Vol. 9, No. 2

SPONSORED BY THE INTERNATIONAL HYDROGRAPHIC ORGANISATION

Reed Business

Shallow to medium water depths

Multibeam echo sounder

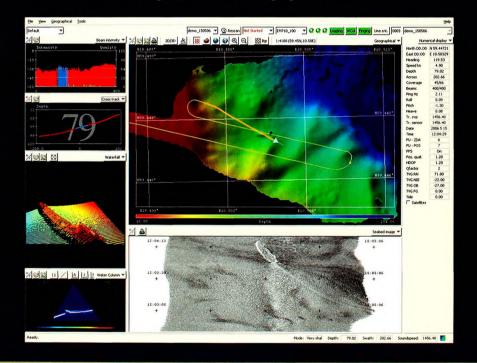
EM 710 - standard for Flexibility and Precision

New technology:

- Wideband transducers using composite ceramics technology
- Fully programmable transmit pulse waveforms
- Floating point, 140 dB dynamic range receivers
- O High resolution beam processing for improved resolution

Main system features:

- O 70-100kHz frequency, up to 2000m range capability
- O Beams actively stabilized for yaw, pitch, roll
- Beams focusing for both transmission and reception
- Choice of transducer sizes/resolution 0.5 to 2 degrees
- O Transducers for permanent hull mounting or portable use
- Chirp pulse waveforms with coherent signal compression on reception
- Calibrated seabed imagery as well as imaging of reflectors in water column



Kongsberg Maritime

Norway: +47 33 03 41 00, USA: +1 425 712 1107, Canada: +1 902 468 2268, UK: +44 1224 22 65 00, Germany: +49 40 547 3460, Holland: +31 18 162 3611 Italy: +39 06 615 22 476, Singapore: +65 68 99 58 00

Email: subsea@kongsberg.com www.kongsberg.com



Vol. 9, No. 2

September 2008

The International Hydrographic Review

SPONSORED BY THE INTERNATIONAL HYDROGRAPHIC ORGANISATION

Published by: Reed Business, P.O. Box 112, 8530 AC Lemmer, The Netherlands Tel.:+31 (0) 514 56 18 54, Fax: +31 (0) 514 56 38 98 E-mail: geo@reedbusiness.nl, Website: www.reedbusiness-geo.nl

Contents

Editorial By Adam J. Kerr, Editor 7 Articles The Mystery of the Deadwater Wreck By Rupert Gerritsen (Australia) 8 Total Propagated Uncertainty (TPU) for Hydrographic LiDAR to Aid Objective Comparison to Acoustic Datasets By Carol Lockhart, Doug Lockhart and José Martinez, Fugro Pelagos (USA) 19 The Geography of a Maritime Boundary Delimitation By Adam Kerr (UK) 28 UNCLOS Article 76 - Implementation by Smaller Developing States Entitlement, Evidence, Expertise and Expense By Ian Russell, Sole Principal Seaconsult (UK) and Ron Macnab, Geological Survey of Canada (Retired) (Canada) 37 A Solution to the Ambiguity Problem in Depth Contouring By Lihua Zhang, Yanchun Liu, Qing Zhu, Fuming Xiao (China) 59 Adopting a Reference Standard Port for Nigeria Oliver C. Ojinnaka and Ndukwe K. Ndukwe, University of Nigeria (Nigeria) 66

Obituary

Mortimer Rogoff Scientist and engineer

35

The International Hydrographic Review

Publishing Company	: Reed Business by
Publication Director	: Durk Haarsma
Editor-in-chief	: Adam J. Kerr
Editorial Board	: Lee Alexander
	: Michael Casey
	: Captain Hugo Gorziglia (International Hydrographic Organization)
	: Horst Hecht
	: Sean Hinds
	: Commander Anthony J. Withers RAN
Editorial Manager	: Joost Boers (joost.boers@reedbusiness.nl)
Account Manager	: Marjan de Vries (marjan.de.vries@reedbusiness.nl)
Circulation Manager	: Petra Hoekstra (petra.hoekstra@reedbusiness.nl)

Information to contributors

1. The International Hydrographic Bureau (IHB) would like to inform the world hydrographic community that the IHR will continue from now on as a digital publication. This digital collection of relevant technical articles as it is today, will be made available free of charge from the International Hydrographic Review section in the IHO website, with up to two peer-reviewed editions a year (April and October), depending on the number of papers and articles submitted and accepted. A printed annual compendium of articles will be made available, free of charge, to IHO Member States only.

The above mentioned provisions will begin in 2009.

- 2. To facilitate the transition to the new IHR format, the IHB Directing Committee, with the help of the IHR Editor, will review and update the existing Technical Instructions for Contributors in order to comply with the new requirements proper to the digital publications. These instructions and procedures will be posted in the IHO web site under the IHR section in the IHO website by 01 December 2008 at the latest.
- 3. The International Hydrographic Review as always remains heavily dependent upon the IHO Member States and other hydrographic organizations and bodies providing suitable articles. During this transitional period the IHB Directing Committee kindly invites all contributors to keep in touch with the IHB and to provide their contributions in digital form (text: WORD document. Illustrations: in one of the following formats TIFF,, GIF, JPEG or EPS) directly to :

International Hydrographic Bureau International Hydrographic Review e-mail: ihreview@ihb.mc

Reprints

Reprints of all articles (including articles published in earlier issues) can be ordered. For more information, please contact Ans Platenkamp: ans.platenkamp@reedbusiness.nl.

Copyright

Any permission needed to incorporate material published elsewhere is the responsibility of the authors and it will be assumed that such permission has been maintained. The publisher is not responsible for statements made in the articles or advertisements nor is responsible for typing or converting errors. No material may be reproduced in whole or in part without written permission of Reed Business by.

Copyright © 2008 Reed Business by The Netherlands All rights reserved ISSN 0020-6946