

MESOAMERICAN AND CARIBBEAN SEA HYDROGRAPHIC COMMISSION
17th Meeting, Belem
14 to 17 December 2016

NATIONAL REPORT – COLOMBIA



1. Hydrographic Office/Service.

Dirección General Marítima - DIMAR

Centro de Investigaciones Oceanográficas e Hidrográficas – CIOH

Servicio Hidrográfico Nacional

2. Surveys

Caribbean Sea (10)

Ítem	No.	Title
1	253	Rio Magdalena
2	880	Puerto de San Andrés
3	218	Isla de Providencia
4	415	Islas de Providencia y Santa Catalina
5	885	Bahía Santa Catalina
6	418	Aproximación Isla Cayos de Bajo Nuevo
7	634	Aproximación Isla Cayos de Serranilla
8	213	Isla Cayos de Serrana
9	211	Isla Cayos de Roncador
10	416	Isla Cayos de Quitasueño

Pacific Ocean

Ítem	No.	Title
1	153	Bahía Buenaventura
2	730	Puerto de Buenaventura
3	109	Aproximación a Bahía Solano
4	710	Bahía Interior de Solano
5	770	Puerto de Tumaco

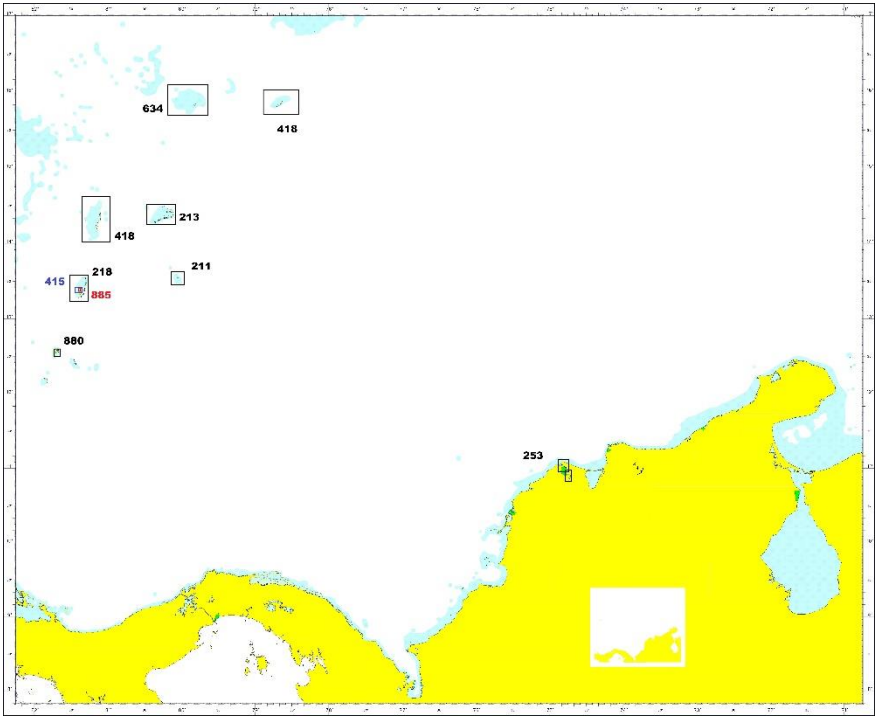


Figure 1. Colombia Caribbean Survey 2016



Figure 2. Colombia Pacific Survey 2016

<i>Special surveys</i>	
Ítem	Title
1	Levantamiento Hidrográfico Binacional Sector Leticia-Atacuari III FASE
2	Levantamiento de Magnetometría en la Bahía de Cartagena - Sector Bocachica
3	Levantamiento de Magnetometría en la Sector Mamonal y Caño de Loro
4	Levantamiento Sector Zona Bajo Mamonal
5	Levantamiento Sector de Magnetometría Sector Canal del Dique y Pasacaballo
6*	Search of a plane in Flandes, Magdalena River, Colombia.
7**	Survey for humanitarian assistance to the Guajira people North of Colombia

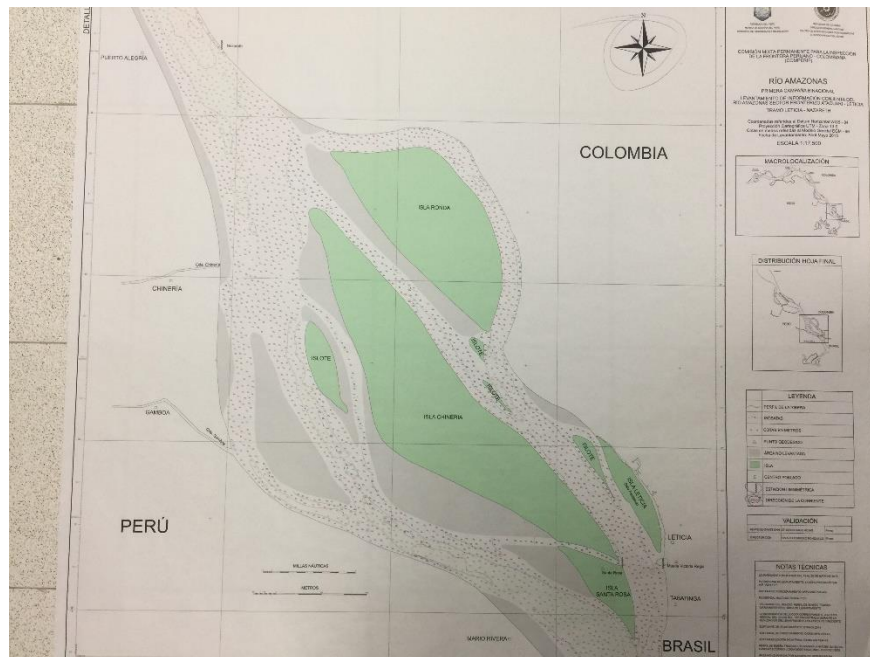


Figure 3. Bi national Survey CO-PE in Amazonas River

* A special operation was completed with the support of Colombia Naval Aviation for the transport of personnel, and Colombia Diving and Rescue Corps for the allocation and security of the place, the hydrographers of the CIOH were capable to locate a submerged airplane and the victims of the accident in the Magdalena River.

** A special survey was completed to give a route to the ships of the Colombian Navy with humanitarian support for the people of the Guajira that is suffering because of the dry season in the north territory of Colombia. This permits the disembarking of food and water, and medical assistance to the inhabitants.

3. New Charts, new edition and updates

2016 (12 nautical charts)

Paper Chart

Caribbean Sea (09)

265 Aproximación a Coveñas y Santiago de Tolú

262 Bahía de Cartagena

253 Río Magdalena

880 Puerto de San Andrés

885 Bahía de Santa Catalina

218 Isla de Providencia

613 Galerazamba a Punta Morro Hermoso

615 Punta Gigante a Punta Canoas

822 Santa Verónica a Punta Morro Hermoso

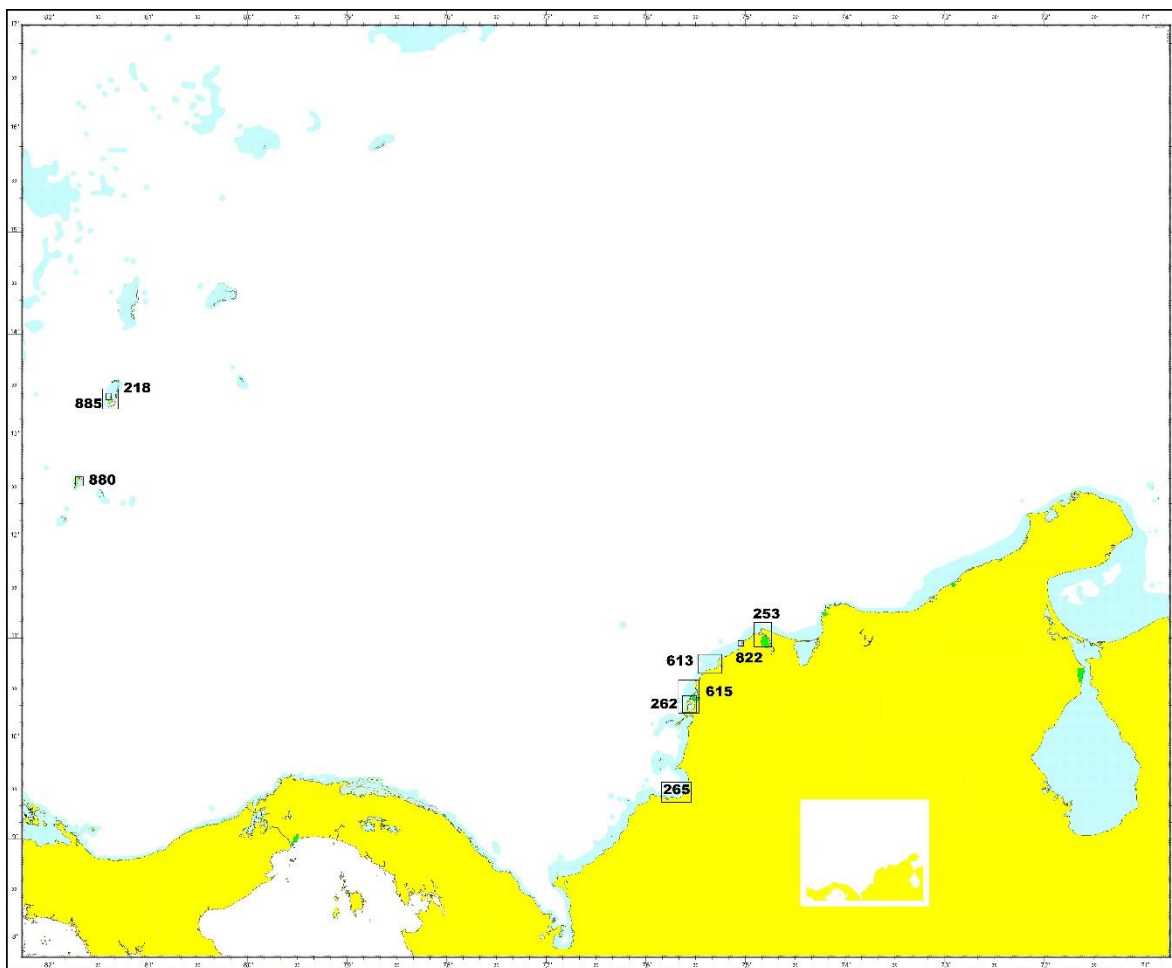


Figure 4. Caribbean nautical chart 2016

Pacific Ocean (03)

- 154 Bahía de Buenaventura
- 155 Puerto de Buenaventura
- 770 Puerto de Tumaco.

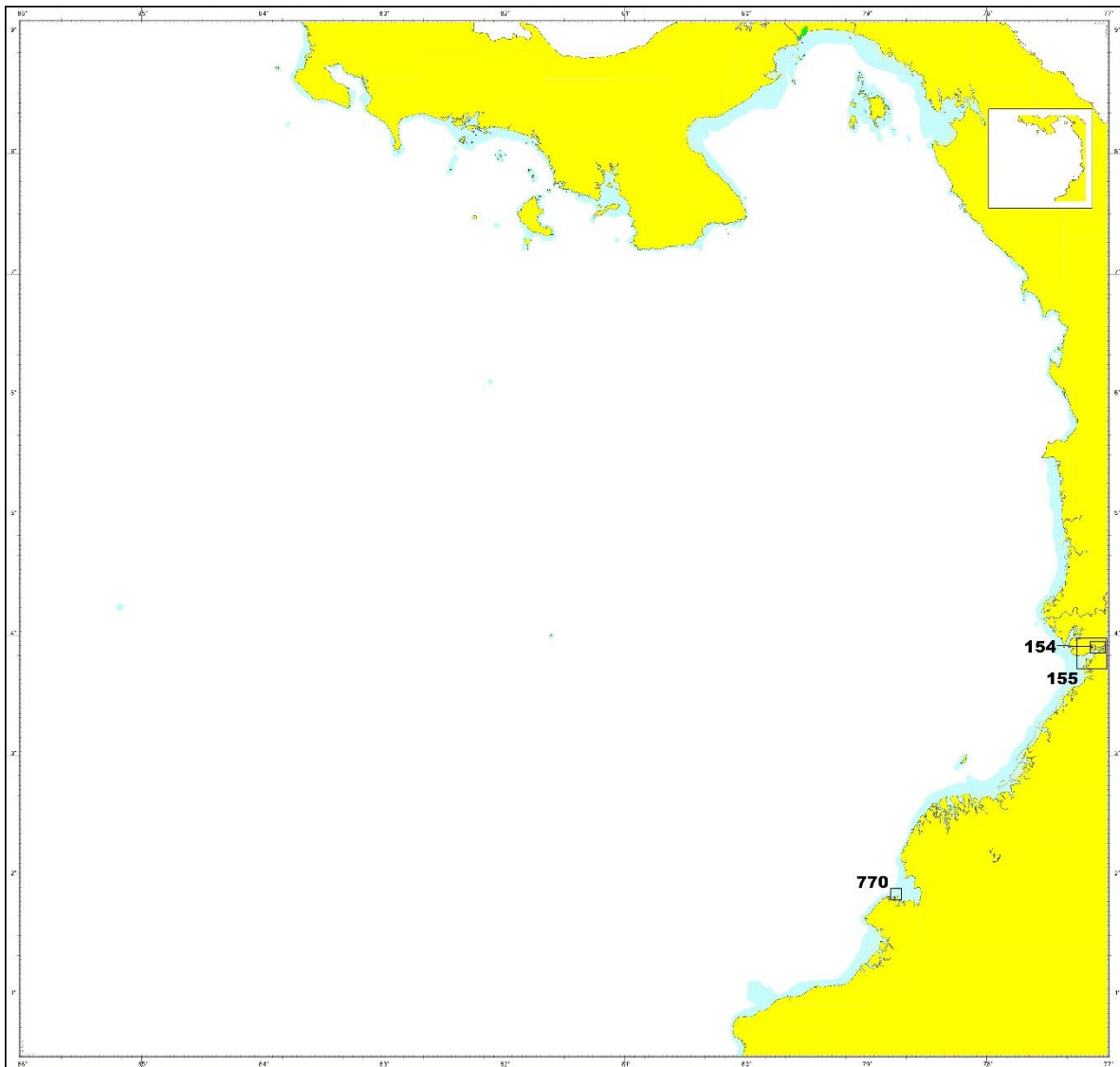
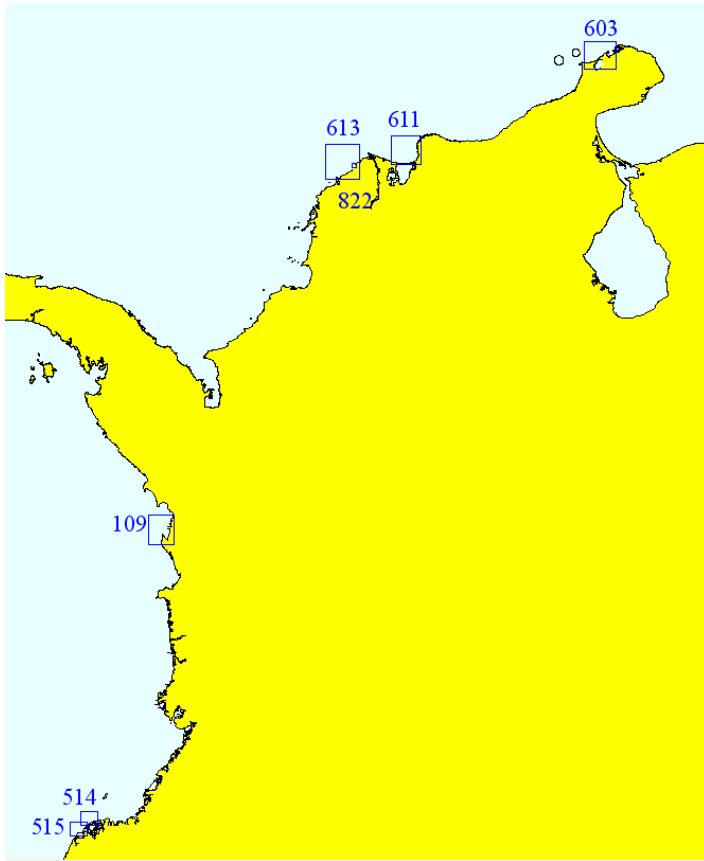


Figure 5. Pacific nautical chart 2016



	ENC
1.	CO400603
2.	CO400611
3.	CO400613
4.	CO400514
5.	CO400515
6.	CO400109
7.	CO500822

Figure 6. CO ENC 2016

60 ENCs Cell updates

Digital updates of 49 nautical charts

Caribbean Sea

ÍTEM	CHART No.	TITLE
01	625	Bahía Colombia
02	008 INT 4025	Cabo Gracias a Dios a Santa Marta
03	029	Golfo de Urabá a Barranquilla
04	407	Puerto Colombia a Santa Marta
05	404	Punta la Vela a Cabo de la Vela
06	245	Ciénaga
07	005	Carta General del Caribe Colombiano
08	618	Golfo de Morrosquillo
09	280	Cabo Tiburón a Isla Terrón de Azúcar

10	406	Santa Marta a Cabo San Agustín
11	612	Aproximación a Barranquilla
12	028	Barranquilla a Punta Espada
13	403	Cabo de la Vela a Punta Gallinas
14	410	Isla Fuerte a Punta Comisario
15	412	Golfo de Urabá
16	603	Aproximación a Bahía Porterte
17	229	Bahía Portete
18	246	Puerto Zúñiga
19	804	Bahía de Santa Marta
20	007	El Gran Caribe
21	244	Bahía de Taganga a Punta Barro Blanco
22	022 INT 4122	Isla de San Andrés a Isla de los Mosquitos
23	023 INT 4120	Golfo de los Mosquitos a Punta de los Mosquitos
24	402	Punta Gallinas a Cabo Chichibacoa
25	409	Bajo Tortuguilla a Punta Canoas
26	261	Bahía de Cartagena
27	833	Bahía de Cartagena (Cnal de Acceso)
28	608	Aproximación a Puerto Brisa
29	808	Puerto Brisa
30	202	Rada El Cove - 882

Pacific Ocean

ÍTEM	CHART No.	TITLE
01	306	Río San Juan a Boca Yurumanguí
02	520	Isla Gorgona
03	521	Isla Malpelo
04	515	Punta Mulatos a Pasacaballos
05	514	Isla Caruma a Punta Mulatos
06	101	Aproximaciones a Isla El Morro
07	280	Cabo Tiburón a Isla Terrón de Azúcar
08	308	Punta Coco a Isla Barrera
09	302	Golfo de Tribugá
10	032 INT 6110	Bahía de Buenaventura a Bahía Ancón de Sardinias
11	303	Nuquí a Punta Catripe
12	308	Punta Coco a Isla Barrera
13	310	Punta Isla Cascajal a Río Mataje

14	107	Bahía de Cupica a Chirichiri
15	003 INT 6000	Bahía de Panamá a Cabo San Francisco
16	145	Cabo Manglares
17	135	Bocana de Iscuande
18	137	Boca de Sanquianga
19	103	Isla Mono a Juradó

4. New Publications and Updates

- a) Update Digital Sailing Directions
- b) Chart 001, Symbols, abbreviations and Terms used in Colombian nautical chart
- c) List of lights 2016
- d) Colombia Catalogue of nautical chart of the ocean and coastal zones**

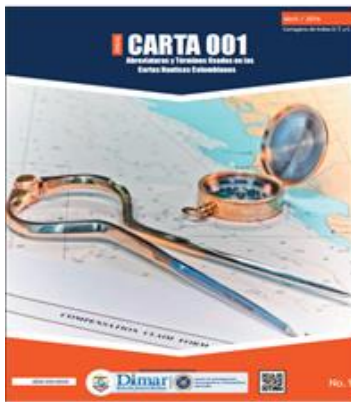


Figure 7. New Publications

DEMCA (Multiple Capacity Development in HPD Paper Chart) project for the edition of electronic and paper nautical charts under the HPD platform. Eleven electronic and four paper charts are planned this year

Scientific Bulletin No. 33 of the Centre for Oceanographic and Hydrographic Research Caribbean.

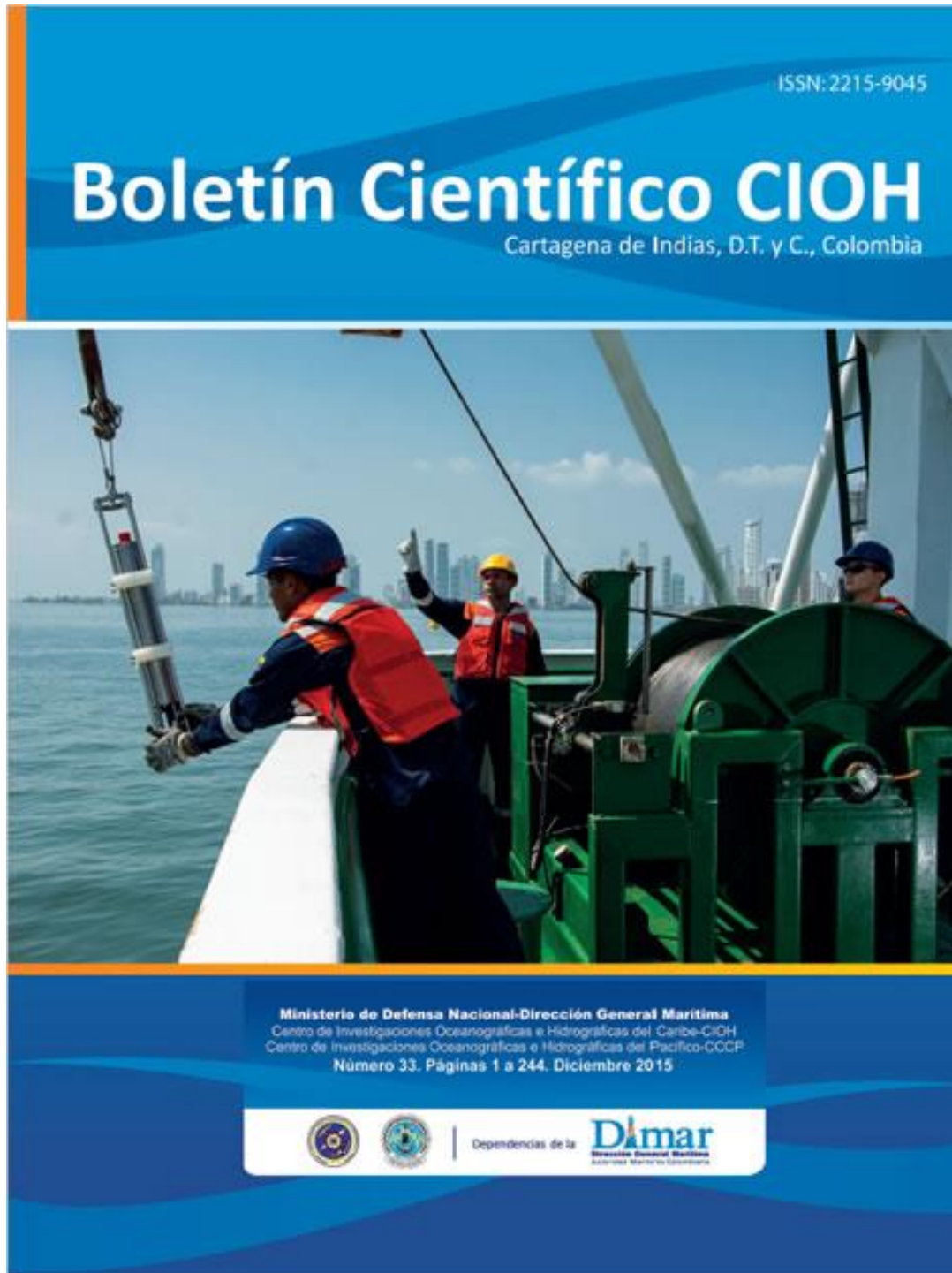


Figure 7. New Publications

5. MSI – Maritime Safety Information.

Implementation of the NAVTEX system for the broadcasting of local and NAVAREA warnings. From April 6, 2016, emails and telephone lines were interconnected with Headquarters to begin implementation of the project "Implementation of the NAVTEX system for the broadcasting of local and NAVAREA", the beginning of the Sending messages in frequency 490 KHz and 518 KHz, within the format required by the International Maritime Organization.



Figure 8. Caribbean area covered by NAVTEX

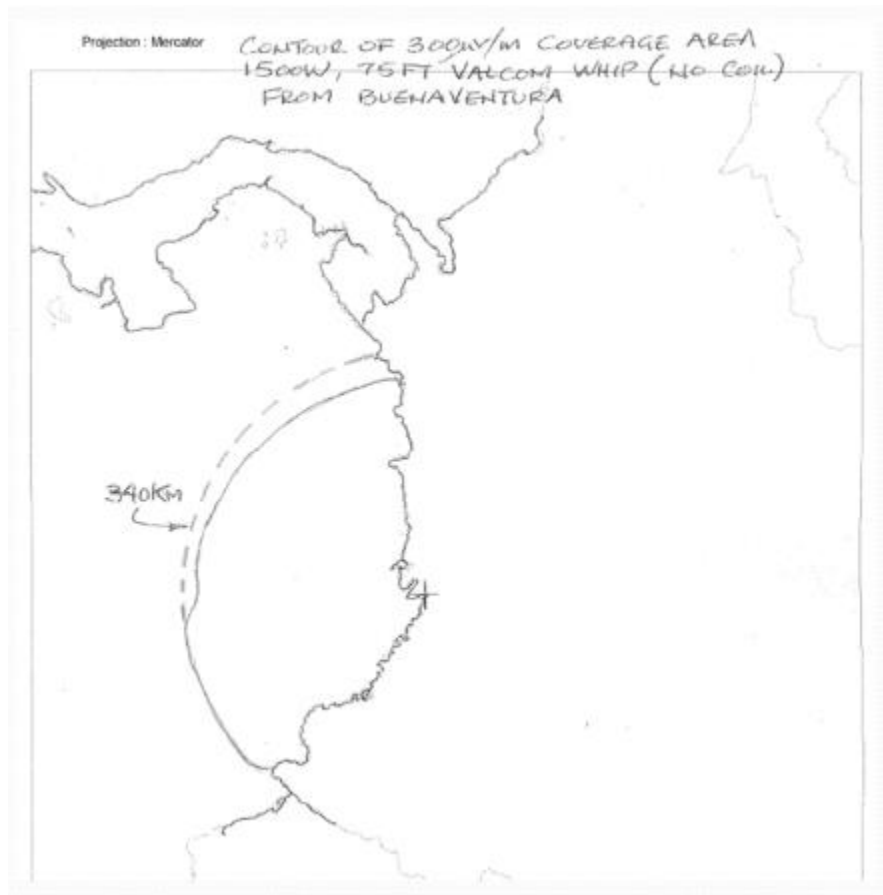


Figure 9. Pacific area covered by NAVTEX

Colombia Navigation aids are agree to IALA standards, organization to which Colombia belong.

With navigational information produced is supporting:

- Harbourmaster Office
- Coast Guard Stations
- Surface Schools of Colombia Navy
- Units over surface and submarine for the Navy
- Academies of Officers and Petty officers
- Government entities. These entities are responsible for safeguarding life at sea.

6. C-55 – Update December 1st 2015

Hydrographics Surveys

	A	B	C
Depth < 200m	96,7	0	3,3
Depth > 200m	33,2	14,4	52,4

Nautical Charting

Purpose/Scale	A	B	C
Offshore passage/Small	100	0	100
Landfall and Coastal passage/Medium	100	0	100
Approaches and Ports/Large	90.4	0	62.7
Percentage of Group A showing depths in meters	100		
Percentage of Group A referenced to a satellite datum	100		

Sub-area Warning (S-53)

SERVICE	Yes	No	Partial	NOTES
Local Warning	X			
Coastal Warning	X			
Navarea Warning	X			In Cooperation to USA Area IV
Information on Ports and Harbours ¹	X			

GMDSS IMPLEMENTATION (IMO 970 –GMDSS Handbook²)

SERVICIO	Sí	No	Partial	NOTAS
Master Plan		X		On going
A1 Area ³			X	Cover the 90 % approximately
A2 Area ³			X	Cover the 100 % approximately
A3 Area ³		X		
NAVTEX	X			
SafetyNET		X		

7. CAPACITY BUILDING

- a) P-12. Development of Workshop on technics and methodology of multi-beam data processing. You can see <https://www.dimar.mil.co/content/taller-internacional-para-el-procesamiento-de-datos-multihaz-en-cartagena>

- b) Photogrammetric and Cartographic image analysis in DHN Peru
- c) Workshop on Maritime Safety Information in Veracruz México
- d) Workshop in Tides in Niteroi Brazil
- e) Workshop in MHz in Argentina
- f) CARIS HPD Source Editor- Paper Chart Editor in Colombia
- g) Workshop ENC validation in Panamá, by UKHO.
- h) The Third “Almirante Padilla” Expedition ICEMAN (Marine Scientific Research for Maritime Safety in the Antarctic) in which different scientific activities are developed; hydrography, oceanography, geology, biological, among others. The preparing of OPB ARC 20 de Julio for a safe navigation in Antarctic is relevant. The COTECMAR Colombia Navy Shipyard built this OPB and its construction guarantee proper operation at high latitudes.

To carry out the hydrographic survey with Multihaz and Monohaz technology in Port Mikkelsen on Trinidad Island and Cierva Cove Bay, on the Antarctic peninsula in order to capture and process information for the edition of INT 9156 of Mikkelsen Bay and Cierva Cove, and of this Contribute to the safety of human life at sea, benefiting the scientific development of the continent.

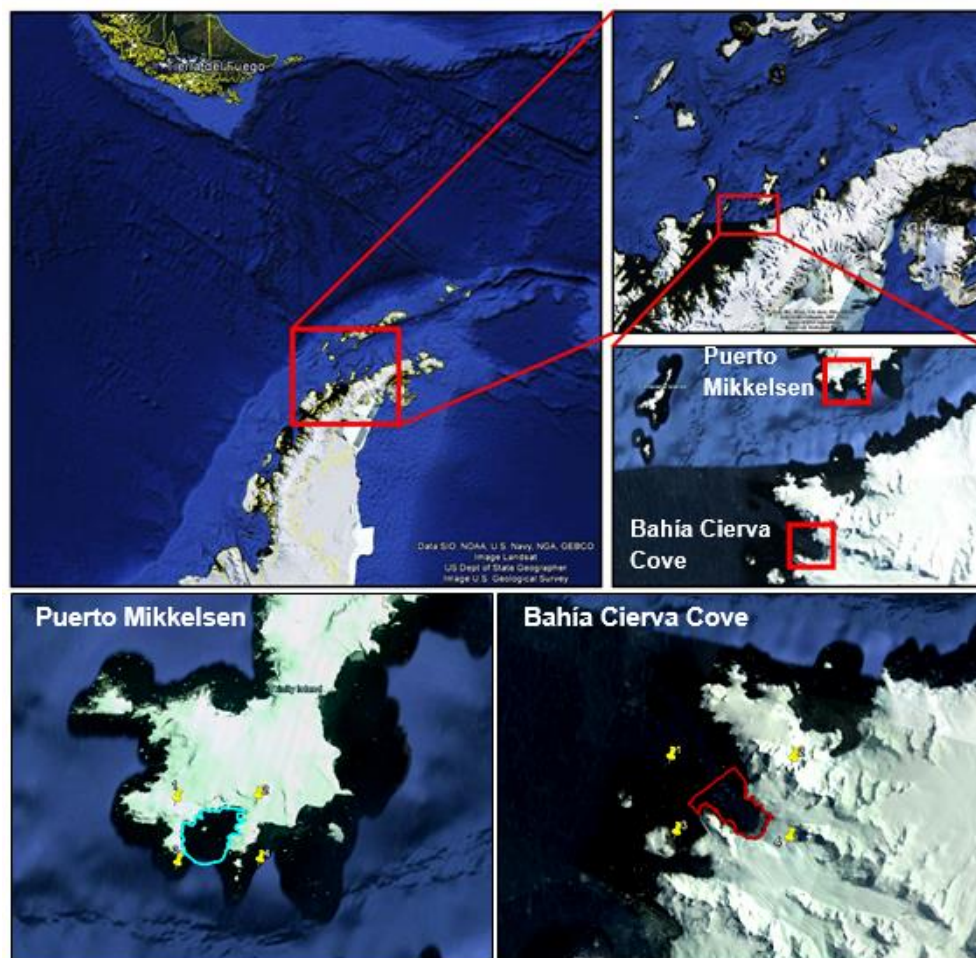


Figure 10. Areas for Survey in Antarctic sea 2016-2017

- i) New Hydrographic Vessel ARC RONCADOR



Figure 11. ARC Roncador Hydrographic and Oceanographic Vessel

Length	45,9 m
Width	10,5 m
Crew	28
Vel.	11 Knots
Displacement	503 Ton
Autonomy	3000 NM
Draft	3,5 m

8. OCEANOGRAPHIC ACTIVITIES

2. 2016

a) National.

- In coordination with the Environment and Sustainable Development Ministry, Transport Ministry, Health and Social Protection Ministry, Foreign Affairs Ministry, University of Antioquia, Jorge Tadeo Lozano University, INVEMAR, DIMAR presented the results of the study of Reference Biological Port Survey carried out in the Tumaco bay, which seeks to generate tools for the construction and improvement of capacities for the protection of the marine environment in this bay.
- System of measurement of oceanographic parameters and marine meteorology in Caribbean and Pacific. SMPOMM
- Prediction oceanic and atmospheric variables. SPOA

- Designation of replacement areas of ballast water in the Colombian Pacific and Caribbean. The general objective is to identify and designate ballast water exchange zones for maritime traffic in the Colombian Pacific and Caribbean.

b) International:

- International research networks on climate change: Antares, NANO IOCC. BR, CA, CL, MX, PE, US, VE

9. OTHER ACTIVITIES

1. The HO participated in the XXXIII meeting of the General Ocean Bathymetric Chart (GEBCO) Steering Committee held in the city of Valparaíso, Chile
 - a. Provided the bathymetric information collected during the first Colombian scientific expedition to Antarctica, to GEBCO
 - b. During the celebration of Science Day, the CIOH presented the results of the project "Bathymetric Model Derived from High Resolution Satellite Images" developed jointly with the Agustín Codazzi Geographic Institute during the last three years.
2. After 51 years of active service the hydrographic vessel ARC 'Quindío' was sunk in a controlled way, with the objective of generating artificial reef for the maintenance of the marine ecosystem.



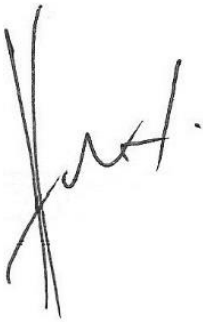
Figure 12. Ex ARC Quindío continuing by marine ecosystem

It is today, one favourite place to dive and the investigation about increment of reef and the refuge of different marine species

3. International seminar about producer hydrocarbons agencies. The meeting led by the National Hydrocarbons Agency with the support of the Ministry of Mines and Energy of Colombia brought together regulatory agencies, companies, organizations and public and private institutions from Europe, Asia, the Middle East and the Americas

10. CONCLUSIONS

Colombia HO will continue doing marine scientific research in the oceans and rivers of Colombia, giving support to the people, bringing peace to the national territory and contributing with other countries for the maintenance of the safety in the navigation and the cleanest of the oceans.



Commander HERMANN LEÓN RINCÓN

Director

Centro Investigaciones Oceanográficas e Hidrográficas del Caribe CIOH (E)

National Maritime Directorate

*We protect the blue of our flag
Science and sovereignty
Colombia Navy*