UNITED KINGDOM

GENERIC NATIONAL REPORT

TO

REGIONAL HYDROGRAPHIC COMMISSIONS

2009

NOTE: This report provides general information about the United Kingdom Hydrographic Office and its activities of interest to Regional Hydrographic Commissions and to other IHO Member States; the report will be revised annually. A supplementary UK National Report will be submitted to each Regional Hydrographic Commission attended by UK, to provide the information specifically relevant to that Commission. For further details of UKHO's role and other activities, see the UKHO website (www.ukho.gov.uk).

1. UNITED KINGDOM HYDROGRAPHIC OFFICE (UKHO)

UK Delivery of Hydrographic Services

1.1 UK is a Contracting Government to the International Convention for the Safety of Life at Sea (as amended and including its Protocol of 1988), 1974 (SOLAS). The UK Maritime and Coastguard Agency (MCA), an agency of the Department for Transport, is the UK National Maritime Administration, and is responsible for ensuring that UK's obligations under SOLAS are met.

1.2 The UKHO cooperates closely with MCA to ensure both appropriate provision of hydrographic services for waters of UK national responsibility, and representation of UK in international hydrographic and maritime fora. Further details of the delivery of hydrographic services in UK waters are provided in IHO publication M-16 (National Hydrographic Regulations).

1.3 In addition to meeting SOLAS obligations, UKHO has a responsibility to deliver hydrographic support to the UK armed forces for operations world-wide, and contributes to UK's efforts to provide technical assistance to other countries.

UKHO Governance

1.4 The UKHO is a Trading Fund agency of the Ministry of Defence (MOD). As a Trading Fund, the UKHO is required to be self financing. It retains the income it receives for its products and services to cover running costs and to fund investment. It pays a dividend to its parent department, the MOD, and is required to make a small return (currently 9%) on the capital employed. The status of all Government Agencies, including UKHO, is subject to regular Government scrutiny; the most recent of which, as reported in our 2008 Generic National Report, confirmed the current status to be that appropriate for such an organization with an international remit. The MOD's expectations of the UKHO are contained in the Framework Document which is available from the UKHO website: (http://www.ukho.gov.uk/content/corpAttachments/20070504-UKHO%20Framework%20Document%20Final-U2.pdf).

1.5 UKHO's current top level organization structure is:

1.6 The owner of the UKHO is the Secretary of State for Defence. He delegates responsibility for the the UKHO to the Parliamentary Under Secretary of State for Defence and Minister for Veterans (USofS). Mike Robinson, as Chief Executive of the UKHO, reports to USofS. The UKHO Corporate Plan is approved by USofS and he receives regular performance reports. USofS is advised by the Hydrographic Office Owner's Council, which is composed of representatives from government, such as the MOD and the MCA, and the shipping industry.

1.7 The Hydrographic Office Board (HOB) meets monthly to provide strategic guidance and to ensure that the Corporate Plan is achieved. The HOB has a non executive Chairman, David Palmer CBE; and includes: the Hydrographer of the Navy; a Trades Union representative; 3 non-Executives; plus the UKHO Chief Executive and the Heads of the six UKHO Divisions (see diagram in 1.5).

1.8 The running of the UKHO is steered by the Executive Committee (ExCo). Chaired by Chief Executive Mike Robinson, ExCo meets twice monthly and is made up of 14 members. As well as the six Heads of Division it is attended by a number of senior managers including the Deputy National Hydrographer, Capt Vaughan Nail.

UKHO Targets

1.9 Every year the UKHO is set Key Targets by its Owner. These are the highest level measures of the UKHO's performance; they are linked to UKHO Top Level Objectives (which are contained in the UKHO Framework Document). We report performance against the Key Targets to the Hydrographic Office Owner's Council, and submit a return at the end of each financial year for inclusion in the MOD Departmental Performance Report. The Key Targets are in the public domain: they are announced in Parliament and performance is reported in the Annual Report and Accounts.

1.10 The four key targets for 2008/09 are:

- Operational Support to Defence – To deliver the Defence Hydrographic Programme achieving an index rating of 95 or higher whilst transitioning to a multi-year Service Definition Annex incorporating incentivised pricing;
- Support to the UK's "Safety of Life at Sea" Treaty Obligations – To achieve a Safety Index exceeding 95;
- Developing profitable business streams – To achieve a Return On Capital Employed of 9% on a 3 year rolling basis;
- Organisational Excellence – To achieve an overall efficiency performance improvement of 3% year on year.

UKHO Organization

1.11 UKHO continues to evolve with changes in both organization and personnel. Re-organization in the Operations Division (responsible for the production and maintenance of UKHO's chart and publications inventory) sees the existing Regional Teams (whose responsibilities include the assessment of newly received data, the creation of Notices to Mariners, and the production of New Charts and New Editions) being organized into three Regional Production Groups. This will enable the integration, over the next twelve months, of paper and digital production, including processes, systems and skills, and facilitate management of the end-to-end chart production process. During 2009 they will also take over responsibility for any ENC production necessary within their area and for ensuring the consistency of paper and digital products issued by UKHO

1.12 The Regional Teams remain the main point of contact for discussion of charting matters. A diagram of the responsibility areas is provided in the Contacts section at the end of this report. Working level contact between our Regional Teams and the other Hydrographic Offices within their areas of interest is actively encouraged.

Production Systems

1.13 UKHO continues to work towards a fully digital production flowline to replace the existing analogue and digital system. Known as the Production Systems Programme (PSP), the project is designed to build the production foundation for the future. To date:

- UKHO's working archive has been catalogued and documents captured in digital format, and geo-referenced;
- the Source Data Receipt and Assessment (SDRA) element of PSP has now been significantly enhanced to further improve the efficiencies in managing the organisation's workflows;
- the implementation of a Hydrographic Database (based around Caris HPD) and the development of associated ENC, Paper Chart and AML production tools has now been completed. The large and complex task of data population is now underway;
- the requirements for the replacement of other legacy system has been reviewed and will be encapsulated in a new blueprint for the PSP programme. This will define the way ahead in these areas over the next two years.

Cooperation and Partnerships

1.14 UKHO has bilateral arrangements with about eighty nations. These bilateral and other arrangements between UKHO and international government hydrographic authorities, cover a range of topics, including the use of copyright data, and also promote other forms of co-operation between the participants, helping to enhance international maritime safety and the protection of the environment.

1.15 UKHO's support to IHO and to international capacity building is described in sections 9 and 7 respectively.

1.16 UKHO is prepared to partner with organizations in order to source capabilities we do not have in-house, to enhance our offering to the mariner. We will work closely with them to deliver basic navigational solutions and seek to be the navigational data provider of choice to those providing wider vessel management solutions. Specifically, we have taken a major step forward in widening our relationships with stakeholders and penetrating the SOLAS user market, by signing strategic agreements with multiple leading OEMs (Original Equipment Manufacturers) in 2008.

2. SURVEYS

Civil Surveys

2.1 Civil hydrographic surveys in UK Home Waters are carried out under the government-funded Civil Hydrography Programme (CHP), managed by the Maritime and Coastguard Agency (MCA), an agency of the Department for Transport (DfT). The aim of the CHP is to carry out systematic hydrographic surveying of UK waters (outside port limits), including regular surveys in

those areas of unstable seabed, to ensure that nautical charts are based on sufficient information for safe surface navigation. MCA manages the funding for the CHP and utilises commercial survey contractors to undertake the work. They ensure that the CHP is delivered at the best value for money, and maximizes the amount of survey work carried out under the allotted funding.

2.2 UKHO provides planning, technical oversight in the field, and assessment of these surveys, and is responsible for archiving the Civil Survey Data. All CHP hydrographic surveying is carried out to a minimum of IHO Order 1A standard, ensuring the data will meet all requirements, including those of safe surface navigation.

2.3 Survey areas are prioritised jointly by the UKHO and MCA using a risk analysis methodology. Routine resurveys are undertaken in areas of high seabed mobility, and analysed at UKHO, to identify the changes and to assess whether the limits of the resurvey areas and the frequency of surveys remain appropriate or should be revised.

Celtic Voyager (IMI)

Fugro Meridian

Anglian Sovereign

2.4 The UK's National Hydrographic Committee (known as the UK Committee on Shipping Hydrography (COSH)), meets on an annual basis and provides the necessary breadth of interests to ensure that all requirements are taken into account when prioritizing the work of the CHP. COSH was expanded in 2007 to include a much wider range of organisations who conduct hydrographic survey, and has been successful in promoting co-operation between these organisations; bringing life to the maxim "survey once, use many times".

2.5 During 2008, CHP surveys have been carried out in the following areas:

- English Channel – South Coast of SW England (Cornwall, Devon and Dorset) in continuation of work in conjunction with Channel Coastal Observatory, as well as the Dover Strait and the Approaches to the Solent.
- North Sea – North East coast of England; East Coast of England (East Anglia);
- Scotland – Shetlands, Orkneys, Flannan Isles and Small Isles;
- Northern Ireland – North Coast (Joint Irish Bathymetric Survey (JIBS) project in conjunction with the Irish Marine Institute (IMI)) (continuation);
- Bristol Channel – North Coast of South West England (continuation).

BRITISH ISLES
UNITED KINGDOM
HYDROGRAPHIC OFFICE
UNITED KINGDOM
CIVIL HYDROGRAPHY PROGRAMME
HYDROGRAPHIC INSTRUCTIONS
FY 2008 - 2009
Swathe bathymetry commissioned between April 2008 to April 2009
Limit of the "Civil Hydrography Programme" survey responsibility
Extended "Civil Hydrography Programme" survey limit
FOROYAR
SHETLAND ISLANDS
ORKNEY ISLANDS
SCOTLAND
NORTHERN IRELAND
REPUBLIC OF IRELAND
WALES
ENGLAND
ISLES OF SCILLY
FRANCE
Routine Resurveys
Q6090A

Defence Surveys

2.6 The Royal Navy (RN) Surveying Service carries out both hydrographic and oceanographic surveying around the world. The RN Surveying Flotilla comprises five survey vessels: HMSML Gleaner (inshore/coastal); HMS Roebuck (coastal), HMS Echo and HMS Enterprise (multi-role Vessels Hydrographic/Oceanographic (SVHOs); and HMS Scott (ocean). In addition, HMS Endurance, the UK's Ice Patrol Ship, is fitted for survey work and carries out hydrographic and oceanographic survey in the Antarctic and South Atlantic regions on a regular basis and can be tasked to other areas as may required on transit to and from UK. Further information on the support role of HMS Endurance to the global community of Antarctica and other ships, their equipment and capabilities, can be found on the Royal Navy website (www.royal-navy.mod.uk).

HMS Echo

HMS Scott

HMS Roebuck

Vertical Offshore Reference Frame

2.7 The UKHO has developed a vertical surface separation model for UK and Irish Waters called VORF (Vertical Offshore Reference Frame). VORF will deliver the capability to transfer heights and depths from one vertical reference system to another, allowing the direct use of depth data from surveys which is referred to a WGS84 compatible datum rather than Chart Datum and thus enabling Hydrographic surveyors to survey without the need to measure tides. VORF continues to be tested to ensure that it fully meets accuracy requirements. A further initial study is to be instigated to find out the feasibility of porting the programme to other areas of the world.

Survey Assistance

2.8 Any requests for survey assistance from other nations will be assessed within the MOD, with advice from UKHO.

3. CHARTS

3.1 Information on UK's portfolio of chart products and services is available from the UKHO website which provides both online and downloadable digital catalogues. Information is also provided in the Catalogue of Admiralty Charts and Publications (NP 131).

3.2 Where possible UKHO will adopt the products of other Hydrographic Offices for incorporation into its services for the international mariner; this is especially so for digital charts where national produced ENCs are combined with UK produced ENCs to form the basis of UKHO's ECDIS services.

Paper Charts

3.3 The paper chart folio comprises about 3,400 charts, 85% of which are metric, 55% are referred to WGS84, 30% are adopted, and 18% are INT. The colour separated bases of all charts are held as high resolution raster images and it is these that are updated for notices to mariners and new editions before being used as source for making printing plates.

3.4 In 2008, UK published a total of 354 standard navigational charts, a figure which includes 86 International (INT) Charts, that is 24%. The following table gives a breakdown of these figures by publication type, and includes the numbers of adopted charts:

	Totals by publication type (with number and % of adopted charts)		INT by type (with number and % of adopted charts)	
NC	96	(includes 70 adopted – 73%)	14	(includes 11 adopted – 79%)
NE	249	(includes 111 adopted – 45%)	69	(includes 34 adopted – 49%)
NEILOB	9	(includes 2 adopted – 22%)	3	(includes 2 adopted – 67%)
Total	354	(includes 183 adopted – 52%)	86	(includes 47 adopted – 55%)

3.5 Further details of charts published and scheduled for publication will be provided in the supplementary UK National Report to each regional hydrographic commission UK attends.

Digital Charts

3.6 UKHO has been involved with the development of digital charts from the outset through involvement with the IHO WGs on S57. Improved technology for the updating of paper charts led to the issue of an RNC (ARCS) service in 1996 in advance of completion of ENC standards and ECDIS standards. UK's first ENC services were launched in 2003 and continue to evolve to meet customer requirements.

3.7 For the mariner, the digital chart picture has been complicated by the increasing availability of privately produced commercial charts and there was uncertainty as to the legal status of charts and systems. To provide clarity on this subject, hydrographic offices, including UK, of the two leading ENC centres, IC-ENC and PRIMAR-Stavanger, joined forces to create a comprehensive guide to electronic charts and chart carriage requirements. The second edition of *Facts about Electronic Charts and Carriage Requirements* is now available (from the RENC and UKHO websites).

ENCs

3.8 UKHO, has completed ENC production of UK home waters except for a few areas of large scale charts of the West Coast of Scotland, where the source charts are still being converted to WGS84. The UKHO will complete ENC coverage for other areas where it is primary charting authority during 2009.

3.9 UK has produced, and has on issue, about 1600 ENCs. Updates to these are issued on a weekly basis in parallel with the same updates for paper charts and RNCs. Full details of the ENCs on issue are provided in the IHO ENC catalogue and on the UKHO website where online and a more functional downloadable digital catalogues are available (see below).

3.10 UKHO is aware that some of its ENCs (especially those produced early on) do not meet the requirements of the IHO consistency standards. UK is therefore re-assessing all of its ENCs against the latest version of the guidelines and has a programme of work to improve their compliance. To date, the UK has issued about 900 New Editions, with improvements including edge-matching, masking, assignment of the correct compilation scale and the application of SCAMIN according to the IC-ENC SCAMIN recommendations. This latter element is recognised to be not as good as the cartographic solution used by some HOs however we believe it to be a practical way to start addressing the issue for those nations who have already issued a large number of ENCs.

3.11 In support of the implementation of a mandatory carriage requirement for ECDIS by IMO, the UK launched a new ENC service – AVCS (Admiralty Vector Chart Service) – in April 2008. The service contains only ENCs. To improve continuity of coverage (a major barrier to the use of ENCs), UK sought Coastal State approval for the production of interim "infill" ENCs based on UK paper charts. To date, in excess of 500 new ENCs have been produced to fill gaps in existing coverage around the world and improve coverage of the top 2000 ports (based on DWT) and the main routes between them. These infill ENCs will be withdrawn when Coastal States are in a position to issue

and maintain their own.

3.12 UK is undertaking a programme of work to resolve the issue of those charts that are needed for the infill programme but are currently on undetermined geodetic datum. So far, using Landsat imagery, work on about 100 charts has been completed sufficiently to allow ENCs to be produced. This work will continue over the next two years and will include using high resolution imagery to improve accuracies for large scale charting.

3.13 Whilst developing AVCS, UK identified issues affecting the quality and updating of some ENCs. In order to satisfy requests from the Royal Navy for assurance that all ENCs issued to them are accurate and up-to-date, UK initiated an exercise comparing ENCs with Admiralty paper charts. Where any differences are found, the appropriate national chart series is consulted; any unresolved differences are referred to the producer nation for comment.

ENC Distribution

3.14 UKHO, along with other European hydrographic offices, was a founder member of the International Centre for ENCs (IC-ENC) RENC. IC-ENC concentrates its efforts on the validation and consistency of ENC data and leaves the marketing of ENCs to the shipping industry, to its value added resellers. Details can be found on the IC-ENC website (www.ic-enc.org).

RNCs

3.15 Most Admiralty paper charts are also made available as RNCs through ARCS (Admiralty Raster Chart Service). The colour separated base images of the paper chart are processed and combined to provide raster digital images in the HCRF format (Hydrographic Chart Raster Format). Most major equipment manufacturers have developed compatibility with this format which originally created by UKHO is now also used by Australia and New Zealand for their own RNC services. Because ARCS charts are linked to the paper chart production process, they are updated in synchronisation with them. A weekly Update CD is issued at the same time as the paper Notice to Mariners booklet. The ARCS portfolio is carried on eleven area-based CD ROMs.

4. PUBLICATIONS

Paper Publications

4.1 UKHO produces a worldwide portfolio of Admiralty nautical publications in paper form, together with an increasing range of publications in digital form. The portfolio includes Sailing Directions (74 volumes), Tide Tables (4 volumes), Lights List (12 volumes), List of Radio Signals (6 volumes - 13 books), the Nautical Almanac, Weekly Notices to Mariners, the Annual Summary of Notices to Mariners, and the Mariner's Handbook, together with a number of catalogues and a range of miscellaneous publications.

4.2 New editions of the Tide Tables, Lights List, List of Radio Signals, Nautical Almanac, the Annual Summary of Notices to Mariners and the catalogues are produced annually. For other publications, new editions are produced according to priority and the amount of change of data within each publication. Most volumes of Sailing Directions are updated by new edition every 2-5 years. Between new editions, items for Sailing Directions, the Lights List and List of Radio Signals that are considered to require urgent promulgation, are issued in the various sections of Weekly Notices to Mariners. A section in the Mariner's Handbook (NP 100) and the pamphlet "How to Keep your Admiralty Charts up-to-date" (NP 294) explain how to apply these updates to the relevant products.

Digital Publications

4.3 Current UK digital publications include Admiralty Digital Catalogue of Charts and Admiralty Digital Notices to Mariners. In addition, Total Tide, Admiralty Digital List of Lights, and Admiralty Digital Radio Signals Volume 6 (ADRS6) are published in a combined Admiralty Digital Publication (ADP) product. These publications are accepted by the UK Maritime and Coastguard Agency and many other national maritime authorities as being at least equal to their paper equivalents and thus meet SOLAS carriage requirements. See http://www.ukho.gov.uk/amd/FlagState.asp for further details.

4.4 UK continues to develop digital equivalents to its existing paper publications; these have the two main advantages to the mariner of providing additional functionality and minimising the task of updating.

4.5 Digital Notices to Mariners are available in several forms including: a facsimile (pdf) copy of the paper notices published on the UKHO website a week before the paper copy is available for distribution, a searchable NM service available on the UKHO website and also through www.nmwebsearch.com and electronic courier services where customised datasets of NM text, blocks and tracings are provided directly to ships at sea by licensed Admiralty distributors.

4.6 The Admiralty digital catalogue may be downloaded free from the UKHO website (www.ukho.gov.uk); it includes details of all paper and digital charts and publications and is updated weekly. It is a useful tool to check on the ENC coverage within the region and to show the latest edition dates of both charts and publications.

5. MSI

5.1 The UK aims to support and satisfy the requirements for urgent navigational data for all vessels in waters of UK responsibility; these include waters around the UK and the fourteen British Overseas Territories around the world.

5.2. UK acts as NAVAREA I Co-ordinator (UKHO) within the Global Maritime Distress and Safety System (GMDSS) and the World-Wide Navigational Warning Service (WWNWS), and provides an Issuing Service within METAREA I (UK Meteorological Office). Close links are maintained with the other NAVAREAs/METAREAs to ensure relevant information is exchanged and broadcast as necessary.

5.3 The UK contributes at all international fora that consider MSI matters, specifically IHO Promulgation of Radio Navigational Warning Sub-Committee (PRNW), WMO/IOC Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM) Expert Team on Maritime Safety Services (ETMSS) and IMO COMSAR. UK currently provides the chairman and secretary of the IMO International NAVTEX Co-ordinating Panel.

6. S-55 LATEST UPDATE

6.1 UK is committed to providing regular updates to the S-55 entries for UK Home Waters and its Overseas Territories. The update correct to 31 December 2008 incorporates the additional breakdown of chart coverage (percentage of metric and WGS84 charts) requested in IHO Circular Letter 102/2008.

6.2 UK has also provided assistance to update S-55 entries to countries where UKHO retains the primary charting responsibility, recognizing that local input remains critical to the maintenance of S-55 as an up-to-date and authoritative reference document.

7. CAPACITY BUILDING

7.1 UK fully supports the IHO CBC strategy and particularly its emphasis on getting Phase 1 and appropriate Phase 2 capacity in place to enable coastal states to meet their obligations under SOLAS Chapter V Regulations 4 and 9. UK will continue to contribute resources to both CBC initiatives and to providing bilateral assistance.

7.2 UK has participated in numerous technical visits and workshops, in several RHC regions.

7.3 UKHO has created a new post dedicated to capacity building. Its key aims are to ensure that capacity building is properly considered in UKHO activity and that UKHO's capacity building activities are fully co-ordinated. It will act as the initial point of contact for UKHO involvement in capacity building activities, including UK involvement in regional hydrographic commission initiatives and IHO Capacity Building Committee activities. It will have a particular responsibility for UK Overseas Territories and liaison with UK's Foreign and Commonwealth Office and with overseas High Commissions to generate phased development of capability and new survey activity. Further information can be obtained from Mr Jeff Bryant (jeff.bryant@ukho.gov.uk).

Cartographic Training provided by UKHO

7.4 Details of the training opportunities currently offered by UKHO are provided on the UKHO website. Training is offered in Marine Cartography, Hydrographic Data Processing, Chart Correction, S-57 and ENC production. A newly designed Phase 1 skills course will be available in 2009. In 2008, UKHO delivered formal training courses to 49 students from 19 countries, and tailored training to a number of students from several countries.

7.5 UKHO courses are accredited by the International Advisory Board as meeting its M-8 Standard of Competence for Nautical Cartographers - Category B. for its Hydrographic Data Processing and Marine Cartography course with specialism The Electronic Navigational Chart (ENC). The course is currently offered in a modular format, one module to each of the three specialisms. Each module is of five weeks duration and students will be issued with a certificate on satisfactory achievement of each module. On successful completion of all three modules, students will be issued with a certificate of programme completion.

ENC Training and Assistance

7.6 UKHO strongly supports the successful uptake of ECDIS using ENC, and is happy to assist other nations to produce, maintain and distribute ENCs. The following courses, detailed in IHO S-47 (Training Courses in Hydrography and Nautical Cartography), are provided:

- A 5 week course at the UKHO which includes an introduction to ENC and S-57; and ENC Production Training, made 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.

7.7 Sponsorship is offered in the form of bursaries which cover the cost of tuition (and, in certain circumstances, travel, food and accommodation charges). 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 such courses, subject to availability and selection.

7.8 Training courses can be delivered at the UKHO's training centre or for larger groups the trainers can conduct courses in the organisation's offices. In addition, the training team can tailor bespoke courses to meet specific needs. Further details can be found on the UKHO website (http://www.ukho.gov.uk/corp/marineCartographyTraining.asp) or obtained by contacting UKHO's Cartographic Training Manager directly (peter.westcott@ukho.gov.uk).

Survey Training at Flag Officer Sea Training - Hydrography, Meteorology and Oceanography (FOST-HM)

7.9 FOST HM (formerly known as HMTG) in Plymouth delivers courses which are nationally and internationally certified, with accreditation provided by the International Hydrographic Organization (IHO), the World Meteorological Organization (WMO), The University of Plymouth, the National Vocational Qualification (NVQ) Council and the Institute of Marine Engineers, Scientists and Technicians (IMarEST).

7.10 Courses include the 14 week hydrographic element of RN Officers' combined HM training, FIG/IHO Category B course. After four years experience of which a minimum of 2 years will be at sea, officers wishing to become specialists in surveying return to FOST HM for the HM Advanced Survey Course (HMAS), which has replaced the former Long H Course. The HMAS lasts for 22 weeks and is accredited as FIG/IHO Category A.

7.11 Both Category A and Category B courses are open to attendance by overseas personnel (military and civilian) and applications are encouraged for these highly competitive courses.

7.12 FOST HM has scope to deliver customised training for overseas naval and civilian students in Hydrographic Survey Planning, Data Gathering and Data Processing as well as initial 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 FOST HM.

8. OCEANOGRAPHIC ACTIVITIES

8.1 UKHO's Maritime Environment Information Centre (MEIC) maintains databases of oceanographic information collected by the RN, or obtained during exchange with other nations. Data exchange is an important source of data and so MEIC are always keen to discuss new exchanges. Through participation in the Argo project and in the UN's International Oceanographic Data Exchange (IODE), MEIC work with the international oceanographic community. On behalf of the RN MEIC make periodic releases of data to international data centres including US NODC, for inclusion in the World Ocean Database, and British Oceanographic Data Centre (BODC).

8.2 The UK national repository for oceanographic data collected for scientific purposes, including data from UK-sponsored research cruises anywhere in the world, is BODC (www.bodc.ac.uk), funded by the Natural Environment Research Council (NERC), and located in Liverpool. The main centre for scientific oceanography is the National Oceanography Centre in Southampton (www.noc.soton.ac.uk).

8.3 UKHO continues to support GEBCO and IBC 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.

8.4 Global sea levels are monitored as part of the GLOSS project, by the Permanent Service for Mean Sea Level (PSMSL) which also resides under POL.

9. OTHER ACTIVITIES

9.1 UK supports the work of IHO by pro-active participation in a wide range of the IHO's Committees and Working Groups, including chair and secretary roles on a significant proportion of these bodies, including CHRIS, CSPCWG, SNPWG, TSMAD. In addition, UK aims to provide constructive input to all IHO discussions, through contributions to bodies such as ISPWG, by chairmanship of bodies such as MSDIWG, by providing constructive responses to IHO Circular Letters, by active participation in all meetings attended, and by positive responses to adhoc requests for advice.

10. CONCLUSION

Nothing further to report.

Taunton, February 2009

UKHO POINTS OF CONTACT **UKHO Website: www.ukho.gov.uk**

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For further information on this report, UKHO representation in international fora, and UKHO activities in general, please contact:

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or

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For all matters related to charting and hydrographic data, please contact the head of the appropriate Regional Team shown below:

RT1A	Mr Roger Cavill	RT3A	Mrs Anne Kearle	RT5A	Mr Paul Fothergill
RT1B	Mrs Christine Walton	RT3B	Mr Graham Denslow	RT5B	Mr Ian Sutcliffe
RT1C	Mr Roger Millard	RT4A	Mr Stan Rogers	RT6A	Mrs Cathy Partridge
RT2A	Mr Mark Halliwell	RT4B	Mr Ian Husband	RT6B	Mr Phil Parker
RT2B	Mr Peter Snowden				