

```
In [1]: import os
import json
from cog_analysis import analyze_session
from report_fct import process_all_run

summary_path = "summary_enriched.json"

base_dir = "../Data_Sailnjord/Straight_lines"
```

Only Upwind:

```
In [2]: # Scan de tous les dossiers de date
for date_folder in sorted(os.listdir(base_dir)):
    date_path = os.path.join(base_dir, date_folder)

    # Scan de tous les runs dans chaque dossier de date
    for run_folder in sorted(os.listdir(date_path)):
        run_path = os.path.join(date_path, run_folder)
        try:
            process_all_run(run_path, summary_path, tot=False, onlyUpwind=True, onlyDownwind=False)
        except ValueError as e:
            print(f"Error: {e}")
```

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=====
Processing run: 06_06_Run1
=====

{'SOG_variation_boat1': 0.9060069436977556,
 'SOG_variation_boat2': 0.6152285750161369,
 'avg TWA boat1': 48.330488649949264,
 'avg TWA boat2': 48.517577751196164,
 'avg_SOG_boat1': 20.437873357228195,
 'avg_SOG_boat2': 20.159856630824375,
 'boat1_master_leeward': False,
 'boat1_name': 'Gian Stragiotti',
 'boat1_total_weight': 106.77,
 'boat2_master_leeward': True,
 'boat2_name': 'Karl Maeder',
 'boat2_total_weight': 100.97500000000001,
 'duration': 83.59299993515015,
 'end_time': 1749217774.756,
 'stability_score': 0.9676324199379018,
 'start_time': 1749217691.163}

=====
Interval 1: Upwind from 2025-06-06 13:48:11 to 2025-06-06 13:49:34 – Karl Maeder vs Gian Stragiotti
=====
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	Run Statistics												
	Avg (Karl Maeder)	Avg (Gian Stragiotti)	Min (Karl Maeder)	Min (Gian Stragiotti)	Max (Karl Maeder)	Max (Gian Stragiotti)	Count (Karl Maeder)	Count (Gian Stragiotti)	StdDev (Karl Maeder)	StdDev (Gian Stragiotti)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.234	7.232	5.204	5.204	9.394	9.395	836	837	1.289	1.289			
TWD	171.5	171.5	169.5	169.5	173.5	173.5	836	837	1.226	1.226			
SOG	20.16	20.44	19.1	18.4	22.2	22.3	836	837	0.618	0.906	Gian Stragiotti	Karl Maeder	Tie
VMG	13.34	13.55	10.02	9.711	16.49	17.37	836	837	1.225	1.418	Gian Stragiotti	Karl Maeder	Tie
COG	123	123.2	112.5	109.9	135.2	137	836	837	3.813	4.509		Karl Maeder	Karl Maeder
TWA_Abs	48.52	48.33	37.76	35.49	58.91	60.84	836	837	3.85	4.59			
Heel_Lwd	53.39	54.96	34.4	37.6	76.1	72.4	836	837	5.86	6.097	Gian Stragiotti	Karl Maeder	Tie
Side_lines	13.47	12.92	4.9	2.2	25.5	23.7	836	837	3.677	3.817	Karl Maeder	Karl Maeder	Karl Maeder
Line_C	110.9	113.8	71.8	71.9	141	152	836	833	11.52	12.23	Gian Stragiotti	Karl Maeder	Tie
Total_lines	124.5	126.6	79.1	82.4	162.4	170.1	836	837	13.21	14.09	Gian Stragiotti	Karl Maeder	Tie

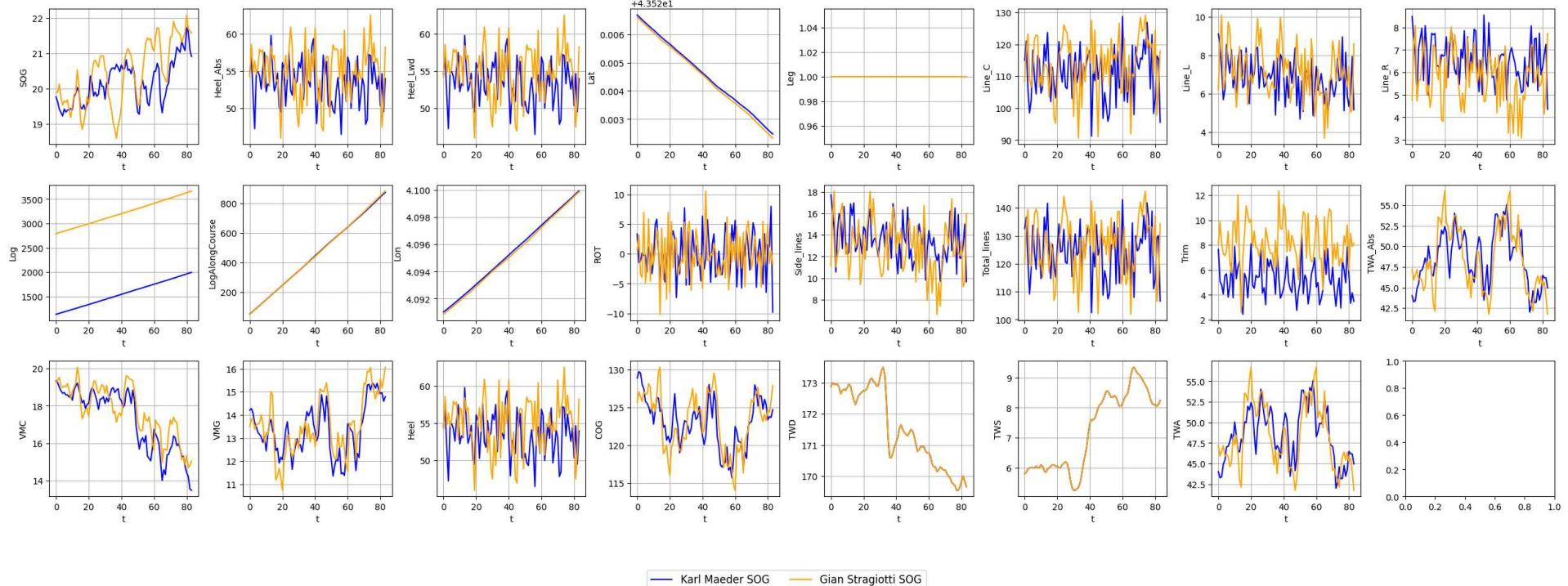
Distance Summary

	Karl Maeder	Gian Stragiotti
Distance [m]	868.657991	881.134771
Straight Line [m]	864.963132	876.540039
Distance as Percentage of Straight Line [%]	100.427170	100.524190

Gain of Karl Maeder with respect to Gian Stragiotti

	Forward	Lateral	VMG
Initial Deficit	-7.208146	15.080504	6.523027
Final Deficit	4.362416	17.079623	15.684942
Total Gain	-11.570562	-1.999119	-9.161915
Gain per Minute	-8.314973	-1.436630	-6.584043

Interval 1: Upwind from 2025-06-06 13:48:11 to 2025-06-06 13:49:34 — Karl Maeder vs Gian Stragiotti - Parameters over time



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=====
Processing run: 06_06_Run2
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```
{'SOG_variation_boat1': 0.9186044828922484,
 'SOG_variation_boat2': 0.8717597316888797,
 'avg TWA boat1': 58.89826233453671,
 'avg TWA boat2': 60.07042340168877,
 'avg_SOG_boat1': 20.580144404332128,
 'avg_SOG_boat2': 19.964981949458487,
 'boat1_master_leeward': True,
 'boat1_name': 'Gian Stragiotti',
 'boat1_total_weight': 106.77,
 'boat2_master_leeward': False,
 'boat2_name': 'Karl Maeder',
 'boat2_total_weight': 100.97500000000001,
 'duration': 82.98699998855591,
 'end_time': 1749218497.944,
 'stability_score': 0.9655042043463251,
 'start_time': 1749218414.957}
```

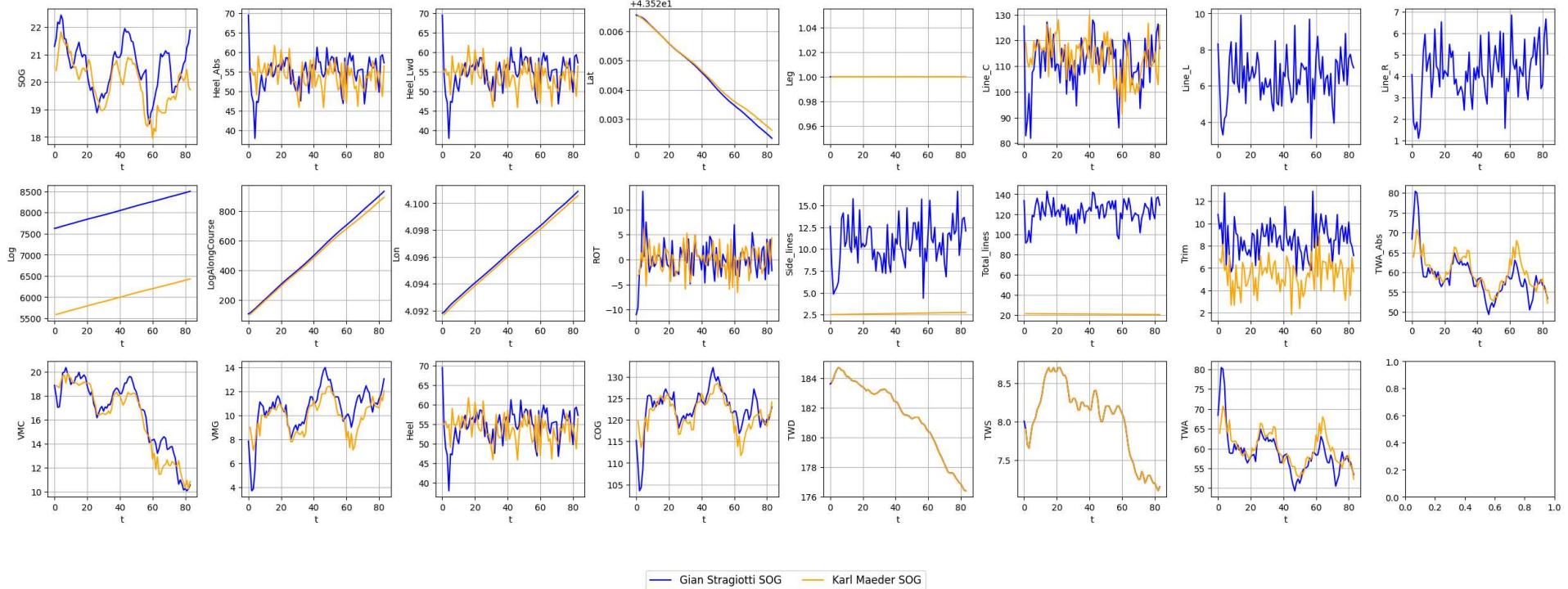
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Interval 1: Upwind from 2025-06-06 14:00:14 to 2025-06-06 14:01:37 — Gian Stragiotti vs Karl Maeder
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	Run Statistics												
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.026	8.027	7.1	7.1	8.7	8.7	831	829	0.472	0.4717			
TWD	181.5	181.5	176.4	176.4	184.8	184.8	831	829	2.406	2.402			
SOG	20.58	19.97	17.9	17.8	22.7	22	831	829	0.9186	0.8723	Gian Stragiotti	Karl Maeder	Tie
VMG	10.57	9.936	2.002	5.209	15.39	13.17	831	829	1.908	1.438	Gian Stragiotti	Karl Maeder	Tie
COG	122.6	121.4	99.6	108.4	137.2	131	831	829	5.155	4.124		Karl Maeder	Karl Maeder
TWA_Abs	58.9	60.07	44.3	49.7	84.8	75.84	831	829	5.748	4.415			
Heel_Lwd	54.62	53.87	29.5	34.5	69.9	73.9	831	829	6.067	5.794	Gian Stragiotti	Karl Maeder	Tie
Side_lines	10.62	2.63	1.8	2.506	24.1	2.754	831	829	3.707	0.07152	Gian Stragiotti	Karl Maeder	Tie
Line_C	111.5	113.1	61.8	81.7	162.3	146.3	826	829	13.32	10.84	Karl Maeder	Karl Maeder	Karl Maeder
Total_lines	122.3	20.92	64.2	20.46	176.8	21.39	831	829	14.73	0.2698	Gian Stragiotti	Karl Maeder	Tie

Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	881.637147	851.906469
Straight Line [m]	876.008669	847.703283
Distance as Percentage of Straight Line [%]	100.642514	100.495832
Gain of Gian Stragiotti with respect to Karl Maeder		
Forward	Initial Deficit	-11.636441
Lateral	Final Deficit	5.025575
VMG	Total Gain	-1.709769
	Gain per Minute	-40.117615
		-11.787467
		-30.820690
		28.481173
		16.813042
		29.110921
		20.592025
		12.155910
		21.047336

Interval 1: Upwind from 2025-06-06 14:00:14 to 2025-06-06 14:01:37 — Gian Stragiotti vs Karl Maeder - Parameters over time



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=====
Processing run: 06_06_Run3
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```
{'SOG_variation_boat1': 0.49000470059418433,
'SOG_variation_boat2': 0.6792614824590278,
'avg TWA boat1': 52.54139975845411,
'avg TWA boat2': 52.82867917675545,
'avg_SOG_boat1': 21.063164251207727,
'avg_SOG_boat2': 20.359541062801927,
'boat1_master_leeward': False,
'boat1_name': 'Gian Stragiotti',
'boat1_total_weight': 106.77,
'boat2_master_leeward': True,
'boat2_name': 'Karl Maeder',
'boat2_total_weight': 100.97500000000001,
'duration': 82.69000005722046,
'end_time': 1749219170.846,
'stability_score': 0.9702963955551277,
'start_time': 1749219088.156}
```

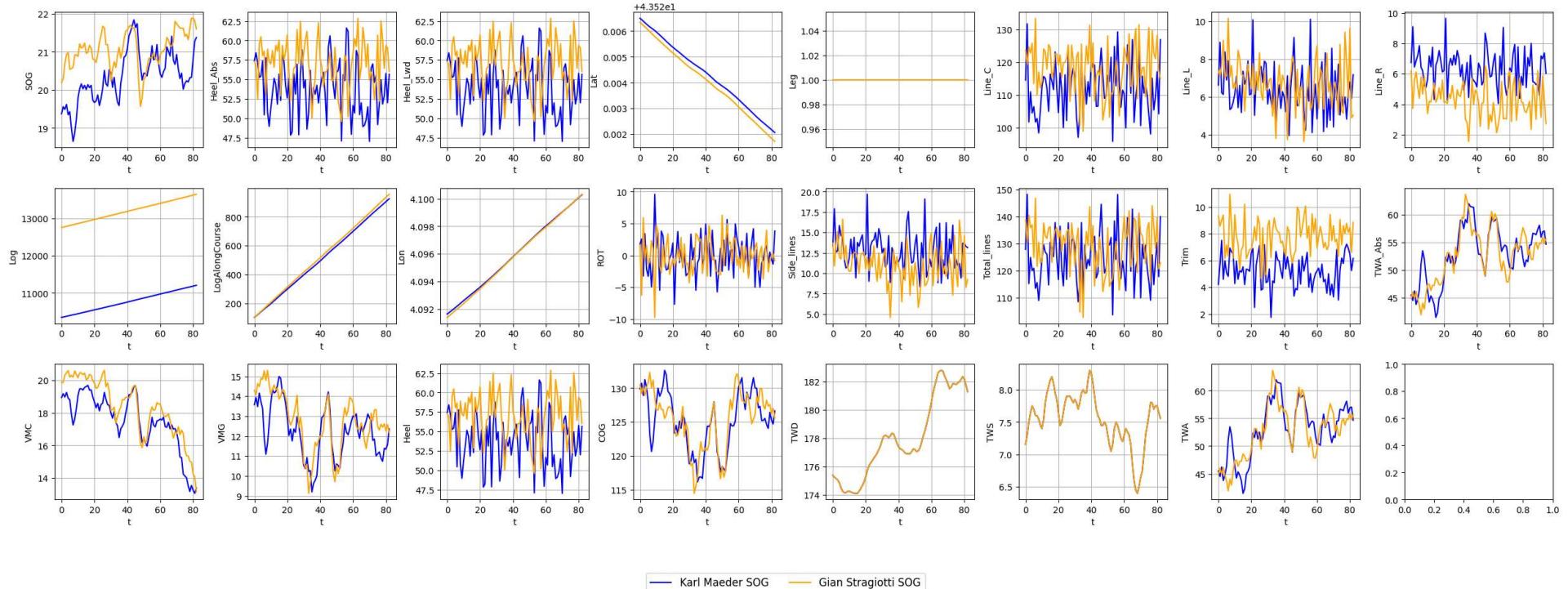
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Interval 1: Upwind from 2025-06-06 14:11:28 to 2025-06-06 14:12:50 – Karl Maeder vs Gian Stragiotti
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	Run Statistics												
	Avg (Karl Maeder)	Avg (Gian Stragiotti)	Min (Karl Maeder)	Min (Gian Stragiotti)	Max (Karl Maeder)	Max (Gian Stragiotti)	Count (Karl Maeder)	Count (Gian Stragiotti)	StdDev (Karl Maeder)	StdDev (Gian Stragiotti)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.554	7.554	6.4	6.4	8.3	8.3	826	828	0.4126	0.4124			
TWD	178	178	174.1	174.1	182.9	182.9	826	828	2.827	2.827			
SOG	20.36	21.06	18.5	19.5	21.9	22	826	828	0.6784	0.49	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	12.24	12.76	8.308	7.939	15.3	16.57	826	828	1.409	1.499	Gian Stragiotti	Karl Maeder	Tie
COG	125.2	125.4	111.6	110.9	134.4	136.3	826	828	4.57	4.502		Gian Stragiotti	Gian Stragiotti
TWA_Abs	52.83	52.54	40.1	37.91	66.46	67.21	826	828	5.239	5.133			
Heel_Lwd	53.86	56.98	33.8	39.7	72.9	73.2	826	828	6.264	5.705	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	12.78	11.01	4.2	2.8	24.4	24	826	828	4.02	3.508	Karl Maeder	Gian Stragiotti	Tie
Line_C	111.9	118.4	76.9	76.6	152.2	154.9	826	821	12.97	10.9	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	124.8	129	82.4	82.1	171.3	165.5	826	828	15.28	12.03	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti

Distance Summary

	Karl Maeder	Gian Stragiotti
Distance [m]	866.941594	898.997515
Straight Line [m]	862.221169	894.202707
Distance as Percentage of Straight Line [%]	100.547473	100.536210
Gain of Karl Maeder with respect to Gian Stragiotti		
Forward	24.961832	15.600337
Lateral	-7.099155	
VMG	38.857689	29.913897
Initial Deficit		24.861394
Final Deficit	-31.960549	
Total Gain	-4.952065	-23.257352
Gain per Minute	-23.245445	-3.601720
		-16.915463

Interval 1: Upwind from 2025-06-06 14:11:28 to 2025-06-06 14:12:50 — Karl Maeder vs Gian Stragiotti - Parameters over time



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Processing run: 06_06_Run4
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```
{'SOG_variation_boat1': 0.7122666523594098,
'SOG_variation_boat2': 0.7265832233472408,
'avg TWA boat1': 52.66727198917456,
'avg TWA boat2': 52.53241598915989,
'avg_SOG_boat1': 20.830446549391066,
'avg_SOG_boat2': 19.742625169147495,
'boat1_master_leeward': True,
'boat1_name': 'Gian Stragiotti',
'boat1_total_weight': 106.77,
'boat2_master_leeward': False,
'boat2_name': 'Karl Maeder',
'boat2_total_weight': 100.97500000000001,
'duration': 73.80799984931946,
'end_time': 1749219672.165,
'stability_score': 0.9631675127350817,
'start_time': 1749219598.357}
```

```
=====
Interval 1: Upwind from 2025-06-06 14:19:58 to 2025-06-06 14:21:12 – Gian Stragiotti vs Karl Maeder
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```

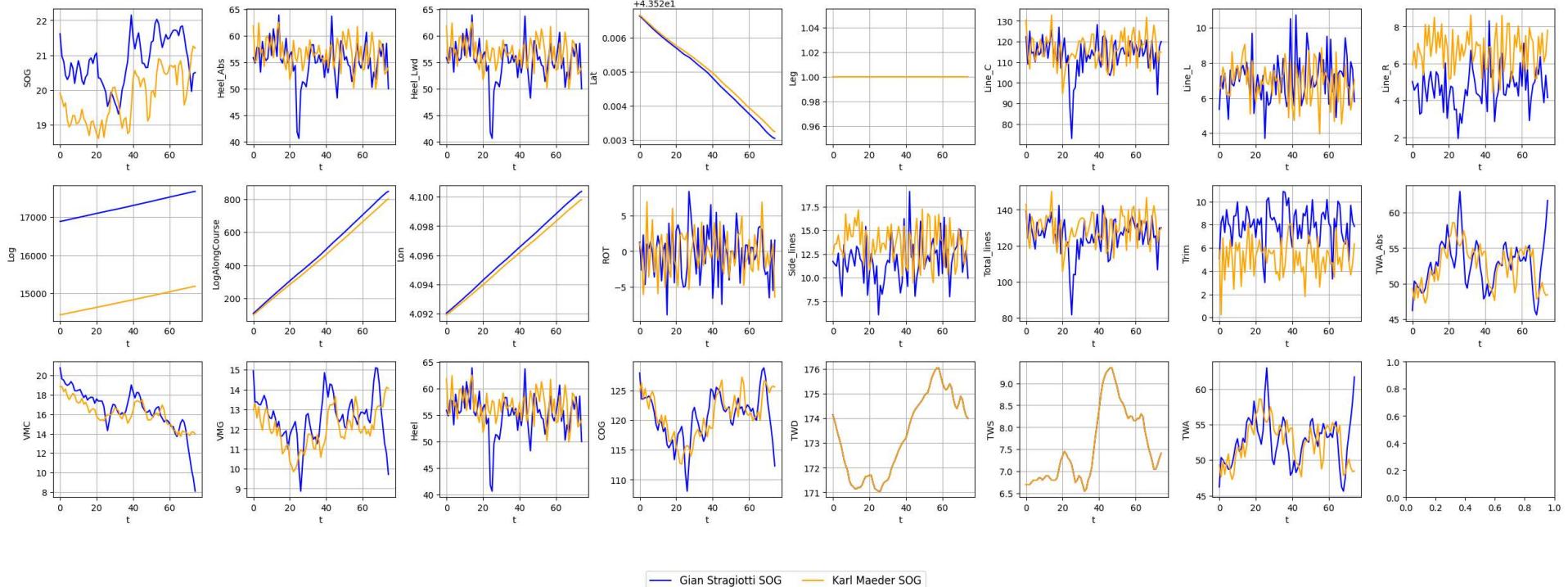
MainReport

	Run Statistics												
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.593	7.594	6.504	6.506	9.396	9.396	739	738	0.8486	0.8485			
TWD	173.3	173.3	171	171	176.1	176.1	739	738	1.637	1.638			
SOG	20.83	19.74	19.1	18.5	22.3	21.3	739	738	0.7123	0.7277	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	12.62	12	8.2	8.03	16.21	14.55	739	738	1.247	1.086	Gian Stragiotti	Karl Maeder	Tie
COG	120.6	120.8	106	107.3	131.6	129.5	739	738	4.214	4.064		Karl Maeder	Karl Maeder
TWA_Abs	52.67	52.53	42.8	44.5	65.03	64.28	739	738	3.662	3.353			
Heel_Lwd	55.19	56.73	31.3	40.4	74.6	74.8	739	738	6.276	5.752	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	11.82	13.62	2.2	5.6	26.1	25.5	739	738	3.608	3.51	Karl Maeder	Karl Maeder	Karl Maeder
Line_C	113.3	116	62.3	85.7	150.6	153.8	735	738	12.43	10.99	Karl Maeder	Karl Maeder	Karl Maeder
Total_lines	125.4	129.6	75.1	94.5	160.7	176	739	738	13.49	12.52	Karl Maeder	Karl Maeder	Karl Maeder

Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	792.398098	751.058332
Straight Line [m]	788.576683	747.458507
Distance as Percentage of Straight Line [%]	100.484597	100.481609
Gain of Gian Stragiotti with respect to Karl Maeder		
Forward	Forward	VMG
Initial Deficit	-9.232465	2.878838
Final Deficit	-50.321621	4.786736
Total Gain	41.089155	-1.907898
Gain per Minute	33.402196	-1.550968
	19.024166	

Interval 1: Upwind from 2025-06-06 14:19:58 to 2025-06-06 14:21:12 — Gian Stragiotti vs Karl Maeder - Parameters over time



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=====
Processing run: 06_06_Run5
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```

```
{'SOG_variation_boat1': 0.5502890980942721,
 'SOG_variation_boat2': 0.5485079840896449,
 'avg TWA boat1': 48.68512300123002,
 'avg TWA boat2': 48.25772996300863,
 'avg_SOG_boat1': 21.45227552275523,
 'avg_SOG_boat2': 21.483148831488318,
 'boat1_master_leeward': True,
 'boat1_name': 'Karl Maeder',
 'boat1_total_weight': 100.97500000000001,
 'boat2_master_leeward': False,
 'boat2_name': 'SenseBoard',
 'boat2_total_weight': 109.08999999999999,
 'duration': 81.19400000572205,
 'end_time': 1749220811.654,
 'stability_score': 0.9628159995384037,
 'start_time': 1749220730.46}
```

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=====
Interval 1: Upwind from 2025-06-06 14:38:50 to 2025-06-06 14:40:11 – Karl Maeder vs SenseBoard
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```

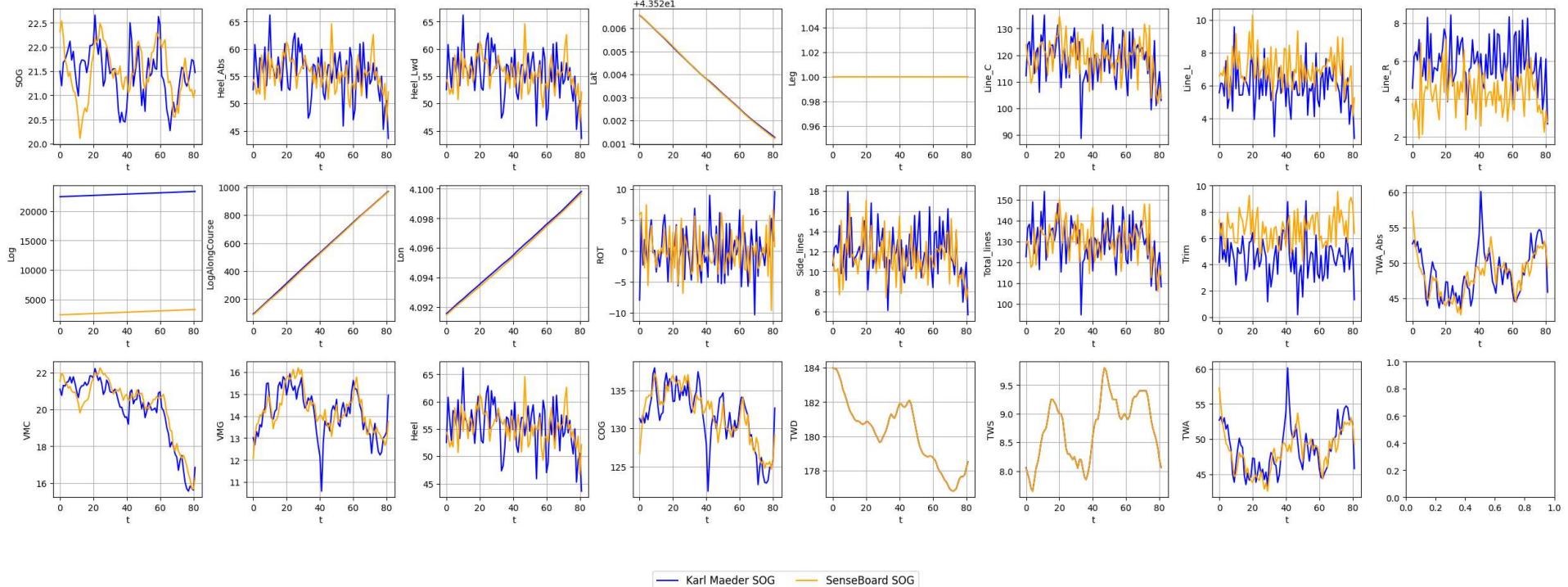
MainReport

	Run Statistics												
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.762	8.763	7.607	7.605	9.8	9.8	813	811	0.5466	0.5461			
TWD	180.1	180.1	176.8	176.8	184	184	813	811	1.892	1.888			
SOG	21.45	21.48	20	20	22.9	23.6	813	811	0.5503	0.5546	SenseBoard	Karl Maeder	Tie
VMG	14.13	14.28	9.293	11.62	17.47	17.12	813	811	1.188	1.024	SenseBoard	SenseBoard	SenseBoard
COG	131.4	131.9	118	121.3	141.2	141.3	813	811	4.385	3.887		SenseBoard	SenseBoard
TWA_Abs	48.69	48.26	39.52	39.53	63.87	58.89	813	811	3.947	3.323			
Heel_Lwd	55.55	55.45	32.8	38	74.8	74.5	813	811	6.328	5.439	Karl Maeder	SenseBoard	Tie
Side_lines	11.84	11.4	3.5	2.8	26	24.9	813	811	3.934	3.757	Karl Maeder	SenseBoard	Tie
Line_C	118.3	119.2	75.9	85	162.8	150.5	813	811	13.8	11.69	SenseBoard	SenseBoard	SenseBoard
Total_lines	130	130.4	80.3	90.7	177.2	174.7	813	811	15.68	13.42	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	898.225740	896.927903
Straight Line [m]	894.110145	893.224327
Distance as Percentage of Straight Line [%]	100.460301	100.414630
Gain of Karl Maeder with respect to SenseBoard		
Forward	Initial Deficit	-5.636834
	Final Deficit	3.981248
	Total Gain	-0.731392
	Gain per Minute	-6.534813
		11.708492
		4.479425
		0.897979
		-7.727244
		-5.210817
		0.663580
		-5.710208
		-3.850642

Interval 1: Upwind from 2025-06-06 14:38:50 to 2025-06-06 14:40:11 — Karl Maeder vs SenseBoard - Parameters over time



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Processing run: 06_06_Run6
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```
{'SOG_variation_boat1': 0.6024771486351213,
'SOG_variation_boat2': 0.5333213508461789,
'avg TWA boat1': 46.08574509803922,
'avg TWA boat2': 45.63624157303371,
'avg_SOG_boat1': 21.702941176470592,
'avg_SOG_boat2': 22.300560224089637,
'boat1_master_leeward': False,
'boat1_name': 'Karl Maeder',
'boat1_total_weight': 100.97500000000001,
'boat2_master_leeward': True,
'boat2_name': 'SenseBoard',
'boat2_total_weight': 109.08999999999999,
'duration': 71.2940001487732,
'end_time': 1749221423.255,
'stability_score': 0.9690295257499035,
'start_time': 1749221351.961}
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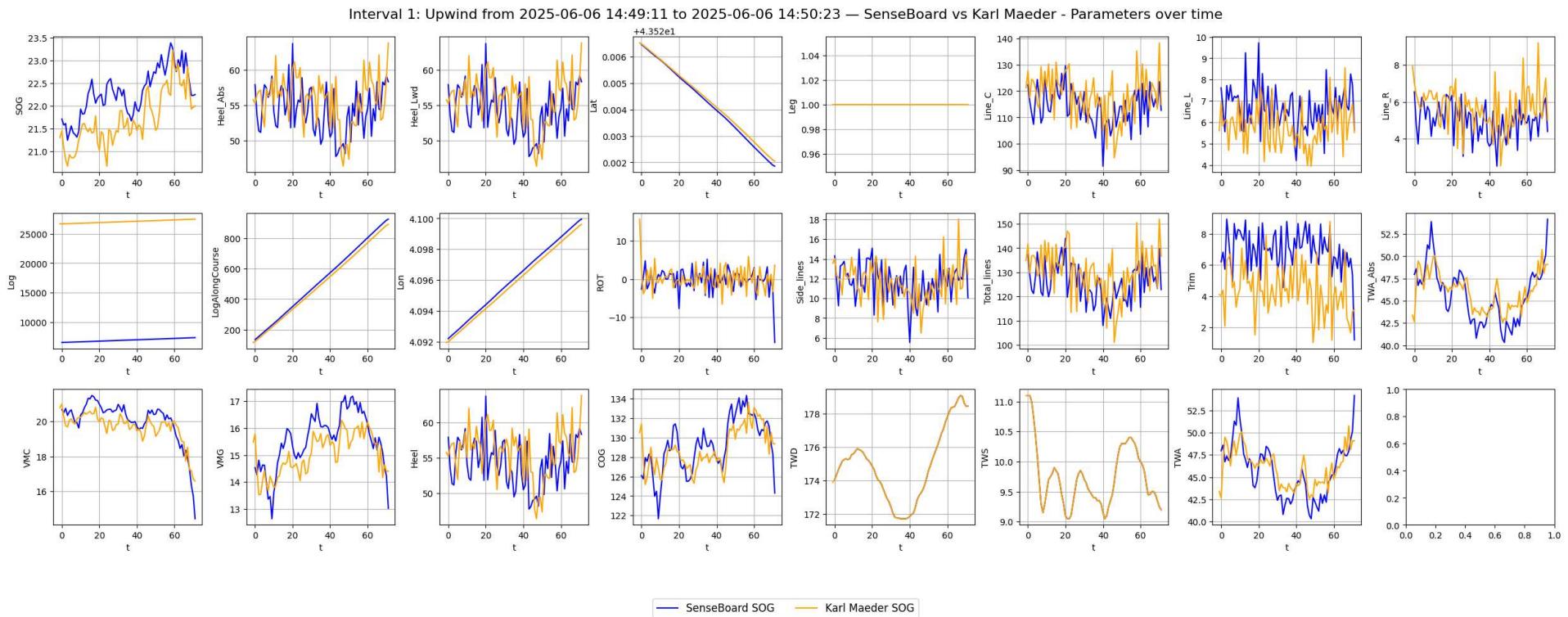
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Interval 1: Upwind from 2025-06-06 14:49:11 to 2025-06-06 14:50:23 — SenseBoard vs Karl Maeder
=====
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Run Statistics

	Avg (SenseBoard)	Avg (Karl Maeder)	Min (SenseBoard)	Min (Karl Maeder)	Max (SenseBoard)	Max (Karl Maeder)	Count (SenseBoard)	Count (Karl Maeder)	StdDev (SenseBoard)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.733	9.734	9.004	9.004	11.1	11.1	712	714	0.4951	0.4974			
TWD	174.9	174.9	171.7	171.7	179.2	179.2	712	714	2.179	2.181			
SOG	22.3	21.7	21.1	20.5	23.5	23.5	712	714	0.5335	0.6025	SenseBoard	SenseBoard	SenseBoard
VMG	15.57	15.04	11.81	12.69	18.17	17.19	712	714	1.105	0.8833	SenseBoard	Karl Maeder	Tie
COG	129.2	128.8	119.2	120.7	137.6	135.5	712	714	3.157	2.662		Karl Maeder	Karl Maeder
TWA_Abs	45.64	46.09	36.84	38.26	56.34	54.05	712	714	3.38	2.616			
Heel_Lwd	54.28	55.76	38.6	38.7	70.4	71.3	712	714	5.642	5.598	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	11.68	11.54	3.1	4.2	25.6	25.8	712	714	3.634	3.497	SenseBoard	Karl Maeder	Tie
Line_C	114.2	118.3	69.8	71.2	149.3	154.9	710	714	12.2	13.28	Karl Maeder	SenseBoard	Tie
Total_lines	125.9	130.1	88.1	76.4	159.4	170.5	712	714	12.26	14.77	Karl Maeder	SenseBoard	Tie

Distance Summary

	SenseBoard	Karl Maeder	
Distance [m]	817.920069	798.352828	
Straight Line [m]	815.143704	795.949532	
Distance as Percentage of Straight Line [%]	100.340598	100.301941	
Gain of SenseBoard with respect to Karl Maeder			
	Forward	Lateral	VMG
Initial Deficit	-14.968790	7.190268	-5.326013
Final Deficit	-34.188164	1.094693	-23.122295
Total Gain	19.219374	6.095576	17.796282
Gain per Minute	16.217284	5.143439	15.016481



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Processing run: 06_06_Run7
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```
{'SOG_variation_boat1': 0.8433990042082609,
'SOG_variation_boat2': 0.7266066949019068,
'avg TWA boat1': 48.42436351875809,
'avg TWA boat2': 47.25475518134715,
'avg_SOG_boat1': 21.420957309184995,
'avg_SOG_boat2': 21.57464424320828,
'boat1_master_leeward': True,
'boat1_name': 'Karl Maeder',
'boat1_total_weight': 100.97500000000001,
'boat2_master_leeward': False,
'boat2_name': 'SenseBoard',
'boat2_total_weight': 109.08999999999999,
'duration': 77.19599986076355,
'end_time': 1749221950.56,
'stability_score': 0.9643827859484259,
'start_time': 1749221873.364}
```

```
=====
Interval 1: Upwind from 2025-06-06 14:57:53 to 2025-06-06 14:59:10 – Karl Maeder vs SenseBoard
=====
```

Run Statistics

	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.654	8.653	8.108	8.109	9.2	9.2	773	772	0.2658	0.2653			
TWD	184.2	184.2	179	179	187.3	187.3	773	772	2.234	2.236			
SOG	21.42	21.57	17.7	19.8	22.8	23	773	772	0.8434	0.7324	SenseBoard	SenseBoard	SenseBoard
VMG	14.2	14.6	9.275	11.03	18.08	18.22	773	772	1.47	1.471	SenseBoard	Karl Maeder	Tie
COG	135.8	136.9	117.2	126.9	148.4	149.2	773	772	4.293	4.003		SenseBoard	SenseBoard
TWA_Abs	48.42	47.25	34.81	35.07	62.59	58.8	773	772	4.159	4.78			
Heel_Lwd	53.07	53.88	23.3	30.9	75.7	68.3	773	772	6.961	5.867	SenseBoard	SenseBoard	SenseBoard
Side_lines	11.19	11.22	2.7	2.7	28.1	24.2	773	772	3.817	3.818	SenseBoard	Karl Maeder	Tie
Line_C	112	112.2	41.7	65	152.8	147.4	773	771	16.63	13.04	SenseBoard	SenseBoard	SenseBoard
Total_lines	123	123.5	45	82	171.1	164.1	773	772	18.01	14.64	SenseBoard	SenseBoard	SenseBoard

Distance Summary

Karl Maeder SenseBoard

Distance [m] 852.057212 857.088102

Straight Line [m] 848.266453 853.420647

Distance as Percentage of Straight Line [%] 100.446883 100.429736

Gain of Karl Maeder with respect to SenseBoard

Forward Lateral VMG

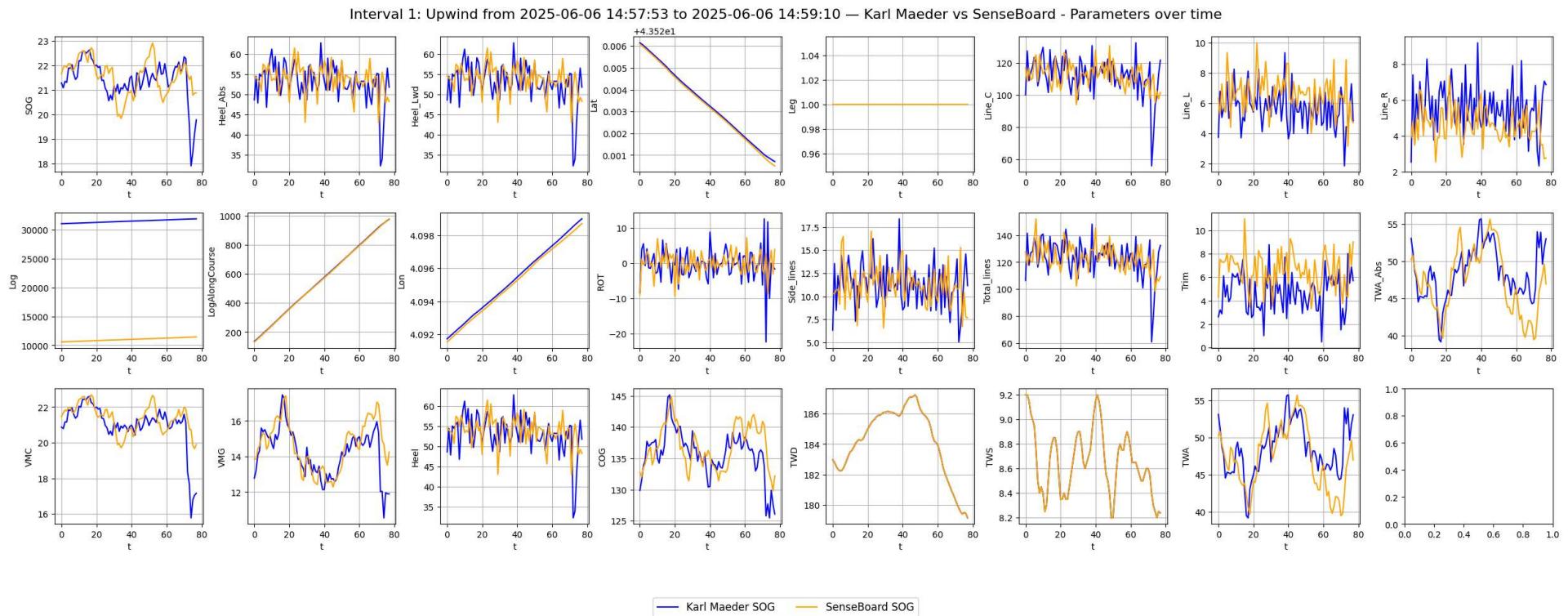
Initial Deficit -5.003085 15.786889 8.489243

Final Deficit -0.002812 32.467874 24.285909

Total Gain -5.000273 -16.680985 -15.796666

Gain per Minute -3.886424 -12.965168 -12.277838

MainReport



```
=====
Processing run: 06_06_Run8
=====
```

```
{'SOG_variation_boat1': 0.5939859207419921,
 'SOG_variation_boat2': 0.7305042739030235,
 'avg TWA boat1': 51.7811052631579,
 'avg TWA boat2': 51.41245709570957,
 'avg_SOG_boat1': 22.20378289473684,
 'avg_SOG_boat2': 22.531743421052635,
 'boat1_master_leeward': False,
 'boat1_name': 'Karl Maeder',
 'boat1_total_weight': 100.97500000000001,
 'boat2_master_leeward': True,
 'boat2_name': 'SenseBoard',
 'boat2_total_weight': 109.08999999999999,
 'duration': 60.69899998474121,
 'end_time': 1749222433.253,
 'stability_score': 0.9676355493012209,
 'start_time': 1749222372.562}
```

```
=====
Interval 1: Upwind from 2025-06-06 15:06:12 to 2025-06-06 15:07:13 — SenseBoard vs Karl Maeder
=====
```

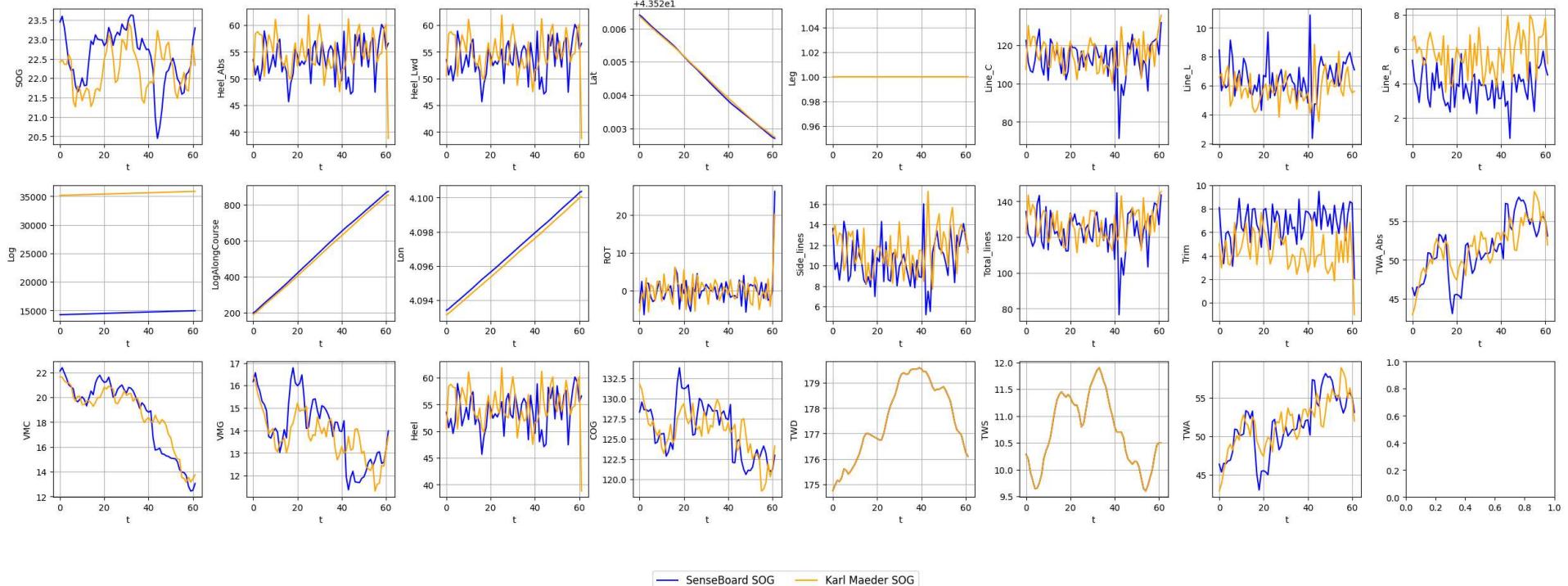
Run Statistics

	Avg (SenseBoard)	Avg (Karl Maeder)	Min (SenseBoard)	Min (Karl Maeder)	Max (SenseBoard)	Max (Karl Maeder)	Count (SenseBoard)	Count (Karl Maeder)	StdDev (SenseBoard)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	10.71	10.71	9.513	9.515	11.9	11.9	606	608	0.6764	0.6756			
TWD	177.6	177.6	174.7	174.7	179.7	179.7	606	608	1.475	1.479			
SOG	22.53	22.2	20.4	19.8	23.7	23.5	606	608	0.7301	0.594	SenseBoard	Karl Maeder	Tie
VMG	14.03	13.71	9.408	10.26	17.63	17.37	606	608	1.551	1.139	SenseBoard	Karl Maeder	Tie
COG	126.2	125.8	114.2	115.4	136.2	135.8	606	608	3.803	3.191		Karl Maeder	Karl Maeder
TWA_Abs	51.41	51.78	40.7	39.17	65.28	62	606	608	4.195	3.531			
Heel_Lwd	53.67	54.98	32.1	31.7	75.7	75.9	606	608	6.196	5.885	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	10.43	11.58	1.7	4.2	27.5	24	606	608	3.923	3.565	Karl Maeder	Karl Maeder	Karl Maeder
Line_C	112.7	115.4	55	75.9	152.8	151.2	602	608	14.79	14.06	Karl Maeder	Karl Maeder	Karl Maeder
Total_lines	123.4	126.9	58.6	83.9	177	164.3	606	608	16.56	15.02	Karl Maeder	Karl Maeder	Karl Maeder

Distance Summary

	SenseBoard	Karl Maeder	
Distance [m]	702.801188	694.299581	
Straight Line [m]	700.120839	692.053828	
Distance as Percentage of Straight Line [%]	100.382841	100.324506	
Gain of SenseBoard with respect to Karl Maeder			
	Forward	Lateral	VMG
Initial Deficit	-14.300088	15.991388	3.580632
Final Deficit	-22.387969	10.876072	-5.462280
Total Gain	8.087881	5.115316	9.042912
Gain per Minute	8.020111	5.072454	8.967140

Interval 1: Upwind from 2025-06-06 15:06:12 to 2025-06-06 15:07:13 — SenseBoard vs Karl Maeder - Parameters over time



SenseBoard SOG — Karl Maeder SOG

Error: At least two CSV files are required.

```

NotADirectoryError                                     Traceback (most recent call last)
Cell In[2], line 9
    7 run_path = os.path.join(date_path, run_folder)
    8 try:
--> 9     process_all_run(run_path, summary_path, tot=False, onlyUpwind=True, onlyDownwind=False)
    10 except ValueError as e:
    11     print(f"Error: {e}")

File c:\Users\romai\OneDrive\Bureau\FormulaKite\fulltime\FormulaKiteDataAnalysis\Straight Run\report_fct.py:472, in process_all_run(run_path, summary_path, tot, onlyUpwind, onlyDownwind)
 470 def process_all_run(run_path, summary_path, tot=False, onlyUpwind=False, onlyDownwind=False):
 471     summary_dict = load_summary_intervals(summary_path)
--> 472     data = load_and_reduce_boat_data(run_path, summary_dict)
 473     name1, name2 = data["boat1_name"], data["boat2_name"]
 475     run_name = os.path.basename(run_path)

File c:\Users\romai\OneDrive\Bureau\FormulaKite\fulltime\FormulaKiteDataAnalysis\Straight Run\report_fct.py:165, in load_and_reduce_boat_data(run_path, summary_dict)
 162 def load_and_reduce_boat_data(run_path, summary_dict):
 163     import copy
--> 165     csv_files = sorted(f for f in os.listdir(run_path) if f.endswith(".csv"))
 166     if len(csv_files) < 2:
 167         raise ValueError("At least two CSV files are required.")

NotADirectoryError: [WinError 267] Nom de répertoire non valide: '../Data_Sailnjord/Straight_lines\\06_06\\SenseBoard_log_modified_250606 - Gian.xlsx'

```

Only Downwind:

```
In [ ]: # Scan de tous les dossiers de date
for date_folder in sorted(os.listdir(base_dir)):
    date_path = os.path.join(base_dir, date_folder)

    # Scan de tous les runs dans chaque dossier de date
    for run_folder in sorted(os.listdir(date_path)):
        run_path = os.path.join(date_path, run_folder)
        try:
            process_all_run(run_path, summary_path, tot=False, onlyUpwind=False, onlyDownwind=True)
        except ValueError as e:
            print(f"Error: {e}")

=====
Processing run: 06_06_Run1
=====
```

Interval 2: Downwind

```
{'SOG_variation_boat1': 0.9516972397395702,
'SOG_variation_boat2': 1.0361443403525072,
'avg TWA boat1': -127.84945833333335,
'avg TWA boat2': -123.79282664526484,
'avg_SOG_boat1': 26.308173076923076,
'avg_SOG_boat2': 25.258974358974363,
'boat1_master_leeward': False,
'boat1_name': 'Gian Stragiotti',
'boat1_total_weight': 106.77,
'boat2_master_leeward': True,
'boat2_name': 'Karl Maeder',
'boat2_total_weight': 100.9750000000001,
'duration': 62.29200005531311,
'end_time': 1749217961.048,
'stability_score': 0.9568326026425789,
'start_time': 1749217898.756}
```

Processing: Interval 2: Downwind from 2025-06-06 13:51:38 to 2025-06-06 13:52:41 – Karl Maeder vs Gian Stragiotti

```
=====
Interval 2: Downwind from 2025-06-06 13:51:38 to 2025-06-06 13:52:41 – Karl Maeder vs Gian Stragiotti
=====
```

Run Statistics

	Avg (Karl Maeder)	Avg (Gian Stragiotti)	Min (Karl Maeder)	Min (Gian Stragiotti)	Max (Karl Maeder)	Max (Gian Stragiotti)	Count (Karl Maeder)	Count (Gian Stragiotti)	StdDev (Karl Maeder)	StdDev (Gian Stragiotti)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.553	7.552	6.8	6.8	8.624	8.624	623	624	0.4699	0.4701			
TWD	188.6	188.6	185.4	185.4	195.3	195.3	623	624	2.936	2.942			
SOG	25.26	26.31	22.6	24.2	27.4	28.3	623	624	1.039	0.9517	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	14.02	16.05	8.383	11.48	19.98	20.2	623	624	2.489	1.967	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	312.4	316.5	297	301.4	323.7	327.8	623	624	5.206	5.294	Karl Maeder	Karl Maeder	Karl Maeder
TWA_Abs	123.8	127.8	110.6	113.9	137.3	139.2	623	624	5.846	5.48			
Heel_Lwd	49.8	48.99	28.3	17.1	72	67.3	623	624	7.787	6.69	Karl Maeder	Gian Stragiotti	Tie
Side_lines	13.01	11.37	3.7	3.1	25.3	22.1	623	624	3.457	3.108	Karl Maeder	Gian Stragiotti	Tie
Line_C	90.84	93.2	54.2	55.6	131.5	129.1	623	621	13.85	11.76	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	104	104.5	59.7	61.9	153.5	151.1	623	624	15.9	12.79	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti

Distance Summary

Karl Maeder Gian Stragiotti

Distance [m] 808.825731 843.849430

Straight Line [m] 804.354952 839.162531

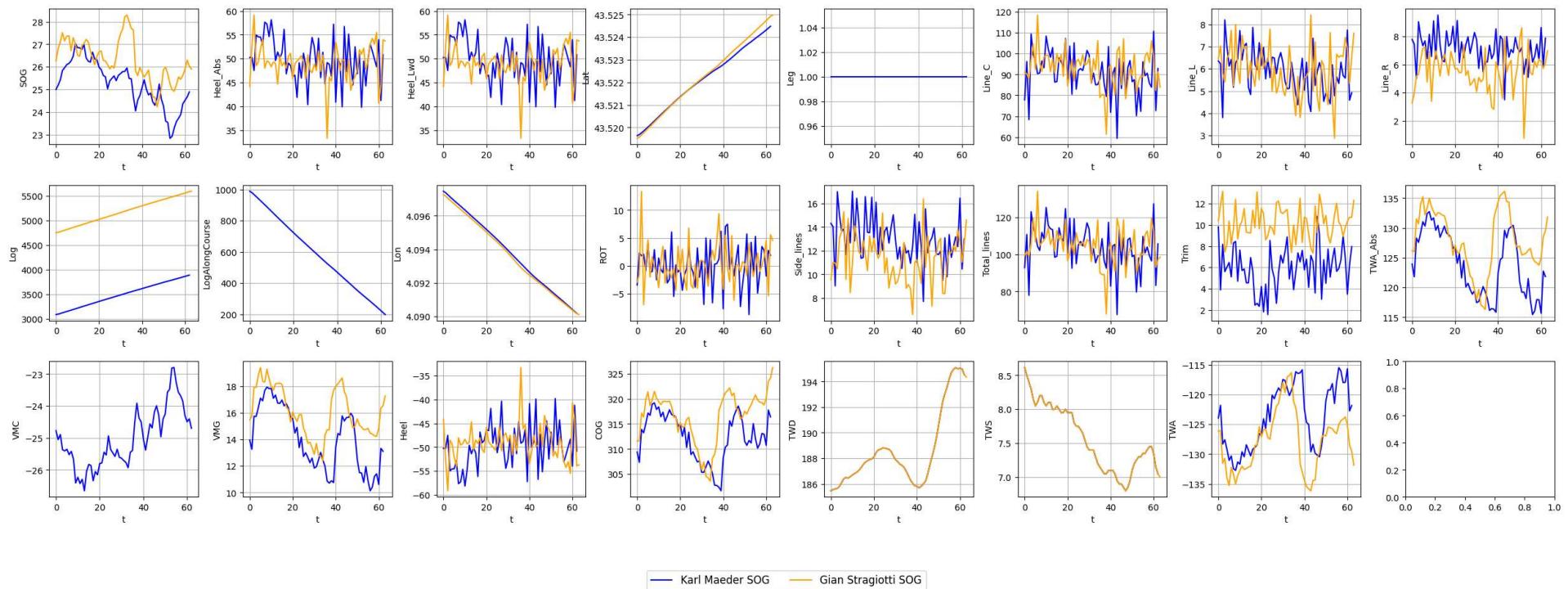
Distance as Percentage of Straight Line [%] 100.555822 100.558521

Gain of Karl Maeder with respect to Gian Stragiotti

Forward Lateral VMG

Initial Deficit 3.142952 20.697345 15.451401**Final Deficit** 36.009546 -36.463102 -50.331788**Total Gain** **32.866594** **-57.160447** **-65.783189****Gain per Minute** 31.702581 -55.136036 -63.453392

Interval 2: Downwind from 2025-06-06 13:51:38 to 2025-06-06 13:52:41 — Karl Maeder vs Gian Stragiotti - Parameters over time



```
=====
Processing run: 06_06_Run2
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.8062025534752273,  
'SOG_variation_boat2': 0.6564624907211762,  
'avg TWA boat1': -126.20847482993196,  
'avg TWA boat2': -122.11107220708448,  
'avg_SOG_boat1': 23.9421768707483,  
'avg_SOG_boat2': 23.076734693877555,  
'boat1_master_leeward': True,  
'boat1_name': 'Gian Stragiotti',  
'boat1_total_weight': 106.77,  
'boat2_master_leeward': False,  
'boat2_name': 'Karl Maeder',  
'boat2_total_weight': 100.97500000000001,  
'duration': 73.40499997138977,  
'end_time': 1749218760.858,  
'stability_score': 0.9693254072977828,  
'start_time': 1749218687.453}
```

Processing: Interval 2: Downwind from 2025-06-06 14:04:47 to 2025-06-06 14:06:00 – Gian Stragiotti vs Karl Maeder

```
=====  
Interval 2: Downwind from 2025-06-06 14:04:47 to 2025-06-06 14:06:00 – Gian Stragiotti vs Karl Maeder  
=====
```

	Run Statistics												
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	6.278	6.278	4.904	4.904	7.3	7.3	735	734	0.6592	0.6597			
TWD	182.2	182.2	172.6	172.7	184.4	184.4	735	734	2.771	2.751			
SOG	23.94	23.08	21.9	21.2	25.7	24.7	735	734	0.8062	0.6555	Gian Stragiotti	Karl Maeder	Tie
VMG	13.91	12.18	8.276	6.846	22.48	19.05	735	734	3.684	2.503	Gian Stragiotti	Karl Maeder	Tie
COG	308.4	304.3	293.9	290.8	329.4	322.2	735	734	8.776	5.25		Karl Maeder	Karl Maeder
TWA_Abs	126.2	122.1	110	107.6	154	144.5	735	734	11.05	7.338			
Heel_Lwd	48.52	48.22	25.6	29.4	69.4	70.4	735	734	6.962	7.099	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	11.49	3.429	2.2	3.32	20.1	3.539	735	734	2.821	0.06334	Gian Stragiotti	Karl Maeder	Tie
Line_C	90.41	86.71	41.6	61	127.3	119.8	731	734	12.56	11.41	Gian Stragiotti	Karl Maeder	Tie
Total_lines	101.9	17.91	45.6	17.49	138.4	18.32	735	734	13.82	0.239	Gian Stragiotti	Karl Maeder	Tie

Distance Summary

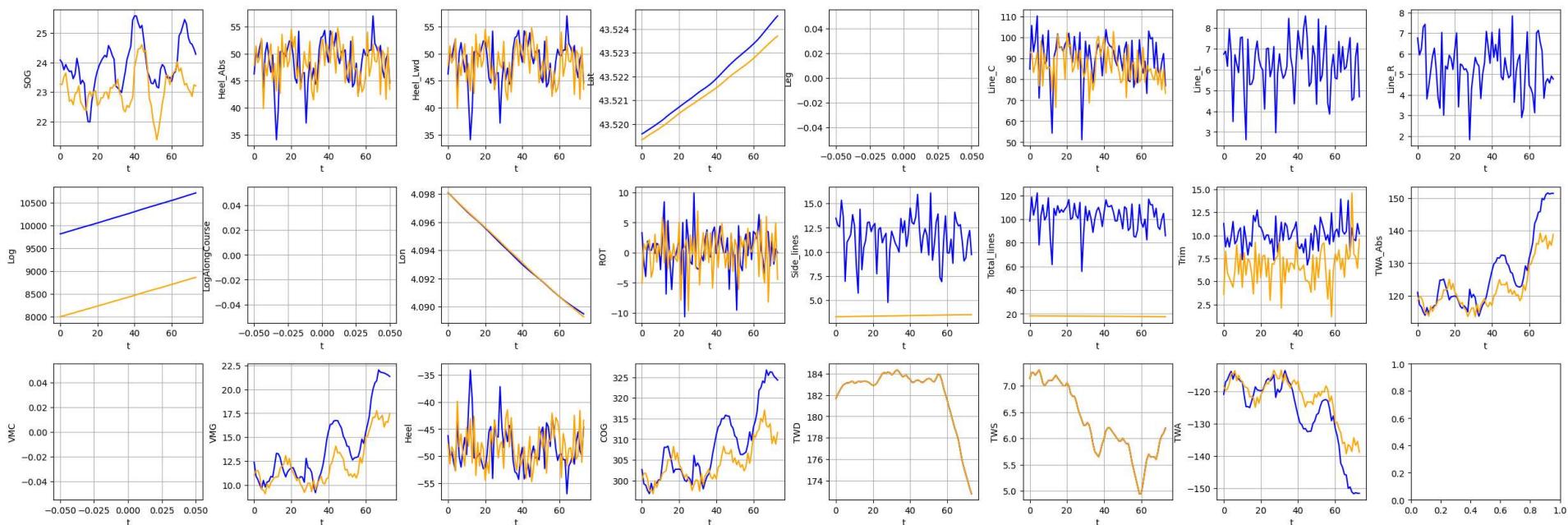
Gian Stragiotti Karl Maeder

Distance [m]	905.398644	871.345408
Straight Line [m]	893.191805	866.004356
Distance as Percentage of Straight Line [%]	101.366654	100.616747

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	-16.617785	21.629820	27.268773
Final Deficit	-46.033620	85.197677	95.942798
Total Gain	-29.415835	63.567857	68.674025
Gain per Minute	-24.044004	51.959286	56.132981

Interval 2: Downwind from 2025-06-06 14:04:47 to 2025-06-06 14:06:00 — Gian Stragiotti vs Karl Maeder - Parameters over time



— Gian Stragiotti SOG — Karl Maeder SOG

```
=====
Processing run: 06_06_Run3
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.9379808445806027,  
'SOG_variation_boat2': 0.7911030825617474,  
'avg TWA boat1': -143.14596038034864,  
'avg TWA boat2': -139.84990634920635,  
'avg_SOG_boat1': 25.69017432646593,  
'avg_SOG_boat2': 24.954992076069733,  
'boat1_master_leeward': False,  
'boat1_name': 'Gian Stragiotti',  
'boat1_total_weight': 106.77,  
'boat2_master_leeward': True,  
'boat2_name': 'Karl Maeder',  
'boat2_total_weight': 100.97500000000001,  
'duration': 62.99600005149841,  
'end_time': 1749219357.356,  
'stability_score': 0.9544882981127863,  
'start_time': 1749219294.36}
```

Processing: Interval 2: Downwind from 2025-06-06 14:14:54 to 2025-06-06 14:15:57 – Karl Maeder vs Gian Stragiotti

```
=====
Interval 2: Downwind from 2025-06-06 14:14:54 to 2025-06-06 14:15:57 – Karl Maeder vs Gian Stragiotti
=====
```

	Run Statistics												
	Avg (Karl Maeder)	Avg (Gian Stragiotti)	Min (Karl Maeder)	Min (Gian Stragiotti)	Max (Karl Maeder)	Max (Gian Stragiotti)	Count (Karl Maeder)	Count (Gian Stragiotti)	StdDev (Karl Maeder)	StdDev (Gian Stragiotti)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.999	7.998	7.046	7.036	8.995	8.996	630	631	0.5273	0.5283			
TWD	170.5	170.5	167	167	174.4	174.4	630	631	2.146	2.146			
SOG	24.96	25.69	22.7	23.7	26.4	27.9	630	631	0.7909	0.938	Gian Stragiotti	Karl Maeder	Tie
VMG	18.88	20.28	12.73	15.9	23.37	23.89	630	631	2.417	1.857	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	310.3	313.6	294.7	299.9	326.5	330.1	630	631	7.694	7.688		Gian Stragiotti	Gian Stragiotti
TWA_Abs	139.8	143.1	122.6	129.1	158.3	162.3	630	631	8.429	8.523			
Heel_Lwd	50.82	47.47	31.6	27.3	73.4	71.2	630	631	7.672	6.729	Karl Maeder	Gian Stragiotti	Tie
Side_lines	12.95	9.826	2.8	1.6	24.5	18.7	630	631	3.279	2.727	Karl Maeder	Gian Stragiotti	Tie
Line_C	90.8	89.02	59.8	62.7	132.3	115.1	630	625	13.68	9.999	Karl Maeder	Gian Stragiotti	Tie
Total_lines	103.7	99.15	67.6	68.8	155.2	131.8	630	631	15.51	10.51	Karl Maeder	Gian Stragiotti	Tie

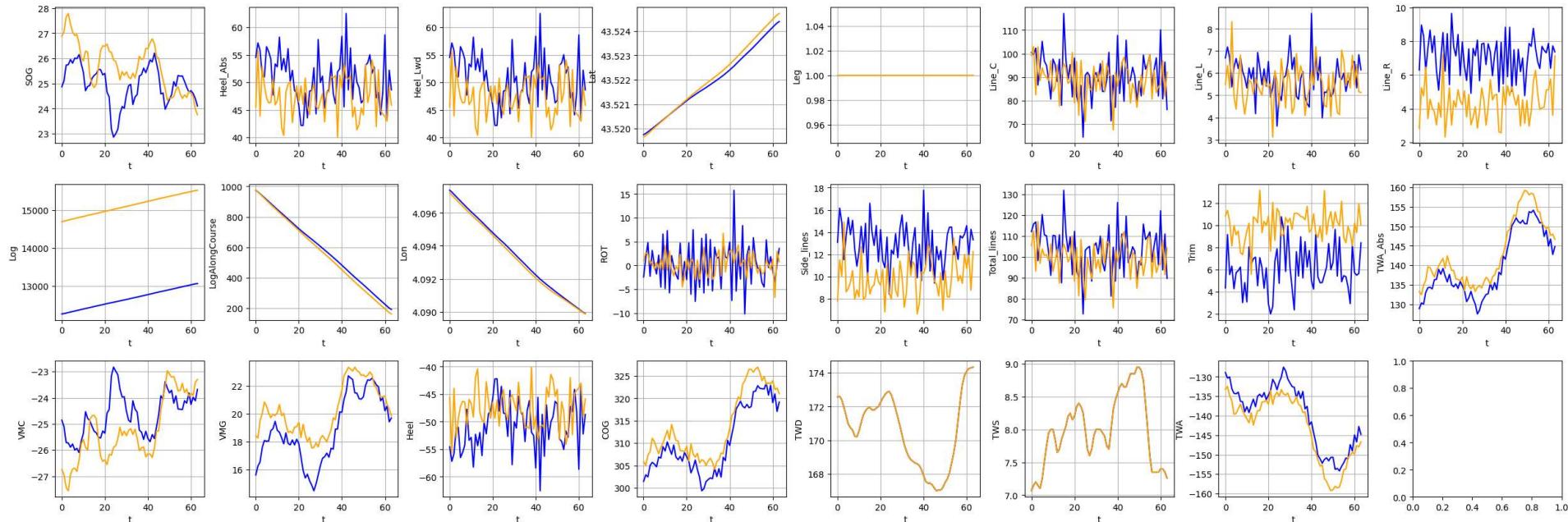
Distance Summary

Karl Maeder Gian Stragiotti**Distance [m]** 808.282584 833.036498**Straight Line [m]** 799.868656 824.678256**Distance as Percentage of Straight Line [%]** 101.051914 101.013516

Gain of Karl Maeder with respect to Gian Stragiotti

Forward Lateral VMG**Initial Deficit** 1.624830 17.207800 9.855781**Final Deficit** 25.241948 -27.241097 -36.859458**Total Gain** 23.617118 -44.448897 -46.715240**Gain per Minute** 22.529685 -42.402280 -44.564271

Interval 2: Downwind from 2025-06-06 14:14:54 to 2025-06-06 14:15:57 — Karl Maeder vs Gian Stragiotti - Parameters over time



```
=====
Processing run: 06_06_Run4
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 1.2440294837720993,  
'SOG_variation_boat2': 0.9417567404996181,  
'avg TWA boat1': -149.82159731543624,  
'avg TWA boat2': -149.42426890756303,  
'avg_SOG_boat1': 25.710234899328857,  
'avg_SOG_boat2': 25.048657718120804,  
'boat1_master_leeward': True,  
'boat1_name': 'Gian Stragiotti',  
'boat1_total_weight': 106.77,  
'boat2_master_leeward': False,  
'boat2_name': 'Karl Maeder',  
'boat2_total_weight': 100.97500000000001,  
'duration': 59.501999855041504,  
'end_time': 1749219909.859,  
'stability_score': 0.9548481156683271,  
'start_time': 1749219850.357}
```

Processing: Interval 2: Downwind from 2025-06-06 14:24:10 to 2025-06-06 14:25:09 – Gian Stragiotti vs Karl Maeder

```
=====  
Interval 2: Downwind from 2025-06-06 14:24:10 to 2025-06-06 14:25:09 – Gian Stragiotti vs Karl Maeder  
=====
```

	Run Statistics												
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	5.891	5.888	5	5	7.3	7.3	596	595	0.5345	0.5319			
TWD	165.4	165.4	160.7	160.7	168.4	168.4	596	595	2.249	2.251			
SOG	25.71	25.04	23.3	22.5	27.9	27.2	596	595	1.244	0.9483	Gian Stragiotti	Karl Maeder	Tie
VMG	22.14	21.52	18.31	16.44	26.77	25.11	596	595	2.086	1.437	Gian Stragiotti	Karl Maeder	Tie
COG	315.3	314.9	304	301.8	330.9	325.1	596	595	6.088	4.14		Karl Maeder	Karl Maeder
TWA_Abs	149.8	149.4	137.9	137	165.1	160.3	596	595	5.835	4.081			
Heel_Lwd	46.54	46.07	24	30	63.7	63.5	596	595	7.04	7.043	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	10.25	7.405	0.2	7.177	19.6	7.633	596	595	2.859	0.1321	Gian Stragiotti	Karl Maeder	Tie
Line_C	85.12	nan	42.7	nan	129.5	nan	590	nan	12.49	nan			
Total_lines	95.69	65.02	45.5	58.52	148.9	71.51	596	595	13.93	3.76	Gian Stragiotti	Karl Maeder	Tie

Distance Summary

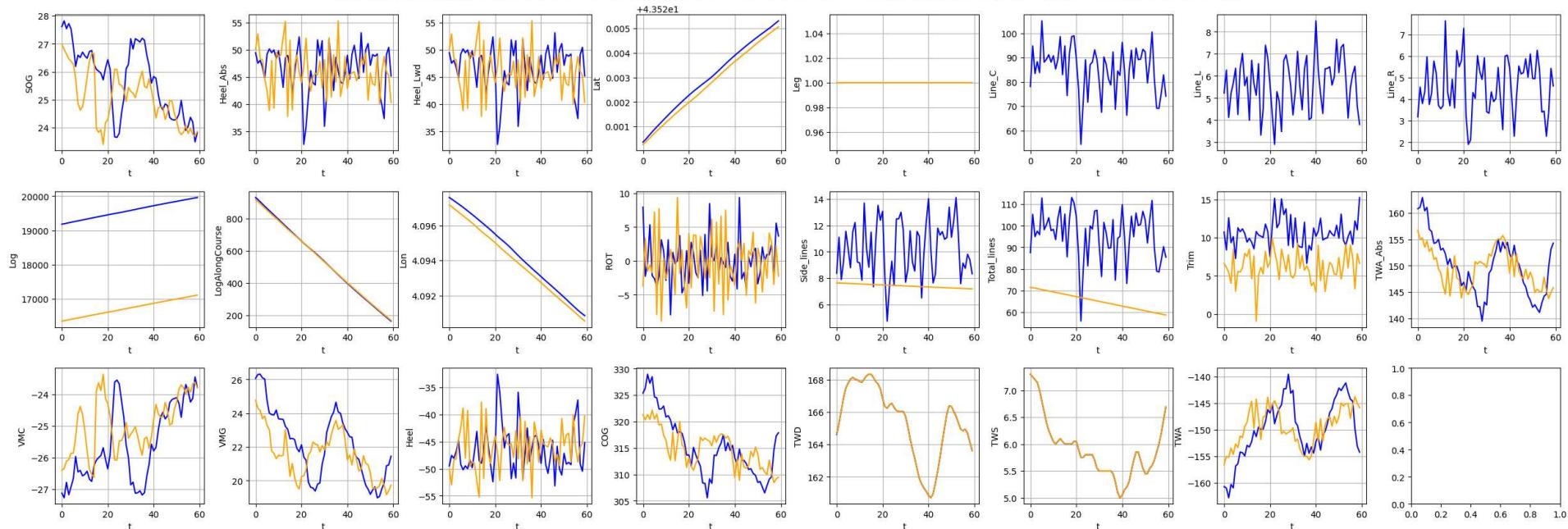
Gian Stragiotti Karl Maeder

Distance [m]	786.749720	764.950553
Straight Line [m]	781.230950	761.991076
Distance as Percentage of Straight Line [%]	100.706420	100.388387

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	17.498028	31.346562	0.635020
Final Deficit	-1.768066	37.748184	20.507500
Total Gain	-19.266093	6.401622	19.872480
Gain per Minute	-19.427340	6.455201	20.038802

Interval 2: Downwind from 2025-06-06 14:24:10 to 2025-06-06 14:25:09 — Gian Stragiotti vs Karl Maeder - Parameters over time



— Gian Stragiotti SOG — Karl Maeder SOG

```
=====
Processing run: 06_06_Run5
=====
```

```
-----
Interval 2: Downwind
-----
{'SOG_variation_boat1': 0.5526799602831597,
 'SOG_variation_boat2': 0.7248894980165709,
 'avg TWA boat1': -152.95215094339622,
 'avg TWA boat2': -152.49173459715638,
 'avg_SOG_boat1': 26.419575471698113,
 'avg_SOG_boat2': 26.722169811320757,
 'boat1_master_leeward': True,
 'boat1_name': 'Karl Maeder',
 'boat1_total_weight': 100.9750000000001,
 'boat2_master_leeward': False,
 'boat2_name': 'SenseBoard',
 'boat2_total_weight': 109.08999999999999,
 'duration': 42.29100012779236,
 'end_time': 1749220975.854,
 'stability_score': 0.962807102252274,
 'start_time': 1749220933.563}
```

Processing: Interval 2: Downwind from 2025-06-06 14:42:13 to 2025-06-06 14:42:55 – Karl Maeder vs SenseBoard

```
=====
Interval 2: Downwind from 2025-06-06 14:42:13 to 2025-06-06 14:42:55 – Karl Maeder vs SenseBoard
=====
```

	Run Statistics												
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.946	8.941	7.5	7.5	10.1	10.1	424	422	0.9215	0.9213			
TWD	168.4	168.3	165.7	165.7	172	172	424	422	1.935	1.934			
SOG	26.42	26.72	24.7	25.4	27.6	28.1	424	422	0.5527	0.727	SenseBoard	Karl Maeder	Tie
VMG	23.45	23.64	20.51	20.51	25.71	26.27	424	422	1.149	1.453	SenseBoard	Karl Maeder	Tie
COG	321.3	320.8	313.1	312.8	330.3	328.2	424	422	3.544	3.164		SenseBoard	SenseBoard
TWA_Abs	153	152.5	141.8	141.4	163.5	160.9	424	422	4.645	4.494			
Heel_Lwd	49.14	46.65	31.6	31	72.7	65.6	424	422	7.347	6.249	Karl Maeder	SenseBoard	Tie
Side_lines	12.59	9.848	3.3	1.7	21.7	20.7	424	422	3.433	3.125	Karl Maeder	SenseBoard	Tie
Line_C	88.83	85.19	56.1	60.5	127.2	113.6	424	418	12.72	10.76	Karl Maeder	SenseBoard	Tie
Total_lines	101.4	95.15	65.6	68.1	145.9	134.3	424	422	14.42	11.76	Karl Maeder	SenseBoard	Tie

Distance Summary

Karl Maeder SenseBoard

Distance [m] 574.781617 579.833110

Straight Line [m] 573.073401 578.283949

Distance as Percentage of Straight Line [%] 100.298080 100.267889

Gain of Karl Maeder with respect to SenseBoard

Forward Lateral VMG

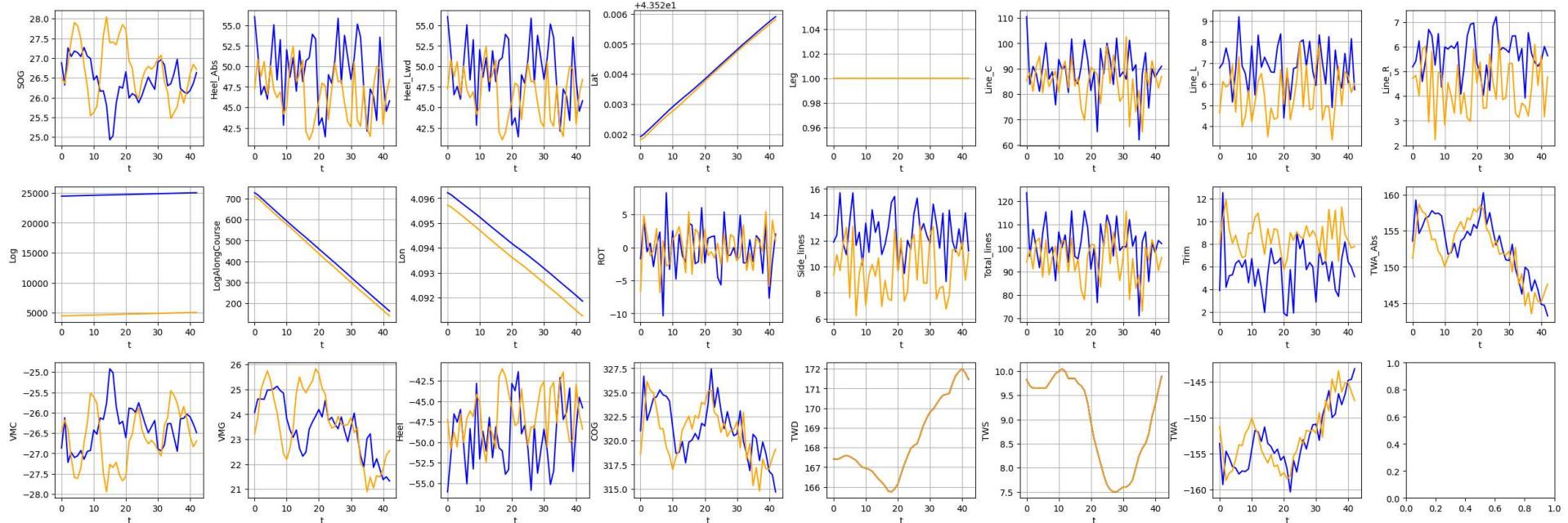
Initial Deficit 16.406014 38.570295 2.927514

Final Deficit 21.598824 42.684510 0.173519

Total Gain 5.192811 4.114215 -2.753995

Gain per Minute 7.367256 5.837008 -3.907207

Interval 2: Downwind from 2025-06-06 14:42:13 to 2025-06-06 14:42:55 — Karl Maeder vs SenseBoard - Parameters over time



```
=====
Processing run: 06_06_Run6
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 1.1345469133779522,  
'SOG_variation_boat2': 0.95609938547161,  
'avg TWA boat1': -144.59948473967685,  
'avg TWA boat2': -145.07276936936935,  
'avg_SOG_boat1': 26.98312387791741,  
'avg_SOG_boat2': 27.60682226211849,  
'boat1_master_leeward': False,  
'boat1_name': 'Karl Maeder',  
'boat1_total_weight': 100.97500000000001,  
'boat2_master_leeward': True,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 109.08999999999999,  
'duration': 55.58399987220764,  
'end_time': 1749221601.952,  
'stability_score': 0.9421958135106284,  
'start_time': 1749221546.368}
```

Processing: Interval 2: Downwind from 2025-06-06 14:52:26 to 2025-06-06 14:53:21 – SenseBoard vs Karl Maeder

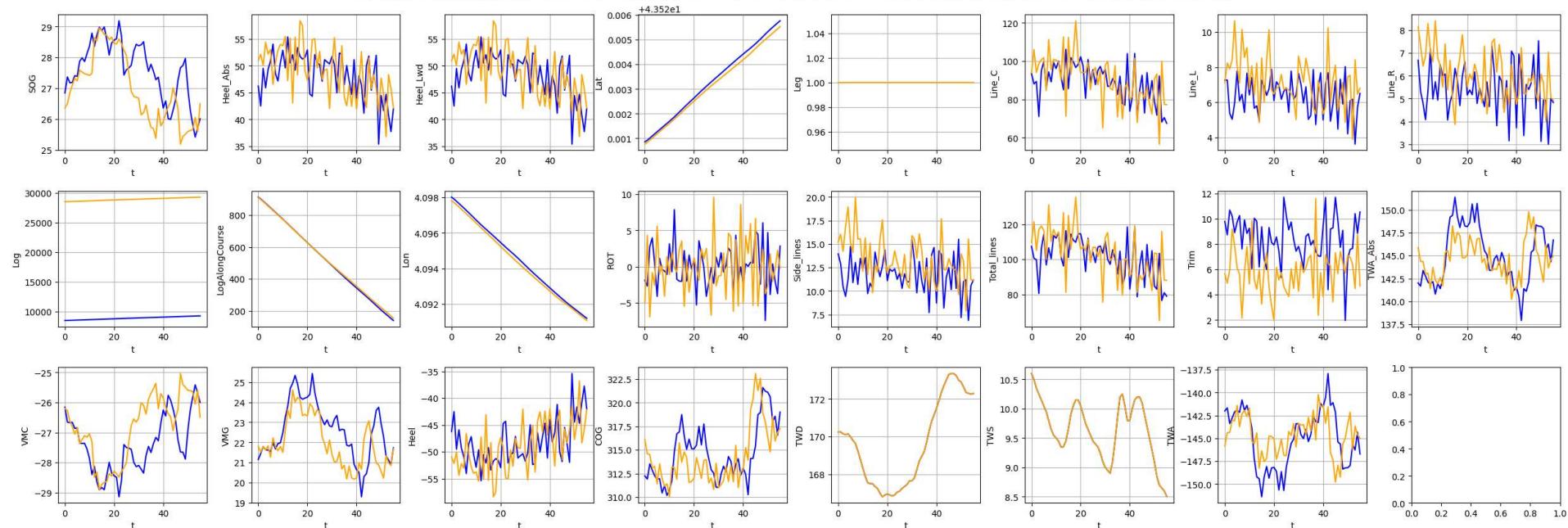
```
=====  
Interval 2: Downwind from 2025-06-06 14:52:26 to 2025-06-06 14:53:21 – SenseBoard vs Karl Maeder  
=====
```

	Run Statistics												
	Avg (SenseBoard)	Avg (Karl Maeder)	Min (SenseBoard)	Min (Karl Maeder)	Max (SenseBoard)	Max (Karl Maeder)	Count (SenseBoard)	Count (Karl Maeder)	StdDev (SenseBoard)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.64	9.639	8.428	8.41	10.6	10.6	555	557	0.5012	0.5047			
TWD	169.6	169.6	166.8	166.8	173.4	173.4	555	557	2.253	2.253			
SOG	27.62	26.98	24.8	24.5	29.3	29.7	555	557	0.9536	1.135	SenseBoard	SenseBoard	SenseBoard
VMG	22.61	21.97	16.9	17.62	26.3	25.11	555	557	1.489	1.325	SenseBoard	Karl Maeder	Tie
COG	314.7	314.2	305.4	305.8	326.5	326.8	555	557	3.522	3.588		SenseBoard	SenseBoard
TWA_Abs	145.1	144.6	133	136	154.2	153.4	555	557	3.652	2.859			
Heel_Lwd	48.27	48.88	24.8	30.8	65.2	69.1	555	557	7.28	7.224	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	11.73	13.4	3.5	4.8	22.4	24	555	557	3.28	3.682	Karl Maeder	SenseBoard	Tie
Line_C	88.98	90.71	61.3	48.5	124.4	138.3	554	557	12.43	16.44	Karl Maeder	SenseBoard	Tie
Total_lines	100.7	103.5	67	57.8	146.8	146.9	555	557	13.7	18.08	Karl Maeder	SenseBoard	Tie

Distance Summary

	SenseBoard	Karl Maeder
Distance [m]	787.418331	772.982590
Straight Line [m]	785.099539	770.630723
Distance as Percentage of Straight Line [%]	100.295350	100.305187
Gain of SenseBoard with respect to Karl Maeder		
Forward	Lateral	VMG
Initial Deficit	3.943722	18.775203
Final Deficit	-10.571826	25.805984
Total Gain	-14.515547	7.030780
Gain per Minute	-15.720242	7.614289
	17.248126	

Interval 2: Downwind from 2025-06-06 14:52:26 to 2025-06-06 14:53:21 — SenseBoard vs Karl Maeder - Parameters over time



— SenseBoard SOG — Karl Maeder SOG

```
=====
Processing run: 06_06_Run7
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.6062525372636404,  
'SOG_variation_boat2': 0.6829045058127635,  
'avg TWA boat1': -149.69734541062803,  
'avg TWA boat2': -148.5991231884058,  
'avg_SOG_boat1': 27.19396135265701,  
'avg_SOG_boat2': 28.07246376811594,  
'boat1_master_leeward': True,  
'boat1_name': 'Karl Maeder',  
'boat1_total_weight': 100.9750000000001,  
'boat2_master_leeward': False,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 109.0899999999999,  
'duration': 41.30900001525879,  
'end_time': 1749222107.762,  
'stability_score': 0.9661079805234971,  
'start_time': 1749222066.453}
```

Processing: Interval 2: Downwind from 2025-06-06 15:01:06 to 2025-06-06 15:01:47 – Karl Maeder vs SenseBoard

```
=====  
Interval 2: Downwind from 2025-06-06 15:01:06 to 2025-06-06 15:01:47 – Karl Maeder vs SenseBoard  
=====
```

Run Statistics

	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.546	9.546	8.412	8.413	10.73	10.73	414	414	0.4883	0.4883			
TWD	172.1	172.1	170.2	170.2	173.7	173.7	414	414	0.9087	0.9086			
SOG	27.19	28.07	25.8	26	28.9	29.4	414	414	0.6063	0.6783	SenseBoard	Karl Maeder	Tie
VMG	23.41	23.94	20.58	21.18	25.78	26.01	414	414	0.9546	0.9684	SenseBoard	Karl Maeder	Tie
COG	321.8	320.7	311.9	313.8	331.5	331.5	414	414	3.516	2.845		SenseBoard	SenseBoard
TWA_Abs	149.7	148.6	138.8	141.4	160.7	157.8	414	414	4.103	2.783			
Heel_Lwd	48.72	46.89	29.8	28.7	68.9	65.1	414	414	6.888	6.582	Karl Maeder	SenseBoard	Tie
Side_lines	12.85	13.01	4.3	5.5	24.2	20.8	414	414	3.22	2.809	SenseBoard	SenseBoard	SenseBoard
Line_C	88.82	89.44	52	61.6	134.5	122.7	414	413	16.26	11.12	SenseBoard	SenseBoard	SenseBoard
Total_lines	102	102.7	61.7	70.4	154.3	139.4	414	414	17.49	11.89	SenseBoard	SenseBoard	SenseBoard

Distance Summary

Karl Maeder SenseBoard

Distance [m] 578.401681 596.844633

Straight Line [m] 576.755970 595.530310

Distance as Percentage of Straight Line [%] 100.285339 100.220698

Gain of Karl Maeder with respect to SenseBoard

Forward Lateral VMG

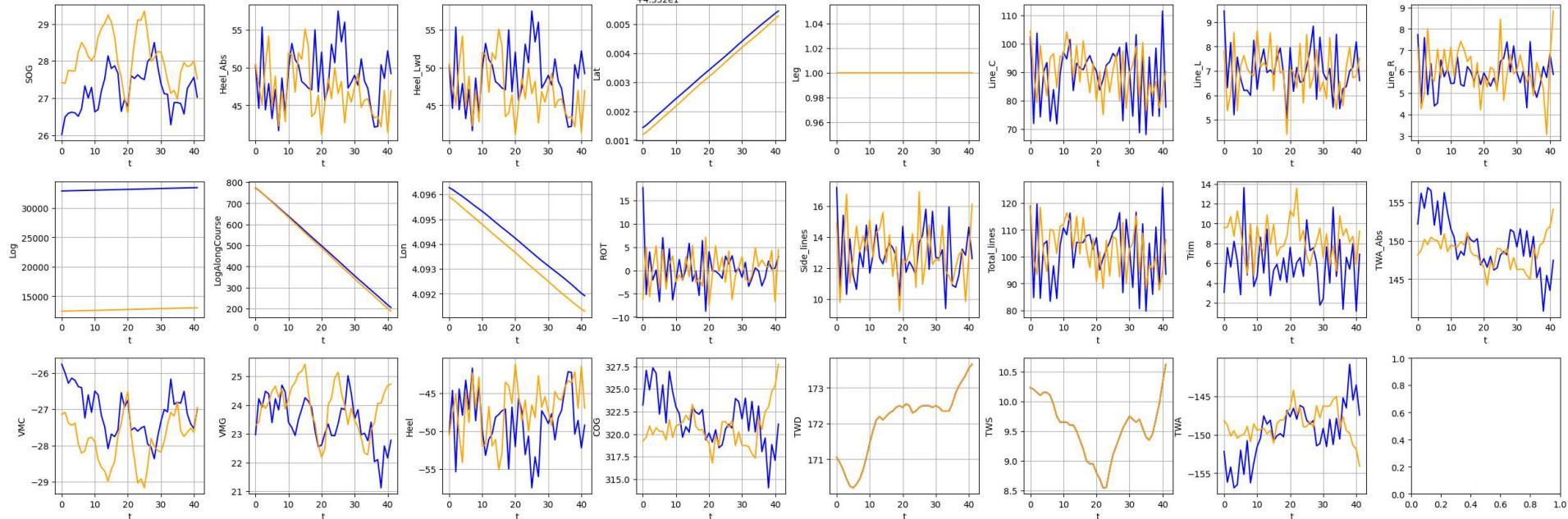
Initial Deficit -2.578480 39.886937 22.351829

Final Deficit 16.088603 50.693632 11.687887

Total Gain 18.667084 10.806695 -10.663942

Gain per Minute 27.113341 15.696378 -15.489034

Interval 2: Downwind from 2025-06-06 15:01:06 to 2025-06-06 15:01:47 — Karl Maeder vs SenseBoard - Parameters over time



— Karl Maeder SOG — SenseBoard SOG

```
=====
Processing run: 06_06_Run8
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.9550264111740758,  
'SOG_variation_boat2': 0.7404229243755341,  
'avg TWA boat1': -156.70291927083335,  
'avg TWA boat2': -155.94574083769635,  
'avg_SOG_boat1': 27.988020833333337,  
'avg_SOG_boat2': 28.154947916666668,  
'boat1_master_leeward': False,  
'boat1_name': 'Karl Maeder',  
'boat1_total_weight': 100.9750000000001,  
'boat2_master_leeward': True,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 109.0899999999999,  
'duration': 38.29299998283386,  
'end_time': 1749222589.053,  
'stability_score': 0.9486132309964281,  
'start_time': 1749222550.76}
```

Processing: Interval 2: Downwind from 2025-06-06 15:09:10 to 2025-06-06 15:09:49 – SenseBoard vs Karl Maeder

```
=====  
Interval 2: Downwind from 2025-06-06 15:09:10 to 2025-06-06 15:09:49 – SenseBoard vs Karl Maeder  
=====
```

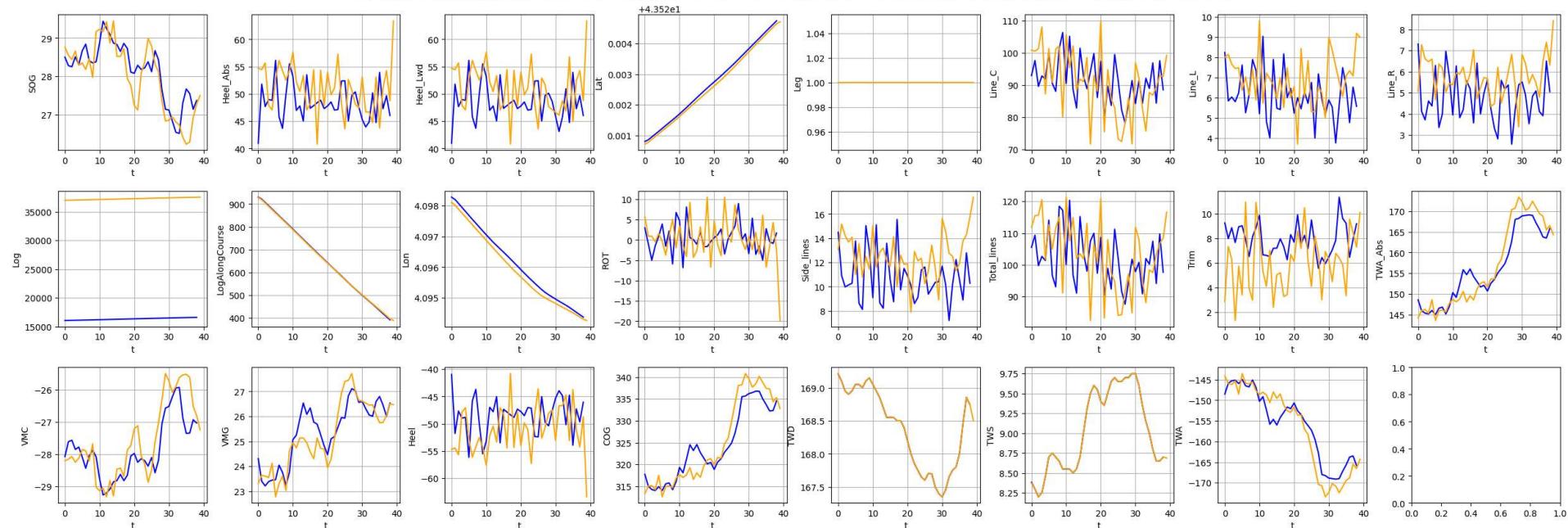
Run Statistics

	Avg (SenseBoard)	Avg (Karl Maeder)	Min (SenseBoard)	Min (Karl Maeder)	Max (SenseBoard)	Max (Karl Maeder)	Count (SenseBoard)	Count (Karl Maeder)	StdDev (SenseBoard)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.05	9.048	8.2	8.2	9.796	9.796	382	384	0.5082	0.5084			
TWD	168.4	168.4	167.3	167.3	169.2	169.2	382	384	0.5978	0.598			
SOG	28.16	27.99	26.3	26.1	29.6	30	382	384	0.7433	0.955	SenseBoard	SenseBoard	SenseBoard
VMG	25.4	25.24	21.94	20.66	27.7	27.94	382	384	1.262	1.415	SenseBoard	SenseBoard	SenseBoard
COG	324.3	325	309.5	307.5	340.9	344.4	382	384	7.992	9.97			SenseBoard
TWA_Abs	155.9	156.7	140.3	138.5	173.3	176.7	382	384	8.429	10.43			
Heel_Lwd	48.72	51.3	32.9	33.9	70.9	68.3	366	313	6.308	6.519	Karl Maeder	SenseBoard	Tie
Side_lines	10.72	12.56	2.6	5.2	19.6	21.9	382	384	3.073	3.17	Karl Maeder	SenseBoard	Tie
Line_C	91.5	90.27	66.2	57.6	128.8	132.2	379	384	10.43	14.21	SenseBoard	SenseBoard	SenseBoard
Total_lines	101.9	102.9	72.5	67.7	143.2	145.1	382	384	11.88	15.58	Karl Maeder	SenseBoard	Tie

Distance Summary

	SenseBoard	Karl Maeder
Distance [m]	552.292913	551.312824
Straight Line [m]	546.427517	542.647379
Distance as Percentage of Straight Line [%]	101.073408	101.596883
Gain of SenseBoard with respect to Karl Maeder		
Forward	17.094218	7.216608
Lateral	-4.074166	10.543551
VMG	-3.803957	-6.550667
Total Gain	-3.803957	-6.550667
Gain per Minute	-5.990012	-10.315199
		1.263638

Interval 2: Downwind from 2025-06-06 15:09:10 to 2025-06-06 15:09:49 — SenseBoard vs Karl Maeder - Parameters over time



— SenseBoard SOG — Karl Maeder SOG

Error: At least two CSV files are required.

=====

Processing run: 07_06_Run1

=====

Interval 2: Downwind

```
{'SOG_variation_boat1': 0.4785025112578562,
 'SOG_variation_boat2': 0.44908609081104717,
 'avg_TWA_boat1': -143.7616779661017,
 'avg_TWA_boat2': -143.34568008474577,
 'avg_SOG_boat1': 27.995974576271188,
 'avg_SOG_boat2': 27.388771186440678,
 'boat1_master_leeward': False,
 'boat1_name': 'Gian Stragiotti',
 'boat1_total_weight': 108.19,
 'boat2_master_leeward': True,
 'boat2_name': 'Karl Maeder',
 'boat2_total_weight': 100.97500000000001,
 'duration': 47.1029999256134,
 'end_time': 1749297201.36,
 'stability_score': 0.9647004339495513,
 'start_time': 1749297154.257}
```

Processing: Interval 2: Downwind from 2025-06-07 11:52:34 to 2025-06-07 11:53:21 – Karl Maeder vs Gian Stragiotti

=====

Interval 2: Downwind from 2025-06-07 11:52:34 to 2025-06-07 11:53:21 – Karl Maeder vs Gian Stragiotti

=====

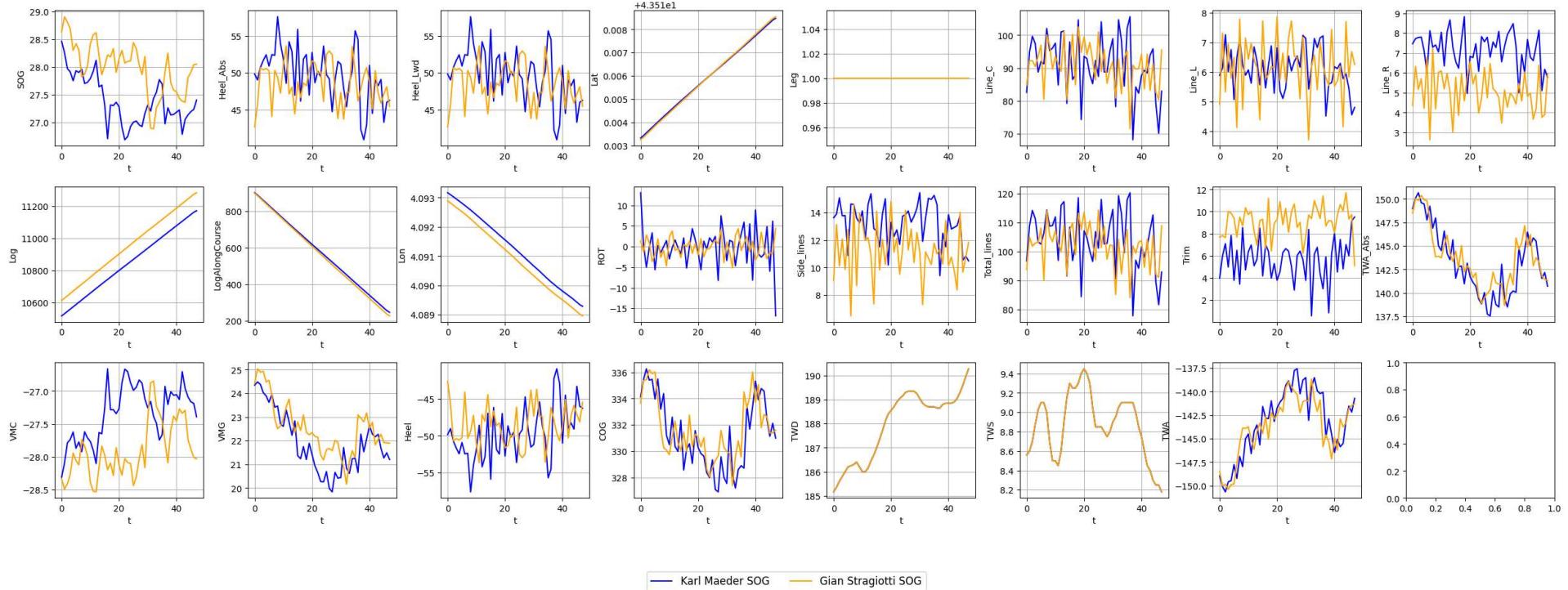
MainReport

	Run Statistics												
	Avg (Karl Maeder)	Avg (Gian Stragiotti)	Min (Karl Maeder)	Min (Gian Stragiotti)	Max (Karl Maeder)	Max (Gian Stragiotti)	Count (Karl Maeder)	Count (Gian Stragiotti)	StdDev (Karl Maeder)	StdDev (Gian Stragiotti)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.881	8.881	8.164	8.164	9.493	9.493	472	472	0.3235	0.3236			
TWD	188	188	185.1	185.1	190.3	190.3	472	472	1.402	1.402			
SOG	27.39	28	26.6	26.7	28.5	29	472	472	0.4476	0.4785	Gian Stragiotti	Karl Maeder	Tie
VMG	21.92	22.54	17.45	19.39	25.38	25.82	472	472	1.419	1.216	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	331.3	331.7	319.3	324.6	340.6	340.2	472	472	3.592	2.938		Gian Stragiotti	Gian Stragiotti
TWA_Abs	143.3	143.8	129.9	135.9	154.3	154.1	472	472	4.311	3.605			
Heel_Lwd	49.73	48.57	27.2	35.1	70.9	68	472	472	6.606	5.874	Karl Maeder	Gian Stragiotti	Tie
Side_lines	13.26	11.22	4.8	3.8	23.3	17.8	472	472	3.047	2.788	Karl Maeder	Gian Stragiotti	Tie
Line_C	91.1	90.87	62.9	64.4	121.7	115.2	472	466	12.31	9.783	Karl Maeder	Gian Stragiotti	Tie
Total_lines	104.3	102	71.5	73.5	140.9	125.5	472	472	13.88	10.49	Karl Maeder	Gian Stragiotti	Tie

Distance Summary

	Karl Maeder	Gian Stragiotti
Distance [m]	663.363464	678.715526
Straight Line [m]	661.464887	677.104721
Distance as Percentage of Straight Line [%]	100.287026	100.237896
Gain of Karl Maeder with respect to Gian Stragiotti		
Forward	3.698603	23.746003
Lateral	19.345131	19.477505
VMG	11.208833	-3.891851
Initial Deficit	15.646529	-4.268498
Final Deficit	-15.100684	
Total Gain	19.931460	-5.437462
Gain per Minute	-19.236132	

Interval 2: Downwind from 2025-06-07 11:52:34 to 2025-06-07 11:53:21 — Karl Maeder vs Gian Stragiotti - Parameters over time



Error: No or insufficient intervals for run: 07_06_Run10

=====

Processing run: 07_06_Run2

=====

Interval 2: Downwind

```
{'SOG_variation_boat1': 0.7945210106979272,
 'SOG_variation_boat2': 1.1674746323131255,
 'avg_TWA_boat1': -151.40243531827517,
 'avg_TWA_boat2': -151.13577572016462,
 'avg_SOG_boat1': 27.1694045174538,
 'avg_SOG_boat2': 26.0905544147844,
 'boat1_master_leeward': True,
 'boat1_name': 'Gian Stragiotti',
 'boat1_total_weight': 108.19,
 'boat2_master_leeward': False,
 'boat2_name': 'Karl Maeder',
 'boat2_total_weight': 100.97500000000001,
 'duration': 48.6010000705719,
 'end_time': 1749297745.558,
 'stability_score': 0.9547757384676734,
 'start_time': 1749297696.957}
```

Processing: Interval 2: Downwind from 2025-06-07 12:01:36 to 2025-06-07 12:02:25 – Gian Stragiotti vs Karl Maeder

=====

Interval 2: Downwind from 2025-06-07 12:01:36 to 2025-06-07 12:02:25 – Gian Stragiotti vs Karl Maeder

=====

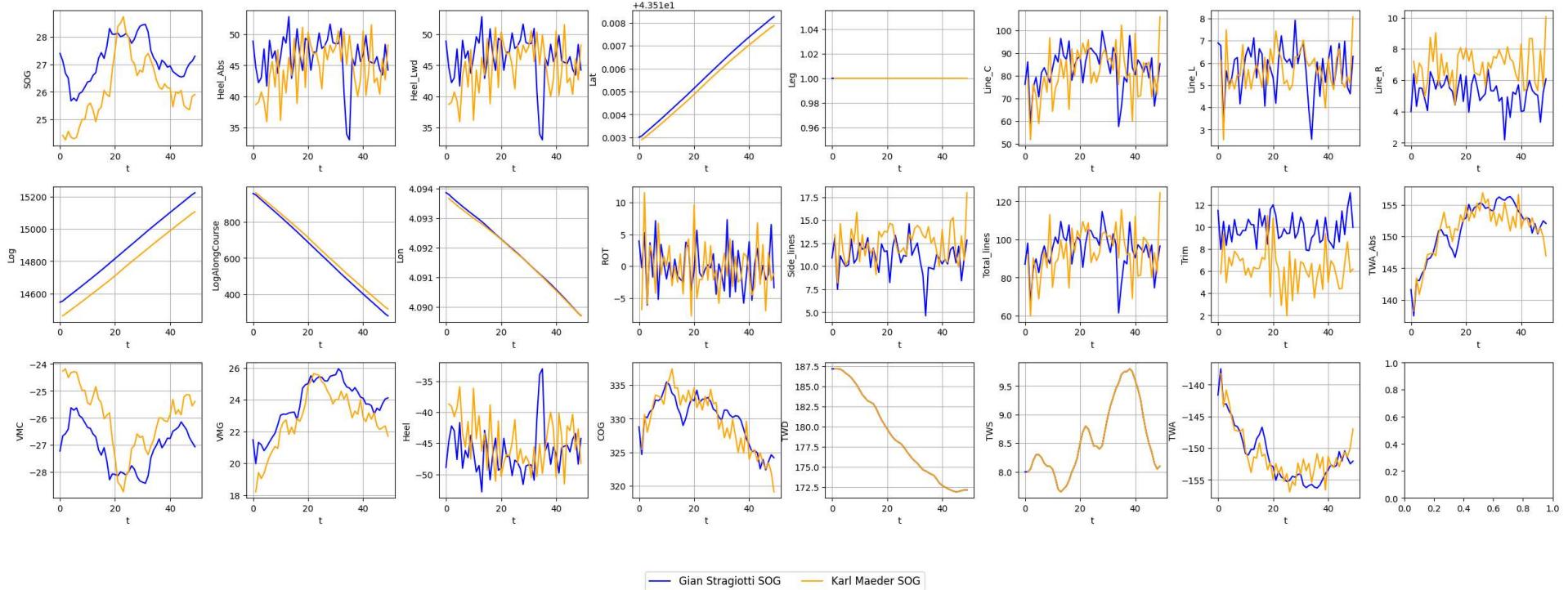
MainReport

	Run Statistics												
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.583	8.585	7.605	7.606	9.8	9.8	487	486	0.6359	0.6359			
TWD	178.6	178.6	171.9	171.9	187.2	187.2	487	486	5.263	5.254			
SOG	27.17	26.09	25.5	24.1	28.6	28.9	487	486	0.7945	1.165	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	23.8	22.81	19.1	17.19	26.55	26.32	487	486	1.558	1.814	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	330	329.8	319.1	316.7	337.7	340.6	487	486	3.939	4.672		Gian Stragiotti	Gian Stragiotti
TWA_Abs	151.4	151.1	134.6	134.8	161.2	160.4	487	486	4.581	4.407			
Heel_Lwd	46.28	44.61	27.3	27.1	65.2	61.5	487	486	6.573	6.251	Gian Stragiotti	Karl Maeder	Tie
Side_lines	10.95	12.59	1.4	4.2	17.1	25.1	487	486	2.549	3.313	Karl Maeder	Gian Stragiotti	Tie
Line_C	83.36	81.11	42.9	39.1	107.7	122.5	487	486	11.19	15.8	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	94.5	93.72	46.8	45.2	123.9	138.4	487	486	12.53	18.04	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti

Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	679.699272	651.814482
Straight Line [m]	677.500446	649.001386
Distance as Percentage of Straight Line [%]	100.324550	100.433450
Gain of Gian Stragiotti with respect to Karl Maeder		
Forward	19.202149	17.151217
Lateral	-9.066958	
VMG		43.764970
Initial Deficit	-37.608592	
Final Deficit	-28.541634	
Total Gain	3.245377	26.613753
Gain per Minute	-35.235860	4.006555
		32.855809

Interval 2: Downwind from 2025-06-07 12:01:36 to 2025-06-07 12:02:25 — Gian Stragiotti vs Karl Maeder - Parameters over time



```
=====
Processing run: 07_06_Run3
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 1.272584780791708,  
'SOG_variation_boat2': 0.8302888435095636,  
'avg TWA boat1': -154.05993896713616,  
'avg TWA boat2': -153.6456282352941,  
'avg_SOG_boat1': 26.421361502347416,  
'avg_SOG_boat2': 25.72840375586854,  
'boat1_master_leeward': False,  
'boat1_name': 'Gian Stragiotti',  
'boat1_total_weight': 108.19,  
'boat2_master_leeward': True,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 102.89,  
'duration': 42.50600004196167,  
'end_time': 1749298715.364,  
'stability_score': 0.948748627453864,  
'start_time': 1749298672.858}
```

Processing: Interval 2: Downwind from 2025-06-07 12:17:52 to 2025-06-07 12:18:35 – SenseBoard vs Gian Stragiotti

```
=====  
Interval 2: Downwind from 2025-06-07 12:17:52 to 2025-06-07 12:18:35 – SenseBoard vs Gian Stragiotti
=====
```

	Run Statistics												
	Avg (SenseBoard)	Avg (Gian Stragiotti)	Min (SenseBoard)	Min (Gian Stragiotti)	Max (SenseBoard)	Max (Gian Stragiotti)	Count (SenseBoard)	Count (Gian Stragiotti)	StdDev (SenseBoard)	StdDev (Gian Stragiotti)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.088	9.088	8.4	8.4	9.5	9.5	425	426	0.3011	0.3008			
TWD	169.7	169.7	168.1	168.1	173.1	173.1	425	426	1.209	1.207			
SOG	25.73	26.42	24.1	23.6	27.3	28.3	425	426	0.828	1.273	Gian Stragiotti	SenseBoard	Tie
VMG	23	23.66	19.4	19.53	25.43	26.21	425	426	1.291	1.626	Gian Stragiotti	SenseBoard	Tie
COG	323.4	323.8	313.8	310.1	332.1	335.1	425	426	3.538	4.585		SenseBoard	SenseBoard
TWA_Abs	153.6	154.1	141.2	137.3	163.8	167	425	426	4.158	5.375			
Heel_Lwd	46.53	45.86	26.5	13.8	71.2	70.4	425	426	7.663	8.111	SenseBoard	SenseBoard	SenseBoard
Line_C	83.89	84.06	43.8	21.5	120.1	115.8	425	425	12.96	15.3	Gian Stragiotti	SenseBoard	Tie
Side_lines	nan	10.32	nan	1.2	nan	19.5	nan	426	nan	3.124			
Total_lines	nan	94.45	nan	23.3	nan	133.3	nan	426	nan	17.13			

Distance Summary

SenseBoard Gian Stragiotti

Distance [m]	561.576450	578.146150
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Straight Line [m]	559.979014	575.735115
--------------------------	------------	------------

Distance as Percentage of Straight Line [%]	100.285267	100.418775
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Gain of SenseBoard with respect to Gian Stragiotti

Forward Lateral VMG

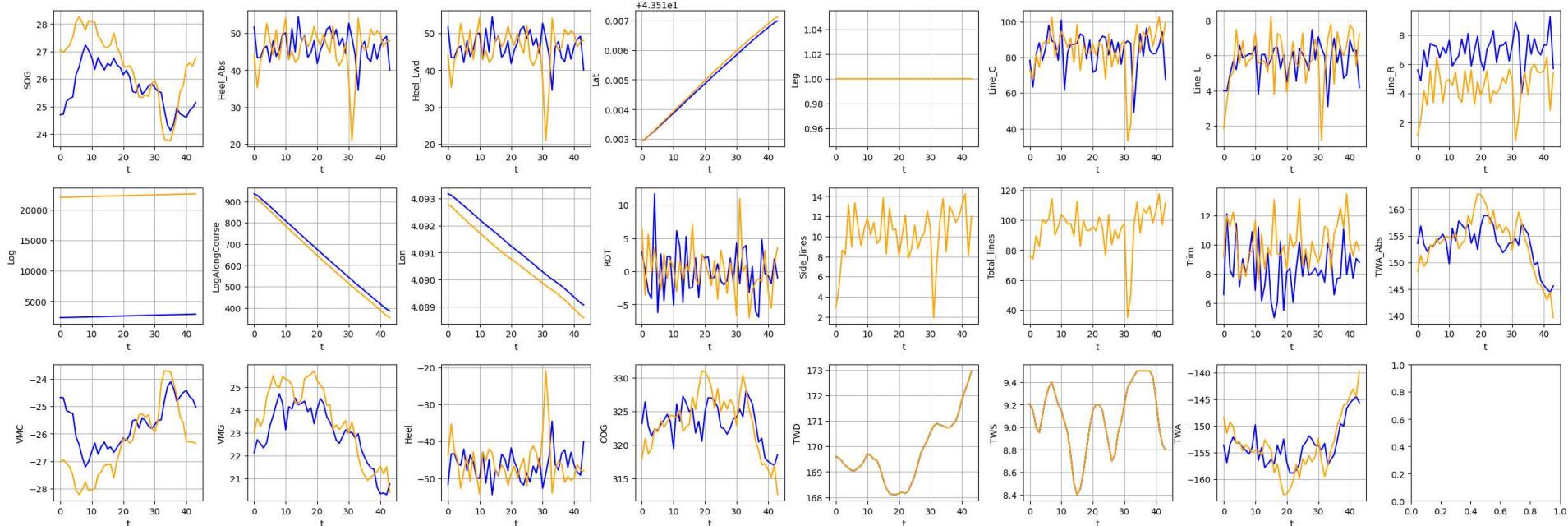
Initial Deficit	19.099398	25.365599	-5.854248
------------------------	-----------	-----------	-----------

Final Deficit	34.860714	21.693081	-21.607764
----------------------	-----------	-----------	------------

Total Gain	15.761316	-3.672518	-15.753516
-------------------	-----------	-----------	------------

Gain per Minute	22.303223	-5.196837	-22.292185
------------------------	-----------	-----------	------------

Interval 2: Downwind from 2025-06-07 12:17:52 to 2025-06-07 12:18:35 — SenseBoard vs Gian Stragiotti - Parameters over time



— SenseBoard SOG — Gian Stragiotti SOG

Error: No or insufficient intervals for run: 07_06_Run4

=====
Processing run: 07_06_Run5
=====

Interval 2: Downwind

```
{'SOG_variation_boat1': 0.7701955440236677,
'SOG_variation_boat2': 0.778711773625049,
'avg_TWA_boat1': -145.96590286975717,
'avg_TWA_boat2': -142.77557522123894,
'avg_SOG_boat1': 26.671302428256066,
'avg_SOG_boat2': 26.09359823399559,
'boat1_master_leeward': False,
'boat1_name': 'Gian Stragiotti',
'boat1_total_weight': 108.19,
'boat2_master_leeward': True,
'boat2_name': 'SenseBoard',
'boat2_total_weight': 102.89,
'duration': 45.187000036239624,
'end_time': 174930002.263,
'stability_score': 0.9616737321092284,
'start_time': 1749299957.076}
```

Processing: Interval 2: Downwind from 2025-06-07 12:39:17 to 2025-06-07 12:40:02 – SenseBoard vs Gian Stragiotti

=====
Interval 2: Downwind from 2025-06-07 12:39:17 to 2025-06-07 12:40:02 – SenseBoard vs Gian Stragiotti
=====

	Run Statistics												
	Avg (SenseBoard)	Avg (Gian Stragiotti)	Min (SenseBoard)	Min (Gian Stragiotti)	Max (SenseBoard)	Max (Gian Stragiotti)	Count (SenseBoard)	Count (Gian Stragiotti)	StdDev (SenseBoard)	StdDev (Gian Stragiotti)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.83	7.829	6.109	6.109	9.995	9.996	452	453	0.9128	0.9118			
TWD	176.4	176.4	170.4	170.4	181.1	181.1	452	453	3.954	3.959			
SOG	26.09	26.67	23.8	24.5	27.3	28.1	452	453	0.778	0.7702	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	20.72	22	15.29	17.8	23.84	25.31	452	453	1.669	1.398	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	319.2	322.4	305.1	310.6	329.3	332.6	452	453	4.008	4.148		SenseBoard	SenseBoard
TWA_Abs	142.8	146	129.2	132.2	152.9	158	452	453	4.891	5.327			
Heel_Lwd	47.08	45.28	23.7	26.7	69.2	65.4	452	453	7.146	6.766	SenseBoard	Gian Stragiotti	Tie
Line_C	6.971	83.83	2.5	48.6	12.1	115	451	451	1.752	12.93	Gian Stragiotti	SenseBoard	Tie
Side_lines	nan	10.15	nan	2.8	nan	20.1	nan	453	nan	2.776			
Total_lines	nan	94.41	nan	53.1	nan	134	nan	453	nan	14.66			

Distance Summary

SenseBoard Gian Stragiotti

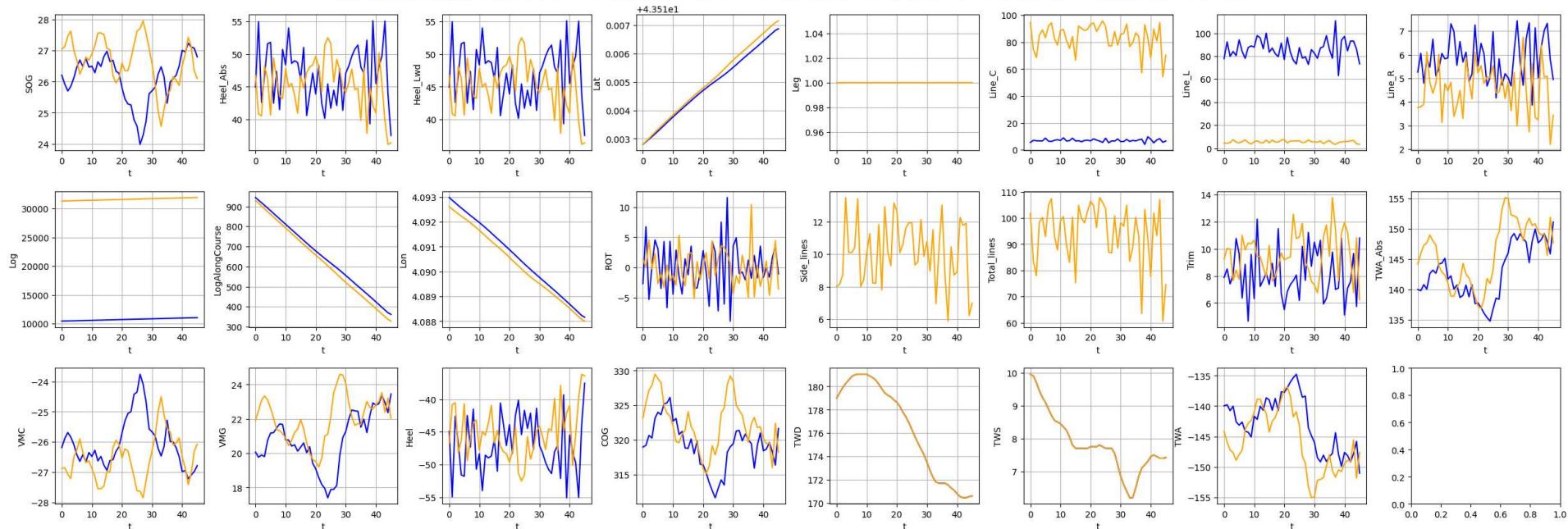
Distance [m]	606.233191	619.950591
Straight Line [m]	604.034223	617.650654
Distance as Percentage of Straight Line [%]	100.364047	100.372369

Gain of SenseBoard with respect to Gian Stragiotti

Forward Lateral VMG

Initial Deficit	19.734451	22.606593	-2.038539
Final Deficit	32.460775	-10.940665	-32.466094
Total Gain	12.726324	-33.547257	-30.427555
Gain per Minute	16.936817	-44.646337	-40.494483

Interval 2: Downwind from 2025-06-07 12:39:17 to 2025-06-07 12:40:02 — SenseBoard vs Gian Stragiotti - Parameters over time



— SenseBoard SOG — Gian Stragiotti SOG

```
=====
Processing run: 07_06_Run6
=====
```

```
-----
Interval 2: Downwind
-----
```

```
{'SOG_variation_boat1': 0.5685403267056057,
'SOG_variation_boat2': 0.7157496418777685,
'avg TWA boat1': -141.94490314136124,
'avg TWA boat2': -142.37469473684212,
'avg_SOG_boat1': 28.251832460732984,
'avg_SOG_boat2': 26.881937172774872,
'boat1_master_leeward': True,
'boat1_name': 'Gian Stragiotti',
'boat1_total_weight': 108.19,
'boat2_master_leeward': False,
'boat2_name': 'SenseBoard',
'boat2_total_weight': 102.89,
'duration': 38.1029999256134,
'end_time': 1749300632.26,
'stability_score': 0.9717130279723044,
'start_time': 1749300594.157}
```

Processing: Interval 2: Downwind from 2025-06-07 12:49:54 to 2025-06-07 12:50:32 – Gian Stragiotti vs SenseBoard

```
=====
Interval 2: Downwind from 2025-06-07 12:49:54 to 2025-06-07 12:50:32 – Gian Stragiotti vs SenseBoard
=====
```

	Run Statistics												
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.88	7.878	7.405	7.405	8.453	8.422	382	380	0.2291	0.2277			
TWD	175.9	175.9	173	173.1	178.1	178.1	382	380	0.9957	0.9805			
SOG	28.25	26.89	27.1	25.1	29.4	28	382	380	0.5685	0.7111	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	22.2	21.26	19.29	18.35	25.1	23.84	382	380	1.442	1.283	Gian Stragiotti	SenseBoard	Tie
COG	317.9	318.3	309.7	309.8	328	327	382	380	4.162	3.716	SenseBoard	SenseBoard	
TWA_Abs	141.9	142.4	133.3	133.5	151	149.7	382	380	4.02	3.616			
Heel_Lwd	48.96	49.4	30.2	23.6	62.9	69.4	382	380	5.743	7.015	SenseBoard	Gian Stragiotti	Tie
Side_lines	10.61	nan	2.2	nan	18.6	nan	382	nan	3.239	nan			
Line_C	93.25	7.269	66.7	2.6	115.5	12.2	381	380	10.04	1.69	Gian Stragiotti	SenseBoard	Tie
Total_lines	104	nan	73.5	nan	131.1	nan	382	nan	11.22	nan			

Distance Summary

Gian Stragiotti SenseBoard

Distance [m]	554.517463	524.901041
---------------------	------------	------------

Straight Line [m]	552.509493	523.324458
--------------------------	------------	------------

Distance as Percentage of Straight Line [%]	100.363427	100.301263
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Gain of Gian Stragiotti with respect to SenseBoard

Forward Lateral VMG

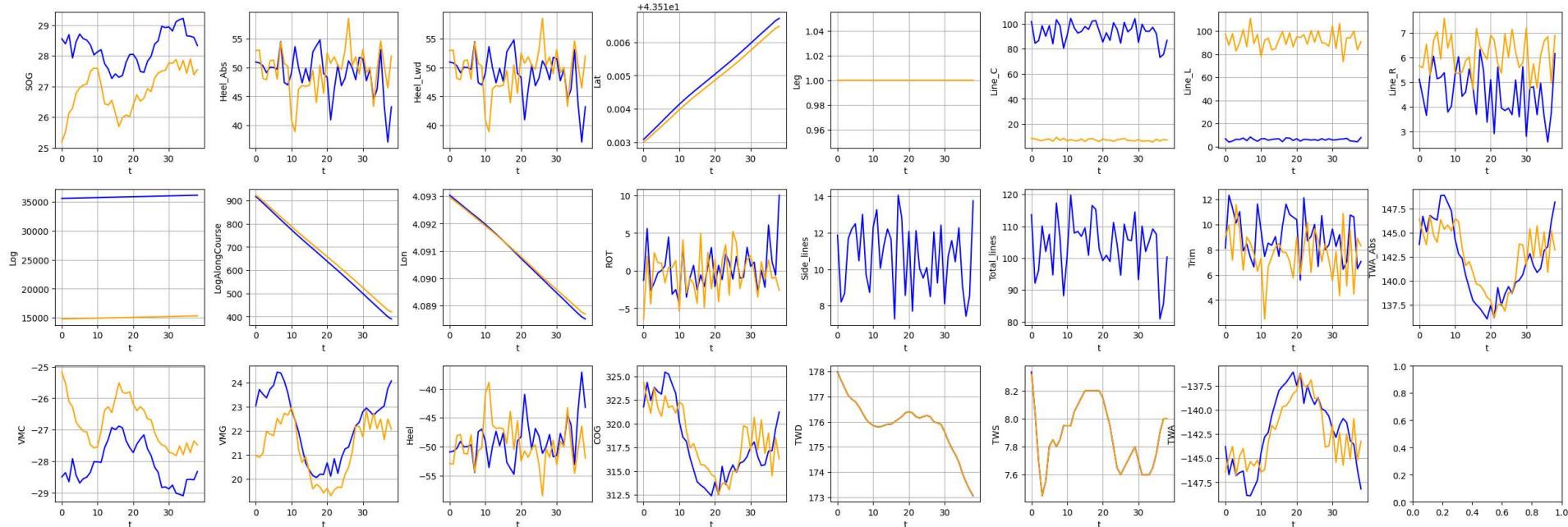
Initial Deficit	-0.996259	11.059991	7.602313
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Final Deficit	-30.199945	7.556306	28.437445
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Total Gain	-29.203686	-3.503685	20.835132
-------------------	------------	-----------	-----------

Gain per Minute	-45.986435	-5.517180	32.808648
------------------------	------------	-----------	-----------

Interval 2: Downwind from 2025-06-07 12:49:54 to 2025-06-07 12:50:32 — Gian Stragiotti vs SenseBoard - Parameters over time



— Gian Stragiotti SOG — SenseBoard SOG

```
=====
Processing run: 07_06_Run7
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.6994768334928197,  
'SOG_variation_boat2': 0.8057898398385431,  
'avg TWA boat1': -143.46581009615386,  
'avg TWA boat2': -142.24757004830917,  
'avg_SOG_boat1': 26.33076923076923,  
'avg_SOG_boat2': 26.25721153846154,  
'boat1_master_leeward': True,  
'boat1_name': 'Karl Maeder',  
'boat1_total_weight': 100.97500000000001,  
'boat2_master_leeward': False,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 109.08999999999999,  
'duration': 41.49900007247925,  
'end_time': 1749301457.157,  
'stability_score': 0.9490600930144912,  
'start_time': 1749301415.658}
```

Processing: Interval 2: Downwind from 2025-06-07 13:03:35 to 2025-06-07 13:04:17 – Karl Maeder vs SenseBoard

```
=====  
Interval 2: Downwind from 2025-06-07 13:03:35 to 2025-06-07 13:04:17 – Karl Maeder vs SenseBoard  
=====
```

Run Statistics

	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.391	9.395	8	8	10.3	10.3	416	414	0.6166	0.6143			
TWD	176.1	176.1	170.8	170.8	179.4	179.4	416	414	2.469	2.461			
SOG	26.33	26.25	24.5	25.1	27.5	29.3	416	414	0.6995	0.8072	Karl Maeder	Karl Maeder	Karl Maeder
VMG	20.95	20.73	16.83	17.26	25.44	25.66	416	414	2.067	1.631	Karl Maeder	SenseBoard	Tie
COG	319.6	318.4	308.7	310.5	335.3	326.6	416	414	5.781	2.46		SenseBoard	SenseBoard
TWA_Abs	143.5	142.2	130.1	132.6	162.7	154.3	416	414	7.922	3.89			
Heel_Lwd	49.2	46.53	34.5	28	64	69.7	416	414	5.317	6.858	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	94.58	10.22	62.8	2.9	133.5	17.8	416	414	12.29	2.609	Karl Maeder	SenseBoard	Tie
Line_C	7.246	82.29	3	57.1	14	117.5	416	412	1.75	11.46	SenseBoard	Karl Maeder	Tie
Total_lines	101.5	92.38	68.2	62.4	145.9	129.3	416	414	12.78	12.93	Karl Maeder	Karl Maeder	Karl Maeder

Distance Summary

Karl Maeder SenseBoard

Distance [m]	562.551935	557.987325
--------------	------------	------------

Straight Line [m]	559.011743	556.693566
-------------------	------------	------------

Distance as Percentage of Straight Line [%]	100.633295	100.232401
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Gain of Karl Maeder with respect to SenseBoard

Forward Lateral VMG

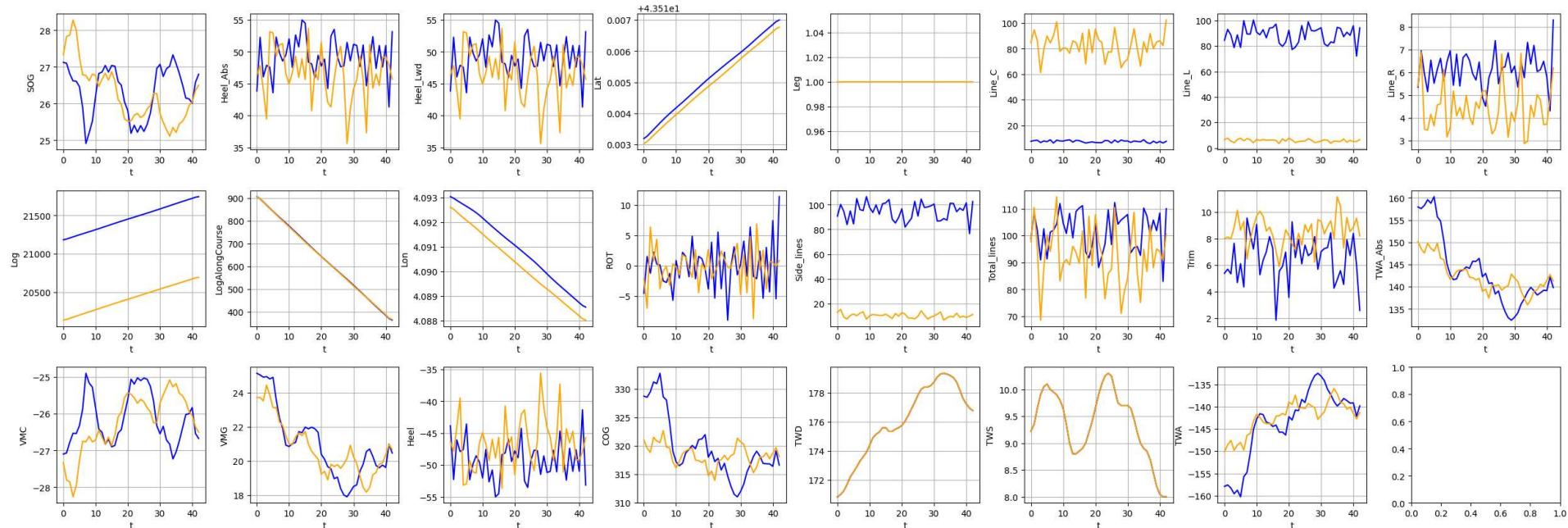
Initial Deficit	9.734838	38.017379	14.814789
-----------------	----------	-----------	-----------

Final Deficit	7.270406	49.145837	23.420772
---------------	----------	-----------	-----------

Total Gain	-2.464431	11.128458	8.605983
------------	-----------	-----------	----------

Gain per Minute	-3.563119	16.089725	12.442685
-----------------	-----------	-----------	-----------

Interval 2: Downwind from 2025-06-07 13:03:35 to 2025-06-07 13:04:17 — Karl Maeder vs SenseBoard - Parameters over time



— Karl Maeder SOG — SenseBoard SOG

```
=====
Processing run: 07_06_Run8
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.8091860497107752,  
'SOG_variation_boat2': 0.8184785351654248,  
'avg TWA boat1': -148.05330720338983,  
'avg TWA boat2': -147.50978510638302,  
'avg_SOG_boat1': 27.379025423728816,  
'avg_SOG_boat2': 27.6625,  
'boat1_master_leeward': False,  
'boat1_name': 'Karl Maeder',  
'boat1_total_weight': 100.9750000000001,  
'boat2_master_leeward': True,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 109.0899999999999,  
'duration': 47.09400010108948,  
'end_time': 1749301961.953,  
'stability_score': 0.9616375431561365,  
'start_time': 1749301914.859}
```

Processing: Interval 2: Downwind from 2025-06-07 13:11:54 to 2025-06-07 13:12:41 – SenseBoard vs Karl Maeder

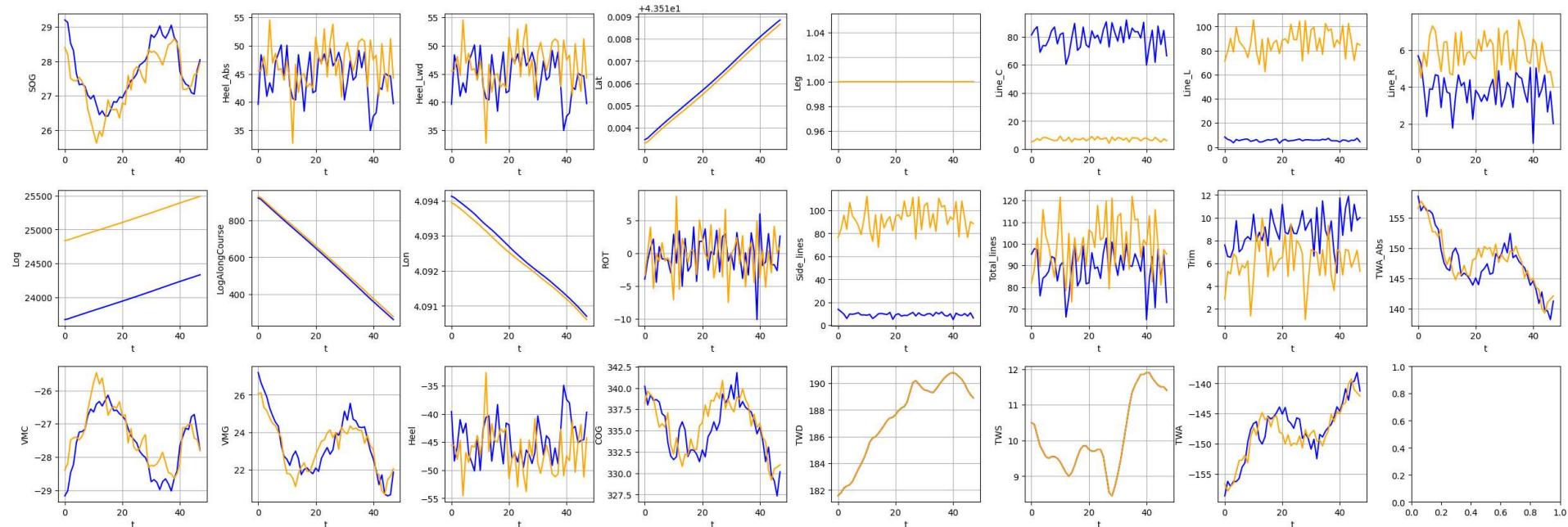
```
=====  
Interval 2: Downwind from 2025-06-07 13:11:54 to 2025-06-07 13:12:41 – SenseBoard vs Karl Maeder  
=====
```

	Run Statistics												
	Avg (SenseBoard)	Avg (Karl Maeder)	Min (SenseBoard)	Min (Karl Maeder)	Max (SenseBoard)	Max (Karl Maeder)	Count (SenseBoard)	Count (Karl Maeder)	StdDev (SenseBoard)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	10.13	10.13	8.405	8.406	11.99	11.99	470	472	1.042	1.041			
TWD	187.6	187.6	181.6	181.6	190.8	190.8	470	472	2.765	2.774			
SOG	27.66	27.38	26.3	25.5	29.3	28.8	470	472	0.8159	0.8092	SenseBoard	Karl Maeder	Tie
VMG	23.26	23.16	19.76	19.73	27.22	26.55	470	472	1.568	1.368	SenseBoard	Karl Maeder	Tie
COG	335.1	335.7	324.4	326.5	343.3	344.5	470	472	3.716	3.593		Karl Maeder	Karl Maeder
TWA_Abs	147.5	148.1	135.3	136.3	159.7	159.8	470	472	4.849	4.56			
Heel_Lwd	44.61	46.63	25.2	20.1	65.9	67.2	470	472	6.746	6.259	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	9.291	92.91	2.1	48.9	16.5	151.5	470	472	2.501	16.51	Karl Maeder	SenseBoard	Tie
Line_C	79.07	7.14	53.2	2.8	105.7	11.9	468	472	10.41	1.908	SenseBoard	Karl Maeder	Tie
Total_lines	88.45	100	58.5	57.6	113.4	163.4	470	472	11.34	17.68	Karl Maeder	SenseBoard	Tie

Distance Summary

	SenseBoard	Karl Maeder
Distance [m]	667.682968	663.296113
Straight Line [m]	665.732089	661.525287
Distance as Percentage of Straight Line [%]	100.293043	100.267688
Gain of SenseBoard with respect to Karl Maeder		
Forward	Lateral	VMG
Initial Deficit	-10.718171	21.428638
Final Deficit	-14.955077	15.384098
Total Gain	-4.236906	-6.044539
Gain per Minute	-5.420234	-7.732721
		0.418145

Interval 2: Downwind from 2025-06-07 13:11:54 to 2025-06-07 13:12:41 — SenseBoard vs Karl Maeder - Parameters over time



— SenseBoard SOG — Karl Maeder SOG

```
=====
Processing run: 07_06_Run9
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.6630842211928816,  
'SOG_variation_boat2': 0.7550342961025506,  
'avg TWA boat1': -147.36239002267575,  
'avg TWA boat2': -146.5883696145125,  
'avg_SOG_boat1': 28.447392290249432,  
'avg_SOG_boat2': 28.581179138321993,  
'boat1_master_leeward': True,  
'boat1_name': 'Karl Maeder',  
'boat1_total_weight': 100.97500000000001,  
'boat2_master_leeward': False,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 109.08999999999999,  
'duration': 44.01100015640259,  
'end_time': 1749302440.459,  
'stability_score': 0.9651754089517661,  
'start_time': 1749302396.448}
```

Processing: Interval 2: Downwind from 2025-06-07 13:19:56 to 2025-06-07 13:20:40 – Karl Maeder vs SenseBoard

```
=====  
Interval 2: Downwind from 2025-06-07 13:19:56 to 2025-06-07 13:20:40 – Karl Maeder vs SenseBoard  
=====
```

Run Statistics

	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.905	9.905	8.906	8.905	10.6	10.6	441	441	0.5114	0.5115			
TWD	186.2	186.2	179.3	179.3	195.8	195.8	441	441	5.045	5.045			
SOG	28.45	28.58	27	26.9	29.8	30.2	441	441	0.6631	0.7518	SenseBoard	Karl Maeder	Tie
VMG	23.85	23.74	19.63	21.36	26.5	26.27	441	441	1.215	1.027	Karl Maeder	SenseBoard	Tie
COG	333.5	332.8	323.8	325.4	343	339.5	441	441	3.237	2.55		SenseBoard	SenseBoard
TWA_Abs	147.4	146.6	132.4	136	158.8	158.1	441	441	5.028	4.971			
Heel_Lwd	49.54	46.13	32.4	26.7	65.7	66.8	441	441	5.904	5.844	Karl Maeder	SenseBoard	Tie
Side_lines	95.58	9.726	62.7	1.1	135.8	19.9	441	441	13.38	2.958	Karl Maeder	SenseBoard	Tie
Line_C	7.23	84.97	2.7	47.8	12.2	115	441	439	1.933	10.86	SenseBoard	Karl Maeder	Tie
Total_lines	102.7	94.78	66.1	51.6	146.5	130.1	441	441	13.94	11.77	Karl Maeder	SenseBoard	Tie

Distance Summary

Karl Maeder SenseBoard

Distance [m] 643.871252 645.818158

Straight Line [m] 642.292491 644.671553

Distance as Percentage of Straight Line [%] 100.245801 100.177859

Gain of Karl Maeder with respect to SenseBoard

Forward Lateral VMG

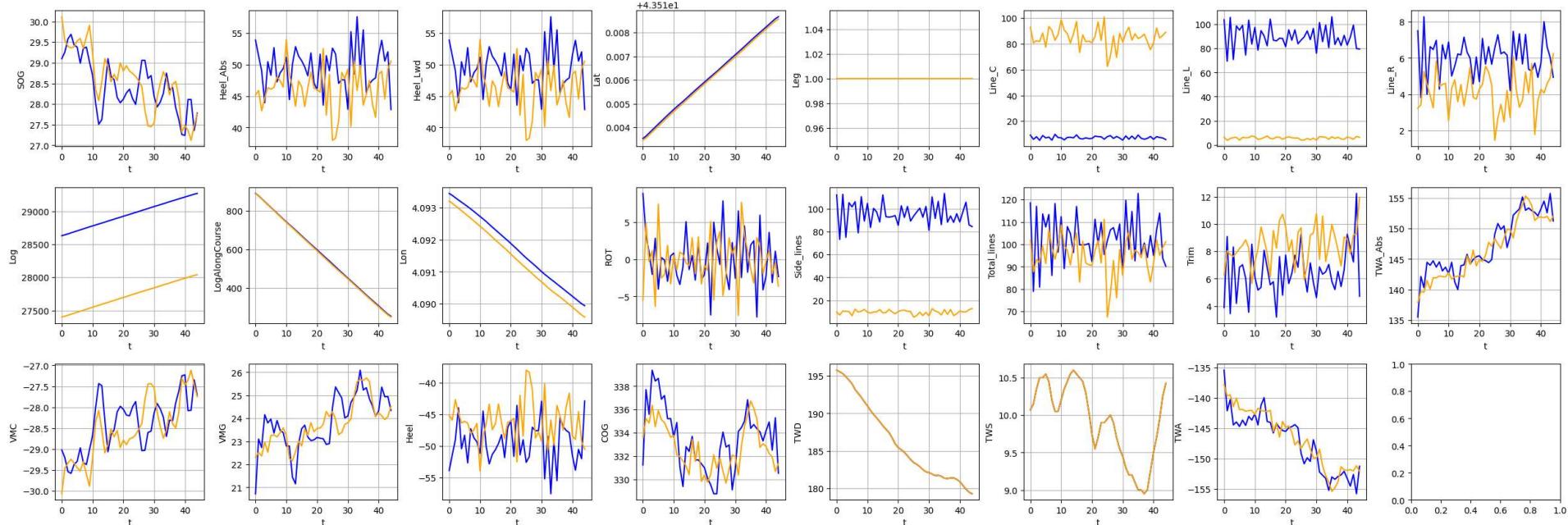
Initial Deficit 0.656779 21.313905 10.940993

Final Deficit 2.968152 30.533484 13.966421

Total Gain 2.311372 9.219580 3.025428

Gain per Minute 3.151084 12.569012 4.124553

Interval 2: Downwind from 2025-06-07 13:19:56 to 2025-06-07 13:20:40 — Karl Maeder vs SenseBoard - Parameters over time



— Karl Maeder SOG — SenseBoard SOG

Error: At least two CSV files are required.
Error: No or insufficient intervals for run: 09_06_Run1

```
=====
Processing run: 09_06_Run10
=====
```

Interval 2: Downwind

```
{'SOG_variation_boat1': 0.5265769855048806,
'SOG_variation_boat2': 0.556149167909675,
'avg TWA boat1': -141.5574108216433,
'avg TWA boat2': -141.35800401606423,
'avg_SOG_boat1': 26.750901803607217,
'avg_SOG_boat2': 27.055511022044087,
'boat1_master_leeward': False,
'boat1_name': 'Karl Maeder',
'boat1_total_weight': 100.9750000000001,
'boat2_master_leeward': True,
'boat2_name': 'SenseBoard',
'boat2_total_weight': 115.08999999999999,
'duration': 49.80200004577637,
'end_time': 1749475704.256,
'stability_score': 0.967040276958964,
'start_time': 1749475654.454}
```

Processing: Interval 2: Downwind from 2025-06-09 13:27:34 to 2025-06-09 13:28:24 – SenseBoard vs Karl Maeder

```
=====
Interval 2: Downwind from 2025-06-09 13:27:34 to 2025-06-09 13:28:24 – SenseBoard vs Karl Maeder
=====
```

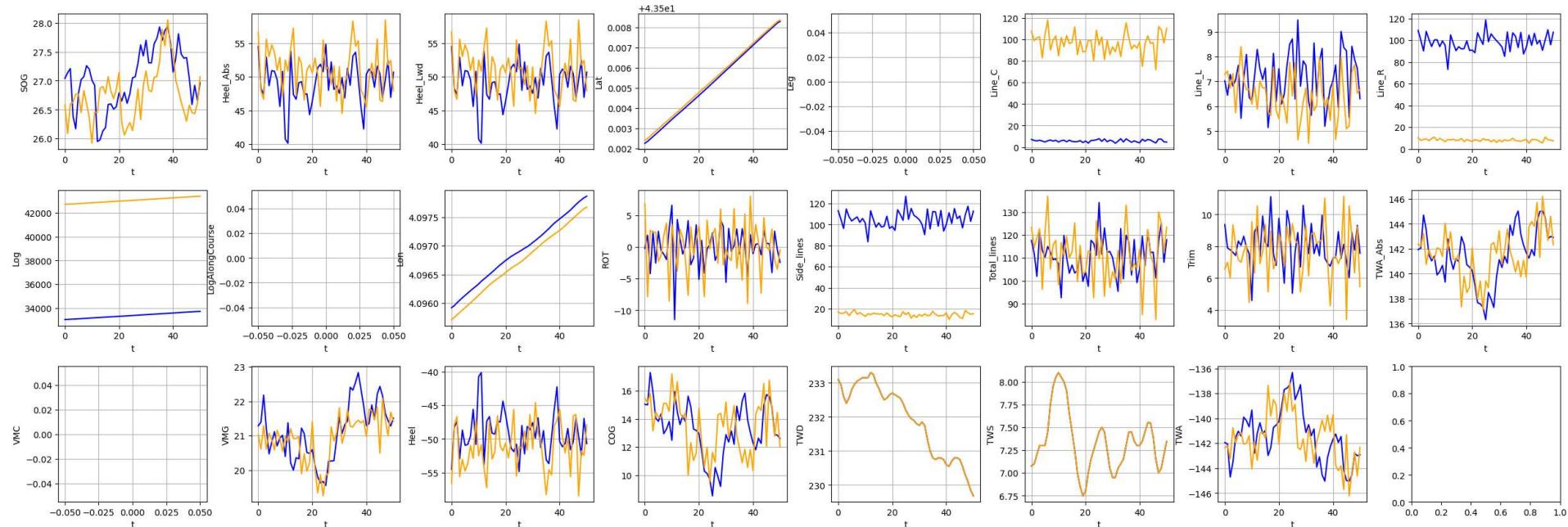
Run Statistics

	Avg (SenseBoard)	Avg (Karl Maeder)	Min (SenseBoard)	Min (Karl Maeder)	Max (SenseBoard)	Max (Karl Maeder)	Count (SenseBoard)	Count (Karl Maeder)	StdDev (SenseBoard)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.338	7.338	6.704	6.704	8.1	8.1	498	499	0.329	0.3289			
TWD	231.9	231.9	229.7	229.7	233.4	233.4	498	499	1.025	1.025			
SOG	27.05	26.75	24.4	24.5	28.4	28.3	498	499	0.5647	0.5266	SenseBoard	Karl Maeder	Tie
VMG	21.1	20.92	18.4	17.89	23.43	23.05	498	499	1.01	0.8914	SenseBoard	Karl Maeder	Tie
COG	13.27	13.48	5.6	4.1	22.8	20.5	498	499	2.697	2.863		SenseBoard	SenseBoard
TWA_Abs	141.4	141.6	133	133.3	149.7	148.9	498	499	2.891	2.927			
Heel_Lwd	49.04	51.16	32.8	31.7	63.8	69.8	498	499	5.224	6.16	Karl Maeder	SenseBoard	Tie
Side_lines	105	14.63	51.4	5.9	146.8	23.2	498	499	12.33	3.089	SenseBoard	Karl Maeder	Tie
Line_C	5.729	96.57	0	60.7	10.3	132.7	498	499	1.94	12.81	Karl Maeder	SenseBoard	Tie
Total_lines	110.8	111.2	54.6	72.3	155.7	149	498	499	12.87	14.44	Karl Maeder	SenseBoard	Tie

Distance Summary

	SenseBoard	Karl Maeder
Distance [m]	692.346612	685.413073
Straight Line [m]	691.578962	684.565694
Distance as Percentage of Straight Line [%]	100.111000	100.123784
Gain of SenseBoard with respect to Karl Maeder		
Forward	Lateral	VMG
Initial Deficit	11.252680	20.176281
Final Deficit	4.218207	16.832598
Total Gain	-7.034473	-3.343683
Gain per Minute	-8.492493	-4.036721
	4.112436	

Interval 2: Downwind from 2025-06-09 13:27:34 to 2025-06-09 13:28:24 — SenseBoard vs Karl Maeder - Parameters over time



— SenseBoard SOG — Karl Maeder SOG

```
=====
Processing run: 09_06_Run11
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.595943023245209,  
'SOG_variation_boat2': 1.301806479623148,  
'avg TWA boat1': -143.12540796963947,  
'avg TWA boat2': -144.06554562737642,  
'avg_SOG_boat1': 25.45749525616698,  
'avg_SOG_boat2': 25.68709677419355,  
'boat1_master_leeward': True,  
'boat1_name': 'Karl Maeder',  
'boat1_total_weight': 100.97500000000001,  
'boat2_master_leeward': False,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 115.08999999999999,  
'duration': 52.59599995613098,  
'end_time': 1749476288.852,  
'stability_score': 0.9622185408950876,  
'start_time': 1749476236.256}
```

Processing: Interval 2: Downwind from 2025-06-09 13:37:16 to 2025-06-09 13:38:08 – Karl Maeder vs SenseBoard

```
=====  
Interval 2: Downwind from 2025-06-09 13:37:16 to 2025-06-09 13:38:08 – Karl Maeder vs SenseBoard  
=====
```

Run Statistics

	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.009	7.008	6.405	6.404	7.496	7.496	527	526	0.3006	0.3008			
TWD	227.7	227.7	226.7	226.7	228.5	228.5	527	526	0.3898	0.3902			
SOG	25.46	25.69	23.9	22.4	26.7	28.1	527	526	0.5959	1.295	SenseBoard	Karl Maeder	Tie
VMG	20.33	20.7	17.28	18.02	22.64	23.14	527	526	0.9043	1.015	SenseBoard	Karl Maeder	Tie
COG	10.82	11.76	1.9	3.4	18.8	24.2	527	526	3.035	4.303		Karl Maeder	Karl Maeder
TWA_Abs	143.1	144.1	133.9	135.7	151.8	157	527	526	3.224	4.52			
Heel_Lwd	47.79	45.54	17.7	24.3	65.8	63.3	527	526	6.722	7.073	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	13.27	91.39	4.2	50.2	22.6	127.3	527	526	2.922	14.83	SenseBoard	Karl Maeder	Tie
Line_C	88.24	4.58	45.1	0	136.2	9.2	527	524	14.16	1.713	Karl Maeder	SenseBoard	Tie
Total_lines	101.5	96.1	51.3	50.6	149.6	132.2	527	526	16.05	15.94	Karl Maeder	SenseBoard	Tie

Distance Summary

Karl Maeder SenseBoard

Distance [m] 688.421640 692.360352

Straight Line [m] 687.459131 690.486777

Distance as Percentage of Straight Line [%] 100.140010 100.271341

Gain of Karl Maeder with respect to SenseBoard

Forward Lateral VMG

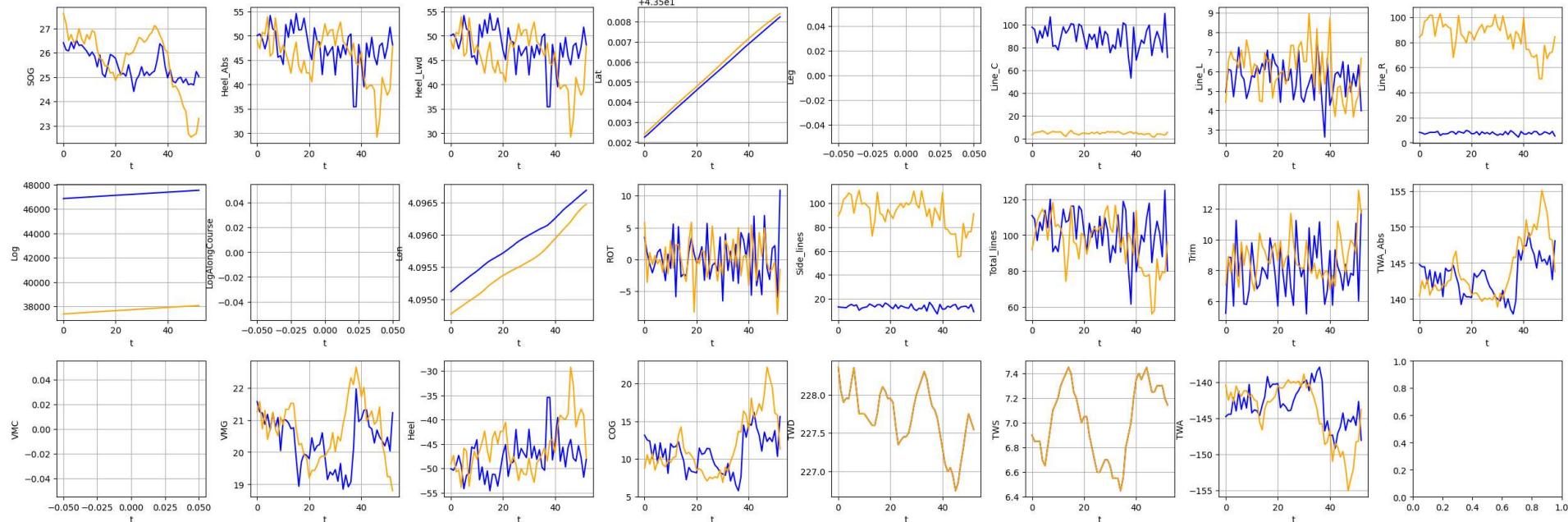
Initial Deficit 11.678188 30.330984 8.858563

Final Deficit 14.641676 21.172340 0.992138

Total Gain 2.963488 -9.158644 -7.866424

Gain per Minute 3.380661 -10.447917 -8.973790

Interval 2: Downwind from 2025-06-09 13:37:16 to 2025-06-09 13:38:08 — Karl Maeder vs SenseBoard - Parameters over time



— Karl Maeder SOG — SenseBoard SOG

Error: No or insufficient intervals for run: 09_06_Run2
 Error: At least two CSV files are required.

```
=====
Processing run: 09_06_Run4
=====
```

 Interval 2: Downwind

```
{'SOG_variation_boat1': 0.849627104813067,
 'SOG_variation_boat2': 0.5257048959698549,
 'avg TWA boat1': -134.64182882882884,
 'avg TWA boat2': -134.72823702031604,
 'avg_SOG_boat1': 27.6213963963964,
 'avg_SOG_boat2': 28.11644144144144,
 'boat1_master_leeward': False,
 'boat1_name': 'Karl Maeder',
 'boat1_total_weight': 106.97500000000001,
 'boat2_master_leeward': True,
 'boat2_name': 'SenseBoard',
 'boat2_total_weight': 109.08999999999999,
 'duration': 44.29400014877319,
 'end_time': 1749472312.65,
 'stability_score': 0.9623474927915108,
 'start_time': 1749472268.356}
```

Processing: Interval 2: Downwind from 2025-06-09 12:31:08 to 2025-06-09 12:31:52 – SenseBoard vs Karl Maeder

```
=====
Interval 2: Downwind from 2025-06-09 12:31:08 to 2025-06-09 12:31:52 – SenseBoard vs Karl Maeder
=====
```

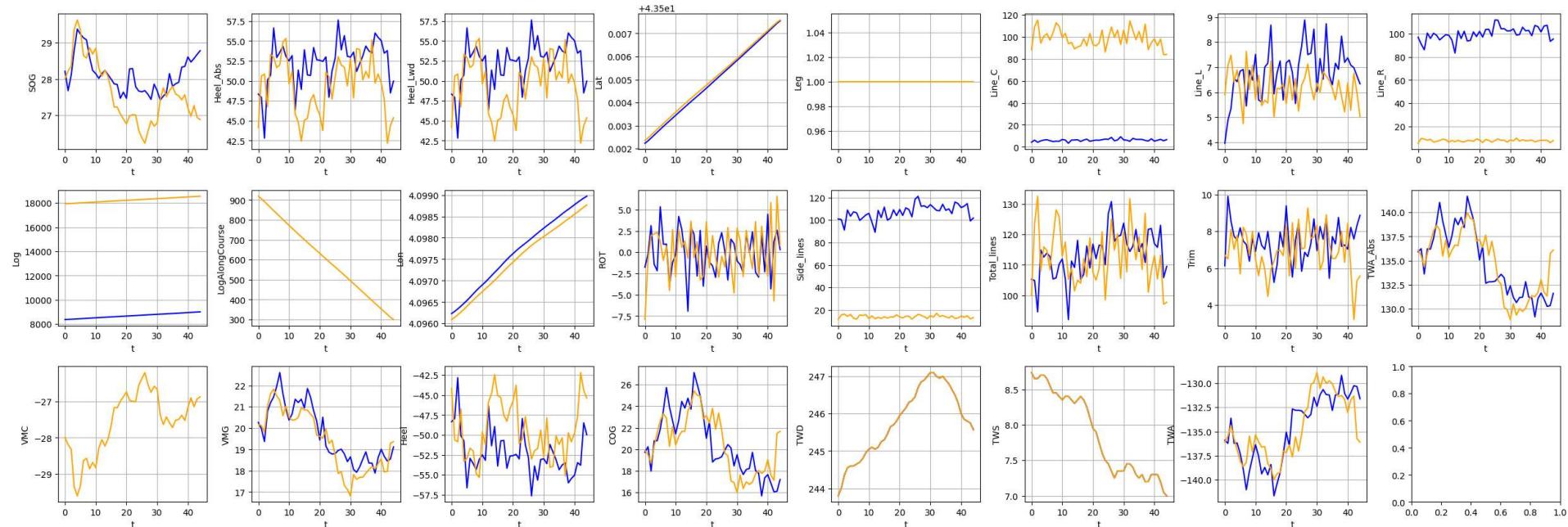
Run Statistics

	Avg (SenseBoard)	Avg (Karl Maeder)	Min (SenseBoard)	Min (Karl Maeder)	Max (SenseBoard)	Max (Karl Maeder)	Count (SenseBoard)	Count (Karl Maeder)	StdDev (SenseBoard)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.861	7.859	7	7	8.764	8.764	443	444	0.5682	0.569			
TWD	245.8	245.8	243.8	243.8	247.1	247.1	443	444	0.9124	0.9117			
SOG	28.11	27.62	27.2	26.1	29.5	29.8	443	444	0.5262	0.8496	SenseBoard	SenseBoard	SenseBoard
VMG	19.74	19.38	16.61	14.59	23.07	22.76	443	444	1.461	1.535	SenseBoard	SenseBoard	SenseBoard
COG	20.53	20.44	11.9	9.2	29.4	27.3	443	444	3.431	3.222		Karl Maeder	Karl Maeder
TWA_Abs	134.7	134.6	126.2	123.4	143.9	142	443	444	3.892	3.698			
Heel_Lwd	52.31	49.4	32.3	33.6	65.3	63.1	443	444	5.335	5.706	SenseBoard	SenseBoard	SenseBoard
Side_lines	107.1	13.94	75	6.5	128.3	22	443	444	8.781	2.695	SenseBoard	Karl Maeder	Tie
Line_C	6.126	98.77	0.2	74.8	15.7	133.9	442	444	2.326	11.01	Karl Maeder	SenseBoard	Tie
Total_lines	113.5	112.8	75.2	85.4	140.1	151	443	444	10.03	12.32	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	SenseBoard	Karl Maeder
Distance [m]	639.025352	629.036540
Straight Line [m]	637.870393	628.039306
Distance as Percentage of Straight Line [%]	100.181065	100.158785
Gain of SenseBoard with respect to Karl Maeder		
Forward	8.589108	15.408385
Lateral	-1.256093	16.558438
VMG	4.902502	12.648029
Total Gain	-9.845201	1.150054
Gain per Minute	-13.364223	1.561124
		10.514053

Interval 2: Downwind from 2025-06-09 12:31:08 to 2025-06-09 12:31:52 — SenseBoard vs Karl Maeder - Parameters over time



— SenseBoard SOG — Karl Maeder SOG

Error: No or insufficient intervals for run: 09_06_Run5

=====
Processing run: 09_06_Run6
=====

Interval 2: Downwind

```
{'SOG_variation_boat1': 0.9562666476793272,
'SOG_variation_boat2': 0.9439934006012783,
'avg_TWA_boat1': -137.5699430379747,
'avg_TWA_boat2': -137.814531779661,
'avg_SOG_boat1': 26.858227848101265,
'avg_SOG_boat2': 27.347257383966245,
'boat1_master_leeward': False,
'boat1_name': 'Karl Maeder',
'boat1_total_weight': 106.97500000000001,
'boat2_master_leeward': True,
'boat2_name': 'SenseBoard',
'boat2_total_weight': 109.08999999999999,
'duration': 47.29200005531311,
'end_time': 1749473362.253,
'stability_score': 0.947487140959874,
'start_time': 1749473314.961}
```

Processing: Interval 2: Downwind from 2025-06-09 12:48:34 to 2025-06-09 12:49:22 – SenseBoard vs Karl Maeder

=====
Interval 2: Downwind from 2025-06-09 12:48:34 to 2025-06-09 12:49:22 – SenseBoard vs Karl Maeder
=====

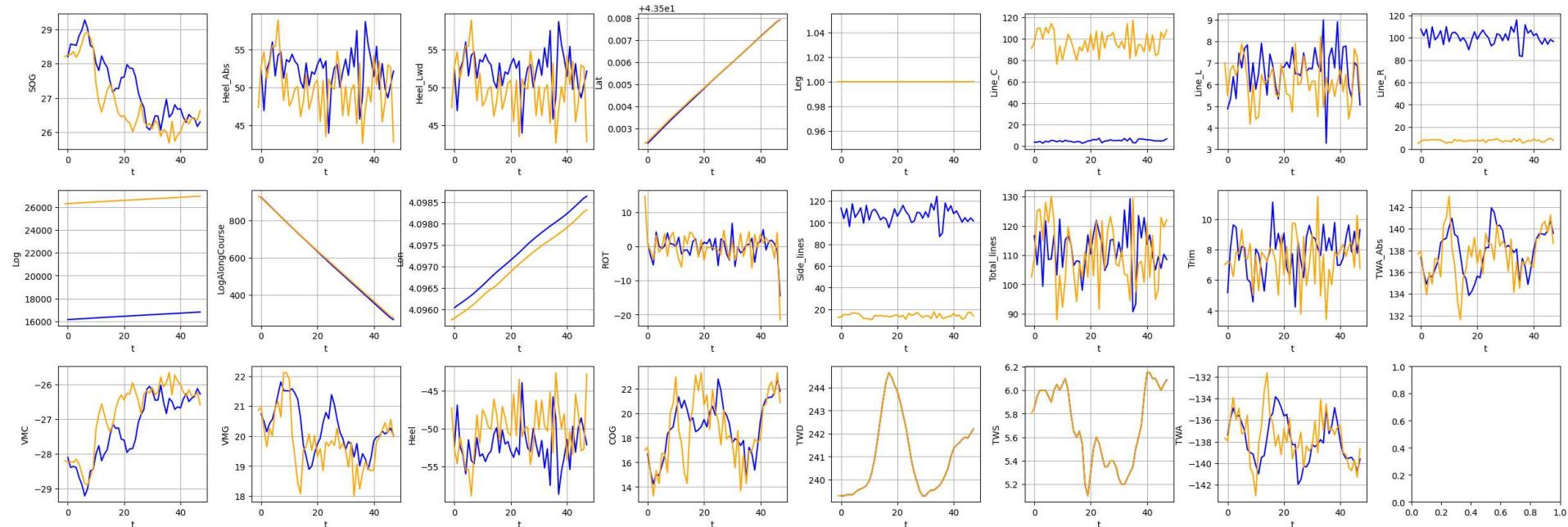
Run Statistics

	Avg (SenseBoard)	Avg (Karl Maeder)	Min (SenseBoard)	Min (Karl Maeder)	Max (SenseBoard)	Max (Karl Maeder)	Count (SenseBoard)	Count (Karl Maeder)	StdDev (SenseBoard)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	5.694	5.695	5.01	5.01	6.196	6.196	472	474	0.3288	0.3286			
TWD	241	241	239.3	239.3	244.7	244.7	472	474	1.635	1.634			
SOG	27.35	26.86	24.5	25.1	30.1	29.6	472	474	0.9583	0.9563	SenseBoard	Karl Maeder	Tie
VMG	20.24	19.8	16.9	16.18	23.29	23.23	472	474	1.003	1.073	SenseBoard	SenseBoard	SenseBoard
COG	18.8	18.55	10.2	8.5	26.2	26.3	472	474	2.816	3.282			
TWA_Abs	137.8	137.6	130.8	129.1	145.1	145.9	472	474	2.725	2.811			
Heel_Lwd	52.24	50.09	34.5	35.5	68.1	66.3	472	474	5.18	5.961	SenseBoard	SenseBoard	SenseBoard
Side_lines	107.3	13.92	69.5	6.6	141.7	25.4	472	474	10.89	2.91	SenseBoard	Karl Maeder	Tie
Line_C	4.909	96.85	0	68.4	10.7	130.2	469	474	2.099	13.06	Karl Maeder	SenseBoard	Tie
Total_lines	111.9	110.3	71.5	82.2	152.4	151.4	472	474	11.4	14.04	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	SenseBoard	Karl Maeder
Distance [m]	661.215301	652.802042
Straight Line [m]	660.398203	651.731524
Distance as Percentage of Straight Line [%]	100.123728	100.164258
Gain of SenseBoard with respect to Karl Maeder		
Forward	Lateral	VMG
Initial Deficit	0.125911	21.707538
Final Deficit	-8.558183	24.074262
Total Gain	-8.684095	2.366724
Gain per Minute	-11.055734	3.013080
		10.215438

Interval 2: Downwind from 2025-06-09 12:48:34 to 2025-06-09 12:49:22 — SenseBoard vs Karl Maeder - Parameters over time



— SenseBoard SOG — Karl Maeder SOG

```
=====
Processing run: 09_06_Run7
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.3075979509419556,  
'SOG_variation_boat2': 0.4363757068660953,  
'avg TWA boat1': -142.399125,  
'avg TWA boat2': -141.92563450292397,  
'avg_SOG_boat1': 27.270639534883717,  
'avg_SOG_boat2': 27.467441860465115,  
'boat1_master_leeward': True,  
'boat1_name': 'Karl Maeder',  
'boat1_total_weight': 106.9750000000001,  
'boat2_master_leeward': False,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 109.0899999999999,  
'duration': 34.29300022125244,  
'end_time': 1749473827.653,  
'stability_score': 0.9731867204076343,  
'start_time': 1749473793.36}
```

Processing: Interval 2: Downwind from 2025-06-09 12:56:33 to 2025-06-09 12:57:07 – Karl Maeder vs SenseBoard

```
=====  
Interval 2: Downwind from 2025-06-09 12:56:33 to 2025-06-09 12:57:07 – Karl Maeder vs SenseBoard  
=====
```

Run Statistics

	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.339	8.338	7.7	7.7	8.7	8.7	344	342	0.3361	0.337			
TWD	243.5	243.5	241.9	241.9	245.1	245.1	344	342	0.836	0.8335			
SOG	27.27	27.48	25.2	26.4	29.1	29.3	344	342	0.3076	0.4449	SenseBoard	Karl Maeder	Tie
VMG	21.57	21.6	18.35	19.13	23.89	24.31	344	342	0.9175	1.06	SenseBoard	Karl Maeder	Tie
COG	25.87	25.39	17	17.2	33.4	35.2	344	342	2.759	3.25		Karl Maeder	Karl Maeder
TWA_Abs	142.4	141.9	132.8	134.2	150.3	150.5	344	342	3.134	3.315			
Heel_Lwd	50.98	50.03	34.7	33.4	66.6	65.8	344	342	5.596	5.704	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	14.8	102.1	7	57.5	22.4	129.3	344	342	2.544	11.59	SenseBoard	Karl Maeder	Tie
Line_C	98.66	5.231	72.5	0	132.2	10.4	344	342	11.84	2.004	Karl Maeder	SenseBoard	Tie
Total_lines	113.5	107.3	85.1	62.7	150.4	134.5	344	342	13.35	12.55	Karl Maeder	SenseBoard	Tie

Distance Summary

Karl Maeder SenseBoard

Distance [m] 481.306534 481.661093

Straight Line [m] 480.752082 480.885773

Distance as Percentage of Straight Line [%] 100.115330 100.161228

Gain of Karl Maeder with respect to SenseBoard

Forward Lateral VMG

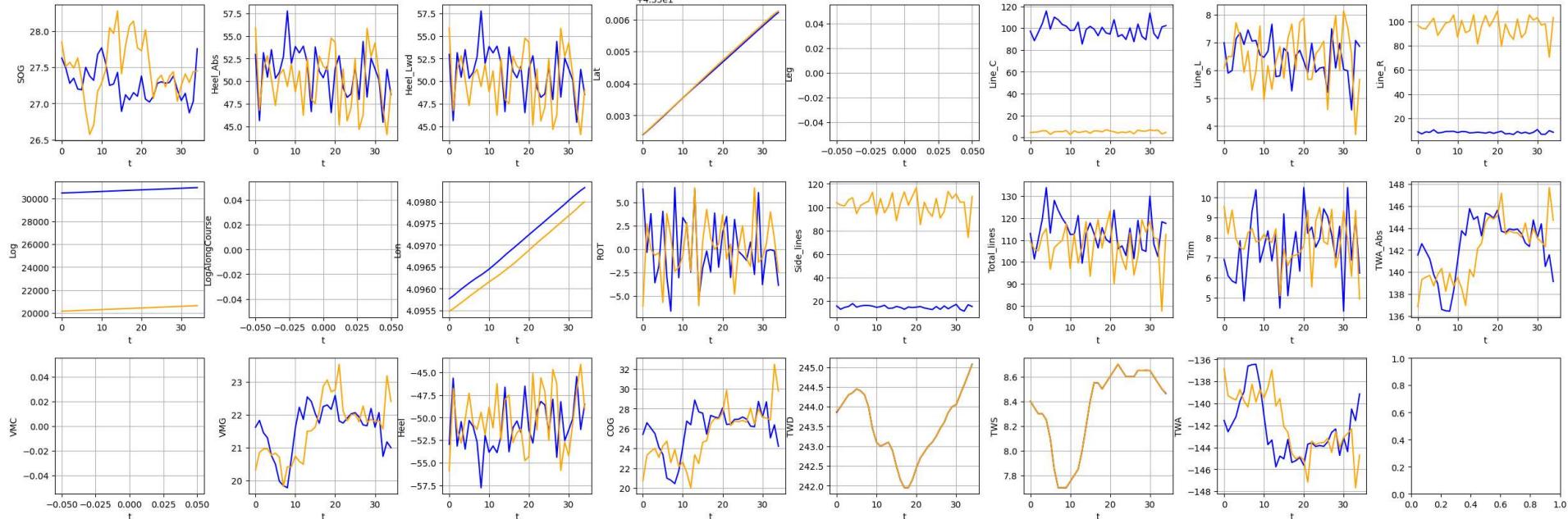
Initial Deficit -7.938432 20.909369 19.047316

Final Deficit -7.818044 25.661175 21.851235

Total Gain 0.120388 4.751807 2.803919

Gain per Minute 0.210635 8.313895 4.905815

Interval 2: Downwind from 2025-06-09 12:56:33 to 2025-06-09 12:57:07 — Karl Maeder vs SenseBoard - Parameters over time



```
=====
Processing run: 09_06_Run8
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.7666824539305778,  
'SOG_variation_boat2': 0.6466930633281409,  
'avg TWA boat1': -142.5215644820296,  
'avg TWA boat2': -142.49367940552017,  
'avg_SOG_boat1': 26.936997885835094,  
'avg_SOG_boat2': 28.12811839323467,  
'boat1_master_leeward': False,  
'boat1_name': 'Karl Maeder',  
'boat1_total_weight': 100.97500000000001,  
'boat2_master_leeward': True,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 115.08999999999999,  
'duration': 47.19899998474121,  
'end_time': 1749474541.045,  
'stability_score': 0.9627796173107166,  
'start_time': 1749474493.854}
```

Processing: Interval 2: Downwind from 2025-06-09 13:08:13 to 2025-06-09 13:09:01 – SenseBoard vs Karl Maeder

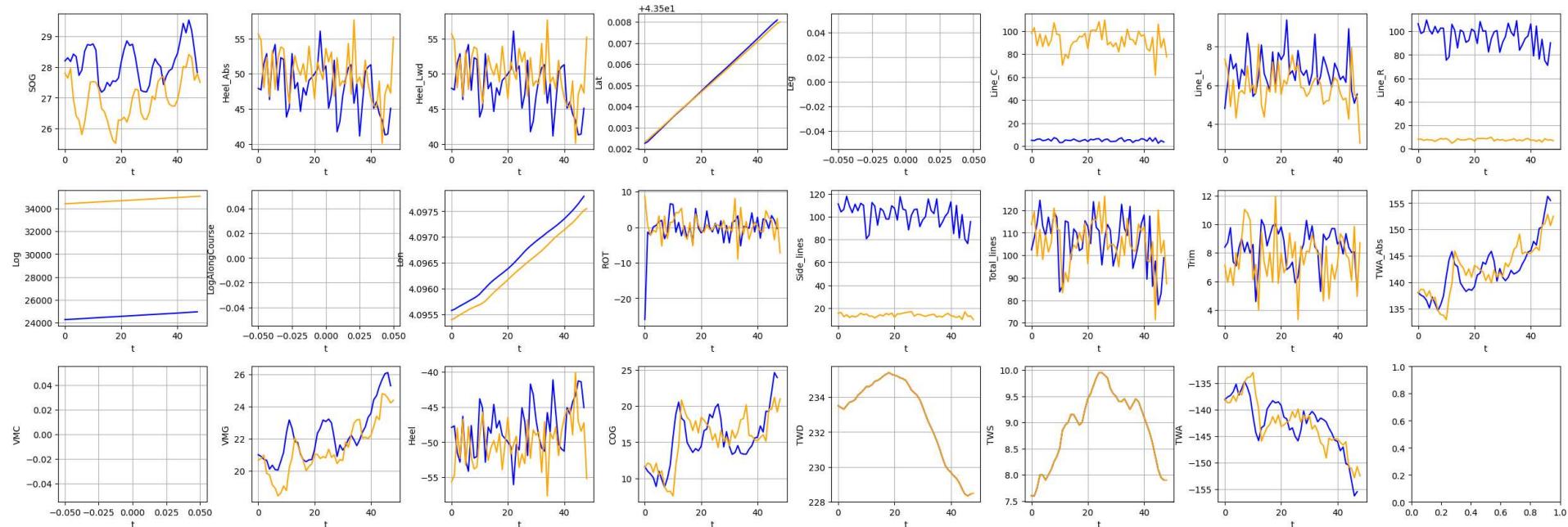
```
=====  
Interval 2: Downwind from 2025-06-09 13:08:13 to 2025-06-09 13:09:01 – SenseBoard vs Karl Maeder  
=====
```

	Run Statistics												
	Avg (SenseBoard)	Avg (Karl Maeder)	Min (SenseBoard)	Min (Karl Maeder)	Max (SenseBoard)	Max (Karl Maeder)	Count (SenseBoard)	Count (Karl Maeder)	StdDev (SenseBoard)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.949	8.944	7.6	7.6	9.995	9.996	471	473	0.6708	0.6739			
TWD	233	232.9	228.3	228.3	235.4	235.4	471	473	2.279	2.284			
SOG	28.13	26.94	26.9	24.7	29.7	28.9	471	473	0.6494	0.7667	SenseBoard	SenseBoard	SenseBoard
VMG	22.23	21.31	18.77	17.13	27.28	25.46	471	473	1.702	1.679	SenseBoard	Karl Maeder	Tie
COG	15.45	15.47	5.5	5.6	26.8	25.6	471	473	4.092	3.838		Karl Maeder	Karl Maeder
TWA_Abs	142.5	142.5	131.4	131.3	158.3	155.5	471	473	5.244	4.934			
Heel_Lwd	48.06	49.81	33.4	34.7	63	66.2	471	473	5.803	5.809	Karl Maeder	SenseBoard	Tie
Side_lines	101.7	13.66	60.4	4.7	133.6	23.9	471	473	13.64	2.945	SenseBoard	Karl Maeder	Tie
Line_C	5.246	91.96	0	56.2	10.2	123.8	469	473	1.913	12.42	Karl Maeder	SenseBoard	Tie
Total_lines	106.6	105.8	62.8	64	138.7	142.7	471	473	14.13	13.57	SenseBoard	Karl Maeder	Tie

Distance Summary

	SenseBoard	Karl Maeder
Distance [m]	679.904964	653.947489
Straight Line [m]	678.178992	652.472263
Distance as Percentage of Straight Line [%]	100.254501	100.226098
Gain of SenseBoard with respect to Karl Maeder		
Forward	Lateral	VMG
Initial Deficit	4.097963	16.262065
Final Deficit	-21.651571	16.785085
Total Gain	-25.749534	0.523020
Gain per Minute	-32.871745	0.667685
		26.482715

Interval 2: Downwind from 2025-06-09 13:08:13 to 2025-06-09 13:09:01 — SenseBoard vs Karl Maeder - Parameters over time



— SenseBoard SOG — Karl Maeder SOG

```
=====
Processing run: 09_06_Run9
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 1.0217059599533802,  
'SOG_variation_boat2': 0.9318197050401614,  
'avg TWA boat1': -141.57092949907235,  
'avg TWA boat2': -141.8663840445269,  
'avg_SOG_boat1': 26.241558441558443,  
'avg_SOG_boat2': 26.94601113172542,  
'boat1_master_leeward': True,  
'boat1_name': 'Karl Maeder',  
'boat1_total_weight': 100.9750000000001,  
'boat2_master_leeward': False,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 115.0899999999999,  
'duration': 53.80299997329712,  
'end_time': 1749475174.256,  
'stability_score': 0.9458172931147468,  
'start_time': 1749475120.453}
```

Processing: Interval 2: Downwind from 2025-06-09 13:18:40 to 2025-06-09 13:19:34 – Karl Maeder vs SenseBoard

```
=====  
Interval 2: Downwind from 2025-06-09 13:18:40 to 2025-06-09 13:19:34 – Karl Maeder vs SenseBoard  
=====
```

Run Statistics

	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.045	7.045	6.4	6.4	7.996	7.996	539	539	0.466	0.4661			
TWD	235.4	235.4	233.5	233.5	237.7	237.7	539	539	0.7963	0.7963			
SOG	26.24	26.94	23.5	23.9	29.7	28.6	539	539	1.022	0.9265	SenseBoard	SenseBoard	SenseBoard
VMG	20.53	21.18	15.17	17.01	24.09	24.34	539	539	1.838	1.477	SenseBoard	SenseBoard	SenseBoard
COG	16.96	17.26	5.6	8.6	27.7	23.3	539	539	3.935	2.801			SenseBoard
TWA_Abs	141.6	141.9	129.3	132.8	152.4	149.1	539	539	4.406	3.139			
Heel_Lwd	48.89	46.85	18.9	21.9	66.7	63.3	539	539	7.083	6.565	Karl Maeder	SenseBoard	Tie
Side_lines	13.47	100.3	2.4	43	20.8	129.6	539	539	2.767	14	SenseBoard	Karl Maeder	Tie
Line_C	90.08	5.556	36.9	0	120.5	11.3	539	538	12.47	1.85	Karl Maeder	SenseBoard	Tie
Total_lines	103.4	106	42.2	43	138.6	138.8	539	539	14.12	15.04	SenseBoard	Karl Maeder	Tie

Distance Summary

Karl Maeder SenseBoard

Distance [m]	725.368854	743.841623
---------------------	------------	------------

Straight Line [m]	723.667963	742.950370
--------------------------	------------	------------

Distance as Percentage of Straight Line [%]	100.235037	100.119961
--	------------	------------

Gain of Karl Maeder with respect to SenseBoard

Forward Lateral VMG

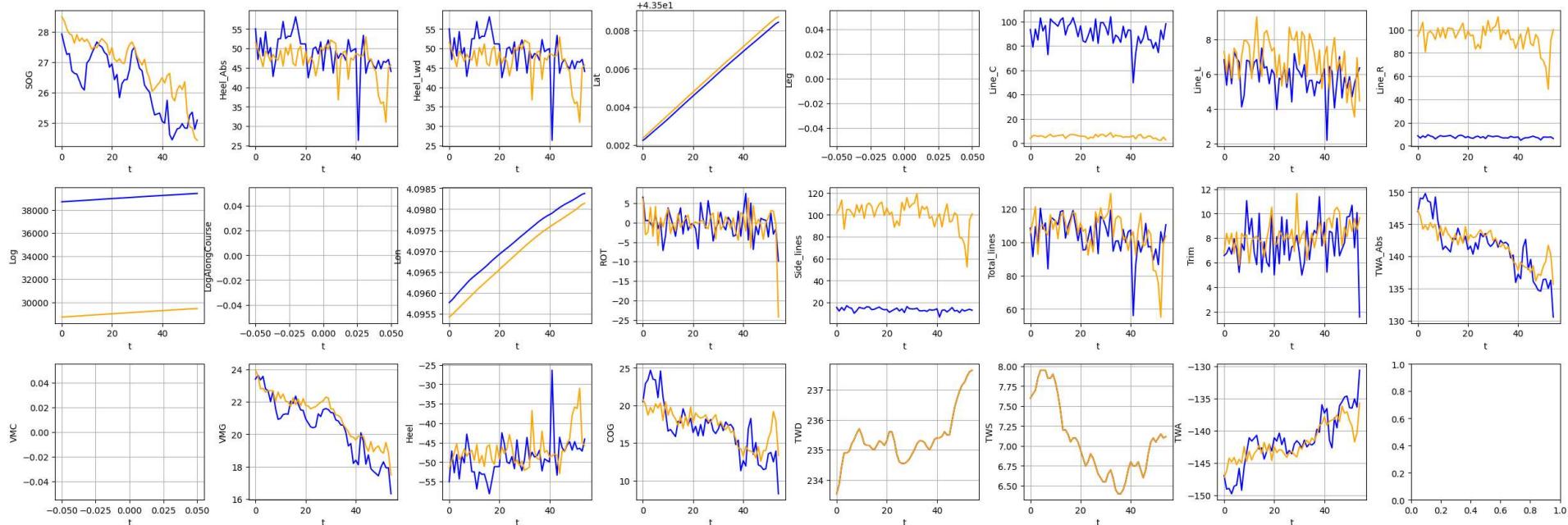
Initial Deficit	5.767867	31.035619	14.771746
------------------------	----------	-----------	-----------

Final Deficit	25.063841	27.297744	-2.667518
----------------------	-----------	-----------	-----------

Total Gain	19.295974	-3.737875	-17.439264
-------------------	-----------	-----------	------------

Gain per Minute	21.518474	-4.168401	-19.447909
------------------------	-----------	-----------	------------

Interval 2: Downwind from 2025-06-09 13:18:40 to 2025-06-09 13:19:34 — Karl Maeder vs SenseBoard - Parameters over time



— Karl Maeder SOG — SenseBoard SOG

Error: At least two CSV files are required.

```
=====
Processing run: 10_06_Run1
=====
```

```
-----
Interval 2: Downwind
-----
```

```
{'SOG_variation_boat1': 0.3462723462527339,
'SOG_variation_boat2': 0.42120353204467675,
'avg_TWA_boat1': -124.37445901639343,
'avg_TWA_boat2': -125.1762262773723,
'avg_SOG_boat1': 26.093624772313298,
'avg_SOG_boat2': 25.469581056466303,
'boat1_master_leeward': False,
'boat1_name': 'Gian Stragiotti',
'boat1_total_weight': 106.195,
'boat2_master_leeward': True,
'boat2_name': 'SenseBoard',
'boat2_total_weight': 102.89,
'duration': 54.78699994087219,
'end_time': 1749558732.858,
'stability_score': 0.9730459562174268,
'start_time': 1749558678.071}
```

Processing: Interval 2: Downwind from 2025-06-10 12:31:18 to 2025-06-10 12:32:12 – SenseBoard vs Gian Stragiotti

```
=====
Interval 2: Downwind from 2025-06-10 12:31:18 to 2025-06-10 12:32:12 – SenseBoard vs Gian Stragiotti
=====
```

Run Statistics

	Avg (SenseBoard)	Avg (Gian Stragiotti)	Min (SenseBoard)	Min (Gian Stragiotti)	Max (SenseBoard)	Max (Gian Stragiotti)	Count (SenseBoard)	Count (Gian Stragiotti)	StdDev (SenseBoard)	StdDev (Gian Stragiotti)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	5.65	5.65	5.4	5.4	6	6	548	549	0.1418	0.1418			
TWD	218.5	218.4	216.9	216.9	219.6	219.6	548	549	0.8393	0.8411			
SOG	25.47	26.09	24.2	25.2	26.7	26.8	548	549	0.4216	0.3463	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	14.64	14.71	10.19	11.72	18.24	18.43	548	549	1.412	1.254	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	343.6	342.8	333.6	336.3	354.2	351.4	548	549	3.314	2.747		Gian Stragiotti	Gian Stragiotti
TWA_Abs	125.2	124.4	114.8	117.6	137.1	134.5	548	549	3.884	3.276			
Heel_Lwd	53.01	56.15	37.3	42.5	72.7	66.5	548	549	5.839	4.134	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Line_C	93.55	114.3	70.5	80.8	119.6	140.1	547	549	9.527	9.461	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	nan	16.67	nan	8.3	nan	24.6	nan	549	nan	3.195			
Total_lines	nan	130.9	nan	92.9	nan	157.9	nan	549	nan	10.88			

Distance Summary

SenseBoard Gian Stragiotti

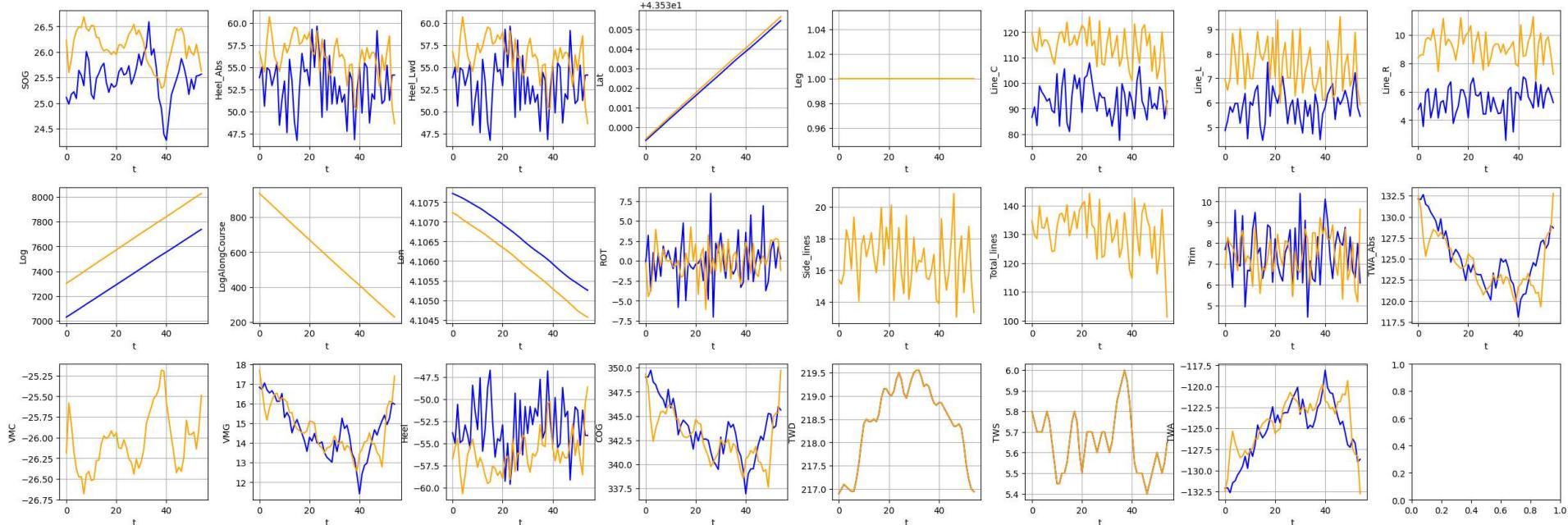
Distance [m]	716.692440	735.526488
Straight Line [m]	715.495093	734.710887
Distance as Percentage of Straight Line [%]	100.167345	100.111010

Gain of SenseBoard with respect to Gian Stragiotti

Forward Lateral VMG

Initial Deficit	18.135349	35.546136	18.607269
Final Deficit	37.300110	46.319265	16.372411
Total Gain	19.164761	10.773128	-2.234858
Gain per Minute	21.019754	11.815880	-2.451174

Interval 2: Downwind from 2025-06-10 12:31:18 to 2025-06-10 12:32:12 — SenseBoard vs Gian Stragiotti - Parameters over time



— SenseBoard SOG — Gian Stragiotti SOG

Error: No or insufficient intervals for run: 10_06_Run10

=====
Processing run: 10_06_Run2
=====

Interval 2: Downwind

```
{'SOG_variation_boat1': 0.7194692927018169,
'SOG_variation_boat2': 0.7702815382301164,
'avg_TWA_boat1': -127.73065321100918,
'avg_TWA_boat2': -127.0197661141805,
'avg_SOG_boat1': 25.846055045871555,
'avg_SOG_boat2': 25.106972477064218,
'boat1_master_leeward': True,
'boat1_name': 'Gian Stragiotti',
'boat1_total_weight': 106.195,
'boat2_master_leeward': False,
'boat2_name': 'SenseBoard',
'boat2_total_weight': 102.89,
'duration': 54.39100003242493,
'end_time': 1749559222.144,
'stability_score': 0.9627767974222723,
'start_time': 1749559167.753}
```

Processing: Interval 2: Downwind from 2025-06-10 12:39:27 to 2025-06-10 12:40:22 – Gian Stragiotti vs SenseBoard

=====
Interval 2: Downwind from 2025-06-10 12:39:27 to 2025-06-10 12:40:22 – Gian Stragiotti vs SenseBoard
=====

Run Statistics

	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	6.754	6.754	6.2	6.2	7.496	7.495	545	543	0.3697	0.3689			
TWD	215.1	215.1	214.6	214.6	215.5	215.5	545	543	0.2693	0.2697			
SOG	25.85	25.11	23.4	23.6	26.9	26.5	545	543	0.7195	0.7701	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	15.75	15.06	12.67	12.47	18.39	17.94	545	543	1.215	1.039	Gian Stragiotti	SenseBoard	Tie
COG	342.8	342.1	334.7	334.2	351.5	352.6	545	543	4.123	3.705		SenseBoard	SenseBoard
TWA_Abs	127.7	127	119.3	119.4	136	137.2	545	543	4.018	3.645			
Heel_Lwd	56.53	52.43	43	33.7	68.6	70.1	545	543	4.299	5.9	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	16.89	nan	6.7	nan	26.1	nan	545	nan	3.233	nan			
Line_C	111.3	93.58	87.3	59.7	141.3	128.1	545	541	9.186	11.3	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	128.3	nan	97.8	nan	163.2	nan	545	nan	10.82	nan			

Distance Summary

Gian Stragiotti SenseBoard

Distance [m]	723.409288	699.392828
---------------------	------------	------------

Straight Line [m]	721.542059	697.925511
--------------------------	------------	------------

Distance as Percentage of Straight Line [%]	100.258783	100.210240
--	------------	------------

Gain of Gian Stragiotti with respect to SenseBoard

Forward Lateral VMG

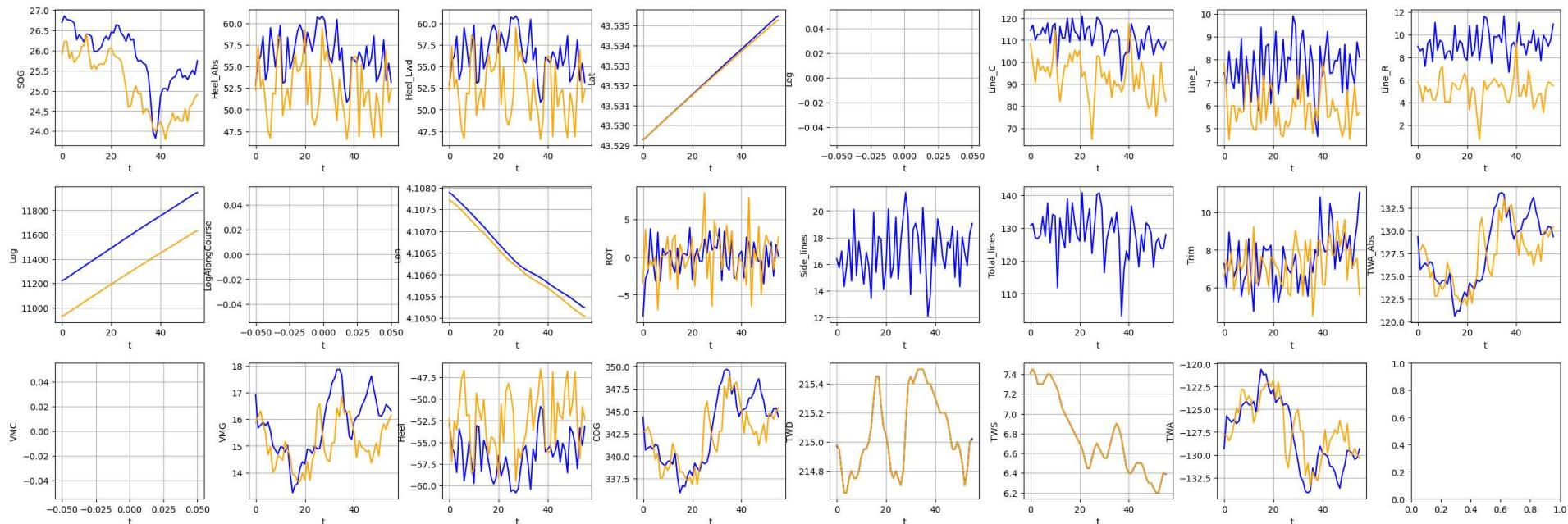
Initial Deficit	6.478441	13.092265	6.390153
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Final Deficit	-17.247769	21.673518	27.696281
----------------------	------------	-----------	-----------

Total Gain	-23.726210	8.581253	21.306127
-------------------	------------	----------	-----------

Gain per Minute	-26.172944	9.466183	23.503293
------------------------	------------	----------	-----------

Interval 2: Downwind from 2025-06-10 12:39:27 to 2025-06-10 12:40:22 — Gian Stragiotti vs SenseBoard - Parameters over time



— Gian Stragiotti SOG — SenseBoard SOG

```
=====
Processing run: 10_06_Run3
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.48782414350891035,  
'SOG_variation_boat2': 0.5967613024843319,  
'avg TWA boat1': -133.17295463917526,  
'avg TWA boat2': -132.24709917355372,  
'avg_SOG_boat1': 27.7280412371134,  
'avg_SOG_boat2': 26.803505154639176,  
'boat1_master_leeward': False,  
'boat1_name': 'Gian Stragiotti',  
'boat1_total_weight': 106.195,  
'boat2_master_leeward': True,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 102.89,  
'duration': 48.401000022888184,  
'end_time': 1749559676.354,  
'stability_score': 0.970534801199097,  
'start_time': 1749559627.953}
```

Processing: Interval 2: Downwind from 2025-06-10 12:47:07 to 2025-06-10 12:47:56 – SenseBoard vs Gian Stragiotti

```
=====  
Interval 2: Downwind from 2025-06-10 12:47:07 to 2025-06-10 12:47:56 – SenseBoard vs Gian Stragiotti  
=====
```

	Run Statistics												
	Avg (SenseBoard)	Avg (Gian Stragiotti)	Min (SenseBoard)	Min (Gian Stragiotti)	Max (SenseBoard)	Max (Gian Stragiotti)	Count (SenseBoard)	Count (Gian Stragiotti)	StdDev (SenseBoard)	StdDev (Gian Stragiotti)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.01	7.011	6.1	6.1	7.8	7.8	484	485	0.4529	0.4524			
TWD	213.8	213.8	211.3	211.3	215.5	215.5	484	485	1.215	1.215			
SOG	26.8	27.73	25.1	26.6	28.1	28.8	484	485	0.5972	0.4878	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	18	18.94	14.43	16.05	20.83	21.34	484	485	1.066	1.123	Gian Stragiotti	SenseBoard	Tie
COG	346	347	337.2	340.5	352.4	353.4	484	485	2.588	2.751		SenseBoard	SenseBoard
TWA_Abs	132.2	133.2	123.7	125.7	141	140.7	484	485	2.869	3.162			
Heel_Lwd	51.72	54.12	30.1	40.6	69.8	66.3	484	485	6.174	4.061	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Line_C	91.25	109.5	50.7	88.4	125.5	136.2	484	485	12.21	8.561	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	nan	15.73	nan	6.9	nan	24.9	nan	485	nan	3.243			
Total_lines	nan	125.2	nan	99.1	nan	154.6	nan	485	nan	10.07			

Distance Summary

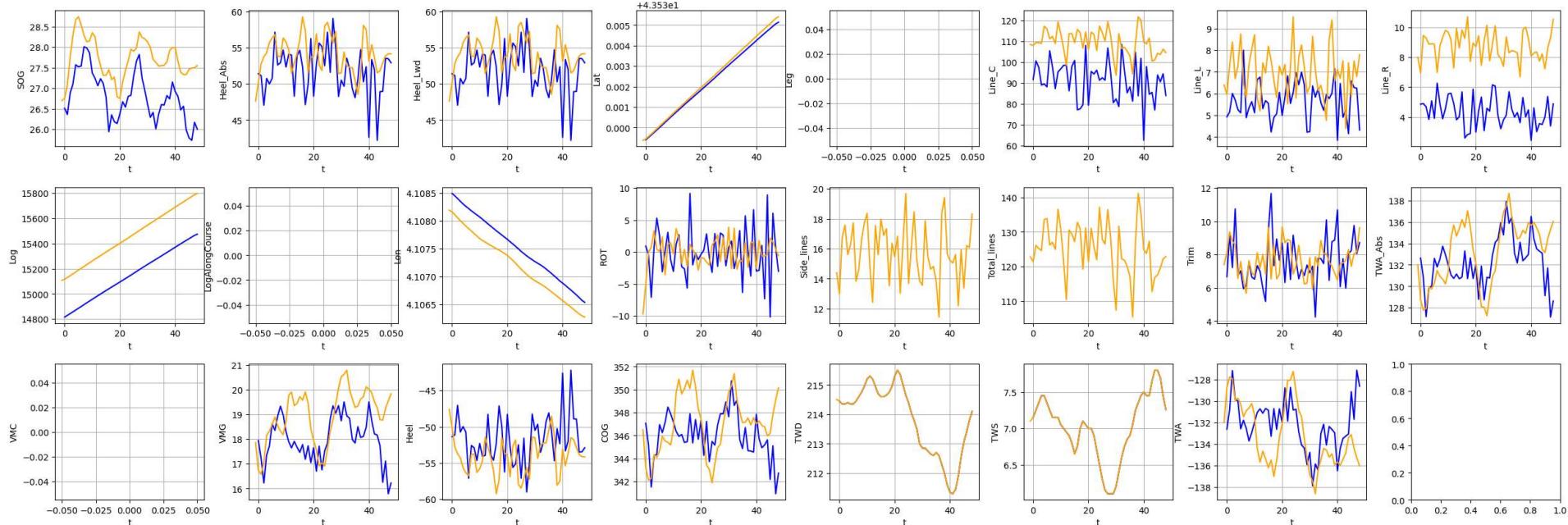
SenseBoard Gian Stragiotti

Distance [m]	666.083542	690.970285
Straight Line [m]	665.408593	690.171508
Distance as Percentage of Straight Line [%]	100.101434	100.115736

Gain of SenseBoard with respect to Gian Stragiotti

	Forward	Lateral	VMG
Initial Deficit	9.509058	24.141362	11.477343
Final Deficit	34.234486	13.273442	-13.191352
Total Gain	24.725428	-10.867920	-24.668695
Gain per Minute	30.721178	-13.503317	-30.650688

Interval 2: Downwind from 2025-06-10 12:47:07 to 2025-06-10 12:47:56 — SenseBoard vs Gian Stragiotti - Parameters over time



— SenseBoard SOG — Gian Stragiotti SOG

```
=====
Processing run: 10_06_Run4
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.253889716586543,  
'SOG_variation_boat2': 0.2897555698691407,  
'avg TWA boat1': 55.89349328214971,  
'avg TWA boat2': 54.93533461538461,  
'avg_SOG_boat1': 23.940882917466407,  
'avg_SOG_boat2': 23.243186180422267,  
'boat1_master_leeward': True,  
'boat1_name': 'Gian Stragiotti',  
'boat1_total_weight': 106.195,  
'boat2_master_leeward': False,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 102.89,  
'duration': 51.990999937057495,  
'end_time': 1749560020.046,  
'stability_score': 0.973918519280143,  
'start_time': 1749559968.055}
```

Processing: Interval 2: Downwind from 2025-06-10 12:52:48 to 2025-06-10 12:53:40 – Gian Stragiotti vs SenseBoard

```
=====  
Interval 2: Downwind from 2025-06-10 12:52:48 to 2025-06-10 12:53:40 – Gian Stragiotti vs SenseBoard  
=====
```

	Run Statistics												
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	5.924	5.924	5.2	5.2	6.496	6.495	521	520	0.3552	0.3555			
TWD	209.5	209.5	208.1	208.1	212.5	212.5	521	520	0.9027	0.894			
SOG	23.94	23.24	21.7	22.6	24.6	24.2	521	520	0.2539	0.2918	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	13.41	13.32	10.85	10.32	15.89	15.67	521	520	0.9177	1.01	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	153.6	154.6	147.2	147.2	160.4	161.5	521	520	2.116	2.845		Gian Stragiotti	Gian Stragiotti
TWA_Abs	55.89	54.94	47.91	47.52	62.88	64.53	521	520	2.657	3.262			
Heel_Lwd	59.9	58.43	43.4	45.4	72.6	73	521	520	4.684	4.389	Gian Stragiotti	SenseBoard	Tie
Side_lines	16.5	nan	9.9	nan	28.3	nan	521	nan	3.37	nan			
Line_C	131.2	118.8	102.6	84.5	160	147.5	521	519	10.29	9.833	Gian Stragiotti	SenseBoard	Tie
Total_lines	147.7	nan	117.9	nan	177.2	nan	521	nan	11.51	nan			

Distance Summary

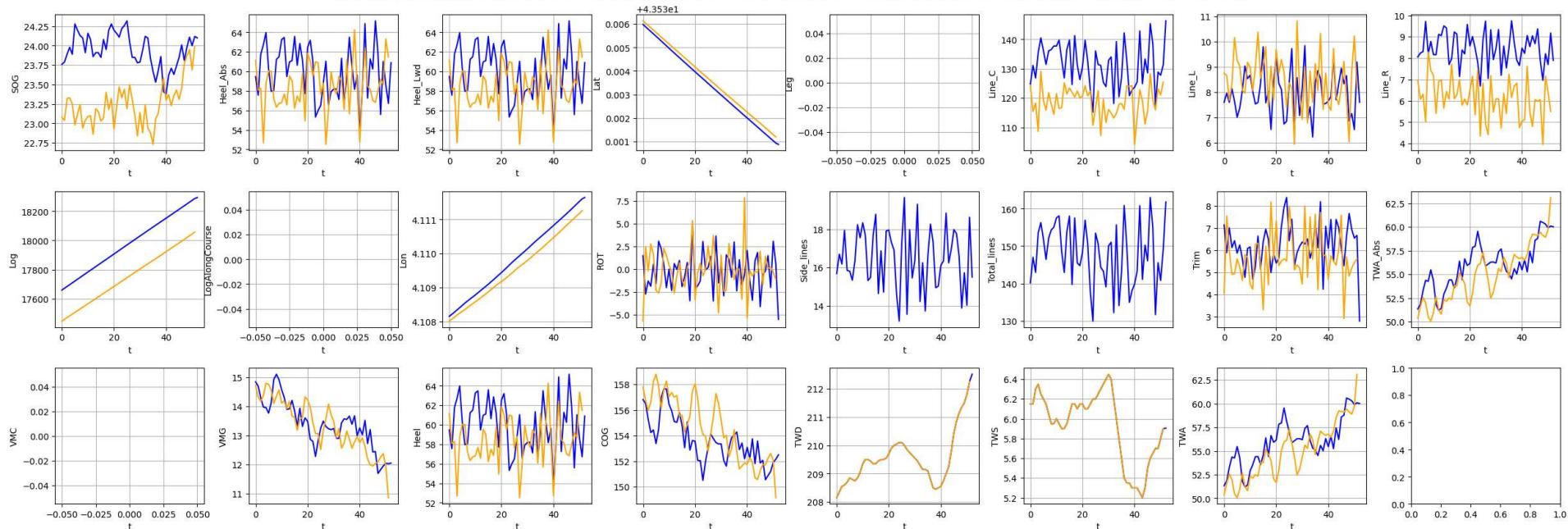
Gian Stragiotti SenseBoard

Distance [m]	640.521969	620.834396
Straight Line [m]	640.087072	620.058025
Distance as Percentage of Straight Line [%]	100.067943	100.125209

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-20.053471	2.380364	-9.273697
Final Deficit	-40.161156	11.912659	-12.656015
Total Gain	-20.107684	9.532295	-3.382318
Gain per Minute	-23.205191	11.000706	-3.903350

Interval 2: Downwind from 2025-06-10 12:52:48 to 2025-06-10 12:53:40 — Gian Stragiotti vs SenseBoard - Parameters over time



— Gian Stragiotti SOG — SenseBoard SOG

```
=====
Processing run: 10_06_Run5
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.661275652373244,  
'SOG_variation_boat2': 0.6862557608982934,  
'avg TWA boat1': -138.87261169102297,  
'avg TWA boat2': -138.84397703549064,  
'avg_SOG_boat1': 27.096033402922757,  
'avg_SOG_boat2': 26.642797494780798,  
'boat1_master_leeward': False,  
'boat1_name': 'Gian Stragiotti',  
'boat1_total_weight': 106.195,  
'boat2_master_leeward': True,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 102.89,  
'duration': 47.79900002479553,  
'end_time': 1749560771.956,  
'stability_score': 0.9616481492402572,  
'start_time': 1749560724.157}
```

Processing: Interval 2: Downwind from 2025-06-10 13:05:24 to 2025-06-10 13:06:11 – SenseBoard vs Gian Stragiotti

```
=====  
Interval 2: Downwind from 2025-06-10 13:05:24 to 2025-06-10 13:06:11 – SenseBoard vs Gian Stragiotti  
=====
```

	Run Statistics												
	Avg (SenseBoard)	Avg (Gian Stragiotti)	Min (SenseBoard)	Min (Gian Stragiotti)	Max (SenseBoard)	Max (Gian Stragiotti)	Count (SenseBoard)	Count (Gian Stragiotti)	StdDev (SenseBoard)	StdDev (Gian Stragiotti)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	6.515	6.515	5.8	5.8	7	7	479	479	0.3227	0.3227			
TWD	210	210	209.3	209.3	211	211	479	479	0.4334	0.4335			
SOG	26.64	27.1	25.1	25.8	28	28.4	479	479	0.6851	0.6613	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	20.03	20.36	17.2	18.54	22.19	22.48	479	479	0.8952	0.7942	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	348.9	348.9	341.4	341.7	356.1	357.5	479	479	2.79	3.146		SenseBoard	SenseBoard
TWA_Abs	138.8	138.9	131.9	131.5	146	147.3	479	479	2.849	3.355			
Heel_Lwd	53.63	54.69	37.3	43	69.1	67.1	479	479	5.723	4.162	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Line_C	92.85	110.4	62.9	85.6	121.2	139.7	478	479	10.94	10.95	Gian Stragiotti	SenseBoard	Tie
Side_lines	nan	16.73	nan	7.2	nan	25.3	nan	479	nan	3.217			
Total_lines	nan	127	nan	94.9	nan	160.4	nan	479	nan	12.36			

Distance Summary

SenseBoard Gian Stragiotti

Distance [m]	654.891622	665.931151
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Straight Line [m]	654.117200	664.930507
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Distance as Percentage of Straight Line [%]	100.118392	100.150488
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Gain of SenseBoard with respect to Gian Stragiotti

Forward Lateral VMG

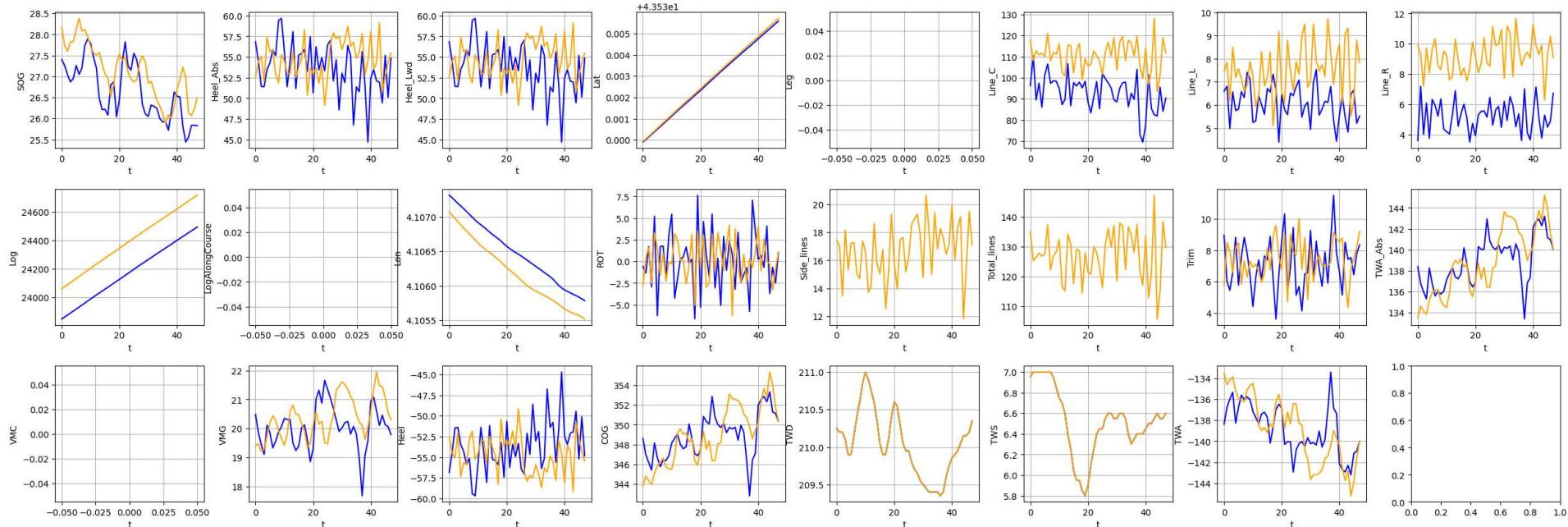
Initial Deficit	7.480278	17.974449	6.197097
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Final Deficit	18.313246	18.140444	-1.850038
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Total Gain	10.832968	0.165996	-8.047135
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Gain per Minute	13.599006	0.208381	-10.101852
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Interval 2: Downwind from 2025-06-10 13:05:24 to 2025-06-10 13:06:11 — SenseBoard vs Gian Stragiotti - Parameters over time



— SenseBoard SOG — Gian Stragiotti SOG

```
=====
Processing run: 10_06_Run6
=====
```

```
-----
Interval 2: Downwind
-----
```

```
{'SOG_variation_boat1': 0.433373795501071,
'SOG_variation_boat2': 0.6449390318040755,
'avg TWA boat1': -139.59860047281325,
'avg TWA boat2': -138.77927251184835,
'avg_SOG_boat1': 27.282269503546107,
'avg_SOG_boat2': 26.92482269503546,
'boat1_master_leeward': False,
'boat1_name': 'Karl Maeder',
'boat1_total_weight': 99.995,
'boat2_master_leeward': True,
'boat2_name': 'SenseBoard',
'boat2_total_weight': 109.08999999999999,
'duration': 42.21399998664856,
'end_time': 1749561405.263,
'stability_score': 0.9674756220226159,
'start_time': 1749561363.049}
```

Processing: Interval 2: Downwind from 2025-06-10 13:16:03 to 2025-06-10 13:16:45 – SenseBoard vs Karl Maeder

```
=====
Interval 2: Downwind from 2025-06-10 13:16:03 to 2025-06-10 13:16:45 – SenseBoard vs Karl Maeder
=====
```

	Run Statistics												
	Avg (SenseBoard)	Avg (Karl Maeder)	Min (SenseBoard)	Min (Karl Maeder)	Max (SenseBoard)	Max (Karl Maeder)	Count (SenseBoard)	Count (Karl Maeder)	StdDev (SenseBoard)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.745	7.745	6.8	6.8	8.696	8.696	422	423	0.6107	0.6101			
TWD	210.7	210.7	209.3	209.3	212.3	212.3	422	423	0.8839	0.8839			
SOG	26.92	27.28	24.6	26.1	27.8	28	422	423	0.6459	0.4334	Karl Maeder	Karl Maeder	Karl Maeder
VMG	20.23	20.77	17.13	17.99	22.17	22.46	422	423	0.7868	0.7704	Karl Maeder	Karl Maeder	Karl Maeder
COG	349.4	350.3	343.1	344.8	358.4	357.1	422	423	2.283	2.09			Karl Maeder
TWA_Abs	138.8	139.6	131.6	133.4	146.4	145.9	422	423	2.225	2.034			
Heel_Lwd	54.75	50.48	33.7	33.7	71.4	61.5	422	423	6.421	4.986	SenseBoard	Karl Maeder	Tie
Side_lines	16.99	11.56	6.8	2.6	25.1	19.8	422	423	3.147	2.991	SenseBoard	Karl Maeder	Tie
Line_C	107.5	90.36	78.1	54.4	140.7	116.6	422	422	11.15	11.76	SenseBoard	SenseBoard	SenseBoard
Total_lines	124.6	102.3	87.4	61	155	133.5	422	423	12.63	13.49	SenseBoard	SenseBoard	SenseBoard

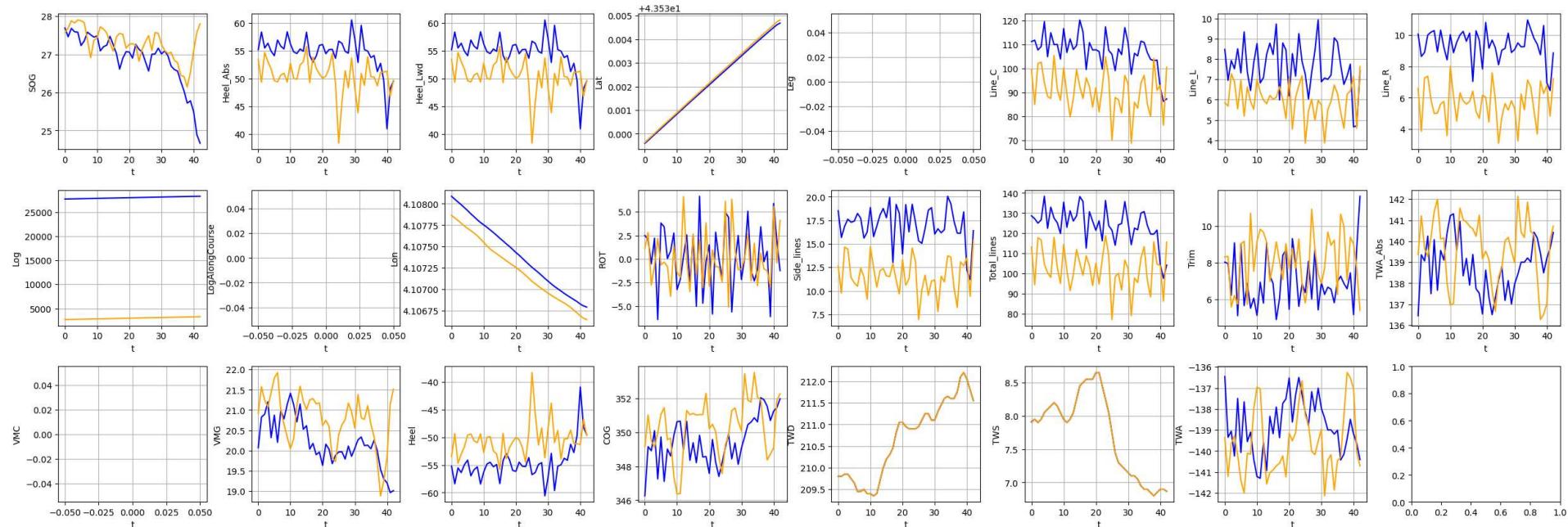
Distance Summary

	SenseBoard	Karl Maeder
Distance [m]	582.084016	592.157245
Straight Line [m]	581.625415	591.762948
Distance as Percentage of Straight Line [%]	100.078848	100.066631

Gain of SenseBoard with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	6.635758	17.202935	6.344832
Final Deficit	16.733575	8.860734	-6.747699
Total Gain	10.097817	-8.342200	-13.092531
Gain per Minute	14.391531	-11.889404	-18.659632

Interval 2: Downwind from 2025-06-10 13:16:03 to 2025-06-10 13:16:45 — SenseBoard vs Karl Maeder - Parameters over time



```
=====
Processing run: 10_06_Run7
=====
```

```
-----  
Interval 2: Downwind  
-----
```

```
{'SOG_variation_boat1': 0.5013496568388439,  
'SOG_variation_boat2': 0.48395425116547436,  
'avg TWA boat1': -140.14205468749998,  
'avg TWA boat2': -140.84758984375,  
'avg_SOG_boat1': 27.2220703125,  
'avg_SOG_boat2': 27.58359375,  
'boat1_master_leeward': True,  
'boat1_name': 'Karl Maeder',  
'boat1_total_weight': 99.995,  
'boat2_master_leeward': False,  
'boat2_name': 'SenseBoard',  
'boat2_total_weight': 109.08999999999999,  
'duration': 51.10599994659424,  
'end_time': 1749561975.263,  
'stability_score': 0.9756249057051376,  
'start_time': 1749561924.157}
```

Processing: Interval 2: Downwind from 2025-06-10 13:25:24 to 2025-06-10 13:26:15 – Karl Maeder vs SenseBoard

```
=====  
Interval 2: Downwind from 2025-06-10 13:25:24 to 2025-06-10 13:26:15 – Karl Maeder vs SenseBoard  
=====
```

Run Statistics

	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.349	7.349	6.7	6.7	7.896	7.896	512	512	0.3178	0.3177			
TWD	208.9	208.9	207.7	207.7	210.2	210.2	512	512	0.7588	0.7588			
SOG	27.22	27.58	26.4	26.6	28.5	28.5	512	512	0.5013	0.4832	SenseBoard	SenseBoard	SenseBoard
VMG	20.88	21.35	19.1	18.68	22.53	23.37	512	512	0.6006	0.9401	SenseBoard	Karl Maeder	Tie
COG	349.1	349.8	343.5	342	354.4	356.9	512	512	1.929	2.892		Karl Maeder	Karl Maeder
TWA_Abs	140.1	140.8	134	131.8	146	148.5	512	512	2.112	3.222			
Heel_Lwd	51.11	54.72	35.2	35.9	66.8	70.3	512	512	5.039	5.97	SenseBoard	Karl Maeder	Tie
Side_lines	10.59	17.36	0.9	7.7	20.4	27.1	512	512	2.921	2.925	SenseBoard	Karl Maeder	Tie
Line_C	88.82	109.6	61.2	77.9	127.8	156.3	510	512	11.67	10.5	SenseBoard	SenseBoard	SenseBoard
Total_lines	99.36	127	64.4	88.4	138.5	179.3	512	512	13.13	11.18	SenseBoard	SenseBoard	SenseBoard

Distance Summary

Karl Maeder SenseBoard

Distance [m] 715.517392 725.710961

Straight Line [m] 715.111526 724.775972

Distance as Percentage of Straight Line [%] 100.056756 100.129004

Gain of Karl Maeder with respect to SenseBoard

Forward Lateral VMG

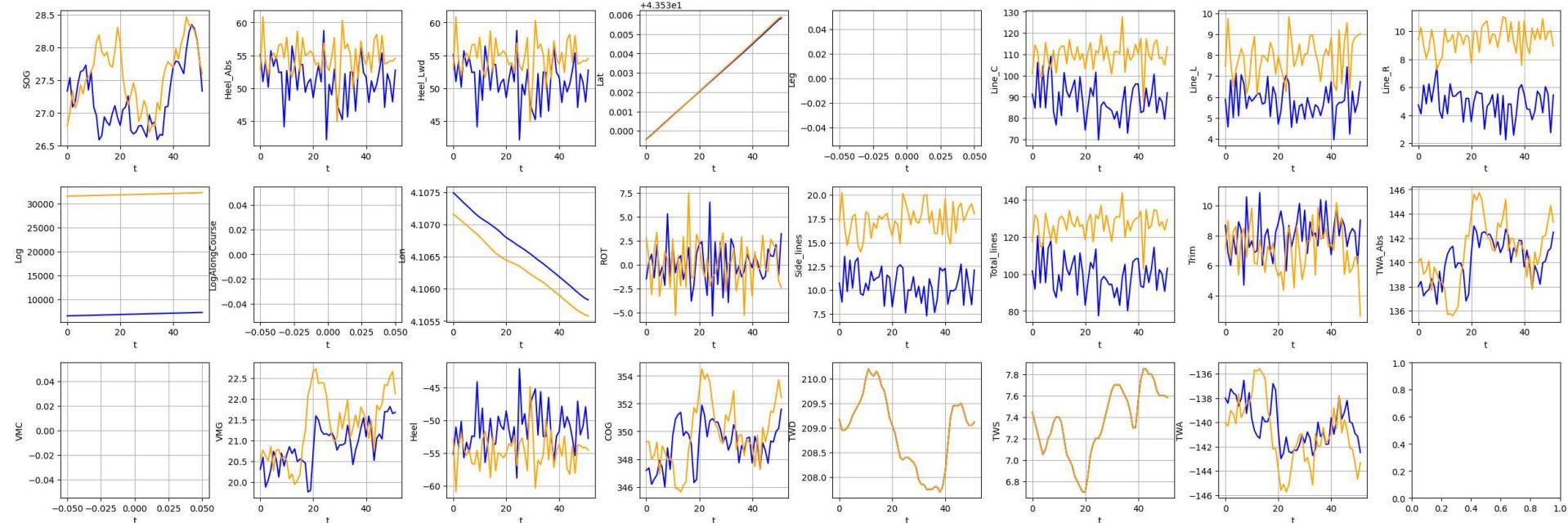
Initial Deficit 2.480150 27.140883 15.490353

Final Deficit 12.110298 18.012490 2.247645

Total Gain 9.630148 -9.128393 -13.242708

Gain per Minute 11.306087 -10.717011 -15.547342

Interval 2: Downwind from 2025-06-10 13:25:24 to 2025-06-10 13:26:15 — Karl Maeder vs SenseBoard - Parameters over time



— Karl Maeder SOG — SenseBoard SOG

```
=====
Processing run: 10_06_Run8
=====
```

```
-----
Interval 2: Downwind
-----
{'SOG_variation_boat1': 0.5399102592381619,
 'SOG_variation_boat2': 0.4688635040032667,
 'avg TWA boat1': -141.74818333333332,
 'avg TWA boat2': -141.80634728033473,
 'avg_SOG_boat1': 27.33354166666667,
 'avg_SOG_boat2': 27.5,
 'boat1_master_leeward': False,
 'boat1_name': 'Karl Maeder',
 'boat1_total_weight': 99.995,
 'boat2_master_leeward': True,
 'boat2_name': 'SenseBoard',
 'boat2_total_weight': 109.08999999999999,
 'duration': 47.89499998926514,
 'end_time': 1749562585.552,
 'stability_score': 0.967918113005577,
 'start_time': 1749562537.657}
```

Processing: Interval 2: Downwind from 2025-06-10 13:35:37 to 2025-06-10 13:36:25 – SenseBoard vs Karl Maeder

```
=====
Interval 2: Downwind from 2025-06-10 13:35:37 to 2025-06-10 13:36:25 – SenseBoard vs Karl Maeder
=====
```

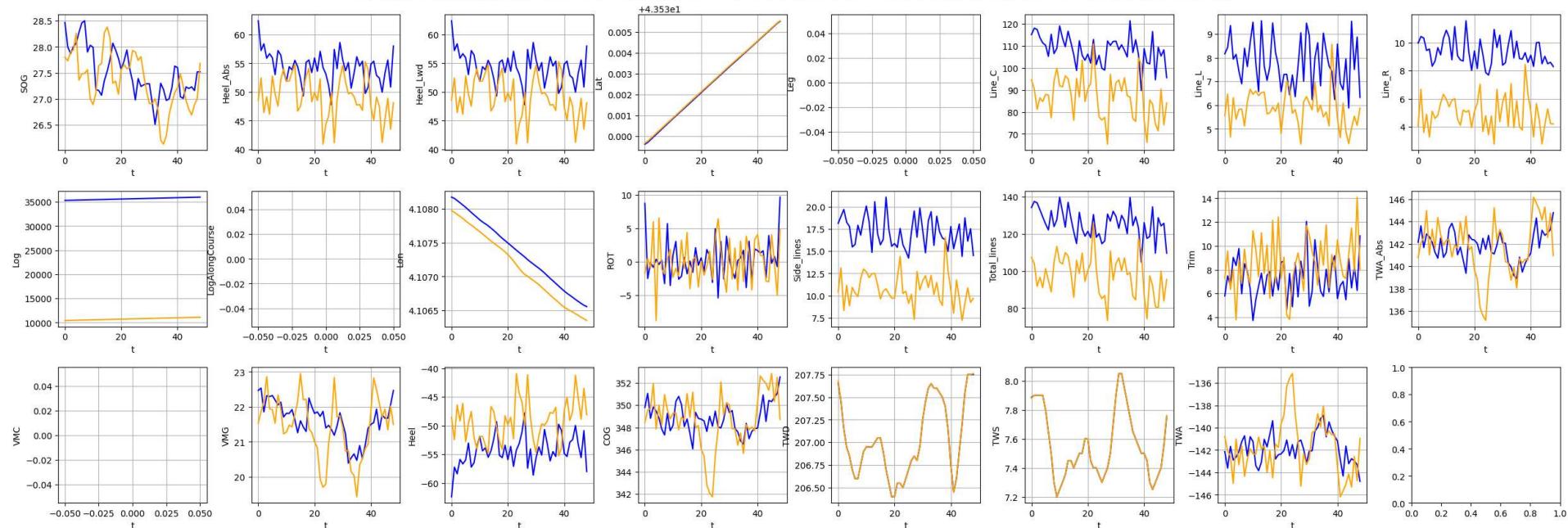
Run Statistics

	Avg (SenseBoard)	Avg (Karl Maeder)	Min (SenseBoard)	Min (Karl Maeder)	Max (SenseBoard)	Max (Karl Maeder)	Count (SenseBoard)	Count (Karl Maeder)	StdDev (SenseBoard)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.551	7.552	7.2	7.2	8.096	8.095	478	480	0.2323	0.2326			
TWD	207	207	206.3	206.3	207.8	207.8	478	480	0.4054	0.4075			
SOG	27.5	27.33	26.4	26	28.6	28.5	478	480	0.4638	0.5399	SenseBoard	SenseBoard	SenseBoard
VMG	21.6	21.44	19.39	18.79	23.31	23.89	478	480	0.6685	0.961	SenseBoard	SenseBoard	SenseBoard
COG	348.8	348.8	343	339.4	355.3	356.1	478	480	1.891	2.959			SenseBoard
TWA_Abs	141.8	141.7	135.9	132.9	147.5	148.6	478	480	1.903	2.928			
Heel_Lwd	54.21	49.14	39.2	31.2	70.7	66.2	478	480	5.447	5.842	SenseBoard	SenseBoard	SenseBoard
Side_lines	17.15	10.82	6.3	3	26.8	20.9	478	480	3.285	2.951	SenseBoard	Karl Maeder	Tie
Line_C	108.3	87.03	78.4	60.8	133.9	125.3	478	479	9.369	13.13	SenseBoard	SenseBoard	SenseBoard
Total_lines	125.4	97.63	91.1	64.5	153.8	140.2	478	480	10.79	14.63	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	SenseBoard	Karl Maeder
Distance [m]	674.678757	673.655103
Straight Line [m]	674.305252	672.759926
Distance as Percentage of Straight Line [%]	100.055391	100.133060
Gain of SenseBoard with respect to Karl Maeder		
Forward	Lateral	VMG
Initial Deficit	8.177704	14.500031
Final Deficit	6.627672	15.843137
Total Gain	-1.550032	1.343107
Gain per Minute	-1.949808	1.689513
	2.577065	

Interval 2: Downwind from 2025-06-10 13:35:37 to 2025-06-10 13:36:25 — SenseBoard vs Karl Maeder - Parameters over time



— SenseBoard SOG — Karl Maeder SOG

```
=====
Processing run: 10_06_Run9
=====
```

```
-----
Interval 2: Downwind
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```

```
{'SOG_variation_boat1': 0.6785337953400632,
'SOG_variation_boat2': 0.48984557892715896,
'avg TWA boat1': -141.96290425531916,
'avg TWA boat2': -142.04973931623934,
'avg_SOG_boat1': 26.97276595744681,
'avg_SOG_boat2': 27.57255319148936,
'boat1_master_leeward': True,
'boat1_name': 'Karl Maeder',
'boat1_total_weight': 99.995,
'boat2_master_leeward': False,
'boat2_name': 'SenseBoard',
'boat2_total_weight': 109.08999999999999,
'duration': 46.882999897003174,
'end_time': 1749562995.342,
'stability_score': 0.9723012641797767,
'start_time': 1749562948.459}
```

Processing: Interval 2: Downwind from 2025-06-10 13:42:28 to 2025-06-10 13:43:15 – Karl Maeder vs SenseBoard

```
=====
Interval 2: Downwind from 2025-06-10 13:42:28 to 2025-06-10 13:43:15 – Karl Maeder vs SenseBoard
=====
```

Run Statistics

	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.798	8.801	7.7	7.7	10.2	10.2	470	468	0.8433	0.844			
TWD	208	208	207.4	207.4	208.6	208.6	470	468	0.2684	0.2689			
SOG	26.97	27.57	25.2	26.4	28.5	28.4	470	468	0.6785	0.4882	SenseBoard	SenseBoard	SenseBoard
VMG	21.23	21.72	18.95	19.41	23.1	23.6	470	468	0.8641	0.8715	SenseBoard	Karl Maeder	Tie
COG	350	350.1	344.7	343.2	355.4	355.4	470	468	2.189	2.459		Karl Maeder	Karl Maeder
TWA_Abs	142	142	136.3	134.9	147.4	147.5	470	468	2.308	2.488			
Heel_Lwd	49.3	53.36	7	36.5	63.7	68.5	470	468	6.641	5.855	SenseBoard	SenseBoard	SenseBoard
Side_lines	9.907	16.24	1	8.8	19	23.4	470	468	3.064	2.572	SenseBoard	SenseBoard	SenseBoard
Line_C	84.83	106.1	39.4	67.7	117.2	144.8	470	468	12.29	11.18	SenseBoard	SenseBoard	SenseBoard
Total_lines	94.69	122.4	50	78.7	130.3	164.9	470	468	14.15	12.07	SenseBoard	SenseBoard	SenseBoard

Distance Summary

Karl Maeder SenseBoard

Distance [m] 650.573241 662.100228

Straight Line [m] 650.099856 661.484797

Distance as Percentage of Straight Line [%] 100.072817 100.093038

Gain of Karl Maeder with respect to SenseBoard

Forward Lateral VMG

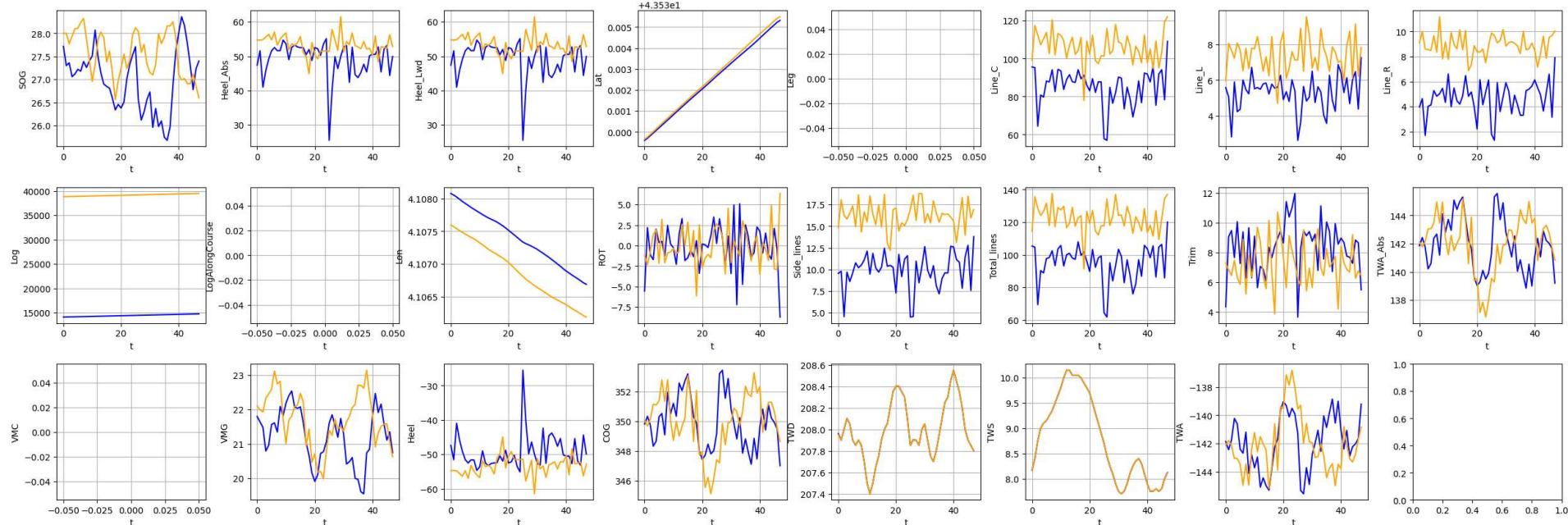
Initial Deficit 14.260343 37.203773 11.692301

Final Deficit 25.666220 36.176934 2.076189

Total Gain 11.405877 -1.026839 -9.616112

Gain per Minute 14.597031 -1.314129 -12.306523

Interval 2: Downwind from 2025-06-10 13:42:28 to 2025-06-10 13:43:15 — Karl Maeder vs SenseBoard - Parameters over time



— Karl Maeder SOG — SenseBoard SOG

Error: At least two CSV files are required.