



**US ARMY CORPS  
OF ENGINEERS**  
ROCK ISLAND  
DISTRICT

# Navigation Notice

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River:  
**MISSISSIPPI RIVER**

Date:  
**16 November 2007**

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Location:  
**UMR Mile 301.2-615.1**

Effective Period:  
**SEE BELOW**

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In Reply Refer to:  
**OD-MV**

**LEGAL NOTICE TO NAVIGATION**

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## UPPER MISSISSIPPI RIVER

### ICE CONDITIONS

#### UMR Mile 301.2 - 615.1

1. All tows are cautioned to be alert for changing conditions and possible hazards due to ice formations. Severe navigation problems can always be expected throughout the ice-forming season. Currently, flows on the Mississippi River are near normal for this time of year. As winter approaches and water temperatures drop, ice will form rapidly, reducing river flow by as much as 50% over the course of a few days. During this time, channel velocities will be minimal leading to ice build up at bends in the river and on submerged training structures. Once initial ice formation is complete, flows will rebound slightly, making movement somewhat less difficult.
2. Gorged ice becomes a particular hazard when attempts are made to drive barges through the formation. Barges forced through or over gorged ice are frequently holed, stoved in or buckled, which usually results in sinking. Navigators are advised to exercise due caution to avoid sinking barges and subsequent blockage of the navigation channel. Gorged ice may also create unusual currents and high-localized flow or outdraft conditions due to water bypassing the temporary dam formed by the gorge. Navigators approaching an ice gorge should make certain that the towboat has sufficient power to properly control the number of barges in tow under such unusual conditions of flow.
3. Sheet ice will at times prevent opening of the upper and lower miter gates. When the miter gates cannot be fully opened into recesses, they are highly vulnerable to extensive damage from tows entering or departing the lock chamber. Navigators are cautioned to exercise extreme care when entering or departing the lock chamber to avoid damage to the miter gates. When ice builds up to the extent that full usage of the lock chamber is prohibited, length and/or width restrictions will be imposed on lockages. Double tripping or use of an industry helper boat will be required when the lock is unable to process the first cut of a double due to ice conditions.

4. During periods of heavy icing, all towboat operators are required to arrange their tows so that recoupling does not occur between box end barges during a lockage. Rake to box ice couplings the entire width of the tow, at break points of the tow, will be required at all locks when ice is present at the lock. Ice conditions at UMR locks may occur as early as 1 November. In the past, ice trapped between box barges has caused long delays in coupling the two sections of a tow, thereby impeding flow of traffic through the locks.

5. If a tow is arranged so that recoupling occurs between box end barges and the lockage will result in unusual delays to navigation, the Lockmaster will require loss of lock turn or double-tripping and use of an industry-provided helper boat. If double tripping is required, the tow will lock through in sections with a towboat attending each section, and each section of the tow will be moved out of the lock approach before recoupling.

6. Consideration will also be given to limiting size of tows if heavy ice conditions warrant. Observation during past severe winters indicates that eight jumbo barges (two wide) appear to be the best configuration to allow adequate traffic movement. Notice will be given if conditions warrant the limitation of the size and/or configuration of tows.

7. The immediate concern in this area is not limited to financial responsibility for the damages to navigation structures. A primary objective is to eliminate all preventable incidents that will delay traffic.

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William T. Gretten, P.E.  
Operations Manager  
Mississippi River Project

MR 07-39