

# REPUBLIC OF SOUTH AFRICA



## SAN HYDROGRAPHIC OFFICE

NATIONAL REPORT

TO THE

15<sup>TH</sup> SOUTHERN AFRICA AND ISLANDS HYDROGRAPHIC

COMMISSION CONFERENCE (SAIHC)

**27 - 30 August 2018**

*Eden Island, Seychelles*

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**15<sup>th</sup> SAIHC MEETING  
REPORT BY THE REPUBLIC OF SOUTH AFRICA**

**1. SA NAVY HYDROGRAPHIC OFFICE (SANHO)**

The SA Hydrographic Service is a government-funded service and is part of the SA Navy. The major assets for the Hydrographic Service are as follows:

One Hecla Class Hydrographic Survey Vessel, named **SAS PROTEA**. She carries onboard two smaller survey motor boats that are deployed for shallow water surveys. There is an additional survey motor boat on a trailer and equipment that is used as a mobile survey unit (MSU).

The **Hydrographic Office**, with the following principal functions:

- Conduct hydrographic surveys;
- Produce paper nautical charts and electronic navigation charts (ENCs;)
- Produce hydrographic publications including List of Lights and Radio Signals, three volumes of Sailing Directions;
- Maintain a tide gauge network and provide tidal information;
- Collect GEBCO data;
- Issue monthly Notices to Mariners;
- Provide hydrographic survey training;
- Provide a Maritime Safety Information (MSI) and
- Provide a Chart Depot and Chart Agent service.

**Personnel**

- a. **Cartographic Personnel**. The SANHO has 4 trained marine cartographers and 7 junior cartographers undergoing IHO/FIG CAT B training in the Chart Production Department working on paper chart and ENC production.
- b. **Survey Personnel**. The SA Navy Hydrographic Service has 4 IHO/FIG CAT A surveyors and 4 IHO/FIG CAT B surveyors available to conduct hydrographic surveys. There are also 33 qualified survey recorders.

**2. HYDROGRAPHIC SURVEYS**

There are areas along the RSA south-east coast that were surveyed in the early 1900's by hand lead line. This area is progressively being filled in by surveys utilizing modern electronic surveying equipment and methodology. Along the Namibian coast in the area south of Walvis Bay to Orange River, modern systematic surveys are required to replace the old German Government charts that currently serve as source in this area. (**Appendix A**).

**3. CHARTS AND PUBLICATIONS**

**a. CHARTS**

**International (INT) Charts**. South Africa is the coordinator for charting Region H and the designated producer for **45** paper charts in this scheme. To date **43** (96%) charts have been produced and published. Some of these charts have undergone a second and in some cases, even a third round of revision.

Since the 14<sup>TH</sup> SAIHC Conference, South Africa has produced 2 new charts of the 1:1 000 000 INT series, INT 7050 (SAN 93) and INT 7051 (SAN 94). Currently in production is the remaining new chart to complete the 1:1 000 000 INT series, namely INT 7052 (SAN 95),

which is projected for publication in 2018. The 1:1 000 000 INT series will replace the existing 1:600 000 national paper chart series on completion of INT 7052. Production of the first edition of the 1:300 000 scale chart INT 7580 (SAN 88) is also currently undergoing verification.

Due to significant developments taking place at Walvis Bay harbour, INT 2612 (SAN 1004) and INT 2613 (SAN 1005) are in a planning stage for production of a new chart/new edition.

### **Area H:**

#### **Medium Scale : 1:300 000**

<i>INT No</i>	<i>SAN No</i>	<i>Title</i>	
*2590	71	Kunene River to Sand Table Hill	
*2600	72	Sand Table Hill to Cape Cross	
*2610	73	Cape Cross to Conception Bay	
*2620	74	Conception Bay to Hottentot Point	
*2630	75	Hottentot Point to Chamais Bay	
*2640	76	Chamais Bay to Port Nolloth	
*2650	77	Port Nolloth to Island Point	
*2660	78	Island Point to Cape Deseada	
*2670	79	Cape Deseada to Table Bay	
*2680	80	Table Bay to Cape Agulhas	
*7510	81	Cape Agulhas to Cape St Blaize	
*7520	82	Cape St Blaize to Cape St Francis	
*7530	83	Cape St Francis to Great Fish Point	
*7540	84	Great Fish Point to Mbashe Point	
*7550	85	Mbashe Point to Port Shepstone	
*7560	86	Port Shepstone to Tugela River	
*7570	87	Tugela River to Ponta do Ouro	
*7580	88	Jesser Point to Boa Paz	(In progress)

#### **Small Scale : 1:1 000 000**

<i>INT No</i>	<i>SAN No</i>	<i>Title</i>	
2051	90	Baia dos Tigres to Walvis Bay	
2052	91	Walvis Bay to Orange River	
2053	92	Orange River to Table Bay	
7050	93	Table Bay to East London	(NC published in 2018)
7051	94	East London to Richards Bay	(NC published in 2018)
7052	95	Durban to Inhambane	(NC in verification process)

#### **Large Scale : Between 1:10 000 – 1:50 000**

<i>INT No</i>	<i>SAN No</i>	<i>Title</i>	
2611	1001	<i>vacant (previously Walvis Bay Harbour and Approaches)</i>	
*2631	1002	Approaches to Lüderitz	
2612	1004	Walvis Bay Harbour	(planning in progress for NC/NE)
2613	1005	Approaches to Walvis Bay	(planning in progress for NC/NE)
*2671	1010	Approaches to Saldanha Bay	
*2673	1011	Entrance to Saldanha Bay	(NE published in 2017)
*2672	1012	Saldanha Bay Harbour	(NE published in 2017)
*2681	1013	Approaches to Table Bay	
*2682	1014	Table Bay Harbour	
*7521	1020	Mossel Bay and Approaches	
*7531	1024	Approaches to Port Elizabeth	
*7532	1025	Port Elizabeth and Bird Island Passage	

*7533	1026	Ngqura Harbour
*7541	1027	East London and Approaches
*7563	1029	Approaches to Durban – Oil Terminal SMB
*7561	1030	Approaches to Durban
*7562	1031	Durban Harbour
*7572	1032	Approaches to Richards Bay
*7571	1033	Richards Bay Harbour
7745	2003	Prince Edward and Marion Islands

**Note:** \* Indicates charts adopted by the UKHO. Text highlighted in **bold and red** is new work since the previous SAIHC meeting.

**National Paper Charts**. The South African paper chart folio currently consists of 104 charts; 44 of which are international (INT) charts. Planned charts at various scales and categories as detailed in the table below:

PLANNED CHARTS		
	NC	NE
INT Small Scale	2	2
INT Large Scale	1	1
National Coastal	1	16
Inland Waters	2	
Small craft	3	2
<b>TOTAL</b>	<b>9</b>	<b>21</b>

Namibia still remains the charting responsibility of South Africa and chart coverage mainly consists of harbour and approaches charts of the two ports, Walvis Bay and Lüderitz, while the coastline is covered by medium scale international (INT) paper charts. All paper charts are regularly maintained by the promulgation of monthly Notices to Mariners (NMs).

The SANHO adopts a pro-active approach by visiting areas and ports when necessary, to ensure that the most up to date information is available to the Hydrographic Office for product updating.

**World Geodetic System (WGS 84)**. Of the 36 SAN charts which fall into the category of scales larger than 1:150 000, only three (8%), namely SAN 150, 1009 and 1022 are still based on Clarke 1880 spheroid.

**Vessel Traffic Service (VTS) and Traffic Separation Schemes (TSS)**. Vessel Traffic Services (VTS) have been implemented at the ports of Saldanha Bay, Table Bay, Port Elizabeth, Ngqura, Durban and Richards Bay. The ports of Mossel Bay and East London has implemented VTS but is as yet not officially approved by the South African Maritime Safety Authority (SAMSA). Walvis Bay is currently in the process of implementing a VTS.

A Traffic Separation Scheme (TSS), which has been International Maritime Organisation (IMO) adopted, has been implemented off the south coast to ensure safe navigation of laden tankers north and south of the *Alphard Banks* and the *FA Platform* for east and west bound traffic.

**Inland Waters and Small Craft Charts**. The Hydrographic Office continues to maintain and provide small craft paper charts to the leisure market. These are half the standard chart size and are unique in a sense that they cover general coastal areas by a main chart at scales of between 1:200 000 to 1:260 000, with condensed sailing directions, seasonal wind roses, facility diagrams and detailed larger scale inset plans of fishing harbours, yacht clubs and marinas on the reverse side. To date six charts have been published.

Published leisure craft charts of South Africa's largest inland dams provide coverage of the Vaal Dam (SAN 2051), Gariep Dam (SAN 2053) and the Vanderkloof Dam (SAN 2054). As part of the newly created South African Co-operative Inland Waterway Safety Programme, there is a navigational requirement for charts covering the Hartebeespoort and the Theewaterskloof Dams. Production for a new chart of the Hartebeespoort Dam is currently in progress.

**Printing of charts:** The Office currently produces paper charts using CorelDraw software and has two AO inkjet printers (Epson 9600 and an HP 5200) to support an in-house Print-on-Demand (PoD) facility.

The SA Navy Printing Unit in Simon's Town is the primary means of chart and publication printing. The onboard PoD facility is only used to print charts which are larger than the standard DE format, as well as for miscellaneous and ad hoc stock replenishment.

**Electronic Navigational Charts (ENCs).** SANHO utilizes Hydroservice dKart software for electronic navigational chart (ENC) production and maintenance and currently has 10 dKart Editor software licences, four dKart Publisher licences and one licence each for dKart Catalogue Server, FODB, SMDB and Archives. ENC validation tools used by SANHO are dKart Inspector, one licence of Seven C's Analyser and eGlobe (ECDIS).

**ENC Production.** South Africa has the following paper chart - ENC relationship:

**Chart Series**

SAN Harbour charts  
 SAN Approaches charts  
 SAN 100 000 and 150 000 Series charts  
 SAN 300 000, 600 000 Series  
 SAN 1 000 000 Series and all other small scales

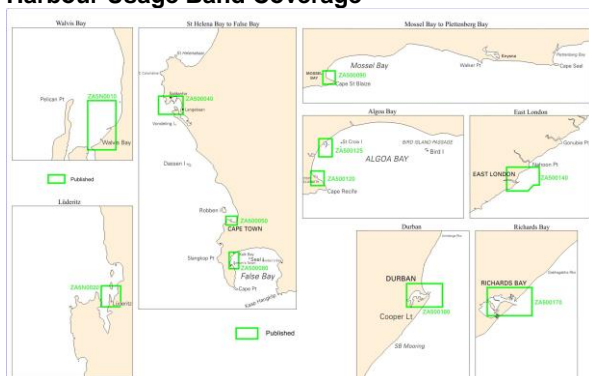
**ENC Usage Band**

Harbour  
 Approaches  
 Coastal  
 General  
 Overview

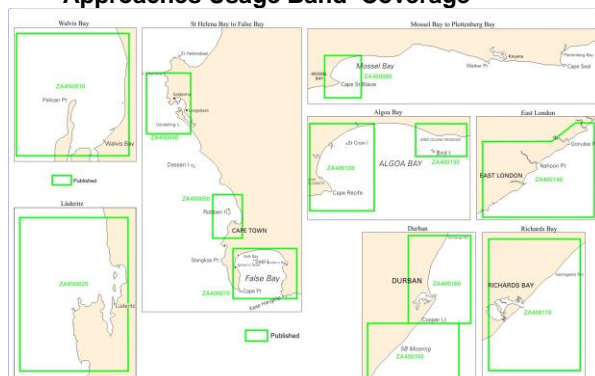
All ENCs conform to the current international guidelines for SCAMIN and data consistency. In addition, SAN ENCs also encode M\_SREL (survey reliability) and CATZOC in the Harbour, Approaches and Coastal usage bands and maintain the products for (T) and (P) notices.

**ENC Coverage.** The following diagrams below graphically illustrate the South African and Namibian ENC coverage:

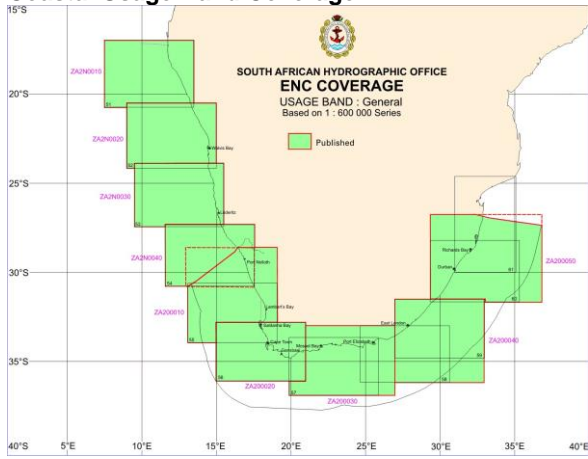
**Harbour Usage Band Coverage**



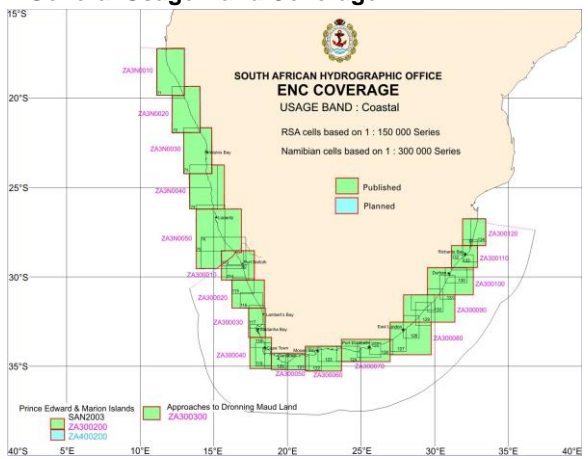
**Approaches Usage Band Coverage**



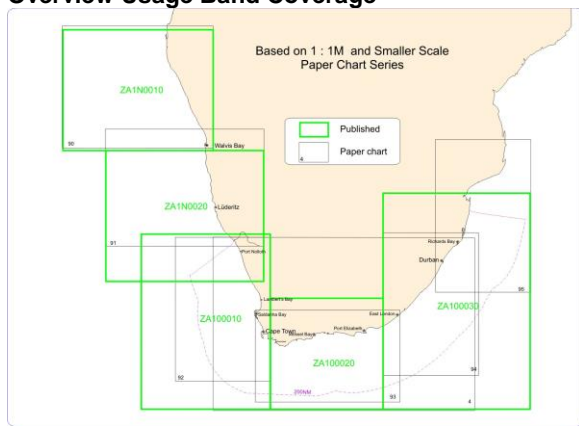
### Coastal Usage Band Coverage



### General Usage Band Coverage



### Overview Usage Band Coverage



**South African and Namibian ENC Products (as at 10 August 2018)**

<b>IC-ENC Product No</b>	<b>Cell Title</b>	
ZA500040	Saldanha Bay	<b>(new edition published 2018)</b>
ZA500050	Table Bay	
ZA500070	Simon's Bay	
ZA500090	Mossel Bay Harbour	
ZA500120	Port Elizabeth Harbour	
ZA500125	Ngqura Harbour	
ZA500140	East London Harbour	
ZA500160	Durban Harbour	
ZA500170	Richards Bay Harbour	
ZA5N0010	Walvis Bay Harbour	
ZA5N0020	Lüderitz Harbour	
ZA400040	Approaches to Saldanha Bay	
ZA400050	Approaches to Table Bay	
ZA400070	False Bay	
ZA400090	Approaches to Mossel Bay	
ZA400120	Approaches to Port Elizabeth	
ZA400130	Bird Island Passage	
ZA400140	Approaches to East London	
ZA400150	Durban Oil Terminal SMB	
ZA400160	Approaches to Durban	
ZA400170	Approaches to Richards Bay	
ZA4N0010	Approaches to Walvis Bay	
ZA4N0020	Approaches to Lüderitz	
ZA400200	Approaches to Transvaal Cove	
ZA300010	Oranjemund to Skulpfonteinpunt	
ZA300020	Hondeklipbaai to Olifantsrivier	
ZA300030	Doringbaai to Yzerfonteinpunt	
ZA300040	Dassen Island to Kaap Hangklip	
ZA300050	Mudge Point to Cape Infanta	
ZA300060	Cape Barracouta to Cape Seal	
ZA300070	Storm Point to Port Alfred	
ZA300080	Great Fish Point to Cape Morgan	
ZA300090	Mbashe Point to North Sand Bluff	
ZA300100	Port Shepstone to Tongaat Bluff	
ZA300110	Tugela River to Cape St Lucia	
ZA300120	Cape Vidal to Ponta do Ouro	
ZA300200	Prince Edward and Marion Islands	
ZA300300	Approaches to Dronning Maud Land	
ZA3N0010	Kunene River to Sand Table Hill	
ZA3N0020	Terrace Bay to Cape Cross	
ZA3N0030	Farilhao Point to Conception Bay	
ZA3N0040	Meob Bay to Hottentot Point	
ZA3N0050	Douglas Point to Orange River	
ZA200010	Orange River to Stompneuspunt	<b>(new edition in progress)</b>
ZA200020	Cape Columbine to Cape Infanta	
ZA200030	Cape Barracouta to Cape Padrone	
ZA200040	Great Fish Point to Cape Hermes	



ZA200050	South Sand Bluff to Ponta do Ouro	
ZA2N0010	Kunene River to Palgrave Point	(new edition in progress)
ZA2N0020	Haub River to Conception Bay	(new edition in progress)
ZA2N0030	Meob Bay to Elizabeth Bay	(new edition in progress)
ZA2N0040	Driemasterpunt to Orange River	(new edition in progress)
ZA100010	Western Waters of South Africa	
ZA100020	Southern Waters of South Africa	(new edition published 2017)
ZA100030	Eastern Waters of South Africa	(new edition published 2017)
ZA1N0010	Northern Waters of Namibia	
ZA1N0020	Southern Waters of Namibia	(new edition published in 2017)

### Scope of ENC Work done

Usage Band	Total Planned	Total Produced	% Coverage Available
Overview	5	5	100
General	9	9	100
Coastal	19	19	100
Approaches	13	13	100
Harbour	11	11	100
Berthing	0	0	0
<b>Total</b>	<b>57</b>	<b>57</b>	<b>100%</b>

**Outstanding ENC production.** There are no new ENC products planned for the foreseeable future, but new editions of the general usage band will be produced based on the new 1:1 000 000 paper charts.

**Distribution of ENCs.** South African commercial ENCs are distributed through IC-ENC.

**Dissemination of ENC and related information.** The South African Hydrographic Office maintains its own web site ([www.sanho.co.za](http://www.sanho.co.za)) which provides information concerning ENC, Charts and Carriage Requirements. Information on MSI, chart products (paper and ENCs), publications and tidal data are also made available on the SANHO web site.

### **b. PUBLICATIONS**

The present status of the most essential SANHO Publications is as given in the table below:

SANHO Ref No	Title	Edition
SAN HO-1	South African List of Lights and Radio Signals	2011
SAN HO-2	South African Tide Tables	<b>2018 &amp; 2019</b>
SAN HO-3	Catalogue and Indexes of SAN Charts, ENCs and Hydrographic Publications	2011
SAN HO-6 (INT 1)	Symbols and Abbreviations used on SA Charts	2017
SAN HO-15	International Regulations for Preventing Collisions at Sea 1972 (COLREGS)	2005
SAN HO-21	SA Sailing Directions Vol I – General Information	2005
SAN HO-22	SA Sailing Directions Vol II – Namibia and West Coast	2014
SAN HO-23	SA Sailing Directions Vol III – South and East Coasts	2014
-	Annual Summary of SA Notices to Mariners	<b>2018</b>
-	Cumulative List of SA Notices to Mariners	<b>2018</b>

The above publications are maintained through the promulgation of monthly NM's in paper format (available through SANHO Chart Agents) and in PDF format, which can be downloaded from the SANHO web site ([www.sanho.co.za](http://www.sanho.co.za)).

#### 4. CAPACITY BUILDING

**Regional capacity building initiatives.** In accordance with the IHO and SAIHC capacity building initiatives, South Africa continues to provide or facilitate training and courses to develop expertise in the SAIHC region. The tables below summarize the progress achieved since the last SAIHC meeting:

Capacity Building/ Hydrographic Surveying and Maritime Safety Information (MSI) Training – Completed and Underway (2017/18)

Course	Period	Participants
Hydrographic Survey for Officers Part III – presented by SANHO	14 Aug – 03 Nov 2017	South Africa (6) Senegal (1) Zimbabwe (1)
Hosted IHO Capacity Building for MSI Training		South Africa (2) International Learners (18)
Maritime Safety Information Training (Intra SAN only)	15 Feb – 6 Apr 2018	South Africa (45)
Hydrographic Survey for Ratings Part 2 - presented by SANHO	18 Apr – 15 Jun 2018	South Africa (4)
Hydrographic Survey for Ratings Part I (basic) - presented by SANHO	Postponed until 2019	

**IC-ENC Validation Training.** The SANHO has sent one member to attend the IC-ENC Validation Training for ENCs (6 to 17 Aug 2018) in the United Kingdom.

**Marine Cartography.** The CAT B course was presented by the UKHO at the South Africa Navy Hydrographic Office over the period 2016 to 2017. There are 8 participants who are currently undergoing on-the-job training to meet the necessary requirements to obtain the CAT B certification.

**Replacement of the South African Navy Hydrographic Capability.** The South African Navy Hydrographic Service is currently undergoing a rejuvenation programme with the acquisition of a new hydrographic survey vessel, 3 x survey motor boats and an upgrade of the SANHO's production and training capabilities. This programme is well underway and is intended to be completed by middle 2022.

#### 5. IHO SPECIAL PUBLICATION C-55

The South African Hydrographic Office acknowledges the importance of the constant review of C-55 to improve hydrographic services along the maritime routes in the region. The status of Namibia is included in South Africa's assessment.

#### 6. OCEANOGRAPHIC ACTIVITIES

**Tide Gauge Network.** The tide gauge network is critical in the calculation of the tidal predictions for South Africa and Namibia, and spans from Walvis Bay on the West Coast to Richards Bay on the East Coast. The Tide Gauge Network has been completely upgraded with all twelve tidal stations having radar type gauges.

The South African Navy Tide Gauge Network communication method is in the process of being upgraded from land lines to GSM communication. Solar power has been installed in

Cape Town and will be expanded throughout the network. Biannual calibration and maintenance site visits are carried out by the Tidal Department.

At the request of the IOC, satellite transmitters were installed at three tidal stations, two of which are Global Sea Level Observing System (GLOSS) stations. The 1 minute data from Port Elizabeth and Simon's Town is transmitted in real time for use in the Indian Ocean Tsunami Early Warning System (IOTWS).

Chart Datum for all SA Ports is Lowest Astronomical Tide (LAT) as from 1 January 2003.

**General Bathymetric Chart of the Oceans (GEBCO).** Since 1991, South Africa has, in accordance with IHO Resolutions, ceased to maintain the 20 GEBCO Collector Plotting Sheets (passage soundings) for which the RSA is responsible. The analogue sheets of South Africa's GEBCO data holdings have been converted into digital format.



## APPENDIX A : STATUS OF HYDROGRAPHIC SURVEYS ALONG THE SOUTHERN AFRICAN COAST

