



IMCA DP Conference 2023 - Report

A Focus on Technical and Operational Challenges
June 2023



The International Marine Contractors Association (IMCA) is the international trade association representing offshore marine contractors, service companies, and the industry's supply chain.

IMCA's mission is to improve performance in the marine contracting industry. To achieve this, we leverage the expertise of our Members through conferences, seminars, and our large network of committees.

IMCA's 2nd DP Conference was held in Amsterdam on 9-10 May 2023. IMCA intends to hold the event on an annual basis with the next Conference planned for **21-22 May 2024**.

The 2023 Conference was aimed at those involved in both offshore renewable energy and offshore oil and gas DP operations,

The event provided an opportunity for IMCA members and industry colleagues to participate in an industry forum where attendees heard from experts actively involved in dynamic positioning and had the opportunity to take part in Q&A sessions and workshops that will help to formulate the work programme for IMCA's DP Committee.

Dynamic Positioning is in our DNA as our heritage goes back to 1989 in this area.



IMCA DP Conference 2023 - Report

DP Conference and Objectives.....	3
Keynote.....	4
Intervention.....	6
1 Session 1 – IMCA DP Reflections	7
1.1 DP Event Reporting – Richard Purser, IMCA Technical Adviser.....	7
1.2 IMCA CPD Accreditation – Graeme Reid, IMCA Technical Adviser.....	10
1.3 Accreditation Scheme and CPD – Graeme Reid, IMCA Technical Adviser.....	11
1.4 IMCA Documents – Kevin Duffin, DP Committee.....	13
2 Session 2 – Technical Work of DP Committee	15
2.1 Annual DP Trials Have We Moved On? – Joey Fisher, IMCA DP Committee.....	15
2.2 DP Operations in Shallow Water – Andy Goldsmith, IMCA Technical Adviser.....	17
2.3 Field Arrival Trials – Vicky Glen, IMCA DP Committee.....	19
3 Session 3 – Quickfire Round – Innovative Technology	21
3.1 Core Power (UK) Ltd.....	21
3.2 Oceaneering.....	21
3.3 OneStep Power.....	21
3.4 Sonardyne.....	22
3.5 The Switch.....	22
3.6 Zelim.....	22
4 Session 4 – Assurance and Training	23
4.1 QA Review of eCMID/eMISW Reports – Andy Goldsmith, IMCA Technical Adviser.....	23
4.2 DP Related Training – Qasim Masood, Nautical Institute.....	24
4.3 Case Study – Simwave and DEME, Cinthya Lopes, IMCA DP Committee and Matthijs van der Moer.....	26
5 Session 5 – Ask the Industry Panel Featuring DP Specialists	29
6 Session 6 – Renewables	32
6.1 Floating Offshore Wind – Rhys Jones – Technical Adviser Marine Renewables.....	32
6.2 Voice Behind the DP Desk – Captain K. Reygaerts and M. van der Moer of DEME.....	34
6.3 Workshop – Renewables.....	36
7 Session – Hybrid, does it do what it says on the tin?	40
7.1 Setting the Baseline.....	40
8 Event Summary	46

DP Conference and Objectives

IMCA's 2023 DP Conference was held in Amsterdam on 9-10 May 2023. Building on the success of the 2022 event this was an ideal opportunity to update delegates on progress in the last twelve months and further engage the industry in sharing their knowledge and expertise in this forum.

Jim Cullen, IMCA's Technical Director, opened the conference by setting out the objectives for the two-day technical programme, these were as follows:

- Canvas opinions from the attendees
- Inform the attendees of the activities of IMCA's DP and eCMID Committees
- Present IMCA's DP Committee roadmap for the next 12 months
- Receive feedback from the attendees
- IMCA holds this event on an annual basis with the next Conference planned for 21-22 May 2024.



Sponsors

IMCA thanks our event sponsors for their support.



Keynote

Karen Davis, OCIMF

Karen Davis, the Managing Director of OCIMF, gave a keynote speech on the importance of collaboration with IMCA along with other industry organisations and how it will continue to move forward with close ties between both associations.

An overview of OCIMF was presented along with the journey of the organisation from the early 1990s to the present day.

Karen acknowledged that there was a shared focus between the two organisations, which included:

- Dynamic Positioning operational best practice
- DP Competence as a key component of safe operations
- DP assurance

Both associations were facing challenges of a changing industry, therefore collaboration was seen to be key. These challenges, but not limited to, were as follows:

- Expanding offshore industry to renewables
 - New/novel stakeholders
 - Interchanging between renewable and Oil & Gas sectors
 - Fast-paced technology
 - Increasing demand for vessels and expertise
 - DP Competence and certification
- Shrinking workforce
 - COVID effects
 - Waning Attraction
- Decarbonisation, future fuels, hybrid/alternative power systems
- Marine technological advances
- Human Factors



Summary of the Presentation

- Collaboration towards harmonisation
- We share a common vision on safety issues. To get to zero harm in safety we need to think differently. We can achieve this by:
 1. Learning to be better "learners"
 2. Focusing on simple but critical safeguards
 3. Collaborating to avoid duplication or confusion
 4. Integrating Human Factors in everything we do

Let's learn together to get to Zero!

Intervention

Just as the first session of the conference was about to get underway the conference moderator, Paul Coia, received a message from the bridge of the IMCA Simwave pipelay vessel*.

Cinthy Lopes of Simwave explained that her DPO had a medical emergency resulting in Cinthya being left alone on the bridge and facing some operational issues while laying pipe in shallow water in a fairly congested area.

Interaction followed between the Bridge with the Captain and OCM and suggestions and observations were invited from the delegates at the conference as possible solutions to rectify the situation.

Thanks go to Cinthya and to Matthijs van der Moer of DEME Offshore for highlighting several operational issues based on an industry case study and the delegates for entering into the exercise and contributing their observations and suggestions.



Images above – clockwise:

From the bridge, A view of the IMCA Simwave vessel, advice from Captain Matthijs, reviewing operational elements and Cinthya directing the conversation from behind the AV desk.

*IMCA Simwave is a name created for the purpose of the intervention and is not a real vessel.

1 Session 1 – IMCA DP Reflections

Chaired by Harry Verhoeven, Vice-Chair, DP Committee

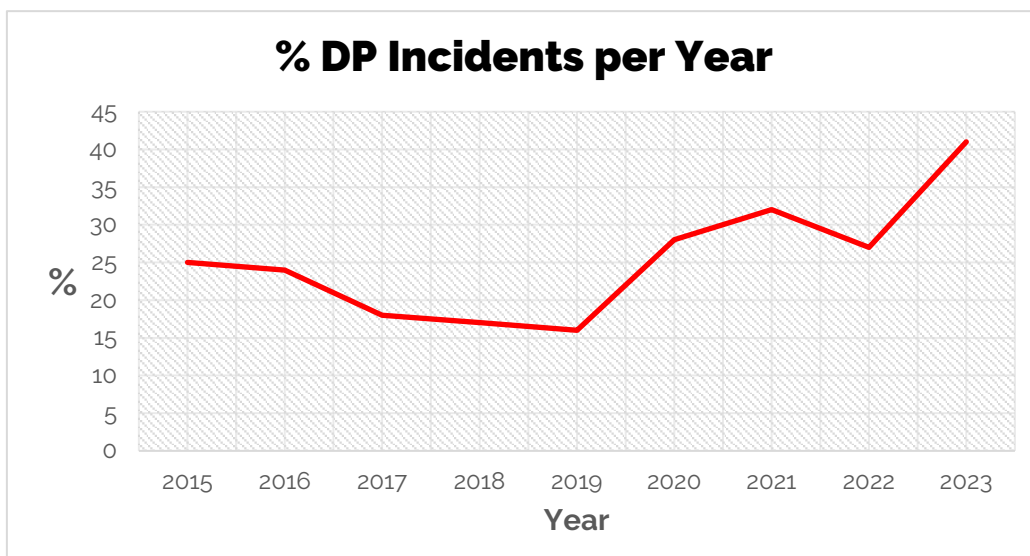
Harry Verhoeven, the Vice-Chair of the DP Committee, opened the first session of the day. Summaries of the sessions follow under their respective titles and sub-headings.



1.1 DP Event Reporting – Richard Purser, IMCA Technical Adviser

DP events are reported to IMCA by members. The data is then anonymised and analysed to track and trend event data and identify any areas for concern and focus.

The reported DP events from 2022 were presented to the conference, which highlighted that the percentage of DP incidents compared to the total amount of reports received had actually decreased during the 2022 period. However, reports received for 2023 to date show a sharp increase.



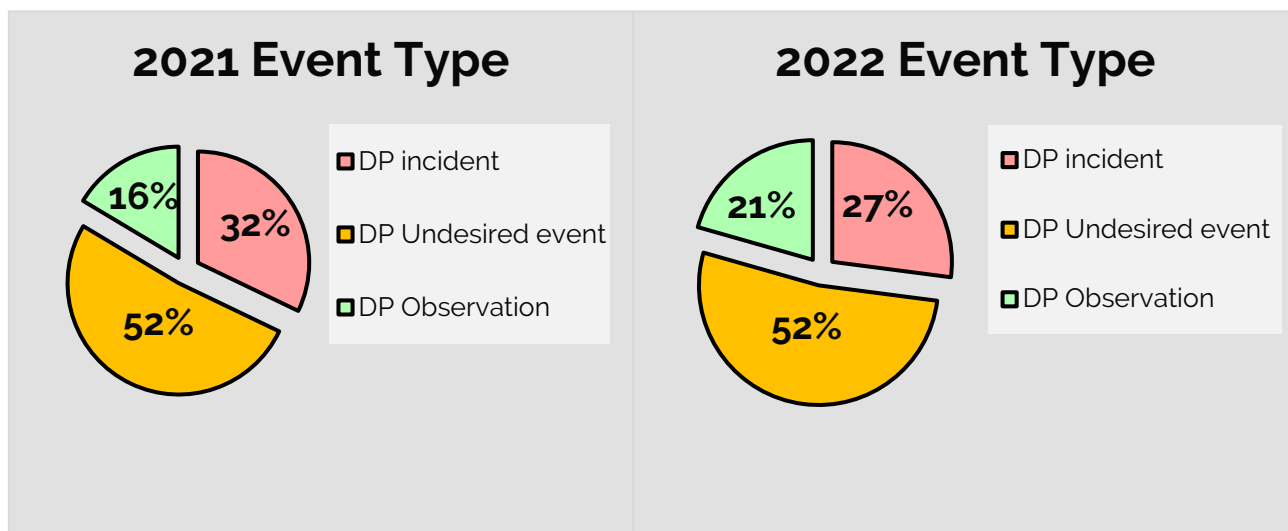
Percentage of DP incidents per year of reporting

The graph above depicts the percentage of reports that reported a DP Incident (position/heading loss) out of all reports received each year.

The definition of a DP incident for IMCA DP event reporting purposes is:

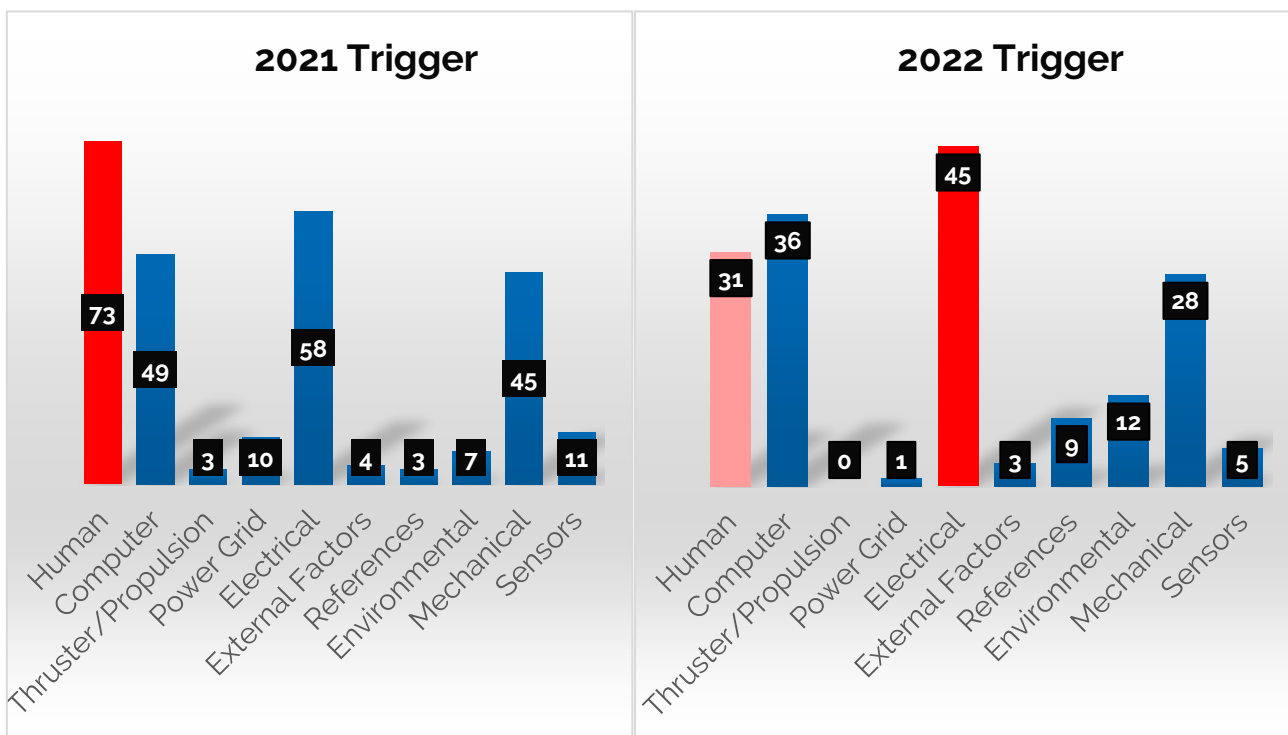
A major system failure, environmental or human factor which has resulted in a loss of DP capability leading to loss of position or heading.

A full overview of the last 365 days of reporting is shown below in the pie chart:



Comparison of Percentage of events reported by type 2021/22

The trigger (root) causes are shown below in the following graph:



Comparison of Trigger factors 2021/22

For the purposes of the DP event reporting process, this was referred to as the 'secondary cause' and is defined as:

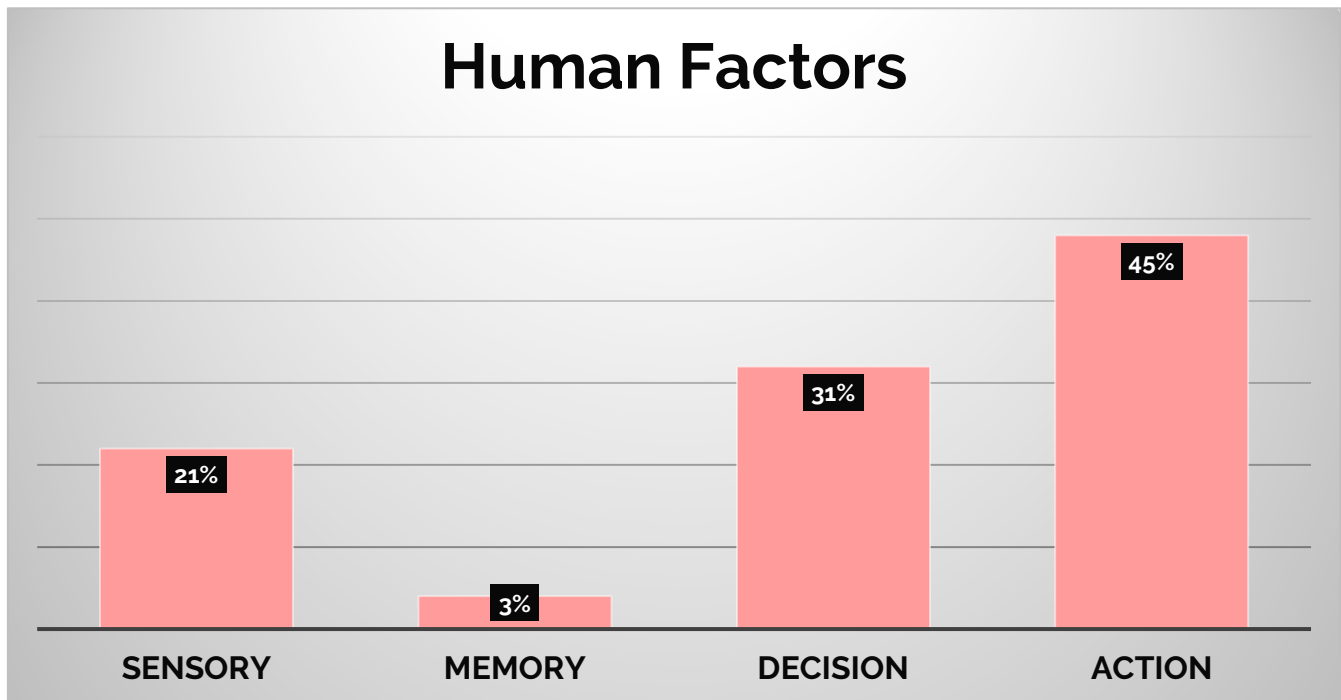
The trigger for defeating the redundancy concept of the DP system again considering the system sub system, environmental, external, or human factor.

The graph showed that the highest trigger for 2021 was attributed to 'human' factors. For 2022, it can be seen that the trigger factor had reduced. During 2022 IMCA and other associations campaigned to try and address the human factor. The graphs above show that there is a consistent top four trigger points. However, the human factor remains in the top three.

The human factors can be analysed further and broken down into four areas:

- Sensory error – errors caused by difficulty distinguishing functions, controls, colours, labelling, etc.
- Memory error – errors caused by forgetting to make a selection or setting.
- Decision error – errors where a clear decision was made to operate in a particular way.
- Action error – errors where a function or control was selected incorrectly.

A breakdown of the 52 events reported which were attributed to 'human' factors is shown below:



Breakdown of Human Factors

The majority of the 'human' initiated events were attributed to 'decision' and 'action' errors. It was suggested that one reason for this could be that the decision support tools, which should be in place, were badly written, interpreted, not used, or ignored.

In 2022, IMCA published an **Information Note 1618 ASOG – The Decision Support Tool You Need**, which is intended to help address human factors.

73% of the events attributed to the 'human' factors had resulted in a DP incident.

Summary of the Presentation

- All event reporting is treated as confidential by IMCA
- The database of event reports was growing and provides a useful source of information
- Human factors play a significant role in the events reported and more work was required to reduce this statistic. We need to understand why this is the case.
- Publications and recommended practices were influenced by event reporting and data constantly reviewed. Increased event reporting was encouraged by vessel owners/operators to build up the database and allow effective remedial actions to be identified.

Of the DP event reports submitted to IMCA, the data showed that trends since 2019 were still showing DP operations were less safe.

1.2 IMCA CPD Accreditation – Graeme Reid, IMCA Technical Adviser

In 2021, IMCA introduced its Key DP Personnel CPD Scheme. This session provided an update on the scheme and how effectively it was being implemented, in light of the Nautical Institute's new ruling that CPD will be a mandatory requirement for DPO Certificate renewal.

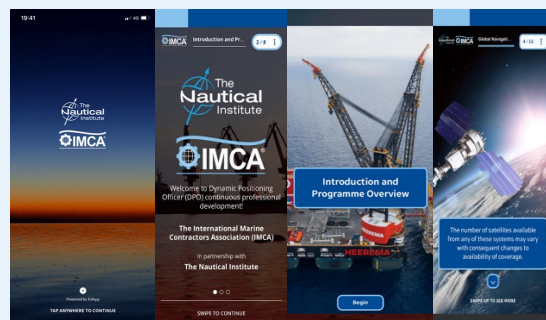
The objective of the programme is to prevent skill deterioration; this can be achieved by:

- Dissemination of Key IMCA Codes and Recommended Practices
- Continuous programme of learning
- Provide easy access to guidance
- Close the loop on DP Events
- The scheme has to be accessible anywhere

The content of the IMCA Key DP Personnel scheme was presented which strictly follows the criteria laid out in Annex K of 'The Nautical Institute Certification and Accreditation Standard' January 2023 – Version 1.

Summary of the Presentation

- The IMCA app enables the user to focus on important industry guidance.
- The IMCA app has the most up to date guidance and references from the industry.
- The IMCA app uses content derived from DP event reporting.
- The IMCA app can satisfy vessel owner/operator CPD requirements.
- The IMCA app promotes safe DP working practices for the benefit of all in the DP community.
- Assisting our industry to achieve our aim of ensuring safe and efficient DP operations.



'Remind, Refresh, Educate'

1.3 Accreditation Scheme and CPD – Graeme Reid, IMCA Technical Adviser

IMCA introduced its DP Practitioner Accreditation Scheme in May 2019. This session provided an update on the scheme and how effectively it was being implemented.

The scheme aims to improve the consistency and conduct of DP trials and to set an industry recognised level of knowledge for DP assurance personnel.

As part of this process, operators can be assured that DP practitioners who are conducting DP audit duties are accredited to a recognised standard and that they meet the OCIMF requirements.

There are two categories of practitioner:

- 1 **DP Trials & Assurance Practitioner** – *A person actively involved in producing, witnessing and assessing the results of DP FMEA proving trials and DP annual trials programmes.*
- 2 **Company DP Authority** – *A person who manages, and provides advice on, DP assurance processes and is typically employed within a vessel owner or charterer company.*

The scheme has five main elements that the candidate is required to demonstrate to acquire and maintain accreditation:

1. Code of conduct
2. Certification and qualification
3. Experience and knowledge
4. Initial examination
5. Three-year revalidation

There are currently 71 accredited DP Trials & Assurance Practitioners and 18 accredited Company DP Authorities.

In the application process, a significant number of candidates were unable to provide supporting evidence in many areas, including DP trials, FMEA involvement, gap analysis, incident investigation, and operational planning. The presentation noted that those who did not meet the criteria were still conducting DP assurance activities worldwide.

Since the introduction of the programme, there have been multiple exam failures, including those attempting the exams for the second and third time. It was emphasised that the exam was not intended for subject matter experts, but rather for those with a more fundamental understanding of the tasks to be performed.

Some of the questions raised included:

- What is preferable – someone who can demonstrate a minimum requirement and understanding or someone who has not been able to demonstrate this formally?
- Can you be sure that the person conducting DP trials on your vessel is suitably equipped with the right knowledge and experience?

Summary of the Presentation

IMCA believes this scheme can make a difference and that with wider adoption the bar can be raised on the subject of DP trials and assurance. There are still far too many individuals undertaking DP-related work scopes that simply do not have the experience, knowledge, and competency to do so.

Accreditation is now a recommendation within a number of IMCA guidance documents, for example, IMCA M 190 June 2023, IMCA M 166 Oct 2019 and IMCA/MSF 182 May 2022, all recently published or updated.

Positive feedback was received from those involved in the scheme, and IMCA plan to periodically update the exam questions to ensure they remain relevant.

A targeted marketing and communications campaign is ongoing to improve participation in the accreditation process.

1.4 IMCA Documents – Kevin Duffin, DP Committee

An overview of the workings of the DP Committee was presented to the audience with a summary of the documents reviewed and produced over the last 18 months.

The following items had been issued:

- DP event bulletins were produced every quarter
- Annual DP station keeping events report (IMCA M 261)
- Guidelines for the management of DP system network storms (IMCA M 259)
- The hazards of using hold-back vessels during DP Operations (IMCA M 260)
- ASOG – The Decision Support Tool You Need (information note 1618)
- Field Arrival Trials (information note 1628)
- Combined Heading/Motion and Gyro Sensor Concerns (information note 1633)
- Increasing Solar Activity and the Effect on GNSS Positioning (information note 1634)

The following documents are being updated or published as new guidance in 2023.

Working title of document or project	Doc. No.	Document Status
Recommended Practice on Failure Modes and Effects Analysis	IMCA M 166	Review is in process – Proposed issue July 2023
Code of Practice – Developing and Conducting DP Annual Trials Programmes	IMCA M 190	Review is in process – Proposed issue June 2023 and Re-introduction of IMCA M 191
The training and experience of key DP personnel	IMCA M 117	Review is in process – Proposed issue June 2023
Specification for DP capability plots	IMCA M 140	Work Group in progress
Introduction to hybrid battery systems for DP vessels	IMCA M 250	Review is in process
Vessel assurance	IMCA M 204	Review is in process

From the 2022 DP Conference, there was a call for a new Recommended Practice document pertaining to 'Shallow Water operations', this is being developed internally and will be made available to the Committee for review and comment prior to circulation to the wider community for review.

Summary of the Presentation

- This was an ongoing review of all IMCA documents.
- Information notes are published as new issues arise and some would be produced following the 2023 DP Conference.
- IMCA requires continuous feedback from all its members to maintain and ensure the documents are current and fit for use.

1.4.1 Q&A – End of the Session

The following pertinent questions were asked by the delegates::

Q Why does IMCA Charge for their CPD App why is it not free?

A IMCA is the only non-profit organisation that provides the CPD app using our Codes and Recommended Practices; while IMCA does not need to make a profit, it also does not want to make a loss. To date, IMCA has invested approximately £170,000 in the development of the scheme; IMCA anticipates that as the numbers increase, the costs to the consumer will be reduced to a level where development costs are covered.

Q Why is the CPD aimed at DPO's only and not vessel technical staff

A The IMCA App is aimed at all Key DP Personnel, however, the DPO Certificate is the only one that is Mandatory for DP system operation. The NI do run a DP Vessel Maintainers (DPVM) scheme that comes under the CPD scheme, however, a DPVM is not a mandatory requirement for vessel staff.

Q Why are we continuing to allow non-competent people to conduct 'remote' DP Annual Trials?

A The new Revision of IMCA M 190 is due to be published which will give new guidance that now closes any loopholes that have been exploited in the past with regards to 'Remote' trials.



2 Session 2 – Technical Work of DP Committee

Chaired by Joey Fisher, DP Committee

2.1 Annual DP Trials Have We Moved On? – Joey Fisher, IMCA DP Committee

Following on from last year's conference where "remote" Annual DP Trials were discussed in the final session, Joey re-visited some of the comments from that session and expanded on them to demonstrate that as an industry we do not appear to be improving on how we conduct Annual DP Trials, citing the now-famous quote "even my granny could do it" if provided with the right tools.

2.1.1 History

To understand the background of how far we have come in our DP journey, a History of Annual DP Trials was presented which highlighted the following:

- Early Days (North Sea) – Diving companies hired DP Vessels
- Vocal divers did not like getting their umbilical's tugged
- Incidents quickly got back to UK DoE and NPD via AODC
- Chris Jenman was brought in and found problems – vessels stopped from working
- Vessel owners had big problems losing work (seasonal)
- Common interests were captured – This brought about the DPVOA (to become IMCA)
- 1991 – DPVOA collaborates with an oil company and UK government – Guideline: 112 UKOOA Part 2 – Guidelines for auditing vessels with dynamic positioning systems – published in 1993
- Rationalisation process continued and was enhanced – IMO Maritime Safety Committee (MSC) Circular 645 (IMO MSC/Circ. 645) which was adopted in 1994

Statutory requirement – The annual survey should ensure that the DP system has been maintained in accordance with applicable parts of the guidelines and is in good working order.

Further, an annual test of all important systems and components should be carried out to document the ability of the DP vessel to keep position after single failures associated with the assigned equipment class.

- DPVOA and AODC merged to form IMCA in 1995
- IMO MSC Circular 645 – An annual test of all important systems and components should be carried out to document the ability of the DP vessel to keep position after single failures associated with the assigned equipment class.
- Test everything every year?



- June 2011 – IMCA M 190 – Guidance for Developing and Conducting Annual DP Trials Programmes for DP Vessels, for the purpose of:
 - Assisting vessel operators in developing a suitable Annual DP Trials Programme
 - Demonstrating the DP system is in good working order
 - Demonstrating the vessel's ability to maintain position following identified single failures
 - Contributing to the management of the DP FMEA
 - Identifying items which do not need to be tested every year – reliability can be demonstrated by other

Statutory requirement – The annual survey should ensure that the DP system has been maintained in accordance with applicable parts of the guidelines and is in good working order.

Further, an annual test of all important systems and components should be carried out to document the ability of the DP vessel to keep position after single failures associated with the assigned equipment class.

2.1.2 The Primary Objectives:

- Carrying out detailed, auditable tests on an annual basis
- Verifying that the DP system is fully functional, well maintained and that the failure modes and effects analysis (FMEA) remains valid
- To give failure response training and experience to DP personnel

2.1.3 Trials Findings

Trials Findings are frequently misclassified for a variety of reasons, including the lack of knowledge of the individuals conducting the Annual DP Trials and/or the commercial pressure exerted by the party that contracts the Trials practitioner.

End clients – As some clients do not fully comprehend why and how the findings have been raised, vessel charterers frequently use the findings to penalise the vessel operator/owner. More education is necessary on both sides to ensure that the vessel's integrity interests are prioritised without bias.

2.1.4 The Report

Some examples of poor reporting include:

- Test titles not included
- Tests omitted
- Results missing – Grainy photo
- Cross reference to FMEA not included
- Names of independent witnesses and dates for individual tests not included
- "As expected" where more information should be included
- Annual DP Trials rebadged as 5 Yearly DP FMEA Proving Trials
- Findings missing or categorised incorrectly
- Test not carried out by an IMCA Accredited Practitioner

Summary of the Presentation

Have we moved forward?

In short NO!

How can we move forward?

We can move forward by being proactive on the following points:

IMCA M 190 – New Code of Practice.

IMCA M 191 – Re-introduced (MODU – Cumulative testing).

Promote understanding of periodic validation (Performance, Protection and Detection).

The IMCA DP Practitioner Accreditation Scheme – Must be the minimum standard.

All stakeholders should insist on this standard.

All stakeholders should have processes to ensure Annual DP Trials are completed in accordance with IMCA M 190.

All stakeholders should be aware of the findings and the correct categorization.

2.2 DP Operations in Shallow Water – Andy Goldsmith, IMCA Technical Adviser

During last year's DP Conference, it was determined that there are no definitive documents that provide guidance for operators wishing to conduct DP Operations in the renewable energy sector (commonly referred to as Shallow Water). This prompted the IMCA DP Committee to create such a document.

The document has been developed internally and will now be presented to the IMCA DP Committee for further refinement before being distributed for industry-wide review.

The motivation for the document is:

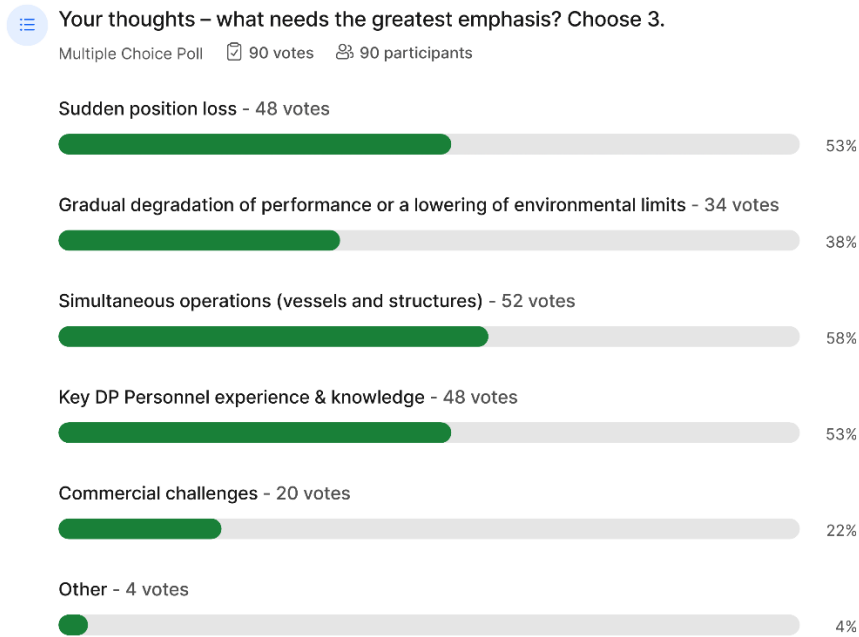
The operation is more dynamic as opposed to the regular Construction/DSV/PSV operation. With this faster paced operation, there is greater scope for human error if one is not focussed and following procedures to the finest point.

There is often a lot of activity of other support vessels in the field in addition the wind turbines are operated remotely from a marine coordination centre. Incidents and near misses between vessel structures and blades do occur.

Potential charterers are reviewing vessel DP capabilities and have been asking for operational guarantees on the transit speed from one wind turbine to the next.

A slide question was asked –





slido

One of the challenges when working within these fields is how to set up the position references and the difficulties of maintaining an accurate reference at all times during the vessel mission, it is noticeable that there is a lack of desire to use the more traditional Taut Wire reference system, why is this? Taut wire is proven technology.

Why are Tautwires often overlooked? The following slido question was asked:



slido

Summary of the Presentation

The document is ready for Committee Development

Once the Committee has contributed to the document, it will go out to the industry for review.

Please review and comment/feedback to IMCA.

Is the document title correct?

2.3 Field Arrival Trials – Vicky Glen, IMCA DP Committee

A workshop was held hosted by Vicky Glen on the subject of DP Field Arrival Trials.

IMCA event reporting indicates well defined field arrival trials could have avoided some events e.g., OS freezers, unintended cross connections.



2.3.1 The Objective of the Workshop was:

- To question whether current field arrivals guidance is suitable for the renewables sector
- Solicit ideas from the delegates with the view to updating IMCA M 103 and information note (2022)

2.3.2 Why do we Conduct Field Arrival Trials?

- Ensure satisfactory operation of the DP system
- To identify any potential problems with the DP system before they can cause an incident
- DP system is set up correctly
- To provide a training opportunity for the DPO's – An additional bonus

2.3.3 What Checks and Tests Should be Included?

It is acknowledged that the following items should be checked/tested:

- Configuration and settings as per CAM or TAM as agreed with the client
- Main machinery – thrusters, engines, switchboards, and emergency stops
- Re-start and redundancy of controllers, OS's, and DP3 backup
- IJS, thruster levers and appropriate changeovers
- PRS's that will be used
- DP model test
- Communication systems to be used, including DP alert
- DPO should be satisfied that the DP system is functioning as expected

2.3.4 Workshop

The room was split into groups and each group was asked one of the following questions:

Q1. Renewable sector – what are the different challenges?

Q2. Same requirements for renewable sector testing?

Q3. How often for the renewable sector:

- Every arrival at the field?
- Every time you go on DP?
- Every watch change?

Q4. Is IMCA's recommended practice clear (IMCA M 103 and information note)?

2.3.5 Report Out

Question 1 Feedback

- Time pressure – Commercial pressures
- May spend a long time in the field and may not be conducting regular Field arrival trials – frequency of testing
- Intensity/SIMOPS – Commercial Pressures
- Rapid changes of field layout as new assets are installed.
- Operational mode changes
- Challenge to safety procedures
- FA Trials to include:
 - Mode switching
 - PRS Testing
 - Power performance



Question 2 feedback

- No, not the same requirement
- CTV Compensated gangways
- Establishing a safe escape route
- Commercial pressures
- W2W set up time
- Isolation of wind turbine

Question 3 feedback

- Upon arrival at Field
- 6hr checklist (include some testing)
- Continual PRS Monitoring
- Re-define the 500m zone
- Commercial pressures



Question 4 feedback

- Where to conduct trials
- Awareness
- When to stop for trials and maintenance

Summary of the Workshop

All the points highlighted by the groups will be analysed and presented to the DP Committee and will also be fed into the new document presented by Andy Goldsmith above.

It was clear that commercial pressures play, or are perceived to play, a limiting factor in how operations in the energy fields are carried out.

3 Session 3 – Quickfire Round – Innovative Technology

The Quickfire, Totally Technology Session provides an opportunity for often small and medium sized companies to showcase their ideas and innovations to industry leaders in a dynamic and inspiring way. For the 2023 DP Conference, six companies were invited to give a 10-minute presentation against the clock on their innovative/novel approach to a particular issue within the industry. The six companies chosen to present their initiatives were:



3.1 Core Power (UK) Ltd.

Tobi Menzies demonstrated Core Powers' innovation in the nuclear generation field and how the marine industry can adopt technology that has advanced significantly since its inception. The numerous benefits of using molten salt reactors and how they can contribute significantly to the energy transition, from providing grid power for land use from offshore-based power stations to vessel propulsion and mission power.

Unfortunately, the old barriers to nuclear use remain in place, so much work remains to be done to persuade regulatory authorities that new nuclear can provide a safe, cost-effective solution to reducing our overall environmental impact.

<https://corepower.energy.com>

3.2 Oceaneering

Keith Park of Oceaneering presented his company's latest innovation, the C-Nav Leo system, which uses the Iridium low earth orbit satellite constellation. Because this is an orbiting system rather than a geostationary station, it can provide continuous global coverage. It claims to have uninterrupted coverage for offshore vessels due to redundant earth processing centres and clocks.

<https://www.oceaneering.com>

3.3 OneStep Power

Sarah Whiteford presented OneStep's 'Designed4Validation' innovation in testing the reliability of vessel power systems to provide repeatable cost-effective power system assurance for the life of the facility. The D4V test points can be installed permanently at a convenient time during a shipyard call. The test points are then used to test the facility at various stages throughout the shipyard and trial programmes.

In conjunction with permanent high speed data loggers, the devices connected to the D4V test points provide data-centric evidence of a vessel's safety and operability; facilitating charterer acceptance and making regular testing safe and affordable.

<https://www.onestepower.com/>.

3.4 Sonardyne

Derek Lynch from Sonardyne demonstrated the new SPRINT-Nav position reference system. SPRINT-Nav uses a combination of Sonardyne's tried and tested Lodestar AHRS (PRH), SPRINT INS and Syrinx DVL, all products designed and manufactured by Sonardyne can be mechanically coupled together. The system is essentially a targetless system that uses the Doppler effect to achieve a bottom lock in water depths as deep as 230msw. This system is already in use with ROVs and AUVs, and it is currently being tested for DP vessels with promising results.

<https://www.sonardyne.com>

3.5 The Switch

Mikko Lonngberg of The Switch introduced us to Semiconductor based protection concept that allows DP Operations with closed bus ties in DC distribution systems. In DC distribution, the fully semiconductor-based protection concept always has a reaction time of 10 microseconds. Instead of a traditional mechanical circuit breaker, the semiconductor functions as a solid-state switch that can be used as a bus-tie, feeder, or incomer. The built in protection allows for isolation upon the known failures that can be experienced in the power grids.

<https://www.yaskawa-global.com>

3.6 Zelim

Sam Mayall gave an overview of the outstanding innovative method of recovering a person from the water using an autonomous SARs vessel.

Given the risks of launching and recovering FRC in adverse conditions, Zelim has created an autonomous vessel that can be launched from a vessel, platform, or wind farm installation. The Guardian, which can be uncrewed or crewed and launched from a larger vessel, and the Survivor, which is an uncrewed remotely operated vessel based offshore in remote locations, were both presented. The vessels use real-time AI to locate and track people in the water, and a novel conveyor belt system is used to remove the person from the water to the vessel.

<https://www.zelim.co>

4 Session 4 – Assurance and Training

Chaired by Graeme Reid – IMCA Technical Adviser

4.1 QA Review of eCMID/eMISW Reports – Andy Goldsmith, IMCA Technical Adviser

Andy Goldsmith provided an overview of the work he has been doing on reviewing a sample of the eCMID/eMISW reports. The goal of the ongoing review is:

- Continue to strive for consistency
- Improve the form and guidance notes
- Provide feedback to AVI Community
- The task of reviewing the reports consists of the following:
 - Review at least 10% of reports CMID and MISW
 - Note if questions are being skipped
 - Spot inconsistencies and common omissions
 - Discover common findings
 - Assess the usefulness of submitted reports
 - Suggest improvements

Why does the committee feel it is necessary to conduct these reviews?

- To ensure consistency of reporting
- Ensure we get clarity in the summary pages
- Provide confidence that the inspection has not been just a tick box exercise
- Evidence that procedures are in place and being adhered to

The review focuses on six main categories which are as follows:

- Completeness
- Language
- Content
- Findings
- AVI's response to questions
- Photographs

On a quarterly basis, approximately 8 eCMIDs and 8 eMISWs are reviewed, accounting for 5-10% of all reports.

- Some interesting statistics coming out of the review process are:
 - 45% did not include a close out meeting report
 - 12% of inspection summaries were Port and Date only
 - 90% of reports had blank lines in vessel particulars
 - 18% did not include company branding in the disclaimer

- 24% did not give confidence that all guidance notes had been taken into account
- 12% provided recommendations from the inspector
- 80% had not been reviewed prior to upload
- 24% made no use of photographs
- 18% resulted in no findings

Summary of the Presentation

In summary, the review is designed to continuously improve the scheme. By conducting the review, IMCA can see where deficiencies in the documents exist, such as clarity of questions and notes.

Feedback to the industry:

- Feedback via IIMS newsletters to AVI's.
- Findings analysis and QA report – June 2023.

Software updates:

- Introduce a N/A choice in vessel particulars.
- Remove the reproduction of additional comments from the report summary.
- Provide the question in place of the section heading in the findings list.
- A few further updates to specific questions.
- Focus on the question guidance note.

4.2 DP Related Training – Qasim Masood, Nautical Institute

There was an overview of the Nautical Institute's (NI) activities, goals, and progress, with an emphasis on training and certification and Continuing Professional Development (CPD), focusing on:

- Personal skills
- Life skills
- Technical and professional skills

4.2.1 DPO Requirement for Revalidation

From the beginning of 2024, the requirements to revalidate your DPO Certificate changed.

DPOs revalidating their certificates will now be required to demonstrate Continuing Professional Development (CPD) as well as experience to ensure that DP Operators keep pace with the evolving standards in a rapidly changing industry.

- To revalidate your DPO Certificate, you will need:
- To be enrolled in a NI-approved CPD program and take the NI Revalidation online exam.
or
- Complete the NI DP Refresher Course including the NI Revalidation online exam.

NI will phase in the changes over the next five years to ensure that all applicants have enough time to meet the requirements.

4.2.2 DPVM Requirements for Revalidation

To ensure that DPVM Operators keep up with evolving standards in a rapidly changing industry, DPVMs revalidating their certificates will now be required to demonstrate Continuing Professional Development (CPD) as well as experience.

- To revalidate your DPVM Certificate, you will need:
- To be enrolled in a NI-approved CPD program and take the NI Revalidation online exam.
or
- Complete the NI DP Refresher Course including the NI Revalidation online exam.

To make sure all applicants have enough time to meet the requirements, we will be introducing the changes gradually.

Summary of Presentation

The NI continued to remain current with collaboration with other associations including IMCA.

New re-validation criteria for DP & DPVM recertification have been implemented, with CPD or a 5-day refresher course and an online NI exam made mandatory.

Further information would be available on the NI website (nautinst.org).

The following significant questions were asked by the delegates:

Q How many vessel owners comply with IMCA M 117

A IMCA Has upgraded IMCA M 117 to a Code of Practice and IMCA anticipates all members will follow it. IMCA M 117 has gone through a lengthy review and update and will shortly be published.

Q When does Mandatory CPD start?

A Now. If revalidating in January 2024 then you need one years' worth of CPD.

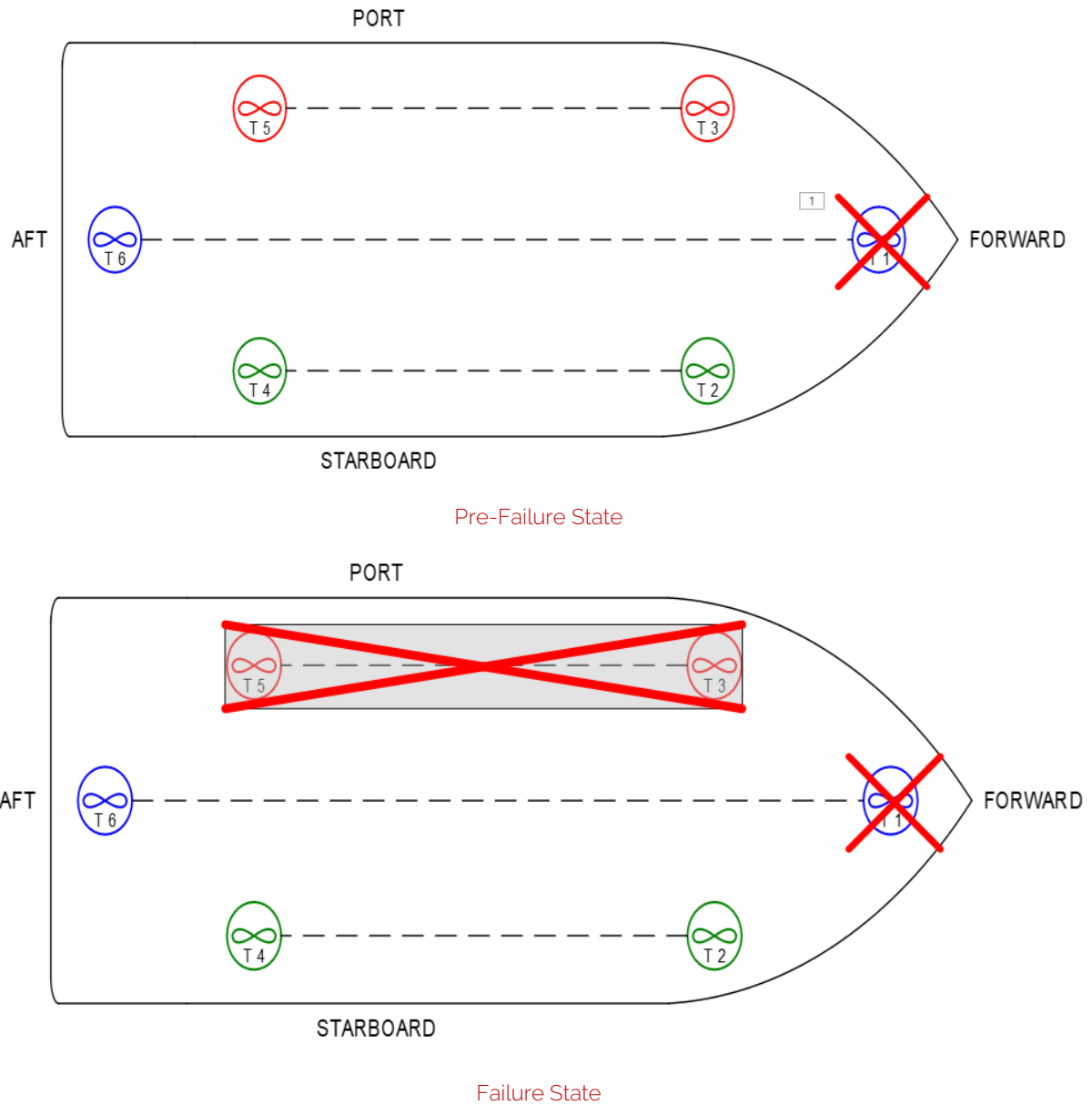
Q What provision has been made for vessel technical staff?

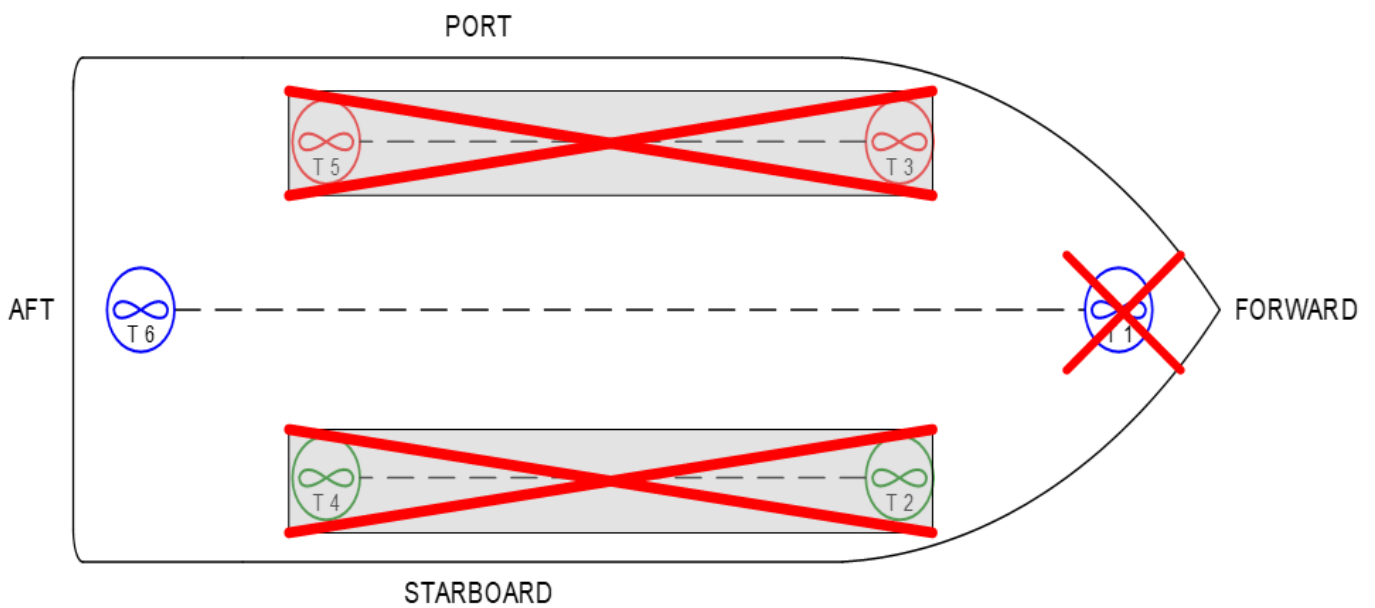
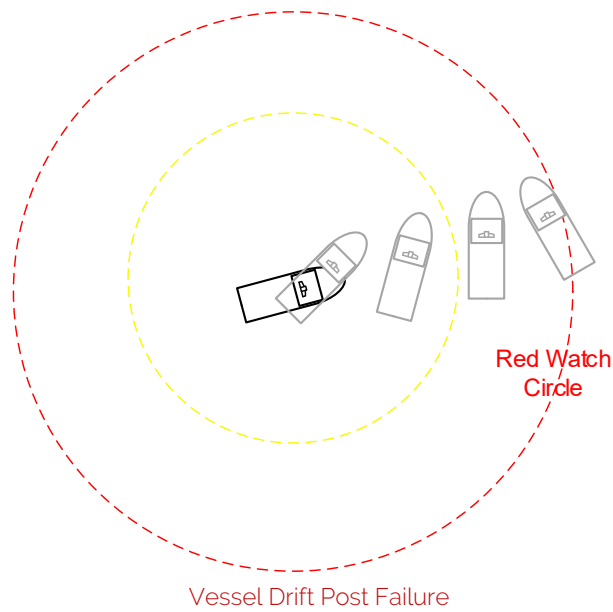
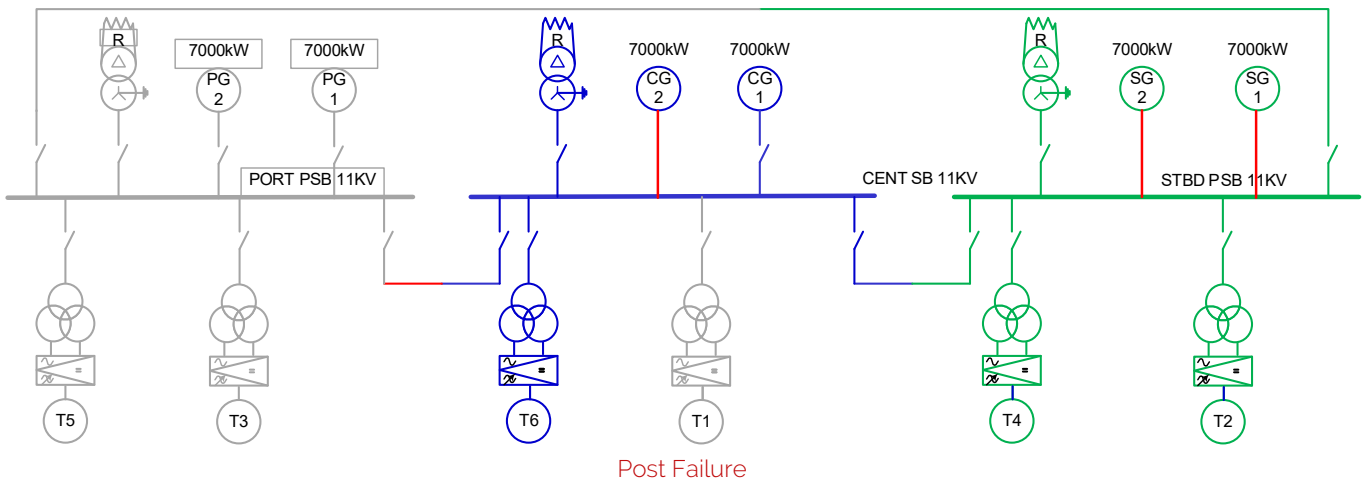
A The NI has delivered a scheme DPVM, with 600 individuals in the process of being brought onto the scheme. It would be desirable to have it implemented similar to that of the DPOs, but this will take some time.



4.3 Case Study – Simwave and DEME, Cinthya Lopes, IMCA DP Committee and Matthijs van der Moer

To conclude the first day, a DP Event Case Study was presented to the audience. It was based on a vessel that was in a degraded state due to offline machinery and then experienced a loss of one of the three redundancy groups. When attempting to recover the affected redundant group, the vessel staff closed a bus-tie, which promptly blacked out a healthy redundant group, effectively leaving the vessel with only a single thruster to maintain heading and position.





Consequence of closing the Bus Tie

The case study promoted a healthy debate within the room; because not all of the facts of the event were known, assumptions had to be made, which added to the debate.

This case study, along with the lack of a full background, highlights to the audience that this is how IMCA regularly receives these Event reports and has to turn them into learning, as presented earlier in Session One. The goal is to learn lessons from the information received and not to get too deep into apportioning blame.



5 Session 5 – Ask the Industry Panel Featuring DP Specialists

Hosted by Mark Ford, Marine & Quality Manager, IMCA

The panellists for this session were:

- Kenn Steen Olsen, Vattenfall
- Aleks Karlsen, DNV
- Graham Coles, OCIMF
- Mike Hensley, ABS
- Frode Fossum, Equinor



Q1. – What opportunities from learnings in the oil and gas sector can be highlighted to the renewable operators as common best practices?

Ans. – OVMSA (Offshore Vessel Management Self-Assessment) which is a tool that was carried over from the downstream sector, these sorts of tools can be leveraged by the new industry to assess their management system against industry best practices in order to not repeat the mistakes that have been made in the early years of the O&G industry.

Q2. – Was there a difference for DPO's switching from the offshore sector to the Wind sector?

Ans. – Short answer, YES, very much so! The oil and gas industry has a strict DP Assurance regime; however, in the wind industry, the assurance process is fairly lax, with no guidance provided to vessel crews and no decision support tools developed. When you consider the operating area and all of the operations that take place within it, there is a lot for new DPOs to absorb and comprehend. Things are however improving.

Q3. – Sustainability – What is the best way for existing vessels to meet sustainability goals and what would be the best type of fuel for DP Vessels?

Ans. – It is difficult to get right; we are seeing very complex vessels that the crew must understand; we know we need to do something but aren't sure how. It will be difficult to achieve this goal with older vessels, and it will require industry-wide collaboration to make it work.

Q4. – With Collaboration in mind is there a desire to combine the eCMID & OVID inspections?

Ans.1 – IMCA would certainly welcome a mutual recognition of each other's schemes so that if a vessel had an eCMID then an OVID is not required and vice-versa, so equivalence would be welcome by many.

Ans.2 – OCIMF sees no reason to combine because both schemes have value and are currently used successfully throughout the industry.

Q5. – How do we address the race to the bottom in DP assurance?

Ans.1 – Through more collaboration and participation. The IMCA DP Committee recognises that bad actors exist; we must ensure that any guidance is not misrepresented; the new revision of IMCA M 190 aims to clear up any areas that are currently being exploited.

Ans 2 – This is all happening at a time when technology is rapidly changing, so perhaps we should beef up the DP Assurance process even more.

Q6. – How do we encourage the adoption of IMCA Codes and Recommended Practices into the Wind Industry?

Ans. – Having faith in the inspectors performing vessel inspections, such as accredited AVIs and IMCA accredited DP practitioners, aids the process. Some wind developers lack technical knowledge in marine matters and the hazards that exist in this area; IMCA's strategy is to engage with the renewable sector to reinforce the message that good guidance is available to the membership.

Q7. – With sustainability in mind would it be good to have guidance developed for PosMoor units?

Ans. – Yes, it would be possible to take this to the IMCA DP Committee or the Marine Division Committee.

Q8. – Are there enough installation vessels worldwide to meet the demands of the developing wind fields if not how will we meet such demands?

Ans. – Many projects are currently active, and many more are in the planning stages. Many vessels are required to build these large wind farms. It will be difficult for operators to meet the demands while also operating in areas of the world where cabotage exists.

Q9. – Will IMCA DP accreditation be applicable for class surveyors – often the class surveyors are not fully knowledgeable about DP systems.

Ans. – There is in-house training given to DNV surveyors, which could be a useful tool to show clients that they are knowledgeable of the DP systems. It is acknowledged that there are varying skill levels within the pool of surveyors.

Q10. – Commercial pressure is a key factor in DP Events how can OCIMF help this issue with the oil companies, should they have a DP Authority?

Ans. – It would be advantageous for all chartering parties to have a DP Authority. OCIMF can help by raising these issues with the oil companies.

Q11. – How can we improve harmonisation and collaboration across the industry associations?

Ans. – This conference is an example of this; we have OCIMF, Nautical Institute, Class, and IMCA all in the same room openly discussing the day's pressing issues and soliciting member feedback.

Q12. – Will IMCA consider having a forum for the IMCA accredited DP Practitioners?

Ans. – Yes, there is already a form similar to the DP Event report form that allows IMCA Accredited DP Practitioners to report unusual test results, etc. This is set to go live on the website soon, and we hope to expand from there.

Q13. – What DP issues keep the panel awake at night?

Ans.1 – The technical shift due to the use of new technology and the challenge of reducing the environmental footprint of vessels.

Ans.2 – Crew competence and how to maintain and prevent skill fade.

Ans.3 – Providing good decision support tools, such as ASOGs, to the crew and ensuring that these decision support tools are fit for purpose and not overly complicated.

Ans.4 – Budgets for crew training should not be limited if operators want to prevent incidents; training is critical; it should be noted that large sums of money are spent on technology, but very little on training.

The session concluded with Mark Ford thanking the panel of DP specialists for their participation and the delegates for their questions and observations.



6 Session 6 – Renewables

Chaired by Rhys Jones, Technical Adviser, IMCA

6.1 Floating Offshore Wind – Rhys Jones – Technical Adviser Marine Renewables

6.1.1 Future of Floating Offshore Wind

Rhys Jones of IMCA gave an informative presentation on the floating wind industry, emphasising the following points:

- Floating offshore wind is expected to undergo a period of acceleration.
- The size, scale and number of assets deployed are all predicted to increase rapidly.
- Market intelligence forecasts from GWEC predict floating offshore wind to reach 16.5 GW by 2030
- The critical requirement for the marine sector to proactively engage in the design and project design phase of floating offshore wind development.

The potential top markets are shown on the map below:



Potential Top Markets

6.1.2 Challenges of Floating Offshore Wind

This emerging industry faces numerous challenges, not the least of which are the threats to human safety in the areas listed below.:

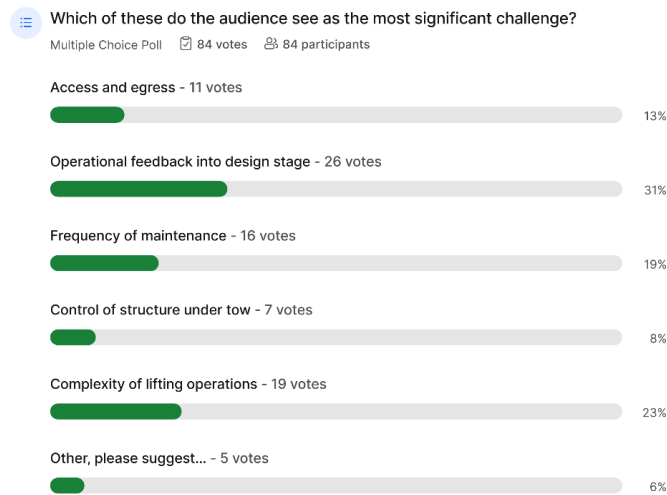
- Structure
 - Dynamic to dynamic interactions
 - DP Events within the energy fields
 - Vessel foundation integration
- Evacuation and Rescue
 - Increased complexity
 - Slow evacuation
 - Obstructed recovery
- Reliability – Lower reliability levels expected:
 - Increased requirement for maintenance
 - Reactive
 - Preventative
 - Increased visits
 - Increased transfers
- Increase of remote monitoring

There are many design concepts out there, but we need to understand how they are best placed in the environment of the area/region they will serve for this rapid transition. This means that sharing information such as lessons learned, and new knowledge is critical if the industry is to move quickly and safely.

Other areas that are becoming more complex than what we are already doing are as follows:

- Towing
 - Experience of the developer in this field
 - Control of the unusual Structure whilst under tow
- Lifting
 - Increased Complexity
 - Dynamic to dynamic
 - Snatch loading risk
 - Novel equipment necessary

The following slido question was posed to the audience:



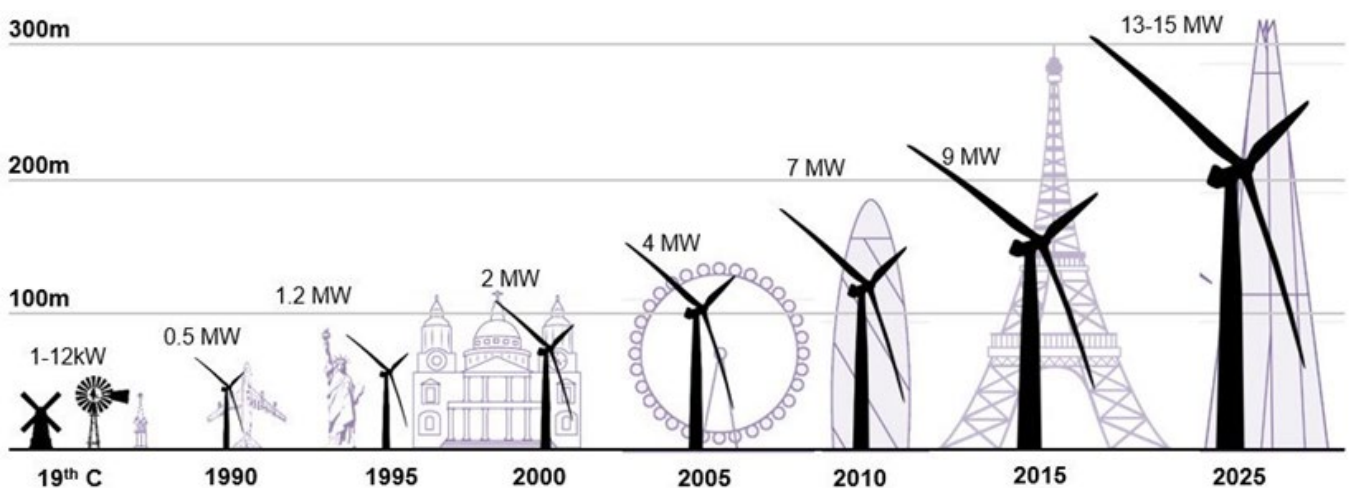
slido

6.2 Voice Behind the DP Desk – Captain K. Reygaerts and M. van der Moer of DEME

This presentation was divided into two sections. Matthijs van der Moer presented the first part, and a current serving Captain onboard a Jack Up Construction vessel presented the second, Kevin Reygaerts,

6.2.1 The Evolution of DP Jack-Up Vessels (JUVs)

Matthijs presented a comprehensive history of how JUVs have evolved since their first iteration in 2005, primarily due to the advancement of wind turbines, which have grown in size both physically and in terms of MW power output, from 3 MW in 2005 to the 15MW units we have today in 2023. Because of the rapid development of turbines, construction vessels have had to keep up with the market. The graphic below perfectly depicts the challenge that JUV owners/operators face.



Sources: Various; Bloomberg New Energy Finance

Evolution of Wind Turbines

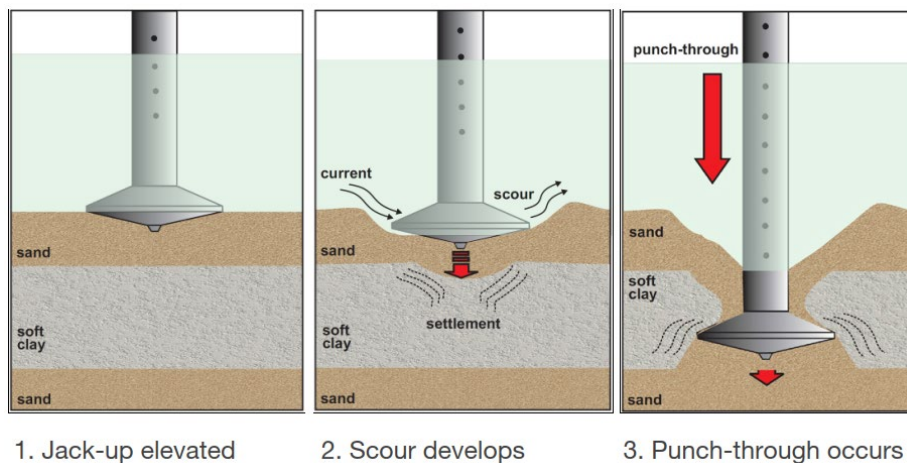
6.2.2 How does Jacking Work?

Kevin Reygaerts, a serving Master on a DEME vessel, took over the presentation and described the operations necessary to execute the safe positioning of the JUV.

During the jacking process, a JUV gradually transitions from a floating to a jacked-up state, where the weight of the vessel is supported by the legs and directly transferred to the seabed. A few distinct steps can be identified in this jacking up process.:

- Positioning of the vessel (DP)
- Lowering of the legs
- Reducing draft – Preliminary preloading
- Lifting hull out of water
- Preloading (final)
- Jacking up to working height
- To jack down the above process is more or less reversed

When a leg footing is (temporarily) supported by a stronger layer of soil that overlies a weaker layer, a punch-through can occur. The vertical footing load eventually exceeds the foundation bearing capacity, allowing the footing to penetrate quickly through the upper layer into the layer below.



6.2.3 Interaction of a JUV with DP

The following considerations must be made:

- On a JUV Jacking and DP are often combined and are considered critical operations
- Jacking operations are typically in shallow waters with dense traffic around
- Survey data is crucial for both Jacking and DP operations with regards to the stability of the soil (leg penetration without punch through), but also the position of subsea structures (wrecks, manifolds, existing cables, and pipelines)
- Jacking/DP operations are almost always close to other offshore assets
- Jacking/DP operations are short in duration but very intense

6.2.4 The Challenges of a JUV on DP

The following considerations must be made:

- One of the difficulties is that the current behaves differently on a JUV than it does on a free-floating unit

- The start and finish of jacking operations are the most critical
- Another issue is the close proximity in which a JUV must position and jack-up to other offshore structures. There is no room for error at all
- It is critical to have experienced personnel on board for these types of operations. As a result, finding, training, and retaining personnel can be difficult at times
- In some cases, a JUV must move over as a subsea structure in DP to do drilling operations while jacked up
- Typically, there is only a small weather, current, and tide margin/window to carry out these types of operations
- Jacking, but also the free-floating lifts are typically done in shallow water with the usual challenges such as turbulence, high currents, shifting winds and waves
- Sometimes there is no option between blow-on or blow-off situations. Chose the lesser of two evils. For example, operations with significant tidal differences. The weather window and tidal window do not always match



Summary of the Presentation

IMCA M 223 are very good guidelines for DP operations on JUVs.

However, guidelines are living documents and that is why it is important that we share our knowledge and experience with IMCA as we are doing today.

The offshore (wind) industry is constantly evolving and rapidly changing. Therefore, we need to regularly review the existing guidelines and dare to sometimes challenge them. Because it is the voice behind the DP desk that needs to be heard

6.3 Workshop – Renewables

Two sets of questions were posed:

6.3.1 Floating Wind Questions

- 1 What foundation design requirements are required for the vessel–foundation interface?
- 2 What guidance for the vessel–foundation interface is required?
 - a) Emergency Evac
 - b) Lifting Ops
 - c) Personnel Transfer
 - d) Weather Limitations

- e) activity specific operating guidelines (ASOG)
 - f) DP Modes
- 3 What guidance is required for towing operations?
 - 4 What guidance is required for lifting operations?
 - 5 What guidance is required for access and egress (routine and emergency response)?
 - 6 What additional competence or familiarisation will be required?

6.3.2 Case Study

- 1 In what DP mode would you move out in this situation? Joystick, Joystick auto-heading, auto-position?
- 2 What are the major risks of this operation?
 - a) Cable Damage
 - b) Leg Damage
 - c) Tide Current limitations
 - d) Inexperience of crew
 - e) Commercial Pressure
- 3 What could be improved to make this operation safer?
- 4 What can we learn from this example?
- 5 What can IMCA guidelines mean for these types of operations?
- 6 Can you use the freeze current function in this situation?

6.3.3 Report Out

(1) Group 1

Floating Wind:

Q1 – Stability of unit, stabilisation of unit when personnel onboard and access and egress concerns

Case Study:

Q1 – Joystick without auto heading when the hull starts to enter the water and full hull immersion, once moving out still on joystick but now with auto heading enabled.



(2) Group 2

Floating Wind:

Q2 – IMCA currently has a comprehensive set of guidance that covers the items listed in Q2

Case Study:

Q2 – Risks include

- Cable damage
- Leg damage
- Tidal/current issues
- Capsize
- Commercial and contractual risks

(3) Group 3

Floating Wind:

Q3 – Towing ops

- Participation of stakeholders in planning
- A goal setting as opposed to a prescriptive approach for guidance
- Approved towage plans and specific ASOG
- Voyage planning is critical including contingency plans

Case Study:

Q3 – Improvement to make Safer

- Good comms/SIMOPS
- Weather limitations along with
- Knowing the currents involved
- Knowledge of power requirements for positioning and industrial mission
- Need to know what press are available
- Planning and Risk Assessments, Toolbox talk
- Site conditions
- Configuration of the vessel – most robust
- Plan an escape route
- Simulate prior to operation



(4) Group 4

Floating Wind:

Q4 – Lifting

- IMCA guidelines
- Both units are floating, and dynamic, additional guidance maybe required

Case Study

Q4 – Learnings

- Use the available guidelines
- Understand the risks
- Asses the holistic situation



(5) Group 5

Floating Wind:

Q5 – Access and Egress

- Standardise the access and egress design and protocols
- Standard design guidance
- FPSO guidelines may be helpful
- Preinstalled ref systems?
- Emergency preparedness

Case Study

Q5 – Guidelines

- Situation could have been foreseen
- Awareness of all guidance available
- Clear on the spirit of the guidance to allow for flexibility
- Decision support tools to allow for the use of guidance



(6) Group 6

Floating Wind:

Q6 – competence and familiarisation

- Project and equipment specific training and familiarisation
- Awareness of surroundings
- Simulator training
- Drills and Exercises
- Training on specific DP setups i.e., the use of 'Current Freeze'
- Escape planning
- Easy simple guidance

Case Study

Q6 – Freeze Current

- Understood to be a function that allows the operator to ensure a constant current force is used by the DP Control.
- Good function but needs to be understood.
- Kongsberg gave an overview of the DP Controller as a PID Controller and what freeze current does is freeze an Integral part of the PID Controller to prevent integral wind up.



7 Session – Hybrid, does it do what it says on the tin?

Chaired by Dr Steven Cargill, Noble Denton

7.1 Setting the Baseline

This session was intended to elicit a response from the floor in order to gain an understanding of the complexities involved with hybrid systems installed on offshore vessels and to better manage attendees' expectations.

7.1.1 Panel

A group of people were asked to serve on the session panel; all of them have extensive experience in some capacity with hybrid systems installed on vessels:

- Hans Brejaart – Boskalis
- Mark Craig – OneStep Power
- Vicky Gren – TechnipFMC
- Harry Verhoeven – Kongsberg
- Justin Taljaard – Tidewater
- Ole Steiner Andersen – Equinor



A case for the application of hybrid battery power systems was given, these include:

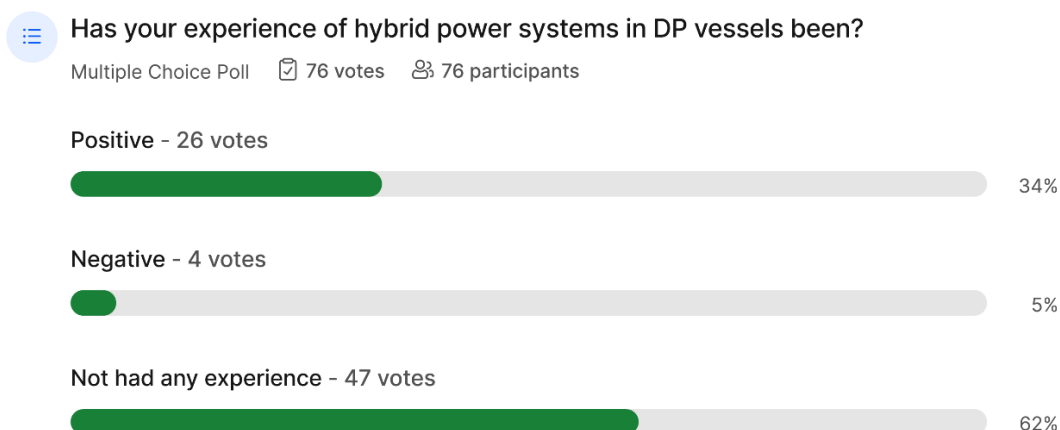
- Energy storage systems – Typically Battery Energy Storage Systems (BESS)
- Electronic spinning reserve – provides redundancy with reduced parasitic losses
- Green House Gas emissions reduction and fuel saving
- Peak shaving – diesel generators operate more efficiently in base load
- Regeneration – cyclic loads can return energy to the battery
- Load acceptance support – large draw works can blackout a rig unless 6 generators are online
- Power for critical power consumers during a blackout – draw works – pipelay
- Time to terminate must be supplied by batteries – alone or in combination with defined generators

A question was posed to each of the panel members:

- Has your experience with hybrid power systems in DP vessels been:
- Positive?
- Negative?
- Not had any experience

Each panellist provided a brief response to the question, and the overall response was that everyone had a positive experience with hybrid battery systems.

The same question was then posed to the audience.



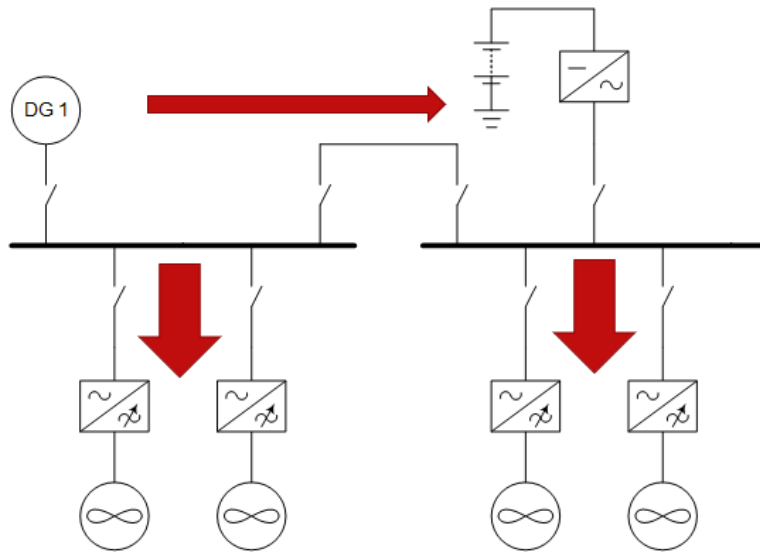
slido

7.1.2 Does it Meet Expectations?

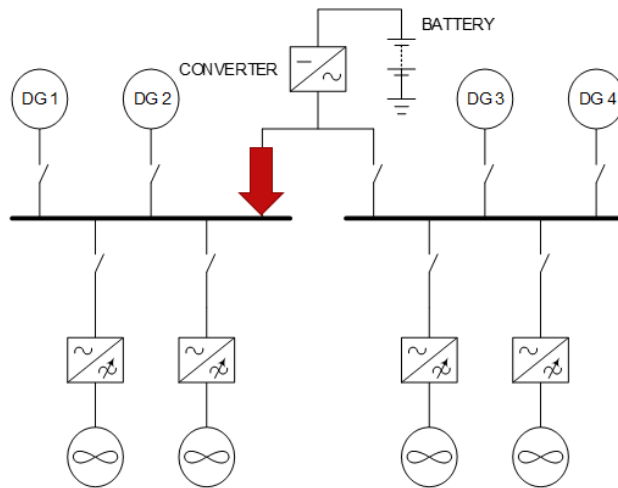
Many variations on power plant configuration – however, a drive to reduce the number of generators online typically introduces commonalities such as:

- Closed busties
- Cross feeding through the DC link
- Effect on DP redundancy concept is similar to closed busties – e.g., fault transfer, ride through capability – common mode failures – SC & GF testing for some notations and some charterers

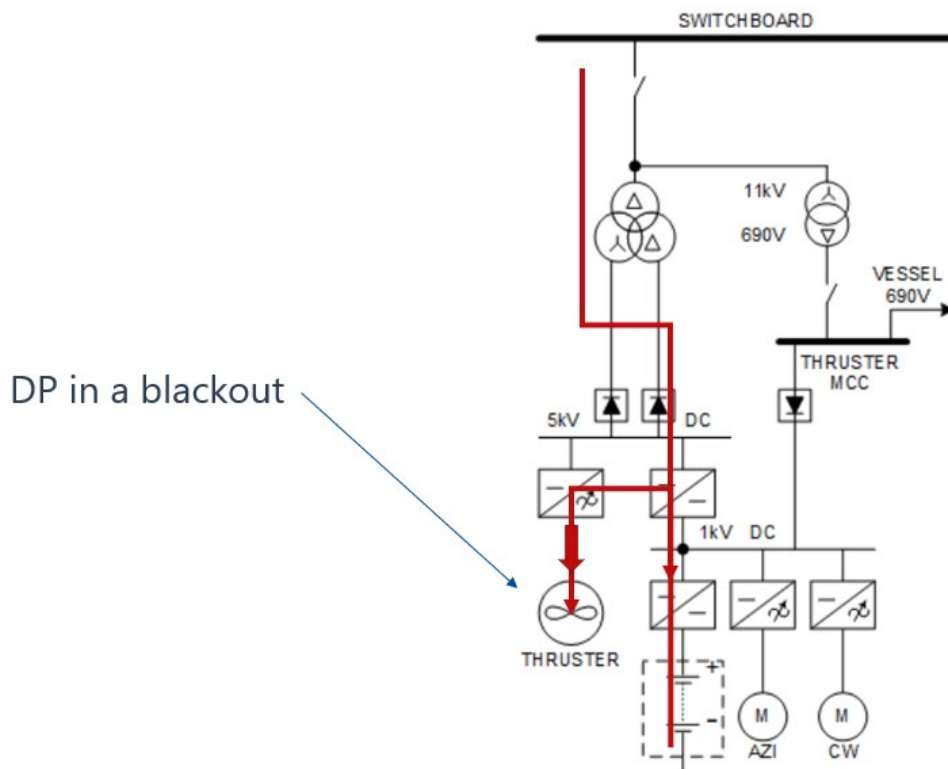
Some examples of configurations using hybrid are shown below:



Single Generator Single Bess – Ambition for PSVs inside 500m Zone



Assignable battery bank



The Autonomous Thruster

General Questions to the panel

- What were/are your objectives in considering hybrid power?
- Have those objectives been met – (can you share your experience?) – are you getting the performance you expected?
- Does the vessel operate in the intended configuration with hybrid power?
- Does that configuration involve closed busties or cross feeding?
- If yes - How confident are you in the protection against fault propagation through these common points? – Supported by analysis and testing?
- How confident are you in State of Charge/State of Health (SOC/SOH) indicators that the ESS will provide sufficient time to terminate the DP operations safely

General answers

- Objective
- Financial to save fuel
- Reduce funnel emissions
- Commit to environmental issues and help reputation
- Use less machinery so less maintenance
- 18-20% of fuel savings have been realised by one operator
- Fault propagation
- Testing is ongoing to ensure all fault propagation paths are identified
- Some were not confident that all fault propagation paths can be identified or are identified
- Closing the bustie needs very careful consideration – split is still safest
- General
- The DP Control system requires SOC/SOH figures

- Consequence analysis needs to take into consideration the battery system
- Batteries do not fully charge, and discharge so only use the top 20%
- FMEAs need to be succinct. FMEA Quality is always a hot topic

7.1.3 Battery Safety – Open Forum

There are two issues related to battery power on board vessels which still cause concern:

- Thermal runaway
- Fighting a battery fire

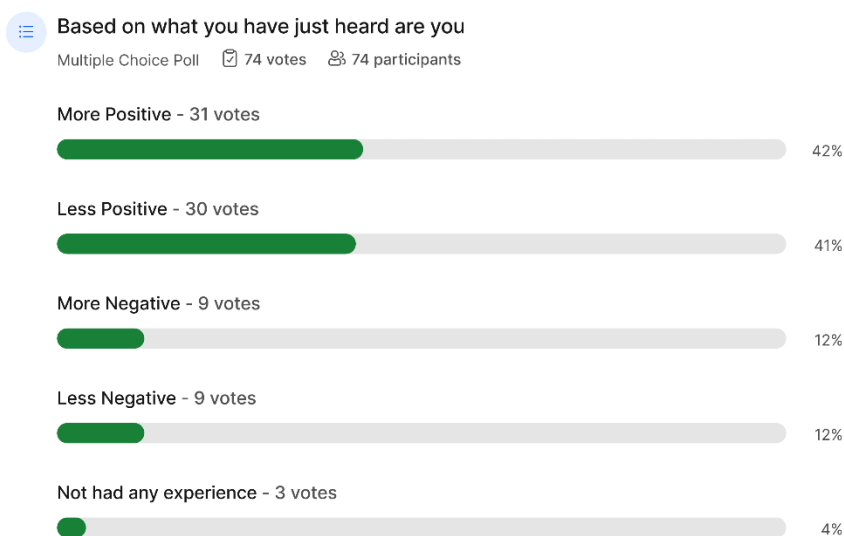
Question to the Floor

Do the fire-fighting systems be installed along with significant battery packages give the crew a reasonable chance of fighting the fire effectively?

General Discussion Points

- Fire fighting
- Systems have inbuilt FiFi systems
- Extra training is required for the crew and should be extensive
- Prevention is better, mistakes and defects are in the interface of the battery protection systems. More efforts need to be put into making sure the battery protections are correct
- Batteries are usually within a designated space that is protected so no need to send in a crew to physically fight the fire
- Not much can be done except close down and boundary cool, very toxic smoke
- Realistically it is beyond the capacity of the crew to fight a battery fire
- Multiple levels of FiFi can be utilized
- Better battery cooling will prevent heating in the first place
- Contingency needs to be discussed at the scoping stage

After all the open discussions the following slido question was asked:



slido

Summary of the Session

A poll was taken to see if the audience's experience with hybrid was positive. The consensus was that it had been positive; however, there are some factors to consider if you are planning to upgrade or build a vessel with a hybrid system, such as vessel mission, DP System configuration, and FMEA analysis, as well as validation and verification.

Battery safety was discussed in relation to firefighting, and the consensus in the room was that prevention was a better focus, ensuring that the battery protection systems are fully functional. Having a battery fire onboard a vessel would be nearly impossible for the crew to handle; all that could be done is to close up and cool with fixed FiFi systems, until the energy of the battery has been exhausted. Crews must be adequately equipped and trained for such events.

The panellists with hybrid system experience advised vessel owners/operators to look for subsidies to offset the costs of the upgrade.



8 Event Summary

This was IMCA's second DP Conference, and the secretariat spent many hours planning and organising the theme, content and logistics. The event was a success, with extremely positive feedback from attendees and excellent engagement throughout the event. Based on this feedback, the programme for the next DP conference (21-22 May 2024) will be developed. IMCA wishes to thank the sponsors and delegates for their contributions and support.

Jim Cullen closed the event by thanking all parties for their contributions and summarising some of the key points raised by the conference:

- The data IMCA has received on DP events shows that the industry is still becoming less safe. Members are encouraged to submit details of events to increase the data that is being analysed
- There is a need to increase the number of people who go through the DP accreditation process, as it is becoming more widely accepted in the industry
- The development of shallow water guidelines has been completed and will go out for review.
- A review of the proposed objectives for the DP committee will be conducted based on the feedback from the members



Thank you!

To view more images and social media feedback [click here](#)

Influence the future of DP

Key outputs from our DP Conferences continue shaping the future of our industry – join us at our DP Conference on **21-22 May 2024** to be part of the journey.

To learn more about IMCA's work around dynamic positioning, please visit our website www.imca-int.com

To report a DP event or to find out more please contact us at dpreports@imca-int.com



**International Marine
Contractors Association**

T: +44 (0) 20 7824 5520

E: imca@imca-int.com

W: www.imca-int.com