

# - THE - SEAHORSE

*A Newsletter Published by*

## THE HYDROGRAPHIC SOCIETY OF AMERICA

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November 2002

### U.S. HYDRO 2003 Program Taking Shape

by Jerry Mills

It's hard to believe that the U.S. HYDRO 2003 conference is less than five months away (March 24-27, 2003 in Biloxi, Mississippi)! That should provide ample time for the many hydrographers and vendors to catch their breath after the whirlwind of conferences this past spring in Monaco, Washington, D.C. and Toronto and the recently completed German Hydrographic Conference in Kiel.

Detailed information and the conference registration form can be found as a link off the THSOA website at <http://thsoa.org/>.

Arrangements for the conference have been progressing very well, especially in the past few weeks. There has been an overwhelming response to the Call for Papers; over 50 abstracts have been received as of press time. In addition, the workshop program has been greatly expanded compared to previous conferences. Ten workshops will be offered covering a wide variety of topics: multibeam sonar, side scan sonar, motion sensing, RTK GPS, geodesy, tides, dredging volume computations, S-57 and an Overview of the 2002 COE Hydrographic Surveying Manual. All workshops will be free of charge to conference registrants except the two half-day workshops (motion sensing and S-57) that will be given on Monday, March

24. For these there will be a nominal charge of \$25 each.

Pre-registration on the conference registration form is strongly advised for the Monday workshops as the number of seats are limited. Signups for the other workshops will take place at the conference.

The venue for the conference, the Beau Rivage Resort and Casino (<http://www.beaurivage.com/>), is the premier hotel along the Mississippi Gulf coast. In addition to top entertainers (Kenny Loggins, Michael Bolton and Gregory Hines are performing in November 2002), the "Beau" has several restaurants and the oldest microbrewery in Mississippi.

A limited number of rooms have

been reserved at the special conference rate of \$76 per night for U.S. government employees and \$89 per night for all others, excluding state and local taxes. This rate will be applicable until the room block is sold out or until February 21, 2003, whichever comes first.

Please note that even though the new FY 2003 authorized government per diem rate is \$61, Federal Travel Regulation 301-74.7 allows reimbursement of up to 25 percent greater than the applicable locality lodging portion of the per diem rate. Therefore, a travel approving official may authorize an employee to be reimbursed the full \$76 (\$61 plus 25%) for lodging expenses.

For reservations call 888-383-7037 and mention U.S. Hydro 2003.

THSOA corporate members are strongly encouraged to reserve their booths for the commercial exhibit over the next few weeks. Reservations have been somewhat slow, perhaps due to the slowdown in the economy, but we really need your support to make the conference a success.

The exhibit hall will be open from March 25 through March 27. For more information or reservations contact Chic Ransone at 410-349-3940 ([chicran@aol.com](mailto:chicran@aol.com)) or Art Kleiner at 337-261-0660 ([Art.Kleiner@cctech.nol.com](mailto:Art.Kleiner@cctech.nol.com)). →

#### ANNOUNCEMENT



Nominations are being accepted for the 2002 election of the following THSOA positions: President, Secretary and two Trustees.

If you are interested in nominating someone or running yourself please forward that information

**by November 20, 2002**

via e-mail to

**[mail@thsoa.org](mailto:mail@thsoa.org)**

or mail to the following address

**THSOA**

**P.O. Box 732**

**Rockville, MD 20848**

One last thought for your consideration. The average temperature in Washington, D.C. or Seattle or Norfolk in late March is in the upper 40's. By then you will probably be suffering from a severe case of the winter blahs! Meanwhile, the average high temperature in Biloxi is 72 balmy degrees with overnight lows in the mid-50's! Make your reservations today. ✨

## 2001/2002 AGM Report

by Jerry Mills

The 2001/2002 Annual General Meeting (AGM) of The Hydrographic Society of America (THSOA) was held on Thursday, May 30 at the Westin Harbour Castle Hotel in Toronto, Canada. There were nearly 20 members in attendance.

**I. Call to Order**—The meeting was called to order by Mr. Jerry Mills, Secretary of THSOA at 4:03 PM.

**II. Approval of the Minutes from the 2000 AGM**—Copies of the Minutes from the 2000 AGM were distributed to the membership for their review. After no response to a call for questions, a motion was made to accept the Minutes of the 2000 AGM and seconded. The motion was unanimously approved via voice vote.

**III. Treasurer's Report**—The Treasurer's Report was distributed to the membership at the meeting and presented by Mr. Karl Kieninger. Although final figures for 2001 were not available, the estimated ending net worth of THSOA was slightly over \$91,000 which represents an increase of over \$8,000 from 2000. In addition, the THSOA Board of Directors approved the continued annual donation of \$5,000 to the American Congress on Surveying and Mapping to assist in administering the ACSM Hydrographer Certification Program. After review of the report, a motion was made and seconded to accept the Treasurer's Report and approved unanimously via a voice vote.

**IV. Old Business**—Past Year's Activities:

**A. International Federation of Hydrographic Societies.** Karl Kieninger and Jerry Mills discussed two different concepts of an International Federation of Hydrographic Societies. Karl reported that The Hydrographic Society based in the U.K. was eliminating individual branches and a strong central office and establishing an International Federation of Hydrographic Societies (IFS) whose aim was to provide an international framework to support the national hydrographic societies. The IFS will be governed by an executive committee comprised of one representative from each member society and each such representative will have one vote on all matters of making decisions.

The founding member organizations are: Australasian Hydrographic Society (AHB), Hydrographic Society Benelux (HRB), Hydrographic Society Denmark (HSD) and The Hydrographic Society of the UK (THSUK). The membership fee of the IFS will be £10 per person (slightly more than \$15) for all services including delivery of The Hydrographic Journal to the

individual members of the IFS constituent member organizations. This fee is a dramatic reduction of the previous THS membership fee of £48 (nearly \$75)!

The IFS representatives will meet during the Hydro 2002 conference in Kiel, Germany in October to discuss organizational matters including the formal appointment of a Manager for the IFS.

Jerry Mills gave a brief summary of discussions that have taken place within the International Federation of Surveyors (FIG) Commission IV (Hydrography) to determine the possibility of having Commission IV serve as the umbrella organization for international hydrographic societies. This would be more loosely organized than the IFS

### THSOA OFFICERS

President ..... vacant  
 Secretary ..... Jerry Mills  
 Treasurer ..... Karl Kieninger  
 Trustees ..... Tim Griffin  
    Chic Ransone  
    Ray Williams  
    Jeff Lillycrop

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Executive Secretary ..... Jack Wallace  
 Editor "The Seahorse" ..... Tom Slater  
 e-mail to: [mail@thsoa.org](mailto:mail@thsoa.org)

### — CHAPTERS —

#### GULF COAST

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 Vice President ..... Al Rougeau  
 Secretary ..... Richard Byrd  
 Treasurer ..... Shirley Dorsey  
 At Large ..... Gail Smith  
 At Large ..... John Iwachiw

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 Vice Chairman ..... Steve Browne  
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 Membership & Student  
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 At Large ..... Andy Bogle  
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 Vice President (Seattle) ..... Dennis Hill  
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 Treasurer ..... Mike Cristler

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with no Manager, no Hydrographic Journal or Diary and the possibility of much smaller fees (preliminary indications are \$3 per person). It was decided that THSOA did not need to make any decisions on this issue until after the IFS organizational meeting in Kiel.

**B.** The issue of liability insurance to cover hydrographic surveyors on their jobs had been introduced at last year's AGM. Over the past year the Board of Directors received correspondence from Mr. Ron D'Allessandro who has been studying the insurance needs of the hydrographic surveying industry and the cost of that insurance. He has proposed a program that would be a membership service of THSOA. As the Board of Directors was uncertain of the benefits of such a service, Mr. D'Allessandro was invited to write an article for the next edition of the Seahorse (*Ed. note—see the article elsewhere in this edition of the Seahorse*) and to solicit responses from THSOA's corporate members.

**C.** Jack Wallace reported on the conversion of various manuals and past THSOA newsletters to PDF format and their subsequent posting onto the THSOA website. In addition, the U.S. Hydro 2001 Proceedings were translated into Spanish at a minimal cost. It

will be posted on the website when the Spanish version of the index for the HTML code can be obtained.

**D.** There was a brief discussion about U.S. Hydro 2003 which will be held in Biloxi, Mississippi on March 24-27, 2003. Jerry Mills has agreed to take on the position of conference Chairman following the resignation of Admiral Barbor who will be moving to Monaco to assume his new position with the International Hydrographic Organization (IHO). Other committees will be chaired by Karl Kieninger (Finance), Jack Wallace/Pat Sanders (Registration), Chic Ransone/Art Kleiner (Exhibits), Max van Norden (Technical Papers), Ray Williams (Workshops), Michael Smith/Jeff Lillycrop (Hotel Logistics). It was also decided that reduced registration rates for the conference would only apply to members of THSOA or other national hydrographic organizations (Canadian Hydrographic Association, German Hydrographic Society, Hydrographic Society Benelux, Hydrographic Society Denmark, The Australasian Hydrographic Society, The Hydrographic Society of the United Kingdom). Conference sponsors will be given a free booth but no reduced registration rates.

**V. Election of Officers**—Elections were held in November 2001 for Treasurer and two Trustee positions. Only one nominee for each of these positions was received resulting in the nominees being elected by consensus. Karl Kieninger was re-elected to the position of Treasurer and Ray Williams and Chic Ransone were re-elected as Trustees. Rear Admiral Ken Barbor, U.S. Navy (ret.) resigned his position as President, effective May 1, 2002 following his April election to the Directing Committee of the International Hydrographic Organization in Monaco. It was decided to leave this position vacant until the fall elections. Our thanks are offered to

Admiral Barbor for his efforts on behalf of THSOA and best wishes in his new endeavor.

Current officers of THSOA are as follows:

President—Vacant  
 Treasurer—Karl Kieninger thru 2003  
 Secretary—Jerry Mills thru 2002  
 Trustee—Jeff Lillycrop thru 2002  
 Trustee—Ray Williams thru 2003  
 Trustee—Chic Ransone thru 2003  
 Trustee—Tim Griffin thru 2002

## VI. New Business

**A.** The question was raised about the availability of undergraduate programs in hydrography at either the University of New Hampshire (UNH) or the University of Southern Mississippi (USM). Andy Armstrong, Director of UNH's Joint Hydrographic Center replied that such a program is not yet available but is a long-term goal along with the possibility of a two-year Associate's Degree. A spokesman for USM stated that an undergraduate degree program in hydrography is not currently available.

**VII. Motion to Adjourn**—There being no other business to discuss, a motion was made to adjourn and seconded. The motion was approved unanimously via voice vote and the 2001/ 2002 AGM was concluded at approximately 5 PM. ☼

– Humor from the Internet –

HOW ENGINEERS DO IT...

Engineers do it with precision.  
 Electrical engineers are shocked when they do it.  
 Electrical engineers do it on an impulse.  
 Electrical engineers do it with large capacities.  
 Electrical engineers do it with more frequency and less resistance.  
 Electrical engineers do it with more power and at higher frequency.  
 Mechanical engineers do it with stress and strain.  
 Mechanical engineers do it with less energy and greater efficiency.  
 Chemical Engineers do it in fluidized beds.  
 City planners do it with their eyes closed. ☼

### IHO Journal Available

"The International Hydrographic Review," the official journal of the International Hydrographic Organisation, is now available for \$45 to THSOA members (a 47 % savings).

Published three times a year, the journal contains original works on all aspects of hydrography. Visit the web site at [www.gitc.nl](http://www.gitc.nl) for an overview. Contact THSOA at [mail@thsoa.org](mailto:mail@thsoa.org) if you want to subscribe.

## Student Outreach

by Jana DaSilva

As we all know, hydrography is a growing field, which is largely unknown to most students.

The Hydrographic Society of America (THSOA) is planning a "student outreach" to introduce the field of hydrographic surveying to up to ten "Top Juniors" by having them attend the U.S. Hydrographic Conference that will be held in Biloxi, Mississippi from March 24 to 27, 2003.

Attending the conference will provide the students with the opportunity to interact with professionals and vendors both in the exhibit hall and on various on-the-water demonstrations.

This is the first time that the society has done anything like this and we are still in the planning stage. As of this moment, activities will include: 1) an introduction to hydrography and the graduate programs available at the University of Southern Mississippi and the University of New Hampshire; 2) a reception that will allow students to speak with potential employers; 3) an assigned "mentor" for each student for the duration of the conference.

THSOA will waive the conference registration fees for the students. We would like to be able to house the students at the Beau Rivage to pro-

vide them with the full conference experience, however if we are unable to do so, USM has available off-site housing facilities.

The students and their universities will be responsible for the student's transportation to and from the meeting.

While the hydrographic society does not ask exhibitors and/or corporate members to sponsor any of the social events associated with the Hydrographic Conference, we will be sending out letters asking for financial support for the student program. We feel that it is important to introduce students to the field of hydrography to keep our field alive and growing. In addition, we will need volunteers to be mentors for these students.

If you have any questions or comments, please contact Jana DaSilva at 337-268-3234 or [jdasilva@fugrochance.com](mailto:jdasilva@fugrochance.com). ✨

## **CHAPTER NEWS** **Gulf Coast**

by Michael Q. Smith

The Gulf Coast Professional Societies of Stennis Space Center, MS, composed of The Hydrographic Society of America, Gulf Coast Chapter; The Gulf Coast Section of the Marine Technology Society; the American Meteorological Society; and Sigma XI, traveled to Lafayette, LA, in June, for a meeting hosted by Thomas and Jimmy Chance of C&C Technologies and Al Rougeaux of Reson.

Comedian Danny Guidry entertained the audience with some Cajun humor. Guidry will also entertain at the Oceans 2002 conference gala in Biloxi, MS, in October.

Our speakers were Robert Church and Daniel Warren, marine archeologists for C&C Technologies, Inc. Church spoke on Unraveling the Mystery: "The Discovery of the German U-boat, U-166."

In January 2001, C&C Technologies, Inc., conducted a deep-water pipeline survey for BP Exploration and Production and Shell International Exploration & Production, Inc. in the vicinity of the reported location of the [sunk Confederate vessel] ROBERT E. LEE. This survey was conducted using C&C's new HUGIN 3000 AUV (High Precision Untethered Geosurvey and Inspection System), which was under contract to BP.

The HUGIN 3000 is the world's first commercially operated Autonomous Underwater Vehicle (AUV) capable of surveying to 3000 meters water depth.

Analysis of the new data by C&C Marine Archaeologists Church and Warren indicated two areas of wreck debris. One was the wreck of the ROBERT E. LEE, but the other, thought to be the ALCOA PURITAN, did not seem to match the characteristics of a nearly 7,000-ton freighter. The dimensions of the sonar contacts matched almost exactly to a type IX-C German U-boat (like U-166).

Additional HUGIN investigations and the use of an ROV verified the U-166 hypothesis and revealed new insights into last moments of both the U-166 and the ROBERT E. LEE.

Our August Joint Societies meeting was held in the StenniSphere Auditorium at Stennis Space Center, MS, and was hosted by the American Meteorological Society.

Our speaker was Dr. John McCarthy of NRL, Marine Meteorology Division who gave an interesting presentation on microburst wind shear. Dr. McCarthy was prominently featured in a July 2002 Times Picayune (New Orleans newspaper) article that discussed the Kenner Airport crash of 1982, and the research that Dr. McCarthy conducted into wind shear to determine the cause of the crash.

This research has led to many improvements in wind shear prediction and most recently led the FAA to

installing an Integrated Terminal Weather System, or ITWS, which fuses data from the FAA and National Weather Service, as well as equipment such as Doppler and NexRad.

Says Dr. McCarthy, "We thought we could reduce wind shear accidents by 50 or 60 percent. But now, wind shear as a hazard has receded to the background, and we couldn't be more excited."

## Houston

by Andy Bogle

The Houston Chapter has had a successful program year to date and members have enjoyed an interesting variety of speakers and program events. Over the last six months presentation topics have ranged from coral reefs to sperm whales and from digital signal processing to LIDAR mapping.

The Chapter also mourned the loss of one of its own, Colin Weeks, who passed away earlier this year. Colin was one of the founding members of the Houston Chapter and his passing was a sad event for many of us who knew and respected him. Gone but not forgotten.

In March, Phil Fontana from Veritas gave a presentation on the purpose and objectives of the Marine Mammal Task Force (MMTF), which was

formed by the IAGC to take a global and pro-active approach in dealing with issues relating to marine seismic activities and the health and behavior of marine mammals. Phil outlined the current cooperative effort between the IAGC and the Mineral Management Services (MMS) for controlled seismic emissions experiments around sperm whales in the Gulf of Mexico during the summer of 2002. I am assured that is not as bad as it sounds—no pun intended, even though this paragraph now has several—and we look forward to a return engagement to learn what the sperm whales thought of this experiment.

Dr. John Tunnell Jr. of Texas A&M University, an expert in reef organisms and ecology of the southwestern Gulf of Mexico, spoke to the chapter in April on the hydrographic survey course which is now offered at Texas A&M at Corpus Christi.

Following the now established tradition the May meeting was a social event and this year it was held at Sherlock's Pub, a popular west Houston watering hole. Coinciding with the Offshore Technology Conference the event—once referred to as the Mother of All Reunions—is now more respectfully called the Hydrographic Society OTC Social. Together with OTC visitors from places afar, the Houston survey community enjoyed an evening of networking and meeting up with old faces, many of which it was noticed are rapidly getting older!

With hangovers cleared the Chapter settled back to serious matters with a presentation from Dr. Martin Rayson (Quest Geodetic Software Solutions) on the European Galileo system. Martin gave the Chapter a comprehensive overview of Galileo, covering the history of the project, its problems and politics before describing the proposed system architecture and performance. While some in the audience took issue with Martin over the apparent conflict

of interest between Galileo and the American GPS systems, Martin assuaged their criticism by assuring them that while he is British, he was not personally responsible for the project.

Let's face it, presentations from equipment manufacturers can sometimes be dry affairs! It was therefore refreshing to listen to Sonardyne's interesting and informative presentation entitled "SIPS2—Our Experiences, Lessons Learned and Future Applications with Digital Signal Processing (DSP)", which was delivered by Kim Schuetzner of Sonardyne at the July meeting.

The Houston Chapter seems to pride itself in asking the tough questions and this meeting was no exception. Although Kim brought an entire team of Sonardyne executives with her, she held her own and concluded one of the most well attended meetings of the year.

From 3,000' under water to 3,000' above the land, the August presentation by Rob McCarthy of John Chance Land Surveys talked about that company's FliMap LIDAR mapping system. In case you don't know, LIDAR stands for Light Detection And Ranging. FliMap is a technology that uses a fan-shaped laser light beam from a helicopter to accurately produce digital terrain models while simultaneously gathering image data. This is the airborne equivalent to multibeam and sidescan sonar, except it's a little faster.

To round out the year to date, in September the Chapter welcomed Paul Devine of RD Instruments who gave a presentation on the use of doppler instrumentation for enhancing positioning accuracy of seismic streamers and USBL acoustics.

The Houston Chapter of The Hydrographic Society of North America meets on the second Tuesday

of the month at the Black Labrador, located at 4100 Montrose in the great city of Houston, Texas. ✧

## Protection in the Future

by Ron D'Alessandro

Because of my past success in designing Industry-specific corporate business insurance plans, current clients of mine arranged for me to have a discussion with THSOA board members to determine not only whether the insurance needs of the hydrographic industry were being met (especially in light of the vulnerability of American ports and harbors to possible terrorist attacks) but whether improvements could be made in the cost and availability of coverage now purchased.

My goal was to devise a membership service using the combined clout of corporate members that would: (1) reduce the corporate premium that a member is currently paying for their insurance; (2) expand both the availability and scope of coverage to better suit the needs of the hydrographic industry; (3) provide a template of coverage to guide corporate members; (4) strengthen the clout of association membership in future negotiations with insurance carriers.

Over the last year I have met with association members as well as with

insurance company representatives and underwriters. The results of my meetings were telling, but not unexpected:

(1) The business insurance needs of corporate hydrographers are significant, and subject to costly errors since liabilities include both land and maritime exposures.

(2) Some members currently do business with insurance agents who do not even understand the legal requirements and penalties of the Jones Act, let alone the complexities of insuring a hydrographic company. This situation leaves members vulnerable to significant uninsured exposures.

(3) The insurance industry itself has not yet truly identified and separated the hydrographic industry from other, more dangerous marine industries.

(4) Hydrographers are therefore currently overcharged but underinsured.

The membership service I envision, which I've dubbed SEAPAC, would provide a template of coverages for a typical member. An important feature is premium cost, which is based upon changing several marine liability rates from "general marine" to "coastal." Such re-rating acknowledges and credits the industry for its investment in modernization and safety upgrades. Both affect the rates that members pay for their insurance.

SEAPAC not only provides coverage for land-based properties, automobile insurance, standard general liability, and standard workers' compensation coverage, but provides extensions for commercial hull and maritime liability, including protection and indemnity for coastal and federal waters (required by the Jones Act), excess marine liability, and coverage for owned piers, wharves, and docks. Other extensions insure equipment that travels from shore to sea, and scientific instruments that are portable or affixed to the hull. There is coverage, too, for

"professional errors and omissions," that is, liabilities that are imposed based on professional misjudgment causing injuries or property damage.

Using this revised template, SEAPAC allows for a premium savings of 18%. However, by separating the hydrographic industry from other maritime industries, and documenting historical premiums and losses, a corporate membership insurance service would enable the association to negotiate from an even stronger position in the future. By creating a direct working relationship between the chosen carrier and a committee of corporate members, the proposed membership service would assist in the design of future coverage—for example, protection against loss of income triggered by the loss of a survey vessel, especially one that may take months to replace.

We live in perilous times, in a business climate radically affected by 9/11. General marine insurance will certainly be affected, not only due to a fear of marine terrorism but due as well to the overall loss of capacity of re-insurance companies to support even current marine insurance liability claims (two carriers who could have written marine insurance have already closed).

The potential benefits of SEAPAC are obvious: it is a specific insurance program designed to address the specific needs of the hydrographic industry, and it is a way to coordinate the efforts of industry members and to create one voice in future negotiations.

To that end, your board would appreciate receiving your responses to this proposed SEAPAC membership service. Please consider the benefits of an alternative method to purchase your corporate insurance; please think of it as having another anchor in a future storm. ✧

## Recent Activities at the University of New Hampshire Center for Coastal and Ocean Mapping (C-COM)/Joint Hydrographic Center (JHC)

by Andy Armstrong

A summer of field work is winding down, and a new academic year is beginning at the University of New Hampshire-based Center.

Earlier this year, Dr. Christian DeMoustier joined the Center and the UNH faculty, coming from the Scripps Institute of Oceanography, to teach and continue his research.

Several new students also arrived to begin M.S. and PhD programs in ocean mapping, coming here from NOAA, from academic institutions, from overseas, and from private industry.

Faculty, staff, and students participated in an amazing variety of hydrographic and ocean mapping field projects in the last 6 months. Among the projects were acoustic lobster tracking and lobster-coral video mosaic mapping; a video imaging soft-shell clam census; a single-beam (Odom Echotrac MkIII and Knudsen 320 BP), multibeam (Reson 9001), and side scan sonar (Klein 3000) hydrographic survey from the Center's R/V COASTAL SURVEYOR and R/V LITTLE BAY for the summer field course; Simrad EM 300 sea trials and multibeam mapping of the Keck-Nootka region of the Juan

de Fuca Ridge with the University of Washington on the R/V T.G. THOMPSON; an RTK GPS evaluation project on the Portsmouth ISLE OF SHOALS ferry; a joint multibeam sonar effort with the USGS and C&C Technologies in the DeSoto Canyon region of the Gulf of Mexico on the R/V MOANA WAVE; a U.S. Office of Naval Research mine burial project with SAIC off Martha's Vinyard aboard the R/V OCEAN EXPLORER; a historical project with the U.S. Navy to map D-Day relics off the coast of Normandy using the Reson 8125 high resolution multibeam; a test of automated multibeam data processing techniques aboard NOAA Ship RAINIER in Valdez, Alaska; and an Ocean Exploration Program-funded SeaBeam 2112 deepwater multibeam project in the Puerto Rico Trench on the NOAA Ship RON BROWN.

In the Center's Visualization Lab, Dr. Colin Ware and his staff and students have been developing a museum display that will bring the Lab's advanced 3D environment and the high resolution hydrographic survey of Portsmouth Harbor to an interactive exhibit for school children and the general public at the Seacoast Science Center in Rye, NH. Visitors will take an interactive underwater fly-through into the harbor, with stops at points of historical and scientific interest.

In May, the Center completed a major undertaking in the publication of a report directed by the U.S. Congress on "*The Compilation and Analysis of Data Relevant to a U.S. Claim Under United Nations Law of the Sea Article 76.*" This NOAA-funded study assessed the adequacy of existing U.S. bathymetric and geophysical data for an Article 76 claim, and identified where additional data must be acquired. In the process of carrying out this study, the Center compiled and analyzed data from NGDC, NIMA,

USGS, MMS, and several academic archives. As a result of this study, the Center has developed an exceptionally efficient and effective database system that will prove valuable on a variety of other projects. The report is available in both HTML and PDF formats from the C-COM / JHC website, <http://www.ccom-jhc.unh.edu>. ✪

### - Humor from the Internet -

#### BRASS MONKEY SPHERES

Did you know, in the mighty British Navy at the time of empire building, every sailing ship had cannon (the plural of cannon) for protection. Cannon of the times required round iron cannonballs. A ship's master wanted to store the cannonballs such that they could be available for instant use when needed, but in a manner that would not let them roll around the gun deck.

The solution devised was to stack them up in a square-based pyramid next to the cannon. The top level of the stack had one ball, the next level down had three, the next had nine, the next had sixteen, and so on. Four levels would provide a stack of 30 cannonballs.

The only real problem was how to keep the bottom level from sliding out from under the weight of the higher levels. To do this, they devised a small brass plate referred to as a "brass monkey," with one rounded indentation for each cannonball in the bottom layer. Brass was used because the cannonballs wouldn't rust on the brass monkey, but would rust on an iron one.

When temperature falls, brass contracts faster than iron. As it got cold on the gun decks, the indentations in the brass monkey would get smaller than the iron cannonballs they were holding. If the temperature got cold enough, the bottom layer of cannonballs would pop out of the indentations, spilling the entire pyramid over the deck.

Thus it was, quite literally, "cold enough to freeze the balls off a brass monkey." And so, another familiar phrase became part of the language.

Now, aren't you glad you took the time to read this historical piece? And you thought this was going to be a "dirty" story....shame on you. ✪

## University of Southern Mississippi Update

by David Dodd

On August 2 fourteen hydrographers of the University of Southern Mississippi's third graduating class accepted master's degrees in hydrographic science. Already professionals in their fields, these students came to USM seeking advanced learning in an increasingly technological career—the charting of the world's oceans and other bodies of water. Trained in the use of today's most advanced instrumentation, the students also survived one of the most intensive, one-year courses offered in hydrographic science.

“Our classes continue to improve as our hydrographic science program matures,” said David Dodd, coordinator of the hydrographic science program at USM's Stennis Space Center campus. “Our course content is updated as new research is made available to keep our program and our students on the cutting edge of hydrographic science.”

The hydrographic science master's degree is a non-thesis program that can be completed in 12 months. It is a rigorous program that is concluded with the presentation of summer field projects in which the students exhibit

their own work from a test environment. Students surveyed the East Pearl River near Stennis Space Center in 2002, while other classes have detected underwater landscapes in Saint Louis Bay in Hancock County, Mississippi, and other local waters.

The program requires 36 hours of classroom instruction and practical activities. Completion of the master's curriculum also meets requirements for category A certification by the International Federation of Surveyors/International Hydrographic Organization (FIG/IHO) Advisory Board on Standards of Competence for Hydrographic Surveyors. Category A is the highest certification granted by the FIG/IHO.

An agreement between USM and the U.S. Navy at Stennis allows hydrographic students to interact with top professionals in their field. Students also train on the Naval Oceanographic Office's hydrographic survey launches, which are equipped with advanced surveying systems that include single beam, multibeam and side-scan sonar. These systems allow hydrographers to visualize beneath the water in greater detail than ever before.

The August 2002 graduating class was followed by the most internationally diverse group of students since the programs inception in 1999. Of the 14 newly-enrolled students, two are from Sweden, one is from Mexico, one is from Peru, and one is from Tonga. The rest are from U.S. government and civilian agencies.

Between the graduation of one class and the beginning of another, USM hosted a workshop at Stennis on August 26–28 on real-time kinematic (RTK) global positioning system (GPS) use in hydrographic surveys. The workshop, attended by 40 professionals from academia, government and commercial organizations, focused on the use of RTK GPS for vertical positioning.

In addition to the academic courses and workshops, USM has a unique research operation within the university's Department of Marine Science. The Hydrographic Science Research Center at Stennis houses the Electronic Chart Display and Information Systems (ECDIS) Laboratory that provides research support to government and commercial clients for information related to ocean navigation, the ocean floor, and ocean processes. It is part of the \$3 million research center created through a partnership between the university and the U.S. Navy to develop and broaden applications for ocean mapping and navigation technology.

The purpose of the ECDIS Lab is to conduct research, development, testing, and evaluation of electronic charting systems that guide military and commercial sea-going vessels. Equipped with eight high-end networked computers and one large plasma display, students, researchers, and faculty serve as an information clearinghouse and demonstration center for electronic charting systems used by United States and foreign military and commercial agencies. The lab boasts an inventory of fifteen electronic charting applications, including the only three systems certified by the U.S. Department of Defense (ECDIS-N).

“We are the honest broker on charting software,” said Darrell Smith, retired naval officer and director of the lab. With over 24 years in the U.S. Navy and additional industry experience in hydrography and geodesy, Smith knows his subject matter well. “We evaluate commercial and government-developed systems,” he said. “Then we provide feedback to stakeholders on what works and what does not. We also provide information on where we see opportunities for improvement.” →



The ECDIS Lab works closely with the Naval Oceanographic Office (NAV-OCEANO) located nearby at Stennis by analyzing promising developments for potential integration into NAV-OCEANO's operation, pursuing the most applicable possibilities and assisting with transition into the Navy's systems. A recent focus for researchers working with NAVOCEANO has been fusing higher resolution data into existing electronic nautical charts, searching for solutions in merging the different data formats of the electronic charts.

Directly linked with USM's hydrographic science academic program, the ECDIS Lab serves a distinct educational as well as commercial purpose as students pursuing a master's degree in hydrographic science get hands-on experience with various charting software. Currently, three graduate students are pursuing directed studies through the ECDIS Lab. ✧

### **IN MEMORIAM**

Lt. Cdr. Alan Ingham RN (Ret.)  
ARICS 1932-2002

Alan Ingham, renown throughout the world hydrographic community, died in Cheltenham, U.K., on May 20, 2002. He is best known for his authorship of two of the most important books on hydrography ever published: "*Hydrography for the Surveyor and Engineer*" (1974) and "*Sea Surveying*" (1975). These two publications remain to this day as required reading for students of hydrography or those seeking a good overview of the discipline.

Alan's naval career spanned 19 years and included command of the Royal New Zealand Navy survey vessel, HMNZS TARAPUNGA in 1960-61, while on an exchange service assignment. Following his retirement from the Royal Navy, he became a lecturer in hydrography at Waltham Forest Technical College (later to become

North East London Polytechnic in 1970, and now the University of East London). It was during this time that he authored his famous books.

His involvement in the hydrography profession expanded beyond the classroom and he was elected Chairman of FIG's (International Federation of Surveyors) Working Group 413 which was charged with establishing international standards of competence for hydrographic surveyors, the precursor of today's joint FIG-IHO Advisory Board of which he was a founding member.

He was also instrumental in establishing The Hydrographic Society on March 24, 1972, and served as the first Honorable Secretary, along with founding President Rear Admiral Steve Ritchie, until 1984.

Retirement from his vocation of hydrography allowed Alan to devote his full attention to his lifelong avocation, painting. He came to be acknowledged as one of Britain's leading landscape artists with over 1200 original works.

Alan Ingham was clearly one of the most influential forces on the profession of hydrography over the past 30 years. He will be sorely missed. ✧

## **New Corps of Engineers Hydrographic Surveying Manual Available**

by Bill Bergen

The U.S. Army Corps of Engineers has published an updated version of Engineering Manual (EM) 1110-2-1003 "Hydrographic Surveying," dated 1 January 2002 (580 pages). The project manager for this effort was Dr. Bob Mann of the U.S. Army Corps of Engineers, Engineer R&D Center located at Ft. Belvoir, Virginia and Bill Bergen served as technical editor. This manual stands out as one of the best available worldwide, because of its superior technical content, readability, and its unrestricted distribution via the Internet.

The manual can be downloaded without charge in Adobe Acrobat (PDF) format using links from either THSOA or Corps of Engineers web sites. The direct link to the Hydrographic Surveying manual is: [www.usace.army.mil/inet/usace-docs/eng-manuals/em1110-2-1003/toc.htm](http://www.usace.army.mil/inet/usace-docs/eng-manuals/em1110-2-1003/toc.htm).

This manual covers hydrographic surveying activities performed by the Corps of Engineers that relate to river and harbor navigation projects, flood control projects, and coastal engineering projects.

The primary focus of the manual is on hydrographic surveys supporting construction and dredging of deep-draft navigation projects. Other topics covered include beach renourishment surveys, river engineering surveys, reservoir sedimentation surveys, and hydrographic survey contracting procedures.

The manual was developed from various sources, including Corps of Engineers districts and laboratories, the dredging industry, NOAA, and hydrographic survey equipment manufacturers and service contractors.

✧

## Hydrographic Data Key Element in SS JACOB LUCKENBACH Oil Removal

by Joanna Hawkins

Multibeam and side-scan sonar data was instrumental in the recovery of more than 83,000 gallons of Bunker C oil from a sunken ship this past summer. In 1953, the SS JACOB LUCKENBACH went down in the Gulf of the Farrallones National Marine Sanctuary. The wreck sits in 185 feet of water approximately 20 miles off of the Golden Gate Bridge in San Francisco, California. The project, funded by the USCG, reached into the millions.

An elite team of professionals from Titan Maritime, Global Diving and Salvage, PCCI, Crowley Marine, and independent contractors including divers, hydrographers, engineers, naval architects, salvage masters, and seasoned mariners worked off of Crowley's 400-foot barge.

Utilizing the multibeam and side-scan data collected from a previous survey and engineer drawings from microfiche, a 3-D image of the LUCKENBACH on the sea floor was generated in Solid Edge, a program typically used to create mechanical parts. The 3-D image was exported out of Solid Edge as a 2-D plan view image, then imported into AutoCAD and overlaid with the contours from the multibeam survey. The image was then checked for correct position and angle of the wreck. The necessary changes were made in Solid Edge and a new 2-D image was created. In AutoCAD, the 2-D image was exported out as a geo-referenced image and brought into Coastal Oceanographic's "Hypack" data acquisition and navigation software as background.

This background image was utilized throughout the duration of the project to position the barge, support diver and

ROV operations, and aid in the daily planning and reports. The most important function it served was to give the Unified Command (shore side) an image they could easily understand at a glance. The combination of hydrographic data with other disciplines helped the project run smoothly and efficiently. Once again the benefits of hydrography shine in a non-traditional marine operation. ✧

## NOAA Contracting Update

by Brian Greenawalt

The 2002 field season is winding down. Ocean Surveys, Inc., completed a survey in Pamlico Sound, North Carolina; SAIC completed two surveys in the approaches to Cape May, New Jersey; in Alaska, Terra Surveys LLC completed four surveys in Kasaan Bay; Thales GeoSolutions (formerly Racal Pelagos) performed a survey of the waters around the Pribilof Islands using LIDAR bathymetry, completed one survey in the approaches to Icy Bay, and five surveys in Clarence Strait; C&C Technologies, Inc., completed two surveys in the Gulf of Mexico. The contracts with Ocean Surveys, Terra Surveys, and SAIC will be closed out in the next 6 months because either the contract period will expire or the ceiling will be reached.

In August, NOAA announced two new contracting opportunities. The first was for hydrographic surveying services using LIDAR technology. The second was for hydrographic surveying services using shallow water multibeam and side scan sonar technologies. Both announcements appeared on the Federal Business Opportunities web site at <http://www.fedbizopps.gov/>. The Source Evaluation Boards will convene in October.

In the FY2002 appropriations bill, Congress included language urging NOAA to enter into a long-term lease or charter for a survey vessel. NOAA

is working with the Military Sealift Command to effect this charter. ✧

## - Humor from the Internet -

TO KEEP A HEALTHY LEVEL OF INSANITY

1. At lunch time, sit in your parked car with sunglasses on and point a hair dryer at passing cars. See if they slow down.
2. Page yourself over the intercom. Don't disguise your voice.
3. Every time someone asks you to do something, ask if they want fries with that.
4. Put your garbage can on your desk and label it "in."
5. Put decaf in the coffee maker for 3 weeks. Once everyone has gotten over their caffeine addictions, switch to espresso.
6. In the memo field of all your checks, write "for sexual favors."
7. Finish all your sentences with "in accordance with the prophecy."
8. Don't use any punctuation marks
9. As often as possible, skip rather than walk.
10. Ask people what sex they are. Laugh hysterically after they answer.
11. Specify that your drive-through order is "to go."
12. Go to a poetry recital and ask why the poems don't rhyme.
13. Put mosquito netting around your work area. Play a tape of jungle sounds all day.
14. Five days in advance, tell your friends you can't attend their party because you're not in the mood. ✧

**Make Your Plans to Attend Now!**



**U.S.  
HYDRO  
2003**

**March 24-27, 2003**

*at the*

**Beau Rivage  
Resort & Casino**

*in*

**Biloxi, Mississippi**



**For Details, See Article, Page 1, This Newsletter**

# The Hydrographic Society of America

## MEMBERSHIP APPLICATION

*(Qualifications for membership and benefits are explained on the THSOA web site where this application may also be downloaded at [www.thsoa.org](http://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.

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If student, name of Institution  
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