TIDES AND WATER LEVELS TECHNICAL WORKSHOP
SUMMARY REPORT

Course: TIDES AND WATER LEVELS TECHNICAL WORKSHOP

Dates: 23-27 February 2015 and 4-11 September 2015

Introduction

On 23 - 27 February 2015, an Introduction to Tides and Water Levels Workshop, to benefit countries in the area of influence of the Southern Africa and Islands Hydrographic Commission (SAIHC) was held on behalf of the International Hydrographic Organisation (IHO) Capacity Building Committee (CBC).

This was the 1st learning opportunity of this nature and was specifically designed to provide a basic knowledge of tide theory, equipment calibration and maintenance processes. This workshop is aimed to cater to developing hydrographic authorities to provide basic knowledge which will help them to develop their capabilities.

On 4-11 September an amended version of the workshop was presented to the Ropeme Sea Area Hydrographic Commission (RSAHC) in the United Arab Emirates.

Objective

The objective of this workshop was to increase the knowledge and skills of the SAIHC region's Hydrographic capabilities in the area of tides and tide data collection, with an emphasis on the installation and calibration of the tide gauges to ensure a high level of accuracy of the collected data.

Content

The workshop content included all aspects as indicated in the workshop outline. The participants were presented with an overview, course material and soft copy of the presentation in pdf format, covering: basic definitions, tidal patterns, Tide levels and Datums, Tide Raising Forces, Tidal Theory, Observations/Equipment and procedures for Tides and Tidal Streams, Basic Tide analysis and Prediction.

The workshop was presented over a period of 5 days, which included 1 ½ days practical exercises and demonstrations. Two progress tests were written to obtain a baseline on level of understanding of the participants. The South African Navy Hydrographic Office (SANHO) printed all the course material and the SANHO Tidal Department supplied a radar tide gauge at the conference venue for the participants to familiarise themselves with.

Subsequently, after the content of the presentation was reviewed at the TWLWG7 meeting, the PowerPoint presentations content was amended to include the comments and suggestions that were forwarded to the SAN HO. (Thank you very much Juan and Kurt) The course was also changed to a workshop over a course.

The Technical Tidal Assistant, WO2 T.J. Mokoena was also on hand to answer some of the more technical questions from the participants as well as to assist with the practical demonstrations. He provided valuable insight for the participants at both workshops..

Difficulties experienced

1. It was requested that all participants should have a good written and oral understanding of the English language and almost all participants had a very good competency level in the English language which ensured that all teaching goals were met. On both workshops one or two participants had a difficult time understanding and communicating in English. It is imperative for those that attend similar workshops to meet the prerequisites prescribed by the IHO CBSC. When this does not happen it detracts from the overall effectiveness of the workshop for everyone, especially if one participant needs to constantly translate for another.

2. Feedback from the workshop in Abu Dhabi indicated that the learners wanted more practical time, and more hands on experience with not only the installation of the equipment, but also the associated software. This is very difficult to do as each region, never mind each country, uses different technology as best fits their needs and budget. It also takes away from the "generic" aspect of this workshop.

3. The workshop in Abu Dhabi could easily have been 3 ½ days long as there was no possibility of carrying out the practical components. A visit to one of the tide gauges was arranged and discussions on site helped to resolve a few issues that were being experienced.

4. Comments received from the TWLWG7 meeting presented a challenge; one set of comments was submitted in PowerPoint, using "track changes", making amendments to the original presentation relatively easy. The other set of comments was sent as a .pdf which, though retyping the changed text was labourious, the suggested images could not be used as they could not be copied.

Conclusion

It is very pleasing to report that the workshop maintained a high standard and that all objectives were met. As this was the first time that the workshop took place there were some teething problems with the timing of the program however this did not affect the final outcome.

Oral feedback from the participants was very positive and indicated that all attendees learnt a lot and were very excited about taking this new knowledge back to their respective countries.

Enabling outcomes:

1. Definitions
   a. Basic definitions
   b. Tide Patterns
   b. Tide Levels and Datums

2. Tide Fundamentals
   a. Tide Raising Forces
   b. Basic Tide Theory
   c. Tide Pattern Generation
   d. Major Factors That Affect Tide

3. Tidal Streams and Measurements
   a. Tidal Streams/ Currents
   b. Progressive and Standing Waves
   c. Tide Levels and Datums
   d. Introduction to Co- Tidal Charts

4. Observations, Equipment and Procedures
   a. Types of Tide Gauges
   b. Installing a Radar Tide Gauge
   c. Measurements of Tidal Streams and Equipment Types

5. Tide Analysis and Predictions.
   a. Introduction to Analysis, Errors and Prediction methods
   b. Archiving of Data
6. Levelling in a Tide Gauge Practical
   Calibrating the Equipment and Data

Assessment Criteria:

In Accordance with:
Standards of Competence for Hydrographic Surveyors (9th Edition, 2001)

By Means of:
Progress tests and Model answer sheet

Practical Assessment:
Draw a tidal Curve using Hourly Tidal Information and graph paper.

Demonstration:
How to level a tide gauge into the national benchmark system.
Problem solving and basic maintenance
Calibration of tide gauge

Note to Presenter:
Any hints, tips or variations available to the presenter
M-13 Chapter 5 Water Levels and Flow