Malawi Hydrographic Surveys

SAIHC 16-17.1M

MALAWI NATIONAL REPORT

to the

16TH SOUTHERN AFRICAN AND ISLANDS

HYDROGRSPHIC COMMISSION

(SAIHC) MEETING

CAPE-TOWN

2-5 September 2019

1. *Malawi Hydrographic Office*

The mandate of the Hydrographic office is to carry out surveys of Lake Malawi including the lesser lakes of Malombe, Chilwa and Chiuta as well as the Shire River.

Hydrographic surveys of Lake Malawi started in the 1950s by the British Admiralty but were not sustained. 30 years later, in 1989, The French cooperation revived hydrographic survey and in 1999 there was a cooperation with Iceland which went on up to 2006. By this time, the Malawi Hydrographic office became well established with an ability to carry out any hydrographic works. This included surveys in dams, rivers or smaller lakes and on ports on the coasts of Lake Malawi.

TV. Timba for offshore Surveys

2. *Hydrographic Surveys*

As of now, 40% of the total area of 24,000km^2 of Lake Malawi has been surveyed. There still remains a substantial amount of work to be done including work for the Shire River which is the major and only outlet river for Lake Malawi and other smaller lakes.

Hydrographic Survey Office reached a new level of achievement in the year 2016 after completion of delimitation of maritime boundary between Malawi and Mozambique. A total maritime boundary of 284.88km (refer annex III) was delimited. As a result of this exercise, Malawi and Mozambique were invited to the African Union Border Programme meeting in Addis Ababa, Ethiopia involving the Riparian States of Lake Tanganyika, namely; Burundi, Democratic Republic of the Congo, Tanzania and Zambia. Malawi and Mozambique therefore shared there successful experience of a Maritime delimitation boundary exercise.

Another assignment carried out involved the Fisheries Sector where a hydrographic survey was carried out in the Southern part of Lake Malawi in the smaller Lake Malombe. The exercise also involved identification of bottom features of the Lake to inform the resilience of the lake to climate change in fisheries sector.

2.1. Problems

The Hydrographic Survey vessel, RV. Timba which has been on repair for a long period is now ready for surveys. For her to be fully operational there is a need to acquire equipment such as GPS and Echo-Sounder and update data acquisition and processing software among other requirements. The government currently has procured a single beam echo-sounder to be installed on the boat and it is hoped that all required softwares will be sourced and updated accordingly.

The small launch the Timba II which is very useful for coastal and river surveys also requires a dedicated positioning and data acquisition equipment to function independently. This launch services surveys in mostly coastal and shoal areas.

Timba II for costal surveys

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

3. New Charts & Updates

To date the following charts have been produced:

Chart No.	Series	Status
C10-8	1:10,000	Printed
C10-7	1:10,000	Printed
C50-24	1: 50,000	Printed
C50-25	1: 50,000	Printed
C50-26	1: 50,000	Printed

C50-27	1: 50,000	Printed
C10-6B	1:10,000	Ready, Printed on demand using CARIS Software
C50-1B	1: 50,000	Ready, Printed on demand using CARIS Software
C10-4A	1:10,000	Data acquired & validated
C10-2	1:10,000	Data acquired & validated
C100-5	1:100,000	Few profiles to be redone in the field
C100-2	1:100,000	50% of data acquired

The Chart Index is attached as Annex I.

Part of chart 50-27, (approaches to Shire River) has been revised with an aim of identifying the sand bar at the mouth of the River (refer annex IV).

Chart annex II takes into account new developments. This takes care of large scale charts required in areas of significant fishing concerns and the sugar factories in Nkhotakota, Salima and Chikwawa districts in the lakeshore and river Shire areas.

ENCs and RNCs are not in production. In addition INT and pleasure Craft charts have not been produced as yet and it is hoped that if another project materializes it will take care of some of these matters.

3.1. Problems Encountered

As far as chart printing is concerned the Departmental printing press has not been functional for some time now. We are currently relying on HP plotters but these have also developed faults. However this problem has been partly solved by our cooperation with United Kingdom Hydrographic Office where 100 copies of the chart of Likoma Island have been printed.

4. New Publications & Updates

The Hydrographic Survey Office is planning for the revision of the Lake Malawi Sailing Directions to be carried out later on this year together with surveys for large scale surveys. The Hydrographic office works in close cooperation with the Marine Department in order to adequately chart the priority areas.

4.1. Problems encountered

With the RV Timba about to start survey operations this year it is hoped that preparation of the sailing pilot will resume. In this project, more personnel will be exposed to hydrographic surveys and appropriate training will also be offered. Currently this activity has not been conducted for a long time.

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	No	No		Marine Transport Sector

		update				

The transmission of safety information to Mariners is the responsibility of Marine Services Department. To this effect the Marine Services department has formulated a Master Plan for the Marine Transport Sector.

IMO carried out an audit scheme which includes safety of navigation and importance of charts. Currently, however the main items for communication are still problematic which has now and again compromised safety at critical times when ships need urgent rescue.

5.1. Problems Encountered

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

6. C-55

As has been the case, 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. However with the lapse of time and the inactivity brought about when the survey vessel Timba was idle we have somewhat lagged behind. Still the revival of operations will enable resumption of production of charts and we look forward to this.

The C55 status therefore remains similar to the one carried out during the IHOCBC Malawi Visit Report of 2008.

7. Capacity Building

It is obvious that personnel have been the major input into the achievements made to date. In order to avoid human resource gaps, capacity building needs to be a continuous exercise. Continuous training is thus required in hydrography and nautical cartography.

The Government of Malawi has trained staff members at local Universities and occasionally at international training institutions such as the STC in Netherlands. In addition training has been funded by the IHOCBC mainly in South Africa. At an earlier stage training was also provided by France at EPSHOM. In addition training was also provided by the IHO at Trieste in Italy. Currently comprehensive training is sought both at CAT A and B 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 also involved the German cooperation GIZ benefited Malawi and Mozambique by having their officers trained in CARIS Lots software which resulted in successfully delimiting maritime boundary of the lake.

8. Oceanographic Activities

The department of Water resources maintains a network of tide gauges throughout the western part of the Lake including gauges on Lake Malombe and the Shire River. Hydrographic office and department of water resources were engaged in hydrographic survey of the approaches to Shire River which has been explained earlier on. Lake Malawi is currently experiencing low water levels and hydraulic modeling data is required to come up with better model of the riparian areas.

The hydrographic office also maintains one automated pressure tide gauge at Monkey Bay, but additional automatic pressure tide gauges will need to be installed at Nkhota Kota, Nkhata Bay

and Chilumba ports in order to complement and check the Water Resources department data. The commencement of operations should revive most of the planned installations. Other oceanographic equipment used by the hydrographic office includes a sound velocity profiler and a Grab corer.

8.1. Problems encountered

The automatic tide gauge and the sound velocity profiler are in a working order but require updates.

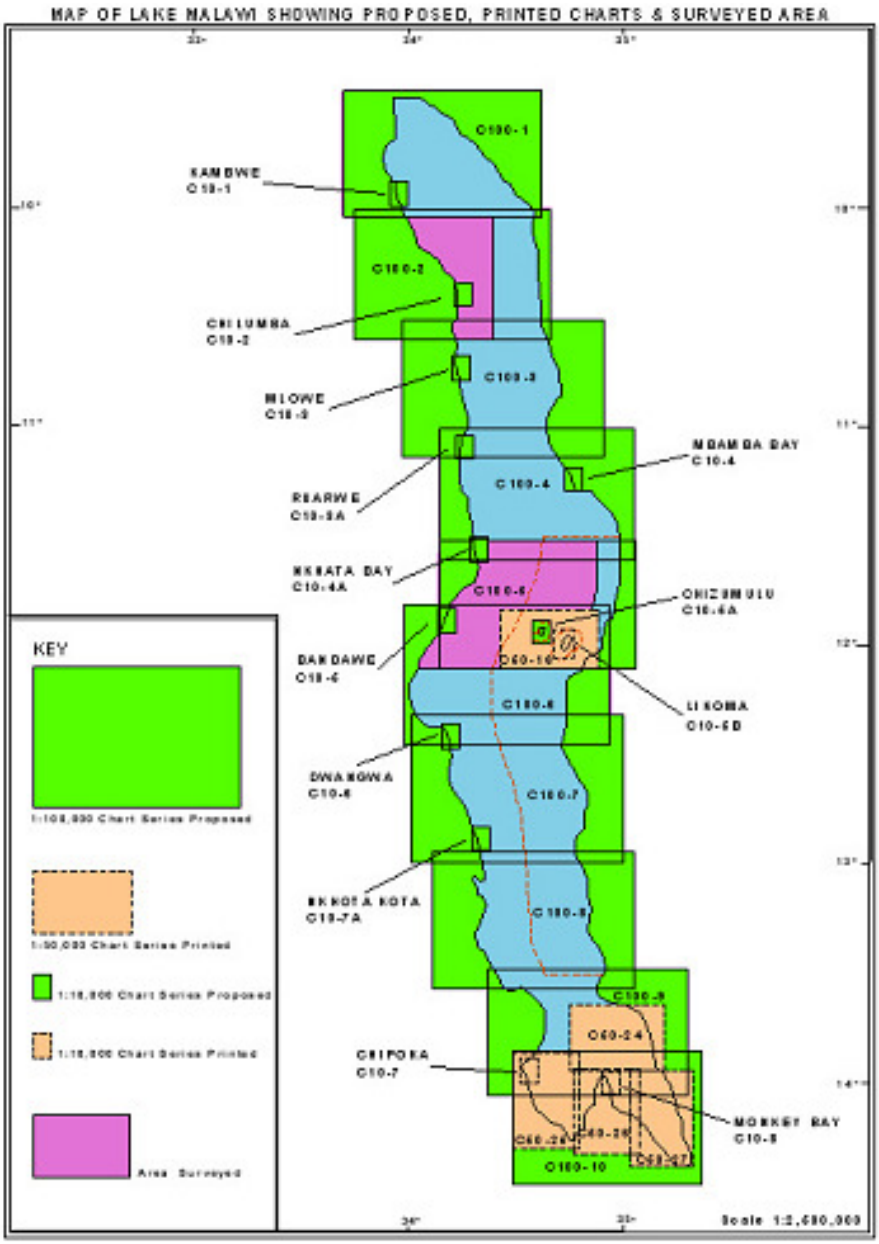
9. Concluding Remarks

With the growing demand of hydrographic data by different stakeholders, we have to strive for modern equipment and technology for a wider use of hydrographic data. Major achievements have been charting coverage of 40% of the Lake Malawi and completion of delimitation of maritime boundary between Malawi and Mozambique.

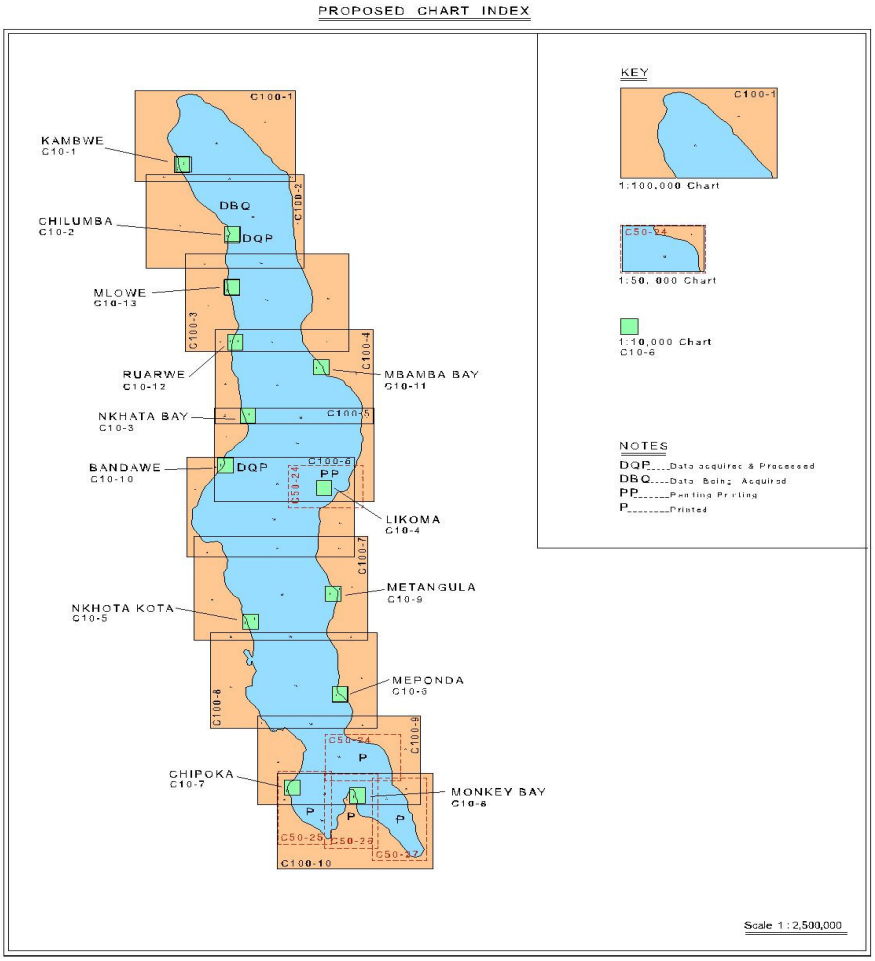
Malawi as a country and Hydrographic surveys in particular is left behind in contributing or rather participating in some international activities; Publications, MSI, and Notices to Marine within the SAIHIC Region. For example, we wonder why we are not contributing MSI to NAVAREA VII while our neighboring countries within the SAIHC are doing so. With proper advice and guidance I hope we can also contribute to the SAIHC on Marine activities, despite Lake Malawi being an inland Lake.

Malawi being a Commonwealth Country we request UK through UKHO to extend its commitments to Malawi in its primary charting activities and its continuing interest in developing regional hydrographic self-sufficiency through capacity building measures.

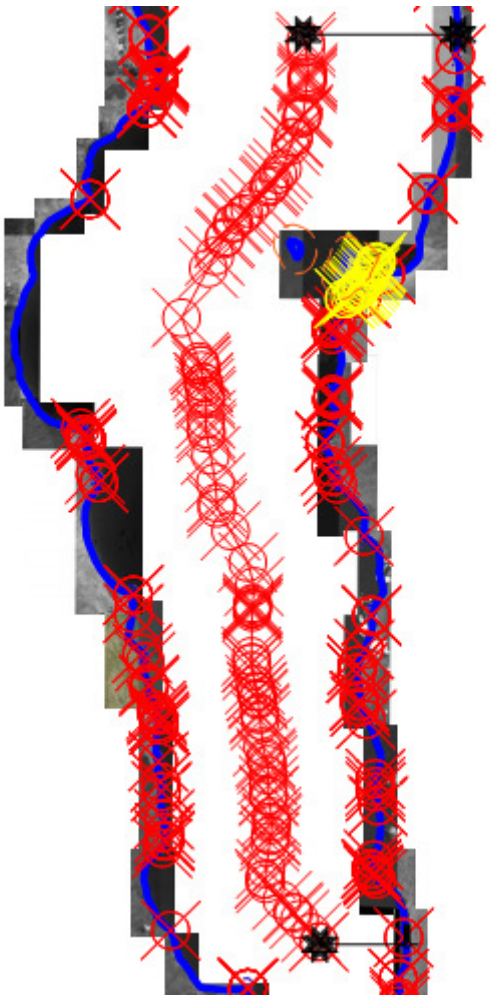
We are very much grateful to SAIHC for inviting us to attend a seminar on Raising Awareness of Hydrography to be held in Cape Town in South Africa and a MSI Training Course in Mauritius. This will go a long way to help us to understand the obligations and the governance requirement of providing hydrographic service.



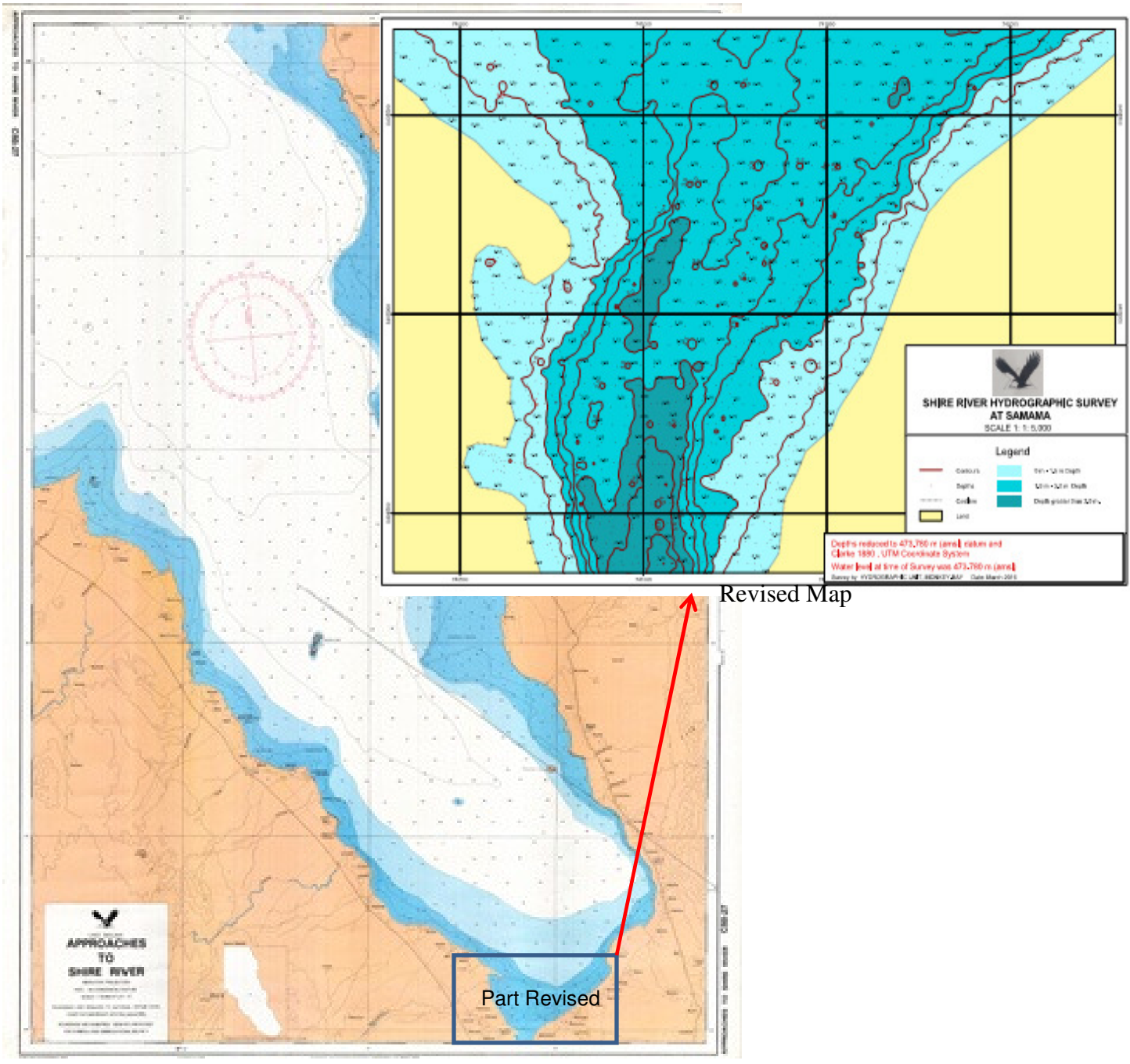
Annex 1: Chart Index



ANNEX II : Charts produced in coasts and projects development areas



Annex III



Revised Map

Annex IV : Revised Chart on Approaches to Shire River

Annex A

Input to the IHO Publication P-5 (*Yearbook*)

Country: MALAWI
Organization: DEPARTMENT OF SURVEYS –HYDROGRAPHIC UNIT

(Please provide the information in English)

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-Web site -site web -sitio web	
Country information / Informations sur le pays/ Información sobre el país	
-Declared National Tonnage -Tonnage national déclaré -Tonelaje Nacional Declarado	Tonnage: Date:

-National day -Fête nationale -Fiesta nacional	
-Date of establishment and Relevant National Legislation -Date de mise en place et législation nationale pertinente -Fecha de constitución y legislaciónnacional pertinente	
-Date first joined IHO -Date d'adhésion à l'OHI -Fecha de adhesión a la OHI	
-Date ratification Convention -Date de ratification de la Convention -Fecha de ratificación de la Convención	
-Remarks on membership -Remarques sur l'adhésion -Comentarios sobre la adhesión	PLANNING TO JOIN
Agency information/ Information sur l'agence/ Informaciónsobre la agencia	
-Top level parent organisation -Organismemère -Organizaciónasocieda de nivel superior	MINISTRY OF LANDS, HOUSING AND URBAN DEVEROPMENT
-Principal functions of the organisation or the department -Attribution principales de l'organisme ou du département -Principales funciones de la Organización o departamento	PRODUCTION OF CHARTS FOR SAFETY OF NAVIGATION, PUBLICATION OF PILOT BOOK, PUBLICATION OF NOTICES TO MARINERS,
-Annual operating budget -Budget annuel -presupuestoanual	
-Total number of staff employed -Effectifstotaux	30

-Número total de personal empleado				
-Number of INT charts published -Nombres de cartes INT publiées -Número de cartas INT publicadas				
-Total number of paper charts published-Nombre total de cartes papier publiées-Número total de cartas de papelpublicadas	6			
-Number of ENC cellspublished -Nombres de cellules ENC publiées -Número de células ENC publicadas				
-Number of Other charts -Nombred'Autrescartes -Número de Otras cartas				
-Type of publications produced -Type d'ouvrages produits -Tipo de publicacionesproducidas	PILOT BOOK			
-Detail of surveyingvessels/ aircraft -Détail des bâtiments hydrographiques / aéronefs -Detalle de los buques hidrográficos / aeronaves	-RV TIMBA -Nom -Nombre	- 70 TONE -Déplacement -Desplazamiento	-1989 Launched -Date de mise en service -Fecha de botado	-12 -Nombre de l'équipage -Tripulación

-Other information of interest -Autresinformationsutiles -Otrainformación de interés	