Endeavour Bridge Data Quality Control Report

Lauren Volkmer, Jesse Enloe, and Shawn R. Smith

World Ocean Circulation Experiment

Surface Meteorological Data Assembly Center

Center for Ocean Atmospheric Prediction Studies

Florida State University

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Introduction:

This report summarizes the quality of surface meteorological data collected by the research vessel *Endeavour* (identifier: CYWK) bridge crew during two cruises covering five WOCE lines. The first cruise started on 20 October 1991 and ended on 31 October 1991. The second cruise began on 26 March 1992 and ended on 12 April 1992. The data were provided in hard copy format by R. Perkin at the Institute of Ocean Sciences, Canada and encoded by DAC personnel and placed in DAC 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) reviewed the data and current flags. Flags were 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 on the *Endeavour* bridge data and explains reasons why these flags were assigned.

Statistical Information:

The *Endeavour* meteorological observations were not taken at regular time intervals. Values for the following variables were collected:

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

*Meteorological observations were taken when the ship was on-station (drifting). The exact time of observations were unknown and the timestamp indicates the time the ship came to a stop.

**The TCA is a coded value with only a limited quality control applied. Coded values are not included in the flag statistics listed below.

Details of the two WOCE cruises 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 1,133 values were evaluated with 6 flags added by both the preprocessor and the DQE resulting in a total of 0.53% of the values being flagged.

Table 1: Statistical Cruise Information

CTC	Dates	Number of Records	Number of Values	Number of Flags	Percent Flagged
PR_06_/04 PRS01_/01	10/21/91 ≠ 10/31/91	61	549	0	0.00
PR_05_/02 PR_06_/06 PRS01_/03	03/26/92 ≠ 04/12/92	73	584	6	1.03

Summary:

The quality of bridge data for the *Endeavour* is excellent with less than one percent of the data being flagged. 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**	**K**	**Total Number of Flags**	**Percentage of Variable Flagged**
TIME			0	0.00
LAT	1		1	0.75
LON	1		1	0.75
PL_CRS			0	0.00
DIR			0	0.00
SPD			0	0.00
P			0	0.00
T		2	2	1.49
TW		2	2	1.49
Total Number of Flags	2	4	6	
Percentage of All Values Flagged	0.18	0.35	0.53	

Missing Data:

The majority of platform course values for cruise (PR_04_06) were missing leaving insufficient data for the DQE to identify potential problems in this data set. Therefore,

the platform course values were not flagged. Platform course data were not available for the second cruise (PR_06_06).

Flags:

Two F flags were placed on the longitude and latitude by the preprocessor to indicate an unrealistic platform velocity as determined by platform position data. A total of four D flags were assigned to temperature and wet bulb temperature variables by the preprocessor to indicate where the reported wet bulb temperature value was greater than the ambient air temperature. These were changed to K flags (use with caution) as the ambient air temperature and wet bulb temperature variables may have been inversely recorded by the observer.

References:

Smith, S.R., C. Harvey, and D.M. Legler, 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