

## Crew Injury – Steam Burns

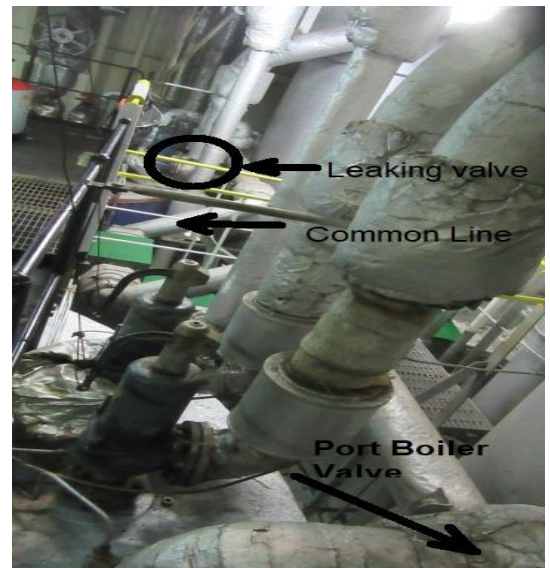
### What Happened?

The boilers were due the intermediate surveys and had been initially planned to complete the port side boiler first in Rotterdam, the starboard boiler was planned to do later in Singapore.

The port boiler was completed while the vessel was at dolphins, awaiting berthing. As there was expected to be an extended period at the dolphins, it was then decided to do the starboard boiler inspection as well.

The vessel conducted a Job Safety Analysis/ Risk Assessment for the jobs and a Toolbox Meeting was carried out. However, these not recorded in the ER logbook.

Work permits for energy Isolation and Enclosed space entry had been completed, and Lock out-Tag out had been done - lashings and tags placed at the isolation valves.



Once the work permits had been completed, work commenced on the starboard boiler including an inspection survey by the Class surveyor. It was agreed to complete the internal cleaning and then secure the manhole cover.

One hour later, the Oiler entered the starboard boiler for the cleaning work.

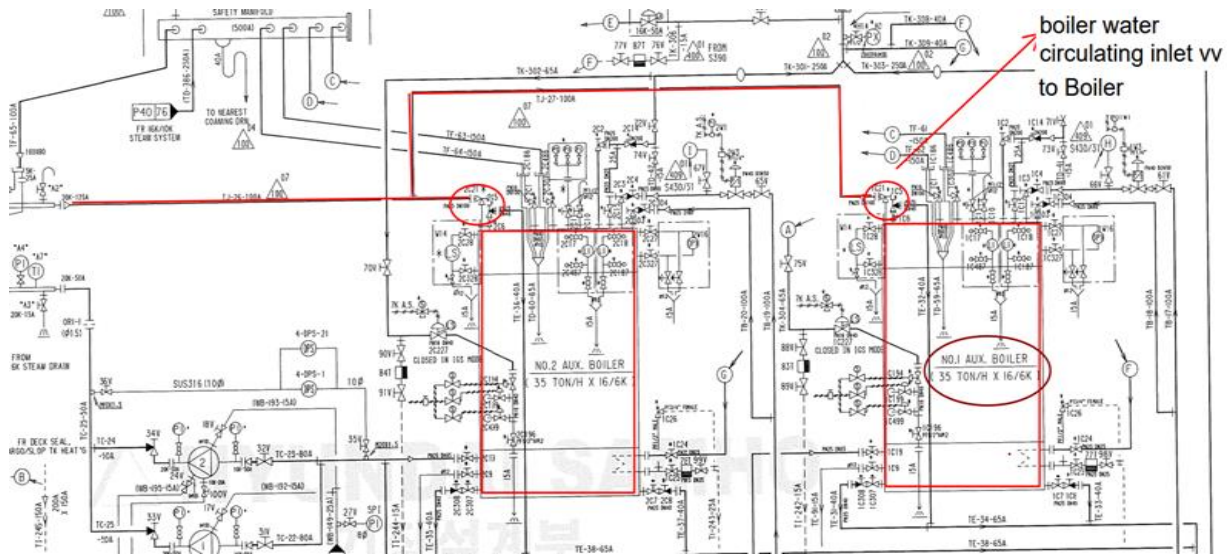
Simultaneously, the duty engineer was instructed by the bridge to make the main engine ready for sailing. Main engine heating was required so the 4th Engineer was instructed by the Chief Engineer to open the steam on the port boiler. This valve is on a common line with the starboard boiler and has a single valve segregation to the starboard boiler.

To open the valve, the LOTO tag and lashing had to be removed. This was not questioned by the 4th Engineer nor by the 3rd Engineer who was acting as linkman for the Starboard boiler. The 4th Engineer opened the valve and then steam entered the starboard boiler, due to the valve passing on the starboard boiler.

The Oiler reacted quickly to the sudden ingress of steam but still took about 15 seconds to escape from the boiler. He suffered significant steam burns to his legs – injury to his face and hands was averted due to the PPE and face mask being worn. **This could have been far worse, and the Oiler is lucky to be alive....**



## Boiler Valves and Piping Diagram



### Why did it happen?

- Inadequate Supervision by the Senior Officers onboard
- Lack of appreciation to increased risks through simultaneous operations
- Lack of communication between the team working in the engine room
- Perceived pressure - there was a hurry to activate the port boiler and have the engine ready prior to the pilot embarking.
- Bypassing the Company's isolation control procedures - Lock out/Tag out was removed prior to completing work, placing colleagues in danger.
- Ineffective stop-work-authority implemented onboard – colleagues saw the LOTO being removed.
- JSA/Risk Assessment did not consider single valve segregation between the steam line and the boiler where people are working. As a result, positive isolation of the steam line valves was not done (single valve - no blank used).



### Lessons to Learn

Hold an Engine Room Team meeting (include the Safety Officer) and reflect upon:

- What barriers are in place on your vessel to prevent this happening?
- What impact do you feel adding the starboard boiler survey, at short notice, had on work planning and safety?
- Does everyone fully understand the purpose and process around Lock-out / tag-out? Challenge colleagues to explain the responsibilities.
- What additional hazards are there in the engine room when simultaneous operations are underway?
- At what stage would you have exercised your Stop Work Authority?

*This is a good lesson in terms of planning, execution, and completion of any job so that everyone knows when a job starts, is being carried out, stopped (for any reason), and completion...*