



**MESO AMERICAN AND CARIBBEAN SEA HYDROGRAPHIC COMMISSION
18th Meeting – Varadero, Cuba (27 November - 02 December 2017)**

NATIONAL REPORT – BRAZIL

1. Hydrographic Office / Service: Directorate of Hydrography and Navigation (DHN).
2. Surveys (MACHC region): Coverage of new surveys: during 2017, Brazilian Navy Hydrographic Ships conducted surveys on the Amazon Basin, mainly in river Madeira, and also in the north region of NAVAREA V, contributing to the nautical cartographic update of the area.
- New technologies/equipment: XXX
- New ships: XXX
- Problems encountered: X X X.
3. New charts & updates (MACHC region): New ENC cells:
- BR64032A - Plano A Porto de Manaus
 - BR64032B - Plano B Porto Chibatão
 - BR64032C - Plano C Terminais da Reman
 - BR404031 - Da Ilha de Matari a Manaus
 - BR321300 - Do Rio Araguari a Ilha das Flechas
 - BR321400 - Do Machadinho a Ponta Quatipuru
 - BR404028 - Da Ponta dos Mundurucus à Ilha Panumã
 - BR404026 - Da Ponta dos Mundurucus à Parintins
 - BR54026A - Paraná do Mocambo
- ENC distribution method: Brazilian ENCs are distributed by IC-ENC.
- RNCs: DHN provides raster navigational charts for the NAVAREA V. 446 RNC (60 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 2017.
- National paper charts (MACHC region): the first edition of the nautical chart 4032A – Porto de Manaus was published in JAN2017.
- Other charts: X X X

Problems encountered: X X X.

4. New publications & updates: New publications:

Updated publications: Tide Tables DG6 54th Edition (DEZ2016) and Nautical Almanac DN5 73th Edition (DEZ2016).

Means of delivery: paper and digital format accessible (the last one can be downloaded 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 by Rio de Janeiro Navy Radio Station, at least three times a day. Local navigational warnings are broadcasted by VHF/HF 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			

Problems encountered: X X X.

6. C-55

On November 09th the template with updates for C-55 was sent to IHO (divided in Region B and C1). The Region B was subdivided in 3 regions: Amazon Basin, Coast and São Pedro e São Paulo Archipelago.

Status of hydrographic survey:

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.

1 - Amazon Basin:

	A	B	C
0 - 200m	70	30	0
Depths > 200m	---	---	---

2 - Coast

	A	B	C
0 - 200m	70	20	10
Depths > 200m	100	0	0

3 - São Pedro e São Paulo Archipelago

	A	B	C
0 - 200m	0	100	0
Depths > 200m	100	0	0

Status of nautical charting:

Coverage of charts published by your organization, where:

A - Percentage covered by INT series/paper chart series meeting the standards in S-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.

1 - Amazon Basin

Chart coverage	Passage (%)	Coastal (%)	Port (%)
INT	---	---	---
RNC	---	---	50
ENC	---	---	100
Status of Paper Charts			
Paper charts with depths in meters (%)	100		
Paper charts referenced to a satellite datum (%)	60		

2 - Coast

Chart coverage	Passage (%)	Coastal (%)	Port (%)
INT	100	100	100
RNC	100	100	100
ENC	100	100	100

Status of Paper Charts	
Paper charts with depths in meters (%)	100
Paper charts referenced to a satellite datum (%)	100

3 – São Pedro e São Paulo Archipelago

Chart coverage	Passage (%)	Coastal (%)	Port (%)
INT	100	100	---
RNC	100	100	---
ENC	100	100	---
Status of Paper Charts			
Paper charts with depths in meters (%)	100		
Paper charts referenced to a satellite datum (%)	100		

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

On October 2017 DHN/BR hosted a CHAtSO CBC bathymetry training course using RTK technology. Seventeen participants from different countries attended: Argentina (2), Brazil (11), Colombia (1), Mexico (1) and Uruguay (2).

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 project 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 5 operational buoys. 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: 407 tide gauges are distributed by the Brazilian territory (NOV2016 data). 104 tide gauges are placed in MACHC region.

New equipment: XXX

Problems encountered: X X X.

9. Other activities

Participation in IHO Committees / Working Groups: IHO Council, HSSC, IRCC, MACHC, SWaTHC, HCA, S-100WG, ENCWG, NCWG, NIPWG, DQWG, MSDIWG, TWCWG, CBSC, WENDWG, IBSC, GEBCO-SCUNF, GEBCO-TSCOM, WWNWS-SC, CSBWG, ABLOS, IEHG, NCSR and IC-ENC Steering Committee.

Meteorological data collection: meteorological data are collected through fixed meteorological stations placed all over Brazil, through ships and also received from other institutions through internet links. All data is used for the Maritime Meteorological Service products, distributed and broadcasted at no cost all over Brazilian coast and by internet.

International: DHN and the Hydrographic Service of Uruguay (SOHMA) are developing the Uruguay-Brazil Waterway in Patos and Mirim Lagoons. When stated, this 1.400km waterway will help improving exportation of both countries, allowing Uruguay to use Rio Grande harbor (13.8 meters deep today).

During the 1st Session of IHO Assembly, on April 2017, Brazil and Guyana signed a technical agreement in Hydrographic matters. Discussions are being conducted with Suriname and Haiti so as to sign similar agreements.

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.