MV Jag Anand

Prepared Basis : CP Speed

madras to cbe

Dep.Date: 25-11-2023 03:00 UTC

Arrival.Date: 05-12-2023 16:30 UTC

Condition : Laden

Report Date : 14-Feb-24

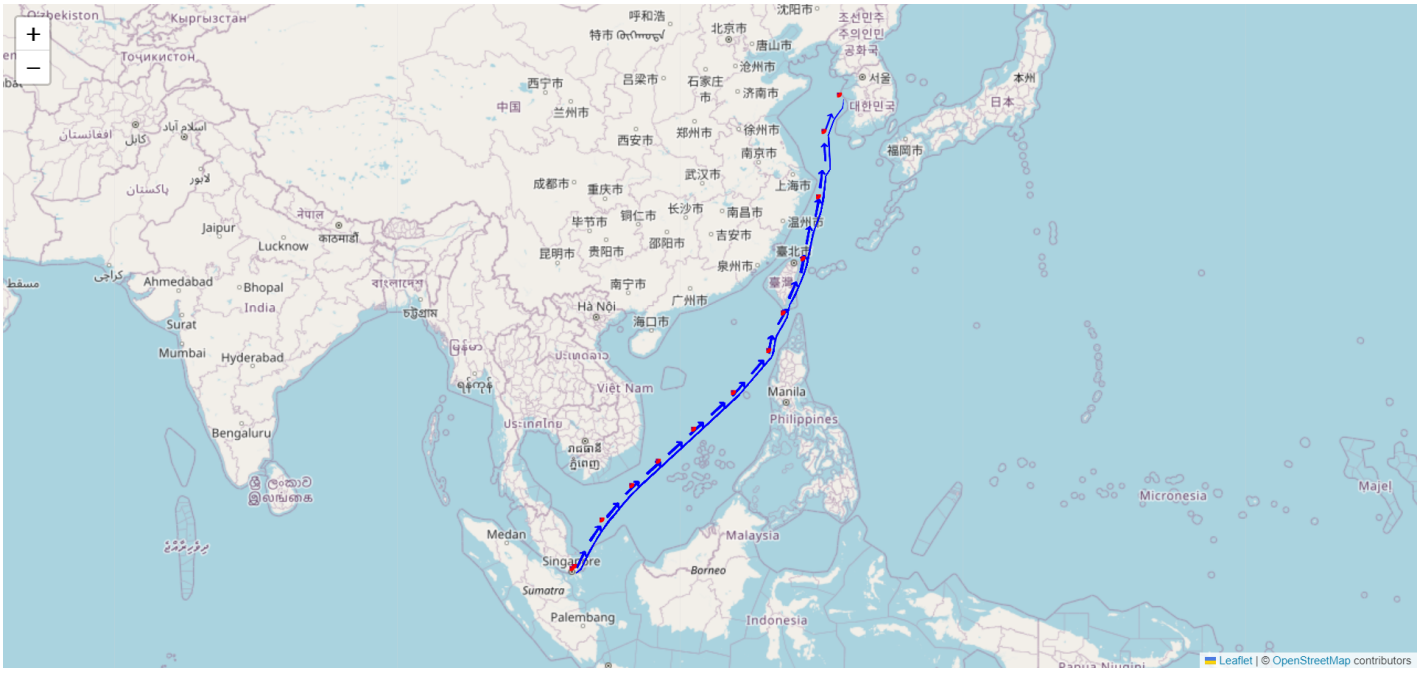
Reference No. :

VOYAGE MAP

Itinerary : madras - cbe

Voyage Leg Date(UTC) : 25-11-2023 03:00 - 05-12-2023 16:30

CP Warranties : About 11.75 Kts on About 39.6 Mts Fuel



Report Analysis Summary

Itinerary : madras - cbe

Voyage Leg Date(UTC) : 25-11-2023 03:00 - 05-12-2023 16:30

ATD(Z)	Time gain/loss	V/U/L SFO gain/loss	HSFO gain/loss	MGO gain/loss	MDO gain/loss
madras - cbe 25-11-2023 03:00	10.01 hours(Loss)	Nil	3.14 mt(Loss)	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.
madras to cbe	2023-11-25	2023-12-05	524	48.0	10.95	80.2	524	10.95	2516	253.5	9.93	438.07
			524	48.0	10.95	80.2	524	10.95	2516	253.5	9.93	438.07

Warranted Consumption

Leg Details	CP Speed	Total Cons.
madras to cbe	About 11.75 kts	About 39.6 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 : madras - cbe

Voyage Leg Date(UTC) : 25-11-2023 03:00 - 05-12-2023 16:30

CP Warranties : About 11.75 Kts on About 39.6 Mts Fuel

Overall

Total Distance Sailed	2516 NM
Time at Sea	253.5 hrs
Average Speed	9.93 kts

Good Weather

Total Distance Sailed	524 NM
Time at Sea	48.0 hrs
Average Speed	10.92 kts
Current Factor	N/A
Performance Speed	10.92 kts
Adjusted Time in Good weather	48.7 hrs
C/P Min.Allowable Time	42.17 hrs
C/P Max.Allowable Time	45.91 hrs
Track Time Loss	2.09 hrs
Applied to Overall Track Time Loss	10.01 hrs

Fuel Consumption Summary

Itinerary : madras - cbe

Voyage Leg Date(UTC) : 25-11-2023 03:00 - 05-12-2023 16:30

CP Warranties : About 11.75 Kts on About 39.6 Mts Fuel

Overall

Average Daily Consumption	39.66 mts
Total Bunkers Consumed at Sea	418.89 mts
Gradewise Distribution of Bunkers consumed at sea	
HSFO	399.67 mts
IFO	0.0 mts
GO	19.22 mts

Good Weather

Actual Usage in Good Weather	80.2 mts
Average Daily Consumption	40.1 mts
Min.Allowable Usage	71.97 mts
Max Allowable Usage	79.55 mts
Fuel Loss	0.65 mts
Fuel Loss applied to overall track	3.14 mts

CO2 Emissions Summary

Overall

Total CO2 produced at sea (MT)	1306.19 mts

Detailed Weather Analysis

Itinerary : madras - cbe

Voyage Leg Date(UTC) : 25-11-2023 03:00 - 05-12-2023 16:30

CP Warranties : About 11.75 Kts on About 39.6 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
25th Nov 2023 03:00	**1.27**	**104.28**	**3**	**282.99**	**0.30**	**0.09**	**0.29**	**34.5**	**-0.78**		**0.00**	**0.00**	**3.00**	**0.00**	**11.75**	**0.00**	**0.00**	**0.00**	**83.00**
25th Nov 2023 04:00	**1.38**	**104.43**	**3**	**274.17**	**0.73**	**0.33**	**0.71**	**22.46**	**-0.26**		**1.00**	**12.00**	**3.00**	**0.00**	**11.75**	**12.00**	**61.80**	**0.00**	**52.00**
25th Nov 2023 07:00			4	286.12	0.91	0.37	0.86	16.83	-0.42	WI,CU									
25th Nov 2023 10:00			4	265.3	1.14	0.62	0.95	20.83	-0.65	WI,CU									
25th Nov 2023 13:00			3	303.78	1.09	0.43	0.08	148.51	-1.13	CU									
25th Nov 2023 16:00			3	289.66	1.28	0.18	1.28	14.68	-0.51	CU									
25th Nov 2023 19:00			4	231.08	1.41	0.57	1.35	26.16	-0.35	WI,CU									
25th Nov 2023 22:00			3	296.6	1.46	0.41	1.46	30.02	-0.32	CU									
26th Nov 2023 01:00			4	21.95	1.49	0.82	1.46	32.82	-0.84	WI,CU									
26th Nov 2023 04:00	**5.08**	**106.62**	**4**	**30.22**	**1.63**	**1.62**	**0.17**	**266.58**	**-1.08**		**24.00**	**259.00**	**5.00**	**0.00**	**11.75**	**10.80**	**65.56**	**0.00**	**39.00**
26th Nov 2023 07:00			5	55.02	1.68	1.68	0.65	291.54	-0.97	WI,CU									
26th Nov 2023 10:00			5	70.07	1.63	1.63	1.62	44.81	-1.53	WI,CU									
26th Nov 2023 13:00			3	47.99	1.48	1.30	1.48	36.61	-1.52	CU									
26th Nov 2023 16:00			4	40.65	1.52	0.71	1.55	36.77	-1.15	WI,CU									
26th Nov 2023 19:00			5	37.47	1.75	1.75	1.75	36.64	-1.63	WI,CU									
26th Nov 2023 22:00			5	38.68	2.20	2.20	2.11	31.8	-1.32	WI,CU									
27th Nov 2023 01:00			6	55.79	2.48	2.48	0.78	296.7	-1.38	WI,CU									
27th Nov 2023 04:00	**7.82**	**108.97**	**6**	**60.04**	**2.71**	**2.71**	**2.25**	**23.11**	**-1.53**		**24.00**	**216.00**	**6.00**	**0.00**	**11.75**	**9.00**	**65.88**	**0.00**	**54.00**
27th Nov 2023 07:00			6	53.4	2.84	2.84	2.26	23.2	-1.66	WI,CU									
27th Nov 2023 10:00			6	45.36	2.95	2.95	2.15	24.21	-1.27	WI,CU									
27th Nov 2023 13:00			6	43.35	3.13	3.13	2.26	23.7	-1.06	WI,CU									
27th Nov 2023 16:00			6	35.3	3.28	3.28	2.60	20.61	-0.90	WI,CU									
27th Nov 2023 19:00			6	35.42	3.32	3.32	2.66	18.47	-0.73	WI,CU									
27th Nov 2023 22:00			6	37.88	3.22	3.22	2.71	15.69	-0.44	WI,CU									
28th Nov 2023 01:00			5	43.49	2.91	2.91	2.56	17.64	-0.60	WI,CU									
28th Nov 2023 04:00	**9.68**	**111.07**	**5**	**47.74**	**2.63**	**2.19**	**1.73**	**348.35**	**-0.67**		**24.00**	**168.00**	**6.00**	**0.00**	**11.75**	**7.00**	**61.13**	**0.00**	**47.00**
28th Nov 2023 07:00			5	51.02	2.32	2.32	2.46	22.13	-0.60	WI,CU									
28th Nov 2023 10:00			4	54.28	2.20	2.20	2.15	27.26	-0.59	WI,CU									
28th Nov 2023 13:00			4	50.78	2.14	2.14	2.36	23.8	-0.73	WI,CU									
28th Nov 2023 16:00			4	43.5	2.01	2.08	2.01	25.31	-0.54	WI,CU									
28th Nov 2023 19:00			4	43.43	2.00	2.00	2.04	27.49	-0.39	WI,CU									
28th Nov 2023 22:00			4	50.72	1.89	1.88	1.49	0.53	-0.05	WI,CU									
29th Nov 2023 01:00			4	64.88	1.76	1.81	1.81	29.69	0.19	WI									
29th Nov 2023 03:00	**12.22**	**113.88**	**4**	**67.03**	**1.65**	**1.79**	**1.65**	**30.65**	**0.50**		**23.00**	**224.00**	**6.00**	**0.00**	**11.75**	**9.70**	**64.14**	**0.00**	**47.00**
29th Nov 2023 06:00			4	67.55	1.79	2.00	1.79	28.92	0.57	WI									
29th Nov 2023 09:00			4	73.72	2.08	0.86	1.89	27.9	0.78	WI									
29th Nov 2023 12:00			4	68.51	2.17	1.14	1.85	28.02	0.76	WI									
29th Nov 2023 15:00			4	56.96	2.09	1.15	1.75	28.26	0.27	WI									
29th Nov 2023 18:00			4	44.38	1.91	1.90	0.13	324.73	0.32	WI									
29th Nov 2023 21:00			4	29.2	1.74	1.69	0.77	110.98	0.36	WI									
30th Nov 2023 00:00			4	42.7	1.50	1.43	0.96	64.72	-0.50	WI,CU									
30th Nov 2023 03:00	**15.05**	**117.05**	**3**	**47.54**	**1.41**	**3.93**	**1.33**	**15.33**	**-0.43**		**24.00**	**250.00**	**6.00**	**0.00**	**11.75**	**10.40**	**64.03**	**0.00**	**47.00**
30th Nov 2023 06:00			3	35.1	1.42	4.29	1.37	14.25	0.00										
30th Nov 2023 09:00			3	1.71	1.43	2.51	1.38	13.63	0.27										
30th Nov 2023 12:00			3	15.11	1.59	1.42	1.56	15.16	0.31										
30th Nov 2023 15:00			3	9.02	1.84	2.18	1.83	17.87	0.12										
30th Nov 2023 18:00			2	57.4	2.28	2.81	2.28	22.19	-0.05	CU									
30th Nov 2023 21:00			6	45.19	2.37	2.37	2.33	19.78	0.40	WI									
01st Dec 2023 00:00			7	49.29	2.67	2.67	1.68	13.16	0.46	WI									
01st Dec 2023 03:00	**18.22**	**119.90**	**6**	**39.36**	**3.15**	**3.15**	**1.46**	**15.3**	**0.83**		**24.00**	**254.00**	**7.00**	**0.00**	**11.75**	**10.60**	**63.80**	**0.00**	**18.00**

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
01st Dec 2023 06:00			7	48.29	3.28	3.28	1.34	10.21	1.13	WI									
01st Dec 2023 09:00			7	55.35	3.04	3.04	1.17	357.99	0.64	WI									
01st Dec 2023 12:00			7	53.29	3.22	3.22	0.76	338.43	0.51	WI									
01st Dec 2023 15:00			6	57.79	4.20	4.20	0.73	341.52	0.29	WI									
01st Dec 2023 18:00			7	49.7	4.39	4.39	0.43	328.19	-0.28	WI,CU									
01st Dec 2023 21:00			7	50.99	4.38	4.38	0.85	95.37	-0.62	WI,CU									
02nd Dec 2023 00:00			7	46.54	3.94	3.94	0.31	344.95	0.01	WI									
02nd Dec 2023 03:00	**21.08**	**121.02**	**7**	**45.21**	**3.79**	**3.79**	**1.70**	**86.43**	**0.13**		**24.00**	**183.00**	**8.00**	**0.00**	**11.75**	**7.60**	**60.61**	**0.00**	**18.00**
02nd Dec 2023 06:00			7	42.08	3.40	3.40	1.68	89.24	0.21	WI									
02nd Dec 2023 09:00			6	35.78	2.57	2.57	0.70	104.03	1.52	WI									
02nd Dec 2023 12:00			6	27.08	2.56	2.10	1.47	96.7	0.43	WI									
02nd Dec 2023 15:00			5	26.04	2.29	1.77	1.46	100.98	0.52	WI									
02nd Dec 2023 18:00			4	34.22	2.12	1.38	1.60	105.56	1.38	WI									
02nd Dec 2023 21:00			4	77.64	2.02	1.24	1.49	111.68	1.58	WI									
03rd Dec 2023 00:00			5	58.95	1.86	1.62	0.91	120.28	1.67	WI									
03rd Dec 2023 03:00	**25.02**	**122.65**	**5**	**46.94**	**2.04**	**1.99**	**0.41**	**135.07**	**0.73**		**24.00**	**257.00**	**7.00**	**0.00**	**11.75**	**10.70**	**62.67**	**0.00**	**13.00**
03rd Dec 2023 06:00			5	44.53	1.90	1.90	0.44	126.39	0.35	WI									
03rd Dec 2023 09:00			5	47.92	1.56	1.48	0.49	115.82	0.20	WI									
03rd Dec 2023 12:00			5	58.04	1.45	1.36	0.49	114.06	-0.02	WI,CU									
03rd Dec 2023 15:00			5	54.15	1.15	1.04	0.47	121.27	0.26	WI									
03rd Dec 2023 18:00			4	58.62	0.89	0.74	0.45	123.73	0.32	WI									
03rd Dec 2023 21:00			3	81.89	0.74	0.56	0.19	93.65	0.18										
04th Dec 2023 00:00			4	73.44	0.64	0.46	0.36	121.76	0.23	WI									
04th Dec 2023 03:00	**29.38**	**123.87**	**4**	**85.32**	**0.62**	**0.49**	**0.12**	**359.82**	**0.16**		**24.00**	**270.00**	**5.00**	**0.00**	**11.75**	**11.30**	**66.37**	**0.00**	**6.00**
04th Dec 2023 06:00			3	96.29	0.55	0.40	0.27	114.28	0.09										
04th Dec 2023 09:00			3	47.94	0.50	0.30	0.31	357.31	0.01										
04th Dec 2023 12:00			3	79.7	0.43	0.16	0.33	358.44	-0.13	CU									
04th Dec 2023 15:00			2	133.64	0.38	0.12	0.28	351.89	0.03										
04th Dec 2023 18:00			1	350.4	0.27	0.55	0.20	350.22	0.10										
04th Dec 2023 21:00			2	336.29	0.22	0.15	0.16	125.36	-0.05	CU									
05th Dec 2023 00:00			1	260.77	0.23	0.41	0.08	358.84	0.09										
05th Dec 2023 03:00	**33.83**	**124.32**	**3**	**230.5**	**0.33**	**0.31**	**0.16**	**149.73**	**0.02**		**24.00**	**270.00**	**4.00**	**0.00**	**11.75**	**11.30**	**66.17**	**0.00**	**1.00**
05th Dec 2023 06:00			3	249.29	0.45	0.45	0.07	143.53	0.22										
05th Dec 2023 09:00			3	251.9	0.48	0.46	0.13	87.66	-0.03	CU									
05th Dec 2023 12:00			3	180.86	0.43	0.18	0.41	246.19	-0.15	CU									
05th Dec 2023 16:30	**36.17**	**125.52**	**3**	**196.37**	**0.46**	**0.41**	**0.37**	**247.86**	**-0.15**		**13.50**	**153.00**	**3.00**	**0.00**	**11.75**	**11.30**	**66.28**	**0.00**	**40.00**

Good Weather Summary

Itinerary : madras - cbe

Voyage Leg Date(UTC) : 25-11-2023 03:00 - 05-12-2023 16:30

CP Warranties : About 11.75 Kts on About 39.6 Mts Fuel

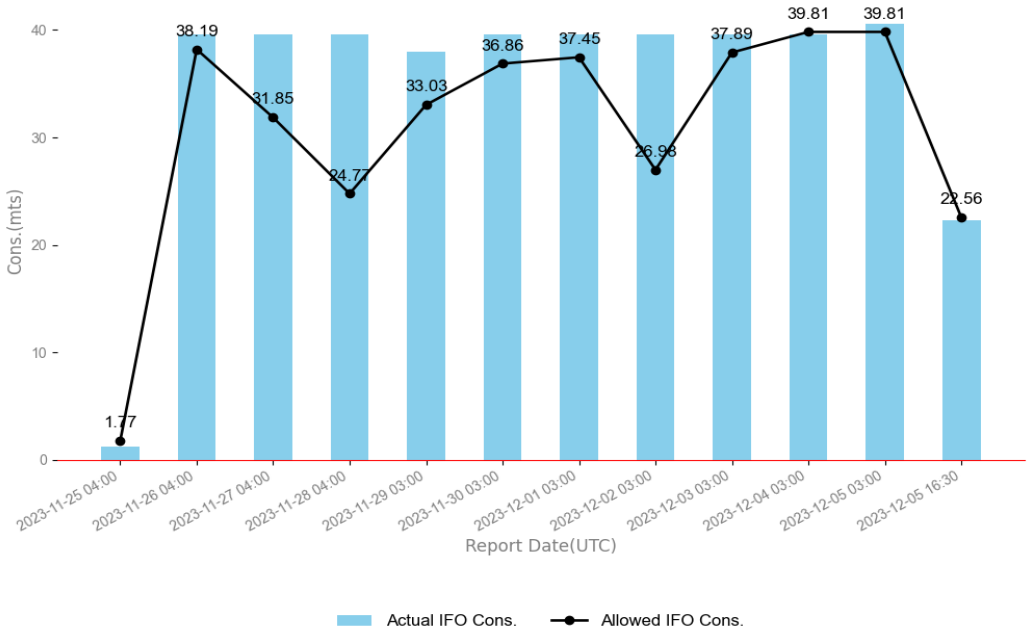
Date	Lat	Log	Steaming Hours	Allowed Steaming Hours	Distance (NM)	Avg - RPM	Slip (%)	Course	Bunker ROB (MT)				Bunker Cons. (MT)				Allowed Cons. MT	Good Weather
									HSFO	VULSFO	MGO	MDO	HSFO	VULSFO	MGO	MDO		
25th Nov 2023 03:00	COSP	madras	0.00	0.00	0	0.00	0	83	2056.80	0.00	342.35	0.00	0.00	0.00	0.00	0.00	0.00	NO
25th Nov 2023 04:00	1.38	104.43	1.00	1.07	12	61.80	0	52	2055.78	0.00	342.10	0.00	1.02	0.00	0.25	0.00	1.77	NO
26th Nov 2023 04:00	5.08	106.62	24.00	23.02	259	65.56	0	39	2016.18	0.00	342.10	0.00	39.60	0.00	0.00	0.00	38.19	NO
27th Nov 2023 04:00	7.82	108.97	24.00	19.20	216	65.88	0	54	1976.58	0.00	342.10	0.00	39.60	0.00	0.00	0.00	31.85	NO
28th Nov 2023 04:00	9.68	111.07	24.00	14.93	168	61.13	0	47	1936.98	0.00	342.10	0.00	39.60	0.00	0.00	0.00	24.77	NO
29th Nov 2023 03:00	12.22	113.88	23.00	19.91	224	64.14	0	47	1899.03	0.00	342.10	0.00	37.95	0.00	0.00	0.00	33.03	NO
30th Nov 2023 03:00	15.05	117.05	24.00	22.22	250	64.03	0	47	1859.43	0.00	342.10	0.00	39.60	0.00	0.00	0.00	36.86	NO
01st Dec 2023 03:00	18.22	119.90	24.00	22.58	254	63.80	0	18	1819.83	0.00	342.10	0.00	39.60	0.00	0.00	0.00	37.45	YES
02nd Dec 2023 03:00	21.08	121.02	24.00	16.27	183	60.61	0	18	1780.23	0.00	342.10	0.00	39.60	0.00	0.00	0.00	26.98	NO
03rd Dec 2023 03:00	25.02	122.65	24.00	22.84	257	62.67	0	13	1740.63	0.00	342.10	0.00	39.60	0.00	0.00	0.00	37.89	NO
04th Dec 2023 03:00	29.38	123.87	24.00	24.00	270	66.37	0	6	1701.03	0.00	342.10	0.00	39.60	0.00	0.00	0.00	39.81	NO
05th Dec 2023 03:00	33.83	124.32	24.00	24.00	270	66.17	0	1	1660.43	0.00	342.10	0.00	40.60	0.00	0.00	0.00	39.81	YES
05th Dec 2023 16:30	EOSP	cbe	13.50	13.60	153	66.28	0	40	1657.13	0.00	323.13	0.00	3.30	0.00	18.97	0.00	22.56	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-madras	1.27	104.28	25th Nov 2023 03:00	315 x 3	315 x 0.2	11.75	0.00	83	0.00	0	0	0	0	2056.80	0	342.35	0	
Noon	1.38	104.43	25th Nov 2023 04:00	315 x 3	315 x 0.5	11.75	12.00	52	61.80	0	12	0	0	2055.78	0	342.10	0	
Noon	5.08	106.62	26th Nov 2023 04:00	45 x 5	45 x 1.5	11.75	10.80	39	65.56	0	259	0	0	2016.18	0	342.10	0	
Noon	7.82	108.97	27th Nov 2023 04:00	45 x 6	45 x 2.0	11.75	9.00	54	65.88	0	216	0	0	1976.58	0	342.10	0	
Noon	9.68	111.07	28th Nov 2023 04:00	0 x 6	0 x 2.0	11.75	7.00	47	61.13	0	168	0	0	1936.98	0	342.10	0	
Noon	12.22	113.88	29th Nov 2023 03:00	45 x 6	45 x 2.0	11.75	9.70	47	64.14	0	224	0	0	1899.03	0	342.10	0	
Noon	15.05	117.05	30th Nov 2023 03:00	45 x 6	45 x 2.0	11.75	10.40	47	64.03	0	250	0	0	1859.43	0	342.10	0	
Noon	18.22	119.90	01st Dec 2023 03:00	45 x 7	45 x 2.5	11.75	10.60	18	63.80	0	254	0	0	1819.83	0	342.10	0	
Noon	21.08	121.02	02nd Dec 2023 03:00	45 x 8	45 x 3.5	11.75	7.60	18	60.61	0	183	0	0	1780.23	0	342.10	0	
Noon	25.02	122.65	03rd Dec 2023 03:00	45 x 7	45 x 2.5	11.75	10.70	13	62.67	0	257	0	0	1740.63	0	342.10	0	
Noon	29.38	123.87	04th Dec 2023 03:00	90 x 5	90 x 1.5	11.75	11.30	6	66.37	0	270	0	0	1701.03	0	342.10	0	
Noon	33.83	124.32	05th Dec 2023 03:00	225 x 4	225 x 0.5	11.75	11.30	1	66.17	0	270	0	0	1660.43	0	342.10	0	
Arrival-cbe	36.17	125.52	05th Dec 2023 16:30	90 x 3	90 x 0.2	11.75	11.30	40	66.28	0	153	0	0	1657.13	0	323.13	0	

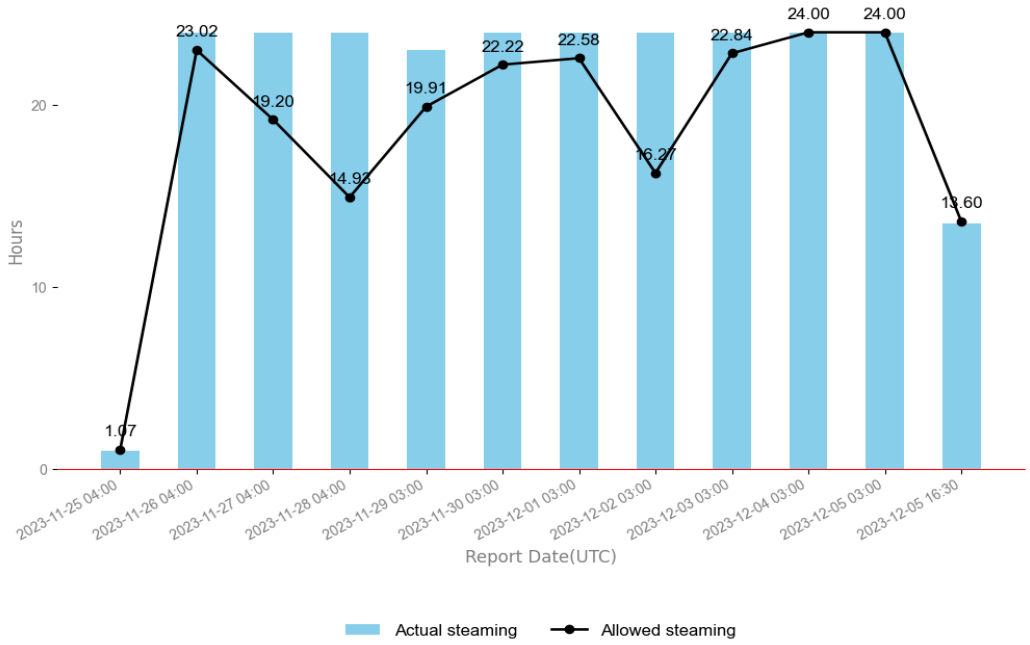
Fuel Graph

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