MV AVRA.GR

Prepared Basis : CP Speed

Singapore to Busan

Dep.Date: 05-12-2023 01:30 UTC

Arrival.Date: 16-12-2023 13:00 UTC

Condition : Laden

Report Date : 20-Feb-24

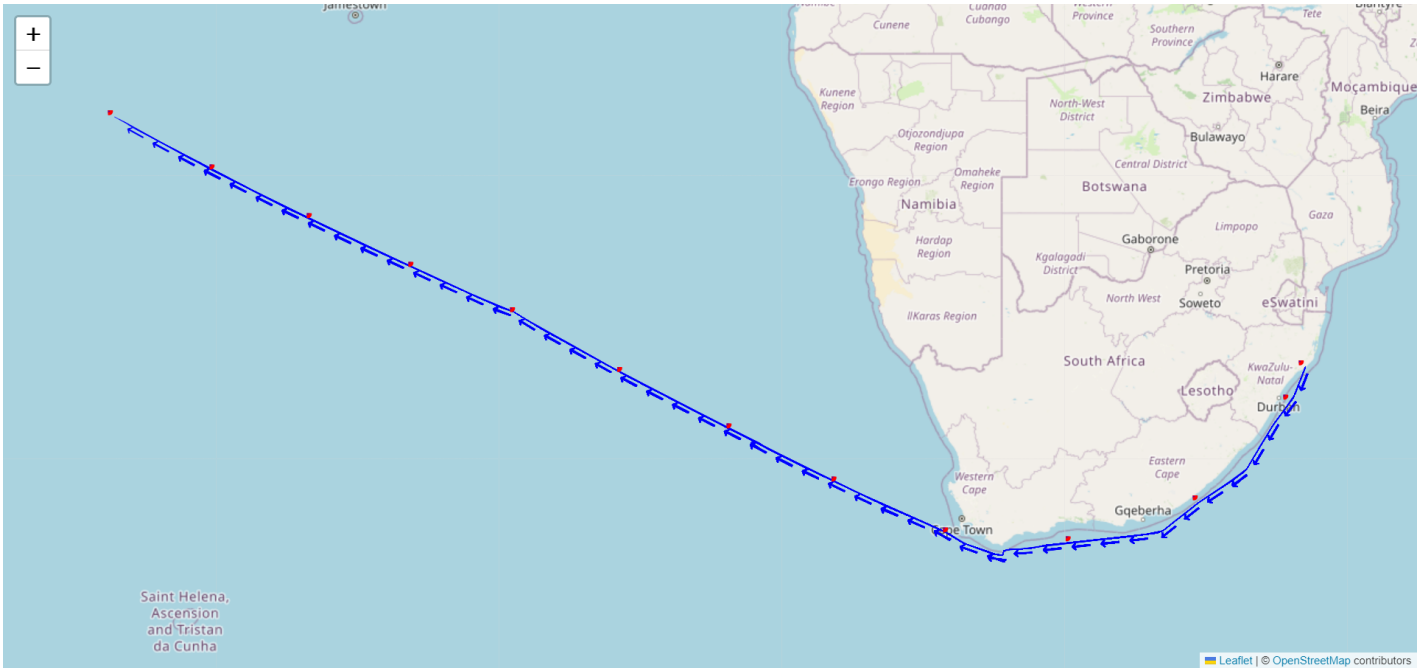
Reference No. :

VOYAGE MAP

Itinerary : Singapore - Busan

Voyage Leg Date(UTC) : 05-12-2023 01:30 - 16-12-2023 13:00

CP Warranties : About 12 Kts on About 15.5 Mts Fuel



Report Analysis Summary

Itinerary : Singapore - Busan

Voyage Leg Date(UTC) : 05-12-2023 01:30 - 16-12-2023 13:00

ATD(Z)	Time gain/loss	V/U/L SFO gain/loss	HSFO gain/loss	MGO gain/loss	MDO gain/loss
Singapore - Busan 05-12-2023 01:30	Nil	Nil	Nil	Nil	NA

Voyage Details

Leg Details	ATD(Z)	ETA(Z)	Good Weather				Performance		Overall Weather			
			Distance	Steaming Hours	Speed	Total Cons	Distance (Exc currents)	Speed	Distance	Steaming Hours	Speed	Total Cons.
Singapore to Busan	2023-12-05	2023-12-16	0	0	0	0.0	0	0	2867	275.5	10.41	186.9
			0	0	0	0.0	0	0	2867	275.5	10.41	186.9

Warranted Consumption

Leg Details	CP Speed	Total Cons.
Singapore to Busan	About 12 kts	About 15.5 MT

Report Analysis Summary

Interpretation of good weather criteria as per CP:

Weather Definition:

A noon report is counted as fair weather if majority of the noon period is good weather basis analyzed weather

- Wind Force <= 3 Bf
- Adverse Currents are excluded

Noon Report excluded from evaluation :

Weather Source : Analyzed

Speed used for Analysis : Performed speed

All comparisons are done against CP Speed

"About" Tolerance:

- For speed : -0.5 / +0.5 Kts
- For consumption : -5.0 / +5.0 %

Good weather performance is extrapolated to overall voyage

***Note: The calculations for the report are done on the performed speed by adjusting the effect of currents (If applicable).

Speed Summary

Itinerary : Singapore - Busan

Voyage Leg Date(UTC) : 05-12-2023 01:30 - 16-12-2023 13:00

CP Warranties : About 12 Kts on About 15.5 Mts Fuel

Overall

Total Distance Sailed	2867 NM
Time at Sea	275.5 hrs
Average Speed	10.41 kts

Good Weather

Total Distance Sailed	0 NM
Time at Sea	0 hrs
Average Speed	0.0 kts
Current Factor	N/A
Performance Speed	0.0 kts
Adjusted Time in Good weather	0.0 hrs
C/P Min.Allowable Time	0.0 hrs
C/P Max.Allowable Time	0.0 hrs
Track Time Gain	0.0 hrs
Applied to Overall Track Time Gain	0 hrs

Fuel Consumption Summary

Itinerary : Singapore - Busan

Voyage Leg Date(UTC) : 05-12-2023 01:30 - 16-12-2023 13:00

CP Warranties : About 12 Kts on About 15.5 Mts Fuel

Overall

Average Daily Consumption	16.28 mts
Total Bunkers Consumed at Sea	186.9 mts
Gradewise Distribution of Bunkers consumed at sea	
HSFO	0.0 mts
IFO	185.7 mts
GO	1.2 mts

Good Weather

Actual Usage in Good Weather	0.0 mts
Average Daily Consumption	0 mts
Min.Allowable Usage	0.0 mts
Max Allowable Usage	0.0 mts
Fuel Loss	0.0 mts
No Loss/Gain applied to overall track	0 mts

CO2 Emissions Summary

Overall

Total CO2 produced at sea (MT)	582.12 mts

Detailed Weather Analysis

Itinerary : Singapore - Busan

Voyage Leg Date(UTC) : 05-12-2023 01:30 - 16-12-2023 13:00

CP Warranties : About 12 Kts on About 15.5 Mts Fuel

Date/Time	Lat	Lon	Wind		SWH	Wind Wave	Swell		Current factor	Bad Weather Details	Report Data by Ship								
			BFT	Dir.(rel.)	Hgt(m)	(m)	Hgt (m)	Dir. (rel.)	Kts		Steaming Hours	Distance (NM)	Wind (Bft)	Current Factor (Kts)	Ordered Speed (Kts)	Avg. Speed (Kts)	RPM	Slip (%)	Course
05th Dec 2023 01:30	**-28.82**	**32.10**	**3**	**185.59**	**1.42**	**0.50**	**0.67**	**129.01**	**-0.16**		**0.00**	**0.00**	**0.00**	**0.00**	**12.00**	**0.00**	**0.00**	**0.00**	**110.00**
05th Dec 2023 04:30			6	192.35	2.37	2.06	0.81	93.4	-0.03	WI,CU									
05th Dec 2023 07:30			4	188.63	2.18	1.78	0.68	122.52	0.39	WI									
05th Dec 2023 10:00	**-30.00**	**31.48**	**4**	**165.17**	**1.79**	**1.31**	**0.59**	**78.65**	**2.23**		**8.50**	**89.00**	**0.00**	**0.00**	**12.00**	**10.47**	**79.80**	**0.00**	**215.00**
05th Dec 2023 13:00			3	149.29	1.67	1.05	0.54	71.02	0.91										
05th Dec 2023 16:00			4	160.93	1.72	1.57	0.55	64.53	0.26	WI									
05th Dec 2023 19:00			4	134.78	2.07	2.63	0.52	80.27	1.90	WI									
05th Dec 2023 22:00			4	126.63	2.34	2.81	0.47	96.48	1.55	WI									
06th Dec 2023 01:00			4	125.05	2.24	2.40	0.37	107.65	1.31	WI									
06th Dec 2023 04:00			4	100.25	2.22	0.92	0.34	85.02	2.01	WI									
06th Dec 2023 07:00			5	74.76	2.04	0.58	1.42	171.46	3.05	WI									
06th Dec 2023 10:00	**-33.40**	**27.87**	**5**	**79.22**	**2.07**	**0.99**	**1.81**	**209.22**	**3.56**		**24.00**	**276.00**	**0.00**	**0.00**	**12.00**	**11.50**	**84.30**	**0.00**	**233.00**
06th Dec 2023 13:00			6	75.8	2.22	1.31	1.76	212.24	3.37	WI									
06th Dec 2023 16:00			7	72.84	2.44	1.74	1.69	216.47	1.45	WI									
06th Dec 2023 19:00			6	80.64	2.52	1.87	1.69	215.26	2.49	WI									
06th Dec 2023 22:00			6	82.74	2.68	2.18	1.48	220.88	-0.01	WI,CU									
07th Dec 2023 01:00			6	85.36	2.47	2.14	1.11	219.65	1.48	WI									
07th Dec 2023 04:00			5	84.72	2.25	1.88	0.80	199.2	0.99	WI									
07th Dec 2023 07:00			4	89.55	2.37	1.96	0.84	205.55	0.46	WI									
07th Dec 2023 10:00	**-34.73**	**22.80**	**3**	**112.79**	**2.09**	**1.51**	**0.45**	**173.18**	**0.75**		**24.00**	**269.00**	**0.00**	**0.00**	**12.00**	**11.21**	**84.30**	**0.00**	**264.00**
07th Dec 2023 13:00			4	110.63	1.88	1.40	0.53	174.67	0.72	WI									
07th Dec 2023 16:00			4	117.03	1.66	1.33	0.43	155.53	0.20	WI									
07th Dec 2023 19:00			2	37.14	1.62	1.66	0.45	194.67	-0.04	CU									
07th Dec 2023 22:00			3	249.35	1.58	1.54	0.58	226.69	0.02										
08th Dec 2023 01:00			4	241.8	1.56	0.59	0.55	202.76	0.46	WI									
08th Dec 2023 04:00			4	234.45	1.60	0.74	0.48	180.67	0.31	WI									
08th Dec 2023 07:00			2	244.57	1.58	0.55	0.39	210.23	0.61										
08th Dec 2023 11:00	**-34.45**	**17.93**	**5**	**168.13**	**2.01**	**1.48**	**0.21**	**248.29**	**0.96**		**25.00**	**251.00**	**0.00**	**0.00**	**12.00**	**10.04**	**84.70**	**0.00**	**292.00**
08th Dec 2023 14:00			5	165.02	1.98	1.47	0.22	194.17	1.41	WI									
08th Dec 2023 17:00			5	151.0	2.29	2.11	0.81	274.8	1.79	WI									
08th Dec 2023 20:00			5	146.85	2.44	1.53	0.06	219.79	1.31	WI									
08th Dec 2023 23:00			5	151.95	2.51	1.78	0.67	284.74	0.46	WI									
09th Dec 2023 02:00			5	148.03	2.57	1.89	0.11	281.76	-0.05	WI,CU									
09th Dec 2023 05:00			5	145.25	2.46	1.83	0.12	280.02	-0.02	WI,CU									
09th Dec 2023 08:00			5	146.81	2.38	1.77	0.11	277.73	-0.04	WI,CU									
09th Dec 2023 11:00	**-32.77**	**13.48**	**5**	**147.27**	**2.31**	**1.65**	**0.10**	**214.5**	**0.85**		**24.00**	**246.00**	**0.00**	**0.00**	**12.00**	**10.25**	**85.20**	**0.00**	**292.00**
09th Dec 2023 14:00			5	136.72	2.25	1.51	0.20	216.37	0.57	WI									
09th Dec 2023 17:00			4	142.12	2.12	1.55	0.26	221.15	0.44	WI									
09th Dec 2023 20:00			5	146.09	2.02	1.47	0.43	223.31	0.25	WI									
09th Dec 2023 23:00			5	147.37	2.04	1.43	0.56	174.5	0.11	WI									
10th Dec 2023 02:00			5	145.96	2.16	1.39	0.69	180.17	0.07	WI									
10th Dec 2023 05:00			4	140.95	2.24	1.32	0.41	176.53	0.22	WI									
10th Dec 2023 08:00			4	132.89	2.27	1.27	0.19	201.11	0.10	WI									
10th Dec 2023 11:00	**-30.98**	**9.32**	**4**	**132.42**	**2.20**	**1.13**	**0.47**	**169.81**	**0.18**		**24.00**	**237.00**	**0.00**	**0.00**	**12.00**	**9.88**	**85.40**	**0.00**	**298.00**
10th Dec 2023 14:00			4	153.01	2.19	1.07	0.58	174.49	0.62	WI									
10th Dec 2023 17:00			4	159.89	2.20	1.08	0.27	270.03	0.98	WI									
10th Dec 2023 20:00			4	166.26	2.20	1.15	0.12	314.17	0.64	WI									
10th Dec 2023 23:00			4	161.91	2.20	1.16	0.12	315.66	0.24	WI									
11th Dec 2023 02:00			4	161.83	2.15	1.09	0.12	318.62	0.38	WI									
11th Dec 2023 05:00			4	151.76	2.03	1.09	0.14	314.19	0.50	WI									

Date/Time	Lat	Lon	Wind		SWH	Wind Wave	Swell		Current factor	Bad Weather Details	Report Data by Ship								
			BFT	Dir.(rel.)	Hgt(m)	(m)	Hgt (m)	Dir. (rel.)	Kts		Steaming Hours	Distance (NM)	Wind (Bft)	Current Factor (Kts)	Ordered Speed (Kts)	Avg. Speed (Kts)	RPM	Slip (%)	Course
11th Dec 2023 08:00			4	146.53	2.05	1.11	0.15	311.57	0.35	WI									
11th Dec 2023 11:00	**-29.05**	**4.97**	**4**	**144.58**	**2.08**	**1.14**	**1.22**	**251.48**	**0.37**		**24.00**	**255.00**	**0.00**	**0.00**	**12.00**	**10.63**	**85.40**	**0.00**	**296.00**
11th Dec 2023 14:00			4	150.66	2.13	1.18	1.24	250.87	0.09	WI									
11th Dec 2023 17:00			4	152.98	2.17	1.27	1.75	220.5	-0.01	WI,CU									
11th Dec 2023 20:00			4	150.1	2.28	1.39	1.80	219.69	0.04	WI									
11th Dec 2023 23:00			5	144.37	2.31	1.48	1.75	221.03	0.29	WI									
12th Dec 2023 02:00			5	142.28	2.30	1.55	1.69	220.38	0.39	WI									
12th Dec 2023 05:00			5	135.32	2.33	1.63	1.65	220.71	0.59	WI									
12th Dec 2023 08:00			5	121.44	2.37	1.77	1.56	219.06	0.33	WI									
12th Dec 2023 12:00	**-26.95**	**0.72**	**5**	**125.25**	**2.44**	**1.91**	**1.50**	**217.76**	**0.01**		**25.00**	**259.00**	**0.00**	**0.00**	**12.00**	**10.36**	**85.40**	**0.00**	**300.00**
12th Dec 2023 15:00			5	127.79	2.42	1.90	1.49	215.81	-0.08	WI,CU									
12th Dec 2023 18:00			5	128.84	2.41	1.88	1.50	214.54	-0.05	WI,CU									
12th Dec 2023 21:00			5	121.4	2.45	1.93	1.49	213.36	-0.03	WI,CU									
13th Dec 2023 00:00			5	122.68	2.50	2.01	1.48	212.08	-0.16	WI,CU									
13th Dec 2023 03:00			5	127.55	2.48	2.01	0.06	326.63	0.05	WI									
13th Dec 2023 06:00			5	127.36	2.48	2.05	0.07	328.73	0.07	WI									
13th Dec 2023 09:00			5	118.22	2.46	2.06	0.09	329.41	0.20	WI									
13th Dec 2023 12:00	**-25.32**	**-3.33**	**4**	**115.58**	**2.41**	**2.00**	**0.12**	**327.39**	**0.59**		**24.00**	**240.00**	**0.00**	**0.00**	**12.00**	**10.00**	**85.40**	**0.00**	**295.00**
13th Dec 2023 15:00			5	123.89	2.32	1.95	0.13	326.11	0.58	WI									
13th Dec 2023 18:00			5	123.28	2.30	1.98	0.13	328.79	0.73	WI									
13th Dec 2023 21:00			5	122.35	2.36	2.06	0.13	329.52	0.35	WI									
14th Dec 2023 00:00			5	116.51	2.38	2.10	0.13	329.52	0.02	WI									
14th Dec 2023 03:00			5	111.65	2.43	2.17	0.12	330.53	-0.09	WI,CU									
14th Dec 2023 06:00			5	108.83	2.40	2.16	0.13	334.36	-0.00	WI,CU									
14th Dec 2023 09:00			5	102.14	2.36	2.14	0.12	334.03	-0.01	WI,CU									
14th Dec 2023 12:00	**-23.58**	**-7.38**	**5**	**96.84**	**2.33**	**2.12**	**0.13**	**332.81**	**0.08**		**24.00**	**245.00**	**0.00**	**0.00**	**12.00**	**10.21**	**85.30**	**0.00**	**295.00**
14th Dec 2023 15:00			4	98.83	2.25	2.06	0.14	331.83	0.12	WI									
14th Dec 2023 18:00			4	106.71	2.16	1.96	0.15	333.52	0.07	WI									
14th Dec 2023 21:00			5	106.01	2.10	1.91	0.18	332.63	0.34	WI									
15th Dec 2023 00:00			5	104.98	2.04	1.86	0.19	331.76	0.30	WI									
15th Dec 2023 03:00			4	105.82	2.01	1.84	0.23	332.29	0.31	WI									
15th Dec 2023 06:00			5	100.54	2.00	1.83	0.27	331.55	0.43	WI									
15th Dec 2023 09:00			5	97.31	2.00	1.84	0.28	332.26	0.41	WI									
15th Dec 2023 13:00	**-21.80**	**-11.25**	**4**	**96.46**	**1.94**	**1.78**	**0.28**	**333.01**	**0.30**		**25.00**	**244.00**	**0.00**	**0.00**	**12.00**	**9.76**	**85.40**	**0.00**	**297.00**
15th Dec 2023 16:00			4	98.99	1.88	1.71	0.26	291.45	0.04	WI									
15th Dec 2023 19:00			4	97.33	1.85	1.75	0.36	330.24	-0.13	WI,CU									
15th Dec 2023 22:00			4	104.86	1.81	1.71	0.39	330.67	-0.23	WI,CU									
16th Dec 2023 01:00			4	105.18	1.79	1.62	0.30	207.58	0.15	WI									
16th Dec 2023 04:00			4	100.69	1.74	1.58	0.35	248.14	0.22	WI									
16th Dec 2023 07:00			4	96.73	1.73	1.54	0.35	207.74	0.09	WI									
16th Dec 2023 10:00			4	89.05	1.70	1.51	0.35	203.55	0.35	WI									
16th Dec 2023 13:00	**-19.78**	**-15.29**	**4**	**83.16**	**1.68**	**1.48**	**0.41**	**336.66**	**0.48**		**24.00**	**256.00**	**0.00**	**0.00**	**12.00**	**10.67**	**83.60**	**0.00**	**298.00**

Good Weather Summary

Itinerary : Singapore - Busan

Voyage Leg Date(UTC) : 05-12-2023 01:30 - 16-12-2023 13:00

CP Warranties : About 12 Kts on About 15.5 Mts Fuel

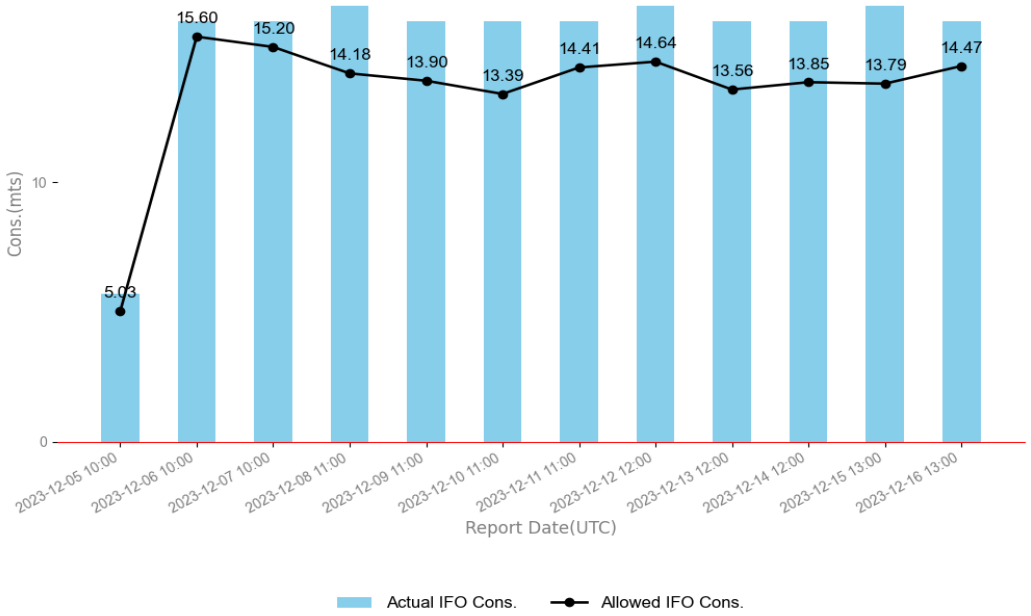
Date	Lat	Log	Steaming Hours	Allowed Steaming Hours	Distance (NM)	Avg - RPM	Slip (%)	Course	Bunker ROB (MT)				Bunker Cons. (MT)				Allowed Cons. MT	Exclusion	Good Weather
									HSFO	VULSFO	MGO	MDO	HSFO	VULSFO	MGO	MDO			
05th Dec 2023 01:30	COSP	Singapore	0.00	0.00	0	0.00	0	110	0.00	743.00	110.40	0.00	0.00	0.00	0.00	0.00	0.00	YES	NO
05th Dec 2023 10:00	-30.00	31.48	8.50	7.74	89	79.80	0	215	0.00	737.30	110.30	0.00	0.00	5.70	0.10	0.00	5.03	YES	NO
06th Dec 2023 10:00	-33.40	27.87	24.00	24.00	276	84.30	0	233	0.00	721.10	110.20	0.00	0.00	16.20	0.10	0.00	15.60	YES	NO
07th Dec 2023 10:00	-34.73	22.80	24.00	23.39	269	84.30	0	264	0.00	704.90	110.10	0.00	0.00	16.20	0.10	0.00	15.20	YES	NO
08th Dec 2023 11:00	-34.45	17.93	25.00	21.83	251	84.70	0	292	0.00	688.10	110.00	0.00	0.00	16.80	0.10	0.00	14.18	YES	NO
09th Dec 2023 11:00	-32.77	13.48	24.00	21.39	246	85.20	0	292	0.00	671.90	109.90	0.00	0.00	16.20	0.10	0.00	13.90	YES	NO
10th Dec 2023 11:00	-30.98	9.32	24.00	20.61	237	85.40	0	298	0.00	655.70	109.80	0.00	0.00	16.20	0.10	0.00	13.39	YES	NO
11th Dec 2023 11:00	-29.05	4.97	24.00	22.17	255	85.40	0	296	0.00	639.50	109.70	0.00	0.00	16.20	0.10	0.00	14.41	YES	NO
12th Dec 2023 12:00	-26.95	0.72	25.00	22.52	259	85.40	0	300	0.00	622.70	109.60	0.00	0.00	16.80	0.10	0.00	14.64	YES	NO
13th Dec 2023 12:00	-25.32	-3.33	24.00	20.87	240	85.40	0	295	0.00	606.50	109.50	0.00	0.00	16.20	0.10	0.00	13.56	YES	NO
14th Dec 2023 12:00	-23.58	-7.38	24.00	21.30	245	85.30	0	295	0.00	590.30	109.40	0.00	0.00	16.20	0.10	0.00	13.85	YES	NO
15th Dec 2023 13:00	-21.80	-11.25	25.00	21.22	244	85.40	0	297	0.00	573.50	109.30	0.00	0.00	16.80	0.10	0.00	13.79	YES	NO
16th Dec 2023 13:00	EOSP	Busan	24.00	22.26	256	83.60	0	298	0.00	557.30	109.20	0.00	0.00	16.20	0.10	0.00	14.47	YES	NO

Message Traffic

Report Type	Position		Date/ Time (GMT)	Since last report								DTG (NM)	ETA (LT)	BROB(MT)				Remarks
	Lat	Log		Avg Wind (Dir. x Bft)	Avg Sea (Dir. x Height)	Ordered Speed (Kts)	Avg. Speed (Kts)	Course	RPM	Slip (%)	Distance Sailed (NM)			HSFO	V/ULSFO	MGO	MDO	
Departure-Singapore	-28.82	32.10	05th Dec 2023 01:30	210 x 0	210 x 2.0	12	0.00	110	0.00	0	0	0	0	0	743.00	110.40	0	
NOON	-30.00	31.48	05th Dec 2023 10:00	225 x 0	225 x 4.0	12	10.47	215	79.80	0	89	0	0	0	737.30	110.30	0	
NOON	-33.40	27.87	06th Dec 2023 10:00	210 x 0	210 x 1.5	12	11.50	233	84.30	0	276	0	0	0	721.10	110.20	0	
NOON	-34.73	22.80	07th Dec 2023 10:00	90 x 0	90 x 1.2	12	11.21	264	84.30	0	269	0	0	0	704.90	110.10	0	
NOON	-34.45	17.93	08th Dec 2023 11:00	230 x 0	230 x 1.2	12	10.04	292	84.70	0	251	0	0	0	688.10	110.00	0	
NOON	-32.77	13.48	09th Dec 2023 11:00	180 x 0	180 x 1.5	12	10.25	292	85.20	0	246	0	0	0	671.90	109.90	0	
NOON	-30.98	9.32	10th Dec 2023 11:00	165 x 0	165 x 1.0	12	9.88	298	85.40	0	237	0	0	0	655.70	109.80	0	
NOON	-29.05	4.97	11th Dec 2023 11:00	165 x 0	165 x 1.0	12	10.63	296	85.40	0	255	0	0	0	639.50	109.70	0	
NOON	-26.95	0.72	12th Dec 2023 12:00	155 x 0	155 x 2.0	12	10.36	300	85.40	0	259	0	0	0	622.70	109.60	0	
NOON	-25.32	-3.33	13th Dec 2023 12:00	115 x 0	115 x 2.5	12	10.00	295	85.40	0	240	0	0	0	606.50	109.50	0	
NOON	-23.58	-7.38	14th Dec 2023 12:00	135 x 0	135 x 3.0	12	10.21	295	85.30	0	245	0	0	0	590.30	109.40	0	
NOON	-21.80	-11.25	15th Dec 2023 13:00	68 x 0	68 x 2.0	12	9.76	297	85.40	0	244	0	0	0	573.50	109.30	0	
Arrival-Busan	-19.78	-15.29	16th Dec 2023 13:00	65 x 0	46 x 2.0	12	10.67	298	83.60	0	256	0	0	0	557.30	109.20	0	

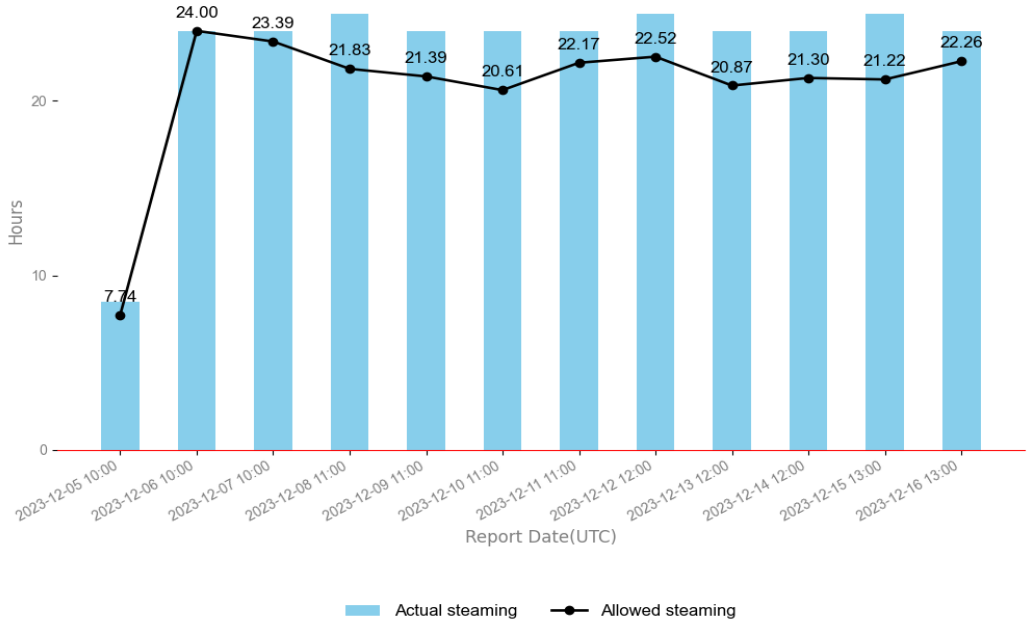
Fuel Graph

Comparison between Actual vs Allowed IFO Cons.



Steaming Graph

Comparison between Actual vs Allowed Steaming



Annex A - Speed Calculation Detail

1 Min. C/P allowable time (hrs)

$$= \frac{\text{Distance in Good Weather (NM)} - (\text{+/- Current Factor x Actual Time in Good Weather) (NM)}}{(\text{Warranted Speed (kts)} + \text{About (kts)})}$$

2 Max. C/P allowable time (hrs)

$$= \frac{\text{Distance in Good Weather (NM)} - (\text{+/- Current Factor x Actual Time in Good Weather) (NM)}}{(\text{Warranted Speed (kts)} - \text{About (kts)})}$$

3 Adjusted Time in Good weather

$$= \frac{\text{Distance Sailed in Good Weather}}{(\text{Average Speed in Good Weather} - \text{Current Factor})}$$

4 Track Time Gain = Min. C/P allowable time (hrs) - Adjusted Time in Good weather

5 Track Time Loss = Max. C/P allowable time (hrs) - Adjusted Time in Good weather

6 Track Time is applied to Overall Track Time

$$= \left[\frac{\text{Good Weather gain/Loss track time(hrs)}}{\text{Good Weather Distance (NM)}} \right] \times \text{Total Voyage Distance (NM)}$$

Annex B - Fuel Consumption Calculation Detail

Distance adjusted for current (NM)

= Distance in Good Weather (NM) - (+/- Current Factor × Actual Time in Good Weather)(NM)

1 Min. Allowable Usage (mts)

$$= \left[\frac{\text{Distance adjusted for current (NM)}}{\text{(C/P Speed - About (Kts))} * 24} \right] \times \text{Daily C/P allowable Consumption} \times (1\text{-About \%})$$

2 Max Allowable Usage (mts)

$$= \left[\frac{\text{Distance adjusted for current (NM)}}{\text{(C/P Speed - About (Kts))} * 24} \right] \times \text{Daily C/P allowable Consumption} \times (1\text{+About \%})$$

3 Good Weather Fuel Gain

= Min. Allowable Usage (mts) - Actual Usage in Good Weather (mts)

4 Good Weather Fuel Loss

= Max. Allowable Usage (mts) - Actual Usage in Good Weather (mts)

5 Good Weather Fuel Gain/Loss Consumption applied to overall track

$$= \left[\frac{\text{Good Weather Fuel gain/Loss Consumption (mts)}}{\text{Good Weather Distance (NM)}} \right] \times \text{Total Voyage Distance (NM)}$$

Annex C - CO2 Emission Calculation Detail

Total CO2 produced at sea (MT) = Σ(bunker consumed x CO2 factor for particular grade)

*all CO2 factors are considered as mentioned in IMO GHG Study 2020 (pg.74; Table 21)

Weather DataSources

Our weather forecast is based on data from several sources including NOAA server along with two other agencies.The weather projection model consist of 05 days accurate weather forecast along with 09 days extended forecast. For subsequent days,information from historical weather database is used.

WAVEWATCH III for Wind/Waves/Swell

WAVEWATCH III is a third generation multi-grid wave model at NOAA/NCEP in the spirit of WAM model.

Update Interval : 6 Hours
Average Resolution Time : 3 Hours
Time Period : 5 Days
Provider : NOAA (National Oceanic & Atmospheric Administration

GEFS (Global Ensemble Forecast System) for Wind/Waves/Swell

The Global Ensemble Forecast System (GEFS) is a weather forecast model made up of 21 separate forecast or ensemble members.

Update Interval : 6 Hours
Average Resolution Time : 3 Hours
Time Period : 16 Days
Provider : NOAA (National Oceanic & Atmospheric Administration

Copernicus Marine Environment Monitoring Service- for Sea Currents

The Copernicus Marine Environment Monitoring Service is part of the Copernicus Pro- gramme, which is an EU Programme managed by the European Commission (EC) and implemented in partnership with the Member States, the European Space Agency (ESA), the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), the European Centre for medium-range Weather Forecasts (ECMWF), EU Agencies and Mercator Ocean. The Programme is aimed at developing a set of European information services based on satellite Earth Observation and in-situ (non-space) data.

Spatial Resolution : 0.08 degree (Lat) x 0.08 degree (Lon)
Temporal Resolution : Hourly mean
Time Period : 7 Days
Provider : Copernicus