



**MESO AMERICAN AND CARIBBEAN SEA HYDROGRAPHIC COMMISSION
15th Meeting - Manzanillo, Mexico (10-13 December 2014)**

NATIONAL REPORT – BRAZIL

1. Hydrographic Office / Service: Directorate of Hydrography and Navigation (DHN).
2. Surveys (MACHC region): Coverage of new surveys: during 2014, Brazilian Navy Hydrographic Ships conducted surveys on the Amazon Basin and in the north region of NAVAREA V, contributing to the nautical cartographic update of the area.
- New technologies/equipment: a “small-independent” survey boat was acquired, so as to be used in fast surveys in restricted areas. New multibeam sonars were acquired (for the small survey boat and for the existing hydro/oceanographic ships).
- New ships: a new hydrographic ship for riverine areas is being built in Brazil and will be commissioned until DEC2015. A new hydro/oceanographic ship is being built in China and will be commissioned until 2016.
- Problems encountered: X X X.
3. New charts & updates (MACHC region): ENC: BR441032 (4th and 5th ed) - Da Costa do Ituquí a Ilha do Meio; BR500321 (2nd ed) - Porto de Vila do Conde; BR541031 (2nd ed) - Santarém, BR400203 (2nd ed) - Da Ponta do Capinal às Ilhas Pedreira, BR321300 - Do Cabo Norte ao Cabo Maguari (1st ed.)
- ENC distribution method: Brazilian ENCs are distributed by IC-ENC and PRIMAR.
- RNCs: DHN provides raster nautical charts for the NAVAREA V. 438 RNC (40 in MACHC region) are currently available at no cost for the entire community.
- INT Charts: the INT nautical charts scheme for MACHC region is ready since NOV2013. There were no new editions in 2014.

National paper charts (MACHC region): 320 – Porto de Belém (6th ed).

Other charts: X X X

Problems encountered: X X X.

4. New publications & updates:

New publications:

Updated publications: Tide Tables DG6 50th Edition (DEZ2014) and Nautical Almanac DN5 70th Edition (DEZ2014).

Means of delivery: paper and digital format accessible at DHN INTERNET website.

Problems encountered: X X X.

5. MSI

Existing infrastructure for transmission: Brazilian Navy Hydrographic Centre is responsible for the reception, processing and promulgation of MSI for NAVAREA V, on behalf of DHN, in accordance with GMDSS Master Plan. Navigational warnings and Meteorological Information are broadcasted by SafetyNET service at scheduled times (0030 and 1230 UTC) twice a day. Meteorological information is broadcasted at scheduled times (0730 and 1930 UTC) twice a day. Bad weather warnings are forwarded any time, whenever it's necessary.

MSI is also broadcasted in VHF/HF radio band by Rio de Janeiro Navy Radio Station, at least three times a day. Local navigational warnings are broadcasted by VHF/HF radio band only.

SERVICE	YES	NO	PARTIAL	NOTES
LOCAL WARNINGS	X			
COASTAL WARNINGS	X			
NAVAREA WARNINGS	X			
INFORMATION ON PORTS AND HARBOURS	X			

GMDSS IMPLEMENTATION (IMO Publication 970 - GMDSS Handbook)

SERVICE	YES	NO	PARTIAL	NOTES
MASTER PLAN	X			
A1 AREA		X		
A2 AREA		X		
A3 AREA	X			
NAVTEX		X		
SafetyNET	X			

New infrastructure in accordance with GMDSS Master Plan: the implementation of a net for the transmission of NAVTEX is being discussed internally.

Problems encountered: X X X.

6. C-55

Status of **hydrographic survey** of all navigable waters, including internal waters, out to the limits of the EEZ (as stated in the last update, JUL2014):

Survey coverage, where:

A - percentage which is adequately surveyed.

B - percentage which requires re-survey at larger scale or to modern standards.

C - percentage which has never been systematically surveyed

	A	B	C
Depths < 200m	70	30	0
Depths > 200m	90	10	0

The information listed above does not include navigable rivers as they are treated separately due to the individual nature of their dynamics, their wide navigable area and economic significance.

Status of hydrographic survey of Brazilian Navigable Rivers

Survey coverage, where:

A - percentage which is adequately surveyed.

B - percentage which requires re-survey at larger scale or to modern standards.

C - percentage EEZ which has never been systematically surveyed.

	A	B	C
Depths < 200m	60	40	0
Depths > 200m	---	---	---

Status of **nautical charting** within the limits of the EEZ:

Coverage of charts published by your organization, where:

A - Percentage covered by INT series or paper chart series meeting the standards in M-4.

B - Percentage covered by Raster Navigational Charts (RNCs) meeting the standards in S-61.

C - Percentage covered by ENC's meeting the standards in S-57.

PURPOSE/SCALE	A	B	C
Offshore passage/Small	90	100	90
Landfall and Coastal passage/Medium	75	85	80
Approaches and Ports/Large	100	100	100
Percentage of Group A showing depths in metres	100		
Percentage of Group A referenced to a satellite datum	80		

7. Capacity Building

Training needed: X X X.

Training and courses offered:

COURSE	DESCRIPTION	DURATION
C-Esp-HN	Aims to qualify the student to be a technician in Hydrography and Navigation issues.	42 weeks
C-Ap-HN	Aims to increase the capability of the student to be a technician in Hydrography and Navigation.	35 weeks
CAHO (IHO Cat."A")	Aims to provide the student with the capability to plan, to conduct and to execute the activities related with the Hydrographic Service.	50 weeks
Hydro 1	Aims to provide the student with the capability of planning a hydrographic survey.	66 hours
Hydro 2	Aims to provide the student with the capability of conducting and executing a hydrographic survey.	98 hours
Training in singlebeam A/P	Aims to promote a day-by-day follow up of the singlebeam acquisition and of the processing tasks aboard.	-
Training in multibeam A/P	Aims to promote a day-by-day follow up of the multibeam acquisition and of the processing tasks aboard.	-
Training in Side Scan operation	Aims to promote a day-by-day follow up of the side scan operation aboard.	-
Training in gauge operation	Aims to promote a day-by-day follow up of the gauge operation aboard.	1 week
Training in GPS survey and post processing	Aims to provide the student with the capability of planning a GPS network, carrying out a classical survey, post-processing baselines and adjusting geodetic coordinate network stations.	1 week
Training in oceanographic data acquiring and processing	Aims to promote training on CTD, ADCP Termosalinometer operation and data processing	2 weeks

On 2014 DHN-BR hosted three foreign students that coursed the IHO category A Course of Hydrography for Officers (CAHO). Two Haitians from the Maritime and Navigational Service of Haiti (SEMANAH) and a Peruvian from the Peruvian Navy successfully attended CAHO. The graduation is scheduled for 17DEC.

On July 2014 DHN (Brazil) hosted a three-week Hydrographic Survey Course, as a part of an effort to build hydrographic capacity also to civilian companies.

a) Projects under development: X X X

8. Oceanographic activities General: deployment of XBTs by Brazilian Navy Ships at international waters and the operation and maintenance (annual) of eight PIRATA moored buoys by Brazilian Hydrographic Navy Ships.

Oceanographic cruises were done by the Brazilian Navy Hydrographic Ships on the north, east and south coasts of Brazil, using CTD, XBT and ADCP.

The Brazilian National Buoy Program counts on 6 operational buoys (+ 4 will be deployed in 2015). None of the buoys are placed in MACHC region, but 2 of the 4 new buoys will be launched and placed in the north coast of Brazil, in MACHC region. Drifting buoys were also deployed along the Brazilian coast during the oceanographic cruises.

GEBCO/IBC's activities: routine GEBCO soundings are performed by the Brazilian Hydrographic Navy Ships employed during the all the commissions done.

Tide gauge network: 233 tide gauges are distributed by the Brazilian territory (DEC2014 data). 49 tide gauges are placed in MACHC region.

New equipment:

Problems encountered: X X X.

9. Other activities

Participation in IHO Committees / Working Groups: HSSC, IRCC, MACHC, SWAtHC, HCA, TSMAD, SNPWG, DPSWG, CSPCWG, DQWG, MSDIWG, TWLWG, HDWG, EUWG, ABLOS, WWNWS, CBSC, WENDWG, IBSC, GEBCO-SCUNF, GEBOTSCOM, IEHG, PAC-PRIMAR, IMO-NCSR and IC-ENC.

Meteorological data collection: meteorological data are collected through fixed meteorological stations placed all over Brazil, through ships and through internet links. All data are used for the Maritime Meteorological Service products, distributed and broadcasted at no cost all over

Brazilian coast and by internet.

Brazil and Suriname are discussing the implementation of a technical agreement between both countries in Hydrographic matters. Drafts have circulated through the technical personnel and an official document was sent to Suriname representatives for ratification.

Brazil and Guyana started discussions for a technical agreement for cooperation in Hydrographic matters. DHN-BR sent a draft document for the evaluation of the Maritime Authority of Guyana.

10. Conclusions

DHN-BR reassures its commitment with the MesoAmerican and Caribbean Sea Hydrographic Commission (MACHC) and plans continuous hydrographic activities so as to keep the nautical charts updated, as stated in regulations V and IX of the SOLAS Convention.