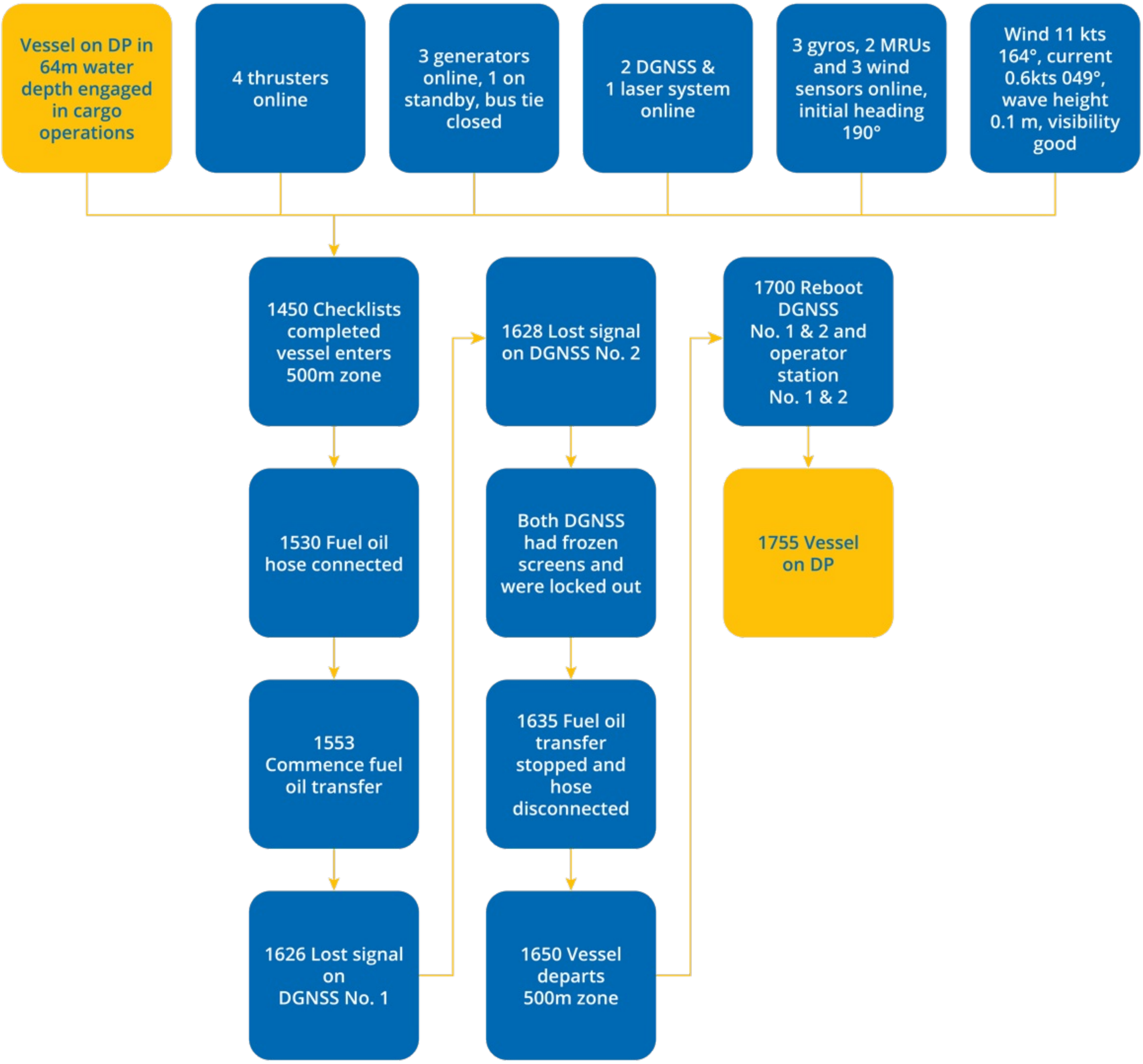
Common mode failure of DGNSS

Undesired event

DP Event • Published on **2 November 2017** • Generated on **9 December 2025** • DPE 04/17

With both systems suffering issues at the same time, it pointed towards a common factor with the likely cause signal interference.



Comments

Both DGNSS systems had locked up, the touch screen was not responding and the NMEA signal was no longer being received, the DP system alarm displayed 'Telegram timeout'.

The GNSS manufacturer concluded that with both systems suffering issues at the exact same time it pointed towards a common factor, the likely root cause was signal interference.

Recommendations included:

- Ensure the antenna, cables, and connectors are in a good condition, and no damage to them.
- Tune the MF module on each set to different MF stations.
- Check if both systems are utilising the same Precise Point Positioning service; if so, consider changing one of them.
- Copy the configuration files for reference.
- If a further crash occurs take pictures of the system screens as there may be additional windows error messages.

Considerations

- The DP system worked as designed, the vessel departed the 500m zone, for investigation, on DP using the laser system as reference.
- The root cause of the problem was not found however it was believed to be a common mode failure.
- Most DGNSS suppliers have a function available to check for shadow of satellites, users would be wise to make proper use of this tool.
- Improvement measure would be to use two different DGNSS suppliers and different differential position services.