

ENGI-NEWS

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Editor: Denis C. Chabot, PE

May 14, 2010

May 14th Meeting Notice

Structural Repair of Miter Gate Anchorage at Greenup Locks and Dam

Michael Keathley, PE, of the US Army Corps of Engineers to present May 14th Program

By: **Simon Fet, EI**
1st Vice President & Program Chair

In late January, 2010, during a normal lockage of an upbound tow at Greenup Locks and Dam, the downstream middle wall gate leaf of the 1200 foot main chamber suffered a tension failure of the miter gate leaf arm. With the gate unsecured at its uppermost point and engineers unsure of whether use of the auxiliary lock chamber would create forces which would cause the gate to lose all stability and fall into the river, barge traffic had to be halted in both directions for days. The Engineers Club program features **Michael Keathley, PE**, who will discuss actions to stabilize the failed miter gate; then to monitor, remove, and repair and reinstall it.

Photo by **Simon Fet, EI**



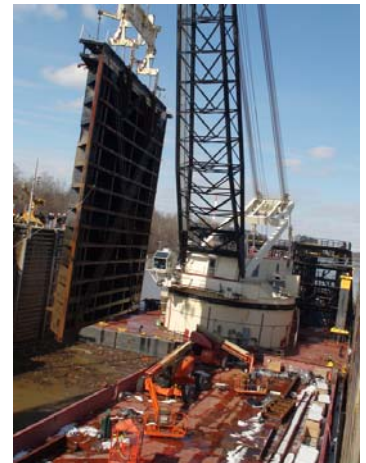
Michael Keathley, PE

In September 2009, the Huntington District awarded a continuing contract for fabrication of one new set of miter gates. Contract award for a second set of gates is scheduled for FY11. Even when the extra gates are on hand, the District does not have a crane with enough capacity to lift the massive miter gates. A crane has to be requested and brought up from the Louisville District to make the lift.



Photo showing broken gate anchorage (USACE photo)

The miter gates at Greenup have long been known to be developing structural problems. During a scheduled de-watering in September 2003, extensive cracking along horizontal girders, vertical diaphragms, within the skin plate and around the pintle casting was discovered on the downstream main chamber gates. The extensive cracking and deteriorated condition of the main chamber miter gates prompted the District to accelerate the frequency of de-watered inspections from a 5-year to a 3-year cycle. Additional de-watered inspections occurred in 2006 and 2009. The Corps also installed strain gages on the gate to monitor performance.



Miter Gate being lifted for repair (USACE photo)

Greenup Locks and Dam is located in Greenup County, Kentucky, on the Ohio River at river mile 341.0, and was placed in service in 1959. The Greenup pool is situated in the Tri-State area of Kentucky, Ohio and West Virginia. The project is a high-lift, non-navigable gated dam with one 1,200-foot main lock and a 600-foot auxiliary, landward lock. The locks are closed by horizontally framed steel miter gates (each 67 feet high) at the upper and lower end of each lock chamber. The dam maintains an upper pool elevation of 515.0 and lower pool elevation 485.0.

ECH Awards \$1,500 in Scholarships at the April Meeting

***Two M.U. Engineering
Students receive \$750 each***

By: **Judith Doty Dumke**
Chair, Awards and Education Committee

The Engineers Club of Huntington April Meeting honored two Marshall University Engineering students chosen as the 2010 recipients of the ECH endowed Scholarship. Each was presented with a dinner, a certificate and recognition for the \$750 award received.

Jese Vance was introduced by ECH Director **Samuel E. Clark, PE** (*Sam had previously taken Jese to lunch as part of a new ECH program to pair students applying for the scholarship with practicing engineers*). Jese is currently a Marshall University sophomore, majoring in engineering. He is currently the President of the Engineers Without Borders chapter at Marshall and a member of the Society of American Military Engineers. The staff of the Water Resources' Section of the Engineering Division at the Huntington District office of the US Army Corps of Engineers provided him glowing recommendations for his work as a part time engineering technician. Originally from Clay County, he graduated from Clay County High School, and now currently lives in Huntington. Mr. Vance is considering graduate school upon completion of his degree.



▲ **Jese Vance** receives a certificate announcing his selection as the ECH Scholarship Recipient; presenting is ECH Awards and Education Chair **Judith D. Dumke**.

Brigham S. Ash proudly displays the certificate of achievement ▼



MAY MEETING NOTICE

Date: May 14, 2010
Speaker: **Michael Keathley, PE**
Program: **Structural Repair of the Greenup Locks Miter Gate Anchorage**
Place: ► **Ponderosa Steakhouse** ◀
 3100 Route 60 East
 Huntington, WV 25705
Time: Social, 6-7:00 p.m.
 Dinner, 7-8:00 p.m.
 Program, 8:00 p.m.
Cost: \$14 (*discount is applied; NO COUPONS, please*)

Reservations Required through Denis Chabot

(NOTE: Deadline Noon Thursday, May 13th)
 at **304-399-5140** (w) or E-mail at
Denis.C.Chabot@usace.army.mil

ECH 1st Vice President **Simon Fet, EI** introduced **Brigham S. Ash** from Letart, West Virginia. Mr. Ash is a junior at Marshall University, majoring in engineering with a strong interest in structural and geotechnical engineering. His interests are varied, including being a member of the Marshall chapter of Engineers Without Borders, coaching junior high football, and working in his family's handyman business for several summers. He is anxious to begin a career in engineering upon completing his degree.

This year there were seven applicants, most of whom were highly qualified; the selection committee only regretted the limitations of current funds. ECH Members serving on the committee making the selections consisted of **Robert Y. Csernica, Jonathan R. Duncan, PE, Wm. Sutton Epps, PE, Simon Fet** and **Harold D. Lunsford, PE**.

Photos from the ECH April Meeting

(Page Layout by Kevin Osborne, EI; Photos by Denis Chabot, PE and Samuel E. Clark, PE)



▲ From left to right, **Bob Csernica**, **Churchill Hodges**, **Maybelle Lee**, **Wayne Horton, PE**, and **Claire Horton**.



▲ Two fine gentleman, **Wayne Horton, PE**, on the left and **Brast Thomas, PE** on the right.



▲ **Mike Pollock, PE** (left) and **Stephen Stack** (right) pause their conversation for a photo opportunity.



▲ From left to right, **Tom Lilly, PE**, **Andrew Loudermilk**, and **Arvie Maynard, PE** pose for a photo during the social hour.



▲ The recurrently cheerful, **Bob Csernica**.



▲ The venerable, **Bob Waters**, a.k.a. **Dennie Shaboo**.



▲ A couple of merry Mary's...that's **Mary Hodges** on the left and **Mary Emmons** on the right.



▲ The always dignified, **Brian Ball, PE**.



▲ From left to right, **Bob Csernica**, **Pillips Emmons, PE**, and **Churchill Hodges**.



▲ ECH's 1st President of Vice, the stately, **Simon Fet, EI**.

Photos from the ECH March Meeting

(Page Layout by Kevin Osborne, EI; Photos by Denis Chabot, PE and Samuel E. Clark, PE)



▲ The always pleasant **Shelley Watkins**.



▲ From left to right, **Sutton Epps, PE, Don Lee, and Phillips Emmons, PE** engage in conversation before the meal.



▲ **Arvie Maynard, PE** always willing and ready with the invocation.



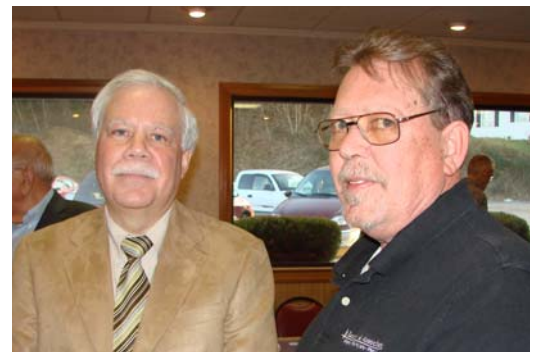
▲ **Brantley Jackson** moving on to CA.



▲ Two thorns beside a rose from left to right **Denis Chabot, PE, Kevin Osborne, and Judy Dumke**.



▲ Foreground from left to right, **Bob Csernica, Sutton Epps, PE, and Don Lee** with **Wayne Horton, PE** looking in from the background.



▲ **Sam Clark, PE** on the left with **Lee Poplin, PLS** on the right.



▲ **Dorothy Lunsford** on the left and **Maybelle Lee** on the right.



▲ Relatively new ECH member **Erik Merlino, PE**.



▲ From Left to right, **Jim Maphet** and **Harold Lunsford, PE** converse.