DYNAMIC POSITIONING CONFERENCE
October 13-14, 2015

WORKSHOP

SESSION 1
Putting the Science Back Into DP Trials
MTS DP COMMITTEE- 2015 WORKSHOP

SESSION 1- ANNUAL DP TRIALS- BEYOND TRADITION
INTRODUCING SCIENCE TO TRADITION
SESSION 2- CONDUCTING EFFECTIVE AND
COMPREHENSIVE DP INCIDENT INVESTIGATIONS

PRESENTED BY: DR. STEVEN CARGILL (DnVGL); MATT BATeman (GLOBAL MARITIME);
JOEY FISHER (M3 MARINE); CHARLIE WILLIAMS (CENTER FOR OFFSHORE SAFETY)
LT CHRIS MARTIN (USCG); GRANT HOWARD (ATWOOD);
BLAKE DENTON (NOBLE DRILLING) CHUCK CENTORE (GATE INC)
DOUG PHILLIPS (DP EXPERTISE) SUMAN MUDDUSETTI (SHELL)
WORKSHOP SPONSORS:- THANK YOU!
AGENDA

- **WELCOME** (0800)
- **SESSION CHAIR AND CO CHAIRS INTRODUCTION ( DOUG PHILLIPS)**
- **AM SESSION- PUTTING SCIENCE BACK INTO DP ANNUAL TRIALS** (0815~1145)
  - INTRODUCTION TO SESSION ( STEVE CARGILL)
  - PART 1 (0830 to 0945)
  - BREAK (0945-1015)
  - PART 2 (1015-1100)
  - REPORT OUT (1100 to 1145)
- **LUNCH** 1145 to 1245
- **PM SESSION** (1245~1630)
- **SESSION CHAIR AND CO CHAIRS INTRODUCTION ( SUMAN MUDDUSETTI)**
- **PM SESSION- CONDUCTING COMPREHENSIVE AND EFFECTIVE DP INCIDENT INVESTIGATIONS**
  - INTRODUCTION TO SESSION ( CHARLIE WILLIAMS/GRANT HOWARD/LT CHRIS MARTIN)
  - PART 1 REVIEW OF TECHOP (1315~1415)
  - BREAK (1415 to 1445)
  - PART 2 (1445 to 1545)
  - REPORT OUT (1545~1615)
- **WRAP UP** (1615~1630)
PUTTING THE SCIENCE BACK INTO ANNUAL DP TRIALS
IMO MSC645 (1994) - ‘Annual survey should be carried out within three months before or after each anniversary date of the initial survey. 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.’

- DP SYSTEM MAINTAINED IN GOOD ORDER
- TEST ALL IMPORTANT SYSTEMS EVERY YEAR
- DEMONSTRATE VESSEL KEEPS POSITION AFTER SINGLE FAILURES
- COMBINATION OF SURVEY AND TEST REQUIREMENTS
- MTS GUIDANCE
  - CONTINUOUS ANNUAL TRIALS FOR MODUS
  - ANNUAL TRIALS AND GAP ANALYSIS
- IMCA M190 & M191
EACH REDUNDANT GROUP MUST BE CAPABLE OF DEVELOPING SURGE, SWAY & YAW

TWO COMPLETELY INDEPENDENT EQUIPMENT GROUPS EACH CAPABLE OF PROVIDING THE REQUIRED POST FAILURE DP CAPABILITY

LOSS OF POSITION OR HEADING

OR

DRIFT OFF

AND

LOSS OF POSITIONING BY GROUP A

LOSS OF POSITIONING BY GROUP B

DRIVE OFF IN GROUP A

DRIVE OFF IN GROUP B

FAULT TREE
ELEMENTS OF DP SYSTEM REQUIRED TO KEEP POSITION AFTER SINGLE FAILURES

PERFORMANCE
- STATIC AND DYNAMIC CAPACITY, ACCURACY, REPEATABILITY, STABILITY, RESOLUTION

PROTECTION
- TO ISOLATE FAULTS ON CROSS CONNECTIONS
- TO ENSURE SYSTEMS FAIL-SAFE

DETECTION
- TO REVEAL HIDDEN FAILURES
- TO INITIATE OPERATOR INTERVENTION
WHAT DO WE NEED TO TEST?

➢ ASSERTION
  o IF A DP VESSEL CAN MAINTAIN POSITION AFTER THE WORST CASE SINGLE FAILURE IT CAN MAINTAIN POSITION AFTER ANY SINGLE FAILURE (PROVEN BY FMEA & TRIALS)

➢ TEST
  o THOSE ELEMENTS OF PERFORMANCE PROTECTION AND DETECTION ON WHICH DP DEPENDS AFTER THE WORST CASE FAILURE – DRIFT OFF
  o THOSE PROTECTIVE FUNCTIONS WHICH PREVENT A DRIVE OFF
GROUP WORK

- Each table has a series of questions to prompt discussion.
- Four common questions and a table-specific question.
- Table coaches and assistant coaches are provided to guide discussion and answer technical questions.
- Table coaches will report the group’s findings.
- A short Q and A session will follow each table report.
- Significant findings will be collected and used to develop and refine future guidance.
THANK YOU
SUGGESTED TOPICS FOR NEXT YEAR

- SMARTER AND VALUE INJECTED ANNUAL TRIALS- A CASE STUDY
- POSITION REFERENCE SENSOR HANDLING
- ENHANCING AND DEMONSTRATING DP VESSEL OWNER DP MANAGEMENT CAPABILITY
<table>
<thead>
<tr>
<th>TABLE COACH</th>
<th>Assistant Coach</th>
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<tbody>
<tr>
<td>Aleks Karlsen</td>
<td>Danny Lee</td>
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<td>Peter Sierdsma</td>
<td>Brian Haycock</td>
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<td>Justin Adams</td>
<td>Chris Richardson</td>
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<td>Johannes Kristian Bjoringsoy</td>
<td>Barry Kent</td>
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<td>Richard Inkster</td>
<td>Guillaume Vileyn</td>
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<td>Senananda Abhayasinghe</td>
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<td>Tom Hanrahan</td>
<td>Chris Richardson</td>
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<td>David Hedgepeth</td>
<td>Rob Heijman</td>
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<td>Graeme Reid</td>
<td>Dan Endersby</td>
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<td>Matt Barney</td>
<td>Kerry Gregory</td>
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