

## **Title: Managing XBT Data in the Global Temperature-Salinity Profile Program Data Base**

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### **ABSTRACT**

The Global Temperature Salinity Profile Program (GTSP) is a joint World Meteorological Organization (WMO) and Intergovernmental Oceanographic Commission (IOC) program. Functionally, GTSP reports to the Joint Commission on Oceanography and Marine Meteorology (JCOMM), a body sponsored by WMO and IOC and to the IOC's International Oceanographic Data and Information Exchange committee (IODE). GTSP is also an accepted part of the Global Ocean Observing System and a participant in CLIVAR (Climate Variability and Predictability).

The US National Oceanographic Data Center (NODC) has preserved XBT data in the GTSP Continuously Managed Database (CMD). The probe type and fall rate equation information is stored in the GTSP CMD if it was provided. The NODC also worked with Canada's Integrated Science Data Management and Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) to develop logic for the depth correction process of archived XBT data. It was agreed that corrections to the depth will be applied only to the data that will be placed on the WOCE (World Ocean Circulation Experiment) DVDs. The NODC will not make depth corrections on the archived XBT data. Two new codes will be created to retain depth correction information in the surface codes structure. The "DPC\$" indicates the status of depth correction and the "FRA\$" will retain the conversion factor of 1.0336. The "DPC\$" code will have the following states:

- 01 = Known Probe Type, Needs Correction,
- 02 = Known Probe Type, No need to Correct
- 03 = Unknown Probe Type, Not enough information to know what to do, leave alone,
- 04 = Known XBT Probe Type, Correction was done, and
- 05 = Unknown Probe Type, but a correction was done.

Having determined which profiles are from XBTs by querying the data type, the XBT probe type and the fall rate equation stored in the XBT archives, the strategy for the fall rate correction is to simply multiply the existing depths by a factor of 1.0336. This was the technique employed with the multiplication factor stored in the file structure, when GTSP played a key role in the WOCE (World Ocean Circulation Experiment) and contributed to the final WOCE Data Resource DVD.

It is suggested that the correction to global archives be carried out in cooperation with other data centers around the world to ensure international standards.

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