



Photo by Tim Smalley

High speed operation can cause accidents. A single occupant was ejected into the water when he hit a wake while operating his boat at high speed near the Twin Cities. The boat continued “unmanned” towards shore where it hit a swimming raft. The raft launched the boat skyward and it came down on top of a boat lift, causing heavy damage to the boat, lift and dock. Amazingly enough, there were no injuries and alcohol was not involved.

BOATING ON THE BIG RIVER

LOCKS AND DAMS

In the 1930s, the United States Army Corps of Engineers built a series of locks and dams on the Mississippi River to maintain a navigational channel of at least nine feet in depth. Eleven such lock and dam facilities are located on the Mississippi north of the Minnesota-Iowa border. These locks and dams present a special hazard to recreational boaters who are unfamiliar with them. Special precautions must be taken when approaching and going through these navigational structures. In addition to these facilities, there are other dams on the Mississippi, Minnesota and St. Croix rivers that have no locks.

What is a lock?

The dams on the Mississippi River create a series of navigational pools. Each dam can be thought of as a step in the river as it descends to the Gulf of Mexico. A lock is used to raise or lower boats to the next pool in the system. A lock is a chamber that may be opened on either end to allow boats to enter or leave. Once a boat is in the lock, water is added to the chamber to raise a boat to the upstream pool or released from the chamber to lower a boat to the downstream pool.

Deceptive Currents

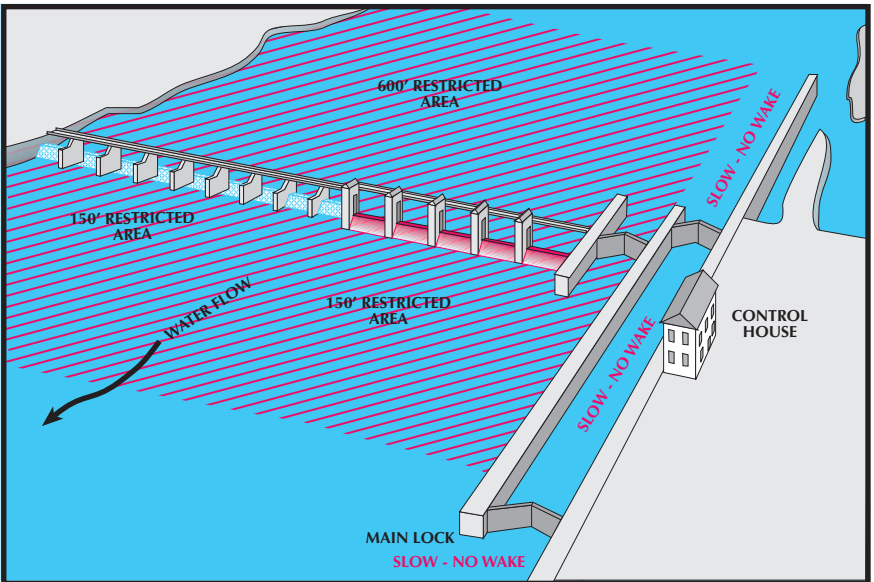
Near each lock and dam the water is turbulent and dangerous. Currents are strong, swift, and deceptive. As water is drawn in and discharged from a lock chamber or drawn over a dam, undercurrents are created that are powerful enough to drag a boat and its occupants to the bottom.

Restricted Areas

There are certain restricted areas to protect boaters in the vicinity of locks and dams. The water near each lock and dam has dangerous currents. Boats *may not enter* the following areas:

The area 600 feet upstream and 150 feet downstream from the dam (*including auxiliary locks not in service*).

Additional restrictions may be posted at each dam or spillway. Obey all signs and buoys.



Locking Through

Upon approaching a lock, a set of traffic signals (the same as you would find at a road intersection) will inform the boater as to the lock's status. See below for a description of these lights and their meaning. Upon approach to the lock, you can contact the lock-master via channel 14 on your VHF marine radio or simply pull the signal cord on the lock approach wall. You should be aware that the lock may be in use as you approach, locking craft through from the other side, and you may have to wait.

No Light



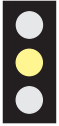
Lock not in use, approach guide wall and signal for lockage by pulling signal cord.

Red Light



Stand clear, do not approach.

Yellow Light

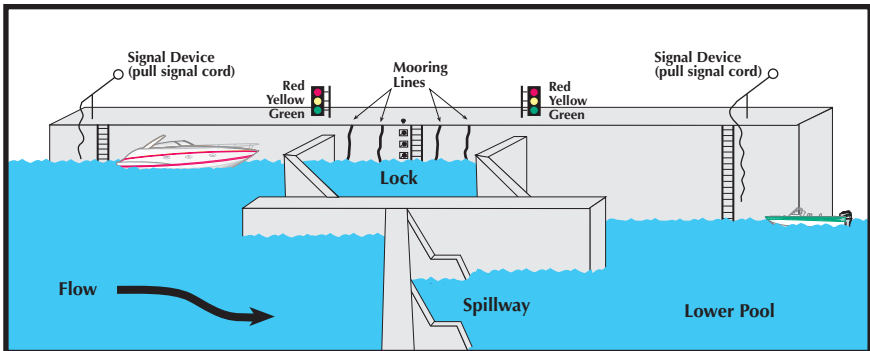


Approach lock under full control.

Green Light



Enter lock.



Upon receiving a green light, proceed slowly into lock and observe mooring lines spaced along lock wall. The lines should be held by hand and not tied to the boat while in the lock chamber. Do not tie a line to a recessed ladder. Insure that passengers remain seated at all times and keep hands inside the boat to avoid the chance of crushed fingers. If construction of craft requires handling lines on deck, a life jacket should be worn. Do not leave the engine running during lockage, nor climb ladders of the lock structure.

Upon completion of the lock filling or emptying operation and when the gates are fully open, a signal will be given by the lock operator that it is safe to depart the lock. *The signal will be either a P.A. announcement, one short toot of the signal horn or a hand*

signal by the lock operator. Leave the lock at a slow speed assuring that you are well clear of the lock structure before gaining speed. The approaches to the locks are considered no wake areas.

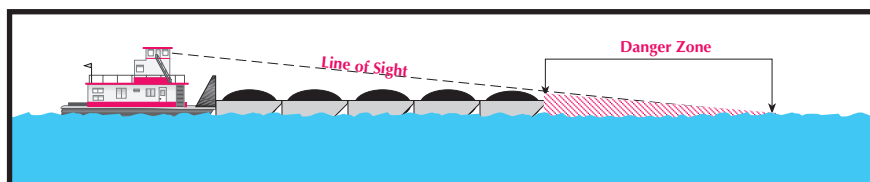
Recreational craft and towboats are locked through on a first-come, first-served basis. Only government craft and regularly scheduled passenger craft have priority. Boaters should be aware that delays in locking through may occur. Lock and dam personnel monitor channels 14 and 16 on the VHF marine radio and can be contacted about waiting periods. There is no charge for locking through.

HAZARDS

Towboats

When encountering a towboat, always obey the following rules:

1. Stay clear of towboats! They usually have the right-of-way over recreational boats and they create strong wakes.
2. Never anchor in their course; it may require a half-mile or more for them to stop.
3. Remember, at night their lights appear far apart compared to small boats.
4. They have a blind area directly in front of the barges and on each side.



5. Stay clear of the stern of the towboats. They may suddenly turn on a burst of power and overturn a small boat.
6. Turn your bow into the wake of barges and boats.
7. When meeting a barge at a bend in the river move to the inside of the bend where possible.

Wing Dams

To help improve the navigability of the Mississippi River by controlling the direction of channel flow, the U.S. Army Corps of Engineers has placed hundreds of wing dams.

A wing dam is an elongated pile of rocks or concrete which is usually submerged. Because wing dams often lie just below the water surface, they cannot be visually detected and pose a great

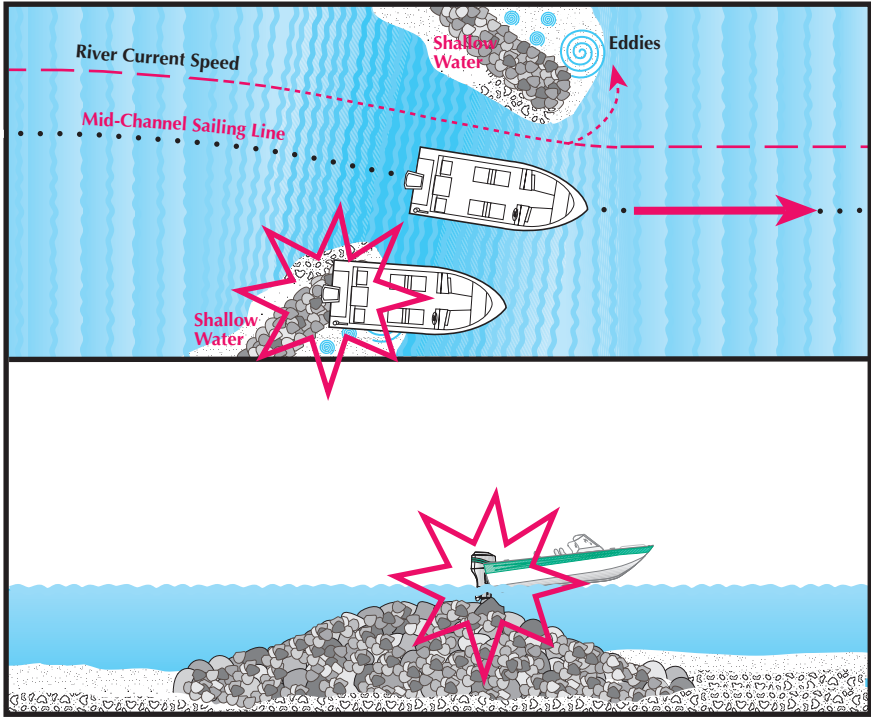
danger to the unwary boater. If you follow these boating practices, however, you can avoid an unwanted encounter with a wing dam.

1. Stay within the main channel, indicated by buoys and markers (see *fold-out flap on back cover*). It is continually dredged and maintained.
2. If approaching shore, proceed slowly from a perpendicular angle.
3. Stay clear of ripples in the water surface; these are a tell-tale sign of a wing dam lying just below.

WARNING!

The dam symbols in this guide show *approximate* locations of the wing or closing dams. *The actual locations may vary.*

Wing Dams and Closing Dams Are Not Buoyed!



Top drawing is not to scale

Closing Dams

Closing dams were constructed by the U.S. Army Corps of Engineers to help control the direction of channel flow on the river. These dams are located on some side channels of the Mississippi River and may not be visible from the surface. A number of these dams are located between Hastings and Red Wing and others between the

lower end of Lake Pepin and the Iowa border. *Although most of these are marked on this set of maps - boaters are cautioned to always proceed at a slow speed outside the main channel of the river to avoid striking either natural or artificial obstructions.*

Stump Fields

When the dam system on the Mississippi River was built in the 1930s, many low-lying areas were covered with trees. Although the trees were cut down, many submerged tree stumps still remain. We have shown the *approximate* locations of stump fields on the river maps; but please remember, whenever you are in a backwater area there is always a chance that you will encounter a stump. Use extra caution in these areas.

Changing Water Levels

Water levels change frequently on the rivers, causing changes in currents that may not be immediately obvious to boaters. High water can produce unpredictable and swift currents and moving debris that may come in the form of logs, timbers, docks and whole trees. Conversely, low water can produce hazards above and below the water's surface (*stump fields, wing dams, etc.*).

BUOYS AND MARKERS

A list of the buoys and markers you will encounter on the river can be found on the fold-out flap of the back cover. A knowledge of them is essential for safe navigation on the river.

All boaters are cautioned not to rely solely on buoys for navigation because of their potential unreliability. U.S. Coast Guard buoys are removed, relocated or established whenever the U.S. Coast Guard determines a change is desirable for the safety of navigation.

While the U.S. Coast Guard makes every reasonable effort to ensure buoys are properly located to serve their intended purpose, they cannot keep all buoys and navigable channels under constant surveillance. Between visits of a Coast Guard buoy tender, it is possible for a channel or obstruction to have shifted, the water depth to have changed, or for a buoy to have moved, sunk, or gone adrift.

Daymarks are square, triangular or diamond-shaped boards (*usually red or green in color*) that are used to mark channels on the large river systems. On the Mississippi they will also indicate the river mileage upstream from Cairo, Illinois on a white board beneath the daymark. They may also be lighted (*green or white lights on green boards and red or white lights on red boards*). Even with lighted buoys and markers, boating at night should be avoided if at all possible.

VHF-FM MARINE RADIO

Channel 16 is a calling and *distress* channel. Communications on channel 16 should be kept short, limited to initial contact only, unless there is an emergency.

Channel 22A is for non-emergency communications with the U.S. Coast Guard. It is also used by the U.S. Coast Guard to make broadcast notices to mariners.

Locks on the Upper Mississippi River monitor channels 14 & 16. Initial contact with locks should be made on channel 14, which will also be the working channel in most cases.

When important marine events occur, broadcast notices to mariners are issued. These notices are broadcast by U.S. Coast Guard radio stations on channel 22A (157.1 MHz). Non-scheduled broadcasts are often made to supplement scheduled broadcasts. U.S. Coast Guard preliminary announcements of broadcasts are made on channel 16 (156.8 MHz) and channel 19 (156.450 MHz) as a secondary channel. The U.S. Coast Guard broadcasts are then given on channel 22A (157.1 MHz). Broadcast times for this area are 3:00 a.m., 8:00 a.m., 3:00 p.m. and 9:00 p.m.

For more information on marine radio use, contact the Federal Communications Commission (*website and telephone number are at the end of this guide*).

DRAWBRIDGE OPERATION REGULATIONS

For drawbridges over the Mississippi and St. Croix rivers, the usual sound signal for opening the draw is a prolonged blast (4 to 6 seconds duration) of a whistle or horn, followed by one short blast (one second duration), sounded not more than three seconds after the prolonged blast. This sequence is repeated at intervals until acknowledged by the drawtender. If the draw can be opened immediately, acknowledging signal is one prolonged blast followed by one short blast, sounded not more than 30 seconds after opening signal. If the draw cannot be opened immediately, or if open and must be closed immediately, five short blasts, sounded in rapid succession not more than 30 seconds after the opening signal, shall be repeated at intervals until acknowledged by a signal which has the same meaning from the vessel. Some drawbridges are equipped with VHF marine radios; a list is provided on the next page. Mariners approaching these drawbridges are urged to contact the bridge tender to confirm requests for opening, or to exchange information. Bridges may also have opening schedules to reduce the backup of traffic. These schedules can vary with the hour, day and time of year and are usually posted on the bridge itself. You should factor this possibility into your float plan.

Locations of Drawbridges

Mississippi River	Mile	Call Sign	Channel
La Crosse Railroad	699.8	KVY 631	13 & 16
Hastings Railroad	813.7	KTD 538	14 & 16

REGULATIONS AND EQUIPMENT

(This is not a complete summary of regulations. Rules and laws are subject to change. A current copy of federal, Minnesota and Wisconsin regulations should be consulted. Unless noted, all rules summarized below are from Minnesota and were in effect in 2007.)

REGISTRATION (LICENSING)

All watercraft, except wild-rice boats and duckboats used during the appropriate season, non-motorized boats nine feet or less in length, and seaplanes, are required to be licensed by the DNR. This rule does not apply if the watercraft is licensed by another state, federal agency or foreign country. All canoes, sailboats, kayaks and rowing shells used in Minnesota must be registered either in Minnesota or the user's home state.

To obtain or renew a watercraft license, go to the nearest deputy registrar's office (where you license your car) or the DNR's License Center (address is at the back of this guide).

SAFETY EQUIPMENT

Personal Flotation Devices - PFDs

The U.S. Coast Guard estimates that 80 percent of the boating fatalities in the country could have been prevented if boaters were wearing their life jackets. This is especially important in boats less than 20 feet in length. The most common boating fatalities are capsizing and falling overboard. Minnesota rules require that:

- ★ On all boats, a U.S. Coast Guard (USCG) approved wearable device (Type I, II, III or V) must be worn or readily accessible for each person on board as well as any persons being towed on water skis or similar devices. Anyone operating or riding on a personal watercraft (Jet Ski, Sea Doo etc.) must WEAR a Type I, II, III or V USCG approved device (see page 16).
- ★ In addition, on all boats 16 feet or more in length, except canoes and kayaks, at least one U.S. Coast Guard (USCG) approved Type IV throwable device must be immediately available aboard the craft. Type IV devices include buoyant cushions, ring buoys and horseshoe buoys.