

-THE- SEAHORSE

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THE HYDROGRAPHIC SOCIETY OF AMERICA

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October 2000

U.S. Hydro 2001 Conference Update

The pace of preparations for the THSOA-sponsored U.S. Hydrographic Conference 2001 is beginning to pick up.

As most of you know, U.S. HYDRO 2001, as it is otherwise known, will be held in Norfolk, Virginia at the Sheraton Norfolk Waterside Hotel from May 21-24, 2001 and continues the tradition of North American hydrographic survey conferences that alternate between the United States and Canada.

It follows on the highly successful U.S. HYDRO' 99 Conference in Mobile, Alabama which hosted more than 650 hydrographers from 33 countries and 80 exhibitors and last year's Canadian Hydrographic Conference in Montreal, Quebec.

The technical program is expected to deal with a wide range of topics including multibeam sonar, side scan sonar, GPS applications, tides and water levels, deep water surveying, new technology (AUV's, UUV's, LIDAR), data management, electronic charts, standards and training.

The Call for Papers was distributed to numerous publications and has appeared in "Underwater Magazine" and the Internet-based "OCEANSP@CE" Newsletter. Look for additional ads in upcoming issues of "Sea Technology" and "Hydro

International."

Several abstracts have already been received. Of particular interest are those for papers on data thinning, improved bottom tracking in dense aquatic vegetation, DGPS usage in inland waterways and recent experiences with lidar bathymetry.

You are invited to submit a one-page abstract for a paper that will be orally presented over the three days of the meetings. The abstract should summarize the objectives, methodology, results and conclusions of your work and be submitted by e-mail to the Program Chair, Jerry Mills Jerry.Mills@noaa.gov, by 1 December 2000.

Authors will be notified of the receipt of the abstract. Notification of acceptance will be sent by 1 January 2001. Final manuscripts must be submitted by 1 March 2001. Proceedings will be published on a CD-ROM.

In addition to the technical presentations, Pat Sanders of Coastal Oceanographics, Inc. will conduct a one day workshop on Volume Computations for dredging operations. The specific date for the workshop will be determined after the technical program has been set.

Additional information on U.S. HYDRO 2001 and The Hydrographic Society of America can be found on our web site at www.thsoa.org. ☼

THSOA Board Meets

The THSOA/THS(U.S.) Board of Directors met in Silver Spring, Maryland on June 9, 2000.

Due to the relevant nature of the items discussed, the Minutes of that meeting are reproduced here to keep members informed of the changes to THSOA.

Item 2 should be of particular interest to those THSOA members who are also members of The Hydrographic Society. In essence, all officers of the U.S. Branch of THS, except for Karl Kieninger, resigned their position at the June meeting. (For an explanation of this action see the lead article in the January 2000 issue of The Seahorse.)

Karl sent a letter to each THS (U.S.) member soliciting volunteers to serve as an officer. As of the date of this publication, there have been no positive responses.

* * *

"The meeting was called to order by President Pat Sanders at 11:05 AM. Board members in attendance included Treasurer Karl Kieninger, Secretary Jerry Mills, Trustees Jim Cain, Jeff Lillycrop, Ray Williams, Chic Ransone and the non-voting Executive Secretary, Jack Wallace. The following items were discussed:

1. The Hydrographic Society (THS) Council Meeting (May 2000)

Karl Kieninger reported on the THS Council Meeting which occurred in May.

There seems to be generally positive support toward a "controlled devolution of THS," that is shifting power to national organizations. To that end, Council took the following steps. Council endorsed the elimination of Ordinary Members of Council. Amendment changes to the Articles of Association are to be put to the members at the next Annual General Meeting (AGM). Council agreed that those currently designated International Members be encouraged to transfer to a national Branch of their choice or, by default, be allocated to the UK Branch. Council endorsed the principle of a "virtual office" in place of the THS Office at the University of East London. Council agreed that collections of dues and other matters related to members should be done at a Branch level. The General Manager of THS has agreed to retire. A new job description will be written. In other actions, Council agreed the THS Journal would cease publication in its current form. At least two more issues of the Journal will be published. This will require some action on the part of THS to either refund a portion of the subscription fee or provide a substitute publication(s) or other service.

2 U.S. Branch Status

Following Karl's remarks, there was a discussion about "delinking" THSOA from THS and the U.S. Branch. While Council appears to acknowledge the merits of a more decentralized THS, most members of the Board of Directors believe that the Council approved actions above are insufficient to justify continued direct affiliation with THS. Furthermore, there appears to be continued disagreement with expenditure of funds for the MARIS-managed THS Web site and little improvement in communication between THS leadership and the U.S. Branch. As a result, all members of the Board of Directors, except Karl Kieninger, resigned their positions for the U.S. Branch of THS. (Jack Wallace also resigned from his position of Executive Secretary of the U.S. Branch.) Karl agreed to poll the paid-up individual (57) and corporate (14) members of the U.S. Branch to ascertain their interest in retaining the U.S. Branch and in serving on its Board of Directors. Following the receipt of this information, appropriate action will be taken.

This was followed by a discussion on the potential formation of a Federation of National Hydrographic societies. It is envisioned that this would allow for complete

independence of each national organization with no financial obligations to an international headquarter entity. To accomplish this some type of forum needs to be established for the exchange of ideas and recent findings related to the hydrographic profession. It was suggested that one such forum might be FIG (International Federation of Surveyors) Commission IV (Hydrography). Jerry Mills was assigned to do further research on this matter and report back to the Board.

The continued use of the name "The Hydrographic Society of America" was discussed. While there may be some merit in changing the name to highlight the "delinkage" with THS, it was decided that such action would be more disruptive and potentially confusing to members. THSOA will be retained for the foreseeable future.

3. Publications for THSOA Members

Jack Wallace has been exploring potential new publications from GITC for THSOA members. He distributed a question on this year's membership renewal form enquiring about member interest in receiving Hydro International (HI). 40% of the responding members indicated that they already receive the magazine and most of the others expressed interest in receiving it. The Board authorized Jack to negotiate with the publisher for a discount rate for the entire THSOA membership for one year, not to exceed \$5000. The impact of this action on membership dues will be determined at a later date by the Board. GITC will also be publishing the first issue of the new International Hydrographic Review this summer and Jack will investigate potential cost savings of this publication for THSOA members.

4. U.S. Hydro 2001 Conference Update

Karl Kieninger provided a general overview on the various areas of preparation for the conference. Jerry Mills identified the members of the Technical Committee and recruited Jim Cain to join as well. He also indicated potential interest in participation in the conference by representatives of the Global Ocean Mapping Project (GOMaP) whose interests lie in multibeam and side scan mapping of all ocean areas, including the use of AUV's. Ray Williams discussed the Wednesday night social event at Nauticus and reviewed the food and beverage options. Pat Sanders agreed to take on the responsibility of coordinating the social

activities in the hotel including the Tuesday night beer social. Chic Ransone reported on the beer mug options for the beer social and the Board indicated a preference for a smaller mug. Pat Sanders/John Marinuzzi will update the Website in the near future with more detailed information about the conference.

5. New Business:

a. MTS "Umbrella" Conference — In February of this year Pat Sanders received a letter from the Marine Technology Society proposing the combination of a number of related conferences into one "Umbrella Conference" that covered a wide range of marine areas. This proposal was discussed by the Board but it was decided that combining the Hydro Conference with a larger conference would lessen the interaction between the attendees and eliminate the "comradery" usually associated with past Hydro Conferences. This is consistent with the Board's reaction to a similar proposal from Oceanology International for their conference in Miami next year.

THSOA OFFICERS

President	Pat Sanders
Secretary	Jerry Mills
Treasurer	Karl Kieninger
Trustees	Jim Cain Chic Ransone Ray Williams Jeff Lillycrop



Executive Secretary	Jack Wallace
Editor "The Seahorse"	vacant
e-mail: mail@thsoa.com	

— CHAPTERS —

GULF COAST

President	Al Rougeau
Vice President	Jeff Lillycrop
Secretary	Arthur Najjar
Treasurer	Shirley Dorsey
At Large	Richard Byrd
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Chairperson	Peter Trabant
Vice Chairman	Brian Morr
Secretary	Dale Lipps
Treasurer	Alister Helme
Membership Sec.	Richard Prothero
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President	Joanna Hawkins
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Secretary	Bob Glaeser
Treasurer	Mike Cristler

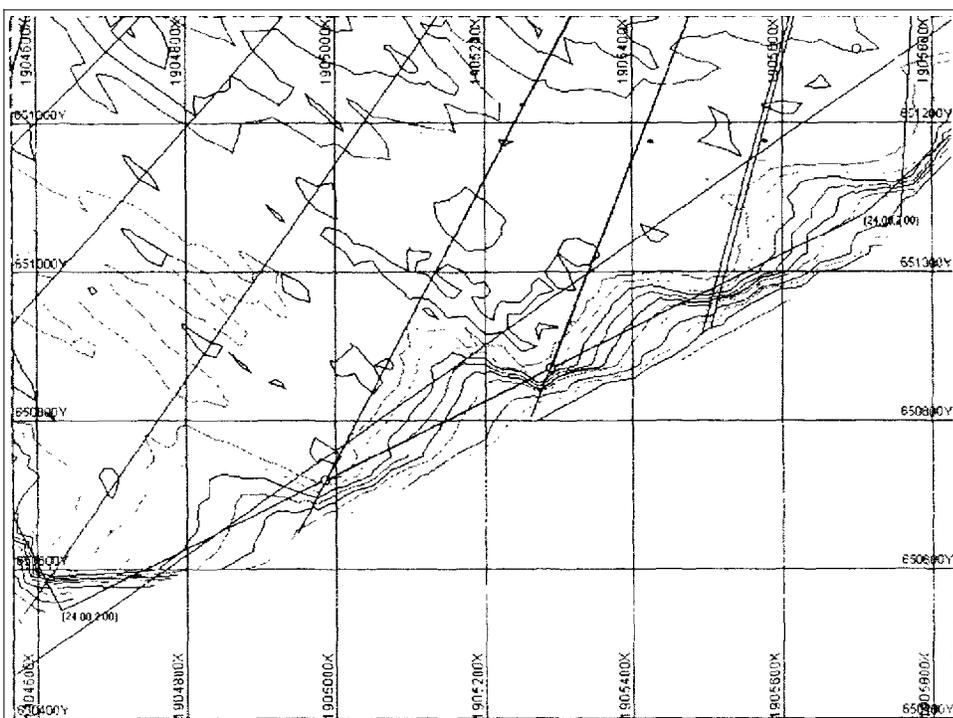
THSOA Tel: (301) 460-4768
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b. ACSM Hydro Certification Board Sponsorship — In response to Pat Sander's request for suggestions to spend some of the profit from the last conference, it was suggested that an offer be made to provide financial assistance to the ACSM Hydrographer Certification Board. This topic had actually been discussed at the AGM in December and an inquiry was made to ACSM but no response was received. Jerry Mills will follow up on this item and report back to the Board. Since ACSM is the focal point for U.S. interaction with FIG, such a sponsorship may be a logical relationship if the Board decides to use FIG as the forum for communication with other national hydrographic societies as suggested in item 2 above.

The meeting was adjourned at 1:40 PM."

Since the June 9 meeting, THSOA has severed its formal affiliation with The Hydrographic Society in the UK. The finances and administration of THSOA and THS (US Branch) have been separated. At membership renewal time (Corporate in January, Individuals in April) members of THS will be invoiced by Karl Kieninger hydromarine@compuserve.com, the sole remaining officer of the U.S. Branch of THS. For further information on the impact of this decision, contact one of the THSOA Officers listed elsewhere in this issue of Seahorse.

SPEED BUMP © DAVE COVERLY



Problems Encountered with Determining Volumes Using Surface Models with Single Beam Data Run Non-Parallel to Slopes

by Pat Sanders

While investigating a problem with volume quantities with a client, we recently encountered a situation that was very interesting and left us stumped.

The client was conducting a single beam survey. Their survey lines were run at an angle to the far bank. They then ran the TIN MODEL program (HYPACK® MAX) to calculate volume quantities. The quantities were well in excess of what they should have been. After an investigation, we finally stumbled onto the cause of the problem.

Take a look at the contours that result from tinning the data used in the TIN MODEL. Between every set of illness you can notice a "scallop" effect where the shallow bottom "bulges" out. The cause of this bulge is explained below.

The end of each survey line is much

shoaler than the rest of the line. Based on the connection distance entered when creating the TIN, the TIN MODEL program uses the last sounding at the end of one line (usually a very shoal sounding) and creates multiple triangles to depths on the adjacent line. The TIN MODEL program then linearly interpolates depths along each side of the each triangle.

Since several deep points on one line use the same shallow depth on an adjacent line as a side of a triangle, numerous false depths are interpolated along every triangle side. This creates a "scallop" effect in the contours which generates a lot of extra volume quantity that does not exist.

The only way to avoid it is to either run lines perpendicular to the bank or to use multibeam data that covers the area in question.

Announcements

Jack, L. Wallace
Executive Secretary

Member Number

Your member number is printed on the top line, left side, of your mailing

label. Member number is required if you want to subscribe to The International Hydrographic Review and receive the 15% THSOA discount.

E-mail Address

In order to reduce the amount of time expended by our volunteer staff in mailing renewal notices, election nominations and ballots, and announcements of general meetings we request that all members having e-mail provide us their address. E-mail addresses are private and will not be provided to outside interests.

We will also use the "bcc" option so only the recipient's e-mail address is shown. Members residing outside the United States must have an e-mail address.

Your e-mail address of record is printed on the top line, right side of your mailing label. Please check it and e-mail us at mail@thsoa.org if a correction is necessary.

Individual Member Renewal Date

At the 1998 Annual General Meeting it was decided to change the renewal date for Individual Members from April 1, to January 1 so that all membership renewals occur at the same time. The 3-month difference is an artifact of the UK Society.

Corporate Renewals have always been January 1. It was also decided to raise the Individual dues from \$15 to \$20. As a way of compensating for only nine months in 2000, the renewal notices will reflect a \$5 credit for those whose payment is received by March 1, 2001. THSOA Renewal notices will be mailed in mid-December.

Web Page Update

Since the last issue of Seahorse we have made numerous changes to the web-site.

Check out the Links page under the Links and References button. The logo with the red bands on the sounding pole was brought back from the late 1980's.

If you think we should come up with a new logo for THSOA, e-mail your thoughts to the President at pres@thsoa.org.

The References page should be completed shortly. ☼

Internet Enabled Sonar Data

Members may be interested in the following article which appeared in Issue 254 of the free internet ocean technology newsletter "Oceansp@ce" this summer (To subscribe e-mail Spearhead Online Directories at Oceansp@ce@speqrheqd.co.uk)

* * *

Mountain View, California USA — Chesapeake Technology Inc. announced the release of a new product, XTFWiz, which converts XTF sonar data to compact HTML pages suitable for web publishing on local intranets or on the world wide web XTFWiz provides thumbnails and full jpeg images of side-scan data, graphs depicting speed, heading, fish height, course, a sonar coverage plot, and useful file and channel information.

XTFWiz works with any vendor's XTF and supports both Netscape and Internet Explorer browsers. A complete description, samples and a free product demo are available at www.chesapeaketech.com. ☼

CHAPTER NEWS

Northwest Chapter Coming Together

by Joanna Hawkins

The Northwest Chapter of the Hydrographic Society, continuing to work through some unique challenges, is evolving into a cohesive group with an expanding membership base.

The Chapter, established on February 14, 2000, has held four meetings, alternating meeting locations between Portland and Seattle. Since the Chapter's establishment, there have been a few changes, including the establish-

ment of board members, increasing membership, and adjustment of meeting schedules.

Members of the board include myself (of David Evans and Associates, Inc.) as President, Dennis Hill (NOAA-Pacific Hydro Branch) as Vice-President, Mike Cristler (USACE-Portland District) as Treasurer, and newly appointed Bob Glaeser (Minister & Glaeser Surveying, Inc.) as Secretary.

The position of Secretary was formerly held by Ken Kleczynski. Ken retired in May of this year from the USACE-Portland District. Although still an active member of THSOA-NW, Ken felt the position of secretary could best be served by someone still active in the hydrographic community. We will miss his knowledge and sense of humor on the board, but still expect to see him wrestling for that raffle prize!

Since its establishment, membership has grown from 13 to 21 active members, with continuous efforts being made to increase this number. We are in the process of compiling a list of possible members, including previous THSOA members in the area and other names submitted by active members. A letter introducing and describing THSOA-NW will be sent to all those on the list to encourage membership.

In addition to this letter, a THSOA-NW website is currently under construction. Dennis Hill has volunteered to create the site, which will include an introduction to THSOA — NW, description of its goals, previous meeting minutes, a list of current members with links to their web sites, a list of upcoming meeting schedules and speakers, and links to relevant resource information.

Originally, meetings were scheduled for the second Friday of every other month, with the location alternating between Portland and Seattle.

Friday nights turned out to be rather awkward, finding adequate meeting spaces was quite difficult, and many members had other obligations, which took precedence over the THSOA-NW meeting.

To work around these conflicts, meetings have been rescheduled for the second Wednesday of every other month.

We hope this change will allow more active and potential members to participate with the Chapter, and join the festivities.

The distance between the two cities has prohibited some members from attending all the meetings, as may the change of schedule.

THSOA-NW members are currently working on the best way to address this issue, so all members can benefit from the presentations at every meeting.

Previous presentations have included a discussion on the benefits of analytical hill-shading verses contours, a presentation on Electronic Chart Navigation systems, and the methods and technology used to establish the Columbia River Datum.

Triton Elics International will present a workshop on the Isis data acquisition system at the next meeting on Wednesday, December 13th in Seattle. Anyone interested in any of the previous topics, speaking or presenting at a meeting should contact Joanna Hawkins jlp@deainc.com or Dennis Hill Dennis.Hill@noaa.gov.

As our membership base grows, and our Chapter community establishes itself, we look forward to continuing to be a mutually beneficial group, where active members of the hydrographic community can get together, socialize, share knowledge, and enjoy each other's company.

In the meantime, we are enjoying watching the Chapter successfully grow and progress from the original membership of 13. ☼

Letter from the President

Pat Sanders
President, THSOA

It is dangerous to the overall health of any organization when the same people are performing the majority of the work, year-after-year. For THSOA to be self-sustaining, there needs to be a continuous supply of people who will volunteer their time and efforts. The new ideas and enthusiasm these people bring is the life-blood of the organization. THSOA recently sent out a notice requesting nominations for officers and trustees. In the past, THSOA elections have resembled votes in Eastern Europe in the 60's, with one candidate for each post. I hope that each and every one of you will consider volunteering to run for a position as officer or trustee.

U.S. Hydro 2001 Conference: There are updates elsewhere in this newsletter concerning the details of the conference, so I won't re-hash those. One of our main goals in presenting the hydrographic conference is to minimize the costs to attendees and exhibitors while maximizing the exchange of information between hydrographers. [I continue to get deluged with different conference brochures where exhibit costs run over \$3,000 for an 8' x 8' booth.] We have also negotiated with the hotel to insure that all attendees are charged the US Govt. Per Diem rate for their room. [It's always a kick in the pants. when the attendees from private companies are paying \$175/night while the government folks are paying \$88/night.] Finally, for those of you who can remember the night at the *USS Alabama* at our 1999 conference, the night we have planned at *Nauticus* for the 2001 conference should be just as great!

International Links: The Hydrographic Society (international organization, based out of the UK) continues

to devolve and no longer seems to be a viable organization. If you have read the summary of our last board meeting in this newsletter [provided by Jerry Mills], you will know that most of the officers and trustees of the U.S. Branch of THS have resigned and there is little support for the continuance of the organization. The national societies of other nations seem to be following suit.

Thinking out loud: What I would like to see evolve is an "unofficial" federation between the different national agencies. Any member of THSOA would be able to access information on the web sites of the other societies without charge (and vice versa). Each year, the rights to hold a World Hydrographic Conference would rotate between the different agencies. About every six years, the U.S. Hydro Conference would become the World Hydrographic Conference. These small steps would assist hydrographers around the world in keeping up to date with techniques and methods used in other areas of the world.

Updated Multibeam Standards: Bill Bergen, formerly of USACE-HQ and now semi-retired has been working to update the USACE Hydrographic Surveying Manual EM 1110-2-1003. He was nice enough to send me a Draft of Chapter 11, which deals with the acquisition, calibration, quality control and quality assurance of multibeam survey systems. More and more USACE districts begin to use multibeam for determining payment quantities on dredging projects. This document is going to answer a lot of questions.

Those of you who would like to read the draft copy can find it at www.saj.usace.army.mil/conops then select "Draft EM 1110-2-1003" on the left sidebar. Each chapter is a separate MSWord file. Please note a couple chapters are still partially complete

and other areas are still rough — typos, etc. have not been edited out.

If you have review comments, please forward them to Bill Bergen at the e-mail address given on the web site

Best regards,
PAT SANDERS
pres@thsoa.org ✨

Shallow Survey 2001 Conference

by Jerry Mills

Secretary, THSOA

The NOAA/University of New Hampshire Joint Hydrographic Center (JHC) will host Shallow Survey 2001 in Portsmouth, New Hampshire on September 23 - 27, 2001.

This is an international conference dealing specifically with high resolution surveys in shallow water and follows the first conference held in Sydney, Australia last year. The Royal Australian Navy (RAN) hosted that conference and started the concept of a "common data set"

In the case of Sydney Harbor, this data set consisted of orthophotos, digital charts, and a series of seafloor sonar data sets collected by several groups. The "common data set" for this conference will be collected in Portsmouth Harbor in early November and will be available for distribution in December or January.

Manufacturers and survey companies are encouraged to bring their systems to the test area and will be supported by the JHC as resources are available. The conference will focus on various approaches to high-density data processing, digital mosaicing, data fusion, visualization and data management.

Many government agencies, manufacturers and survey companies are expected to participate and registration will be limited to 200 partici-

pants.

To express an interest in attending the conference or to obtain more information, visit the conference website at <http://www.ccom.unh.edu/ShallowWeb/default.htm> or contact Deborah Androchuk via e-mail at deborah.androchuk@unh.edu.

In addition, the JHC will host the 2001 US/Canada Shallow Water Multibeam Course which has been presented over 20 times in various locations around the world. The date for this course has not yet been determined but will be announced in early 2001. ✨

NOAA Hydrographic Survey Contract Update

In June, NOAA selected Racal Pelagos, Inc. of San Diego, California to provide hydrographic surveying services in the navigable waters of Alaska. An indefinite-delivery contract, it will run four years, with an estimated value of \$10 million each year.

This contract is the first for NOAA that requires wide area coverage of some areas with an airborne lidar bathymeter. The contract and initial work order for Harris Bay and approaches to Aialik Bay was awarded on September 7, 2000.

Terra Surveys LLC of Palmer, Alaska, has recently completed four surveys in the vicinity of Ketchikan, Alaska as part of a three year indefinite-delivery contract with NOAA.

David Evans and Associates, Inc. of Portland, Oregon, is currently surveying in El Segundo, California, and in the approaches to Los Angeles and Long Beach.

Other companies recently completing hydrographic survey work orders for NOAA are Ocean Surveys, Inc. of Old Saybrook, Connecticut (approaches to Georgetown, South

Carolina), and SAIC of Newport, Rhode Island (Salem Harbor, Massachusetts and Portland, Maine).

As of late October 2000, Congress has not appropriated FY 2001 funds for NOAA. Until such appropriations are approved, NOAA cannot proceed with awarding any new contracts or task orders. However, amendments to previously issued task orders are being issued to enable contractors to complete item investigations on the surveys begun in FY2000.

Since Congress began providing dedicated funding for contract hydrographic surveys in 1998, NOAA has awarded over \$45 million in contracts to seven different companies and their numerous subcontractors.

In FY2001 NOAA intends to issue task orders under existing contracts for surveying in Delaware Bay (SAIC), Pamlico Sound (Ocean Surveys), Port Hueneme (David Evans & Associates), Upper Cook Inlet (Terra Surveys LLC), Kasaam Bay (Racal Pelagos), and Southwestern Alaska Peninsula (Racal Pelagos).

It is anticipated that a new solicitation for hydrographic surveying services in the Gulf of Mexico will be published in the "Commerce Business Daily" in the next few months, if sufficient funding is appropriated.

For additional information, contact C. Brian Greenawalt via e-mail at Brian.Greenawalt@noaa.gov or Jeffrey Ferguson at Jeffrey.Ferguson@noaa.gov. ✨

THSOA Annual General Meeting

by Jerry Mills

Secretary, THSOA

THSOA will hold its 2000 Annual General Meeting (AGM) on Wednesday, January 10, 2001 at 4:30 PM at the Fairmont Hotel in New Orleans, Louisiana.

This meeting will occur during HYPACK 2001 which runs from January 9 through 11, 2001.

This is a change in venue from the usual AGM meeting site in the Washington, D.C. area. As a result, it is hoped that different members will have the opportunity to participate in an AGM particularly those from the Gulf Coast and Houston chapters.

For more information contact one of the Board members. Otherwise, we'll see you in New Orleans. ☼

NOAA Sponsors Course For Hydrographers

"TIDES AND WATER LEVELS FOR HYDROGRAPHERS, A SHORT OVERVIEW COURSE," 11-15 December 2000, Norfolk, Virginia

Presented by the Cooperative Institute for Coastal Physical Oceanography: a collaboration of the Center for Coastal Physical Oceanography at Old Dominion University and the National Ocean Service (NOAA). The lead instructor is Mr. Stephen Gill, NOS.

Purpose of the course: The purpose of this course is to educate participants in all aspects of operational tides and water levels support relevant to surveying and mapping. With the information learned from this course the participant will be able to better understand and satisfy the survey specifications and deliverables for vertical control.

Intended audience: This course is valuable for managers and technical staff of private and public agencies involved in hydrographic surveying to support nautical charting. This includes companies seeking federal contracts and state agencies with local charting projects.

Cost of the course: Includes all notes and materials, several meals and an evening banquet on the waterfront.

For more information contact the Course Coordinator, Mr. Richard Moody at moody@ccpo.edu or 757-683-4685.

Updated course information will be posted at www.ccpo.edu/~atkinson/cicpo/tidcourse/index.html. ☼

NOS Specifications and Deliverables 2000

In June NOAA's Office of Coast Survey produced an updated version of the NOS Hydrographic Surveys Specifications and Deliverables publication.

This document contains the requirements for hydrographic surveys to be undertaken either by NOAA field units or by organizations under contract to the Director, Office of Coast Survey. The effective date of the document was July 1, 2000 which superceded the April 23, 1999 edition.

The new document includes several changes in the deliverables required for each survey including a streamlined Descriptive Report and a new requirement for a sun-illuminated Digital Terrain Model (DTM).

Other changes deal with Danger to Navigation reporting, data coverage diagrams and tides. The new edition will be available in PDF format by November 1, 2000 at the following internet web site: <http://chartmaker.ncd.noaa.gov/hsd/hsd-0.html>.

Any questions can be directed to Jerry Mills at (301) 713-2780, Ext.

116 or via e-mail at Jerry.Mills@noaa.gov. ☼

THSOA Membership Eligibility, Benefits

Membership in The Hydrographic Society of America (THSOA) is open to any individual or organization with an interest in surveying afloat. No formal qualifications are required. Local Chapters have been formed in Houston, Texas, Bay St. Louis, Mississippi, and the Pacific Northwest (Portland and Seattle).

All members receive the Seahorse Newsletter, a subscription to *Hydro International* magazine (HI), the annual HI SourceBook, and a discount on registration at THSOA-sponsored events.

Additional membership application forms may be downloaded at the THSOA web site at www.thsoa.org.

In addition, Corporate members receive a free hot-link and free posting of recruitment notices on THSOA's web site www.thsoa.org, as well as discounts on group registration and exhibit space rental at THSOA events.

Membership in THSOA is effective from January 1 of each year. Dues are not prorated; however, members joining in the middle of the year receive all back issues of the Seahorse for that year. ☼



The Hydrographic Society of America

MEMBERSHIP APPLICATION

(Qualifications for membership and benefits are explained on Page 7 of this Newsletter. This application may also be downloaded on-line at www.thsoa.org)

I wish to make application for membership in the Hydrographic Society of America. I agree to abide by the THSOA Articles of Association and to further THSOA's aims and objectives. I declare that the information below is accurate to the best of my knowledge and belief. I agree that the decision of THSOA Executive in regard to this application is final.

Title First Name Initial Last Name

Address

City State ZIP Country

Employer

Phone E-mail Address

If student, name of Institution

Signature

THSOA Annual Dues (Check Appropriate Box)

- \$20 INDIVIDUAL** (Houston and Northwest Chapters add \$10 for local dues)
 \$10 RETIRED (no longer employed in sea surveying profession)
 \$5 STUDENT (full-time undergraduate)
 \$100 CORPORATE

[Payment must be in U.S. dollars by international draft, postal money order or by a check drawn on a U.S. bank. U.S. dollars on a Canadian bank are acceptable.]

Credit card users please complete the following.-

- Master Card** **Visa** **American Express**

Name on credit card: _____

Card No.: _____ Exp.: ____/____

Billing Address: _____

Mail to: **The Hydrographic Society of America**
P.O. Box 732
Rockville, MD 20848-0732

The Hydrographic Society of America
P.O. Box 732
Rockville, MD 20848-0732

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