UNITED STATES OF AMERICA

National Report

To the

Hydrographic Commission on Antarctica (HCA)

14th Meeting – Tromso, Norway

28-30 June 2016

National Geospatial-Intelligence Agency, NOAA Office of Coast Survey,

and the US Naval Meteorological and Oceanography Command

UNITED STATES OF AMERICA

1. United States Hydrographic Offices

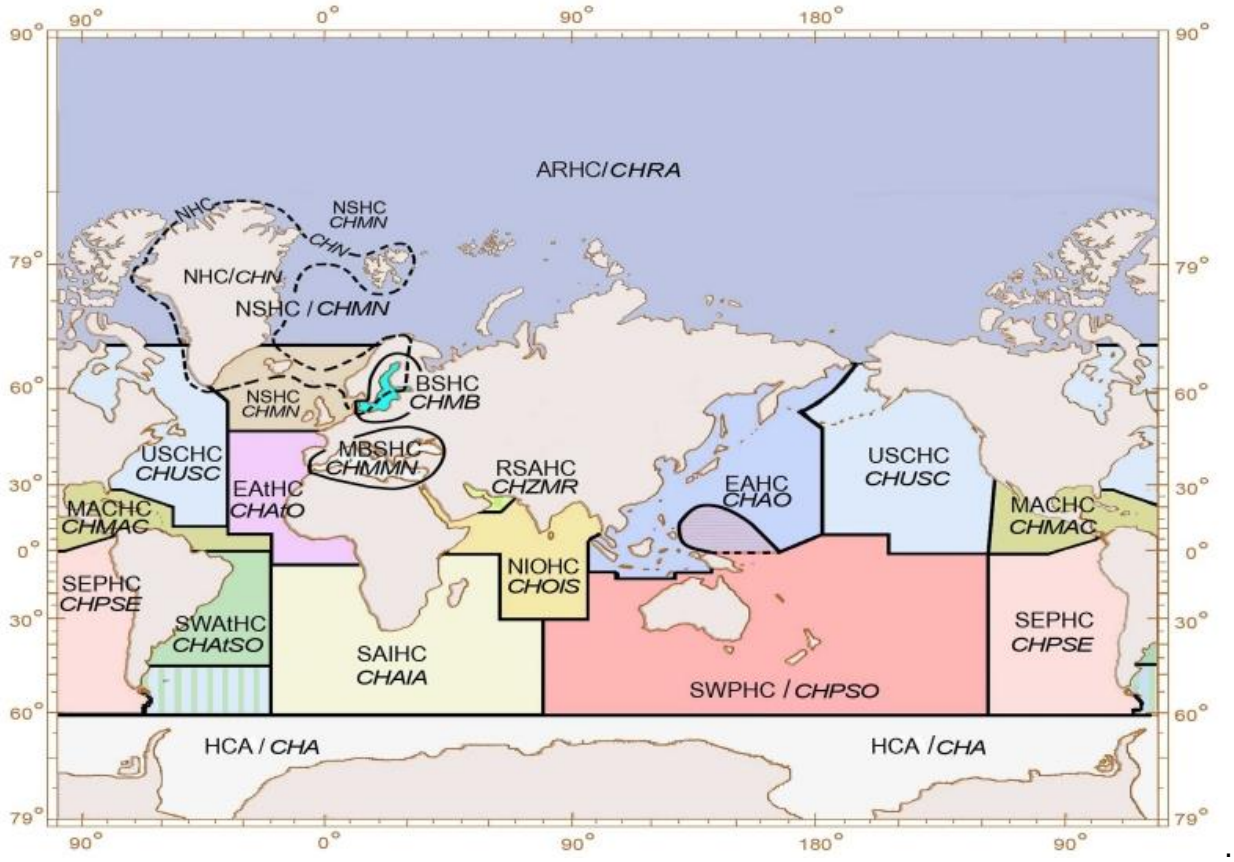
This National Report provides specific information pertaining to individual products and services of primary interest to the Hydrographic Commission on Antarctica (HCA). U.S. domestic and international hydrographic services are primarily conducted by three government agencies: The National Oceanic and Atmospheric Administration's (NOAA) Office of Coast Survey (OCS), the National Geospatial-Intelligence Agency (NGA) Maritime Safety Office, and the Naval Meteorology and Oceanography Command (CNMOC, U.S. Navy). A fourth agency, the U.S. Army Corps of Engineers, is responsible for hydrographic surveys in designated U.S. federal waterways and inland rivers, and produces U.S. inland ENCs (IENCs).

NOAA, Office of Coast Survey http://www.nauticalcharts.noaa.gov

NGA, Maritime Safety Information http://msi.nga.mil/NGAPortal/MSI.portal

Naval Meteorology and Oceanography Command http://www.navmetoccom.navy.mil

U.S. Army Corp of Engineers http://www.nauticalcharts.noaa.gov/staff/usace.html



United States Open Data Policy – Managing Information as an Asset

Information is a valuable national and global resource. The U.S. considers information a strategic asset to the U.S. Federal Government, its partners, and the public. In order to ensure the U.S. Federal Government is taking full advantage of its information resources, agencies are directed to increase operational efficiencies, reduce costs, improve services, support mission needs, ***and increase public access to valuable government information***.

The access to data and services, usable to the public, can help fuel entrepreneurship, innovation, and scientific discovery – all of which improve lives and contribute significantly to job creation. This policy is available at: https://www.whitehouse.gov/sites/default/files/omb/memoranda/2013/m-13-13.pdf

Many hydrographic data, products and services produced by the U.S. HO's are generally made available for download at no cost. For nautical products and services, web deliveries of digital versions of most data are available free to the public.

NOAA

For access to survey data: http://www.nauticalcharts.noaa.gov/hsd/hydrog.html

For access to charting data: http://www.nauticalcharts.noaa.gov/staff/chartspubs.html

NGA

NGA Hydrographic Products are no longer offered for sale to civilian customers by the National Aeronautical Charting Office (NACO) or the US Government Printing Office (GPO); however, authorized reproductions of these products can still be purchased from commercial vendors. For access to charting data: http://msi.nga.mil/NGAPortal/MSI.portal

NGA fully supports the U.S. Open Data Policy and is a regular supporter of making data available to support crisis situations such Nepal Earthquake, Ebola Outbreak to also include Arctic Support and Wildlife Tracking. Past support has also included the Haiti earthquake several years ago, or more recent significant weather events such as hurricanes. This data supports not only the U.S. agencies that are responding to the crisis but also the many responding partners as well. Access to the NGA data portal can be found at: https://nga.maps.arcgis.com/home/

NAVY

In addition to navigation safety products and services, the U.S. is committed to making these data available in a variety of formats to as many users as possible.

International Open Government Partnership (OGP)

OGP was launched in 2011 to provide an international platform committed to making governments more open, accountable, and responsive to citizens. Since then, OGP has grown from 8 countries to 69 participating countries. In all of these countries, government and civil society are working together to develop and implement ambitious open government reforms. Additional information regarding the OGP can be found at: http://www.opengovpartnership.org/

2. Surveys

2.1 At this time neither NOAA nor the United States Navy are conducting any surveying activity within the HCA region. The US Government has sponsored some recent surveying activity under the auspices of the National Science Foundation.

2.2 The *NOAA Hydrographic Survey Priorities* available at http://www.nauticalcharts.noaa.gov/hsd/NHSP.htm defines the methodology NOAA uses to identify survey priorities across the U.S. EEZ. *NOS Hydrographic Surveys Specifications and Deliverables* has been updated for 2015 and includes new specifications and changes made since the 2014 version. Those who acquire hydrographic survey data in accordance with NOS specifications should use the current version; 2015 Specifications and Deliverables.

The Office of Coast Survey 2016 Hydrographic Survey Projects plan for the nation can be viewed on-line in an ArcGIS at:

http://noaa.maps.arcgis.com/apps/MapSeries/index.html?appid=c04dbcf9398d4933b9bfacd01758b5e1

.

2.3 *US Navy Survey Program:*

The Navy has five 100 meter multi-purpose survey ships: USNS PATHFINDER, USNS MARY SEARS, USNS BOWDITCH, USNS HENSON, and USNS BRUCE C. HEEZEN. BOWDITCH, HENSON, and HEEZEN carry two 10 meter hydrographic survey launches (HSLs) to conduct oceanographic, bathymetric, and hydrographic surveys. The USNS MAURY, Navy's newest multipurpose ocean survey vessel, is being fitted out for survey. USNS MAURY is 8 meters longer than the previous ships of the same class to accommodate a moon pool for unmanned underwater vehicle (UUV) deployment and retrieval. Other survey assets employed by the US Navy include Airborne Coastal Survey (ACS) using the OpTech Coastal Zone Mapping and Imaging (CZMIL) system which is flown on a Balsar BT-67 refurbished DC-3and the Fleet Survey Team (FST), which is a team of highly skilled civilian and military hydrographers. FST employs various small craft for survey including 9 meter SAFE boats (defender class) fitted with multi-beam, 7 meter RHIB with multi-beam, and rapid littoral survey vessels (RLSVs) which are jet skis fitted with a single beam echo sounder and side scan sonar.

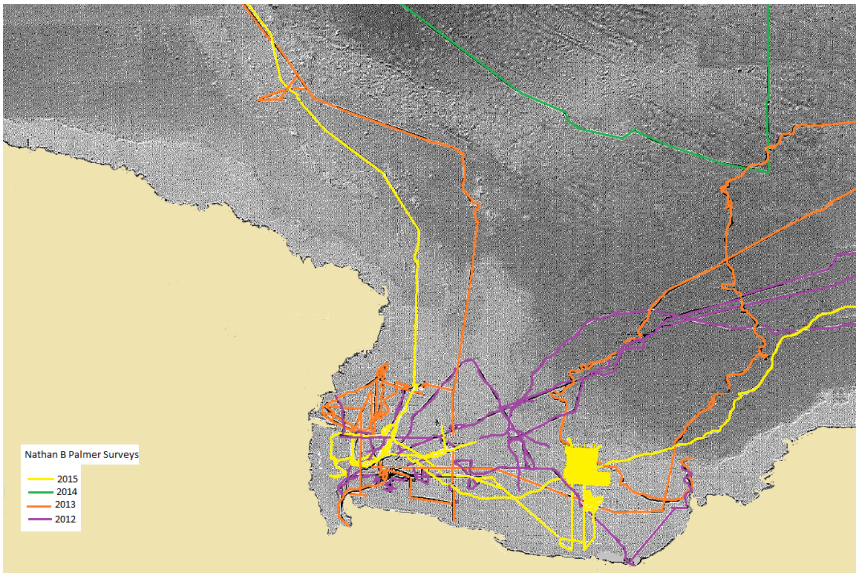
NAVOCEANO's survey ships, ACS aircraft, and FST have all been utilized in the past to conduct cooperative hydrographic surveys with countries around the world. In 2015 the U.S. Navy did not conduct any hydrographic surveys for the US-Canada waters and, is not planning any survey for the 2016**.**

2.4 *National Center for Environmental Information:*

Although the primary use for NOAA surveys is for chart compilation, they are also available to the general public through the NOAA National Center for Environmental Information (NCEI) which is located in Boulder, Colorado, USA. NCEI serves as the data archive and distribution center for the NOAA Office of Coast Survey (OCS) digital hydrographic data and maintains the NOAA National Ocean Service (NOS) Hydrographic Data Base (NOSHDB) providing survey data for the coastal waters and Exclusive Economic Zone (EEZ) of the United States and its territories. The publicly available survey data held at the NCEI, which includes not only NOAA data but also academic and releasable US Naval Oceanographic Office survey data, can be accessed at http://www.ncei.noaa.gov/mgg/bathymetry/relief.html. The NCEI also operates the IHO Data Center for Digital Bathymetry (IHO DCDB) as a worldwide digital data bank of oceanic soundings on behalf of the IHO and its member states which in 2016 NGA contributed funding to.

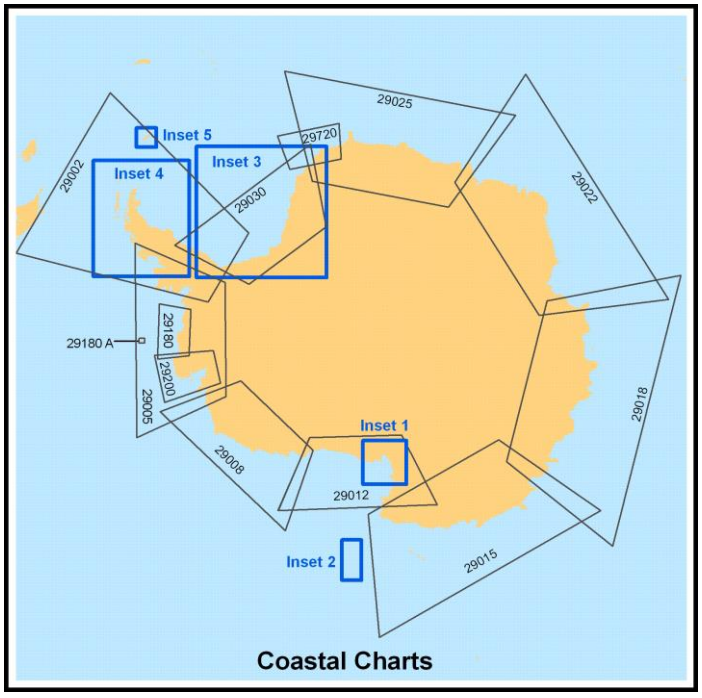
2.5 *The Marine Geoscience Data System (MGDS):*

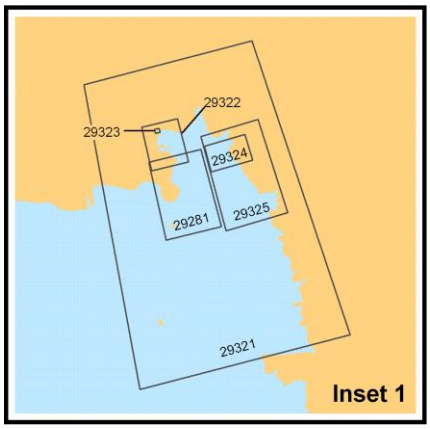
MGDS is hosted at the Lamont-Doherty Earth Observatory of the Columbia University in New York City, USA, provides free public access to data collected throughout the global oceans. The data portals available here serve different communities associated with US National Science Foundation (NSF)-funded researchers and other academic organizations by providing direct access to data holdings. There is a specific Antarctic Portal at this site which can be accessed at http://www.marine-geo.org/portals/antarctic. Between 2012 and 2015 Lamont-Doherty's research vessel, M/V Nathan B. Palmer, conduct several surveys in Antarctic waters as depicted in the graphic below.

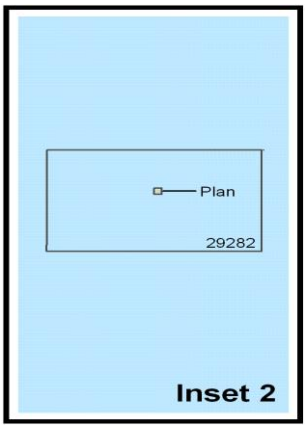


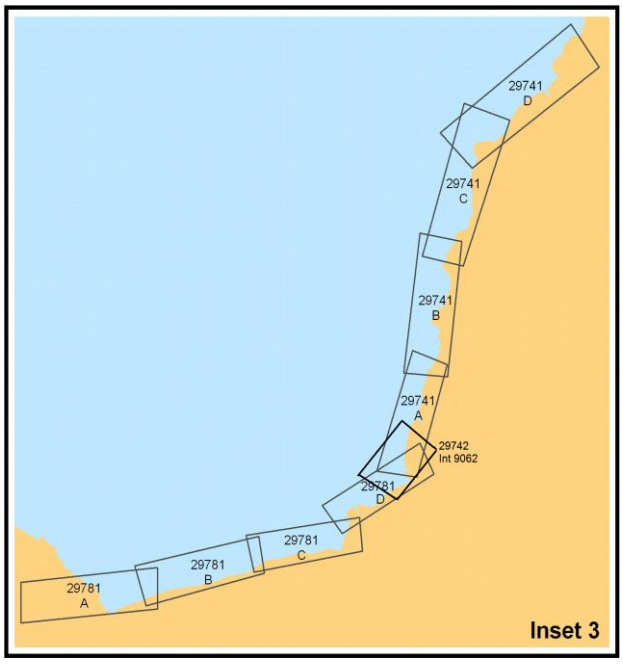
3. New Charts & Updates

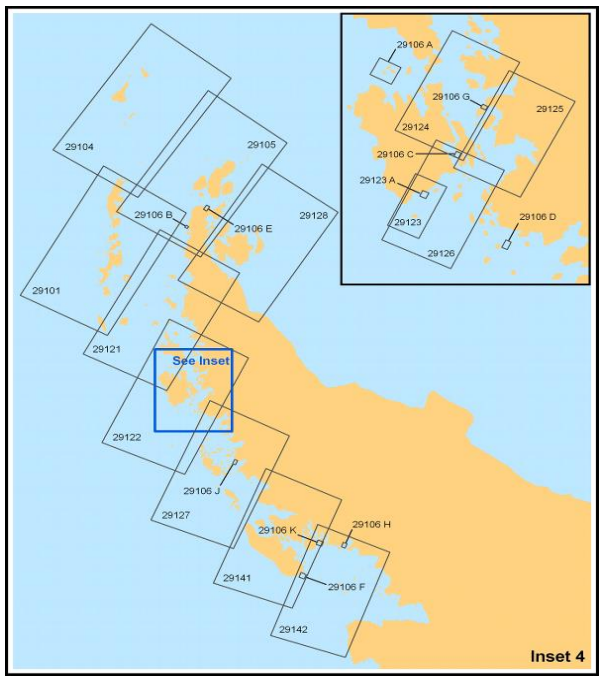
3.1 The US/NGA maintains a portfolio of Coastal, Approach and Harbor scale charts with associated plans and panels within the HCA region. All of these charts are on public distribution and are maintained from any available sources through the US Notice to Mariners. Graphics that portray NGA chart coverage are included below:

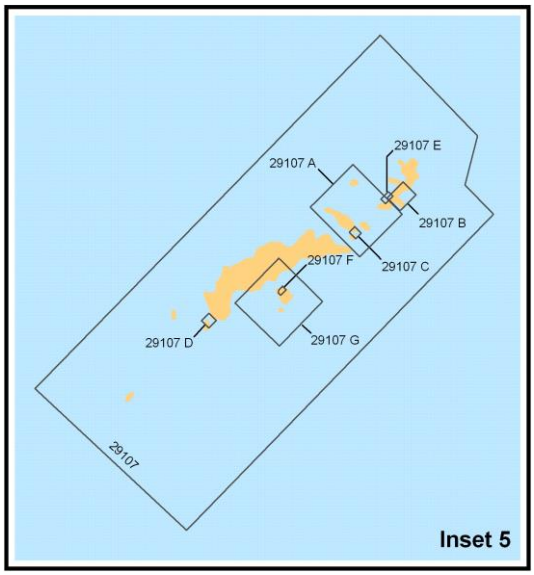



29322
29323
29324
29281
29325
29321
Inset 1

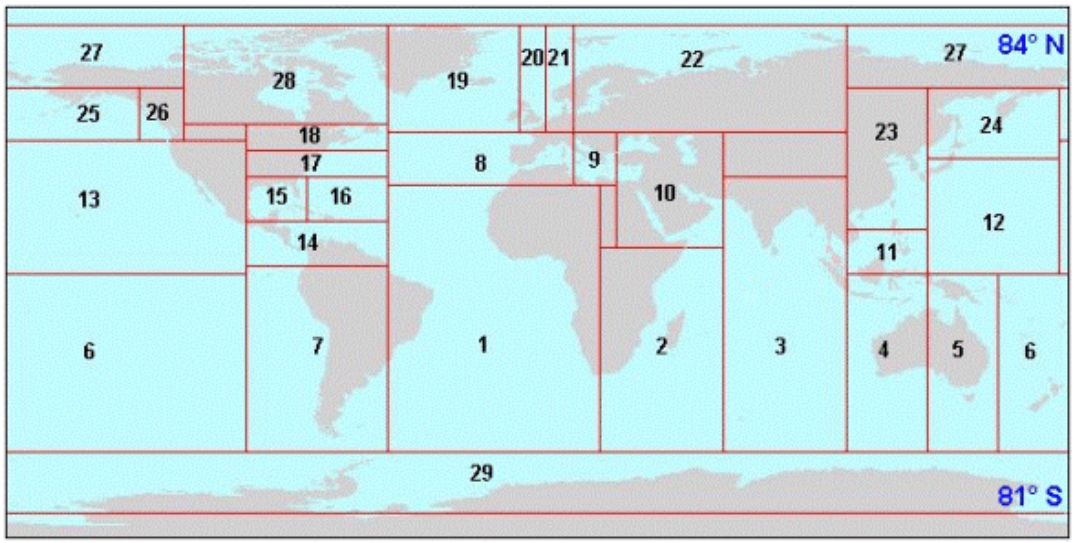

Plan
29282
Inset 2


29741
D
29741
C
29741
B
29741
A
29742
Int 9062
29781
D
29781
C
29781
B
29781
A
Inset 3


29106 A
29106 G
29125
29124
29106 C
29123 A
29123
29106 D
29126
29104
29105
29106 B
29106 E
29128
29101
29121
See Inset
29122
29106 J
29127
29106 K
29106 H
29141
29106 F
29142
Inset 4



3.2 The Digital Nautical Chart (DNC)® produced by the US National Geospatial-Intelligence Agency (NGA) is an unclassified, vector-based, digital database containing maritime significant features essential for safe marine navigation. Initial data collection of the database was from an NGA and NOAA portfolio of approximately 5,000 hardcopy standard nautical charts of varying scales and today provides global digital chart coverage for marine navigation between 84° North latitude and 81° South latitude. The DNC® database consists of 29 DNC® geographic regions and is produced in the NGA standard Vector Product Format (VPF). The DNC® contains four library categories based on scale and purpose of the source charts including Harbor, Approach, Coastal and General charts, from largest to smallest scale, respectively. In addition, there is a single Browse library that acts as an index. Below is a graphic showing the US/NGA DNC® Geographic Regions:



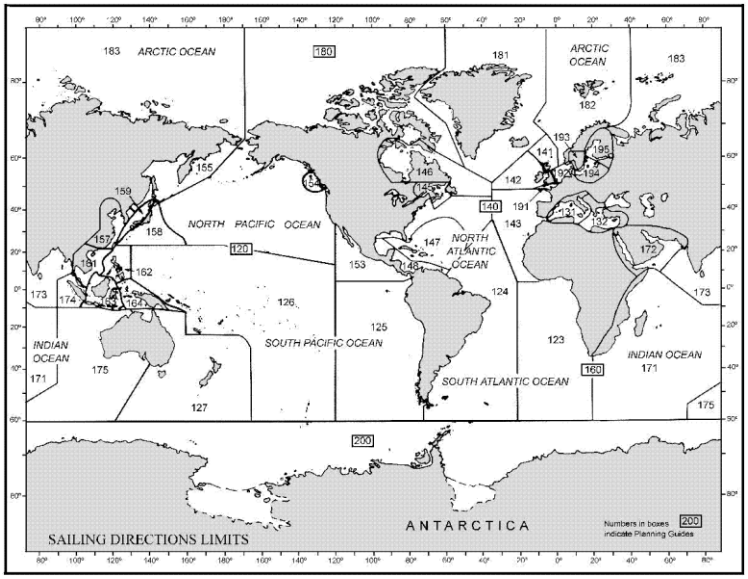
Digital Nautical Chart® Geographic Regions

For DNC®29 (Antarctic) there are 54 total libraries (cells) of data based on and collected from a total of 95 US and foreign hardcopy standard nautical charts with three additional libraries in work which will bring the total to 57. The breakout of DNC® libraries by scale indicates that there are 8 General, 11 Coastal plus an additional library in work, 16 Approach plus and 21 Harbor libraries. The DNC® website is at http://dnc.nga.mil where graphics and a listing of available coverage can be found. This data is not releasable to the general public.

3.3 Within the Antarctic region, the US/NGA was assigned as the producer nation for INT Chart 9105 (1:25K) and INT Chart 9062 (1:200K). INT 9105, (US Chart 29123) is a 1:25K chart of the Approaches to Arthur Harbor with a plan of 1:12.5K of Arthur Harbor. It was completed in December 2011. NGA also a new DNC® libraries of the main body of the chart and the plan. In conjunction with NOAA an ENC cell of this area was produced, US5AN01. INT 9062, (US Chart 29742), Vahsel Bay and Vicinity including Belgrano Station, was completed in February of 2012 and is listed as 1st Edition February 25, 2012. NGA then produced the corresponding ENC cell, US30029K in August 2013. NGA maintains both ENC cells as part of its ENC portfolio which now includes cells in Panama, Haiti and Palau. These cells are available through the NOAA website.

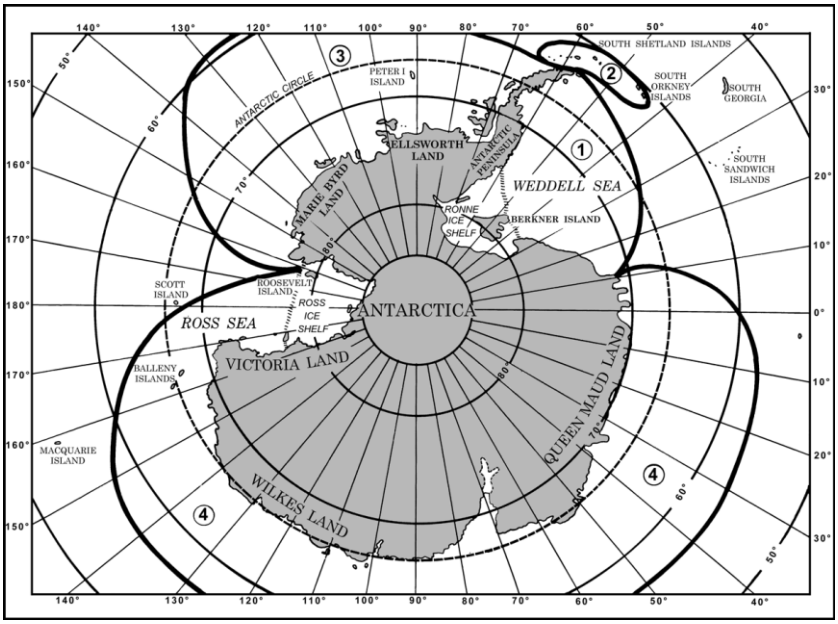
4. Nautical Publications

4.1 Sailing Directions are published by the US/NGA in 42 Planning Guide and Enroute volumes as part of a global portfolio of publications. Sailing Directions (Planning Guide) are intended to assist mariners in planning ocean passages and include relevant physical, political, industrial, navigational and regulatory information about the countries adjacent to a particular ocean basin. Sailing Directions (Enroute) are intended to supplement the largest scale charts of the area and include detailed coastal and port approach information. They are subdivided into geographic regions, called sectors, which contain information about the coastal weather, currents, ice, dangers, features and ports. NGA Sailing Directions are updated via a digital update, Publication Data Update (PDU), patch process. All of these publications and their digital patch updates are available to the public and are posted at the NGA Maritime Safety website at www.nga.mil/maritime. A graphic of NGA Sailing Directions global coverage is shown below:



NGA Sailing Directions Limits

4.2 NGA Sailing Directions Pub. 200, (Planning Guide and Enroute) Antarctica, Ninth Edition, 2011, is issued as Part I and Part II, with both Planning Guide and Enroute information combined in one volume. This combination of volumes was initiated due to the rather unique aspect of the Antarctic continent. Part I, Sailing Directions (Planning Guide) Antarctica includes information concerning physical geography, meteorology, exploration, treaties and legal agreements, regulations, history, and navigation. Part II, Sailing Directions (Enroute) Antarctica is comprised of four sectors and includes basic coastal and navigational information for each. A graphic showing these sectors is shown below:



NGA Sailing Directions Pub 200 Sector Limits

5. MSI

5.1 The promulgation of Maritime Safety Information (MSI) within this region as part of the IHO World-Wide Navigational Warning Service (WWNWS) is outside the responsibility of the United States.

6. C-55

6.1 Since the last meeting of the HCA, NGA has produced one of its national charts plus has two additional charts in work. US Chart 29323, McMurdo Station and Vicinity was completed and listed as

4th Edition September 19, 2015. The two charts that are in work are US Chart 29282, Scott Island and Vicinity, and US Chart 29322, Cape Royds to Hut Point.

7. Capacity Building

7.1 The United States is an active participant in the IHO Capacity Building Sub-Committee (CBSC) and directly supports the IHO Maritime Safety Information (MSI) training course. The United States has not been involved in any capacity building activities directly related to the HCA.

8. Oceanographic Activities

8.1 The United States participates on the IOC-IHO Guiding Committee for GEBCO and as mentioned previously in this report hosts and helps fund the IHO Data Center for Digital Bathymetry at the NOAA National Center for Environmental Information (NCEI).

9. Other Activities

9.1 Since the last meeting of the HCA, NGA provided commercial imagery to assist Argentina in the production of new charts in Antarctica.

10. Conclusion

10.1 The United States is committed to being an active member of the IHO HCA. NGA is pleased to have completed both INT Charts 9105 and 9062 and the corresponding ENC cells and made them available. NGA has publically available chart, nautical publication, bathymetric data and imagery data (as described within this report) that currently has been made available to other member states for use in this region.