

## IMPACTFUL BLUES - A PRAGMATIC APPROACH TO MANAGING CUMULATIVE RISK CAUSED BY A CHANGE IN ASOG/WSOG STATUS TO BLUE

This LFI<sub>(n)</sub> introduces the concepts of the ‘**Impactful Blue**’ and ‘**Focused Based Risk Assurance**’. It provides information on the reasons for the development of these terms and concepts and provides a flow chart to aid implementation.

### Why this Learning Is Being Issued

ASOG and WSOG are well established tools for managing DP station keeping risk. Current practices have established that a change in status to Blue indicates an advisory state in which the DP system has some known defect or limitation but is still considered to have the required station keeping integrity when operating within the limits defined in the ASOG. It has been the practice to continue with ongoing DP operations, **based on the output of a risk assessment by the vessel’s team and once the identified stakeholders have been informed of the status change and the output of the risk assessment.**

One of the objectives of this document is to highlight the risks of using blue as a means of ‘**not stopping operations**’ rather than considering whether ‘**operations should stop**’.

A documented risk assessment to support the continuation of operations is typically a precursor and the requirement for such an assessment is often identified in the ASOG column heading for Blue Status. Progressive insights from industry experience have brought to the fore a gap in the risk assessment process. It has been recognized that a full appreciation of the cumulative risk picture may have not been captured in the risk assessment (which is part of the expected response to events categorised as triggering Blue status in the ASOG). Adopting the concept of ‘**impactful blues**’ may be useful in driving the need for a risk assessment with a specific emphasis on the impact of the cumulative risk picture thus enabling improved decision quality.

Notes (1 to 5):

1. *The term ‘cumulative risk picture’ is used to describe the overall risk picture including risks other than those associated with DP station keeping (e.g. industrial mission risks) and those that may manifest themselves later in the DP operation.*
2. *It is emphasized that nothing in this LFI alludes to the addition of a ‘fifth category’ / ‘traffic light’ to the current industry practice of a four traffic-light system in the ASOG/WSOG. The DP system is still considered to be in Blue Status, but the response is appropriate to the conclusions of the risk assessment.*
3. *The concept of the ‘impactful blue’ has been developed to provide a way of identifying when and why the outcome of the risk assessment process is to suspend **operations** rather than continue operations.*

*The term has been coined to provide a more concise way of articulating and communicating*

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*that the DP system is now in a state where consideration should be given to suspending DP operations and additional activities are required before DP operations can resume. It differs from Yellow status in so far as a change to Yellow requires a suspension of DP operations (i.e. The decisions to suspend operations is not an outcome of a risk assessment it has already been agreed that operations should cease because of the risk of loss of position and heading).*

4. *The importance of recognizing and addressing Intermittent faults has been the subject of progressive insights from recent DP incidents and is the subject of MTS Techop (D-12), 'Management of Intermittent Faults In DP Systems'. Guidelines on the categorization of triggers as indicating a change to blue status in the ASOG may make reference to the occurrence of alarms or poor performance. Proving that these observations are not the onset of a more insidious intermittent fault may require intrusive validation testing which cannot be carried out during ongoing operations. Risk assessment may conclude that such scenarios require categorization as an 'Impactful Blue' and a credible basis of confidence in predictable outcomes (i.e., no loss of position and or heading), should be established as a precursor to allowing operations to proceed.*
5. *Progressive insights for incidents/near misses*
  - *Sharing lessons learned from the 'improper use of blues' can help improve categorization of blues and yellows in A(W)SOGs.*
  - *As a general practice, 'don't assume blue is safe'.*

### Target Audience for this Learning

- Charterers and their Project Teams.
- DP Vessel Owners & Operators / Management Teams.
- Vessel crew including Industrial Mission personnel.
- Verification and assurance providers.
- Industry bodies / regulators.

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### What was learned?

#### Concepts

The concept of focus-based risk assurance and the impactful blue are related:

- **Focus (Objective) Based Risk Assurance** is the means by which alternate/additional barriers may be applied in circumstances where limitations or restrictions on DP operations, imposed by established industry guidance and practice, are incompatible with the specific (atypical) task being carried out by the DP Vessel. Aspects to be considered include:
  - How are risks recognized and evaluated?
  - How is the effectiveness of barriers monitored?
  - How is the total effect of accumulated concerns tracked (e.g. logs and a formal evaluation process)?

Notes (6 and 7):

6. *Focus based risk assurance is the process used to develop additional mitigations after the change to blue status has been risk assessed – it is not the process by which an impactful blue is identified.*
  7. *Anomaly logs are a standard tool in some industries.*
- **Impactful blue** status in the ASOG may be the trigger to apply Focus Based Risk Assurance to the effects of the change in status to Blue in the ASOG/WSOG

Note 8: *The premise for the concept of impactful blues is to focus on the cumulative risk picture which is likely to be influenced by upcoming operations. As examples,*

- *‘Point-of-no-return’, (the point at which the risks associated with suspending the operation are higher than those associated with completing it in a degraded state).*
- *‘non-shearables’ through the BOP,*
- *getting into the hydrocarbon zone,*  
*and conditions such as:*
  - *upcoming weather exceeding revised post failure capability (post failure capability revised due to lack of equipment availability),*
  - *inability to carry out verification / validation testing as a basis of establishing/restoring confidence etc).*

*Where there is uncertainty and the consequences of a potential loss of position (and or heading) is unacceptable, it may be prudent to suspend DP operations until the necessary resources can be assembled to remove the uncertainty by application of a Focus Based Risk Assurance process. A return-to-work plan akin to that followed for a change in ASOG/WSOG status to yellow categorization may be needed for ‘Impactful Blues’.*

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### DP System Change in Status to Blue – ASOG/WSOG Configuration and Criteria Section

Change to Blue status may occur:

- Before starting DP operations, when applying the guidelines in the **Configuration Section** of the ASOG.
- Once operations have commenced, when applying the guidelines in the **Criteria Section** of the ASOG.

In either case, the instruction to the ASOG/WSOG user is - INFORM / CONSULT / **RISK ASSESS** (CONSIDER ONGOING AND **UPCOMING OPERATIONS**)

While operations are underway, a change to blue status may be triggered when:

- The DP system is still considered to have the required station keeping integrity (within the ASOG definition and within its defined post failure capability), but there is evidence to indicate the onset of abnormal conditions requiring investigation and communication with stakeholders. (See also intermittent faults).
- There is a reduction in the provision of non-critical redundancy.

Note 9: *The A(W)SOG cannot cover all possibilities, and observations outside its scope may trigger valid concerns which may initiate a risk assessment.*

### Impactful Blue – Definition

Definition: - *An Impactful Blue exists when the risk assessment that follows change in DP system status to blue indicates the existence of risks that require additional mitigation when the cumulative risk picture is considered and particularly when combined with factors that could potentially negatively influence the cumulative risk picture.*

### Response to an Impactful Blue

The concept of the **Impactful Blue** status in an ASOG has been developed to address potential changes to the risk profile if operations are continued in blue status when the cumulative risk picture includes conditions such as those listed in Note 8 above.

Where the risk assessment process applied as part of establishing Blue Status indicates that there are impacts associated with the cumulative risk picture, the prudent response to a change in status to an 'impactful Blue' may be one that is akin to that of a change in status to Yellow:

- Suspend operations,
- Notify pertinent stakeholders,
- Risk assessments to consider cumulative risk profile (focus-based risk assurance process),
- Resolve the issue that triggered the change in status to an impactful blue if warranted etc.

Note 10: *This risk assessment is typically conducted by the Vessel Technical Operator (VTO). Engagement and involvement of resources beyond the VTO's team would typically only occur once the status change was concluded to have impacts. i.e an 'impactful blue'.*

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If the Focus Based Risk Assurance which follows the identification of an ‘Impactful blue’ concludes that the cumulative risk is not increased, suspended operations may be resumed with the concurrence of the end user Charterer / Risk Owner.

Note 11: *When there is a doubt about the outcome of the risk assessments applied to a change to Blue status, it is recommended that it is categorized as an ‘Impactful Blue’ and appropriate notifications made. The ensuing consultative process and focus based risk assurance process will determine the appropriate conclusion and resolution.*

***A flow chart is provided in the Appendix to assist in operationalizing this LFI(n).***

### Suggested Action

It is suggested that:

- Vessel owners and operators should evaluate the learnings in this LFI(n) for applicability to their own DP vessel fleet and become familiar with the concept of Impactful Blues and their impact on the management of DP operations.
- ASOG processes should incorporate the concept of Impactful Blues to assist in delivery of predictable incident free DP operations.
- End user charterers (and their DP Assurance Providers) of DP vessels should evaluate the learning in this LFI(n) and support the suggested response to “Impactful Blues “.
- Actions may include operational restriction or other measures.

### Conclusions

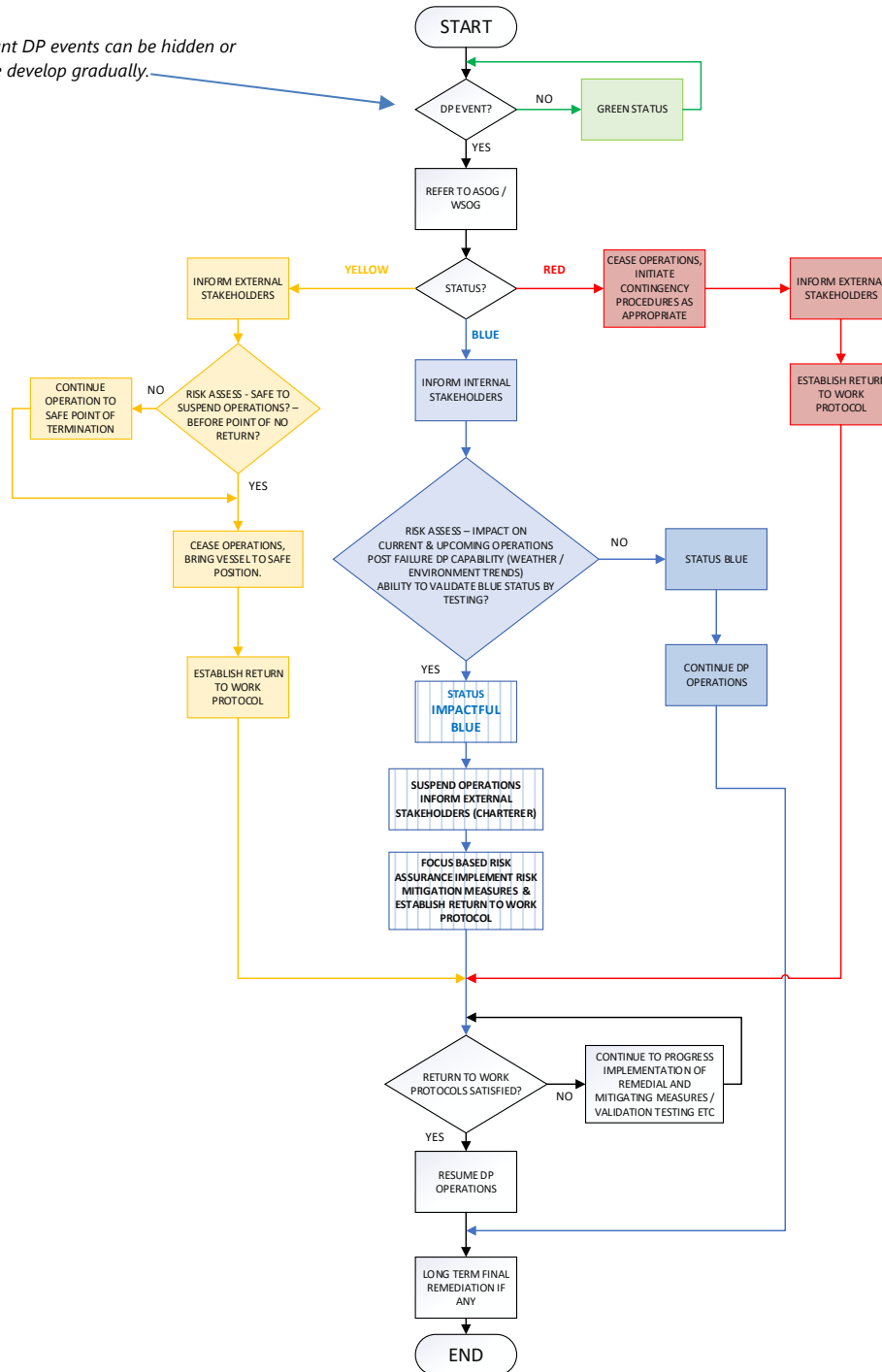
**It is acknowledged that** the processes described in this LFI(n), as it pertains to risk assessments, may appear to be obvious in so far as it is a widely known expectation that such assessments will be performed by vessel operation teams in response to a change in ASOG / WSOG status to Blue. However, experience in reviewing such risk assessments, and a look-back into the actions undertaken, reveals a gap associated with **not considering the cumulative risk picture** and the ensuing actions to be undertaken. It is a misconception to believe that operations can always continue in Blue Status. The concept of Impactful Blues and introducing it into the vocabulary of ASOGs is intended to close the identified gap and provide a pathway to implement Focus Based Risk Assurance to manage the impact of the cumulative risk picture and aid delivery of predictable outcomes.

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## APPENDIX – Flowchart Describing Process of Identifying an Impactful Blue

Note: Some significant DP events can be hidden or unrecognized. Some develop gradually.



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