

## **A Cruise Report: PR14**

### **A.1 Cruise Narrative**

#### **A.1.1 Highlights**

WOCE Line: **PR14**  
ExpoCode: **20VDPR1497\_1**

Chief Scientist: **Dante Gutierrez B.**  
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Ship AGOR60 - Vidal Gormaz.  
Port of call Talcahuano, CHILE.  
Cruise Dates March 15 — April 10, 1997

#### **A.1.2 Cruise Summary**

##### **Cruise Track**

The cruise track and station locations are shown in figure 1.

##### **Number of stations**

A total of 50 hydrographic stations were performed using a sealogger 19 CTD model 1240 and a sealogger 25.

##### **Sampling**

continuous profiles of temperature and salinity were made using a CTD.

##### **Floats, Drifters, and Moorings**

(None)

### A.1.3 List of principal Investigators

NAME	RESPONSIBILITY	INST.
EaC. Dante Gutierrez B.	Chief of Watch 1, Computer Operator, Cruise Logger, Form filer.	SHOA
C1. Raul Estrada A.	Chief of Watch 2, Computer and Seabeam, cruise logger , METEO/S.H.I.P message sender.	SHOA

### A.1.4 Scientific Programme and methods

#### The principal objectives of the cruise were:

To collect necessary information to develop ocean circulation models to predict decade climatic changes in order to contribute to international WOCE program.

### Preliminary Results

#### A.1.5 Major Problems Encountered on the Cruise

- Major problems were related to Deck unit failure and water filtration at the cable connector unit.
- Bad weather at the study area

#### A.1.6 Other Observations of Note:

- CTD 19 model 1240 had problems at the beginning of the cruise . therefore, the first station were performed with a CTD 25 (belongs to the Catholic University of Valpara so).

### A.1.7 List Of Cruise Participants

NAME	RESPONSABILITY	INST.
EaC. D. Gutierrez B	Chief of watch 1	SHOA
S1 Serv. (Oc. Bas) Sr. P. Urz a	Winche operator	SHOA
C1. (Me. S.) A. Martinez	Seabeam & ecosounder maneuver	V. Gormaz
M.Serv. (Oc. Bas.) M. Higuera	CTD-maneuver, XBT launcher, water sampler	SHOA
M. Serv. (Oc. Bas) H. Gatica	Water sampler	SHOA
C1. Serv. (Oc. Bas) R. Estrada	Chief of watch 2, computer handler, data logger	SHOA
S1. Serv. (Oc.) M. Placencia	Winche operator	V. Gormaz
C1. (Mc. S.) E. Jerez	Seabeam & ecosounder maneuver	SHOA
M. Serv. (Oc. Bas.) C. Saavedra	CTD-maneuver, XBT launcher, water sampler	SHOA
M. Serv. (Oc. Bas.) J. Cortez	Water sampler	SHOA

## **A.2 Underway Measurements**

### **A.2.1 Navigation**

(Not available)

### **A.2.2 Echosounding**

(Not available)

### **A.2.3 Acoustic Doppler Current Profiler (ADCP)**

(None)

### **A.2.4 Thermosalinograph Measurements**

(None)

### **A.2.5 XBTs**

A total of 50 XBT launches (T7) were performed.

### **A.2.6 Meteorological Measurements**

Meteorological data measured were : wind speed and direction, air temperature, atmospheric pressure.

## **A.3 Hydrographic Measurement Techniques and Calibration**

### **A.3.1 Sample Salinity Measurements**

(Not sampled)

### **A.3.2 Sample Oxygen Measurements**

(Not sampled)

### **A.3.3 Nutrients**

(Not sampled)

### **A.3.4 CFC**

(Not sampled)

### **A.3.5 Samples taken for other chemical measurements**

(None)

### **A.3.6 CTD Measurements**

The CTD used were a CTD seabird 25 (first 44 stations) and a Sealogger-19 model 1240 (last 6 stations). The last CTD had malfunctions after this cruise. It was sent to Factory for reparations and all sensors were replaced. Therefore, the time drift of the instrument was lost and data could not be corrected accordingly.

### A.3.7 CTD Data collection and processing

#### Data registry:

Date	STATION
03/16/97	1,2
03/17/97	4, 5, 6
03/18/97	7, 8
03/22/97	9
03/23/97	10, 11, 12, 13
03/24/97	14, 15, 16, 17
03/25/97	18, 19, 20
03/26/97	21, 22
03/27/97	23
03/29/97	33, 34
03/30/97	35, 36, 37, 38, 39
03/31/97	40
04/01/97	24
04/02/97	26
04/03/97	27, 28, 29, 30, 31
04/04/97	25, 32
04/05/97	41
04/06/97	42, 43, 44, 45, 46
04/07/97	47, 48, 49, 50

#### CTD SBE-25 model 1813

This CTD was acquired in June/1995 and its first calibration was made in August /1997, Therefore, the calibration coefficients were the ones from 1995 applying the slope and offset lineal drift according to 1997 calibration.

#### Temperature:

G =	4.84362130E-03	offset1 = 0.0142	offset6 = 0.0147
H =	6.77464130E-04	offset2 = 0.0143	
I =	2.72222137E-05	offset3 = 0.0144	
J =	2.21258685E-06		offset4 = 0.0145
F0 =	1000		offset5 = 0.0146

Day	B	n	B/n	Post-delta(t)	Offset
16	627	773	0.811125	-0.01746	0.0142
17	628	773	0.812419	-0.01746	0.0142
18	629	773	0.813712	-0.01746	0.0142
22	633	773	0.818887	-0.01746	0.0143
23	634	773	0.820181	-0.01746	0.0143
24	635	773	0.821474	-0.01746	0.0143
25	636	773	0.822768	-0.01746	0.0144
26	637	773	0.824062	-0.01746	0.0144
27	638	773	0.825355	-0.01746	0.0144
29	640	773	0.827943	-0.01746	0.0145
30	641	773	0.829236	-0.01746	0.0145
31	642	773	0.830530	-0.01746	0.0145
1	643	773	0.831824	-0.01746	0.0145
2	644	773	0.833117	-0.01746	0.0145
3	645	773	0.834411	-0.01746	0.0146
4	646	773	0.835705	-0.01746	0.0146
5	647	773	0.836998	-0.01746	0.0146
6	648	773	0.838292	-0.01746	0.0146
7	649	773	0.839586	-0.01746	0.0147

**Conductivity:**

M = 4.5	Offset = 0
A = 7.19611919E-06	Slope 1= 0.99993
B = 5.41883750E-01	Slope 2= 0.99992
C = -4.14061857E+00	Slope 3= 0.99991
D = 1.34395405E-04	
Cpcor = -9.5700E-08	

Day	B	n	b/n	(pre-slope)-1	slope
16	627	773	0.811125	-0.000311	0.999745
17	628	773	0.812419	-0.000311	0.999745
18	629	773	0.813712	-0.000311	0.999745
22	633	773	0.818887	-0.000311	0.999745
23	634	773	0.820181	-0.000311	0.999745
24	635	773	0.821474	-0.000311	0.999745
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31	642	773	0.830530	-0.000311	0.999744
1	643	773	0.831824	-0.000311	0.999744
2	644	773	0.833117	-0.000311	0.999744
3	645	773	0.834411	-0.000311	0.999744
4	646	773	0.835705	-0.000311	0.999744
5	647	773	0.836998	-0.000311	0.999744
6	648	773	0.838292	-0.000311	0.999744
7	649	773	0.839586	-0.000311	0.999744

**Pressure**

A0 = 537.701	Offset = 0
A1 = -1.379409E+00	
A2 = -4.139641E-09	

Therefore, six \*.con configuration files were created (PR14-97 A.con a PR14-97 f.con

## Processing

### Step1

1. Convert data from \*.hex to \*.cnv format using DATCNV program and \*.con configuration file.
2. Deleting negatives velocities using the leewoce.bas program
3. Checking and cleaning the header files.
4. Computing the average down velocity value (X).
5. e) to apply the AlingCTD program to correct temperature and conductivity time response shift from the CTD sensors.

### Step 2

- a) To apply DATCNV program to average observed values meter by meter.

### Step 3

- a) To apply Winfilter program to filter data after step 2 , using a flexible windows determined by the user.

### A.3.8 Satellite image acquisition and processing. (None)

### A.3.9 Shipboard computing: (None)

**Note:** All data from WOCE PR14 and SR1 cruises, have been passed to the National Oceanographic Data Center of Chile (CENDOC) for data management purposes and to be quality controlled according to normal WHPO procedures. Once finished they have been sent to the WOCE Hydrographic Program Office at the Scripps Institution of Oceanography for archival. The data remain non-public access until new notification. However, specific authorisation will be forwarded to interested scientist if their goals do not overlap SHOA s goals. For major information write to:

**Ricardo Rojas**  
Chief of CENDOC  
Casilla 324  
Valpara so  
CHILE  
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who can direct your request to the appropriate decision channels. Do not write directly to Principal Investigators.

**Figure 1. Location of hydrographic stations during PR14-97**

