



# PIANC Bulletin

Quarterly Newsletter of the International Navigation Association U.S. Section  
Permanent International Association of Navigation Congresses (PIANC)

Winter Issue

First Quarter · 2005

**President's Message** by Major General Don T. Riley, President, U.S. Section, and Director of Civil Works, U.S. Army Corps of Engineers

Dear Members,

It was a pleasure for me, as your new U.S. Section President, to renew acquaintances with many of you and meet others at this year's Annual Meeting in Baltimore. This event is instrumental for ensuring we continue the collaboration needed to promote a strong and modern U.S. navigation system.

Our efforts to keep America's ports and waterways competitive internationally are key to maintaining National security, strengthening the Nation's economy, and enhancing our environment. In this Quarterly U.S. Section Bulletin, let me expand on those strategic concepts.



**MG Don T. Riley**

**Maintaining National Security.** During this time of terrorist threats to U.S. interests and those of our allies, we must remain vigilant on the national security front. Areas of vulnerability in our ports and waterways are many, with significant potential impact. Risks must be assessed and security measures implemented. The navigation community must develop a culture of awareness against terror threats, establishing communication networks with authorities and reporting suspicious activities at our harbors and along our waterways.

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Lastly, we must prepare and train to react in the event an incident should occur.

***Strengthening the U.S. Economy.*** The U.S. is blessed with an extensive and well-developed navigation system. It is the backbone of our international trade, which drives the country's economic engine. However, with our aging navigation infrastructure having a multibillion dollar backlog of maintenance items, as well as needs for replacement or upgrade in some instances, telling the navigation story to our Nation is important. We must make steady progress in addressing maintenance and development needs along our ports and waterways, while at the same time implementing sustainable solutions where we face social and environmental challenges.

***Enhancing Our Environment.*** The country's rivers, lakes, and coasts serve as corridors for transportation, but they also provide flood damage reduction, water supply, and hydropower for our people and industries. Water bodies also provide habitat to sustain fish and wildlife, as well as opportunities for recreation. Achieving our many water resources needs will require that we work together with a variety of interests, striking a balance among this spectrum of uses. Attaining balance comes with additional cost; however, the long-term health of our environment is vital to our own health and welfare. The way forward is through a culture of conservation, environmental protection, and ecosystem restoration.

The Technical Seminar held in Conjunction with the 2005 PIANC Annual General Assembly (AGA 05), scheduled for May 12, 2005, in Charleston, South Carolina, will be a great forum to discuss these strategic messages at the international level. With an extensive line-up of navigation-related papers to be delivered at the conference, it will be a unique chance to learn what others are doing to achieve these goals.

This is also an opportunity to interact with navigation interests from abroad, who play an

important role in international commerce with the U.S. The conference is for senior leaders and their staffs involved in the navigation mission, directly or indirectly. U.S. Section Chairman Mr. John Paul Woodley, Jr., joins me in encouraging as many as of you to as possible to attend, and I hope to see you there!

Sincerely,

Major General Don T. Riley  
President, U.S. Section, and Director of Civil Works, U.S. Army Corps of Engineers

## **World Dredging Congress XVII Held in Hamburg, Germany**

*by Edmond Russo*

The World Organization of Dredging Associations (WODA) had its seventeenth World Dredging Congress from September 27 to October 1, 2004, in the Hanseatic City of Hamburg, Germany. The theme of the conference was "Dredging in a Sensitive Environment," which was organized by the Central Dredging Association (CEDA) on behalf of WODA. The event was held in conjunction with the Shipbuilding, Machinery, and Marine Technology (SMM) 2004 International Trade Fair.

Delegates from around the globe convened at the event to meet old friends and new in the field of dredging. Ideas were discussed regarding legislation and policies towards dredging. Attendees exchanged project experiences to understand lessons learned and best practices. New processes and technologies in dredging were also presented, with group discussion.

World Dredging Congress XVII had technical tours of dredging projects around the Port of Hamburg and connecting channels; technical sessions where papers were presented; as well as a post-Congress tour of islands in the Wadden Sea. The technical exhibition boasted 31 companies to address the dredging-related needs of delegates.

Tour 1 was of the Mechanical Treatment and Dewatering of Harbour Sediments (METHA) Plant, which is located in the Port of Hamburg. The plant separates dredged sediments into coarse sand, fine sand, and silt. The sand materials are used in construction applications. The silt fraction, which contains contaminants, is disposed of in a specially designed site. The site espouses design features similar to that of a hazardous waste landfill.



***METHA Plant particle grain size separator (top); Separated coarse fraction (right)***

The METHA facility cost about 70 million Euro (€) to construct. Annual plant operations over the last ten years since being placed into service runs on average about €12 million. About 1 million cubic meters of dredged materials are processed each year by the plant. As cells of the disposal facility reach capacity, they are capped and planted with habitat suitable for wildlife and recreation.



***METHA Plant sand and silt stockpiling***

Tour 2 brought delegates to the Technical University Hamburg-Harburg (TU HH), which offers courses on river and coastal engineering. TU HH also has newly established institutes for developing innovative methods for handling and treating sediments, as well as that of sediment systems, which were visited by conventioners.

The Muhlenberger Loch Project was the subject of Tour 3, which was created to reclaim a sensitive fresh water mud flat during provision of port expansion for Airbus Industries.



***METHA Plant silt disposal operations***

Congress delegates attending Tour 4 went to the German Waterway Engineering and Research Institute Coastal Division (BAW-AK), where they viewed the latest technologies on hydrodynamic modeling of river and coastal water bodies for sediment management. The modeling efforts support project planning and evaluation for a sustainable balance between economic and environmental objectives during port development.

See us at the U.S. Section web page:  
<http://www.iwr.usace.army.mil/PIANC/>



***Rugenberger Schleuse Lock, connecting the Elbe River and Alster Lake***

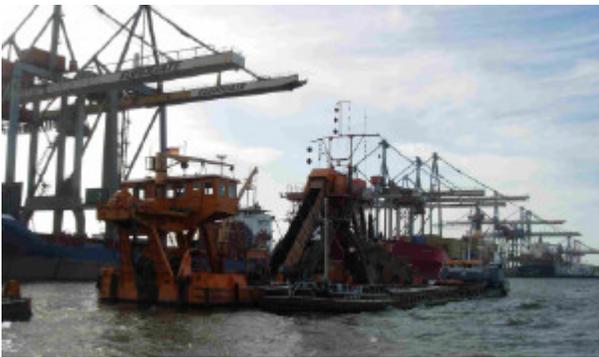
Hamburg City and Port was the subject of Tour 5. Delegates were afforded the opportunity to view bucket ladder and hopper dredging operations; tour the extensive, high-tech container facilities, as well as the lock systems between the Elbe River and Alster Estuary.



***Modern vessel tracking system in port***



***Container-on-barge operations on the Elbe River***



***Bucket ladder dredging at container ship berths***



***Grain ship loading at waterside silos in port***

Mr. Rewert Wurpts, Chairman of WODA, and President of CEDA, delivered the opening remarks at the plenary session. Mr. Wurpts placed emphasis on the importance of ports and waterways world wide, as follows:

- Port activity and shipping are integral to the world's national economics for sustainability and growth;
- Waterways are multiple use resources, providing access to shipping, water supply, flood waters routing, and habitat for flora and fauna;
- Dredging is key to supporting shipping trade;
- Project cost alone is not a priority, considering multi-use protection and conservation;
- Sustainable concepts must be sought to balance economic and environmental objectives, for attaining public support; and
- Knowledge and technology are strategic for achieving sustainability goals.

The U.S. Section was well represented by several governmental agencies, as well as members of the private sector. Dr. Dena Dickerson, USACE ERDC, gave a paper on dredging impacts and

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<http://www.pianc-aipcn.org/>

measures for protection of sea turtles in the southeastern U.S. Mr. J. Cura, with Menzie-Cura & Associates, Inc., participated in a group paper covering environmental risk assessment on dredging projects, in connection with EnviCom PIANC Working Group 10. Mr. Craig Vogt, USEPA, delivered a presentation on the London Convention. Mr. T. Rogers, employed by Service Engineering Group, talked about data gaps and their resolution at a superfund sediment site.



***Dr. Linda Mathies (center right) and Edmond Russo (left), USACE, New Orleans District, and Dr. Doug Clark, ERDC (right), conversing with Dr. Anna Cisti (center left), WODA at Hamburg City Hall reception***

Mr. Vogt and Dr. Bob Engler, USACE ERDC, and Commissioner of PIANC EnviCom, served on a panel for discussion leading to the signing of the Hamburg Declaration, centered on upholding holistic approaches to dredged materials management, as well as project planning and execution for sustainability on a basin scale. Dr. Doug Clark, USACE ERDC, gave a presentation on the precautionary principle applied to environmental windows for dredging. Mr. T. Otten, Geotechnical Engineering Consultant, discussed his paper on factors affecting disposal and reuse of contaminated dredged material. Dr. Linda Mathies and Mr. Edmond Russo, USACE, New Orleans District, delivered a presentation on development and project application of their Hydraulic Dredge Constituent Fate Model (HD-CFM). Dr. Ram Mohan, of Blasland, Bouck & Lee, Inc.,

participated in a group paper on habitat value considerations for sediment caps. Dr. Robert Randall and Dr. B. Koo, of Texas A&M University, presented a paper on the potential for floating breakwaters in increasing dredging operating time during beach nourishment. Mr. Tim Welp, USACE ERDC, et. al., presented a paper covering dredging equipment modifications for detection and removal of ordinance.



***Dr. Bob Engler discussing PIANC and the Environment***

The World Organization of Dredging Associations is comprised of the Western Dredging Association (WEDA) serving the Americas, the Central Dredging Association (CEDA) serving Europe, Africa, and the Middle East, and the Eastern Dredging Association (EADA) serving the Asian and Pacific region. The Associations that form WODA are non-profit organizations dedicated to the exchange of knowledge and information related to dredging, navigation, marine engineering and construction. Members of CEDA, EADA and WEDA include designers, builders and suppliers of dredging equipment, dredging companies, port authorities, shipping and business interests, academics, representatives of all levels of government, and other stakeholders. The three

sister associations share the mission of WODA and operate autonomously.

World Dredging Congresses are held every three years. WODA delegates the responsibility of the organization to the association in whose region the congress takes place. Since the current WODA was formed, the following congresses have been held: Amsterdam ('78), Vancouver ('80), Singapore ('83), Brighton ('86), Orlando ('89), Bombay ('92), Amsterdam ('95), Las Vegas ('98), Kuala Lumpur (2001). For more information about WODA visit <http://www.woda.org>.

## **COPRI Update: Meet the 2005 Governing Board** *by Kelly J. Barnes*

The Coasts, Oceans, Ports, and Rivers Institute (COPRI) was created in 2000 as an Institute of the American Society of Civil Engineers (ASCE), the United States' oldest national engineering society. COPRI works to advance and disseminate scientific and engineering knowledge to its diverse membership engaged in sustainable development and the protection of coasts, oceans, ports, waterways, and wetlands. Membership is open to civil engineers, other engineers, scientists, managers, planners, and lawyers - anyone interested in the development and protection of the coastal, port, and river environments for the benefit of society in the U.S. and other countries.

The COPRI proudly introduces their new governing board.

### **Gordon Sterling, P.E., COPRI President.**

In over a 35 year career with Shell Oil Company, USA, Exploration and Production, Sterling worked as a Project Engineer, Structural Designer, Research Supervisor, Design and Installation Supervisor, Production Superintendent, Project Manager, Manager of Deepwater Projects, and



Director of the Year 2000 (Y2K) Compliance Project. Projects completed under Sterling included the record setting Tension Leg Platform (TLP) series - Mars, Ram-Powell, and Ursa - in 3000 to 4000 feet of water, as well as the Sub-Sea developments of Tahoe, Popeye, and Mensa (5400 feet water depth). Sterling earned a Bachelor of Applied Science in Civil Engineering from the University of Waterloo, Ontario, in 1963 and a Masters of Civil Engineering from Lehigh University in 1965. Since his retirement from Shell, Sterling has, in collaboration with two others, authored a book entitled "Deepwater Petroleum - Exploration and Production - A Non-Technical Guide". Filled with illustrations, graphs and pictures, this non-technical guide aims to help people understand the history, technology, business and future of this multi-billion dollar industry. Sterling represents the Ocean and Offshore Engineering technical community on the COPRI Board.

**Douglas A. Thiessen, P.E., COPRI Vice President.** Douglas A. Thiessen is the Port of Long Beach's chief harbor engineer, where he heads all port engineering and construction projects, overseeing more than \$300 million a year in projects. He has responsibility for engineering design, project and contract management, surveying and mapping, and construction. Thiessen received a bachelor's degree and did graduate work in civil/structural engineering at the University of Southern California, and has extensive experience in public engineering projects and transportation. Prior to coming to the Port of Long Beach, Thiessen also spent time at the Port of Los Angeles where he worked for 15 years on expansion projects and eventually was named the port's manager of special projects. Thiessen represents the Ports and Harbors technical community on the COPRI Board.

**Charles C. Calhoun, Jr., P.E., COPRI Past President.** Charles Calhoun is an engineering consultant in the private sector and a sought after speaker and facilitator for leadership development programs, particularly for engineers. He holds a

Bachelor and Masters degree from Mississippi State University and Oklahoma State University, respectively. In 1999, Mr. Calhoun retired as the Deputy Director of the Coastal and Hydraulics Laboratory (CHL) of the U.S. Army Engineer Waterways Experiment Station (WES). Prior to coming to CHL he was a Program Manager in the WES Environmental Laboratory where he was responsible for all Corps of Engineers research related to the environmental impacts of dredging and dredged material disposal. He is also a Commissioner of the U.S. Section of the International Navigation Association (PIANC). Calhoun represents the Rivers technical community on the COPRI Board.

**Billy Edge, Ph.D., P.E.** Dr. Billy Edge is currently the W. H. Bauer Professor in Dredging Engineering at Texas A&M University and Director of the Haynes Coastal Engineering Laboratory. Before joining the program at Texas A&M in 1993, he worked in private practice for ten years with Cubit Engineering Limited and then Edge & Associates, Inc., where he provided consulting services in the area of port, harbor and coastal engineering to clients worldwide. Dr. Edge's professional and research interests are coastal engineering, dredging technology, storm surge and hurricanes, coastal zone management and water quality modeling. Dr. Edge currently serves on the Marine Board of the National Academy of Engineering and is one of the three civilian members of the Coastal Engineering Research Board of the U.S. Army Corps of Engineers. Edge represents the Coastal technical community on the COPRI Board.

**John R. Headland, P.E., ASCE**  
**Representative.** John Headland is a Senior Vice President and a Director of Moffatt & Nichol and works in that firm's New York City office. Mr. Headland graduated from George Washington University (Bachelor's of Science in Civil Engineering) and attended California State University, Long Beach (Master's of Science in Civil Engineering) and Duke University (doctoral

course work). Mr. Headland is a practitioner in the fields of port and coastal engineering. Over the past 25 years, he has worked on many shore protection projects, container/LNG/petroleum/bulk ports, offshore moorings, and dredging and dredge material placement assignments. He joined Moffatt & Nichol in 1980, worked for the U.S. Navy from 1986-1992, and returned to the firm in 1992. While with the Navy he served as worldwide consultant for harbor and coastal engineering where he performed projects throughout the U.S. and the Pacific.

**Thomas H. Christensen, P.E., COPRI Treasurer.** Thomas Christensen is an Engineering Program Manager for design and construction for Kellogg, Brown & Root. He holds a Bachelor's degree in Civil Engineering from the University of California, Berkeley, and Masters in Ocean Engineering and Material Science from Massachusetts Institute of Technology. He has also completed a Masters of Business Administration from the California Lutheran University, and is a Distinguished Graduate of the Industrial College of the Armed Forces. Mr. Christensen retired as a Captain from the Navy in 1997 after 27 years, where he worked in design and construction management, ocean engineering research and deep submergence.

**Daniel Cox, Ph.D., COPRI Secretary.** Daniel Cox is a professor in Civil Engineering at Oregon State University. He received Bachelor, Master, and Ph.D. degrees in Civil Engineering from the University of Delaware where he specialized in coastal engineering at the Center for Applied Coastal Research. In 1995, he joined the faculty in the Ocean Engineering Program at Texas A&M University where he developed an active research and teaching program in near shore processes related to coastal erosion and the stability of coastal structures. In 2002, Dr. Cox joined the Civil Engineering faculty at Oregon State University where he also serves as the director of the O.H. Hinsdale Wave Research Laboratory, the largest coastal facility at an academic institution.

## Critical Issues Facing the 8<sup>th</sup> Coast Guard District *by LT Kevin Lynn*

The 8<sup>th</sup> Coast Guard District is one of the largest and most diverse districts in the Coast Guard. It spans an area that covers all or part of 26 states, 10,500 miles of inland waterways, 1,300 miles of gulf coast waterways, and thousands of square miles of the Gulf of Mexico. The 8<sup>th</sup> District is home to all types of marine activity, from deep draft shipping to barge traffic, oil and gas production to the exportation of grain, and to commercial fishing and recreational boating activities. The Coast Guard has, and always will be committed to providing mariners and the maritime industry the best service possible. As part of this service, it is important to keep the maritime industry abreast of issues that are currently in the spotlight. The following are issues that in one way or another affect the mariner or maritime industry.

***Towing Vessel Inspection Program.*** The Coast Guard and Maritime Transportation Act of 2004 amends the United States Code to add towing vessels to the list of vessels subject to inspection by the Coast Guard. The amendment also provides for the establishment of a safety management system for the characteristics, methods of operation, and nature of service of towing vessels. The basic concept of adding towing vessels to the Coast Guard inspection program is to ensure the safety of individuals and property on board these vessels. While towing vessels have long been referred to as “un-inspected” vessels, it does not mean they are “un-regulated.” Subchapter C of Title 46, Code of Federal Regulations provides general regulations including requirements for lifesaving and fire protection equipment on towing vessels. There are also specific regulations regarding the authority of the Coast Guard to board towing vessels in the performance of their duties, which include conducting safety inspections or examinations.

Presently, towing vessels do not carry a Certificate of Inspection. However, with the provisions of the Coast Guard Authorization Act,

towing vessels will be issued a Certificate of Inspection. This change requires the Coast Guard to regulate a variety of towing vessel components, including the design, construction, alteration and repair of the superstructure, hull, propulsion equipment, machinery, and life saving equipment. Because of the variety of towing vessels, the Coast Guard may prescribe different standards based on size, horsepower, type of operation, and area of operation. For example, the Coast Guard may prescribe different standards with regard to propulsion machinery and hulls for a towing vessel pushing barges down the Mississippi River than for vessels that provide towing assistance for recreational vessels.

The concept of a safety management system is to give the Coast Guard the ability to oversee the maintenance and repair of vessel equipment and ship systems subject to inspection through an approved safety management plan that includes maintenance schedules and system tests. To ensure the safety and well being of the crew, the safety management system must address the entire marine work environment of towing vessel personnel. Some key areas that must be addressed are: (1) vessel operating procedures and policies including better pilothouse management involving vessel navigation, watch standing and the development of standing orders; (2) enhanced safety and health policies and procedures addressing a broad range of issues including hearing conservation programs, confined space entry polices, and improved personal protective equipment; (3) development of detailed emergency response procedures; (4) development of internal audits and review procedures; (5) development of periodic maintenance and inspections schedules for all vessel equipment; and (6) a look at the human factors including vessel manning standards, crew training programs, and strict management of crew work hours. A crew endurance management system may also be an integral part of any safety management system. How the Coast Guard plans to enforce the requirements for a safety management system still has to be developed, but one option may be to

enforce the safety management plan through audits of the vessel's log and vessel operator's records rather than having to directly oversee the repair or maintenance work conducted on a particular piece of equipment or ship system.

**Mariner Licensing Issues.** The Coast Guard's mariner licensing program has been dramatically impacted over the last three years. The events of September 11<sup>th</sup>, 2001, and a new focus towards homeland security prompted significant improvements to the integrity and security of our licensing system. Several national and international regulatory efforts including implementation of the STCW-95 convention and sweeping revisions to the towing license requirements have also occurred. The additional evaluation and criminal background screening requirements that have come about from these initiatives have created extensive application backlogs at each of our Regional Examination Centers. Where it was uncommon to see backlogs greater than two weeks prior to 2001, application backlog of six to eight weeks at most of our exam centers are not uncommon.

In response to this, the Coast Guard has taken several steps to control and ultimately eliminate these backlogs. First, approximately \$110,000 in civilian overtime hours has been expended at Eighth District Regional Exam Centers. Second, contract personnel have been added and active duty, reserve and in certain cases, Coast Guard Auxiliary personnel from other missions within of our Marine Safety Offices have been temporarily reassigned to address the problem. These efforts have prevented further growth of the application backlogs. Recognizing the significant burden that extensive licensing process delays place on companies and individual mariners, the 8<sup>th</sup> District will continue to use all available resources to address and ultimately eliminate these backlogs.

**Coast Guard Sector Implementation.** The Coast Guard must continue to grow and evolve to effectively manage both the traditional missions and the sweeping changes to the operational

environment resulting from the attacks of September 11<sup>th</sup>, 2001. In order to meet this new challenge, the Coast Guard is establishing approximately 40 Sector commands by integrating Coast Guard Groups, Marine Safety Offices, Vessel Traffic Services and, in some cases, Air Stations, to more effectively handle and prosecute assigned missions in this new operational environment. Unifying Coast Guard operational functions into a single Sector command places the full range of our missions under one local operational commander. This can be likened to the efficiencies realized by the creation of the Department of Homeland Security, which effectively achieved the same result by unifying multiple existing agencies. The Coast Guard plans to have all Sectors implemented by the end of 2006.

Realigning the Coast Guard field structure to unify operational communities is not a new idea, and the Coast Guard currently has several successful consolidated command models. From these models, a generic Sector model has been developed that includes prevention, response, and logistics elements. This model can be modified to account for local factors such as geography and the complexity of the area of responsibility. This structure draws together a full range of the Coast Guard's missions and personnel, which allows for increased coordination and operational effectiveness.

The creation of Sectors is a strategic change that will impact the entire organization and will benefit all customers, especially the maritime industry. This change leverages many innovative approaches across the service and will further improve operational performance by enhancing Coast Guard interoperability, creating a common operating picture, allowing for the rapid sharing of information, and identifying a single contact for stakeholders. Day-to-day operations will be even more aligned, coordinated and integrated.

**Vessel Traffic Service Update.** In addition to creating Sectors to improve operational

performance, Coast Guard Vessel Traffic Services (VTS) are also being enhanced. Automatic Identification System (AIS) carriage requirements for vessels transiting VTS areas in Houston and Port Arthur, Texas, as well as Berwick Bay and New Orleans, Louisiana, became effective on December 31, 2004. The implementation of AIS in coastal ports is a significant step forward in increasing maritime domain awareness, enhancing the ability to manage vessel traffic and providing mariners with current up-to-date information that will further their efforts to safely navigate U.S. waters.

Progress in making VTS Lower Mississippi River operational continues. Currently, efforts are underway to install a 6<sup>th</sup> and final AIS base station in the vicinity of Mississippi River, Southwest Pass, a fifth land based radar at mile marker 100 in Westwego, Louisiana, and AIS coverage tests commenced in September of 2004. These coverage tests included a thorough analysis of the Mississippi River from Southwest Pass to Baton Rouge to ensure there are no AIS coverage gaps. The established standard will be that for anyone operating on the AIS system with an antenna height of 3 meters or greater above the water, full coverage regardless of vessel location in the system will be achieved. The Coast Guard is also building a VTS in the Port Arthur area, and this project is progressing at a fairly rapid rate. With a recent hiring of personnel and the installation of equipment, a limited operational capability should be in place by the spring of 2005.

***Maintaining an Aging Fleet of Construction and River Tenders.*** A reliable system of aids to navigation is needed for safe and efficient movement of products through the intracoastal waterway and western rivers. As such, a reliable fleet of construction tenders and buoy tenders is also needed to provide that aids to navigation system. The fleet of Coast Guard tenders is nearing the end of its service life with most cutters reaching 40-45 years of age. To ensure that the aging tenders will be able to meet mission requirements until the fleet can be replaced, a major overhaul for the 75-

foot construction tenders and the entire fleet of river tenders is being planned. System upgrades include standardizing machinery and equipment systems from the propulsion plant to the bridge. This project is expected to commence early in 2005 with the first vessels being the construction tenders. Each cutter is expected to be out of service for approximately eight months, however other cutters will work to cover any temporary loss of services.

***Bridge Allisions.*** On average, a bridge allision occurs within the 8<sup>th</sup> District every two days. The Illinois River, Upper Mississippi River and Gulf Intracoastal Waterway (GIWW) are the waterways that have the greatest number of bridge allisions. An analysis of the most frequently hit bridges shows that the Galveston Interstate Highway 45 Causeway Bridge, the Bayou Dularge Bridge, and the Southern Pacific Railroad Bridge on the GIWW lie amongst the ten most hit bridges between 1991 and 2001.

There are a number of ongoing projects that will help reduce bridge allisions. The American Waterways Operators have been working with the Coast Guard on crew endurance studies and recommendations to industry on how crew and pilot fatigue can be reduced. Many companies have embraced these recommendations had have implemented a number of them, including darkened quarters for crews and alternate watch standing rotations and cycles. Additionally, GICA members worked with the Coast Guard and Louisiana State Bridge Personnel on improving the understanding between bridge operators and towboat pilots through personnel exchanges on a number of lift bridges that mariners have experienced problems navigating.

The National Transportation Safety Board investigation and recommendations regarding the Interstate Highway 40 bridge accident is expected for release soon. But until that report is issued and the recommendations made known, all mariners are encouraged to consider implementing additional safety measures when transiting known problem

areas. Company management, safety officers and vessel officers are also encouraged to pass information amongst each other and through maritime associations on areas and bridges that present the greatest problems. An increase in vigilance, training to pilots in transiting difficult areas, managing crew endurance, and sharing information on problem bridges will help manage today's risks to prevent tomorrow's casualties.

All of these issues as well as many other issues continue to be worked both within the 8<sup>th</sup> District as well as throughout the entire Coast Guard. Mariners and the maritime industry as a whole are encouraged to work through their local Coast Guard units to help improve the safety, security and viability of the ports and waterways throughout the nation. Establishing such partnerships between the Coast Guard and members of the maritime community will help in the evolution of a safer and more secure working environment.

LT Kevin Lynn is with the Eighth Coast Guard District, Waterways and Port Security, Tel: (504) 589-6217, Email: [klynn@d8.uscg.mil](mailto:klynn@d8.uscg.mil).



## U.S. Section Annual Meeting Emphasizes Prosperity through Innovation and International Commerce

by Edmond Russo and Anne Sudar

On October 19<sup>th</sup> and 20<sup>th</sup>, 2004, Baltimore's Inner Harbor was the scene for this year's Annual Meeting of the U.S. Section. In addition to a meeting of our section's Commissioners, a seminar on the emerging container-on-barge (COB) transport industry was held, bringing a wide range of navigation interests together for discussions of strategic trade growth opportunities.



**Baltimore's Inner Harbor**

As Chairman of the U.S. Section, Assistant Secretary of the Army for Civil Works, Mr. John Paul Woodley, Jr., provided opening remarks at the U.S. Section's Meeting of the Commissioners. Mr. Woodley recognized Mr. Tom Wakeman, Operations Manager for the Port Authority of New York and New Jersey, for his volunteerism and dedication in serving during the rebuilding of Iraq's port and waterway infrastructure (see related articles in the U.S. Section's Third Quarter 2004 News Bulletin). Mr. Woodley congratulated Mr. Charles Calhoun for his dedication and contributions in forwarding the missions of PIANC and ASCE's Coasts, Oceans, Ports and Rivers Institute. Mr. Woodley expressed his appreciation to Mr. Kurt Nagle, President of the American Association of Port Authorities, for his work on the Inter-American Initiative, aimed at fostering progressive navigation networking in the Americas.



**U.S. Section Leadership Dinner**

Mr. Woodley opened the regular meeting of the U.S. Section, drawing attention to PIANC's fostering of innovation and technical exchange on navigation topics since 1885. Citing the Inter-American Initiative, Mr. Woodley underscored the U.S. Section's value to the Nation as providing:

- Stronger ties in the Pan-American region for increased trade through navigation;
- A concept of all nations prospering together; and
- Real progress towards a strong and modern navigation system for benefit of international partners of the Americas.

Major General Don T. Riley, Director of Civil Works, USACE, and President of the U.S. Section, expressed his excitement at being a part of PIANC, having a history of involvement in navigation as Commander of the Corps' Mississippi Valley Division. MG Riley expressed his personal interest in the Corps' civil works budget, oriented towards assisting Mr. Woodley to enact performance based budgeting as part of the President's Management Agenda.



*ASCE's National President, William Henry, P.E., discussing the importance of the U.S. navigation system with Mr. Woodley and MG Riley*

The main civil works budget challenge posed by MG Riley was that USACE must finish water resources projects currently under construction to realize long-anticipated benefits. Navigation community experts were called to express their

views on the best ways the Corps' budget could be spent to sustain the navigation mission. MG Riley ensured that the Corps intends to capture second and third order effects when evaluating navigation projects for budgeting, such as ecosystem restoration and recreation.



*Mr. Woodley (left) delivering his address, which was followed by that of MG Riley (right), Dr. Engler (middle), and the general session of delegates*

MG Riley discussed the way ahead, by presenting the recently published Corps of Engineers Civil Works Strategic Plan for FY 2004 through 2009, signed by Mr. Woodley this past spring. Stimulated by a need to sustain projects from the economic and environmental perspectives in a cost effective way, the plan supports:

- Responding to environmental damage caused by past projects;
- Modernizing or deactivating projects to be best stewards;
- Providing disaster / energy response to storm-afflicted areas, providing water, ice, and temporary shelter;
- Supporting military efforts in Iraq and Afghanistan, fighting terrorism and rebuilding infrastructure; and
- Transforming USACE into a world-class public engineering organization, responding to the Nation's needs in peace and war in a balanced way.

Concluding his remarks, MG Riley characterized PIANC as one of the great opportunities for public and private interests to build a strategic coalition as navigation partners, towards a long-term view of what is best for America's waterborne commerce.

The technical seminar topic was "Implications for Navigation Infrastructure with an Emerging COB Sector," which was moderated by Mr. Tom Wakeman. Mr. Wakeman characterized the container market growth internationally, and how that traffic flow in the U.S. must be addressed to sustain the needs of commerce. Modes of transportation, route networks, and capacity of those lines are of paramount importance. Development of new, unused capacity of our Nation's waterways may be an answer, stated Wakeman.

Mr. James McCarville, from the Port of Pittsburgh, discussed the problems and opportunities associated with initiating a COB service on the Ohio River and the importance of having infrastructure in place. Mr. Joseph Pyne, President, Kirby Corporation, addressed the importance of water transportation services to satisfy increasing demands for freight transport as a result of domestic and international trade growth.



*John Lesnick (left), Bob Nichol (left center), and Dan Allen (right), of Moffatt & Nichol Engineers, conversing with MG Riley (right center) on navigation and ecosystem sustainability issues*

Mr. Lloyd Thompson, Moffatt & Nichol Engineers, spoke about the Port Inland Distribution

Network, which is an initiative of the Port Authority of New York and New Jersey. The project aims at distributing containers by barge and rail, in addition to trucks. Mr. Michael Kidby, Senior Program Manager for Inland Waterways, HQUSACE, discussed the implications of COB transport on the Corps. A need for safe and reliable inland waterways infrastructure was expressed as a key consideration.



*An opportunity to socialize among old and new associates in the navigation field*

Ms. Doris Bautch, Director, Great Lakes Region of the Maritime Administration, delivered a presentation on the Heartland Intermodal Partnership (HIP). This is a regional approach intended to expedite safe and secure freight movement, as well as to reduce congestion through increased use of the Heartland's intermodal transportation system, including water resources, to cope with transportation demands.

## **The Great Lakes – St. Lawrence Seaway System Study** *by Dave Wright*

The Great Lakes Basin encompasses some 94,000 square miles with over 10,000 miles of coastline. Upon completion of construction of the St. Lawrence Seaway in 1959, a 2400-mile deepwater navigation route was created connecting the Gulf of St. Lawrence on the Atlantic Ocean to

the head of the Great Lakes at Duluth Minnesota (see Figure 1). Navigable portions of the system include 1400 miles on the Great Lakes and 1000 miles on the St. Lawrence River. The navigation system includes seven locks (five Canadian and two U.S.) within the St. Lawrence river between Montreal and Lake Ontario, eight locks (all Canadian) within the Welland Canal between Lake

approximately 30 rail lines and more than 40 provincial/interstate highways.

The Great Lakes-St. Lawrence Seaway navigation system exists today essentially as it did when the St. Lawrence River portion opened in 1959. With the exception of the construction of the Poe Lock at Sault Ste. Marie, Michigan in 1968,



**Figure 1. The Great Lakes – St. Lawrence Seaway System. Photo Credit: St. Lawrence Seaway Management Corporation and St. Lawrence Seaway Development Corporation**

Ontario and Lake Erie, and four locks (all U.S., with only two currently in operation) located within the St. Mary’s River between Lake Superior and Lake Huron. The navigation system is an integral component of North America’s transportation Infrastructure, serving 15 major international ports and some 50 regional ports, and providing links to

there has been no comprehensive redesign or renewal of the aging infrastructure on the waterway since its original construction. Considering that construction of the present locks on the Welland Canal date back to 1913, it’s a remarkable testament to lock maintenance (Figure 2). Perhaps of even greater concern, there has been no strategic plan that addresses the future of the system.



**Figure 2. Welland Canal Flight Locks. Photo Credit: St. Lawrence Seaway Management Corporation**

The navigation locks of the Great Lakes-St. Lawrence Seaway are routinely exposed to various factors, which affect concrete durability. This includes freeze and thaw cycles, watering/dewatering cycles, thermal effects, hydro-mechanical effects, steel reinforcement corrosion and ship impact. One additional maintenance issue having to be dealt with is the existence of alkali-aggregate reaction (AAR). In the case of the four locks located in the Eastern Region of the St. Lawrence Seaway, excessive swelling of the concrete due to AAR has caused operational and structural problems, including the squeezing of stop log guides and ice gates, pipe and shaft misalignments, jamming of valve seals, cracking within the cable galleries and the general deterioration of the coping concrete. Through 1999, it was estimated that approximately \$2,500,000 CDN had been spent on machine realignment and

concrete repairs, which were directly attributable to AAR.

In May, 2003, Secretary of Transportation Norman Y. Mineta and Transport Canada Minister David M. Collenette signed a memorandum of Cooperation (MOC). The MOC acknowledges the need for a strong partnership in a bi-national effort to evaluate the long-term integrity of the navigation system on the Great Lakes – St. Lawrence Seaway. In addition, both nations are aware that the waterway must continue to be a safe, reliable and environmentally sustainable transportation system. The MOC also reflects growing awareness from transportation policymakers that railroad and highway infrastructure on both sides of the border may not be able to accommodate a significant growth in freight traffic. The Great Lakes – St. Lawrence Seaway system, a consistently safe and reliable system, will likely play an increasingly important role in satisfying future growth.

The bi-national study is examining the condition and reliability of the locks and related assets of the system, as well as reporting on environmental and economic conditions. It's important to note that this is not a feasibility study; there will be no evaluation of improvements or modifications to the waterway such as deeper channels or larger locks. The study team includes representatives from the U.S. Army Corps of Engineers, the St. Lawrence Seaway Development Corporation, the St. Lawrence Seaway Management Corporation, U.S. Fish & Wildlife Service, Transport Canada, and Environment Canada.

The study, scheduled to be complete in the fall of 2006, will document what future investments are required to operate and maintain the waterway's existing infrastructure, and identify the corresponding socio and economic impacts. The report will provide a valuable tool not only for operations and maintenance decision makers who are working under current and anticipated future budgetary constraints, but also for policy makers

who are looking at the long-term viability of the system.

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## Port of Beaumont, Texas *by John Roby*

Nestled on the banks of the Neches River in Texas, in the middle of the downtown business district, the Port of Beaumont is carrying out a very important mission for the U.S. military. Since December, 2002, the Department of Defense has used the port to ship more than a fourth of the military hardware used in Operation Iraqi Freedom, more cargo than any other seaport.



*Port of Beaumont, Texas*

Frequent visitors to the port are gigantic ships known as LMSR's, which stands for Large Medium Speed Roll-On Roll-Off ships. The huge gray ships, which are the Navy's newest and largest cargo carriers, are around 1000 feet long, and carry the equivalent of 3000 Sports Utility Vehicles (SUVs).

The United States Maritime Administration and Department of Defense have designated 15 commercial U.S. ports – including the Port of Beaumont – as strategic ports. Since the war began, the Port of Beaumont has handled a total of 79 shiploads of cargo, representing more than 65,000

pieces of equipment weighing in excess of 600,000 tons.

The Army's Surface Deployment and Distribution Command recently recognized the port's importance with the presentation of its annual Quality Award for 2003. The port was nominated for the award its role in shipping cargo to Iraq in support of Operation Enduring Freedom and Operation Iraqi Freedom.

First designated a wartime port in 1952, the Port of Beaumont has been active in every major foreign conflict, exercise and humanitarian effort undertaken by the U.S. military from the Korean War, Vietnam, Operation Desert Storm and Operations Iraqi Freedom and Enduring Freedom.

The port is home to two major military commands: the Army's 842<sup>nd</sup> Transportation Battalion, which is part of the Surface Deployment and Distribution Command (SDDC) and the U.S. Navy's Military Sealift Command (MSCO Beaumont)

In addition to military cargo, the Port of Beaumont handles a variety of commercial cargoes including bulk and break bulk commodities. In an average year, more than three million tons of cargo crosses the port's wharves, including bulk cargoes such as grain, aggregate and potash; and break bulk commodities like forest products, steel, and project cargo.

The Port of Beaumont has excellent highway and rail connections. Located less than one mile from Interstate Highway 10, the port has direct service by three major Class 1 railroads: the Burlington Northern Santa Fe, Union Pacific, and Kansas City Southern. Beaumont is also the origin point for the Texas Mexican Railroad, which regularly handles cargo transshipped through the port for destinations in Mexico.

Like most U.S. ports, the Port of Beaumont is upgrading its security facilities, using a combination

of state, federal and local funding. Security improvements include upgraded fencing and lighting, purchase and installation of security camera systems, construction of a new command and control center and access controls. The improvements are being made as part of a nationwide effort to enhance security at key port facilities.

The port is beginning a major Rail Improvement Project, which will expand and relocate the facilities used to interface with the three railroads that serve the port. The project will increase the port's railcar capacity, improve efficiency and security, and promote economic development of Neches River frontage in the downtown area.

The port owns about 455 acres of property in Orange County, on the East bank of Neches River, including a 215-acre parcel purchased in September. Development options for the property are currently being evaluated, and several proposed uses are being considered. The initial development of the property began with construction of the first 600 feet of bulkhead, location of potable water and utilities, and construction of an access road and railroad bed on the site.

The importance of Beaumont as a strategic port for the military, plus the large amount of petroleum traffic moving on our waterway in tankers, points out the need for funding of ship channel maintenance. The port complex in Beaumont, which consists of about 20 miles of the Neches River between the city of Beaumont and the Rainbow Bridge at Port Arthur, is ranked 4th in the U.S. in terms of foreign trade and total tonnage.

Tonnage on the waterway, which is identified as "Port of Beaumont" by the Corps of Engineers, was 85 million tons in 2002, the last year for which statistics are available.

The Corps is in the final year of a five-year study of the feasibility of channel improvements, including deepening, widening, and construction of passing zones.

John Roby is Director of Logistics & Public Affairs, Tel: (409) 835-5367, Email: [jrr@portofbeaumont.com](mailto:jrr@portofbeaumont.com). More information on the Port of Beaumont can be found on its website, [www.portofbeaumont.com](http://www.portofbeaumont.com).

## Navigation Data Center (NDC) Publications & U.S. Waterway Data CD by Ray Jones

**Navigation Data Center.** The U.S. Army Corps of Engineers (USACE) is responsible for the operation and maintenance of the Nation's waterway system. The Corps of Engineers, through the Institute for Water Resources, Navigation Data Center, exercises its Federal responsibility for establishing and maintaining a variety of water transportation information systems. These include databases and statistics pertaining to waterborne commodity and vessel movements, domestic commercial vessel characteristics, port and waterway facilities, lock operations, and navigation dredging projects. All public data are available through the Navigation Data Center (NDC) website, [www.iwr.usace.army.mil/ndc](http://www.iwr.usace.army.mil/ndc).

**NDC Publications & U.S. Waterway Data CD.** USACE NDC has just released its latest CD, Volume No. 10 NDC Publications & U.S. Waterway Data CD. The NDC Publications and U.S. Waterway CD is a source of information about waterborne transportation and the waterway infrastructure. Use your Internet browser to access the CD. All of the publications and data files are linked from the opening page (index.htm). In addition, a GIS data viewer is included but not required to use the CD. This free software allows visualization and analysis of the geo-referenced data sets. To receive a copy of this free CD, which is updated annually, contact Ray Jones, Email: [raymond.s.jones@wrc01.usace.army.mil](mailto:raymond.s.jones@wrc01.usace.army.mil) and be sure to include your current address, or visit the NDC website, [www.iwr.usace.army.mil/ndc](http://www.iwr.usace.army.mil/ndc).

## New Dredging and Coastal Engineering Laboratory at Texas A&M University

by Dr. Bob Randall



The new Reta and Bill Haynes (Class of 1946) Coastal Engineering Laboratory is located in the Research Park on the campus of Texas A&M University in College Station.

Installation of a wave maker and dredge/tow carriage is the primary activity in the laboratory at the present time, but it is anticipated that navigation, dredging, coastal structures and coastal processes testing projects will begin in 2005.

The main testing facilities (Figures 1a and 1b, respectively) are a large tow/dredge tank (12 ft wide, 10 ft deep with a 5-ft deep sediment pit, 150 ft long) and a large shallow water wave basin (75 ft wide, 120 ft long, and 4 ft deep).



**Figure 1a. Tow/Dredge Tank**

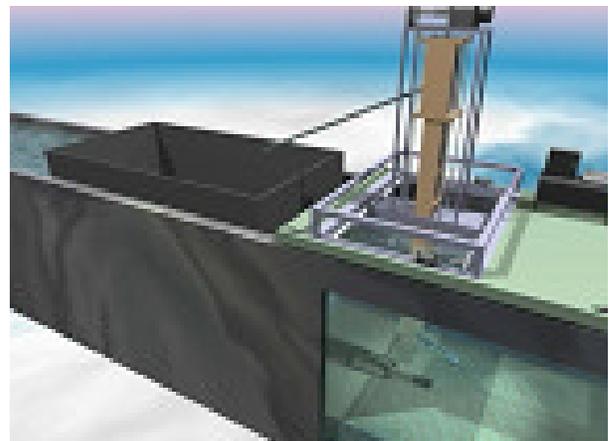
The Hinder Foundation donated \$200,000 for the construction of a dredge/tow carriage (Figures 2a through 2e) for the tow/dredge tank that will have a dredge system that includes a dredge pump (4-in-diameter suction and 3-in-diameter discharge), ladder, cutter head, draghead, and associated instrumentation. Oilfield-Electric-Marine (OEM) and Digital Automation Control Systems (DACs) in Houston, Texas are under contract to design, construct and install the dredge carriage. Kevin

Williams, President of OEM, has agreed to donate some of the electrical drive equipment, and Pete deJong of DACs is spearheading the carriage design and construction. GIW Industries is donating the dredge pump for the carriage.

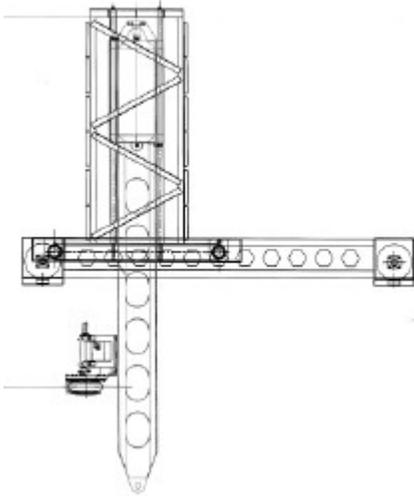


**Figure 1b. Shallow Water Basin**

The dredge carriage is expected to be operational in the November/December, 2004 timeframe. Rexroth-Hydraudyne in the Netherlands has been contracted to design, construct and install a directional, random wave generator for the shallow water basin and the wavemaker is expected to be operational by December 2004. One industrial testing project was completed in November, 2003, in the tow/dredge tank, and a year-long river meandering research project in the shallow water basin was completed in August, 2004.



**Figure 2a. Dredge/Tow Carriage**



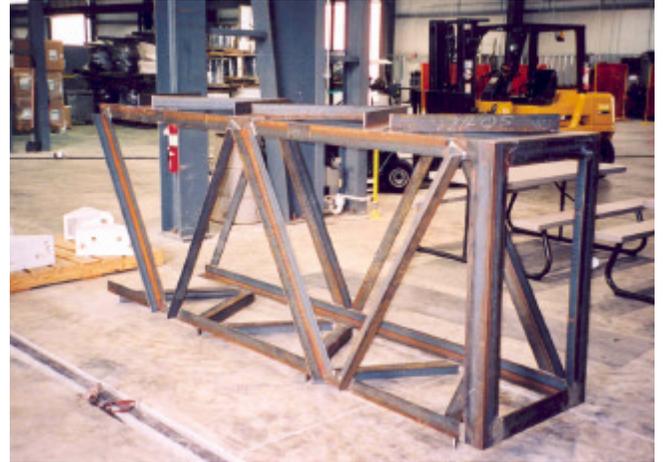
**Figure 2b. System Drawing**



**Figure 2c. Ladder**



**Figure 2d. Carriage Frame**



**Figure 2e. Tower Frame**

Information about the laboratory can be found at <http://coastal.tamu.edu> or by contacting Dr. Billy Edge, Director, Haynes Coastal Engineering Laboratory, Tel: (979) 847-8712, Email: [b-edge@tamu.edu](mailto:b-edge@tamu.edu).

### **National Waterways Conference 44<sup>th</sup> Annual Meeting (22-24 September, Adam's Mark Hotel, St. Louis, Missouri)** by David Grier

Under the Theme, “Think Outside the Locks”, NWC Chairman Robert Portiss kicked off the organization’s 44<sup>th</sup> annual meeting in St. Louis, in the shadow of the city’s famed Gateway Arch. But despite the admonition of the conference theme, the fragile state of the locks on the inland waterway system quickly took center stage.

Lead-off speaker Rob Vining, Chief of Program Integration for the U.S. Army Corps of Engineers, said that the tight budget situation has left the agency in a “breakdown-maintenance mode” and that it is no longer a question of whether a major failure will occur, but where and when it is going to happen. Prophetically, just a few days later, a major failure of the gates occurred in the auxiliary chamber at Mel Price Locks & Dam, just upstream from the conference site at St. Louis. Mr. Vining told the 250-plus attendees that the Corps’

operations and maintenance (O&M) budget has been flat for decades, even as the agency's portfolio of projects has grown, as projects have aged, and as the resources devoted to environmental stewardship and restoration have expanded. Meanwhile, the hours of lock "unavailability" time – both scheduled and unscheduled – more than doubled in the 1990s to an annual average of over 100,000 hours. This means longer queues at the locks and an increasing perception of unreliability about the waterway system that impacts shipper and carrier decisions.

Mr. Vining described a growing list of lock and dam emergencies over the past two years: John Day on the Columbia River; Greenup, McAlpine and Emsworth on the Ohio; Locks 15 and 27 on the Upper Mississippi; Bayou Sorrel on Gulf Coast; and Lockport on the Illinois Waterway. He noted these disruptions represent "a long-term erosion of the capacity of our system to handle traffic." The funding shortfall affects not only O&M, but capital improvements as well. Funding for the Olmsted lock replacement project is so stretched that the project may not be completed for another eight years or more, leading to concerns about how to keep the old locks at 52 and 53 functioning in the meantime. The funding dilemma has pushed the Corps to adopt "performance-based budgeting" that prioritizes limited O&M resources for those projects with the greatest returns to the economy. Mr. Vining stressed that this is still "more art than science" and that the agency will be seeking input from the navigation industry in developing meaningful performance metrics.

Richard Walker, Director of the Office of Intermodal Shipping for the Maritime Administration, spoke about opportunities for expanding container-on-barge use of the inland waterways and in short sea shipping. Mr. Walker noted that domestic freight in the U.S. is projected to grow by 67 percent by 2020, taxing freight capacity on highway and rail. Shifting some of this cargo to inland waterways and coastal shipping offers an escape from the gridlock that otherwise seems destined to occur. Farthest along are the

plans for the Port Inland Distribution Network (PIDN) at the Port of New York and New Jersey. Mr. Walker also highlighted Osprey Line's successful introduction of container-on-barge along the Gulf Intracoastal Waterway and Lower Mississippi River.

Jonathan Tolman, with the staff of the Senate Environment and Public Works Committee, addressed the topic of why many environmental groups in the United States oppose navigation use of the river systems, while in Europe such groups often take a more supportive position, seeing navigation as a "greener" freight transportation option. Mr. Tolman separates U.S. environmental groups into two types – Utilitarian versus Preservationist – with the former being more akin to European groups, while the latter holds a somewhat religious stance in their philosophy that traces back to Thoreau and John Muir. In Mr. Tolman's thesis, the passion and zeal of the Preservationists leave little room to find common ground or compromise over most water resources development issues.

The new Chief of Engineers for the Corps, Lieutenant General Carl A. Strock, gave a luncheon address that focused on the major changes underway at the agency. In particular, the Corps is responding to the public interest in increased environmental restoration to undo past degradation and neglect. The agency has also restructured and is implementing a new strategic plan that strives to balance economic and environmental considerations under a more collaborative planning process for integrated watershed management. General Strock cited the restructured Upper Mississippi River study as an example of the more collaborative approach the agency is seeking.

Several speakers from the Corps' Engineering Research & Development Center addressed new technologies and lessons learned from abroad. Dr. Craig Fischenich compared the European and U.S. approaches to sustainable watershed management, and in particular flood protection measures. Dr. Sandra Knight and Fred Pinkard looked at emerging

technologies in inland navigation and flood damage reduction, respectively. Dr. Knight cited paradigm shifts that are occurring in navigation, such as new flexible and fuel-efficient vessel types, decentralizing cargo distribution, and enhancing environmental sustainability in water resources management and development.

The second day featured discussions on balancing navigation modernization of several locks on the Upper Mississippi and Illinois Rivers with a major environmental restoration initiative; an innovative container handling facility near the mouth of the Mississippi; and a brainstorming session on how the inland waterway system of the future might operate. The conference closed with a luncheon address by U.S. Senator Jim Talent of Missouri, who said the general public understands the importance of recapitalizing our transportation infrastructure and offered suggestions to move beyond the current funding dilemma for the inland waterways, perhaps through issuing bonds. Senator Talent said he was a strong proponent of a new transportation bill and noted that it still under funds what is needed. To make up the difference, the Senator is co-sponsoring legislation that would allow the sale of bonds to help pay for infrastructure improvements. He noted that we only have a short window of opportunity to make these investments in the nation's future.

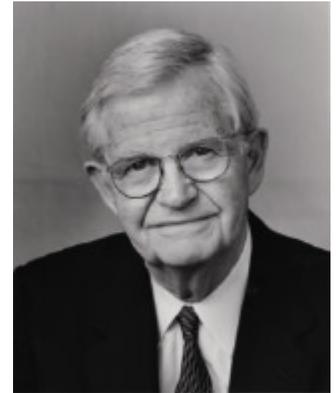
Presentations from the conference will be available on the NWC website:

<http://www.waterways.org/>.



## Meet the Commissioners *by Anne Sudar*

We are glad to highlight Mr. Bob Nichol this quarter, as next in an article series introducing our U.S. Section Commissioners.



Bob Nichol has been President of Moffatt & Nichol Engineers, for almost 30 years. The firm was founded by **Bob Nichol** John Moffatt and Frank Nichol (Bob's father) in 1945.

Certainly, the biggest part of the firm's engineering business, and where it has an international reputation, is in ports and harbors, land reclamation, dredging, over and in water structures, coastal engineering, and the riverine fields. Bob has never forgotten the philosophy of the founders, that a firm should always remember to focus on what it is good at, deepen and enlarge that niche, and continue to grow its expertise in that field of practice. He continually encourages his staff to be the very best that they can be. Being an employee-owned privately held company; growth is based on the ability to provide quality services. "We're only as good as our people, and our reputation is only as good as our last project, or better still, the one we are working on now," he says. He always emphasizes the importance of taking care of employees, constant on-the-job training, and providing them the opportunities to be challenged and to grow in their fields of expertise. He believes that the firm has some of the best employees in the industry.

Bob was born in Portland, Oregon in 1931 and moved to Long Beach, California as a boy in 1940. While in high school Bob worked on weekends on survey crews for the firm on small municipal projects. He liked outside work, and after a summer working on an uncle's farm in Minnesota, and

another summer on a cattle ranch in the Sierra foothills, he convinced his father to let his brother Jack be the engineer, for he wanted to be a farmer. After attending University of California at Davis (UC Davis) and receiving a degree in Animal Husbandry, he fulfilled his Reserve Officer's Training Corps (ROTC) commitment as an Infantry Lieutenant teaching recruits in South Carolina, and later served in Germany with the occupation forces. Having had plenty of "outside work" in the Army, he decided he liked engineering after all and enrolled in the University of Minnesota and received a Bachelor's of Science in Civil Engineering in 1959.

During his long and distinguished engineering career, Bob Nichol has worked on a host of interdisciplinary waterfront projects throughout the United States and Canada including large scale projects in Quebec, Louisiana, Illinois, Maryland and California.

The U.S. Navy and U.S. Army Corps of Engineers have been long-term clients of the firm since the early 1950s. During Bob's tenure the firm provided design services for every Engineering Field Division (EFD) of Navy Facilities Engineering Command (NAVFAC) and over 20 Districts of USACE. From Diego Garcia in the Indian Ocean throughout the Pacific, the three coasts of the continental U.S. and east to the Mediterranean / Near East, the firm has provided engineering services on military ports and waterfront facilities. For the Corps it's been more in the field of civil works concerning navigation, dredging, coastal engineering, water quality, sediment management, and related water resources field.

Historically, the firm was certainly at the right place at the right time to participate in the growth of the port industry. The change in international cargo from break bulk to containers had a profound influence on how the Ports needed to grow and develop. The globalization of industry coupled with the tremendous increase of world trade grew the

Ports of Long Beach and Los Angeles complex into the third largest in the world. The ports continued to grow and change their infrastructure to meet the needs of the shipping industry.

Bob saw that the cargo changes at the West Coast Ports were going to spill over to the other U.S. ports, so for the past twenty years the company has established offices in ports cities around the country and in Canada to assist the port industry in the changes required to handle this growth. Additionally, he encouraged the company to use the total capabilities of the firm no matter where that expertise lies, and that each office be interconnected with the other, so that any client has access to the best the firm has to offer. Building on the firm's long established history in port engineering, he brought key people on board in port planning, economics and cargo forecasting, port simulation and modeling, port maintenance and operations, inspection and repair, port environmental strategy and permitting, and other associated fields that can help ports, carriers, and operator clients. Having grown up around the waterfront and having worked throughout the world, he's partial to the port industry, as it is a relatively small but a very important industry to the world economy. Everyone knows each other and the owners, contractors, and engineers, both public and private, work together and then at times compete with each other. But they all have one thing in common: They love this industry!

Besides leading and helping grow the firm, Bob still likes to be involved in projects, and for the past 15 years he has been spending part of his time on large joint venture engineering projects where his firm has had key roles. For the Alameda Corridor he was the Program Director for ACET (the program manager), a joint venture of four Los Angeles County engineering firms. This was approximately a \$2 billion project that was delivered on schedule and under budget and involved many engineering and construction firms. The owner is ACTA, and its Board includes

members from the Ports of Long Beach and Los Angeles, the two cities, and the county.

In the Bay Area, the firm is a joint venture partner with another firm on the design of the seismic retrofit of the east span of the San Francisco–Oakland Bay Bridge (SFOBB). The owner is the California Department of Transportation (CALTRANS); the skyway is over 60 percent complete, while the main span is being reviewed as of November, 2004. For the City of San Francisco in a joint venture with another firm, he recently finished studying the runways' expansion at San Francisco Airport.

In the U.S. Section of PIANC, Bob is Chairman of the Membership Committee, besides being a Commissioner. He has recently become the Chairman of the COPRI Policy Committee.

Bob and his wife of 47 years, Georgia, live in Sonoma County where in his "spare time" he occasionally gets to utilize his UC Davis education. They have two children, Doug and Eric, and two grandchildren.

## Recent Workgroup Guidebooks Publications *by Edmond Russo*

***Technical and Economic Problems of Channel Icing.*** Inland Waterways Commission (InCom) Workgroup 23 recently completed their report focusing on the impact of waterway freezing on navigation during wintertime. Waterway icing can cause short-term to extensive delays in shipping, and is most detrimental when mariners are caught unaware.



The guidebook's objectives are to provide more understanding of icing problems, as well as to explain practical and reliable ways for extending the navigation period during winter. Pursuant to these problems and needs, the guidebook addresses ice formation in canals and rivers, as well as ice breaking technologies, procedures, and operations.

***Disability Access Guidelines for Recreational Boating Facilities.*** A report of Recreation Commission (RecCom) Workgroup 14, this publication discusses from a global perspective reasonable and cost-effective measures for access of recreational boating facilities for persons with disabilities.

Many countries have laws requiring access for persons with disabilities, which apply to landside boating facility features. Whether or not such laws apply, the recommendations of this guidebook help break down barriers for those with disabilities wishing to engage in boating activities.



Design suggestions emphasize an architectural approach for new facilities, where space may be planned for elements facilitating persons with disabilities. Designers may be challenged finding appropriate solutions for existing facilities to meet the needs of the disabled. In any case, this guidebook explains that solutions do not necessarily need to be highly technical or costly, just thoughtfully planned.

## Highlights from the PIANC Executive Commission (ExCom) *by Bob Engler*

The ExCom met several times in 2004 to direct the business practices of PIANC and strategically plan for the future. Major issues under consideration and action are: Discussion and

approval of new Working Group Terms of Reference for the various Commissions. The Commissions include the International Co-Operation Commission – CoCom; Environmental Commission – EnviCom; Inland Waterways Commission – InCom; Maritime Commission – MarCom; and Recreation Commission – RecCom). These commissions are the historic and continuing foundation of PIANC. The ExCom is pursuing partnering with global and regional stakeholders to expand the reach and scope of PIANC to system wide navigation/water resource activities and to gain a better recognition of PIANC’s water resource stakeholders. The groups include COPEDEC (Coastal and Port Engineering in Developing Countries), to better reach out to countries in transition, the European Union and its various directives, the American Association of Port Authorities, the World Bank, European Sea Ports Organization (ESPO), and other United Nations (U.N.) agencies such as International Maritime Organization (IMO), and U.N. Environment Program (UNEP). Various PIANC Commission Chairs, and vice presidents are directing these activities. The overall role of PIANC in technology support to countries in transition (i.e., developing) was expanded through a reorganization of the CoCom to address regions of the world and through input from the other commissions such as the EnviCom “Environmental Awareness – Train the Trainer” initiative.

The ExCom discussed final changes to the Statutes and Regulations that must be finalized at the December, 2004, Council meeting. These changes are necessary to be compliant with Belgian laws governing non-profit organizations. The ExCom has also proposed translation changes as a cost-saving measure.

It was noted that several vacancies in the ExCom will need to be filled in the next year and a half. They are: Vice President from the Pacific Rim (immediately), Chair of CoCom and ReCom (2005), and chair of EnviCom (2006). Nominations for these offices will be requested from the National

Sections at appropriate times. The ExCom approved new Working Groups that include InCom (Navigation Lock Design), EnviCom (Dredging Around Coral), and MarCom (Horizontal and Vertical Dimensions of Fairways). Financially, PIANC has a positive balance, but will continue looking at cost cutting and revenue enhancement measures. The formal announcement of the 31<sup>st</sup> PIANC World Congress 2006 in Estoril, Portugal, has been sent out electronically and in hard copy. It was agreed that the technical commissions will initiate discussions regarding watershed/basin-wide future activities in relation to management of navigation infrastructure. Future discussions of Young Professional Activities include exchange programs, membership to Commissions, paper competition of Congress and other special activities. There were discussions in regard to improving our marketing of PIANC and initiating and update or Strategic Plans: Goals and Implementation 2006-2009.

The U.S. delegation presented final plans for the 2005 Annual General Assembly (AGA) to be held in Charleston, South Carolina, May 8-13, 2005. Plans were also discussed for the May, 2006 PIANC World Congress to be held in Portugal. These and other ExCom activities will be posted at [www.pianc.aipcn.org](http://www.pianc.aipcn.org). Questions may be directed to Dr. Bob Engler at Email: [robert.m.engler@erdc.usace.army.mil](mailto:robert.m.engler@erdc.usace.army.mil) or Tel: (601) 634-3624.

## Notes from the PIANC Environmental Commission (EnviCom) by Bob Engler

The EnviCom, responsible for dealing with both broad and very specific sustainability and environment-related issues of interest to PIANC, has had an exceptionally busy 2004. The EnviCom met in Brussels, Belgium, and Hamburg, Germany, in conducting its business of environmental support to navigation infrastructure. Two Working Group (WG) reports dealing with broad aspects of

environmental sustainability and assessment were completed this year with early 2005 publication. They are: WG 2 – Wildlife Habitat (Avian) Habitat and Port Activities, and WG 8 – Generic Biological Assessment Guidance for Dredged Material. EnviCom reports are not only targeted on a wide diverse array of user groups, but are partnered with important stakeholders concerned with navigation activities. Two WGs scheduled for completion in early 2005, WG 10 – Environmental Risk Assessment in Dredging and Dredged Material Disposal and WG 11 – Management, Reclamation of Dredged Material and End Use of Existing Confined Disposal Facilities. Three new WG's started in 2004 are: WG 12 – Sustainable Waterways within the Context of Navigation and Flood Management, WG 13 – Best Management Practices Applied to Dredging and Dredged Material Disposal for the Protection of the Environment, and WG 14 – Dredged Material Beneficial Use Options and Constraints. They are scheduled for publication in 2006. A new WG15 dealing with Coral Reefs in relation to dredging and port construction was approved. The EnviCom will also initiate an Experts Group on the Environmental Benefits of Waterborne Transport.

The EnviCom working with the European Union (EU) and European navigation interests continue to interact with the EU “Water Directives” and their relationship to navigation and its infrastructure.

The EnviCom also represents the technical views of the PIANC member nations at important global and regional treaties and international agreements such as the London Convention, as well as the Convention on Protection of the Marine Environment of the North Atlantic (OSPAR), dealing with global and regional protection of the marine environment. The EnviCom further partners with important stakeholders such as the American Association of Port Authorities (AAPA), International Association of Ports and Harbors (IAPH), Western Dredging Association (WEDA), Central Dredging Association (CEDA),

International Association of Dredging Contractors (IADC), International Commission on Large Dams (ICOLD), European Sediment Research Network (SedNet) and the Paralia Nature Project of the Institute for Infrastructure, Environment, and Innovation.

A complete listing of EnviCom activities schedules and published reports, brochures and technical briefs and found at [www.pianc.aipcn.org](http://www.pianc.aipcn.org). EnviCom meetings in 2005 are February 3-4 in Brussels, Belgium, at the PIANC Headquarters with the other Commissions and will also host the initial meetings of new WG 15. The second meeting of the EnviCom will take place September 29-30, 2005, in Gothenburg, Sweden. The EnviCom has as its membership, 15 nations and 7 partnering groups/associations. Questions about these activities can be directed to Dr. Bob Engler, Chairman, EnviCom at Email: [robert.m.engler@erdc.usace.army.mil](mailto:robert.m.engler@erdc.usace.army.mil) or Tel: (601) 634-3624.

## Nominate a Colleague Today for a COPRI / ASCE Award!

by Kelly J. Barnes

The American Society of Civil Engineers (ASCE) is now accepting nominations for COPRI's three awards for professional achievement. **The deadline for nominations is November 1, 2005.**

**John G. Moffatt-Frank E. Nichol Harbor and Coastal Engineering Award.** This award recognizes new ideas and concepts that can be efficiently implemented to expand the engineering or construction techniques available for harbor and coastal projects. The recipient must be a member of ASCE.

**International Coastal Engineering Award.** The award was established to provide international recognition for outstanding leadership and development in the field of coastal engineering. The recipient is to be chosen from the international

community of coastal engineers without restriction as to nationality or Society membership.

**Hans Albert Einstein Award.** This award was established to honor a member of the Society who has made a significant contribution to the engineering profession in the areas of erosion control, sedimentation and/or waterway development either in teaching, research, planning, design, or management. The recipient must be a member of ASCE.

These awards are a great opportunity to honor your colleagues who have contributed to the civil and harbor, coastal, and waterways engineering profession in significant ways. Please consider nominating a deserving colleague for one of these awards.

Complete details about the awards and nomination procedures are available at the COPRI Awards website:

<http://www.coprinstitute.org/inside/awards.cfm>.

Nominations packets should include:

- Nomination form (download from COPRI website)
- Two or three letters of recommendation
- Resume

For questions, email Kelly at the Coasts, Oceans, Ports, and Rivers Institute of ASCE: [kbarnes@asce.org](mailto:kbarnes@asce.org).

## Coastal and Port Professionals to Gather in Charleston

by Kelly J. Barnes and Anne Sudar

In May 2005, the beautiful and historic city of Charleston, South Carolina, will be over-run with coastal engineers, managers, planners, scientists, geologists, economists, oceanographers, meteorologists, and others interested in the coasts and ports. Both COPRI and PIANC will hold conferences in Charleston at the same time, providing the opportunity for joint activities and

interaction among coastal and port professionals. COPRI's Solutions to Coastal Disasters Conference will be held May 8-11, 2005, and PIANC's Annual General Assembly (AGA) and Technical Workshop are scheduled for May 9-13, 2005. The numerous technical and networking events will give delegates from both societies the chance to meet and mingle.

With 2004 hurricanes and south Asian tsunami, COPRI's Solutions to Coastal Disasters Conference could not be happening at a more appropriate time. The conference will have a strong technical program, workshops, field trips, exhibits, and networking events. The conference will include three days of technical sessions on topics such as coastal erosion, seismic events and tsunamis, climate change, sea level change, and hurricanes. Special sessions on the hurricanes of 2004 (Frances, Ivan, and Jeanne) and the recent south Asian tsunami disaster have just been added. On Sunday, May 8, 2005, COPRI, the Association of Coastal Engineers (ACE), and National Oceanic and Atmospheric Administration (NOAA) will offer technical workshops for continuing education credit on coastal engineering for coastal managers, the application of morphodynamic modeling to shoreline protection and inlets, flood protection and HAZUS multi-hazard loss estimation methodology. Fieldtrips include a visit to Folly Beach, a tour of the Cooper River Bridge, and sightseeing around important coastal spots in Charleston.

The PIANC series of events include a technical tour, technical workshop, and networking events scheduled in connection with AGA 05. While the AGA 05 event is a meeting of just the PIANC leadership, most of the other events at both the COPRI and PIANC conferences are open to attendees of either meeting for a nominal registration fee.

PIANC events will be held at the Francis Marion Hotel. Hotel information can be found at: <http://www.francismarioncharleston.com/>. Event attendees will take horse-drawn carriages through historic Charleston to the opening reception at the

South Carolina Aquarium. There will be a boat tour of Charleston Harbor, which will include a visit to Ft. Sumter and viewing of the U.S.S. Yorktown. The South Carolina State Port Authority has agreed to sponsor the opening reception and provide commentary during the harbor boat tour.



*Charleston Harbor*

The PIANC Technical Workshop hosted in conjunction with AGA 05 will be held on Thursday May 12, 2005, from 9:00 AM to 5:00 PM. The theme for this workshop is “Port Development in the Americas.” The workshop will explore historic port development in the Americas, as well as ongoing development of ports in South and Central America and the Caribbean.

The morning session of the PIANC Technical Workshop will focus on Port Development in the Americas, particularly Latin America. Keynote Speaker will be Alberto Aleman Zubieta, Panama Canal Administrator. Mr. Aleman Zubieta has functioned as the Panama Canal Administrator since 1986, serving under both U.S. and Panamanian control. He will talk about current facilities and the future of the Panama Canal.

The afternoon session of the PIANC Technical Workshop will feature an opening paper by Thomas Wakeman on the rebuilding of Umm Qasr, Iraq’s main port. This session will be followed by presentation of technical papers on U.S. navigation issues.

Detailed information is posted on the COPRI and PIANC websites for these events and

registration materials will be distributed in February 2005. Additional information on these venues are posted at the following websites:

**Solutions to Coastal Disasters Conference (May 8-11, 2005):**

<http://www.asce.org/conferences/cd05/index.cfm>



**PIANC AGA 05 (May 9-13, 2005):**

<http://www.iwr.usace.army.mil/pianc>

<http://www.iwr.usace.army.mil/AGA2005>



**Younger Member and Student Opportunities to Excel in PIANC**

*by Anne Sudar and Edmond Russo*

**U.S. Section Scholarship.** A U.S. Section PIANC Scholarship is available to Texas A&M University students, and will soon also be available to other universities. The award is \$1500. At present, the scholarship is awarded by the Texas A&M Scholarship Committee based on the following criteria:

- The applicant will provide a curriculum vitae or resume not to exceed one page.
- The selected applicant will be a graduate student or undergraduate student of junior or senior standing with a grade point average of at least 3.0.
- The selected applicant will be in a course of study in engineering, economic, or

environmental disciplines related to planning, design, construction, operations and maintenance, and management of navigation infrastructure, coastal waterways, dredging, port and terminal facilities and water transportation planning.

- The selected applicant will have demonstrated potential to make substantial contributions to a relevant field of engineering or associated discipline, and/or shows promise for further distinguished academic studies that are related to the mission of PIANC.

**2005 De Paepe-Willems Award Contest Results and Call for 2006 Papers.**

The De Paepe-Willems Award is given for the most outstanding technical paper prepared on an aspect of waterborne transport. Categories include policy, management, design, economics, integration with other transportation modes, technology, safety, public involvement, and the environment. The competition is open to anyone 35 years of age or under.



**Ir. Gustave Willems**  
1901 - 1982



**Ir. Robert De Paepe**

The U.S. Section's award winner in 2006 receives a \$1000 U.S. Savings Bond, an expense-paid trip to the 2006 U.S. Section Annual Meeting, and an individual membership in the U.S. Section PIANC for five years. The U.S. Section winner's paper is forwarded for international competition in 2006. The international winner in 2006 receives a trip to the 2006 Annual General Assembly, which will be held in Estoril, Portugal. The International

award winner receives € 5000 and a five-year membership.

Shana Heisey, an economist at the U.S. Army Corps of Engineers' Institute for Water Resources, had the winning U.S. Section paper for 2005, entitled "Determining Economic Efficiency of Harbors, HarborSym, An Application". A related article in this quarterly summarizes her composition.

Abstract submittal is open for the 2006 competition. The deadline for submitting paper abstracts for the 2006 contest is April 1, 2005, with technical paper submittals required by July 1, 2005. For more details contact Edmond Russo, Chairman, Publications Committee, at [edmond.j.russo@mvn02.usace.army.mil](mailto:edmond.j.russo@mvn02.usace.army.mil).

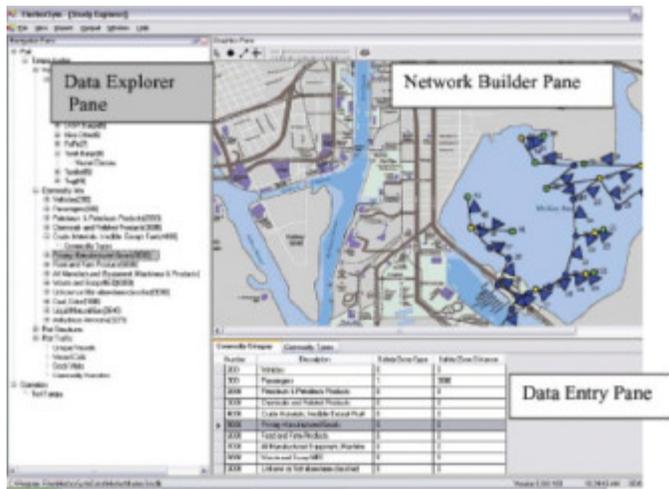
**Young Professionals' Implementation Group (YPIG).** The YPIG is an international group of younger members of PIANC, which are focusing on:

- Building E-communication in the navigation community;
- Representation of Young Professionals in the organization;
- Promotion of PIANC to navigation interests; and
- Knowledge transfer of navigation-based information and technologies.

There is an opening to fill the YPIG U.S. Section representative position. If you are interested in taking up this position, please contact Ron Conner at [ronald.r.conner@usace.army.mil](mailto:ronald.r.conner@usace.army.mil).

## U.S. Section De Paepe-Willems Award Winning Paper for 2005

Ms. Shana Heisey had the winning U.S. Section paper for 2005. Ms. Heisey is an economist at the U.S. Army Corps of Engineers' Institute for Water Resources. Her paper is entitled "Determining Economic Efficiency of Harbors, HarborSym, An Application".



*HarborSym User Interface*

The paper discusses HarborSym, a simulation model designed to assist in economic analyses of coastal harbors. Users customize the tool for a particular study by supplying input parameters, such as information on the harbor network, physical dimensions of channels, transit rules, and vessel calls. This flexibility allows the model to be easily adapted to many different ports. Changing data on channel dimensions or the rule structure will show possible changes in vessel delay times resulting from proposed harbor improvements. An application of the model to the Sabine-Neches Waterway showed substantial time savings from several possible channel expansions.

Shana Heisey has been working as an economist at the Corps' Institute for Water Resources since April 2001. Her work focuses on model development, including the deep draft simulation model HarborSym and IWR-Plan, a tool for conducting cost effectiveness and incremental cost analyses on environmental restoration projects. Her Corps career began in the Norfolk Districts' Planning Division after completing her undergraduate degree at the University of California, Davis. She expects to complete her Master's Degree in Economics at the George Washington University in May, 2005.

## Upcoming PIANC Events

by Edmond Russo

**AGA 2005 in Charleston, South Carolina.** The 2005 Annual General Assembly of PIANC will be held May 9-13, 2005 in Charleston, South Carolina at the Francis Marion Hotel. See related article in this quarterly for more details.

**31st World Congress.** The next International Congress will be held May 14-18, 2006, in the Portuguese resort city of Estoril.

## Upcoming Related Conferences

### 2005

- [4th International Surfing Reef Symposium.](#) January 12-15. Manhattan Beach, CA.
- [5th International Conference on Coastal Dynamics.](#) April 11-15. Barcelona, Spain.
- [Conference on Coastal Conservation and Management.](#) April 17-20. Algarve, Portugal.
- [Coastlines, Structures and Breakwaters.](#) April 19-21. London, UK
- [Dredged Material Assessment and Management Seminar.](#) April 26-28. Boston, MA
- [Solutions to Coastal Disasters.](#) May 8-11. Charleston, SC
- [Offshore Technology Conference.](#) May 8-11. Houston, TX.
- [Second International Coastal Symposium in Iceland.](#) June 5-8. Hornafjordur, Iceland.
- [5th International Symposium on Ocean Wave Measurement and Analysis.](#) (Waves '05) July 3-7. Madrid, Spain.
- [International Conference on Port-Maritime Development and Innovation.](#) September 5-7. World Trade Center, Rotterdam, The Netherlands.

### 2006

- [30th International Conference on Coastal Engineering.](#) September 3-8. San Diego, CA.

## About PIANC *by Anne Sudar*

**What is PIANC?** The International Navigation Association (PIANC) is a worldwide organization of individuals, corporations, and national governments. Founded in 1885 in Brussels, Belgium, it is concerned with maritime ports and inland waterways. The Association promotes contact and advances and disseminates information of a technical, economic, and environmental nature between people worldwide in order to efficiently manage, develop, sustain, and enhance inland, coastal and ocean waterways, ports and harbors, and their infrastructure, in a changing environment.

**Where is PIANC?** The international headquarters is located in Brussels, Belgium, at facilities provided by the Belgian Government. The headquarters of the United States Section is located in the Washington, D.C. area, within facilities provided by the U.S. Army Corps of Engineers.

**International Interaction.** The Annual General Assembly operates through a Council, which directs the working level permanent technical committees, international study commissions, and working groups.

**Working Groups.** Technical working groups are composed of participants from member countries who have interest in various subjects being studied. The groups gather, analyze, and consolidate state-of-the-art material from each country. The resulting reports are published and sent to each PIANC member. Working group reports and the International Bulletin are sent to each member from Brussels.

Every four years an International Congress, open to all members and other registrants, is held for the presentation and discussion of papers on subjects pertaining to waterways and maritime navigation.

PIANC also participates in technical activities with other organizations to study navigation

problems and joins with them to present symposia on related subjects.

**In the USA.** The United States became a member of PIANC by Act of Congress in 1902. The Chairman of the U.S. Section is the Assistant Secretary of the Army (Civil Works). The Director of Civil Works for the U.S. Army Corps of Engineers serves as President. The Section is managed by a National Commission of eleven individuals from both private industry and the Federal Government. The U.S. Section has two standing and four technical committees which promote the flow of information between members and facilitate cooperation with other national organizations. The committees are Membership, Publications, Environment, Inland Navigation, Maritime Navigation, and Ports and Recreation Navigation.

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*A publication of the Secretariat  
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