

**G-1**

**TEAM MEETINGS**

**COMMENTS ON METHODOLOGY  
(GORDON)**

**Gaines, Roger A MVM**

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**From:** Gordon, David MVS  
**Sent:** Wednesday, September 04, 2002 10:51 AM  
**To:** Gaines, Roger A MVM  
**Cc:** Maynard, Stephen T ERDC-CHL-MS  
**Subject:** RE: Comments on Basic Methodology of WES Movable Bed Models

References

"Design and Development of Bendway Weirs for the Dogtooth Bend Reach, Mississippi River, Hydraulic Model Investigation," US Army Corps of Engineers, Waterways Experiment Station, Technical Report HL-94-10, August 1994.

"Greenville Bridge Movable-Bed Model Study, Mississippi River," Letter Report, Date Unavailable.

The St. Louis Harbor model was used several times since the late 1960's. There are at least two instances where the model was used to evaluate navigation conditions. Flow visualization was analyzed to determine the effect of bendway weirs on navigation through the bridge crossings in some of the last tests. These tests were not published in a report. The model was also used to design a solution to a shoaling problem at a barge terminal. The results of this study are documented in:

"St. Louis Harbor Study, Missouri and Illinois, Potamological, Hydrologic, and Hydraulic Design Memorandum," June 1986.

A quantitative analysis of velocities appears to have been used in this design:

"Velocity Analysis

The velocities induced off the downstream edge of the PRAIS (Prototype River Access Improvement Structure) were analyzed with confetti during model testing. Velocities were increased slightly at the higher flows of around 1.5 ft/sec along the front wall. Compared to the normal velocities found in the navigation channel, the velocities along PRAIS were determined to be compatible with the requirements necessary for safe and efficient barge accessibility, and the configuration of PRAIS was thus approved for structural design."

-----Original Message-----

**From:** Gaines, Roger A MVM  
**Sent:** Wednesday, September 04, 2002 7:13 AM  
**To:** Gordon, David MVS; Maynard, Stephen T ERDC-CHL-MS  
**Subject:** Comments on Basic Methodology of WES Movable Bed Models