



DYNAMIC POSITIONING CONFERENCE
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QUALITY ASSURANCE SESSION

Learning the Lessons, Reporting DP Incidents

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INTRODUCTION

Over the past 22 years DP station keeping incidents have been recorded, collected and analysed, firstly on behalf of the then UK Department of Energy and latterly by IMCA (International Marine Contractors Association). The first volume produced, *Dynamic Positioning Station Keeping Incidents – An Incident Databank 1980 – 1988 for Dynamically Positioned Vessels used for Diving Support*, was prepared for the afore-mentioned Department of Energy by Global Maritime and published in November 1989.

From 1990 the incidents have been collated and analysed by the International Marine Contractors Association (and its predecessor the Dynamic Positioning Vessels Owners Association), who have produced an annual volumes entitled *Dynamic Positioning Station Keeping Incidents*. In addition to the usual IMCA M number, given to Marine Division publications, these volumes also have a DPSI number identifying them as part of the DP station keeping incident collection. IMCA has also prepared a CD-ROM compilation, IMCA M 156 *Dynamic Positioning Incidents 1990 – 1999*, which includes further analysis of the incidents. Furthermore in this suite of publications there is included IMCA M 181 *Analysis of Station Keeping incident Data 1994 – 2003* from which the following diagram comes.

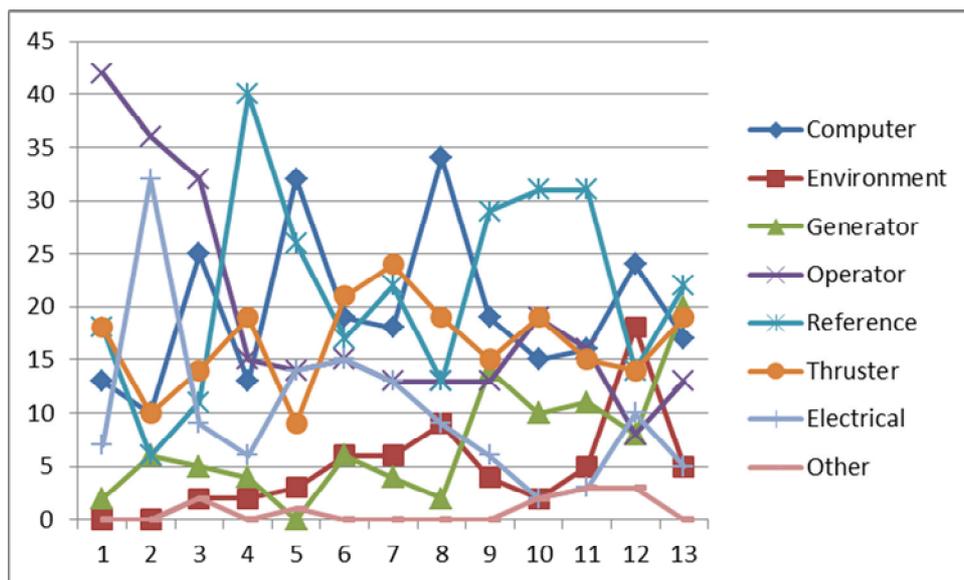


Figure 1 – Incident causes from 1994 to 2003

This diagram illustrates the trends for various main causes over the ten year period.

Also in preparation for this conference further analysis has been carried out and the diagram below shows the main causes of incidents from 2006 to 2010.

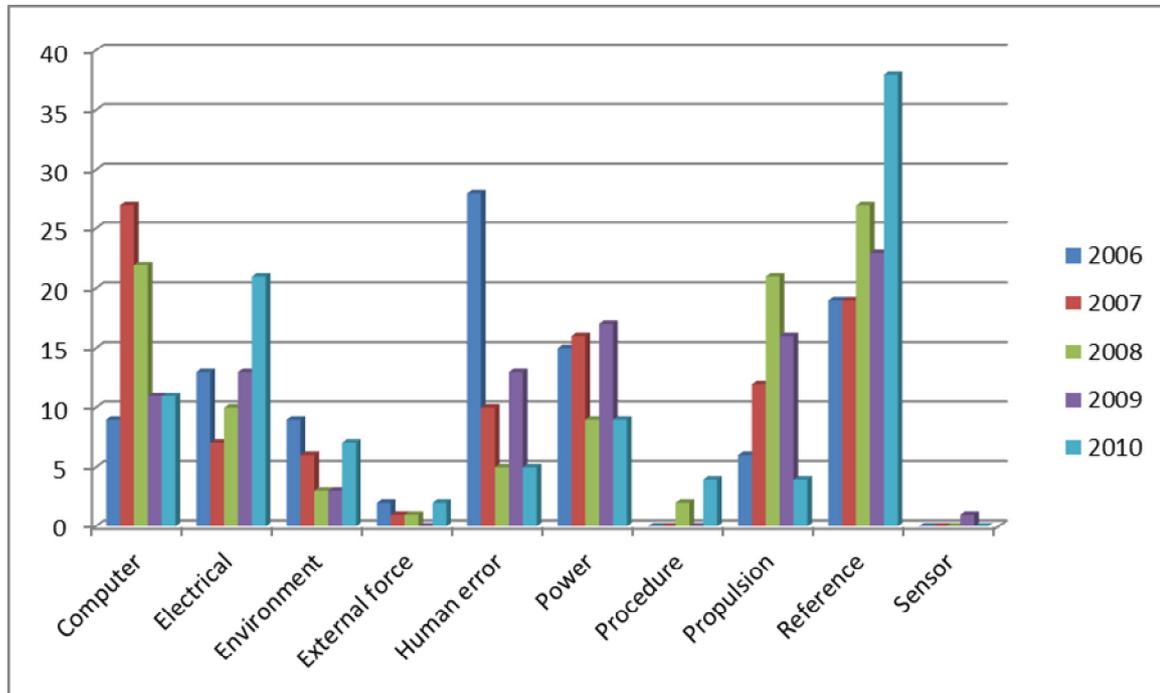


Figure 2 – Incident causes from 2006 to 2010

It should also be noted that there are other DP incident reporting systems and analysis available such as that from Petrobras presented in a paper to this conference in 2006.

What is clear from the above graphs is that there are no immediately discernable trends within these graphs, although it can be seen that position reference appear to be increasing their significance as main cause of incidents.

DP INCIDENT REPORTING

Over the years there have been significant changes to this incident reporting scheme including the expansion from incidents primarily involving diving support vessels in the Department of Energy document to the much wider criteria used now encompassing all DP vessels. This expansion has brought its own challenges such as what is loss of position where a diving support vessel allows three metres to the red alert and a drilling vessel allows a watch circle which depending upon the riser angle and the water depth may be many tens of metres.

Quantifying what an incident is, what category of loss of position it is and what are the criteria for undesired events and downtime have become increasingly difficult in recent years. We have already dropped these categorisations for the analysis process, although the submitters may still be used then in their reports if desired. Some vessel owners and operators go further with these definitions, clearly aligning the reporting with yellow and red alert statuses.

This raises the question of whether we should return to a simplistic definition of an incident such as “anything that takes the DPO by surprise” in order to make it easier and encourage people to report and should we be trying to capture near misses and hazard observations as well. Not only can lessons be learnt from incidents, undesired events and downtime but also from these near misses and hazard observations. Indeed these later often hold clues as to how people prevented the occurrence from escalating to an incident. Further there has recently been a drive by many maritime authorities to try to capture near misses in the mainstream shipping, so maybe it is time we tried to do the same.

Further to this, the use of Activity Specific Operating Guidelines, as championed by the Marine Technology Society and Det Norske Veritas, give a clear indication of when vessel

and activity specific conditions should be met with regard to green, advisory, yellow and red alerts and by inference when things should be reported.

Hand in hand with this is the question of when to report with some people favouring reporting immediately after the incident and others after the incident has been analysed closed out internally. For the IMCA scheme it is important that the vessel owner/operator is involved in the reporting process as will be seen later in this paper, because the vessel owner/operator carries out the final review of the incident tree, comments and causes before publication.

This comes with a drawback however for reporting though as often auditors and inspectors are made aware of DP incidents during audits and inspections or they are involved in the investigation of DP incidents, which have not been reported to IMCA. Furthermore sometimes constraints from the charterer prevent reporting to IMCA, although this is a rarer occurrence these days with most charters requiring vessels to report any DP incidents.

INCIDENT ANALYSIS

It is said that incident investigation may have a number of goals such as identifying the sequence of events, the causes of the incident and the measures to prevent recurrence. The analysis carried out within IMCA attempts to do these after the fact, although the inclusion of any investigation carried out by the charterer, the vessel owner or operator or by a third party in the submitted report, where the who, what and why have been identified, aids the process.

Once all the incidents have been received, and this often involves a number of emails out to members and others requesting and encouraging submission of incidents for the year, the incidents go through the process outlined in the flowchart below.

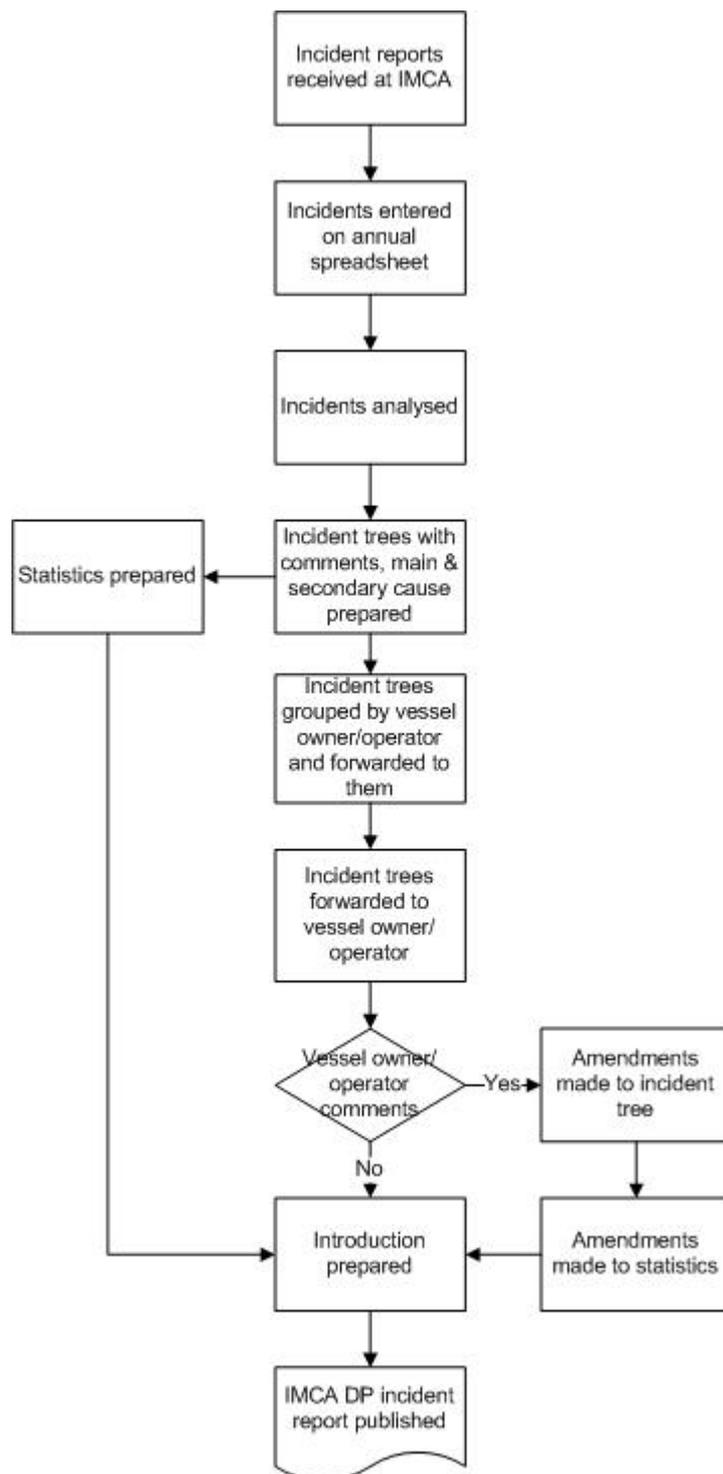


Figure 3 – Incident analysis flowchart

The method of analysis currently used is a combination of parts from various analysis systems such as event tree analysis. As will be mentioned later other systems are being discussed with

a different way of presenting the incident and the findings.

Important in this process is where the incident trees are forward to the vessel owner/operator to ensure that the incident has been correctly analysed and for final approval. Over the years this part of the process has raised some issues and concerns, notable amongst which are where management declined to allow any of their vessels' DP incidents to be used and an incident which management were not aware of and could find no record of within their systems. In this latter case there was even a concern that the submission may have been malicious.

Finally the analysis is objective when carried out within IMCA, although subjectivity from those completing the incident report may have crept in before this stage. It is hoped that the output is factual and informative, but more importantly useful to the readers. At this point it should be mentioned that the analysis report is not just for those working in the company's offices but also for those at the coal face, that is the Masters, Mates, DPOs and engineers on board the vessels. Thus a request is sent for members to notify the secretariat of the number of vessels they operate so that a corresponding number of analysis reports can be sent.

DEVELOPMENT OF THE DP INCIDENT SYSTEM

In addition to statutory reports usually prepared by maritime authorities such as the Marine Accident Investigation Branch (MAIB) in the UK, many other organisations also produce incident reports which cover a variety of activities including DP. Examples of these are:-

- Confidential Hazardous Incident Reporting Programme (CHIRP) for maritime. (CHIRP also deals with aviation incidents but there the acronym stands for Confidential Human Factors Incident Reporting Programme);
- The Nautical Institute Mariners' Alerting and Reporting Scheme;
- Marine Safety Forum's safety alerts.

The purpose of almost all of these systems is so that lessons can be learnt and repetition of the incident avoided.

With regard to IMCA's system although we have attempted to include lessons learnt where they are either included or discernible, this has not always been possible. Thus this is one area where our own reporting form may need changing to encourage the reporting of lessons learnt.

Another difference between the DP incident reports and others is that most of other reports are issued in a narrative format. Although for DP incidents the initial analysis done would still need to be in an incident tree format it may be possible to convert this into a narrative form. Furthermore the possible introduction of a three monthly DP incident summary report would require a more narrative approach to be of value.

CONCLUSION

I hope this has given you an insight to the IMCA DP station keeping incident scheme. Over the forthcoming months, in addition to preparing the annual incident report for 2011 and introducing the three monthly summaries, IMCA will be reviewing the scheme with the view to improving and enhancing it. Contributions to this process will be welcomed.

REFERENCES

<http://www.maib.gov.uk/home/index.cfm>

<http://www.chirp.co.uk/>

<http://www.nautinst.org/>

<http://www.marinesafetyforum.org/>