Cappuccino Effect



What is the Cappuccino Effect?

The Cappuccino Effect is a phenomenon in the bunkering industry where compressed air is blown through the fuel delivery hose, causing the fuel to froth or bubble. This aeration makes the fuel appear to be at a higher volume than it actually is when measured.





How It Happens

During bunkering, compressed air is introduced into the fuel delivery system. This creates small air bubbles within the fuel, leading to a frothy appearance similar to a cappuccino.

When the fuel settles, the air escapes, and the actual fuel volume is revealed to be less than initially measured.







Why It Matters

The Cappuccino Effect can lead to significant discrepancies in fuel quantity, resulting in financial losses for ship operators. It is a common malpractice in the industry, despite efforts to mitigate it.

The trapped air often overstates volumetric meter figures as well as the received quantity, so the loss is only evident against manually gauged figures before, therefor thorough inspection of fuel tanks before transfer is also critical.





Detection and Prevention

- Visual Inspection: Before fuel transfer, check for foam on the surface of the fuel through ullage hatches. Foam or bubbles on the ullage tape can also indicate aeration 12.
- 2. **Sampling**: Lower a weighted bottle into the tank to obtain a fuel sample. Pour it into a clean glass jar and observe for signs of foam or bubbles.
- 3. **Flow Meters:** Use advanced flow meters like Coriolis Mass Meters, which measure the actual mass of the fuel rather than just the volume, to detect and compensate for air bubbles.





Precautions

- Before Bunkering: Ensure thorough inspection and sampling of the fuel.
- During Bunkering: Monitor the fuel delivery process closely.
- After Bunkering: Recheck fuel levels after the fuel has settled to ensure accurate measurements.

By following these steps, ship operators can better detect and prevent the Cappuccino Effect, ensuring accurate fuel measurements and avoiding potential financial losses. If you have any more questions or need further details, feel free to ask!





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