



THE NEWSLETTER OF THE U.S. SECTION, PIANC

International Navigation Association

Fall 1999

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U. S. SECTION PARTICIPATES AT ANNUAL CONFERENCES

PIANC holds breakfast at the NWC and is an exhibitor at the AAPA annual meetings

In September the U. S. Section participated in the annual meetings of two important navigation organizations. The PIANC working group on *Technical and Economic Problems of Channel Icing* held a meeting in Nashville.

On September 16th the U. S. Section, as it has for many years, sponsored a breakfast at the annual meeting of the National Waterways Association (NWC), Inc. in Nashville, Tennessee. The principal speaker was Dr. Sandra K. Knight, Chief, Navigation Branch, Coastal and Hydraulics Laboratory, Waterways Experiment Station. Dr. Knight is the Principal U. S. Representative to the Permanent Technical Committee I, where she

provides an important link between the U. S. Section and other international working groups and national sections which are studying problems related to inland navigation. The subject of her talk was *Navigation Trials and Tribulations: Are There Solutions?* She presented examples of such serious navigation problems caused by approach channel layout, channels which cross rivers, bridge approaches, river bends, shoaling and flow conditions at locks. Several success stories were used to illustrate how problems have been solved. In some instances, Dr. Knight pointed out how the solution to one problem has created other problems. In contrast to the seriousness of the subject matter, Dr. Knight used time lapse video footage of tows entering locks and navigating bends in the river that were taken at various Corps projects which introduced a humorous element to the presentation.

The working group on *Technical and Economic Problems of Channel Icing*, which is sponsored by the Permanent Technical Committee I, held a working session in Nashville in conjunction with the meeting of the NWC. Mr. Claude Strauser, Chief, Potamology Section, Hydrology and Hydraulics Branch, St. Louis District, U.S. Army Corps of Engineers, made arrangements for the working group to meet in the United States. Mr. Strauser is the U.S. Section representative to the working group. A conference room for the use of the

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Members of working group on *Technical and Economic Problems of Channel Icing* met in Nashville, Tennessee, in September. Pictured are: Charles Shadie, Jacque Harcourt, J.C. Tatinclaux, Jan Balduck, Olli Holm, Claude Strauser, and Jean Phillippe Le Fur.

working group was provided and other arrangements were facilitated by Mr. Harry N. Cook, President, NWC. Attending the meeting were: Mr. Olli Holm, Head Inland Waterway Section, Finish Maritime Administration and Chairman of the working group; Mr. Jacques Harcourt, Flemish Ministry of Equipment and Transportation; Mr. Jean Philippe Le Fur, Deputy Chief, Plans and Programs Branch, Infrastructure and Environment Directorate of France; and Mr. Jan Balduck, Flemish Ministry of the Upper Scheldt. Other members of the U. S. Section who are with the U. S Army Corps of Engineers and who attended the working group meeting were: Mr. Jean-Claude Tatinclaux, Chief, Ice Engineering Division, Cold Regions Research and Engineering Laboratory and Mr. Charles E. Shadie, Hydraulic Engineer, Water Control Branch,

Mississippi Valley Division. The working group member also visited the St. Louis District, the Waterways Experiment Station and the Cold Regions Research and Engineering Laboratory.

From September 27-30 the U. S. Section was an exhibitor at the annual meeting of the American Association of Port Authorities (AAPA). The opportunity to be an exhibitor was made possible by Mr. Kurt Nagle, President of AAPA and Mr. Robert D. Nichol, President of Moffatt and Nichol Engineers, both of whom are members of the U. S. National Commission; and Ms. Lillian C. Barrone, Director, Port Commerce Department of the Port Authority of New York and New Jersey. The PIANC display shared space provided by the engineering firm of Frederic



U.S. Section, PIANC Display at AAPA

R. Harris, Inc., in an arrangement which was facilitated by Mr. Edward J. Schmeltz and Mr. Walter D. Ritchie both Vice Presidents of Frederic R. Harris, Inc.

In addition to the display, the PIANC attendance at the AAPA conference included The Honorable Joseph W. Westphal, Ph. D., the Assistant Secretary of the Army (Civil Works) and the Chairman of the U. S. Section of PIANC and Mr. Eric Van den Eede, President of the International Navigation Association (PIANC). Dr. Westphal was the principal luncheon speaker on Tuesday, September 28. The subject of his talk was *Status of and Prospects for the Corps of Engineers Navigation Program*. He included in his talk complementary remarks about the work of the International Navigation Association (PIANC). Mr. Van den Eede is

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the first President of PIANC who has been invited to speak at an AAPA conference. He made a presentation as a member of a panel on *Emerging Environmental Issues at Ports*. The subject of his talk was *Promoting the Sustainable Development of Ports*.

Future activities with the AAPA and NWC include a PIANC breakfast with speaker which will be held during the Spring Meeting of the AAPA in Washington, D. C. On September 28, 2000, the U. S. Section will hold its annual breakfast at the annual conference of the National Waterway Conference, Inc., in St. Louis, Missouri.

Article From British Section, PIANC Newsletter

The following article by Michael Thorn originally appeared in the Summer 1999 issue of the Newsletter of the British Section of PIANC. The article is being used with permission of Mr. Thorn. The announcement about the new president of PIANC was included in an article in the Summer 1999 issue of the U.S. Section Newsletter. The excellent article by Mr. Thorn is reprinted here, giving U.S. readers the British perspective on the subject.

From the desk of the Government Chief Delegate

Squalls in Brussels

The introduction of new Statutes, opening the Presidency to any nationality, was presaged in the previous Newsletter. They have not had an easy passage and were challenged and debated at length at the December meeting of the Council. The outcome was confirmation of the revised Statutes, and a pragmatic "Gentleman's Agreement" that the retiring President should propose a Belgian successor to serve a 4-year term from May 1999, for the approval of the national chief Delegates. This allows time for the procedure for nomination and appointment of future Presidents to be worked out, and a breathing space in which all delegations can come to terms with the new arrangement.

In February, the Executive Committee considered the recommendation of the Belgian Section, and proposed Eric Van den Eede to succeed Robert de Paepe as President at the May 1999 meeting of the Permanent International Commission. Eric is Head of the Upper Scheldt Division of the Flemish

Community, based in Ghent, responsible for 450km of waterways and maritime access to the Port of Ghent. He is a 50 year old civil engineer, who has been active in both the International Navigation Association (PIANC) and the Central Dredging Association (CEDA), particularly on environmental issues. He is well known and respected by British members of PIANC and CEDA who have worked with him, and we had no reservation in giving his nomination our support.

At the same time the Secretary General, Charles van Begin, has actively promoted his own candidacy for the Presidency not withstanding the "Gentleman's Agreement." This has caused concern and confusion amongst the national delegations, but the agreement has held and in May 1999 Eric Van den Eede was unanimously confirmed as President for four years.

In the wake of this turbulence Charles van Begin has resigned as Secretary General, but his contribution to PIANC has been recognised by designating him "Honorary Secretary General." The new Secretary General is Louis Van Schel, Senior Engineer at the Environment and Infrastructure Department of the Flemish Ministry. He works in Brussels next to the PIANC office, in charge of the promotion of knowledge and experience for infrastructure development including the design, construction, and management of ports. Louis is the personal choice of Eric Van den Eede, and they will work together as an integral team.

So the mantle of PIANC is passing to a new generation. The new President will continue to chair the Communications Commission through to the conclusion of its work and production of a new strategic plan by the end of 1999. He has also pledged himself to modernise and streamline the working of the

Brussels secretariat. Thus we sail forwards under new command, in the expectation that the Association will be reinvigorated and refocused to make its mark in the third Millennium.

Mike Thorn
UK Government Chief Delegate, PLANC

Corps of Engineers Research Aids Global Projects

Partnering With U.S. Firms in Work Overseas

The U.S. Army Corps of Engineers enjoys an enviable worldwide reputation for its expertise in designing and maintaining inland and coastal ports, structures, and navigation channels. The Corps also is a major source for specialty engineering in related areas such as inland and coastal planning, regulatory permitting, digital mapping, dredging and dredged material placement, water quality, wetlands, and environmental work. This expertise was honed through decades of developing U.S. waterways in technically sound and environmentally compatible projects.

Recent legal authorities are allowing Corps districts and research laboratories increased latitude in partnering with U.S. firms seeking overseas work, working directly with foreign private sector firms, and supporting foreign government agencies. Such partnering broadens the Corps' expertise through experience in a wider range of projects that will also help enhance its ability to meet existing and future U.S. civil and national defense missions. U.S. and foreign firms, and foreign agencies, recognize the reputation, integrity, and specialized staff the Corps can

bring to a foreign project, which increases credibility with international lending agencies.

The Corps research laboratories have taken an aggressive attitude in supporting potential global projects. Such support will be enhanced by the recent consolidation of all eight Corps R&D laboratories into one organization – the Engineering Research and Development Center, or ERDC. The ERDC can easily tap the expertise of any individual or combination of its R&D laboratories to provide solutions for complex projects. With its Coastal and Hydraulics, Cold Regions, Construction Engineering, Environmental, Geotechnical, Information Technology, Structures, and Topographic Engineering research organizations, ERDC has the expertise to address a wide variety of technical problems and issues. Its specialized engineering and scientific expertise includes world-class hydraulic modeling capabilities, ice formation and transport in waterways, coastal engineering, high performance numerical simulations, construction materials and techniques, advanced mapping and surveying techniques, seismic analysis, navigation impacts (structures and vessels) on fisheries and ecosystems, flood control, dredging technology, contaminated sediments, shore protection, watershed management, and a host of other navigation and environmental related topic areas.

ERDC also has unique facilities and equipment including physical scale models of inland waterway and coastal projects, a Department of Defense High Performance Computing Major Shared Resource Center (with four supercomputer systems), Ice Engineering Facility, twin console Ship-Towboat Simulator, Environmental Chemistry Laboratory Complex, Triaxial Earthquake and Shock Simulator, and the world's most powerful centrifuge.

There are several legal avenues that can be examined for potentially tapping Corps expertise for domestic and global projects. There are some general stipulations that govern most of these authorities, including the services provided by the Corps cannot be reasonably or expeditiously available from the private sector. Also, the Corps must receive up-front funding for private sector work, but efforts can be broken down into specific tasks with advanced payments made for each task.

The authorities which permit ERDC to support projects and some examples of projects follow.

- **Cooperative Research and Development Agreements (CRDAs)** – CRDAs allow the Corps and one or more non-Federal partners to collaborate on research projects of mutual interest. The Corps and the research partners can contribute staff, facilities, equipment, and supplies. The Corps cannot contribute funding but can accept funding from its non-Federal partner.
Norwegian Environmental Technology is working with ERDC through a CRDA to establish a Center for Contaminated Marine Sediments at Sandefjord, Norway. This agreement is providing ERDC research staff the opportunity to field techniques for handling, treating and confining contaminated sediments in deep water marine ecosystems.
- **Technical Assistance Agreements (TAAs)**
– TAAs allow the Corps to provide technical assistance on a non-exclusive basis to U.S. firms that are competing for or have been awarded a contract for a project outside the United States.
- **Testing and Evaluation Agreements (TEAs)** – TEAs allow ERDC laboratories,

on a reimbursable basis, to test materials, equipment, models, computer software, and other items for the private sector, other government agencies, universities, and friendly foreign governments.

Through a TAA, ERDC is supporting a Brown and Root project to maintain navigation and water quality on Canal Del Dique on the Rio Magdalena in Columbia. In Phase 1, ERDC developed preliminary solutions to a sedimentation problem and will conduct numerical modeling of the area in Phase 2.

Through a TAA between ERDC and Alden Research Laboratory of Massachusetts, ERDC provided physical modeling expertise on ice transport and ice jam formation, progression and breakup for the Niagara River Power Project. Alden was competing against two Canadian firms for the project.

Through a TAA, ERDC is supporting Raytheon Engineers and Constructors in the design and construction of the San Roque Multipurpose Project on the Lower Agno River, Central Luzon, Philippines. The project includes a 200-meter-high earth and rockfill dam. To obtain geotechnical engineering design parameters, ERDC is conducting a specialized soils laboratory investigation that includes large diameter (up to 45 cm) compaction tests, triaxial compression tests, isotropic and 1-D consolidation tests, permeability tests, and dynamic (earthquake engineering) properties tests to stresses as large as 3.5 MPa.

- **Section 234 Assistance** - Under Section 234 of the Water Resources Development Act of 1996, limited types of Corps

assistance can be provided to other Federal agencies and international organizations.

- **Section 607 Agreements** – Under Section 607 of the Foreign Assistance Act, Federal agencies such as the Corps, can furnish commodities and services to friendly countries, international organizations, the American Red Cross, and other nonprofit relief agencies approved by the Agency for International Development.

Through a Section 607 Agreement, ERDC is collaborating with CERIDE, the R&D organization of Argentina, to develop solutions for the passage of fish through hydraulic structures on the Parana River. This work is tapping and enhancing the research ERDC has conducted relating to fish passage work in the United States, including salmon passage through dams on the Columbia-Snake River systems

- **Patent License Agreements** – Under the Technology Transfer Act, patent licenses are a means by which U.S. Government laboratories can transfer their patented inventions to the private sector for marketing. There are three basic types of licenses: an exclusive license restricts use of an invention to a single licensee, a partially exclusive license allows multiple licensees but restricts the use of an invention by any single licensee to a particular geographic area or to a particular use, and a nonexclusive license can be issued to any number of licensees.

ERDC patented a revolutionary new concrete armor breakwater unit called the CORE-LOC. Under patent license agreements with Concrete Technology Corp. (American), Sogreah (French), Tetra (Japanese), and CORE-LOC Africa (South African) for specific geographic areas,

CORE-LOCs are showing up on breakwaters in such places as the Cape Verde Islands, St. Francis Bay in South Africa, Oman, and Manasquan, N.J.

For more information on partnering with the Corps of Engineers research laboratories, contact Mr. Phillip Stewart at (601) 634-4113 or stewarp@wes.army.mil.

Corps of Engineers Research Labs

Coastal and Hydraulics Laboratory

Waterways Experiment Station
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Cold Regions Research and Engineering Laboratory

72 Lyme Road
Hanover, NH 03755-1290

Construction Engineering Research Laboratory

P.O. Box 9005
Champaign, IL 61826-9005

Environmental Laboratory

Waterways Experiment Station
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Geotechnical Laboratory

Waterways Experiment Station
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Information Technology Laboratory

Waterways Experiment Station
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Structures Laboratory

Waterways Experiment Station
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

Topographic Engineering Center

7701 Telegraph Road
Alexandria, VA 22315-3864

Murden Memorial Committee

Army Corps of Engineers Memorial Corporation, Chairman: Brigadier General Gerald C. Brown, USA, (Ret.)

Message from Chairman

When the Poplar Island dredged material disposal site is completed to serve Baltimore Harbor, it will be the site of a lasting memorial to a great public servant and highly effective dredging advocate, Mr. Bill Murden.

William R. Murden, Jr., was born in Beaufort, North Carolina. He graduated from Randolph Macon Military Academy. Bill's service to the country began in WWII when he dropped out of college at the Citadel to join the Army. He rose in rank and by the end of the conflict served as an Army Air Corps bomber command pilot. After the war, he returned to college, finished his degree in mechanical engineering, and began his career with the Norfolk District, U.S. Army Corps of Engineers. While with the Norfolk District, he was engaged in construction and operation of a variety of projects ranging from navigation to flood control and multiple purpose hydroelectric facilities. In addition, he was active in management of the District's dredging program.

Promotions followed and Bill was soon assigned to Headquarters, U.S. Army Corps of Engineers in Washington. Here he began his life's work in earnest. He served in numerous positions of responsibility in the Corps' Planning, Programming, Engineering, Construction-Operations, and Dredging Divisions. Serving in the Civil Works Directorate throughout his career, Bill was involved in various projects in support of the United States military programs and unique

projects in foreign countries. He traveled to Vietnam when needs there arose. Other projects took him to Peoples Republic of China, Egypt, several European nations, Saudi Arabia, Republic of Panama, Thailand, Japan, India, Australia, and various nations in Central and South America. After retirement from the Corps in 1988, projects took him to Japan, France, England, Pakistan, India, Kuwait, Mexico, Guatemala, Argentina, The Netherlands, and Malaysia.

His last Corps assignment was as "Mr. Dredging," a position specially created for him by the Chief of Engineers, Lieutenant General Jack Morris. With Senior Executive Service rating, Bill was responsible for managing all aspects of the Corps' national dredging program. In this position Bill Murden advanced quality dredging, improved dredging equipment, and improved transportation around the world. He authored numerous technical papers relative to dredging technology and marine engineering. He was a champion for the protection of the marine environments as well as the beneficial use of dredged materials.

Bill Murden died in 1997.

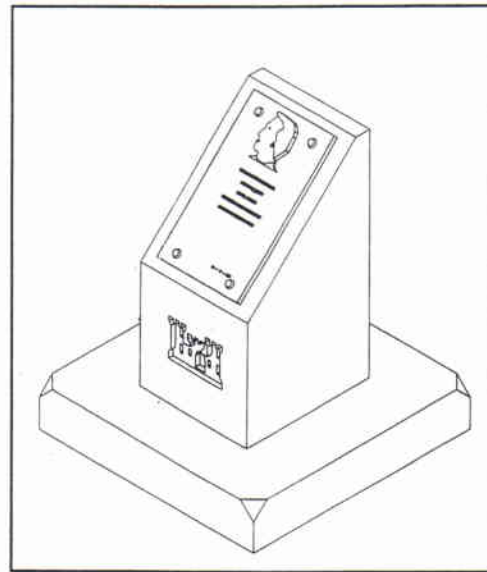
Now a group of senior Corps officials are planning a monument in his memory. This is notable because not many monuments are erected to military civilians. It says a lot about Bill Murden. And the group itself says a lot more about Bill Murden. It includes an all-star list of notables such as the Honorable Robert K. Dawson, former Assistant Secretary of the Army for Civil Works, and Lieutenant General Jack Morris and Lieutenant General Vald Heiberg III, both former Chiefs of Engineers.

The group plans to erect a monument in the Chesapeake Bay on Poplar Island, now being reconstructed through beneficial use of dredged material. Designed to handle materials dredged

from the Baltimore Harbor and channels, the reborn Poplar Island will become a wildlife refuge and recreation area when completed. It enjoys broad support from both navigation and environmental interests. Establishment of the Murden memorial there is supported by the Corps and by Maryland and Port officials. The memorial will be constructed from dredged materials and support a plaque with a profile of Bill Murden with suitable inscription. The profile will symbolize Murden watching over dredging and the beneficial use of materials. Surely Bill Murden would approve.

Like all such endeavors, funds are needed. If PIANC members would like to be financial supporters of this effort, all contributions will be gratefully received. Three levels of support have been established for special recognition. Donors, in appreciation for a contribution of \$30.00 or more, will receive recognition in the program for the plaque unveiling. Patrons, in appreciation for a contribution of \$100.00 or more, will receive program recognition and a special memento cast from dredged material suitable for desktop display. Sponsors, in appreciation for a contribution of \$500.00 or more, will receive program recognition, the special memento, and recognition on a plaque on the Poplar Island memorial. An application has been filed for recognition as a nonprofit charitable organization under Section 501(c)(3) of the Internal Revenue Code. That matter is under review by the IRS and it is expected that all contributions will be tax exempt.

Bill Murden was an active member of PIANC and for many years provided a strong guiding hand in the management of the U.S. Section as well as providing leadership at the international level. He served as a U. S. National Commissioner from 1979-1984; he was involved in numerous international meetings and



Design of proposed memorial for Bill Murden. The Memorial was designed by Ms. Suzanne DiGeronimo, FAIA, principal of the firm Architects DiGeronimo, P.A.

congresses; and he served as Chairman of the International Finance Committee. In 1990 PIANC recognized Bill's significant contributions by making him an Honorary International Member of the navigation association.

PIANC members are invited to make a donation to show appreciation for Bill Murden and his enormous contribution to PIANC related programs (see enclosed page).