



FERNANDES MARITIME CONSULTANTS, LLC

- CONSULTANTS | ENGINEERS | AUDITORS | SURVEYORS -

3525 N CAUSEWAY BLVD, SUITE 1020, METAIRIE, LOUISIANA 70002

fmc.international

Tel.: (504) 304-1932

Fax: (504) 910-6990

E-Mail: jfernandes@fmcneworleans.com

Mobile: (504) 982-1234

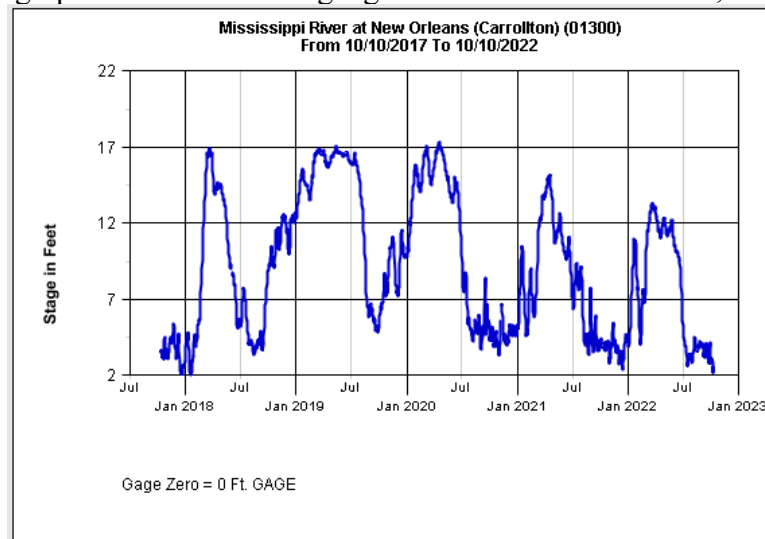
October 11, 2022

Low water advisory in Mississippi River – Fall 2022

As is well known, the Mississippi River goes through seasonal high and low water cycles annually, high water with associated rapid currents in spring and low water conditions in fall. However, this year the River is currently experiencing its lowest water levels in over a decade due to a severe mid-west draught situation. This has caused upriver supply chain interruptions to barge traffic transporting grain and other cargoes as well as groundings of ocean-going vessels traversing up and down the Lower Mississippi River's (LMR) navigable channels upto Baton Rouge, Louisiana, approx. Mile 139 AHP (Above Head of Passes). The US Army Corp of Engineers (abbr. *Army Corps*) is working diligently dredging sections of the River to maintain or restore normal traffic conditions, however fighting nature is not always a winning hand.

An early signal of what was to come this fall was contained in the conditions we experienced last spring, and, in fact, the spring of 2021, when the River levels did not rise to customary heights in spring attributed to the mild winters the US heartland has been experiencing in the past couple of years resulting in lower levels of snowfall and less water brought down by the Mississippi River.

This is reflected in a graph of the Carrollton gauge levels near New Orleans, shown below.



So, what are the precautions a Master can take to avoid his ship running aground at this time?

1) Stay abreast of the latest updates.

The Army Corps as well as the three pilots' associations responsible for navigating vessels along the approx. 160 miles of navigable waterway between the Southwest Pass and Baton Rouge, issue periodic (daily) updates on the navigable depths of water along the Mississippi River. Remember, these depths are not uniform throughout with water depths reducing as one goes upriver. This information is sent to the Master by his local agent. The Master is to make sure that receives and applies them (Passage Planning).

In addition, The US Coast Guard issues "Marine Safety Information Bulletins" (MSIB) when necessary, advising the maritime transportation fraternity on precautions to be taken in the event of extreme river or weather conditions. Accordingly, the Captain of the Port, Sector New Orleans, has issued a safety advisory volume number XXII, issue 053, noting water of the LMR from Mile Marker (MM) 0.0 to MM 167.5 AHP because of lower water conditions. The safety advisory was needed to protect vessel and mariners from hazards associated with low water, including possible shoaling and decreased channel widths. The safety advisory was effective 1315 LT on Sept 21, 2022, with the following provisions.

- Commercial vessel operators to be aware of falling river conditions and monitor USCG safety broadcasts announcing know navigation trouble spots.
- All mariners to review facility docking procedures for low water conditions prior to arriving at the facility.
- Mariner to be advised on the increased possibility of shoaling and to exercise extreme caution when transiting the LMR.
- All mariners to be advised to promptly report missing aids to navigation to the Sector New Orleans Command Centre.

Bottom line, stay abreast of the latest updates on River conditions.

2) Remain within the navigation channel

While maneuvering in the Mississippi River, remain within the navigation channel. The Army Corps has designated a navigation channel towards the center of the Mississippi River where they assure a specific depth of water, generally 45 ft (13.72 m) - 47 ft (14.33 m). Do not exit that channel (other than to berth or anchor). Sounds simple, and yet ships exit the channel at their own risk and peril. When asked, Masters generally point to the pilot. True, but when an incident occurs, the pilot shrugs and points to the Master being in-overall command, a fact enshrined in every SMS. The pilot is only there to assist in navigation.

It is useful to delve into the reasons why a ship would need to deviate outside the channel? And these include attempting to pass (overtake) another vessel, giving space for a passing vessel, avoiding collision with, say, a runaway barge-tow or while maneuvering a deep bend in the River, which there are plenty. Another reason could be due to "bank suction effect" where the bow when

passing close to the bank displaces the water between the ship and the bank causing a low pressure in the void which sucks the bow in. This is prevalent during low water conditions but primarily when one exits the navigation channel. Last but certainly not the least, Passage Planning should consider the effects of Squat which gets critical during low water, notably when prosecuting turns in the River.

3) Shoaling “Mud Lumps”

The ECDIS and river depths are based on survey results carried out periodically by the Army Corps but not continuously. On the other hand, the Mississippi River along its nearly 4,000 kms. route from the Canadian border brings down along with it, on average, about 600,000 Tons of mud and silt each day. This silt gets dropped on the riverbed notably where a change of flow is encountered, for example, at a bend in the river or where it encounters a sudden change in depth or at the river delta. The silt deposited is generally soft and is colloquially called “gumbo mud”. Such shoaling is also locally termed a “mud lump”. During low water, such mud lump formation can be critical.

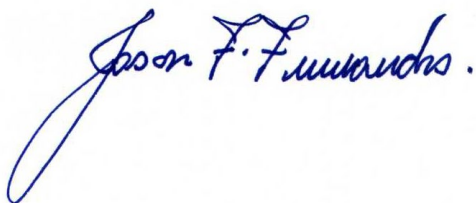
4) Overloading:

At loading berths, often, there is considerable pressure put on vessel Masters to overload on several pretexts, the minimum depth available being at zero gauge height being a prominent one. Do Not succumb to such pressures. These folks who offer such assurances melt into the night the moment a ship touches bottom. Again, the importance of proper Passage Planning, UKC, and Squat cannot be overemphasized at all times but particularly during the prevailing low water conditions.

In conclusion, it is pertinent at the current time more than any other that vessel Masters be advised to closely monitor the current Mississippi River depths and prepare their Passage Plans carefully. Furthermore, it is advisable to constantly correct the applied helm and judiciously adjust ship speed. It is also prudent not to deviate from the safe navigation channel in an attempt to pass or let pass other river traffic, and do not overload. And you, the Master, are the overall-in-charge on board.

Respectfully submitted

FERNANDES MARITIME CONSULTANTS, LLC



Jason F. Fernandes, Surveyor