

### ***1 Malawi Hydrographic Office***

The assembly of the 70 ton ship RV Timba with the assistance of the French government in 1989 ushered in the commencement of modern hydrographic surveys in Malawi. This time around the objective was to carry out surveys of Lake Malawi including the lesser lakes of Malombe, Chilwa and Chiuta and also the Shire River.

The coming in of ICEIDA (Icelandic International Development Agency) in 2001 enhanced the Malawi Hydrographic office capacity and afforded the local hydrographers to utilize modern equipment and software for data acquisition and processing. By the time the project ended in 2006 most of the goals had been attained.

### ***2 Hydrographic Surveys***

With an area of about 24000km<sup>2</sup> Lake Malawi affords a significant amount of hydrographic survey work for the hydrographic office. There still remains about 60% of survey work remaining to be carried out. When the River Shire and the lesser lakes are put in perspective the amount of work remaining is substantial.

### **Problems**

The ship RV Timba repairs are now almost complete and it is expected that come September 2014 the ship will be fully operational.

Once the main vessel starts operations there will be need to acquire equipment such as GPS, update data acquisition and processing software among other requirements.

Most of the minor operations on the lake have been carried out using the smaller hydrographic launch RV Timba II. However it also requires dedicated positioning and data acquisition equipment to function independently. This launch services surveys in mostly coastal and shoal areas.

The purchase of a side scan sonar would assist in achieving 100% bottom coverage to complement the traditional single beam echosounder especially in harbor and critical areas of concern.

### ***3 New Charts & Updates***

The following charts have been produced to date:

#### **i. Data acquired**

##### **- 1:100,000 Series**

##### **a) C100-2 (50% of the data has been acquired)**

## **ii. Data acquired and validated**

- **1:10,000Series**
  - a. C10-4A
  - b. C10-2
  
- **1:100,000 Series**
  - C100-5 (few profiles to be redone in the field)

## **iii. Charts ready for printing**

The following charts are ready for printing, and currently are printed on demand using CARIS Software:

### **-1:10,000 Series**

C10-6B

### **-1:50,000 Series**

a. C50-1B

## **iv. Charts printed**

### **-1:10,000 Series**

- a. C10-8
- b. C10-7

### **-1:50,000Series**

- c. C50-24
- d. C50-25
- e. C50-26
- f. C50-27

Chart Index is attached as Annex I

ENCs and RNCs are not in production. In addition INT and pleasure Craft charts have not been produced as yet.

## **Problems Encountered**

A functional Printing press is available at the Government Printer and it is currently one of the options to be considered when we are ready to print new charts. Our printing personnel would have to be involved at every stage since the Government Printer does not deal in geo-referenced documents but pictures which are not geo-referenced.

#### 4. New Publications & Updates

It is planned to carry out surveys on the Nsanje port at the southern tip of Malawi where the Shire River flows into Mozambique, using the vessel RV Timba II. Revision of the Lake Malawi Sailing Directions remains an activity planned for the coming months in close cooperation with the Department of Marine Services.

#### Problems encountered

There is lack of trained or experienced personnel in the preparation of the sailing pilot. It is hoped that once the Survey vessel Timba is back to sailing on the lake, there will be an operation together with the Marine Services Department to do the sailing pilot revision.

#### 5. Maritime Safety Information (MSI)

Nation/Area	INT Region	Local Warning	Coast Warning	Navarea Warning	Port Info	Master Plan
Malawi	H	Partial Lake Malawi pilot update	No	No		Marine Transport Sector

The transmission of safety information to Mariners is the responsibility of Marine Services Department. A communication project which also involves capacity building is in the pipeline. In process also is a Master plan which is a project in conjunction with the EU. The Master Plan is a Marine Transport Sector Master Plan and has started together with Port Development management.

IMO will do an audit scheme later this year which will include safety of navigation and indicate importance of charts. Currently, however the main items for communication are still VHF radios which have indeed compromised safety at critical times when ships need urgent rescue.

#### Problems Encountered

The Hydrographic Survey office intends to work in close cooperation with Marine Department in order to develop reliable Maritime Safety Information.

#### 6. C-55

The charts are at scales 1:10000, 1:50000 and 1:100000. With the resources at hand the status of hydrography and nautical cartography may be ranked as fairly good. As mentioned above 40% of the

lake has been surveyed. Two charts at 1:10000 and four charts at 1:50000 scales have been printed. One chart at 1:10000 and one at 1:50000 chart scales are being printed on demand.

Attached find Annex II which shows the C55 status as extracted from the IHOCBC Malawi Visit Report 2008.

## ***7. Capacity Building***

Personnel have been the major input into the achievements made to date. Capacity building is a continuous exercise that need never stall to avoid gaps in delivery. Training is therefore required both in hydrography and nautical cartography.

In order to maintain a trained staff, Government has done its part by putting in place a comprehensive training programme. Thus some staff members have been trained at the STC in Netherlands. At the local universities in Blantyre, Mzuzu and Lilongwe training has also been provided in Surveying and Mapping. Other training which also involved cooperating partners as well as the IHOCBC allowed for training in France, Italy and South Africa. Currently training is sought for CAT A training in Hydrography.

Malawi and Mozambique have had multilateral agreements involving hydrographic surveys on Lake Malawi (Niassa) which also involved Iceland. The joint project of the lake boundary between Malawi and Mozambique using CARIS Lots software is planned to commence from September 2014.

It is also anticipated that the cooperation between Malawi Hydrographic office and Norway will come to fruition which will be very helpful to revive the operations of the survey ship RV Timba. Such items as the positioning equipment, the sounding equipment, data logging instruments and accompanying softwares will require revamping and we therefore hope Norwegian Hydrographic office will look with favour at our plight.

Another project to be carried out is the Shire-Zambezi waterway project. A new impetus to the project has been assured by the government and cooperating countries to bring new life to this important project.

## ***8. Oceanographic Activities***

A network of staff tide gauges run the whole stretch of the western coast of Lake Malawi including Lake Malombe and Shire River are maintained by the Ministry of Water and Irrigation department.

The hydrographic office maintains one automated pressure tide gauge at Monkey Bay which is fully functional. Additional automatic pressure tide gauges will eventually be installed at Nkhota Kota, Nkhata Bay and Chilumba ports. Other oceanographic equipment used by the hydrographic office includes a sound velocity profiler and a Grab corer.

GIZ Germany cooperation has delivered to the hydrographic office a winch and motor, a rubber dinghy, a hydrophore water pump and outboard engine. This is much appreciated and it will be put to good use.

#### **Problems encountered**

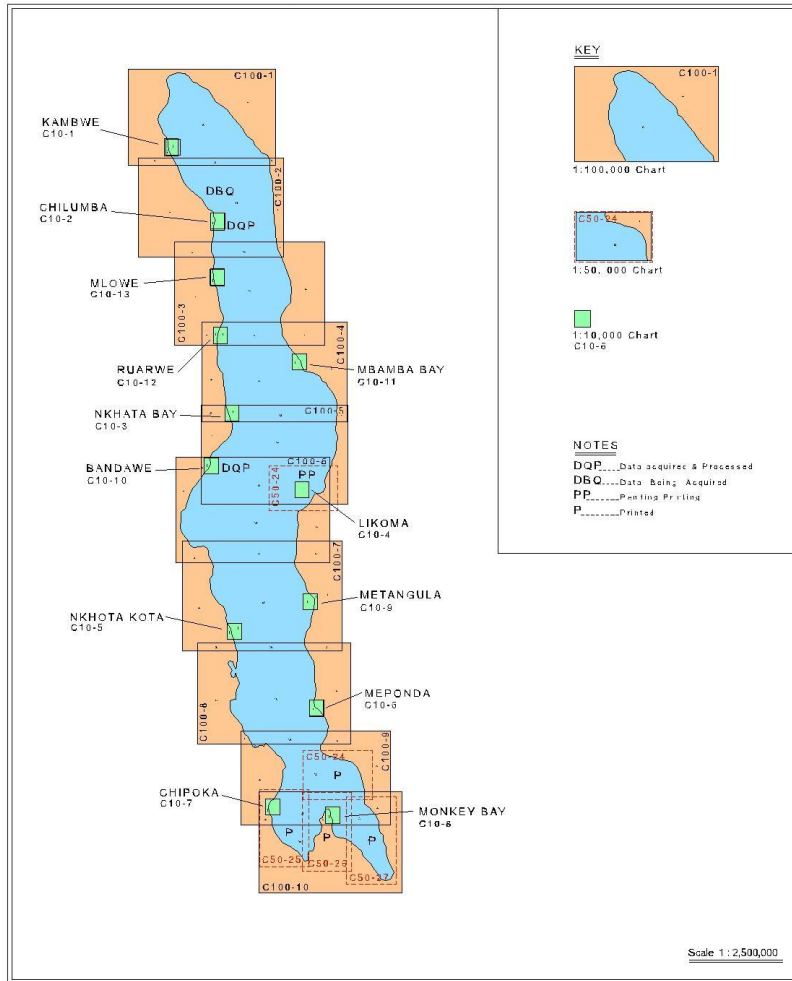
There is need to purchase a current meter for inclusion of water current information on the charts. In addition even though the automatic tidegauge has functioned well all these years we are worried that its batteries will come to end of their life very soon and we are not in touch with the supplier to know the how about maintenance.

#### ***10. Concluding Remarks***

The lengthy repair period to the ship Timba has been a major stumbling block to successful continuation of our programmes but it is hoped this will become history this September when the Timba becomes operational again. Based on our past glory it is hoped that future success can be attained in the production of modern navigation charts, revision of the Lake pilot and monitoring the lake and river environment.

With the willingness of our cooperating partners such as Iceland, Germany GIZ and Norway who have pledged to support Malawi and others in the international community including the IHO, we hope to get back to our winning ways and achieve those milestones hitherto eluded due to funding or ship breakdown or other such reasons.

PROPOSED CHART INDEX



IHO Special Publication S-55 Update (Visit Malawi Apr / May 2008)

Page 32  
 Basic Data

Maritime Nation/Area	Nation or Area Code	Region ID	Nation or Area (N or A)	EEZ (sq km x 1000)	Length of Coastline (km)	Data for S-55 Edition No.	Latest Update	IHO Mem State
Malawi	MW	AF	N	24.0	1290	3	May 2008	N IHO S-55 Annex

Page 40  
 Hydrographic Resources

Maritime Nation/Area	Hydrographic Survey Vessels				Hydro. Staff		Positioning Methods		
	>100m	30m-100m	25m-30m	<25m	Specialists	Assistants	Long >40km	Medium 5-40km	Short Rn
Malawi				1	1	2		RTK	RTK

Page 48  
 Status of Hydrographic Surveys

A1 = % which has been adequately surveyed  
 B1 = % which requires re-survey at larger scale or to modern standards  
 C1 = % which has never been systematically surveyed  
 An entry of 1 in column A1 indicates inland waters

Maritime Nation/Area	Data	State of Hydrography d<80m			State of Hydrography 50m<d<200m Surveys for areas between 0 and 200m			State of Hydrography d>200m		
		% adequate	% resurvey	% unsurveyed	% adequate A1	% resurvey B1	% unsurveyed C1	% adequate	% resurvey	% unsur
Malawi		30	0	70	35	0	65	0	0	

ANNEX II

IHO S-55

Summary Report on MARITIME SAFETY INFORMATION (MSI)

Nation / Area	INT Region	Local Warning	Coast Warning	NAVAREA Warning	Port Info	Master Plan	A1 Sea Area	A2 Sea Area	A3 Sea Area	NAVTEX	SafetyNet
Malawi	H	Partial	NO	NO	Partial						

IHO S-55

Summary Report on the Status of RNCs

In the table below, -1 has been used for Inland Waters

Nation / Area	INT Region	Small Scale	Medium Scale	Large Scale
Malawi	H	0	0	0

IHO S-55

Summary Report on the Status of ENC's

In the table below, -1 has been used for Inland Waters

Nation / Area	INT Region	Small Scale %	Medium Scale %	Large Scale %
Malawi	H	0	0	0

IHO S-55

Summary Report on the Status of INT Charts

In the table below, -1 has been used for Inland Waters

Nation / Area	INT Region	Small Scale	Medium Scale	Large Scale
Malawi	H	0	0	0