IXth Meso American & Caribbean Sea Hydrographic Commission Meeting

9-10 October 2008

Niteroi, Brazil

NATIONAL REPORT – BRAZIL

1. Hydrographic Office / Service: Directorate of Hydrography and Navigation (DHN)

2. Surveys: Coverage of new surveys: during the last year, the Brazilian Navy Hidrographic Ships Sirius and Garnier Sampaio conducted surveys in the vicinity of North Entrance of Amazon river.

3. New charts & updates: - There were no new paper charts edited. ENC cells BR BR221020 - De Salinópolis a Fortaleza and BR400011 - Arquipélago de São Pedro e São Paulo released. Arrangements are being made to Coordinate the coverage and compilation scale of necessary ENC cells with SHOM.

4. New publications & updates: New Publication – DHN/2008, "List of Nautical Charts and Publications – DH20".
Updated publications: Distances Table – DN1-I, 3rd Ed, 1997. 3rd Reedition 2008.
Means of delivery: paper by mail and digital format accessible at DHN INTERNET site.

5. MSI Brazilian Navy Hydrographic Centre is responsable for receiving, processing and promulgation of MSI for NAVAREA V area, on behalf of Directorate of Hydrography and Navigation (DHN), in accordance with GMDSS Master Plan. Navigational warnings and Meteorological Information are broadcasted at least twice a day by SafetyNET service and VHF/HF radio band. 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			

6. S-55

1. HYDROGRAPHIC SURVEYING

1.1 Status of hydrographic survey of all navigable waters, including internal waters, out to the limits of the EEZ:
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	25	72	3
Depths > 200m	0	100	0

Amplifying information: The concept of EEZ is not applicable

2. NAUTICAL CHARTING

If you do have a nautical charting capability, complete the details below:

2.1 Status of nautical charting within the limits of the EEZ
Coverage of charts published by your organisation, where:
A = percentage covered by INT series, or a 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 ENCs meeting the standards in S-57.

Purpose/Scale	A		B		C
	INT	National series	INT	National series	
Offshore passage/Small	30		13		0
Landfall and Coastal passage/Medium	70		62		7
Approaches and Ports/Large		100		96	7

7. Capacity Building

a) Training needed: ENC production

b) Training and courses offered:

COURSE	DESCRIPTION	DURATION	REQUIREMENTS

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C-Esp-HN	To qualify the student to be a technician in Hydrography and Navigation issues. Contents: Astronomy, Meteorology, Navigation, Cartography, Geodesy, Tides Hydrographic Surveys, Oceanography, Topography and Practical Hydrography	42 weeks	Elementary school
C-Ap-HN	To increase the capacity of the student to be a technician in Hydrography and Navigation. Contents: Astronomy, Meteorology, Navigation, Cartography, Geodesy, Tides, Hydrographic Surveys, Oceanography, Topography and Practical Hydrography	35 weeks	High School C-Esp-HN
CAHO (IHO Cat."A")	To provide the student with the capacity to plan, to conduct and to execute the activities related with the Hydrographic Service. Contents: Oceanography, Topography, Meteorology, Geodesy, Marine Geology, Aids to navigation, Cartography, Tides, Navigation, Submarine Acoustic, Remote Sensing and Photogrametry, Production of the Nautical Chart, Hydrography I and II, Error Theory, and Practical Hydrography.	50 weeks	To be graduated in Naval Sciences, Cartography, Physics, Mathematic, Statistics, Geology, Geophysics, Oceanography, Meteorology, Computer Science and correlated sciences
Hydro 1	To plan a hydrographic survey.	66 hours	Graduation in Naval Sciences or Cartographic Engineering.
Hydro 2	To conduct and to execute a hydrographic survey using singlebeam ecosounders, multibeam ecosounders and side scan sonars.	98 hours	Graduation in Naval Sciences or Cartographic Engineering, Hydro 1
Tide	To introduce the tide theory learning how to predict and how to get a harmonic analyses to a hydrographic survey use.	83 hours	Graduation in Naval Sciences or Cartographic Engineering.
Cartography	To describe and to use cartographic projection systems commonly applied in hydrography.	45 hours	Graduation in Naval Sciences or Cartographic Engineering.
NC Production	To introduce the characteristics and the processes of the construction and updating of a	33 hours	Graduation in Naval Sciences or Cartographic

COURSE	DESCRIPTION	DURATION	REQUIREMENTS
	Nautical Chart.		Engineering, Cartography.
Training in singlebeam acquisition and processing	To promote a day by day follow up of the singlebeam acquisition and of the processing tasks onboard.	-	Graduation in Naval Sciences or Cartographic Engineering, Hydro 1, Hydro 2.
Training in multibeam acquisition and processing	To promote a day by day follow up of the multibeam acquisition and of the processing tasks onboard.	-	Graduation in Naval Sciences or Cartographic Engineering, Hydro 1, Hydro 2.
Training in Side Scan operation	To promote a day by day follow up of the side scan operation onboard.	-	Graduation in Naval Sciences or Cartographic Engineering, Hydro 1, Hydro 2.
Training in gauges operation	To promote a day by day follow up of the gauge operation onboard.	1 week	Graduation in Naval Sciences or Cartographic Engineering, Tide.
Training in GPS survey and post processing	To plan a GPS network, to carry out a classical survey, to post-process baselines and to adjust geodetic coordinate network stations.	1 week	Graduation in Naval Sciences or Cartographic Engineering, Hydro 1, Hydro 2.

c) Projects under development:
- ENC & ECDIS Seminar – Nov 2008
- Workshop on multibeam – Nov 2008;
- Cartographic production update – 2009;
- Multibeam course – 2009;
- Workshop on shallow water hydrography – 2010;
- Workshop on geospatial data processing and management – 2011.

8. Oceanographic activities

General: deployment of XBTs by opportunity Navy Ships, at international waters, and the operation and annual maintenance of eight PIRATA moored buoys by Hydrographic Navy Ships. Oceanographic operations by CHM are in an increase at the Amazon region, in cooperation with Petrobras.

GEBCO/IBC's activities: routine GEBCO soundings are performed by the Hydrographic Navy Ships employed in the annual maintenance of the eight PIRATA moored buoys.

Tide gauge network: It is being implemented, in an initial stage, an improvement of the tide gauge network at northern Brazil, with installation of radar sensors.

New equipment: improvement of the tide gauge network

	at northern Brazil, with installation of radar sensors. Problems encountered: funding is not always adequate to quantitatively keep with the maintenance/improvement requirements
9. Other activities	Participation in IHO Committees / Working Groups: CHRIS, SNPWG, CSTCWG, CPRNW, TC, GEBCO-SCUNF, WEND, CBC, HCIWWG, ISPWG
10. Conclusions	Future plans include: Conclusion of coverage for ENC cells of the region until the end of 2010.