The American Club

Barge Fleeting Area Issues & Best Practices

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Introduction

Barge fleeting areas are important to maritime commerce on rivers, particularly in the United States. They provide secure places to temporarily store loaded and empty barges. The barges may be waiting for a towboat to pick them up, waiting to be cleaned, waiting for repairs, or waiting for a ship to arrive so they can be offloaded.

Unique risks

Barge fleeting areas present their own unique risks:

- If the barges are not properly secured and monitored, they can be damaged, cause third-party property damage, or fail to protect the cargo within.
- If not properly cared for, the hull or barge covers may allow the ingress of water.
- If the weather and/or river current is not sufficiently accounted for, barges can break loose.
- If the moorings at the fleeting area are not properly maintained, barges can also break loose.

We've all seen pictures of what can happen. Sometimes individual barges break loose, but sometimes it is an entire raft of barges that breaks loose as a block and moves downstream.

Actual damage - and potential damage - can be significant. The barges themselves can be damaged or may sink. Cargoes can be damaged or lost entirely. (see **Figures 1** through **5**) The barges can also strike other objects downstream such as locks, dams, bridges, barges in other fleeting areas, underway tows, moored or anchored ships or any other moving or fixed structure that may be present. Resulting claims can be both numerous and costly. Salvage costs can be extensive, especially if an incident results in pollution, or if a barge or barges sink or are pushed up against a lock, dam or bridge in a strong current.

Figure 1 | A damaged barge

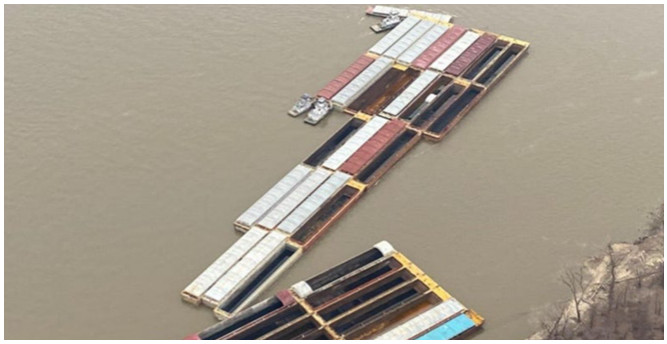

Figure 2 |Breakaway barges back under control

Figure 3 | Damaged bridge column

Figure 4 | Loose barges against a dam structure

Figure 5 | Runaway barge leaning on a structure

Can many of these scenarios be prevented? Can the number of incidents be reduced? **Yes.**

Do we have to accept that barge breakaways are just part of doing business on the river? **No.**

Rules and regulations

The US Coast Guard lays out requirements in 33 CFR 165.803 for barge fleeting areas on the Lower Mississippi River between mile marker 88 and 240 above Head of Passes.

In general, a barge cannot be secured to trees or to other vegetation, and mooring lines cannot be unraveled, frayed, defective, or worn (see **Figures 6A** through **8C**). Furthermore, barges moored to other barges should be positioned so the corners align as much as possible.

The regulations also establish minimum requirements when attaching barges to mooring devices. The upstream end of the barge or barges must be secured with a wire rope that is at least 1¼ inches in diameter or secured with a line of equivalent strength. The downstream end of the barge (or barges) must be secured with a wire rope of at least ⅞ inch in diameter or secured with a line of equivalent strength. However, between mile marker 127 and 240, only the upstream end must be secured. These are the minimum requirements.

When mooring to another barge, another vessel, a wharf or a pier, three parts of wire rope must be used and they have to be of at least ⅞ inch diameter with an eye at each end of the rope and passed around the timberhead, cavel, or button. A mooring line of natural or synthetic fiber can be used instead of three parts of wire rope provided it has at least 75 per cent of the breaking strength of the three wire ropes. Fixed rigging can also be used instead of three parts of wire rope

provided the fixed rigging is at least equivalent in strength to the three wire ropes.

The towboat Master dropping off a barge (or barges) has a clear responsibility to ensure that all mooring devices, wire ropes, lines and connecting gear have sufficient strength and are in sufficient number to withstand forces that may be exerted on them while moored. In other words, he/she is accountable for how they moor barges in the fleeting area. The mooring arrangements must be able to handle the forces at the time the barge was moored as well as anticipated forces during the mooring period due to changes in the current from rising or falling river conditions.

The regulations also place responsibilities on the fleeting facility requiring it to assign personnel to inspect the moorings at least twice a day for all of the connections used to moor barges. Also, they are required to inspect each mooring arrangement whenever any barge is dropped off, moved or removed from the fleeting area. Of equal importance, they are required to take action if the mooring is deficient in any way. Moreover, they are also required to keep records of their inspections and the barges in the fleeting area, with information on when barges arrived and departed, and which barges contained hazardous cargo.

Additionally, fleeting facilities are required to assign personnel to continuously observe and monitor the barges in the fleeting area, look for unusual movements of the barges (an indication something may be wrong with a barge or the wire ropes or lines) and take action as may be necessary to prevent any barges from breaking away.

While the above requirements only apply to barge fleeting areas between mile marker 88 and 240 above Head of Passes, they also serve as general guidelines for barge fleeting areas in other places.

33 CFR 105.296 focuses on maritime security by placing additional requirements on all barge fleeting facilities regardless of location. One specific security-based requirement also relates to preventing breakaways whereby at least one towboat must be available to service the fleeting facility for every 100 barges within the facility.

Figure 6A | Lines in poor condition

Figure 6B | Lines in poor condition

Figure 7A | Wire ropes in poor condition

Figure 7B | Wire ropes in poor condition

Figure 8A | Fleet ropes in poor condition

Figure 8B | Fleet ropes in poor condition

Figure 8C | Fleet ropes that parted

Best practices when interacting with a barge fleeting area

A. The barge fleeting area should have clear procedures and policies for both barge arrivals and departures that specify minimum expectations and requirements as far as the barge's physical condition and the condition of mooring ropes and wires. The policies should clearly state whether or not personnel representing the barge fleeting area are to be present for

operations where barges are dropped off, moved or picked up. The towing company and the towboat Master should understand the barge fleeting area procedures and policies before dropping off or picking up a barge or barges.

B. The barge fleeting area will also have requirements for inspecting barges including inspecting the barge's cavels (as seen in **Figure 9**). Their standards for line quality for the lines left behind to secure the barge should be clearly spelled out. In addition, the watertight integrity of the barges should be inspected. Barges with excessive leaks may not be allowed into the barge fleeting area. Although different barge fleeting areas may have different standards, a barge that, for example, might require constant attention by fleeting area personnel, or a barge that requires a pump to run continuously, may not be allowed in.

C. Additionally, the barge fleeting area must operate within the limits of their fleeting area permit. This may limit the number of barges and/or the configuration of the barges in the fleeting area. Operators should be aware of those limits before dropping of a barge or barges.

Figure 9 | Cavel or kevel chock

D. The barge fleeting area is also required to have a high water plan that addresses:

- When extra lines are required to connect the barges to the moorings.
- When extra lines are required between barges.
- If and when wires might be required instead of rope.
- When fleeting operations should be stopped so personnel can secure barges.
- And, most importantly, when the mooring configuration of the barges in the fleet should be changed to the least vulnerable arrangement.

The high-water plan may limit the ability to drop off or pick up barges and, if permitted, will most likely change the mooring configuration for a barge.

E. Operators should anticipate that the barge fleeting area will be checked frequently at established intervals. Checks will likely include:

- The condition of the wire ropes and lines used to secure the barges to the moorings and to secure barges to each other to verify the wire ropes and lines have not broken, become frayed, become loose, or caused any deformation to rings, timberheads, cavels, spools, etc.
- Whether the mooring arrangements need to be adjusted to tighten or slack wire ropes and

lines due to changing river levels.

- The status of barges with known leaks including the status of any pumps in operation.
- The lighting on the barges.

F. While the operator of the barge fleeting area, the watchmen in the fleeting area and the crew on the fleet towboat should have a keen awareness of the river conditions, the weather and forecasts for each: do not assume they do. Keep current conditions and forecasts in mind when mooring a barge or barges and use sufficient wire ropes and lines in anticipation of expected conditions (see **Figures 10** through **11B**).

G. Communications equipment should be available to the watchmen and other personnel operating in the fleeting area to allow them to communicate with towboats.

H. Emergency equipment should be available in the barge fleeting area including pumps, damage control equipment, hoses, rigging, and oil spill response gear. However, it should not be expected that the barge fleeting area to be able to sufficiently mitigate all risks associated with barges that are in poor condition or moored improperly.

I. Participation in local Harbor Safety Committees (HSC), Fleeting Associations, or similar groups can provide insight and be platforms to address common problems and share ideas, which is highly recommended. The US Coast Guard and US Army Corps of Engineers normally participate in those groups.

Figure 10 | Double lashing in high water

Figure 11A | Barge Fleet Moorings in a Rising River

Figure 11B | Barge Fleet Moorings in a Rising River

Summary

When it comes to barge breakaways, an ounce of prevention is worth a pound of cure to prevent incidents associated with hull and machinery and P&I claims from barges in barge fleeting areas that were not properly secured and monitored. Prevention requires vigilance and is hard work. But by following the best practices above, it is possible to reduce the number of breakaways and other incidents from barge fleeting areas.

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