

DON'T CURE PREVENT

ISSUE 12 DECEMBER 2021



WHAT IS THIS NOISE ?



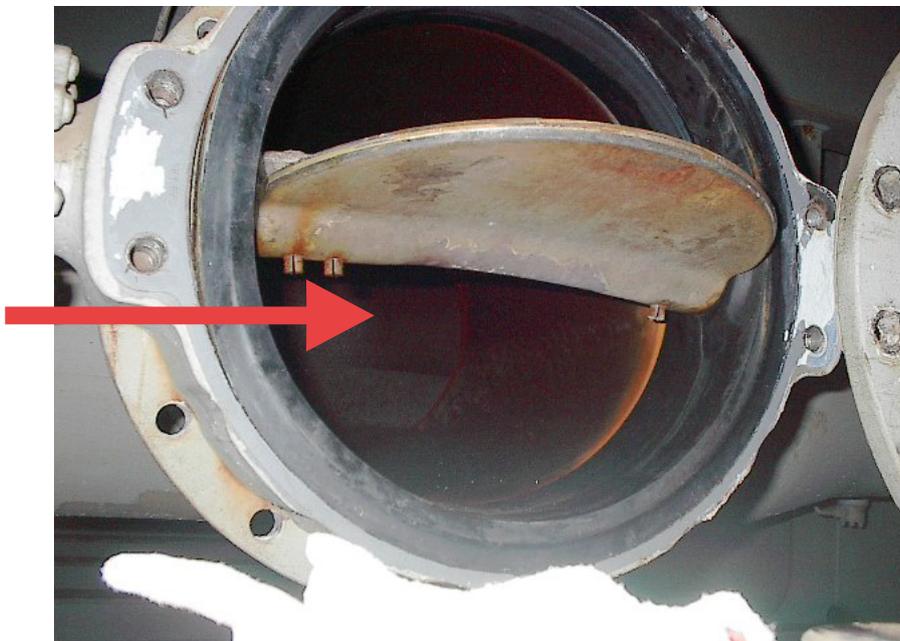
WHAT IS THIS NOISE ?



CASE

During an onboard Cargo Operation Audit, the Officer On Watch was performing simultaneously discharging cargo operation and ballasting operation by gravity at the bulk stage. P@S Assessor observed that the Officer On Watch considered, after calculations, that it was the right time to start the ballast pump. When the No1 ballast pump was started, the crew noticed an unexpected noise. After investigation it was concluded that the ballast piping system was facing a pressure surge.

The subject observation, although not a common finding, is very critical. Pressure surge may damage pipelines and valves causing possible complications during PSC inspections, vetting inspections or class inspections, if the responsible Officers are not continuously alert during the cargo / ballast operation.



REGULATORY FRAMEWORK

AS PER ISGOTT 6TH EDITION, CH. 12.1.4

The incorrect operation of pumps and valves can produce pressure surge caused by the kinetic energy of the liquid flow in a pipe line system.

AS PER ISGOTT 6TH EDITION, CH. 16.7.1

A pressure surge occurs when the flow rate of a liquid rapidly changes and becomes unsteady.

AS PER ISGOTT 6TH EDITION, CH. 16.8.2

Prior to the commencement of the cargo operation , a pre-transfer conference should take place between vessel and shore representatives for exchanging information such as closure automatic *ESD** valves, sudden starting or stopping of a pump, elevation of shore tanks, etc.

AS PER VIQ 7TH EDITION, CH.8,5

The details of the cargo plan should be discussed with all personnel, both on the ship and at the terminal.

** ESD: Emergency Shut Down valve*



WHAT WENT WRONG?

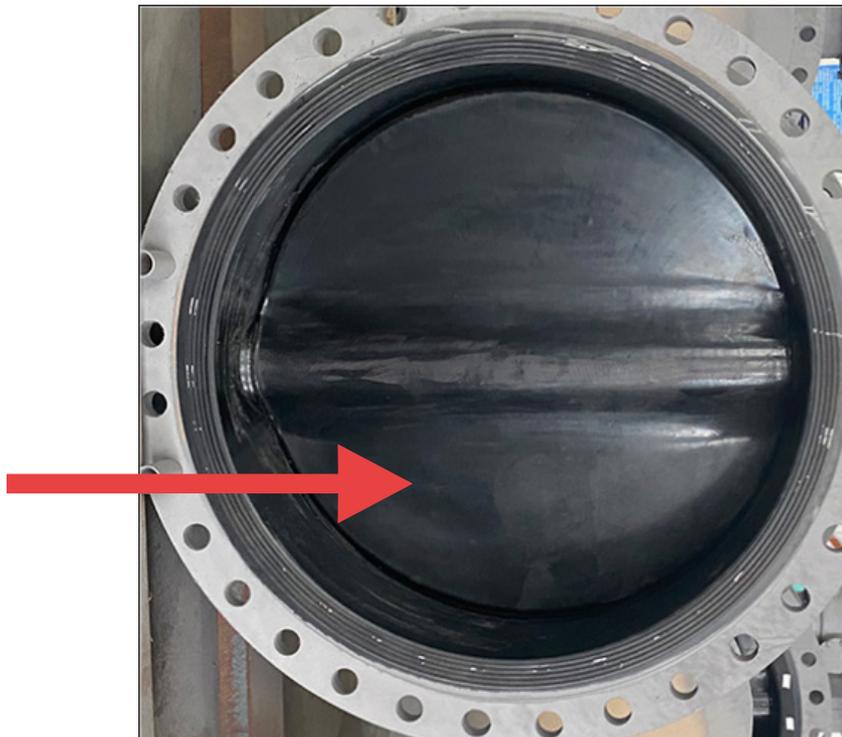
- ⦿ Non-compliance with Company's procedures for the proper performing of ballast/de-ballast operation.
- ⦿ Lack of best practice in the proper handling of starting and stopping pumps.



OUR SUGGESTION

We suggest the following actions with the aim to prevent such cases from occurring;

- ⦿ The Company should prepare a cargo operation letter with practical guidelines for preventing generation of the 'hammer effect' or 'pressure surge'.
- ⦿ Company should provide extra training to the Cargo Officers in order to understand the invisible but still present hazards during cargo and ballast operation which once escalated, will cause operational problems.



BEST PRACTICE

- ✓ Before starting, a ballast pump fill slowly the ballast line and the dedicated tanks by gravity, so as to allow entrapped air to escape.
- ✓ **Open** all valves of the ballast line including the tank valve.
- ✓ **Close** the discharging valve of the ballast pump **before** you operate.

REMEMBER:

- ▶ *Always follow the steps of cargo transfer plan.*
- ▶ *Be alert, invisible hazards waiting to unfold/escalate.*



Q&A

- 1. A pressure surge occurs when the flow rate of a liquid rapidly changes and becomes unsteady?**
 - a. True
 - b. False

- 2. What is the procedure before we start the ballast pump?**
 - a. Fill slowly the ballast line by gravity, open all valves of the ballast line including the tank valve, start the ballast pump with the pump discharging valve fully closed.
 - b. Open all valves of the ballast line including the tank valve and start the ballast pump.
 - c. Open all valves of the ballast line including the tank valve and fill slowly the ballast line by pump.

- 3. What is the procedure before we stop the ballast pump?**
 - a. Slowly close the pump discharge valve fully, stop the pump, close the other valves of the system.
 - b. Stop the pump, close all the valves, close the pump discharge valve.
 - c. Close all the valves, stop the pump.

- 4. Why is the cargo pre-transfer conference important?**
 - a. Due to the importance of the exchange of information on managing the risk of generating pressure surge.
 - b. Due to terminal's requirement.
 - c. Due to the need of relevant records in a forthcoming inspection.



TEST YOUR KNOWLEDGE

SPOT THE DEFICIENCY

Can you find the deficiency in the photo below?



TEST YOUR KNOWLEDGE ANSWERS



1. a (ISGOTT 6th Edition, Ch.16.7.1)
2. a (ISGOTT 6th Edition, Ch.12.1.3)
3. a
4. a (ISGOTT 6th Edition, Ch.16.8.2)

Q&A

SPOT THE DEFICIENCY

PREVENTION AT SEA

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PREVENT**

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FOR MORE INFORMATION,
PLEASE DO NOT HESITATE TO CONTACT US.

 **Prevention at Sea Ltd**
5 Artemidos Avenue, 6th Floor,
Artemidos Tower, 6020
Larnaca - Cyprus
Tel: +357 24819800
Fax: +357 24819881

 **Prevention at Sea GERMANY**
Pestalozzistraße 25,
22305 Hamburg, Germany
Tel: +49 40226329710

 **PREVESEA Ltd**
91 Akti Miaouli Str.
Piraeus 18538
Athens - Greece
Tel: +30 210 64 37 637

 **Prevention at Sea ASIA**
80 Robinson Road
068898, Singapore
Tel: +65 64206258

 info@preventionatsea.com

 www.preventionatsea.com