

another Dam newsletter



Ohio Dam Safety Organization, Spring 2006

Ohio Dam Safety Organization

by Joe Stock, Jr., P.E., Chairman

The Ohio Dam Safety Organization (ODSO) was formed in 1995 as a division of the Water Management Association of Ohio (WMAO). ODSO is also affiliated with the national Association of State Dam Safety Officials (ASDSO). Membership to ODSO is free and open to all who are members of the WMAO. It is ODSO's mission to promote dam safety in the State of Ohio by establishing a partnership between dam owners, operators, engineers and regulators. We do this by providing forums for education and discussion on dam safety related issues and providing a voice for all concerned in the formation and implementation of dam safety policy in the State of Ohio. If you are interested in becoming involved with ODSO, please fill out the membership application at the end of the newsletter and check Dam Safety as your area of interest.

Incident at Buckeye Lake Dam Narrowly Avoided

by Tom Moe

Buckeye Lake, which is located in about 20 minutes east of Columbus, just south of Interstate 70, was constructed as a canal feeder lake in 1826.

On Wednesday, March 15 a bulldozer was digging into the Buckeye Lake dam when the dirt began to slip. Thanks to the seawall on the pool side of the dam, the water did not cause a breach and flood the surrounding territory. What was going on here, and how did the appropriate agencies respond?

Anyone who is familiar with the Buckeye lake area knows that homes are built right up to if not into the dam structure. Many homeowners can step from their homes directly onto the dam which has a walkway running its length. This latest incident occurred because yet another property owner was going to build his house foundation into the dam.

The practice has gone on for years in spite of regulations to the contrary, and we are all lucky that the dam has maintained its integrity in spite of these assaults.

The latest situation was aided by the effect that the preceding weather had been rather wet, and the bulldozer was eating far into the dam structure. Fortunately, the equipment operator stopped when he saw the walkway sag and the dirt beginning to slide. He quickly reversed his operation and began to replace the dirt as fast as he could. No more rain came, and the dam was not breached.

A call went out to the Licking County Sheriff's office and then to Licking Emergency Management even though the property is in Fairfield County. This did not create any difficulties however, because the two counties, along with Perry County have practiced joint response to dam emergencies many times. Licking EMA notified his counterpart, yours truly, in Fairfield County and also Mark Ogden at ODNR. ODNR supplied the requisite engineering expertise, and the EMAs stood by to launch response and evacuation activities which, it turned out, were not needed.

We again "dodged a bullet," thanks to a number of quick-thinking individuals. Had the dam breached, widespread loss of property and possibly of life would have occurred. Although the proverbial "10 foot high wall of water sweeping through Newark" is a myth and was again propagated by nervous citizens, the danger of a breach cannot be trivialized.

ODNR is working on plans to build a parallel dam to the existing north dam, but in the meantime property owners and builders must exercise more caution when building near the dam and not impinge on the dam's integrity. Next time we might not be lucky--and it was pure luck that has kept us from tragedy so far.

Dam Safety Tip: Seepage through Earthen Dams

by Peter George

All dams have some seepage as the impounded water seeks paths of least resistance through the dam and its foundation. Seepage must, however, be controlled in both velocity and quantity.

Detection

Seepage can emerge anywhere on the downstream face, beyond the toe, or on the downstream abutments at elevations below normal pool. Seepage may vary in appearance from a "soft," wet area to a flowing "spring." It may show up first as an area where the vegetation is lush and darker green. Cattails, reeds, mosses, and other marsh vegetation often become established in a seepage area. Downstream groin areas (the areas where the downstream face contacts the abutments) should always be inspected closely for signs of seepage. Seepage can also occur along the contact between the embankment and a conduit spillway, drain, or other appurtenance. Slides in the embankment or an abutment may be the result of seepage causing soil saturation or pressures in the soil pores.

At most dams, some water will seep from the reservoir through the foundation. Where it is not intercepted by a subsurface drain, the seepage will emerge downstream from, or at the toe of the embankment. If the seepage forces are large enough, soil will be eroded from the foundation and be deposited in the shape of a cone around the outlet. If these "boils" appear, professional advice should be sought immediately. Seepage flow which is muddy and carrying soil particles may be evidence of "piping," and complete failure of the dam could occur within hours. Piping can occur along a spillway and other conduits through the embankment, and these areas should be closely inspected. Sinkholes that develop on the embankment are signs that piping has begun. A whirlpool in the lake surface may soon follow and then likely a rapid and complete failure of the dam. Emergency procedures, including downstream evacuation, must be implemented if this condition is noted.

A continuous or sudden drop in the normal lake level may be an indication that seepage is occurring. In

this case, one or more locations of flowing water are usually noted downstream from the dam. This condition, in itself, may not be a serious problem, but will require frequent and close monitoring and professional assistance.

Monitoring

Regular monitoring is essential to detect seepage and prevent failure. Without knowledge of the dam's history, the owner or the inspector has no idea whether the seepage condition is in a steady or changing state. It is important to keep written records of points of seepage exit, quantity and content of flow, size of wet area, and type of vegetation for later comparison. Photographs provide invaluable records of seepage. The inspector should always look for increases in flow and evidence of flow carrying soil particles.

Regular surveillance and maintenance of internal embankment and foundation drainage outlets is also required. Normal maintenance consists of removing any soil or other material that obstructs flow. Internal repair is complicated and often impractical and should not be attempted without professional advice. The rate and content of flow emerging from these outlets should be monitored regularly.

For additional information such as seepage control and monitoring; refer the Ohio Department of Natural Resources, Division of Water Fact Sheet 94-31, "Seepage through Earthen Dam"

Dam Safety Loan Program

Reprint from ODNR's web site.

The Ohio Water Development Authority (OWDA) and the Ohio Department of Natural Resources (ODNR) have joined to create two loan programs to assist the state's dam owners in funding safety related repairs and improvements. Public agencies will utilize the Ohio Water Development Dam Safety Loan Program and private or corporate owners may borrow through the Ohio Water Development Link Deposit Program.

For more information, refer to <http://www.dnr.state.oh.us/water/dsafety/damloans.htm>

WMAO/ODSO Annual Fall Conference

by Dave Moore

Mark your calendars for the 35th Annual WMAO/ODSO Fall Conference! The theme of this year's conference is "Follow the Flow". It will be held November 15 & 16, 2006 at the Midwest Hotel and Conference Center (4900 Sinclair Drive, Columbus, OH 43229).

Abstracts are being sought for presentations of information addressing the interconnectedness of water resources and water-resources management. You may choose to make a 20-minute Oral Presentation or participate in a Poster Session. The Conference Planning Committee will review all abstracts and inform authors of those that are accepted. Accepted abstracts will be compiled and posted on the WMAO web site.

Membership in WMAO is not a requirement for submittal of an abstract or presentation of your paper although we encourage everyone to consider joining WMAO to support the water resources profession in Ohio. All conference presenters are required to pay the conference registration fee. A discounted registration rate will apply to currently-enrolled students.

SESSION TOPICS: Presentations should focus on the following potential session topics addressing water and water-resources management (specific topics may be relevant to multiple headings):

- Hydrology and Watershed Management
- The Importance of Hydrology to Riparian and Aquatic Ecosystems
- Water Quality and the TMDLs of the Future
- Dam Safety and Floodplain Management
- Interactions Between Surface- and Ground-Water Resources
- Water Quantity (Challenges and Opportunities)
- Stormwater Management and "Green Engineering"
- Wastewater Management (Municipal, Industrial, Private)
- Drinking Water (Source Water Protection and Treatment)
- Monitoring and Assessment
- Use of Volunteer Data in Research and Water Information Management

- Community-Based Watershed Stewardship and Education
- Water Resource Monitoring and Pollutant Source Identification
- Policy and Administration
- Water Policy, Planning and Management
- Revisions to and Effects of HSTS and Small-Flows Treatment Rules
- Balancing the Needs of Navigation, Industrial Users & Recreation

ABSTRACT SUBMISSION: Abstracts should be limited to 300 words or fewer. Abstracts should communicate clearly and concisely the purpose, findings and implications of your investigation or study. Abstracts will be reviewed and ranked for acceptance and placement in the program by members of the Conference Planning Committee. Papers will be selected for presentation based on their merit and relevance to the conference and session topics. Submissions that are thought provoking and address controversial water resource issues and describe new areas of application or study are especially welcomed. Authors' suggestions for topic placement will be considered, but the Conference Planning Committee will make the final decision. Abstracts received after the JULY 21, 2006 deadline may not be accepted.

ODSO Executive Board

by Joe Stock, Jr., P.E., Chairman

ODSO is governed by an Executive Board of representative dam owners elected at our annual Fall meeting. The Executive Board consists of one member representing each of the following seven areas of dam safety interest:

- Academia
- Conservancy Districts
- Dam Construction Contractors
- Engineering Consultants
- Industrial Dam Owners
- Municipal Dam Owners
- Private Dam Owners

The Executive Board's Officers are Joe Stock-Chairman from Buckeye Engineering representing Engineering Consultants, Tim Granata-Vice Chairman from the Ohio State University representing Academia and Jeff Brooks-Secretary/Treasurer from the City of Columbus/Water Division representing Municipal Dam Owners.

The Advisory Committee members are Dick Lorenz (immediate past Chairman) from the City of Westerville/Water, Pete George from ODNR/Division of Water/Dam Safety Program and Art Brate from Natural Resources Conservation Service (NRCS).

This year's Executive Board consists of three newly elected members Brett Dreger from American Electric Power representing Industrial Dam Owners; and Chad Schroeder from Miami Conservancy District representing Conservancy Districts and Steve Roberts from Beaver Excavating representing Dam Construction Contractors.

The additional Board member is Tom Moe of Fairfield County EMA representing Private Dam Owners. Further information is available on our website: <http://www.wmao.org/div/odso/>

ODSO Nomination Committee News

by Tim Granata, Dick Lorenz and Steve Roberts

The Committee is taking nominations for the following Executive Board seats:

- 1) Municipal (Local Government) Dam Owners;
- 2) Private Dam Owners; and
- 3) Academia.

Terms will start in November, 2006 and will last until November, 2008. We request the nominees' name, qualifications and Email address be sent by July 10, 2006 to the following Email address: granata.6@osu.edu.

The Committee will review the nominations and try to place two or more names on the ballot for each category. Voting will take place during the ODSO session of the Fall 2006 WMAO Conference. Absentee ballots will be attached to the fall WMAO newsletter.

Dam Safety Awards

by Dan Hill

Best Maintained Dams

Congratulations to the winners of last year's annual ODSO Dam Safety Awards for best maintained dam. The 2005 winners (by ownership category) as recognized at the Annual Meeting last November are:

Private:

Lake Stroman Dam, Jake & Terrie Conley

Conservancy District:

Taylorville Dam, Miami Conservancy District

Local Public:

East Cold Run Reservoir Dams, City of Salem

Photos of the above dams can be viewed at the ODSO web site: www.wmao.org/div/odso/ Click on Awards and then click on the name of the dam.

Nominations for the 2006 awards are now being sought. Eligibility is based on two simple requirements: (1) the dam must be at least 5 years old; and (2) it must be in compliance with all of the Department of Natural Resources' dam safety regulations.

This year's awards will be presented in conjunction with the Ohio Dam Safety Organization / Water Management Association of Ohio annual conference in mid November. To make a nomination for this year's awards, fill out the form in this newsletter and return it by September 15, 2006 to:

Dan Hill, Chair
ODSO Awards Committee
1433 Inglis Avenue
Columbus, OH 43212

Membership Application

Please complete this form and include it with your payment (made payable to WMAO) to:



The Ohio Dam Safety Organization
A Division of
Water Management Association of Ohio
601 Dempsey Road
Westerville, Ohio 43081-8978

NAME _____

ORGANIZATION _____

TITLE _____

MAILING ADDRESS _____

OFFICE PHONE _____

E-MAIL _____

| MEMBERSHIP | ANNUAL DUES | BENEFITS |
|----------------|-------------|--|
| Individual | \$85.00 | 1 member |
| Organizational | \$180.00 | 3 members, additional members \$80 each |
| Sustaining | \$400.00 | 6 members, additional members \$80 each; business card advertisement space in 4 Ohio Water Table issues (Please provide complete information on each individual) |
| Student | \$10.00 | 1 member |
| Emeritus | \$25.00 | 1 member; must be 65 years of age with 5 years membership in WMAO or be approved by the executive board. |

MEMBERSHIP TYPE _____

AREAS OF INTEREST (Check all that apply)

- | | | |
|---|--|---|
| <input type="checkbox"/> Agriculture | <input type="checkbox"/> Floodplain Management | <input type="checkbox"/> Research & Data Management |
| <input checked="" type="checkbox"/> Dam Safety (ODSO) | <input type="checkbox"/> Groundwater | <input type="checkbox"/> Stormwater Management |
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Joe Stock, Jr., P.E.
Director of Water Resources

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ODSO 2006 Best Maintained Dam Nomination Form

Categories (*check one*):

| | | |
|---------------------------------------|----------------------------------|---|
| <input type="checkbox"/> Industrial | <input type="checkbox"/> Private | <input type="checkbox"/> Property Owner Association |
| <input type="checkbox"/> Local/Public | <input type="checkbox"/> State | <input type="checkbox"/> Conservancy District |

Name of Dam: _____ ODNR File No. (if known) _____

Owner: _____

Address: _____

Telephone No.: _____

Nomina _____

Address: _____

Telephone No.: _____
