MAIB: A scalding injury

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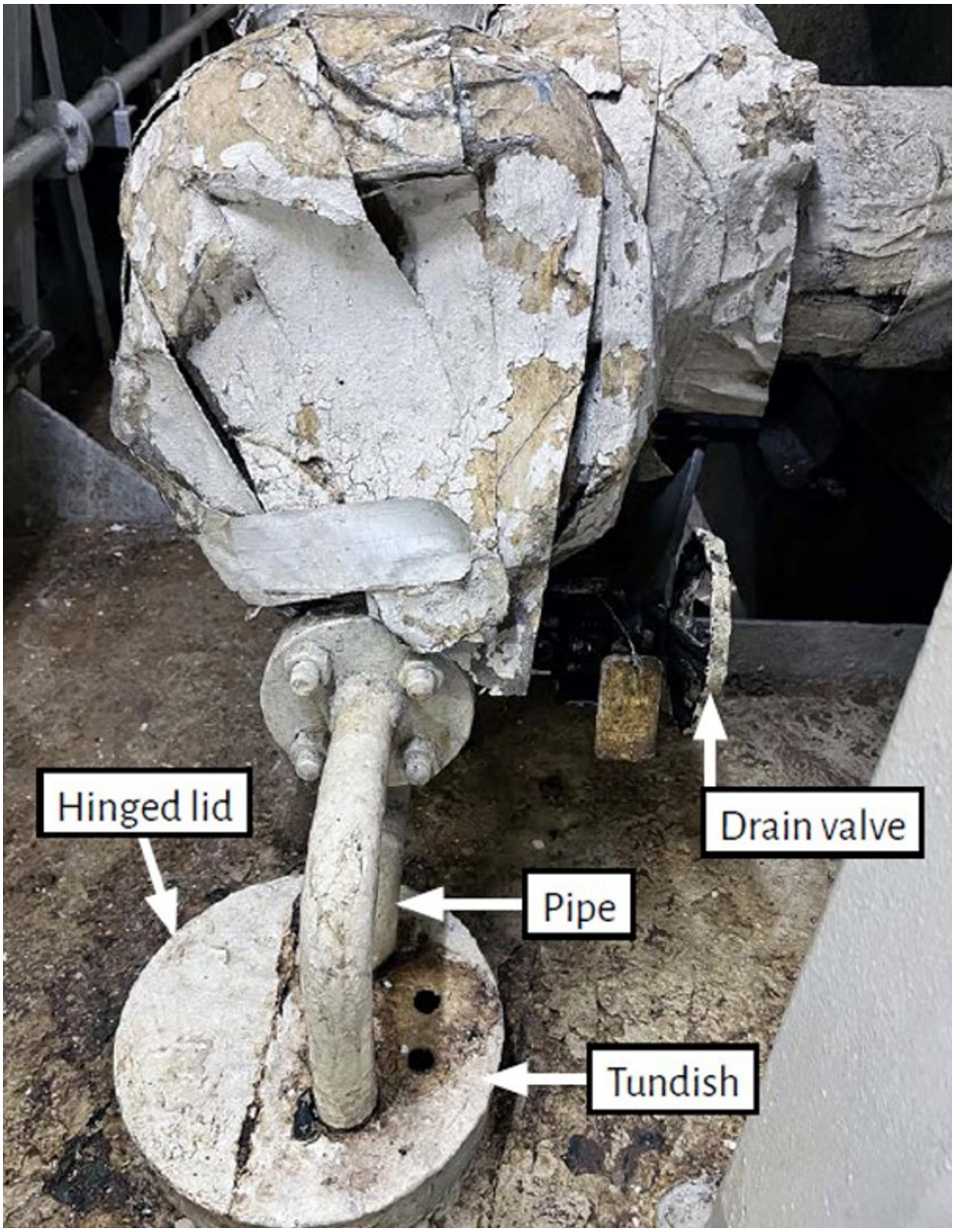
The Marine Accident Investigation Branch Safety Digest 2/2022 includes an incident in which an engineer suffered severe scalding to his face.

IOGP Life Saving Rules:

Line of fire

What happened?

The incident occurred during rounds, when a cruise ship's third engineer discovered a leak on the drain valve for one of the vessel's four economisers. There was an open-ended pipe running from the valve to a tundish drain in the deck. The Chief Engineer was briefed and a decision was taken to conduct a repair. The economiser's circulating pump was stopped and the inlet and outlet valves were shut; the plan was to leave the system to cool down overnight before the repair.



What went wrong?

After the isolations were in place, but before the system had cooled down, the Second Engineer decided to check the system by opening the drain valve. Leaning over the valve, the Second Engineer cracked it open and pressurised hot water and steam burst out of the drain pipe. The force of the discharge caused the hot water to deflect upwards off the tundish, severely scalding his face. After initial medical treatment on board, he was evacuated to a nearby hospital for specialist burns care.

The lessons (MAIB)

- Hazard: The opening of drain lines on pressurised systems should be undertaken with extreme caution.
- Risk: The Second Engineer leant forward over the pipework that ran to the tundish to open the drain valve. As a result, his upper body was directly in line with the deflected water and steam. When venting or releasing stored pressure, keep your body OUT OF THE PATH of any

predictable discharge.

- Equipment: Take great care when opening valves that are infrequently used. A valve that has become seized in the shut position may require extra force to manoeuvre it and lead to the valve suddenly and unexpectedly opening, causing an uncontrolled fluid flow. The use of a correctly sized wheel key can provide appropriate torque and increase the application of controlled force to the valve wheel.