Dynamic Positioning Committee

Marine Technology Society

DYNAMIC POSITIONING CONFERENCE

OCTOBER 9-11, 2017

TRAINING/COMPETENCY

Real DP Time - Really?

Dan Endersby

All Offshore

Real DP Time – Really?

Daniel Endersby

Marine Technology Society – Conference 2017

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About us

- Founded in 2014, twenty years of marine experience predominately in Offshore and experienced IT professionals from the financial services industry
- Utilise digital technology for improvements in the industry

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What we will cover

- Look at the issues of capturing DPO operational experience
- Consider technological innovations for a digital based system
- Review the data from a beta digital based system
- Explore additional digitisation options to support DP operators

An Analogy

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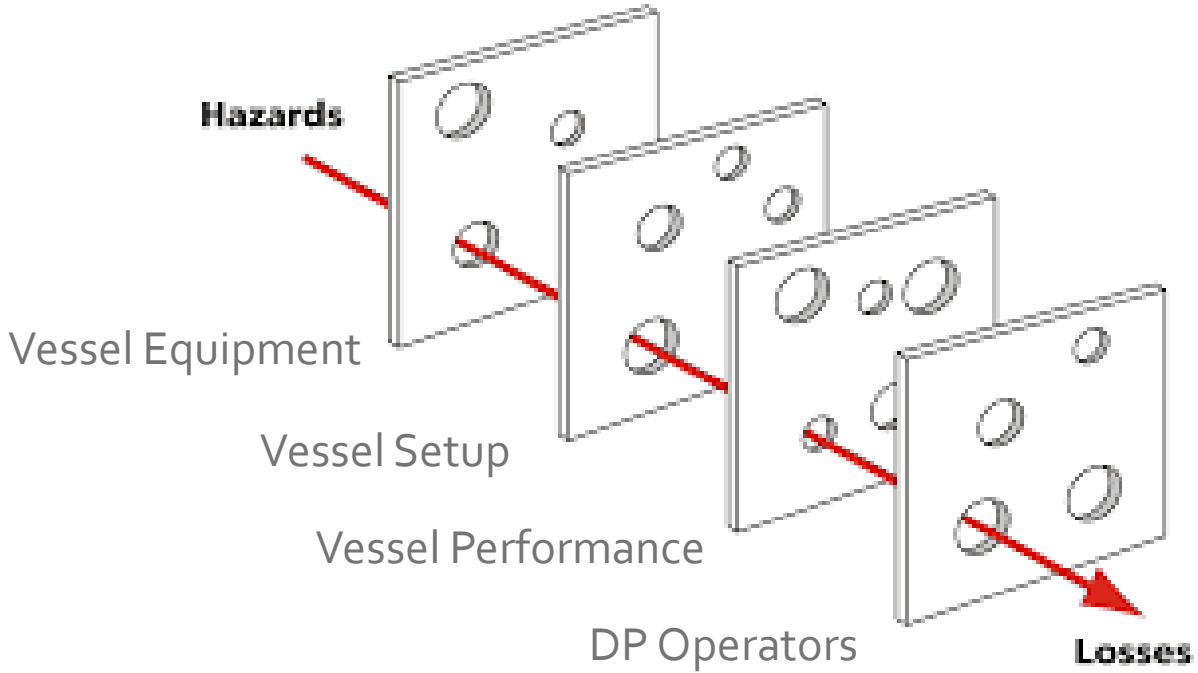
Smart Energy GB - https://www.youtube.com/watch?v=kxzYnYvmHzw

DP Risk Management



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Current Situation

- Consider Certificated experience?
- 74 days onboard
- 1776 hours onboard = 888 working hours if working 12 hour shifts
- DPO Claims 600 hours
- 8 hours per day average for total period

IMCA DPO Logbook

Port calls and Transit time for PSV operations??

Actual vessel DP time over the 74 day period was 777 hours based on log records

Actual DP hours worked are nearer 380 hours – 35 'DP Days' @ just under 11hrs per day when on DP

Based on claimed 06:00 to 12:00 & 18:00 to 24:00 watch pattern

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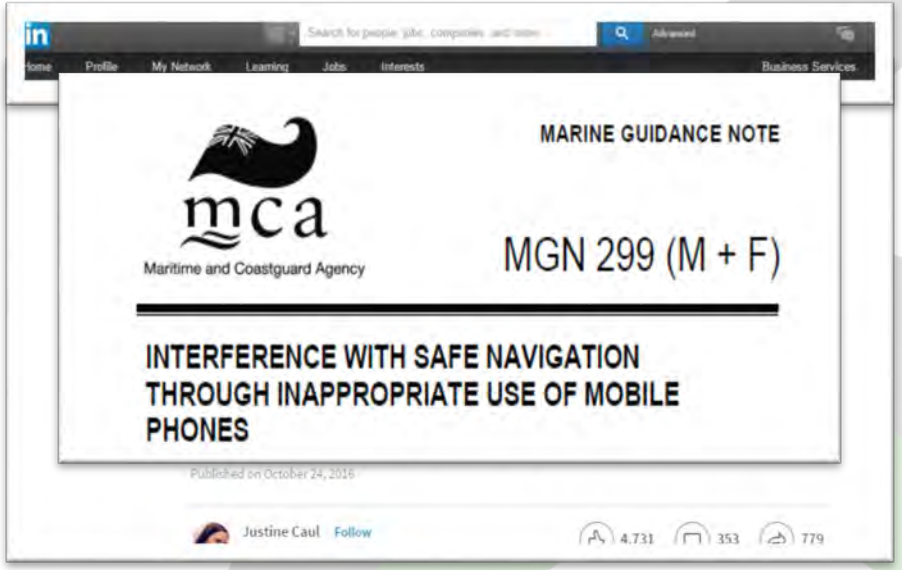
Variance in claim

	Claim	AIS	Notes
Time onboard	74 days	74 days	
DP Time	600 hours	380 hours	DPO over claim of true hours
DP Time (real days)		35 days	Actual number of DP Days @ any above 2 hours per day
NI Limit	74 days		
NI Calculation @ min 2 hours per day	148 hours		
DP Days	74 days	35 days	Variance
Hours	148 hours	380 hours	

Digital – What not to do

- Don't digitize a S**T process
- Don't give the operator external distractions (email, chat, games etc)



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Digital – What to do

- Know when the vessel is operating in DP, ensure ID of system is known
- Ensure network integrity
- Be able to identify the DP operators
- Ensure DP operators have their own records independent of the vessel
- Security of data transmission
- Data integrity

Digital System – Beta Data

- 1649 hours of Desktime (any mode excluding monitor)
- 1539 hours of DP time (DP and Follow Target)
- 74 hours of Joystick Auto Heading
- 36 hours of Joystick Manual Heading
- 15 training exercises
- 5 DPO's

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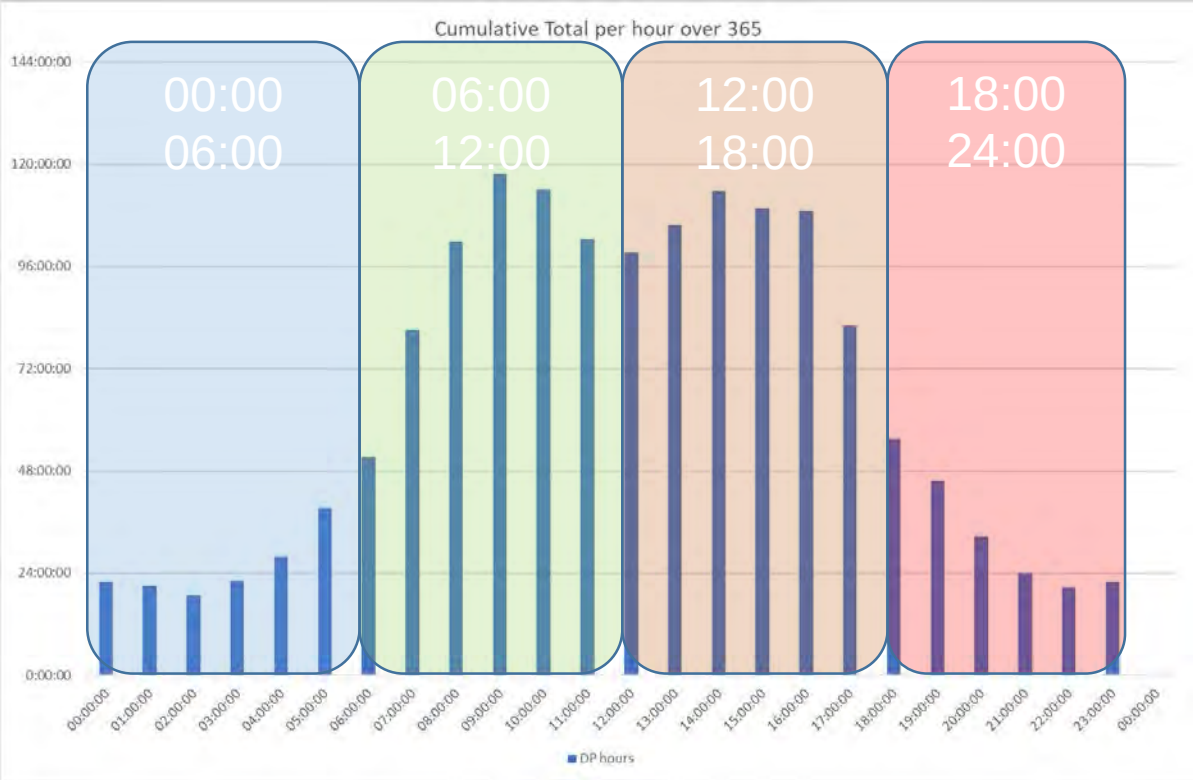
Vessel Cumulative Total over 365 days



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Real DPO DP Days & Hours

Row		ID 14	ID 16	ID 17	ID 18	ID 19	ID 0 non assigned data
1	Number of Days onboard	236	62	166	195	124	N/A
2	Total ‘DP Days’ (>20minutes)	116	26	63	96	46	31
3	Total ‘NI DP Days’	80	23	49	74	31	7
4	Total hours (DPDeskTime)	464	110	250	417	235	60
5	IMCA hours to DP Days**	232	55	125	208	117	n/a
6	Days onboard / 2	118	31	83	97	62	n/a

Total number of vessel DP Days when in DP (greater than 20minutes) = 1539 hours over 224 days

** Total number of hours for each embark / 2h = < X

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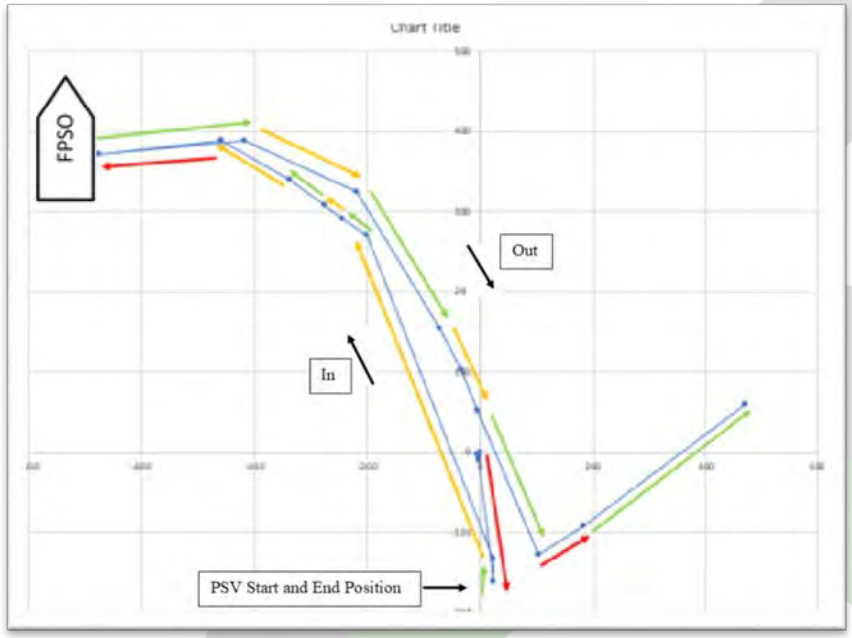
Real DPO DP Days & Hours

Row		ID 14	ID 16	ID 17	ID 18	ID 19	ID 0 non assigned data
3	Total 'NI DP Days'	80	23	49	74	31	7
5	DP Days (IMCA)**	232	55	125	208	117	n/a
	Variance (R5-R3)	152	32	76	134	86	
4	Total hours (DPDeskTime)	464	110	250	417	235	60

Qualitative Data

- DP19 completing 500metre zone entry and exit



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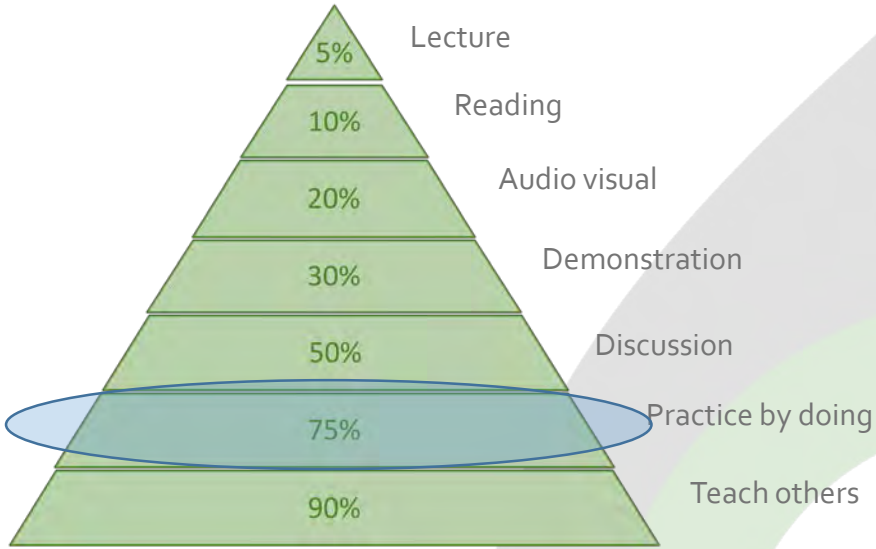
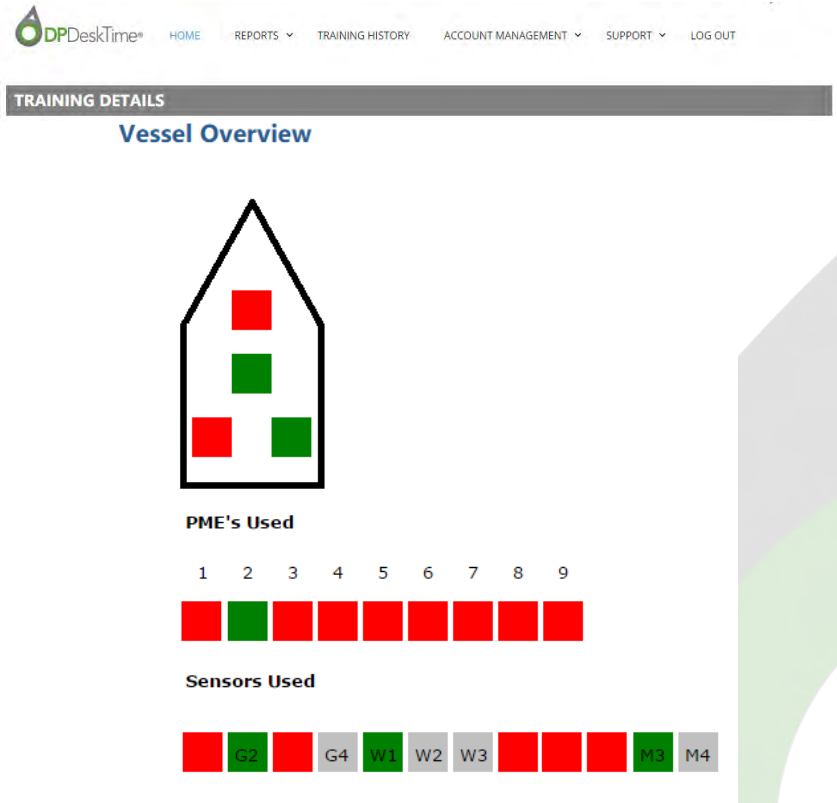
Training

- Learning Pyramid
  - Retention Rates
- Practice by doing



Worst Case Failure Training



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Simulators

- Controlled environment
- Add digital system to simulators
- Enhanced continuing professional development records for DPOs

- Continuing professional development

  "The process of tracking and documenting the skills, knowledge and experience that you gain both formally and informally as you work, beyond any initial training. It's a record of what you experience, learn and then apply"

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Four levels of digitization

Level	Type	Description
0	Paper	Basic
1	Digital	No integration, some benefits of quick distribution & checking of missing boxes
2	Semi Automation	Some sensor information, can highlight high level issues/changes
3	Full Automation	Full sensor/system integration full identification of issues/changes

Aviation – Digital checklists

- Boeing
  - Digital checklists
  - Main ‘standard’ checklists
  - Emergency checklists (with detail)
  - Reduction in errors
    - Missing items
    - Outstanding items forgotten

JIM ANDERSON PHOTO

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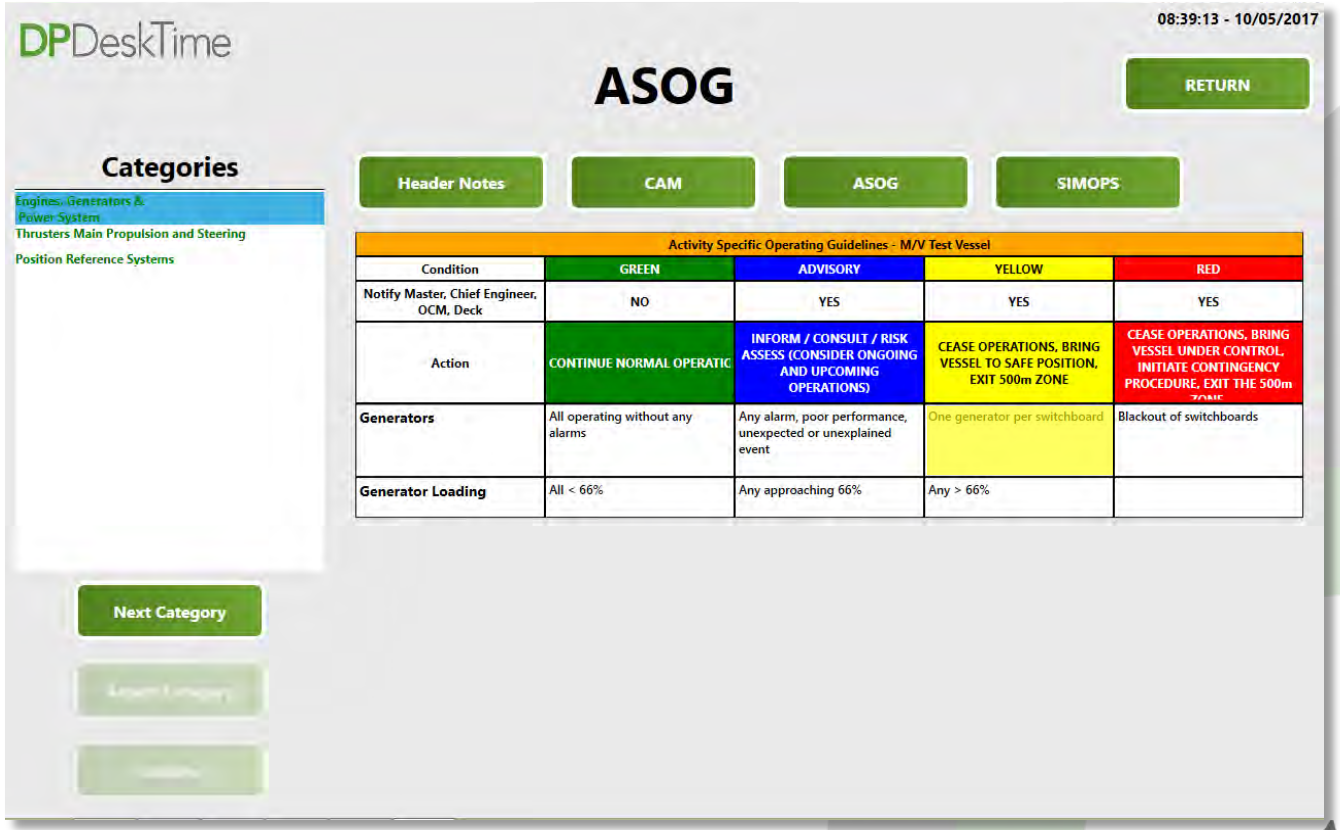
Level 2 – ASOG digitization



Activity Specific Operating Guidelines - M/V Test Vessel

Condition	GREEN	ADVISORY	YELLOW	RED
Notify Master, Chief Engineer, OCM, Deck	NO	YES	YES	YES
Action	CONTINUE NORMAL OPERATIC	INFORM / CONSULT / RISK ASSESS (CONSIDER ONGOING AND UPCOMING OPERATIONS)	CEASE OPERATIONS, BRING VESSEL TO SAFE POSITION, EXIT 500m ZONE	CEASE OPERATIONS, BRING VESSEL UNDER CONTROL, INITIATE CONTINGENCY PROCEDURE, EXIT THE 500m
Generators	All operating without any alarms	Any alarm, poor performance, unexpected or unexplained event	One generator per switchboard	Blackout of switchboards
Generator Loading	All < 66%	Any approaching 66%	Any > 66%	

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Incidents do happen

- One insurer
- Four year period – 62 DP operator related incidents
- Quantum of claims per incident
- from $110,800
- up to $1,200,000

- Can accurate operational experience capture & 'practice by doing' reduce the number of incidents and ultimately a ship owners premiums?

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Conclusion

- Accurate operational experience is possible both in quantitative and qualitative formats benefiting all offshore stakeholders
- Enhanced documented onboard training for worst case failure situations and other modes – practice by doing
- Introducing a digital system into simulator training can bring complete digital professional records for DP operators
- Digitization of decisions support tools can follow the advancements made within the aviation industry

Thank You

Remember – Why estimate when you can be accurate