

Title: Loss of propulsion due to heavy weather damage

What happened

A managed ship was en route to her next port of call, experiencing heavy [for the size of ship] weather conditions: adverse winds and seas on the bow with force Beaufort 6/7 and 5 respectively. At the end of the morning watch 04-08, a large wave hit the port bridge wing causing various damages to equipment and fittings in way, as follows:

- Bridge wing console cover retaining clips were parted and the cover was displaced on deck
- Bow and stern thruster joysticks and Main Engine (ME) emergency stop buttons were sheared off by the cover
- A section of the aluminum cap rail of approx. length 15-20 feet was torn off
- Bridge lifebuoy holding bracket was partly distorted



The damaged ME emergency stop buttons caused shutdown of Main engines and activation of an “Overspeed” alarm on the ME local control panel. While investigating the “Overspeed” alarm, the cause for the ME shutdown and restoring the propulsion, the vessel remained adrift in rough sea for approx. 2 hours, which led to a couple of passenger injuries as a result of the ship motion.

Investigation of root causes/contributory factors

The **Heavy Weather** conditions were identified as the **Immediate Cause** for this incident.

Incident investigation carried out onboard and ashore ascertained that Company Heavy Weather procedures were properly followed and further identified the following **contributory factors/ root cause**:

- Inherent (as-built) design weakness of the Bridge wing console cover securing latches, manufactured of rubber material in combination with suspected aging did not provide sufficient holding strength
- Inherent (as-built) electrical configuration and design of the actuation of the ME Remote emergency stop buttons. These were connected in series and independent from the ME control transfer and required a pulling activation to cause a shutdown. In such a way the emergency stop buttons remained active at the wing console that was not in control and were pulled by the dislodging cover causing the shutdown

Proposed Corrective/Preventive Actions

The Vessel:

- Temporary lashings were attached to secure the Bridge wing console cover on place
- Original rubber latches replaced with new stainless turnbuckle type latches with positive lock

All Managed Vessels:

- Discuss during SEPPH Committee meeting
- Assess ship-specific bridge wing console arrangements, including securing of covers and electrical configuration of controls
- Re-visit Leisure VMS procedure on Heavy Weather referenced below

- Use the attached enhanced SAF44 “Heavy Weather checklist”, which will be included in the next VMS revision

The Company:

- Distribute a Case Study to the managed fleet
- Enhance SAF44 “Heavy Weather checklist” to include a check item regarding securing of Bridge wing console covers

Note: The Company has contracted a service agreement with “StormGeo” – a professional high quality weather support and forecast service, with the aim to improve the support to vessels’ Masters in their decision making relating to weather.
The Company is also working on a Computer Based Training (CBT) with Marlins to develop a program for officers to enhance their weather data and forecast interpretation knowledge and skills.

Reference

- Company eLVMS:
 - o [Operations](#) > [Ship Operations](#) > [Marine Operations](#) > Heavy Weather and associated Dangerous Phenomena
 - o SAF44 “Heavy Weather checklist” (enhanced checklist attached)

Completed

Vessel:

Checklist commenced on [date/time]:

at [location]:

Caution: Complete when wind speed > BF 7 or significant wave height > 4 m, OR for smaller sized vessels – based on a specific assessment for max. weather limitations, OR when directed by Master

Master's checks

- 1) Weather routing service considered necessary & requested from office ☐
- 2) Speed reduced & course adjusted to avoid dangerous phenomena and prevent injuries done ☐

Note: Refer to VMS [Operations](#) > [Ship Operations](#) > [Marine Operations](#) > Heavy Weather and associated Dangerous Phenomena

- 3) Propulsion and steering controls, incl. associated cabling, on bridge and wings adequately protected against waves/ spray/ impact damage ensured ☐

Note: Consider if bridge windows could be broken by waves

- 4) Hand steering (additional pump motor) considered necessary & engaged ☐
- 5) Shore management, including DPA and Marine Planning and Port Operations informed & updated ☐

Note: Consider deviation from the intended route

- 6) Passengers and crew warned & instructed ☐

Note: Use PA or other means of communication as appropriate

- 7) Work activities on open decks suspended ☐

Note: Those strictly necessary for the safety of the ship are excepted, but shall be based on a Risk Assessment and form SAF113 "PTW on Deck in Adverse Weather" shall be used

- 8) Suspending of some passenger services to prevent accidents considered necessary ☐

Note: Coordinate with the Hotel Director

Staff Captain's checks

- 1) Ballasting for deeper draft, lesser trim and list and avoidance of slamming considered & done ☐

Note: Beware of stiffer/ rigid ship if GM too high

- 2) Adequate stability as per ship's operational limitations and requirements maintained ☐

Caution: Avoid partially empty tanks where possible to minimize free surface effects. Maintain trim, bending moments and shear forces within permissible ranges.

- 3) All new Heads of Department, supervisors and other shipboard staff warned and advised of heavy weather precautions via a brief meeting or e-mail done ☐
- 4) Written instructions to secure for heavy weather sent to all HoDs ☐
- 5) Appropriate scuttles closed ☐
- 6) Deadlights, shutters and windows/ portholes storm covers mounted in position ☐

Note: Consider if accommodation windows/ portholes not designed with storm-covers or deadlights can be damaged and take precautions as necessary

- 7) Weather tight doors and hatches closed & secured ☐
- 8) All watertight shell openings confirmed closed ☐
- 9) Halyards and standard rigging checked ☐

Staff Captain's checks (continued)

- 10) Positive written report confirming securing completed (per [Operations](#) > [Safety Management](#) > [General Work Precautions](#) > Securing of Objects and forms SAF102 and SAF103 "Objects requiring Securing – Guidance / Register") received by:

- | | |
|---|--|
| a) Chief Engineer..... <input type="checkbox"/> at _____ | i) Hotel Controller <input type="checkbox"/> at _____ |
| b) Hotel Director <input type="checkbox"/> at _____ | j) Photo Manager <input type="checkbox"/> at _____ |
| c) Exec. Chef..... <input type="checkbox"/> at _____ | k) Cruise Director <input type="checkbox"/> at _____ |
| d) Maiter D' <input type="checkbox"/> at _____ | l) Doctor <input type="checkbox"/> at _____ |
| e) F&B manager <input type="checkbox"/> at _____ | m) IT Manager <input type="checkbox"/> at _____ |
| f) Bar manager <input type="checkbox"/> at _____ | n) Ch. Officer <input type="checkbox"/> at _____ |
| g) House keeper <input type="checkbox"/> at _____ | o) Other () .. <input type="checkbox"/> at _____ |
| h) Shop manager..... <input type="checkbox"/> at _____ | p) Other () .. <input type="checkbox"/> at _____ |

- 11) All securing arrangements of deck equipment i.e. anchors, lifeboats, life-rafts, mooring ropes (stow below deck), cranes or derricks, stores, paints, chemicalschecked☐
- a) Additional lashings on accommodation ladders and heavy equipmentfitted☐

Note: Refer to [Operations](#) > [Safety Management](#) > [General Work Precautions](#) > Securing of Objects and forms SAF102 and SAF103 "Objects requiring Securing – Guidance / Register"

- 12) Swimming pools and Jacuzzis dumped☐
- 13) Sounding pipes secured watertight☐
- 14) All vulnerable vent covers closed☐

Note: Coordinate with A/C Engineer and Hotel Engineer

- 15) "Deck Closed" signage at doors onto open deck.....posted as necessary☐
- 16) Hand ropes in foyersrigged as necessary☐
- 17) Gymnasiums closed☐
- 18) Personnel without operational functions NOT admitted on the Bridgeensured☐

Note: Consider imposing condition "Red"

- 19) Safety rounds.....organized☐

Chief Engineer's checks

- 1) All securing arrangements within machinery spaces i.e. gas bottle stowage, chemical and lube-oil drums, loose items in the work shop etc.....checked☐

Note: Refer to [Operations](#) > [Safety Management](#) > [General Work Precautions](#) > Securing of Objects and forms SAF102 and SAF103 "Objects requiring Securing – Guidance / Register"

- 2) Maximum operating levels in all main and auxiliary engine lubricating sump tankskept☐
- 3) Personnel without operational functions NOT admitted in the ECR.....ensured☐
- 4) All necessary lifts isolated☐
- a) "Not in use" sign..... posted☐

Bridge OOW's checks

- 1) Frequent checking, assessing and hourly recording of meteorological datacommenced☐
- 2) As minimum condition Yellow on Bridge and ECRimposed☐

Note: Refer to [Operations](#) > [Ship Operations](#) > [Marine Operations](#) > Navigational Safety – Bridge Team and Resource Management and relevant form SAF122

- 3) Additional lookout(s) posted ☐
- 4) Radar settings (range, clutter vs target detection) adjusted ☐
- 5) Adequate visibility out of bridge windows (via FW flushing, wipers, clear view devices etc.) provided ☐
- 6) Stabilizers extended ☐
- 7) Watertight doors closed ☐
- 8) Bridge wing control stands' covers securing/lashing arrangements enhanced as necessary ☐
- 9) Completion of this checklist entered in the logbook ☐

Checklist completed on [date/time]: at [location]:

Bridge OOW:

Chief Engineer:

Staff Captain:

Master:

Note: Reassess changing circumstances above every watch and commence a new checklist as necessary