



BANK SUCTION GETS UGLY

BANK SUCTION DAMAGE

Description

A general cargo vessel was outbound from a river port.

The Master-pilot exchange had been cursory. It was daytime with clear skies and good visibility, and no other vessel traffic was in the area or expected. The pilot had the conn.

While negotiating a bend in the river, the vessel experienced bank suction, or “bank effect.” As a result, the vessel did not respond to its rudder as expected. The pilot was trying to get the vessel to turn to port and travel around the bend in the river. Instead, the vessel continued straight, quickly crossed the river, and struck a pier. The pilot had ordered the anchor dropped, but there wasn’t enough time and space for the anchor to arrest the vessel’s motion or change the vessel’s heading.



Actual Damage

When the vessel struck the pier, the bulbous bow penetrated beneath the pier, damaging several support pilings. The damage to the bulbous bow and forepeak tank on the vessel cost \$125,000 to repair. The third-party claim for damage to the pier structure, pier face, fender system, and bollard exceeded \$245,000.

Potential Damage

Had the vessel been transiting at a higher speed, the damage to the vessel and pier would have been significantly higher.

The vessel was also fortunate that no vessel was moored at the pier it struck. Just 3 hours earlier, an oil product tanker had been moored there. Had it still been there, the tanker would have been seriously damaged, possibly causing an oil spill and/or a fire from spilled flammable cargo. That would have resulted in a massive third-party claim.

How could this have been prevented?

- ★ The Master-pilot exchange should have included a discussion of the transit plan for the vessel and identified concerns about hydrodynamics along the river including bank suction and bank bounce effect. The Master and pilot should have agreed on a plan to avoid those effects while also closely monitoring the vessel's movement in areas where those effects might be expected.
- ★ The voyage plan should have laid out the vessel's course and position for the entire river transit and should have taken into account all areas where bank suction or bank cushion effect could be expected.
- ★ Good Bridge Resource Management (BRM) includes close tracking of the vessel's transit and the vessel's responsiveness to rudder and steering commands. In this incident, better BRM would have quickly identified that the vessel's track was closer to the bank than planned, which increased the risk of bank suction. Good BRM would have more quickly identified the vessel's failure to respond to the port rudder command as expected.

When you identify a hazard before something goes wrong...

it's a Good Catch.

When you stop an operation before something bad happens...

it's a Good Catch.

When take into account and monitor for bank suction and bank cushion effect during river transits...

that's a Good Catch, too!



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