

EP1-93-MB  
NOAA Ship Malcolm Baldrige  
Rodman, Panama - San Diego  
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#### ACQUISITION:

A total of 26 CTD casts were taken along 95W and 110W during leg 1 of the spring EPOCS cruise using PMEL Neil Brown CTD s/n 1112 and 12-bottle rosette sampling package. All casts were to a depth of 1000 meters. Typically 12 bottles were fired on each cast and salinity samples were taken for calibration checks of the NBIS CTD. Survey department personnel were responsible for preparing the CTD, all data acquisition, collection of water samples, and analyzing the samples for salinity using the ship's Autosol.

The CTD data were acquired using the ship's LOGGER software. Audio backups were made on VCR tapes. Raw CTD data were transferred from the acquisition microVAX to the processing microVAX where PMEL programs reduced the data for analysis. Final calibrations were determined at PMEL after the cruise.

Incorrect temperature calibration coefficients were used during acquisition of casts 1 and 2.

#### CONDUCTIVITY CALIBRATIONS:

CALIB.DAT precruise calibrations for PMEL CTD 1112:

1112	6	380						
-0.18188	.9955384	0.194715E-5	-0.2006194E-09	P	DN	S/N 1112	JUN 92	
-0.18188	.9955384	0.194715E-5	-0.2006194E-09	P	UP	S/N 1112	JUN 92	
-0.00027	1.0000130	0.000000E-6	0.0000000E-10	T	68	S/N 1112	JUN 92	
-0.00036	1.0000150	0.000000E-6	0.0000000E-10	C		S/N 1112	JUN 92	

Post-cruise, files were restored to the VAX computer system at PMEL from Exabyte 8mm tapes. The .CAL file was created on the ship using CALDSK which takes the CTD values from those written on the cast logs during acquisition and not from the READER listings. The .CAL file was proofed, typos corrected, and put into the latest format compatible with WOCE modified programs at the lab. LINCALW.FOR, CALMSTRW.FOR, CALMCONW.PPC, and CALMDEEPW.PPC were used to find the best calibrations to apply to this data set.

Final calibrations applied were from an overall fit of deep bottles from both EP193 and EP293 cruises:

A0 = 0.3079272E-01  
A1 = 0.9980662E+00

No additional offsets were applied.

#### CONDUCTIVITY CALIBRATION PROGRAMS & PPLUS COMMAND FILES:

CALDSKW - creates .CAL uncalibrated data file on SCS system  
CALMSTRW - inputs .CAL uncalibrated data file  
- outputs .CLB calibrated data file (from .COM), and  
.SEA calibrated WOCE data file (edit quality bytes)  
LINCALW - inputs .CAL uncalibrated data file (may be broken into  
groups), applies a linear fit to the data and throws out  
any points greater than 2.8 times the standard deviation,  
iterates through the program until no points are thrown out  
outputs .COEF file containing linear fit coefficients and  
.LOG file of fit iterations  
CALMCONW.PPC - reads .CLB calibrated bottle data file and makes five  
separate scatter plots: P, T, C, S, and cast number vs.  
delta-C (CTD-bottle). These are examined for cast  
breaks and drifts in the CTD.  
CALMDEEPW.PPC - reads .CLB calibrated bottle data file and makes two  
separate scatter plots: CTD salinity and bottle salinity  
vs. potential temperature from theta=0.6 to 2.2 C.  
DEEPCTD.PPC - reads .CTD EPIC pointer file and .BOT EPIC pointer file  
of deep casts only and overplots the bottle salinity  
data and CTD salinity trace from theta=.8 to 2.4 C for  
each deep cast.

#### PROCESSING:

Raw data files were restored from Exabyte 8mm tapes to the VAX at PMEL.  
Standard processing programs for the Baldrige with default parameters  
were used to reduce these data. Single point spikes were removed in  
cast 8 using NOMIT subroutine in EPCTDW.

Final CTD and bottle files were moved to DISK\$HAYES and included in the  
RIM data management tables on December 18, 1995.

DPDNB - inputs EG&G .EDT raw data file  
- outputs .DPZ binary file including computed fall rates and  
.RECZ ASCII file to choose downcast record range from  
DLAGB - inputs .DPZ binary file, applies precruise calibrations from  
CALIB.DAT, edits data for window outliers (according to  
WINDOW.DAT) and first differencing outliers, fills gaps by  
linear interpolation, lags conductivity, edits data exceeding  
fall rate criteria (according to .INP created by DLAGAVZ.COM;  
default minimum fall rate acceptable is .8 db/60 scans (25  
meters per minute) and pressure interval of 1.5 db; doesn't  
fill these gaps), computes 1-meter averages, and applies cell  
dependence to final conductivity values  
- outputs CTDERR.DAT file of outlier flags, interpolated values,  
and fall rate criteria failures, and an ASCII .CTD data file  
including computed salinity  
EPCTDW - inputs .CTD calibrated P, T, OXC, OXT, and raw conductivity;  
applies any additional P and T calcs (in EPCTDW\_SHIP.COM),  
corrects raw C for cell factor, and applies C calcs from  
EPCTDW\_SHIP.COM; computes salinity; deals with oxygen if  
there was a sensor; option to eliminate 1-point spikes  
according to the gradients hardwired into the source code  
NOT used by default; omits any values for manual despiking;  
fills by linear interpolation for a value to exist every whole  
meter; recomputes C from S; and calculates other EPIC variables.  
- outputs final .CTD data file in EPIC format, and a .LOG  
file listing edited and filled data points  
EPICBOMSTRW - inputs .CLB calibrated bottle data file and  
.CTD EPIC data files (for header information)  
- outputs .BOT bottle data files in EPIC format

