UNITED KINGDOM

NATIONAL REPORT FOR THE 2nd ROPME SEA AREA HYDROGRAPHIC COMMISSION MEETING

TEHRAN, ISLAMIC REPUBLIC OF IRAN

2nd – 3rd MAY 2006

CONTENTS

1. UNITED KINGDOM HYDROGRAPHIC OFFICE

1.1 UKHO Responsibilities

The UKHO is responsible for delivering the UK's treaty obligations under SOLAS V, Regulation 9, for the provision of hydrographic services for waters of UK national responsibility. The UKHO also has responsibilities to deliver hydrographic support to the UK armed forces for their operations world-wide. In addition, the UKHO contributes to UK's efforts to provide technical assistance to other countries, especially members of the Commonwealth.

1.2 UK and the IHO

UK is a founder member of the IHO and plays a full part in its committees and Regional Hydrographic Commissions. Dr Williams has acted as a Vice Chairman of the SPWG, and UK has fully supported the proposals which were submitted to the Extraordinary International Hydrographic Conference in April 2005. UK considers that the agreed improvements in structure and procedures are vital to improve decision making and responsiveness to the needs of the international community.

1.3 Current Issues and Priorities

UKHO is working towards a fully digital production flowline to replace the existing analogue and digital one. The Production Systems Programme (PSP) is the UKHO project designed to build the production foundation to enable strategic growth. PSP consists of the following elements:

- Archive Cataloguing Project – to catalogue the UKHO working archive and capture 170,000 documents in a digital format (including geo-referencing).
- Source Data Receipt and Assessment – to manage the receipt and distribution of source data documents in a digital format and provide workflow to operational branches so that data can be assessed against products.
- Hydrographic Database – to store assessed hydrographic data which will be extracted through a single process driven by product specifications to form an initial data cut. The Chart Production Toolset will provide the cartographic tools to support production of raster and vector charting products.
- Case by case projects for specific items.

2. SURVEYS

2.1 In UK, the Maritime and Coastguard Agency (MCA) has statutory responsibility for enforcing SOLAS, and it has a Navigation Safety Branch which funds and coordinates the prioritised plan for survey of UK Home Waters in accordance with Regulation 9.2.1 of the revised Chapter V of SOLAS. UKHO supports the delivery of this Civil Hydrography Programme (CHP) by categorising the status of survey on the UK continental shelf, by producing specifications for surveys, and by appraising the results and publishing them in the Admiralty chart series.

2.2 The civil survey requirement in UK waters is divided into two main components:

- The Priority A areas are those where routine re-survey of unstable areas is required. The UKHO conducts an analysis to optimise the limits and frequency of the surveys, which are repeated on annual, 3, 6 or 12 year cycles. The main areas of operation are in the S North Sea and Dover Strait. UKHO is ready to pass on to any other members of the Commission lessons which have been learnt in the management of routine re-surveys.

- Those sea areas which require re-survey to modern standards, or which have never been systematically surveyed, are assessed by a committee of national shipping interests chaired by MCA, following which an annual programme is defined. This programme is put out to contract in the commercial sector. UKHO provides oversight during the course of the surveys. Again, UKHO is prepared to provide advice on the management of a contract survey programme.

2.3 Any requests for survey assistance will be assessed within the MOD, with advice from UKHO. The new Joint Venture Company, Admiralty Coastal Surveys, gives UKHO some additional flexibility to respond to such requests for shallow water areas. As indicated above, the UKHO can also contribute to project management of hydrographic surveys.

3. NEW CHARTS AND UPDATES

Electronic Navigational Charts (ENCs)

ENC Production

3.1 By March 2006, the UKHO had 683 ENCs available for distribution through IC-ENC and the UKHO's ENC and ECDIS services.

The UKHO has the capacity to produce around 20 ENCs per month (either as new cells, new editions, or as a mixture of both).

All of the UKHO's ENC production processes are ISO 9001:2000 certified.

Coverage

3.2 The main areas of geographic coverage of the UKHO's ENCs are the waters around the UK and parts of the Mediterranean Sea, the Caribbean Sea, the Red Sea and the Gulf. Plans to extend the coverage to other parts of the world are presently under consideration. There are currently 48 ENCs published within the RSAHC region – 45 of these by UKHO and 3 by Bahrain; UK has a further 41 cells in production.

Each of the UKHO's ENCs is broadly equivalent to a paper chart panel both in terms of its area of coverage and its content.

Data Capture and Verification

3.3 Initial data capture is contracted out to a company in India (IIC). This reduces the average in-house production time for new cells from 6 to 3 weeks.

The verification of data from IIC and all work on the production of updates for ENCs and new editions is done in-house in the UKHO.

Assistance

3.4 The UKHO is able to offer the following services to other national hydrographic offices:

- Production of ENCs
- Quality Assurance (QA) of ENCs
- Updating of ENCs for Notices to Mariners and New Editions
- Provision of training in ENCs and their production (see Section 7 of this Report and IHO Special Publication S-47)
- Assistance with the establishment of ENC production facilities
- Assistance with establishment of a Quality Management System for ENC production
- Assistance with distribution of ENCs (through IC-ENC and UKHO's ECDIS service)

ENC Distribution Method

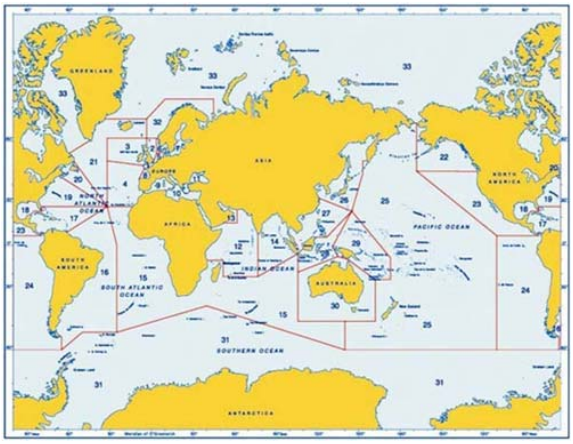
3.5 During 2002, the arrangements supporting the collection and distribution to market of ENCs, set up in 1998 as PRIMAR, were reviewed and dissolved in favour of a new approach. Norway continues to operate a distribution centre called PRIMAR-Stavanger and the UK has set up a second RENC, based in Taunton and with an office in Australia, known as IC-ENC - International Centre for ENCs (ic-enc.org).

3.6 IC-ENC is operated on behalf of Argentina, Australia, Bahrain, Belgium, Chile, Germany, Greece, Iceland, India, Mexico, Mozambique, The Netherlands, Pakistan, Peru, The Philippines, Portugal, Russia, South Africa, Spain, Turkey and the UK. IC-ENC operates a different financial structure from the original PRIMAR, and a different strategy for release to the market, replacing a single end-user service with specialist distributors (Value Added Resellers), who can package ENCs to meet the needs of the shipping market. IC-ENC considers it essential to provide comprehensive data validation, ECDIS and consistency checks prior to ENC release to ensure a supply of high quality consistent data to end-users. IC-ENC is therefore an ideal mechanism to assist nations who have ENC data ready for distribution and are either unsure of its conformity to S-57 specifications or have not yet joined a RENC.

3.7 IC-ENC currently has six Value Added Resellers, who each provide (or are developing) their own tailored services to the international market. They are C-Map Norway, Kelvin-Hughes, Norwegian Hydrographic Office, SevenCs, Transas and UKHO.

3.8 In its capacity as an IC-ENC VAR, the UKHO has developed the Admiralty ENC Service. The service works in the same way as the UKHO's Admiralty Raster Chart Service (ARCS). The UKHO issues the latest ENC corrections every week to ensure all subscribers have fast access to all safety critical information. Updates are being supplied on CD-ROM. Web and email updates are available for the ARCS charts and a similar service will be available for ENC charts in early 2007. ENCs are supplied on a unit by unit basis where one unit is approximately equal to a paper chart.

3.9 The Admiralty ECDIS Service was launched in 2005; this combines ENCs and comprehensive ARCS coverage to provide a seamless service. Charts are available on folio basis, with three levels of coverage (Transit, Standard and Full):



It is the first digital chart service in the world to supply a combination of electronic charts for ECDIS that can fully meet the IMO ECDIS performance standards. In areas where ENCs are not yet available ARCS charts may, with flag state approval, be used in ECDIS for primary navigation rather than just a secondary aid to the paper chart. As with the ENC Service, base and update information is currently supplied on CD-ROM. Web and email updates are available for the ARCS charts and a similar service for ENC charts will be available in early 2007.

Raster Navigational Charts (RNCs)

3.10 ARCS provides digital copies of paper Admiralty charts on 11 area-based CD-ROMs. Virtually all of the charts in the UKHO standard navigational chart inventory are held in Raster Navigational Chart (RNC) format for base maintenance purposes, including daily Notice to Mariners updating. 3100 charts of the UKHO inventory, including full coverage of the RSAHC region, are available for customer use in the ARCS series. Additional charts will be published subject to agreements with other Hydrographic Offices (HOs).

3.11 ARCS is made available to the mariner through three levels of service, of which **ARCS Navigator** is designed for the SOLAS market and provides an annual licence for charts including all weekly updates. Charts are kept corrected by means of a weekly Update CD-ROM which contains all the outstanding Notices to Mariners, New Charts and New Editions for the whole of the series. The user can therefore have a completely up-to-date worldwide chart outfit on just 12 CD-ROM discs. The ARCS Navigator Online Update Service is available from 1st March 2006. The service will enable all ARCS Navigator users to access ARCS updates via web download or email request. The provision of this online service will allow users access to safety critical chart updates as soon as they are published.

3.12 Navigation software and display systems for ARCS have been developed by many commercial manufacturers, ARCS itself being a navigation data supply service only. Many of these display systems will support both ARCS and vector ENC charts. Following evaluation by UKHO of data protection and safety-critical functions, systems are now available for purchase from over 45 companies. These systems range from integrated bridge systems for large vessels to stand-alone PC applications for small craft.

INT charts

3.13 In total there are 106 charts in the Area I INT scheme. Of these, 59 are assigned to UK for production.

3.14 UKHO has so far published 20 of the 59 INT charts assigned to it. These are listed below, with the charts published in the last year highlighted in **bold**:

INT No.	GB No.	Scale	Area	Region
INT 7199	**GB 2888**	**1:350k**	**Straits of Hormuz**	**Gulf ofOman**
INT 7200	GB 3520	1:150k	Khawr Kalba to Gahha Shoal	Gulf of Oman
INT 7211	**GB 2889**	**1:350k**	**Dubai to Jabal az Zannah**	**Gulf, East**
INT 7214	**GB 3410**	**Various**	**Ports in United Arab Emirates**	**Gulf, East**
INT 7218	**GB 3411**	**1:15k**	**Dubai and Approaches**	**Gulf, East**
INT 7219	**GB 3412**	**1:50k**	**Hamriyah to Mina Seyaha**	**Gulf, East**
INT 7220	**GB 3739**	**Various**	**Jebel Ali & Approaches (NE)**	**Gulf, East**
INT 7227	**GB 3413**	**Various**	**Oil terminals in UAE & Qatar**	**Gulf, Central**
INT 7232	**GB 2887**	**1:350k**	**Dubai to Jazirat Halul**	**Gulf, East**
INT 7245	GB 3787	1:50k	Approaches to Mesaieed	Gulf, Central
INT 7250	**GB 2523**	**1:150k**	**Cable Bank to Ras Rakan**	**Gulf, Central**
INT 7264	**GB 2882**	**1:350k**	**R'Tannurah to Jazirat Faylakah**	**Gulf, North**
INT 7278	**GB 2884**	**1:350k**	**Mina az Zawr to Al Basrah (NE)**	**Gulf, North**
INT 7289	GB 1235	1:100k	Khawr Abd Allah/App Shatt al Arab	Gulf, North
INT 7291	GB 1265	1:60k	Khawr al Amaya to Khawr al Kafka	Gulf, North
INT 7292	GB 3842	1:25k	Entrance to Shatt al Arab	Gulf, North
INT 7293	GB 3843	1:25k	Inner Bar to Kabda Point	Gulf, North
INT 7294	GB 3844	Various	Kabda Point to Abadan	Gulf, North

INT No.	GB No.	Scale	Area	Region
INT 7295	GB 3845	Various	Abadan to Umm at Tuwaylah	Gulf, North
INT 7296	GB 3646	Various	Umm at Tuwaylah to Al Ma'gil	Gulf, North

3.15 The UKHO is currently working on New Editions of the following charts, scheduled for publication in the next three years:

INT 750	GB 2858	1:1.5m	G of Oman to Shatt al Arab	Small scales
INT 7017	GB 2837	1:750k	Stait of Hormuz to Qatar	Small scales
INT 7018	GB 2847	1:750k	Qatar to Shatt al Arab	Small scales
INT 7212	GB 3175	1:125k	Jazirat Al Hamra to Dubai	Gulf, East
INT 7216	GB 3176	1:125k	Ajman to Sir Abu Nu'ayr	Gulf, East
INT 7222	GB 3177	1:125k	Outer App to Abu Dhabi	Gulf, East
INT 7223	GB 3713	1:32.5k	App to Abu Dhabi	Gulf, East
INT 7224	GB 3715	Various	Abu Dhabi	Gulf, East
INT 7230	GB 3780	1:35k	App to Jabal az Zannah	Gulf, Central
INT 7235	GB 2442	1:125k	Jaz-ye Sirri to Abu Nu'ayr	Gulf, East
INT 7243	GB 2886	1:350k	Jazirat Das to Ras Tannurah	Gulf, Central
INT 7244	GB 3950	1:150k	Umm Said to Ras Laffan	Gulf, Central
INT 7246	GB 3786	N/A	Doha / Mesaieed	Gulf, Central
INT 7252	GB 3790	1:150k	Ras Laffan to Ras Tannurah	Gulf, Central
INT 7260	GB 2883	1:350k	Lavan to Ras Tannurah	Gulf, Central
INT 7264	GB 2882	1:350k	Ras Tann. to Jaz. Faylakah	Gulf, North
INT 7265	GB 3788	1:150k	Fasht al Jarim to Abu Ali	Gulf, Central
INT 7266	GB 3777	1:80k	App to Ad Damman/R Tann	Gulf, central
INT 7267	GB 3719	1:80k	Approaches to Jubail	Gulf, Central
INT 7268	GB 3812	1:30k	Add Dasmman/Ras Tannurah	Gulf, Central
INT 7298	GB 1268	Various	App to Khowr-e Musa	Gulf, North

National paper charts

3.16 The charting activities in 2005 in areas covered by the RSAHC where the UK has primary responsibility are covered by the INT charting comments above.

4. NEW PUBLICATIONS AND UPDATES

Paper publications

4.1 UKHO is striving to convert all 73 Sailing Directions (SD) books into Continuous Revision by the end of 2010. The majority of the series will then be maintained and republished on a 3 yearly cycle removing the need for Supplements. As at 1 March 2006, 56 out of the 73 SD titles had been published in the CR format.

4.2 The following Sailing Directions in the RSAHC Region have recently been updated:-

New Editions Published:

NP38 West Coast of India Pilot – published March 2005.

NP63 Persian Gulf Pilot – published December 2005.

NP64 Red Sea and Gulf of Aden Pilot – published May 2005.

New Editions to be published:

NP3 Africa Pilot Vol 3 – scheduled August 2006.

Digital publications / services

4.3 The 2006 edition of Admiralty TotalTide (DP550), premier tidal prediction software, was released December 2005. Available on an annual subscription service, TotalTide provides fast, accurate tidal height and tidal stream predictions. TotalTide area data set number 5 provides coverage for Indian Ocean (Northern Part) and Red Sea to Singapore.

4.4 A software upgrade was issued in November 2005 for the Admiralty Digital List of Lights (ADLL) (DP565) which was originally released in August 2003. Enhancements in the ADLL upgrade include:

- Chart view interface – inclusion of world vector shoreline.
- Improved zooming functionality.
- Help files updated.
- Key management licensing made identical to that in TotalTide.

4.5 The UKHO is working on producing digital versions of the Admiralty List of Radio Signals (ALRS) starting with ALRS Volume 6 (Pilot Services, Vessel Traffic Services and Port Operations), scheduled for release at the end of 2006.

4.6 Since January 2000, the UKHO has provided a free service known as Admiralty Notices to Mariners On-Line (ANMO). Two types of data are being provided on a weekly basis, digital Notices to Mariners (Textual) and digital Notices to Mariners (Tracings). The digital tracing service is only available through appointed Admiralty Chart Distributors. The Text file is a replication of the NM Weekly Booklet containing all Chart and Publication updates together with full-colour image of the NM Block corrections. Experience indicates that this textual data is of most use for the correction of publications and to help keep an efficient archive of NMs. The UKHO NM Website was enhanced in May 2002 by the inclusion of a search facility. The Searchable service is to be further refreshed in March 2006 with a new presentation and an enhanced search engine, which will enable users to store search criteria for their portfolio of charts. This will avoid having to enter individual searches for every chart each week. Outstanding updates will also be printed out on a single listing rather than by individual chart as at present. HOs who wish to access the UKHO Website can do so via www.ukho.gov.uk. The searchable NM service can be accessed directly via www.nmwebsearch.com. Whilst these ANMO services are freely available, the UKHO does not permit use of the information to provide a customised service to end users in competition with Admiralty Chart Distributors or approved Value Added Resellers. In addition to the UKHO Web services, UKHO has licensed four commercial companies to distribute Admiralty Notices to Mariners via satellite direct to vessels at sea. These electronic courier or value added reseller companies supply customised correction NM datasets directly related to a vessel's portfolio of charts and publications. These companies also provide ENC updates from PRIMAR-Stavanger and IC-ENC and are now capable of carrying digital updates to the Admiralty Digital List of Lights. The UK Maritime and Coastguard Agency accepts that both the paper and digital forms of the Admiralty Notices to Mariners Booklet comply with carriage requirements for Notices to Mariners within Regulation 19.2.1.4 of the revised Chapter V of the Safety of Life at Sea Convention, and the UK Merchant Shipping (Carriage of Nautical Publications) Regulations, both of which came into force 1 July 2002.

4.7 The Admiralty Online Catalogue, freely available on the UKHO website, provides access to information concerning all commercially available Admiralty products.

5. MSI

5.1 The ROPME Sea Area forms the north-western portion of NAVAREA IX, the co-ordinator of which is Pakistan, who also provides access to SafetyNET.

5.2 The area is relatively well covered by NAVTEX, with stations providing an International service (broadcasting on 518 kHz) located at:

- Masqat (Oman)
- Bahrain
- Damman (Saudi Arabia)
- Karachi
- Bandar 'Abbas (Iran)
- Bushehr (Iran)

There are no NAVTEX stations providing a National service in the area.

6. S-55 LATEST UPDATE

6.1 The UK welcomes the issue of IMO MSC Circular 1179 (dated 24 May 05) and the subsequent inclusion of SOLAS V, Regulations 4 and 9 (hydrographic services) in the IMO voluntary audit scheme.

6.2 UK has no territory within RSAHC. However, all UKHO entries in S-55 have been reviewed during the first quarter of 2006.

7. CAPACITY BUILDING

Offer of and/or demand for Capacity Building

7.1 UK fully supports the IHO CBC strategy with its emphasis on getting Phase 1 and appropriate Phase 2 capacity in place so that coastal states can meet their obligations under Regulations 4 and 9 of SOLAS Chapter V. UK will continue to contribute resources to CBC initiatives, as well as bilateral assistance.

7.2 Wherever possible UK will offer lecturers, at no cost, for the workshops in the CBC work programme.

Training received, needed, offered

Hydrographic Data Processing and Marine Cartography

7.3 UKHO offers training in Hydrographic Data Processing and Marine Cartography, designed specifically for students from overseas HOs. The training aims to provide a sound introduction to techniques of processing hydrographic data into published form, particularly nautical charts. It lays the foundation for data assessment and chart compilation skills and is equally relevant to a conventional or digital production environment.

7.4 To increase the accessibility of the modular training programme, two courses are available:

- A 5 week modular training course in Hydrographic Data Processing and Marine Cartography at the UKHO.
- A compact 2 week modular training course – developed for delivery at other HOs, subject to adequate demand and facilities.

7.5 The latter course is tailored to the requirements of the sponsoring nation and has successfully been delivered to 91 students since 2001. The 2 week courses have been delivered in Indonesia, Malaysia, Denmark, Netherlands and Brunei. The 5 week course places particular emphasis on the International Hydrographic Organization's capacity building programme.
In March 2006 the 2 week course is being delivered to the National Hydrographic Office, Oman.

ENC Training and Assistance

7.6 UKHO is keen to see the successful uptake of ECDIS using ENC, and is willing to assist other nations to produce, maintain and distribute ENCs.
UKHO now offers the following:

- A 5 week course at the UKHO which includes an introduction to ENC and S-57, and ENC Production Training which is aimed at being as generic as possible (using Hydroservice dKart Software).
- A 2 week course off site which is non-system specific and provides an introduction to ENC and S-57.

Both of these courses are advertised in IHO S-47 (Training Courses in Hydrography and Nautical Cartography).
The 2 week course is planned to be delivered the National Hydrographic Office, Oman in 2006.

7.7 In Apr–May 2003 UKHO delivered a 5 week ENC Training Course to students from the Gulf of Mexico and Caribbean region. This course was delivered in Spanish, with a translator present throughout the course. All course documentation was also available in Spanish.
A one week ENC 'Acquaint' course was also delivered to 2 Uruguayan officers in November 2003, with similar courses delivered to officers from the Philippines in May 2004, to an officer from the Solomon Islands in Aug 2004 , an officer from Sudan in Feb 2005, and an officer from Brazil in Aug 2005.
A 5 week ENC course was delivered in Sept/Oct 2004 to 3 students from Iran, Pakistan, and Sri Lanka. In Sept 2005, 6 officers from 6 different hydrographic organizations (Colombia, Iran, Pakistan, Saudi Arabia, Malaysia, Honduras) attended the 5 week ENC Course.
In Aug 2005 a trainer from UKHO was seconded to South African Hydrographic Office to assist with ENC production and training.

7.8 Sponsorship is offered in the form of bursaries which cover the cost of tuition. In certain circumstances travel, food and accommodation charges can also be sponsored. There is a selection process, to ensure that sponsorship is offered to the countries considered to benefit most from the free tuition in line with the IHO Capacity Building programme. Sponsorship is available for all courses, subject to availability and selection. Since 2003, 36 students from 17 nations will have benefited from sponsored training at the UKHO. In July 2005, 9 students from the following countries attended the 5 week Bursary Cartographic Course; Colombia, Mozambique, Saudi Arabia, Pakistan, Kuwait, Estonia, Indonesia, Philippines, UAE.

Similar sponsorship will be offered to selected countries in 2006.

Accreditation

7.9 In Feb 2005, the UKHO Training Course achieved accreditation at Category B level of the IHO M8 Standard for Nautical Cartographers. In 2006 the courses offered will be in Modular format to support the accreditation status. The Modules are:

- Hydrographic Data Processing
- Marine Cartography
- Electronic Navigational Charts

This modular programme is also being delivered in country to the Royal Malaysian Navy Hydrographic Office in 2006.

Other training

7.10 In addition to the courses offered above, the UKHO can also provide a range of training solutions to meet individual and organizational needs.

Training at HMTG

7.11 At the HMTG (Hydrographic and Meteorological Training Group), Royal Navy officers begin the hydrographic element of their combined HM training with a 12 week FIG/IHO Category B course (formerly known as the RN Hydrographic School, in Plymouth).

7.12 After about four years at sea, officers wishing to become specialists in surveying will return to HMTG for the HM Advanced Survey Course (HMASC), which replaced the former Long Course from September 2001. The HMASC lasts for 21 weeks and is accredited as FIG/IHO Category A.

7.13 Both Category A and Category B courses are open to attendance by overseas personnel (military and civilian) and are usually fully subscribed.

7.14 At HMTG there is scope for delivery of customised training for overseas naval and civilian students in Hydrography, Cartography and Data Management to meet the needs of developed and developing Hydrographic Offices. Such courses can, by mutual agreement, involve both training at the UKHO and at HMTG.

8. OCEANOGRAPHIC ACTIVITIES

General

8.1 The Maritime Environment Information Centre at UKHO maintains databases of oceanographic information collected by the RN, or exchanged with other nations. This data, together with information and products derived from it, is used primarily for maritime defence purposes.

8.2 The national repository for oceanographic data collected for scientific purposes, including data from UK sponsored research cruises anywhere in the world, is the British Oceanographic Data Centre (bodc.ac.uk) which is funded by the Natural Environment Research Council (NERC) and located in Liverpool. Various universities and NERC funded organisations within the UK carry out research cruises worldwide but the main centre for scientific oceanography is the National Oceanography Centre in Southampton (noc.soton.ac.uk), affiliated to the University of Southampton.

GEBCO/IBC's activities

8.3 The UKHO continues to support the GEBCO and IBC projects by the depositing of available digital passage sounding data at the IHO Data Centre for Digital Bathymetry, hosted by the National Geophysical Data Center, NOAA, USA. Other data may be made available following discussion with the relevant co-ordinators both to these and other similar bathymetric projects. The UKHO encourages all member states to similarly make their data available to these important projects.

Tide gauge network

8.4 Within the UK, the Proudman Oceanographic Laboratory (POL) operates the National Tidegauge Network consisting of some 44 gauges spread around the UK coastline. Under POL also resides the Permanent Service for Mean Sea Level (PSMSL) which monitors global sea levels as part of the GLOSS project.

Further information on this report can be obtained from:

Mrs Liz Dunn
Head of National & International Relations
United Kingdom Hydrographic Office
Admiralty Way
Taunton
Somerset TA1 2DN
United Kingdom

T: +44 1823 337900 Ext. 4123
F: +44 1823 284077
E: elizabeth.dunn@ukho.gov.uk

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