Ever Changing ULCS

Updating Training, Skills and procedures

for the Worlds largest vessels

Captain Nick Lee

Chairman

United Kingdom Marine Pilots Association

Technical & Training Committee

25th IMPA CONGRESS
CANCÚN 2022

UKMPA

IMPA Congress 2016

Port Preparations for ULCS

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2016 - 2022

What's Changed

- Increased Traffic density
- Terminal pressure
- Less available water
- Better understanding hydrodynamics
- Our experiences

Route Planning

- Identify conflicting Traffic Early

- Establish No Passing / Controlled passing areas

- Role of VTS ?

- Tidal windows vs speed

- Respect your colleagues and other Port users

One Columba OUTBOUND from **LGW 3** Via:

Barrows ☐		Princes DW ☐	
Black Deep ■	Princes ☐	Fisherman's Gat ☐	

PORT OF LONDON AUTHORITY

Deep Draft Plan Agreed with DPC ■   Draft 15.6 m

		CD	HoT	UKC	HoT Req	Earliest / Latest Times
LGW 3	06/06/2022 16:00	14.10	4.47	2.97	3.06	
27.5 Min						
Tanker Buoy	06/06/2022 16:27	12.70	4.72	1.82	4.46	
2.8' 27.5 Min						
Sea Reach 7	06/06/2022 16:55	12.90	4.83	2.13	4.26	
2.9' 12.5 Kts						
Sea Reach 5	06/06/2022 17:08	14.20	4.83	3.43	2.96	
3.4' 12.5 Kts						
Sea Reach 3	06/06/2022 17:25	13.50	4.77	2.67	3.66	
3.6' 12.5 Kts						
Sea Reach 1	06/06/2022 17:42	14.30	4.63	3.33	2.86	
1.8' 15.0 Kts						
West Oaze	06/06/2022 17:49	14.50	4.61	3.51	2.66	
7.6' 15.0 Kts						
Knock John 7	06/06/2022 18:20					
2.4' 15.0 Kts						
Knock John 3	06/06/2022 18:29	13.60	3.84	1.84	3.56	06/06/2022 19:00 L
3.9' 15.0 Kts						
Black Deep 9	06/06/2022 18:45					
3.8' 15.0 Kts						
Black Depp Middle 2	06/06/2022 19:00	15.30	3.04	2.74	1.86	
2.8' 15.0 Kts						
Black Deep 5	06/06/2022 19:11					
3.8' 15.0 Kts						
Black Deep Middle 1	06/06/2022 19:26	16.40	2.34	3.14	0.76	
4.9' 15.0 Kts						
Sunk Head Middle	06/06/2022 19:46	15.90	1.99	2.29	1.26	06/06/2022 21:10 L
5.5' 15.0 Kts						
Sunk Inner / Trinity	06/06/2022 20:08	16.40	1.66	2.46	0.76	06/06/2022 22:30 L
3.5' 20.0 Min						
Sunk Pilots	06/06/2022 20:28	15.90	1.49	1.79	1.26	06/06/2022 20:50 L

MIN UKC Used Flood 1.56m Ebb 1.56m   These values are also used at the berth

Weather Forecast: Wind Dir: **W**   Speed: **12.5 Kts**   Viz: **Clear**

Abort Contingency:

	Y	N	N/A
Defects notified	☐		■
Manoeuvring characteristics discussed	■	☐	
Squat characteristics understood	■	☐	
Pilot card sighted	■	☐	
Ready Berth	☐	☐	■
Relevant NtMs - Master advised	■	☐	
Individual roles & actions understood	■	☐	

Port Side To ☐   Stbd Side To ■

Head Up ■   Head Down ☐

Swing to Port ☐ Swing to Stbd ■ No Swing ☐

HW Coryton 06/06/2022 17:44   Flood

Windage: 59t @ 15 Kts

Tug Allocation		Type	Bollard Pull	Ship's Restriction
1.	Rt Ambition	Rotor	92.1	
2.	Rt Peter	Rotor	92	
3.	Sd Dolphin	ASD	80.5	
4.				
5.				

12.5 Kts

Rt Ambition (Fast)

Rt Peter (Pushing)

Sd Dolphin (Fast)
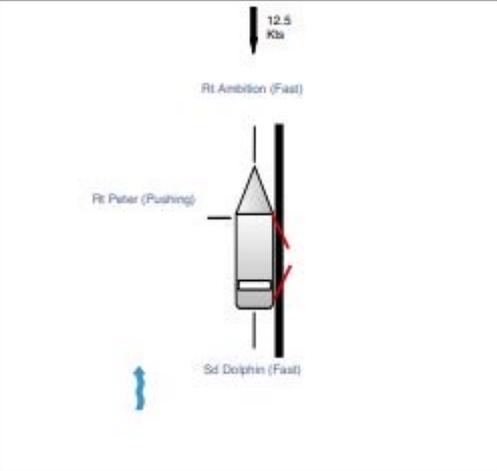
Passage Notes

Overrides req'd @ SR5 (req centre channel), SR1 - W.Oaze, KJ7 - BD9
One way working req'd Tanker by, SR5, SR3, SR1 - W.Oaze, KJ7 - BD9
Significant Traffic - Essen Maersk @ Holehaven, Seychelles Progress off berth @ 1600.
    MSC Domitille @

AGREEMENT

The Passage Plan and all pertinent information concerning the passage has been discussed and agreed by the Master and Pilot and may be subject to change during the passage.

The Master also agrees with and understands the position of a compulsory pilot under UK law.

Pilot's Name   N Lee   Master's Name

2nd Pilot's

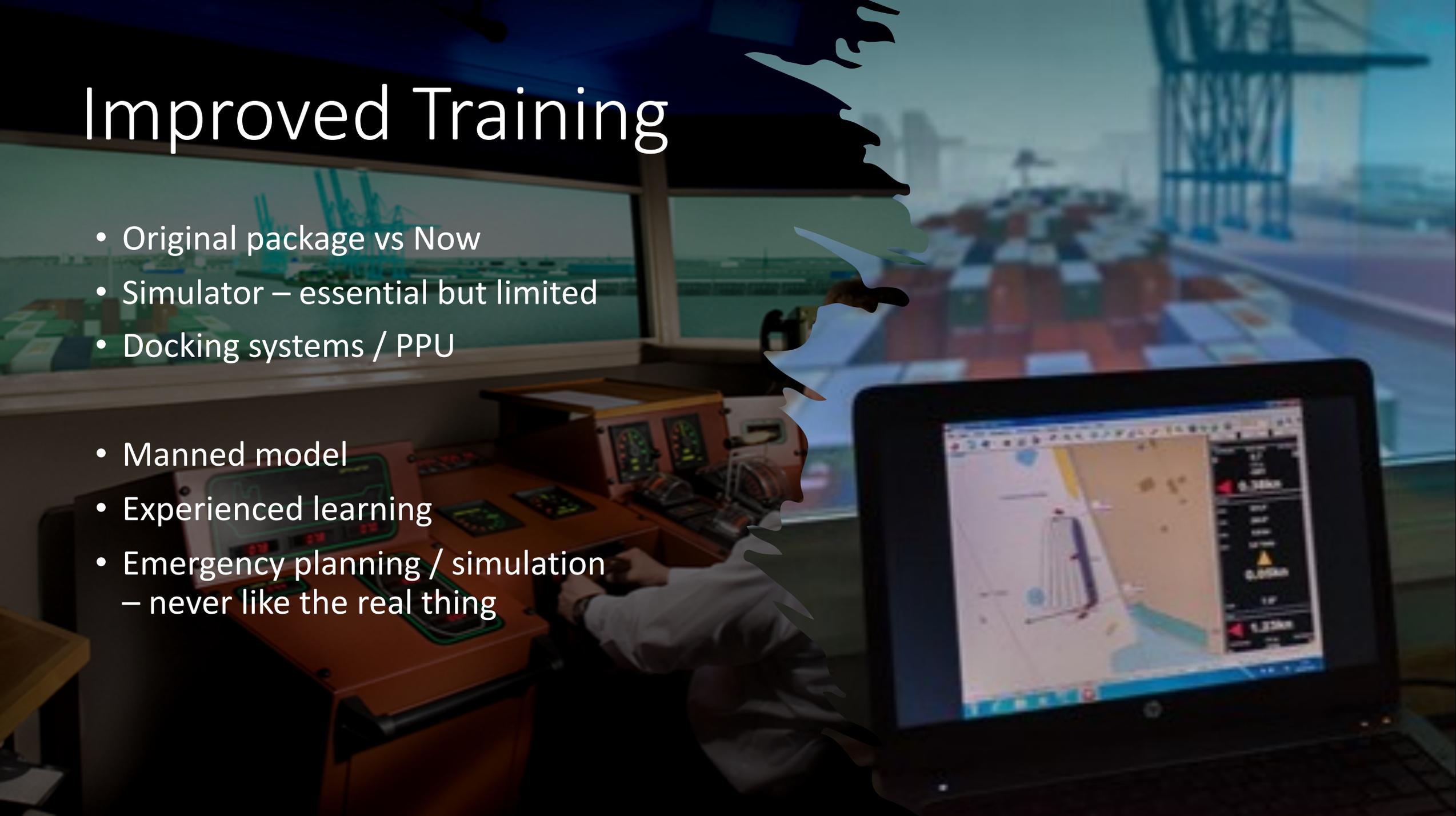Pilot's Signature   _N Lee_   Master's Signature
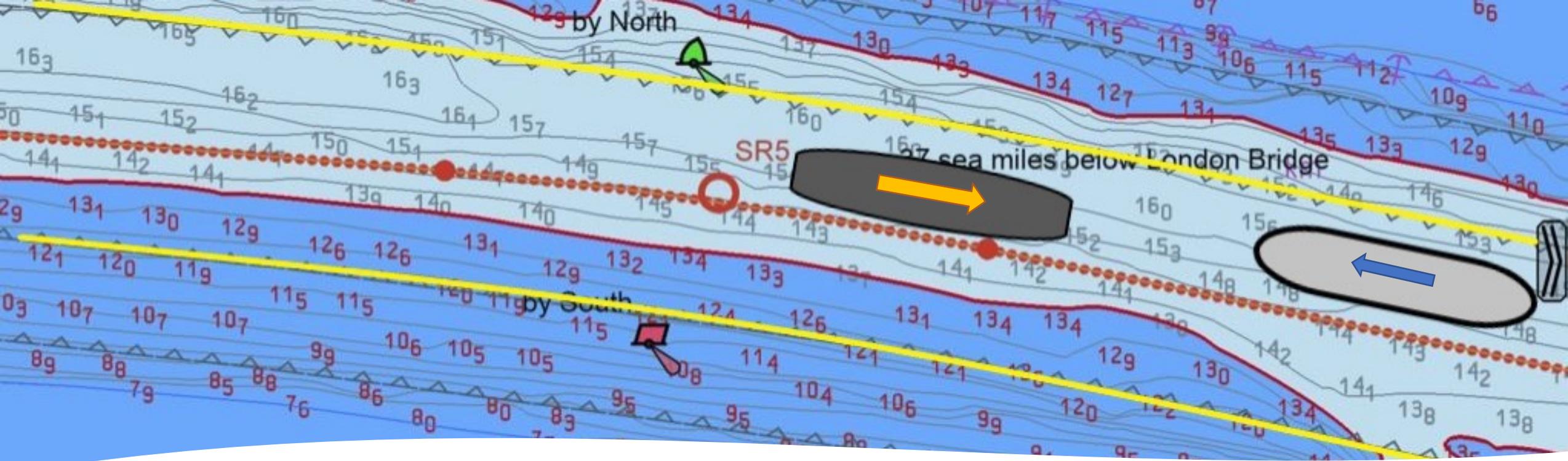
One way working required

Improved Training

- Original package vs Now
- Simulator – essential but limited
- Docking systems / PPU

- Manned model
- Experienced learning
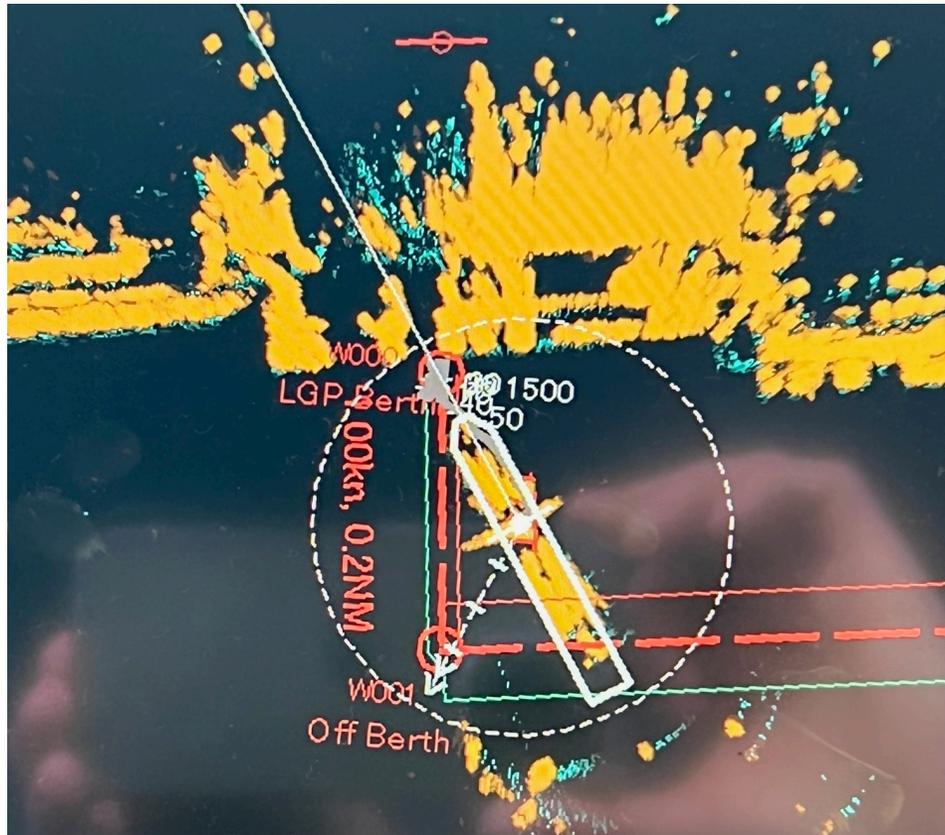- Emergency planning / simulation – never like the real thing

Portable Pilot Units

- Essential equipment ?

- Positioning / setup vital

- It can and **will fail** - at the most inopportune moments

- Have a back up – even if most basic
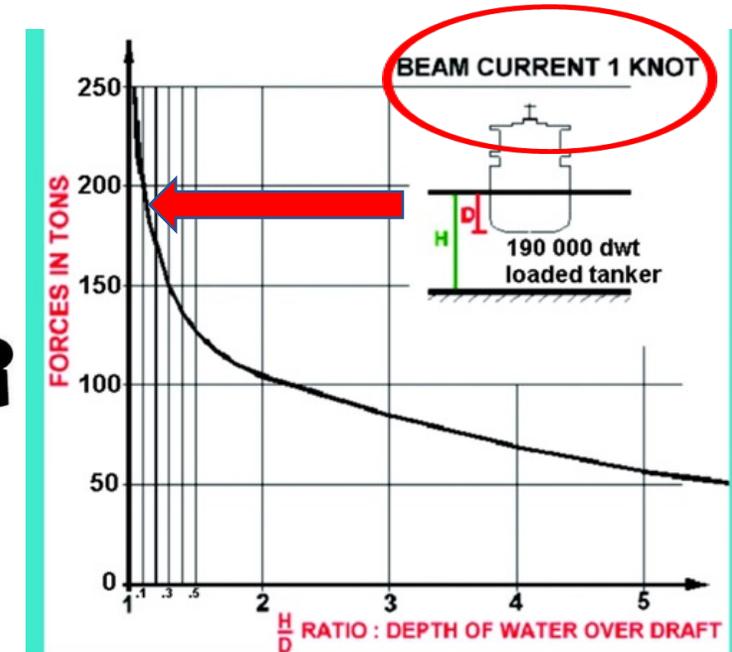
- Governance

Backing it up
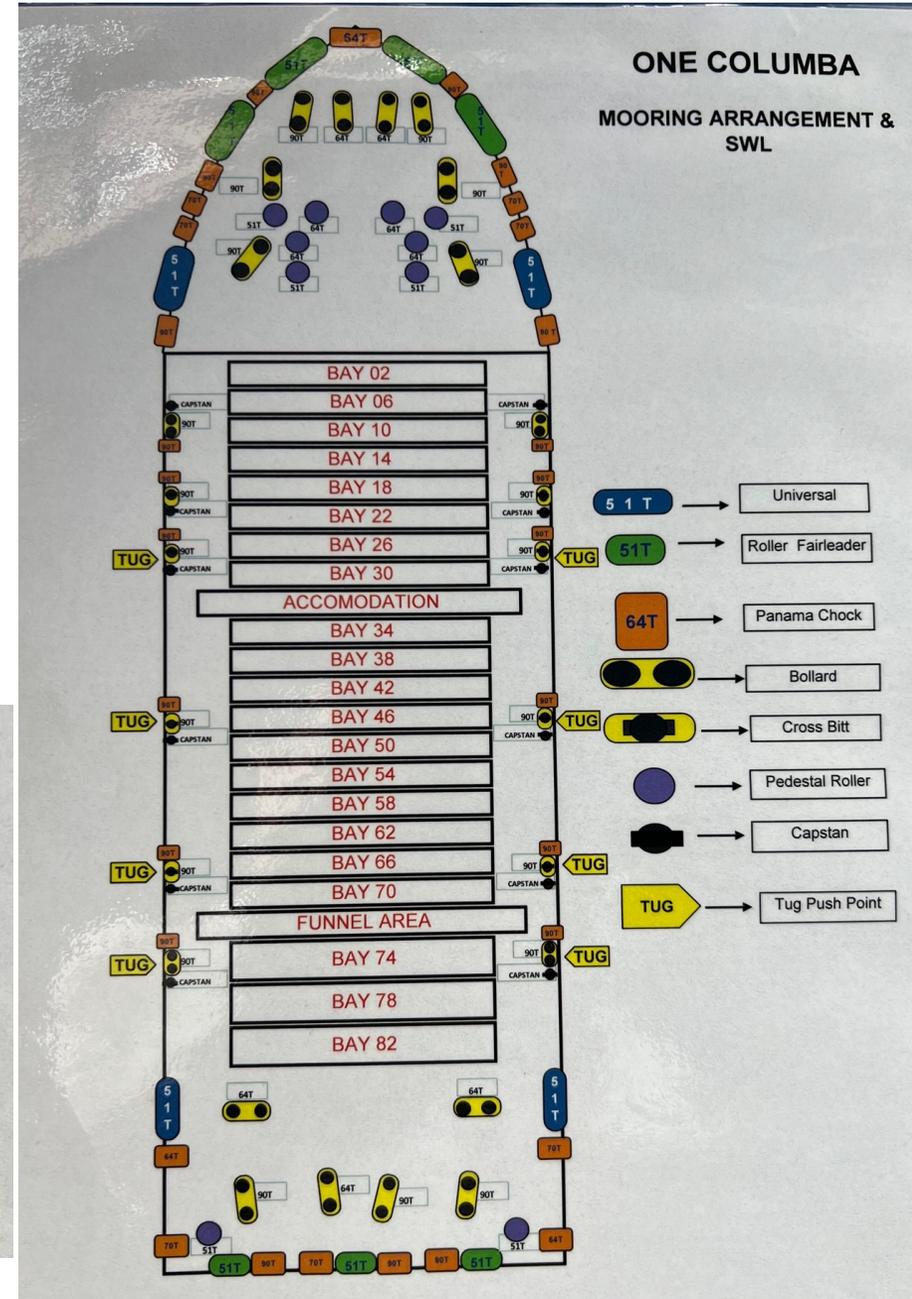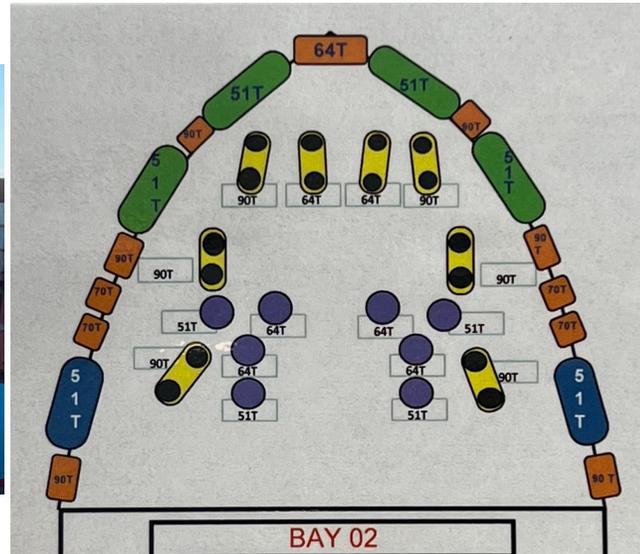
Ship types and constraints

- Hull forms – tug positioning issues

- Understanding Propulsion and Power management

- Manoeuvring aids – thrusters – know your Rudder

Tugs

- Do We Have enough ?!!
- Tug Type – ASD / RT /
- Bollard pull vs position
- Line angle ?
- Tug interaction
- Making fast / letting go considerations = crew / time taken
- Sheep dogging
- Relationship with Tug Masters

ONE COLUMBA

MOORING ARRANGEMENT & SWL

51 T	→	Universal
51T	→	Roller Fairleader
64T	→	Panama Chock
●●	→	Bollard
🟡	→	Cross Bitt
🟣	→	Pedestal Roller
◼	→	Capstan
TUG	→	Tug Push Point

BAY 02
BAY 06
BAY 10
BAY 14
BAY 18
BAY 22
BAY 26
BAY 30
ACCOMODATION
BAY 34
BAY 38
BAY 42
BAY 46
BAY 50
BAY 54
BAY 58
BAY 62
BAY 66
BAY 70
FUNNEL AREA
BAY 74
BAY 78
BAY 82

BAY 02

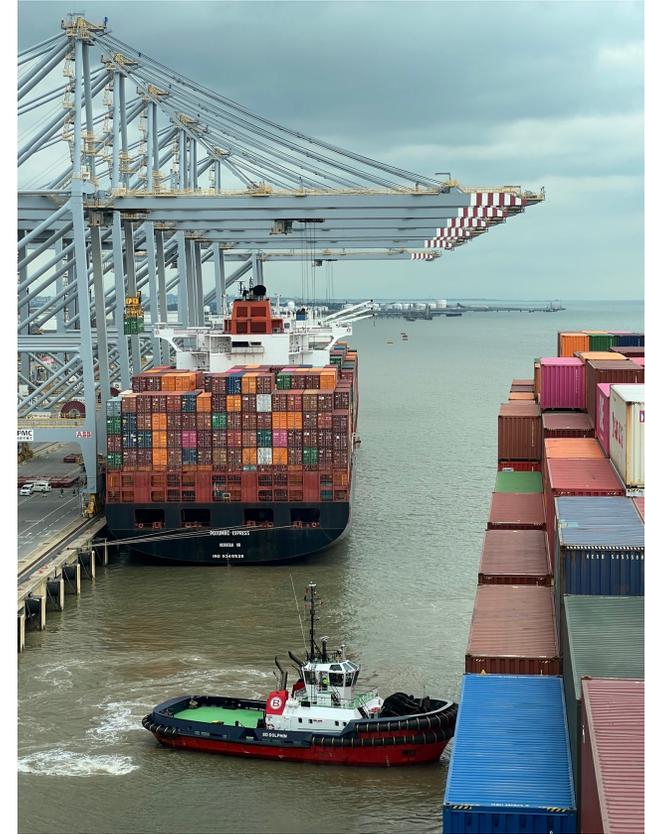# Working with the Bridge Team

- Fully brief the bridge team - MPX
- Keeping bridge team involved and informed
- Designating roles
- 2 pilot operation – +ve vs –ve
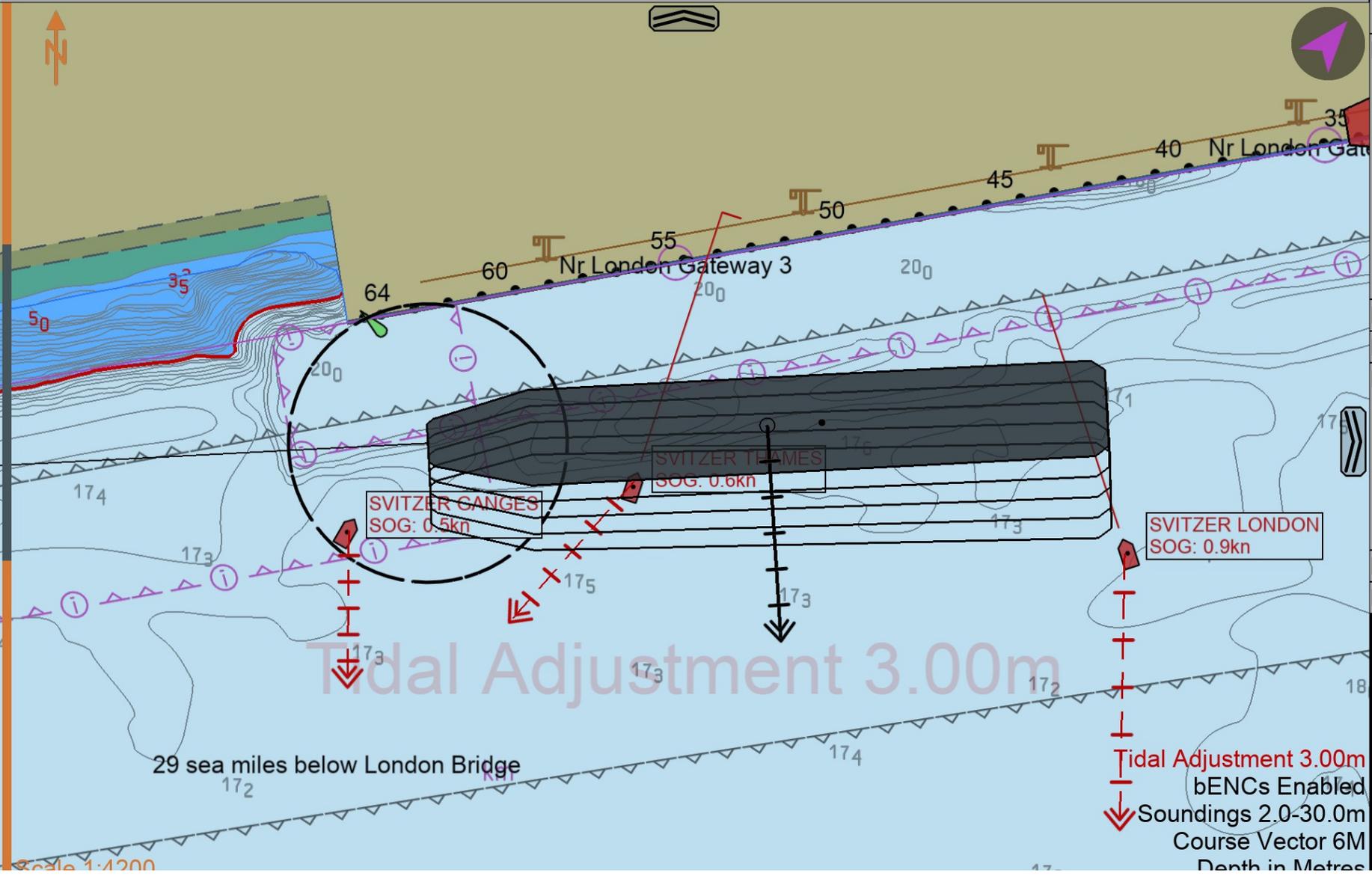- CMA CGM Centaurus
- BRM

CPD

- This is CPD
- Should be Reflective
- Keeping up with technology
- And Vessel design
- Period
- Formal vs informal

Putting it together

Source

AD Navigation

Model	HDG	Battery
ADQ2	NA	83%

Alarms ☒

Navigation Status

Vessel Motion ☒

Bow ◀0.59

Knots 0.01 ▼

Stern ◀0.78

Cursor ☒

Speed Required

Own-Ship Water Level ☒

	Prev	Own-Ship	Next
STN	Denton	Interpolate	Thameshaven
RNG	-5.32NM	0.00NM	0.55NM
Time	1 Min	1 Min	1 Min
LVL	2.96	2.99	2.99
Ref	LCD	LCD	LCD

Waypoint

XTD

35

40 Nr London Gate

45

50

55

Nr London Gateway 3

60

20₀

64

20₀

SVITZER THAMES
SOG: 0.6kn

SVITZER GANGES
SOG: 0.5kn

17₅

SVITZER LONDON
SOG: 0.9kn

17₃

17₃

17₄

17₃

17₃

17₂

17₃

Tidal Adjustment 3.00m

29 sea miles below London Bridge

17₂

17₄

18

Tidal Adjustment 3.00m

bENCs Enabled
Soundings 2.0-30.0m
Course Vector 6M
Depth in Metres

Scale 1:4200

ROT	HDG	COG	SOG
9.0°	**284.9°**	**167.2°**	**-0.8**
Stbd °/m	True	True	Knots

Source

AD Navigation

Model	HDG	Battery
ADQ2	NA	83%

Alarms

Navigation Status

Vessel Motion

Bow	0.35
Knots	0.35
Stern	1.68

Cursor

Speed Required

Own-Ship Water Level

	Prev	Own-Ship	Next
STN	Denton	Interpolate	Southend (Copy)
RNG	-5.33NM	0.00NM	8.36NM
Time	Now	1 Min	1 Min
LVL	3.03	3.03	3.03
Ref	LCD	LCD	LCD

Waypoint

XTD

Nr London Gateway 3

SVITZER GANGES
SOG: 0.6kn

SVITZER THAMES
SOG: 0.0kn

29 sea miles below London Bridge

SVITZER LONDON
SOG: 1.8kn

Tidal Adjustment 3.00m

Tidal Adjustment 3.00m
bENCs Enabled
Soundings 2.0-30.0m
Course Vector 6M
Depth in Metres

Scale 1:4200

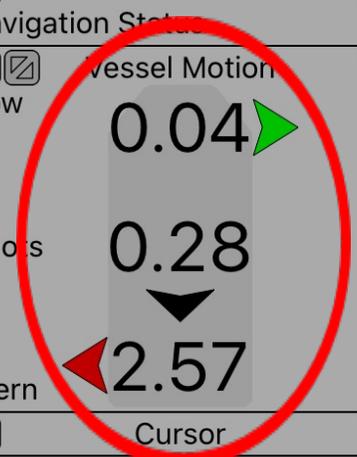| ROT	HDG	COG	SOG
11.6°	342.7°	240.3°	-1.3
Stbd °/m	True	True	Knots
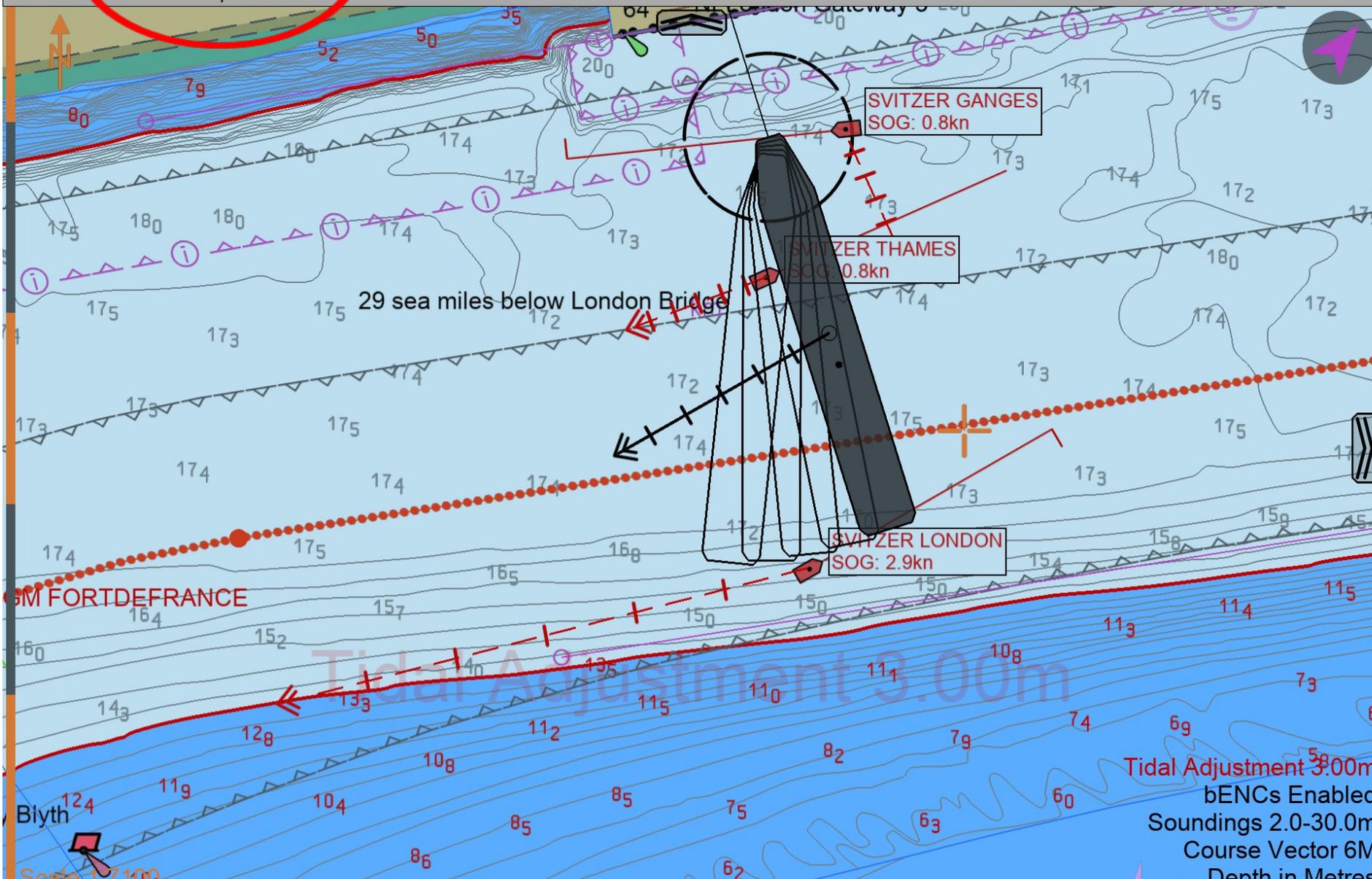
Source

AD Navigation
Model   HDG   Battery
ADQ2   NA   83%

Alarms
Navigation Status

Vessel Motion
Bow
0.04
Knots
0.28
Stern
2.57

Cursor

Speed Required

Own-Ship Water Level
Prev   Next
STN   Shivering Sand
RNG   23.6NM
Time   1 Min
LVL   3.10
Ref   LCD

Waypoint

XTD
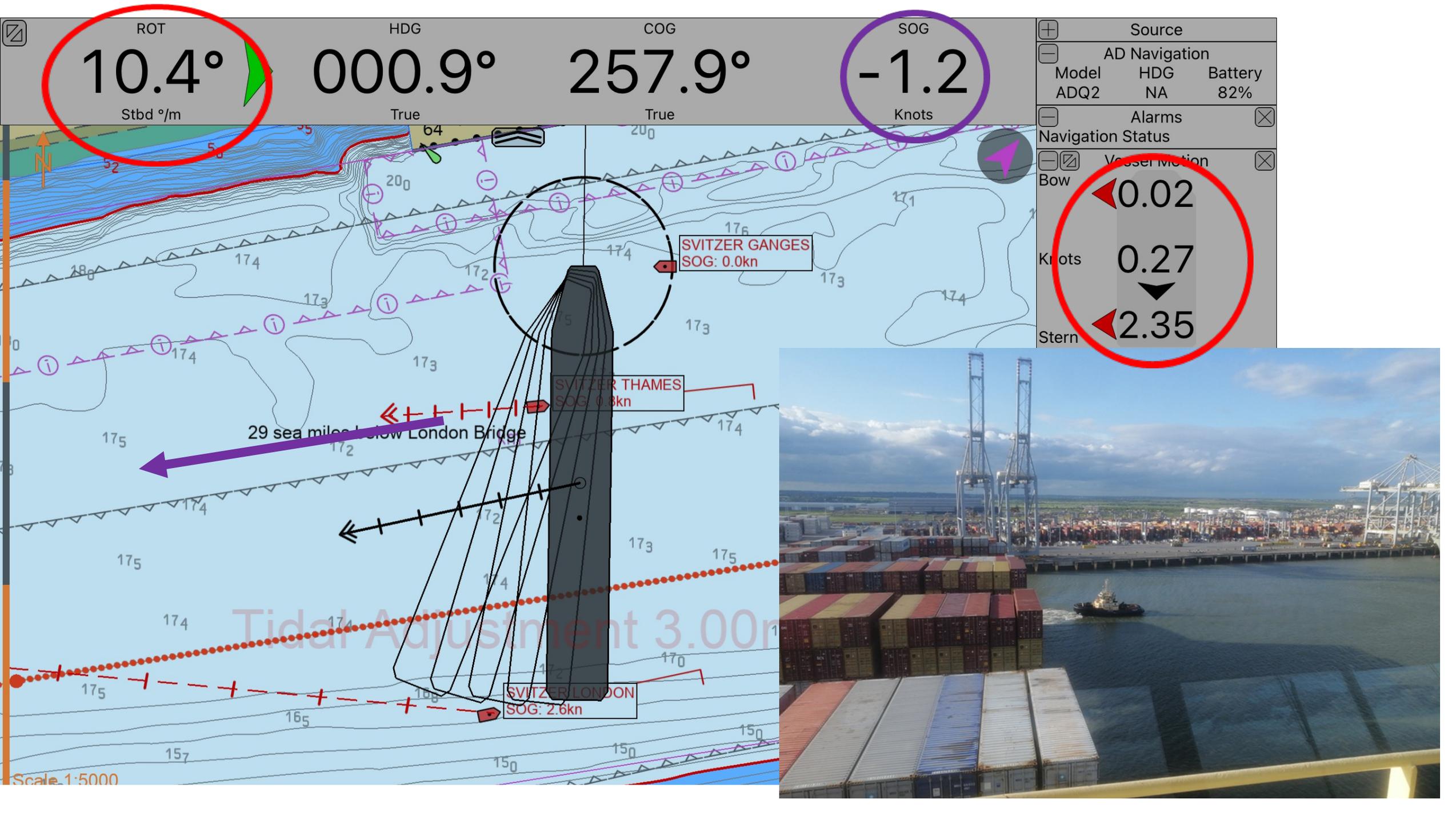
SVITZER GANGES
SOG: 0.8kn

SVITZER THAMES
SOG: 0.8kn

29 sea miles below London Bridge

SVITZER LONDON
SOG: 2.9kn

GM FORTDEFRANCE

Blyth

Tidal Adjustment 3.00m

Tidal Adjustment 3.00m
bENCs Enabled
Soundings 2.0-30.0m
Course Vector 6M
Depth in Metres

ROT	HDG	COG	SOG
10.4°	**000.9°**	**257.9°**	**-1.2**
Stbd °/m	True	True	Knots
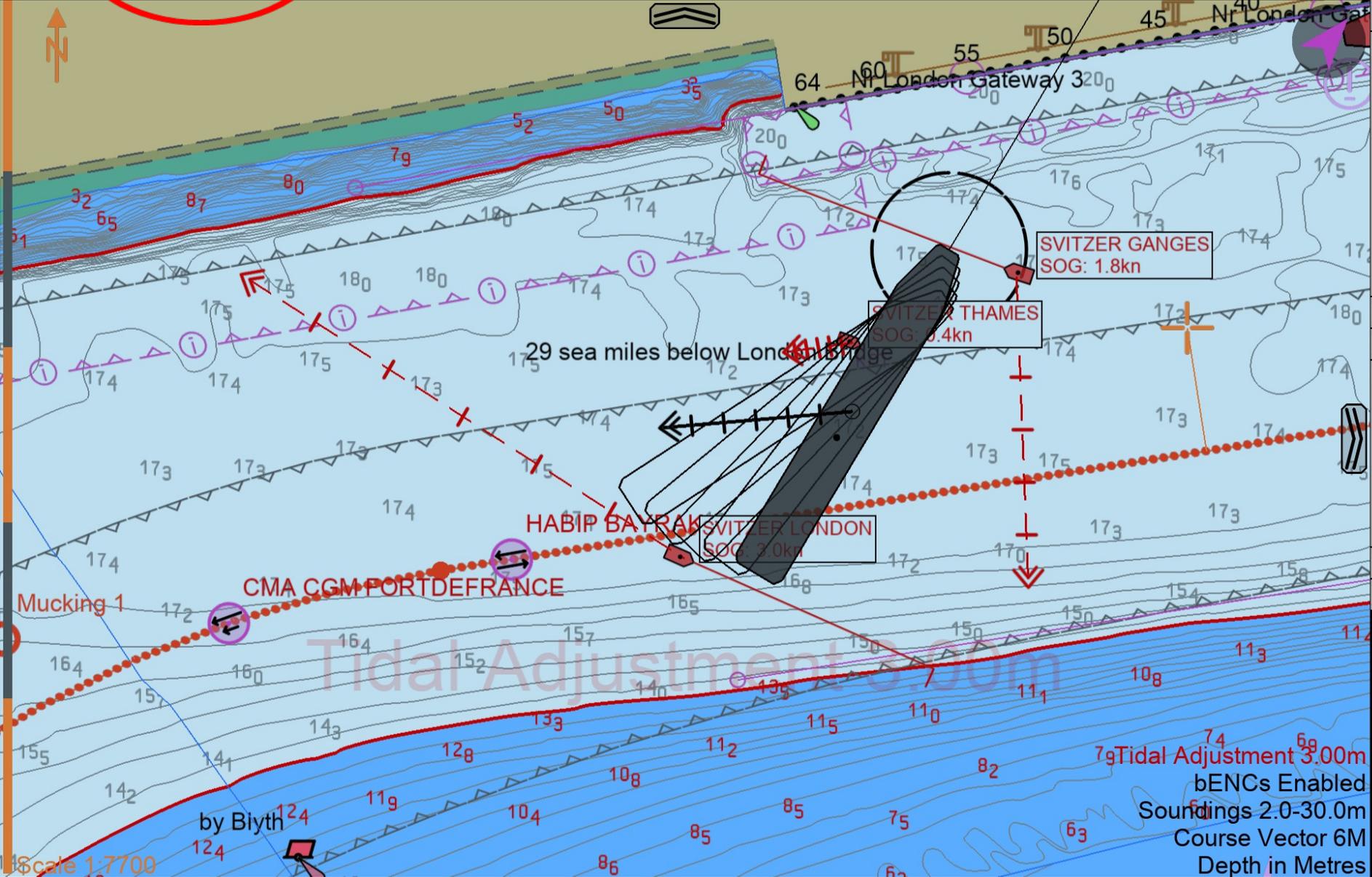
Source		
AD Navigation		
Model	HDG	Battery
ADQ2	NA	82%

Alarms
Navigation Status

Vessel Motion

Bow ◄ 0.02

Knots 0.27

▼

Stern ◄ 2.35

SVITZER GANGES
SOG: 0.0kn

SVITZER THAMES
SOG: 0.8kn

29 sea miles below London Bridge

Tidal Adjustment 3.00m

SVITZER LONDON
SOG: 2.6kn

Scale 1:5000

13.0° ▶ **030.9°** **265.1°** **-1.1**

Stbd °/m True True Knots

Nr London Gat
45   40
50
55   60
64   Nr London Gateway 3   20₀
20₀
35₅
5₀
7₉
8₀
18₀
17₄
17₂
17₃
17₅
17₄
17₃
18₀

SVITZER GANGES
SOG: 1.8kn

SVITZER THAMES
SOG: 0.4kn

29 sea miles below London Bridge

17₃
17₂
17₄
17₃
17₅
17₃

HABIP BAYRAK

SVITZER LONDON
SOG: 3.0kn

17₂
17₀
16₈

CMA CGM PORTDEFRANCE

Mucking 1

17₂
16₄
16₀
16₅
15₇
14₀
15₄
15₀
15₈
11₂

14₃
12₈
13₇
11₅
11₀
11₁

Tidal Adjustment.com

15₅
14₄
14₂
11₉
10₈
8₅
7₄
6₉

by Blyth
12₄
12₄
10₄
7₅
6₃
8₅

Tidal Adjustment 3.00m
bENCs Enabled
Soundings 2.0-30.0m
Course Vector 6M
Depth in Metres

Scale 1:7700

ROT		HDG	COG	SOG
5.2°	▶	**057.9°**	**249.4°**	**0.0**
Stbd °/m		True	True	Knots

AMOLIAN
SOG 0.0

35
40
45
Nr London Gateway 2
50
55
Nr London Gateway 3
60
64

20

20
5₀
3₅
5₂
7₉
8₀
18₀
17₅
18₀
18₀
20₀
175
173
174
176
173
174
172
175
173
172
173
174
173
174
173

29 sea miles below London Bridge

SVITZER THAMES
SOG 0.1kn

SVITZER GANGES
SOG: 0.5kn

SVITZER LONDON
SOG 0.5kn

YASMINE

AQUABIANA FORT DEFRANCE

Tidal Adjustment.com

174
175
173
174
173
174
172
173
173
173
172
172
175
173
174₄
174
175
174
173
17₁
174
15₉
15₈
15₄
16₈
17₀
172
15₀
15₀
16₅
16₅
16₄
15₂
11₄
11₅
11₃
160
14₃
13₃
11₉
12₄
10₄
10₈
8₅
14₀
13₂
11₅
11₁
11₀
10₈
8₂
7₉
7₄
7₅
7₃
7₂
6₁
6₉
6₀
6₃

by Blyth
Scale 1:7700

Tidal Adjustment 3.00m
bENCs Enabled
Soundings 2.0-30.0m
Course Vector 6M
Depth in Metres

Spot the difference

Evelyn Maersk

One Falcon

ROT	HDG	COG	SOG
10.4°	000.9°	257.9°	-1.2
Stbd °/m	True	True	Knots

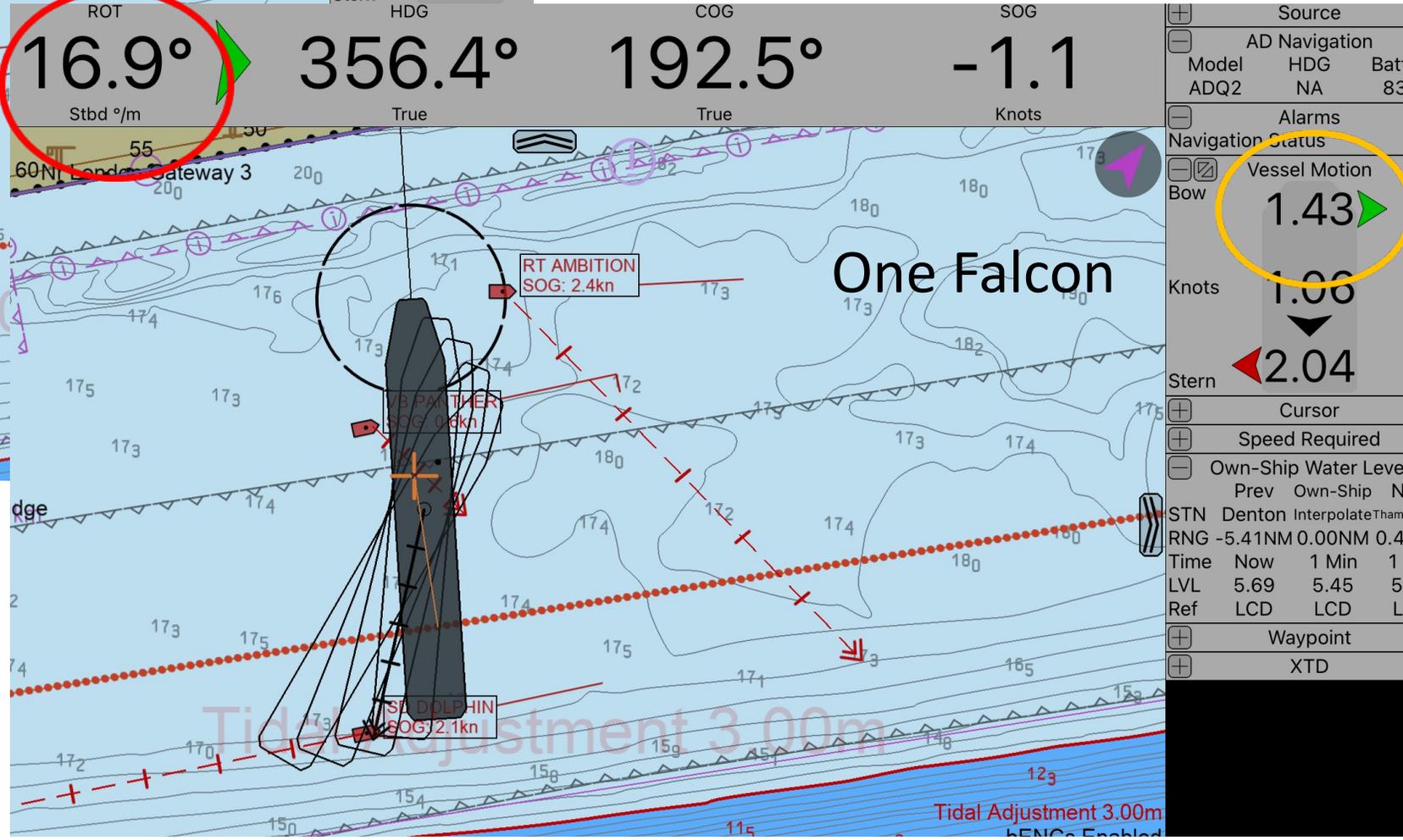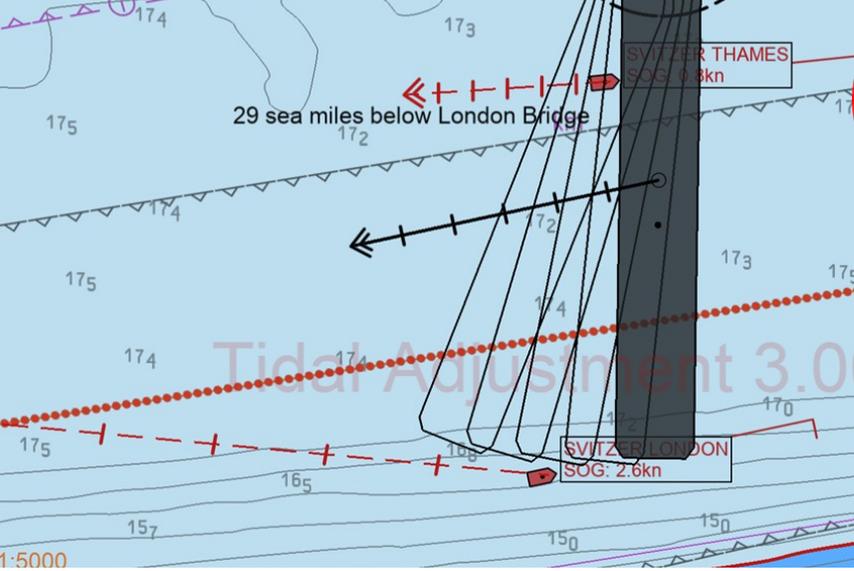| ROT	HDG	COG	SOG
16.9°	356.4°	192.5°	-1.1
Stbd °/m	True	True	Knots

Source
AD Navigation
Model   HDG   Ba
ADQ2   NA   8
Alarms
Navigation Status
Vessel Motion
Bow   ◄0.02
Knots   0.27
▼
Stern   ◄2.35

Source
AD Navigation
Model   HDG   Batt
ADQ2   NA   83
Alarms
Navigation Status
Vessel Motion
Bow   1.43►
Knots   1.06
▼
Stern   ◄2.04
Cursor
Speed Required
Own-Ship Water Leve
Prev   Own-Ship   N
STN   Denton   Interpolate Tham
RNG -5.41NM 0.00NM 0.4
Time   Now   1 Min   1
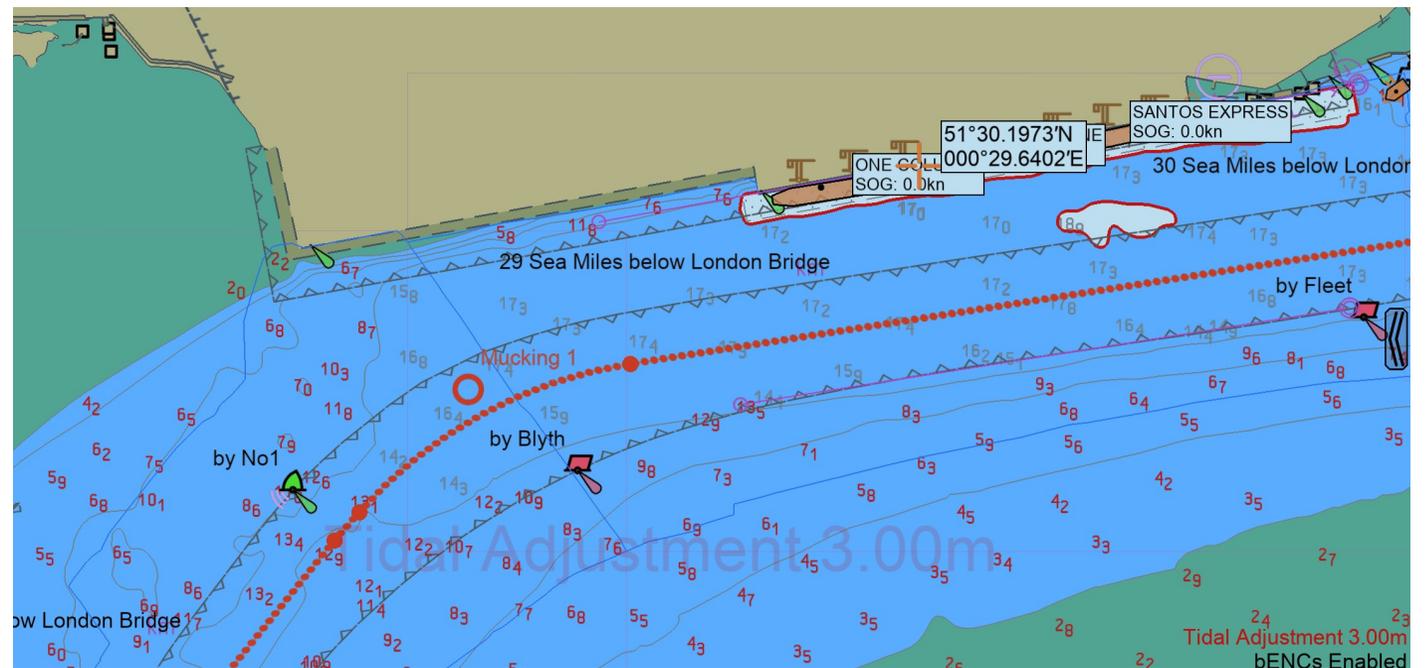LVL   5.69   5.45   5
Ref   LCD   LCD   L
Waypoint
XTD

How it really looks

Future Challenges

- Introduction of Berths 4, 5 and 6

- More ULCS – passing

- Ship design and propulsion