✓

Change day from 23
to 22

0019 ✓

Change day from 24 to 23

0022 ✓

Change day from 25 to 24

7 ✓

Change day to 18

12-14 ✓

Change day to 21

M L
7/30/90

ACCESS NUMBER	REF NUMBER	FILE TYPE	PROJ CODE	INST	PLAT	CRUISE NO	CRUISE START	CRUISE END	NUM STA	NUM REC
9100142	310015	C022	0168	313F	3175	TW0399	06/15/89	06/24/89	16	7,820
9100142	310016	C022	0168	313F	31DS	TW0400	10/25/89	11/10/89	26	7,889
9100142	310017	C022	0168	313F	3175	TW0398	05/13/89	05/29/89	36	11,087
9100142	310018	C022	0168	313F	31DS	TW0401	11/26/89	12/08/89	18	4,815
9100142	TW0398	F022	0168	313F	3175		05/13/89	05/29/89	36	11,087
9100142	TW0399	F022	0168	313F	3175		06/15/89	06/24/89	16	7,820
9100142	TW0400	F022	0168	313F	31DS		10/25/89	11/10/89	26	7,889
9100142	TW0401	F022	0168	313F	31DS		11/26/89	12/08/89	18	4,815

9100142

	DATE	INIT.	TAPE OR DISK DSN	NO. FILES	MBCL	DLK	SIZE	REC
RE	08/13/91	CUK	Aφ1475	1	80	1600	2400	157,6
TAPE	08/26/91	CUK	Wφ2427**	1	80	6250	2400	157,6
DISK								
CK								
CK								
ER								
HALIZED								

REPORTED TO PRINCIPAL INVESTIGATOR: ** DSN=DNODC*9100142-01.

Tape Wφ2427 is 9TRK, SL, 6250bpi

ERRORS/CORRECTIONS (NOT REPORTED TO P.I.)

TRACKS DELETED, FIELDS DELETED, ETC.)

Name <i>W. J. Hadley</i>	Phone # <i>673-5436</i>	Off/Task <i>EC12008A3HH9</i>	Submit Date <i>05/12/91</i>	File Date <i>ASAP</i>
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PART A

Request/Problem Category

- Communications Equipment Supplies
 Data Computer Operations

Request/Problem Description

Please scan tape A01475

PART B (For Operator Job Requests)

Operator Job Request Type

- Run BRBUOY procedure Name: _____ See attached list
 Run SELBUOY procedure Name: _____ See attached list
 Run BUOYSUM procedure Name: _____ See attached list
 Run OTHER procedure - see SPECIAL INSTRUCTIONS
 Tape Scan
 Tape to Tape Copy Scan OUTPUT tape? yes no
 Disk to Tape Copy Scan OUTPUT tape? yes no
 Tape to Disk Copy
 Print 80 column 132 column HEX OCTAL Character
 All files/records? yes no, see SPECIAL INSTRUCTIONS
 Restore VAX file Name: _____
 OTHER - see SPECIAL INSTRUCTIONS

Special Operator Instructions:

Please return tape A01475 to Bin 09

JOB INPUT ID#/Filename: *A01475*

MEDIUM: Tape Disk Diskette Other Specify:
 Code: ASCII EBCDIC Binary Other Specify:
 Tape Specs: 80 1600 6250 NL SL
 MAX Record Length: _____ MAX BLOCKSIZE: _____

JOB OUTPUT ID#/Filename: _____

Medium: ~~Tape~~ Disk Diskette Other Specify:
 Code: ASCII EBCDIC Binary Other Specify:
 Tape Specs: 80 1600 6250 NL SL
 MAX Record Length: _____ MAX Blocksize: _____

(OC3 Use Only)
 JOB Number: *91081201* Date/Time Start: *8-13-91/0730*
 Completed By: *g.s.* Date/Time Completed: *8-13-91/*



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 ENVIRONMENTAL RESEARCH LABORATORIES
 Pacific Marine Environmental Laboratory
 NOAA Building Number 3
 7600 Sand Point Way N.E.
 Seattle, WA 98115

July 26, 1991

R/E/PM

Mr. Sid Stillwaugh
 NOAA/NODC E/OC13
 7600 Sand Point Way N.E.
 Seattle, WA 98115

Dear Sid,

Enclosed is one 9-track magnetic tape containing CTD cast data from 4 cruises collected in 1989. T61289 were part of the TOGA project. Stations were near the equator between 140°W and 180°. EP389 and EP489 were part of the ongoing EPOCS project and stations were within 10° of the equator from 100°W to 140°W. The TOGA data were collected from the NOAA ship, MALCOLM BALDRIGE; EPOCS data were collected from the NOAA ship, DISCOVERER. Both projects used a Neil Brown Mark III CTD equipped with an oxygen sensor.

Also, enclosed is the NODC data documentation form supplemented with further information about the content and organization of the tape.

Unfortunately, the 1990 data is not ready yet. I will send it along when it is completed. If you have any questions, please don't hesitate to contact me.

Sincerely,

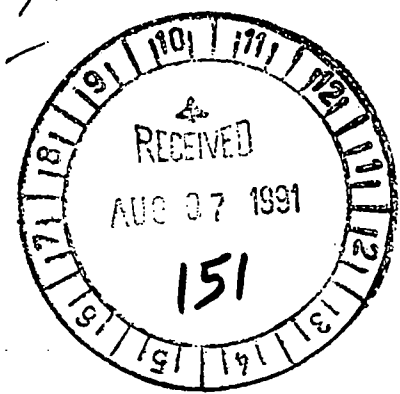
K. McTaggart
 Kristy McTaggart
 CTD Technical Coordinator

Enclosures

cc: S. Hayes
 L. Mangum

9100142

AQ 1475



LRECL=80

TRANSMITTAL AND RECEIPT RECORD
(Please sign and return carbon copy acknowledging receipt)

TO: NOAA/NESDIS/NODC 1825 Connecticut Ave NW Washington DC 20235	REFER TO # 9100142
	ATTENTION E/OC13, Dr. Anthony R. Picciolo

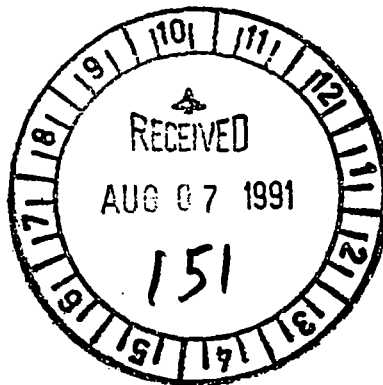
THE ITEM(S) LISTED BELOW WERE FORWARDED TO YOU BY

ORDINARY MAIL
 REGISTERED MAIL
 AIR MAIL
 CERTIFIED MAIL
 GOVERNMENT TRUCK
 BY HAND
 OTHER

Enclosed, find documentation and one (1) magnetic data tape containing both TOGA and EPOCS CTD data taken during cruises in 1989. These data were received from Ms. Kristy McTaggart, PMEL.

Tape specs. - 9 track, 1600 bpi, ASCII, 1 file

A61475



cc: Ms. Kristy McTaggart, PMEL
Ms. Linda Mangum, PMEL

FORWARDED BY (Signature) Sid Stillwaugh	TITLE NODC Liaison Officer, Seattle	DATE FORWARDED -7/29/91
RECEIVED BY (Signature)	TITLE	DATE RECEIVED

ACCESSION NUMBER

9100142

DATA DOCUMENTATION FORM

A01475

NOAA FORM 24-13 (2-85)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEANOGRAPHIC DATA CENTER
RECORDS SECTION
WASHINGTON, DC 20235

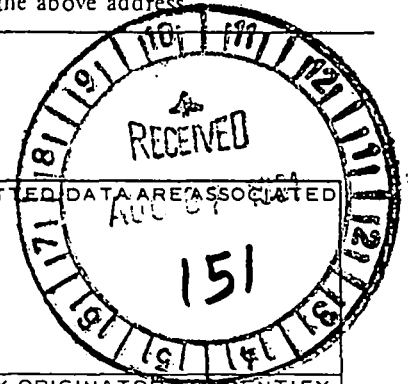
FORM APPROVED
O.M.B. No. 0648-0024
EXPIRES 2/29/87

(While you are not required to use this form, it is the most desirable mechanism for providing the required ancillary information enabling the NODC and users to obtain the greatest benefit from your data.)

This form should accompany all data submissions to NODC. Section A, Originator Identification, must be completed when the data are submitted. It is highly desirable for NODC to also receive the remaining pertinent information at that time. This may be most easily accomplished by attaching reports, publications, or manuscripts which are readily available describing data collection, analysis, and format specifics. Readable, handwritten submissions are acceptable in all cases. All data shipments should be sent to the above address.

A. ORIGINATOR IDENTIFICATION

THIS SECTION MUST BE COMPLETED BY DONOR FOR ALL DATA TRANSMITTALS

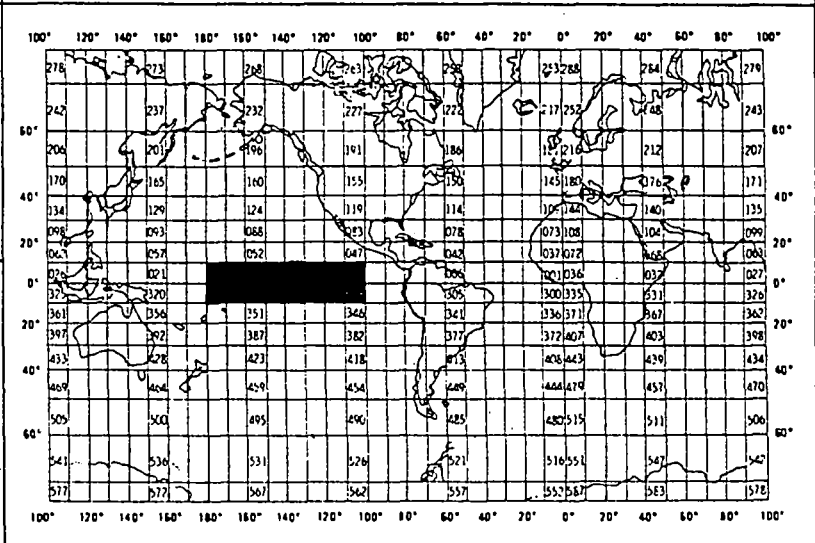


1. NAME AND ADDRESS OF INSTITUTION, LABORATORY, OR ACTIVITY WITH WHICH SUBMITTED DATA ARE ASSOCIATED Dr. Stanley P. Hayes NOAA / Pacific Marine Environmental Lab Bldg. 3 / Bin C15100 1600 Sand Point Way NE Seattle, Washington 98115			
2. EXPEDITION, PROJECT, OR PROGRAM DURING WHICH DATA WERE COLLECTED TOGA cruises in 1989. EPOCS cruises in 1989.		3. CRUISE NUMBER(S) USED BY ORIGINATOR TO IDENTIFY DATA IN THIS SHIPMENT TG1 - 89 - MB TG2 - 89 - MB EP3 - 89 - DI EP4 - 89 - DI	
4. PLATFORM NAME(S) R/V Malcolm Baldrige R/V Discoverer	5. PLATFORM TYPE(S) (E.G., SHIP, BUOY, ETC.) ship	6. PLATFORM AND OPERATOR NATIONALITY(IES) U.S. U.S.	7. DATES FROM: MO, DAY, YR TO: MO, DAY, YR 5/9/89 12/15/89

8. ARE DATA PROPRIETARY?
 NO YES
IF YES, WHEN CAN THEY BE RELEASED FOR GENERAL USE? YEAR _____ MONTH _____

11. PLEASE DARKEN ALL MARSDEN SQUARES IN WHICH ANY DATA CONTAINED IN YOUR SUBMISSION WERE COLLECTED.
GENERAL AREA

9. ARE DATA DECLARED NATIONAL PROGRAM (DNP)?
(I.E., SHOULD THEY BE INCLUDED IN WORLD DATA CENTERS HOLDINGS FOR INTERNATIONAL EXCHANGE?)
 NO YES PART (SPECIFY BELOW)



10. PERSON TO WHOM INQUIRIES CONCERNING DATA SHOULD BE ADDRESSED WITH TELEPHONE NUMBER (AND ADDRESS IF OTHER THAN IN ITEM-1)
Dr. Stanley P. Hayes
(206) 526-6742

B. SCIENTIFIC CONTENT

NAME OF DATA FIELD	REPORTING UNITS OR CODE	METHODS OF OBSERVATION AND INSTRUMENTS USED (SPECIFY TYPE AND MODEL)	ANALYTICAL METHODS (INCLUDING MODIFICATIONS) AND LABORATORY PROCEDURES	DATA PROCESSING TECHNIQUES WITH FILTERING AND AVERAGING
pressure	decibars	Neil Brown CTD / O ₂	n/a	Values averaged over 1 decibar intervals.
temperature	°C	"	"	
salinity	psu	"	"	
sigma-t	kg/m ³	"	"	
oxygen	ml/l	"	"	

C. DATA FORMAT

COMPLETE THIS SECTION FOR PUNCHED CARDS OR TAPE, MAGNETIC TAPE, OR DISC SUBMISSIONS.

1. LIST RECORD TYPES CONTAINED IN THE TRANSMITTAL OF YOUR FILE
GIVE METHOD OF IDENTIFYING EACH RECORD TYPE

The first five records contain header information for the first cast. The header records are identified by readable labels preceding most fields. The five header records are followed by a variable number of data records depending on the depth of each cast. Data records are followed by the header records of the ~~the~~ following cast, and so forth.

2. GIVE BRIEF DESCRIPTION OF FILE ORGANIZATION

The tape contains one file comprised of all the CTD casts. Each cast contains five header records followed by a variable number of data records depending on the depth of the cast. Each record is 80 characters long. A listing of CTD casts in their order on the tape is attached.

3. ATTRIBUTES AS EXPRESSED IN PL-1 ALGOL COBOL
 FORTRAN _____ LANGUAGE

4. RESPONSIBLE COMPUTER SPECIALIST:

NAME AND PHONE NUMBER Kristy McTaggart 526-6692
ADDRESS NOAA / PMEL, 1600 Sand Point Way NE, Seattle, WA 98115

COMPLETE THIS SECTION IF DATA ARE ON MAGNETIC TAPE

<p>5. RECORDING MODE</p> <p><input type="checkbox"/> BCD <input type="checkbox"/> BINARY</p> <p><input checked="" type="checkbox"/> ASCII <input type="checkbox"/> EBCDIC</p> <p><input type="checkbox"/> _____</p>	<p>9. LENGTH OF INTER-RECORD GAP (IF KNOWN) <input type="checkbox"/> 3/4 INCH</p> <p><input type="checkbox"/> _____</p>
<p>6. NUMBER OF TRACKS (CHANNELS)</p> <p><input type="checkbox"/> SEVEN</p> <p><input checked="" type="checkbox"/> NINE</p> <p><input type="checkbox"/> _____</p>	<p>10. END OF FILE MARK</p> <p><input checked="" type="checkbox"/> OCTAL 17</p> <p><input type="checkbox"/> _____</p>
<p>7. PARITY</p> <p><input checked="" type="checkbox"/> ODD</p> <p><input type="checkbox"/> EVEN</p>	<p>11. PASTE-ON-PAPER LABEL DESCRIPTION (INCLUDE ORIGINATOR NAME AND SOME KEY SPECIFICATIONS OF DATA TYPE, VOLUME NUMBER) <u>1-25-91</u></p> <p><u>NOAA / PMEL / OCRD / HAVES</u></p> <p><u>1989 CTD DATA : T6189 , T6289 ,</u></p> <p><u>EP389 , EP489</u></p> <p><u>9 TRK / 1600 BPI / ASCII / 1 FILE</u></p>
<p>8. DENSITY</p> <p><input type="checkbox"/> 200 BPI <input checked="" type="checkbox"/> 1600 BPI</p> <p><input type="checkbox"/> 556 BPI</p> <p><input type="checkbox"/> 800 BPI</p> <p><input type="checkbox"/> _____</p>	<p>12. PHYSICAL BLOCK LENGTH IN BYTES</p> <p style="text-align: center;"><u>2400</u></p>
	<p>13. LENGTH OF BYTES IN BITS</p>

RECORD FORMAT DESCRIPTION

RECORD NAME _____

14. FIELD NAME	15. POSITION FROM -1 MEASURED IN bytes (e.g., bits, bytes)	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		
<u>First header record:</u>					
field label	1	5		H5	Always "CAST_" (^ = blank)
cruise number	6	11		A11	cruise id. (example, "TW2-87-0C-")
cast number	17	3		I3	ctd cast number
field label	20	8		H8	Always "^^^ DATE ^"
date: day	28	2		I2	day (1-31)
	30	1		H1	always "-" field separator
month	31	3		A3	month (ex. "JUN")
	34	1		H1	always "-" field separator
year	35	2		I2	year, last 2 digits
field label	37	8		H8	always, "^^^ TIME ^"
time	45	4		I4	CNT of cast (ex. "0132")
field label	49	4		H4	always, "^ CNT"
blank	53	2			
instrument type	55	26		A26	instrument description
<u>Second header record:</u>					
field label	1	4		H4	always "LAT_"
latitude	5	8		A8	cast latitude in degrees, decimal minutes (ex. 45_15.2 N")
field label	13	7		H7	always "^^ LONG_"
longitude	20	9		A9	cast longitude in degrees, decimal minutes (ex. "124_15.8W")
field label	29	10		H10	always "^^ WEATHER_"
weather	39	1		I1	weather code, see attached table 2
field label	40	12		H12	always "^^ SEA STATE_"
sea state	52	1		I1	sea state code, see attached table 3
blank	53	2			
file creation date	55	15		A15	hh:mm_dd-mm-yy
blank	70	8			
header type	78	1		A1	header type ("C" for standard CTD header)
blank	79	2			

RECORD FORMAT DESCRIPTION

RECORD NAME _____

14. FIELD NAME	15. POSITION FROM -1 MEASURED IN <small>(e.g., bits, bytes)</small>	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		
<u>Third header record:</u>					
field label	1	10		H10	always "BAROMETER _^ " atmospheric pressure in millibars over 1000 mbs. (ex. "19" means 1019 mbs)
atmos. press	11	2		I2	
field label	13	11		H11	always " _{^^} WIND _^ DIR _^ " wind directions in degrees from which the wind is blowing.
wind direction	24	3		I3	
field label	27	7		H7	always " _^ T _^ SPD _^ " wind speed in knots
wind speed	34	2		I2	
field label	36	16		H16	always " _^ KT _^ VISIBILITY _^ " visibility code, see attached table 4
visibility code	52	1		I1	
blank	53	2			number of data scans to follow
number of scans	55	6		I6	
first pressure	61	6		F6.0	pressure of first scan
last pressure	67	6		F6.0	
increment	73	5		FS.0	pressure increment between scans
blank	78	1			number of variables to be listed in data scans.
number of variables	79	2		I2	
<u>Fourth header record:</u>					
field label	1	6		H6	always "CLOUD _^ " cloud type code, see attached table 5
cloud type	7	1		I1	
field label	8	9		H9	always " _{^^} AMOUNT _^ " cloud amount code, see attached table 6
cloud amount	17	1		I1	

RECORD FORMAT DESCRIPTION

RECORD NAME _____

14. FIELD NAME	15. POSITION FROM -1 MEASURED IN (e.g., bits, bytes)	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		
field label	18	6		H6	always " ~ ~ DRY ~ "
dry bulb temp.	24	4		F4.1	dry air temperature in °C to nearest tenth
field label	28	6		H6	always " ~ ~ WET ~ "
wet bulb temp.	34	4		F4.1	wet bulb temperature in °C to nearest tenth
field label	38	9		H9	always " ~ ~ ~ DEPTH ~ "
water depth	47	4		I4	water depth to nearest meter
field label	51	2		H2	always " ~ M "
blank	53	2			
data origin	55	26		A26	information on data origin
<u>Fifth header record:</u>					
variable codes	1	80		20I4	variable codes for data listed in data file. See attached table 1.
<u>Data Record:</u>					
pressure	1	8		F8.1	pressure (dB)
temperature	9	8		F8.3	temperature (°C)
salinity	17	8		F8.3	salinity (psu)
sigma - t	25	8		F8.3	density (kg/m ³)
oxygen	33	8		F8.3	dissolved oxygen (mLL)
blank	41	40			
Note: data not present is represented by -99.999					

D. INSTRUMENT CALIBRATION

This calibration information will be utilized by NOAA's National Oceanographic Instrumentation Center in their efforts to develop calibration standards for voluntary acceptance by the oceanographic community. Identify the instruments used by your organization to obtain the scientific content of the DDF (i.e., STD, temperature and pressure sensors, salinometers, oxygen meters, velocimeters, etc.) and furnish the calibration data requested by completing and/or checking ("✓") the appropriate spaces. Add the interval time (i.e., 3 months, 6 months, 9 months, etc.) if the fixed interval calibration cycle is checked.

INSTRUMENT TYPE (MFR., MODEL NO.)	DATE OF LAST CALIBRATION	INSTRUMENT WAS CALIBRATED BY		CHECK ONE: INSTRUMENT IS CALIBRATED					INSTRUMENT IS NOT CALIBRATED (✓)
		YOUR ORGANIZATION (✓)	OTHER ORGANIZATION (GIVE NAME)	AT FIXED INTERVALS (✓)	BEFORE OR AFTER USE (✓)	BEFORE AND AFTER USE (✓)	ONLY AFTER REPAIR (✓)	ONLY WHEN NEW (✓)	
TG189 - TG289; Neil Brown MKIII STD S/N 2156	JAN. 1989		AOML	✓					
EP389 - EP489; Neil Brown MKIII CTD S/N 2044	SEPT. 1989		NW Regional Calibration Center Bellevue, WA			✓			

NOAA / PMEL / OCRD CTD Data Format Description

Magnetic tapes containing CTD cast data have the following characteristics:

- 1) 9-track
- 2) ASCII
- 3) Odd Parity
- 4) 1600 BPI
- 5) Single file
- 6) End-of-file mark - Octal 17

7) Blocking: Tapes have 80-character records blocked 30 records/block, and therefore have 2400 characters/block. The last block on the tape may contain fewer than 2400 characters/block.

8) Data Format: The enclosed data listing shows the format of the data on the tape. The listing format differs from the tape only in that the listing is of subsampled data. On this listing, there is a data header consisting of 5 80-character lines. Line 5 of the header records contains the variable codes for the data that is included in the file. These variable codes are identified in attached listing. The data scans themselves follow sequentially (F8.1, 9F8.3).

The number of variables in each data scan is in columns 79-80 of line 3 in the data header. The number of data scans in each cast is in columns 55-60 of line 3 in the data header (see listing).

9) The CTD cast data files are in the order shown on the attached listing.

LAT 07 03.9N LONG 147 36.0W WEATHER SEA STATE 12:59 6-DEC-89 C
 BAROMETER 09 WIND DIR 054 T SPD 17 KT VISIBILITY 4035 0. 4034. 1. 5
 CLOUD AMOUNT DRY 27.0 WET 23.7 DEPTH 4196 M NOAA/PMEL/OCRD/HAYES

1	20	41	70	60
0.0	26.839	34.653	22.510	4.754
100.0	15.160	34.386	25.465	2.964
200.0	10.334	34.672	26.639	1.356
300.0	9.479	34.664	26.777	1.351
400.0	8.876	34.645	26.860	1.139
500.0	7.783	34.598	26.991	0.724
600.0	6.866	34.568	27.097	0.709
700.0	6.038	34.552	27.194	0.891
800.0	5.453	34.548	27.263	0.938
900.0	4.981	34.552	27.323	1.141
1000.0	4.520	34.559	27.380	1.271
1100.0	4.109	34.571	27.434	1.313
1200.0	3.729	34.583	27.482	1.342
1300.0	3.403	34.593	27.522	1.480
1400.0	3.174	34.600	27.550	1.590
1500.0	2.941	34.609	27.578	1.700
1600.0	2.735	34.616	27.603	1.814
1700.0	2.534	34.625	27.628	1.930
1800.0	2.403	34.631	27.643	2.032
1900.0	2.272	34.639	27.660	2.106
2000.0	2.164	34.645	27.674	2.160
2100.0	2.068	34.650	27.686	2.256
2200.0	1.999	34.655	27.695	2.395
2300.0	1.937	34.660	27.704	2.423
2400.0	1.890	34.663	27.710	2.472
2500.0	1.848	34.666	27.716	2.487
2600.0	1.824	34.668	27.719	2.510
2700.0	1.797	34.669	27.722	2.581
2800.0	1.753	34.672	27.728	2.578
2900.0	1.720	34.675	27.733	2.667
3000.0	1.670	34.677	27.739	2.738
3100.0	1.613	34.679	27.745	2.836
3200.0	1.579	34.682	27.749	2.956
3300.0	1.548	34.683	27.752	3.026
3400.0	1.524	34.684	27.755	3.127
3500.0	1.499	34.686	27.758	3.228
3600.0	1.476	34.687	27.761	3.325
3700.0	1.454	34.690	27.764	3.428
3800.0	1.431	34.692	27.768	3.534
3900.0	1.401	34.694	27.772	3.616
4000.0	1.373	34.695	27.775	3.711

Data Variables Contained on NOAA/PMEL/OCRD CTD Data Tape:

1	PRESSURE (DB)
20	TEMPERATURE (C)
41	SALINITY (PSU)
70	SIGMA-T
60	OXYGEN (ML/L)

Following casts were written to CTD Data Tape:

Cruise	#	NSCANS
TG1-89-MB	-001	4035
TG1-89-MB	-002	307
TG1-89-MB	-003	1006
TG1-89-MB	-004	1006
TG1-89-MB	-005	1004
TG1-89-MB	-006	5104
TG1-89-MB	-007	302
TG1-89-MB	-008	1004
TG1-89-MB	-009	1006
TG1-89-MB	-010	126
TG1-89-MB	-012	4943
TG1-89-MB	-013	293
TG1-89-MB	-014	1006
TG1-89-MB	-015	1003
TG1-89-MB	-016	1003
TG1-89-MB	-017	4449
TG1-89-MB	-018	1003
TG1-89-MB	-019	1004
TG1-89-MB	-020	1006
TG1-89-MB	-021	4427
TG1-89-MB	-022	302
TG1-89-MB	-023	1005
TG1-89-MB	-024	1004
TG1-89-MB	-025	997
TG1-89-MB	-026	1003
TG1-89-MB	-027	1006
TG1-89-MB	-029	301
TG1-89-MB	-030	4394
TG1-89-MB	-031	1006
TG1-89-MB	-032	1002
TG1-89-MB	-033	1004
TG1-89-MB	-034	3810
TG1-89-MB	-035	302
TG1-89-MB	-036	992
TG1-89-MB	-037	1005
TG1-89-MB	-038	1003
TG2-89-MB	-039	5355
TG2-89-MB	-040	302
TG2-89-MB	-041	507
TG2-89-MB	-042	5363
TG2-89-MB	-043	304
TG2-89-MB	-044	5218
TG2-89-MB	-045	335
TG2-89-MB	-046	79
TG2-89-MB	-047	5828

TG2-89-MB -049	5158
TG2-89-MB -050	303
TG2-89-MB -051	4666
TG2-89-MB -052	302
TG2-89-MB -053	4461
TG2-89-MB -054	<u>301</u>
EP3-89-DI -001	3208
EP3-89-DI -002	402
EP3-89-DI -003	1004
EP3-89-DI -004	1003
EP3-89-DI -005	1003
EP3-89-DI -006	1005
EP3-89-DI -007	3844
EP3-89-DI -008	1002
EP3-89-DI -009	1001
EP3-89-DI -010	3529
EP3-89-DI -011	1002
EP3-89-DI -012	1005
EP3-89-DI -013	501
EP3-89-DI -014	3702
EP3-89-DI -014	3702
EP3-89-DI -015	1004
EP3-89-DI -016	1004
EP3-89-DI -017	1005
EP3-89-DI -018	504
EP3-89-DI -019	1007
EP3-89-DI -020	703
EP3-89-DI -021	1004
EP3-89-DI -022	4510
EP3-89-DI -023	1004
EP3-89-DI -024	307
EP3-89-DI -025	303
EP4-89-DI -001	1002
EP4-89-DI -002	302
EP4-89-DI -003	4238
EP4-89-DI -004	1006
EP4-89-DI -005	1004
EP4-89-DI -006	1002
EP4-89-DI -007	4365
EP4-89-DI -008	1003
EP4-89-DI -009	1002
EP4-89-DI -010	1004
EP4-89-DI -011	1002
EP4-89-DI -012	1001
EP4-89-DI -013	1003
EP4-89-DI -014	1002
EP4-89-DI -015	1000
EP4-89-DI -016	1002
EP4-89-DI -017	1002
EP4-89-DI -018	1005

5/3

94158

Total number of CTD casts written out = 96

TABLE 1
VARIABLE CODES

N	Label	Comments
0	UNDEFINED	Undefined Variable
1 P	PRESSURE (DB)	
2 D	DEPTH (CM)	
3 D	DEPTH (M)	
4 P	PRESSURE (PASCALS)	
5 PD	PRESSURE DIFFERENCE (DB)	
6 ISO	ISOTHERM DEPTH (M)	
10 DYN	DYNAMIC HEIGHT (DYN M)	
11 DYN	DYM HT (SUBSAMPLED DATA)	
12 dDN	DYNN-DYNS	Diff of North and South Dyn Ht.
13 DYN	DYNAMIC HEIGHT (DYN CM)	
20 T	TEMPERATURE (C)	1968 standard
21 T	AIR TEMPERATURE (C)	
22 T0	THERM TEMPERATURE (C)	Reversing therm. 1E35 indicates no therm.
29 IT	TEMP INTEGRAL	Depth integrated temperature
30 PT	POTENTIAL TEMP (C)	PT = Potential Temperature
40 S	SALINITY (PPT)	From SALIN1
41 S	SALINITY (PSU)	Practical Salinity Units
43 S0	BOTTLE SALINITY (PSU)	From Salinometer. 1E35 indicates no sample.
49 S	SALINITY	calculated for XBT's from mean T-S curve, M McCarty
50 C	CONDUCTIVITY	
60 O	OXYGEN (ML/L)	Dissolved oxygen calculated from CTD values
61 BO	BOTTLE OXYGEN (ML/L)	DO determined by titration. 1E35 ->no sample
62 OST	OXYGEN, %SAT	

64	AOU	APPARENT O2 UTILIZATION	
70	ST	SIGMA-T	
71	STH	SIGMA-THETA	
72	S2	SIGMA 2	
74	S4	SIGMA 4	
80	SV	SOUND VELOCITY	
85	SPV	SPECIFIC VOLUME	
90	BV	BVF (CPH)	Brunt Vaisala Frequency
91	BV2	BVF SQUARED (CPH**2)	Brunt Vaisala Frequency squared (N*ABS(N))
100	SN	SCAN NUMBER	
101	FS	FRAME SYNC	FOR TOPS
102	CL	PTG CLOCK WORD	
105	NAV	NUMBER POINTS IN AVERAGE	
110	OXC	OXYGEN CURRENT	
111	OXT	OXYGEN TEMPERATURE	
112	DOC	doXC/dt	Time rate of change of Oxygen current
120	T'	GRADIENT DT/DZ	Program CTDGRD2
121	DT	T(PROFILE 1)-T(PROFILE 2)	Program XBTDIFF
122	T'X	GRADIENT DT/DX	X is longitude
124	UTX	U * dt/dx	X is longitude
130	HTC	HEAT CONTENT (JOU/M**2)	joules / meter**2
150	FR	FREON	
152	NO3	NITRATE	
154	NO2	NITRITE	
156	PO4	PHOSPHATE	
158	SI	SILICATE	
200	DIS	VERTICAL DISPLACEMENT	From mean CTD profile
300	CS	CURRENT SPEED (CM/S)	
310	CD	CURRENT DIRECTION DEGREES	
320	U	ZONAL CURRENT (CM/S)	measured w/r true N
321	V	MERIDIONAL CURRENT (CM/S)	measured w/r true N
322	U	ZONAL CURRENT (CM/S)	relative w/r true N
323	V	MERIDIONAL CURRENT (CM/S)	relative w/r true N
324	U	ZONAL CURRENT (CM/S)	instrument w/r true N
325	V	MERIDIONAL CURRENT (CM/S)	instrument w/r true N
326	U	ZONAL CURRENT (CM/S)	tracked w/r true N
327	V	MERIDIONAL CURRENT (CM/S)	tracked w/r true N
328	W	VERTICAL VELOCITY (CM/S)	tracked TOPS
330	U	ZONAL CURRENT (CM/S)	measured w/r magnetic N
331	V	MERIDIONAL CURRENT (CM/S)	measured w/r magnetic N
332	U	ZONAL CURRENT (CM/S)	relative w/r magnetic N
333	V	MERIDIONAL CURRENT (CM/S)	relative w/r magnetic N
334	U	ZONAL CURRENT (CM/S)	instrument w/r magnetic N
335	V	MERIDIONAL CURRENT (CM/S)	instrument w/r magnetic N
336	U	ZONAL CURRENT (CM/S)	tracked w/r magnetic N
337	V	MERIDIONAL CURRENT (CM/S)	tracked w/r magnetic N
340	Ug	GEOSTROPHIC ZONAL (CM/S)	geostrophic
341	Vg	GEOSTR MERIDIONAL (CM/S)	geostrophic
342	Umg	Umodel-Ugeost (cm/s)	
350	HX	COMPASS HX	
351	HY	COMPASS HY	

360	AX	ACCELERATION AX	
361	AY	ACCELERATION AY	
362	AU	ACCELERATION AU	
363	AV	ACCELERATION AV	
370	X	X POSITION IN NET	tracked TOPS position
371	Y	Y POSITION IN NET	tracked TOPS position
372	Z	Z POSITION IN NET	tracked TOPS position
380	ZT	ZONAL TRANSPORT, M**2/SEC	total transport per unit width (m**2/sec)
381	MT	MERIDIONAL TRANSPRT, M**2/SEC	total transport per unit width (m**2/sec)
382	ZT+	ZONAL TRANSPORT (+)	positive zonal transport per unit width (m**2/sec)
383	MT+	MERIDIONAL TRANSPORT (+)	positive meridional transport per unit width (m**2/sec)
384	ZT-	ZONAL TRANSPORT (-)	negative zonal transport per unit width (m**2/sec)
385	MT-	MERIDIONAL TRANSPORT (-)	negative meridional transport per unit width (m**2/sec)
390	ZU	ZONAL TRANSPORT UPPER LIM	transport per unit width (m**2/sec)
391	MU	MERIDIONAL TRNS UPPER LIM	transport per unit width (m**2/sec)
392	ZL	ZONAL TRANSPORT LOWER LIM	transport per unit width (m**2/sec)
393	ML	MERIDIONAL TRNS LOWER LIM	transport per unit width (m**2/sec)
394	ZCW	ZONAL CURRENT WIDTH	
395	MCW	MERIDIONAL CURRENT WIDTH	
396	Dx	ZONAL MOORING LINE DRAG	
397	Dy	MERIDIANAL MOOR LINE DRAG	
398	DRG	DRAG ON MOORING LINE	
400	WS	WIND SPEED (CM/S)	
401	WS	WIND SPEED (M/S)	
410	WD	WIND DIRECTION	0-360 degrees
411	WD	WIND DIRECTION	-180 to 180 degrees
420	WU	WIND U (CM/S)	
421	WV	WIND V (CM/S)	
422	WU	WIND U (M/S)	
423	WV	WIND V (M/S)	
440	T-X	ZONAL WIND STRESS	Zonal Wind Stress, dynes/cm**2
441	T-Y	MERIDIONAL WIND STRESS	Meridional Wind Stress, dynes/cm**2
500	LA	LATITUDE	
501	LO	LONGITUDE	
600	TIM	TIME (EPIC)	EPIC Time series time h:mm as real number
620	DAT	DATE (EPIC)	EPIC Time series date yymmdd as real number
621	DAT	MMDD.HHMM	Date, Time without year (mmdd.hhmm, real no)

TABLE 2

Weather Condition Code Used to
Describe Each Set of CTD Measurements

<u>Code</u>	<u>Weather Condition</u>
0	Clear (no cloud)
1	Partly cloudy
2	Continuous layer(s) of cloud(s)
3	Sandstorm, duststorm, or blowing snow
4	Fog, thick dust or haze
5	Drizzle
6	Rain
7	Snow, or rain and snow mixed
8	Shower(s)
9	Thunderstorms

Sea State Code Used to Describe
Each Set of CTD Measurements

<u>Code</u>	<u>Height (meters)</u>	<u>Description</u>
0	0	Calm-glassy
1	0 - 0.1	Calm-rippled
2	0.1 - 0.5	Smooth-wavelet
3	0.5 - 1.25	Slight
4	1.25 - 2.5	Moderate
5	2.5 - 4	Rough
6	4 - 6	Very rough
7	6 - 9	High
8	9 - 14	Very high
9	> 14	Phenomenal

TABLE 4

Visibility Code Used to Describe
Each Set of CTD Measurements

<u>Code</u>	<u>Visibility</u>
0	< 50 meters
1	50 - 200 meters
2	200 - 500 meters
3	500 - 1,000 meters
4	1 - 2 km
5	2 - 4 km
6	4 - 10 km
7	10 - 20 km
8	20 - 50 km
9	50 km or more

TABLE 5

Cloud Type

<u>Code</u>	<u>Cloud Types</u>
0	Cirrus
1	Cirrocumulus
2	Cirrostratus
3	Alto cumulus
4	Altostratus
5	Nimbostratus
6	Stratocumulus
7	Stratus
8	Cumulus
9	Cumulonimbus
x	Clouds not visible

TABLE 6

Cloud Amount

<u>Code</u>	<u>Cloud Amount</u>
0	0
1	1/10 or less but not zero
2	2/10 - 3/10
3	4/10
4	5/10
5	6/10
6	7/10 - 8/10
7	9/10
8	10/10
9	Sky obscured or not determined

9100142

ACCESS NUMBER	REF NUMBER	FILE TYPE	PROJ CODE	INST	PLAT	CRUISE NO	CRUISE START	CRUISE END	NUM STA	NUM REC
9100142	310015	C022	0168	313F	3175	TW0399	06/15/89	06/24/89	16	7,820
9100142	310016	C022	0168	313F	31DS	TW0400	10/25/89	11/10/89	26	7,889
9100142	310017	C022	0168	313F	3175	TW0398	05/13/89	05/29/89	36	11,087
9100142	310018	C022	0168	313F	31DS	TW0401	11/26/89	12/08/89	18	4,815
9100142	TW0398	F022	0168	313F	3175		05/13/89	05/29/89	36	11,087
9100142	TW0399	F022	0168	313F	3175		06/15/89	06/24/89	16	7,820
9100142	TW0400	F022	0168	313F	31DS		10/25/89	11/10/89	26	7,889
9100142	TW0401	F022	0168	313F	31DS		11/26/89	12/08/89	18	4,815

96 3,611

9150142

FILETYPE

TRACK

FOZZ TW0398-401

	DATE	INIT.	TAPE OR DISK DSN	NO. FILES	RECL	BLK SIZE	NO. RECS
TAPE	08/13/91	CMK	A01475	1	80	2400 2400	159,851
TAPE	08/26/91	CMK	W02427**	1	80	6250 2400	159,851
DISK		RPS	W10251				

REPORTED TO PRINCIPAL INVESTIGATOR: ** DSN=DNODC*9100142-01.

Tape W02427 29 TRK, SL, 6250 bpi

W10251 DNODC*PHCLOTOUT.

ERRORS/CORRECTIONS (NOT REPORTED TO P.I.)

(TRACKS DELETED, FIELDS DELETED, ETC.)

User Name Cliff Hartley	Phone # 604-4636	Org/Task EG1200SN3/119	Submit Date 08/20/91	Job # 11541
----------------------------	---------------------	---------------------------	-------------------------	----------------

PART A

Request/Problem Category

- | | | | |
|---------------------------------------|---|---|-----------------------------------|
| <input type="checkbox"/> General Info | <input type="checkbox"/> Communications | <input type="checkbox"/> Equipment | <input type="checkbox"/> Supplies |
| <input type="checkbox"/> Software | <input type="checkbox"/> Tape Library | <input checked="" type="checkbox"/> Computer Operations | |
| <input type="checkbox"/> Other | | | |

copy tape AΦ1475 to a 'w' tape
Please scan 'w' tape

PART B (For Operator Job Requests)

Operator Job Request Type

- Run BRBUOY procedure Name: _____ [See attached list
- Run SELBUOY procedure Name: _____ [See attached list
- Run BUOYSUM procedure Name: _____ [See attached list
- Run OTHER procedure - see SPECIAL INSTRUCTIONS
- Tape Scan
- Tape to Tape Copy Scan OUTPUT tape? yes [no
- Disk to Tape Copy Scan OUTPUT tape? [yes [no
- Tape to Disk Copy
- Print [80 column [132 column [HEX [OCTAL [Character
- All files/records? [yes [no, see SPECIAL INSTRUCTIONS
- Restore VAX file Name: _____
- OTHER - see SPECIAL INSTRUCTIONS

Special Operator Instructions:

Please send 'w' tape to Asheville, N.C.
Data Set Name for 'w' tape: DNODC*9100142-01.

JOB INPUT

Id#/Filename: AΦ1475(DΦ2365)

Medium: Tape [Disk [Diskette [Other Specify:
 Code: ASCII [EBCDIC [Binary [Other Specify:
 Tape Specs: [800 1600 [6250 NL [SL
 MAX Record Length: 80 MAX Blocksize: 2400

JOB OUTPUT

Id#/Filename: WΦ2427

Medium: Tape [Disk [Diskette [Other Specify:
 Code: ASCII [EBCDIC [Binary [Other Specify:
 Tape Specs: [800 1600 [6250 [NL SL
 MAX Record Length: 80 MAX Blocksize: 2400

(OC3 Use Only)

JOB Number: 910823Φ3
Completed By: 9/8

Date/Time Start: 8-26-91/10:30
Date/Time Completed: 8-26-91/10:45

Name <i>L.H. Hardy</i>	Phone # <i>673-5436</i>	Org/Task <i>EE 2008A3AH9</i>	Submit Date <i>05/12/91</i>	File Date <i>ASAP</i>
---------------------------	----------------------------	---------------------------------	--------------------------------	--------------------------

PART A

Request/Problem Category:

- Communications Equipment Supplies
 Other Computer Operations

Request/Problem Description:

Please scan tape AΦ1475

PART B

(For Operator Job Requests)

Operator Job Request Type

- Run BRBUOY procedure Name: _____ See attached list
 Run SELBUOY procedure Name: _____ See attached list
 Run BUOYSUM procedure Name: _____ See attached list
 Run OTHER procedure - see SPECIAL INSTRUCTIONS
 Tape Scan
 Tape to Tape Copy Scan OUTPUT tape? yes no
 Disk to Tape Copy Scan OUTPUT tape? yes no
 Tape to Disk Copy
 Print 80 column 132 column HEX OCTAL Character
 All pages/records? yes no, see SPECIAL INSTRUCTIONS
 Restore VAX file Name: _____
 OTHER - see SPECIAL INSTRUCTIONS

Special Operator Instructions:

Please return tape AΦ1475 to Bill 09

JOB INPUT

Id#/Filename: AΦ1475

Medium: Tape Disk Diskette Other Specify:
 Code: ASCII EBCDIC Binary Other Specify:
 Tape Specs: 80 1600 6250 NL SL
 MAX Record Length: _____ MAX Blocksize: _____

JOB OUTPUT

Id#/Filename: _____

Medium: ~~Tape~~ Disk Diskette Other Specify:
 Code: ASCII EBCDIC Binary Other Specify:
 Tape Specs: 800 1600 6250 NL SL
 MAX Record Length: _____ MAX Blocksize: _____

(OC3 Use Only)

JOB Number: *910812Φ1*

Completed By: *J.S.*

Date/Time Start: *8-13-91/0730*

Date/Time Completed: *8-13-91/*



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
ENVIRONMENTAL RESEARCH LABORATORIES
Pacific Marine Environmental Laboratory
NOAA Building Number 3
7600 Sand Point Way N.E.
Seattle, WA 98115

July 26, 1991

R/E/PM

Mr. Sid Stillwaugh
NOAA/NODC E/OC13
7600 Sand Point Way N.E.
Seattle, WA 98115

Dear Sid,

Enclosed is one 9-track magnetic tape containing CTD cast data from 4 cruises collected in 1989. T61289 were part of the TOGA project. Stations were near the equator between 140°W and 180°. EP389 and EP489 were part of the ongoing EPOCS project and stations were within 10° of the equator from 100°W to 140°W. The TOGA data were collected from the NOAA ship, MALCOLM BALDRIGE; EPOCS data were collected from the NOAA ship, DISCOVERER. Both projects used a Neil Brown Mark III CTD equipped with an oxygen sensor.

Also, enclosed is the NODC data documentation form supplemented with further information about the content and organization of the tape.

Unfortunately, the 1990 data is not ready yet. I will send it along when it is completed. If you have any questions, please don't hesitate to contact me.

Sincerely,

K. McTaggart
Kristy McTaggart
CTD Technical Coordinator

Enclosures

cc: S. Hayes
L. Mangum

9100142

AP 1475



LRECL=80



TRANSMITTAL AND RECEIPT RECORD
(Please sign and return carbon copy acknowledging receipt)

TO:
NOAA/NESDIS/NODC
1825 Connecticut Ave NW
Washington DC 20235

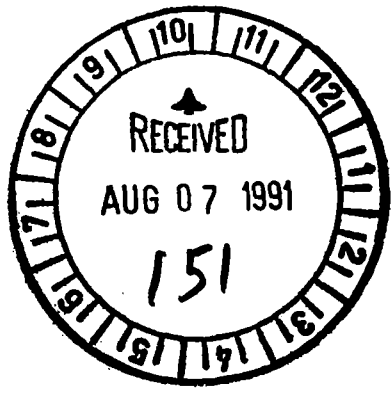
REFER TO # 9100142
ATTENTION
E/OC13, Dr. Anthony R. Picciolo

THE ITEM(S) LISTED BELOW WERE FORWARDED TO YOU BY
 ORDINARY MAIL REGISTERED MAIL AIR MAIL CERTIFIED MAIL GOVERNMENT TRUCK BY HAND OTHER

Enclosed, find documentation and one (1) magnetic data tape containing both TOGA and EPOCS CTD data taken during cruises in 1989. These data were received from Ms. Kristy McTaggart, PMEL.

Tape specs. - 9 track, 1600 bpi, ASCII, 1 file

A61475



cc: Ms. Kristy McTaggart, PMEL
Ms. Linda Mangum, PMEL

FORWARDED BY (Signature) <i>Sid Stillwaugh</i> Sid Stillwaugh	TITLE NODC Liaison Officer, Seattle	DATE FORWARDED -7/29/91
RECEIVED BY (Signature)	TITLE	DATE RECEIVED

ACCESSION NUMBER

9100142

DATA DOCUMENTATION FORM

A01475

NOAA FORM 24-13
(2-85)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEANOGRAPHIC DATA CENTER
RECORDS SECTION
WASHINGTON, DC 20235

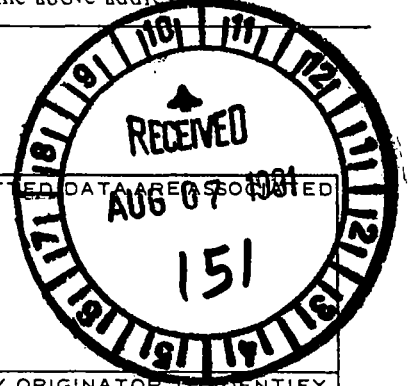
FORM APPROVED
O.M.B. No. 0648-0024
EXPIRES 2/29/87

(While you are not required to use this form, it is the most desirable mechanism for providing the required ancillary information enabling the NODC and users to obtain the greatest benefit from your data.)

This form should accompany all data submissions to NODC. Section A, Originator Identification, must be completed when the data are submitted. It is highly desirable for NODC to also receive the remaining pertinent information at that time. This may be most easily accomplished by attaching reports, publications, or manuscripts which are readily available describing data collection, analysis, and format specifics. Readable, handwritten submissions are acceptable in all cases. All data shipments should be sent to the above address.

A. ORIGINATOR IDENTIFICATION

THIS SECTION MUST BE COMPLETED BY DONOR FOR ALL DATA TRANSMITTALS



1. NAME AND ADDRESS OF INSTITUTION, LABORATORY, OR ACTIVITY WITH WHICH SUBMITTED DATA ARE ASSOCIATED

Dr. Stanley P. Hayes
NOAA / Pacific Marine Environmental Lab
Bldg. 3 / Bin C15100
1600 Sand Point Way NE
Seattle, Washington 98115

2. EXPEDITION, PROJECT, OR PROGRAM DURING WHICH DATA WERE COLLECTED

T06A cruises in 1989.
EPOCS cruises in 1989.

3. CRUISE NUMBER(S) USED BY ORIGINATOR TO IDENTIFY DATA IN THIS SHIPMENT

T61 - 89 - MB
T62 - 89 - MB
EP3 - 89 - DI
EP4 - 89 - DI

4. PLATFORM NAME(S)

R/V Malcolm
Baldrige
R/V Discoverer

5. PLATFORM TYPE(S)
(E.G., SHIP, BUOY, ETC.)

ship

6. PLATFORM AND OPERATOR NATIONALITY(IES)

U.S.

7. DATES

PLATFORM	OPERATOR	FROM: MO/DAY/YR	TO: MO/DAY/YR
U.S.	U.S.	5/9/89	12/15/89

8. ARE DATA PROPRIETARY?

NO YES

IF YES, WHEN CAN THEY BE RELEASED FOR GENERAL USE? YEAR _____ MONTH _____

11. PLEASE DARKEN ALL MARSDEN SQUARES IN WHICH ANY DATA CONTAINED IN YOUR SUBMISSION WERE COLLECTED.

GENERAL AREA

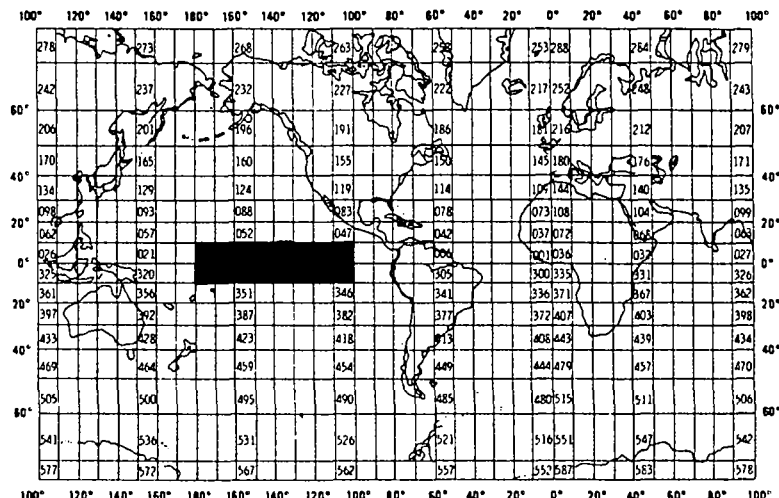
9. ARE DATA DECLARED NATIONAL PROGRAM (DNP)?

(I.E., SHOULD THEY BE INCLUDED IN WORLD DATA CENTERS HOLDINGS FOR INTERNATIONAL EXCHANGE?)

NO YES PART (SPECIFY BELOW)

10. PERSON TO WHOM INQUIRIES CONCERNING DATA SHOULD BE ADDRESSED WITH TELEPHONE NUMBER (AND ADDRESS IF OTHER THAN IN ITEM-1)

Dr. Stanley P. Hayes
(206) 526-6742



B. SCIENTIFIC CONTENT

NAME OF DATA FIELD	REPORTING UNITS OR CODE	METHODS OF OBSERVATION AND INSTRUMENTS USED (SPECIFY TYPE AND MODEL)	ANALYTICAL METHODS (INCLUDING MODIFICATIONS) AND LABORATORY PROCEDURES	DATA PROCESSING TECHNIQUES WITH FILTERING AND AVERAGING
pressure	decibars	Neil Brown CTD / O ₂	n/a	Values averaged over 1 decibar intervals.
temperature	°C	"	"	
salinity	psu	"	"	
sigma-t	kg/m ³	"	"	
oxygen	ml/l	"	"	

C. DATA FORMAT

COMPLETE THIS SECTION FOR PUNCHED CARDS OR TAPE, MAGNETIC TAPE, OR DISC SUBMISSIONS.

**1. LIST RECORD TYPES CONTAINED IN THE TRANSMITTAL OF YOUR FILE
GIVE METHOD OF IDENTIFYING EACH RECORD TYPE**

The first five records contain header information for the first cast. The header records are identified by readable labels preceding most fields. The five header records are followed by a variable number of data records depending on the depth of each cast. Data records are followed by the header records of the ~~the~~ following cast, and so forth.

2. GIVE BRIEF DESCRIPTION OF FILE ORGANIZATION

The tape contains one file comprised of all the CTD casts. Each cast contains five header records followed by a variable number of data records depending on the depth of the cast. Each record is 80 characters long. A listing of CTD casts in their order on the tape is attached.

3. ATTRIBUTES AS EXPRESSED IN PL-1 ALGOL COBOL
 FORTRAN _____ LANGUAGE

4. RESPONSIBLE COMPUTER SPECIALIST:

NAME AND PHONE NUMBER Kristy McTaggart 526-6692
 ADDRESS NOAA / PMEL, 1600 Sand Point Way NE, Seattle, WA 98115

COMPLETE THIS SECTION IF DATA ARE ON MAGNETIC TAPE

<p>5. RECORDING MODE</p> <p><input type="checkbox"/> BCD <input type="checkbox"/> BINARY</p> <p><input checked="" type="checkbox"/> ASCII <input type="checkbox"/> EBCDIC</p> <p><input type="checkbox"/> _____</p>	<p>9. LENGTH OF INTER-RECORD GAP (IF KNOWN) <input type="checkbox"/> 3/4 INCH <input type="checkbox"/> _____</p>
<p>6. NUMBER OF TRACKS (CHANNELS)</p> <p><input type="checkbox"/> SEVEN</p> <p><input checked="" type="checkbox"/> NINE</p> <p><input type="checkbox"/> _____</p>	<p>10. END OF FILE MARK</p> <p><input checked="" type="checkbox"/> OCTAL 17</p> <p><input type="checkbox"/> _____</p>
<p>7. PARITY</p> <p><input checked="" type="checkbox"/> ODD</p> <p><input type="checkbox"/> EVEN</p>	<p>11. PASTE-ON-PAPER LABEL DESCRIPTION (INCLUDE ORIGINATOR NAME AND SOME KEY SPECIFICATIONS OF DATA TYPE, VOLUME NUMBER) 1-25-91</p> <p>NOAA / PMEL / OLRD / HAVES 1989 CTD DATA : T6189 , T6289 , EP389 , EP489</p>
<p>8. DENSITY</p> <p><input type="checkbox"/> 200 BPI <input checked="" type="checkbox"/> 1600 BPI</p> <p><input type="checkbox"/> 556 BPI</p> <p><input type="checkbox"/> 800 BPI</p> <p><input type="checkbox"/> _____</p>	<p>12. PHYSICAL BLOCK LENGTH IN BYTES</p> <p style="text-align: center;">2400</p>
<p>13. LENGTH OF BYTES IN BITS</p>	<p>9 TRK / 1600 BPI / ASCII / 1 FILE</p>

RECORD FORMAT DESCRIPTION

RECORD NAME _____

14. FIELD NAME	15. POSITION FROM -1 MEASURED IN <u>bytes</u> (e.g., bits, bytes)	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		
<u>First header record:</u>					
Field label	1	5		H5	Always "CAST_" (^ = blank) cruise id. (example, "TWZ-87-0C-") ctd cast number Always "^^^ DATE ^" day (1-31) always "-" field separator month (ex. "JUN") always "-" field separator year, last 2 digits always, "^^^ TIME ^" GMT of cast (ex. "0132") always, "^ GMT" instrument description
cruise number	6	11		A11	
cast number	17	3		I3	
Field label	20	8		H8	
date: day	28	2		I2	
	30	1		H1	
month	31	3		A3	
	34	1		H1	
year	35	2		I2	
Field label	37	8		H8	
time	45	4		I4	
field label	49	4		H4	
blank	53	2			
instrument type	55	26		A26	
<u>Second header record:</u>					
Field label	1	4		H4	always "LAT_" cast latitude in degrees, decimal minutes (ex. 45_15.2 N") always "^^ LONG_" cast longitude in degrees, decimal minutes (ex. "124_15.8 W") always "^^ WEATHER_" weather code, see attached table 2 always "^^ SEA STATE_" sea state code, see attached table 3 hh:mm_dd - mmm-yy header type ("C" for standard CTD header)
latitude	5	8		A8	
Field label	13	7		H7	
longitude	20	9		A9	
Field label	29	10		H10	
weather	39	1		I1	
Field label	40	12		H12	
sea state	52	1		I1	
blank	53	2			
file creation date	55	15		A15	
blank	70	8			
header type	78	1		A1	
blank	79	2			

RECORD FORMAT DESCRIPTION

RECORD NAME _____

14. FIELD NAME	15. POSITION FROM -1 MEASURED IN (e.g., bits, bytes)	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		
<u>Third header record:</u>					
field label	1	10		H10	always "BAROMETER"
atmos. press	11	2		I2	atmospheric pressure in millibars over 1000 mbs. (ex. "19" means 1019 mbs)
field label	13	11		H11	always "WIND DIR"
wind direction	24	3		I3	wind direction in degrees from which the wind is blowing.
field label	27	7		H7	always "T SPD"
wind speed	34	2		I2	wind speed in knots
field label	36	16		H16	always "KT VISIBILITY"
visibility code	52	1		I1	visibility code, see attached table 4
blank	53	2			
number of scans	55	6		I6	number of data scans to follow
first pressure	61	6		F6.0	pressure of first scan
last pressure	67	6		F6.0	pressure of last scan
increment	73	5		FS.0	pressure increment between scans
blank	78	1			
number of variables	79	2		I2	number of variables to be listed in data scans.
<u>Fourth header record:</u>					
field label	1	6		H6	always "CLOUD" see attached
cloud type	7	1		I1	cloud type code, table 5
field label	8	9		H9	always "AMOUNT"
cloud amount	17	1		I1	cloud amount code, see attached table 6

RECORD FORMAT DESCRIPTION

RECORD NAME _____

14. FIELD NAME	15. POSITION FROM -1 MEASURED IN <small>(e.g., bits, bytes)</small>	16. LENGTH		17. ATTRIBUTES	18. USE AND MEANING
		NUMBER	UNITS		
field label	18	6		H6	always "^^ DRY ^"
dry bulb temp.	24	4		F4.1	dry air temperature in °C to nearest tenth
field label	28	6		H6	always "^^ WET ^"
wet bulb temp.	34	4		F4.1	wet bulb temperature in °C to nearest tenth
field label	38	9		H9	always "^^^ DEPTH ^"
water depth	47	4		I4	water depth to nearest meter
field label	51	2		H2	always " ^M "
blank	53	2			
data origin	55	26		A26	information on data origin
<u>Fifth header record:</u>					
variable codes	1	80		20I4	variable codes for data listed in data file. See attached table 1.
<u>Data Record:</u>					
pressure	1	8		F8.1	pressure (dB)
temperature	9	8		F8.3	temperature (°C)
salinity	17	8		F8.3	salinity (psu)
sigma - t	25	8		F8.3	density (kg/m ³)
oxygen	33	8		F8.3	dissolved oxygen (mL/L)
blank	41	40			
Note: data not present is represented by -99.999					

D. INSTRUMENT CALIBRATION

This calibration information will be utilized by NOAA's National Oceanographic Instrumentation Center in their efforts to develop calibration standards for voluntary acceptance by the oceanographic community. Identify the instruments used by your organization to obtain the scientific content of the DDF (i.e., STD, temperature and pressure sensors, salinometers, oxygen meters, velocimeters, etc.) and furnish the calibration data requested by completing and/or checking ("✓") the appropriate spaces. Add the interval time (i.e., 3 months, 6 months, 9 months, etc.) if the fixed interval calibration cycle is checked.

INSTRUMENT TYPE (MFR., MODEL NO.)	DATE OF LAST CALIBRATION	INSTRUMENT WAS CALIBRATED BY		CHECK ONE: INSTRUMENT IS CALIBRATED					INSTRUMENT IS NOT CALI- BRATED (✓)
		YOUR ORGANIZATION (✓)	OTHER ORGANIZATION (GIVE NAME)	AT FIXED INTERVALS (✓)	BEFORE OR AFTER USE (✓)	BEFORE AND AFTER USE (✓)	ONLY AFTER REPAIR (✓)	ONLY WHEN NEW (✓)	
TG189 - TG289; Neil Brown MKIII STD S/N 2156	JAN. 1989		AOML	✓					
EP389 - EP489; Neil Brown MKIII STD S/N 2044	SEPT. 1989		NW Regional Calibration Center Bellevue, WA			✓			

NOAA / PMEL / OCRD CTD Data Format Description

Magnetic tapes containing CTD cast data have the following characteristics:

- 1) 9-track
- 2) ASCII
- 3) Odd Parity
- 4) 1600 BPI
- 5) Single file
- 6) End-of-file mark - Octal 17

7) Blocking: Tapes have 80-character records blocked 30 records/block, and therefore have 2400 characters/block. The last block on the tape may contain fewer than 2400 characters/block.

8) Data Format: The enclosed data listing shows the format of the data on the tape. The listing format differs from the tape only in that the listing is of subsampled data. On this listing, there is a data header consisting of 5 80-character lines. Line 5 of the header records contains the variable codes for the data that is included in the file. These variable codes are identified in attached listing. The data scans themselves follow sequentially (F8.1,9F8.3).

The number of variables in each data scan is in columns 79-80 of line 3 in the data header. The number of data scans in each cast is in columns 55-60 of line 3 in the data header (see listing).

9) The CTD cast data files are in the order shown on the attached listing.

CAST: TG1-89-MB -001 DATE 13 MAY 89 TIME 1326 GMT PMEL NBIS CTD #2156
 LAT: 07 03.9N LONG 147 36.0W WEATHER SEA STATE 12:59 6-DEC-89 C
 BAROMETER 09 WIND DIR 054 T SPD 17 KT VISIBILITY 4035 0. 4034. 1. 5
 CLOUD AMOUNT DRY 27.0 WET 23.7 DEPTH 4196 M NOAA/PMEL/OCRD/HAYES

1	20	41	70	60
0.0	26.839	34.653	22.510	4.754
100.0	15.160	34.386	25.465	2.964
200.0	10.334	34.672	26.639	1.356
300.0	9.479	34.664	26.777	1.351
400.0	8.876	34.645	26.860	1.139
500.0	7.783	34.598	26.991	0.724
600.0	6.866	34.568	27.097	0.709
700.0	6.038	34.552	27.194	0.891
800.0	5.453	34.548	27.263	0.938
900.0	4.981	34.552	27.323	1.141
1000.0	4.520	34.559	27.380	1.271
1100.0	4.109	34.571	27.434	1.313
1200.0	3.729	34.583	27.482	1.342
1300.0	3.403	34.593	27.522	1.480
1400.0	3.174	34.600	27.550	1.590
1500.0	2.941	34.609	27.578	1.700
1600.0	2.735	34.616	27.603	1.814
1700.0	2.534	34.625	27.628	1.930
1800.0	2.403	34.631	27.643	2.032
1900.0	2.272	34.639	27.660	2.106
2000.0	2.164	34.645	27.674	2.160
2100.0	2.068	34.650	27.686	2.256
2200.0	1.999	34.655	27.695	2.395
2300.0	1.937	34.660	27.704	2.423
2400.0	1.890	34.663	27.710	2.472
2500.0	1.848	34.666	27.716	2.487
2600.0	1.824	34.668	27.719	2.510
2700.0	1.797	34.669	27.722	2.581
2800.0	1.753	34.672	27.728	2.578
2900.0	1.720	34.675	27.733	2.667
3000.0	1.670	34.677	27.739	2.738
3100.0	1.613	34.679	27.745	2.836
3200.0	1.579	34.682	27.749	2.956
3300.0	1.548	34.683	27.752	3.026
3400.0	1.524	34.684	27.755	3.127
3500.0	1.499	34.686	27.758	3.228
3600.0	1.476	34.687	27.761	3.325
3700.0	1.454	34.690	27.764	3.428
3800.0	1.431	34.692	27.768	3.534
3900.0	1.401	34.694	27.772	3.616
4000.0	1.373	34.695	27.775	3.711

Data Variables Contained on NOAA/PMEL/OCRD CTD Data Tape:

1	PRESSURE (DB)
20	TEMPERATURE (C)
41	SALINITY (PSU)
70	SIGMA-T
60	OXYGEN (ML/L)

Following casts were written to CTD Data Tape:

Cruise	#	NSCANS
TG1-89-MB	-001	4035
TG1-89-MB	-002	307
TG1-89-MB	-003	1006
TG1-89-MB	-004	1006
TG1-89-MB	-005	1004
TG1-89-MB	-006	5104
TG1-89-MB	-007	302
TG1-89-MB	-008	1004
TG1-89-MB	-009	1006
TG1-89-MB	-010	126
TG1-89-MB	-012	4943
TG1-89-MB	-013	293
TG1-89-MB	-014	1006
TG1-89-MB	-015	1003
TG1-89-MB	-016	1003
TG1-89-MB	-017	4449
TG1-89-MB	-018	1003
TG1-89-MB	-019	1004
TG1-89-MB	-020	1006
TG1-89-MB	-021	4427
TG1-89-MB	-022	302
TG1-89-MB	-023	1005
TG1-89-MB	-024	1004
TG1-89-MB	-025	997
TG1-89-MB	-026	1003
TG1-89-MB	-027	1006
TG1-89-MB	-029	301
TG1-89-MB	-030	4394
TG1-89-MB	-031	1006
TG1-89-MB	-032	1002
TG1-89-MB	-033	1004
TG1-89-MB	-034	3810
TG1-89-MB	-035	302
TG1-89-MB	-036	992
TG1-89-MB	-037	1005
TG1-89-MB	-038	1003
TG2-89-MB	-039	5355
TG2-89-MB	-040	302
TG2-89-MB	-041	507
TG2-89-MB	-042	5363
TG2-89-MB	-043	304
TG2-89-MB	-044	5218
TG2-89-MB	-045	335
TG2-89-MB	-046	79
TG2-89-MB	-047	5828

TG2-89-MB -048	503
TG2-89-MB -049	5158
TG2-89-MB -050	303
TG2-89-MB -051	4666
TG2-89-MB -052	302
TG2-89-MB -053	4461
TG2-89-MB -054	<u>301</u>
EP3-89-DI -001	3208
EP3-89-DI -002	402
EP3-89-DI -003	1004
EP3-89-DI -004	1003
EP3-89-DI -005	1003
EP3-89-DI -006	1005
EP3-89-DI -007	3844
EP3-89-DI -008	1002
EP3-89-DI -009	1001
EP3-89-DI -010	3529
EP3-89-DI -011	1002
EP3-89-DI -012	1005
EP3-89-DI -013	501
EP3-89-DI -014	3702
EP3-89-DI -014	3702
EP3-89-DI -015	1004
EP3-89-DI -016	1004
EP3-89-DI -017	1005
EP3-89-DI -018	504
EP3-89-DI -019	1007
EP3-89-DI -020	703
EP3-89-DI -021	1004
EP3-89-DI -022	4510
EP3-89-DI -023	1004
EP3-89-DI -024	307
EP3-89-DI -025	303
EP4-89-DI -001	1002
EP4-89-DI -002	302
EP4-89-DI -003	4238
EP4-89-DI -004	1006
EP4-89-DI -005	1004
EP4-89-DI -006	1002
EP4-89-DI -007	4365
EP4-89-DI -008	1003
EP4-89-DI -009	1002
EP4-89-DI -010	1004
EP4-89-DI -011	1002
EP4-89-DI -012	1001
EP4-89-DI -013	1003
EP4-89-DI -014	1002
EP4-89-DI -015	1000
EP4-89-DI -016	1002
EP4-89-DI -017	1002
EP4-89-DI -018	1005

533

94158

Total number of CTD casts written out = 96

TABLE 1
VARIABLE CODES

N	Label	Comments
0	UNDEFINED	Undefined Variable
1 P	PRESSURE (DB)	
2 D	DEPTH (CM)	
3 D	DEPTH (M)	
4 P	PRESSURE (PASCALS)	
5 PD	PRESSURE DIFFERENCE (DB)	
6 ISO	ISOTHERM DEPTH (M)	
10 DYN	DYNAMIC HEIGHT (DYN M)	
11 DYN	DYM HT (SUBSAMPLED DATA)	
12 dDN	DYNn-DYNs	Diff of North and South Dyn Ht.
13 DYN	DYNAMIC HEIGHT (DYN CM)	
20 T	TEMPERATURE (C)	1968 standard
21 T	AIR TEMPERATURE (C)	
22 T0	THERM TEMPERATURE (C)	Reversing therm. 1E35 indicates no therm.
29 IT	TEMP INTEGRAL	Depth integrated temperature
30 PT	POTENTIAL TEMP (C)	PT = Potential Temperature
40 S	SALINITY (PPT)	From SALIN1
41 S	SALINITY (PSU)	Practical Salinity Units
43 S0	BOTTLE SALINITY (PSU)	From Salinometer. 1E35 indicates no sample.
49 S	SALINITY	calculated for XBT's from mean T-S curve, M McCarty
50 C	CONDUCTIVITY	
60 O	OXYGEN (ML/L)	Dissolved oxygen calculated from CTD values
61 BO	BOTTLE OXYGEN (ML/L)	DO determined by titration. 1E35 ->no sample
62 OST	OXYGEN, %SAT	

31 /

64	AOU	APPARENT O2 UTILIZATION	
70	ST	SIGMA-T	
71	STH	SIGMA-THETA	
72	S2	SIGMA 2	
74	S4	SIGMA 4	
80	SV	SOUND VELOCITY	
85	SPV	SPECIFIC VOLUME	
90	BV	BVF (CPH)	Brunt Vaisala Frequency
91	BV2	BVF SQUARED (CPH**2)	Brunt Vaisala Frequency squared (N*ABS(N))
100	SN	SCAN NUMBER	
101	FS	FRAME SYNC	FOR TOPS
102	CL	PTG CLOCK WORD	
105	NAV	NUMBER POINTS IN AVERAGE	
110	OXC	OXYGEN CURRENT	
111	OXT	OXYGEN TEMPERATURE	
112	DOC	doXC/dt	Time rate of change of Oxygen current
120	T'	GRADIENT DT/DZ	Program CTDGRD2
121	DT	T(PROFILE 1)-T(PROFILE 2)	Program XBTDIFF
122	T'X	GRADIENT DT/DX	X is longitude
124	UTX	U * dt/dx	X is longitude
130	HTC	HEAT CONTENT (JOU/M**2)	joules / meter**2
150	FR	FREON	
152	NO3	NITRATE	
154	NO2	NITRITE	
156	PO4	PHOSPHATE	
158	SI	SILICATE	
200	DIS	VERTICAL DISPLACEMENT	From mean CTD profile
300	CS	CURRENT SPEED (CM/S)	
310	CD	CURRENT DIRECTION DEGREES	
320	U	ZONAL CURRENT (CM/S)	measured w/r true N
321	V	MERIDIONAL CURRENT (CM/S)	measured w/r true N
322	U	ZONAL CURRENT (CM/S)	relative w/r true N
323	V	MERIDIONAL CURRENT (CM/S)	relative w/r true N
324	U	ZONAL CURRENT (CM/S)	instrument w/r true N
325	V	MERIDIONAL CURRENT (CM/S)	instrument w/r true N
326	U	ZONAL CURRENT (CM/S)	tracked w/r true N
327	V	MERIDIONAL CURRENT (CM/S)	tracked w/r true N
328	W	VERTICAL VELOCITY (CM/S)	tracked TOPS
330	U	ZONAL CURRENT (CM/S)	measured w/r magnetic N
331	V	MERIDIONAL CURRENT (CM/S)	measured w/r magnetic N
332	U	ZONAL CURRENT (CM/S)	relative w/r magnetic N
333	V	MERIDIONAL CURRENT (CM/S)	relative w/r magnetic N
334	U	ZONAL CURRENT (CM/S)	instrument w/r magnetic N
335	V	MERIDIONAL CURRENT (CM/S)	instrument w/r magnetic N
336	U	ZONAL CURRENT (CM/S)	tracked w/r magnetic N
337	V	MERIDIONAL CURRENT (CM/S)	tracked w/r magnetic N
340	Ug	GEOSTROPHIC ZONAL (CM/S)	geostrophic
341	Vg	GEOSTR MERIDIONAL (CM/S)	geostrophic
342	Um _g	Umodel-Ugeost (cm/s)	
350	HX	COMPASS HX	
351	HY	COMPASS HY	

360	AX	ACCELERATION AX	
361	AY	ACCELERATION AY	
362	AU	ACCELERATION AU	
363	AV	ACCELERATION AV	
370	X	X POSITION IN NET	tracked TOPS position
371	Y	Y POSITION IN NET	tracked TOPS position
372	Z	Z POSITION IN NET	tracked TOPS position
380	ZT	ZONAL TRANSPORT, M**2/SEC	total transport per unit width (m**2/sec)
381	MT	MERIDIONAL TRANSPRT, M**2/SEC	total transport per unit width (m**2/sec)
382	ZT+	ZONAL TRANSPORT (+)	positive zonal transport per unit width (m**2/sec)
383	MT+	MERIDIONAL TRANSPORT (+)	positive meridional transport per unit width (m**2/sec)
384	ZT-	ZONAL TRANSPORT (-)	negative zonal transport per unit width (m**2/sec)
385	MT-	MERIDIONAL TRANSPORT (-)	negative meridional transport per unit width (m**2/sec)
390	ZU	ZONAL TRANSPORT UPPER LIM	transport per unit width (m**2/sec)
391	MU	MERIDIONAL TRNS UPPER LIM	transport per unit width (m**2/sec)
392	ZL	ZONAL TRANSPORT LOWER LIM	transport per unit width (m**2/sec)
393	ML	MERIDIONAL TRNS LOWER LIM	transport per unit width (m**2/sec)
394	ZCW	ZONAL CURRENT WIDTH	
395	MCW	MERIDIONAL CURRENT WIDTH	
396	Dx	ZONAL MOORING LINE DRAG	
397	Dy	MERIDIANAL MOOR LINE DRAG	
398	DRG	DRAG ON MOORING LINE	
400	WS	WIND SPEED (CM/S)	
401	WS	WIND SPEED (M/S)	
410	WD	WIND DIRECTION	0-360 degrees
411	WD	WIND DIRECTION	-180 to 180 degrees
420	WU	WIND U (CM/S)	
421	WV	WIND V (CM/S)	
422	WU	WIND U (M/S)	
423	WV	WIND V (M/S)	
440	T-X	ZONAL WIND STRESS	Zonal Wind Stress, dynes/cm**2
441	T-Y	MERIDIONAL WIND STRESS	Meridional Wind Stress, dynes/cm**2
500	LA	LATITUDE	
501	LO	LONGITUDE	
600	TIM	TIME (EPIC)	EPIC Time series time hhmm as real number
620	DAT	DATE (EPIC)	EPIC Time series date yymmdd as real number
621	DAT	MMDD.HHMM	Date, Time without year (mmdd.hhmm, real no)

TABLE 2

Weather Condition Code Used to
Describe Each Set of CTD Measurements

<u>Code</u>	<u>Weather Condition</u>
0	Clear (no cloud)
1	Partly cloudy
2	Continuous layer(s) of cloud(s)
3	Sandstorm, duststorm, or blowing snow
4	Fog, thick dust or haze
5	Drizzle
6	Rain
7	Snow, or rain and snow mixed
8	Shower(s)
9	Thunderstorms

TABLE 3

Sea State Code Used to Describe
Each Set of CTD Measurements

<u>Code</u>	<u>Height (meters)</u>	<u>Description</u>
0	0	Calm-glassy
1	0 - 0.1	Calm-rippled
2	0.1 - 0.5	Smooth-wavelet
3	0.5 - 1.25	Slight
4	1.25 - 2.5	Moderate
5	2.5 - 4	Rough
6	4 - 6	Very rough
7	6 - 9	High
8	9 - 14	Very high
9	> 14	Phenomenal

TABLE 4

Visibility Code Used to Describe
Each Set of CTD Measurements

<u>Code</u>	<u>Visibility</u>
0	< 50 meters
1	50 - 200 meters
2	200 - 500 meters
3	500 - 1,000 meters
4	1 - 2 km
5	2 - 4 km
6	4 - 10 km
7	10 - 20 km
8	20 - 50 km
9	50 km or more

TABLE 5

Cloud Type

<u>Code</u>	<u>Cloud Types</u>
0	Cirrus
1	Cirrocumulus
2	Cirrostratus
3	Alto cumulus
4	Altostratus
5	Nimbostratus
6	Stratocumulus
7	Stratus
8	Cumulus
9	Cumulonimbus
x	Clouds not visible

TABLE 6

Cloud Amount

<u>Code</u>	<u>Cloud Amount</u>
0	0
1	1/10 or less but not zero
2	2/10 - 3/10
3	4/10
4	5/10
5	6/10
6	7/10 - 8/10
7	9/10
8	10/10
9	Sky obscured or not determined

Password:

accNo	fleA	refNo	proj	inst	ship	startDate	cruise	catId
9100142	C022	310015	0168	313F	3175	1989/06/15	TW0399	201342
9100142	C022	310017	0168	313F	3175	1989/05/13	TW0398	201344
9100142	F022	TW0398	0168	313F	3175	1989/05/13	NULL	201346
9100142	F022	TW0399	0168	313F	3175	1989/06/15	NULL	201347
9100142	C022	310016	0168	313F	31DS	1989/10/25	TW0400	201343
9100142	C022	310018	0168	313F	31DS	1989/11/26	TW0401	201345
9100142	F022	TW0400	0168	313F	31DS	1989/10/25	NULL	201348
9100142	F022	TW0401	0168	313F	31DS	1989/11/26	NULL	201349

(8 rows affected)

Password:

accNo	fleA	refNo	ship	staCnt	recCnt	startDate	endDate
9100142	C022	310015	3175	16	32	89/06/15	89/06/24
9100142	C022	310017	3175	36	70	89/05/13	89/05/29
9100142	F022	TW0398	3175	36	11087	89/05/13	89/05/29
9100142	F022	TW0399	3175	16	7820	89/06/15	89/06/24
9100142	C022	310016	31DS	26	50	89/10/25	89/11/10
9100142	C022	310018	31DS	18	37	89/11/26	89/12/08
9100142	F022	TW0400	31DS	26	7889	89/10/25	89/11/10
9100142	F022	TW0401	31DS	18	4815	89/11/26	89/12/08

(8 rows affected)