

IDOE./CUEA

FJM GPY

ACCESSION
NUMBER

79-0209

DATA DOCUMENTATION FORM

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FORM 24-13

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEANOGRAPHIC DATA CENTER
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WASHINGTON, DC 20235FORM APPROVED
O.M.B. No. 41-R2651
EXPIRES 1-81

ORIGINAL TOP - TAPE = MAM 77

(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.)

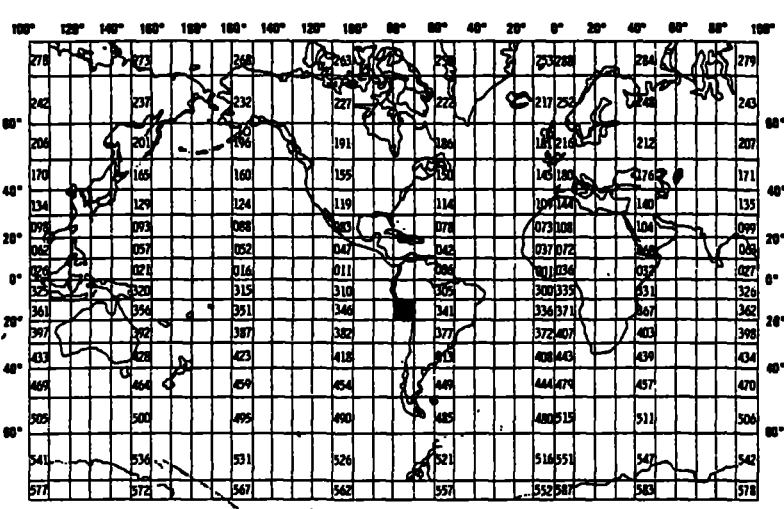
This form should accompany all data submissions to NODC. Section A, Originator Identification, must be completed when the data are submitted. It is highly desirable for NODC to also receive the remaining pertinent information at that time. This may be most easily accomplished by attaching reports, publications, 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.

33 FILES

A. ORIGINATOR IDENTIFICATION

THIS SECTION MUST BE COMPLETED BY DONOR FOR ALL DATA TRANSMITTALS

NODC TAPE = 1987
LABEL = (N4)
33 FILES
BLKS: 3E = 4000

1. NAME AND ADDRESS OF INSTITUTION, LABORATORY, OR ACTIVITY WITH WHICH SUBMITTED DATA ARE ASSOCIATED School of Oceanography MELVILLE = 254 STATIONS Oregon State University ISELIN = 199 STATIONS Corvallis, OR 97331				
2. EXPEDITION, PROJECT, OR PROGRAM DURING WHICH DATA WERE COLLECTED JOINT-II (MAM 77)		3. CRUISE NUMBER(S) USED BY ORIGINATOR TO IDENTIFY DATA IN THIS SHIPMENT JOINT-II (MAM 77)		
4. PLATFORM NAME(S) R/V MELVILLE R/V ISELIN	5. PLATFORM TYPE(S) (E.G., SHIP, BUOY, ETC.) ship	6. PLATFORM AND OPERATOR NATIONALITY(IES) PLATFORM OPERATOR MELVILLE SIO ISELIN U. Miami		7. DATES FROM: MO/DAY/YR TO: MO/DAY/YR 3/4/77 5/22/77 4/5/77 5/19/77
8. ARE DATA PROPRIETARY? <input checked="" type="checkbox"/> NO <input type="checkbox"/> 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?) <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> 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. Jane Huyer (503) 754-2206				

B. SCIENTIFIC CONTENT

Include enough information concerning manner of observation, instrumentation, analysis, and data reduction routines to make them understandable to future users. Furnish the minimum documentation considered relevant to each data type. Documentation will be retained as a permanent part of the data and will be available to future users. Equivalent information already available may be substituted for this section of the form (i.e., publications, reports, and manuscripts describing observational and analytical methods). If you do not provide equivalent information by attachment, please complete the scientific content section in a manner similar to the one shown in the following example.

EXAMPLE (HYPOTHETICAL INFORMATION)

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
Salinity	‰	Nansen bottles	Inductive salinometer (Hytech model S510)	N/A (Not applicable)
		STD Bissett-Berman Model 9006	N/A	Values averaged over 5-meter intervals
Water color	Forel scale	Visual comparison with Forel bottles	N/A	N/A
Sediment size	φ units and percent by weight	Ewing corer	Standard sieves. Carbonate fraction removed by acid treatment	Same as "Sedimentary Rock Manual," Folk '65

(SPACE IS PROVIDED ON THE FOLLOWING
TWO PAGES FOR THIS INFORMATION)

B. SCIENCE 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
Temperature Conductivity	°C mhos/cm ²	Geodyne CTD	(see attached sheets)	values averaged over one meter intervals
<div>Melville Leg 1</div> <div>MELVILLE Leg 2</div> <div>Iselin Leg 2</div> <div>MELVILLE Leg 4</div> <div>Iselin</div>	1/6	1 L1 MAM77 STA. 1-12		
	1	2 L2 MAM77 STA. 13-37		
	2	3 L3 MAM77 STA. 38-45		
	3	4 L4 MAM77 STA. 46-56		
	4	5 L5 MAM77 STA. 57-74		
	5	6 L6 MAM77 STA. 75-93		
	6	7 L7 MAM77 STA. 94-117		
	7	8 L8 MAM77 STA. 119-126		
	8	9 L9 MAM77 STA. 127-153		
	9	10 L10 MAM77 STA. 154-161		
	10	11 L11 MAM77 STA. 162-181		
	11	12 L12 MAM77 STA. 182-195		
	12	13 L13 MAM77 STA. 196-203		
	13	14 L14 MAM77 STA. 204-217		
	14	15 L15 MAM77 STA. 218-243		
	15	16 L16 MAM77 STA. 244-255		
	16	17 L17 MAM77 STA. 257-271		
	17	18 L18 MAM77 STA. 272-303		
	18	19 L19 304-343		
	19	20 L20 MAM77 STA. 344-359		
	20	21 L21 MAM77 STA. 361-362		
	21	22 B1 MAM77 BOTTLE STA. 363-371		
	22	23 L22 MAM77 STA. 372-380		
	23	24 B2 MAM77 BOTTLE STA. 394-398		
	24	25 L23 MAM77 STA. 382-393, 399-405		
	25	26 B3 MAM77 BOTTLE STA. 409-412		
	26	27 L24 MAM77 STA. 413-418		
	27	28 B4 MAM77 BOTTLE STA. 420, 423		
	28	29 L25 MAM77 STA. 424-433		
	29	30 L26 MAM77 STA. 434-448		
	30	31 L27 MAM77 STA. 449-462		
	31	32 L28 MAM77 STA. 801-810		
	32	33 L29 MAM77 STA. 811-821		
33	34 L30 MAM77 STA. 822-831			

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

Header Block - list is enclosed with mag tape (there are 33 cast groupings).
Ignore smoothed data past group #33.

Data Blocks - each cast is composed of 2 header cards and numerous lines
of data. See p. 27-28 of enclosed data report for header
card information. P. 28-29 gives data layout.

2. GIVE BRIEF DESCRIPTION OF FILE ORGANIZATION

Header block followed by as many data blocks as needed.

CONTRIBUTES AS EXPRESSED IN ☐ PL-1 ☐ ALGOL ☐ COBOL
☐ FORTRAN ☐ _____ LANGUAGE

4. RESPONSIBLE COMPUTER SPECIALIST:

NAME AND PHONE NUMBER William Gilbert (503) 754-2206

ADDRESS School of Oceanography, Oregon State Univ., Corvallis, OR 97331

COMPLETE THIS SECTION IF DATA ARE ON MAGNETIC TAPE

5. RECORDING MODE <input checked="" type="checkbox"/> BCD <input type="checkbox"/> BINARY <input type="checkbox"/> ASCII <input type="checkbox"/> EBCDIC <input type="checkbox"/> _____	9. LENGTH OF INTER-RECORD GAP (IF KNOWN) <input checked="" type="checkbox"/> 3/4 INCH <input type="checkbox"/> _____
6. NUMBER OF TRACKS (CHANNELS) <input checked="" type="checkbox"/> SEVEN <input type="checkbox"/> NINE <input type="checkbox"/> _____	10. END OF FILE MARK <input checked="" type="checkbox"/> OCTAL 17 <input type="checkbox"/> _____
7. PARITY <input type="checkbox"/> ODD <input checked="" type="checkbox"/> EVEN	11. PASTE-ON-PAPER LABEL DESCRIPTION (INCLUDE ORIGINATOR NAME AND SOME LAY SPECIFICATIONS OF DATA TYPE, VOLUME NUMBER) Oregon State University School of Oceanography BCD Even Parity JOINT-II (MAM 77) 7 track 800 BPI
8. DENSITY <input type="checkbox"/> 200 BPI <input type="checkbox"/> 1600 BPI <input type="checkbox"/> 556 BPI <input checked="" type="checkbox"/> 800 BPI <input type="checkbox"/> _____	
12. PHYSICAL BLOCK LENGTH IN BYTES 4000	
13. LENGTH OF BYTES IN BITS 6	

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		
				FIRST HEADER CARD	
Sta. No.			col. 1-3 col. 4		Station number U = up cast; D = down
Sta. Designator (if used)			col. 5-7		
Month			8-9		
Day			10-11		
time (z)			12-15		
Latitude (N)			16-21		
Longitude (W)			22-28		
Swell direction			29-31		
Swell height (ft)			32-33		
Swell period (sec)			34-35		
Wind direction			36-38		
Wind speed (knots)			39-40		
Barometric pressure (mb)			41-44		14.6 = 1014.6 mb
Dry bulb temperature			45-48		°C
Wet bulb temperature			49-52		°C
WMO weather code			53-54		
Cloud Type			55-56		
Second Cloud Type			57-58		
Cloud amount			59		
Visibility code			60		

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		
SECOND HEADER CARD					
COLUMNS					
Bottom depth (m)				1-4	
Sample depth (m)				5-10	
Sample temperature (°C)				11-16	
Sample salinity (o/oo)				17-23	
Second sample depth (if used)				24-29	
Second sample temp. (°C)				30-35	
Second sample sal. (o/oo)				36-42	
CTD number				43-47	
Year				49-52	
Data					
Depth (m)					
Temperature (°C)					
Conductivity (mmhos/cm ²)					
Salinity (o/oo)					
sigma-T					
(repeats)					

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 (✓)	
CTD		X				X			

Documentation of Processed STD Velocimeter Data

National Oceanographic Data Center

September 1971

Please use this form as a supplement to the NODC "Data Documentation Form,

All items on this form are considered of importance to the archive processing and future use of STD-velocimeter data. In submitting computer processed data, it is especially important to complete the section titled "Reduction-Processing."

A. Instrument - Sensors

1. Instrument - Sensors

- a. Manufacturer Geodyne CTD
- b. Model
- c. Serial
- d. Sensors (The questions asked about each sensor listed may serve as a guide for information to be submitted about other sensors.)

2. Salinity (Compensated Conductivity)

- a. Model
- b. Serial
- c. Date of last calibration data was calibrated using samples collected during casts.

3. Temperature

- a. Model
- b. Serial
- c. Date of last calibration data was calibrated using samples collected during casts.

4. Pressure

- a. Model
- b. Serial #3 #4 #5
- c. Date of last calibration April 78 Oct. 76 Jan. 77
- d. If pressure is recorded as depth, what relationship was used to arrive at depth?

5. Sound Velocity

- a. Model
- b. Serial number
- c. Date of last calibration
- d. Is raw calibration data available? Yes No
- e. Person to be contacted for calibration information.
- f. Reference equation used for sound velocity (i.e., Wilson, Greenspan, etc., or variations thereon).

6. Conductivity (if used)

- a. Model
- b. Serial
- c. Date of last calibration data was calibrated using salinity samples collected during casts.

7. Other (Attach a list for other parameters such as ambient light, transmissivity, etc.)

8. Is calibration data for the above sensors available? Yes X No

9. Have you modified your instrument and/or sensors? yes

10. Which parameters are affected by the modifications? conductivity
temperature

11. What is the result of the modification with respect to the accuracy, resolution, and precision of the data? improved accuracy

B. Operational Methods

1. Mode of use

- a. Platform is affected by pitch and roll which is not decoupled from the package.
- b. Platform is stable or platform motion is decoupled from package.
- c. Unit is freefalling.
- d. Other (describe).

2. Lowering rate (meters/min)

- a. Enter lowering rate in regions of high parameter gradients 10 m/min
- b. Enter lowering rate in regions of low parameter gradients 35 m/min

3. Time Response

- a. Unit measures continuously

- 1 set of T,C, reference word
- b. Unit measures _____ samples per second
- c. Samples are instantaneous measurements at depths dependent on lowering rate.
- 4. Power Supply
 - a. Power supply is unstabilized _____ Maximum fluctuations + _____ Volts About _____ Volts nom
 - b. Power supply to the following portions of the system is stabilized. uses self-contained batteries.
- 5. Field Checks (Indicate any operational "Deck" tests routinely made on the system (e.g., ice point tests on temperature sensors, electrical tests, etc.). (Describe) bottle and temperature samples which are taken simultaneously with CTD observations are compared
- 6. Thermal Environment
 - a. Instrument stored in water bath at _____ °C to °C

C. Reduction-Processing

1. Primary Data Output

- a. Strip chart (state scale setting (s))
- b. Paper tape
- (c) Magnetic tape
 - (1) Digital
 - (2) Analog

2. Initial Reduction

- (a) Down trace only
- b. Down trace and up trace processed

- (1) Separate
- (2) Averaged

- c. Multiple lowerings _____ through depth interval _____
- d. Values smoothed against depth. Describe (e.g., running average, etc.)
- e. Special routines to compensate for "spiking" (describe)
- f. Compression applied to final data record (i.e., vertical spacing, rounding of depth, temperature, salinity, etc.)

→ Spikes removed by removing values which are bad on T, S, σ_t plots.

3. Corrections

a. Were corrections applied to final data? yes

b. Corrections based on (by parameter)

- (1) Surface sample
- (2) On-line samplers (give depth relation to probe) T,S (3 m above probe)
- (3) Separate lowering (Nansen casts, other probes)
- (4) Other _____

c. For corrected data, what is the estimated average accuracy of the final data? For uncorrected data, what is the average bias (if known)?

(1) Depth-pressure	$\pm \frac{0.2}{\text{m}}$
(2) Temperature	$\pm \frac{0.02}{^\circ\text{C}}$
(3) Salinity	$\pm \frac{0.03}{\text{o/oo}}$
(4) Sound Velocity	$\pm \frac{\quad}{\quad}$

and recovered PD on 16 May. We began CTD stations off Callao on 17 May, completed the section on 18 May (Fig. 16), and then retrieved Yucca-Too and Opuntia (Fig. 3). By combining this Callao section with those occupied on MELVILLE Leg 4, we obtained a second large scale survey along the Peru coast (Fig. 17). On 19 May, we made Station 821 alongside Peyote, recovered Peyote and headed toward Callao.

Personnel participating in the hydrographic data collection were R. L. Smith, A. Huyer, M. Linse, K. McCarey, R. Romea and A. Badan-Dangon of Oregon State University, and A. M. Querida at the Universidad de San Marcos, Lima.

PROCEDURES

At most stations, we made both a CTD cast to obtain continuous profiles of temperature and salinity, and a bottle cast to obtain samples for chemical analysis. Because of differences in facilities on the MELVILLE and the ISELIN, we used different sampling procedures on the two ships.

On the MELVILLE, the bottle casts were combined with CTD casts, i.e., Niskin bottles were hung on the conducting cable while the CTD was being lowered. Hence, the CTD lowering was frequently interrupted. In addition, an NIO bottle equipped with reversing thermometers was mounted about 3 m above the CTD sensors, to obtain in situ calibration data. During combined bottle casts, this bottle was tripped at the bottom of the cast, after a 5-10 minute wait to allow the thermometers to reach equilibrium. At stations with no bottle cast, we still used the NIO bottle, either at the bottom of the cast or after the CTD was raised to the desired sample depth, to obtain temperature data and a salinity sample for CTD calibration.

On the ISELIN, CTD casts were made immediately before or after the bottle cast at the same station. Again, we used an NIO bottle to obtain in situ temperature and salinity data. During part of the cruise, (stations 272-343) we omitted thermometers on the NIO bottle to save time; experience had indicated that the CTD temperature data was usually reliable.

Three different CTD probes were used. Each measures pressure, temperature, and conductivity sequentially, and begins a new sampling cycle about once per second. The CTD normally records while it is being lowered, at a rate of about $15\text{--}30\text{ m min}^{-1}$. To reduce the salinity "spiking" through the thermocline, the CTD was lowered very slowly (less than 10 m min^{-1}) through the thermocline. This slow lowering rate, combined with the presence of high frequency internal waves, probably caused the apparent temperature and density inversions at the top of the thermocline observed at some stations, e.g. 82-85, 142, 143, 153. It should be remembered that although the CTD data are presented as a function of depth, they are not collected instantaneously, and may include the effects of high frequency time variability.

TEMPERATURE AND CONDUCTIVITY CALIBRATION

Each CTD probe was calibrated for temperature and conductivity in a bath of sea water, between JASON and MAM 77, using procedures described in Huyer et al. (1978). In addition, we collected temperature and salinity samples with most CTD casts to provide in situ calibration data. From the bath calibrations, and prior in situ calibration data, we obtained equations for preliminary processing of the CTD data (Table 1).

The CTD temperature and conductivity sensors are calibrated in situ by using two or three protected reversing thermometers on a sampling bottle

differences are of the order of the standard deviations; and for CTD #5, the standard deviation is about twice as large as expected. We, therefore, used the sample data to obtain new calibration constants for conductivity (Table 3). Using these constants to obtain new CTD values, we again compared the differences between CTD and sample values, and obtained both means and standard deviations (Table 3) within the sampling and instrument errors (± 0.03 mmhos cm^{-2}).

CTD DATA PROCESSING

After the calibration constants are determined, the CTD data are read from magnetic or punched paper tapes. Pressure, conductivity and temperature are calculated. If depth remains constant, conductivity and temperature from up to six samples are averaged. If pressure decreases, the data are deleted. The resulting pressure-increasing file is used to calculate salinity using Perkin and Walker's (1972) equations, and sigma-t is calculated using Knudsen's equation as reported by Sweers (1971). Profiles of T, S, σ_t are plotted for error detection. The data are edited by hand to remove obviously erroneous values, and replotted. Temperature-salinity diagrams are plotted as a final check on the conductivity calibration (conceivably it can change from station to station because it depends on cell geometry). Both the profile plots and T-S plots are compared with data from bottle casts whenever possible.

For one station (399), data were recorded while the CTD was being raised rather than during its descent; this is indicated in the listings by a U (for up) rather than a D (for down) immediately after the station number. At another station (152) no data were recorded between 38 m and 74 m; we linearly interpolated temperature, salinity and sigma-t in this gap in order to compute the dynamic height.

Table 3. Conductivity calibration constants adopted as a result of in situ calibration, and the mean and standard deviation of the differences between the new CTD data and the sample data.

	Calibration Constants		ΔC		
	a	b	mean	s.d.	N
CTD #3	-0.119	0.0145798	0.005	0.024	28
CTD #4	-0.031	0.0145493	0.009	0.030	158
CTD #5	-0.106	0.0141543	0.002	0.020	32

Table 4. Stations whose T-S curves showed the processed CTD salinity data to be in error. In almost all cases, the error was substantiated by the sample data, or data from a bottle cast at the same station. The salinity data were corrected by the addition of amount shown.

Station	Correction (o/oo)	Station	Correction (o/oo)
25	-0.06	204	-0.06
27	-0.06	205	-0.05
29	-0.03	257	-0.07
33	-0.04	258	-0.04
38	-0.08	382	-0.06
154	+0.04	383	-0.06
155	+0.04	399	-0.03
156	+0.04	400	-0.03
157	+0.04	413	-0.07
158	+0.04	414	-0.04
159	+0.04	424	-0.06
160	+0.04	425	-0.03
182	-0.06	426	-0.02
183	-0.03	434	-0.03

For several stations (Table 4), the T-S diagrams showed that the processed salinity data were in error. For these stations, the difference between the sample and processed CTD salinity was also unusually large. In most cases, the processed CTD salinity was too high, but in other cases the salinity was too low. The stations at which the salinity is too low all occur together (Stations 154-160), and with the same CTD probe; we believe some non-conducting material may have been deposited on the conductivity cell between Stations 153 and 154 and removed when the probe was washed at the end of MELVILLE Leg 2. The stations at which salinity was too high also seem to occur in groups, and all occur after periods when the CTD was not used for an unusually long interval; we believe salt crystals may have been deposited on the conductivity cells during the periods of disuse, and that their slow dissolution resulted in the high salinity data. The CTD salinity data from these stations were corrected by subtracting or adding the amount shown in Table 4, and the new salinity data were used to recompute sigma-t.

Since the resolution of the salinity data (± 0.03 o/oo) was only about an order of magnitude smaller than the total salinity range we decided to smooth the salinity data, and also the sigma-t data. The technique we used was to interpolate linearly the data to 1 m intervals, and then to apply three "Hannings" consecutively. Each "Hanning" is a running average over three points weighted by ($\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$). Applying the Hanning three times is equivalent to applying a seven-point binomial filter. Effectively, then, the data are smoothed over a 7 m interval, which is equivalent to three times the length of the CTD probe. We smoothed the salinity and sigma-t data independently; the temperature

data were not smoothed. This data file, of unsmoothed temperature, smoothed salinity, and smoothed sigma-t, is regarded as the final data, and was used to generate the plots and listings in the body of this data report.

For stations with no CTD data (due to CTD malfunctions on MELVILLE Leg IV), we have included the temperature and salinity data from the bottle casts. The profile plots for bottle stations show the actual data, and all observed data are listed. The temperature and salinity data were linearly interpolated to standard depths, and all computed parameters including sigma-t were calculated from the temperature and salinity at standard depths.

Temperature-salinity curves for all stations are shown in Figure 18. The stations have been grouped to correspond as much as possible to the station position maps presented earlier (Figs. 2, 4, 6-10, 12-16); for stations with no CTD casts, we have included the T-S diagrams for the bottle casts at those stations. In some of the T-S diagrams, e.g. for Stations 75-93 and 204-217, there are apparent discontinuities at about 7.2°C and 9.4°C; these are not observed in the bottle data, and are believed to be an artifact caused by the digitizing electronics of CTD Probe No. 4. T-S curves for stations at which we used CTD Probe No. 3 (e.g. 801-810) or CTD Probe No. 5 (e.g. 218-243) do not have these discontinuities. The T-S curves for CTD No. 5 stations show that these salinities are too high at temperatures less than 10°C, by an amount which increases from 0.02 o/oo at 10°C to about 0.05 o/oo at 6°C.

ACKNOWLEDGMENTS

We thank all those who participated in the massive effort to collect all of the data, especially Mike Linse, Henry Pittock, Jackie Paul, and "Oregon" Whaling. We especially thank the officers and crew of the MELVILLE and the ISELIN for their vital assistance and Laina Hardenburger for typing the data report. These observations were funded by the Office for the International Decade of Ocean

Exploration under Grants OCE 76-00594 and OCE 76-04825; data processing continued under Grant OCE 78-03381. This report is a contribution to the Coastal Upwelling Ecosystems Analysis Program.

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***** Record 1437 in INVENTORY *****

001470

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY)

RPS

DATE OF ENTRY: 10/04/85

REFERENCE NUMBER: 319563 ACCESSION NUMBER: 7900209
FORMER REFERENCE NUMBER: _____ FORMER ACCESSION NUMBER: _____ (RESUB ONLY)

INVENTORY

MEDIA-IN: 01 - Digital Magnetic Tape DINDB CODE 09
EXCHANGE (FORMAT): E001 - Low Resolution STD
PROCESSING (FORMAT): C022 - Low Resolution STD (SD2 Format)

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

INSTITUTE (COUNTRY AND INSTITUTE CODES): 3101
PLATFORM (COUNTRY AND PLATFORM CODES): 318M
PLATFORM TYPE: 9 - Ship DINDB CODE 09

ORIGINATORS FILE ID: _____ ORIGINATORS CRUISE ID: TT3217
CRUISE START DATE: 03/04/77 CRUISE END DATE: 03/28/77 Press PgDn
PROJECT CODE: 0071 DATA USE CODE (DUC): 1 to continue

VOLUME - NUMBER OF STATIONS: 164 NUMBER OF RECORDS: 12,621

If STA/REC counts are not appropriate then enter -

NUMBER: _____ UNITS: _____

OCEAN AREA

CODE 1: 61B MEANING: SW Pacific (limit-140 W)
CODE 2: _____ MEANING: _____
CODE 3: _____ MEANING: _____

DINDB TRACK TRANSACTION GENERATED: / /

***** Record 1439 in INVENTORY *****

001472

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY)

RPS

E OF ENTRY: 10/04/85

REFERENCE NUMBER: 329377 ACCESSION NUMBER: 7900209
FORMER REFERENCE NUMBER: _____ FORMER ACCESSION NUMBER: _____ (RESUB ONLY)

INVENTORY

MEDIA-IN: 01 - Digital Magnetic Tape DINDB CODE 09
EXCHANGE (FORMAT): E001 - Low Resolution STD
PROCESSING (FORMAT): C022 - Low Resolution STD (SD2 Format)

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

INSTITUTE (COUNTRY AND INSTITUTE CODES): 3125
PLATFORM (COUNTRY AND PLATFORM CODES): 32IC
PLATFORM TYPE: 9 - Ship DINDB CODE 09

ORIGINATORS FILE ID: _____ ORIGINATORS CRUISE ID: TT3218
CRUISE START DATE: 04/05/77 CRUISE END DATE: 04/23/77 Press PgDn
PROJECT CODE: 0071 DATA USE CODE (DUC): 1 to continue

VOLUME - NUMBER OF STATIONS: 168 NUMBER OF RECORDS: 4,526

If STA/REC counts are not appropriate then enter -

NUMBER: _____ UNITS: _____

OCEAN AREA

CODE 1: 61B MEANING: SW Pacific (limit-140 W)
CODE 2: _____ MEANING: _____
CODE 3: _____ MEANING: _____

DINDB TRACK TRANSACTION GENERATED: / /

***** Record 1441 in INVENTORY *****

001474

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY)

RPS

DATE OF ENTRY: 10/04/85

REFERENCE NUMBER: 319564 ACCESSION NUMBER: 7900209
FORMER REFERENCE NUMBER: _____ FORMER ACCESSION NUMBER: _____ (RESUB ONLY)

INVENTORY

MEDIA-IN: 01 - Digital Magnetic Tape DINDB CODE 09
EXCHANGE (FORMAT): E001 - Low Resolution STD
PROCESSING (FORMAT): C022 - Low Resolution STD (SD2 Format)

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

INSTITUTE (COUNTRY AND INSTITUTE CODES): 3101
PLATFORM (COUNTRY AND PLATFORM CODES): 318M
PLATFORM TYPE: 9 - Ship DINDB CODE 09

ORIGINATORS FILE ID: _____ ORIGINATORS CRUISE ID: TT3219
CRUISE START DATE: 05/05/77 CRUISE END DATE: 05/22/77 Press PgDn
PROJECT CODE: 0071 DATA USE CODE (DUC): 1 to continue

VOLUME - NUMBER OF STATIONS: 67 NUMBER OF RECORDS: 7,332

If STA/REC counts are not appropriate then enter -

NUMBER: _____ UNITS: _____

OCEAN AREA

CODE 1: 61B MEANING: SW Pacific (limit-140 W)
CODE 2: _____ MEANING: _____
CODE 3: _____ MEANING: _____

DINDB TRACK TRANSACTION GENERATED: ____ / ____ / ____

***** Record 1443 in INVENTORY *****

001476

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY)

RPS

DATE OF ENTRY: 10/04/85

REFERENCE NUMBER: 329378

ACCESSION NUMBER: 7900209

FORMER REFERENCE NUMBER: _____

FORMER ACCESSION NUMBER: _____ (RESUB ONLY)

INVENTORY

MEDIA-IN: 01 - Digital Magnetic Tape DINDB CODE 09

EXCHANGE (FORMAT): E001 - Low Resolution STD

PROCESSING (FORMAT): C022 - Low Resolution STD (SD2 Format)

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

INSTITUTE (COUNTRY AND INSTITUTE CODES): 3125

PLATFORM (COUNTRY AND PLATFORM CODES): 321C

PLATFORM TYPE: 9 - Ship DINDB CODE 09

ORIGINATORS FILE ID: _____ ORIGINATORS CRUISE ID: TT3220

CRUISE START DATE: 05/12/77 CRUISE END DATE: 05/19/77 Press PgDn

PROJECT CODE: 0071 DATA USE CODE (DUC): 1 to continue

VOLUME - NUMBER OF STATIONS: 20 NUMBER OF RECORDS: 1,633

If STA/REC counts are not appropriate then enter -

NUMBER: _____ UNITS: _____

OCEAN AREA

CODE 1: 61B MEANING: SW Pacific (limit-140 W)

CODE 2: _____ MEANING: _____

CODE 3: _____ MEANING: _____

DINDB TRACK TRANSACTION GENERATED: / /

***** Record 1436 in INVENTORY *****

001469

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY)

RPS

DATE OF ENTRY: 10/04/85

REFERENCE NUMBER: TT3217

ACCESSION NUMBER: 7900209

FORMER REFERENCE NUMBER: _____

FORMER ACCESSION NUMBER: _____

(RESUB ONLY)

INVENTORY

MEDIA-IN: 01 - Digital Magnetic Tape

DINDB CODE 09

EXCHANGE (FORMAT): E089 - CUEA STD

PROCESSING (FORMAT): F022 - CTD/STD

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

INSTITUTE (COUNTRY AND INSTITUTE CODES): 3101

PLATFORM (COUNTRY AND PLATFORM CODES): 318M

PLATFORM TYPE: 9 - Ship

DINDB CODE 09

ORIGINATORS FILE ID: _____

ORIGINATORS CRUISE ID: JOINT-II

CRUISE START DATE: 03/04/77

CRUISE END DATE: 03/28/77

Press PgDn

PROJECT CODE: 0071

DATA USE CODE (DUC): 1

to continue

VOLUME - NUMBER OF STATIONS: 164

NUMBER OF RECORDS: 12,621

If STA/REC counts are not appropriate then enter -

NUMBER: _____ UNITS: _____

OCEAN AREA

CODE 1: 61B

MEANING: SW Pacific (limit-140 W)

CODE 2: _____

MEANING: _____

CODE 3: _____

MEANING: _____

DINDB TRACK TRANSACTION GENERATED: / /

***** Record 1438 in INVENTORY *****

001471

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY)

RPS

DATE OF ENTRY: 10/04/85

REFERENCE NUMBER: TT3218 ACCESSION NUMBER: 7900209
FORMER REFERENCE NUMBER: _____ FORMER ACCESSION NUMBER: _____ (RESUB ONLY)

INVENTORY

MEDIA-IN: 01 - Digital Magnetic Tape DINDB CODE 09
EXCHANGE (FORMAT): E089 - CUEA STD
PROCESSING (FORMAT): F022 - CTD/STD

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

INSTITUTE (COUNTRY AND INSTITUTE CODES): 3125
PLATFORM (COUNTRY AND PLATFORM CODES): 32IC
PLATFORM TYPE: 9 - Ship DINDB CODE 09

ORIGINATORS FILE ID: _____ ORIGINATORS CRUISE ID: JOINT-II
CRUISE START DATE: 04/05/77 CRUISE END DATE: 04/23/77 Press PgDn
PROJECT CODE: 0071 DATA USE CODE (DUC): 1 to continue

VOLUME - NUMBER OF STATIONS: 168 NUMBER OF RECORDS: 4,586

If STA/REC counts are not appropriate then enter -

NUMBER: _____ UNITS: _____

OCEAN AREA

CODE 1: 61B MEANING: SW Pacific (limit-140 W)
CODE 2: _____ MEANING: _____
CODE 3: _____ MEANING: _____

DINDB TRACK TRANSACTION GENERATED: / /

***** Record 1440 in INVENTORY *****

001473

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY)

RPS

E OF ENTRY: 10/04/85

REFERENCE NUMBER: TT3219 ACCESSION NUMBER: 7900209
FORMER REFERENCE NUMBER: _____ FORMER ACCESSION NUMBER: _____ (RESUB ONLY)

INVENTORY

MEDIA-IN: 01 - Digital Magnetic Tape DINDB CODE 09
EXCHANGE (FORMAT): EO89 - CUEA STD
PROCESSING (FORMAT): F022 - CTD/STD

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

INSTITUTE (COUNTRY AND INSTITUTE CODES): 3101
PLATFORM (COUNTRY AND PLATFORM CODES): 318M
PLATFORM TYPE: 9 - Ship DINDB CODE 09

ORIGINATORS FILE ID: _____ ORIGINATORS CRUISE ID: JOINT-II
CRUISE START DATE: 05/05/77 CRUISE END DATE: 05/22/77 Press PgDn
PROJECT CODE: 0071 DATA USE CODE (DUC): 1 to continue

VOLUME - NUMBER OF STATIONS: 67 NUMBER OF RECORDS: 7,332

If STA/REC counts are not appropriate then enter -

NUMBER: _____ UNITS: _____

OCEAN AREA

CODE 1: 61B MEANING: SW Pacific (limit-140 W)
CODE 2: _____ MEANING: _____
CODE 3: _____ MEANING: _____

DINDB TRACK TRANSACTION GENERATED: / /

***** Record 1442 in INVENTORY *****

001475

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY)

RPS

DATE OF ENTRY: 10/04/85

REFERENCE NUMBER: TT3220 ACCESSION NUMBER: 7900209
FORMER REFERENCE NUMBER: _____ FORMER ACCESSION NUMBER: _____ (RESUB ONLY)

INVENTORY

MEDIA-IN: 01 - Digital Magnetic Tape DINDB CODE 09
EXCHANGE (FORMAT): E089 - CUEA STD
PROCESSING (FORMAT): F022 - CTD/STD

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

INSTITUTE (COUNTRY AND INSTITUTE CODES): 3125
PLATFORM (COUNTRY AND PLATFORM CODES): 321C
PLATFORM TYPE: 9 - Ship DINDB CODE 09

ORIGINATORS FILE ID: _____ ORIGINATORS CRUISE ID: JOINT-II
CRUISE START DATE: 05/12/77 CRUISE END DATE: 05/19/77 Press PgDn
PROJECT CODE: 0071 DATA USE CODE (DUC): 1 to continue

VOLUME - NUMBER OF STATIONS: 20 NUMBER OF RECORDS: 1,653

If STA/REC counts are not appropriate then enter -

NUMBER: _____ UNITS: _____

OCEAN AREA

CODE 1: 61B MEANING: SW Pacific (limit-140 W)
CODE 2: _____ MEANING: _____
CODE 3: _____ MEANING: _____

DINDB TRACK TRANSACTION GENERATED: / /

ACCESSION NO. 7900249FILETYPE F022TRACK NO. TT3217-20

PROJECT

IDENTIFICATION

JOE/CUEA/
JOINT-11

STEP	DATE	INIT.	TAPE OR DISK DSN	NO. FILES	NO. RECL	BLK SIZE	NO. RECORDS
ORIG. TAPE							
<u>MAM77</u>				<u>55</u>		<u>4000</u>	
DUPLICATE TAPE				<u>↓</u>		<u>↓</u>	
<u>W06136</u>	<u>6/24/83</u>	<u>JBR</u>					
REFORMATTED TAPE							
REFORMATTED DISK							
	<u>9/26/85</u>	<u>RPS</u>	<u>DNODCK MELOUT.</u> <u>" * MEL15OUT.</u>	<u>2</u>	<u>120</u>	<u>224</u>	<u>116000</u>
FIRST MULCHEK	<u>10/23</u>	<u>CBA</u>	<u>SEZDATA, F022 TT3217</u> <u>TT3218</u>	<u>4</u>	<u>120</u>		<u>35861</u>
FINAL MULCHEK	<u>10/24</u>	<u> </u>	<u>TT 3219</u> <u>TT 3220</u>				
MPD75 OR F022	<u>10/24</u>	<u> </u>	<u>F022, TT3217/F022</u>	<u>1</u>			<u>35861</u>
DATA SET FINALIZED	<u>10/24</u>	<u>CBA</u>	<u>"</u>	<u>1</u>	<u>120</u>		<u>35861</u>

ERRORS REPORTED TO PRINCIPAL INVESTIGATOR:

NONE

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

SEE HANDWRITTEN NOTE FROM R. STEIN ATTACHED TO
MEL15 PASS1. LISTING.

COMMENTS (TRACKS DELETED, FIELDS DELETED, ETC.)

SEE ~~THE~~ NOTE MENTIONED ABOVE.

ERROR CORRECTION DOCUMENTATION FORM

DATE:

TO:

FROM:

SUBJECT: Error Correction in Processing of Data Set - Accession # 7900209

- 1) File Type: C139
- 2) Project Ident.: IDOE/CUEA
- 3) ^{Ref.}~~Track~~ Nos.: (none given)

I. Error Corrections as reported to Principal Investigator:

Error

Correction Completed (Check)

II. Additional error corrections:

Error

Correction Completed (Check)

III. Processor Name: _____

ACCESSION/TRACK # 7900209/

Step	Completion Date/Init.		Tape # or DSN	# of Files	BLKSIZE	LRECL	# RECORDS
ORIGINATOR TAPE	6/24/83	888P	MAM97	55	4000		
QUADI/SCAN TAPE	6/24/83	888P	W06136	55	4000		
ASSIGNED FOR PROCESS.							
DDF EVALUATION							
QUALITY REVIEW							
PRELIMINARY DATA SORT							
PRELIMINARY MULCHEK							
FIRST USER TAPE							
WORK DISK FILE							
FINAL USER TAPE							
FINAL MULCHEK							
EDITED DISK FILE							
DATA SET "FINALIZED"							

TAPE ASSIGNMENT SHEET

ACCESSION NO.: 7900209

TRACK NO(s):

Type of Tape	Tape Number	Label	LRECL	BLKSIZE	RECFM	Remarks
Originator	MAM77	NL		4000	7-tr 800 BPI BCD Even Par.	
Duplicate	W06136	SL		4000	9-tr 1600 BPI ASCII Odd Parity	
Reformatted						
First User						
Final User						

Password:

accNo	fleA	refNo	proj	inst	ship	startDate	cruise	catId
7900209	F022	TT3217	0071	3101	318M	1977/03/04	JOINT-II	309517
7900209	F022	TT3219	0071	3101	318M	1977/05/05	JOINT-II	309519
7900209	C022	319563	0071	3101	318M	1977/03/04	TT3217	309521
7900209	C022	319564	0071	3101	318M	1977/05/05	TT3219	309523
7900209	F022	TT3218	0071	3125	32IC	1977/04/05	JOINT-II	309518
7900209	F022	TT3220	0071	3125	32IC	1977/05/12	JOINT-II	309520
7900209	C022	329377	0071	3125	32IC	1977/04/05	TT3218	309522
7900209	C022	329378	0071	3125	32IC	1977/05/12	TT3220	309524

(8 rows affected)

Password:

accNo	fleA	refNo	ship	staCnt	recCnt	startDate	endDate
7900209	F022	TT3217	318M	164	12347	77/03/04	77/03/28
7900209	F022	TT3219	318M	67	7258	77/05/05	77/05/22
7900209	C022	319563	318M	164	228	77/03/04	77/03/28
7900209	C022	319564	318M	67	109	77/05/05	77/05/22
7900209	F022	TT3218	32IC	168	14604	77/04/05	77/04/23
7900209	F022	TT3220	32IC	20	1653	77/05/12	77/05/19
7900209	C022	329377	32IC	168	271	77/04/05	77/04/23
7900209	C022	329378	32IC	20	29	77/05/12	77/05/19

(8 rows affected)

Password:

accNo	fleA	refNo	proj	inst	ship	startDate	cruise	catId
7900209	F022	TT3217	0071	3101	318M	1977/03/04	JOINT-II	309517
7900209	F022	TT3219	0071	3101	318M	1977/05/05	JOINT-II	309519
7900209	C022	319563	0071	3101	318M	1977/03/04	TT3217	309521
7900209	C022	319564	0071	3101	318M	1977/05/05	TT3219	309523
7900209	F022	TT3218	0071	3125	32IC	1977/04/05	JOINT-II	309518
7900209	F022	TT3220	0071	3125	32IC	1977/05/12	JOINT-II	309520
7900209	C022	329377	0071	3125	32IC	1977/04/05	TT3218	309522
7900209	C022	329378	0071	3125	32IC	1977/05/12	TT3220	309524

(8 rows affected)

7900209

Password:

accNo	fleA	refNo	ship	staCnt	recCnt	startDate	endDate
-----	-----	-----	-----	-----	-----	-----	-----
7900209	F022	TT3217	318M	164	12347	77/03/04	77/03/28
7900209	F022	TT3219	318M	68	7258	77/05/05	77/05/22
7900209	C022	319563	318M	164	228	77/03/04	77/03/28
7900209	C022	319564	318M	68	109	77/05/05	77/05/22
7900209	F022	TT3218	32IC	178	14604	77/04/05	77/04/23
7900209	F022	TT3220	32IC	20	1653	77/05/12	77/05/19
7900209	C022	329377	32IC	178	271	77/04/05	77/04/23
7900209	C022	329378	32IC	20	29	77/05/12	77/05/19

(8 rows affected)