

# The Seahorse



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## *Hydrographic Data Content Standard proposed*

### **Comments are solicited**

*by Jerry Mills, NOAA, Coast Survey,  
Silver Spring, Md.*

The following information has been summarized from a notice appearing in the Federal Register of April 9, 1998, Volume 63, No. 68, regarding a proposed Hydrographic Data Content Standard for Coastal and Inland Waterways. While the proposal refers to hydrographic data, it actually focuses on nautical charting and engineering features. If more detailed information is needed, the complete proposal can be found at the following Internet address:

<http://www.fgdc.gov/Standards/Documents/Proposals/hydrocont.html>

### **Comments solicited**

The Federal Geographic Data Committee (FGDC) is soliciting public comments on a proposal to develop a "Hydrographic Data Content Standard for Coastal and Inland Waterways" to support the National Spatial Data Infrastructure (NSDI). As part of the development process, the views of state and local governments, academia, industry, and the public are sought to ensure such a standard meets non-Federal needs. The FGDC is

inviting the community to review the proposal and comment on the objectives, scope, approach, and usability of the proposed standard, identify existing related standards, and indicate their interest in participating in the development of the standard. If the standard is adopted by the FGDC, it must be followed by all Federal agencies gathering and using hydrographic data for the purpose of navigation and engineering applications directly or indirectly (through grants, partnerships or contracts).

### **Justification /benefits**

There is currently no national data content standard for hydrographic data that supports navigation and engineering applications; yet there has been considerable interest from Federal agencies, private industry, and the public for this type of information. A comprehensive data content standard that supports waterway navigation applications will ensure effective use of geospatial data across different agencies, organizations, and other users. Inclusion of graphic representation information and symbology will increase consistency and accuracy of interpreted information displayed on

### **A Letter From Pat**

*by President Pat Sanders,  
THSOA*



Work continues to take place in preparation for the 1999 U.S. Hydrographic Conference in Mobile, Alabama. Traditionally, the United States and Canada have alternated every other year, holding one of the premier hydrographic conferences in the world. In the past, the U.S. Hydrographic Conference has been held mainly through the efforts of NOAA and related personnel. Due to the large time and personnel commitments needed to meet their internal requirements, NOAA could not take an active role in hosting the 1997 U.S. Hydrographic Conference.

The Hydrographic Society of America (THSOA) has decided to fill the void and act as the host organization for the 1999 U.S. Hydrographic Conference. Although THSOA is the host, we won't be acting alone. We have already received sponsorship commitments from the U.S. Army Corps of Engineers, NOAA and the

*(See **Standard**, page 2)*

*(See **Pat**, page 2)*



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### Pat (from page 1)

U.S. Naval Oceanographic Office. This should allow their personnel to take an active role in the technical presentations and make it easier to justify attendance by their hydrographers.

Beginning in May, we will begin to actively publicize the conference. This will include notices in most of the hydrographic related journals and magazines, along with e-mail notices. The conference will take place over three days. Emphasis will be placed on Offshore Hydrography, Near Shore Hydrography and Data Presentation. In addition to the technical seminars, several organizations and companies will offer training in hydrographic topics and equipment.

The exhibit hall is already close to being sold out, with a total of 80 exhibitors. There will also be demonstration vessels available just outside the convention center, demonstrating the latest in hydrographic survey equipment. Companies interested in exhibiting at the conference should get in touch with David Clarke of David Clarke Associates (201-828-9466). Estimated attendance for the event is close to 1,000.

The Hydrographic Society of America is striving to keep the cost of attending the conference affordable. Space has been contracted with the Adams Mark Hotel (connected to the Convention Center), and the U.S. Government Per Diem Rate (currently \$55/night) has been guaranteed for all attendees.

As the conference draws nearer, we will keep you up to date with the latest information.

Best regards,

Pat ✧

### Standard (from page 1)

electronic charting.

### Development approach

Upon approval from the FGDC Standards Working Group to proceed, the FGDC Bathymetric Subcommittee will establish a project team to develop a draft of this standard. This project team will extract and combine feature/attribute information available from existing standards (see below section on related standards) and other sources as the basis for the FGDC Standard.

The Standard will consist of a feature/attribute/domain catalog and will use a logical data model that is consistent with the Spatial Data Transfer Standard/Federal Information Processing Standard (SDTS/FIPS 173 part 2).

A draft will be submitted to the Bathymetric Subcommittee for review and approval (expected time of completion is 3-6 months) and thence to the Standards Working Group prior to release for public review.

The Bathymetric Subcommittee will also submit this information to the FGDC Feature Registry to identify any potential overlap with other FGDC Standards. The total time to develop this standard is expected to be one year to 18 months.

### Related standards

There are several significant standards that relate to the hydrographic standard being proposed for development:

1. International Hydrographic Organization's, S57, Appendix A, "Object Catalog for Digital Hydrographic Data"
2. USACE Regional Engineering and Environmental GIS project's data dictionary for inland waterways information.
3. Tri-Service Spatial Data Standard.

(See **Standard**, page 3)

### DISCLAIMER

Mention in *The Seahorse* of commercial companies or products does not constitute an endorsement or recommendation by The Hydrographic Society. ✧

**Standard** (from page 2)

4. Potentially, the National Mapping and Imagery Agency (NIMA) Feature Attribute Coding Catalog (FACC).
5. Potentially, the NIMA Hydrographic Data Model.
6. Potentially, the USGS DLG-F feature dictionary.

**Participants**

The primary participants will be the members of the Bathymetric Subcommittee that includes representatives from Federal agencies. Members of the public and private sector are encouraged to become involved in the development of this Standard by joining the developing group and actively participating in the drafting of the standard. While the Bathymetric Subcommittee has adequate resources to accomplish most of the development of this Hydrographic Standard, additional resources may be required if there is interest in participation on the development of this standard from the non-Federal sector.

**Target authorization body**

The Bathymetric Subcommittee proposes pursuing the development of this Hydrographic Standard as a FGDC standard. The Bathymetric Subcommittee may consider pursuing (at a later date) the promoting of parts of this standard (e.g., inland waterway information), that are not currently part of the S57 standard, to the International Hydrographic Organization for inclusion in its standard.

Comments may be submitted via Internet mail to: **gdc-hydrocont@www.fgdc.gov** (attachments must be in ASCII format) or by mailing an electronic copy on a 3.5 x 3.5 diskette in WordPerfect 5.0 or 6.0/6.1 format (include one hardcopy version of the comments) to the following address: FGDC Secretariat (attn: Jennifer Fox), U.S. Geological Survey, 590 National Center, 12201 Sunrise Valley Drive,

Reston, VA 20192. Comments should be received before June 1, 1998. If additional information about the proposed standard is needed or if you would like to join the development group, please contact Mr. Kevin Backe, U.S. Army Corps of Engineers, e-mail: **kevin.backe@usace.army.mil**, telephone: (703)428-6505. ✧

**VERY PUNNY!**

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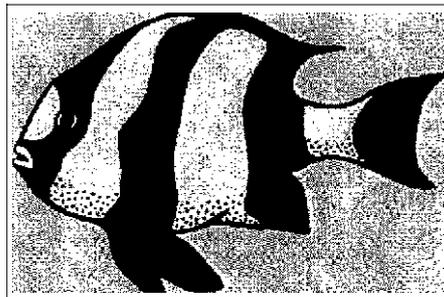
**The Singing Fish**

Pat: Hey, Chris! How's your new pet fish doing? You told me he was really something special.

Chris: To tell you the truth, I'm really disappointed in him. The guy who sold him to me said I could teach him to sing like a bird.

Pat: You bought a fish because you thought you could teach him to sing like a bird? I can't believe it!

Chris: Well, yeah. After all, he's a parrot fish.



Pat: I hate to tell you this, Chris, but while you might be able to teach a parrot bird to sing, you're never going to get anywhere with a parrot fish.

Chris: That's what you think! He can sing all right. The thing is, he keeps singing off-key. It's driving me crazy. Do you know how hard it is to tuna fish? ✧

**RECRUIT A  
NEW MEMBER!**

**Hydrographic Engineering M.S. option offered by the Florida Institute of Technology (Florida Tech)**

(Summarized by Jerry Mills from an article by Dr. George Maul appearing in the April 1998 issue of *Hydro International*)

In 1996, Florida Institute of Technology (Florida Tech) began offering Hydrographic Engineering as a Master of Science option in Ocean Engineering. Numerous hydrographic surveying-related courses are also available to undergraduate students.

Hydrographic Engineering is the measuring, recording, analyzing and ultimately forecasting the topography of the ocean bottom, coasts and estuaries. It includes the essential skills for understanding nautical charting, harbor dredging control, marine geophysical Surveys, deep-sea bathymetry, survey vessel design, law of the sea, Geographic Information Systems (GIS), marine geodesy, sediment transport, coastline evolution and project management.

At Florida Tech, Hydrographic Engineers are inter-disciplinary students in ocean engineering and oceanography. Accordingly, upon graduation they are prepared to conduct field surveys, model topographic evolution, manage complex organizations, and/or create new technology. An M.S. can be completed in 15 months or less for the well prepared student.

The Florida Institute of Technology is located on a 175-acre site in Melbourne, Florida, about 50 km southwest of the launch complexes at the NASA Kennedy Space Center near Cape Canaveral. The university was founded in 1958 primarily as a graduate school for the high technol-

(See **M.S. option**, page 4)

## SPEED BUMP DAVE COVERLY

**M.S. option** (from page 3)

ogy industries associated with the space program. Programs in oceanography, ocean engineering and environmental sciences were started in 1966, 1972 and 1975 respectively. Graduate and undergraduate programs are accredited by the Southern Association of Colleges and Schools (SACS), and the undergraduate engineering programs are also accredited by ABET, the Accreditation Board for Engineering and Technology. Over 2,000 B.S., M.S., and Ph.D. students have graduated from the programs in oceanography, ocean engineering, and environmental sciences over the last 30 years.

**The Florida Tech curriculum**

The Master of Science in Ocean Engineering (Hydrographic Engineering Option) can be completed in fifteen months or less if the student is prepared to enter graduate school during the summer semester; exceptionally well prepared full-time students may need only twelve months. Students with an undergraduate degree in a physical science or engineering are encouraged to apply, but those without prior surveying

experience are required to take a basic land surveying course either prior to arriving or during their first semester. Either a 30-credit thesis option (recommended for students with prior hydrographic experience), or a 33-credit non-thesis option (including an internship with a marine surveying company or government agency and a comprehensive examination), is available.

The curriculum includes many electives such as Digital Image Processing, Pattern Recognition, Coastal Processes and Engineering, Marine Hydrodynamics and Wave Theory, Marine Meteorology, Computer Applications in Ocean Engineering, Coastal and Estuarine Processes, Digital Signal Processing and Coastal Systems Planning. A typical fifteen-month curriculum for a full-time student is illustrated in table 1. Many options are available for students to create an individual program of study. The curriculum illustrated in table 1 is an example for one interested in the mostly technical aspects of hydrographic engineering coming from another engineering or scientific discipline. Students who already are expe-

rienced hydrographers wishing to improve their management skills (for example) would have a course of study tailored to the university's engineering management program; alternatively, if the student were interested more in vessel design, he or she would study naval architecture and hydrodynamics. The intent is to offer a flexible program, but to be sure that the graduate has certain fundamental analytic skills such as mathematics and surveying.

**Faculty, staff and equipment**

Students interact with faculty from many specializations including biological, chemical, geological and physical oceanography, engineering management, GIS, hydroacoustics, mathematics, marine geodesy, naval architecture, ocean engineering, oceanic remote sensing and surveying. Each member of the hydrographic engineering faculty is academically accomplished through their doctorate. One of the many benefits for Florida Tech being in the high-technology environment of Melbourne is the large number of professionals who serve as

(See **M.S. option**, page 5)

Summer Semester	MTH 5401	Applied Statistical Analysis	3 credits
Fall Semester	OCE 5571	Naval Architecture	3 credits
	OCE 4545	Hydroacoustics	3 credits
	OCE 5550	Bathymetry	3 credits
	OCE 5512	OCE Seminar	0 credits
	OCN 5401	Principles of Physical Oceanography	3 credits
	OCN 5704	Oceanic Remote Sensing	3 credits
Spring Semester	ENS 4010	Geographic Information Systems	3 credits
	OCE 5512	OCE Seminar	0 credits
	OCN 5301	Principles of Geological Oceanography	3 credits
	OCE 5999	Thesis Research	3 credits
Summer Semester	or	Restricted Electives	6 credits
	OCN 5996	Internship	3 credits
	or OCE 5999	Thesis Research	3 credits
Notes: Complete descriptions of these courses are available in the Florida Institute of Technology catalogue on the internet at <a href="http://www.fit.edu">http://www.fit.edu</a> or in paper format by writing to the Admissions Office, Florida Institute of Technology, 150 West University Boulevard, Melbourne FL 32901. Abbreviations used above are: ENS- environmental science, MTH- mathematics; OCE - ocean engineering; OCN- oceanography			
Table 1. Example of a course of study for a master of science in hydrographic engineering			

**M.S. option** (from page 4)

adjunct faculty. Not only do the adjunct faculty enrich the educational experience, they often are the gateway for graduates to employment. A wide spectrum of expertise is available for the program.

One of the hallmarks of a technical university is its teaching and research laboratories. Within Florida Tech's College of Engineering alone are over 50 such laboratories. The single most important laboratory to this program is an 18-meter coastal research vessel, R/V **Delphinus**. The **Delphinus** is professionally manned by a U.S. Coast Guard-licensed, university-educated master, and a mate/engineer. The vessel is equipped for a variety of oceanographic tasks including those measuring devices required to support bathymetry (DGPS, depth recorder, CTD, etc.). The PC-based data acquisition system logs hydrographic information including position, depth and time, and is the result of one of the many student projects at the university.

A long-term loan from the U.S. National Oceanic and Atmospheric Administration's National Ocean Service, including theodolites, sextants, three-arm protractors, a differential level, and an electronic distance measuring system, form the core of the ancillary surveying instrumentation. Although modern surveying practice is oriented to the Global Positioning System (GPS), scientists, engineers and managers must often compare new data with historical information. Accordingly, Florida Tech hydrographic surveying students are well-schooled in the methods used in the past, in particular astronomic and visual position control. Supporting the R/V **Delphinus** is a shallow-water pontoon boat for inshore hydrography, a donation to hydrographic engineering through the university's boat donation program.

Florida Tech also operates a modern real-time acoustic tide gauge/weather station at nearby Sebastian Inlet which is used by the students for analysis of sea-level time series, leveling practice and coastal meteorology. Other laboratories directly involved include geographic information systems fluid mechanics, computer, remote sensing, coastal processes, and a new 60-meter wave channel for simulating beach dynamics.

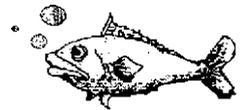
In the current environment of hydrographic practice, computer laboratories and facilities are of paramount importance. As part of a practicum, our students conduct surveys starting with a clean sheet of paper, or more pointedly, a blank computer screen. These surveys are designed to give students a sense of the way things were done in the past as well as to current practice with all its electronic genius. As an example, students analyze data collected in Melbourne harbor immediately before dredging. An after-dredging survey is then conducted and calculations made to determine the volume of material removed. Other students at the university will take concurrent samples to document other changes such as the bottom fauna, heavy metal concentrations and water quality.

**Envisioning the future**

Florida Tech will host INSMAP '98, the (fourth) international symposium on marine positioning, Nov. 30-Dec. 4, 1998. Many students faculty and staff will have the opportunity to interact with this outstanding gathering of scientists and engineers from all over the world. In 1994, the university was the host to STAB '94, another international symposium, but with emphasis on naval architecture and marine hydrodynamics.

The Hydrographic Engineering program is actively seeking industrial and governmental partners, par-

ticularly for student internships, which is a requirement for graduation. During their internship, the students work with surveyors in a variety of situations including laser bathymetry, side-scan surveys, and harbor dredging control. Clearly the future of charting and navigation will be in the electronic sector. Students at Florida Tech are well prepared for the continuation of this revolution in hydrography, naval architecture, and marine transportation through a broadly based interdisciplinary applied science engineering education. ✨

**Salty Facts**

from "Naval Meteorology and Oceanography Command News,"  
Cathy L. Willis, Ed.

**J**ason is one of the heroes of Greek mythology. His mythical journey took him on a long voyage in search of a golden fleece. He had to capture the fleece to gain the kingdom that was rightfully his. The fleece was guarded by a dragon in a land on the Black Sea called Colchis.

Jason set sail in a ship named the *Argo*. His crewmen were called Argonauts (*nautes* is the Greek word for sailor). The crew included a number of celebrities, including Hercules. After a difficult journey, they arrived in Colchis. Although the king welcomed them, he was not eager to give up his golden treasure so he set impossible tasks for Jason to do to win the fleece.

The king's daughter, Medea, fell in love with Jason, and she used her magic to help him overcome fire-breathing bulls and a thousand soldiers. She put the dragon to sleep

(See **Salty**, page 6)

## In memoriam

Mary Lee McGinley, 70, passed away on Feb. 16, 1998, after a year-long battle with cancer. She started working for the U.S. Coast and Geodetic Survey (CEGS) in the Marine Chart Division. A few years later, she transferred to the Operations and Requirements Staff, Office of Marine Surveys and Maps, then finished her career in the Hydrographic Surveys Division, retiring Aug. 27, 1988, after 25 years of Federal service.

Mary Lee was a dedicated CEGS employee and was very well known in the hydrographic community, having worked for many years with our field-office personnel at the Atlantic Marine Center, Norfolk, Va., and the Pacific Marine Center, Seattle, Wash. Also, The Hydrographic Society of America benefited from her expertise in administrative and secretarial work in her off-duty hours.

Mary Lee bowled in the NOAA Duckpin League and was an avid "Redskin" fan having had season tickets for many years with her late husband, Bob.

She is survived by her three children—Patrick McGinley, Joanne Cheek, and Barbara McGinley; six grandchildren; one great grandson; two brothers; and three sisters. ✨

—Fran Mayhugh

We sincerely appreciate the support of all our Corporate Members. ✨

## The Coast and Geodetic Survey Album

Library presents images in time of the first science

agency

by Albert E Theberge, NOAA Central Library, NOAA/NESDIS/MODC, Silver Spring, Md., as seen in "Earth System Monitor," NOAA/NESDIS, Sheri Phillips, Ed. (Reprinted with permission)

The NOAA Library, in cooperation with the NOAA Home Page Design and Construction Team, is developing a web site devoted to historic photographs of the predecessor agencies of the National Oceanic and Atmospheric Administration. These agencies were the Coast Survey, the Weather Bureau, and the Bureau of Commercial Fisheries in their various forms and names. They were instrumental in helping develop the infrastructure of modern American science. For instance, the Coast Survey is the oldest physical science agency in the United States, having been authorized by Congress in 1807.

The Coast Survey and its descendants, which include NOAA's Office of Coast Survey, the Office of NOAA Corps Operations, and many other elements of NOAA, helped in the formation of the Smithsonian Institution, National Institutes of Standards and Technology, the American Association for the Advancement of Science, the National Academy of Sciences, and the American Geophysical Union.

The goal of this project is to develop three separate family albums chronicling the accomplishments, instrumentation, methodology, and personnel of these organizations. The Coast and Geodetic Survey Album is

(See **Album**, page 7)

## Salty (from page 5)

and helped Jason make off with the fleece.

## CUP OF JOE

Josephus Daniels (1862-1948) was appointed Secretary of the Navy by President Woodrow Wilson in 1913. Among his reforms of the Navy were inaugurating the practice of making 100 sailors from the fleet eligible for entrance to the Naval Academy, the introduction of women into the service, and the abolishment of the officers' wine mess. From that time on, the strongest drink aboard Navy ships could only be coffee, and over the years, a cup of coffee became known as "a cup of Joe."

## TOUCH AND GO

When a ship scrapes over shoal

ground without actually stopping, she is said to "touch and go." ✨

## Welcome to new 1998 Corporate Members

- ◆ CRA Inc., Houston, Texas
- ◆ DWS International, Corpus Christi, Texas
- ◆ Hydroquip Ltd, Aberdeen, Scotland
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- ◆ Terra Surveys LLC, Palmer, Alaska
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- ◆ Gahagan and Bryant, Houston, Texas
- ◆ Dredge America, Inc., Kansas City, Missouri
- ◆ David Clarke & Associates, Mahwah, New Jersey
- ◆ Planning Systems Incorporated, McLean, Virginia

**Album** (from page 6)

the prototype album and has over 3,000 images on line, some of which date back to the 1830s. These images are organized by major topics such as Geodesy or Charting and then further organized by category. By clicking on a category, a page of 20 "thumbnails" will be accessed; a patron can click on a thumbnail to access a larger image.

Although captions are not presently available for the larger images, a database is being built that will provide information such as photograph source, personnel names if identified, ship names, and descriptions of activities. The individual images are in JPEG file format and occupy ~ 50 kilobytes. Much higher resolution JPEG files will be available in the future.

The "bread and butter" of the Coast Survey and Coast and Geodetic Survey were geodetic operations and nautical charting. The geodetic operations were the foundation of the nautical chart and also much of the civil surveying conducted in the United States. As such, Geodesy is the first section in the album. Geodetic operations were multifaceted and included: astronomic latitude and longitude observations, triangulation work with tower building (figure 1), base-line measurements and observing angles, topographic work and photogrammetry, and geodetic leveling, which established mean sea level as the accepted datum for elevations throughout the United States and its territories.

Intrinsic to all of these operations were "Getting There" and "Camping Out." "Getting There" involved walking, climbing, packing, driving a variety of mechanically-powered vehicles, sledding, riding horses and mules, taking oxcarts, and in general making use of most means of conveyance known to humankind. Particularly interesting are the truck



**Figure 1.** A group of Coast and Geodetic surveyors ready to observe angles from a 100 portable Bilby steel tower in the Missouri Ozarks, 1934.

photos beginning in 1913 when there were few gravel roads and fewer paved roads, few adequate bridges for automobiles, and few to no service stations and automobile mechanics.

Once the surveyors got to their destinations, there were usually no hotels or restaurants for miles, so they had to be expert campers. Coast surveyors lived primarily in tent camps well into the 1930s in the lower 48 states and made use of large tent camps in Alaska well into the 1950s.

Nautical Charting encompasses "Ships", "Boats", "Soundings", "Navigation", "Tides" and other aspects of the background work necessary to produce a nautical chart. "Ships" include over 250 images of Coast Survey ships dating back to the 1830s (figure 2) and extends up to modern vessels that are still active in the NOAA Fleet. The "Boats" photos contain images of sounding boats and

work boats, including many late nineteenth century and early twentieth century work vessels used by the Survey.

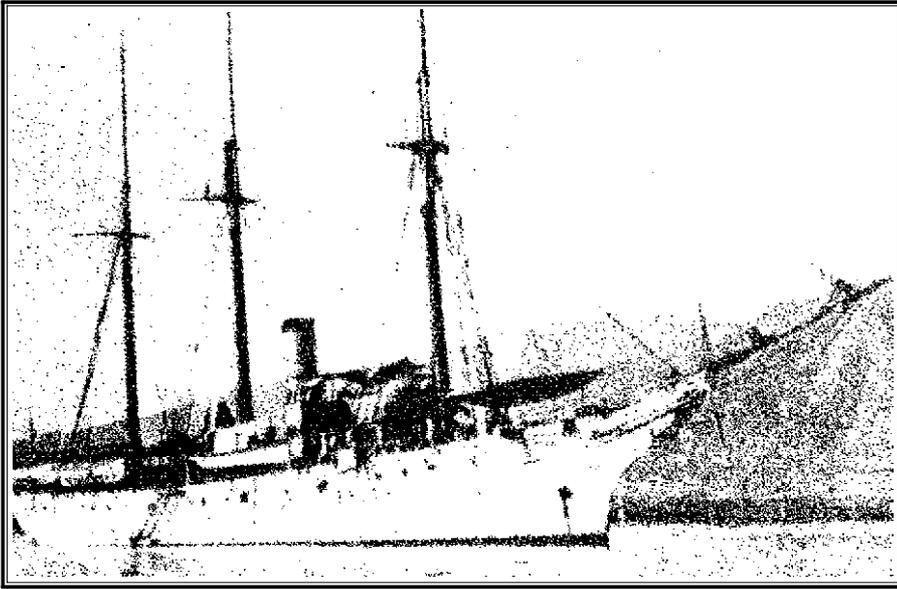
"Soundings" includes images of instrumentation and the resulting charts and maps from the time of the leadline, through single-beam electronic sounding, to the modern multi-beam deepwater systems that were used in offshore surveys within the past ten years. A highlight of this collection is the earliest known depiction of a Coast Survey hydrographic survey crew conducting sounding operations at Strawberry Harbor in Rosario Straits, Washington, in 1857.

Besides Geodesy and Nautical Charting, other major topics within the Coast and Geodetic Survey album are Geophysics, Oceanography, Who Was Who, War Service, and Coast and Geodetic Sights and Views.

Concerning oceanography, the Coast Survey was perhaps the first organization in the world to conduct systematic oceanographic operations beginning with Gulf Stream studies in 1845. It was also the first Federal agency to conduct large-scale geophysical operations beginning with magnetic observations in the 1840s, to work on the development of gravity studies beginning in the 1870s, and finally was involved in the accretion of further geophysical functions including seismological observatories and field operations in the early 1900s.

In the realm of Who Was Who, many prominent Federal scientists and science administrators are found as well as many lesser known officers and employees of the Survey. Leaders of the Survey found in this collection include nineteenth century personalities such as Ferdinand Hassler, Alexander Dallas Bache, and Benjamin Peirce. Great scientists and engineers whose portraits are included in the Coast Survey album include George David-

(See **Album**, page 8)



**Figure 2.** The "Ships" section of the Coast and Geodetic Survey Album includes over 250 images of Coast Survey ships dating back to the 1830s.

### Album (from page 7)

son, Charles Schott, Henry Mitchell, Charles Sanders Peirce, Rollin Harris, William Bowie, and Charles Whitten.

Surprisingly, many of the military leaders of the Civil War served with the Survey in the antebellum years. On the Union side, these included Andrew Atkins Humphreys, E. O. C. Ord, John Dahlgren, and David Dixon Porter. Confederate officers who served with the Survey prior to the war included Joseph Johnston, Ambrose P. Hill, Richard Ewell, and the "Prince of the Privateers," John Maffitt.

In the first two-thirds of the twentieth century, the Survey was led by a number of strong personalities such as Ernest Lester Jones, Raymond Stanton Patton, Leo Otis Colbert, and H. Arnold Karo, whose portraits are all found in the Coast Survey album.

War-service photos are also of historic interest as the role of the Coast Survey and Coast and Geodetic Survey was very important in the major wars of the United States, beginning with the Civil War. The World War II collection is particularly

interesting with pictures of artillery survey operations and pictures of the major Coast and Geodetic Survey vessels that saw wartime service. Survey work accomplished by Coast and Geodetic Survey officers was a major factor in U.S. Army and Marine artillery success during World War II.

Of those Coast and Geodetic Survey vessels serving with the armed forces, the *Hydrographer* was the first United States vessel to enter Massacre Bay on Attu and led the transports and major combatant vessels into the harbor; the *Oceanographer* saw service in the Solomons and hydrographers off this vessel named Ironbottom Sound; and the *Pathfinder* survived over 50 bombing raids between Guadalcanal and Okinawa, was hit by a kamikaze at Okinawa, and conducted postwar surveys of Tokyo Bay. It was said that the "road to Tokyo was paved with *Pathfinder* charts."

The album ends with "Coast and Geodetic Sights and Views": images of the coastlines of America; sights at the ports and islands visited by Coast and Geodetic surveyors; humorous views that transcend time including an 1850 cartoon by a brother of Henry Wads-

worth Longfellow; and ocean views.

The album, taken as a whole, gives a view of the life of an organization, the sort of people that comprised its field and office personnel, and its accomplishments. Anyone who peruses this album can only go away with a feeling of respect for those who surveyed America and its waters.

The Coast and Geodetic Survey Album can be accessed through the NOAA Central Library home page at: <http://www.lib.noaa.gov/> through the photo collection or directly at: [http://www.noanews.noaa.gov/lb\\_images/theb/histcoll.htm](http://www.noanews.noaa.gov/lb_images/theb/histcoll.htm).

Complementary sites include the NOAA Historical Map and Chart Collection that was developed by the Office of Coast Survey and the Bibliography of the Appendices of the Coast and Geodetic Survey Annual Reports from 1844-1910. Both of these sites are accessible through the NOAA Central Library home page or at: <http://chartmaker.ncd.noaa.gov/ocs/text/map-coll.htm> for the maps and charts and at: <http://www.lib.noaa.gov/edocs/cgsreports.html> for the bibliography. Future related sites will include Voices from the Past and Tales from the Survey. ☼

### NOAA hydrographic survey contracting update

by Brian Greenawalt, NOAA, Coast Survey, Silver Spring, Md.

#### Gulf of Mexico

NOAA recently awarded three indefinite delivery, requirements-type contracts for hydrographic surveying services in the Gulf of Mexico as follows:

1. C&C Technologies, Inc., was awarded a contract on March 13. The award included the authorization to commence the first

(See **Contracting**, page 9)

**Contracting** (from page 8)

work order, a 61-square nautical miles area in the approaches to Calcasieu Pass, Louisiana. C&C Technologies plans to commence the first work order on May 6.

2. John E. Chance & Associates, Inc., was awarded a contract on March 20. The award included the authorization to commence the first work order, a 58-square nautical mile area south of Sabine Pass, along the Texas/Louisiana border. John E. Chance & Associates plans to commence the first work order on May 5.
3. Science Applications International Corporation (SAIC) was awarded a contract on April 3. The award included authorization to commence the first work order, a 79-square nautical mile area in the approaches to Galveston Bay, Texas. SAIC plans to commence side scan sonar survey operations on May 8.

**Cook Inlet, Alaska**

On April 10, Terra Surveys LLC of Palmer, Alaska, was awarded a two-year indefinite delivery contract, at a maximum of \$1,500,000/year. The award included the authorization to commence the first work order, a 8.4-square nautical mile area at Nikiski, Alaska. Field operations are scheduled to commence on May 4.

**Cook Inlet, Prince William Sound and Southeast Alaska**

Racal Pelagos, Inc., was selected. Negotiations will begin shortly. NOAA anticipates awarding a \$6,000,000/year, two-year indefinite delivery contract in late August.

**California**

David Evans & Associates was selected. Negotiations will begin

shortly. NOAA anticipates awarding a \$2,000,000/year, two-year indefinite delivery contract in late August.

**Southeastern U.S. coast**

The Source Evaluation Board will convene in late May. ✪

- atmospheric Administration  
National Ocean Service
- U. S. Army  
Corps of Engineers
- Mobile District  
U. S. Army  
Corps of Engineers



**U.S. Hydrographic Conference '99 update**

by Karl Wm. Kieninger, Hydro Marine, Inc.

Here is some recent information concerning the structure of the conference planned by The Hydrographic Society of America (THSOA) to be held next spring. Mark your calendar now to be sure you don't miss it.

U.S. HYDROGRAPHIC CONFERENCE'99  
MOBILE, ALABAMA  
April 26-29, 1999

**SPONSORS**

- Canadian Hydrographic Service
- Canadian Hydrographic Association
- U. S. Navy  
Oceanographic Office
- National Oceanographic and At-

**PROGRAM COMMITTEE**

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**Karl Wm. Kieninger**  
Hydro Marine, Inc.
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Capt. Andrew Armstrong.  
NOAA  
Hydrographic Survey Division
- OFFSHORE HYDROGRAPHY CHAIR  
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**Frederick K. Ganjon**, Chair  
Offshore Charts Ltd.  
**Jeff Lillycrop**  
Mobile District  
U.S. Army Corps of Engineers  
**Maxim F. van Norden**  
Applied Hydrographic Division  
Naval Ocean Oceanographic Office ✪

**NEWS FROM THE CHAPTERS**



HOUSTON CHAPTER  
and  
TEXAS A&M UNIV. STUDENT CHAPTER

The speaker for the Feb. 10 meeting was James Hutchinson of the Houston law firm, London, Schaeffer & Patterson, LLP, who spoke on "Ten different reasons why your contracts

(See **Chapters**, page 10)

## Chapters (from page 9)

are disputed. " There were 23 members and guests in attendance to hear Jim give us some "common sense" advice to keep your contracts away from the courts and arbitrators. Thanks to Michael Barnes for organizing this lecture.

The March 10 Houston THSOA Chapter meeting featured a two-screen presentation on "Acoustic and First Break Position Comparisons in the Teal South D./C OBGC Survey" a technical paper written by Jay Bole (DigiCOURSE), Noel Zinn (Western Geophysical) and Martin Stupel (Western Geophysical). Martin Stupel of Western Geophysical Company presented this paper. Noel Zinn of Western and Dave Clayton of DigiCOURSE were in attendance to help answer questions. The meeting was also well attended by others in the acoustic and geophysical positioning arena, with several questions and comments by John Conner of ENSOCO and several others involved and/or interested in OBC cable positioning techniques.

This presentation was based upon a direct comparison between acoustic and seismic first-break positions. There were 52 members and guests in attendance, with several attendees down from Dallas to hear the presentation. Round sponsors for the evening were Western Geophysical and John E. Chance & Associates.

The Texas A&M University in Galveston Student Chapter held their annual Crawfish Boil Sunday, April 5, at the Texas A&M University Teichman Campus in Galveston. A fun time was had by all. Thanks to Kim Fairweather for handling the \$100 donation from our Houston Chapter for their event.

The Houston Chapter's April 14 meeting featured Dr. Estes and students from Texas A&M University at Galveston. The three students, Shawn

Maddock, Constance McDaniel and Michael Baccigalopi, discussed their curriculum and future goals. Thanks to Dr. Estes and the students for making the trip from Galveston to provide us with an informative overview on the programs offered at Texas A&M in Galveston.

The Houston Chapter Executive Committee for 1998 is now as follows, with telephone, fax and e-mail for each committee member:

Chairperson: Chris Echols (Ashtead Technology)  
Phone: 281-398-9533, Fax: 281-398-3052, E-mail: [ashteadusa@aol.com](mailto:ashteadusa@aol.com)

Vice-Chair: (open position at this time)

Treasurer: Meredith Rhodes (MDL Technologies)  
Phone: 281-646-0050, Fax: 281-646-9565, E-mail: [rhodesm@mdl-laser.com](mailto:rhodesm@mdl-laser.com)

Secretary: Rob Roman, Jr. assisted by Dana Price (Gahagan & Bryant Associates, Inc.)  
Phone: 713-267-2785, Fax: 713-267-2950, E-mail: [gba@neosoft.com](mailto:gba@neosoft.com)

Membership Secretary & Student Liaison: Kim Fairweather (DigiCOURSE)  
Phone: 713-784-4292, Fax: 713-784-6961, E-mail: [kim.fairweather@laitram.com](mailto:kim.fairweather@laitram.com)

Events & Meetings Coordinator: Richard Seeger (Seascope Technical Resources, Inc.)  
Phone: 713-781-8429, Fax: 713-781-8429, E-mail: [Seascope@neosoft.com](mailto:Seascope@neosoft.com)

"At Large" — will assist with Membership: M. Duff Simpson (Deutsch ECD)  
Phone: 281-293-9689, Fax: 281-293-7730, Cellular: 281-732-2463

THSOA Trustee-Houston Chapter: Jim Cain (Western Geophysical)  
Phone: 713-689-6345, Fax: 713-689-6372, E-mail: [cain@wgcgps.com](mailto:cain@wgcgps.com) or [jimmy.cain@waii.com](mailto:jimmy.cain@waii.com)

## GULF COAST CHAPTER

The Gulf Coast Chapter elected new 1998-1999 officers at their Feb. 26, 1998, meeting. They are:

President : Al Rogeau, Odom Hydrographic Systems, Inc.  
Vice-President: Jeff Lillycrop, Army Corps of Engineers  
Secretary: Art Najjar, Naval Oceanographic Office  
Treasurer: Shirley Dorsey, Naval Oceanographic Office  
Member-at-large: Richard Byrd, Odom Hydrographic Systems, Inc.  
Member-at-large: John Iwachlw, Naval Oceanographic Office

Congratulations, and welcome aboard to Al and Shirley. ☺

## Miscellaneous announcements

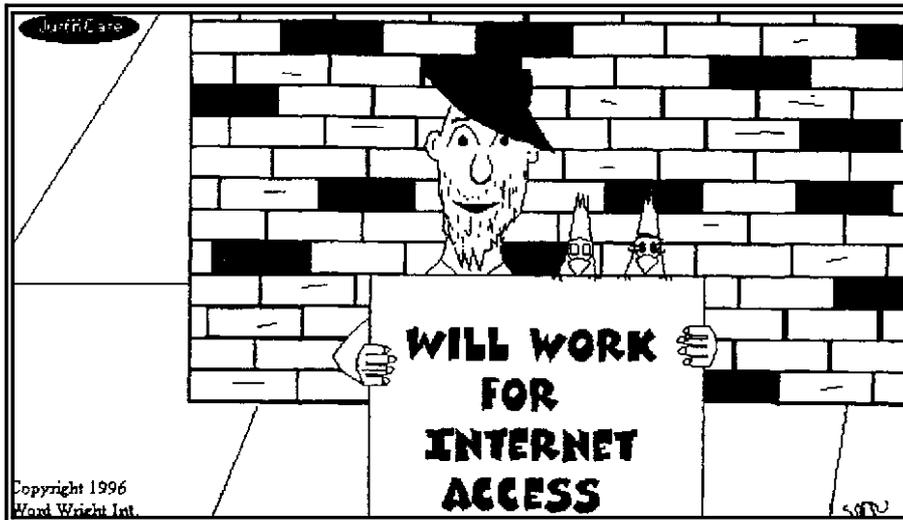
*submitted by Jack Wallace and Karl Kieninger*

### THSOA membership spans 12 countries

They are:

Australia  
Canada  
France  
India  
Israel  
Malaysia  
Mexico  
Panama  
Saudi Arabia  
Scotland  
United States  
Venezuela

(See **MISC.**, page 11)



**Misc.** (from page 10)

#### Renewal notices

Member renewal notices have been sent out. A Houston Chapter reminder is printed in their monthly newsletter. We will not be sending out reminders, except to Corporate Members. If your renewal is not received before the next issue of *The Seahorse* is printed, back issues will not be mailed out, no matter when your renewal is received. We simply do not have the personnel resources to keep track of late payers!

#### The Hydrographic Society AGM

The 26th Annual General Meeting of The Hydrographic Society will be held on Thursday, Nov. 26, 1998, commencing at 5:30 p.m., in the Science Museum (Reserve Collection), Blythe House, 23 Blythe Road, London W14 0QF, England. It is being held in conjunction with the half-day UK Branch workshop on the subject of "Real-time Kinematic GPS—Applications in Hydrography" at the same venue (Time: 2:00 p.m.-5:00 p.m., followed by light refreshments 5:00 p.m.-5:30 p.m.)

The AGM will be followed by a conducted tour/demonstration of the museum's reserve collection of hydro-

graphic/oceanographic instruments.

#### House passes hydro. services act

RADM William L. Stubblefield NOAA, has announced that, on April 22, the House of Representatives, by unanimous consent, passed HR 3164, the "Hydrographic Services Improvement Act of 1998." The bill clarifies NOAA's authorities related to acquiring hydrographic survey data, promulgating standards for hydrographic data and related services used or provided by NOAA, ensuring comprehensive geographic coverage of hydrographic services, and developing and implementing for the United States, international standards for hydrographic services.

The bill, introduced by Rep. Jim Saxton (R-NJ), authorizes about \$775 million in federal expenditures from Fiscal Year 1999 to 2003.

Rep. Saxton said the bill will speed up critically important" navigation charting. It will accelerate the reduction of the approximate 30-year surveying backlog "30 percent faster with this bill-it's an important step in the right direction," said Rep. Saxton.

Delegate Eni Faleomavaega (D-G) noted that NOAA's charting capacity had fallen on "hard times" with the reduction of the NOAA hydrographic

fleet from 11 to three ships. The bill allows NOAA to modernize its nautical charting capabilities "while allowing maximum opportunity to the private sector to participate," he said.

Currently, there is no Senate bill, but it is anticipated that the Senate Commerce Committee (Chairman John McCain, R-AZ) may take up the issue at some future date.

#### Kieninger elected

Karl Win. Kieninger, Hydro Marine, Inc. has been elected secretary and a director of the Maritime Association of the Port of New York/New Jersey (MAPONY/NJ). Since 1873, MAPONY/NJ has been the hub of information communications for the shipping industry of the port as well as a center of commercial activity for New York and New Jersey maritime business. ☼

#### Call for papers— Oceanology International '99 Pacific Rim

**O**ceanology International Pacific Rim, April 24-26, 1999, a marine science and ocean technology exhibition and conference focusing on the Indo and Pacific regions, returns to Singapore with its theme "Enabling Technology for a Sustainable Environment."

"We are glad to host Oceanology International '99 Pacific Rim in Singapore and certainly extend a warm welcome to all intending participants and exhibitors," says Dr. Chou Loke Ming, Director, Tropical Marine Science Initiative, Associate Professor, School of Biological Sciences and Chairman of the Oceanology International '99 Pacific Rim Conference Committee. "The ocean environment has tremendous potential that can be

(See **Papers**, page 12)

## Papers (from page 11)

harnessed to benefit mankind in almost limitless ways. Oceanology International '99 Pacific Rim will provide full opportunities for researchers from different disciplines, managers, decision-makers and providers of state-of-the-art services and products to come together, share and exchange information and to plot the future course of research and development for the seas and oceans."

The Conference Committee invites speakers to present abstracts on Marine Environmental Management, Marine Information Technology, Marine Biology/Biotechnology, Acoustics, Operational Modelling and Integrated Coastal Zone Management. The topics are intended as a guide and are not exclusive.

Copies of the call for papers are available from Spearhead Exhibitions, Ltd., owners and organizers of the 01 series of events (Tel: +44 (0)181 949 9222, Fax: +44 (0)181 949 8186). Full details appear on the world wide web: <http://www.spearhead.co.uk>.

The deadline for receipt of abstracts is October 9, 1998.

At the close of Oceanology International '97 Pacific Rim, some 1,500 professionals from 36 countries involved in coastal protection, marine environmental sciences, oil & gas production, pollution monitoring and control, and ports and harbors had attended the first dedicated marine science and ocean technology exhibition and conference ever to be held in the Pacific region. ✧

### NOTICE!

THSOA's web site,  
[www.USAhydrosoc.org](http://www.USAhydrosoc.org)  
is continually being improved. Try it! ✧

## Students visit Bowditch electronically

by George Lammons, from "Naval Meteorology and Oceanography Command News," Cathy L. Willis, Ed., used with permission

Mississippi took a step into the 21st Century in Sept. when about 20 of the state's high school and middle school students went on a field trip on board the Navy's newest oceanographic survey ship, *USNS Bowditch*.

The field trip was a step into the future because those 20 students took with them, through the magic of television, students at 21 Mississippi high schools—scattered from the Tennessee line to the Gulf Coast and from the Mississippi River to the Alabama line—although the ship was at the Mississippi State Port at Gulfport.

The students physically on the ship were from area schools—Pearl River Central High School in Carriere, Picayune Memorial High School in Picayune, Harrison Central High School in Gulfport, Stone High School in Wiggins and Trent Lott Middle School in Pascagoula.

The field trip was a cooperative effort between the Naval Meteorology and Oceanography Command, the Naval Oceanographic Office, John C. Stennis Space Center, Mississippi State University and the Mississippi Educational Television Network.

On camera, oceanographers from the Naval Oceanographic Office (NAVOCEANO), the students, and Naval officers from NAVOCEANO and the Naval Meteorology and Oceanography Command manned survey stations on the ship and explained the survey process, the types of data that surveyors collect, and the survey systems to the people watching the field trip from the satellite video locations.

Students at the 21 schools, which are part of Mississippi Educational

Television's STAR School Network, were able to view the field trip on video monitors and ask questions by fax. Consequently, the television show was live and mostly unscripted.

The field trip was held two days before the *Bowditch* began its survey work. The ship, built at Halter Marine in nearby Moss Point, Miss., is forward deployed and probably will never return to the Gulf Coast. Consequently, the chance to have a field trip on the ship was a unique opportunity for Mississippi students to see an oceanographic survey ship. ✧

## Don't monkey with me!

from the Internet

A tourist walks into a pet shop in A Silicon Valley and is browsing around the cages on display. While he's there, another customer walks in and says to the shopkeeper, "I'll have a C monkey, please." The shopkeeper nods, goes over to a cage at the side of the shop and takes out a monkey. He fits a collar and leash and hands it to the customer saying, "That'll be \$5,000." The customer pays and walks out with the monkey.

Startled, the tourist goes over to the shopkeeper. "That was a very expensive monkey—most of them are worth only a few hundred dollars. Why did it cost so much?"



(See **Monkey**, page 13)

**Monkey** (from page 12)

"Ah, that monkey can program in C. Very fast, tight code, no bugs; well worth the money."

The tourist looks at the monkeys in the next cage. "That one's even more expensive—\$10,000! What does it do?"

"Oh, that one's a C++ monkey; it can manage object oriented programming, Visual C++, even some Java, all the really useful stuff."

The tourist looks around for a little longer and sees a third monkey in a cage on its own. The price tag around its neck says \$50,000. He gasps to the shopkeeper, "That one costs more than all the others put together! What on earth does it do?"

"Well, I don't know if it does anything, but it says it's a contractor."



## Australian Hydrographic Surveyors' Accreditation Guidelines

[The following was summarized by Jerry Mills from Minutes of the Australian Hydrographic Surveyors' Accreditation Panel appearing in the March 1, 1998, issue of *Hippocampus*—Ed.]

The lead article in the Fall 1997 issue of *The Seahorse* described the American Congress of Surveying and Mapping (ACSM) Hydrographer Certification Examination. The following is a description of the accreditation guidelines for hydrographic surveyors in Australia.

### ACCREDITATION GUIDELINES

The current guidelines (revised in September 1997) are as follows:

#### 1.0 PURPOSE

Accreditation will confer eligibility for membership of The Institution of Surveyors, Australia, Inc. (ISA), with notation as a hydrographic surveyor, and inclusion on ISA Hydrographic Commission's list of Accredited Hydrographic Surveyors.

#### 2.0 DEFINITION

Accredited Hydrographic Surveyor: Any person who has been accepted by the Australian Hydrographic Surveyors Accreditation Panel (AHSAP) as having met the accreditation standards in his or her specialisms at either Level 1 or Level 2. A person who has been accredited may use the term "Accredited Hydrographic Surveyor" while that person maintains his or her membership of ISA. If a person does not become or remain a member of ISA, the entitlement to use the term "Accredited Hydrographic Surveyor" will lapse one year after the person is accredited.

#### 3.0 ACCREDITATION SPECIALISM

A person wishing to be accredited, as a Hydrographic Surveyor in Australia, will have to satisfy the relevant requirements stipulated by the AHSAP in one or more of the following specialist areas within hydrographic surveying.

##### 3.1 NAUTICAL CHARTING

Hydrographic surveying in support of charting for marine navigation.

##### 3.2 SURVEYS FOR COASTAL ZONE MANAGEMENT

Hydrographic surveying in support of port management and coastal engineering.

##### 3.3 INDUSTRIAL OFFSHORE SURVEYING

Hydrographic surveying in support of resource exploration and development.

#### 4.0 ACCREDITATION LEVELS

A person wishing to be accredited as a Hydrographic Surveyor in Australia will have to satisfy the relevant requirements at either of two levels offered by the AHSAP:

##### 4.1 LEVEL 1

Accreditation for eligibility to become a Member of ISA as a Hydrographic Surveyor.

There will be four alternative clauses of requirements for accreditation as a Member:

4.1.1 Category A Course—Successful completion of a FIG/IHO approved Category A Course. These courses provide a comprehensive and broad-based knowledge in aspects of the theory and practice of hydrography and allied disciplines.

##### AND

A minimum aggregate period of two years of appropriate experience in hydrographic surveying, 50 percent of which should include surveying afloat.

4.1.2 Suitable Bachelor Degree and Category B Course—Successful completion of an approved bachelor degree, or equivalent, in a discipline of surveying from a course that has suitable hydrographic modules. These modules can be taken as post-graduate courses. The contents of these modules shall be based upon the contents of the "FIG/IHO Standards of Competence for Hydrographic Surveyors" (Cat. B Course is the minimum requirement).

##### AND

A minimum aggregate period of two years of appropriate experience in hydrographic surveying, 50 percent of which should include surveying afloat.

4.1.3 Suitable Bachelor Degree and Experience—Successful completion of an approved bachelor degree, or equivalent, in a discipline of surveying.

##### AND

A minimum aggregate period of five years of appropriate experience in hydrographic surveying, 50 percent of which should include surveying afloat, and which demonstrates an expertise

(See **Accreditation**, page 14)

### Accreditation (from page 13)

that is not less than that stipulated in 4.1.1 and 4.1.2. (Note: Cut off date for this clause will be 18 months after a FIG/IHO Category A course is available in Australia. The current cut off date is June 30, 1999, and will be reviewed in future. Persons who are currently eligible to be accredited under this clause should apply before this date.)

4.1.4 Long Term Practice—Knowledge and long term practice in hydrographic surveying which, in the opinion of the AHSAP, demonstrates an expertise that is not less than that stipulated in 4.1.1, 4.1.2, and 4.1.3. (Notes: 1. It is not possible to upgrade from Level 2 to Level 1 under this clause, and 2. Cut-off date for this clause will be December 31, 2000. It will not be possible to be accredited under this clause after this date. Persons who are currently eligible to be accredited under this clause should apply before this date.)

#### 4.2 LEVEL 2

Accreditation for eligibility to become an Associate ISA as a Hydrographic Surveyor.

There will be three alternative clauses of requirements for accreditation as an Associate Member:

4.2.1 Category B Course—Successful completion of a FIG/IHO approved Category B Course. These courses provide a practical comprehension of hydrographic surveying for carrying out various hydrographic surveying tasks.

AND

A minimum aggregate period of two years of appropriate experience in hydrographic surveying, 50 percent of which should include surveying afloat.

4.2.2 Other Qualification—Successful completion of a qualification that

would confer eligibility to become an Associate of ISA, being an approved Associate Diploma in a discipline of surveying, or its equivalent (e.g., Engineering Surveying Certificate) or an approved qualification equivalent to an Associate Diploma in a discipline other than surveying.

AND

A minimum aggregate period of five years of appropriate experience in hydrographic surveying, 50 percent of which should include surveying afloat, and which demonstrates an expertise that is not less than that stipulated in 4.2.1.

4.2.3 Long Term Practice—Knowledge and long term practice in hydrographic surveying which, in the opinion of the AHSAP, demonstrates an expertise that is not less than that stipulated in 4.2.1 and 4.2.2. (Notes: 1. It is not possible to upgrade from Level 2 to Level 1 under this clause, and 2. Cut off date for this clause is June 30, 1999, and will be reviewed in the future. Persons eligible under this clause should apply before this date.)

A Register of Accredited Hydrographic Surveyors is maintained at the ISA National Headquarters in Canberra. As of December 31, 1997, there were thirty-four Level 1 and seven Level 2 Hydrographic Surveyors. ✪

### Hydrographic survey contracting in New Zealand

[The March 1998 edition of *Hippocampus*, the newsletter of the Australasian Branch Of The Hydrographic Society, contains two articles about hydrographic contracting in New Zealand—one was a press release, and the other was written by Mr. Bruce Wallen of newly formed Land Information New Zealand (LINZ). A summary of these articles compiled by Jerry Mills follows. Readers should contact the *Hippocampus* editor, Mr. Ron Furness at [rfurness@ozemail.com.au](mailto:rfurness@ozemail.com.au) for the full text of the articles.—Ed.]

### Overview

Recent changes in policy in New Zealand have resulted in a separation between the agency funding hydrography (LINZ) and the agency conducting hydrographic surveys (traditionally the Royal New Zealand Navy-RNZN). LINZ has been tasked with utilizing contracting as a method of obtaining hydrographic services.

### Background

The Royal New Zealand Navy Hydrographic Office has conducted hydrographic surveys and produced nautical charts for New Zealand and her Island Dependencies since 1949, very similar to the work of the royal navies of the United Kingdom and Australia. This organizational structure suited the manually intensive techniques and processes for surveying and chart production that existed until the early 1980s.

Many countries have had difficulty developing sufficient capacity to support the increasing demand for digital bathymetric information and New Zealand is expected to have the same difficulty. This demand in New Zealand for client oriented products derived from digital bathymetry has created a marketing opportunity.

### The Change

During a nine-year period, a number of reviews were undertaken on hydrography in New Zealand. Recommendations from a review published in March 1995 were adopted by the New Zealand Government in Dec. 1995 and implemented in July 1996. Briefly summarized, the Government specified:

- A separation between purchaser and providers of hydrographic services.

(See **New Zealand**, page 16)

# Membership Application



**The Hydrographic Society  
of America  
and the  
U.S. Branch of The Hydrographic  
Society**

Membership in The Hydrographic Society is open to any individual or organization with an interest in surveying afloat. No formal qualifications are required.

The Hydrographic Society of America (THSOA) serves as the focal point for activities in America. Members of THSOA receive *The Seahorse* newsletter, are eligible for membership in local chapters, receive a \$15 discount on subscription to *Hydro International* magazine and receive a discount on registration at THSOA sponsored events. Local chapters have been formed in Houston, Tx. and Bay St. Louis, Miss. THSOA also provides administrative support to the U.S. Branch of The Hydrographic Society.

The Hydrographic Society (THS) was founded in London, England, in 1972. For those members interested in the international aspects of the profession, the U.S. Branch of THS provides a convenient way to pay dues in U.S. dollars. Members of THS receive quarterly copies of *The Hydrographic Journal* and a discount on registration at sponsored international events.

THSOA Corporate Members receive *The Seahorse*, a free hotlink or company description on THSOA's website (www.USAhydrosoc.org) and free posting of recruitment notices in *The Seahorse*. THS Corporate Members receive two copies of *The Hydrographic Journal* and a discount on *Journal* advertising.

**The dues structure allows Individual, Retired, Student and Corporate Members to opt for THSOA alone or both THSOA and THS.** There is no THSOA-only Associate Corporate rate. Individual and Retired memberships begin on entry and are renewed on April 1. Corporate memberships are renewed on January 1. Student THS memberships begin on April 1, while THSOA Student memberships are totally flexible to accommodate the school calendar. In all cases, dues are not prorated. However, members joining in the middle of the year receive all back issues of the publications for that year.

NAME: Title (Mr, Ms, CAPT, Dr, etc.)			First	M.I.	Last
ADDRESS (for mailing and correspondence)					
CITY		STATE		ZIP	
EMPLOYER					
TEL:			FAX:		
e-mail address:					
YEAR	(From which membership is to be effective):				199
<input type="checkbox"/> Check box if name may be included on mailing list provided to Corporate Members					

## ANNUAL DUES (Check appropriate box)

- |                                                                                                   |                                      |                                            |
|---------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------------|
| <b>INDIVIDUAL</b> (Houston Chapter add \$10 for local dues)                                       | <input type="checkbox"/> THSOA \$15  | <input type="checkbox"/> THSOA/THS \$75    |
| <b>RETIRED</b> and no longer employed in the profession of sea surveying                          | <input type="checkbox"/> THSOA \$10  | <input type="checkbox"/> THSOA/THS \$37.50 |
| <b>STUDENT</b> full-time undergraduate                                                            | <input type="checkbox"/> THSOA \$5   | <input type="checkbox"/> THSOA/THS \$20    |
| <b>CORPORATE</b>                                                                                  | <input type="checkbox"/> THSOA \$100 | <input type="checkbox"/> THSOA/THS \$385   |
| <b>ASSOCIATE CORPORATE</b> available to a different location or unit of a parent Corporate Member |                                      | <input type="checkbox"/> THSOA/THS \$205   |

if **Student**, name of institution \_\_\_\_\_

If **Associate Corporate**, name of parent \_\_\_\_\_

**STATEMENT:** I wish to make application for membership in The Hydrographic Society. I agree to abide by the Articles of Association and to further its aims and objectives. I declare that the answers to the above are accurate to the best of my knowledge and belief. I agree that the decision of The Hydrographic Society Executive in regard to this application is final.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

Please return with payment to:  
The Hydrographic Society  
P.O. Box 732  
Rockville, MD 20848-0732

### New Zealand *(from page 14)*

- A degree of contestability to be introduced in the provision of hydrographic services, while still retaining some core hydrographic functions under Government control.
- A national marine survey information system be identified and implemented.
- Nautical charts continue to be publicly available.
- New Zealand retain a national hydrographic capability.

### Implementation

From July 1, 1996, Land Information NZ (a new government department established from a restructure of Department of Survey and Land Information) has assumed the role of national hydrographic and topographic mapping agency and the purchaser of all hydrographic services on behalf of the Crown. The Hydrographic Service of the RNZN has

become the prime provider of seabed surveys and nautical charts.

The first ever contract for a hydrographic survey was recently let to an accredited provider. The development of the proposal, the tender, the establishment of QA processes and the letting of the contract were completed in a short time to ensure the contractor could optimize the best weather window and complete the work in FY 97/98. The contractor was expected to mobilize in late February and complete the survey by late May '98.

The amount of contracting work for FY 98/99 is currently being determined and tender documentation is being prepared. LINZ hopes to be in a position to offer tenders for accredited providers to consider within the next few months.

### Future Challenges

Land Information NZ has many new challenges to meet in the future some of which are outlined below:

- ◆ The identification of core functions of hydrography which should be retained and funded by the Government.
- ◆ Development of a process for accreditation of organizations who wish to tender for delivery of hydrographic services.
- ◆ Authorizing development of client-orientated charts and bathymetric products.

### Conclusion

The task set for Land Information NZ is without doubt a difficult one. RNZN charts are, quite rightly, held in high regard at both national and international levels. The changes outlined above have been implemented as a way of meeting New Zealand's hydrographic and bathymetric needs in the future. A possibility for the immediate years is a hybrid arrangement whereby Navy surveyors work alongside private sector counterparts to amalgamate their skills.

✻



## The Hydrographic Society

of America

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