BOF-5.4: Passage Planning for ECDIS

A. Particulars of the Voyage

Vessel:	M/T NORDIC LUNA		Voyage No.	NAT013		Date Compeleted:	25/02/2018		
Departure Port:	Kome Kribi,Cameroon		Name of Berth:	KK 1 Marine Terminal		Draft Fwd:	14,50	m / ft	Draft Aft: 14,50 m / ft
Arrival Port:	Philadelphia, USA		Name of Berth:	Big Stone Anchorage		Draft Fwd:	14.60	m / ft	Draft Aft: 14.60 m / ft
Distance Berth to Berth:	5468.4		Distance Pilot to Pilot:	5452.6		Steaming Time:			Planned Speed: 13,0
Draft Restriction:	NIL	m/ft	AP(s) affected:						
Air Draft Restriction:	NIL	m/ft	AP(s) affected:						
Passage Plan file name:	NAT013L1		Passage Plan save location:	ECDIS No 1,2 HDD					

B. Course Card / Action Points

WP & AP No.	WP Name / Action Point Name	ENC Band No.	Position Lat			Position Long			Co (T°)	Dist.	XTC	Turn Radius	Air Draft	UKC	CAT ZOC	Safety Depth	Position Cross Check Method	Position Cross Check Interval	Safety Frame Settings	Watch Level
Passage Berth To Pilot Station - outward pilotage																				
WP00	Initial WP; Complete Pre-Departure C/L's; Manual Steering; BW-II; Master in corn; Stand-by on VHF 09/16; Set ECDIS CARD #1	FR271880 FR373820 FR373830 FR104209	02	55.3	N	009	47.9	E	270	3.2	0.1	0.4	35.44	18.19	D	17	RAD/GPS	30 MIN	2 MIN	BW-II
Passage Pilot Station To Pilot Station - Sea Passage																				
WP01	PBG; Pilot off point; Report to KK1 when pilot off on VHF ch 09	FR271880 FR373820 FR373830 FR104209	02	55.3	N	009	44.7	E	252	133	0.5	0.4	35.44	34.98	D/U	19	RAD/GPS	30 MIN	2 MIN	BW-II
AP01A	BW-I; Switch off E/S; Set ECDIS CARD #2; PFI-60 MIN		02	51.8	N	009	33.8	E									GPS/CEL	60 MIN	15 MIN	BW-I
WP02	Off Sao Tome Island; PFI 120 MIN	FR271880 FR373820 FR373830 FR104209	02	14.0	N	007	39.0	E	269	186.9	0.5	0.4	35.44	2557.5	U	21	GPS/CEL	120 MIN	30 MIN	BW-I
WP03	Gulf Of Guinea	FR271880 FR104209	02	09.4	N	004	33.2	E	276	946.4	0.5	0.4	35.44	3683.5	U/D	21	GPS/CEL	120 MIN	30 MIN	BW-I
WP04	Off Liberia Coast	FR271860 FR104209	03	49.0	N	011	03.0	W	299	1137.3	0.5	0.4	35.44	3983.5	U/D	21	GPS/CEL	120 MIN	30 MIN	BW-I
AP04A	Leave Hardering Area; Remove Razor Wires		04	3.0	N	011	28.4	W												
WP05	Leave GoG HRA, Send FR, Make Entry in DLB	GB104115	12	57.7	N	027	45.0	W	298	2369.2	0.5	0.4	35.44	5427	D	21	GPS/CEL	120 MIN	30 MIN	BW-I

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WP & AP No.	WP Name / Action Point Name	ENC Band No.	Position						Co (T°)	Dist.	XTC	Turn Radius	Air Draft	UKC	CAT ZOC	Safety Depth	Position Cross Check Method	Position Cross Check Interval	Safety Frame Settings	Watch Level
			Lat			Long														
AP05A	Change Inmarsat System for Navarea IV and AORW sat; Set ECDIS Card #3		15	10.0	N	032	0.0	W								22				
WP06	Bermuda Rise	GB104407 GB1A20M2 GB104403	29	50.9	N	061	08.4	W	283	312.4	0.5	0.4	35.34	4572	D	22	GPS/CEL	120 MIN	30 MIN	BW-I
WP07	Off Bermuda Rise	GB104403 GB1A20M2 US2EC02M US2EC03M	31	00.0	N	067	00.0	W	320	342.5	0.5	0.4	35.34	4981.9	U	22	GPS/CEL	120 MIN	30 MIN	BW-I
AP07A	Give Notice to ER to Change Fuel to LSMGO, 100 NM to ECA		34	04.8	N	070	04.6	W												
WP08	ECA Entering, Make Entry in DLB; Test ME & Steering Gear more than 12 NM Before Enter USA TW	GB104403 GB1A20M2 US2EC02M US2EC03M US3DE01M	35	21.4	N	071	23.3	W	320	244.2	0.5	0.4	35.34	4981.9	U	22	GPS/CEL	120 MIN	30 MIN	BW-I
AP08A	Echo Sounder On		37	53.3	N	074	02.4	W												
WP09	Delaware TSS Entering ; Set ECDIS CARD #4; Report to delaware Pilot VHF CH 14; Keep Watch VHF Ch. 13,14,16; PFI 30MIN GPS/RAD; Notice to ER	GB104403 GB1A20M2 US2EC03M US3DE01M US4DE11M US4VA50M	38	28.0	N	074	39.5	W	321	21.2	0.5	0.4	35.34	13.36	U	18	GPS/RAD	30 MIN	15 MIN	BW-II
AP09A	ESB; Master in Conn; BWL-II; Reduce Speed to 10 KNTS, North Whale Zone		38	35.5	N	074	47.2	W												
WP10	Off Delaware TSS; Complete Pre-Arrival C/L's; Manual Steering, Both Pimps in Use	GB104403 GB1A20M2 US2EC03M US3DE01M US4DE11M US4DE12M US5DE10M	38	44.5	N	074	56.5	W	298	3.9	0.1	0.4	35.34	4.27	U	18	RAD/VIS	60 MIN	2 MIN	BW-II
Passage Pilot Station To Berth - inward pilotage																				

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WP & AP No.	WP Name / Action Point Name	ENC Band No.	Position						Co (T°)	Dist.	XTC	Turn Radius	Air Draft	UKC	CAT ZOC	Safety Depth	Position Cross Check Method	Position Cross Check Interval	Safety Frame Settings	Watch Level
			Lat			Long														
WP11	Pilot Boarding Station	GB104403 GB1A20M2 US2EC03M US3DE01M US4DE11M US4DE12M US5DE10M	38	46.3	N	075	01.0	W	219	1.7	0.1	0.4	35.34	4.67	A1	17	RAD/VIS	30 MIN	2 MIN	BW-II
WP12	Delaware Entrance Buoy № 6; Set PI=1.9' to bn Harbor of Refuger Light	GB104403 GB1A20M2 US2EC03M US3DE01M US4DE11M US4DE12M US5DE10M US5NJ24M	38	47.6	N	072	02.4	W	341	2.9	0.1	0.4	35.34	10.67	A1	17	RAD/VIS	30 MIN	2 MIN	BW-II
WP13	South Shoal Lump Buoy 8B; Set PI=1.6' to bn Delaware Bay East Icebreaker Light 2	GB104403 GB1A20M2 US2EC03M US3DE01M US4DE11M US4DE12M US5DE10M	38	50.3	N	075	03.6	W	312	5	0.1	0.4	35.34	20.47	A1	17	RAD/VIS	30 MIN	2 MIN	BW-II
WP14	Tanker Anchorag Approach Light Buoy A	GB104403 GB1A20M2 US2EC03M US3DE01M US4DE11M US4DE12M	38	53.7	N	075	08.3	W	331	2.9	0.1	0.4	35.34	5.19	U	17	RAD/VIS	30 MIN	2 MIN	BW-II
WP15	Big Stone Anchorage; Complete Anchoring C/L's; Set Anchor Alarm; Pilot Disembarked	GB104403 GB1A20M2 US2EC03M US3DE01M US4DE11M US4DE12M	38	56.3	N	075	10.2	W						21.1	U	16				

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C. Charts and Publications

All Voyage ENCs and e-NPs are updated up to the latest Notice To Mariners including Temporary & Preliminary Notice: 10 **week**

Thematic Charts (if available):

Maritime Security Charts	NP:N/A,Annex to SSP	Meteorological Charts and Diagrams	NP:
Admiralty Routing Charts	NP:IMO Ship's routening		NP:
Admiralty Routing Guides	NP:		NP:
Planning Charts	NP:ECDIS General Chart		NP:

Admiralty Digital Publications:

ADDL	Admiralty Digital List of Lights	**Updated up to:**	11 **week**
ADRS	Admiralty Digital Radio Signals, Vol. 6	**Updated up to:**	11 **week**
ATT	Admiralty Total Tide	**Updated up to:**	11 **week**

Relevant sections of the Admiralty Digital Publication pertaining to the vessel's planned voyage are printed off and attached to this passage plan: YES

Nautical Publications and Maritime Safety Information:

Sailing Directions	NP:69,70,71,1	MI Marine Notice	No. N/A
Admiralty List of Radio Signals	NP:N/A	DNV Navigator	Update: Wk-11/18
Tidal Stream Atlases	NP:N/A	Local Marine Notice	No.
Ocean Passages for the World	NP:136	Weather Routing Service	WNI Weather News

Prepared by:	2nd Officer	**Name of 2/O**	N.Varakin	**Signature**	
Approved by:	Master	**Name of Master**	V.Dashkin	**Signature**	
Acknowledged by:	Chief Officer	**Name of Officer**	V.Brekhov	**Signature**	
Acknowledged by:	3rd Officer	**Name of Officer**	V.Zakharov	**Signature**	

NORDIC LUNA IMO NO. 9290933 GEORGETOWN

ED_002238_00001412-00004

// ROUTE SHEET exported by JRC ECDIS.
// <<NOTE>>This strings // indicate comment column/cells. You can edit freely.
// NAT013I <Normal> KOME KRIBI - BIG STONE ANCHORAGE

// WPT No.	LAT			LON			PORT[NM]	STBD[NM]	Arr. Rad[NI	Speed[kn]	Sail(RL/GC)	ROT[deg/n	Turn Rad[N	Time Zone		Name
0	2	55.297	N	9	47.875	E	***	***	***	***	***	***	***	05:00	W	
1	2	55.297	N	9	44.691	E	0.1	0.1	0.5	5	RL	9.55	0.5	05:00	W	
2	2	14.004	N	7	38.976	E	0.5	0.5	0.5	13	RL	24.83	0.5	05:00	W	
3	2	9.414	N	4	33.205	E	0.5	0.5	0.5	13	RL	24.83	0.5	05:00	W	
4	3	49	N	11	3	W	0.5	0.5	0.5	13	RL	24.83	0.5	05:00	W	
5	12	57.722	N	27	44.462	W	0.5	0.5	0.5	13	RL	31.04	0.4	05:00	W	
6	29	50.934	N	61	8.415	W	0.5	0.5	0.5	13	RL	31.04	0.4	05:00	W	
7	31	0	N	67	0	W	0.5	0.5	0.5	13	RL	31.04	0.4	05:00	W	
8	35	21.4	N	71	23.306	W	0.5	0.5	0.5	13	RL	31.04	0.4	05:00	W	
9	38	28	N	74	39.5	W	0.5	0.5	0.5	13	RL	31.04	0.4	05:00	W	
10	38	44.5	N	74	56.5	W	0.2	0.2	0.5	10	RL	23.87	0.4	05:00	W	
11	38	46.32	N	75	0.961	W	0.2	0.2	0.5	10	RL	23.87	0.4	05:00	W	PBG
12	38	47.587	N	75	2.455	W	0.1	0.1	0.5	10	RL	23.87	0.4	05:00	W	
13	38	50.354	N	75	3.641	W	0.1	0.1	0.5	10	RL	23.87	0.4	05:00	W	
14	38	53.727	N	75	8.353	W	0.1	0.1	0.4	8	RL	19.1	0.4	00:00	E	
15	38	56.292	N	75	10.2	W	0.1	0.1	0.4	5	RL	11.94	0.4	00:00	E	

Prepared by:	2nd Officer	N.Varakin	Signature
Approved by:	Master	V.Dashkin	Signature
Acknowledged by:	Chief Officer	V.Brekhov	Signature
Acknowledged by:	3rd Officer	V.Zakharov	Signature

MT NORDIC LUNA
IMO NO. 5290833
GEORGE TOWN

ED_002238_00001412-00005

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TIDAL INFORMATION

-DEPARTURE PORT
-ARRIVAL PORT

3688 Kribi
2°56'N 9°55'E Cameroon 24 February 2018 -0100
Data Area 10. South Atlantic & Indian Ocean (southern part) Version 0
Predictions are based on BONNY TOWN

24/02/2018			25/02/2018			26/02/2018			27/02/2018		
	Time	Height		Time	Height		Time	Height		Time	Height
High	12:07	1.5 m	High	00:32 13:33	1.7 m 1.6 m	High	01:47 14:48	1.7 m 1.7 m	High	02:54 15:52	1.8 m 1.8 m
Low		0.5 m 0.6 m	Low		0.5 m 0.6 m	Low		0.4 m 0.5 m	Low		0.3 m 0.4 m

28/02/2018			01/03/2018			02/03/2018		
	Time	Height		Time	Height		Time	Height
High	03:53 16:46	1.8 m 1.9 m	High	04:45 17:33	1.9 m 2.0 m	High	05:31 18:14	1.9 m 2.0 m
Low		0.2 m 0.3 m	Low		0.1 m 0.3 m	Low		0.1 m

Insufficient source data inhibits the computation of full predictions for this tidal station
ML inferred
Predicted heights are in metres above Chart Datum
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2727 Lewes (Breakwater Harbour)
38°47'N 75°07'W United States 15 March 2018 +0500
Data Area 9. North America (E coast) & Caribbean Version 0

15/03/2018	
12:00	0.2 m
13:00	0.0 m
14:00	0.1 m
15:00	0.2 m
16:00	0.5 m
17:00	0.8 m
18:00	1.0 m
19:00	1.2 m
20:00	1.2 m
21:00	1.0 m
22:00	0.8 m
23:00	0.4 m

16/03/2018	
00:00	0.2 m
01:00	0.0 m
02:00	0.0 m
03:00	0.2 m
04:00	0.4 m
05:00	0.8 m
06:00	1.1 m
07:00	1.3 m
08:00	1.4 m
09:00	1.3 m
10:00	1.0 m
11:00	0.7 m
12:00	0.3 m
13:00	0.1 m
14:00	0.0 m
15:00	0.1 m
16:00	0.3 m
17:00	0.6 m
18:00	0.9 m
19:00	1.2 m
20:00	1.3 m
21:00	1.2 m
22:00	1.0 m
23:00	0.7 m

17/03/2018	
00:00	0.3 m
01:00	0.0 m
02:00	-0.1 m
03:00	0.0 m
04:00	0.2 m
05:00	0.5 m
06:00	0.9 m
07:00	1.2 m
08:00	1.4 m
09:00	1.4 m
10:00	1.2 m
11:00	0.9 m
12:00	0.5 m
13:00	0.2 m
14:00	0.0 m
15:00	0.0 m
16:00	0.1 m
17:00	0.4 m
18:00	0.7 m
19:00	1.1 m
20:00	1.3 m
21:00	1.3 m
22:00	1.2 m
23:00	0.9 m

18/03/2018	
00:00	0.6 m
01:00	0.2 m
02:00	0.0 m
03:00	-0.1 m
04:00	0.0 m
05:00	0.3 m
06:00	0.7 m
07:00	1.0 m
08:00	1.3 m
09:00	1.4 m
10:00	1.3 m
11:00	1.1 m
12:00	0.7 m
13:00	0.4 m
14:00	0.0 m
15:00	-0.1 m
16:00	0.0 m
17:00	0.2 m
18:00	0.5 m
19:00	0.9 m
20:00	1.2 m
21:00	1.4 m
22:00	1.4 m
23:00	1.2 m

19/03/2018	
00:00	0.8 m
01:00	0.5 m
02:00	0.1 m
03:00	-0.1 m
04:00	-0.1 m
05:00	0.1 m
06:00	0.4 m
07:00	0.8 m
08:00	1.1 m
09:00	1.3 m
10:00	1.4 m
11:00	1.2 m
12:00	1.0 m
13:00	0.6 m
14:00	0.2 m
15:00	0.0 m
16:00	-0.1 m
17:00	0.0 m
18:00	0.3 m
19:00	0.7 m
20:00	1.0 m
21:00	1.3 m
22:00	1.4 m
23:00	1.3 m

20/03/2018	
00:00	1.1 m
01:00	0.7 m
02:00	0.4 m
03:00	0.0 m
04:00	-0.1 m
05:00	0.0 m
06:00	0.2 m
07:00	0.5 m
08:00	0.8 m
09:00	1.1 m
10:00	1.3 m
11:00	1.3 m
12:00	1.1 m
13:00	0.8 m
14:00	0.5 m
15:00	0.1 m
16:00	-0.1 m
17:00	-0.1 m
18:00	0.1 m
19:00	0.5 m
20:00	0.8 m
21:00	1.1 m
22:00	1.4 m
23:00	1.4 m

21/03/2018	
00:00	1.3 m
01:00	1.0 m
02:00	0.7 m
03:00	0.3 m
04:00	0.0 m
05:00	-0.1 m
06:00	0.0 m
07:00	0.3 m
08:00	0.6 m
09:00	0.9 m
10:00	1.1 m
11:00	1.3 m
12:00	1.2 m
13:00	1.0 m
14:00	0.7 m
15:00	0.4 m
16:00	0.1 m
17:00	-0.1 m
18:00	0.0 m
19:00	0.2 m
20:00	0.6 m
21:00	0.9 m
22:00	1.2 m
23:00	1.4 m

22/03/2018	
00:00	1.4 m
01:00	1.3 m
02:00	1.0 m
03:00	0.6 m
04:00	0.3 m
05:00	0.0 m
06:00	0.0 m
07:00	0.1 m
08:00	0.3 m
09:00	0.6 m
10:00	0.9 m
11:00	1.1 m

Predicted heights are in metres above Chart Datum
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2727 Lewes (Breakwater Harbour)
38°47'N 75°07'W United States 15 March 2018 +0500
Data Area 9. North America (E coast) & Caribbean Version 0

15/03/2018			16/03/2018			17/03/2018			18/03/2018		
	Time	Height		Time	Height	●	Time	Height		Time	Height
High	07:14	1.3 m	High	07:53	1.4 m	High	08:30	1.4 m	High	09:08	1.4 m
	19:31	1.2 m		20:09	1.3 m		20:47	1.3 m		21:25	1.4 m
Low	00:45	0.0 m	Low	01:25	0.0 m	Low	02:05	-0.1 m	Low	02:45	-0.1 m
	13:21	0.0 m		13:56	0.0 m		14:31	-0.1 m		15:07	-0.1 m

19/03/2018			20/03/2018			21/03/2018		
	Time	Height		Time	Height		Time	Height
High	09:47	1.4 m	High	10:28	1.3 m	High	11:13	1.3 m
	22:06	1.4 m		22:49	1.4 m		23:36	1.4 m
Low	03:26	-0.1 m	Low	04:10	-0.1 m	Low	04:57	-0.1 m
	15:45	-0.1 m		16:25	-0.1 m		17:09	-0.1 m

Predicted heights are in metres above Chart Datum
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ECDIS SETTING CARD

BOF-5.2: ECDIS Setting Card № 4 – "Coastal Navigation Arrival Big Stone Anchorage"

The card is to be completed by the navigation officer, signed by the Master and posted on the bridge near the ECDIS. The Card can be amended with equipment specific information, as required.

A separate card shall be completed for the main stages of the passage i.e. Pilotage outbound, Coastal Navigation, Ocean Passage, Pilotage Inbound. The Name of the card may be used as a reference in the action point of the passage plan.

No.	Setting	Value	
1	**Safety Depth**	**18 M**	
2	**Safety Contour**	**18 M**	
3	**Safety Frame**	**2 MIN (Look Ahead)**	
4	**Display Setting**	**CUSTOM**	
5	**Primary ECDIS Scale**	**Variable (See over scale notice)**	
6	**Position Source – Main ECDIS**	**Primary**	**Secondary**
		GPS 1	**DR**
7	**Position Source – Back-up ECDIS**	**Primary**	**Secondary**
		DR	**GPS 1**

ECDIS Equipment – Manufacturer and model: JRC JAN-901B

Navigation Officer: N.Varakin Signature: .....

Master: V.Dashkin Signature: ..... Date: 16.03.18

BOF-5.2: ECDIS Setting Card № 3 – "Ocean Passage Bad Weather"

The card is to be completed by the navigation officer, signed by the Master and posted on the bridge near the ECDIS. The Card can be amended with equipment specific information, as required.

A separate card shall be completed for the main stages of the passage i.e. Pilotage outbound, Coastal Navigation, Ocean Passage, Pilotage Inbound. The Name of the card may be used as a reference in the action point of the passage plan.

No.	Setting	Value	
1	**Safety Depth**	**22 M**	
2	**Safety Contour**	**22 M**	
3	**Safety Frame**	**30 MIN (Look Ahead)**	
4	**Display Setting**	**CUSTOM**	
5	**Primary ECDIS Scale**	**Variable (See over scale notice)**	
6	**Position Source – Main ECDIS**	**Primary**	**Secondary**
		GPS 1	**DR**
7	**Position Source – Back-up ECDIS**	**Primary**	**Secondary**
		DR	**GPS 1**

ECDIS Equipment – Manufacturer and model: JRC JAN-901B

Navigation Officer: N.Varakin Signature: .....

Master: V.Dashkin Signature: ..... Date: 06.03.18

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BOF-5.2: ECDIS Setting Card № 2 – "Ocean Passage"

The card is to be completed by the navigation officer, signed by the Master and posted on the bridge near the ECDIS. The Card can be amended with equipment specific information, as required.

A separate card shall be completed for the main stages of the passage i.e. Pilotage outbound, Coastal Navigation, Ocean Passage, Pilotage Inbound. The Name of the card may be used as a reference in the action point of the passage plan.

No.	Setting	Value	
1	**Safety Depth**	**21 M**	
2	**Safety Contour**	**21 M**	
3	**Safety Frame**	**30 MIN (Look Ahead)**	
4	**Display Setting**	**CUSTOM**	
5	**Primary ECDIS Scale**	**Variable (See over scale notice)**	
6	**Position Source – Main ECDIS**	**Primary**	**Secondary**
		GPS 1	**DR**
7	**Position Source – Back-up ECDIS**	**Primary**	**Secondary**
		DR	**GPS 1**

ECDIS Equipment – Manufacturer and model: JRC JAN-901B

Navigation Officer: N.Varakin Signature: .....

Master: V.Dashkin Signature: ..... Date: 25.02.18

ED_002238_00001412-00013

BOF-5.2: ECDIS Setting Card – "Departure Kome Kribi"

The card is to be completed by the navigation officer, signed by the Master and posted on the bridge near the ECDIS. The Card can be amended with equipment specific information, as required.

A separate card shall be completed for the main stages of the passage i.e. Pilotage outbound, Coastal Navigation, Ocean Passage, Pilotage Inbound. The Name of the card may be used as a reference in the action point of the passage plan.

No.	Setting	Value	
1	**Safety Depth**	**19 M**	
2	**Safety Contour**	**19 M**	
3	**Safety Frame**	**15 MIN (Look Ahead)**	
4	**Display Setting**	**CUSTOM**	
5	**Primary ECDIS Scale**	**Variable (See over scale notice)**	
6	**Position Source – Main ECDIS**	**Primary**	**Secondary**
		GPS 1	**DR**
7	**Position Source – Back-up ECDIS**	**Primary**	**Secondary**
		DR	**GPS 1**

ECDIS Equipment – Manufacturer and model: JRC JAN-901B

Navigation Officer: N.Varakin Signature: .....

Master: V.Dashkin Signature: ..... Date: 25.02.18

COLUMBIA
SHIPMANAGEMENT

UKC CALCULATION

BOF-2.2b: Passage Plan - UKC Calculation

Vessel: **NORDIC LUNA** Displacement: **151,080** LBP: **263.0** Breadth: **48.0** Mean Draft: **14.50**

INITIAL DATA						
Position	WP00	WP00-01	WP01-02	WP02-03	WP03-04	WP04-05
	KK1 SBM	Pilot St	Golfe De Biafra	Gulf of Guinea	Off Liberia	Off HRA
Date	25/02/2018	25/02/2018	26/02/2018	26/02/2018	28/02/2018	05/03/2018
Time of Passage	13:00	18:00	06:30	21:00	21:35	14:25
Shallow Waters	BERTH	OPEN WATER	OPEN WATER	OPEN WATER	OPEN WATER	OPEN WATER
Width of Channel, in meters						
Charted Depth	33.00	50.00	2574.00	3700.00	4000.00	5444.00
Maximum Salt Water Draft	14.50	14.50	14.50	14.50	14.50	14.50
Initial UKC	**18.50**	**35.50**	**2,559.50**	**3,685.50**	**3,985.50**	**5,429.50**
VARIABLE FACTORS						
Predicted Tidal Height	0.00	0.00	0.00	0.00	0.00	0.00
Difference between Predicted and actual Tidal Height	0.00	0.00	0.00	0.00	0.00	0.00
Tidal Surge	0.00	0.00	0.00	0.00	0.00	0.00
Hydrographic Data Tolerance	0.00	0.00	0.00	0.00	0.00	0.00
Reduced Depth over Pipelines	0.00	0.00	0.00	0.00	0.00	0.00
Water Density Allowance	0.00	0.00	0.00	0.00	0.00	0.00
Allowance for Sea and Swell	-0.20	-0.20	-0.50	-0.50	-1.00	-1.00
Increase in Draft due to Heel, Trim or List	0.00	0.00	0.00	0.00	0.00	0.00
Allowance for Draft calculation and for Hogging and Sagging	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11
TOTAL ALLOWANCE	**-0.31**	**-0.31**	**-0.61**	**-0.61**	**-1.11**	**-1.11**
PLANNED and LIMITING FACTORS						
Columbia min UKC requirements	**1.45**	**3.63**	**3.63**	**3.63**	**3.63**	**3.63**
Max Speed to comply with company UKC policy	**BERTH**	**61.8**	**556.4**	**667.8**	**694.5**	**810.7**
Planned Speed		**5.0**	**13.0**	**13.0**	**13.0**	**13.0**
Estimated Squat at the Planned Speed	**0.00**	**0.21**	**1.39**	**1.39**	**1.39**	**1.39**
Estimated UKC at the Planned Speed	**18.19**	**34.98**	**2557.50**	**3683.50**	**3983.00**	**5427.00**
UKC in % of Deepest Draft	**125.4%**	**241.3%**	**17637.9%**	**25403.4%**	**27468.9%**	**37427.6%**
Limiting Depth at the Planned Speed	**16.3**	**18.6**	**20.1**	**20.1**	**20.6**	**20.6**
Office approval required	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
CATZOC INFO (applicable for ECDIS only)						
CATZOC	**D**	**D**	**U**	**U**	**U**	**D**
Depth Accuracy	**worse than 3.65 m**	**worse than 4.50 m**	**Unassessed**	**Unassessed**	**Unassessed**	**worse than 274.20 m**

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BOF-2.2b: Passage Plan - UKC Calculation

Vessel: **NORDIC LUNA** Displacement: **151,080** LBP: **263.0** Breadth: **48.0** Mean Draft: **14.50**

INITIAL DATA						
Position	WP05-06 Leave HRA	WP06-07 Berm. Rise	WP07-08 Off Berm. Rise	WP08-09 ECA Entering	WP09-10 Delaware TSS	WP10-11 Off TSS
Date	06/03/2018	12/03/2018	13/03/2018	15/03/2018	16/03/2018	16/03/2018
Time of Passage	13:00	16:00	00:00	13:00	06:00	08:00
Shallow Waters	**OPEN WATER**	**OPEN WATER**	**OPEN WATER**	**OPEN WATER**	**OPEN SHALLOW**	**OPEN SHALLOW**
Width of Channel, in meters						
Charted Depth	4590.00	5000.00	5000.00	4367.00	28.60	19.20
Maximum Salt Water Draft	14.50	14.60	14.60	14.60	14.60	14.60
Initial UKC	**4,575.50**	**4,985.40**	**4,985.40**	**4,352.40**	**14.00**	**4.60**
VARIABLE FACTORS						
Predicted Tidal Height	0.00	0.00	0.00	0.00	0.80	1.30
Difference between Predicted and actual Tidal Height	0.00	0.00	0.00	0.00	0.00	0.00
Tidal Surge	0.00	0.00	0.00	0.00	0.00	0.00
Hydrographic Data Tolerance	0.00	0.00	0.00	0.00	0.00	0.00
Reduced Depth over Pipelines	0.00	0.00	0.00	0.00	0.00	0.00
Water Density Allowance	0.00	0.00	0.00	0.00	0.00	-0.19
Allowance for Sea and Swell	-1.50	-2.00	-2.00	-1.50	-0.50	-0.50
Increase in Draft due to Heel, Trim or List	0.00	0.00	0.00	0.00	0.00	0.00
Allowance for Draft calculation and for Hogging and Sagging	-0.11	-0.11	-0.11	-0.11	-0.11	-0.11
TOTAL ALLOWANCE	**-1.61**	**-2.11**	**-2.11**	**-1.61**	**0.19**	**0.50**
PLANNED and LIMITING FACTORS						
Columbia min UKC requirements	**3.63**	**3.65**	**3.65**	**3.65**	**2.19**	**2.19**
Max Speed to comply with company UKC policy	**744.1**	**776.7**	**776.7**	**725.7**	**38.1**	**18.8**
Planned Speed	**12.9**	**13.0**	**13.0**	**13.0**	**10.0**	**10.0**
Estimated Squat at the Planned Speed	**1.37**	**1.39**	**1.39**	**1.39**	**0.83**	**0.83**
Estimated UKC at the Planned Speed	**4572.52**	**4981.90**	**4981.90**	**4349.40**	**13.36**	**4.27**
UKC in % of Deepest Draft	**31534.6%**	**34122.6%**	**34122.6%**	**29790.4%**	**91.5%**	**29.3%**
Limiting Depth at the Planned Speed	**21.1**	**21.8**	**21.8**	**21.3**	**17.4**	**17.1**
Office approval required	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
CATZOC INFO (applicable for ECDIS only)						
CATZOC	**D**	**U**	**D**	**U**	**U**	**U**
Depth Accuracy	**worse than 231.50 m**	**Unassessed**	**worse than 252.00 m**	**Unassessed**	**Unassessed**	**Unassessed**

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BOF-2.2b: Passage Plan - UKC Calculation

Vessel: **NORDIC LUNA** Displacement: **151,080** LBP: **263.0** Breadth: **48.0** Mean Draft: **14.50**

INITIAL DATA						
Position	WP11-12	WP12-13	WP13-14	WP14-15	WP15	
	PBG	Buoy № 6	Buoy 8B	Light Buoy A	Anchorage	
Date	16/03/2018	16/03/2018	16/03/2018	16/03/2018	16/03/2018	
Time of Passage	08:30	08:45	09:15	09:45	10:30	
Shallow Waters	OPEN SHALLOW	OPEN SHALLOW	OPEN SHALLOW	OPEN SHALLOW	BERTH	
Width of Channel, in meters						
Charted Depth	19.20	25.20	35.00	19.20	35.00	
Maximum Salt Water Draft	14.60	14.60	14.60	14.60	14.60	
Initial UKC	**4.60**	**10.60**	**20.40**	**4.60**	**20.40**	
VARIABLE FACTORS						
Predicted Tidal Height	1.40	1.40	1.40	1.30	1.20	
Difference between Predicted and actual Tidal Height	0.00	0.00	0.00	0.00	0.00	
Tidal Surge	0.00	0.00	0.00	0.00	0.00	
Hydrographic Data Tolerance	0.00	0.00	0.00	0.00	0.00	
Reduced Depth over Pipelines	0.00	0.00	0.00	0.00	0.00	
Water Density Allowance	-0.19	-0.19	-0.19	-0.19	-0.19	
Allowance for Sea and Swell	-0.20	-0.20	-0.20	-0.20	-0.20	
Increase in Draft due to Heel, Trim or List	0.00	0.00	0.00	0.00	0.00	
Allowance for Draft calculation and for Hogging and Sagging	-0.11	-0.11	-0.11	-0.11	-0.11	
TOTAL ALLOWANCE	**0.90**	**0.90**	**0.90**	**0.80**	**0.70**	
PLANNED and LIMITING FACTORS						
Columbia min UKC requirements	**2.19**	**2.19**	**2.19**	**2.19**	**1.46**	
Max Speed to comply with company UKC policy	**20.0**	**33.6**	**48.1**	**19.7**	**BERTH**	
Planned Speed	**10.0**	**10.0**	**10.0**	**5.0**	**0.0**	
Estimated Squat at the Planned Speed	**0.83**	**0.83**	**0.83**	**0.21**	**0.00**	
Estimated UKC at the Planned Speed	**4.67**	**10.67**	**20.47**	**5.19**	**21.10**	
UKC in % of Deepest Draft	**32.0%**	**73.1%**	**140.2%**	**35.6%**	**144.5%**	
Limiting Depth at the Planned Speed	**16.7**	**16.7**	**16.7**	**16.2**	**15.3**	
Office approval required	**NO**	**NO**	**NO**	**NO**	**NO**	
CATZOC INFO (applicable for ECDIS only)						
CATZOC	**A1**	**A1**	**A1**	**U**	**U**	
Depth Accuracy	**0.69**	**0.75**	**0.85**	**Unassessed**	**Unassessed**	

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