



US Army Corps
of Engineers
St. Paul District

Crosscurrents

Vol. II, No. 6, June 1988

District to celebrate 50 years of the Mississippi 9-foot navigation channel

50th ANNIVERSARY
Nine-Foot Navigation Channel
Upper Mississippi River

OLD MAN RIVER



Poster available in June;
main celebration June 25
at Lock and Dam 7

As part of the 50-year anniversary of the 9-foot channel, the St. Paul District has prepared a color poster commemorating this occasion. The poster is based on the illustration used for the cover of "Old Man River," the district newsletter, in 1937. It features a Neptune-like figure sitting on one of the roller gates of a navigation dam. Ann Martin, Dave Berwick and John Anfinson collaborated on the poster. The poster should be available in June. For more information on the poster, contact Dave Berwick (612-220-0261). For more information about the ceremony at Lock and Dam 7 on June 25 and the other celebrations of the 50th anniversary and for information about the history of the 9-foot channel, see the stories on pages 3, 4 and 5 of this issue.

1938

U. S. ENGINEER DISTRICT
ST. PAUL, MINNESOTA

1988

Corps Calendar

- June 4-5 Fort Sisseton (S.D.) Days, Traveling Trailer Exhibit, Rosemarie Braatz, 220-0316
- June 5 Open House, Lock and Dam 5, Anthony Helmueller, 507-689-2101
- June 5-11 National Safe Boating Week
- June 12-18 National Flag Week
- June 14 Birthday of the Army (1775)
- June 14-16 USACE Security and Law Enforcement Conference, Dave Christenson, 220-0204
- June 15 Public Meeting, Lake Traverse Reservoir Operation Plan Evaluation, Herb Nelson, 220-0403
- June 16 Birthday of the Corps of Engineers (1775)
- June 16 S.A.M.E. Luncheon, Gen. John W. Vessey, "Defense for the Future," St. Paul Athletic Club, 11:30, Eleanor Williams, 220-0423
- June 17 Annual Engineer's Day Award Ceremony and Picnic, Eau Galle Recreation Area, Spring Valley, Wis., Reservations and Picnic Information: Rosemarie Braatz, 220-0316, Awards: Jan Wallace, 220-0493
- June 18 Open House, Lock and Dam 9, Charles L. Hiam, 608-874-4311
- June 21 200th Anniversary of Ratification of the Constitution (New Hampshire provided the deciding vote)
- June 23 Constitutional Convention Adopts the Name "United States" (1787)
- June 25 Rededication Ceremony, 9-foot Channel/Open House, Lock and Dam 7, Dennis Cin, 220-0320
- July 2-4 Traveling Trailer Exhibit, La Crosse, Wis.
- July 4 Independence Day, Federal Holiday
- July 9 Open House, Lock and Dam 6/Catfish Days, Trempealeau, Wis., James Weyant, 608-534-6424
- July 11 Farewell Luncheon for Col. Briggs, St. Paul Athletic Club, 11:30 a.m.
- July 13 Change of Command Ceremony, Holiday Inn - Town Square, 11 a.m.
- July 16 Open House, St. Anthony Falls, Robert Stahl, 612-333-5336
- July 23-24 Open House, Lock and Dam 2/Rivertown Days, Hastings, Minn., Franklin Yule, 612-437-3150
- July 31 Open House, Lock and Dam 8, Lavern Horstman, 608-689-2625

Corps history: a quiz

1. Who was the first chief engineer?
2. What was Gouverneur K. Warren's role in St. Paul District history?
3. Who was William A. Thompson?
4. Where was the original Lock and Dam 2?
5. When was the last new lock finished in the St. Paul District?
6. When did the Corps begin its role in water resource development?
7. In what year did Congress re-establish a separate Corps of Engineers?
8. What is NEPA?
9. When was the district established?
10. How many navigation lock and dam complexes are in the district?
11. When was the Upper Mississippi River 9-foot channel authorized?
12. When were the 4 1/2-foot and 6-foot channels authorized?
13. Who was Dan Kingman?
14. Which St. Paul District Engineer was one of the heroes of Gettysburg?
15. What Engineer officer served as a field marshal in another army between stints as a general in the U.S. Army?

See page 9 for the answers

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*District Engineer Col. Joseph Briggs
Chief, Public Affairs Ken Gardner
Editor Joe Yanta*

50 years of delivering the goods

by Rosemarie Braatz

Plans are underway for the celebration of the 50th anniversary of the Upper Mississippi River 9-foot navigation channel and the lock and dam system in the St. Paul District. Various celebrations will be held throughout the summer, with a theme of "50 Years of Delivering the Goods."

The main celebration for the anniversary will be at 10 a.m. on June 25 at Lock and Dam 7, in La Crescent, Minn. It will feature a rededication of the lock, speakers and a ribbon-cutting ceremony. There will be tours of the facility, displays and food concessions for picnicking.

Other celebrations will be held throughout the summer along the river at community festivals and will feature open house tours of other locks and dams:

- St. Anthony Falls - Open House on July 16

- Lock and Dam 2 - Open House on July 23-24, during Hasting's Rivertown Days.

- Lock and Dam 4 - Open House was held May 7-8 for the fishing opener.

- Lock and Dam 5 - Open House on June 5.

- Lock and Dam 5A - Open House on September 11.

- Lock and Dam 6 - Open House on July 9, during Trempealeau's Catfish Days.

- Lock and Dam 7 - Lock Rededication and Main Anniversary Celebration on June 25.

- Lock and Dam 8 - Open House on

July 31.

- Lock and Dam 9 - Open House on June 18.

Past and present Corps employees in the area, retirees, those who worked on construction of the 9-foot channel or the locks and dams, and anyone else with a special interest in the river are particularly urged to join in the celebrations. Everyone is invited to attend.

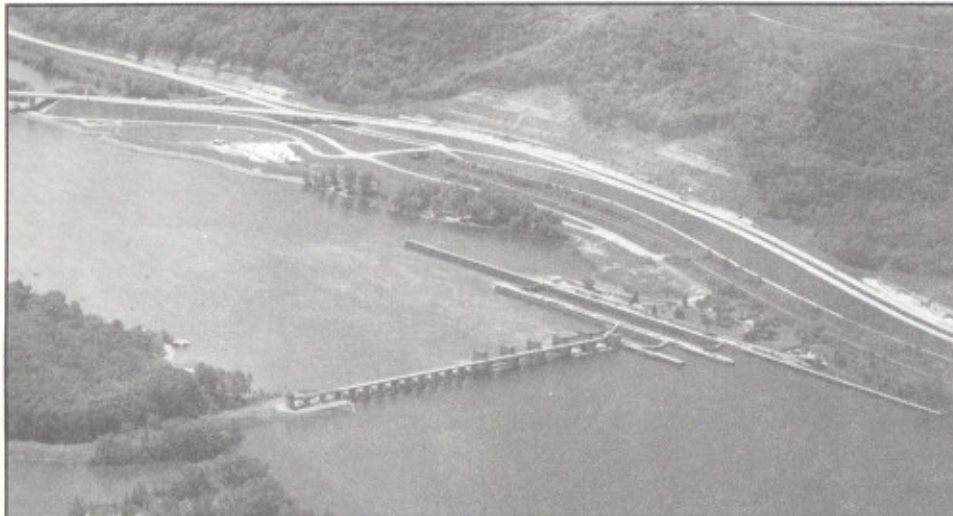
A guest book will be available at each celebration. Everyone who worked on the 9-foot channel project is invited to sign this book. The district historian, Dr. John Anfinson (612-220-0260) is interested in talking with anyone who worked on this project.

50-year brochure to be published

As part of the 50th anniversary of the 9-foot channel system, Dr. John Anfinson, the district historian, has prepared a brochure on the history and significance of this project.

The brochure provides background on river transportation and the authorization of the locks and dams, and it discusses of the environmental and recreational effects of the project.

For copies of this brochure, contact the district Public Affairs Office (612-220-0200) after July 1.



The main celebration for the 50th anniversary of the 9-foot channel will be on June 25 at Lock and Dam 7, near La Crescent, Minn.

Picnic tickets on sale

by Rosemarie Braatz

Tickets are now on sale for the annual Engineer's Day Awards Ceremony and Picnic. The picnic will be held on June 17 (all day!) at the district's recreation site at Eau Galle (by golly!) in Spring Valley, Wis.

The picnic menu includes pop, coffee, hamburgers, brats and kraut, wieners, beans, slaw, chips, popcorn and snocones. Advance tickets (on sale through June 15) are just \$3.00 for adults (includes admission and two meat portions), \$1.50 for children 12 and under (includes admission and one meat portion), and \$1.00 for admission-only tickets (includes pop, coffee, snocones and popcorn).

Ticket purchasers will receive an Eau Galle brochure, which has maps of the route to the site (50 miles from St. Paul) and of the park grounds. Those who need transportation to the site should notify the ticket sellers when they purchase their tickets.

Planned events for the day include the awards ceremony, the picnic lunch, bus tours of the area, fishing, volleyball, bingo and children's activities. Those who wish to camp will find excellent accommodations at the site.

The awards ceremony is scheduled for 11 a.m. Meals will be served from 11:30 a.m. to 2 p.m. Drawings for door prizes will be at 2 p.m. (Be sure to sign the back of your tickets so that you are eligible for the drawing.)

Flyers listing ticket sellers are posted on each floor. For more information, or to make reservations, retirees may contact Rosemarie Braatz (220-0316). Field people who wish to join in the day's activities may contact their office in the district headquarters.

Advance ticket sales will end June 15. All tickets will cost 50 cents more at the picnic.

Volunteer helpers (before, during and after the picnic) will be heartily welcomed; just contact Harold Tagatz at 220-0311.

Letters to the editor

Crosscurrents prints relatively few letters to the editor, but only because it receives so few letters. If you have a letter you want published, send it to *Crosscurrents*.

Corps built 9-foot channel to serve Midwest:

by Dr. John Anfinson, District Historian

The Upper Mississippi River 9-foot navigation channel is the largest segment of the nation's inland waterway system. Because the channel has been part of this transportation system for 50 years, many people now take it for granted. Although the river itself is a great natural resource, the 9-foot channel is not a product of nature. It is the result of the efforts of many people.

Congress authorized the Corps of Engineers to construct the channel because of the rapid growth of population, agriculture and industry in the Upper Midwest after 1900.

The Mississippi River, once the principal artery of commerce in the Midwest, was inadequate for modern shipping needs in its natural condition. And as transportation costs increased, the growing numbers of Midwest businessmen and farmers demanded a cheap and efficient transportation system. Without such a system, they believed, they could not compete in national or international markets.

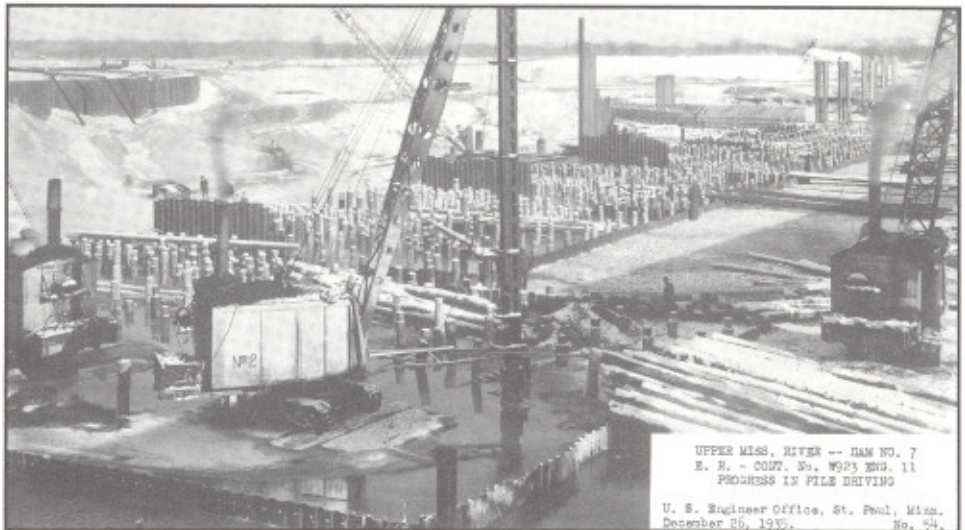
Since the mid-19th century, the Corps had improved the river for navigation through dredging, snagging and clearing, and channel constriction.

The Corps constricted the river with wing dams and the closing of side channels. Together, these measures forced the water down a narrower passage, allowing it to cut through sand and debris. These procedures began with the 4 1/2-foot channel in 1878 and continued with the 6-foot channel in 1907.

The Corps also completed Lock and Dam 1 in the Twin Cities in 1917, and Lock and Dam 2 at Hastings, Minnesota, in 1930.

Authorized channel depths were based on the low-water year of 1864. Ideally, if another year were as dry as 1864, the river would have at least the authorized depth. Although the 4 1/2- and 6-foot channels sufficed for lumber rafts and shallow draft vessels, they could not meet 20th century needs.

Other factors aggravated the Midwest's transportation problem. Completion of the Panama Canal in 1914 allowed goods to be shipped more cheaply between the East and West Coasts than from the Midwest to either coast.



Construction of each lock and dam provide a stable foundation for the structure.
involved the driving of many piles to

Some Midwesterners believed that, since the federal government built the Panama Canal, it should compensate them with a deeper channel on the Upper Mississippi River.

Rising transportation rates struck Midwest farmers and businesses hard. American agriculture had been in a depression for most of the 1920s. Higher freight rates reduced the farmers' purchasing power and made their products less competitive. Some businesses failed; some moved to other regions.

While shipping on the Upper Mississippi River declined, traffic on the lower river increased. New towboats and barges, with drafts of 8 1/2 feet, could haul two to four times as much cargo as trains could, but these new vessels could not operate on the shallower upper river. Goods had to be transferred to smaller towboats and barges, increasing shipping costs greatly. This breaking of bulk, as rivermen called it, discouraged use of the Upper Mississippi River.

Because of their limited and costly transportation network, many Midwesterners feared that their region would decline economically.

They did not allow this to happen, however. Businessmen, civic leaders, politicians and farmers joined to fight for the 9-foot channel. Champions of the project included Secretary of Commerce and later President Herbert Hoover, Minnesota Sena-

tor Henrik Shipstead and many businessmen.

By 1927, they had succeeded in getting a survey for the feasibility of a 9-foot channel on the Upper Mississippi River. In 1930, Congress authorized construction of 24 locks and dams from Red Wing, Minnesota, to near St. Louis, Missouri.

The Great Depression, however, threatened to postpone construction. Hoover, by then President, withdrew his support because he did not believe in deficit spending.

His successor, Franklin Roosevelt, however, not only recognized the project's commercial importance, but he saw it as an opportunity to put unemployed citizens to work. And in contrast to Hoover, Roosevelt believed deficit spending could improve the economy. In 1933, he signed the National Industrial Recovery Act, providing \$51,000,000 for the project.

Once the Corps had money for the project, it had to work out the details of such a massive undertaking.

Special conditions: special dams

The Upper Mississippi River floodplain varied from 1/2 mile to 2 miles across at the proposed lock and dam sites. Because of this wide floodplain, the river had relatively low flood stages.

Railroads, farms and some towns

Continued on the next page

the project has delivered the goods for 50 years

encroached upon the floodplain. Thick ice formed on the river during the winter. When the ice broke up, it gouged the riverbanks and most obstacles in its path. The Upper Mississippi Wild Life and Fish Refuge also lay between Lake Pepin and Rock Island.

Because of these conditions, the Corps carefully evaluated the type of lock and dam system to use.

After intensive surveys on the Upper Mississippi River and an extensive inspection of dams in Europe and the United States, the Corps decided to build low-crest, nonnavigable dams. High, fixed dams would have flooded railroads, farms and buildings in or near the floodplain. Navigable dams that allowed open river navigation during high stages could not be used because of the short duration of high stages. While low-crest dams were more expensive, they were more dependable, easier to maintain and repair, and safer to operate. They also sustained an operational channel better than navigable dams did.

The selected dam design contained a number of elements: dikes, spillways, and both Tainter and roller gates. Each type of gate had been used before, but general engineering practice discouraged the use of both in one dam. By incorporating both types into the dams on the Mississippi River, the Corps established a precedent in dam engineering.

Tainter gates became the principal component of the movable part of the dam. They were cheaper than roller gates and still offered dependable operation. Tainter gates, however, were ineffective for spans greater than 35 feet, and some channel openings had to be wider to allow passage of ice and debris. Also, Tainter gates were difficult to maneuver during cold weather because ice often formed on them.

Roller gates solved the problems of length and ice. The gates are large cylinders with toothed ends that mesh with an inclined track set into the piers at the ends of the gate. Large, electrically operated gears on top of the piers raise and lower the gate. Roller gates offered the greatest assurance of operation in freezing weather with a span of 80 feet or more between the supporting piers.

To ensure the greatest economy in design, construction and operation, gate size was standardized. All the New Deal era

Tainter gates in the St. Paul District are 35 feet wide, and all roller gates, except those at Locks and Dams 4 and 5, are 80 feet wide. The roller gates at Dams 4 and 5 are only 60 feet wide because they were built before advances in technology allowed wider gates.

The Corps patterned the Mississippi River locks after those on the Ohio River. All of the New Deal era locks are 110 feet wide by 600 feet long, and the lock chamber fills through the opening of Tainter gate valves in the lock walls. Use of these gates as valves was somewhat unusual.

Unusual, unique and innovative are terms that characterize the 9-foot channel project on the Upper Mississippi River. To deal with the unusual conditions on the river, the Corps built models of most of the project's elements, still a relatively new procedure then.

Despite the time required for research and testing, the St. Paul District completed its portion of the 9-foot channel project in only 7 years at a cost of \$170 million.

Commercial navigation: vision realized

Validation of the 9-foot channel project depended upon the development of commercial navigation on the Upper Mississippi River.

Commercial traffic on the river began increasing even before the district completed its part of the channel. River traffic for 1937 increased 100 percent over 1936,

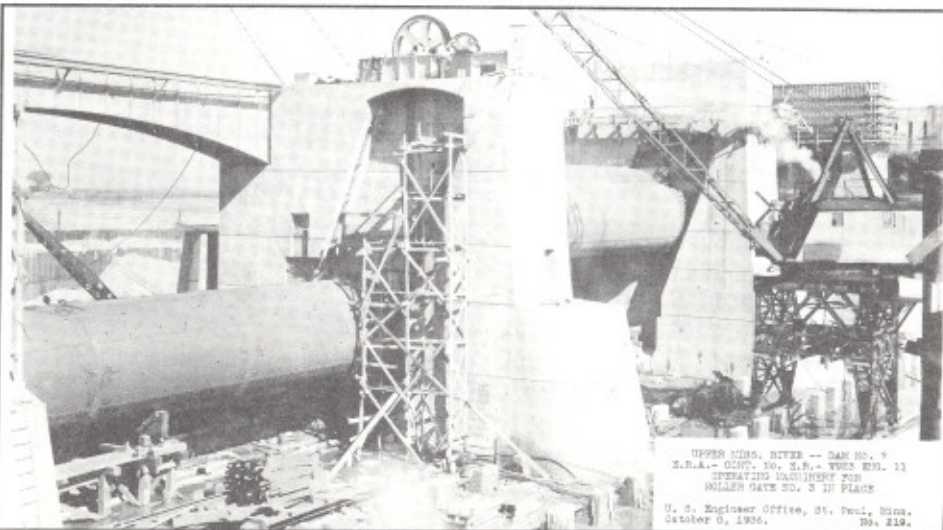
and it increased even more in 1938. While World War II stalled the Mississippi River's commercial development, navigation on the river soared after 1945. In the next 5 years, shipping on the river more than doubled, from 4.5 million tons to 11 million tons. By 1960, it increased to over 27 million tons. Today, barges carry nearly 80 million tons annually on the Upper Mississippi River.

Energy commodities—petroleum products, coal and coke—spurred the revival of river commerce. Grain shipping increased slowly, but today, agricultural products account for nearly half of all goods shipped on the Upper Mississippi River.

Proponents of the 9-foot channel project based projections for the Mississippi River's commercial expansion upon towboats of up to 2,000 h.p. and tows of 14,000 tons. Now, towboats of up to 5,000 h.p. and tows carrying more than 22,000 tons operate on the river.

The variety of barges has increased as greatly as their capacity. Specialized barges now carry coal, petroleum, grain and other perishable cargoes, liquid methane gas, molten sulfur, carbon black, anhydrous ammonia and cement.

The 9-foot channel works as those who had envisioned it predicted. Manufacturers, farmers and urban consumers benefit from it. Because of this channel, the Midwest has a cheap and reliable transportation route that provides an outlet for its products and an inlet for the goods it needs.



Installing the 80-foot wide roller gates and their operating machinery at the locks and dams required the use of heavy equipment.

Internal review office is here to help

by Joe Yanta, Public Affairs Office

Many district employees have misconceptions about the Internal Review Office, or Internal Auditor, as the office is sometimes called.

A few believe that it is part of the Safety Office because the two organizations share the same space. Some think that it is part of the Comptroller's Office. Others think that the office is only concerned with financial audits.

Actually, as Kathleen Keating (the current chief and complete staff of the Internal Review Office) explained, the office is an independent organization that reports directly to the district commander. And its concerns can be quite wide-ranging.

The St. Paul District's Internal Review Office is also relatively new. The contract audit and internal review functions were formerly both part of North Central Division's St. Paul Audit Office, but the internal review function was transferred to the district in fall 1986.

Kathleen said that the Internal Review Office can review "all the mission and support activities" of the district—essentially anything that the district does—and not just in financial terms. Instead, it can undertake "overall evaluations" of various district operations, usually concentrating on efficiency and compliance with regulations. Kathleen explained, however, that no internal auditor can hope to be "an expert on the different operations to be reviewed and must rely on the cooperation of management and staff." Kathleen said that she has received this cooperation from everyone she has worked with in the district.

Kathleen said that the Internal Review Office is not intended to police anyone. Rather, "An auditor is here to help," she said.

She explained that the Internal Review Office may select another office or operation for review in several ways. It may conduct a review in response to a directive from the district commander, North Central Division or the Office of the Chief of Engineers. It might also do so in response to a request from an office that wants to be reviewed, either because of specific problems or because of a desire to improve its operations. Some of these requests come in response to the annual questionnaires that



Kathleen Keating is the chief and complete staff of the St. Paul District Internal Review Office.

Photo by Joe Yanta

the Internal Review Office sends out each August and September for the following calendar year's work. Others come in at different times, as various offices see a need for a review.

After Kathleen selects the subject of an internal review, she talks with the managers and employees involved, reviews the pertinent regulations and assesses the effectiveness of the operations. After Kathleen prepares her report, she submits a copy to

the office under review for comments before submitting the final copy to the district commander. Later, she follows up to see how the recommendations have been followed.

The Internal Review Office also acts as a liaison with outside reviewing agencies, such as the General Accounting Office (GAO) and the Army Audit Agency (AAA). In response to an AAA request, the NCD Resident Audit Office reviewed financial management throughout the district, and GAO just completed a review of a number of district functions. In its liaison role, the Internal Review Office can help offices within the district implement recommendations recommended by outside auditors.

In other words, the Internal Review Office plays several roles that help other offices in the district improve their operations.

Kathleen noted that much of her recent work has involved follow-ups to the extensive AAA-mandated review of financial management in the district. That review consisted of ten separate audits. Six of the follow-up reviews are now complete.

Kathleen has been the chief of the Internal Review Office since September 1987. Before working in the Internal Review Office, Kathleen was a quality assurance auditor in the district's Finance and Accounting Branch. Her previous experience includes work with the U.S. Department of Agriculture, the State of South Dakota and a private accounting firm. She has a degree in accounting.

Vessey to speak on "Defense for the Future"

by Rosemarie Braatz

"Defense for the Future" will be the theme when Gen. John W. Vessey, Jr., addresses the joint luncheon meeting of the Society of American Military Engineers and the Honeywell Engineer's Club on June 16, in the St. Paul Athletic Club at 11:30 a.m.

Vessey served as chairman of the Joint Chiefs of Staff from 1982 until his retirement in 1985. A native Minnesotan, he now

makes his home at Garrison, Minn., and takes an active part in many panels, corporate boards and advisory councils.

Guests are invited to attend this meeting. The cost of the fried chicken luncheon is \$8.00. To make reservations, contact Eleanor Williams at 220-0423.

Brown wins EEO award

Sharon Brown, a former EEO officer for the St. Paul District, has been awarded the Chief of Engineers' Award for Outstanding Achievement in Equal Employment Opportunity. She is now an EEO specialist in the Fort Worth District.

District celebrates Asian/Pacific American Week

The district celebrated May 8-14 as Asian/Pacific American Week with various activities open to all employees.

The program on Wednesday, May 11, "Asian/Pacific Americans in Minnesota," was a special event for all district office employees. Dr. Sarah Mason, a historian, spoke on the history of Asians in Minnesota. Gaoly Yang, one of the first Minnesota Hmong, showed slides of the refugee camps and spoke of her experiences as a refugee in the camps and in America. The Khmer Mahori ensemble played selections of classical, traditional and popular Cambodian music at the beginning and end of the program. Many people stayed after the end of the formal program to hear additional music.

Dr. Mason grew up in China, studied Asian-American history and works with the Minnesota Historical Society and the University of Minnesota. She just returned from a year teaching in China. Ms. Yang was born in Laos and came to the United States in 1976. She is a founding member of WAHL (Women's Association of Hmong and Lao), is employed by the Minneapolis School



The Khmer Mahori ensemble played a selection of traditional, classical and popular Cambodian music at the May 11 program.

Photo by Ann Martin

System in its bilingual education program, and serves in various other capacities as an interpreter in the local Hmong community. The Khmer Mahori ensemble are Cambodian refugees who now live in the United States.

In addition to the major program, other activities were held throughout the week.

On May 9, district employees were

treated to an Asian-Pacific food sampler.

From May 9 through 13, employees participated in a "Name that Nation" contest featuring dolls from various countries and clues to their origin.

On May 12, there was a display featuring traditional garments from Asian countries plus recent photos, books, newspapers and other items of interest.

Eggers co-authors wetland guide

Steve D. Eggers of the St. Paul District and Donald M. Reed of the Southeastern Wisconsin Regional Planning Commission have prepared a detailed, color field guide to wetlands in this area. This 201-page guide, entitled *Wetland Plants and Plant Communities of Minnesota & Wisconsin*, was published recently by the St. Paul District.

Steve said that this book is intended primarily to assist Corps employees working with the regulatory permit program in the identification of wetland plants but that it also will assist people working with other agencies and programs dealing with wetlands and enhance public awareness of wetland diversity and values.

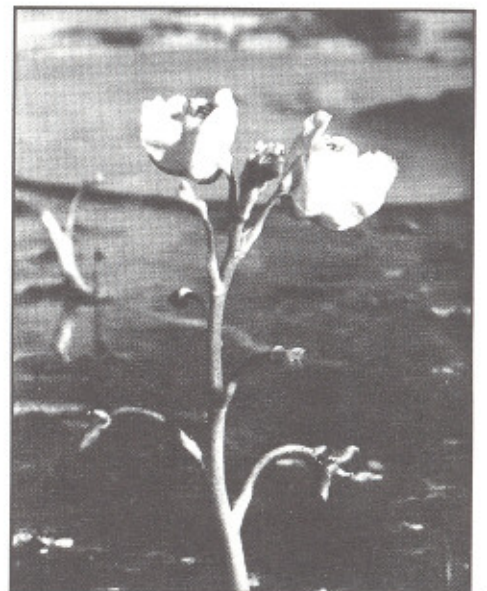
The book describes 15 wetland plant communities in the two states covered by the district's permit program. It contains more than 100 color photographs and descriptions of each wetland community and the representative plants in each.

This guide is designed to be a largely self-sufficient reference, with maps, tables,

charts, a glossary and even a metric/English measure ruler supplementing the color photographs.

Steve is an ecologist in the Regulatory Functions Branch. For the last 9 years, he has worked with the Corps permit program, evaluating proposed dredging, filling and development actions in lakes, rivers and wetlands. He has a bachelor's degree in biology from the University of Wisconsin-La Crosse and has completed additional coursework in plant taxonomy at the University of Minnesota. One of his hobbies is photographing wetland plants and animals.

The field guide is available free of charge to most government agencies (contact Stephanie Dupey, (612) 220-0375). Others may purchase the book for \$5.50 at the St. Paul District office (room 1102) or \$6.50 through the mail (write St. Paul District, Corps of Engineers, ATTN: CENCS-LM, 1421 U.S. Post Office and Custom House, St. Paul, MN 55101-1479; telephone: (612) 220-0222).



The wetland plant manual features many full color photos, such as this picture of a bladderwort, an aquatic, free-floating herb.

Photo by Steve Eggers



Above: Several people from the St. Paul District joined city, county and state officials on May 6 for a ground-breaking ceremony for the Henderson, Minn., flood control project. Participants included Col. Joe Briggs (right), project manager Bob Stenfors (with shovel to the left of Col. Briggs) and Marlin Munter (far left). Marlin, who is now chief of General Engineering Section in Design Branch, was flood engineer for Henderson during the 1969 flood. The emergency levee built by Marlin during that flood fight has been protecting the city for nearly 20 years. The Henderson project will cost an estimated \$1.8 million. Construction is scheduled to begin this month.

Photo by Larry LaPoint

Right: Wally Voss (left) and Maury Geiken check one of the cables used to stabilize a portable communications antenna set up at Winona State University during a mobilization exercise called "Whistle Stop." The three-day exercise was held in mid-May and included sending teams to Ft. McCoy, Wis., Camp Ripley, Minn., and the Twin Cities Army Ammunition Plant, as well as to fallout shelter sites at Winona, St. Peter and Collegeville. The 40-foot mobile antenna is part of the mobile communications equipment which could be used during a natural disaster or mobilization to maintain communications within the St. Paul District and with other agencies and Corps activities outside of the district. Wally is central area lockmaster at Fountain City; Maury is from the Electronic Service Center at Hastings.

Photo by Ken Gardner



National Safe Boating Week

by Evelyn D. Harris
American Forces Information Service

June 5-11 will be the 30th annual National Safe Boating Week. Since 1958, when the week was first proclaimed, the number of recreational boats has grown from 5 million to 17 million nationwide.

According to the National Transportation Safety Board, more than 1,000 Americans lose their lives every year in boating accidents—more than the combined annual fatalities from airline accidents and railway accidents.

This year's theme is "Know Before You Go." Hunt Anderson, who heads the U.S. Coast Guard's Boating Education Branch and is the National Safe Boating Council's secretary, said the council is giving special attention to non-traditional boaters—people who use boats occasionally for fishing or water-skiing. Because these people often don't think of themselves as boaters, they're unlikely to take a boating safety course.

According to Anderson, boat users need to know their craft and its safety equipment; weather and water conditions; the boating "rules of the road"; and their personal limitations.

To help people with this, the Coast Guard has a consumer hotline to answer questions relating to safety and recalls. In the United States (except for the Washington, D.C., area), the number is 800-368-5647.

For information about a safe boating course, call 800-336-BOAT in any state except Virginia or District of Columbia or contact the offices listed in the following story.

Some points covered in the course:

- Always wear a Coast Guard-approved personal flotation device—and make sure everyone on the boat is wearing one. Of the 1,066 people who died in boating accidents in 1986, 82.5 percent were not wearing lifejackets.

- Have respect for the water, even if it's a small lake. The two major causes of fatal accidents are capsizings and falls overboard. Most happen in small boats on small inland bodies of water.

- Don't overload your boat. The small utility, or jon, boats people use for fishing, hunting and day cruising tend to be unstable

and easily swamp or capsize. Modern outboard boats have a plate indicating the maximum outboard horsepower and carrying capacity of the boat. The number of seats in a boat isn't a measure of its capacity. Overloaded boats overturn.

- Booze and boats don't mix. The stressors in the marine environment—the motion and noise of the boat combined with sun, wind and glare—compound the effects of alcohol. If you want to serve alcohol on your boat, use the designated-driver concept. But remember, any intoxicated person, boat operator or passenger, is at risk on the water.

Local information on safe boating

by Joe Yanta, Public Affairs Office

The district Public Affairs Office (612-220-0200) and most of the locks and dams and the recreation sites have publications on water safety, small boat handling, locking procedures and restricted areas at the navigation locks and dams.

The Upper Mississippi River Navigation Charts show navigation aids and hazards in addition to docks, ramps and other facilities. These cost \$9.00 per book, plus \$3.50 shipping and handling (if ordered by mail). They can be picked up in room 1102 of the district office or ordered by mail through the Logistics Management Office (612-220-0222).

Other boating safety information and classes are available through the Coast Guard Auxiliary (612-725-3414); the Departments of Natural Resources of Minnesota (612-296-3336), Wisconsin (608-266-0831), and Iowa (515-281-5145 or 515-281-8652); the North Dakota Game and Fish Department (701-221-6327), the South Dakota Game, Fish and Parks Department (605-773-3630) and some local sheriff's offices.

Local boating clubs, marine dealers and marina operators may also be good sources of free pamphlets and other information on boating.

Answers to Corps history, a short quiz

1. Richard Gridley. In June 1775, the Continental Congress organized the Continental Army with a chief engineer and two assistants with the Grand Army and a chief engineer and two assistants in a separate department, should one be established. When George Washington took command of the Continental Army in July 1775, Gridley (then chief engineer in the New England Provincial Army) became his first chief engineer.

2. In 1866, Warren became the first district engineer in St. Paul. He had previously won fame as a western explorer and Civil War hero. Although he served as a brevet major general in the war, afterwards he returned to his permanent rank of major. As district engineer, Warren worked to improve St. Paul and Minneapolis as commercial centers, began the Headwaters reservoirs and worked to preserve the Falls of St. Anthony. See the 12th floor hall display for more details.

3. Thompson served the Corps for 47 years (1878-1925). As assistant engineer with the Rock Island and St. Paul Districts, he improved methods of wing dam construction and dredging. The district's main dredge is named in his honor. Also see the 12th floor hall display.

4. The original Lock and Dam 2 was on the Mississippi River between the Milwaukee Road and Lake St. Marshall Ave. Bridges, near the border between St. Paul and Minneapolis. See the January 1988 Crosscurrents for more information on its construction and dismantling.

5. The Upper St. Anthony Falls Lock was completed in 1963.

6. In 1824, Congress passed a General Survey Act that authorized the president to use Army engineers to survey road and canal routes, and it appropriated \$75,000 for improving navigation on the Ohio and Mississippi Rivers.

7. 1802.

8. The National Environmental Policy Act. Passed in 1969, this law changed the way the Corps and other federal agencies operate, requiring them to consider environmental impacts of major actions.

9. 1866.

10. 13.

11. 1930.

12. 4 1/2-foot, 1878; 6-foot, 1907.

13. Brig. Gen. Dan Christie Kingman was Chief of Engineers from 1913-1916. His earlier service in the Corps included an assignment in the St. Paul District that involved work at Yellowstone Park. The Kingman Building at Ft. Belvoir is named in his honor.

14. Gouverneur K. Warren. At Gettysburg, Brevet Maj. Gen. Warren noticed that Little Round Top hill was weakly defended. So did Confederate Gen. John B. Hood. Warren's men beat Hood's troops to the hill, defeated the Confederates after a tough fight and probably saved the day for the Union.

15. Douglas MacArthur retired from the U.S. Army, served as a field marshal in the army of the Philippines, and returned to active duty in the U.S. Army in 1941.

Engineer Day Message

by Maj. Gen. George K. Withers, Jr.,
Acting Commander, USACE

1988 is a year of transition - for the nation, and for the Corps of Engineers. In November, we will elect a new President and prepare for a new administration. This summer, many of our district commanders will rotate. LTG E. R. Heiberg III retired last month as Chief of Engineers and Commander of USACE, and as I write, we are awaiting the Senate confirmation of MG Henry J. Hatch as his successor.

1988 is also a year of transition for much of the business of the Corps.

We wrapped up the program in Saudi Arabia, not only with the successful completion of the massive construction program, but in successfully "cloning" ourselves. Saudi Arabia now has its own "corps of engineers," trained by us. Now we are turning our attention to increased support of EPA's Superfund project, as well as clean-up of hazardous and toxic wastes on Army and DOD property.

In our water resources program, we are busy on three fronts. One is planning and executing the projects authorized in the Water Resources Development Act of 1986. Another is producing the guidance for the many policy provisions of the Act. And soon we will begin implementing throughout the Corps a major thrust called Initiative 88 - a fresh look at the ways we've done business for decades in order to be even more efficient and effective in accomplishing our mission. You will be hearing much more about this as the Corps leadership visits the field this month.

In our military work, after several years of "making hay while the sun shines," as LTG J. K. Bratton used to say, we are facing a period of "constrained resources" - challenging us to find ways of working smarter to get more construction for the dollar.

The "leaders in Customer Care" legacy of General Heiberg includes greatly improved relationships with our customers, thanks to your commitment and emphasis. The benefits go far beyond "good feelings" - it has greatly facilitated our working relationships with customers, and most importantly, is reflected in the improved quality

of the product delivered to our ultimate customers. This theme must live on.

General Heiberg's legacy is also reflected in a number of initiatives to enhance the quality of leadership in the Corps.

One of these is a flexible program to help assure a smooth transition and minimize loss of productivity during change of leadership. General Heiberg and General Hatch are participating in such a program, which is also available to leaders in the Divisions, Districts, and laboratories.

NCD Engineer Day message

by Brig. Gen. Theodore Vander Els
NCD Commander

On the occasion of Engineer Day, it is well to reflect on the role the Corps has played in the evolution of American engineering. For over 200 years, the Corps of Engineers has served the Nation and provided the crucible for much of her engineering and success.

From its infancy, the United States has benefited from the skill and ingenuity of the Corps. Army Engineers and topographers explored the frontier, opening the west for the growth of America.

Army engineers designed roads, railways and other transportation systems that enabled the new Nation to grow and prosper.

When interlopers sought to challenge our rights and freedoms, Army engineers provided technical skills, troop support as well as field strategies to assist our combat forces.

When nature wrought hardship or destruction upon the land, the Corps found new direction—providing engineering expertise to alleviate or lessen the problem.

The Corps finds its direction today no less challenging. As we approach the 21st century, a host of new directions...of new challenges await the Corps. Energy development, genetic research, further space exploration are all areas where engineers will be in the forefront. As in the past, the Corps will be ready to once again take the baton of service to the Nation.

On this 213th birthday of the Corps, I commend the men and women of the North Central Division for their continuing contributions to the Corps and to the Nation.

But in the final analysis, it is the responsibility of each of us as individuals to maintain the momentum. Drawing more than ever on the traditional Corps values of professionalism, integrity, quality, and esprit de corps, we can each continue to foster enthusiasm, creativity and drive for excellence.

It is we who will make 1988 not only a year of new beginnings, but a year of achievement, of success, and of celebration.

Essayons!

Around the District

by Ken Gardner, Public Affairs Office

So June has finally arrived along with the warm weather, the kids are out of school and you're looking for something to do for a weekend get-away.

Well, you're in luck. There are plenty of Corps things to do in June and July. One of the premier events in June will be the "rededication" of the Mississippi lock and dam system which will be held on Saturday, June 25 at Lock and Dam No. 7 at La Crescent, Minn. (Or near La Crosse if you are a Wisconsin-oriented person). That is the main event marking the 50th anniversary of the completion of locks and dams 3 through 9. Or you might take the family camping at Eau Galle Reservoir and partake of the district awards ceremony and picnic there on Friday, June 17.

However, if Corps-crowds are not your style, most of the locks and dams are having open houses this summer in observance of the 50th anniversary. The open houses are often held in conjunction with local civic celebrations such as Catfish Days in Trempeleau (July 9 for the Lock 6 open house).

Some of the open houses will be as close as your back door (if you live in the Twin Cities). Lock 2 will hold its open house on July 23-24 while Hastings celebrates Rivertown Days, and St. Anthony Falls will have its open house on July 16. And, if you're really ready for a trip, you might want to check out the June 18 open house at Lock 9, Lynxville, Wis., or Fort Sisseton Days at Sisseton, South Dakota. The district's traveling exhibit trailer is scheduled to be there on June 4-5.

And that is what's happening around the district this month.