Vidal Gormaz Bridge Data Quality Control Report

Jesse Enloe and Shawn R. Smith

World Ocean Circulation Experiment (WOCE)

Surface Meteorological Data Assembly Center

Center for Ocean Atmospheric Prediction Studies

Florida State University

May 21, 1999

Report WOCEMET 99-07

Version 1.0

Introduction:

This report summarizes the quality of surface meteorological data collected by the *Vidal Gormaz* (identifier: CCVG) bridge crew during one WOCE cruise. The data were provided by W. Garcia of the Chilean Navy to the Florida State University Data Assembly Center (DAC) in electronic format and converted to standard DAC netCDF format. The data were then processed using an automated screening program, which adds quality control flags to the data, highlighting potential problems. Finally, the Data Quality Evaluator (DQE) reviews the data and current flags. Flags are then added, modified, and deleted according to the judgement of the DQE and other DAC personnel. An in depth description of the WOCE quality control procedures can be found in Smith et al. (1996). The data quality control report summarizes all flags for the *Vidal Gormaz* bridge observations and explains reasons why these flags were assigned.

Statistical Information:

The *Vidal Gormaz* WOCE cruise data are expected to include hourly observations. Values for the following variables were collected:

Time	(TIME)
Latitude	(LAT)
Longitude	(LON)
Earth Relative Wind Direction	(DIR)
Earth Relative Wind Speed	(SPD)
Atmospheric Pressure	(P)
Air Temperature	(T)
Wet Bulb Temperature	(TW)
Relative Humidity	(RH)
Total Cloud Amount	(TCA)*

*The TCA is a coded value with only a limited quality control applied. Values that are out of the code range are changed to the special value, -8888, by the preprocessor. Coded values are not included in the flag statistics listed below.

Details for the cruise are listed in Table 1 and include cruise dates, number of records, number of values, number of flags, and total percentage of data flagged. A total of 4,041 values are evaluated with 8 flags added by the preprocessor and the DQE resulting in a total of 0.20% of the values being flagged.

Table 1: Statistical Cruise Information

CTC	Dates	Number of Records	Number of Values	Number of Flags	Number Flagged
PR_14_/06	08/14/96 – 08/27/96	449	4,041	8	0.20

Summary:

The bridge data for the *Vidal Gormaz* prove to be of excellent quality. The distribution of flags for each variable is detailed in Table 2.

Table 2: Number of Flags and Percentage Flagged for Each Variable

Variable	F	G	S	Total Number of Flags	Percentage of Variable Flagged
TIME				0	0.00
LAT	1			1	0.22
LON	1			1	0.22
DIR				0	0.00
SPD		3		3	0.67
P				0	0.00
T		1		1	0.22
TW				0	0.00
RH			2	2	0.45
Total Number of Flags	2	4	2	8	
Percentage of All Values Flagged	0.05	0.10	0.05	0.20	

There were no major problems in this data set. The preprocessor applied the G flags to the earth relative wind speed and one to the air temperature on values which were greater than four standard deviations from the climatological mean (da Silva et al.). An F flag, also applied by the preprocessor, was placed on latitude and longitude to indicate a position value that demonstrated unrealistic platform movement (platform velocity of greater than 15 m/s).

The only flags assessed by the DQE were two S flags, applied to relative humidity. The *Vidal Gormaz* calculated the relative humidity from pressure, temperature, and wet bulb temperature. Relative Humidity values that showed up as spikes were re-calculated by the DQE. The two values flagged with an S indicate a relative humidity value that was calculated incorrectly by the data provider.

References:

Smith, S.R., C. Harvey, and Legler, D.M., 1996: *Handbook of Quality Control Procedures and Methods for Surface Meteorology Data.* WOCE Report No. 141/96, Report WOCEMET 96-1, Center for Ocean-Atmospheric Prediction Studies, Florida State University, Tallahassee FL 32306-2840 da Silva, A.M., C.C. Young and S. Levitus, 1994: *Atlas of Surface Marine Data 1994, Volume 1: Algorithms and Procedures*. NOAA Atlas Series.