NATIONAL REPORT OF UKRAINE
TO 18th CONFERENCE
OF THE MEDITERRANEAN AND BLACK SEAS
HYDROGRAPHIC COMMISSION (18 MBSHC)

1. Hydrographic Office/Service

a. General

State Hydrographic Service of Ukraine (SHS) is a national hydrographic office of Ukraine established within the framework of the Ministry of Infrastructure of Ukraine.

The main tasks of the SHS are as follows:

- Fulfilment of international commitments of Ukraine pertaining to safety of navigation, in particular hydrographic surveying of the seas and oceans in accordance with the IHO standards, maintenance of aids to navigation (AtoNs) in the seas and inland waterways within zone of responsibility of Ukraine and ensuring their continuous operation in conformity with the requirements approved by International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA);

- Compilation and distribution of nautical and pilot inland charts, Sailing Directions and Notices to Mariners;

- Development of the AtoN system by means of creation and implementation of new methods, techniques and technologies in the fields of navigation, hydrography and cartography;

- Lighthouses renovation involving the energy-saving technologies (solar batteries, wind power stations, LEDs, etc.), modernization of floating aids to navigation through use of plastics, flasher mechanisms with LEDs modules and implementation of the Automatic Identification System (AIS).

*b. Updates for the IHO Yearbook, e.g. reorganization (please, see below the updates to the IHO Yearbook as of 16 April 2013; all updated information is in **red bold**)*

STATE HYDROGRAPHIC SERVICE OF UKRAINE **23, Gagarina Avenue** **Kyiv 02660** **UKRAINE**	
Department of which the Hydrographic Office is part	~~**State Administration of Maritime and Inland Water Transport,**~~ Ministry of Infrastructure of Ukraine
Principal functions of the H.O.	Hydrographic surveys, oceanography, nautical paper and electronic navigational charts, Notices to Mariners, radio navigational warnings, aids to navigation

National day	24 August
Telephone: **Fax:** **E-mail:**	+38 (044) 296 60 40 +38 (044) 292 12 17 office@hydro.gov.ua miagkova.a@hydro.gov.ua
Date of establishment and Relevant National Legislation	6 June 1997
Name and rank of the Director or Head	Mr. Sergii SYMONENKO, PhD Head
Tonnage	**2013 = 856 508**
Staff employed - **Hydrographers (Name and rank of managing staff)**	Mr. Dmytro PADAKIN, PhD – Deputy Head of the State Hydrographic Service of Ukraine Mr. Mykola GOLODOV, **PhD** – Deputy Head of the State Hydrographic Service of Ukraine Mr. Oleksandr BORYS – Head of *Ukrmorcartographia* (charting branch of the State Hydrographic Service of Ukraine)
№ of charts published **№ of INT charts published** **№ of ENC cells published**	**169** paper charts **129** paper charts for inland waterways **12** **266** ENCs **158** IENCs
Type of publications produced (e.g.; Tide Tables, Sailing Directions, List of Lights etc.)	- Notices to Mariners (in Ukrainian and English) No.907.00; - *'Sailing Directions on Ukrainian Waters of the Black Sea and the Sea of Azov'* No.101 (in Ukrainian); - '*Lights and Beacons of the Black Sea and Sea of Azov*' No.201 (in Ukrainian); - '*Regime of Navigation in Ukrainian Waters of the Black Sea and the Sea of Azov*' (summary description) No.402 (in Ukrainian and Russian); - Catalogue '*Nautical Charts and Publications*' No.701 (in Ukrainian and English); - '*Nautical Charts Symbols*' No.902 (in Ukrainian and English); - '*Description of Maritime Buoyage System in Ukrainian Waters. IALA System. Region A*' No.903 (in Ukrainian); - '*Maritime Buoyage System in Ukrainian Waters. IALA System - Region A*' No. 904 (in Ukrainian); - '*Symbology for Inland Waterways Charts*' No. 908 (in

	Ukrainian, English and Russian); - '*Lights and Beacons of the Danube River. Kiliis'ke Mouth Delta to the Prut River Mouth* ' No.202 (in Ukrainian and Russian); - '*Sailing Directions of the Danube River. Kiliis'ke Mouth Delta to the Prut River Mouth*' No.103 (in Ukrainian and Russian); - '*Instructions on Producing of Field Updates to Navigational Charts, Manuals and Publications (IKM-2005)*' No.918 (in Ukrainian); - '*Instructions for Compilation of Technical Orders and Technical Reports Resulting from Hydrographic Surveys (ITII-2005)*' No.932 (in Ukrainian); - '*Instructions on Requirements and Methods of Bottom Features Surveying for Navigational Purposes*' No.933 (in Ukrainian); - '*Regulation on Aids to Navigation on the Inland Waterways, in the Territorial Sea and Exclusive (Maritime) Economic Zone of Ukraine*' No.937 (in Ukrainian); - '*Regulation on the Numbering System for Paper Nautical Charts, Electronic Navigational Charts and Inland Waterways Charts, Books, Sailing Directions and Blank Technical Documentation*' No.934 (in Ukrainian); - '*General Provisions for Compilation of Notices to Mariners*' No.935 (in Ukrainian); - *'Regulation on Procedure for Conducting of Oceanologic Surveys in the Black Sea and the Sea of Azov'* No. 920 (in Ukrainian); - *'Instructions on Compilation and Preparation of Coastal Warnings and Appropriate Informing of Mariners'* No. 944 (in Ukrainian); - *'Summary Correction, 2008'* No. 402 3 (in Ukrainian and Russian); - *'Instructions on Input Expertise of Hydrographic Surveys Materials for the Purpose of Charting'* No. 936 (**in Ukrainian**); - *'Oceanographic Atlas of the Black Sea and the Sea of Azov'* No. 601 (in Ukrainian and English); - *'The list of Current Temporary and Preliminary NtMs of State Hydrographic Service of Ukraine'* No. 910 (in Ukrainian and English); - ***'Navigational and Reference Tables for Navigators'*** **No.909 (in Ukrainian and English);** - ***'Dnipro River Pilot'*** **No.105 (in Ukrainian and English)**.		
Surveying vessels / Aircraft	Displacement	Date Launched	Crew
GS – 82	807.0	1969	23
GS – 273	713.0	1972	23
A. LYSENKO	52.7	2003	4
A. SOLODUNOV	52.7	2005	4

V. ZARUDNIY	53.0	2006	4
ODESA	320.0	2007	10
SHLIAHOVYK	92.0	2010 (**rema-nufactured**)	6
MGK-catamaran	**2.5**	**2013**	**2**
MGK-catamaran	**2.5**	**2013**	**2**

2. Surveys

a. Coverage of new surveys

Within Ukrainian zone of responsibility the SHS routinely performs hydrographic surveys in the water areas of commercial ports, approaches to ports, places of anchorage and areas of high-density vessel traffic.

The hydrographic surveys at scales of 1:5 000 and 1:1 000 are performed regularly at the anchorages, in the water areas of and approaches to the commercial ports of Odesa, Illichivsk, Mariupol, Mykolaiv, Ochakiv, Komysh-Burun, as well as the Yuzhnyi, Khersonskyi, Kerchenskyi, Dnipro-Buzkyi, Pheodosiiskyi, Bilhorod-Dnistrovskyi, Yevpatoriiskyi, Berdianskyi, Sevastopolskyi and Yaltynskyi ports.

In addition, for the purpose of safety of navigation the hydrographic surveys by a multi-beam echosounder are performed regularly in the Buzko-Dniprovsko-Lymanskyi channel, Khersonskyi sea channel and in the Kerch-Yeni-Kale channel.

During the years 2011-2013 it was carried out:

- hydrographic surveying of approaches to the ports of Odesa, Illichivsk, Bilhorod-Dnistrovskyi, Yuzhnyi port and Buzko-Dniprovsko-Lymanskyi channel;
- hydrographic surveying of the Traffic Separation Scheme “Approaches to the ports Odesa, Illichivsk, Yuzhnyi”;
- hydrographic multibeam surveying of approaches to the ports of Odesa, Illichivsk, Yuzhnyi port and Buzko-Dniprovsko-Lymanskyi channel;
- hydrographic multibeam surveying of the Traffic Separation Scheme “Approaches to the ports Odesa, Illichivsk, Yuzhnyi”;
- hydrographic surveys in the Kerchenska Strait, approaches to the Kerchenska Strait in the Black Sea and the Sea of Azov at scale 1:50 000 – 1:10 000;
- detailed survey of the seabed relief within the area of the Traffic Separation Scheme “Approaches to the Kerchenska Strait from the North”;
- hydrographic multibeam surveying of the deep-sea navigable waterway “Danube - Black Sea” (Kiliiske Mouth of the Danube river, Bystre Mouth, approach channel to the Bystre Mouth);
- hydrographic multibeam surveying of the north-west Black Sea on approaches to the Danube river (Bystre Mouth);
- hydrographic surveys in the area of the Traffic Separation Scheme “Approaches to the port of Sevastopol”;
- hydrographic surveys of the Dnipro river in vicinity of Kyivske Reservoir, from border with Belarus (town on Loiev) to Kyivske Reservoir, the Prypiat river from border with Belarus to Kyivske Reservoir at scale 1:25 000 – 1:10 000;
- hydrographic surveying of approaches to the port of Bilhorod-Dnistrovskyi.

State Hydrographic Service of Ukraine routinely fulfils examination of sunken wrecks and other navigational dangers by means of a multi-beam echosounder, side-scan sonar, marine magnetometer and bottom profiler. The SHS also disseminates in the coastal warnings and in Ukrainian Notices to Mariners the information about detected dangers and changes in navigational conditions.

We constantly upgrade our technical facilities for the purpose of performance of hydrographic surveys in accordance with modern standards and requirements.

In 2010 we have updated the existing versions of the HYPACK software used for hydrographic surveys and data processing.

b. New technologies and/or equipment

It was purchased 2 side-scan sonars CM2 C-MAX for sea bottom surveys.

At present the SHS possesses modern technical facilities for fulfilment of hydrographic surveys. In 2011 we have upgraded our SeaBat 8101 multi-beam echosounder to the SeaBat 7101 version that increased capabilities for the purpose of areal surveys. In addition, our hydrographic surveys are supported with single-beam echosounders, side-scan sonars, Magis magnetometer and StrataBox bottom profiler.

We use the Trimble DSM232 and SPS461 DGPS receivers for horizontal positioning of surveys. The planimetric base of hydrographic surveys is maintained by means of geodetic GPS receiver Trimble 5700. The SHS of Ukraine uses the SET 3130R3 electronic total stations for topographic and geodetic surveys of the coastal areas, as well as for creation of planimetric base of the surveys.

c. New ships

2 MGK-catamarans.

d. Problems encountered

NtR

3. <u>New Charts & Updates</u>

a. ENCs

NtR

b. ENCs distribution method

Distribution agreements with PRIMAR and UKHO.

c. RNCs

The SHS does not produce RNCs.

d. INT Charts

8 new INT Charts to be produced during the year 2013.

1	*INT 3818*	*UA/RU*	*300 000*	*Sea of Azov*

2	*INT 3886*	*UA*	*50 000*	*Pivdennyi Buh River. From the Mouth to Mykolaiv*
3	*INT 3897*	*UA/RU*	*50 000*	*Kerchenska Strait*
4	*INT 3899*	*UA/RU*	*50 000*	*Approaches to Mariupol Port*
5	*INT 3819*	*UA*	*75 000*	*Approaches to Zmiinyi Island*
6	*INT 3884*	*UA*	*10 000*	*Mykolaiv Port*
7	*INT 3901*	*UA*	*10 000*	*Mariupol Port*
8	*INT 3903*	*UA*	*10 000*	*Kerch Port*

e. National paper charts

- 3 new charts:
  No. 20101, *Eastern Part of Mediterranean Sea and Black Sea 1:2 000 000*
  No. 20102, *Middle Part of Mediterranean Sea 1:2 000 000*
  No. 20103, *Western Part of Mediterranean Sea 1:2 000 000*
- 2 new editions
- 3 new national paper charts to be produced during the year 2013.

f. Other charts, e.g. for leisure craft

- 158 inland ENCs;
- 8 albums of navigational rivers charts:
  No. 3504, *Navigational River (Pilot) Charts of the Danube River from Reni Port to the Mouth*
  No. 3534, *Navigational River Chart of Kyivske Reservoir, Dnipro River from Loiev to Kamaryn, Prypiat River from Usivske Reach to Chornobyl*
  No. 3533, *Navigational River Chart of Kanivske Reservoir from Kyivska Hydroelectric Power Station to Kanivska Hydroelectric Power Station*
  No. 3532, *Navigational River Chart of the Kremenchutske Reservoir from Kanivska Hydroelectric Power Station to Kremenchutska Hydroelectric Power Station*
  No. 3531, *Navigational River Chart of Dniprodzerzhynske Reservoir and the Vorskla River Mouth*
  No. 3530, *Navigational River Chart of Dniprovske Reservoir and the Samara River from Novomoskovsk to the Mouth*
  No. 3529, *Navigational River Chart of Kakhovske Reservoir from Dniprovska Hydroelectric Power Station to Kakhovska Hydroelectric Power Station*
  No. 3528, *Navigational River Chart of the Nyzhnii Dnipro River from Kakhovska Hydroelectric Power Station to the Mouth*

All charts have been produced according to WGS-84 datum.

4. New publications & updates

a. New publications

2 new publications:

No. 909*, "Navigational and Reference Tables for Navigators";*

***No. 105**, "Dnipro River Pilot"*

b. Updated publications

1 updated publication:

***No. 701,** Catalogue 'Nautical Charts and Publications'*

c. Means of delivery, e.g. paper, digital

Publications are delivered in paper form.

Notices to Mariners are provided on the users' requests either in paper or in digital forms.

The technology "Print-on-Demand" has been implemented for production, maintenance and dissemination among users of paper navigational nautical charts from national portfolio.

d. Problems encountered

NtR

5. MSI

a. Existing infrastructure for transmission

Several years ago Centre of Navigational and Hydrographic Information was created in Kyiv. Its tasks include informing mariners on changes in navigational conditions and regime of navigation in the sea area of Ukraine by means of:

- transmission of NAVAREA III navigational warnings for 031 region via international automated service for transmission of navigational and meteorological warnings and urgent information to vessels;
- transmission of coastal warnings in English via NAVTEX at frequencies of 518 and 490 kHz;
- transmission of coastal warnings in English and Russian via radiotelephone;
- transmission of local warnings in zones of responsibility of ports; and
- dissemination of Notices to Mariners.

Transmission of coastal warnings (navigational information) in NAVTEX mode is carried out through Odesa-radio and Kerch-radio radio centres.

Radio stations transmit coastal warnings according to the schedule only for their operative range, while *vital* and *important* coastal warnings are transmitted out of schedule.

Nation/Area	**Service MSI**		**GMDSS**	
Ukraine	a. Local warnings	**Yes**	a. Master plan	**Yes**
	b. Coastal warnings	**Yes**	b. A1 Area	**Yes**
	c. Navarea warnings	**Yes**	c. A2 Area	**Yes**
	d. Information about ports	**Yes**	d. A3 Area	**No**
			e. NAVTEX	**Yes**
			f. SafetyNET	**No**

For improvement of safety of navigation it has been implemented a new unified system for surface conditions monitoring using Automated Identification System in the Black Sea and the Sea of Azov in Ukrainian zone of responsibility (AIS Monitoring System).

The AIS Monitoring System is based upon existing networks of AIS base stations belonging to the State Hydrographic Service of Ukraine (19 base stations), "Delta-Pilot" State Enterprise (11 base stations) and "Maritime Search and Rescue Service" State Enterprise (1 base station). The system functions through integration of received information by dint of a central server intended for the monitoring system routing.

Currently urgent NAVTEX navigational warnings are repeated via AIS channels. In addition, the AIS channels are used as back-up for transmission of all NAVTEX warnings.

It has been started the transmission of information on virtual aids to navigation via AIS channels.

b. New infrastructure in accordance with GMDSS Master Plan

NtR

c. Problems encountered

NtR

6. C-55 latest update (Tables)

The table below describes the hydrographic surveys for the depth ranges 0-200m and > 200m (--/--) out to the limits of Exclusive Economic Zone:

Nation/ Area	**A**	**B**	**C**	**Amplifying notes including significant gaps in coverage**
Ukraine	75%/100%	25%/0%	0%/0%	High-priority tasks: a. Regional routes: water areas of sea ports and their approach channels, in particular in the north-western part of the Black Sea, Kerchenska Strait and approaches to it. b. Internal routes: surveys for inland charts of the Dnipro, Danube and Pivdennyi Buh rivers.

In accordance with Annex B to IHO C-55 Publication we provide the latest update on the status of Ukrainian charts portfolio coverage in Ukrainian zone of responsibility in the International Charting Region F:

Nation/Area	**Offshore passage**/ Small			**Landfall and Coastal passage**/ Medium			**Approaches and ports**/ Large			**Amplifying notes**
	A	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**	
Ukraine	100%	-	100%	100%	-	100%	100%	-	99%	Ukraine does not produce RNCs. A number of large-scale charts needs to

										be updated.

7. Capacity Building

a. Offer of and/or demand for Capacity Building

According to the Standards of Competence for Hydrographic Surveyors (S-5 IHO Publication) the SHS has implemented the program of training and advanced training for hydrographic surveyors using facilities of Odesa Maritime Academy. However, State Hydrographic Service of Ukraine has been constantly looking for supplementary ways of its personnel training, such as visiting by our hydrographic surveyors various specialized courses under the auspices of International Hydrographic Organization.

b. Training received, needed, offered

The candidate from Ukraine was selected for the training course at the UK Hydrographic Office in the year 2012 for the period from 30 January till 2 March. It was the 3rd 5-week module of recognized UK Category B Programme by the FIG-IHO-ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers. Ukrainian candidate Ms. Nataliia Botsuliak has successfully graduated from the training course.

The HYPACK software training seminar took place in Odesa Maritime Academy in November 2012. The seminar was presented by Mr. Patrick Sanders, the President of HYPACK Inc.

c. Status of national, bilateral, multilateral or regional development projects with hydrographic component (in progress, planned, under evaluation or study):

To date the SHS has concluded the agreement on exchange of navigational information with the United Kingdom Hydrographic Office. For the purpose of distribution of ENCs the agreements have been signed with PRIMAR, Jeppesen (Boeing Company), Navionics S.r.l. and Tresco Ltd. companies.

d. Definition of bids to IHO CBC

NtR

8. Oceanographic Activities

a. General

The SHS has designed a digital version of Oceanographic Atlas of the Black Sea and the Sea of Azov.

For the purpose of performance of oceanographic researches the SHS uses modern hydrological probes and current meters. We also use the Magis magnetometer for measurements in the Black and Azov Seas for mapping of the Earth magnetic field and for detection of iron objects on the sea bottom.

In addition, we utilize the StrataBox bottom profiler for examination of the surface soils. This equipment ensures acquisition and accumulation of oceanographic data in the Black Sea and the Sea of Azov and contributes to creation of the oceanographic data bank. The above instrumentation is used both for the charting purposes and for commercial projects.

b. GEBCO/IBC's activities

NtR

c. Tide gauge network
NtR

d. New equipment
NtR

e. Problems encountered
NtR

9. Other activities

a. Participation in IHO Working Groups

The employees of the State Hydrographic Service of Ukraine take part in the activities conducted by different IHO bodies, Working Groups and Committees, such as BASWG, MBSHC, WEND, CSPCWG and S-23.

b. Meteorological data collection
NtR

c. Geospatial studies
NtR

d. Disaster prevention
NtR

e. Environmental protection
NtR

f. Astronomical observations
NtR

g. Magnetic/Gravity surveys
NtR

h. MSDI
NtR

i. International
NtR

j. Other
NtR.

10. Conclusions

1 During 2011-2013 the SHS has achieved considerable results in fulfilment of international obligations of Ukraine as pertaining to aids to navigation and, in particular, in development of aids to navigation system through implementation of new navigational, hydrographical and charting methods, techniques and technologies.

2 All SHS branches have been provided with modern facilities for hydrographic surveying of the bottom contour, instrumentation for positioning of hydrographic surveys and maintenance of planimetric base. All this together with specialized software ensures compliance of the level of accuracy, including that in the critical shallow waters, with the international standards.

3 The high-priority tasks with regard to hydrographic surveys are hydrographic soundings in the areas of recommended and actual vessel traffic routes, harbour waters and approach channels to ports, heavy traffic areas and critical shallow waters.