

Recovery from a full black out

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Explore our drill scenario on the action required following a full black out.

DP emergency drill scenarios are included to assist DP vessel management and DPOs / Engineers and ETOs to conduct DP drills onboard. The intent is that the template can be used on any DP vessel, so specific details regarding the technical outcome are not included.

The benefit of using this template is to monitor and learn from the human reactions of key DP personnel. It is also important that the crew are familiar with various DP system set-ups including their failure modes.

Refer to Code of practice for the training and experience of key DP personnel – Appendix six (IMCA M117).

Exercise scenario: Recovery from a full black out

Objective:

To familiarise all vessel crew with what actions are required in order to recover the vessel into a controllable condition.

Method:

This test does not have to be a live test unless a safe manageable situation presents itself. A workshop should be conducted onboard.

- Discuss what would be the first reaction upon blackout?
 - How was the blackout triggered? This may change how the recovery is conducted.
 - What operations are being conducted?
 - Will personnel be directly at risk?
 - Are there still full communications?
 - Can operations be terminated?
- Recovery – ECR – *Restore power*
 - Is there a flow chart in the ECR that can be followed?
 - Will generators auto start and connect?
 - What machinery is locked out?
 - How are Generators and thrusters re-set? Are there any auxiliaries that require re-setting as part of start permissive?
- Recovery – Bridge – *Secure Vessel Position & Minimise Excursion*
 - Where is the vessel drifting?
 - What comms remain live most important ECR-Bridge?
 - Is there a flow chart on the Bridge that can be followed?
 - What is required in order to start the thrusters?

- Are thrusters automatically selected into DP Control or manually?
- Is there a clear escape route?
- Mission Personnel – *Prevent Uncontrolled Damage to Personnel, Environment and assets*
 - Considerations as to how the mission personnel react to secure their equipment and communicate with Bridge.
 - How does the mission equipment react upon power up (clamps/brakes, etc..)

Observations during Workshop

- Is the DP emergency drill procedure being followed?
- Are those individuals directly involved in the exercise reacting appropriately given their assigned duties?
- Are those individuals indirectly involved reacting in an appropriate manner?
- Is the degree of participation and diligence as expected?

Discussion points (post-exercise):

Human factors:

- What are the potential risks due to “multi-tasking” during DP operations that may directly lead to the scenario outlined during this drill? (examples include managing / monitoring deck operations, radio traffic, etc.)
- What are the potential risks due to distractions in the workspace (i.e., Bridge, Engine Room) that may directly lead to the scenario outlined during this drill? (Examples include routine maintenance procedures, social media, personnel interactions, etc.)
- Discuss the alternative actions/reactions that may occur in response to a similar scenario. Are there multiple paths to a successful resolution or is there a preferred solution? Why?
- Following a review of the simulated exercise and the vessel and crew’s reaction, what different operator (Bridge and/or ECR) reaction(s) might be warranted if faced with a similar situation during operation?

Review of DPO and other key DP personnel reaction:

- What potential gaps in the existing DP Familiarisation program have been highlighted as a result of the exercise?
- What changes/revisions should be considered for the training and familiarisation procedures?

Review the applicable checklists (ASOG CAM/TAM/DP operations Manual/bridge and engine room checklists/FMEA/DP Annual Trials programmes/etc.)

- What additional necessary actions and considerations should be addressed
- What potential changes should be made to make the checklists more appropriate?
- What additional necessary operating conditions and parameters should be considered?
- What potential changes should be considered to make Decision Support Tools more applicable to the vessel and her equipment?
- How would these changes improve/affect the vessel’s capabilities and limitations?

Conclusion:

Based on the results of the exercise and related discussions before and after, any suggestions for follow up including any corrective actions deemed appropriate should be accurately detailed and managed to close out.

Handling of power system failures in the correct manner requires knowledge of the DP specific critical equipment required for vessel control, how the DP system reacts to multiple failures and alarms and the human intervention required if necessary to ensure station keeping. Items to consider include:

- Awareness of the power system segregation (following the redundant groups)
- DP system reaction to multiple failures.

- Mission equipment reaction to power-loss and power-up.
- Appropriateness of communication.
- Training requirements.

Related IMCA Guidance

IMCA M117

The case studies and observations above have been compiled from information received by IMCA. All vessel, client, and operational data has been removed from the narrative to ensure anonymity. Case studies are not intended as guidance on the safe conduct of operations, but rather to assist vessel managers, DP operators, and technical crew.

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