# A Cruise Report: PR14, 1993

## A.1 Cruise Narrative

### A.1.1 Highlights

WOCE Line: **PR14, 1993**
Expocode: **20VDPR1493_1**

Chief Scientist: **Teniente 1° Rodrigo Nuñez Gundlach**
Servicio Hidrográfico y Oceanográfico de la Armada (SHOA).
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Ship: AGOR 60- Vidal Gormaz.

Ports of call: Puerto Montt, Chile

Cruise Date: 7 - 16 October 1993.

### A.1.2 Cruise Summary

**Cruise Track**:
The cruise track and station locations are shown in figure 1.

**Number of stations**:
A total of 46 hydrographic stations were performed using a sealogger CTD model 1240

**Sampling**:
continuos profiles of Temperature and Salinity were made using a CTD.

**Floats, Drifters, and Moorings:**
(None)

### A.1.3 List of principal Investigators

| Name | Responsibility | Institution |
|---|---|---|
| Teniente 1° Sr. R. Nuñez G. | Chief Scientist | 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

- Some XBT launches were lost, mostly associated to storage /handling of the XBT probes.

### A.1.6 Other Observations of Note

### A.1.7 List Of Cruise Participants

| Name | Responsibility | InstituTiOn |
|---|---|---|
| Teniente 1° Sr. R. Nuñez | Chief Scientist | SHOA |
| E. a C. Wanda GarcÌa | Chief Watch 1, CTD maneuver | SHOA |
| E. a C. Cristian Rodrigo | Seabeam-Ecosounder-Pinger operator | SHOA |
| E. a C. Mauricio Bravo | Chief Watch 2, CTD maneuver | SHOA |
| M. Serv. (Oc. Bas.) M. Higueras | Rosette maneuver, water sampler | SHOA |
| M. Serv. (Oc. Bas.) D. Meza | Rosette maneuver , Chemical analysis | SHOA |
| M. Serv. (Oc. Bas.) P. Bizama | Rosette maneuver, water sampler | SHOA |
| S2° Serv. (Oc) M. Placencia | Winche operator | SHOA |
| S2° Serv. (Oc) J. Caro | XBT launcher | 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 22 XBT launches ( T5 and 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 was a Sealogger-19 model 1064 bought by SHOA in 1992.

### A.3.7 CTD Data collection and processing

Data registry

| Date | Stations |
|---|---|
| 10/7/93 | 1, 2, 3, 4 |
| 10/8/93 | 5, 6, 7, 8, 9, 10, 11 |
| 10/9/93 | 12, 13, 14, 15, 16, 17 |
| 10/10/93 | 18, 19, 20, 21, 22, 23, 24 |
| 10/11/93 | 25, 26, 27, 28, 29, 30 |
| 10/12/93 | 31, 32, 33, 34, 35 |
| 10/13/93 | 36, 37, 38 |
| 10/14/93 | 39, 40, 41, 42, 43 |
| 10/15/93 | 44 |
| 10/16/93 | 45 |

**CTD SBE-19 model 1064**

This instrument was bought in 1992 and it was lost during the cruise WOCE-SR1 1994, so it was not able to be recalibrated in the meantime to compute the shifting of the sensors.

**Temperature:**

| | | |
|---|---|---|
| A = | 3.67532044E-03 | slope= 1 |
| B = | 5.78042359E-04 | offset= 0 |
| C = | 9.66296627E-06 | |
| D = | -1.12827511E-06 | |
| F0 = | 2335.580 | |

**Conductivity:**

| | | |
|---|---|---|
| M = | 2.6 | |
| A = | 1.99268521E-03 | slope= 1 |
| B = | 4.89685367E-01 | offset= 0 |
| C = | -4.10744141E+00 | |
| D = | 7.48601141E-04 | |
| E = | -9.5700E-08 | |

**Pressure**

| | | |
|---|---|---|
| A0 = | 4980.989 | |
| A1 = | -1.304659E+00 | |
| A2 = | 7.124232E-08 | |

**Processing**

***Step 1***

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. to apply the Aling CTD program to correct temperature and conductivity time response shift from the CTDísensors.

***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 authorization will be forwarded to interested scientist if their goals do not overlap SHOAís goals. For major information write to:

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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 PR14-93