**Intergovernmental Oceanographic Commission**

GLOBAL SEA LEVEL
GLOSS
OBSERVING SYSTEM

# The GLOSS Station Handbook CD-ROM
# (July 1996)

BODC

UNESCO

PSMSL
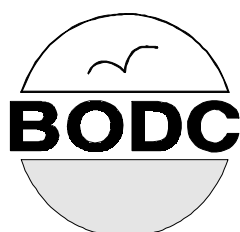
Global Sea Level Observing System (GLOSS)
of the
Intergovernmental Oceanographic Commission

# The GLOSS Station Handbook CD-ROM

## by

## L.J. Rickards (*), R.N. Cramer (*), A.R. Tabor (*),
## N.E. Spencer (**), P.L. Woodworth (**) & M.T. Jones (*)

## July 1996

\* British Oceanographic Data Centre
Bidston Observatory, Birkenhead,
Merseyside L43 7RA
United Kingdom

email:   bodcmail@pol.ac.uk
phone:  +44 151 653 8633
fax:      +44 151 652 3950

\*\* Permanent Service for Mean Sea Level
Bidston Observatory, Birkenhead,
Merseyside L43 7RA
United Kingdom

email:   psmsl@pol.ac.uk
phone:  +44 151 653 8633
fax:      +44 151 653 6269

*Note to Users:*

*If you encounter any problems or errors when using the CD-ROM, or you require further information, the GLOSS Handbook Co-ordinator at the Permanent Service for Mean Sea Level would be pleased to hear from you.*

# CONTENTS

Page

## Acknowledgements

Adobe and *Acrobat* are trademarks of Adobe Systems Incorporated.

*Windows* is a trademark of Microsoft Corporation.

# 1.    INTRODUCTION

The Global Sea Level Observing System (GLOSS) is an international system, co-ordinated by the Intergovernmental Oceanographic Commission (IOC) of UNESCO, to provide high-quality sea level data from a global network of sea level stations. It has been designed to observe large scale variations in sea level, and to monitor changes which could be indicative of global warming, ocean circulation patterns, climate variability, etc. The network contributes data to international research programmes and complements satellite altimetry measurements.

The GLOSS network was initiated in 1985 and consists of more than 300 sea level stations which are operated and maintained by some 80 countries worldwide. Data from the network are collected and archived at the Permanent Service for Mean Sea Level (PSMSL) in the form of monthly mean values.

In April 1996, the IOC invited the British Oceanographic Data Centre (BODC) to compile and publish a CD-ROM for GLOSS to mark the occasion of the 'Second Conference of Parties of the UN Framework Convention on Climatic Change', Geneva, July 1996. It was intended initially that the CD-ROM should simply include the 'GLOSS Station Handbook' (hence the title of the CD-ROM) containing detailed information on the tide gauge stations in the GLOSS network. In the event, it was decided to expand the contents to include a wide range of other material relevant to the measurement of mean sea level, including for example the complete data holdings of the PSMSL.

The PSMSL and BODC are both hosted by the Proudman Oceanographic Laboratory at Bidston Observatory. The laboratory is part of the Centre for Coastal and Marine Sciences, a component body of the UK's Natural Environment Research Council. In addition to its many other activities, the BODC serves as one of the Sea Level Data Assembly Centres for the World Ocean Circulation Experiment (WOCE) and is part of the IOC's international network of national oceanographic data centres. The PSMSL is a member of the Federation of Astronomical and Geophysical Data Analysis Services (FAGS) established by the International Council of Scientific Unions.

# 2.    CONTENTS OF THE CD-ROM

## 2.1    Introduction

The CD-ROM contains six basic products:

| | |
|---|---|
| I | Overview of the GLOSS System |
| II | The GLOSS Station Handbook |
| III | The PSMSL Data Sets |
| IV | IOC Manuals & Guides No. 14, Volume I |
| V | IOC Manuals & Guides No. 14, Volume II |
| VI | PSMSL Public Access Files |

Products I, III, IV and V are hypertext documents in Adobe *Acrobat* format - they may be viewed on the user's screen or directed to the user's printer. The executable code for *Acrobat Reader* (which has its own on-line help) is included on the CD-ROM.

Product II is a BODC developed system with its own inbuilt software interface.

Products I to V were designed for use within a *Windows* environment.

Product VI is a set of simple flat ASCII files.

## 2.2 Overview of the GLOSS System

The Overview document provides an introduction to the GLOSS system, together with information on its current status and links to other international and regional sea level programmes. It contains information on training activities within GLOSS and includes a recently updated list of publications relevant to GLOSS and PSMSL. The document also gives a detailed description of the 'GLOSS Station Handbook' and instructions on how to use the handbook.

## 2.3 The GLOSS Station Handbook

The Handbook is a comprehensive database of information about the 308 tide gauge stations that currently make up the GLOSS network. A full description of each station is provided, including tide gauge details, benchmark information, data delivery systems, and the GLOSS national contact point. The accompanying software allows the selection and display of: a) station information, b) monthly and annual mean sea level plots for each station, if the data are held by PSMSL, and c) map images of the tide gauge sites and their benchmarks (available for about 100 stations).

## 2.4 The PSMSL Data Sets

The PSMSL Data Sets document contains a complete listing of the 42,360 station years of sea level data held by PSMSL as of June 1996 and covering 1754 stations worldwide. The monthly and annual mean values for each station are displayed in a computer printout format together with relevant supporting documentation. A full catalogue of the data is provided with the stations arranged in geographic order - hypertext links from the catalogue allow the user to display data for the station(s) of interest.

## 2.5 IOC Manuals & Guides No. 14

These two volumes comprise the IOC Manual on Sea Level Measurement and Interpretation. Volume I (Basic Principles) was published in 1985 and is based on training courses held at Bidston Observatory on behalf of PSMSL and IOC. It contains information on the scientific aspects of sea level change and on the practical aspects of sea level measurement and data reduction. Volume II (Emerging Technologies) was published in 1994 and is complementary to the earlier volume, extending and updating the material on measurements.

## 2.6 PSMSL Public Access Files

The PSMSL maintains an on-line public access information system, accessible by anonymous FTP, containing not only full copies of its data holdings but also a wide range of other ancillary data and information. The system includes help/information files and Fortran programs, and is updated several times a year. The CD-ROM contains a full set of the information system files (as of June 1996), each stored in a simple flat ASCII format. User notes and information on the contents of these files may be found in the 'readme' file that accompanies them. Contents include the following:

a)  a short description of PSMSL and its data sets;

b)  a catalogue printout of the PSMSL data holdings;

c)  copies of PSMSL's main data sets in a form suitable for further analysis, e.g. through the user's own Fortran programs;

d)  copies of PSMSL's main data sets in a computer printout format

e)  a copy of the contents of the 'GLOSS Station Handbook', excluding graphics images such as data plots and site maps;

f)  a list of publications relevant to PSMSL and GLOSS;

g)  text and tables (but not figures) of the PSMSL 'Ancillary Time Series' report of 1988. This includes a wide range of mean sea level data held by PSMSL which, for various reasons, have not been considered suitable, or to the standard necessary, for inclusion in PSMSL's main databases;

h)  a copy of the IAPSO Pelagic Tidal Constants data set;

i)  information on the availability of air pressure data;

j)  information on the POL/PSMSL TASK tidal analysis package.

## 2.7 Other Material

It will be noted that some of the items contained in the PSMSL Public Access Files (e.g. items b), d), e) and f) above) duplicate information contained within the other products stored on the CD-ROM. This is because the other products have been designed primarily for use within a *Windows* environment. The duplicated information contained in the PSMSL Public Access Files has been included for the benefit of DOS and Unix users without access to *Windows*.

The CD-ROM also includes a DOS version of the 'GLOSS Station Handbook' containing the same information as the *Windows* version but without the site location maps - these map images are accessible separately in a set of TIFF formatted files.

Finally, the CD-ROM also includes the executable code for Adobe *Acrobat Reader* for use in reading the hypertext documents which form the main body of the CD-ROM.

## 3.  CD-ROM DIRECTORIES

The CD-ROM is formatted according to the ISO 9660 Standard and contains files organised into nine directories, viz:

Root Directory — contains two files:

      'readme.txt' - a simple flat ASCII version of this document

      'setup.exe' - this program is used to set up the *Windows* user interface to the CD-ROM (see section 4)

Directory INSTALL — contains the files used by the 'setup' program

Directory DATA — contains the data files used by the *Windows* version of the 'GLOSS Station Handbook' software

Directory MAP — contains bit-maps of the tide gauge site location maps used by the *Windows* version of the 'GLOSS Station Handbook' software

Directory MANUAL — contains Adobe *Acrobat* formatted versions of:

- 'The Overview of the GLOSS System'
- 'The PSMSL Data Sets'
- 'IOC Manuals & Guides No. 14, Volumes I & II'
- This 'readme' document

Directory MAPTIFF — contains user-accessible TIFF formatted versions of the tide gauge site location maps from the 'GLOSS Station Handbook'. Each file contains a single image and the following file naming convention is used:

      'GLNOnnnx.tif'

where 'nnn' is the GLOSS station no. of the site and may be up to 3 digits. If the site has more than one map, then the maps are identified with entries of 'a', 'b' or 'c' in 'x'.

Directory PSMSLFTP — contains a full set of simple flat ASCII files from the PSMSL on-line public access information system (as of 14 June 1996). These are a direct copy of the files normally made available to users *via* anonymous FTP. Detailed information on the contents of these files may be found in the 'readme' file within the directory (PSMSLFTP).

Directory GLOSSDOS — contains Version 2.1 of the 'GLOSS Station Handbook' complete with a DOS based software interface. The content is the same as Version 3.0 accessible through the *Windows* interface to this CD-ROM except that it does not contain the site location maps (these are available separately as TIFF files from Directory MAPTIFF). Detailed instructions are supplied in the 'read.me' file within the directory (GLOSSDOS).

Directory ADOBE — contains executable code for the Adobe *Acrobat* Reader version 2.1. In addition to a *Windows* version, a DOS version is also included. The help system for the *Windows* version is available in 7 languages.

## 4. HOW TO USE THE CD-ROM

The CD-ROM has been designed primarily for use within *Windows* 3.1 or above, although a considerably reduced facility is also available for DOS and Unix users.

### 4.1 Use within *Windows*

To install the CD-ROM support system on your PC, simply load the CD-ROM in its drive and follow one or other of the following procedures:

*Windows* 3.1: Select 'Run' from the File menu of Program Manager; enter 'd:\SETUP.EXE' (where 'd' is the drive letter of your CD-ROM drive) in the box and then click on 'OK'.

*Windows 95*: Select 'Run' from the Start Menu; enter 'd:\SETUP.EXE' (where 'd' is the drive letter of your CD-ROM drive) in the box and then click on 'OK'.

You will then be taken through a simple 3-stage dialogue:

Stage 1      enables you to set a directory name for the installation - by default it is set to 'c:\GLOSS'

Stage 2      enables you to set a name for the *Windows* Program Group - by default it is set to 'GLOSS'

Stage 3      enables you to choose between a 'default' or 'custom' installation

● 'Default' Installation - with this option the setup program automatically installs the CD-ROM support system on your computer. It also installs the Adobe *Acrobat Reader* software if a PDF reader for Adobe does not already exist - if already present it does not reinstall. By default, the Adobe *Acrobat Reader* help system is made available in the English language.

● 'Custom' Installation - this option provides 4 additional features compared with the 'default' installation, the first 3 of which enable you optionally to install the DATA, MAP and MANUAL Directories (see section 3) respectively from the CD-ROM onto hard disk - alternatively they can be left on the CD-ROM, in which case they will be accessed from the CD-ROM as and when required. The fourth feature enables you to select the language in which you would like the Adobe *Acrobat Reader* help system to be presented - the following options are available: English, German, French, Spanish, Italian, Dutch or Swedish. This feature should also be used if you wish to force the loading of the Adobe *Acrobat Reader* in case there are problems concerning a pre-existing installation of the reader, or you wish to upgrade an earlier copy to version 2.1.

Once you have completed the above dialogue and clicked the 'OK' box, the system is ready to run and you will be offered the following six icons:

| | 'README' | (for this document) |
|---|---|---|
| | 'GLOSS STATION HANDBOOK' | |
| | 'GLOSS OVERVIEW' | (for document described in 2.2) |
| | 'IOC M & G No. 14 VOL. I' | (for manual described in 2.5) |
| | 'IOC M & G No. 14 VOL. II' | (for manual described in 2.5) |
| | 'PSMSL DATA SETS' | (for document described in 2.4) |

Double clicking on the relevant icon activates the appropriate product. For all icons except 'GLOSS STATION HANDBOOK' you will be placed on the cover page of the relevant hypertext document - the facilities of the *Acrobat Reader* are then available for you to browse through the document selectively, printing out pages as and when required. If you are not familiar with the *Acrobat Reader* you should consult its integral help system.

To start running the 'GLOSS Station Handbook' software, double click on the Handbook icon. This brings you to the main index of GLOSS Stations. This index can be browsed; individual stations can be marked in order to view detailed information about the station on the screen or sent to a printer. In addition, where monthly and annual sea level data are held by PSMSL, these may be plotted on screen and the plots sent to a printer. For approximately 100 stations, maps are also available showing the location of the gauge and benchmarks. These can be displayed and sent to a printer. The 'GLOSS Station Handbook' has its own integral help system - a full copy of this text can be found in section 2 of the 'Overview of the GLOSS System' document, i.e. by double clicking on the 'GLOSS OVERVIEW' icon.

## 4.2   Use within DOS

As mentioned previously, the CD-ROM was not designed for use within DOS but some facilities have been included in case you are only able to work through DOS.

4.2.1   A DOS version of the 'GLOSS Station Handbook' is available on the CD-ROM but without the site location maps - instructions for installing and running this DOS version can be found in the ASCII text file 'read.me' in directory 'GLOSSDOS'. TIFF formatted versions of the site location maps can be found in directory 'MAPTIFF' - see section 3.

4.2.2   The CD-ROM contains a DOS version of the Adobe *Acrobat Reader* software to enable you to access the five hypertext products. It can be installed as follows:

a)   change current drive to your CD-ROM drive, e.g. if your CD-ROM is drive 'd', type 'd:' and press return;

b)   use CD command to change current directory to '\adobe\acro_v1\acrodos';

c)   type 'install', press return and follow the on-screen instructions to install the *Acrobat Reader* on your hard disk.

To run *Acrobat* at any time, type 'acrobat' and press return. From the 'open file' window, select your CD-ROM drive in the 'drive' sub-window, then select 'MANUAL' from the directory list. Finally, select the PDF file for your chosen hypertext product from the following file list:

| | | |
|---|---|---|
| 'PSMSLDAT.PDF' | = | PSMSL Data Sets; |
| 'GLOSS.PDF' | = | Overview of the GLOSS System; |
| 'README.PDF' | = | this document; |
| 'IOC_14I.PDF' | = | IOC Manuals & Guides No. 14, Vol. I; |
| 'IOC_14II.PDF' | = | IOC Manuals & Guides No. 14, Vol. II |

and press 'open'.

You will then be placed at the cover page of the selected hypertext document and the facilities of the *Acrobat Reader* will be available to enable you to browse through the document, selectively printing out pages as and when required. If you are not familiar with the *Acrobat Reader* you should consult its integral help system (available in English only in the DOS version).

It is highly desirable to use a mouse when running this system.

### 4.3   General Use

The CD-ROM contains a wide range of simple flat ASCII files that you can access directly whether through Windows, DOS or Unix. In particular, the PSMSL Public Access Files are stored in this form.