

Post Voyage Analysis Report

Performance Results:

	Date effective	Speed	HFO consumption	MDO consumption
Eco Speed laden (11.8kts)	11 Feb 2023 21:00			

VesselName:

From: Conakry
To: Singapore
Issued: March 21 2023
Reference NR:

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Management Summary (Total voyage)

Customer:	.	Vessel:	
From:	Conakry	To:	Singapore
ATD (UTC):	11 Feb 2023 21:00	ATA (UTC):	19 Mar 2023 12:00

Management Summary (Total voyage)

Management Summary (Per leg)

Leg 1:			
From:	Conakry	To:	Singapore
Cargo (mT)	175317	Draft Fwd/Aft (m)	18.28/18.37
ATD (UTC):	11 Feb 2023 21:00	ATA (UTC):	19 Mar 2023 12:00

C/P Speed and consumption (Eco Speed laden (11.8kts), date effective: 11 Feb 2023 21:00)

	C/P	Allowance	
Speed	11.8 kts	-0.5 kts (11.3 kts)	✘
HFO consumption	41.0 mT/day	+5% (43.1) mT	✔
MDO consumption	0.0 mT/day	+5% (0.0) mT	✘
Good weather definition	Good weather up to and including Beaufort force 4 (16kts) and Douglas Seastate 3 (2.0 meters significant wave height).		
Fuel saved versus time lost	Not applicable		

Speed analysis

	All weather	Good weather
Distance	8890.79 nm	5339.21 nm
Time	855.0 hrs	499.0 hrs
Average speed	10.399 kts	10.7 kts
Average RPM	68.5 RPM	68.7 RPM
Current factor	-0.321 kts	-0.285 kts
Weather factor	-0.265 kts	0.0 kts
Performance speed	10.98 kts	10.98 kts

	Calculation	Result
C/P Time	8890.8 nm / 11.80 kts	753.46 hrs
Maximum warranted time	8890.8 nm / 11.30 kts	786.8 hrs
GWT extrapolated voyage	8890.8 nm / 10.99 kts	809.39 hrs
Time loss		22.6 hrs

HFO Bunker evaluation

	All Weather	Good Weather
Consumption	1471.06 mT	856.73 mT
Average per day	41.293 mT	41.205 mT
GWx allowed consumption		852.458 / 895.081 mT
GWx allowed consumption extrapolated		1344.110 / 1411.315 mT
GWx cons. extrapolated voyage		1389.64 mT
Deviation total voyage (over consumption)		0.0 mT

MDO Bunker evaluation

	All Weather	Good Weather
Consumption	5.6 mT	5.6 mT
Average per day	0.157 mT	0.269 mT
GWx allowed consumption		0.000 / 0.000 mT
GWx allowed consumption extrapolated		0.000 / 0.000 mT
GWx cons. extrapolated voyage		9.08 mT
Deviation total voyage (over consumption)		9.08 mT

Wind and wave analysis (Total Voyage)

Wind analysis

Number of hours of wind
Beaufort, total significant wind

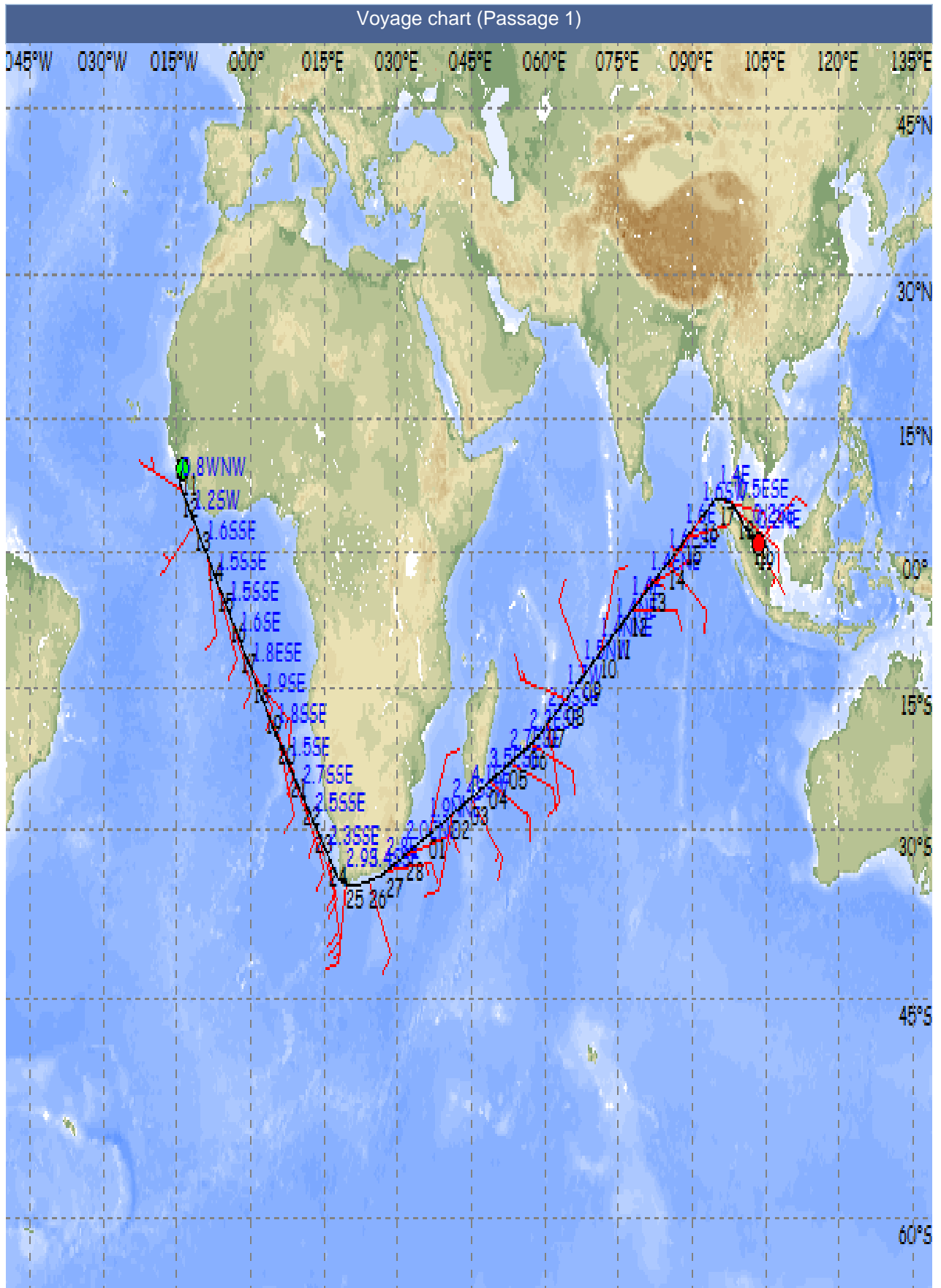
Relative Bearing Wind Force	Head 0-30	Bow 30-60	Beam 60-120	Quarter 120-150	Follow 150-180	Total Hours	Percentage
Bft < 1	1	2	2	1		6	1 %
2	42	21	17	3	9	91	11 %
3	114	86	59	9	6	273	32 %
4	244	74	87	6	15	425	50 %
5	49	9				58	7 %
6	1					1	0 %
7							
8							
9							
> 10							
Total hours	450	191	165	20	29	855	100 %
Percentage	53	22	19	2	3	100	

Wave analysis

Number of hours of wave height
Meters, total significant wave height

Relative Bearing Wave Height	Head 0-30	Bow 30-60	Beam 60-120	Quarter 120-150	Follow 150-180	Total Hours	Percentage
Meters 0	42	13	15			71	8 %
1	76	123	24	238	14	475	56 %
2	49	32	38	99	1	219	26 %
3			13	59		72	8 %
4				18		18	2 %
5							
6							
7							
8							
>9							
Total hours	167	168	90	414	15	855	100 %
Percentage	20	20	11	48	2	100	

Details Passage 1



Nr.	Track								Weather										Bunkers				Vessel obs. weather					
	Code	Date	Time(UTC)	Lat	Lon	Dist (nm)	SOG (kts)	Avg. RPM (RPM)	Current (kts)	Current factor	STW (kts)	Wind Bft (kts)	Wave (m)	Swell (m)	Total Wave Height DSS (m)	HFO (mT)		MDO (mT)		Current Dir (kts)	Wind	Wave	Swell					
																ROB	AV(24H)	ROB	AV(24H)		Dir (Bft/kts)	(m)	Dir	(m)				
10	RP	21/02	12:00	23°56'S	008°18'E	251.1	10.46	68.3	WNW	0.19	-0.14	10.6	SE	4(11.0)	0.48	SSE	1.4	3(1.5)	2559.3	41.4	178.5		WNW (0.2)	S (4)(13.0)	1.5	S	1.5	
		21/02 18:00		24°44'S	008°59'E				WNW	0.1	-0.1		SSE	4(11.0)	0.5	S	2.6	2.65										
		22/02 00:00		25°29'S	009°38'E				SW	0.2	0.0		SSE	4(14.0)	0.7	S	2.8	2.89										
		22/02 06:00		26°10'S	010°13'E				W	0.3	-0.2		SE	4(14.0)	0.8	S	2.8	2.91										
11	RP	22/02	11:00	26°42'S	010°41'E	210.8	9.17	68.0	WNW	0.26	-0.16	9.32	SSE	4(12.0)	0.62	S	2.65	4(2.7)	2519.5	41.5	178.5		WNW (0.2)	SSE (5)(19.0)	4.0	SSE	4.0	
		22/02 12:00		26°50'S	010°48'E				NW	0.3	-0.3		SSE	4(16.0)	1.1	S	2.4	2.64										
		22/02 18:00		27°31'S	011°25'E				NW	0.5	-0.5		SSE	5(18.0)	1.8	SSW	1.8	2.55										
		23/02 00:00		28°17'S	012°05'E				WSW	0.5	-0.2		SSE	5(20.0)	2.1	SSW	1.4	2.52										
		23/02 06:00		29°00'S	012°42'E				WSW	0.2	-0.1		SSE	5(20.0)	2.1	SSW	1.4	2.52										
12	RP	23/02	11:00	29°37'S	013°16'E	222.5	9.27	67.8	NW	0.41	-0.31	9.58	SSE	5(19.0)	1.89	SSW	1.64	4(2.5)	2478.1	41.5	178.5		WNW (0.3)	SSE (6)(24.0)	4.0	SSE	6.0	
		23/02 12:00		29°51'S	013°28'E				NNW	0.5	-0.5		SSE	5(18.0)	1.9	SSW	1.4	2.36										
		23/02 18:00		30°33'S	014°06'E				NW	0.2	-0.2		SSE	5(21.0)	2.1	SW	1.1	2.37										
		24/02 00:00		31°23'S	014°51'E				WSW	0.3	-0.1		SSE	5(20.0)	1.9	SW	1.5	2.42										
		24/02 06:00		32°07'S	015°35'E				NW	0.5	-0.5		SSE	5(18.0)	1.3	SW	1.9	2.3										
13	RP	24/02	11:00	32°44'S	016°06'E	237.6	9.9	67.9	NNW	0.35	-0.25	10.15	SSE	5(19.0)	1.76	SW	1.51	4(2.3)	2436.6	41.4	178.5		ENE (0.2)	S (6)(24.0)	4.0	S	4.0	
		24/02 12:00		32°53'S	016°14'E				WNW	0.8	-0.7		S	4(14.0)	0.8	SW	2.0	2.15										
		24/02 18:00		33°44'S	017°03'E				NW	0.8	-0.8		S	4(16.0)	0.9	SW	2.1	2.28										
		25/02 00:00		34°24'S	017°40'E				SSE	0.6	0.6		S	4(16.0)	0.9	SW	2.8	2.94										
		25/02 06:00		34°55'S	018°46'E				W	1.0	-1.0		SSW	4(13.0)	0.8	SW	3.6	3.69										
14	RP	25/02	10:00	35°01'S	019°22'E	221.5	9.63	67.8	WNW	0.87	-0.7	10.33	S	4(15.0)	0.87	SW	2.74	4(2.9)	2396.9	41.5	178.5		WNW (0.4)	S (5)(19.0)	4.0	S	4.0	
		25/02 12:00		35°07'S	019°51'E				WSW	0.3	-0.3		S	3(10.0)	0.6	SW	3.6	3.65										
		25/02 18:00		35°09'S	020°58'E				WSW	0.1	-0.1		SSE	4(12.0)	0.5	SW	3.4	3.44										
		26/02 00:00		35°03'S	022°19'E				SW	0.9	-0.8		ESE	3(8.0)	0.2	SSW	3.4	3.41										
		26/02 06:00		34°48'S	023°29'E				WNW	1.0	-0.9		E	3(8.0)	0.2	SSW	3.4	3.41										
15	RP	26/02	10:00	34°48'S	024°08'E	238.3	9.93	68.0	WSW	0.53	-0.37	10.3	SSE	3(10.0)	0.33	SW	3.41	5(3.4)	2355.4	41.4	178.5		S (0.5)	E (6)(24.0)	4.0	E	4.0	

Nr.	Code	Track							Weather										Bunkers				Vessel obs. weather				
		Date	Time(UTC)	Lat	Lon	Dist (nm)	SOG (kts)	Avg. RPM (RPM)	Current (kts)	Current factor	STW (kts)	Wind Bft (kts)	Wave (m)	Swell (m)	Total Wave Height DSS (m)	HFO (mT)		MDO (mT)		Current Dir (kts)	Wind		Wave	Swell			
																ROB	AV(24H)	ROB	AV(24H)		Dir (Bft/kts)	(m)	Dir	(m)			
36	RP	19/03	04:00	01°49'N	102°25'E	254.1	10.59	68.7	NW	0.92	-0.72	11.3	SE	2(6.0)	0.15	SSE	0.09	1(0.2)	1496.4	41.5	178.5		NW (1.4)	NE (4)(13.0)	1.5	NE	1.5
		19/03	06:00	01°40'N	102°40'E				NW	1.2	-1.1		NE	3(7.0)	0.2	NE	0.0	0.2									
		19/03	12:00	01°08'N	103°29'E				NW	1.1	-1.1		ENE	3(8.0)	0.2	SW	0.1	0.22									
37	EP	19/03	12:00	01°08'N	103°29'E	76.5	9.56	68.4	NW	0.98	-0.75	10.32	NE	3(8.0)	0.2	ESE	0.03	2(0.2)	1487.0	28.1	172.9	16.8	S (1.5)	NE (3)(8.0)	1.0	NE	1.0

Legend:

- Good weather
- Excluded from good weather
- Excluded from analysis

- PP Polled Position
- IP Inserted position
- EP End of sea passage
- SP Start of sea passage
- RP Reported Position

Appendix A

Derivation of analysis figures

DTN uses 8 decimal digit numbers in calculations but shows in report 2 digits only

Speed

$$\text{Charter party time} = \frac{\text{Distance}}{\text{Charter party speed}}$$

$$\text{Maximum warranted time} = \frac{\text{Distance}}{\text{Minimum warranted speed}}$$

Minimum warranted speed = Charter party speed - allowance
(when the term 'about speed' is used the allowance is interpreted as 0.5 knots)

$$\text{Good weather average speed} = \frac{\text{Good weather distance}}{\text{Good weather time}}$$

$$\text{All weather average speed} = \frac{\text{Distance}}{\text{All weather time}}$$

Performance speed = Average speed - Weather factor - Current factor

Weather factor = All weather average speed - Performance speed - All weather current factor

$$\text{Time gained} = \frac{\text{Distance}}{\text{Charter party speed}} - \frac{\text{Distance}}{\text{Performance speed}}$$

$$\text{Time lost} = \frac{\text{Distance}}{\text{Minimum warranted speed}} - \frac{\text{Distance}}{\text{Performance speed}}$$

Consumption

(when the term 'about consumption' is used the allowance is interpreted as 5%)

Good weather consumption = Charter party consumption (+ Allowance) x Good weather time

Good weather consumption extrapolated = Charter party consumption (+ Allowance) x $\frac{\text{Maximum warranted time}}{24}$

Good weather consumption extrapolated voyage = Average daily good weather consumption x $\left(\frac{\text{Distance}}{\text{Performance speed}} \right)$
24

Deviation voyage (over consumption) = $\left(\frac{\text{Distance}}{\text{Performance speed}} \times \frac{\text{Good weather consumption}}{\text{Good weather time}} \right) -$
 $\left(\frac{\text{Distance}}{\text{Minimum warranted speed}} \times \frac{\text{Charter party consumption incl allowance}}{24 \text{ hours}} \right)$

Deviation voyage (under consumption) = $\left(\frac{\text{Distance}}{\text{Performance speed}} \times \frac{\text{Good weather consumption}}{\text{Good weather time}} \right) -$
 $\left(\frac{\text{Distance}}{\text{Minimum warranted speed}} \times \frac{\text{Charter party consumption}}{24 \text{ hours}} \right)$

Deviation voyage (fuels saved versus time lost) = $\left(\frac{\text{Distance}}{\text{Performance speed}} \times \frac{\text{Good weather consumption}}{\text{Good weather time}} \right) -$
 $\left(\frac{\text{Distance}}{\text{Minimum warranted speed}} \times \frac{\text{Charter party consumption incl neg. allowance}}{24 \text{ hours}} \right)$

Appendix B

RouteGuard performance assessment methodology

The methodology used in RouteGuard is in compliance with the maritime arbitration standards. The good weather analysis method is based on the same principals as set out by “The Didymi (1987) 2 Lloyd’s Rep. 166” and “the Gas Enterprise (1993) 2 Lloyd’s Rep. 352”. DTN uses a minimum of 75% good weather during a period of time between consecutive daily noon positions according to the good weather definition as described in the Charter Party.

Based on the principals as set out by “The Gaz Energy (2012) Lloyd’s Rep. 852” in cases where an “about” clause is included and where “Time loss” is set-off against an “Under consumption” on vessel bunker consumption a negative (5%) allowance is applicable on the daily Charter Party consumption.

In cases where good weather is not specified within the Charter Party, the analysis will be based on the upper limit of wind force 4 Beaufort and a significant wave height of 2.0 meters (based on the upper limit of Douglas Sea State 3). When no good weather days occur during a passage or voyage the good weather Speed and Bunker analysis cannot be calculated. When “about” clause is included within the Charter Party DTN will use an allowance of 0.5 knots on the Charter Party speed and an allowance of 5 percent on fuel consumption.

DTN uses the analyses of 3 worldwide weather models to calculate the performance analysis. Current information is obtained from the Mercator models and the U.S. Naval Research Laboratory.

Appendix C

RouteGuard definitions

General

Sea Passage A trip or track of a ship between the position associated with the *Start of Sea Passage* and the position associated with the consecutive *End of Sea Passage*

Voyage A trip or track of a ship consisting of 1 or more consecutive Sea Passages.

Time and Speed analysis

Charter party time Figure representing the theoretical time the vessel needs to cover the voyage distance when travelling at charter party speed.

Minimum warranted speed Charter party speed minus the allowance (about).

Maximum warranted time Figure representing the theoretical time the vessel needs to cover the voyage distance when travelling at the minimum warranted speed.

Good weather definition Definition of good weather as specified in the charter party agreement in force. In cases where good weather is not specified in the charter party agreement it is assumed to be up to and including wind force 4 Beaufort and up to and including Douglas sea state 3.

*Sea passage distance
(All weather distance)* The (accumulated) computed distance sailed over 1 or more sea passages, between the positions associated with Start of Sea Passage and the positions associated with End of Sea Passage reports i.a.w. the ships position reports, polling information following the established routes and fairways.

Good weather distance Computed (accumulated) distance sailed in under good weather conditions (according to the good weather definition) between the positions associated with Start of Sea Passage and the positions associated with End of Sea Passage reports, i.a.w. the ships position reports, polling information and the established routes and fairways.

Good weather analysis Analysis of the sailed track related to the good weather distance.

Weather factor The calculated influence of the weather on the ships speed through the water. By definition the weather factor during 'good weather conditions' is zero.

*Performance speed
(Good weather)* Calculated speed (through the water) based on good weather analysis.

Time gained The figure representing the time gained for the voyage based on the extrapolation of the time gained of the good weather part of the voyage. For calculating the time gained DTN uses the Charter Party speed as the benchmark.

Time Lost The figure representing the time lost for the voyage based on the extrapolation of the time loss of the good weather part of the voyage. For calculating the time lost DTN uses the Minimum Warranted Speed

Bunker evaluation

*Actual consumption
(All weather)* Total amount of consumed bunkers during the voyage based on the masters position reports.

*Actual consumption
(Good weather)* Total amount of consumed bunkers during good weather based on the masters position reports.

*Actual average per day
(All weather)* The amount of Consumed bunkers divided by the all-weather time, times 24.

<i>Actual average per day (Good weather)</i>	The amount of Consumed bunkers in good weather divided by the good weather time, times 24.
<i>Allowed consumption total voyage</i>	The range between minimal and maximum amount of bunkers allowed to consume during the entire voyage based on the total voyage time including time loss or gained times the daily Charter party consumption (+/- the allowance).
<i>Good Weather consumption total voyage</i>	The extrapolated good weather consumption based on the good weather consumption per day divided by 24 times the total voyage time.
<i>Deviation total voyage</i>	The amount of under or overconsumption in mT during the total voyage, this is the difference between the allowed total consumption total voyage and the Good Weather consumption total voyage.

For questions please contact us: shippingoperations@dtm.com