

Unique No.: 221400

Date of Entry: 05/04/93

F022

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY - DINDB)

TW4829-TW4829

Accession No.: 9300033 Reference No.: TW4829
Former Accession No.: Former Reference No.: (Resub ONLY)

Media-In (DINDB): 07 - 5.25-inch Floppy Diskette

Exchange Format: E018 - STD/CTD (F022)

Processing Format: F022 - CTD/STD

* Note * If data is F022, create an additional record for C022.

Country/Institute Code: 31R2 Country/Platform Code: 35LL

Platform Type (DINDB): 09 - Ship Orig. Cruise ID:

Cruise Start Date: 08/20/91 Project Code: 0226

Cruise End Date: 09/10/91 Data Use Code (DUC): 3

Number of Stations: 42 Number of Records: 5,554

 If stations/records not appropriate then:

 Number: Units:

Ocean Area:

 Code 1: 57G Meaning: TOGA Area - Pacific (30 N TO 30 S)
 Code 2: Meaning:
 Code 3: Meaning:

DINDB Transaction Date:

ACCESSION NO. 9300033

FILETYPE

C100TRACK NO. TW4829

PROJECT

IDENTIFICATION

"COARE"F022

42

6

DATA Files

NO. Files

27,732

NO.

STEP

DATE

INIT.

TAPE OR
DISK DSN

FILES LRECL BLK SIZE RECORDS

INFO. TAPE Diskettes	3-19-93	FJM	Two 5 1/4"	X	65	512	27,732
DUPLICATE TAPE Disk	3-9-93	↓	* *	42	65	↓	↓
REFORMATTED TAPE copy	3-29-93	FJM	D02798 (A01657)	48	65	6500	27,732
REFORMATTED DISK TAPE	4-2-93	R.P.S	W60923 **	1	120	12000	5,554
FIRST MULCHEK							
FINAL MULCHEK							
MPD75 OR F022							
DATA SET FINALIZED							

ERRORS REPORTED TO PRINCIPAL INVESTIGATOR:

* 42 STATIONS LRECL = 146

** D NODC * HAWAIICTD ✓

D NODC * COA1SEA.
 D NODC * COA1SUM.
 D NODC * READMECTD.
 D NODC * READMEFMT.

D NODC * READMESEA.
 D NODC * READMESUM.

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

** LABEL: D NODC * HAWAIICTDOUT.

COMMENTS (TRACKS DELETED, FIELDS DELETED, ETC.)

D4429P

ACCESSION NO. 9300033 FILETYPE ~~100~~ F022 TRACK NO. _____

PROJECT IDENTIFICATION "COARE"

STEP	DATE	INIT.	TAPE OR DISK DSN	NO. FILES	NO. LRECL	BLK SIZE	NO. RECORDS
002 <u>DISK HOS</u>	3-1-93	FJM	TWO 5 1/4"	*	65	512	28,629
DUPLICATE TAPE <u>DISK</u>	3-9-93	✓	VAX [MITCHELL.DECARLO]	*	65	512	460
REFORMATTED TAPE							
REFORMATTED DISK							
FIRST MULCHEK							
FINAL MULCHEK							
MPD75 OR F022							
DATA SET FINALIZED							

ERRORS REPORTED TO PRINCIPAL INVESTIGATOR: * 42 CTD FILES (STATIONS)
 LRECL = 65 28,629 RECS

** 42 Bottle Tests
 LRECL = 146 460 RECORDS

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

RELS (TRACKS DELETED, FIELDS DELETED, ETC.)

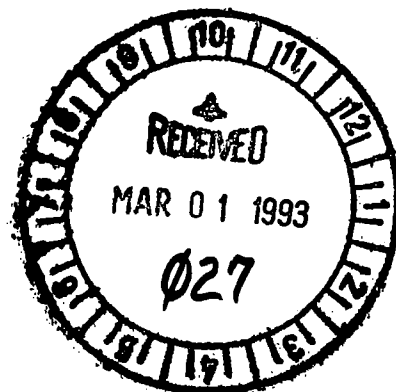


31RZ University of Hawaii at Manoa

9300033

School of Ocean and Earth Science and Technology
Joint Institute for Marine and Atmospheric Research (JIMAR)
1000 Pope Road • Honolulu, Hawaii 96822
Telephone: (808) 956-8083 • Facsimile: (808) 956-4104
February 19, 1993

Dr. Tony Picciolo
National Oceanographic Data Center (NODC)
NOAA/NESDIS
Universal Building Room 416
1825 Connecticut Ave, NW
Washington, D.C. 20235



Dear Dr. Picciolo,

3544

Enclosed are the final CTD and salinity bottle data from the COARE 156E-1 cruise. The data was obtained in August and September of 1991 on the R/V Le Noroit. The Chief Scientist were Mr. Ben Moore (Leg 1) and Dr. Roger Lukas (Leg 2). They are distributed on two IBM-PC 5.25" high density diskettes .

The cruise summary information is in a file called **coal.sum**. Please refer to the *Cruise Summary Data Format Document* (or **readme.sum**) for the specification of the file's format.

Coal.sea contains the salinity bottle file. The *COARE Water Sample Data Format* document (or **readme.sea**) describes the format of the file.

The 42 CTD data filenames are determined by the concatenation of 'c', 2 digit cruise number, 'a', a 2 digit station number, a 2 digit cast number and a file extension of **.ctd**. For example, COARE 156E-1, station 2, cast 1, would be found in **c01a0201.ctd**. *COARE CTD Data Format Description* (or **readme.ctd**) and *CTD Data Format Document* (or **readme.fmt**) provide information the data format.

Should you have problems reading the data or questions regarding the data format, please do not hesitate contact me at (808) 956-7000 (or Internet: decarlo@iniki.soest.hawaii.edu)

COARE = Coupled Ocean-Atmosphere
Response Experiment

Sincerely,

Sharon DeCarlo

Sharon DeCarlo
Computer Specialist

Cruise Summary Data Format Document
Joint Institute for Marine and Atmospheric Research (JIMAR)
University of Hawaii at Manoa
February 18, 1993

The cruise summary file (SUM file) contains information on the time and location of each station. The file is written in a format specified by the WOCE Hydrographic Programme Office. These files were designed for the Hawaii Ocean Time-series and some information will not be relevant for COARE. Details of the format are found in the WHP Office Report WHPO 90-1, available from Dr. Terrence Joyce, Director, WHP Office, Dept. of Physical Oceanography, WHOI, Woods Hole, MA 02543.

The station summary file contains the following columns:

Country Code-Ship Code-Expedition Designation / Leg (EXPOCODE) - This code allows for the identification of cast. It consists of a 4 character NODC country-ship code, a maximum of 8 character cruise number followed by a "/" and leg number. For example, the EXPOCODE for COARE 156E-1 on the Le Noroit would be 35LN01/1.

WHP-ID - Used on WOCE cruises. Ignore on COARE cruises.

Station numbers - Station number.

Cast number and Type - Every over-the-side operation is assigned a sequential cast number. The cast type is a three-character description, e.g., Rosette water samples plus CTD (ROS); CTD only (CTD), etc.

Date and time - This field consists of the number of the month, day, and the last two digits of the year (MMDDYY; note this is the American system). Time (UTC) is as GMT. The time code indicates when during the cast time was recorded, e.g., beginning (BE), bottom (BO), and completion (EN).

Position - Position is recorded during each cast together with the time the position was taken as described above. Positions are recorded as (D)DD MM.MM X, where X is N or S for latitude and E or W for longitude. The Navigation system code maybe one of the following, Dead reckoning (DR), Global Positioning System (GPS), Loran (LOR), Omega (OM), Transit (TRS), Decca (DEC), or Celestial navigation (CN). The preliminary data may not correctly identify the navigational method used.

Bottom depth - Bottom depth as recorded on console log.

Height above bottom - Bottom depth less the maximum pressure sampled.

Maximum pressure - Specifies the deepest pressure in the cast.

Number of bottles - The number of bottles used during the cast.

Parameters - A list of various parameters measured from the water samples collected during this cast. The type of variables measured are specified by the following:

- 1 = Salinity
- 2 = Oxygen
- 3 = Silicate
- 4 = Nitrate
- 5 = Nitrite
- 6 = Phosphate
- 7 = Freon 11
- 8 = Freon 12
- 9 = Tritium
- 10= Helium
- 11= Carbon 14
- 12= Carbon 13
- 13= Krypton 85
- 14= Argon
- 15= Argon 39
- 16= Neon
- 17= Radium
- 18= Radium 226
- 19= o18/o16 ratio
- 20= Strontium 90
- 21= Cesium 137

COARE Water Sample Data Format
Joint Institute for Marine and Atmospheric Research
University of Hawaii at Manoa
February 18, 1993

Water sample data from COARE are written according to the *.sea files specified by the WOCE Hydrographic Programme Office for submission of the data to the WHP.

Formats for these files are detailed in the WHP Office Report WHPO 90-1 (WOCE Report No 67/91) available from Dr. Terrence Joyce, Director, WHP Office, Dept. of Physical Oceanography, WHOI, Woods Hole, MA 02543.

The files are self-explanatory, one column is written for each measured parameter. Missing data are filled with -9. A 5-line heading labels each column.

Variables having 7 asterisks on the 4th heading line have a quality flag associated with them. These 1-digit quality flags are concatenated to form quality word which is listed as the last variable in each row. The values each digit can assume and their meanings are listed below:

Bottle quality flag definitions:

Byte Value	Definition
1	Not assigned.
2	No problems noted.
3	Leaking.
4	Did not trip correctly.
5-8	Not assigned.
9	Samples not drawn from this bottle.

Water sample quality flag definitions:

Byte Value	Definition
1	Sample for this measurement was drawn from water bottle but analysis not received.
2	Acceptable measurement.
3	Questionable measurement.
4	Bad measurement.
5	Not reported.
6	Mean of replicate measurements.
7	Manual chromatographic peak integration.
8	Irregular digital chromatographic peak integration.
9	Sample not drawn for this measurement from this bottle.

COARE CTD Data Format Description
Joint Institute of Marine and Atmospheric Research (JIMAR)
University of Hawaii at Manoa
February 18, 1993

COARE CTD data were collected using a SeaBird CTD at the maximum sampling rate of 24 samples per second (24 Hz). They are screened for errors and processed to 2 dbar averages. Details of the CTD processing can be found in HOT Data Report #1.

CTD data are written to files using formats specified by the WOCE Hydrographic Programme Office. These formats are based on NODC formats, and are detailed in the WHP Office Report WHPO 90-1, available from Dr. Terrence Joyce, Director, WHP Office, Dept. of Physical Oceanography, WHOI, Woods Hole, MA 02543.

Data consist of pressure, temperature and salinity for all casts. Details of this format are given in the file *CTD Data Format Document*. Briefly, the format consists of a 6-line header followed by the data. The header is self-documenting, and contains cast information such as cruise, station, cast number, date, etc. The data records are written so that they can be read with a simple FORTRAN read statement.

The cruise and position information are given in the cruise summary file ("SUM" file). The EXPOCODE, station number and cast number are used to cross-reference the "SUM" file to the "CTD" files. Please refer to *Cruise Summary Data Format Document* for a description of the EXPOCODE.

Temperature is reported in ITS-90 units. Since temperature sensor calibrations were done in IPTS-68 units, and the UNESCO routines require IPTS-68 temperature, all intermediate processing was done in IPTS-68. As a final step, temperature and potential temperature were converted to ITS-90 using $t_{90} = 0.99976 \times t_{68}$.

The CTD data are then followed by the number of observations, which, when positive is the number of 24-Hz data points averaged within the respective 2 dbar bin. Sometimes, especially near the start of a cast, the number of salinity data points in a bin is less than the number of temperature data points (because air bubbles affect the conductivity measurement more than they affect temperature). When this occurs, the number of data points going into the salinity average is reported.

CTD Data Format Document
Joint Institute for Marine and Atmospheric Research (JIMAR)
University of Hawaii at Manoa
February 18, 1993

CTD data are distributed in a format specified by the international WOCE Hydrographic Programme Office (WHPO). This document describes that format.

Each station/cast is stored in a separate file. A file's name can be determined by the concatenation of 'c', 2 digit cruise number, 'a', a 2 digit station number, a 2 digit cast number and a file extension of ctd. For example, COARE 156E-1, station 2, cast 3, would be found in c01a0203.ctd.

The cruise and position information for each cast is in the cruise summary file (*.sum). The EXPOCODE, station number and cast number can be used to cross-reference the CTD data files with the cruise summary file. This code allows for the identification of the cruise. It consists of a 4 character NODC country-ship code, a maximum of 8 character cruise number followed by a "/" and leg number. For example, the EXPOCODE for Leg 1 COARE 156E-1 on the Le Noroit would be 35LN001/1.

The first six records of a CTD file contain header information:

Record 1:

Column Format Item

9-22 a14 EXPOCODE (See Readme.sum file)

30-34 a5 WHP-ID (Please ignore)

41-46 3i2 date (MMDDYY)

FORTTRAN FORMAT (8x,a14,6x,a5,5x,3i2)

C "%*s %s %*s %s %*s %2d%2d%2d"

Record 2:

7-12 i6 Station number

20-22 i3 Cast number

36-40 i5 Number of Records

FORTTRAN FORMAT ('STNNBR',i6,' CASTNO',i3,1x,'NO. RECORDS=',i5)

C "%*s %d %*s %d %*s %d"

Record 3:

15-21 i7 Instrument number

37-41 f5.2 Sampling rate (hz)

FORTTRAN FORMAT (14x,i7,15x,f5.2)

C "%*s %d %*s %f"

Record 4: headers for data columns (variable labels).

Record 5: Unit header for data columns.

Record 6: Quality byte designators. All parameters requiring a quality byte are underscored by seven (7) asterisks.

The remaining records contain CTD data. The order of variables in a record are as follows: pressure, temperature, salinity, oxygen, transmission, fluorescence, number of observation used to compute average and quality.

Data Record Format:

Column Format Item

1-8	f8.1	Pressure (Decibars)
9-16	f8.4	Temperature (Degrees Celsius, International Temperature Scale of 1990)
17-25	f9.4	Salinity (1978 International Practical Salinity Scale)
24-33	f8.1	Oxygen (Not available on COARE cruises)
34-41	f8.3	Percent Transmission (not available on COARE cruises)
42-49	f8.3	Fluorescence (not available on COARE cruises)
50-57	i8	Number of samples averaged at this pressure level
58-65	i8	Quality ** (see below)
FORTRAN FORMAT (f8.1, f8.4, f9.4, f8.1, 2f8.3, i8, i8)		
C		"%f %f %f %f %f %f %d %d"

** The quality word is the left-to-right concatenation of required quality bytes for the variables measured. They are defined as follows:

Byte value	Definition
1	Not calibrated with water samples.
2	Acceptable measurement.
3	Questionable measurement.
4	Bad measurement.
5	Not reported.
6	Interpolated value.
7	Not assigned for CTD data
8	Not assigned for CTD data
9	Not sampled

Sample File: (First and last few records)

EXPOCODE	35LN001/1	WHP-ID	PRS2	DATE	082091		1
STNNBR	1	CASTNO	1	NO. RECORDS=	504		2
INSTRUMENT NO.	92859	SAMPLING RATE	24.00	HZ			3
CTDPRS	CTDTMP	CTDSAL	CTDOXY	XMISS	FLUOR	NUMBER	QUALT1
DBAR	DEG C	PSS-78	UMOL/KG	%TRANS	WT/CM2	OBS.	*
*****	*****	*****	*****	*****	*****		*
0.0	23.3044	35.3077	-99.0	-99.000	-99.000	0	226999
2.0	23.3061	35.3077	-99.0	-99.000	-99.000	96	222999
4.0	23.3164	35.3077	-99.0	-99.000	-99.000	120	222999
6.0	23.3063	35.3080	-99.0	-99.000	-99.000	84	222999
8.0	23.2997	35.3073	-99.0	-99.000	-99.000	96	222999
10.0	23.2944	35.3072	-99.0	-99.000	-99.000	84	222999
...							
986.0	4.5843	34.4732	-99.0	-99.000	-99.000	72	222999
988.0	4.5785	34.4736	-99.0	-99.000	-99.000	120	222999
990.0	4.5642	34.4744	-99.0	-99.000	-99.000	84	222999
992.0	4.5447	34.4751	-99.0	-99.000	-99.000	120	222999
994.0	4.5329	34.4754	-99.0	-99.000	-99.000	120	222999
996.0	4.5293	34.4758	-99.0	-99.000	-99.000	60	222999
998.0	4.5283	34.4757	-99.0	-99.000	-99.000	132	222999
1000.0	4.5252	34.4757	-99.0	-99.000	-99.000	108	222999
1002.0	4.5188	34.4759	-99.0	-99.000	-99.000	60	222999
1004.0	4.4918	34.4769	-99.0	-99.000	-99.000	564	222999
1006.0	4.4885	34.4778	-99.0	-99.000	-99.000	862	222999

Password:

accNo	fileA	refNo	proj	inst	ship	startDate	cruise	catId
9300033	C022	359180	0226	31R2	35LL	1991/08/20	TW4829	212289
9300033	F022	TW4829	0226	31R2	35LL	1991/08/20	NULL	212290

(2 rows affected)

Password:

accNo	fileA	refNo	ship	staCnt	recCnt	startDate	endDate
-----	-----	-----	-----	-----	-----	-----	-----
9300033	C022	359180	35LL 42		74	91/08/20	91/09/10
9300033	F022	TW4829	35LL 42		5554	91/08/20	91/09/10

(2 rows affected)