PREFACE

B.M. Sloyan[1] and C.L. Sabine[2]
[1]CSIRO Marine and Atmospheric Research, P.O. Box 1538, Hobart, Tasmania 7001, Australia. e-mail: Bernadette.Sloyan@csiro.au
[2] NOAA/Pacific Marine Environmental Laboratory, 7600 Sand Point Way, Seattle WA 981115, U.S.A, e-mail: Chris.Sabine@noaa.gov

Global hydrographic surveys have been carried out approximately every decade since the 1970s through research programs such as GEOSECS, TTO/SAVE, WOCE / JGOFS, and CLIVAR. However, global repeat hydrography has lacked formal global organization since the end of WOCE and this has led to a lack of visibility for hydrography in the global observing system as well as a significant decrease in the number of trans-basin sections carried out by some countries. More importantly, the lack of international agreements for implementation of hydrographic sections has led to duplication of some sections, cruises being carried out without a consistent suite of core variables, inconsistencies in data analysis procedures leading to variable data quality, and disparate data sharing policies.

Acknowledging the lack of coordination, the initiative to establish the Global Ocean Ship-based Hydrographic Investigations Program (GO-SHIP) was supported by the 3rd session (November 2009) of the IOC-WMO Joint Technical Commission on Oceanography and Marine Meteorology (JCOMM). GO-SHIP will provide international scientific and technical coordination for the sustained global network of hydrographic sections that are an integral component of the Global Ocean / Climate Observing System.

One priority for the new GO-SHIP program was to revise the 1994 WOCE Hydrographic Programme manual. In the 15 years since the original publication of the manual, many methods and techniques have changed and new sensors have been developed. The GO-SHIP Repeat Hydrography Manual: A Collection of Expert Reports and Guidelines provides detailed instructions for the high quality collection and analysis techniques of numerous ocean parameters. The manual addresses both physical and biogeochemical parameters. Sixteen chapters covering CTD methods, discrete samples, and underway measurements have been reviewed and revised by more than 50 experts in field oceanography. Chapters have been through a period of open community review and comment and have also been reviewed through an informal peer-review process.

While most chapters were written specifically for this new version of the manual, several chapters are recently published guides that have been adopted as the GO-SHIP reference for specific variables. These chapters include the Calculation of the Thermophysical Properties of Seawater (McDougall et al., 2010), The Guide to Best Practices for Ocean CO_2 Measurement (Dickson et al., 2008), A Guide to Making Climate Quality Meteorological and Flux Measurements at Sea (Bradley and Fairall, 2006), and the IHO Standards for Hydrographic Surveys (2008). A new guide for thermosalinograph installation and operation is being developed and will be added to this collection when it is published.

The goal of this effort is to promote standardized methods for a core set of parameters measured on the GO-SHIP hydrographic reference sections, although the hope is that the

techniques described in this manual will be adopted by others wishing to make high quality measurements. The JCOMM has highlighted the importance of the GO-SHIP revision of the 1994 WOCE hydrographic Programme Manual.

We gratefully acknowledge the efforts of expert authors and reviewers in producing this manual.

Bernadette M. Sloyan and Christopher L. Sabine, GO-SHIP Co-Chairs.