SOP-NAUT-007 Dynamic Positioning Policies and Procedures

1.0 Introduction

The purpose of this Standard Operating Procedure (SOP) is to establish and define guidelines for maintaining the vessel in a safe manner while maintaining location on DP. All Bridge and Engineering Officers are jointly responsible for the safe operation of the vessel. It is the responsibility of the SDPO during all DP Operations to ensure that:

- All Officers are to follow the guidelines outlined within the Safety Management System, DP FMEA and DP Operations Manual
- Appropriate steps are taken in a timely manner to prevent any potential injury to personnel, harm to the environment or damage to equipment.
- All watches are conducted in an orderly and professional manner with due regard to seamanship and personal conduct.

The overall safety of personnel, environment and the vessel is paramount.

2.0 Dynamic Positioning Documentation

There should be a document library onboard the vessel that is specifically related to DP documentation. The latest revisions or editions of the following documentation should be kept

on board the vessel either in hard copy, electronic copy, or both. Documents that have been superseded should be kept separate and clearly marked.

These documents should be readily available to all key DP personnel. They should also be available for operational and technical shore management. As a minimum, the document library should consist of the documents listed below:

- DP Operations Manual
- DP FMEA
- DP FMEA Proving Trials
- Annual DP Trials
- DP Capability Plots
- DP Footprint Plots
- Offset Values of all position references and environmental sensors
- DP Event Reports
- DP Audits and Inspection Reports
- DP Checklists
- DP Fault / Anomaly Log
- DP Alarm Printer Readouts
- DP Familiarization for all officers. Bridge and Engine
- DP related Drills
- Operational Activity Planning Documents – ASOG/CAMO/TAMO
- DP service reports from vendors

In addition to the above, The IMCA and MTS documents listed in the table below can be referenced for a detailed description of industry accepted standards and practices related to the construction and operation of DP classed vessels. These documents should be retained on board in either electronic or hard-copy format and available for any crew to reference to.

113 IMO	Maritime Safety Committee (MSC) Circular 645
245 IMO	Maritime Safety Committee (MSC) Circular 1580
182 MSF	International Guidelines for the Safe Operation of Dynamically Positioned Offshore Supply Vessels
IMCA D046	Guidance on Operational Communications
IMCA M103	Guidelines for the Design and Operation of Dynamically Positioned Vessels
IMCA M109	A Guide to DP-related Documentation for DP Vessels
IMCA M115	Risk Analysis of Collision of Dynamically Positioned Support Vessels with Offshore Installations

IMCA M117	Guidelines for Training and Experience of Key Personnel
IMCA M125	Safety Interface Document for a DP Vessel Working Near an Offshore Platform
IMCA M134	A Comparison of Moored and Dynamically Positioned Diving Support Vessels
IMCA M140	Specification for DP Capability Plots
IMCA M159	Guidance on Thruster-Assisted Station Keeping by FPSOs and Similar Turret-Moored Vessels
IMCA M163	Guidelines for the quality assurance and quality control of software
IMCA M166	Guidance on Failure Modes and Effects Analysis (FMEA)
IMCA M190	Guidance for Developing and Conducting DP Annual Trials Program
IMCA M203	Guidance on Simultaneous Operations (SIMOPS)
IMCA M206	A Guide to DP Electrical Power and Control Systems
IMCA M216	Thruster Integrity Management Guidance
IMCA M217	Offshore Vessel High Voltage Safety
IMCA M220	Guidance on Operational Activity Planning
IMCA M223	Guidance for The Positioning of Dynamically Positioned (DP) Jack-up Vessels on and Off the Seabed
IMCA M244	Guidance on Vessel USBL Systems for Use in Offshore Survey, Positioning and DP Operations
IMCA M247	Identify DP System Components and their Failure Modes
MTS	Part 1 (DP Operations Guidance)
MTS	Part 2 Appendix 1 (DP MODUs) - DP Operations Guidance
MTS	Part 2 Appendix 2 (DP Project/Construction Vessels) - DP Operations Guidance
MTS	Part 2 Appendix 3 (DP Logistics Vessels) - DP Operations Guidance
MTS	Guidance for Professional Development of Personnel Engaged in DP Operations Using the Mapping Delivery Ability Tool (MDAT)
OCIMF	Dynamic Positioning Assurance Framework Risk-based Guidance
OCIMF	DP FMEA Assurance Framework Risk-based Guidance

In addition to the documents that will be kept onboard, the DP Manager with further review the required documents on a set interval as described below.

- DP Failure Mode and Effects Analysis (FMEA) – will be reviewed and updated as required at a minimum of every Five (5) years.
- DP Proving Trials – Will be completed at every DP FMEA Update and / or equipment changes
- DP Annual Trials – Will be conducted annually as required by Flag state

All DP Checklists and associated documents will be reviewed on an “as needed” basis.

3.0 Qualifications and Training

In general, all DP key personnel shall be appropriately qualified, trained and have a good understanding of each other’s tasks and responsibilities. It is important that all DP key personnel have a full understanding of the risks and consequences of an inadvertent operation and / or malfunction of the DP system. Each DP Operater is at a minimum a licensed and qualified Deck Officer.

3.1 Master

The Master should hold, as a minimum, a Class 1 (Deck / Master) Certificate of Competency or equivalent to an approved current STCW convention standard and a DP operator certificate issued by the Nautical Institute or equivalent issuing authority recognized by IMCA.
The Master shall have all the qualifications and competence to fulfill the role of senior DP operator.
The Master shall be trained, competent, sufficiently experienced, and knowledgeable with the class of vessel to the satisfaction of the company.

Minimum experience for the Master should generally be 10 weeks on a previous DP vessel engaged in a similar operation and 4 weeks on either this or similar vessel (i.e., DP2).

The Master shall be competent to conduct annual trials, lead DP drills, train new DP personnel and assess the skill level of new and existing DP personnel.

3.2 DP Operators

A Senior DPO (SDPO) is defined as a trained DP operator meeting the competence requirements outlined in section 6 of IMCA M117 – The Training and Experience of Key DP Personnel, as defined by the Nautical Institute, or an equivalent standard that is recognized by IMCA.

The SDPO shall have satisfied company requirements (for example DP hours) and been assessed by the Master as being capable of taking sole charge of a DP watch, and providing supervision to junior and trainee DPOs, for any DP operation that the vessel may become engaged in.

The SDPO should be able to provide supervision of junior and trainee DPOs and, when doing so, the senior DPO shall be in the same workspace and maintaining continuous oversight of the activities of the DPO.

Minimum experience for an SDPO shall generally be 10 weeks on a previous DP vessel and 2 weeks on either this or another similar vessel (i.e., DP2).

A DPO is defined as a trained DP operator meeting the competence requirements outlined in section 6 of IMCA M117 – The Training and Experience of Key DP Personnel, and who has completed training to a minimum of Phase E as defined by the Nautical Institute, or an equivalent standard that is recognized by IMCA.

Minimum experience for a DPO should generally be 3 weeks on a previous DP vessel and 1 week on either this or another similar vessel (i.e., DP2). Although competent to maintain a DP watch, for any DP operation the particular vessel may become engaged in, a DPO would not yet have satisfied the company that they are sufficiently experienced and capable of taking sole charge of the watch or providing supervision to junior and trainee DPOs.

A junior DPO is defined as a trained DP operator meeting the competence requirements outlined in 6 of IMCA M117 – The Training and Experience of Key DP Personnel, and who has completed training to a minimum of Phase C as defined by the Nautical Institute, or an equivalent standard that is recognized by IMCA.
Minimum experience for a DPO should generally be 3 weeks on a previous DP vessel and 1 week on this vessel.

Note: It is a requirement for all operators of the DP system on a vessel to be qualified navigational watch keeping officers possessing valid Certificates of Competency to STCW standards.

3.3 Chief Engineer

The Chief Engineer shall hold a valid Certificate of Competency equivalent to an approved current STCW convention standard valid for the size/power capacity of the vessel.

The Chief Engineer shall be trained, competent, sufficiently experienced, and knowledgeable with the class of vessel to the satisfaction of the company.

Minimum experience should generally be 10 weeks on a previous DP vessel and 4 weeks on either this or another similar vessel (i.e., DP2).

The Chief Engineer shall have a full understanding of the DP operational requirements of the vessel, the consequences of failures and the optimization of the redundancy available in the DP system and all related equipment.

Additionally, the Chief Engineer shall understand the need for and implement good communications between the bridge and engine control room and also have a comprehensive knowledge of the vessel's operations manuals, including the FMEA documents as currently updated.

3.4 Electrical Officers

Electrical officers should have certification to show that they have been assessed for competence according to A-III/6 of the STCW code.

The electrical officers shall be experienced and sufficiently competent to maintain the DP control system and associated systems and carry out routine checks and maintenance.

They shall also have a comprehensive knowledge of the vessel's operations manuals and FMEA documents as currently updated.

The electrical officers should be able to carry out tests and effect maintenance, repairs and replacements to systems and components with reference to the manufacturer's approved operation and maintenance procedures.

They shall understand when such work is safe and sensible to carry out, have appropriate understanding of the vessel's current DP FMEA documents and implement good communication with bridge and engine control locations.

3.5 Training & Experience Matrix

The following table is general guidance for the expected qualifications, training, and experience of key DP personnel on board. When a vessel is deployed in a new area or new crew joiner, it may be difficult to crew the vessel with adequately experienced DP personnel.

In addition to the below table the DP Manager or an approved 3-rd Party evaluator will conduct a DP Crew Proficiency Evaluation at least once in a Five (5) Year period.

DP Personnel	Minimum Qualifications / Training	Experience on Previous DP Vessel		Experience on Subject DP vessel	
		Hours	Weeks	Hours	Weeks
Master	STCW Class 1 (Deck / Master) plus Unlimited DPO (Phase E)	250	10	100	4

Senior DPO	STCW (Deck) Unlimited DPO (Phase E)	250	10	150	2
DPO	STCW (Deck) Unlimited DPO (Phase E)	150	3	50	1
Junior DPO	STCW (Deck) DPO Training to (Phase C)	100	3	50	1
Chief Engineer	STCW Class 1 Motor	250	10	100	4
Senior Watch keeping Engineer	STCW Class 2 Motor	100	4	50	2
Junior Watch keeping Engineer	STCW Engine room watch keeping certificate	100	2	24	1
ETO / Electrician	Assessed for competence according to A-III/6 of the STCW code. DP Experience / Training to a recognized standard.	250	10	100	4

3.6 DPO's and Engineer's Training Scheme

The Company's training requirements, including all DP related courses. Below is an example of the required minimum training.

The following DP related courses are arranged for DPO's and Engineers at The NI approved Training Centre.

- DP Induction
- DP Simulator
- DP Refresher/Revalidation
- DP Sea Time Reduction
- DP Maintainer
- CORE DP
- DP Awareness

3.7 Onboard Simulator Training

In addition to above, each vessel DP Control System is provided with offline built-in Trainer/simulation.

The purpose of the built-in trainer is to provide operator training and system familiarization as an integral part of the system. The built-in trainer comprises a vessel simulator and a dedicated graphical user interface for the set-up of the simulated operational conditions.

The simulator generates realistic dynamic behavior of environmental conditions, thrust devices, power system, and resulting vessel motion.

The simulator sends artificial measurements and feedback signals to the Icon system that in real operations are received from the sensor systems, position reference systems, power systems and thrust devices. Based on these inputs, the Icon system computes thrust device order signals. In training, these signals are sent back to the vessel simulator, not the real thrust devices.

NOTE: This function facilitates operator training and analysis of the vessel behavior; it is **ONLY** available when the DP system is **NOT** in control of the vessel. The DP Operators will **NOT** operate in Simulator mode while the vessel is active DP Operations

4.0 DP Operations

Prior to any DP operation, the DP system and related equipment should be checked according to vessel specific check lists to ensure the system is functioning correctly and is set up for the appropriate DP operation.

At regular intervals during DP operations, the systems should be checked according to vessel specific checklists. Standing orders should be produced for DP operators and engineers that are vessel specific and based on the specific vessel operations.

All vessel specific checklists are included in the Approved DP Operations Manual. The ASOG / CAMO / TAMO are included in the ASOG Manual. These should be used for all DP operations. DP operations should only commence or continue when the system is in the 'normal operational status'.

The "**normal operational status**" is defined when all of the following conditions apply.

- Vessel is under DP control and the DP systems are operating normally with the appropriate back-up systems available
- The vessel is operated within the pre-determined environmental conditions and there are no 'consequence analysis' alarms active or being activated regularly over a short period of time.
- All relevant operational DP checklists and risk assessments are completed.
- No risk of collision exists.

During DP operations, the DP system and its position maintaining capability should be monitored continuously by the DP Operator. The radar monitor should also be monitored during any open water DP operations.

NOTE: Should a particular operation or client requirement require the checklists to be changed then changes may be developed by the vessel Master and Chief Engineer depending upon the specific operation and client requirements. These changes must always be in accordance with

relevant company or industry guidance and must be approved by the DP Manager. Changes which degrade the ability to maintain the WCF redundancy case are not to be made.

Reinstating equipment post failures requires the vessel to safely suspend operations, leave the worksite / 500m Safety Zone prior to attempting reinstatement (e.g., Low level auxiliaries, thruster, and control voltages).

It is essential that DP operators, in addition to fulfilling their primary role of monitoring the DP console, maintain a good visual watch of deck operations, nearby vessels and structures, and maintain communication. By ensuring this is done it will allow the DP operator to have the necessary overall awareness and understanding of simultaneous operations.

Weather forecasts, from all available sources, should be obtained regularly and should be closely monitored. A visual and radar watch should be maintained for early warning of approaching squalls.

NOTE: The time to terminate (TTT) any operations should always be established and defined. The TTT is calculated as the amount of time required in an emergency to physically free the DP vessel from its operational activity following a DP abort status and allowing it to be maneuvered clear and to proceed to safety, whilst considering the post worst case failure DP capability. This time should be defined based on the specific operation.

The vessel has capability to maintain the position for sufficient time after worst-case failure to ensure the safe recovery of equipment / disconnect hoses in all anticipated operational and environmental conditions.

4.1 Priorities

During planning, the priorities should be clearly established for dealing with a DP emergency. The authorities of the Master and Party Chief (if any) are of fundamental importance at such times. They should co-operate closely to ensure that there is no room for doubt or disagreement.
The safety of life is the first priority. The Master has authority to assess and decide on courses of action in this respect.

The advice of the Party Chief must also be taken into account.

When operating in close proximity to an installation the safety of the platform can be of equal importance especially if the ship, during an emergency, poses a threat to the platform and its personnel. In this instance the advice of the Client's Representative and Offshore Installation Manager should be heeded, regarding the safety of the installation, its equipment, and personnel.

4.2 Station Keeping Limits

The Master has sole responsibility and discretion to decide whether environmental conditions are suitable for DP operations and should refer to the DP capability plots and DP display for up to date decision support tools.

Safe working limits shall be determined for each geographical location and type of task to be performed. These limits must consider all possible failure modes and the TTT such that a safe situation exists.

Note:

- **Safe situation** means that the work has immediately ceased and there is no immediate risk of serious consequences from position loss.
- **Safe working limits** are limits that would make a catastrophic event from a single fault impossible because either.
    - there is adequate control and power remaining, or
    - the time to reach a safe situation is short in comparison to the speed of position loss, or
    - in the existing circumstances and conditions position loss does not have any serious consequences.

In determining safe separation limits between the DP vessel and an adjacent fixed structure the following guidance may be considered:

- The vessel position footprint, under normal operating conditions, should not exceed 50% of a defined critical position excursion limit.
- The critical position excursion limit should not exceed 50% of the separation distance between the vessel and adjacent structure.

If the vessel is to work in a position which results in a drift on situation at any installation or other obstruction, either through the effect of wind, tide or current, or the combined effects from any of these, this must be addressed utilizing the TDI Risk Assessment Policy.

It must be appreciated that additional power will be required to maintain full control of the vessel when moving clear from the work site.

In conditions of restricted visibility operations should not take place unless the structure which the vessel is working alongside can be clearly seen. A continuous radar watch should be observed at all times during periods of restricted visibility. Special use should be made of long-range scanning to obtain early warning of vessels with lower than acceptable CPA limits approaching. The necessary sound signals with reference to the collision regulations should be sounded.

The Master should always have due regard for traffic density and should not commence or should cease any operations if they consider the situation to be hazardous to the vessel or any subsea equipment, if applicable.

- Serious consideration should be given to suspending operations if the DP operator considers that adequate position referencing is not being achieved or be further maintained due to the effects of prevailing conditions such as currents, tide and weather conditions or external factors such as blind spots / shadow sectors or other sources of interference. The effects of tidal direction changing, the vessel swinging during heading alterations shall all be factors for consideration in deciding the reliability of the reference system.

During any operations, the vessel will **not work closer than 10 meters** to a surface obstruction unless otherwise agreed upon with the Master in consultation with the DP Manager. It should be recognized that the risk increases exponentially the closer the vessel gets to an installation or structure; conversely, the working efficiency for any subsea operation will also increase exponentially. The distance of 10 meters is a reasonable compromise between the two factors.

When involved in subsea operations the greatest caution must be exercised when operating close to mid-water obstructions such as rig anchor chains or barge moorings. In such cases a plot of the obstructions, and their position relative to the vessel, should be maintained on the bridge and in any subsea control center.

If working within an anchor pattern the DP operators will have a pre-agreed "Escape Route" which will allow vessel movement, with the subsea equipment still in the water, without entanglement with anchor wires (or other subsea obstructions).
Any subsea operations should cease, or not commence, if the safe working limits identified above are being, or are likely to be, exceeded.

5.0 Maintenance

“**No maintenance is to be conducted on any equipment that forms part of the vessels DP system while the vessel is operating within the 500M safety zone, or while operating on DP**”.

For the avoidance of doubt this means all equipment listed as part of the ASOG / DP checklists. Additionally, any maintenance which is required on any other systems and equipment which are not part of the DP System must be carefully considered via the use of the approved TDI Permit to Work System and a Risk Assessment prior to commencement to ensure there is no relationship to any of the DP related systems which could have an adverse effect. If there is any doubt, then that maintenance is to be deferred.

The vessel’s maintenance shall strictly follow and be tracked in the Planned Maintenance System (PMS). Records of planned and unplanned maintenance should be kept in the PMS. Records should also include vendor/maker service records. These records should be kept on board for the period specified by the company.

A minimum number of required DP spares should be maintained on board. The list of spares for the relevant class of vessels will be provided. The spares inventory should be monitored by the Chief Engineer and ETO onboard.

Careful planning, involving consultation with the Master, is required when scheduling maintenance on main machinery or critical equipment. Redundancy, time frame and vessel operational conditions should be considered.

No machinery maintenance / machinery testing etc. should be conducted while the vessel is operating within the 500M zone, or while operating on DP.

6.0 Log Book and Records

The Bridge Logbook and DP Logbook are to be maintained by the bridge DPO's. Other records and log books are required to be maintained by the company, flag state or other regulations, and the requirement above does not relieve the vessel crew from also maintaining those logs.

All log books shall be considered legal records and kept in a complete and neat manner by all watch officers. Log and record books must be kept strictly confidential, and not photocopied, duplicated or distributed to outside 3rd parties without the approval and instructions from Shoreside Marine Management. Additionally, log books are not only a reflection of each individual's professionalism but a strong indicator of how the vessel is operated on a daily basis. Keep in mind that the Master has no sense of humor in regard to Log Books or how they are kept.

6.1 General Logbook Guidance:

- Think before making any entry. Sometimes it is best to make a rough draft and review it prior to the final entry.
- Be neat so that your writing is legible by others.
- Be as clear and concise as possible. Concise means as short as possible without losing any information. Clear is meant to convey the fact that the Log may have to be read by personnel who are unfamiliar with our operations.
- **Do not speculate - enter only facts.**
- Occasionally a time will be unknown. In such cases, it will be acceptable to estimate the time and clarify by the phrase "time approximate".
- Logbook entries should also be made soon after the time that the event occurred so important facts are not missed or accidentally left unrecorded.
- If for some reason an entry has to be made late and the actual time of the event does not fall into the chronological order of the logbook, a notation of "Late Entry" shall be made next to the time that the event is recorded.
- If necessary to change a log book entry, draw one straight line through the entry (using a ruler or straight edge), initial above or beside the strikethrough line, then make the correct entry. At no point is white-out/correction fluid to be used in any document on board TDI Operated vessels.

6.2 DP Printer

SDPOs shall ensure that the DP Printer are all working properly. All printers should be running with adequate paper and toner cartridges available.

7.0 DP System Software Guidelines and Log

The purpose is to ensure that the computer-controlled systems are of a known quality such that any fault rectification, modification, upgrade, or other work is fully compatible with the system as originally installed or as previously modified or upgraded.

7.1 DP Related Hardware

All DP related hardware is to be under the custody of the Master and Chief Engineer. This equipment should only be used specifically for DP related maintenance or upgrade and not for any other purposes.

The Master should ensure that non-DP related software or programs are NOT uploaded into these computers and the company's IT policy is always adhered too.

7.2 Software Register and Upgrade Control

Software is an essential component of the DP system, i.e., DP control system, position reference systems, thruster control system and drives, engines, power management system and control, alarm, and monitoring system.

The DP Manager and Master, or his designated person/rank on board the vessel, is responsible for maintaining the software register to match the latest software in use on-board.

Once per year the Company DP Manager will check with the DP system suppliers for the latest software updates, and if it is applicable to the hardware installed on board the vessels in the fleet. DP Manager and Subject Matter Experts (SME) are to review findings of any DP incident and assess the requirement for software changes prior to implementation.

At no point is any software related to any DP system to be updated, changed or replaced without express written permission from the DP Manager of TDI Brooks International.

8.0 DP Incident Reporting

DP incident is an event or failure that occurs while the ship is in DP mode and results, or has the potential to result, in a loss of position or reduces the ship's DP performance or capability. These events may result in either a Yellow or Red Alert as per the ASOG

All DP Incidents will initially be reported as soon as possible to the DP Manager and certainly once the vessel is deemed to be in a safe position and out of immediate danger.. If a DP Incident Investigation is required/completed the DP Manager will identify and share the report to the relevant stakeholders as necessary.

8.1 DP Incident – Categories

DP incidents fall into three categories as shown below.

Record all categories of DP incidents and investigate to find the root cause or causes on DP incident report form in accordance with TEC-WWD_STD-055 - DP Incident Reporting Standard.

Red Alert	Where the DP incident results in a loss of position to the extent that there has been measurable loss or damage (such as personal injury), disconnect, environmental pollution (such as hose rupture and spillage of contents)
Yellow Alert	Where the DP incident loses position exceeding the Yellow watch circle or the vessel reaches performance limits and there has been a component or system failure, resulting in no redundancy for that system
Degraded Operations	Where the DP incident did not result in a loss of position, but where there is reduced DP performance or capability (such as in situations where there has been a thruster failure but no loss of position)

8.2 DP Incident – Investigation

DP incidents will be investigated in accordance with the Company's accident investigation procedures in the Safety Management System. The depth of the investigation will depend on not only the type of DP incident but also the potential consequences of the incident.

9.0 DP Operational Deviations

Any deviations of the Approved DP Operations Manual, to include DP setup, will be handled in accordance with TDI Brook's Management of Change process. This process is detailed in the corresponding SOP – Management of Change.

10.0 Responsibility for the DP Watch

The person designated as the SDPO is the Officer-in-Charge of the Watch during all Dynamic Positioning operation.

The responsibility for the DP watch can be passed to another certified operator that has been deemed competent by the SDPO and Master.

The mere presence of the Master on the bridge does not relieve any Watch Officer from their duty. Any change in responsibility among watch officers shall be made only after verbal

declaration and mutual agreement by both individuals. The Master may, however, take control of the watch and station keeping duties at any time by verbal declaration. The Watch Officer must record any change in the control of the watch in the Logbook.

Regardless of designation or position, all Watch Standers shall take an active part of ensuring the safe operation of the vessel. Teamwork and effective Bridge Resource Management (BRM) shall be practiced at all times!

11.0 Handing over the Watch

Proper handover procedures must be followed when assuming the watch and alternating console duties. The on-tour DPOs must complete a Handover with all relevant information that their reliefs will need to know in order to safely assume the watch. Oncoming Watch Standers must review the information that is prepared by the off-going personnel and ask pertinent questions as needed. The oncoming DPO shall also complete a 6-hour DP Checklist.

The following items shall be discussed at the change of each watch:

- Current operations, - onboard and surrounding the vessel.
- Forthcoming operations, including SIMOPS - on or near the worksite that may directly or indirectly affect operations for next for the next 12/24 hours.
- Any forthcoming hazardous operations which will require completion of a checklist or risk assessment.
- Equipment status including any DP or safety related equipment undergoing testing, service or repair, equipment not performing to normal standards and any unusual alarms or events that have occurred in the last 12 hours.
- Any active PTW, or Energy Isolations that are currently in place and relevant to DP or safety critical equipment that should include any inhibited or isolated sensors that are part of our fire and gas detection systems.
- Any personnel or Management System changes.
- Any HSE Alerts, Incidents or lessons learned from unplanned events.
- Any other relevant information

Additional items that shall be discussed during the rotation of DP console duties include:

- Current weather conditions including visibility, wind, sea and current force/direction, as well as the latest weather forecasts.
- Vessel position is stable, and the footprint is within levels consistent with prevailing environmental conditions.
- Vessel heading related to the prevailing meteorological conditions.
- Latest Online/Hypothetical capability plots.
- Anticipated heading changes.
- Rotational limits/stops while technical gear is on the sea floor. +/-90 degrees
- The present coordinates and any position offset from landing center.
- Any changes to or conflicts with the planned escape route.

- Status of diesel generators, thrusters, power distribution system and sensors.
- Thruster Biasing
- Nearby vessel or boat status.
- Technical gear status.
- ASOG as it relates to present operations.
- Position alarm settings as determined by current weather conditions.
- Possible periods of poor DGPS satellite coverage.
    - Anticipated atmospheric scintillation.
- Moonpool or back deck activities
- Any other relevant information

Handing over the watch during critical operations, i.e., course/heading change, critical technical operations, landing gear on sea-floor, etc., shall be avoided and shall never take place until the relieving Watch Stander is fully satisfied that they have received all the information needed to stand a safe watch. Before assuming the watch, the relieving Watch Stander must verbally acknowledge that they have the watch, and such handover shall be recorded in the DP and Bridge logbook.

12.0 Housekeeping

The bridge shall be kept in an orderly fashion at all times. Decks and Desktops are to remain free of clutter. Boots and hard hats shall be stowed in the associated locations. Bridge windows shall be cleaned as needed.

NOTE: No containers with liquids shall be placed on or near any of the bridge or engine room consoles at any time.

13.0 Safety Critical Systems

Watch Standers are responsible for ensuring that all bridge systems that are critical to station keeping and safety of the vessel remain in good working order. This includes the Watertight Integrity, DP, Navigation, Fire & Gas, Collision Avoidance, Fire Fighting and LSA Equipment, Emergency Power and CCTV systems. If any one of these systems, or components of these systems, fails or becomes inoperable for any reason including planned maintenance, the Captain shall be informed immediately or as soon as it is safe to do so.

Additionally, any work that inhibits or removes any component of a safety critical system requires a PTW and Energy Isolation when applicable.

14.0 Fire and Gas Alarms

A check for faults and isolations on the Fire Detection Panel shall be made at the beginning of each watch and at regular interval, thereafter. Any active fire or gas detection alarm is to be treated as if there were an actual fire or gas release. In areas that are known for false alarms, it will be acceptable to acknowledge the alarm and immediately investigate the space in question.

If a smoke or fire is found, or you are unable to determine an alarm is false in a very short period of time, you must immediately sound the General Alarm!

15.0 Internet, TV, and Personal Electronic Devices (PEDs)

Monitors in the bridge shall only be used for monitoring the various areas of the vessel during vessel operations or for security purposes. Use of PEDs or Internet while manning the DP console is strictly **forbidden**.

Use of PEDs and internet for other than business related searches shall be kept at a minimum but will be permissible as long as such use does not distract any Bridge Team member from performing their duty. At any time, the Master may suspend use of PEDs or personal internet use in the bridge if the above rules are not strictly followed.