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

summary_path = "summary.json"

base_dir = "../Data_Sailnjord/Straight_lines"

# 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)
        print("\n\nProcessing:", run_path)
        try:
            process_all_run(run_path, summary_path, tot=False)
        except ValueError as e:
            print(f"Error: {e}")
```

```
Processing: ../Data_Sailnjord/Straight_lines\06_06\06_06_Run1
Processing only reduced intervals for Gian Stragiotti vs Karl Maeder
Interval 1 summary:
{'avg TWA boat1': 47.52772792607803,
 'avg TWA boat2': 48.092227132579644,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'Karl Maeder',
 'end_time': 1749217781.456,
 'high_sog_duration': 97.30000019073486,
 'min_sog_used': 19.4,
 'start_time': 1749217684.156}

================================================================================
Interval 1: Upwind from 2025-06-06 13:48:04 to 2025-06-06 13:49:41: Gian Stragiotti vs Karl Maeder
================================================================================
```

Run Statistics

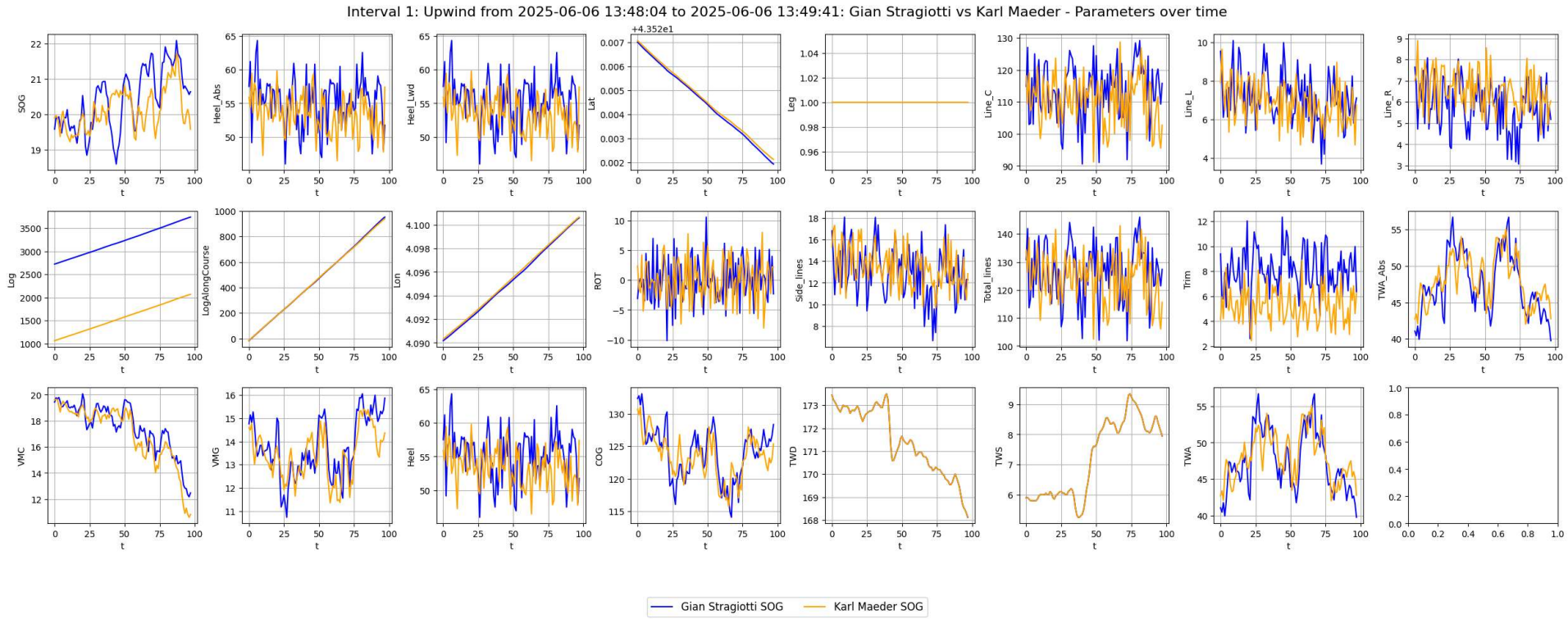
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.209	7.208	5.204	5.204	9.395	9.394	974	973	1.287	1.288			
TWD	171.5	171.5	168.1	168.1	173.5	173.5	974	973	1.415	1.411			
SOG	20.41	20.12	18.4	18.7	22.3	22.2	974	973	0.8675	0.5892	Gian Stragiotti	Karl Maeder	Tie
VMG	13.74	13.42	9.711	10.02	17.37	16.49	974	973	1.424	1.189	Gian Stragiotti	Karl Maeder	Tie
COG	123.9	123.4	109.9	112.5	137.2	136.9	974	973	4.738	3.92		Karl Maeder	Karl Maeder
TWA_Abs	47.53	48.09	35.49	36.52	60.84	58.91	974	973	4.808	3.875			
Heel_Lwd	55.22	53.42	36.5	34.3	73.5	76.1	974	973	6.243	5.99	Gian Stragiotti	Karl Maeder	Tie
Side_lines	12.94	13.46	2.2	4.9	23.7	25.5	974	973	3.716	3.669	Karl Maeder	Karl Maeder	Karl Maeder
Line_C	113.8	110.5	71.9	71.8	152	141	967	973	11.94	11.58	Gian Stragiotti	Karl Maeder	Tie
Total_lines	126.6	124	82.4	79.1	170.1	162.4	974	973	13.61	13.28	Gian Stragiotti	Karl Maeder	Tie

Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	1024.114025	1008.833910
Straight Line [m]	1018.340761	1004.399795
Distance as Percentage of Straight Line [%]	100.566929	100.441469

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	5.466857	-12.840886	-5.779823
Final Deficit	-8.524018	-20.870516	-21.149719
Total Gain	-13.990875	-8.029630	-15.369896
Gain per Minute	-8.627467	-4.951467	-9.477839




```
Interval 2 summary:
{'avg TWA boat1': -126.42702176870749,
 'avg TWA boat2': -122.44802043596731,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'Karl Maeder',
 'end_time': 1749217960.656,
 'high_sog_duration': 73.39699983596802,
 'min_sog_used': 24.6,
 'start_time': 1749217887.259}

================================================================================
Interval 2: Downwind from 2025-06-06 13:51:27 to 2025-06-06 13:52:40: Gian Stragiotti vs Karl Maeder
================================================================================
```

Run Statistics

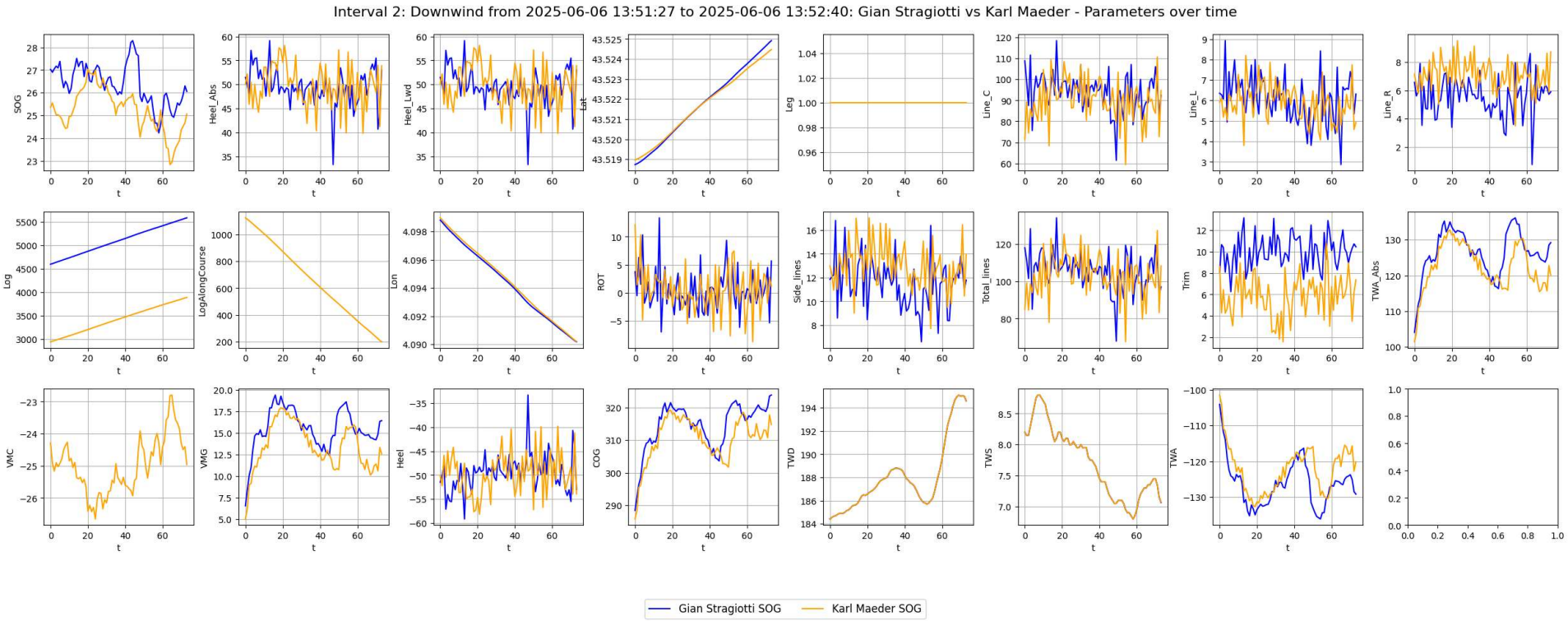
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.708	7.709	6.8	6.8	8.8	8.8	735	734	0.5666	0.5664			
TWD	188	188	184.4	184.4	195.3	195.3	735	734	2.995	2.988			
SOG	26.37	25.21	24.2	22.6	28.3	27.4	735	734	0.9074	0.9737	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	15.53	13.48	4.514	2.636	20.2	19.98	735	734	2.458	2.831	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	314.4	310.4	284	280.4	327.8	323.7	735	734	7.298	7.123		Karl Maeder	Karl Maeder
TWA_Abs	126.4	122.4	99.59	96.03	139.2	137.3	735	734	6.656	6.807			
Heel_Lwd	49.48	49.67	17.1	28.3	67.3	72	735	734	6.769	7.612	Karl Maeder	Gian Stragiotti	Tie
Side_lines	11.55	12.99	3.1	3.7	22.1	25.3	735	734	3.161	3.399	Karl Maeder	Gian Stragiotti	Tie
Line_C	94	90.01	55.6	54.2	129.1	131.5	732	734	11.85	13.63	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	105.5	103.1	61.9	59.7	151.1	153.5	735	734	13	15.64	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti

Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	996.761609	951.566212
Straight Line [m]	987.691050	943.163538
Distance as Percentage of Straight Line [%]	100.918360	100.890903

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	9.545003	-27.792163	-28.025776
Final Deficit	-37.189038	34.472000	49.823707
Total Gain	-46.734041	62.264162	77.849484
Gain per Minute	-38.203775	50.899216	63.639781




```
Processing: ../Data_Sailnjord/Straight_lines\06_06\06_06_Run2
Processing only reduced intervals for Gian Stragiotti vs Karl Maeder
Interval 1 summary:
{'avg TWA boat1': 58.09369238187078,
 'avg TWA boat2': 59.46659594985535,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'Karl Maeder',
 'end_time': 1749218506.357,
 'high_sog_duration': 103.6010000705719,
 'min_sog_used': 18.9,
 'start_time': 1749218402.756}

================================================================================
Interval 1: Upwind from 2025-06-06 14:00:02 to 2025-06-06 14:01:46: 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	7.93	7.93	6.1	6.1	8.7	8.7	1037	1037	0.5807	0.5808			
TWD	181.5	181.5	176.3	176.3	184.8	184.8	1037	1037	2.633	2.633			
SOG	20.64	20.03	17.9	17.8	22.7	22	1037	1037	0.8659	0.8261	Gian Stragiotti	Karl Maeder	Tie
VMG	10.85	10.15	2.002	5.209	15.39	13.17	1037	1037	1.932	1.413	Gian Stragiotti	Karl Maeder	Tie
COG	123.4	122	99.6	108.4	137.2	131.3	1037	1037	5.219	4.038		Karl Maeder	Karl Maeder
TWA_Abs	58.09	59.47	44.3	48.4	84.8	75.84	1037	1037	5.805	4.357			
Heel_Lwd	54.5	54.05	29.5	34.5	69.9	73.9	1037	1037	6.031	5.677	Gian Stragiotti	Karl Maeder	Tie
Side_lines	10.82	2.624	1.8	2.47	24.1	2.779	1037	1037	3.682	0.08946	Gian Stragiotti	Karl Maeder	Tie
Line_C	111.1	113.1	61.8	81.7	162.3	146.3	1032	1037	13.31	10.63	Karl Maeder	Karl Maeder	Karl Maeder
Total_lines	122	20.94	64.2	20.36	176.8	21.53	1037	1037	14.73	0.3375	Gian Stragiotti	Karl Maeder	Tie

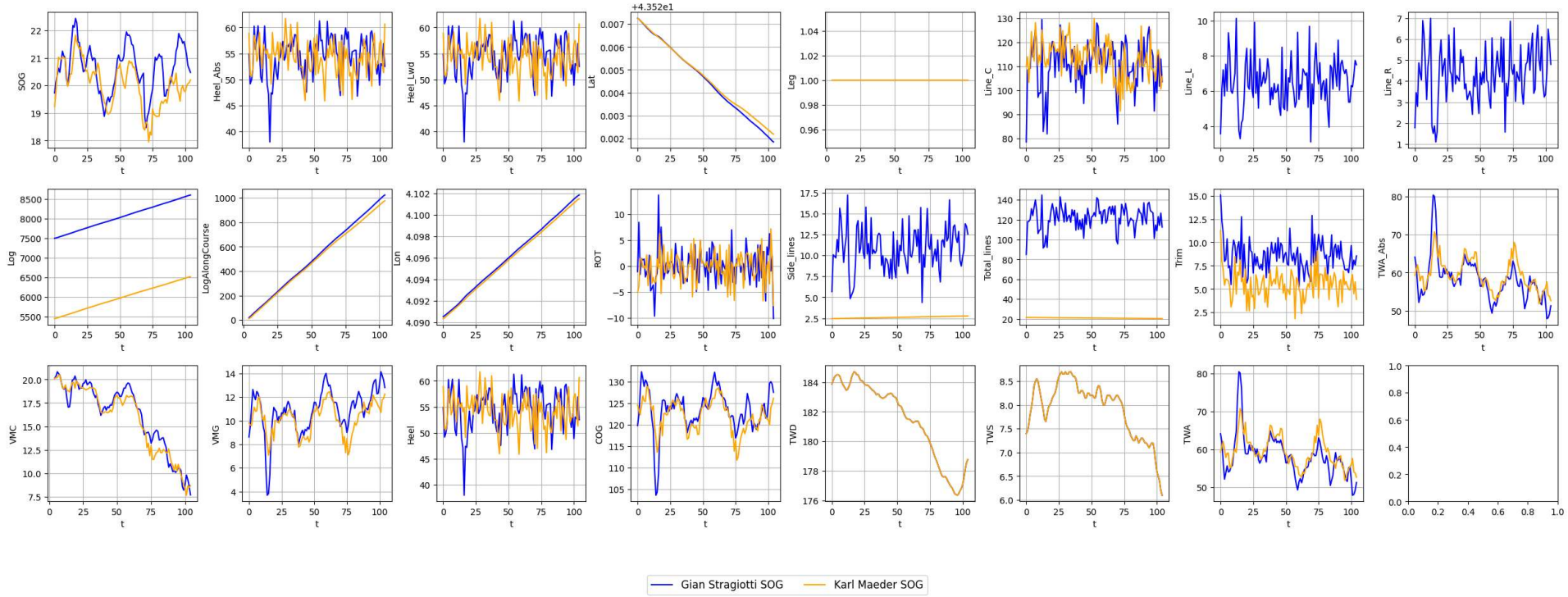
Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	1103.399242	1070.267511
Straight Line [m]	1096.252597	1065.199818
Distance as Percentage of Straight Line [%]	100.651916	100.475750

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	-12.807311	8.434714	0.389142
Final Deficit	-44.177020	-16.451852	-37.319160
Total Gain	-31.369709	-24.886567	-37.708303
Gain per Minute	-18.167610	-14.412930	-21.838575

Interval 1: Upwind from 2025-06-06 14:00:02 to 2025-06-06 14:01:46: Gian Stragiotti vs Karl Maeder - Parameters over time




```
Interval 2 summary:
{'avg TWA boat1': -127.75345068928952,
 'avg TWA boat2': -123.66420996818664,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'Karl Maeder',
 'end_time': 1749218770.356,
 'high_sog_duration': 94.21199989318848,
 'min_sog_used': 22.9,
 'start_time': 1749218676.144}

================================================================================
Interval 2: Downwind from 2025-06-06 14:04:36 to 2025-06-06 14:06:10: 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	6.336	6.336	4.904	4.904	7.3	7.3	943	943	0.5988	0.5988			
TWD	180.7	180.7	171	171	184.4	184.4	943	943	4.126	4.126			
SOG	23.9	23.05	21.9	21.2	25.7	24.7	943	943	0.7897	0.6649	Gian Stragiotti	Karl Maeder	Tie
VMG	14.32	12.64	6.633	6.846	22.48	19.44	943	943	3.813	2.922	Gian Stragiotti	Karl Maeder	Tie
COG	308.5	304.4	282.7	285.5	329.4	322.2	943	943	9.209	5.89		Karl Maeder	Karl Maeder
TWA_Abs	127.8	123.7	105.9	107.6	154	146.4	943	943	12.03	8.791			
Heel_Lwd	48.24	47.85	25.6	18.4	69.4	70.4	943	943	6.932	7.446	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	11.4	3.427	2.2	3.286	21.4	3.568	943	943	2.965	0.08136	Gian Stragiotti	Karl Maeder	Tie
Line_C	89.56	85.87	41.6	58.4	133.6	126.1	938	943	12.85	12.45	Gian Stragiotti	Karl Maeder	Tie
Total_lines	101	17.92	45.6	17.39	154.7	18.45	943	943	14.33	0.3069	Gian Stragiotti	Karl Maeder	Tie

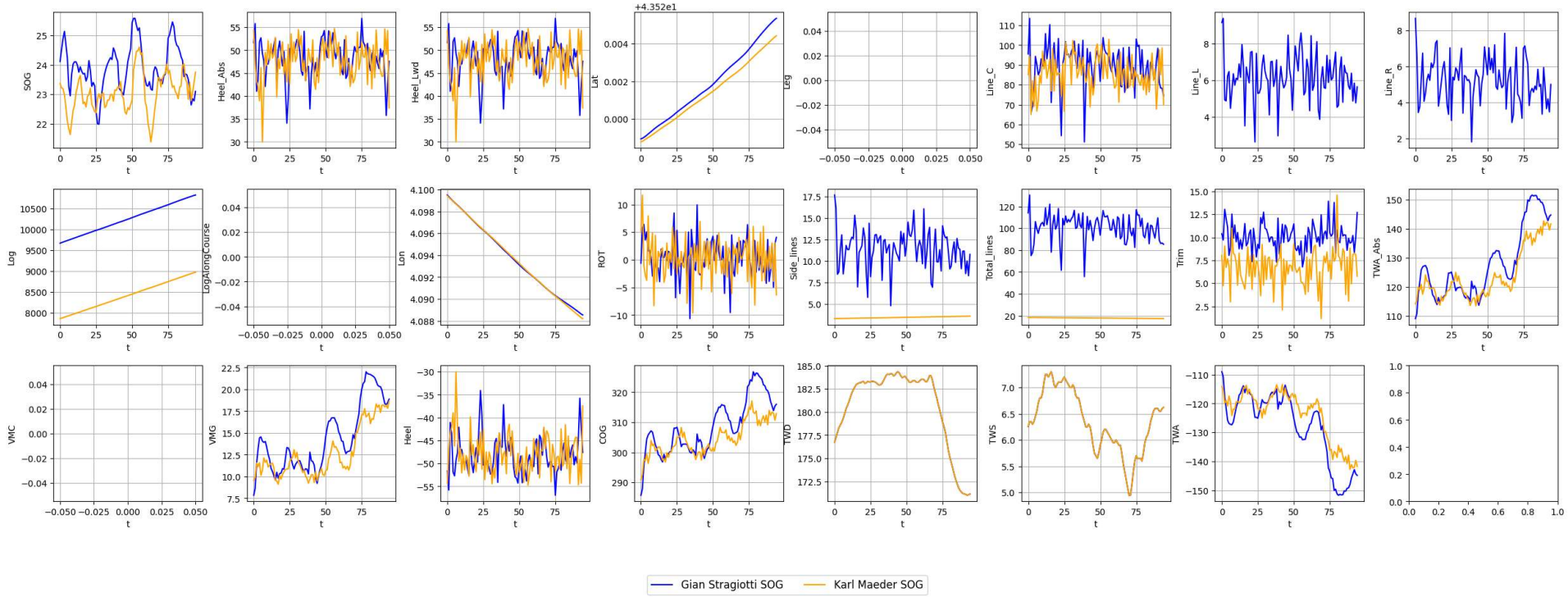
Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	1159.678331	1118.260087
Straight Line [m]	1142.955706	1110.312037
Distance as Percentage of Straight Line [%]	101.463104	100.715839

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	-7.230597	17.957714	18.626855
Final Deficit	-42.686754	97.606650	103.315950
Total Gain	-35.456157	79.648937	84.689095
Gain per Minute	-22.580663	50.725345	53.935228

Interval 2: Downwind from 2025-06-06 14:04:36 to 2025-06-06 14:06:10: Gian Stragiotti vs Karl Maeder - Parameters over time




```
Processing: ../Data_Sailnjord/Straight_lines\06_06\06_06_Run3
Processing only reduced intervals for Gian Stragiotti vs Karl Maeder
Interval 1 summary:
{'avg TWA boat1': 50.98377227722772,
 'avg TWA boat2': 52.04162698412698,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'Karl Maeder',
 'end_time': 1749219179.259,
 'high_sog_duration': 100.89900016784668,
 'min_sog_used': 19.6,
 'start_time': 1749219078.36}

================================================================================
Interval 1: Upwind from 2025-06-06 14:11:18 to 2025-06-06 14:12:59: 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	7.562	7.562	6.4	6.4	8.3	8.3	1010	1008	0.3945	0.3945			
TWD	177.8	177.8	173.5	173.6	182.9	182.9	1010	1008	2.767	2.766			
SOG	21.02	20.29	19.5	18.1	22.3	21.9	1010	1008	0.5588	0.7718	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	13.15	12.4	7.939	8.308	17.22	16.1	1010	1008	1.676	1.389	Gian Stragiotti	Karl Maeder	Tie
COG	126.8	125.7	110.9	111.6	141.3	138	1010	1008	5.287	4.559		Karl Maeder	Karl Maeder
TWA_Abs	50.98	52.04	34.12	35.74	67.21	66.46	1010	1008	6.225	5.49			
Heel_Lwd	57.14	53.9	39.7	29.8	73.2	72.9	1010	1008	5.623	6.338	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	11.1	12.86	2.8	3.9	24	24.4	1010	1008	3.482	4.073	Karl Maeder	Gian Stragiotti	Tie
Line_C	118.5	111.9	76.6	76.7	154.9	152.2	1003	1008	10.65	13.1	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	129.4	124.9	82.1	82.4	165.5	171.3	1010	1008	11.79	15.45	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti

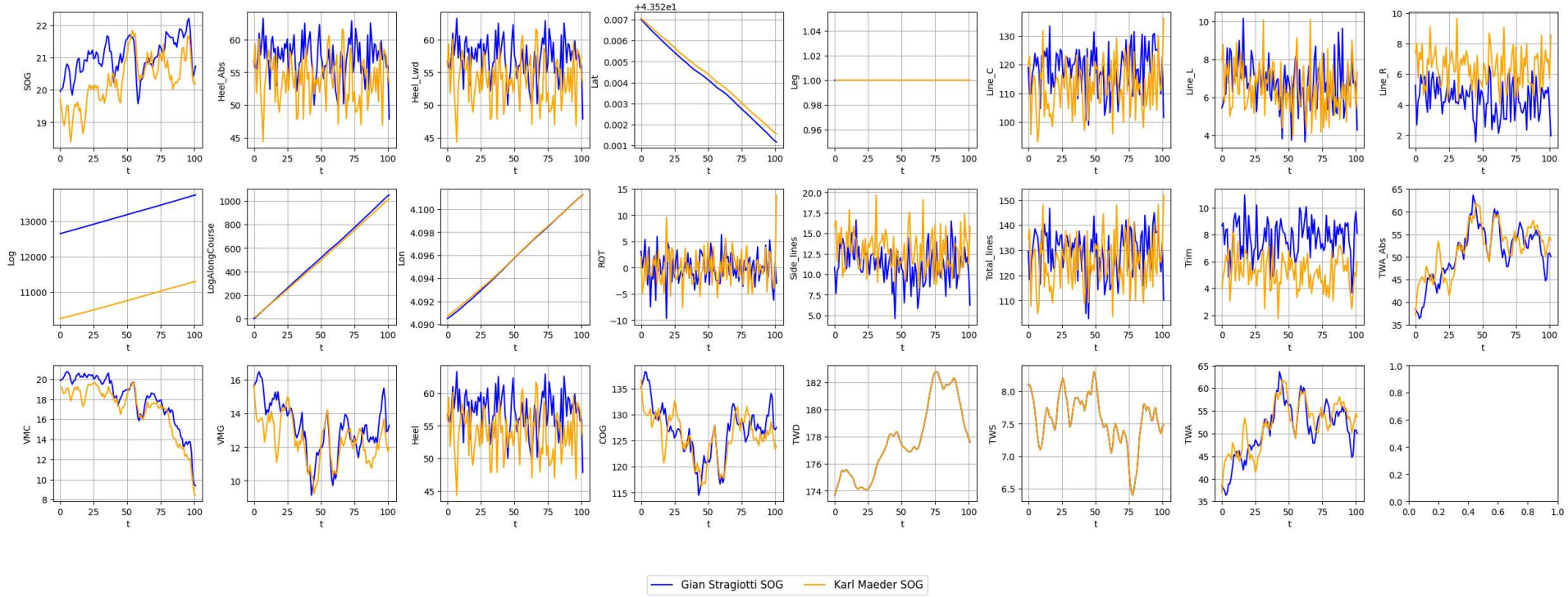
Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	1094.059465	1054.173786
Straight Line [m]	1087.085324	1048.440017
Distance as Percentage of Straight Line [%]	100.641545	100.546886

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	11.419933	-15.495366	-4.849646
Final Deficit	-27.438028	-35.555484	-44.898786
Total Gain	-38.857960	-20.060118	-40.049140
Gain per Minute	-23.107044	-11.928831	-23.815383

Interval 1: Upwind from 2025-06-06 14:11:18 to 2025-06-06 14:12:59: Gian Stragiotti vs Karl Maeder - Parameters over time




```
Interval 2 summary:
{'avg TWA boat1': -141.58895720399428,
 'avg TWA boat2': -138.27849857142857,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'Karl Maeder',
 'end_time': 1749219355.956,
 'high_sog_duration': 69.99699997901917,
 'min_sog_used': 24.3,
 'start_time': 1749219285.959}

================================================================================
Interval 2: Downwind from 2025-06-06 14:14:45 to 2025-06-06 14:15:55: Gian Stragiotti vs Karl Maeder
================================================================================
```

Run Statistics

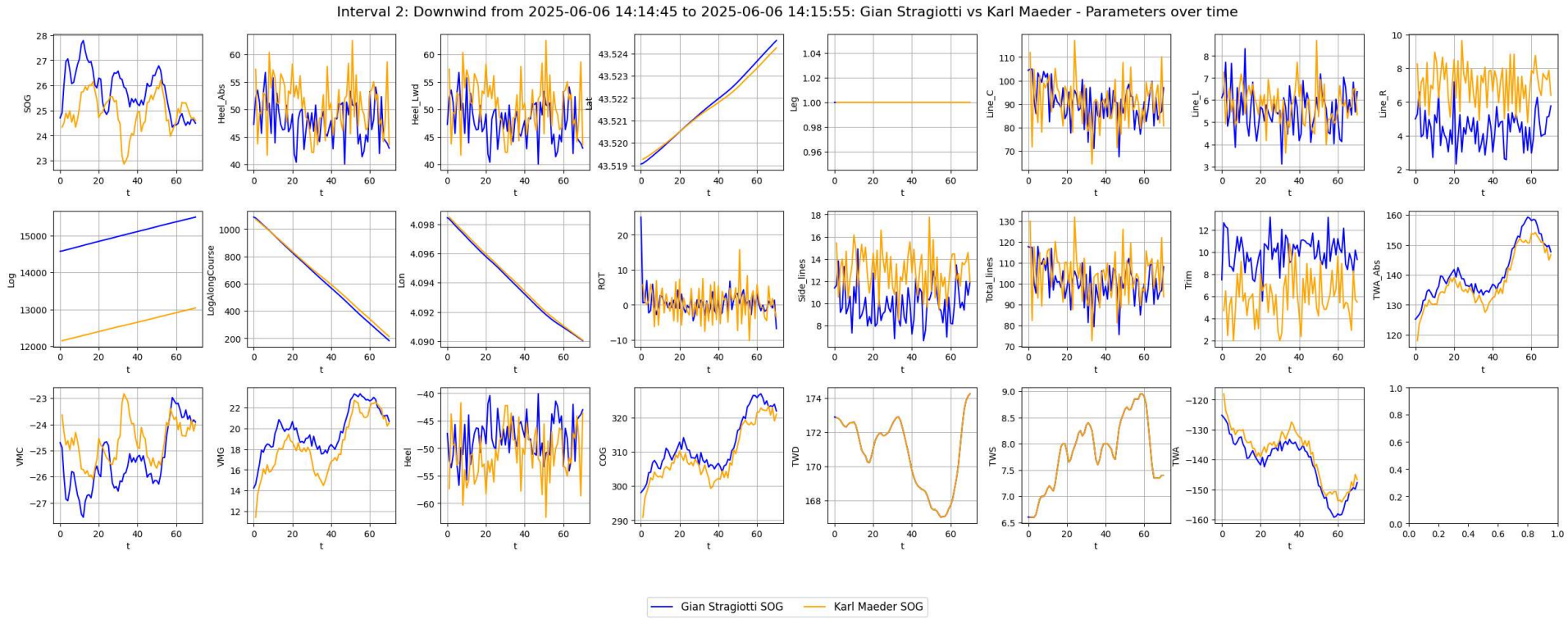
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.865	7.867	6.6	6.6	8.996	8.995	701	700	0.6369	0.6356			
TWD	170.7	170.7	167	167	174.3	174.3	701	700	2.085	2.084			
SOG	25.8	24.93	24.2	22.7	27.9	26.4	701	700	0.9023	0.764	Gian Stragiotti	Karl Maeder	Tie
VMG	19.91	18.39	13.99	9.747	23.89	23.37	701	700	2.095	2.699	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	312.2	308.9	294.8	286.4	330.1	326.5	701	700	7.99	8.12		Gian Stragiotti	Gian Stragiotti
TWA_Abs	141.6	138.3	122	113.5	162.3	158.3	701	700	9.067	9.1			
Heel_Lwd	47.92	50.84	27.3	31.6	72.8	74.9	701	700	6.886	7.824	Karl Maeder	Gian Stragiotti	Tie
Side_lines	9.931	12.91	1.6	2.8	18.9	27.7	701	700	2.798	3.348	Karl Maeder	Gian Stragiotti	Tie
Line_C	90.4	91	62.7	59.8	120.7	132.3	695	700	10.66	14.07	Karl Maeder	Gian Stragiotti	Tie
Total_lines	100.5	103.8	68.8	67.6	131.8	155.2	701	700	11.15	15.94	Karl Maeder	Gian Stragiotti	Tie

Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	930.447316	897.648397
Straight Line [m]	920.487809	887.554480
Distance as Percentage of Straight Line [%]	101.081981	101.137273

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	7.814013	-22.224913	-19.934444
Final Deficit	-26.569648	25.254119	36.510487
Total Gain	-34.383660	47.479032	56.444931
Gain per Minute	-29.472972	40.698058	48.383443




```
Processing: ../Data_Sailnjord/Straight_lines\06_06\06_06_Run4
Processing only reduced intervals for Gian Stragiotti vs Karl Maeder
Interval 1 summary:
{'avg TWA boat1': 52.542748685594105,
 'avg TWA boat2': 52.45479578947368,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'Karl Maeder',
 'end_time': 1749219680.559,
 'high_sog_duration': 95.00300002098083,
 'min_sog_used': 17.5,
 'start_time': 1749219585.556}

================================================================================
Interval 1: Upwind from 2025-06-06 14:19:45 to 2025-06-06 14:21:20: Gian Stragiotti vs Karl Maeder
================================================================================
```

Run Statistics

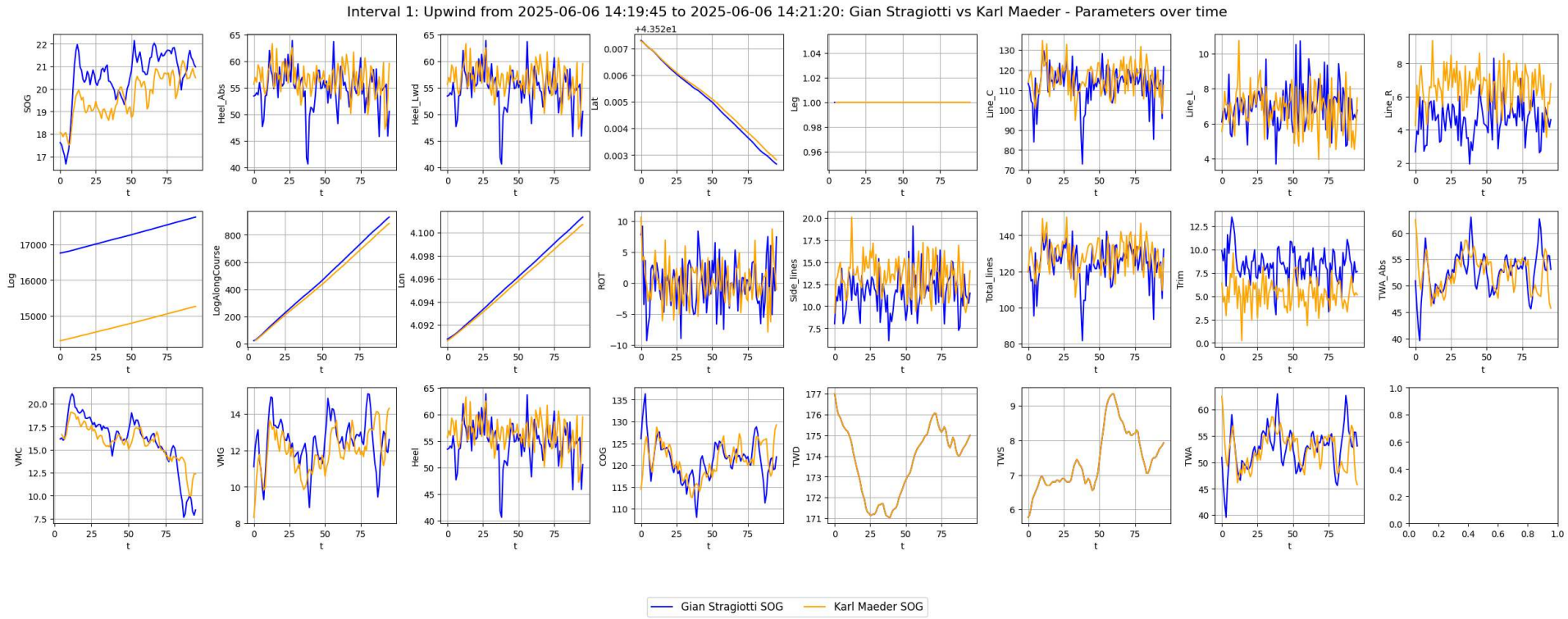
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.457	7.456	5.756	5.756	9.396	9.396	951	950	0.8438	0.8441			
TWD	173.7	173.7	171	171	177.1	177.1	951	950	1.665	1.665			
SOG	20.58	19.65	16.6	17.4	22.3	21.3	951	950	1.193	0.8987	Gian Stragiotti	Karl Maeder	Tie
VMG	12.47	11.96	8.2	7.029	16.21	14.86	951	950	1.355	1.245	Gian Stragiotti	Karl Maeder	Tie
COG	121.2	121.2	106	107.3	139.1	131.3	951	950	4.888	4.226		Karl Maeder	Karl Maeder
TWA_Abs	52.54	52.45	36.99	43.36	65.41	66.88	951	950	4.278	3.67			
Heel_Lwd	54.83	56.58	31.3	40.4	74.6	74.8	951	950	6.31	5.84	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	11.63	13.49	2.2	5.6	26.1	25.5	951	950	3.6	3.484	Karl Maeder	Karl Maeder	Karl Maeder
Line_C	112.6	115.6	62.3	76.1	150.6	153.8	946	950	13.02	11.17	Karl Maeder	Karl Maeder	Karl Maeder
Total_lines	124.3	129.1	75.1	82.6	160.7	176	951	950	14.08	12.68	Karl Maeder	Karl Maeder	Karl Maeder

Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	1009.088114	962.802206
Straight Line [m]	1003.451617	957.894841
Distance as Percentage of Straight Line [%]	100.561711	100.512307

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	-8.170577	8.841264	2.049411
Final Deficit	-53.693525	12.073471	-23.069713
Total Gain	-45.522948	3.232207	-25.119124
Gain per Minute	-28.750428	2.041329	-15.864209




```
Interval 2 summary:
{'avg TWA boat1': -149.96216861219196,
 'avg TWA boat2': -149.48105324675325,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'Karl Maeder',
 'end_time': 1749219917.956,
 'high_sog_duration': 76.99900007247925,
 'min_sog_used': 24.4,
 'start_time': 1749219840.957}

================================================================================
Interval 2: Downwind from 2025-06-06 14:24:00 to 2025-06-06 14:25:17: Gian Stragiotti vs Karl Maeder
================================================================================
```

Run Statistics

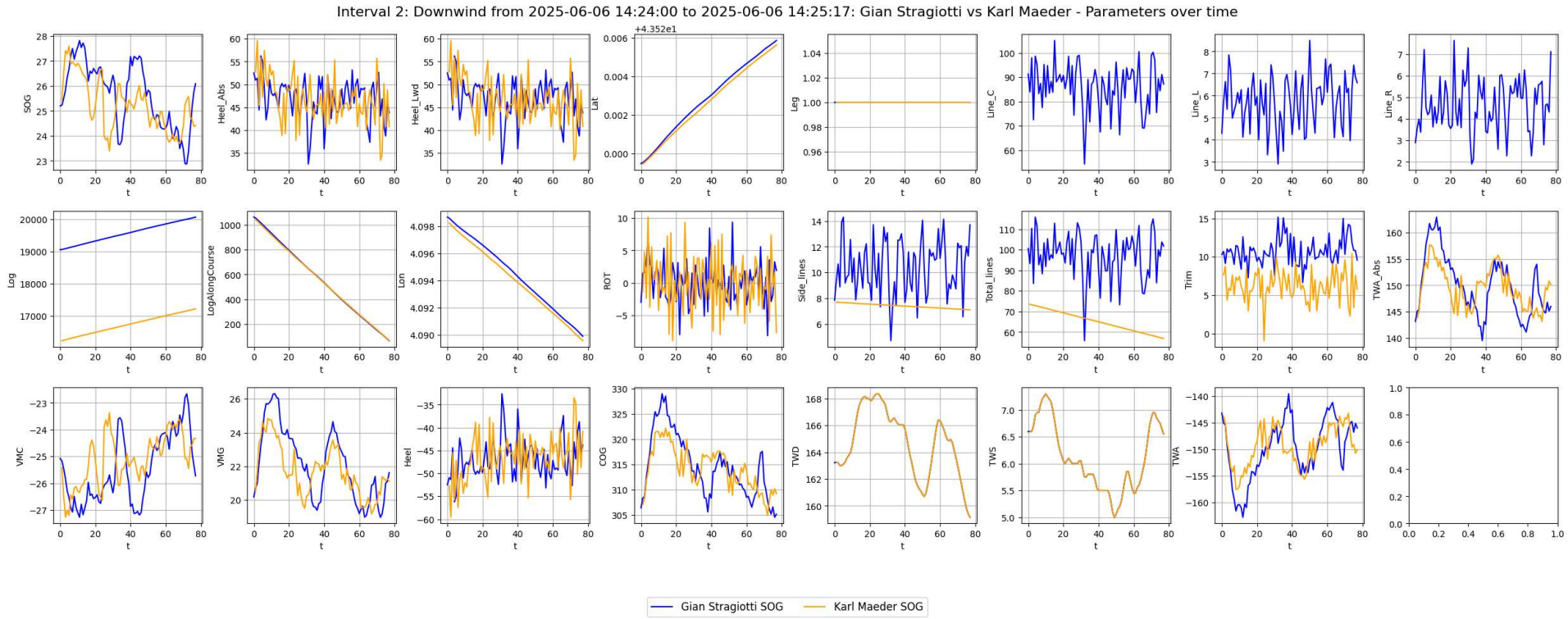
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	6.112	6.111	5	5	7.3	7.3	771	770	0.6304	0.6306			
TWD	164.7	164.7	159	159	168.4	168.4	771	770	2.507	2.508			
SOG	25.66	25.24	22.6	22.5	27.9	27.7	771	770	1.32	1.067	Gian Stragiotti	Karl Maeder	Tie
VMG	22.13	21.7	17.56	16.44	26.77	25.33	771	770	2.17	1.577	Gian Stragiotti	Karl Maeder	Tie
COG	314.7	314.2	298	298.7	330.9	325.6	771	770	6.489	4.738		Karl Maeder	Karl Maeder
TWA_Abs	150	149.5	137.9	137	165.1	161.6	771	770	5.943	4.374			
Heel_Lwd	46.74	46.68	24	19.7	71.7	69.2	771	770	7.129	7.813	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	10.45	7.41	0.2	7.115	19.6	7.705	771	770	2.898	0.1709	Gian Stragiotti	Karl Maeder	Tie
Line_C	86.07	nan	42.7	nan	129.5	nan	764	nan	12.41	nan			
Total_lines	96.91	65.16	45.5	56.75	148.9	73.57	771	770	13.85	4.865	Gian Stragiotti	Karl Maeder	Tie

Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	1017.655604	999.211033
Straight Line [m]	1009.672361	994.469570
Distance as Percentage of Straight Line [%]	100.790677	100.476783

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	15.870210	25.857426	-0.792365
Final Deficit	0.633547	36.107045	17.528727
Total Gain	-15.236663	10.249619	18.321093
Gain per Minute	-11.872879	7.986820	14.276362




```
Processing: ../Data_Sailnjord/Straight_lines\06_06\06_06_Run5
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 50.37893713733075,
 'avg TWA boat2': 50.196473837209304,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749220819.854,
 'high_sog_duration': 103.29200005531311,
 'min_sog_used': 16.8,
 'start_time': 1749220716.562}

================================================================================
Interval 1: Upwind from 2025-06-06 14:38:36 to 2025-06-06 14:40:19: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

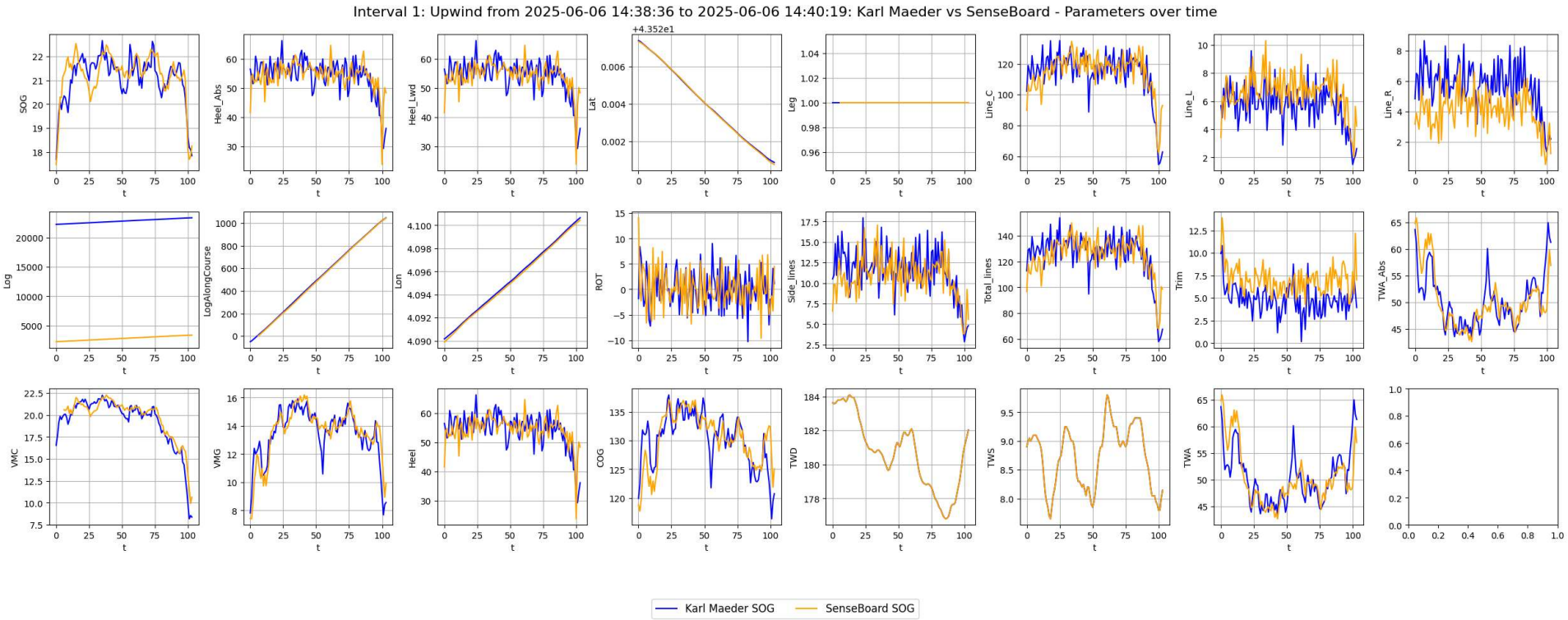
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.719	8.72	7.607	7.605	9.8	9.8	1034	1032	0.5443	0.5445			
TWD	180.7	180.6	176.8	176.8	184.2	184.2	1034	1032	2.115	2.114			
SOG	21.1	21.24	17.3	17.1	22.9	23.6	1034	1032	0.9643	0.9772	SenseBoard	Karl Maeder	Tie
VMG	13.44	13.56	7.349	6.063	17.47	17.12	1034	1032	1.863	1.882	SenseBoard	Karl Maeder	Tie
COG	130.3	130.5	115.6	114.3	141.2	141.3	1034	1032	5.024	4.94		SenseBoard	SenseBoard
TWA_Abs	50.38	50.2	39.52	39.53	65.9	69.3	1034	1032	5.233	5.546			
Heel_Lwd	54.19	54.31	22.4	9	74.8	74.5	1034	1032	7.931	7.016	SenseBoard	SenseBoard	SenseBoard
Side_lines	11.43	10.78	2.2	1.4	26	24.9	1034	1032	4.272	3.915	Karl Maeder	SenseBoard	Tie
Line_C	114	114.7	46.8	50.8	162.8	150.5	1034	1031	19.07	15.64	SenseBoard	SenseBoard	SenseBoard
Total_lines	125.3	125.4	49.3	54	177.2	174.7	1034	1032	21.55	17.69	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	1124.464977	1129.901346
Straight Line [m]	1118.144972	1123.658099
Distance as Percentage of Straight Line [%]	100.565222	100.555618

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-10.513295	16.932705	6.337421
Final Deficit	-5.005395	20.524161	12.616383
Total Gain	5.507900	3.591456	6.278962
Gain per Minute	3.199415	2.086196	3.647308




```
Interval 2 summary:
{'avg TWA boat1': -153.36284957264957,
 'avg TWA boat2': -152.55197941680962,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749220980.555,
 'high_sog_duration': 58.38499999046326,
 'min_sog_used': 26.1,
 'start_time': 1749220922.17}

================================================================================
Interval 2: Downwind from 2025-06-06 14:42:02 to 2025-06-06 14:43:00: Karl Maeder vs SenseBoard
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```

Run Statistics

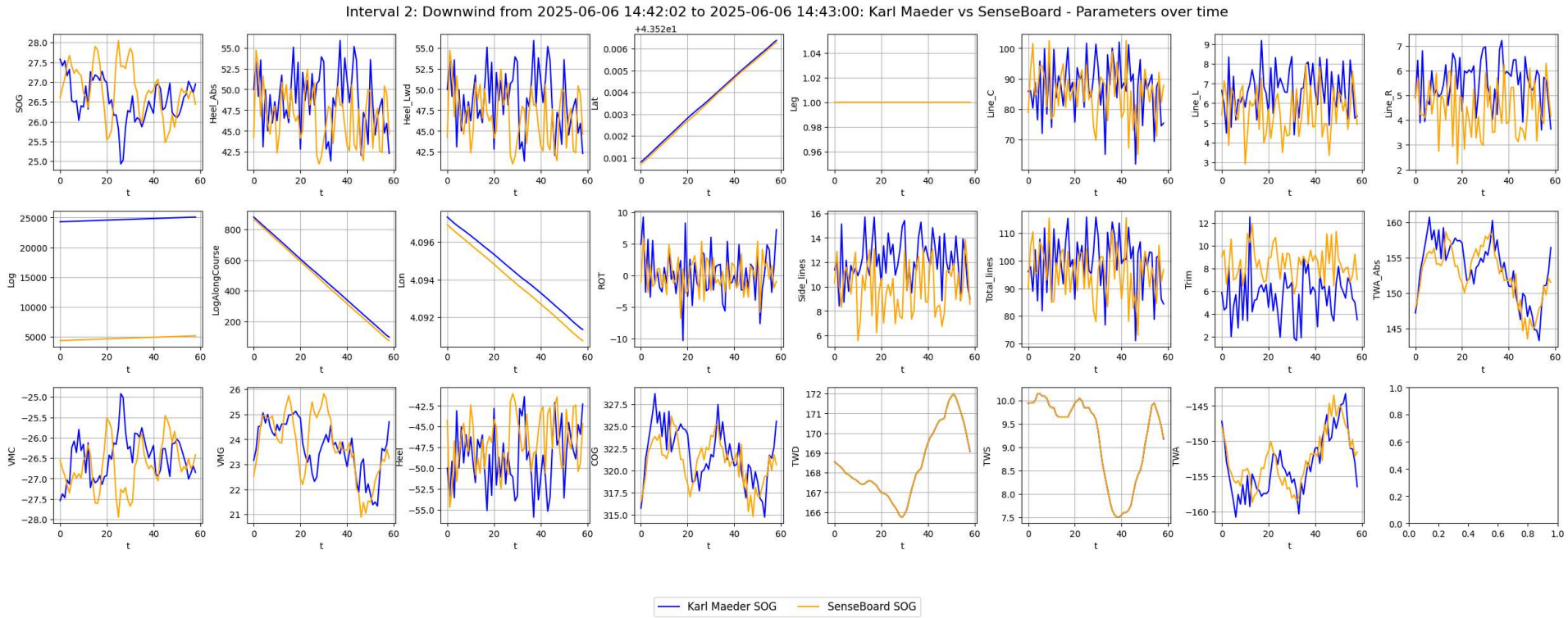
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.209	9.208	7.5	7.5	10.2	10.2	585	583	0.9016	0.9026			
TWD	168.4	168.4	165.7	165.7	172	172	585	583	1.757	1.76			
SOG	26.54	26.8	24.7	25.4	27.8	28.1	585	583	0.5693	0.6584	SenseBoard	Karl Maeder	Tie
VMG	23.64	23.73	20.51	20.51	25.71	26.27	585	583	1.11	1.334	SenseBoard	Karl Maeder	Tie
COG	321.8	321	311	312.8	332.4	328.2	585	583	3.748	3.07		SenseBoard	SenseBoard
TWA_Abs	153.4	152.6	141.8	141.4	164.5	160.9	585	583	4.676	4.202			
Heel_Lwd	48.76	46.79	31.6	30.8	72.7	65.6	585	583	7.065	6.51	Karl Maeder	SenseBoard	Tie
Side_lines	12.19	9.981	3.3	1.7	21.7	20.7	585	583	3.462	3.202	Karl Maeder	SenseBoard	Tie
Line_C	87.37	85.71	56.1	60.5	127.2	113.9	585	579	13.18	10.73	Karl Maeder	SenseBoard	Tie
Total_lines	99.57	95.91	65.6	68.1	145.9	134.3	585	583	15.02	11.71	Karl Maeder	SenseBoard	Tie

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	797.103996	803.490457
Straight Line [m]	794.516750	801.439663
Distance as Percentage of Straight Line [%]	100.325638	100.255889

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	13.631881	32.927964	2.577737
Final Deficit	20.471753	44.319291	1.570959
Total Gain	6.839872	11.391327	-1.006777
Gain per Minute	7.029071	11.706425	-1.034626




```
Processing: ../Data_Sailnjord/Straight_lines\06_06\06_06_Run6
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 46.24676207729469,
 'avg TWA boat2': 46.01592140266022,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749221428.76,
 'high_sog_duration': 82.70199990272522,
 'min_sog_used': 21.4,
 'start_time': 1749221346.058}

================================================================================
Interval 1: Upwind from 2025-06-06 14:49:06 to 2025-06-06 14:50:28: 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	9.764	9.763	9	9	11.1	11.1	828	827	0.5604	0.5603			
TWD	174.9	174.9	171.5	171.6	179.2	179.2	828	827	2.23	2.228			
SOG	21.65	22.26	20.5	21.1	23.5	23.5	828	827	0.5909	0.512	SenseBoard	SenseBoard	SenseBoard
VMG	14.95	15.43	11.24	11.81	17.19	18.17	828	827	0.9887	1.195	SenseBoard	Karl Maeder	Tie
COG	128.7	128.9	117.5	119.2	136.4	137.6	828	827	2.876	3.188		Karl Maeder	Karl Maeder
TWA_Abs	46.25	46.02	36.82	36.84	59.12	56.34	828	827	3.173	3.7			
Heel_Lwd	55.63	54.58	38.7	38.6	71.3	70.4	828	827	5.698	5.593	Karl Maeder	SenseBoard	Tie
Side_lines	11.47	11.62	4.2	3.1	25.8	25.6	828	827	3.502	3.597	SenseBoard	Karl Maeder	Tie
Line_C	118.3	114.2	71.2	69.8	155.2	149.3	828	825	13.45	12.05	Karl Maeder	SenseBoard	Tie
Total_lines	129.9	125.8	76.4	88.1	175.7	159.4	828	827	14.88	12.14	Karl Maeder	SenseBoard	Tie

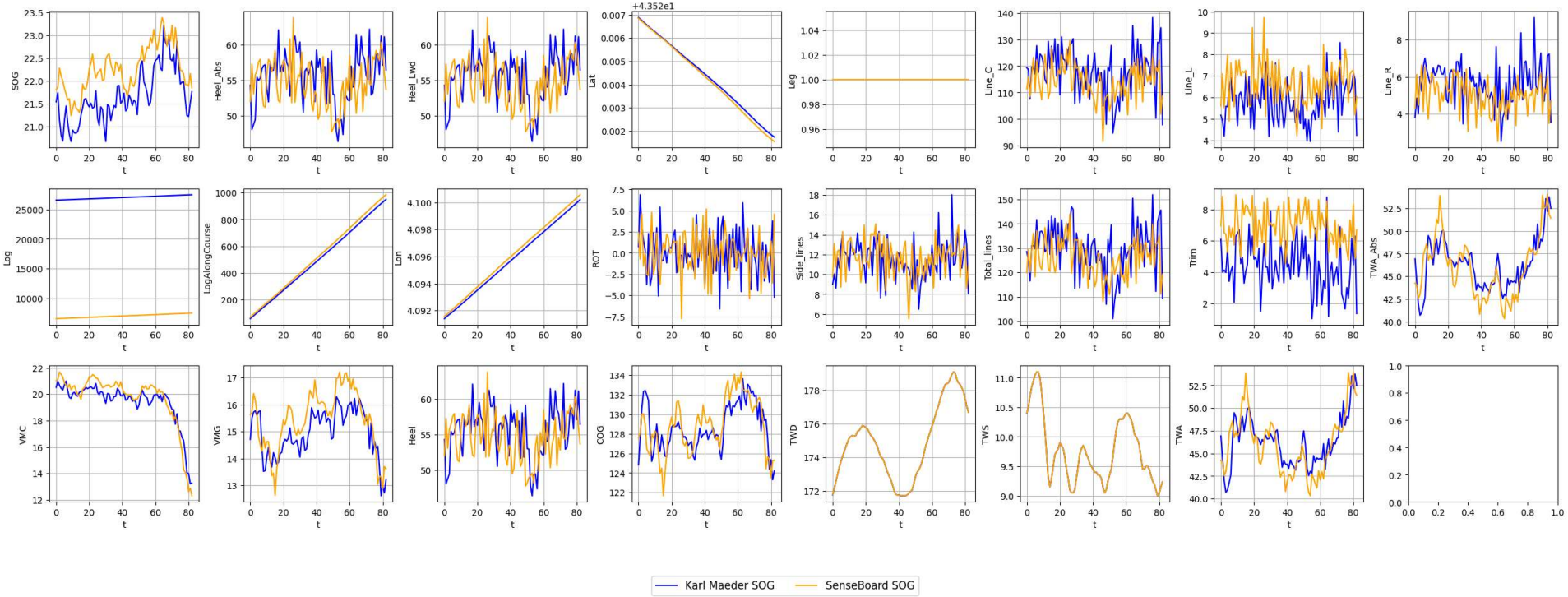
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	923.752574	948.081891
Straight Line [m]	920.738700	944.801356
Distance as Percentage of Straight Line [%]	100.327332	100.347220

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	12.619753	-5.103565	5.040845
Final Deficit	36.672373	-1.532827	24.253806
Total Gain	24.052620	3.570738	19.212961
Gain per Minute	17.450089	2.590557	13.938933

Interval 1: Upwind from 2025-06-06 14:49:06 to 2025-06-06 14:50:28: Karl Maeder vs SenseBoard - Parameters over time




```
Interval 2 summary:
{'avg TWA boat1': -144.47150258397932,
 'avg TWA boat2': -144.74235012919897,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749221609.453,
 'high_sog_duration': 77.28900003433228,
 'min_sog_used': 26.0,
 'start_time': 1749221532.164}

================================================================================
Interval 2: Downwind from 2025-06-06 14:52:12 to 2025-06-06 14:53:29: Karl Maeder vs SenseBoard
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Run Statistics

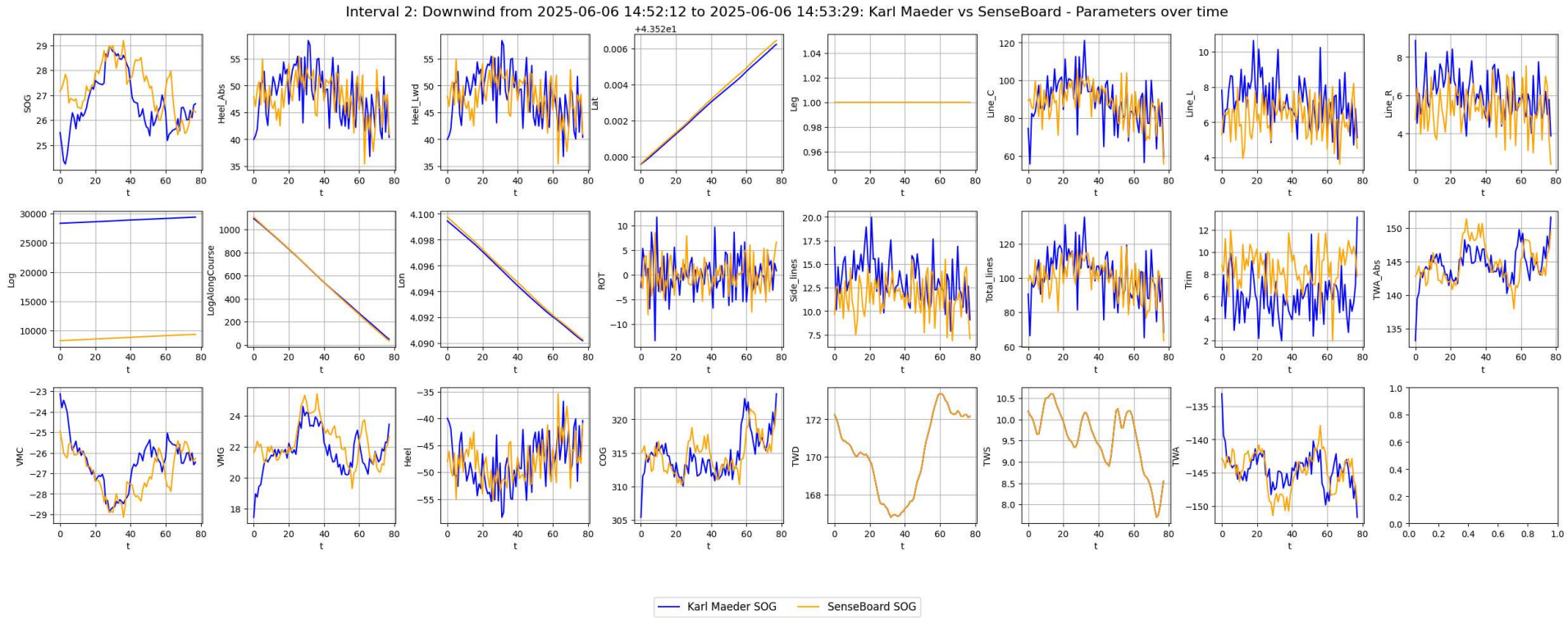
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.577	9.577	7.608	7.608	10.6	10.6	774	774	0.7066	0.7065			
TWD	170.1	170.1	166.8	166.8	173.4	173.4	774	774	2.111	2.111			
SOG	26.65	27.33	23	24.8	29.7	29.3	774	774	1.166	0.9839	SenseBoard	SenseBoard	SenseBoard
VMG	21.67	22.29	16.29	16.9	25.11	26.3	774	774	1.433	1.422	SenseBoard	SenseBoard	SenseBoard
COG	314.6	314.8	301.9	305.4	326.8	326.5	774	774	3.706	3.324		SenseBoard	SenseBoard
TWA_Abs	144.5	144.7	129.7	133	153.4	154.2	774	774	3.178	3.414			
Heel_Lwd	48.19	48.03	25.9	24.8	69.1	66.7	774	774	7.493	7.259	Karl Maeder	SenseBoard	Tie
Side_lines	13.37	11.58	3.8	3.5	25	22.4	774	774	3.672	3.223	Karl Maeder	SenseBoard	Tie
Line_C	88.96	88.1	46.7	55.1	138.3	124.4	774	771	16.27	12.36	Karl Maeder	SenseBoard	Tie
Total_lines	101.7	99.69	51.7	63.3	146.9	146.8	774	774	17.83	13.46	Karl Maeder	SenseBoard	Tie

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	1062.024318	1087.597144
Straight Line [m]	1058.649794	1084.555752
Distance as Percentage of Straight Line [%]	100.318757	100.280427

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-15.112105	-18.016260	1.828875
Final Deficit	10.796028	-23.228240	-22.284405
Total Gain	25.908133	-5.211980	-24.113280
Gain per Minute	20.112668	-4.046097	-18.719310




```
Processing: ../Data_Sailnjord/Straight_lines\06_06\06_06_Run7
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 48.267085173501584,
 'avg TWA boat2': 47.056454736842106,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749221956.046,
 'high_sog_duration': 94.97699999809265,
 'min_sog_used': 20.4,
 'start_time': 1749221861.069}

================================================================================
Interval 1: Upwind from 2025-06-06 14:57:41 to 2025-06-06 14:59:16: Karl Maeder vs SenseBoard
================================================================================
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Run Statistics

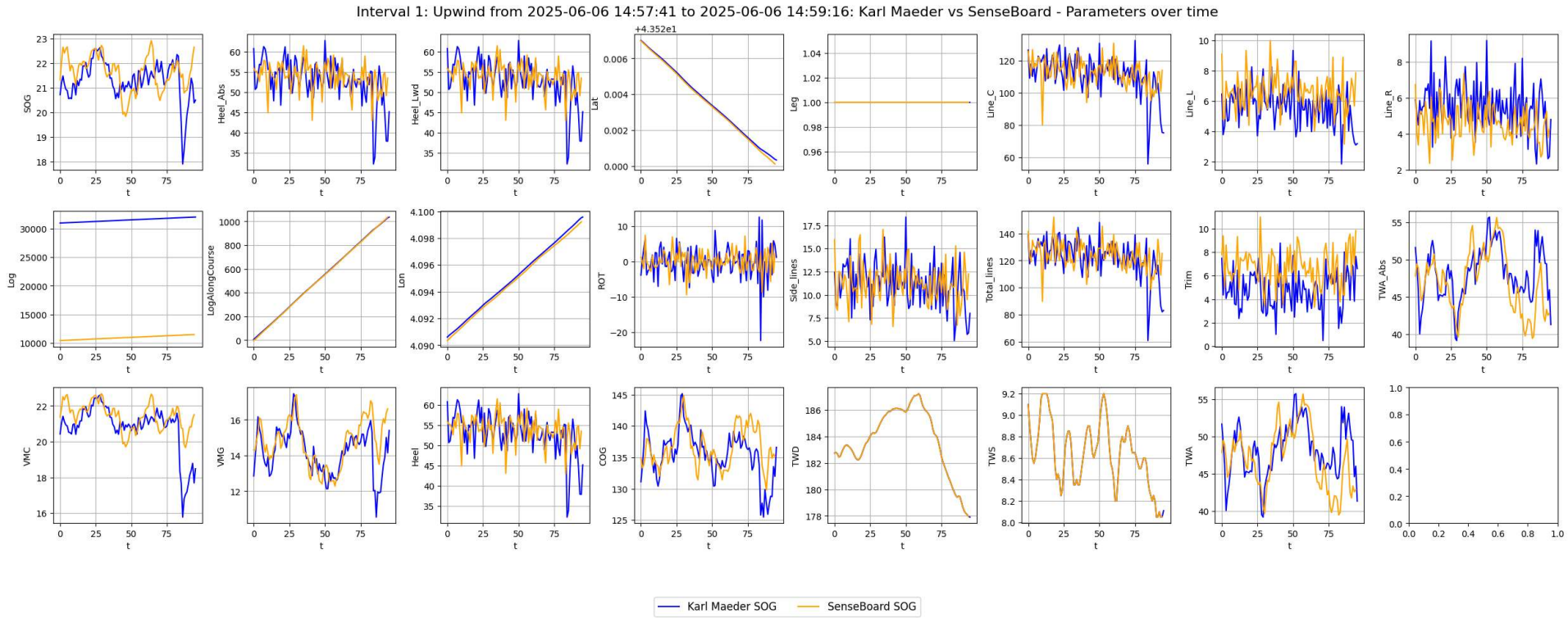
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.649	8.65	8.004	8.004	9.2	9.2	951	950	0.3028	0.3024			
TWD	183.7	183.7	177.9	177.9	187.3	187.3	951	950	2.459	2.453			
SOG	21.32	21.64	17.7	19.8	22.8	23	951	950	0.8078	0.715	SenseBoard	SenseBoard	SenseBoard
VMG	14.17	14.7	9.275	11.03	18.08	18.22	951	950	1.42	1.414	SenseBoard	SenseBoard	SenseBoard
COG	135.4	136.6	117.2	126.9	148.4	149.2	951	950	4.442	3.798		SenseBoard	SenseBoard
TWA_Abs	48.27	47.06	34.81	35.07	62.59	58.8	951	950	4.169	4.558			
Heel_Lwd	53.05	53.89	23.3	30.9	75.7	69.6	951	950	7.347	5.85	SenseBoard	SenseBoard	SenseBoard
Side_lines	11.11	11.27	2.7	2.7	28.1	24.2	951	950	3.851	3.794	SenseBoard	SenseBoard	SenseBoard
Line_C	111.6	112.4	41.7	65	157.6	147.4	951	949	17	13.51	SenseBoard	SenseBoard	SenseBoard
Total_lines	122.4	123.8	45	73.9	171.1	166.8	951	950	18.48	15	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	1044.022199	1058.986876
Straight Line [m]	1039.141539	1054.696629
Distance as Percentage of Straight Line [%]	100.469682	100.406775

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-12.647660	16.805426	4.121523
Final Deficit	2.708553	37.970570	30.138065
Total Gain	15.356213	21.165144	26.016542
Gain per Minute	9.701010	13.370696	16.435479




```
Interval 2 summary:
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 'avg TWA boat2': -148.80882975460122,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749222118.96,
 'high_sog_duration': 65.19600009918213,
 'min_sog_used': 26.7,
 'start_time': 1749222053.764}

================================================================================
Interval 2: Downwind from 2025-06-06 15:00:53 to 2025-06-06 15:01:58: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

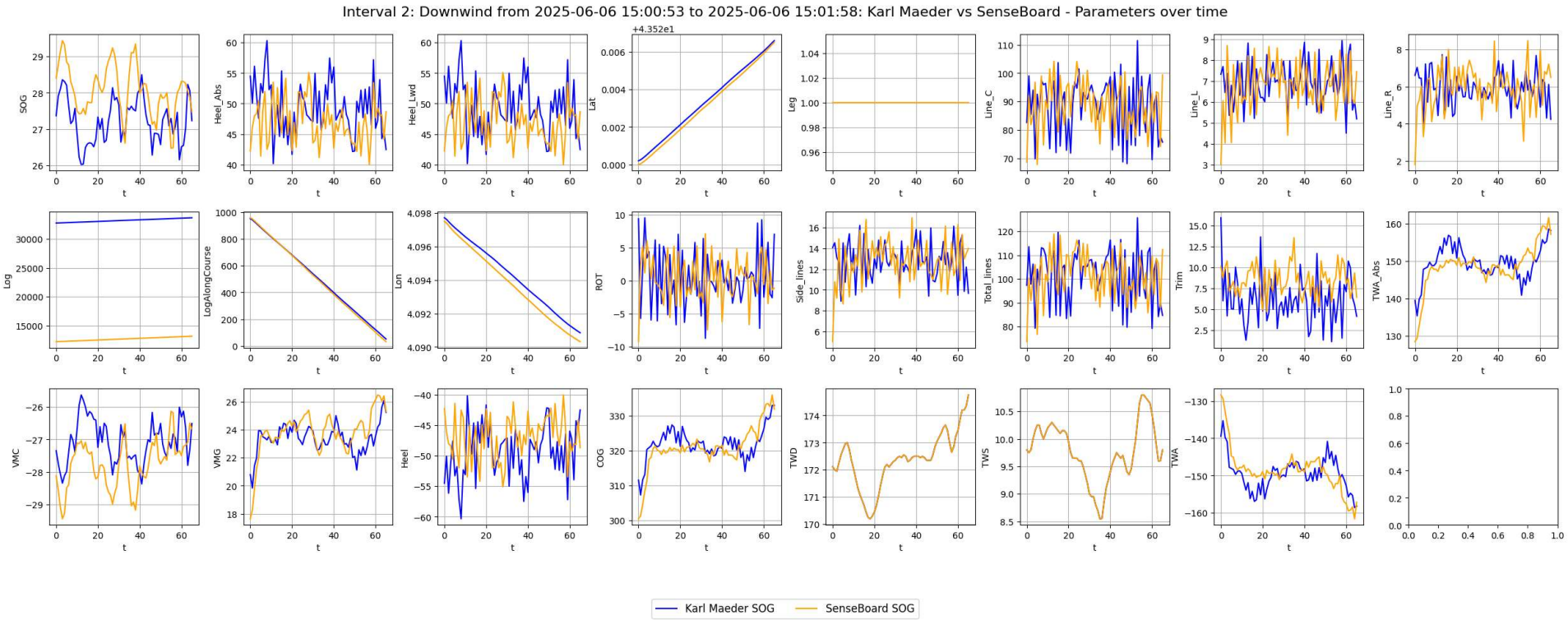
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.782	9.782	8.412	8.413	10.8	10.8	653	652	0.5447	0.5451			
TWD	172.4	172.4	170.2	170.2	175	175	653	652	0.9956	0.9962			
SOG	27.23	28.07	25	26	29.1	29.7	653	652	0.67	0.7147	SenseBoard	Karl Maeder	Tie
VMG	23.4	23.88	19.13	17.33	26.73	26.98	653	652	1.148	1.519	SenseBoard	Karl Maeder	Tie
COG	322	321.2	305.9	299.7	336.2	338.2	653	652	4.831	6.185		Karl Maeder	Karl Maeder
TWA_Abs	149.6	148.8	133.9	127.6	161.2	163.8	653	652	4.864	5.771			
Heel_Lwd	49.27	47.07	29.8	20.7	77	65.1	653	652	7.296	6.656	Karl Maeder	SenseBoard	Tie
Side_lines	12.79	12.75	4.3	4.2	24.2	20.8	653	652	3.374	2.949	Karl Maeder	SenseBoard	Tie
Line_C	88.2	88.89	52	61.6	134.5	122.7	653	648	15.8	11.46	SenseBoard	SenseBoard	SenseBoard
Total_lines	101.3	101.7	61.7	68.4	154.3	139.4	653	652	17.35	12.39	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	913.564919	940.454726
Straight Line [m]	909.336015	934.235248
Distance as Percentage of Straight Line [%]	100.465054	100.665729

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-6.033981	27.248407	18.979874
Final Deficit	18.774538	40.308947	4.175974
Total Gain	24.808519	13.060540	-14.803900
Gain per Minute	22.831326	12.019639	-13.624057




```
Processing: ../Data_Sailnjord/Straight_lines\06_06\06_06_Run8
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 51.289050065876154,
 'avg TWA boat2': 50.88904881266492,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749222441.852,
 'high_sog_duration': 75.80800008773804,
 'min_sog_used': 21.6,
 'start_time': 1749222366.044}

================================================================================
Interval 1: Upwind from 2025-06-06 15:06:06 to 2025-06-06 15:07:21: 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	10.59	10.59	9.513	9.513	11.9	11.9	759	758	0.6553	0.6557			
TWD	177.2	177.2	173.9	173.9	179.7	179.7	759	758	1.671	1.672			
SOG	22.14	22.58	19.8	20.4	23.5	23.7	759	758	0.5952	0.7151	SenseBoard	Karl Maeder	Tie
VMG	13.8	14.22	9.987	9.408	18.15	18.95	759	758	1.423	1.618	SenseBoard	Karl Maeder	Tie
COG	125.9	126.3	113.8	114.2	139.2	137.5	759	758	3.894	3.762		SenseBoard	SenseBoard
TWA_Abs	51.29	50.89	34.8	36.58	63.13	65.28	759	758	4.551	4.392			
Heel_Lwd	55.06	54	30.3	32.1	75.9	75.7	759	758	6.197	6.076	Karl Maeder	SenseBoard	Tie
Side_lines	11.68	10.56	3.9	1.7	24	27.5	759	758	3.568	3.91	Karl Maeder	Karl Maeder	Karl Maeder
Line_C	115.7	113.6	66.7	55	156.9	152.8	759	754	14.24	14.37	Karl Maeder	Karl Maeder	Karl Maeder
Total_lines	127.3	124.4	70.6	58.6	168.6	177	759	758	15.11	16.03	Karl Maeder	Karl Maeder	Karl Maeder

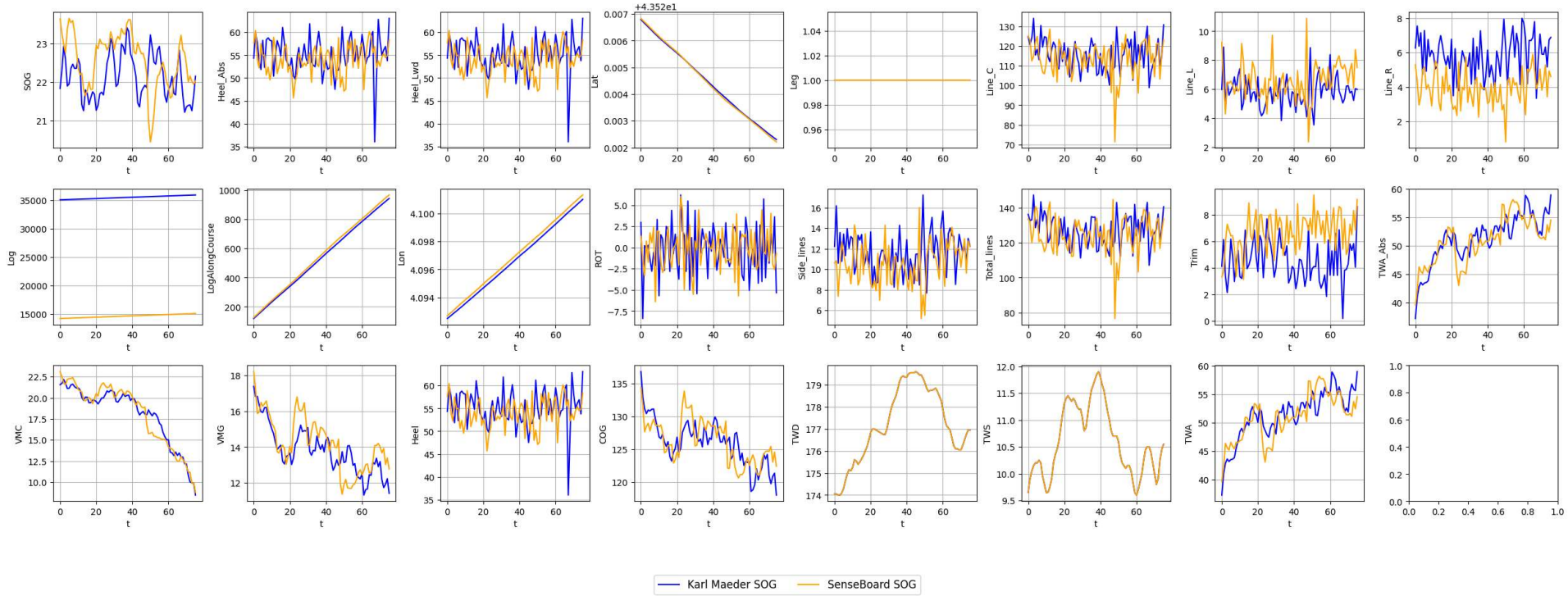
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	864.573994	880.689720
Straight Line [m]	861.249083	877.382532
Distance as Percentage of Straight Line [%]	100.386057	100.376938

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	9.812706	-13.065942	-4.058801
Final Deficit	25.927479	-6.397722	11.222483
Total Gain	16.114773	6.668220	15.281284
Gain per Minute	12.754411	5.277717	12.094726

Interval 1: Upwind from 2025-06-06 15:06:06 to 2025-06-06 15:07:21: Karl Maeder vs SenseBoard - Parameters over time




```
Interval 2 summary:
{'avg TWA boat1': -154.87797790055248,
 'avg TWA boat2': -154.36817343173433,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749222592.36,
 'high_sog_duration': 54.198999881744385,
 'min_sog_used': 26.9,
 'start_time': 1749222538.161}

================================================================================
Interval 2: Downwind from 2025-06-06 15:08:58 to 2025-06-06 15:09:52: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

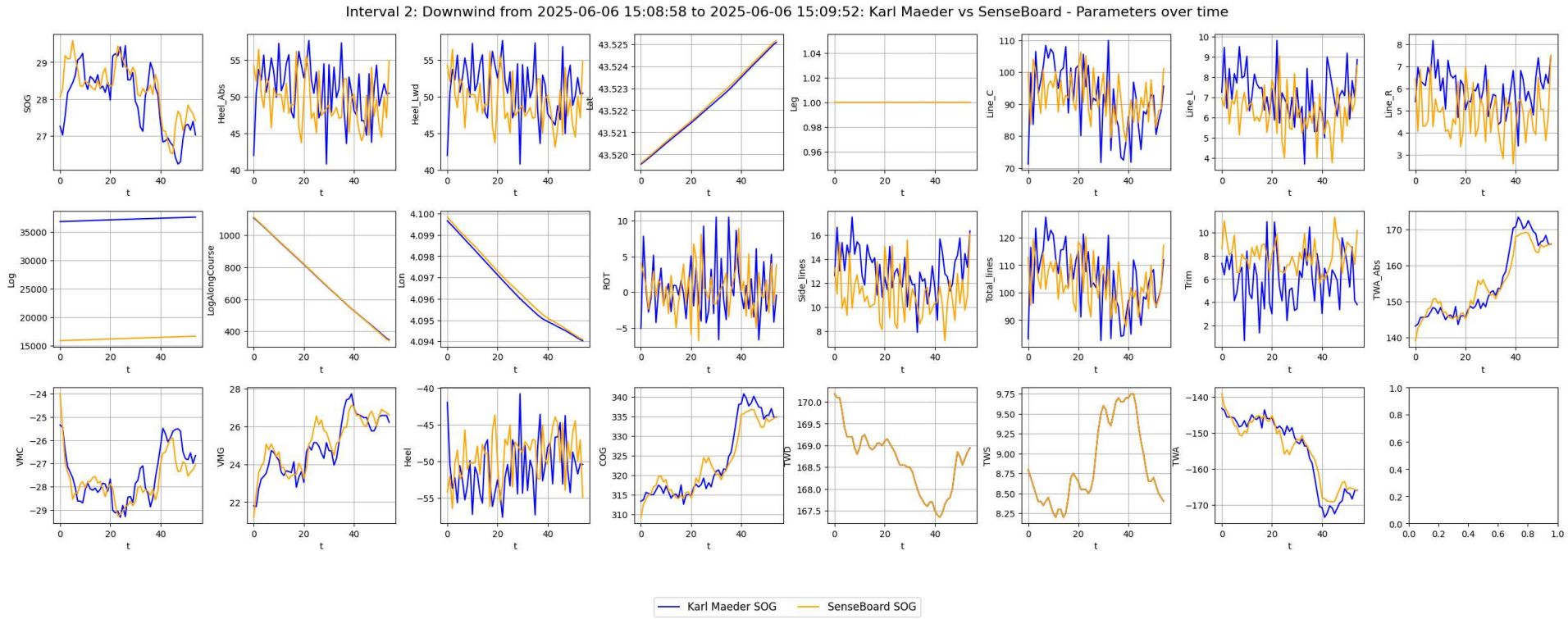
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.873	8.873	8.2	8.2	9.796	9.796	543	542	0.5139	0.514			
TWD	168.6	168.6	167.3	167.3	170.3	170.3	543	542	0.7061	0.7065			
SOG	28.02	28.26	26.1	26.3	30	29.7	543	542	0.905	0.7222	SenseBoard	SenseBoard	SenseBoard
VMG	24.91	25.15	20.66	20.71	27.94	27.7	543	542	1.541	1.399	SenseBoard	SenseBoard	SenseBoard
COG	323.5	323	307.5	307.9	344.4	340.9	543	542	9.857	8.203		SenseBoard	SenseBoard
TWA_Abs	154.9	154.4	138.5	137.7	176.7	173.3	543	542	10.37	8.718			
Heel_Lwd	51.42	49.22	33.9	32.9	68.3	72.1	470	526	6.475	6.453	Karl Maeder	SenseBoard	Tie
Side_lines	13.05	10.98	3.6	2.6	26.5	19.6	543	542	3.416	3.097	Karl Maeder	SenseBoard	Tie
Line_C	91.79	92.07	57.6	66.2	136.6	128.8	543	539	14.7	9.986	SenseBoard	SenseBoard	SenseBoard
Total_lines	105	103.1	67.7	72.5	154.4	143.2	543	542	16.49	11.32	Karl Maeder	SenseBoard	Tie

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	781.541105	786.855543
Straight Line [m]	769.437323	778.154279
Distance as Percentage of Straight Line [%]	101.573069	101.118193

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-3.880830	-15.207422	-2.950547
Final Deficit	4.797434	-9.420258	-8.346339
Total Gain	8.678264	5.787163	-5.395792
Gain per Minute	9.607111	6.406572	-5.973311




```
Processing: ../Data_Sailnjord/Straight_lines\07_06\07_06_Run1
Processing only reduced intervals for Gian Stragiotti vs Karl Maeder
Interval 1 summary:
{'avg TWA boat1': 48.67222300469484,
 'avg TWA boat2': 48.87948531139835,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'Karl Maeder',
 'end_time': 1749297053.156,
 'high_sog_duration': 85.10699987411499,
 'min_sog_used': 20.8,
 'start_time': 1749296968.049}

================================================================================
Interval 1: Upwind from 2025-06-07 11:49:28 to 2025-06-07 11:50:53: Gian Stragiotti vs Karl Maeder
================================================================================
```

Run Statistics

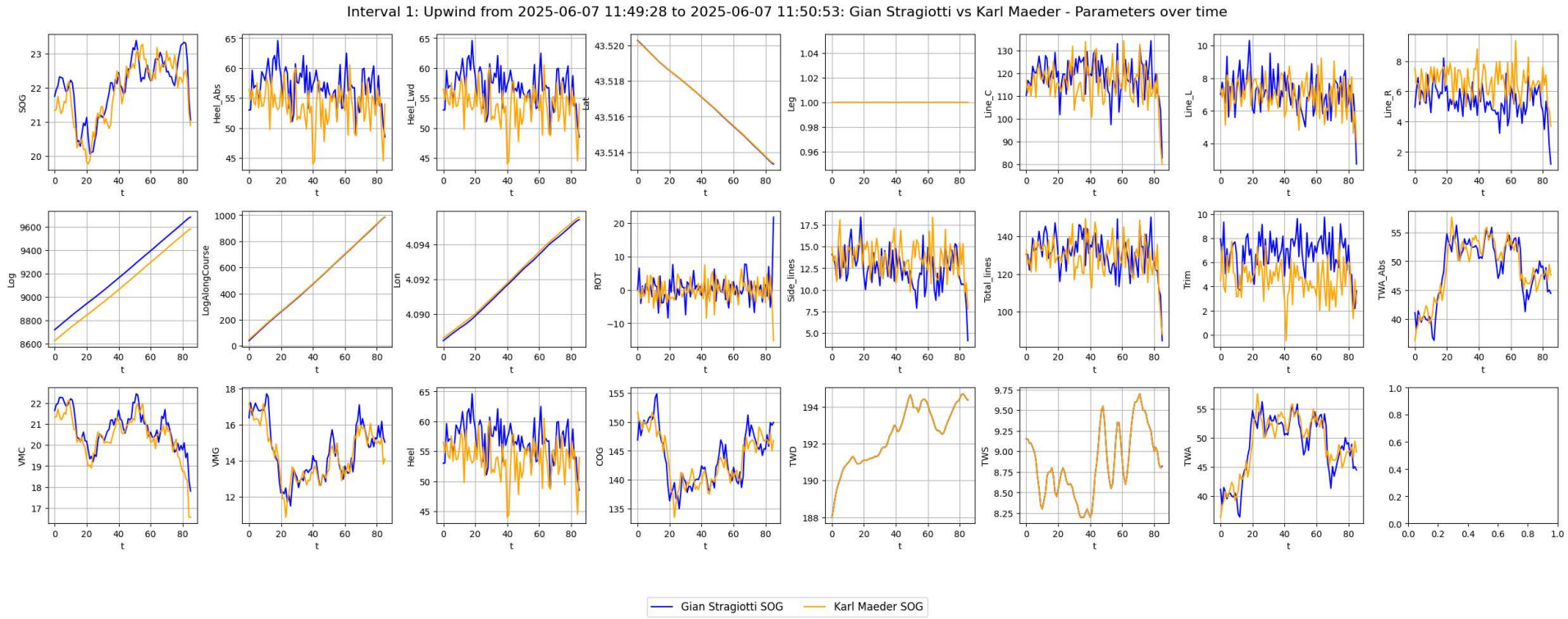
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.859	8.859	8.2	8.2	9.7	9.7	852	851	0.4166	0.4168			
TWD	192.4	192.4	187.8	187.8	194.7	194.7	852	851	1.573	1.573			
SOG	22.02	21.84	20	19.7	23.4	23.9	852	851	0.8427	0.9243	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	14.48	14.29	10.76	10.18	18.27	18.04	852	851	1.688	1.504	Gian Stragiotti	Karl Maeder	Tie
COG	143.8	143.6	132.1	131.1	158	155.1	852	851	5.107	4.62		Karl Maeder	Karl Maeder
TWA_Abs	48.67	48.88	33.21	32.96	59.83	60.07	852	851	5.573	5.252			
Heel_Lwd	57	53.75	37.9	31.9	74	71.6	852	851	5.665	5.67	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	12.51	13.74	3.3	4.9	23.4	27.5	852	851	3.523	3.857	Karl Maeder	Gian Stragiotti	Tie
Line_C	118.9	116	77.4	77	156.2	157.6	850	851	11.68	13.87	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	131.3	129.8	81	85.8	168.5	175.8	852	851	12.59	15.61	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti

Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	966.086699	956.656174
Straight Line [m]	960.716816	952.249078
Distance as Percentage of Straight Line [%]	100.558945	100.462809

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	10.471273	-8.338778	0.652525
Final Deficit	1.979467	-13.060087	-8.500518
Total Gain	-8.491807	-4.721309	-9.153043
Gain per Minute	-5.986680	-3.328499	-6.452848




```
Interval 2 summary:
{'avg TWA boat1': -143.40776842105262,
 'avg TWA boat2': -142.64689457831327,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'Karl Maeder',
 'end_time': 1749297208.858,
 'high_sog_duration': 66.3989999294281,
 'min_sog_used': 27.2,
 'start_time': 1749297142.459}

================================================================================
Interval 2: Downwind from 2025-06-07 11:52:22 to 2025-06-07 11:53:28: Gian Stragiotti vs Karl Maeder
================================================================================
```

Run Statistics

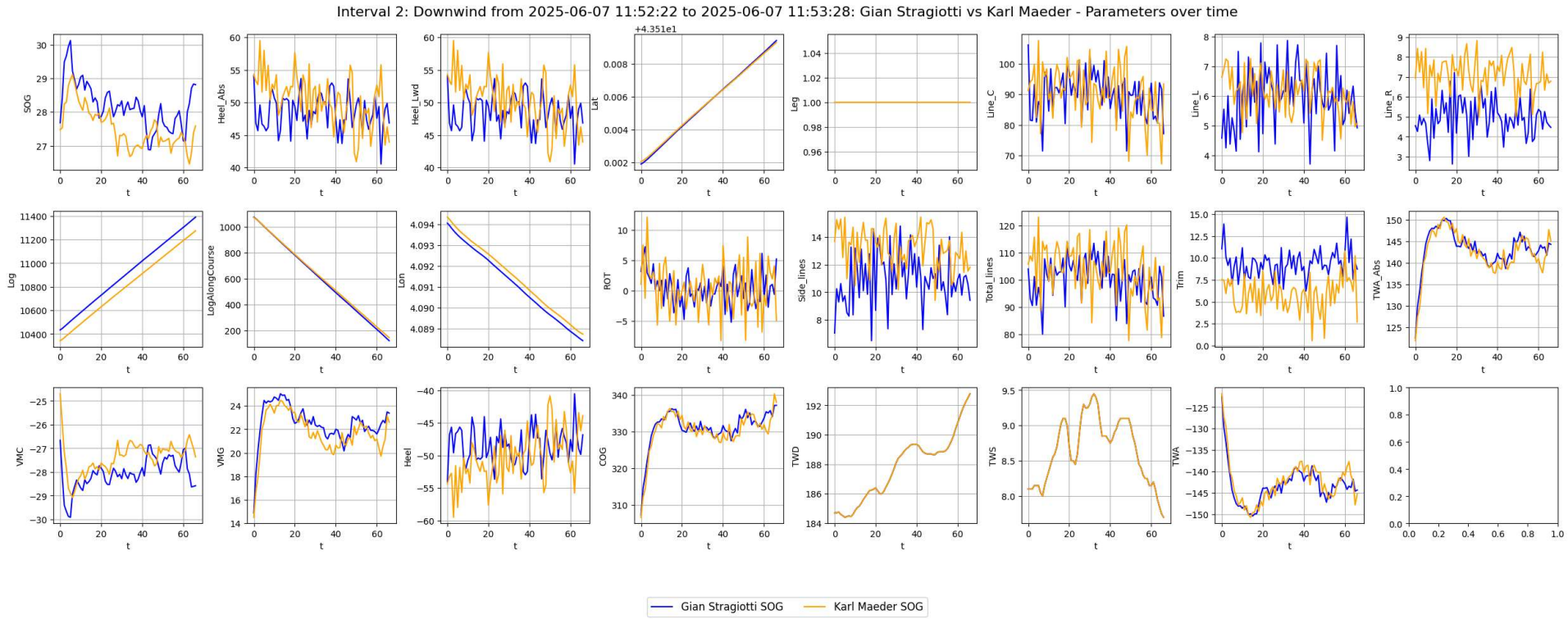
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.653	8.654	7.7	7.7	9.493	9.493	665	664	0.4592	0.459			
TWD	187.8	187.8	184.3	184.3	192.9	192.9	665	664	2.241	2.239			
SOG	28.21	27.53	26.7	26.4	30.3	29.2	665	664	0.688	0.6141	Gian Stragiotti	Karl Maeder	Tie
VMG	22.58	21.8	14.32	14.26	25.85	25.38	665	664	1.583	1.792	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	331.2	330.5	306.4	305.9	340.2	342.5	665	664	4.838	5.484		Gian Stragiotti	Gian Stragiotti
TWA_Abs	143.4	142.6	121.6	121.3	154.1	154.3	665	664	4.594	5.319			
Heel_Lwd	48.48	50.37	31.5	27.2	68	71.1	665	664	5.984	6.724	Karl Maeder	Gian Stragiotti	Tie
Side_lines	10.94	13.25	2.3	4.8	17.8	23.3	665	664	2.804	3.139	Karl Maeder	Gian Stragiotti	Tie
Line_C	89.79	90.76	64.4	60.8	126.1	132.7	659	664	10.32	12.61	Karl Maeder	Gian Stragiotti	Tie
Total_lines	100.4	103.9	73.5	67.8	125.5	147.3	665	664	10.74	14.29	Karl Maeder	Gian Stragiotti	Tie

Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	964.936668	938.898507
Straight Line [m]	960.730991	933.987346
Distance as Percentage of Straight Line [%]	100.437758	100.525827

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	3.131857	-27.818023	-19.093312
Final Deficit	-23.722321	-15.825265	9.618189
Total Gain	-26.854178	11.992759	28.711501
Gain per Minute	-24.266189	10.836993	25.944519




```
Processing: ../Data_Sailnjord/Straight_lines\07_06\07_06_Run10
Error: No or insufficient intervals for run: 07_06_Run10


Processing: ../Data_Sailnjord/Straight_lines\07_06\07_06_Run2
Processing only reduced intervals for Gian Stragiotti vs Karl Maeder
Interval 1 summary:
{'avg TWA boat1': 47.66838840937115,
 'avg TWA boat2': 48.54008281829419,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'Karl Maeder',
 'end_time': 1749297587.954,
 'high_sog_duration': 80.99699997901917,
 'min_sog_used': 22.3,
 'start_time': 1749297506.957}

================================================================================
Interval 1: Upwind from 2025-06-07 11:58:26 to 2025-06-07 11:59:47: Gian Stragiotti vs Karl Maeder
================================================================================
```

Run Statistics

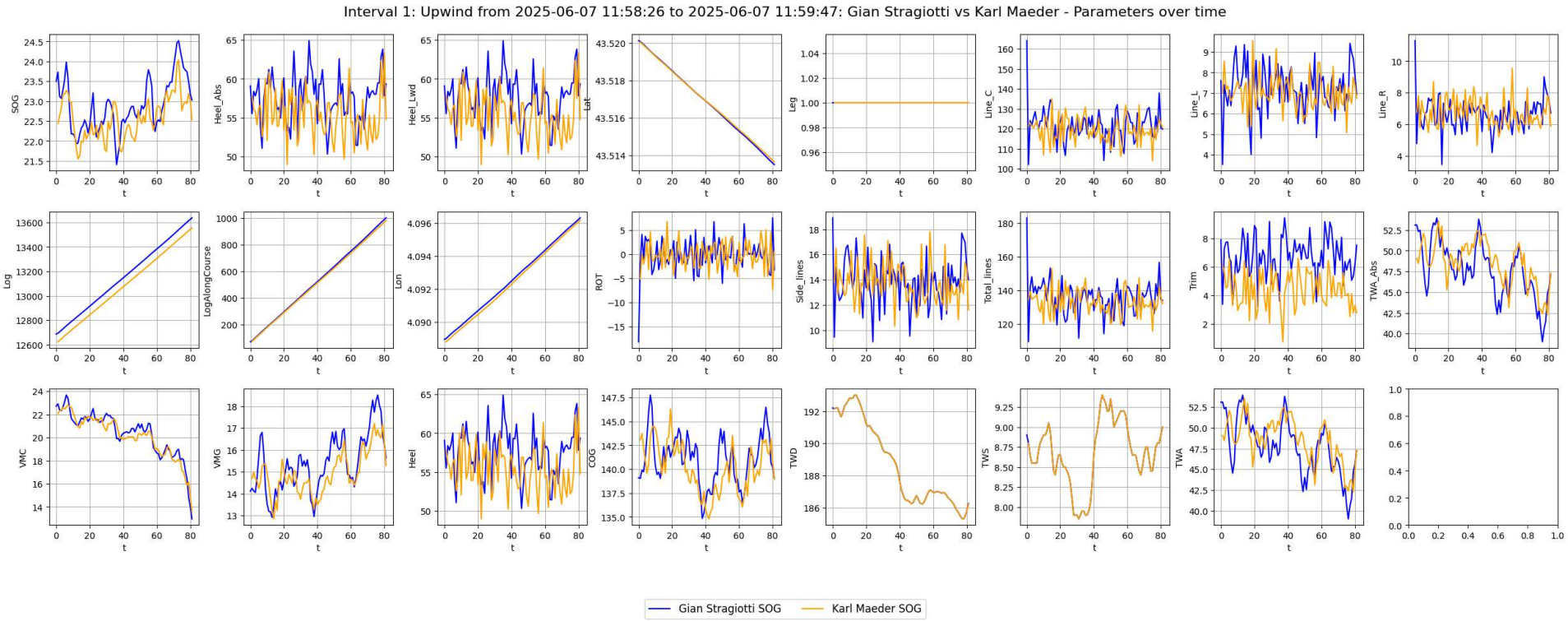
	Avg (Gian Stragiotti)	Avg (Karl Maeder)	Min (Gian Stragiotti)	Min (Karl Maeder)	Max (Gian Stragiotti)	Max (Karl Maeder)	Count (Gian Stragiotti)	Count (Karl Maeder)	StdDev (Gian Stragiotti)	StdDev (Karl Maeder)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.67	8.669	7.806	7.807	9.4	9.4	811	809	0.4089	0.4091			
TWD	188.7	188.7	185.3	185.3	193.1	193.1	811	809	2.54	2.539			
SOG	22.89	22.57	21.3	21.4	24.6	24.2	811	809	0.6679	0.5294	Gian Stragiotti	Karl Maeder	Tie
VMG	15.4	14.93	11.89	12.01	19.06	17.88	811	809	1.403	1.071	Gian Stragiotti	Karl Maeder	Tie
COG	141	140.2	133.2	131.9	152.2	150	811	809	3.049	2.972		Karl Maeder	Karl Maeder
TWA_Abs	47.67	48.54	36.79	38.37	57.45	56.21	811	809	3.706	3.032			
Heel_Lwd	57.61	55.31	41.6	37.9	74.4	74.2	811	809	5.714	5.077	Gian Stragiotti	Karl Maeder	Tie
Side_lines	13.85	13.72	4.8	5.6	26.9	26.4	811	809	3.573	3.379	Gian Stragiotti	Karl Maeder	Tie
Line_C	121.4	119.3	77	77.8	164.1	159.9	809	809	11.92	12	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	135.3	132.9	81.9	92.7	183	180.2	811	809	13.09	13.22	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti

Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	954.980325	939.223758
Straight Line [m]	952.099583	936.520214
Distance as Percentage of Straight Line [%]	100.302567	100.288680

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	-5.673504	14.098121	6.601490
Final Deficit	-21.399381	-0.694194	-14.924004
Total Gain	-15.725877	-14.792315	-21.525493
Gain per Minute	-11.649229	-10.957676	-15.945401




```
Interval 2 summary:
{'avg TWA boat1': -149.29563662374824,
 'avg TWA boat2': -148.91185100286535,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'Karl Maeder',
 'end_time': 1749297755.456,
 'high_sog_duration': 69.80000019073486,
 'min_sog_used': 25.8,
 'start_time': 1749297685.656}

================================================================================
Interval 2: Downwind from 2025-06-07 12:01:25 to 2025-06-07 12:02:35: 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	8.442	8.442	7.605	7.606	9.8	9.8	699	698	0.5775	0.5778			
TWD	178.9	178.9	171.7	171.7	187.2	187.2	699	698	5.868	5.867			
SOG	27.11	25.92	25.5	23.2	28.6	28.9	699	698	0.7437	1.227	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	23.19	22.09	18.04	15.13	26.55	26.32	699	698	1.9	2.429	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	328.2	327.8	317.9	312.2	337.7	340.6	699	698	4.574	5.348		Gian Stragiotti	Gian Stragiotti
TWA_Abs	149.3	148.9	133.4	126.6	161.2	160.4	699	698	6.305	6.78			
Heel_Lwd	45.91	45.04	22.8	27.1	65.2	63.7	699	698	6.94	6.479	Gian Stragiotti	Karl Maeder	Tie
Side_lines	10.95	12.6	1.4	4.2	20.2	25.1	699	698	2.704	3.437	Karl Maeder	Gian Stragiotti	Tie
Line_C	83.24	80.35	42.9	39.1	110.2	124.7	699	698	11.61	16.03	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	94.38	92.91	46.8	45.2	129.9	138.4	699	698	13.09	18.36	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti

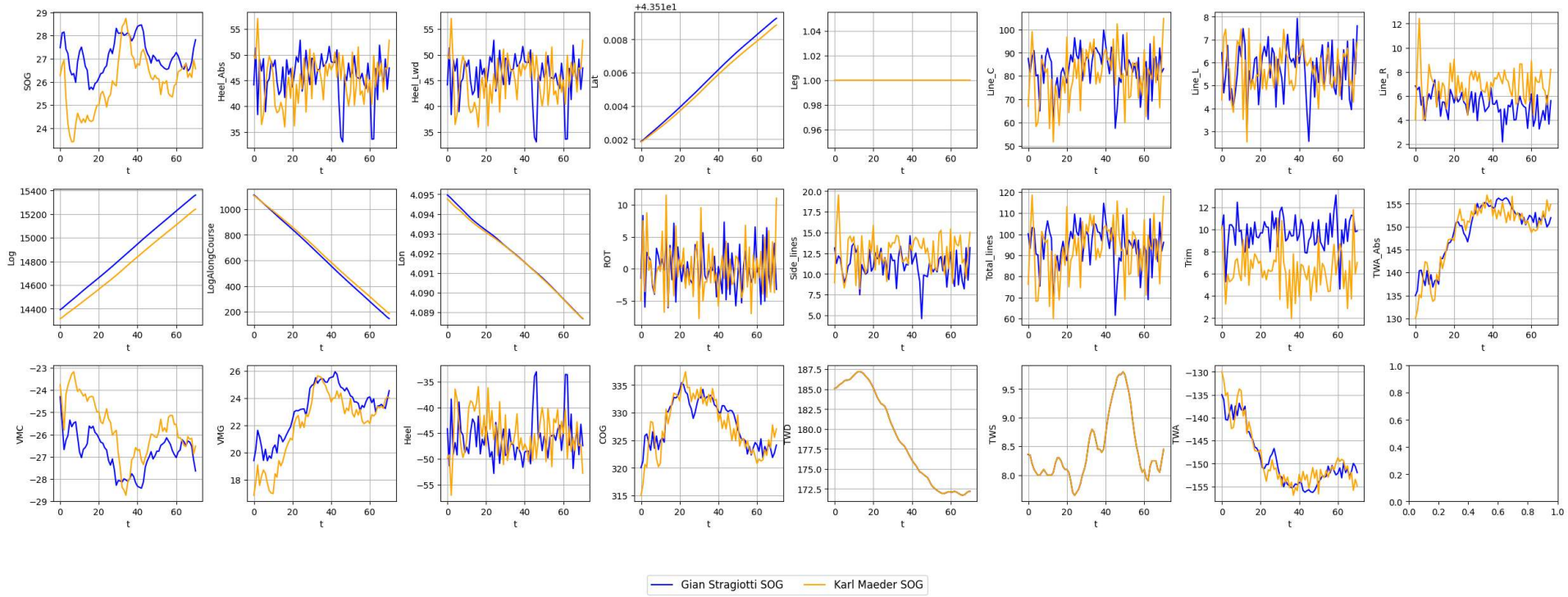
Distance Summary

	Gian Stragiotti	Karl Maeder
Distance [m]	974.124186	929.739291
Straight Line [m]	970.175467	924.767626
Distance as Percentage of Straight Line [%]	100.407011	100.537612

Gain of Gian Stragiotti with respect to Karl Maeder

	Forward	Lateral	VMG
Initial Deficit	6.602926	16.643332	2.820374
Final Deficit	-38.872337	22.524391	44.924115
Total Gain	-45.475263	5.881059	42.103740
Gain per Minute	-39.090484	5.055351	36.192327

Interval 2: Downwind from 2025-06-07 12:01:25 to 2025-06-07 12:02:35: Gian Stragiotti vs Karl Maeder - Parameters over time




```
Processing: ../Data_Sailnjord/Straight_lines\07_06\07_06_Run3
Processing only reduced intervals for Gian Stragiotti vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 44.5103324775353,
 'avg TWA boat2': 45.23079691516709,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'SenseBoard',
 'end_time': 1749298552.459,
 'high_sog_duration': 77.79900002479553,
 'min_sog_used': 20.7,
 'start_time': 1749298474.66}

================================================================================
Interval 1: Upwind from 2025-06-07 12:14:34 to 2025-06-07 12:15:52: Gian Stragiotti vs SenseBoard
================================================================================
```

Run Statistics

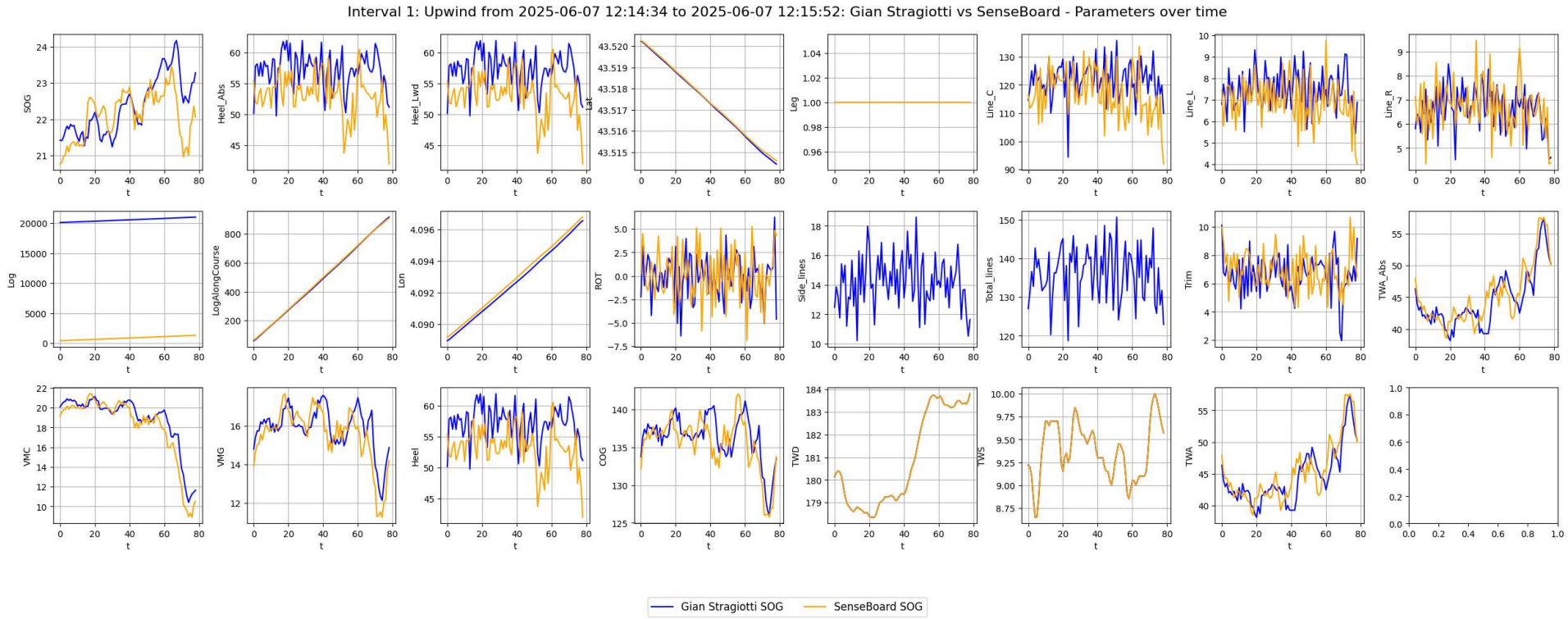
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.372	9.372	8.604	8.604	10	10	779	778	0.314	0.3141			
TWD	180.8	180.8	178.3	178.3	183.9	183.9	779	778	2.055	2.056			
SOG	22.35	22.11	21.1	20.7	24.4	23.7	779	778	0.7726	0.6609	Gian Stragiotti	SenseBoard	Tie
VMG	15.87	15.52	11.22	10.71	18.4	18.28	779	778	1.216	1.529	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	136.3	135.6	123.3	123.9	146.3	145	779	778	3.452	3.807		Gian Stragiotti	Gian Stragiotti
TWA_Abs	44.51	45.23	32.01	36.2	60.09	59.6	779	778	4.632	4.95			
Heel_Lwd	57.24	53.15	41.8	35.5	71.4	69.3	779	778	5.44	5.764	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	14.2	nan	6.5	nan	24.2	nan	779	nan	3.368	nan			
Line_C	121.8	117	78.4	82.8	146.9	149.4	775	778	10.3	13.08	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	136.1	nan	101.8	nan	163.6	nan	779	nan	10.35	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	897.230518	885.840499
Straight Line [m]	893.893961	882.202037
Distance as Percentage of Straight Line [%]	100.373261	100.412429

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	11.265731	-15.293108	-2.686527
Final Deficit	-0.512532	-25.783235	-18.439893
Total Gain	-11.778263	-10.490127	-15.753366
Gain per Minute	-9.083610	-8.090176	-12.149282




```
Interval 2 summary:
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 'boat2_name': 'SenseBoard',
 'end_time': 1749298721.658,
 'high_sog_duration': 60.79900002479553,
 'min_sog_used': 25.4,
 'start_time': 1749298660.859}

================================================================================
Interval 2: Downwind from 2025-06-07 12:17:40 to 2025-06-07 12:18:41: Gian Stragiotti vs SenseBoard
================================================================================
```

Run Statistics

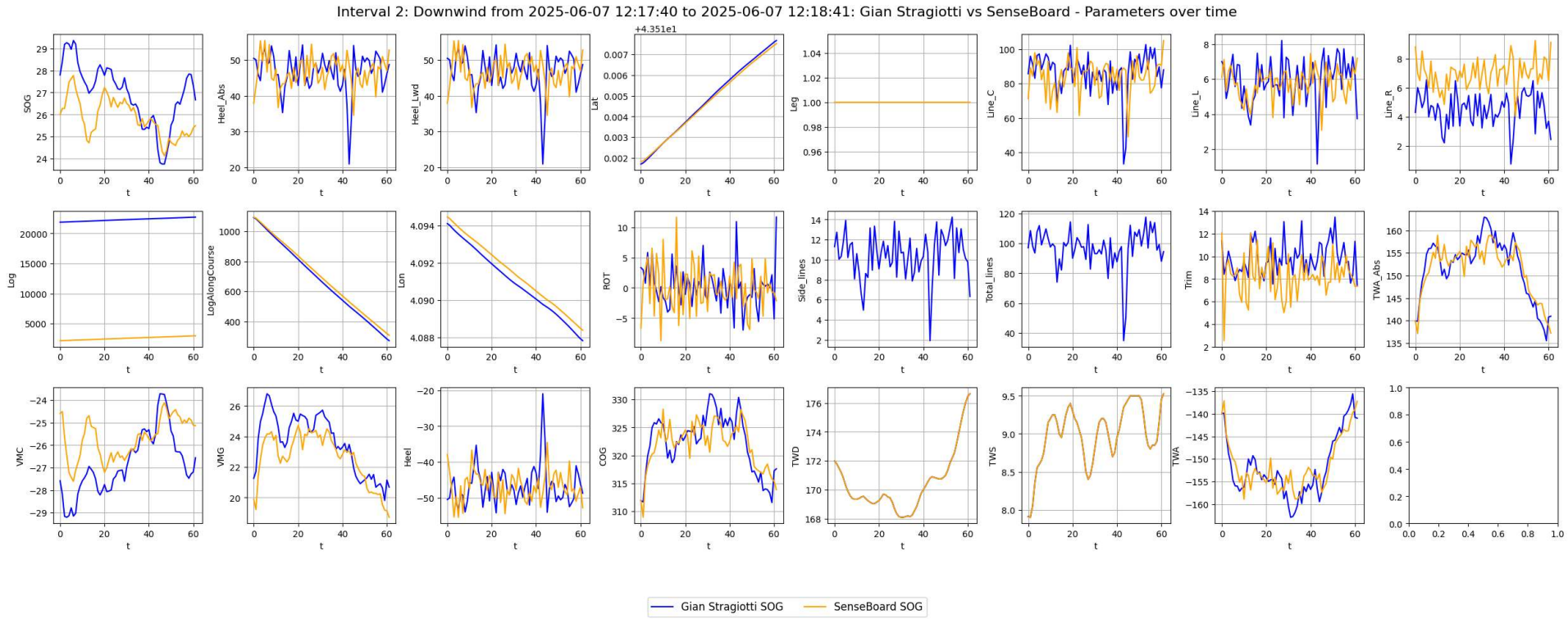
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.01	9.012	7.9	7.9	9.588	9.587	609	608	0.3675	0.3651			
TWD	170.4	170.4	168.1	168.1	176.7	176.7	609	608	2.024	2.025			
SOG	26.94	25.85	23.6	24.1	29.4	27.9	609	608	1.404	0.8897	Gian Stragiotti	SenseBoard	Tie
VMG	23.62	22.64	18.04	17.41	27.3	25.43	609	608	1.92	1.668	Gian Stragiotti	SenseBoard	Tie
COG	322.5	322.1	306.5	303.1	335.1	332.1	609	608	5.329	4.453		SenseBoard	SenseBoard
TWA_Abs	152.1	151.7	130.5	131.2	167	163.8	609	608	6.897	5.9			
Heel_Lwd	46.57	46.83	13.8	22.2	70.4	71.2	609	608	7.77	7.948	SenseBoard	Gian Stragiotti	Tie
Side_lines	10.43	nan	1.2	nan	19.5	nan	609	nan	3.128	nan			
Line_C	86.36	84.25	21.5	43.8	115.8	120.1	604	608	14.4	12.99	Gian Stragiotti	SenseBoard	Tie
Total_lines	96.84	nan	23.3	nan	133.3	nan	609	nan	16.01	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	842.605079	806.874787
Straight Line [m]	838.169560	803.739207
Distance as Percentage of Straight Line [%]	100.529191	100.390124

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-7.085984	-29.338417	-7.467211
Final Deficit	-41.563334	-24.579365	25.229082
Total Gain	-34.477350	4.759053	32.696294
Gain per Minute	-34.024260	4.696511	32.266610




```
Processing: ../Data_Sailnjord/Straight_lines\07_06\07_06_Run4
Error: No or insufficient intervals for run: 07_06_Run4


Processing: ../Data_Sailnjord/Straight_lines\07_06\07_06_Run5
Processing only reduced intervals for Gian Stragiotti vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 36.772666666666666,
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 'high_sog_duration': 80.59999990463257,
 'min_sog_used': 21.1,
 'start_time': 1749299748.66}

================================================================================
Interval 1: Upwind from 2025-06-07 12:35:48 to 2025-06-07 12:37:09: Gian Stragiotti vs SenseBoard
================================================================================
```

Run Statistics

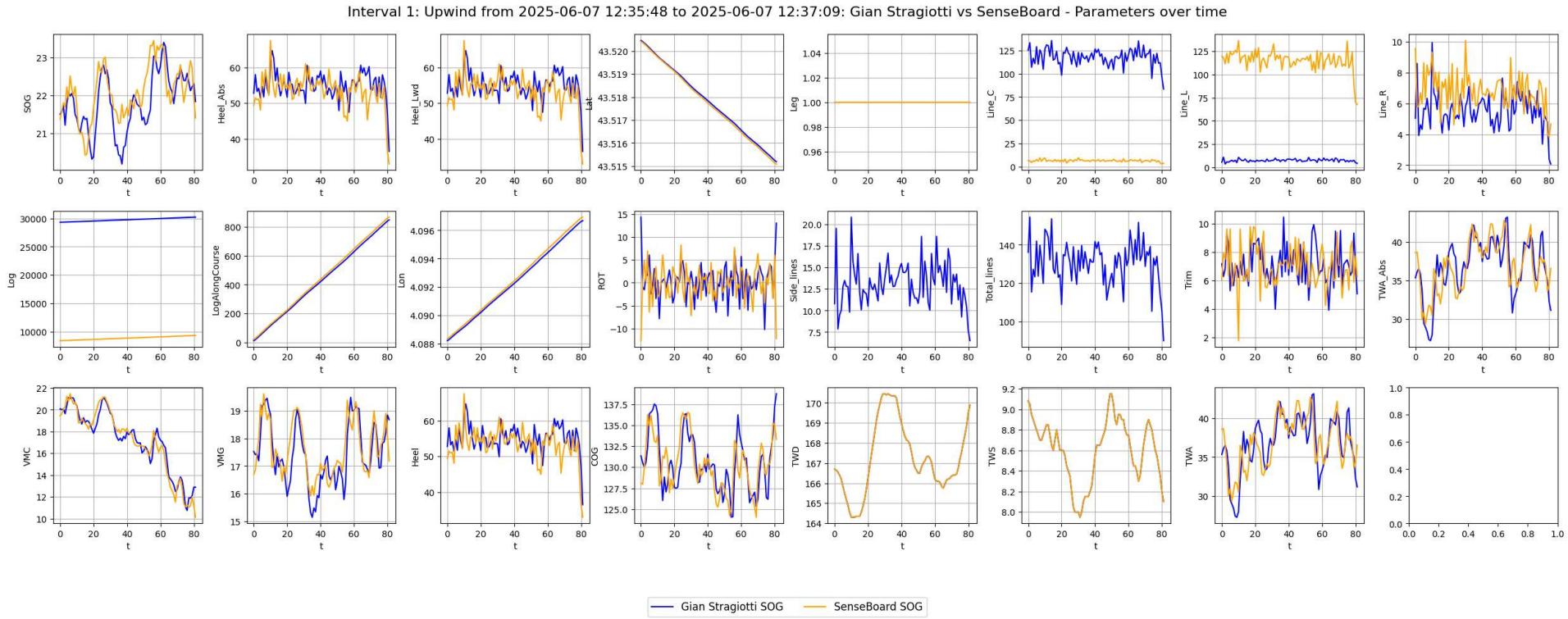
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.605	8.605	7.904	7.905	9.196	9.195	807	806	0.3018	0.3015			
TWD	167.2	167.2	164.3	164.3	170.5	170.5	807	806	1.809	1.81			
SOG	21.81	22.09	20.1	20.2	23.5	23.6	807	806	0.7749	0.7067	SenseBoard	SenseBoard	SenseBoard
VMG	17.43	17.65	14.5	15.14	20.04	20.15	807	806	1.192	1.056	SenseBoard	SenseBoard	SenseBoard
COG	130.4	130.4	121.5	120.8	140.6	139.8	807	806	3.817	3.601		SenseBoard	SenseBoard
TWA_Abs	36.77	36.83	24.3	26.31	45.75	46.74	807	806	4.006	3.704			
Heel_Lwd	55.12	53.72	33.4	28.3	72.4	75.9	807	806	6.163	6.607	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	13.21	nan	3.4	nan	25.4	nan	807	nan	3.826	nan			
Line_C	118	6.33	73.4	2.1	164.1	11.7	806	806	12.95	1.838	Gian Stragiotti	SenseBoard	Tie
Total_lines	131	nan	84.1	nan	177.5	nan	807	nan	14.62	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	906.314698	916.495609
Straight Line [m]	902.471545	913.065637
Distance as Percentage of Straight Line [%]	100.425848	100.375654

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	12.113051	-3.010653	7.900320
Final Deficit	22.702404	-4.473999	15.506445
Total Gain	10.589354	-1.463346	7.606125
Gain per Minute	7.882893	-1.089340	5.662128




```
Interval 2 summary:
{'avg TWA boat1': -145.66490342679128,
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 'boat2_name': 'SenseBoard',
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 'high_sog_duration': 64.08999991416931,
 'min_sog_used': 25.9,
 'start_time': 1749299945.16}

================================================================================
Interval 2: Downwind from 2025-06-07 12:39:05 to 2025-06-07 12:40:09: Gian Stragiotti vs SenseBoard
================================================================================
```

Run Statistics

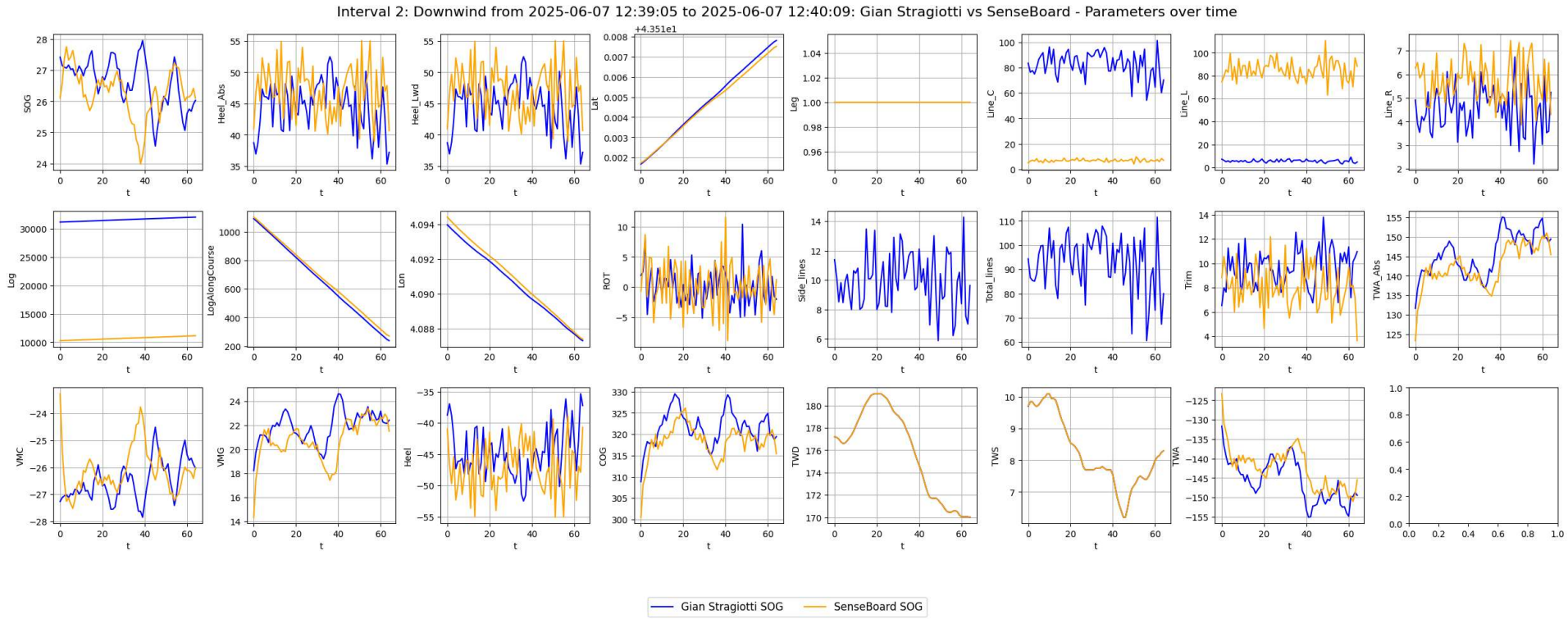
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.224	8.222	6.109	6.109	10.19	10.19	642	640	1.107	1.107			
TWD	175.9	175.9	170	170	181.1	181.1	642	640	3.902	3.901			
SOG	26.63	26.28	24.5	23.8	28.1	28.6	642	640	0.7662	0.7881	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	21.86	20.74	17.42	13.75	25.31	23.84	642	640	1.371	1.786	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	321.6	318.4	306.5	299	332.6	329.3	642	640	4.388	4.542		Gian Stragiotti	Gian Stragiotti
TWA_Abs	145.7	142.5	129.3	121.8	159	153.8	642	640	5.689	5.657			
Heel_Lwd	44.63	47.24	25.7	23.7	65.4	69.2	642	640	6.837	7.129	SenseBoard	Gian Stragiotti	Tie
Side_lines	9.993	nan	2.8	nan	20.1	nan	642	nan	2.669	nan			
Line_C	82.75	6.864	48.6	2.2	119.5	13	640	639	12.93	1.792	Gian Stragiotti	SenseBoard	Tie
Total_lines	92.99	nan	53.1	nan	134	nan	642	nan	14.43	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	877.893526	864.408384
Straight Line [m]	874.421322	860.796229
Distance as Percentage of Straight Line [%]	100.397086	100.419629

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-16.034725	-32.458463	-5.067024
Final Deficit	-31.008516	14.648687	33.867681
Total Gain	-14.973791	47.107150	38.934705
Gain per Minute	-14.018216	44.100937	36.450029




```
Processing: ../Data_Sailnjord/Straight_lines\07_06\07_06_Run6
Processing only reduced intervals for Gian Stragiotti vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 53.04572126436783,
 'avg TWA boat2': 53.22717579250721,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'SenseBoard',
 'end_time': 1749300473.048,
 'high_sog_duration': 69.49200010299683,
 'min_sog_used': 22.1,
 'start_time': 1749300403.556}

================================================================================
Interval 1: Upwind from 2025-06-07 12:46:43 to 2025-06-07 12:47:53: Gian Stragiotti vs SenseBoard
================================================================================
```

Run Statistics

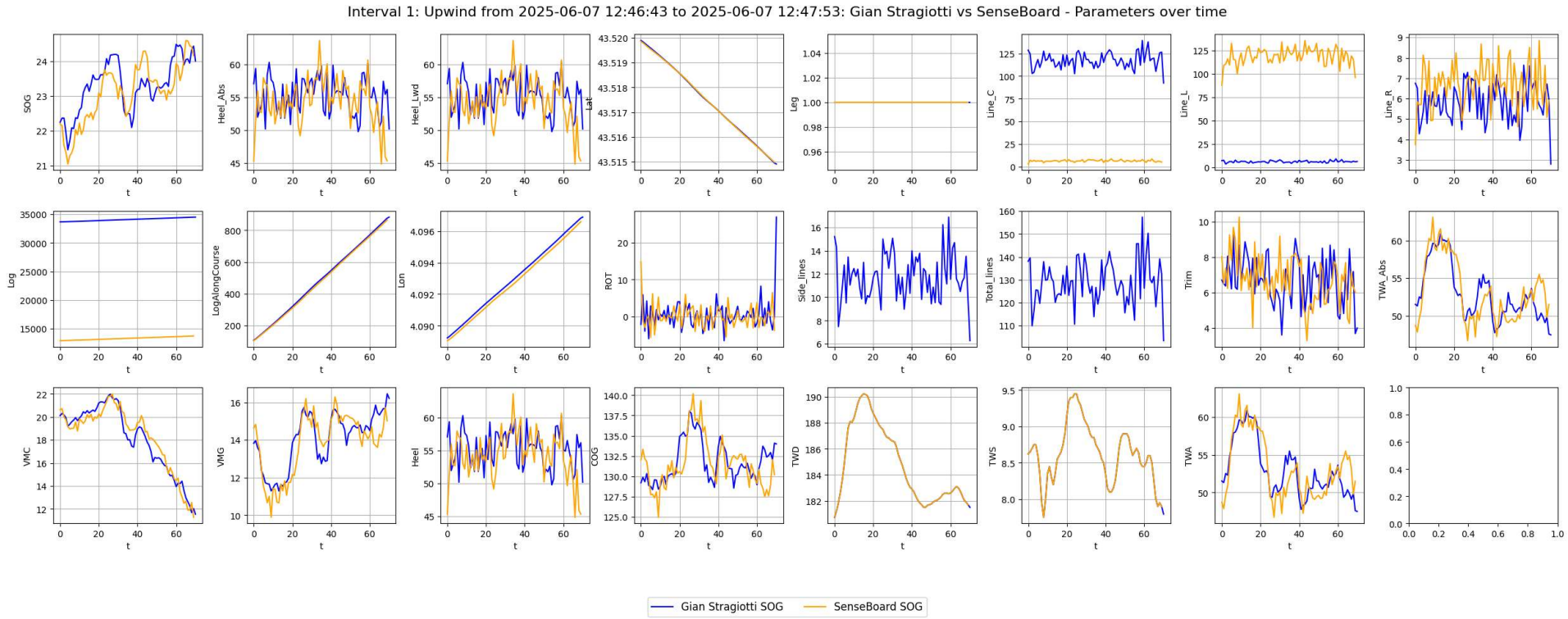
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.623	8.625	7.705	7.706	9.496	9.495	696	694	0.4103	0.4097			
TWD	184.8	184.8	180.6	180.7	190.3	190.3	696	694	2.949	2.946			
SOG	23.3	23.08	21.3	20.9	24.6	24.8	696	694	0.7477	0.8603	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	13.99	13.8	10.09	8.73	17.67	17.61	696	694	1.531	1.701	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	131.7	131.6	124.9	121.5	140.6	143.3	696	694	2.953	3.436		Gian Stragiotti	Gian Stragiotti
TWA_Abs	53.05	53.23	43.36	41.43	64.45	66.51	696	694	3.93	4.434			
Heel_Lwd	55.32	54.44	37.9	35.6	72	71.2	696	694	5.329	5.805	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	11.8	nan	3.3	nan	25.8	nan	696	nan	3.641	nan			
Line_C	117.6	6.62	80.8	2.2	166	14.1	696	694	13.13	1.809	Gian Stragiotti	SenseBoard	Tie
Total_lines	129.3	nan	93.1	nan	179.6	nan	696	nan	14.24	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	834.575578	824.847198
Straight Line [m]	832.274794	822.016788
Distance as Percentage of Straight Line [%]	100.276445	100.344325

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-7.006246	12.965548	6.148939
Final Deficit	-17.271569	9.936249	-2.443118
Total Gain	-10.265323	-3.029299	-8.592057
Gain per Minute	-8.863170	-2.615523	-7.418457




```
Interval 2 summary:
{'avg TWA boat1': -141.38087074829932,
 'avg TWA boat2': -141.91550511945394,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'SenseBoard',
 'end_time': 1749300641.056,
 'high_sog_duration': 58.700000047683716,
 'min_sog_used': 26.8,
 'start_time': 1749300582.356}

================================================================================
Interval 2: Downwind from 2025-06-07 12:49:42 to 2025-06-07 12:50:41: Gian Stragiotti vs SenseBoard
================================================================================
```

Run Statistics

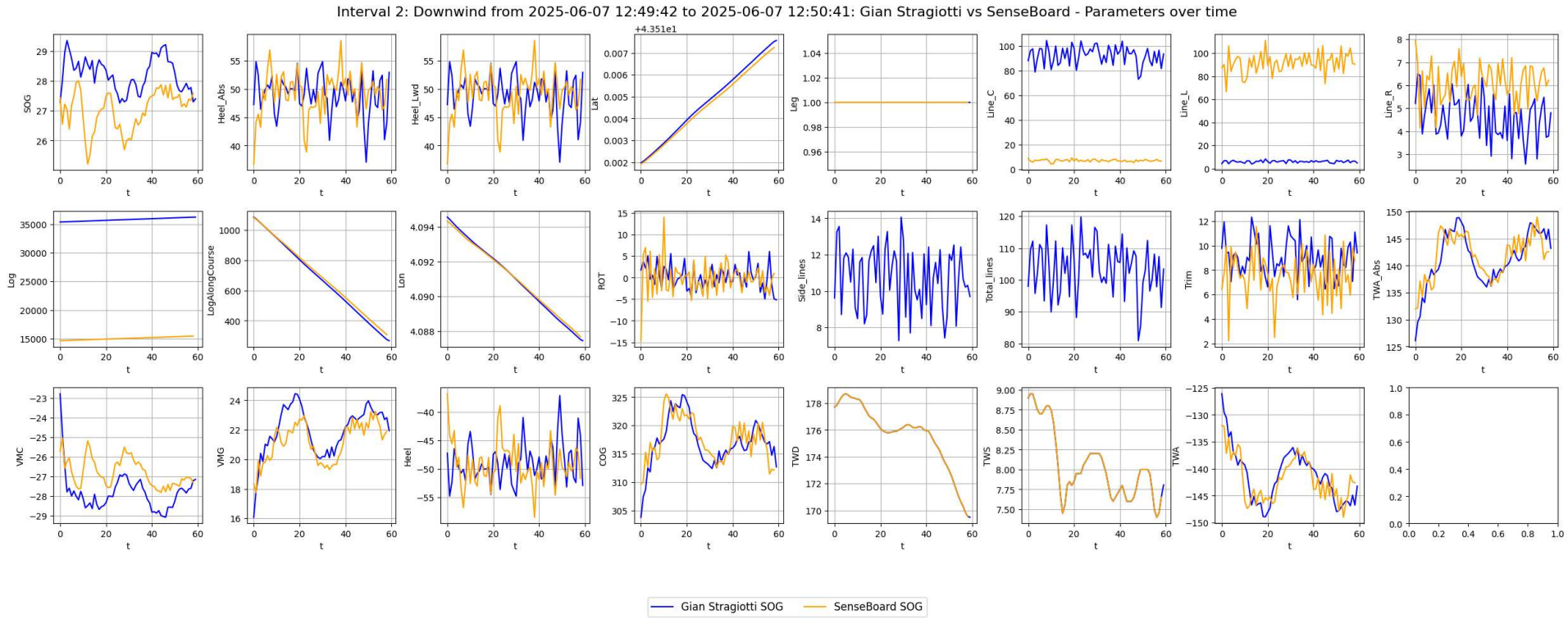
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.04	8.039	7.4	7.4	8.996	8.995	588	586	0.4331	0.4323			
TWD	175.7	175.7	169.5	169.5	178.7	178.7	588	586	2.338	2.326			
SOG	28.24	27	26.1	25.1	29.6	28.2	588	586	0.5776	0.6833	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	21.98	21.19	15.68	14.29	25.1	23.84	588	586	1.659	1.44	Gian Stragiotti	SenseBoard	Tie
COG	317.1	317.6	302.6	301.4	328	328.7	588	586	4.359	4.203		SenseBoard	SenseBoard
TWA_Abs	141.4	141.9	124.9	123.6	151	151.1	588	586	5.099	4.437			
Heel_Lwd	48.82	49.24	29.2	23.6	63.2	69.4	588	586	6.024	6.898	SenseBoard	Gian Stragiotti	Tie
Side_lines	10.75	nan	1.9	nan	18.6	nan	588	nan	3.053	nan			
Line_C	92.46	7.205	63.1	2.2	115.5	12.3	586	586	9.885	1.791	Gian Stragiotti	SenseBoard	Tie
Total_lines	103.7	nan	73.5	nan	131.1	nan	588	nan	10.66	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	853.615794	812.713065
Straight Line [m]	850.321286	809.735115
Distance as Percentage of Straight Line [%]	100.387443	100.367768

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	8.949950	18.326585	4.445688
Final Deficit	-31.674077	11.456219	31.897615
Total Gain	-40.624027	-6.870366	27.451927
Gain per Minute	-41.523707	-7.022521	28.059892




```
Processing: ../Data_Sailnjord/Straight_lines\07_06\07_06_Run7
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 47.92611689814814,
 'avg TWA boat2': 47.380006952491314,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749301285.153,
 'high_sog_duration': 86.2960000038147,
 'min_sog_used': 21.0,
 'start_time': 1749301198.857}

================================================================================
Interval 1: Upwind from 2025-06-07 12:59:58 to 2025-06-07 13:01:25: 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	9.059	9.058	7.5	7.5	10	10	864	863	0.7707	0.7706			
TWD	181	181	174.9	174.9	186.7	186.7	864	863	4.036	4.038			
SOG	21.9	21.9	18.6	20.2	24.2	23.6	864	863	0.9405	0.6545	SenseBoard	SenseBoard	SenseBoard
VMG	14.55	14.71	9.382	10.25	20.41	19.25	864	863	2.455	2.237	SenseBoard	SenseBoard	SenseBoard
COG	133.1	133.6	121.7	123.1	149.6	146.6	864	863	5.099	4.806		SenseBoard	SenseBoard
TWA_Abs	47.93	47.38	26.8	28.83	64.51	61.16	864	863	8.06	7.654			
Heel_Lwd	54.77	54.08	36	36.2	79.1	72.1	864	863	5.966	5.619	Karl Maeder	SenseBoard	Tie
Side_lines	122.1	14.22	78.9	6.5	170.3	25.4	864	863	12.21	3.351	Karl Maeder	SenseBoard	Tie
Line_C	6.653	113.9	2.9	83	13.5	144.1	864	860	1.865	10.98	SenseBoard	Karl Maeder	Tie
Total_lines	129.1	128	85.1	92.6	175.7	168.1	864	863	12.76	12.45	Karl Maeder	SenseBoard	Tie

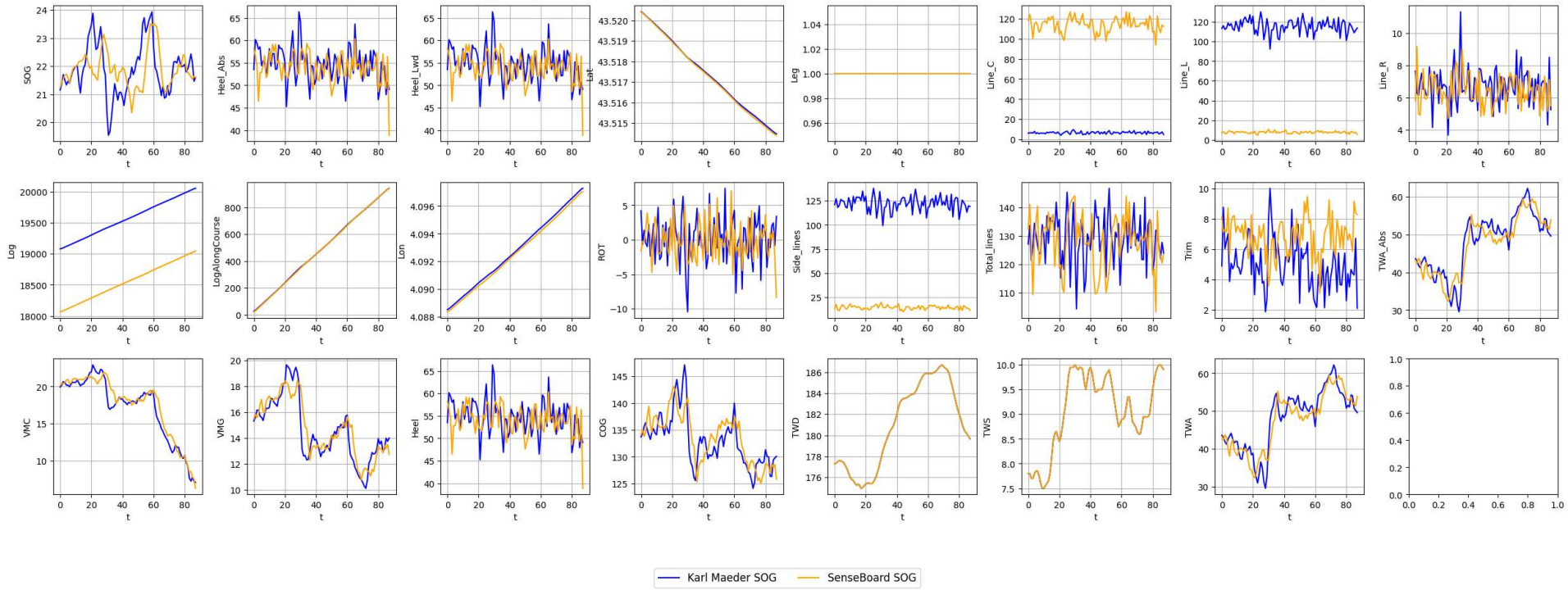
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	974.999635	973.929420
Straight Line [m]	969.327433	968.599142
Distance as Percentage of Straight Line [%]	100.585169	100.550308

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-8.297759	10.037090	1.891145
Final Deficit	-9.058772	18.883040	7.947903
Total Gain	-0.761013	8.845950	6.056758
Gain per Minute	-0.529118	6.150424	4.211151

Interval 1: Upwind from 2025-06-07 12:59:58 to 2025-06-07 13:01:25: Karl Maeder vs SenseBoard - Parameters over time

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Interval 2 summary:
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 'min_sog_used': 25.7,
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================================================================================
Interval 2: Downwind from 2025-06-07 13:03:24 to 2025-06-07 13:04:25: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

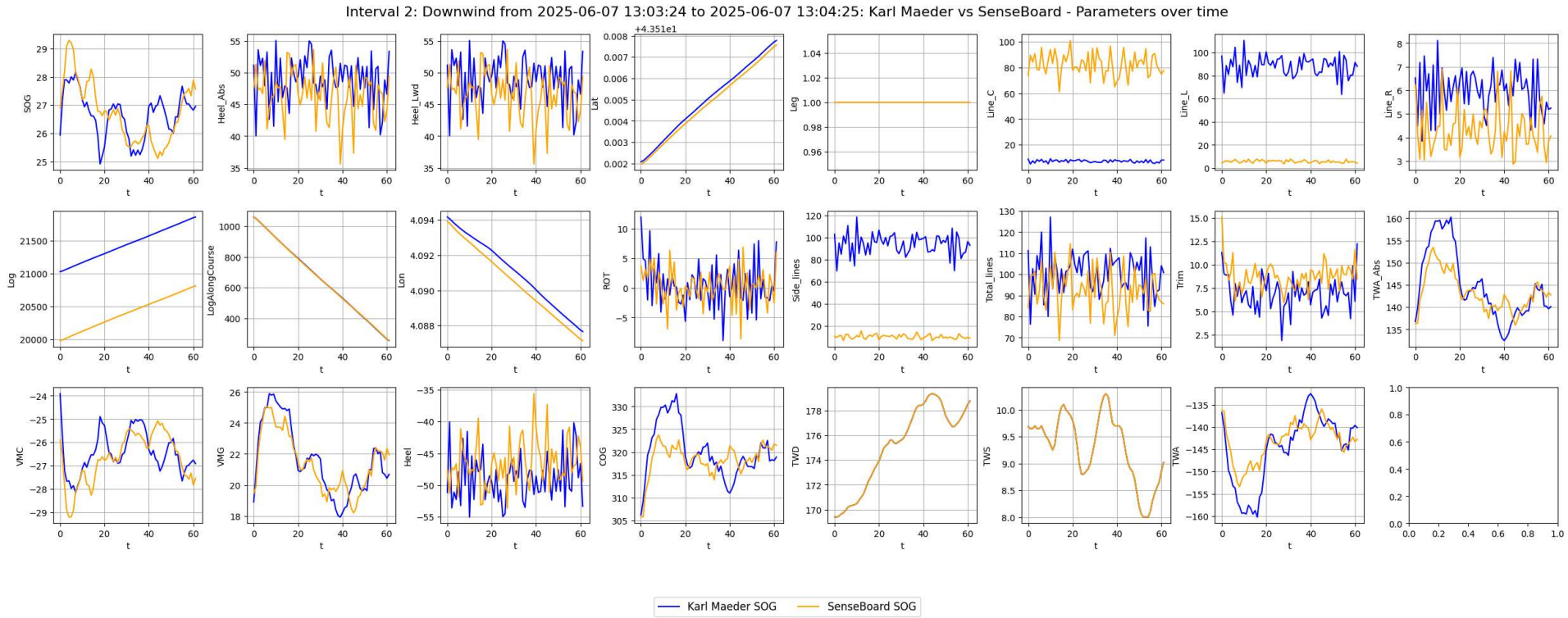
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	9.291	9.291	8	8	10.3	10.3	607	606	0.6367	0.6372			
TWD	175.2	175.2	169.4	169.4	179.4	179.4	607	606	3.216	3.215			
SOG	26.67	26.74	24.5	25.1	28.4	29.4	607	606	0.8184	1.088	SenseBoard	Karl Maeder	Tie
VMG	21.63	21.42	16.83	17.26	26.22	25.76	607	606	2.303	1.913	Karl Maeder	SenseBoard	Tie
COG	320.2	318.5	305.5	302.1	335.3	326.6	607	606	5.874	3.523		SenseBoard	SenseBoard
TWA_Abs	145	143.3	130.1	132.6	162.9	155.2	607	606	8.086	4.521			
Heel_Lwd	48.85	46.45	29	28	66.4	69.7	607	606	5.859	6.636	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	93.62	10.04	60.1	2.9	133.5	19.9	607	606	14.09	2.633	Karl Maeder	SenseBoard	Tie
Line_C	7.162	82.65	2.4	57.1	14	117.5	607	604	1.837	10.99	SenseBoard	Karl Maeder	Tie
Total_lines	100.5	92.66	64.4	62.4	145.9	129.3	607	606	14.72	12.11	Karl Maeder	SenseBoard	Tie

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	832.443215	833.295011
Straight Line [m]	827.146188	830.634023
Distance as Percentage of Straight Line [%]	100.640398	100.320356

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	4.591186	23.158712	9.533505
Final Deficit	7.715792	47.183459	20.765030
Total Gain	3.124606	24.024747	11.231526
Gain per Minute	3.093670	23.786879	11.120323




```
Processing: ../Data_Sailnjord/Straight_lines\07_06\07_06_Run8
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 41.94094908062235,
 'avg TWA boat2': 41.49582719546742,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749301809.552,
 'high_sog_duration': 70.59899997711182,
 'min_sog_used': 22.2,
 'start_time': 1749301738.953}

================================================================================
Interval 1: Upwind from 2025-06-07 13:08:58 to 2025-06-07 13:10:09: 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	9.593	9.593	7.805	7.804	10.7	10.7	707	706	0.7218	0.7222			
TWD	182.2	182.2	180.8	180.8	183.9	183.9	707	706	0.7259	0.7263			
SOG	22.61	22.75	21	21.4	23.8	24.3	707	706	0.5543	0.5596	SenseBoard	Karl Maeder	Tie
VMG	16.79	17.01	14.62	14.68	18.53	19.5	707	706	0.7131	0.8253	SenseBoard	Karl Maeder	Tie
COG	140.3	140.7	131.4	131.8	147.2	148.4	707	706	2.76	2.925		Karl Maeder	Karl Maeder
TWA_Abs	41.94	41.5	34.66	33.77	50.31	49.72	707	706	2.793	2.989			
Heel_Lwd	55.64	53.48	42.4	34.3	71.9	70.7	707	706	5.144	5.618	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	125.3	12.14	82.7	4	167.3	23.1	707	706	13.1	3.316	Karl Maeder	SenseBoard	Tie
Line_C	6.465	114.8	2.5	63.7	12.6	150.3	707	704	1.75	12.33	SenseBoard	Karl Maeder	Tie
Total_lines	131.6	127.1	86.3	72.9	173.2	168.4	707	706	13.64	13.82	Karl Maeder	Karl Maeder	Karl Maeder

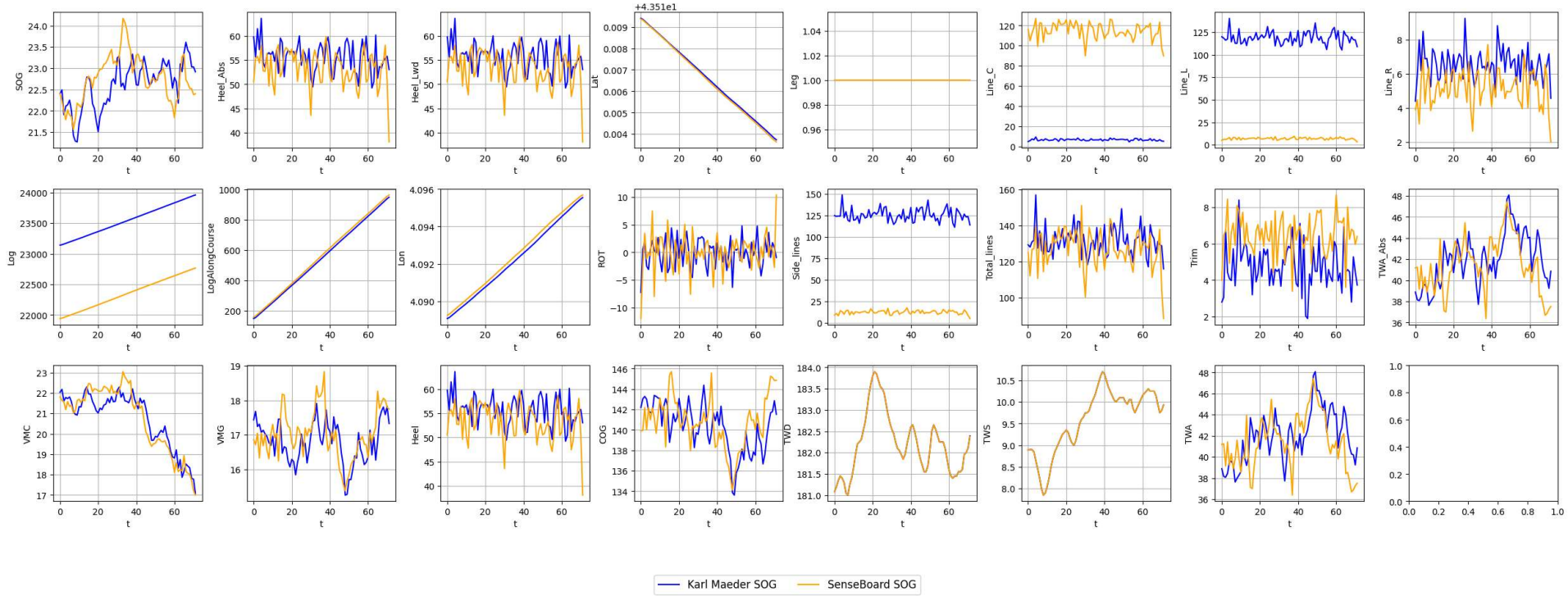
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	823.181208	826.150289
Straight Line [m]	821.078010	823.986297
Distance as Percentage of Straight Line [%]	100.256151	100.262625

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	12.113862	-8.478672	3.343946
Final Deficit	15.010942	-1.515043	10.153115
Total Gain	2.897080	6.963629	6.809169
Gain per Minute	2.462142	5.918182	5.786911

Interval 1: Upwind from 2025-06-07 13:08:58 to 2025-06-07 13:10:09: Karl Maeder vs SenseBoard - Parameters over time




```
Interval 2 summary:
{'avg TWA boat1': -148.9638829113924,
 'avg TWA boat2': -147.5923968253968,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749301973.752,
 'high_sog_duration': 63.092000007629395,
 'min_sog_used': 26.9,
 'start_time': 1749301910.66}

================================================================================
Interval 2: Downwind from 2025-06-07 13:11:50 to 2025-06-07 13:12:53: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

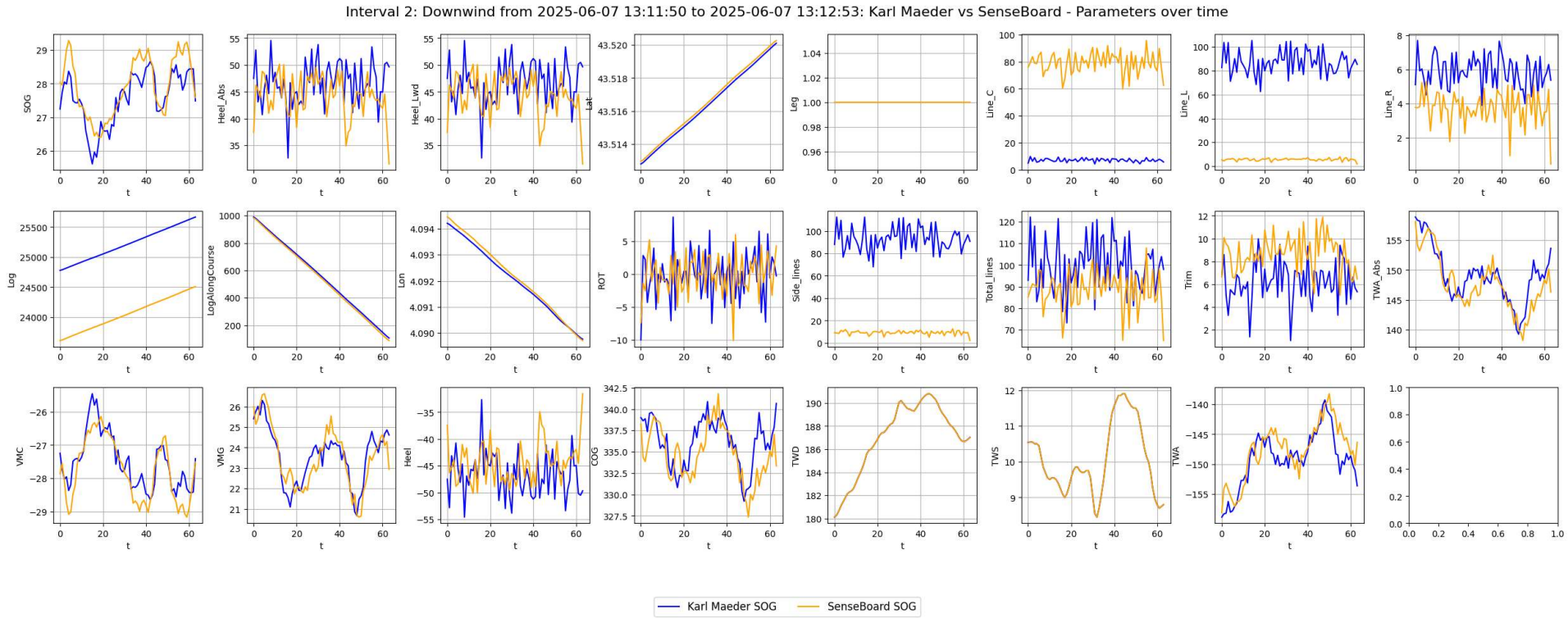
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	10.06	10.07	8.406	8.405	11.99	11.99	632	630	0.9947	0.9948			
TWD	187.1	187.1	180.1	180.1	190.8	190.8	632	630	2.953	2.944			
SOG	27.58	27.93	25.5	26.3	28.8	29.4	632	630	0.7979	0.8778	SenseBoard	Karl Maeder	Tie
VMG	23.55	23.5	19.73	19.76	26.88	27.22	632	630	1.44	1.546	Karl Maeder	Karl Maeder	Karl Maeder
COG	336.1	334.7	326.5	324.4	344.5	343.3	632	630	3.462	3.532		Karl Maeder	Karl Maeder
TWA_Abs	149	147.6	136.3	135.3	162.4	159.7	632	630	4.827	4.837			
Heel_Lwd	46.7	44.4	20.1	25.2	67.2	65.9	632	630	6.258	6.664	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	92.9	9.273	48.9	1.5	151.5	16.5	632	630	15.95	2.648	Karl Maeder	SenseBoard	Tie
Line_C	7.09	79.18	2.8	45.9	12.1	109.3	632	628	1.946	10.22	SenseBoard	Karl Maeder	Tie
Total_lines	99.93	88.49	57.6	49.1	163.4	123.6	632	630	17.09	11.27	Karl Maeder	SenseBoard	Tie

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	895.493437	904.074708
Straight Line [m]	893.184216	901.636863
Distance as Percentage of Straight Line [%]	100.258538	100.270380

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	9.609305	-25.014488	-21.130635
Final Deficit	17.801100	-3.327803	-16.968464
Total Gain	8.191795	21.686685	4.162171
Gain per Minute	7.790333	20.623868	3.958192




```
Processing: ../Data_Sailnjord/Straight_lines\07_06\07_06_Run9
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 38.23883565107459,
 'avg TWA boat2': 38.14020379746835,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749302301.859,
 'high_sog_duration': 78.99900007247925,
 'min_sog_used': 21.6,
 'start_time': 1749302222.86}

================================================================================
Interval 1: Upwind from 2025-06-07 13:17:02 to 2025-06-07 13:18:21: 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	10.33	10.33	9.006	9.007	11.2	11.2	791	790	0.5675	0.5678			
TWD	181.4	181.4	178.4	178.4	183.9	183.9	791	790	1.563	1.561			
SOG	22.45	22.52	20.8	21.3	24.4	23.6	791	790	0.5951	0.429	SenseBoard	SenseBoard	SenseBoard
VMG	17.58	17.67	14.22	14.39	20.4	20.06	791	790	1.118	1.051	SenseBoard	SenseBoard	SenseBoard
COG	143.1	143.2	134.3	134.5	151.7	151.5	791	790	3.404	3.189		SenseBoard	SenseBoard
TWA_Abs	38.24	38.14	28.3	28.63	49.5	49.16	791	790	4.334	4.002			
Heel_Lwd	55.17	54.11	27	37.4	71.7	72.6	791	790	5.959	5.174	Karl Maeder	SenseBoard	Tie
Side_lines	123.2	12.82	75.74	3.5	159.5	27.2	791	790	15.47	3.853	Karl Maeder	SenseBoard	Tie
Line_C	6.243	117.8	2.7	78.7	12.7	156.1	791	788	1.868	12.35	SenseBoard	Karl Maeder	Tie
Total_lines	129.5	130.5	78.29	88.1	170.6	179.5	791	790	16.3	13.82	SenseBoard	SenseBoard	SenseBoard

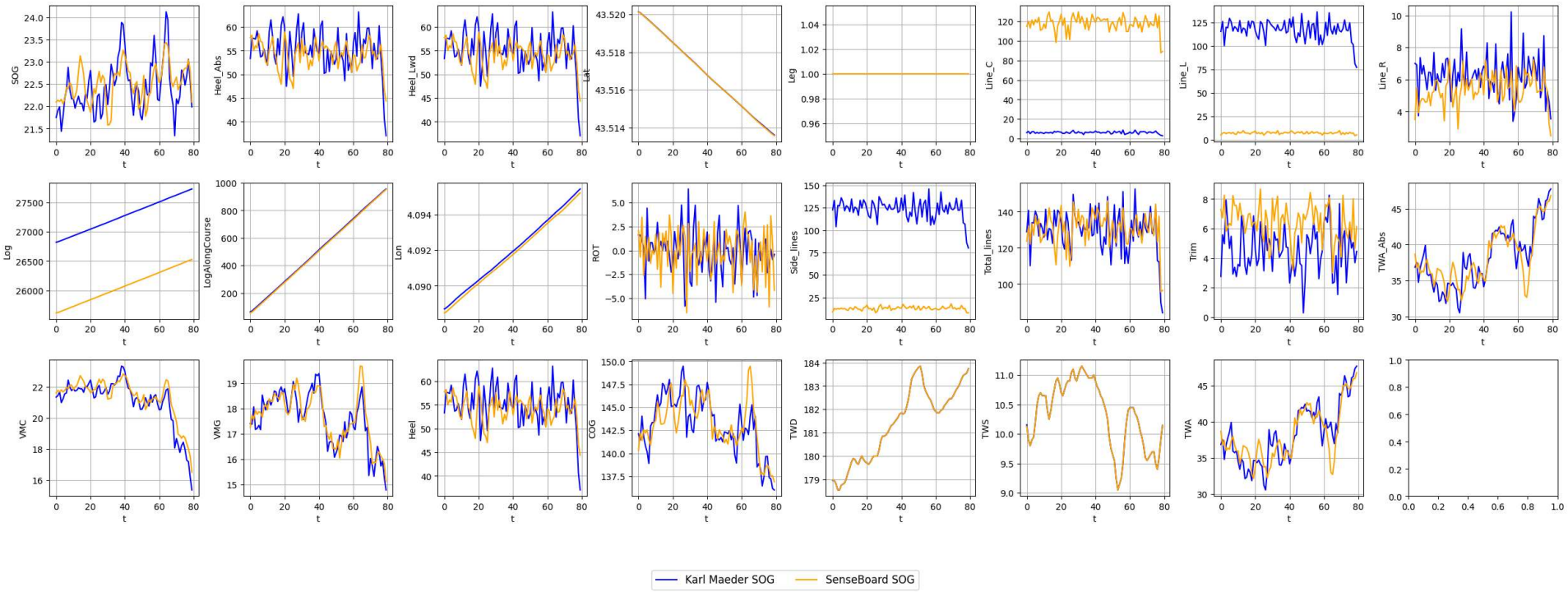
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	913.233405	915.406039
Straight Line [m]	910.407581	912.864734
Distance as Percentage of Straight Line [%]	100.310391	100.278388

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-9.307891	14.884182	1.901537
Final Deficit	-6.847413	16.557233	4.869610
Total Gain	2.460478	1.673051	2.968073
Gain per Minute	1.868741	1.270688	2.254261

Interval 1: Upwind from 2025-06-07 13:17:02 to 2025-06-07 13:18:21: Karl Maeder vs SenseBoard - Parameters over time




```
Interval 2 summary:
{'avg TWA boat1': -145.27775609756097,
 'avg TWA boat2': -144.661623853211,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749302449.157,
 'high_sog_duration': 65.49699997901917,
 'min_sog_used': 27.8,
 'start_time': 1749302383.66}

================================================================================
Interval 2: Downwind from 2025-06-07 13:19:43 to 2025-06-07 13:20:49: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

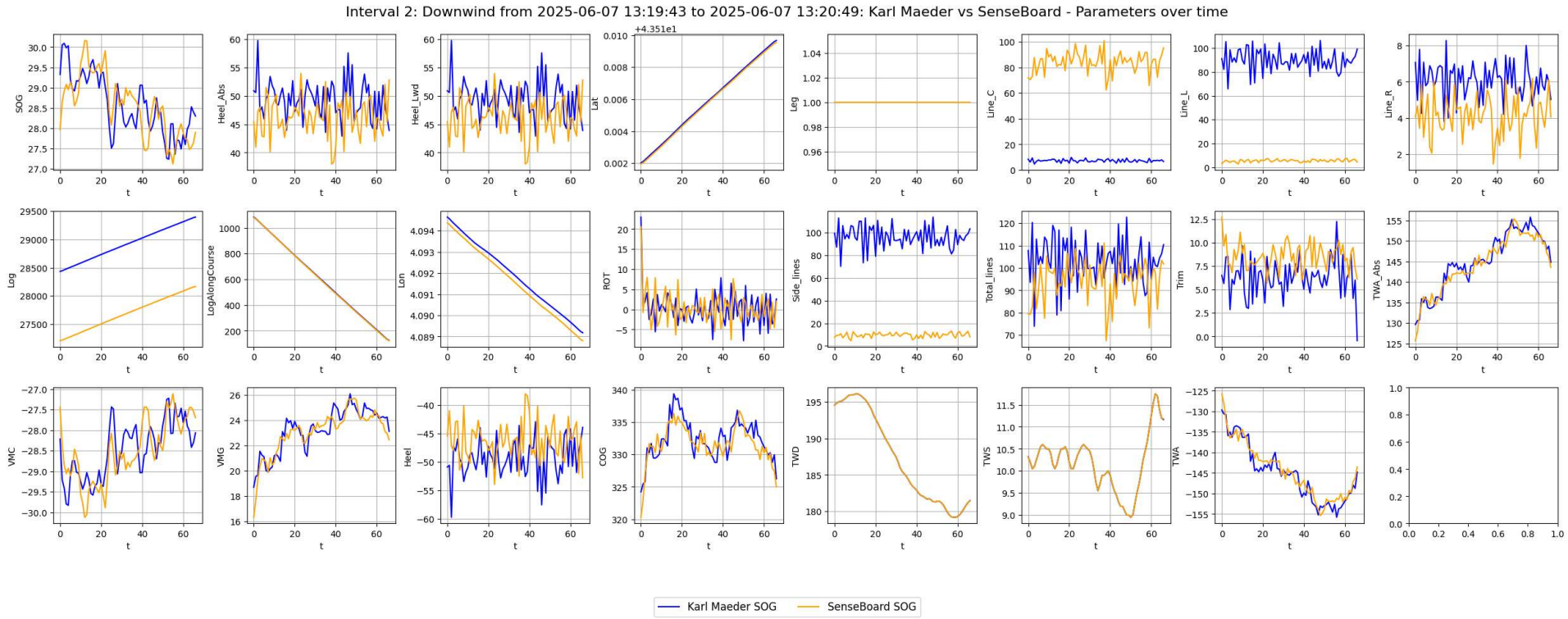
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	10.17	10.17	8.906	8.905	11.79	11.79	656	654	0.6431	0.643			
TWD	187.2	187.2	179.2	179.2	196.1	196.1	656	654	6.213	6.211			
SOG	28.58	28.57	27	26.9	30.5	30.4	656	654	0.7544	0.7694	Karl Maeder	Karl Maeder	Karl Maeder
VMG	23.27	23.12	17.41	15.75	26.5	26.27	656	654	1.746	1.726	Karl Maeder	SenseBoard	Tie
COG	332.5	331.8	321	318.8	343	339.5	656	654	3.453	3.119		SenseBoard	SenseBoard
TWA_Abs	145.3	144.7	126.5	124.2	158.8	158.1	656	654	7.086	6.739			
Heel_Lwd	49.42	46.13	30.9	26.7	70.1	66.8	656	654	6.042	5.987	Karl Maeder	SenseBoard	Tie
Side_lines	95.82	9.691	62.7	1.1	136.5	19.9	656	654	13.81	2.95	Karl Maeder	SenseBoard	Tie
Line_C	7.247	84.21	2.5	47.8	13.4	115	656	652	1.921	10.92	SenseBoard	Karl Maeder	Tie
Total_lines	102.9	94.1	66.1	51.6	146.5	130.1	656	654	14.57	11.88	Karl Maeder	SenseBoard	Tie

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	963.036606	959.793589
Straight Line [m]	960.561651	957.618635
Distance as Percentage of Straight Line [%]	100.257657	100.227121

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	4.141834	23.187671	9.802363
Final Deficit	1.134376	33.095283	17.917314
Total Gain	-3.007458	9.907611	8.114951
Gain per Minute	-2.755050	9.076090	7.433883




```
Processing: ../Data_Sailnjord/Straight_lines\09_06\09_06_Run1
Error: No or insufficient intervals for run: 09_06_Run1


Processing: ../Data_Sailnjord/Straight_lines\09_06\09_06_Run10
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 53.130319268635716,
 'avg TWA boat2': 52.58521690140845,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749475539.36,
 'high_sog_duration': 71.0,
 'min_sog_used': 22.5,
 'start_time': 1749475468.36}

================================================================================
Interval 1: Upwind from 2025-06-09 13:24:28 to 2025-06-09 13:25:39: 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	7.079	7.078	6.5	6.5	7.8	7.8	711	710	0.3432	0.3434			
TWD	236.6	236.6	233	233	240.1	240.1	711	710	2.215	2.216			
SOG	23.13	23.51	22.1	22.5	24	24.4	711	710	0.4053	0.4505	SenseBoard	Karl Maeder	Tie
VMG	13.85	14.25	9.926	10.9	16.57	17.51	711	710	1.206	1.313	SenseBoard	Karl Maeder	Tie
COG	183.4	184	173.5	172.5	193.1	196.1	711	710	3.77	4.02		Karl Maeder	Karl Maeder
TWA_Abs	53.13	52.59	43.9	41	64.67	62.1	711	710	3.764	4.007			
Heel_Lwd	55.44	54.55	37.6	33.4	71.5	69.1	711	710	5.08	5.158	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	14.34	124.5	5.9	56.4	26	164.1	711	710	3.36	12.5	SenseBoard	Karl Maeder	Tie
Line_C	118	5.973	80	0.9	154.6	12.1	711	709	12.25	1.777	Karl Maeder	SenseBoard	Tie
Total_lines	132.7	130.7	91.5	57.6	176.8	176.2	711	710	13.57	13.32	Karl Maeder	SenseBoard	Tie

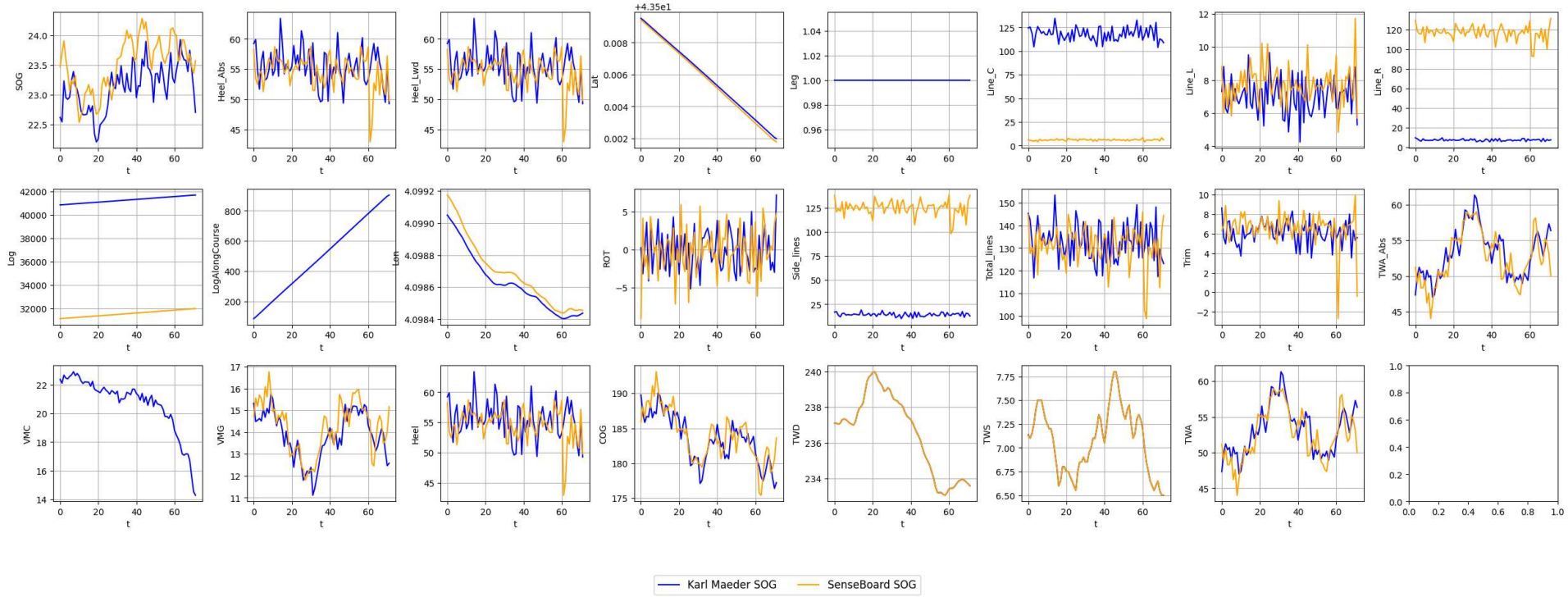
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	845.799539	858.077253
Straight Line [m]	843.944499	855.980928
Distance as Percentage of Straight Line [%]	100.219806	100.244903

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	11.326566	-10.451618	-1.565376
Final Deficit	23.353655	-2.577102	11.950484
Total Gain	12.027089	7.874516	13.515860
Gain per Minute	10.163737	6.654521	11.421853

Interval 1: Upwind from 2025-06-09 13:24:28 to 2025-06-09 13:25:39: Karl Maeder vs SenseBoard - Parameters over time




```
Interval 2 summary:
{'avg TWA boat1': -142.2301451355662,
 'avg TWA boat2': -142.0313712,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749475711.655,
 'high_sog_duration': 62.59100008010864,
 'min_sog_used': 26.6,
 'start_time': 1749475649.064}

================================================================================
Interval 2: Downwind from 2025-06-09 13:27:29 to 2025-06-09 13:28:31: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

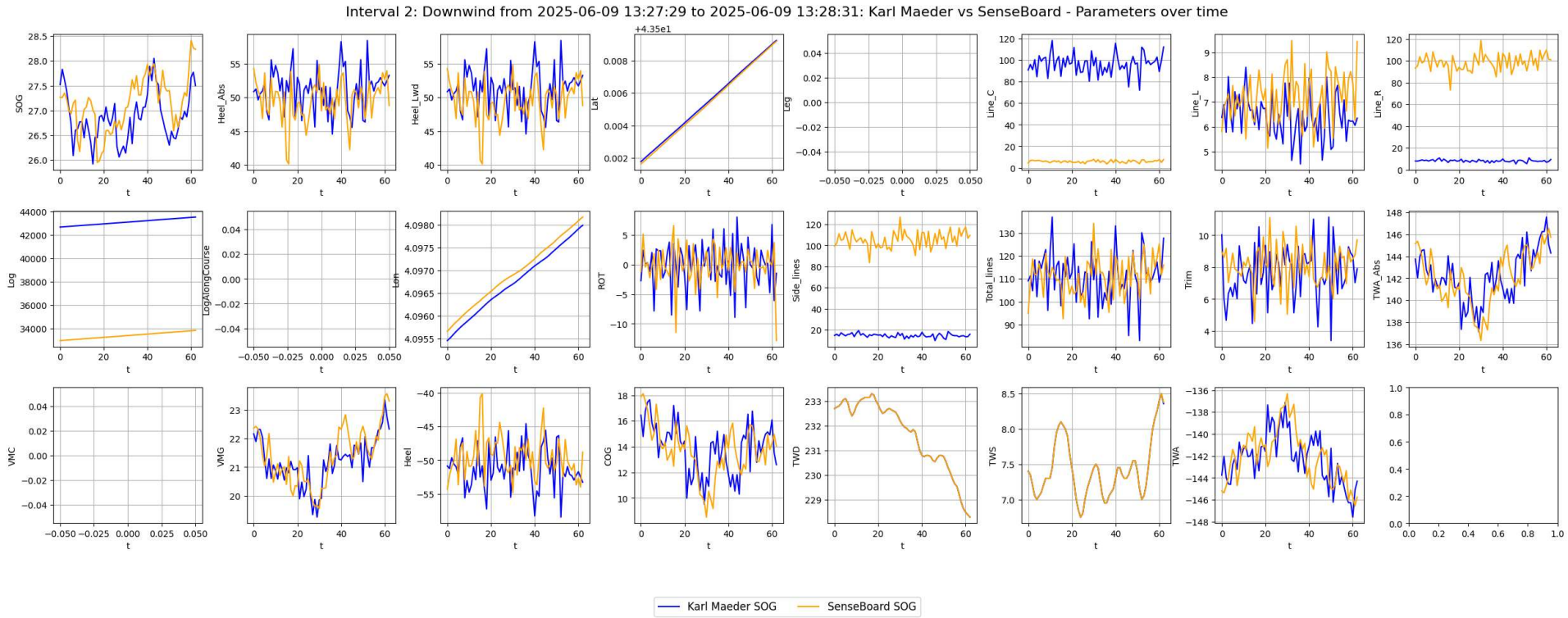
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.418	7.417	6.704	6.704	8.5	8.5	627	625	0.4117	0.4109			
TWD	231.6	231.6	228.3	228.3	233.4	233.4	627	625	1.396	1.391			
SOG	26.86	27.13	24.5	24.4	29.6	28.6	627	625	0.5628	0.5824	SenseBoard	Karl Maeder	Tie
VMG	21.21	21.36	17.89	18.4	24.49	24.24	627	625	1.02	1.112	SenseBoard	Karl Maeder	Tie
COG	13.87	13.68	4.1	5.6	20.5	22.8	627	625	2.87	2.753		SenseBoard	SenseBoard
TWA_Abs	142.2	142	133.3	133	150.7	150	627	625	3.107	3.056			
Heel_Lwd	51.23	49.52	31.7	32.8	69.8	64.3	627	625	5.848	5.234	Karl Maeder	SenseBoard	Tie
Side_lines	14.6	105.6	5.6	51.4	26.6	146.8	627	625	3.032	11.77	SenseBoard	Karl Maeder	Tie
Line_C	96.48	5.851	60.7	0	132.7	10.3	627	625	12.49	1.904	Karl Maeder	SenseBoard	Tie
Total_lines	111.2	111.3	72.3	54.6	149	155.7	627	625	13.9	12.38	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	865.028744	872.213691
Straight Line [m]	863.957593	871.204293
Distance as Percentage of Straight Line [%]	100.123982	100.115862

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-10.601677	-19.751792	-3.717408
Final Deficit	-3.345724	-15.888820	-7.087040
Total Gain	7.255953	3.862972	-3.369632
Gain per Minute	6.955588	3.703061	-3.230144




```
Processing: ../Data_Sailnjord/Straight_lines\09_06\09_06_Run11
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 52.30572202166066,
 'avg TWA boat2': 51.72654698795181,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749476127.96,
 'high_sog_duration': 82.99600005149841,
 'min_sog_used': 20.5,
 'start_time': 1749476044.964}

================================================================================
Interval 1: Upwind from 2025-06-09 13:34:04 to 2025-06-09 13:35:27: 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	7.28	7.28	6.104	6.104	8	8	831	830	0.4268	0.427			
TWD	232.3	232.3	227.1	227.1	235	235	831	830	1.698	1.697			
SOG	22.44	22.57	20.7	21.2	24.2	23.6	831	830	0.7464	0.6508	SenseBoard	SenseBoard	SenseBoard
VMG	13.68	13.94	10.5	10.82	16.4	17.28	831	830	0.9539	0.8815	SenseBoard	SenseBoard	SenseBoard
COG	180	180.5	168.7	170.4	191.4	191.5	831	830	4.4	4.217		SenseBoard	SenseBoard
TWA_Abs	52.31	51.73	43.48	39.82	62.3	61.4	831	830	3.443	3.282			
Heel_Lwd	55.27	54.39	31.9	36.9	74.2	70.5	831	830	5.849	5.39	Karl Maeder	SenseBoard	Tie
Side_lines	13.85	124.8	4.9	82.3	26.4	161.4	831	830	3.592	10.82	SenseBoard	Karl Maeder	Tie
Line_C	115.1	6.486	71.8	1.2	163.5	12.1	831	825	13.84	1.675	Karl Maeder	SenseBoard	Tie
Total_lines	128.9	131.3	80.3	83.5	182.6	162.1	831	830	15.71	11.43	SenseBoard	SenseBoard	SenseBoard

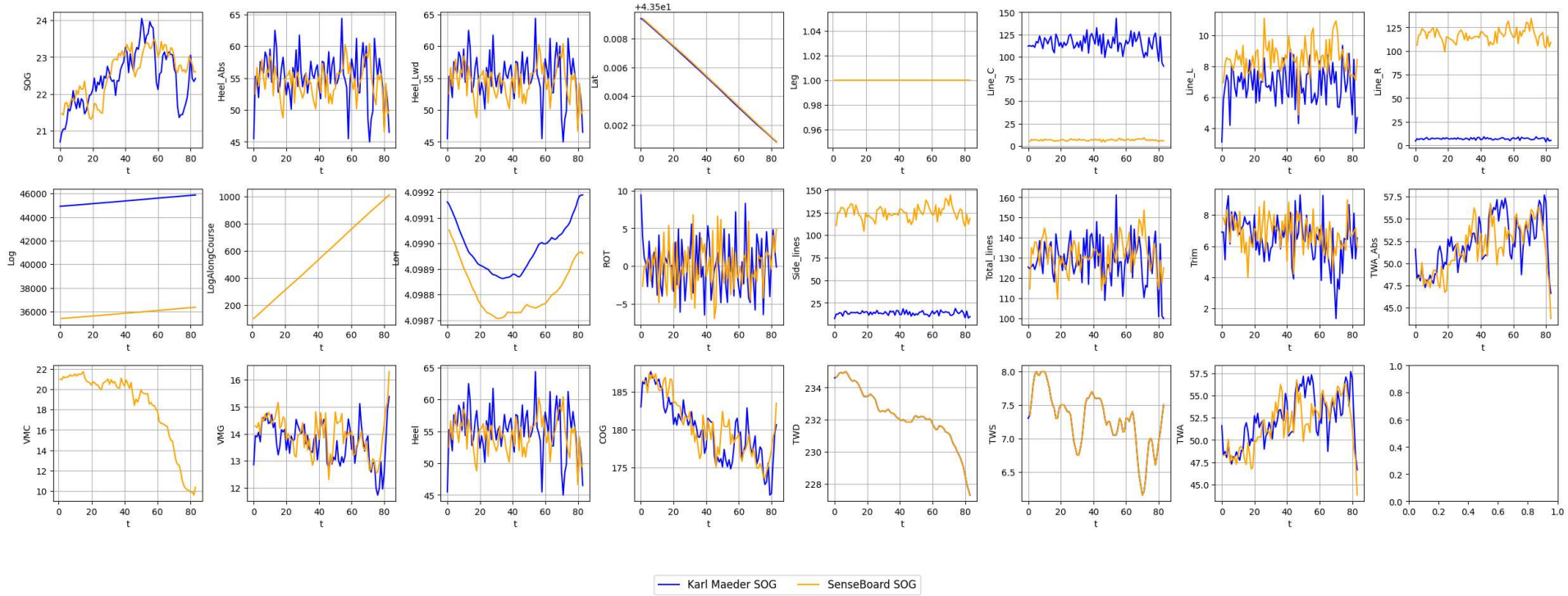
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	958.679474	962.523824
Straight Line [m]	955.828981	959.864108
Distance as Percentage of Straight Line [%]	100.298222	100.277093

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-6.751240	8.230762	2.384845
Final Deficit	-2.750499	18.850097	13.234007
Total Gain	4.000740	10.619335	10.849162
Gain per Minute	2.892241	7.676998	7.843145

Interval 1: Upwind from 2025-06-09 13:34:04 to 2025-06-09 13:35:27: Karl Maeder vs SenseBoard - Parameters over time




```
Interval 2 summary:
{'avg TWA boat1': -142.36573607748184,
 'avg TWA boat2': -142.48069586374697,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749476277.75,
 'high_sog_duration': 41.19099998474121,
 'min_sog_used': 25.1,
 'start_time': 1749476236.559}

================================================================================
Interval 2: Downwind from 2025-06-09 13:37:16 to 2025-06-09 13:37:57: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

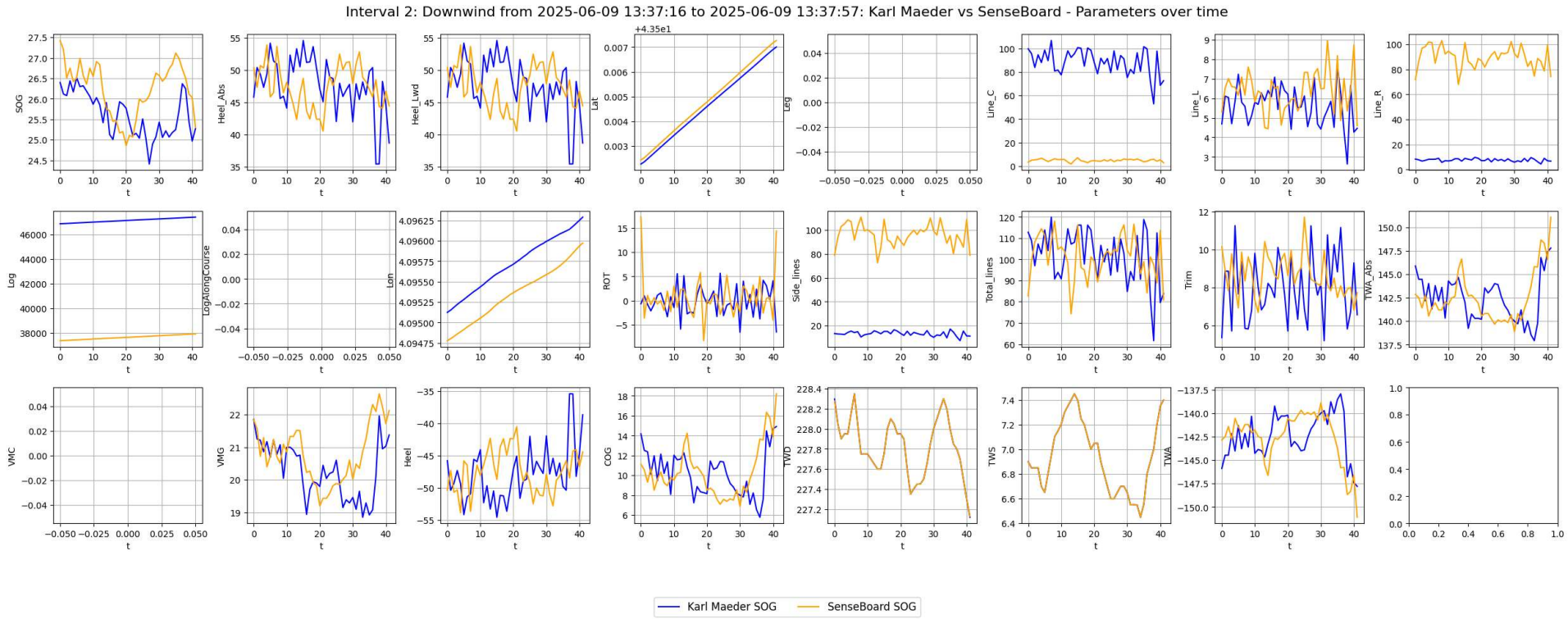
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	6.93	6.929	6.405	6.404	7.496	7.496	413	411	0.2894	0.2892			
TWD	227.8	227.8	227.1	227.1	228.4	228.4	413	411	0.2887	0.2857			
SOG	25.61	26.23	23.9	24.6	26.7	27.5	413	411	0.5641	0.6617	SenseBoard	Karl Maeder	Tie
VMG	20.25	20.77	17.28	18.02	22.64	23.14	413	411	0.9617	1.019	SenseBoard	Karl Maeder	Tie
COG	10.18	10.3	1.9	3.4	17.8	22.1	413	411	2.854	3.12		Karl Maeder	Karl Maeder
TWA_Abs	142.4	142.5	133.9	135.7	150.6	155	413	411	2.965	3.178			
Heel_Lwd	47.81	47.46	17.7	29.2	64.9	63.3	413	411	6.86	6.024	Karl Maeder	SenseBoard	Tie
Side_lines	13.27	96.19	4.2	66.8	22.6	127.3	413	411	3.086	11.58	SenseBoard	Karl Maeder	Tie
Line_C	88.36	4.897	45.1	0.1	116.5	9.2	413	409	13.8	1.639	Karl Maeder	SenseBoard	Tie
Total_lines	101.6	101.3	51.3	68.3	135	132.2	413	411	15.84	12.44	Karl Maeder	SenseBoard	Tie

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	542.406942	552.359279
Straight Line [m]	541.742134	551.523357
Distance as Percentage of Straight Line [%]	100.122717	100.151566

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	13.554020	30.697228	8.010541
Final Deficit	23.352121	29.922558	-0.221845
Total Gain	9.798101	-0.774670	-8.232386
Gain per Minute	14.272197	-1.128407	-11.991532




```
Processing: ../Data_Sailnjord/Straight_lines\09_06\09_06_Run2
Error: No or insufficient intervals for run: 09_06_Run2


Processing: ../Data_Sailnjord/Straight_lines\09_06\09_06_Run3
Error: At least two CSV files are required.


Processing: ../Data_Sailnjord/Straight_lines\09_06\09_06_Run4
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 49.59838480697385,
 'avg TWA boat2': 49.4283042394015,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749472189.854,
 'high_sog_duration': 80.21000003814697,
 'min_sog_used': 22.8,
 'start_time': 1749472109.644}

==============================================================================
Interval 1: Upwind from 2025-06-09 12:28:29 to 2025-06-09 12:29:49: Karl Maeder vs SenseBoard
==============================================================================
```

Run Statistics

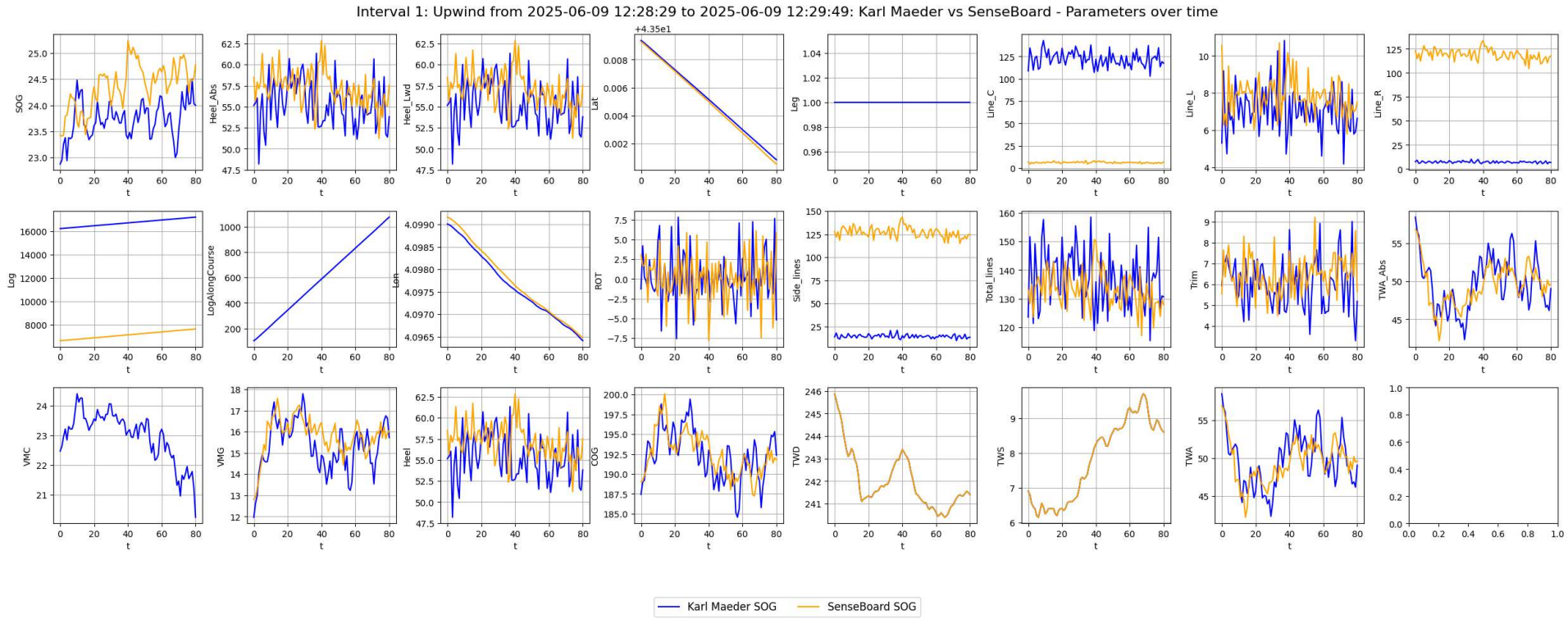
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.799	7.798	6.105	6.105	9.7	9.7	803	802	1.16	1.16			
TWD	242	242	240.4	240.4	245.9	245.9	803	802	1.219	1.219			
SOG	23.73	24.37	22.8	23.3	24.7	25.4	803	802	0.3651	0.4363	SenseBoard	Karl Maeder	Tie
VMG	15.35	15.82	10.9	12.25	18.61	18.55	803	802	1.282	1.016	SenseBoard	SenseBoard	SenseBoard
COG	192.4	192.5	179.7	184.2	203.3	203.6	803	802	3.708	3.187		SenseBoard	SenseBoard
TWA_Abs	49.6	49.43	39.75	37.85	61.57	58.44	803	802	3.854	3.17			
Heel_Lwd	55.35	57.19	39.1	43.3	71.2	76.4	803	802	4.965	4.621	SenseBoard	SenseBoard	SenseBoard
Side_lines	14.37	127	4.9	85.9	27.3	157.2	803	802	3.562	10.89	SenseBoard	Karl Maeder	Tie
Line_C	122.3	6.343	80.7	1.7	162.3	11.6	803	800	12.67	1.733	Karl Maeder	SenseBoard	Tie
Total_lines	137	133.2	104	92	180.3	166.6	803	802	14.28	11.17	Karl Maeder	SenseBoard	Tie

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	980.948536	1004.881686
Straight Line [m]	978.904432	1003.347031
Distance as Percentage of Straight Line [%]	100.208816	100.152953

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	7.122136	-14.305308	-6.277499
Final Deficit	31.602306	-12.478284	10.980581
Total Gain	24.480171	1.827024	17.258080
Gain per Minute	18.312059	1.366680	12.909672

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Interval 2 summary:
{'avg TWA boat1': -134.85508047690016,
 'avg TWA boat2': -135.13272835820896,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749472323.448,
 'high_sog_duration': 66.99799990653992,
 'min_sog_used': 27.1,
 'start_time': 1749472256.45}

================================================================================
Interval 2: Downwind from 2025-06-09 12:30:56 to 2025-06-09 12:32:03: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

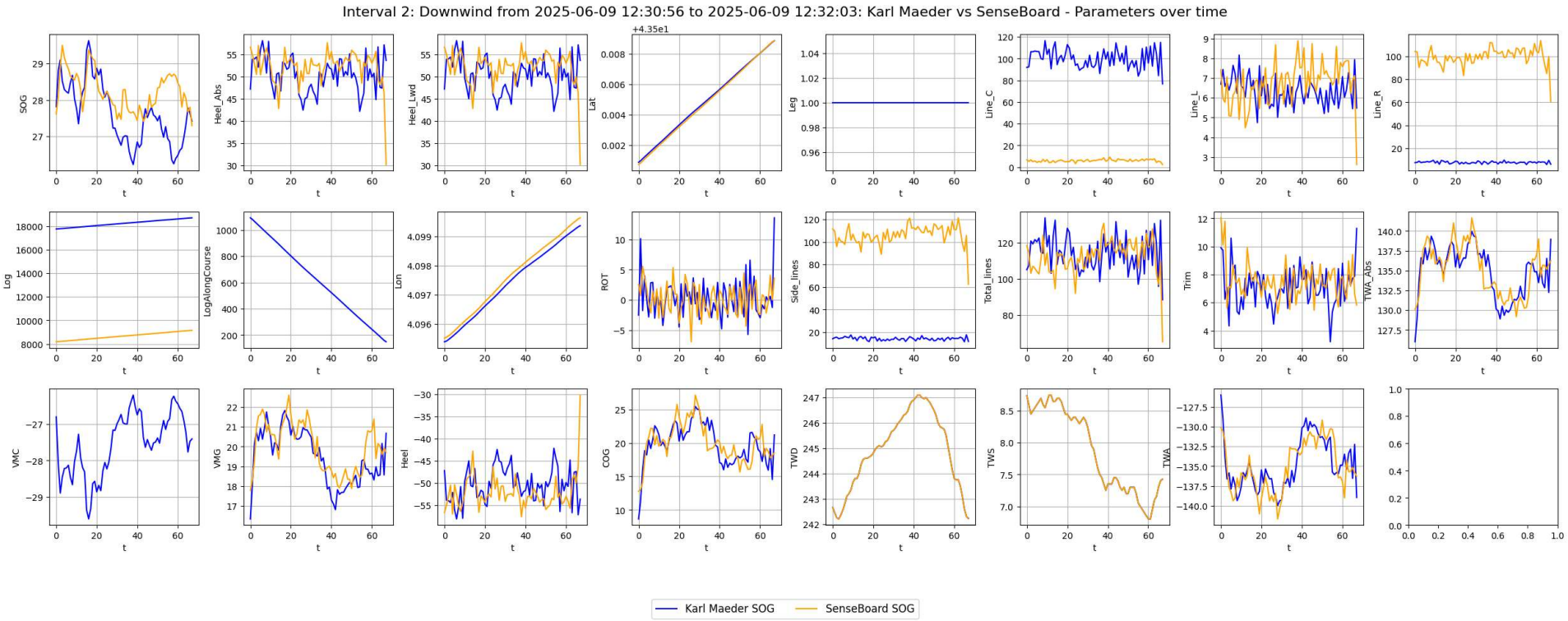
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.861	7.861	6.8	6.8	8.795	8.796	671	670	0.6575	0.6578			
TWD	244.9	244.9	242.2	242.2	247.1	247.1	671	670	1.496	1.493			
SOG	27.62	28.24	26.1	27.2	30	29.6	671	670	0.8591	0.5468	SenseBoard	SenseBoard	SenseBoard
VMG	19.45	19.98	14.59	16.61	22.76	23.07	671	670	1.497	1.412	SenseBoard	SenseBoard	SenseBoard
COG	19.79	20.08	5.4	9.9	27.3	29.4	671	670	3.506	3.398		SenseBoard	SenseBoard
TWA_Abs	134.9	135.1	122.8	126.2	142	143.9	671	670	3.646	3.654			
Heel_Lwd	50.35	52.32	33.6	22.8	68.3	66.6	671	670	6.099	5.618	SenseBoard	SenseBoard	SenseBoard
Side_lines	14.29	106.6	6.4	56.8	23.6	129.2	671	670	2.91	9.848	SenseBoard	Karl Maeder	Tie
Line_C	100.1	6.05	71.3	0.2	134.2	15.7	671	666	11.99	2.301	Karl Maeder	SenseBoard	Tie
Total_lines	114.5	112.7	81.6	59.3	154.9	140.1	671	670	13.54	11.01	Karl Maeder	SenseBoard	Tie

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	951.683037	971.161759
Straight Line [m]	949.925398	969.476503
Distance as Percentage of Straight Line [%]	100.185029	100.173831

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-12.044154	-14.693209	-1.920563
Final Deficit	7.514250	-19.891498	-19.400674
Total Gain	19.558404	-5.198290	-17.480111
Gain per Minute	17.515511	-4.655324	-15.654298




```
Processing: ../Data_Sailnjord/Straight_lines\09_06\09_06_Run5
Error: No or insufficient intervals for run: 09_06_Run5


Processing: ../Data_Sailnjord/Straight_lines\09_06\09_06_Run6
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 47.938517919075146,
 'avg TWA boat2': 47.48461921296297,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749473229.046,
 'high_sog_duration': 86.39400005340576,
 'min_sog_used': 22.6,
 'start_time': 1749473142.652}

================================================================================
Interval 1: Upwind from 2025-06-09 12:45:42 to 2025-06-09 12:47:09: 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	7.479	7.479	6.504	6.504	8.4	8.4	865	864	0.6093	0.6097			
TWD	240.7	240.7	239.2	239.2	244.5	244.5	865	864	1.399	1.4			
SOG	23.03	23.61	21.7	22.5	26.5	24.8	865	864	0.4975	0.5176	SenseBoard	Karl Maeder	Tie
VMG	15.41	15.92	11.71	12.91	18.77	18.13	865	864	1.005	0.9329	SenseBoard	SenseBoard	SenseBoard
COG	192.7	193.2	181.3	182.9	202.2	201.9	865	864	3.641	3.747		Karl Maeder	Karl Maeder
TWA_Abs	47.94	47.48	39.44	38.22	58.79	57.09	865	864	3.174	3.356			
Heel_Lwd	55.65	56.64	42.9	37.7	71.2	72.5	865	864	4.917	4.835	SenseBoard	SenseBoard	SenseBoard
Side_lines	14.7	123.7	5.8	89.8	25.8	147.5	865	864	3.344	10.12	SenseBoard	Karl Maeder	Tie
Line_C	123.8	4.206	90.3	0.3	157.7	8.9	865	858	11.55	1.589	Karl Maeder	SenseBoard	Tie
Total_lines	138.6	127.5	101.5	91.9	178.7	152.6	865	864	12.36	10.56	Karl Maeder	SenseBoard	Tie

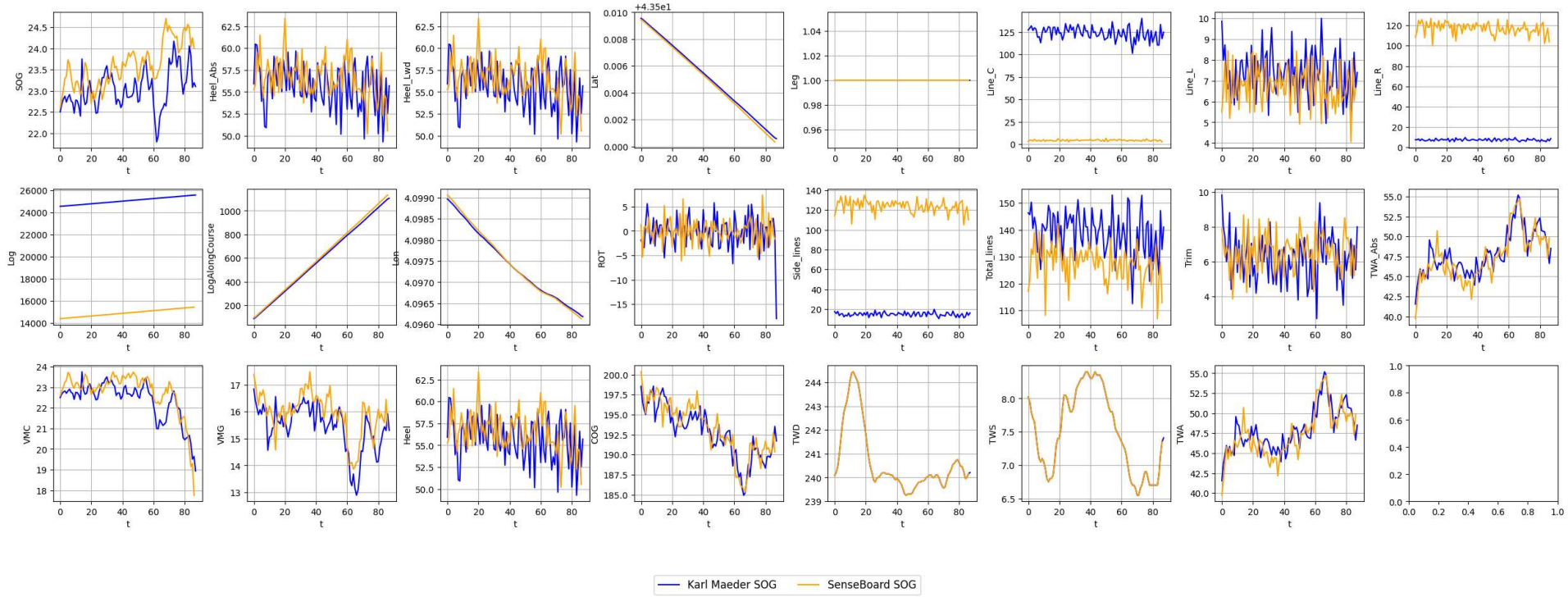
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	1024.460031	1049.832479
Straight Line [m]	1022.405595	1047.596875
Distance as Percentage of Straight Line [%]	100.200941	100.213403

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	7.798955	-9.682519	-1.963684
Final Deficit	33.000028	-2.445812	20.292090
Total Gain	25.201073	7.236707	22.255774
Gain per Minute	17.501961	5.025840	15.456472

Interval 1: Upwind from 2025-06-09 12:45:42 to 2025-06-09 12:47:09: Karl Maeder vs SenseBoard - Parameters over time




```
Interval 2 summary:
{'avg TWA boat1': -138.2115680379747,
 'avg TWA boat2': -138.68514896988907,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749473372.653,
 'high_sog_duration': 63.09500002861023,
 'min_sog_used': 26.4,
 'start_time': 1749473309.558}

================================================================================
Interval 2: Downwind from 2025-06-09 12:48:29 to 2025-06-09 12:49:32: 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	5.809	5.808	5.01	5.01	6.396	6.396	632	631	0.3544	0.3543			
TWD	241.2	241.2	239.3	239.3	244.7	244.7	632	631	1.641	1.64			
SOG	27.04	27.5	25.1	24.5	29.8	30.4	632	631	1.068	1.131	SenseBoard	Karl Maeder	Tie
VMG	20.13	20.62	16.18	16.9	23.71	23.95	632	631	1.198	1.202	SenseBoard	Karl Maeder	Tie
COG	19.38	19.85	8.5	10.2	28.2	29.8	632	631	3.635	3.494		SenseBoard	SenseBoard
TWA_Abs	138.2	138.7	129.1	130.8	146	146.7	632	631	2.97	3.059			
Heel_Lwd	50.22	51.94	34.7	32.1	71.7	68.1	632	631	6.256	5.477	SenseBoard	SenseBoard	SenseBoard
Side_lines	13.87	106.5	6.3	67.3	25.4	141.7	632	631	3.003	11.47	SenseBoard	Karl Maeder	Tie
Line_C	97.01	4.936	68.4	0	133.3	10.7	632	627	13.11	2.062	Karl Maeder	SenseBoard	Tie
Total_lines	110.4	111.3	82.2	69.3	153.6	152.4	632	631	14.36	12.12	SenseBoard	SenseBoard	SenseBoard

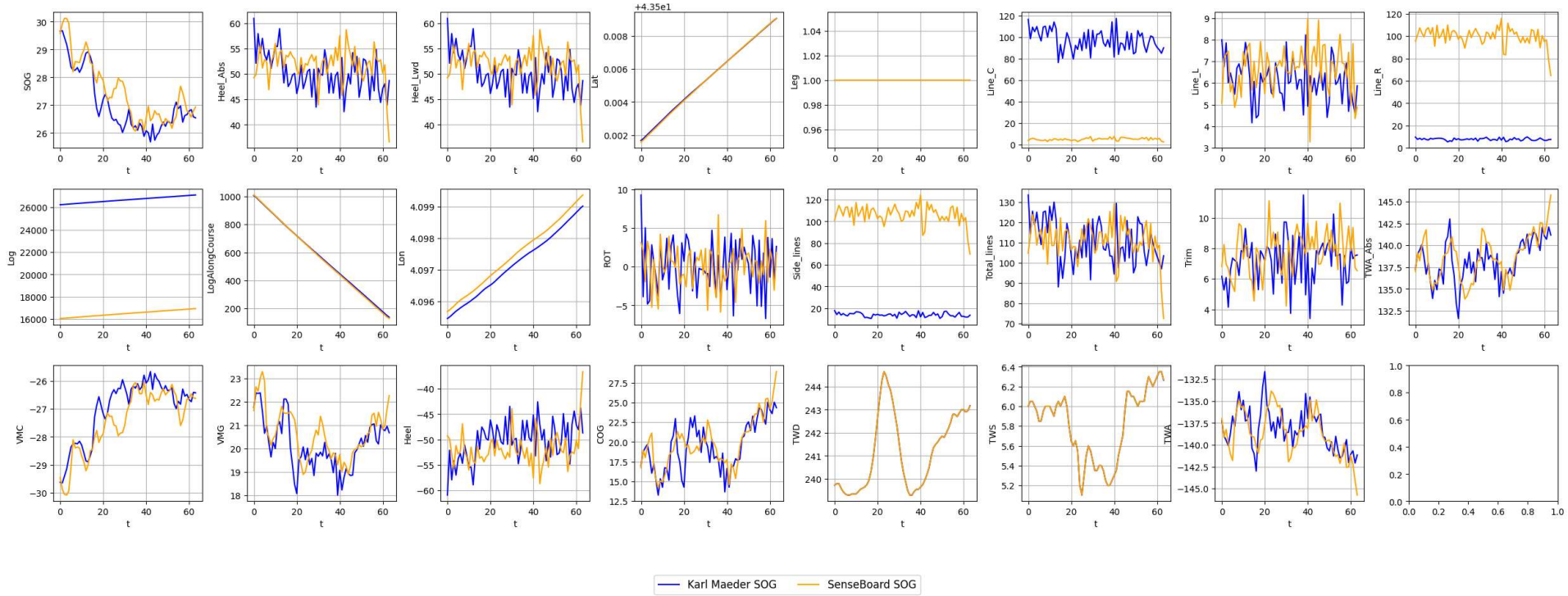
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	876.624517	889.394186
Straight Line [m]	874.875986	887.735198
Distance as Percentage of Straight Line [%]	100.199860	100.186879

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-3.262180	-20.217727	-11.040369
Final Deficit	9.584840	-26.784075	-24.994947
Total Gain	12.847020	-6.566348	-13.954579
Gain per Minute	12.216835	-6.244249	-13.270065

Interval 2: Downwind from 2025-06-09 12:48:29 to 2025-06-09 12:49:32: Karl Maeder vs SenseBoard - Parameters over time




```
Processing: ../Data_Sailnjord/Straight_lines\09_06\09_06_Run7
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 49.09307907542579,
 'avg TWA boat2': 47.843509135200975,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749473722.048,
 'high_sog_duration': 82.08800005912781,
 'min_sog_used': 22.1,
 'start_time': 1749473639.96}

================================================================================
Interval 1: Upwind from 2025-06-09 12:53:59 to 2025-06-09 12:55:22: 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	7.223	7.223	6.604	6.604	7.8	7.8	822	821	0.2621	0.2623			
TWD	244.1	244.1	242.4	242.4	245.6	245.6	822	821	0.9234	0.9238			
SOG	22.52	22.65	20.1	20.3	25.3	26	822	821	0.544	0.493	SenseBoard	SenseBoard	SenseBoard
VMG	14.73	15.18	11.93	12.15	17.65	18.66	822	821	0.7842	0.8977	SenseBoard	Karl Maeder	Tie
COG	195	196.2	187.2	186.2	207.8	205.9	822	821	2.605	2.976		Karl Maeder	Karl Maeder
TWA_Abs	49.09	47.84	37.67	36.8	56.67	58.1	822	821	2.556	3.069			
Heel_Lwd	54.72	54.82	32.2	38.6	71.4	69.2	822	821	4.907	5.131	SenseBoard	Karl Maeder	Tie
Side_lines	13.88	119.2	3.6	77.7	25.6	149.7	822	821	3.457	11.44	SenseBoard	Karl Maeder	Tie
Line_C	117.8	4.501	70	0.5	158.3	9	822	819	12.61	1.548	Karl Maeder	SenseBoard	Tie
Total_lines	131.7	123.8	75.7	78.8	180.9	156.8	822	821	14.17	12.17	Karl Maeder	SenseBoard	Tie

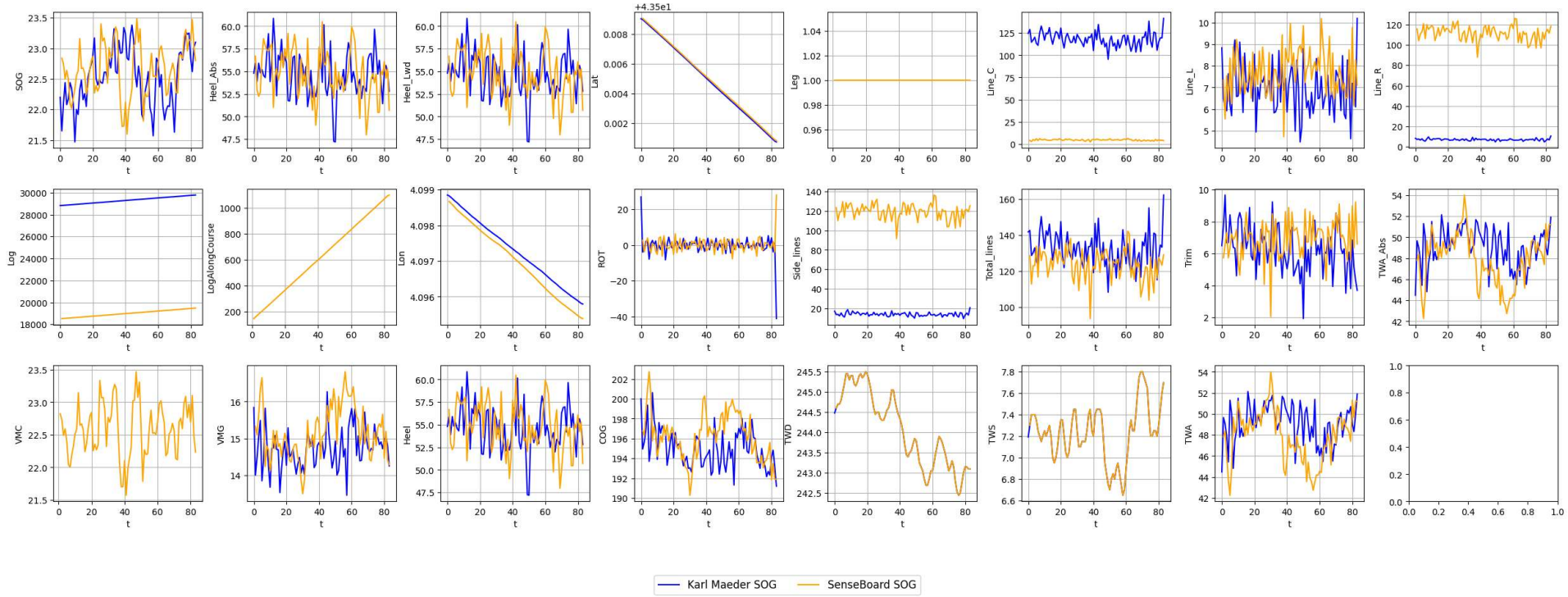
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	952.567807	956.214030
Straight Line [m]	951.565383	954.923755
Distance as Percentage of Straight Line [%]	100.105345	100.135118

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-4.298993	14.590511	8.212093
Final Deficit	-1.183520	34.492558	25.293726
Total Gain	3.115472	19.902047	17.081633
Gain per Minute	2.277170	14.546862	12.485357

Interval 1: Upwind from 2025-06-09 12:53:59 to 2025-06-09 12:55:22: Karl Maeder vs SenseBoard - Parameters over time

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Interval 2 summary:
{'avg TWA boat1': -142.0165375,
 'avg TWA boat2': -141.66317083333334,
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 'boat2_name': 'SenseBoard',
 'end_time': 1749473834.852,
 'high_sog_duration': 47.894999980926514,
 'min_sog_used': 27.2,
 'start_time': 1749473786.957}

================================================================================
Interval 2: Downwind from 2025-06-09 12:56:26 to 2025-06-09 12:57:14: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

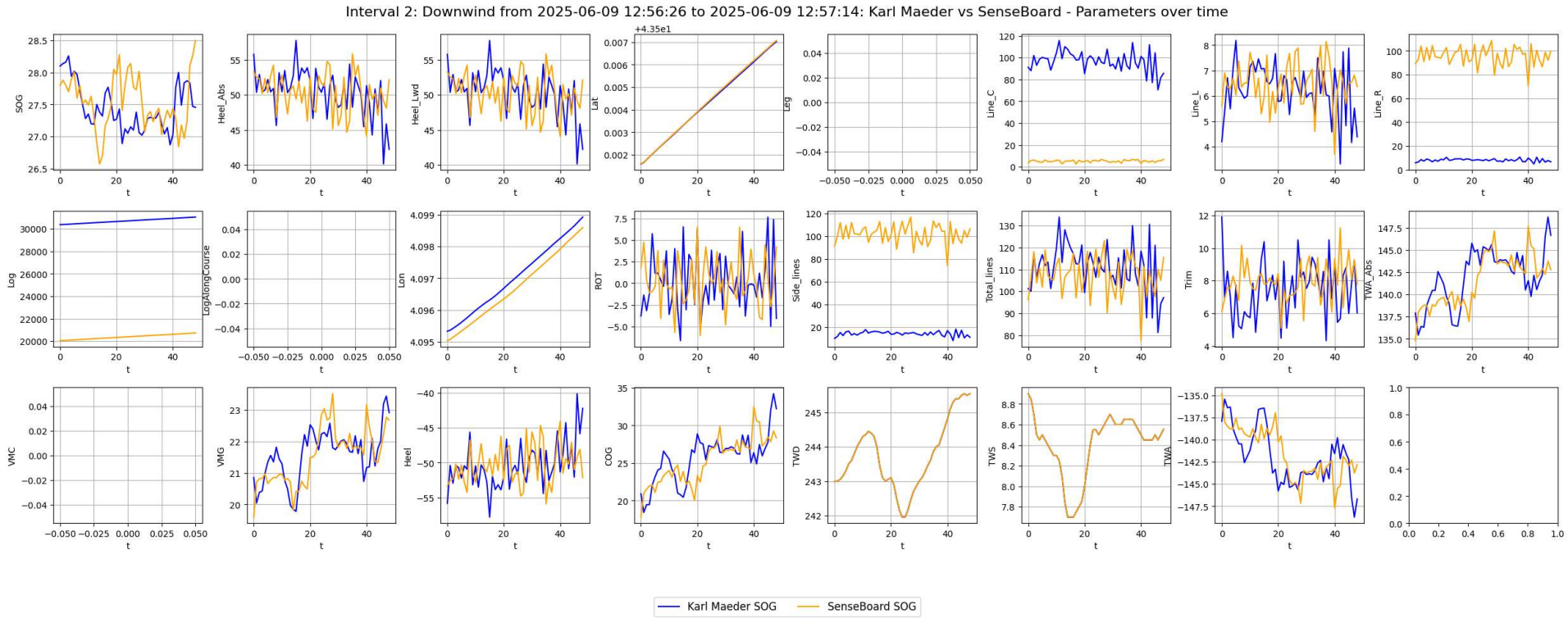
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.39	8.39	7.7	7.7	8.9	8.9	480	480	0.3034	0.3033			
TWD	243.7	243.7	241.9	241.9	245.6	245.6	480	480	1.013	1.013			
SOG	27.44	27.53	25.2	26.4	29.1	29.3	480	480	0.4116	0.467	SenseBoard	Karl Maeder	Tie
VMG	21.58	21.56	18.35	19.13	23.94	24.31	480	480	0.9863	1.016	Karl Maeder	Karl Maeder	Karl Maeder
COG	25.76	25.41	16.3	17.2	36.7	35.2	480	480	3.622	3.465		SenseBoard	SenseBoard
TWA_Abs	142	141.7	132.8	134	151.2	150.5	480	480	3.561	3.272			
Heel_Lwd	50.29	50.23	31.6	33.4	66.6	65.8	480	480	5.739	5.526	Karl Maeder	SenseBoard	Tie
Side_lines	14.38	102.2	4.9	57.5	23.2	131.4	480	480	2.98	11.23	SenseBoard	Karl Maeder	Tie
Line_C	96.73	5.281	62.2	0	132.2	10.4	480	479	12.81	2.002	Karl Maeder	SenseBoard	Tie
Total_lines	111.1	107.3	73.1	62.7	150.4	140.8	480	480	14.76	12.09	Karl Maeder	SenseBoard	Tie

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	675.729584	678.513606
Straight Line [m]	674.379679	677.287963
Distance as Percentage of Straight Line [%]	100.200170	100.180963

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-8.978614	21.936574	20.577316
Final Deficit	-6.074731	27.112352	21.473840
Total Gain	2.903882	5.175777	0.896524
Gain per Minute	3.637811	6.483905	1.123112




```
Processing: ../Data_Sailnjord/Straight_lines\09_06\09_06_Run8
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 57.39792211055276,
 'avg TWA boat2': 56.94166372795969,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749474396.653,
 'high_sog_duration': 79.4850001335144,
 'min_sog_used': 21.8,
 'start_time': 1749474317.168}

================================================================================
Interval 1: Upwind from 2025-06-09 13:05:17 to 2025-06-09 13:06:36: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

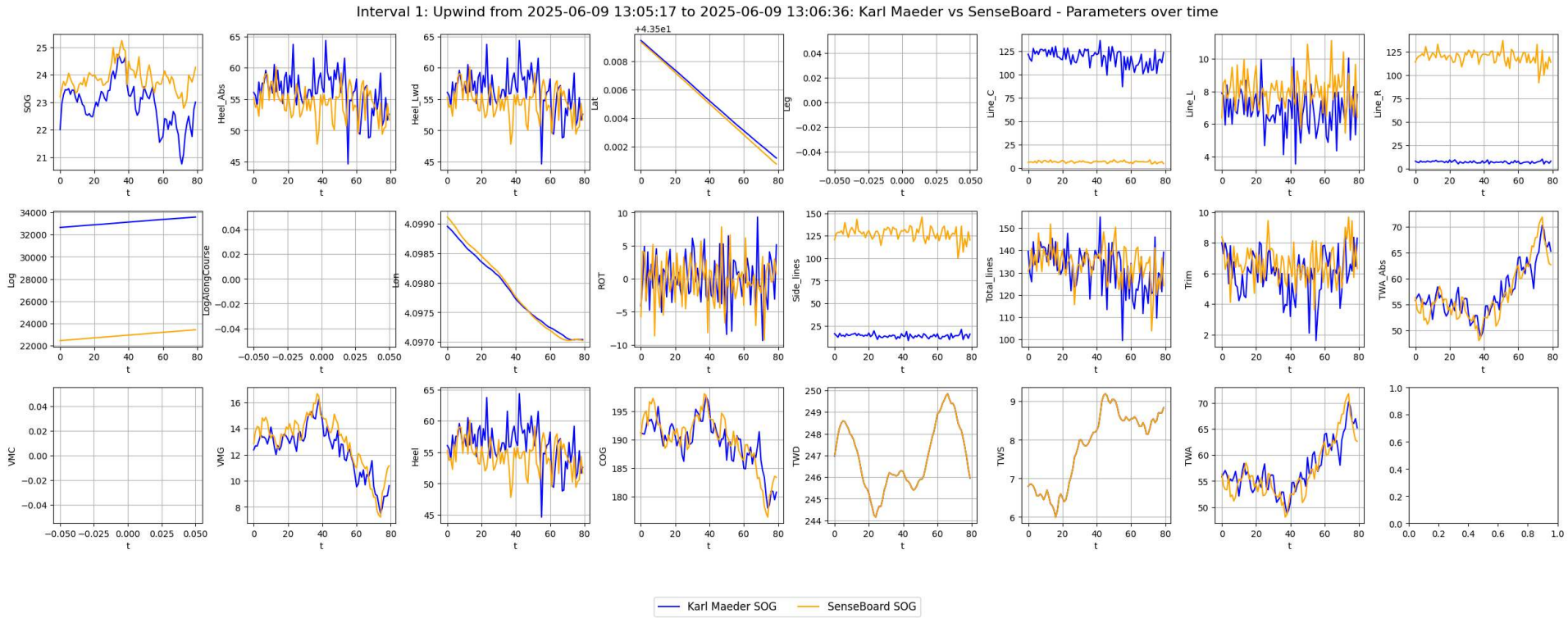
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.823	7.823	5.907	5.908	9.2	9.2	796	794	0.9573	0.9571			
TWD	246.9	246.9	244	244	249.9	249.9	796	794	1.523	1.524			
SOG	22.92	23.87	20.2	22.5	27.6	26.7	796	794	0.8468	0.5487	SenseBoard	SenseBoard	SenseBoard
VMG	12.34	12.98	6.303	6.238	18.23	17.3	796	794	2.027	2.193	SenseBoard	Karl Maeder	Tie
COG	189.5	190	174.2	174.5	202.4	200.7	796	794	4.511	5.055		Karl Maeder	Karl Maeder
TWA_Abs	57.4	56.94	43.81	46	73.73	73.98	796	794	5.07	5.752			
Heel_Lwd	56.2	54.38	34.7	38	77.7	68.2	796	794	5.464	4.94	Karl Maeder	SenseBoard	Tie
Side_lines	13.75	127.6	4.9	84.3	26.1	159	796	794	3.705	11.21	SenseBoard	Karl Maeder	Tie
Line_C	117.7	6.445	69.6	2	152.9	11.5	796	782	14.29	1.793	Karl Maeder	SenseBoard	Tie
Total_lines	131.4	134	82	88	171.6	162.1	796	794	15.2	11.41	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	939.084643	974.712659
Straight Line [m]	936.217573	970.902331
Distance as Percentage of Straight Line [%]	100.306240	100.392452

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	11.117612	-14.641320	-6.343206
Final Deficit	45.819664	-6.239981	19.433216
Total Gain	34.702052	8.401339	25.776422
Gain per Minute	26.195171	6.341830	19.457574




```
Interval 2 summary:
{'avg TWA boat1': -143.11451043338684,
 'avg TWA boat2': -143.52072186495178,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749474551.76,
 'high_sog_duration': 62.200000047683716,
 'min_sog_used': 26.8,
 'start_time': 1749474489.56}

================================================================================
Interval 2: Downwind from 2025-06-09 13:08:09 to 2025-06-09 13:09:11: 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	8.594	8.597	6.612	6.631	9.996	9.995	623	622	0.8679	0.8649			
TWD	232.6	232.6	228.3	228.3	235.4	235.4	623	622	2.31	2.311			
SOG	26.96	28.01	24.7	26.2	28.9	29.7	623	622	0.7432	0.7361	SenseBoard	SenseBoard	SenseBoard
VMG	21.48	22.41	17.13	18.77	25.46	27.28	623	622	1.621	1.627	SenseBoard	Karl Maeder	Tie
COG	15.7	16.1	5.6	5.5	25.6	27.7	623	622	3.827	4.254		Karl Maeder	Karl Maeder
TWA_Abs	143.1	143.5	131.3	131.4	155.7	159.2	623	622	5.154	5.681			
Heel_Lwd	49.55	47.72	32.3	29.2	66.2	63	623	622	6.024	5.931	Karl Maeder	SenseBoard	Tie
Side_lines	13.5	101.3	4.7	60.4	23.9	140	623	622	2.903	13.17	SenseBoard	Karl Maeder	Tie
Line_C	91.6	5.26	56.2	0	123.8	10.2	623	619	12.02	1.813	Karl Maeder	SenseBoard	Tie
Total_lines	105.2	106.2	64	62.8	142.7	149	623	622	13.18	13.61	SenseBoard	Karl Maeder	Tie

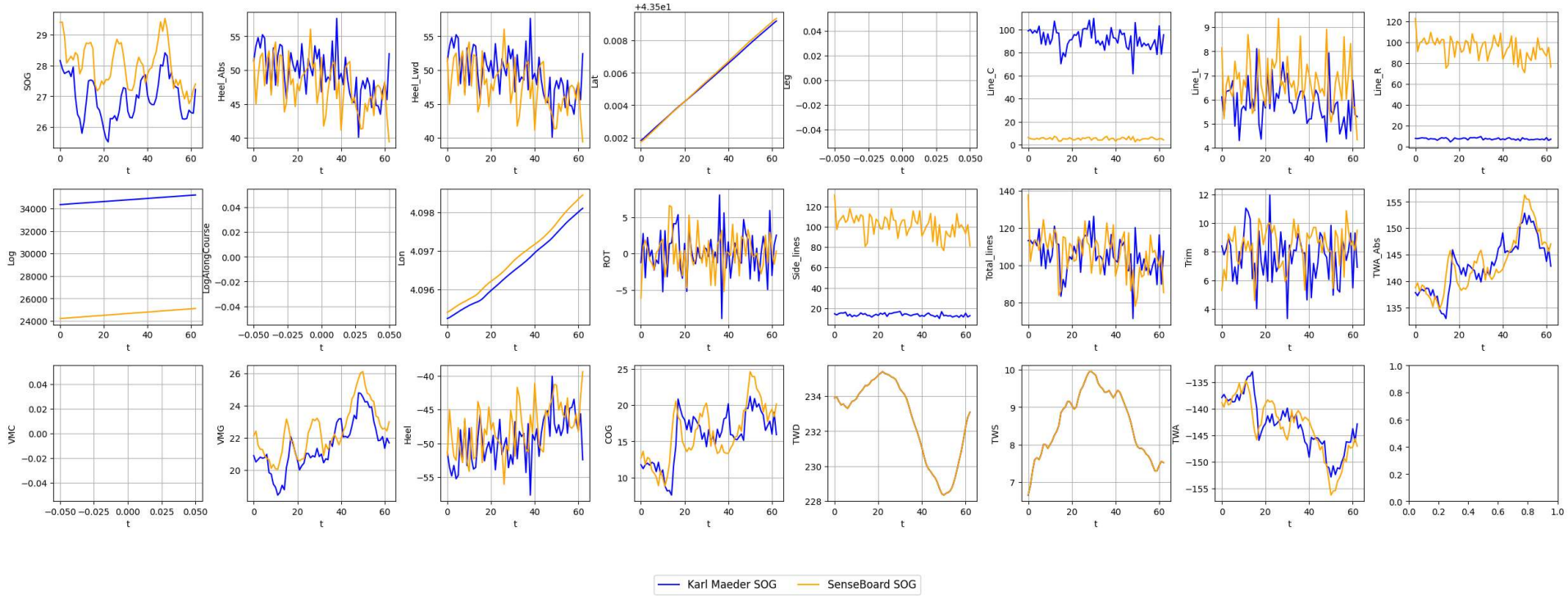
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	862.227699	894.077563
Straight Line [m]	860.287329	891.635920
Distance as Percentage of Straight Line [%]	100.225549	100.273839

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-5.795217	-15.299949	-4.547899
Final Deficit	25.574067	-22.001557	-33.660776
Total Gain	31.369284	-6.701608	-29.112877
Gain per Minute	30.259759	-6.464573	-28.083161

Interval 2: Downwind from 2025-06-09 13:08:09 to 2025-06-09 13:09:11: Karl Maeder vs SenseBoard - Parameters over time




```
Processing: ../Data_Sailnjord/Straight_lines\09_06\09_06_Run9
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 41.686427906976746,
 'avg TWA boat2': 41.350760186263095,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749475014.164,
 'high_sog_duration': 85.9079999923706,
 'min_sog_used': 21.3,
 'start_time': 1749474928.256}

================================================================================
Interval 1: Upwind from 2025-06-09 13:15:28 to 2025-06-09 13:16:54: 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	8.037	8.035	6.906	6.905	9.174	9.164	860	859	0.5013	0.5			
TWD	230	230	227.8	227.8	232.5	232.5	860	859	1.176	1.177			
SOG	22.27	22.69	20.6	20.9	24.2	25	860	859	0.5613	0.7135	SenseBoard	Karl Maeder	Tie
VMG	16.57	17	12.43	13.15	19.91	19.87	860	859	1.129	0.9226	SenseBoard	SenseBoard	SenseBoard
COG	188.3	188.6	177.8	178.7	199	197.4	860	859	4.307	3.423		SenseBoard	SenseBoard
TWA_Abs	41.69	41.35	31.36	32.14	54.3	53.28	860	859	4.582	3.429			
Heel_Lwd	55.72	55.22	33.4	38.8	74.8	71.2	860	859	5.588	5.115	Karl Maeder	SenseBoard	Tie
Side_lines	13.6	127.9	5	70.7	26.1	159.1	860	859	3.619	11.66	SenseBoard	Karl Maeder	Tie
Line_C	116.9	6.265	66.6	1.8	155.2	11.5	860	859	13.67	1.742	Karl Maeder	SenseBoard	Tie
Total_lines	130.2	133.8	71.7	76.9	170.9	167.7	860	859	15.67	12.17	SenseBoard	SenseBoard	SenseBoard

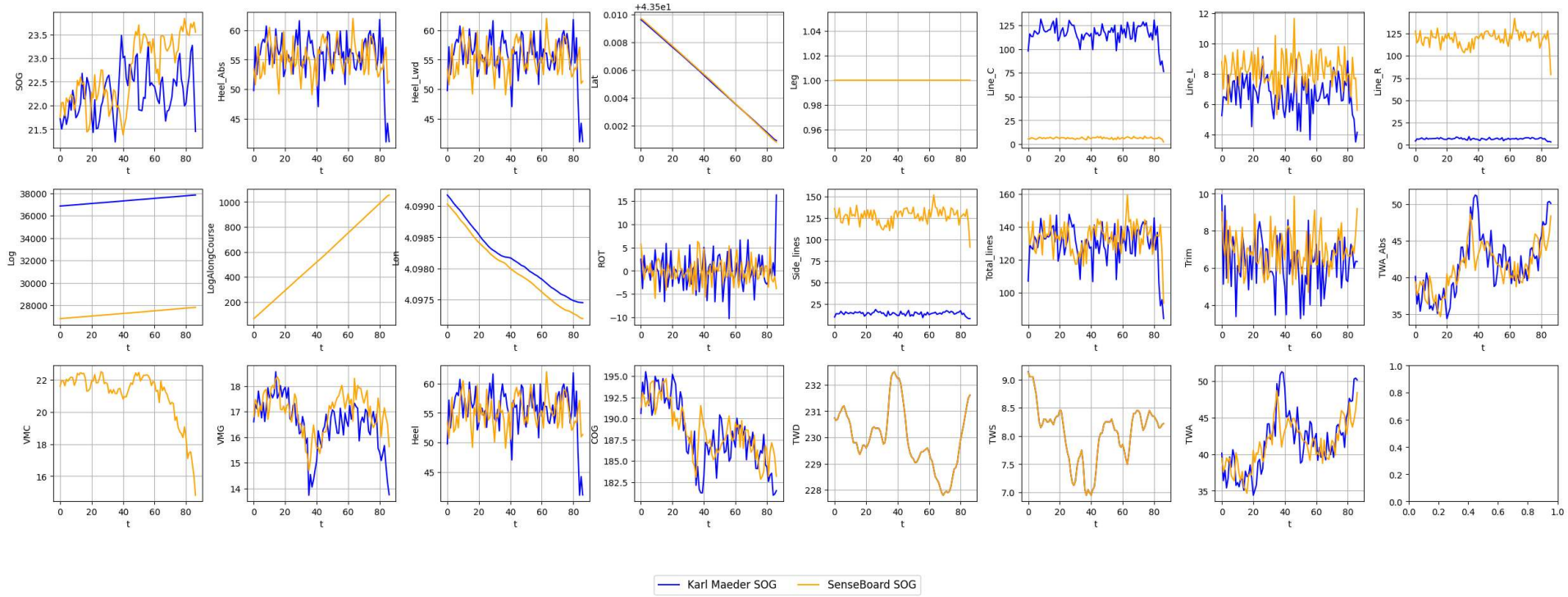
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	982.732502	1004.133795
Straight Line [m]	979.935342	1002.349961
Distance as Percentage of Straight Line [%]	100.285443	100.177965

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-8.462889	13.132984	2.414111
Final Deficit	13.977166	18.772532	22.922833
Total Gain	22.440055	5.639548	20.508722
Gain per Minute	15.672619	3.938782	14.323734

Interval 1: Upwind from 2025-06-09 13:15:28 to 2025-06-09 13:16:54: Karl Maeder vs SenseBoard - Parameters over time




```
Interval 2 summary:
{'avg TWA boat1': -141.0000910447761,
 'avg TWA boat2': -141.4629656716418,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749475181.367,
 'high_sog_duration': 66.91400003433228,
 'min_sog_used': 25.6,
 'start_time': 1749475114.453}

================================================================================
Interval 2: Downwind from 2025-06-09 13:18:34 to 2025-06-09 13:19:41: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

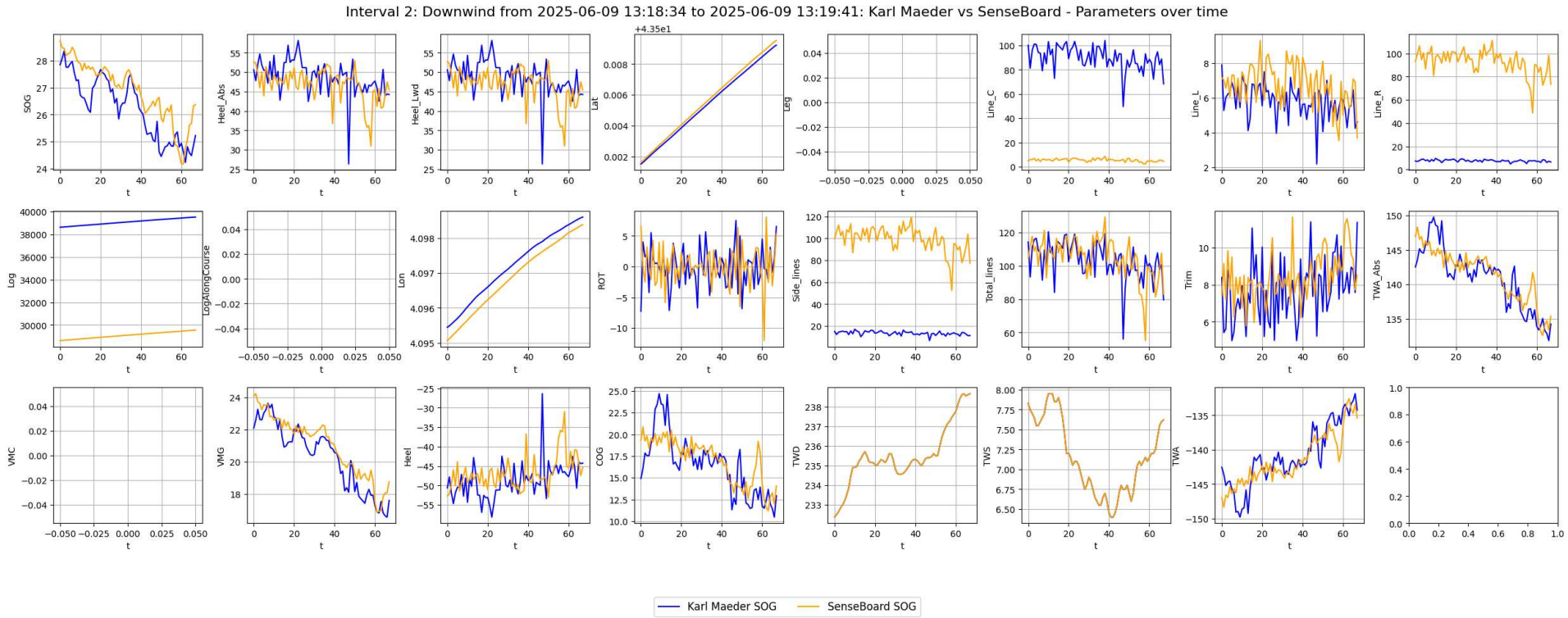
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.133	7.133	6.4	6.4	7.996	7.996	670	670	0.4637	0.4637			
TWD	235.5	235.5	232.3	232.3	238.7	238.7	670	670	1.443	1.443			
SOG	26.23	26.89	23.5	23.7	29.7	28.9	670	670	1.181	1.131	SenseBoard	SenseBoard	SenseBoard
VMG	20.35	21.02	15.17	14.64	24.42	25	670	670	2.131	1.948	SenseBoard	SenseBoard	SenseBoard
COG	16.48	16.95	5.6	5.5	27.7	23.3	670	670	3.958	3.107		SenseBoard	SenseBoard
TWA_Abs	141	141.5	127.7	127.2	152.4	150.3	670	670	4.856	4.103			
Heel_Lwd	48.73	46.7	18.9	21.9	66.7	63.3	670	670	6.892	6.361	Karl Maeder	SenseBoard	Tie
Side_lines	13.44	99.55	2.4	43	20.8	129.6	670	670	2.734	13.92	SenseBoard	Karl Maeder	Tie
Line_C	89.97	5.493	36.9	0	120.5	11.3	670	669	12.35	1.801	Karl Maeder	SenseBoard	Tie
Total_lines	103.3	105	42.2	43	138.6	138.8	670	670	13.9	14.87	SenseBoard	Karl Maeder	Tie

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	901.624992	923.899139
Straight Line [m]	899.499752	922.549206
Distance as Percentage of Straight Line [%]	100.236269	100.146326

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	4.771738	33.933099	17.646573
Final Deficit	27.808333	26.544302	-4.906110
Total Gain	23.036596	-7.388797	-22.552682
Gain per Minute	20.656301	-6.625337	-20.222389




```
Processing: ../Data_Sailnjord/Straight_lines\10_06\10_06_Run1
Processing only reduced intervals for Gian Stragiotti vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 52.14381183431953,
 'avg TWA boat2': 52.65938507109005,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'SenseBoard',
 'end_time': 1749558590.053,
 'high_sog_duration': 84.39999985694885,
 'min_sog_used': 20.7,
 'start_time': 1749558505.653}

================================================================================
Interval 1: Upwind from 2025-06-10 12:28:25 to 2025-06-10 12:29:50: Gian Stragiotti vs SenseBoard
================================================================================
```

Run Statistics

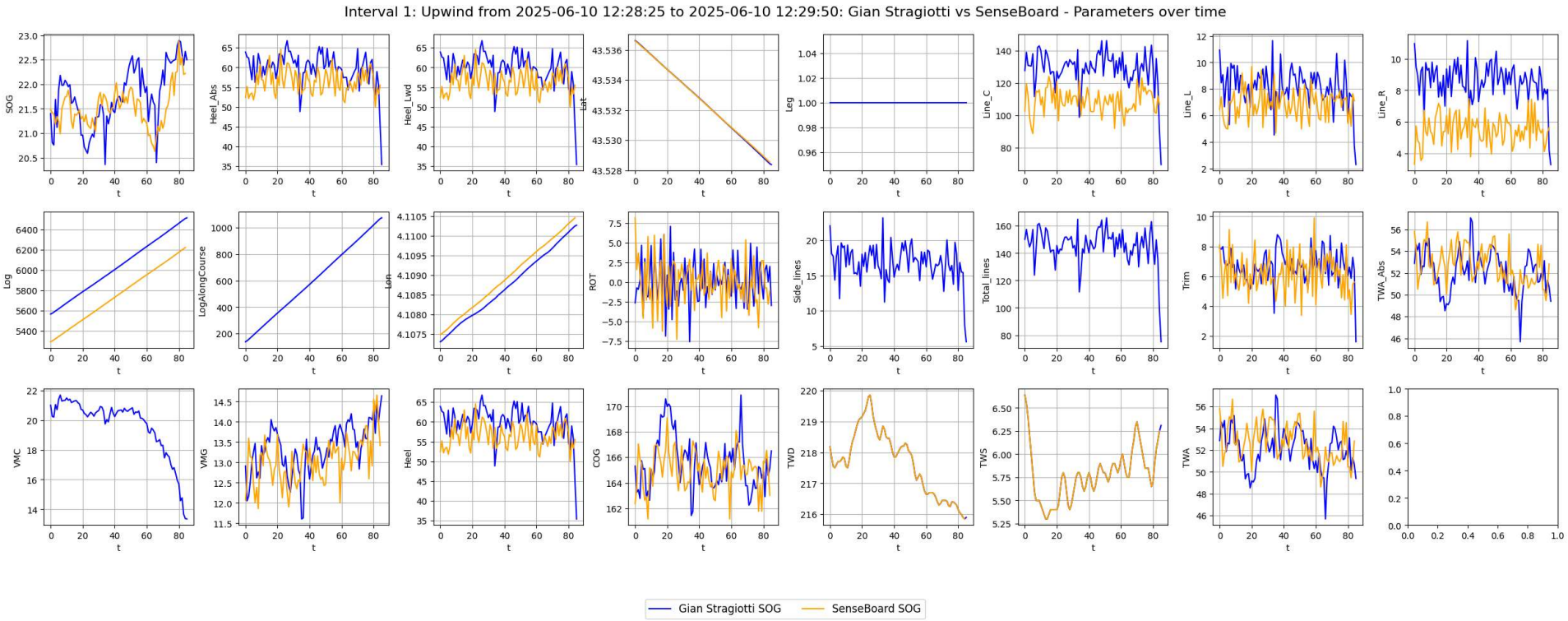
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	5.772	5.771	5.3	5.3	6.669	6.668	845	844	0.2743	0.2738			
TWD	217.7	217.7	215.8	215.8	219.9	219.9	845	844	1.046	1.045			
SOG	21.76	21.53	18.5	20.6	24.3	23.1	845	844	0.6983	0.4227	Gian Stragiotti	SenseBoard	Tie
VMG	13.33	13.04	10.71	10.79	15.44	15.34	845	844	0.7431	0.7775	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	165.5	165	158.1	157.8	174.9	171.5	845	844	2.583	2.355		SenseBoard	SenseBoard
TWA_Abs	52.14	52.66	41.63	45.4	59.65	60.02	845	844	2.428	2.485			
Heel_Lwd	59.92	56.42	31	39.2	73.8	73.9	845	844	5.881	5.632	Gian Stragiotti	SenseBoard	Tie
Side_lines	16.84	nan	5.5	nan	28	nan	845	nan	3.802	nan			
Line_C	129.3	109	63.9	78.7	166.5	139.3	845	839	13.19	10.46	Gian Stragiotti	SenseBoard	Tie
Total_lines	146.2	nan	70.3	nan	192.2	nan	845	nan	15.37	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	948.038243	933.532624
Straight Line [m]	947.112501	932.746175
Distance as Percentage of Straight Line [%]	100.097744	100.084315

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	7.059474	-13.096495	-6.008246
Final Deficit	-7.374325	-19.089137	-19.597441
Total Gain	-14.433799	-5.992642	-13.589195
Gain per Minute	-10.260994	-4.260172	-9.660565




```
Interval 2 summary:
{'avg TWA boat1': -125.20420057306592,
 'avg TWA boat2': -125.69550932568147,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'SenseBoard',
 'end_time': 1749558736.756,
 'high_sog_duration': 69.6930000782013,
 'min_sog_used': 25.3,
 'start_time': 1749558667.063}

================================================================================
Interval 2: Downwind from 2025-06-10 12:31:07 to 2025-06-10 12:32:16: Gian Stragiotti vs SenseBoard
================================================================================
```

Run Statistics

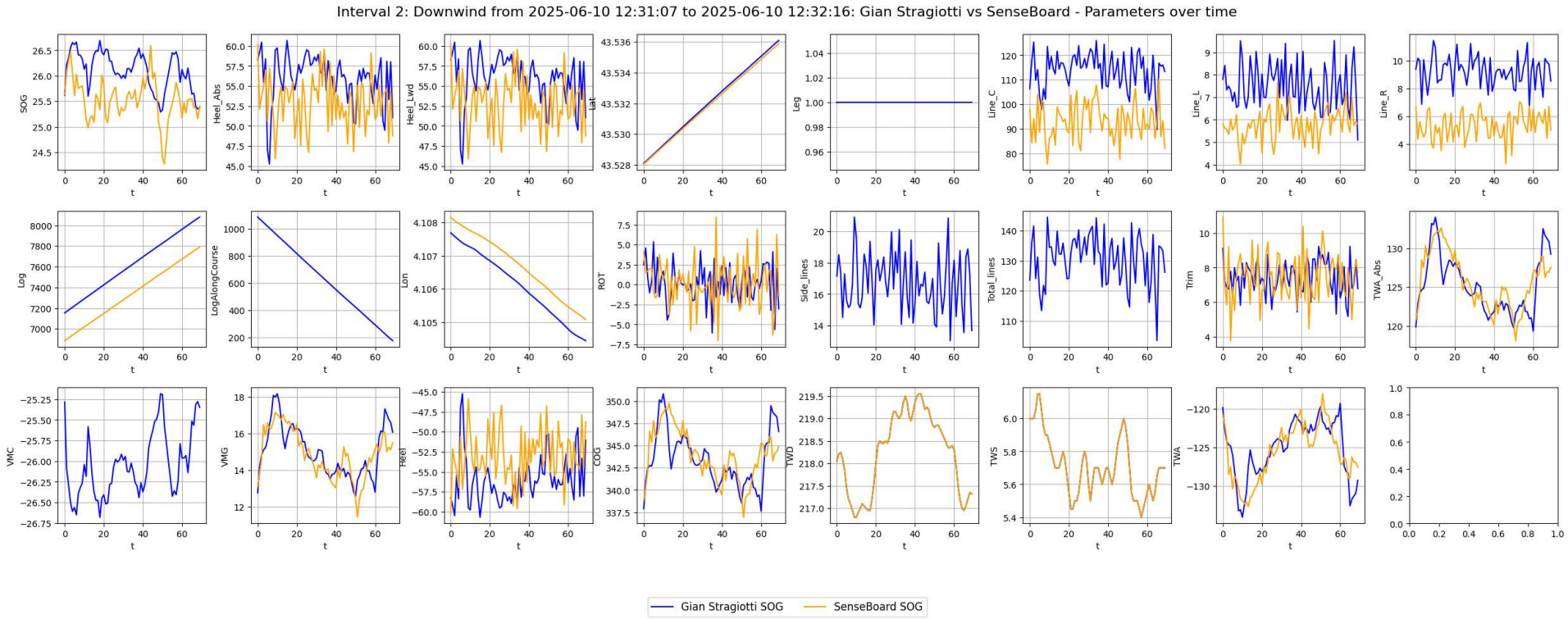
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	5.708	5.707	5.4	5.4	6.195	6.195	698	697	0.1826	0.1824			
TWD	218.2	218.2	216.7	216.7	219.6	219.6	698	697	0.8832	0.8838			
SOG	26.1	25.53	25.2	24.2	26.8	26.7	698	697	0.3792	0.4299	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	15.01	14.86	11.64	10.19	18.74	18.28	698	697	1.448	1.453	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	343.4	343.9	335.3	333.6	352.2	354.2	698	697	3.273	3.367		Gian Stragiotti	Gian Stragiotti
TWA_Abs	125.2	125.7	117.3	114.8	135.4	137.1	698	697	3.891	3.96			
Heel_Lwd	55.97	52.98	40.1	37.3	66.5	72.7	698	697	4.533	5.958	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	16.77	nan	7.7	nan	24.6	nan	698	nan	3.136	nan			
Line_C	113.9	93.11	80.8	68.3	140.1	124.8	698	693	9.549	9.981	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	130.5	nan	92.9	nan	157.9	nan	698	nan	10.98	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	935.835344	913.762829
Straight Line [m]	934.342541	912.206447
Distance as Percentage of Straight Line [%]	100.159770	100.170617

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-15.202866	-34.718133	-19.604414
Final Deficit	-37.410212	-42.807474	-13.412204
Total Gain	-22.207346	-8.089341	6.192210
Gain per Minute	-19.118717	-6.964264	5.330989




```
Processing: ../Data_Sailnjord/Straight_lines\10_06\10_06_Run10
Error: No or insufficient intervals for run: 10_06_Run10


Processing: ../Data_Sailnjord/Straight_lines\10_06\10_06_Run2
Processing only reduced intervals for Gian Stragiotti vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 52.572764115432875,
 'avg TWA boat2': 52.20766959798995,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'SenseBoard',
 'end_time': 1749559063.355,
 'high_sog_duration': 79.59899997711182,
 'min_sog_used': 21.2,
 'start_time': 1749558983.756}

================================================================================
Interval 1: Upwind from 2025-06-10 12:36:23 to 2025-06-10 12:37:43: Gian Stragiotti vs SenseBoard
================================================================================
```

Run Statistics

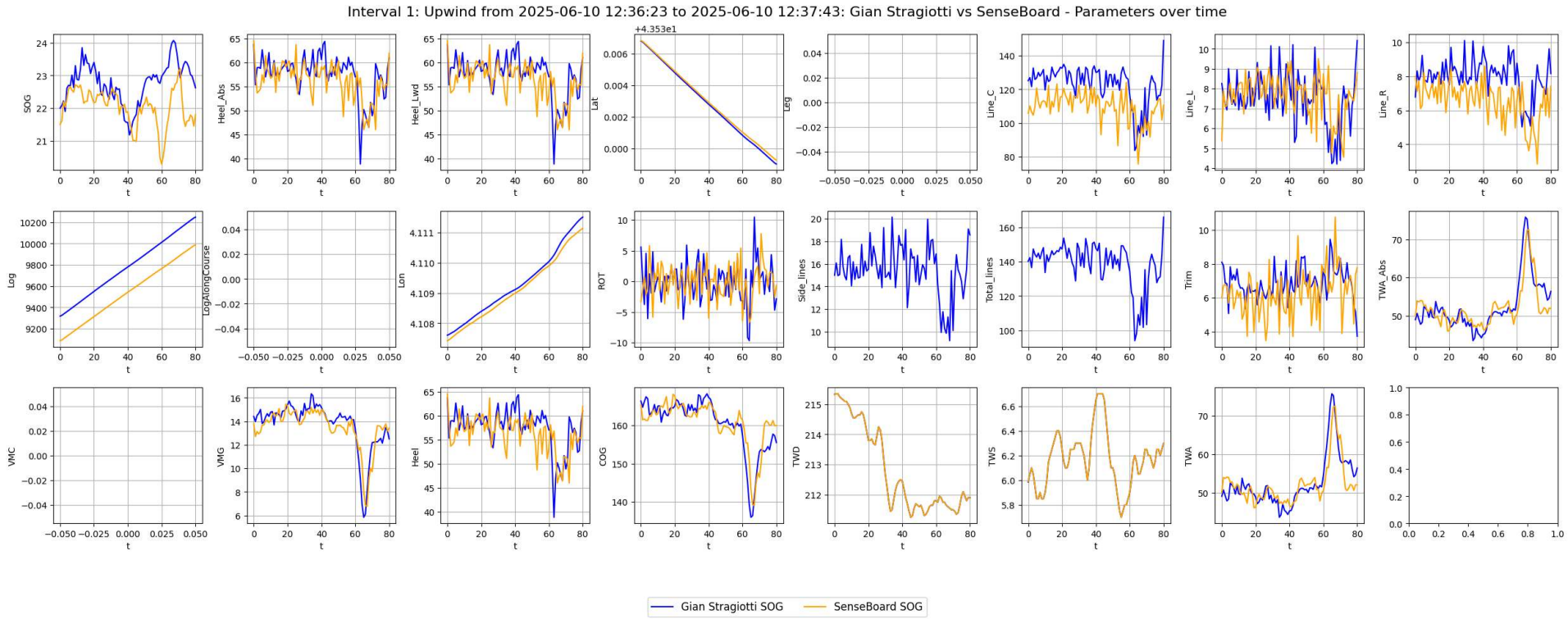
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	6.168	6.168	5.7	5.7	6.7	6.7	797	796	0.2339	0.2339			
TWD	212.8	212.8	211.2	211.2	215.4	215.4	797	796	1.395	1.392			
SOG	22.78	22.05	19.7	20.2	25.5	23.4	797	796	0.7322	0.5846	Gian Stragiotti	SenseBoard	Tie
VMG	13.72	13.44	4.652	5.367	17.1	16.4	797	796	2.129	1.825	Gian Stragiotti	SenseBoard	Tie
COG	160.2	160.6	132.8	135.3	171.9	171.6	797	796	7.33	6.213		SenseBoard	SenseBoard
TWA_Abs	52.57	52.21	39.82	42.39	78.83	76.33	797	796	6.803	5.743			
Heel_Lwd	57.37	56.12	32.5	35.3	73.3	73.2	797	796	6.066	5.819	Gian Stragiotti	SenseBoard	Tie
Side_lines	15.43	nan	4.7	nan	25.4	nan	797	nan	3.713	nan			
Line_C	122.9	109.6	76	60.5	151.5	144.4	797	788	13.38	11.48	Gian Stragiotti	SenseBoard	Tie
Total_lines	138.4	nan	86.2	nan	169.7	nan	797	nan	15.12	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	933.476787	902.414339
Straight Line [m]	925.625164	897.009551
Distance as Percentage of Straight Line [%]	100.848251	100.602534

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-7.473815	12.791965	5.608535
Final Deficit	-36.118650	19.387105	-6.578031
Total Gain	-28.644835	6.595139	-12.186566
Gain per Minute	-21.591855	4.971273	-9.185969




```
Interval 2 summary:
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 'boat2_name': 'SenseBoard',
 'end_time': 1749559227.552,
 'high_sog_duration': 70.99699997901917,
 'min_sog_used': 24.8,
 'start_time': 1749559156.555}

================================================================================
Interval 2: Downwind from 2025-06-10 12:39:16 to 2025-06-10 12:40:27: Gian Stragiotti vs SenseBoard
================================================================================
```

Run Statistics

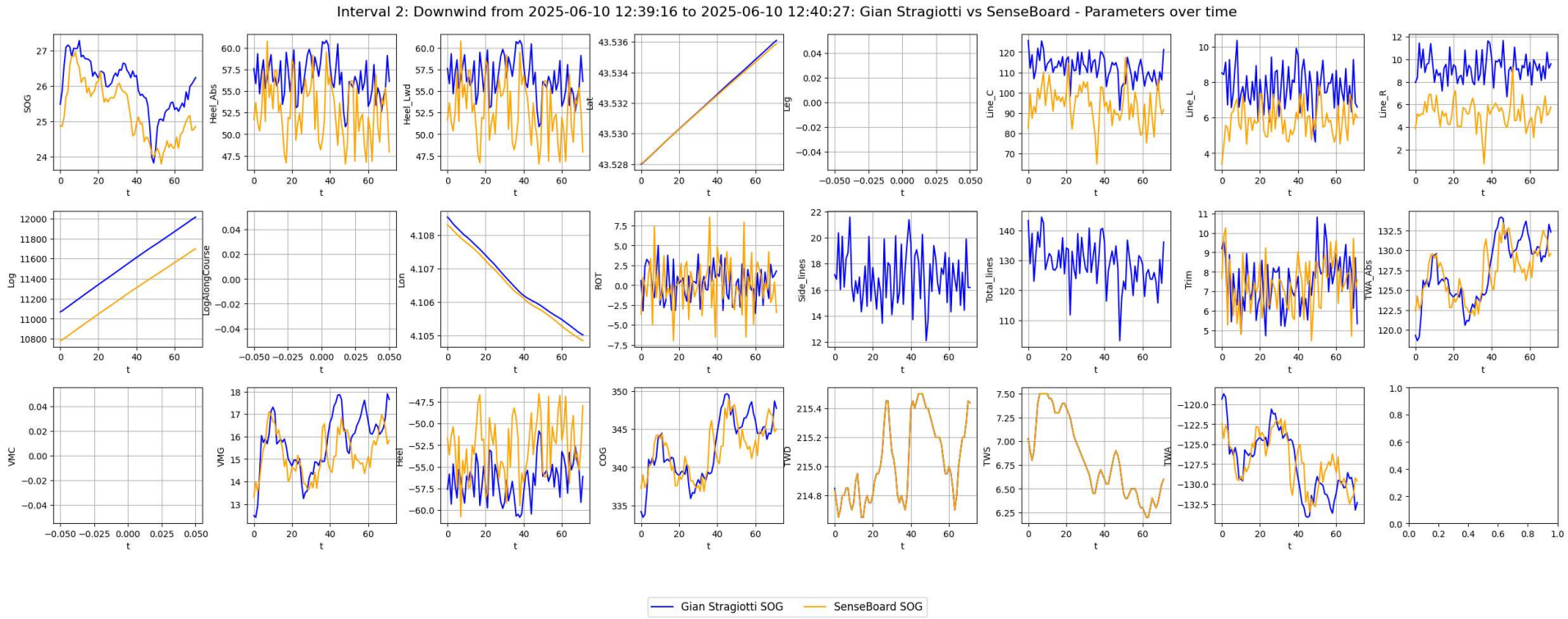
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	6.81	6.809	6.2	6.2	7.5	7.5	711	710	0.4056	0.4058			
TWD	215	215	214.6	214.6	215.5	215.5	711	710	0.2715	0.2717			
SOG	26.01	25.25	23.4	23.6	27.4	27	711	710	0.7532	0.8294	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	15.77	15.24	11.81	12.44	18.75	17.94	711	710	1.32	1.149	Gian Stragiotti	SenseBoard	Tie
COG	342.5	342.3	331.6	334.2	351.5	352.6	711	710	4.23	3.708		SenseBoard	SenseBoard
TWA_Abs	127.5	127.2	116.9	119.4	136	137.2	711	710	4.101	3.633			
Heel_Lwd	56.54	52.72	43	33.7	69.7	70.1	711	710	4.224	5.863	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	17	nan	5.9	nan	26.1	nan	711	nan	3.232	nan			
Line_C	111.9	94.23	87.3	59.7	141.3	128.1	711	706	9.274	11.18	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	129	nan	97.8	nan	163.2	nan	711	nan	10.82	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	950.665143	921.098916
Straight Line [m]	948.101983	919.180278
Distance as Percentage of Straight Line [%]	100.270346	100.208734

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	10.213476	16.982413	7.258452
Final Deficit	-18.771044	21.225596	28.266168
Total Gain	-28.984520	4.243183	21.007715
Gain per Minute	-24.494995	3.585940	17.753749




```
Processing: ../Data_Sailnjord/Straight_lines\10_06\10_06_Run3
Processing only reduced intervals for Gian Stragiotti vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 49.862143373493986,
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 'boat2_name': 'SenseBoard',
 'end_time': 1749559520.851,
 'high_sog_duration': 82.89800000190735,
 'min_sog_used': 21.0,
 'start_time': 1749559437.953}

================================================================================
Interval 1: Upwind from 2025-06-10 12:43:57 to 2025-06-10 12:45:20: Gian Stragiotti vs SenseBoard
================================================================================
```

Run Statistics

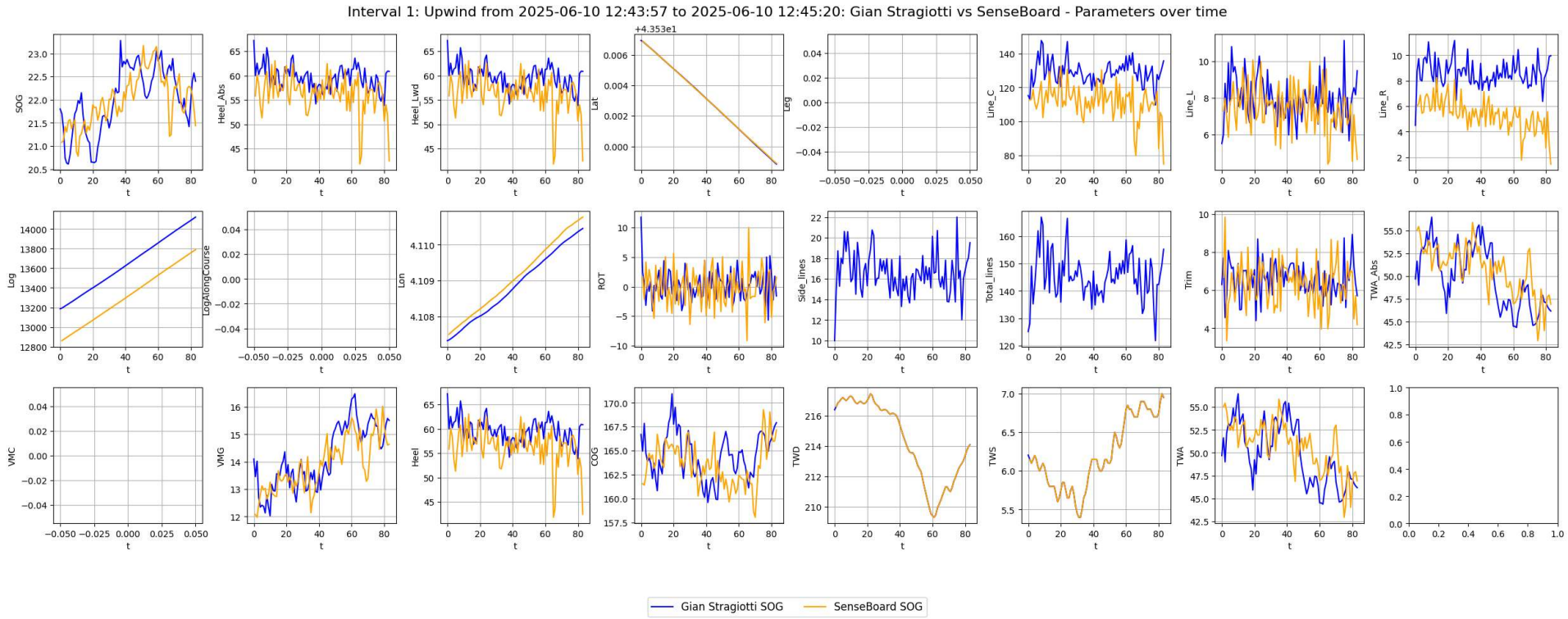
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	6.207	6.206	5.4	5.4	7	7	830	828	0.4519	0.4518			
TWD	214.3	214.3	209.2	209.2	217.6	217.6	830	828	2.613	2.615			
SOG	22.01	21.99	20	20.3	25.1	23.3	830	828	0.7343	0.5676	Gian Stragiotti	SenseBoard	Tie
VMG	14.16	13.91	11	10.87	17.24	16.69	830	828	1.212	1.092	Gian Stragiotti	SenseBoard	Tie
COG	164.4	163.6	157.6	154	172.9	172.2	830	828	2.748	2.8		Gian Stragiotti	Gian Stragiotti
TWA_Abs	49.86	50.72	41.37	40.96	58.5	60.25	830	828	3.631	3.165			
Heel_Lwd	59.52	56.3	46.1	26.2	73.1	70.9	830	828	4.502	5.783	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	16.64	nan	7.1	nan	27.7	nan	830	nan	3.438	nan			
Line_C	129	111.6	91.6	50.8	158.6	145.6	830	827	9.862	12.96	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	145.6	nan	107	nan	177.7	nan	830	nan	11.59	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	938.700882	935.380690
Straight Line [m]	937.614787	934.269792
Distance as Percentage of Straight Line [%]	100.115836	100.118905

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	3.885211	-12.296148	-6.895924
Final Deficit	0.392977	-26.068030	-19.675714
Total Gain	-3.492234	-13.771882	-12.779791
Gain per Minute	-2.527613	-9.967827	-9.249770




```
Interval 2 summary:
{'avg TWA boat1': -133.30425096525096,
 'avg TWA boat2': -132.0077582205029,
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 'boat2_name': 'SenseBoard',
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 'high_sog_duration': 51.694000005722046,
 'min_sog_used': 26.4,
 'start_time': 1749559628.352}

================================================================================
Interval 2: Downwind from 2025-06-10 12:47:08 to 2025-06-10 12:48:00: Gian Stragiotti vs SenseBoard
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Run Statistics

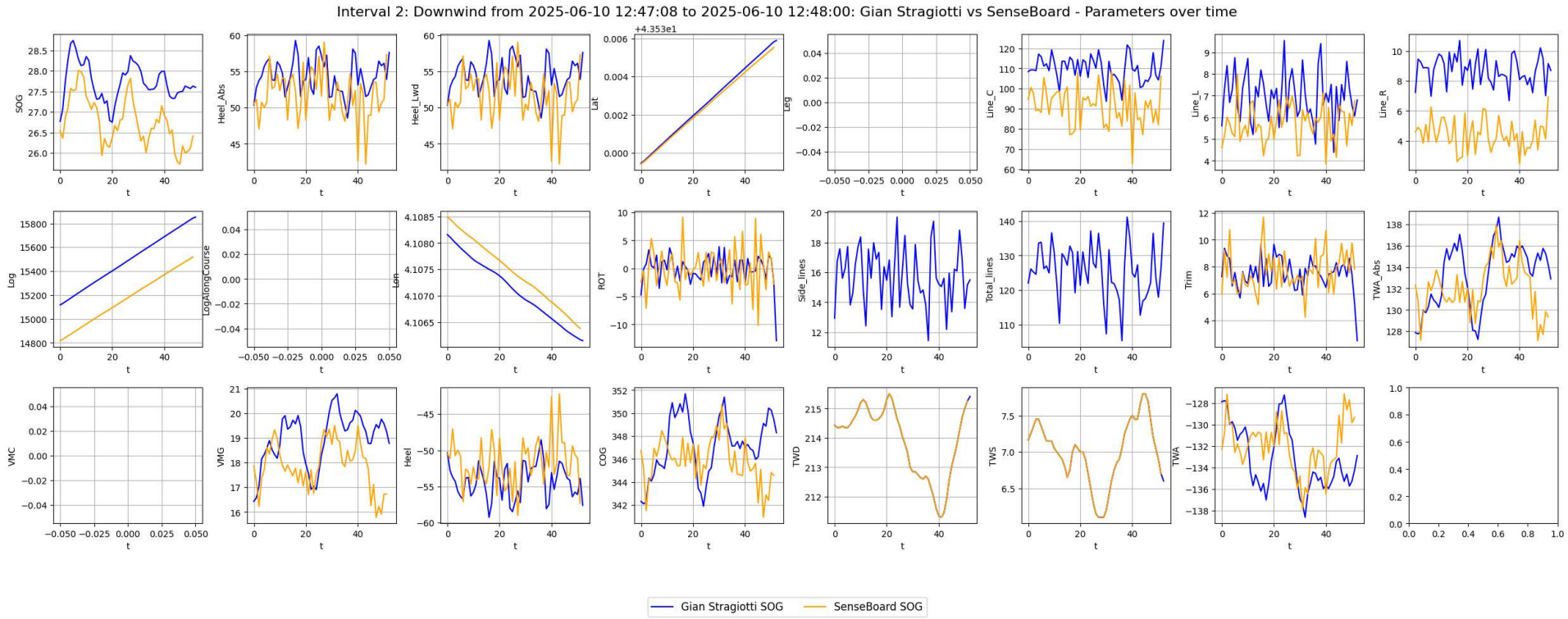
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.003	7.004	6.1	6.1	7.8	7.8	518	517	0.4409	0.441			
TWD	213.9	213.9	211.3	211.3	215.5	215.5	518	517	1.211	1.21			
SOG	27.73	26.76	26.6	25.1	28.8	28.1	518	517	0.4646	0.6021	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	18.99	17.89	16.05	14.43	21.34	20.83	518	517	1.093	1.119	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	347.2	345.9	340.5	337.2	353.4	352.4	518	517	2.773	2.607		SenseBoard	SenseBoard
TWA_Abs	133.3	132	125.7	123.7	140.7	141	518	517	3.103	2.935			
Heel_Lwd	54.28	51.73	40.6	30.1	66.3	69.8	518	517	4.072	6.151	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	15.76	nan	6.9	nan	24.9	nan	518	nan	3.203	nan			
Line_C	109.7	91.26	88.4	50.7	136.2	125.5	518	517	8.765	12.18	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	125.3	nan	99.1	nan	154.6	nan	518	nan	10.26	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	737.982882	710.567949
Straight Line [m]	737.124737	709.838351
Distance as Percentage of Straight Line [%]	100.116418	100.102784

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-10.465443	-24.759270	-10.839860
Final Deficit	-37.988895	-8.900379	19.578592
Total Gain	-27.523452	15.858891	30.418452
Gain per Minute	-31.945818	18.407038	35.305976




```
Processing: ../Data_Sailnjord/Straight_lines\10_06\10_06_Run4
Processing only reduced intervals for Gian Stragiotti vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': -134.68273780487806,
 'avg TWA boat2': -134.89336697247705,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'SenseBoard',
 'end_time': 1749560209.453,
 'high_sog_duration': 65.49900007247925,
 'min_sog_used': 25.4,
 'start_time': 1749560143.954}

================================================================================
Interval 1: Upwind from 2025-06-10 12:55:43 to 2025-06-10 12:56:49: Gian Stragiotti vs SenseBoard
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```

Run Statistics

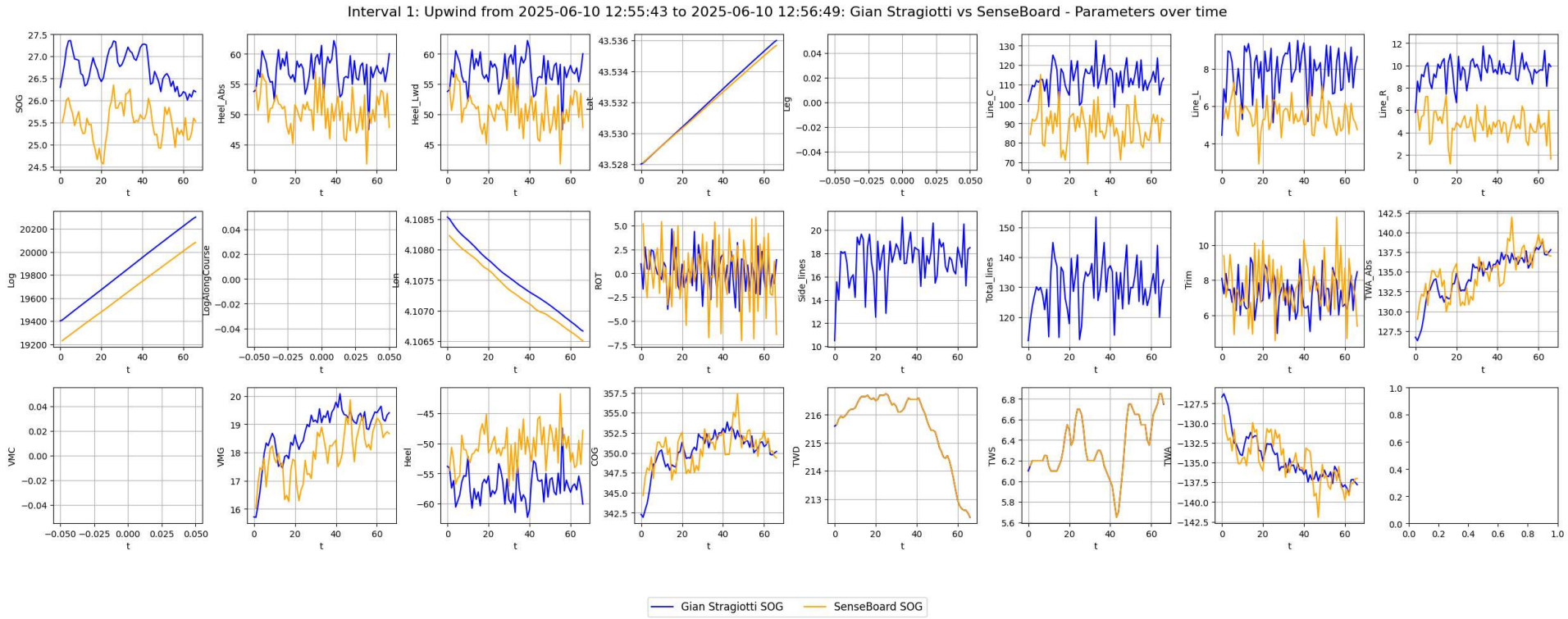
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	6.339	6.339	5.605	5.605	6.895	6.896	656	654	0.278	0.2779			
TWD	215.6	215.6	212.3	212.3	216.8	216.8	656	654	1.268	1.263			
SOG	26.72	25.51	25.9	24.5	27.4	26.5	656	654	0.3952	0.4225	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	18.76	17.97	15.35	14.55	20.58	20.48	656	654	0.9437	0.9936	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
COG	350.3	350.5	340.7	341.4	355.5	359.5	656	654	2.642	2.795		Gian Stragiotti	Gian Stragiotti
TWA_Abs	134.7	134.9	125	125.1	140.6	144.1	656	654	2.991	3.244			
Heel_Lwd	57.13	50.7	38.6	34.7	68.3	67.4	656	654	4.211	5.575	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	17.44	nan	9	nan	26.3	nan	656	nan	2.723	nan			
Line_C	113.1	88.47	88.8	55.8	145.2	130.9	656	653	10.22	11.45	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	130.5	nan	102	nan	168	nan	656	nan	11.69	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	900.810679	857.779625
Straight Line [m]	899.873075	856.783981
Distance as Percentage of Straight Line [%]	100.104193	100.116207

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	9.376088	21.670200	8.814319
Final Deficit	-33.798225	18.545190	36.952274
Total Gain	-43.174313	-3.125009	28.137955
Gain per Minute	-39.549593	-2.862648	25.775619

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Interval 2 summary:
{'avg TWA boat1': 56.28187441860465,
 'avg TWA boat2': 55.657818322981356,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'SenseBoard',
 'end_time': 1749560028.155,
 'high_sog_duration': 64.3989999294281,
 'min_sog_used': 22.7,
 'start_time': 1749559963.756}

================================================================================
Interval 2: Downwind from 2025-06-10 12:52:43 to 2025-06-10 12:53:48: Gian Stragiotti vs SenseBoard
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```

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	5.97	5.97	5.2	5.2	6.496	6.495	645	644	0.3377	0.3379			
TWD	209.9	209.9	207.7	207.7	213.3	213.3	645	644	1.492	1.49			
SOG	23.92	23.3	21.7	22.6	24.6	24.3	645	644	0.2496	0.3652	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	13.25	13.1	9.828	9.223	16.75	15.67	645	644	1.291	1.208	Gian Stragiotti	SenseBoard	Tie
COG	153.6	154.2	147.2	145.5	163.1	161.5	645	644	2.624	2.98		Gian Stragiotti	Gian Stragiotti
TWA_Abs	56.28	55.66	45.25	47.52	65.5	67.5	645	644	3.757	3.958			
Heel_Lwd	59.9	58.39	43.4	41	72.6	73	645	644	4.609	4.52	Gian Stragiotti	SenseBoard	Tie
Side_lines	16.48	nan	9.2	nan	28.3	nan	645	nan	3.372	nan			
Line_C	131	118.1	101.9	84.5	160	147.5	645	642	10.18	9.55	Gian Stragiotti	SenseBoard	Tie
Total_lines	147.4	nan	112.3	nan	177.2	nan	645	nan	11.35	nan			

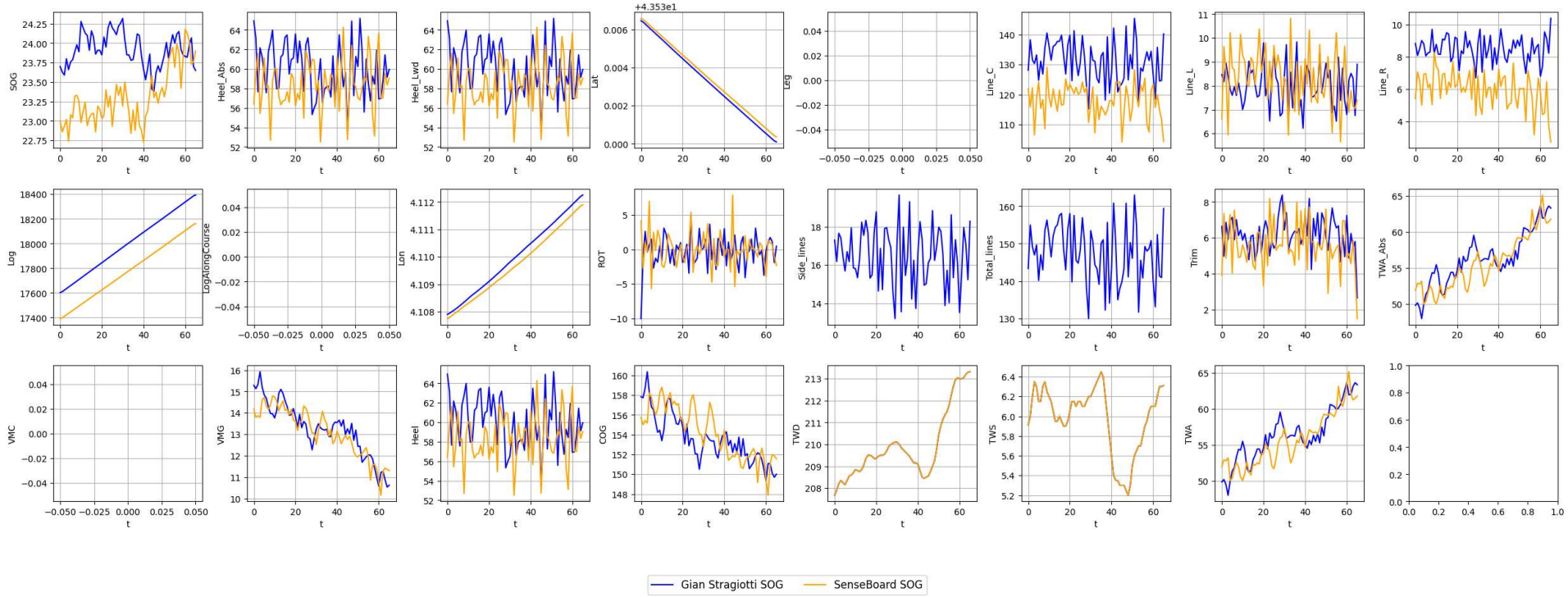
Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	792.326488	771.015219
Straight Line [m]	791.494504	769.958952
Distance as Percentage of Straight Line [%]	100.105116	100.137185

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-17.421351	4.971925	-5.535120
Final Deficit	-39.004333	12.517438	-11.239720
Total Gain	-21.582982	7.545514	-5.704599
Gain per Minute	-20.108681	7.030091	-5.314927

Interval 2: Downwind from 2025-06-10 12:52:43 to 2025-06-10 12:53:48: Gian Stragiotti vs SenseBoard - Parameters over time




```
Processing: ../Data_Sailnjord/Straight_lines\10_06\10_06_Run5
Processing only reduced intervals for Gian Stragiotti vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 53.57801909959072,
 'avg TWA boat2': 53.569808743169396,
 'boat1_name': 'Gian Stragiotti',
 'boat2_name': 'SenseBoard',
 'end_time': 1749560605.753,
 'high_sog_duration': 73.19799995422363,
 'min_sog_used': 20.6,
 'start_time': 1749560532.555}

================================================================================
Interval 1: Upwind from 2025-06-10 13:02:12 to 2025-06-10 13:03:25: Gian Stragiotti vs SenseBoard
================================================================================
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Run Statistics

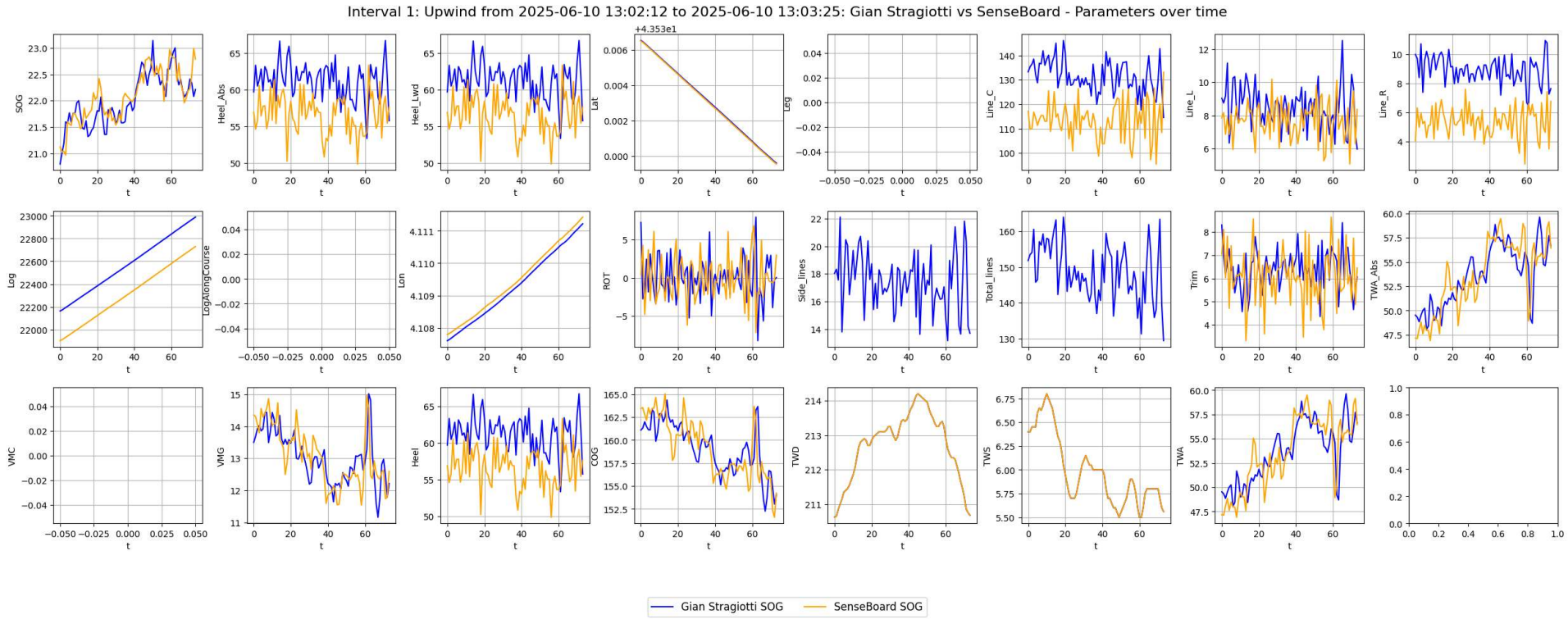
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	5.986	5.986	5.5	5.5	6.8	6.8	733	732	0.3669	0.3668			
TWD	212.7	212.7	210.6	210.6	214.2	214.2	733	732	0.9674	0.965			
SOG	22.01	22.09	20.7	20.8	26	23.1	733	732	0.5038	0.493	SenseBoard	SenseBoard	SenseBoard
VMG	13.03	13.07	10.71	10.67	16.28	16.35	733	732	0.9108	1.051	SenseBoard	Gian Stragiotti	Tie
COG	159.1	159.2	151.1	149.7	167.7	169.3	733	732	3.06	3.586		Gian Stragiotti	Gian Stragiotti
TWA_Abs	53.58	53.57	44.7	42.2	61.23	61.7	733	732	3.321	3.924			
Heel_Lwd	61.17	56.58	44.4	42.4	76.2	71.9	733	732	4.687	4.986	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	17.45	nan	7.5	nan	28.4	nan	733	nan	3.45	nan			
Line_C	131.5	113.3	95.5	82	158.6	144.1	733	729	9.949	10.71	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Total_lines	148.9	nan	107.2	nan	180.2	nan	733	nan	11.18	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	829.098053	830.760326
Straight Line [m]	827.904834	829.116565
Distance as Percentage of Straight Line [%]	100.144125	100.198254

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	10.027791	-13.002326	-4.508692
Final Deficit	11.240220	-13.464480	-4.160714
Total Gain	1.212429	-0.462154	0.347977
Gain per Minute	0.993821	-0.378825	0.285235




```
Interval 2 summary:
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 'avg TWA boat2': -138.1788006279435,
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 'boat2_name': 'SenseBoard',
 'end_time': 1749560776.944,
 'high_sog_duration': 63.687999963760376,
 'min_sog_used': 26.1,
 'start_time': 1749560713.256}

================================================================================
Interval 2: Downwind from 2025-06-10 13:05:13 to 2025-06-10 13:06:16: Gian Stragiotti vs SenseBoard
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Run Statistics

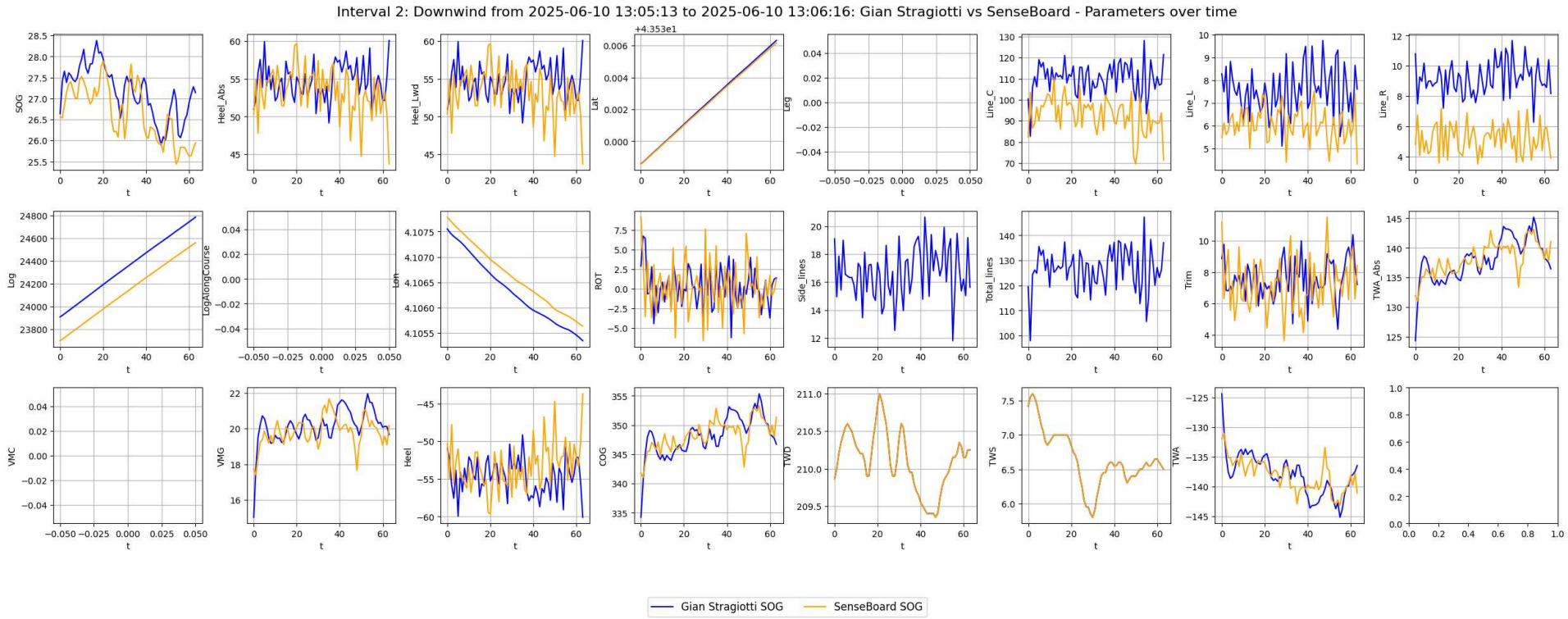
	Avg (Gian Stragiotti)	Avg (SenseBoard)	Min (Gian Stragiotti)	Min (SenseBoard)	Max (Gian Stragiotti)	Max (SenseBoard)	Count (Gian Stragiotti)	Count (SenseBoard)	StdDev (Gian Stragiotti)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	6.645	6.645	5.8	5.8	7.6	7.6	638	637	0.4068	0.407			
TWD	210.1	210.1	209.3	209.3	211	211	638	637	0.4055	0.4057			
SOG	27.16	26.65	25.8	25.1	28.4	28.9	638	637	0.6134	0.6907	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
VMG	20.15	19.82	14.26	16.36	22.48	22.19	638	637	1.01	0.9704	Gian Stragiotti	SenseBoard	Tie
COG	348.2	348.3	332.8	338.1	357.5	356.1	638	637	3.547	3.09		SenseBoard	SenseBoard
TWA_Abs	138.1	138.2	123	128.1	147.3	146	638	637	3.702	3.162			
Heel_Lwd	54.72	53.33	43	36.6	67.1	70.4	638	637	4.211	5.836	Gian Stragiotti	Gian Stragiotti	Gian Stragiotti
Side_lines	16.66	nan	7.2	nan	25.3	nan	638	nan	3.196	nan			
Line_C	110	92.81	78.7	62.9	139.7	121.2	638	634	11.01	10.84	Gian Stragiotti	SenseBoard	Tie
Total_lines	126.5	nan	92.8	nan	160.4	nan	638	nan	12.26	nan			

Distance Summary

	Gian Stragiotti	SenseBoard
Distance [m]	890.456806	872.296353
Straight Line [m]	888.849182	871.057707
Distance as Percentage of Straight Line [%]	100.180866	100.142200

Gain of Gian Stragiotti with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-5.427392	-17.475539	-7.634924
Final Deficit	-23.252047	-19.397475	4.345545
Total Gain	-17.824655	-1.921936	11.980469
Gain per Minute	-16.792478	-1.810642	11.286713




```
Processing: ../Data_Sailnjord/Straight_lines\10_06\10_06_Run6
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 51.355708641975305,
 'avg TWA boat2': 52.56209023485785,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749561254.954,
 'high_sog_duration': 80.89000010490417,
 'min_sog_used': 19.775,
 'start_time': 1749561174.064}

================================================================================
Interval 1: Upwind from 2025-06-10 13:12:54 to 2025-06-10 13:14:14: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

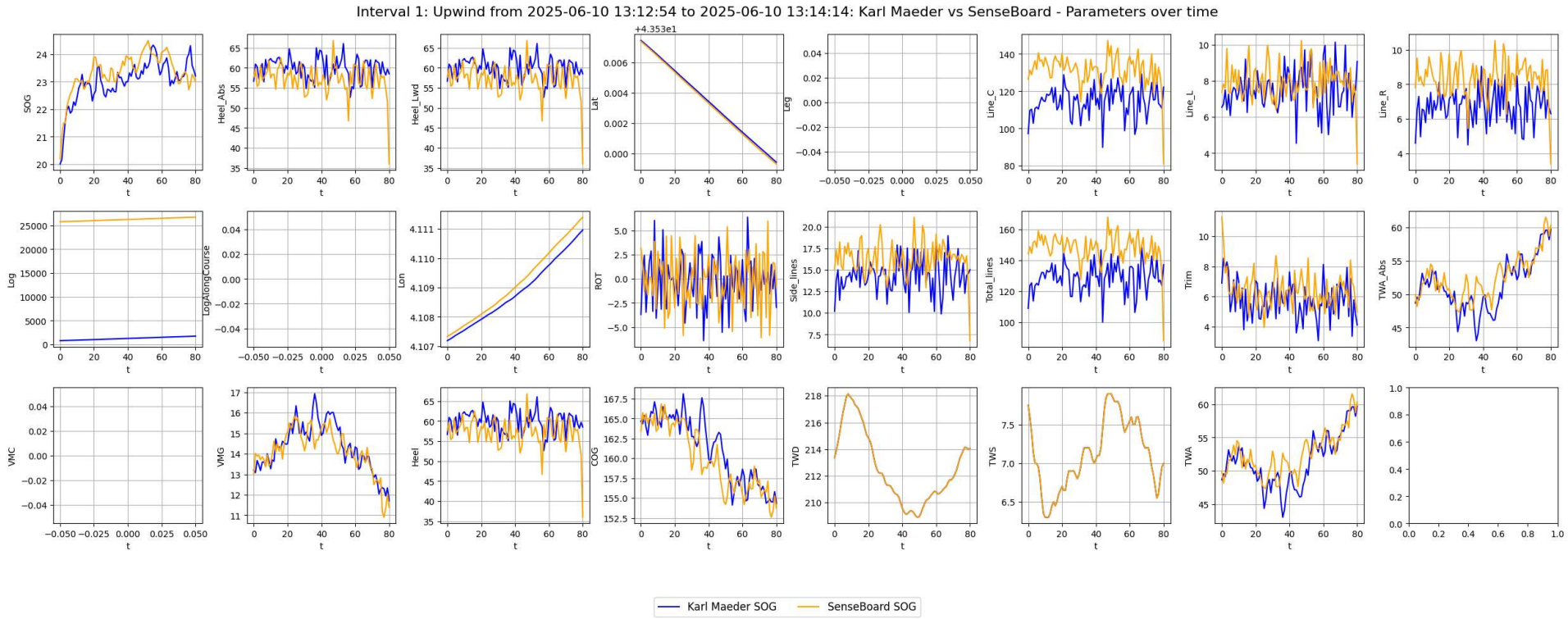
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.112	7.112	6.3	6.3	7.9	7.9	810	809	0.4473	0.4476			
TWD	212.6	212.6	208.9	208.9	218.2	218.2	810	809	2.7	2.701			
SOG	23.01	23.32	19.8	19.9	25.4	24.6	810	809	0.7847	0.7282	SenseBoard	SenseBoard	SenseBoard
VMG	14.32	14.15	11.34	9.814	17.69	16.66	810	809	1.245	1.18	Karl Maeder	SenseBoard	Tie
COG	161.2	160	150.3	149.7	170.8	169.4	810	809	4.341	4.333		SenseBoard	SenseBoard
TWA_Abs	51.36	52.56	40.6	44.62	61.15	64.26	810	809	4.099	3.548			
Heel_Lwd	59.93	57.17	47.1	28.1	71.5	74.3	810	809	4.26	5.7	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	14.32	16.27	5.7	4.3	24.2	30.6	810	809	3.081	3.922	SenseBoard	Karl Maeder	Tie
Line_C	114.6	131.3	71	51.7	144	162	806	809	10.91	12.45	SenseBoard	Karl Maeder	Tie
Total_lines	128.8	147.9	82.3	56	166.1	184	810	809	12.44	14.15	SenseBoard	Karl Maeder	Tie

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	956.445204	969.480827
Straight Line [m]	953.641622	966.709540
Distance as Percentage of Straight Line [%]	100.293987	100.286672

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	10.264435	-8.569599	-0.282880
Final Deficit	23.070258	-29.137413	-8.349530
Total Gain	12.805824	-20.567815	-8.066651
Gain per Minute	9.498695	-15.256136	-5.983423




```
Interval 2 summary:
{'avg TWA boat1': -139.56818947368419,
 'avg TWA boat2': -138.77731161971832,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749561409.755,
 'high_sog_duration': 56.896000146865845,
 'min_sog_used': 26.5,
 'start_time': 1749561352.859}

================================================================================
Interval 2: Downwind from 2025-06-10 13:15:52 to 2025-06-10 13:16:49: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

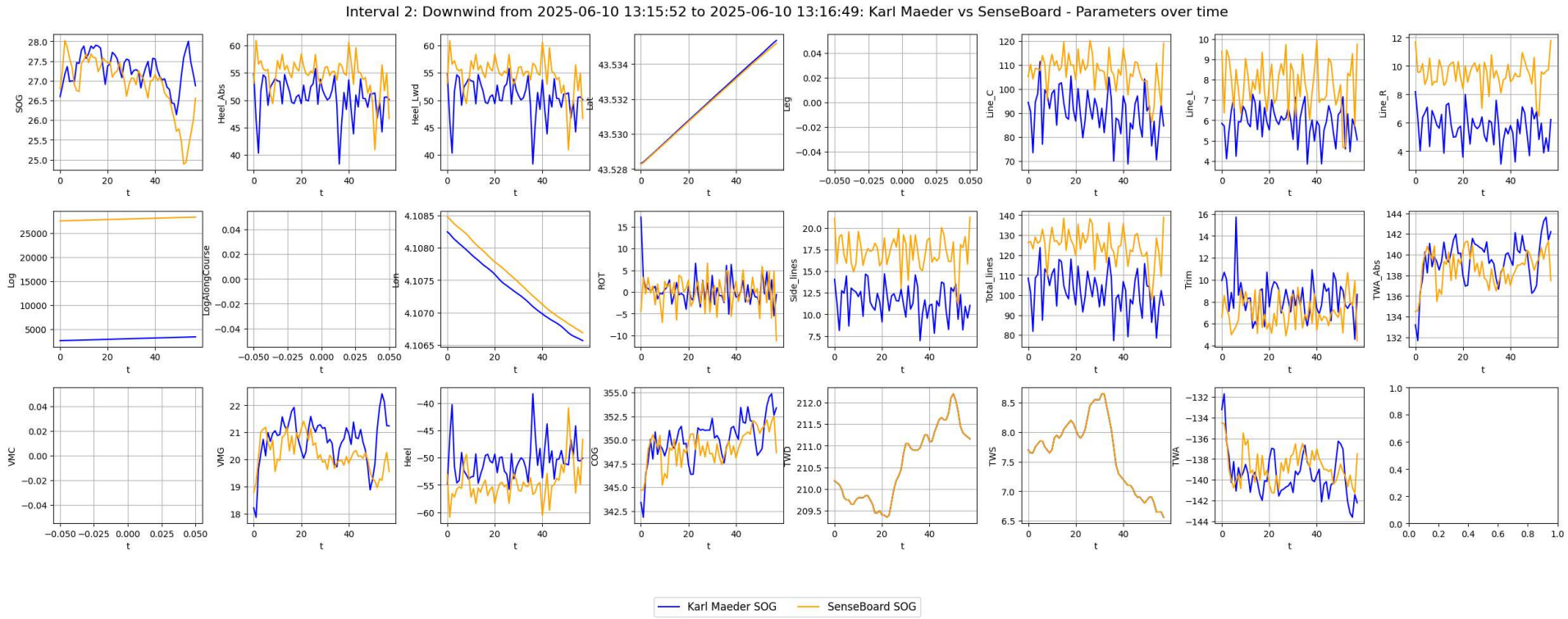
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.657	7.659	6.524	6.534	8.696	8.696	570	568	0.6035	0.6026			
TWD	210.6	210.6	209.3	209.3	212.3	212.3	570	568	0.8507	0.8517			
SOG	27.3	26.9	26.1	24.6	28.1	28.2	570	568	0.4237	0.7172	Karl Maeder	Karl Maeder	Karl Maeder
VMG	20.76	20.21	17.03	17.13	23.02	22.17	570	568	0.8926	0.8088	Karl Maeder	SenseBoard	Tie
COG	350.1	349.3	339.4	341.3	357.1	358.4	570	568	2.598	2.519		SenseBoard	SenseBoard
TWA_Abs	139.6	138.8	129.3	131.5	145.9	146.4	570	568	2.416	2.408			
Heel_Lwd	50.46	54.66	33.7	33.7	61.9	71.4	570	568	5.112	6.473	SenseBoard	Karl Maeder	Tie
Side_lines	11.5	17.15	2.6	6.8	21.6	25.1	570	568	3.099	3.229	SenseBoard	Karl Maeder	Tie
Line_C	90.24	107.3	54.4	78.1	118.2	140.7	569	568	11.91	11.23	SenseBoard	SenseBoard	SenseBoard
Total_lines	102.1	124.6	61	87.4	133.7	155	570	568	13.72	12.69	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	798.986237	784.237471
Straight Line [m]	798.182489	783.487952
Distance as Percentage of Straight Line [%]	100.100697	100.095664

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-6.589204	-17.163713	-6.115711
Final Deficit	-21.389527	-5.979896	12.403164
Total Gain	-14.800323	11.183818	18.518876
Gain per Minute	-15.607764	11.793959	19.529185




```
Processing: ../Data_Sailnjord/Straight_lines\10_06\10_06_Run7
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 51.93085956964892,
 'avg TWA boat2': 51.51348979591837,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749561820.953,
 'high_sog_duration': 88.19700002670288,
 'min_sog_used': 19.9,
 'start_time': 1749561732.756}

================================================================================
Interval 1: Upwind from 2025-06-10 13:22:12 to 2025-06-10 13:23:40: 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	7.963	7.963	7.4	7.4	8.6	8.6	883	882	0.249	0.2491			
TWD	209.1	209.1	207.5	207.5	210.7	210.7	883	882	0.9256	0.9257			
SOG	22.42	22.61	19.9	20.6	23.8	23.6	883	882	0.5536	0.5325	SenseBoard	SenseBoard	SenseBoard
VMG	13.75	14.01	10.04	9.67	16.89	17.34	883	882	1.461	1.45	SenseBoard	SenseBoard	SenseBoard
COG	157.1	157.5	145.6	147.2	169.8	169.2	883	882	4.566	4.385		SenseBoard	SenseBoard
TWA_Abs	51.93	51.51	38.28	38.3	64.25	63	883	882	5.194	4.971			
Heel_Lwd	58.58	56.88	40	39.4	72.9	73.3	883	882	4.533	5.248	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	13.24	16.47	3.7	7.5	24.2	28.6	883	882	3.592	3.862	SenseBoard	Karl Maeder	Tie
Line_C	111.9	130.7	58.8	92.7	140.2	165.1	881	882	11.2	10.85	SenseBoard	SenseBoard	SenseBoard
Total_lines	124.9	147.2	68.5	102.9	159.1	179	883	882	12.8	12.56	SenseBoard	SenseBoard	SenseBoard

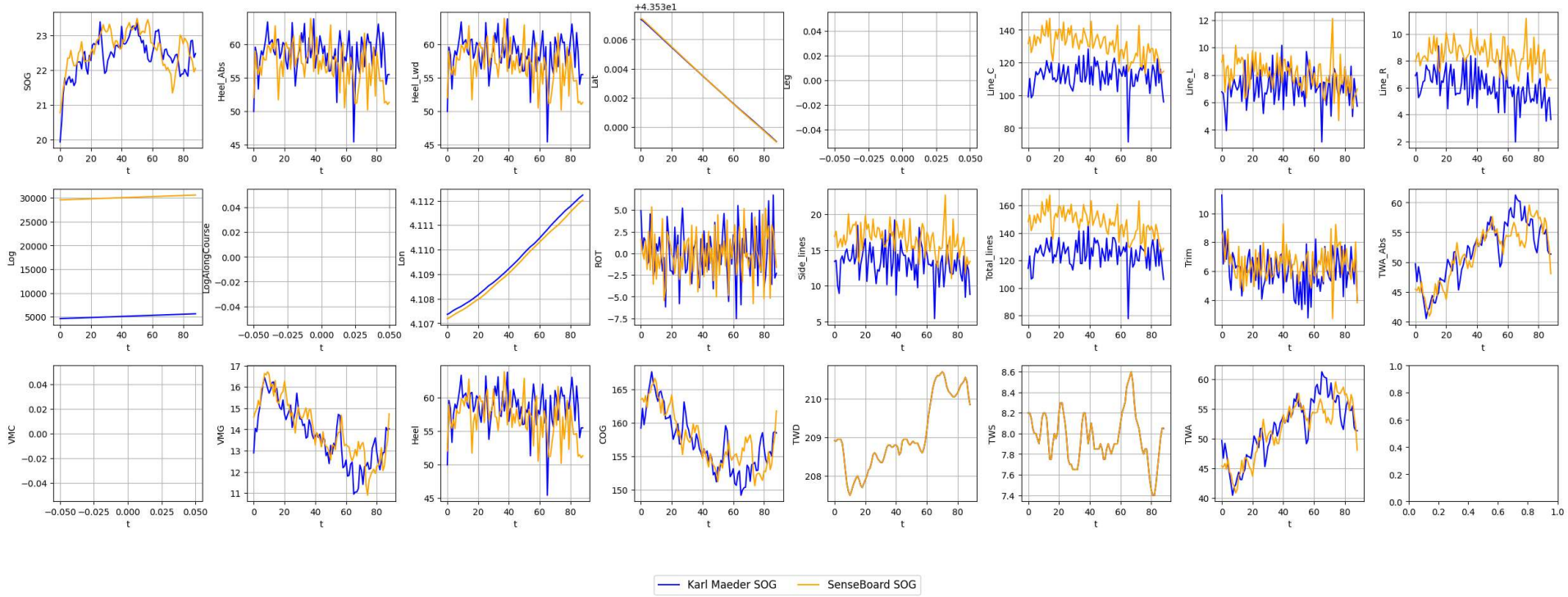
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	1016.431319	1024.663172
Straight Line [m]	1013.213426	1021.672754
Distance as Percentage of Straight Line [%]	100.317593	100.292698

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-13.370448	9.669297	-0.631680
Final Deficit	-4.905615	17.584735	10.819362
Total Gain	8.464833	7.915438	11.451041
Gain per Minute	5.758586	5.384835	7.790089

Interval 1: Upwind from 2025-06-10 13:22:12 to 2025-06-10 13:23:40: Karl Maeder vs SenseBoard - Parameters over time




```
Interval 2 summary:
{'avg TWA boat1': -139.4729668674699,
 'avg TWA boat2': -140.21056948640484,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749561978.344,
 'high_sog_duration': 66.28500008583069,
 'min_sog_used': 26.8,
 'start_time': 1749561912.059}

================================================================================
Interval 2: Downwind from 2025-06-10 13:25:12 to 2025-06-10 13:26:18: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

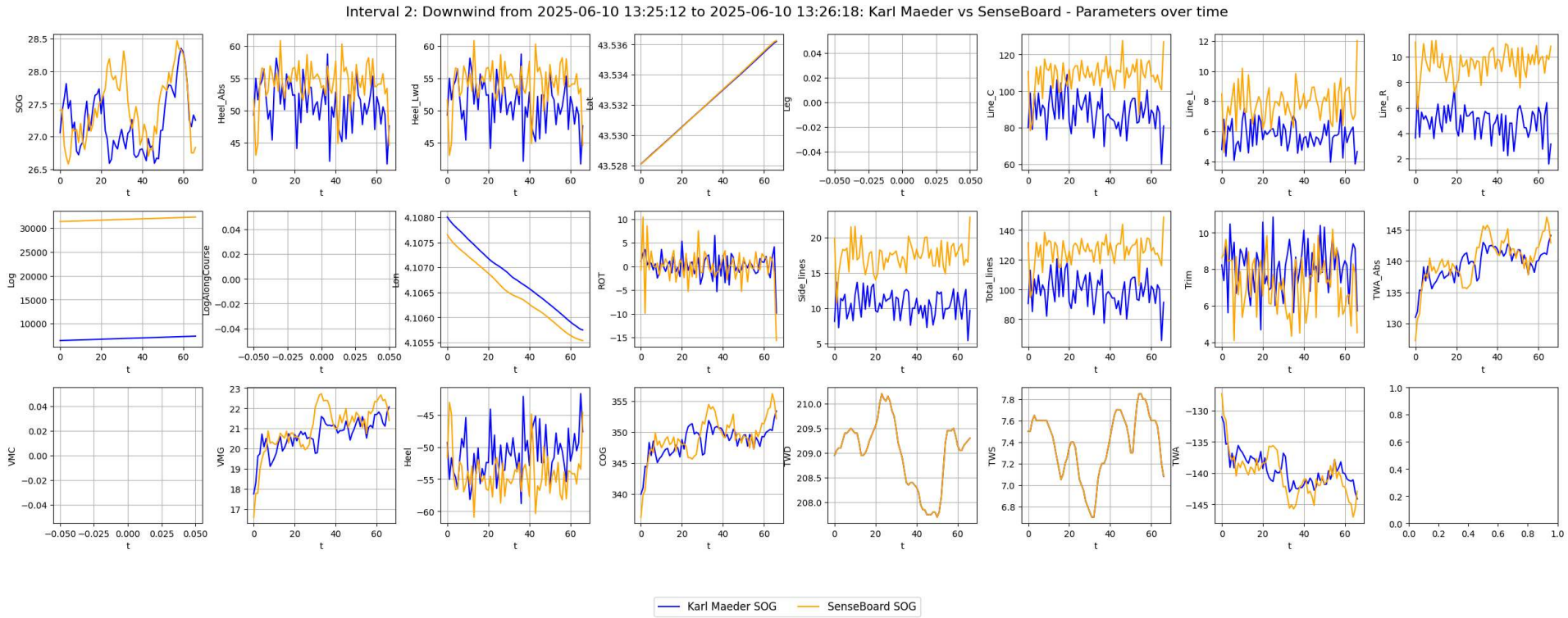
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.389	7.389	6.7	6.7	7.896	7.896	664	662	0.2954	0.2955			
TWD	209	209	207.7	207.7	210.2	210.2	664	662	0.6876	0.6885			
SOG	27.22	27.44	26.4	26.5	28.5	28.5	664	662	0.4667	0.5164	SenseBoard	Karl Maeder	Tie
VMG	20.66	21.03	17.04	13.87	22.85	23.37	664	662	0.8624	1.317	SenseBoard	Karl Maeder	Tie
COG	348.5	349.2	338.4	329.8	356.1	358	664	662	2.645	3.874		Karl Maeder	Karl Maeder
TWA_Abs	139.5	140.2	129.5	120.8	146.8	148.7	664	662	2.796	4.089			
Heel_Lwd	51.16	54.31	35.2	27.4	66.8	70.3	664	662	5.24	6.28	SenseBoard	Karl Maeder	Tie
Side_lines	10.53	17.34	0.9	3.6	20.4	27.1	664	662	3.07	3.119	SenseBoard	Karl Maeder	Tie
Line_C	88.57	108.5	56	55	127.8	156.3	662	662	12.19	11.77	SenseBoard	SenseBoard	SenseBoard
Total_lines	99.06	125.9	60.7	77.8	138.5	179.3	664	662	13.86	12.46	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	928.527002	933.586886
Straight Line [m]	927.576219	931.531337
Distance as Percentage of Straight Line [%]	100.102502	100.220663

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	6.116574	27.706495	13.354345
Final Deficit	9.997784	15.374514	2.390922
Total Gain	3.881210	-12.331981	-10.963423
Gain per Minute	3.513202	-11.162689	-9.923895




```
Processing: ../Data_Sailnjord/Straight_lines\10_06\10_06_Run8
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 47.1392376738306,
 'avg TWA boat2': 46.03150821744627,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749562438.064,
 'high_sog_duration': 79.01199984550476,
 'min_sog_used': 22.3,
 'start_time': 1749562359.052}

================================================================================
Interval 1: Upwind from 2025-06-10 13:32:39 to 2025-06-10 13:33:58: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

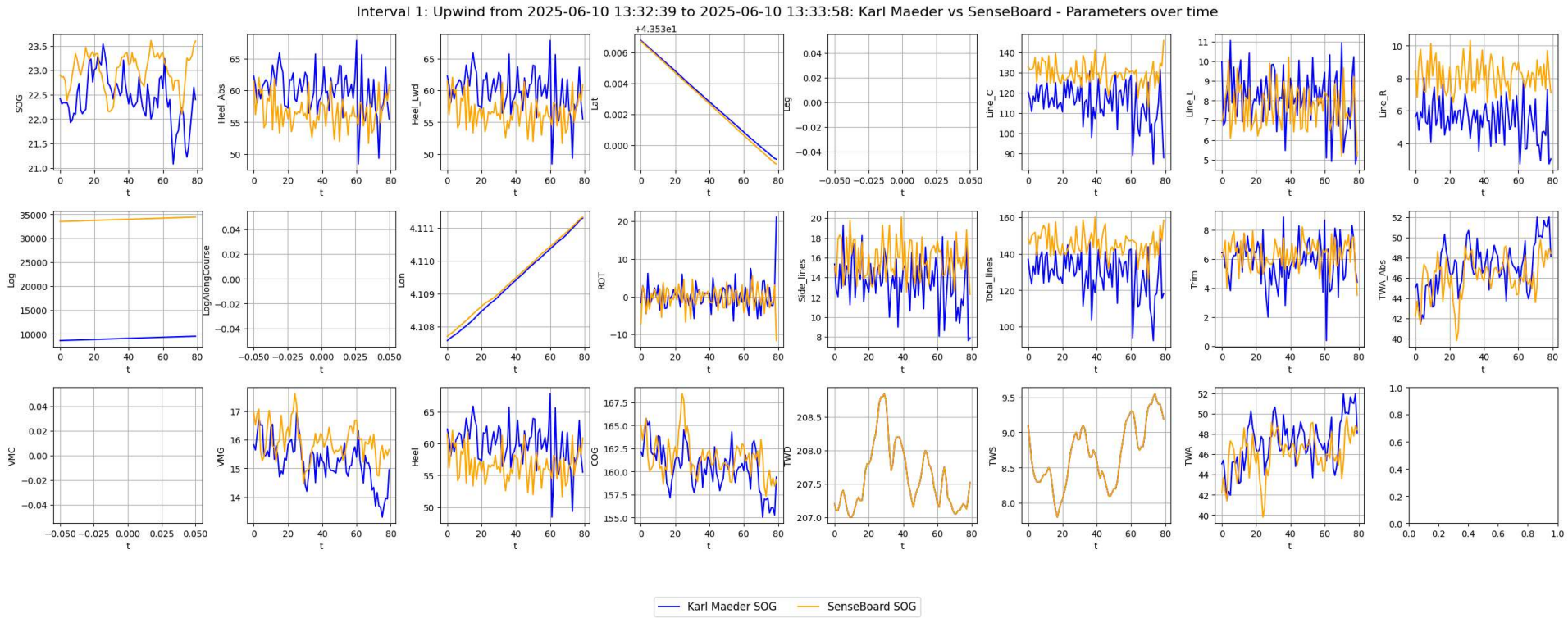
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	8.689	8.689	7.8	7.8	9.595	9.595	791	791	0.4476	0.4476			
TWD	207.6	207.6	207	207	208.9	208.9	791	791	0.4896	0.4896			
SOG	22.42	22.99	20.3	22	24	23.7	791	791	0.5272	0.3688	SenseBoard	SenseBoard	SenseBoard
VMG	15.23	15.95	12.33	13.58	17.69	18.4	791	791	0.9157	0.7524	SenseBoard	SenseBoard	SenseBoard
COG	160.5	161.6	151.8	154.9	169.7	171.1	791	791	2.931	2.543		SenseBoard	SenseBoard
TWA_Abs	47.14	46.03	37.49	36.87	55.44	52.2	791	791	2.913	2.495			
Heel_Lwd	59.9	56.63	39.7	44	75.5	75.2	791	791	4.639	4.943	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	13.65	15.88	4	7.4	24.8	28.4	791	791	3.523	3.888	SenseBoard	Karl Maeder	Tie
Line_C	115.4	129.5	66.3	95.8	144.4	159.5	786	791	12.43	10.9	SenseBoard	SenseBoard	SenseBoard
Total_lines	128.8	145.4	73	106.7	166.2	181.7	791	791	14.49	12.57	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	911.033080	934.624500
Straight Line [m]	909.863240	933.717323
Distance as Percentage of Straight Line [%]	100.128573	100.097158

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	9.352199	-8.043710	0.465485
Final Deficit	33.100097	9.180666	29.244903
Total Gain	23.747898	17.224376	28.779418
Gain per Minute	18.033639	13.079818	21.854466




```
Interval 2 summary:
{'avg TWA boat1': -141.71373203883496,
 'avg TWA boat2': -141.79741245136185,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749562578.056,
 'high_sog_duration': 51.3989999294281,
 'min_sog_used': 27.1,
 'start_time': 1749562526.657}

================================================================================
Interval 2: Downwind from 2025-06-10 13:35:26 to 2025-06-10 13:36:18: Karl Maeder vs SenseBoard
================================================================================
```

Run Statistics

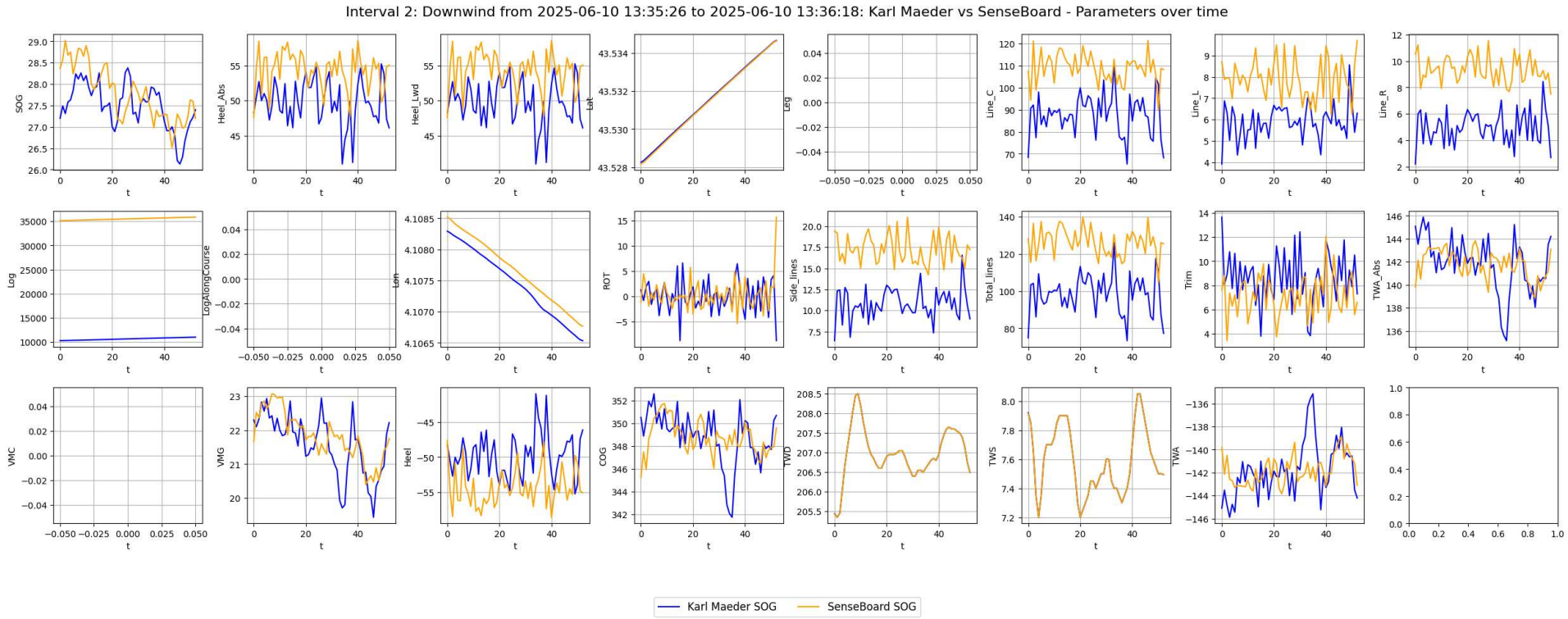
	Avg (Karl Maeder)	Avg (SenseBoard)	Min (Karl Maeder)	Min (SenseBoard)	Max (Karl Maeder)	Max (SenseBoard)	Count (Karl Maeder)	Count (SenseBoard)	StdDev (Karl Maeder)	StdDev (SenseBoard)	Winner (Avg)	Winner (StdDev)	Winner (Overall)
TWS	7.587	7.586	7.2	7.2	8.095	8.096	515	514	0.2306	0.2304			
TWD	207	207	205.3	205.3	208.6	208.6	515	514	0.6338	0.6309			
SOG	27.49	27.79	26	26.4	28.5	29.2	515	514	0.5544	0.6427	SenseBoard	Karl Maeder	Tie
VMG	21.55	21.83	18.79	19.39	23.89	24	515	514	0.9874	0.8436	SenseBoard	SenseBoard	SenseBoard
COG	348.7	348.8	339.4	342.7	355.5	354.6	515	514	2.749	2.069		SenseBoard	SenseBoard
TWA_Abs	141.7	141.8	132.9	135.9	148.6	146.7	515	514	2.766	1.944			
Heel_Lwd	49.84	54.38	31.2	40.1	66.2	70.7	515	514	5.483	5.48	SenseBoard	SenseBoard	SenseBoard
Side_lines	10.91	17.23	1.8	6.3	20.9	27.6	515	514	3.027	3.475	SenseBoard	Karl Maeder	Tie
Line_C	88.27	109	59.8	78.4	125.3	139.9	514	514	12.52	9.773	SenseBoard	SenseBoard	SenseBoard
Total_lines	99.05	126.2	64.5	91.1	140.2	159	515	514	13.92	10.96	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	727.134924	733.237350
Straight Line [m]	726.292763	732.755088
Distance as Percentage of Straight Line [%]	100.115953	100.065815

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-12.679141	-16.161553	-0.061108
Final Deficit	-6.205152	-18.020712	-6.294655
Total Gain	6.473989	-1.859159	-6.233547
Gain per Minute	7.557333	-2.170267	-7.276655




```
Processing: ../Data_Sailnjord/Straight_lines\10_06\10_06_Run9
Processing only reduced intervals for Karl Maeder vs SenseBoard
Interval 1 summary:
{'avg TWA boat1': 48.6318538083538,
 'avg TWA boat2': 48.69162976629766,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749562856.154,
 'high_sog_duration': 81.29800009727478,
 'min_sog_used': 22.5,
 'start_time': 1749562774.856}

================================================================================
Interval 1: Upwind from 2025-06-10 13:39:34 to 2025-06-10 13:40:56: 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	8.984	8.985	7.4	7.4	10	10	814	813	0.7663	0.7654			
TWD	210.4	210.4	207.9	207.9	211.7	211.7	814	813	0.7113	0.7064			
SOG	22.92	23.23	21.6	21.9	24.9	24.3	814	813	0.5206	0.4987	SenseBoard	SenseBoard	SenseBoard
VMG	15.11	15.31	12.22	12.43	17.82	17.88	814	813	1.025	0.8093	SenseBoard	SenseBoard	SenseBoard
COG	161.8	161.7	151.5	155.8	171.5	171.3	814	813	3.458	2.694		SenseBoard	SenseBoard
TWA_Abs	48.63	48.69	38.4	39.6	58.82	55.42	814	813	3.492	2.787			
Heel_Lwd	59.44	56.62	42.6	38.1	74.4	70.9	814	813	4.945	5.007	Karl Maeder	Karl Maeder	Karl Maeder
Side_lines	11.45	15.78	3.2	7.7	24	27.2	814	813	3.647	3.714	SenseBoard	Karl Maeder	Tie
Line_C	113.6	130.3	68.5	89	151.1	160.1	809	813	13.68	11.98	SenseBoard	SenseBoard	SenseBoard
Total_lines	125	145.8	76.6	101.6	174.5	179.5	814	813	15.03	13.17	SenseBoard	SenseBoard	SenseBoard

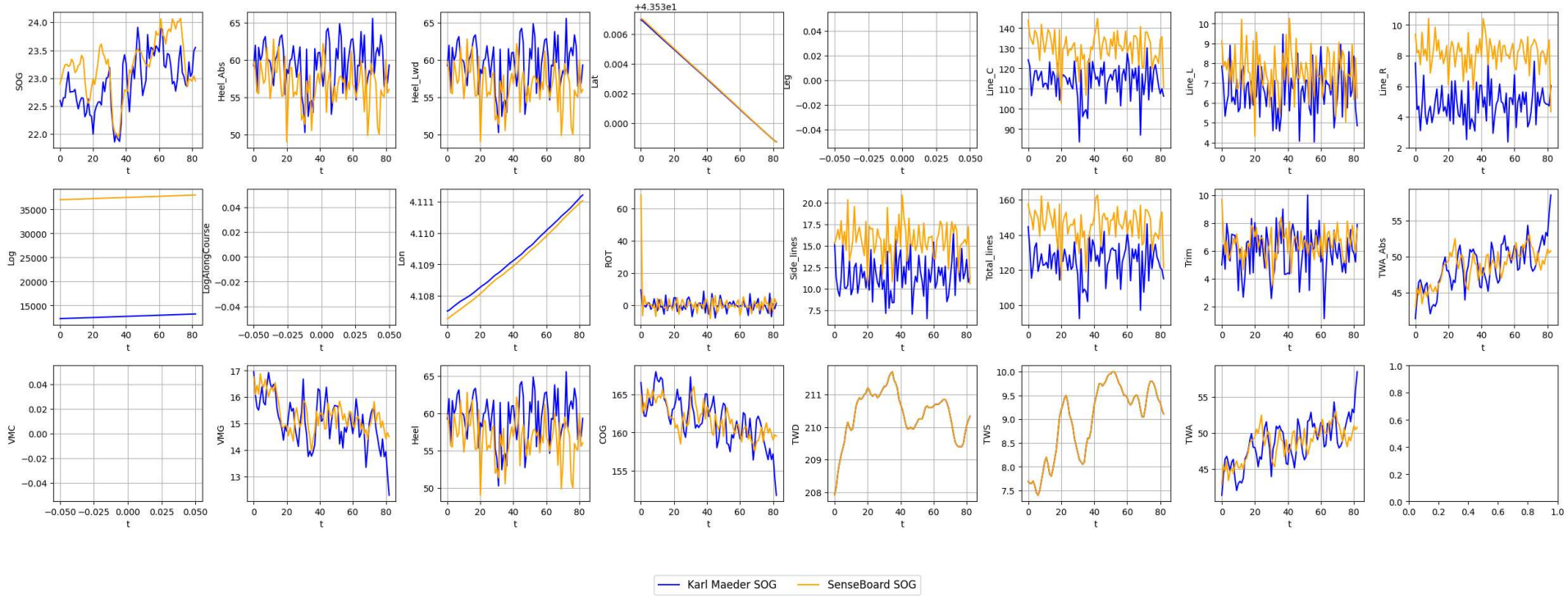
Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	957.706000	970.039512
Straight Line [m]	955.959339	968.962792
Distance as Percentage of Straight Line [%]	100.182713	100.111121

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	-16.464392	14.954631	0.341801
Final Deficit	-3.441349	14.482477	8.594365
Total Gain	13.023043	-0.472154	8.252564
Gain per Minute	9.611339	-0.348462	6.090603

Interval 1: Upwind from 2025-06-10 13:39:34 to 2025-06-10 13:40:56: Karl Maeder vs SenseBoard - Parameters over time




```
Interval 2 summary:
{'avg TWA boat1': -142.29937386018238,
 'avg TWA boat2': -141.88526484018266,
 'boat1_name': 'Karl Maeder',
 'boat2_name': 'SenseBoard',
 'end_time': 1749563002.155,
 'high_sog_duration': 65.6949999332428,
 'min_sog_used': 26.9,
 'start_time': 1749562936.46}

================================================================================
Interval 2: Downwind from 2025-06-10 13:42:16 to 2025-06-10 13:43:22: Karl Maeder vs SenseBoard
================================================================================
```

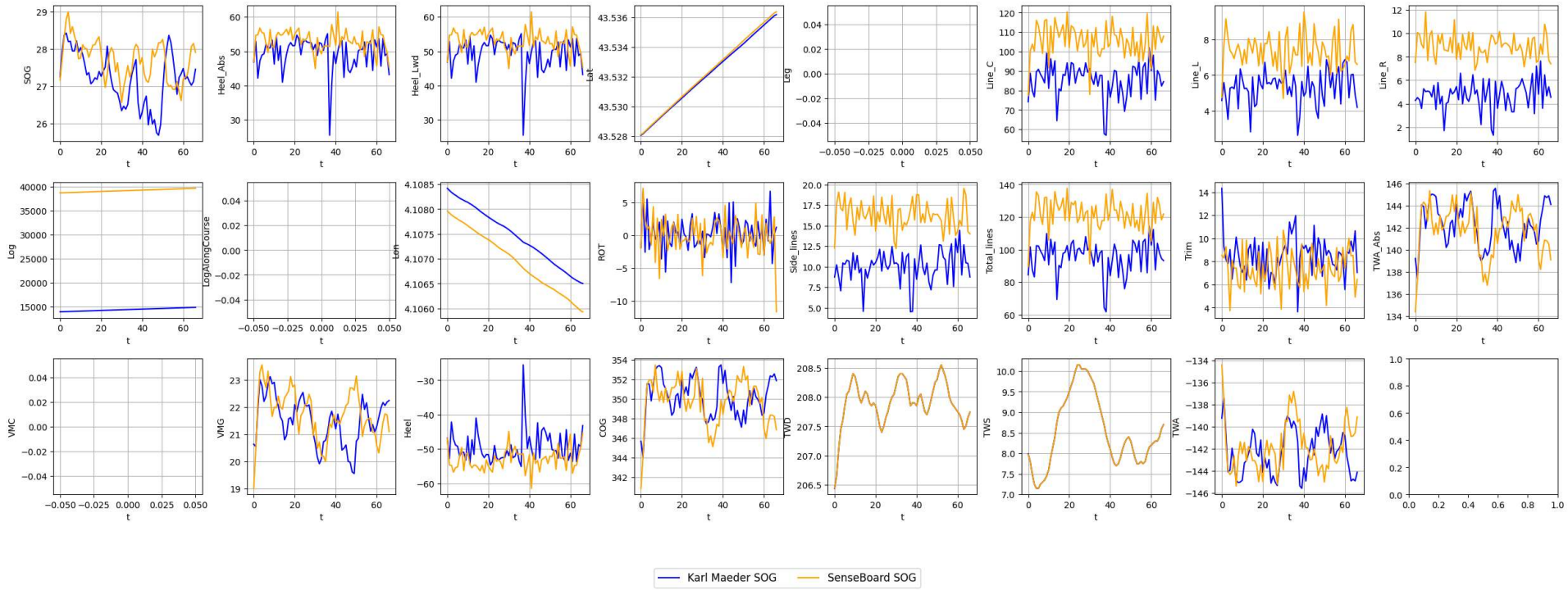
Run Statistics

	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	8.51	8.51	7.105	7.105	10.2	10.2	658	657	0.8845	0.885			
TWD	207.9	207.9	206.4	206.4	208.6	208.6	658	657	0.37	0.3656			
SOG	27.19	27.68	25.2	26.4	28.5	29.1	658	657	0.7159	0.5451	SenseBoard	SenseBoard	SenseBoard
VMG	21.49	21.76	18.95	18.73	23.57	23.98	658	657	0.9427	0.9627	SenseBoard	Karl Maeder	Tie
COG	350.2	349.8	341.5	340	355.6	356	658	657	2.419	2.672		Karl Maeder	Karl Maeder
TWA_Abs	142.3	141.9	134.9	133.5	148.2	148.2	658	657	2.427	2.592			
Heel_Lwd	49.49	53.23	7	36.5	63.9	68.5	658	657	6.311	5.796	SenseBoard	SenseBoard	SenseBoard
Side_lines	10.06	16.29	1	8.8	21.1	23.4	658	657	3.015	2.741	SenseBoard	SenseBoard	SenseBoard
Line_C	85.44	105.7	39.4	67.7	117.2	144.8	657	657	12.05	11.56	SenseBoard	SenseBoard	SenseBoard
Total_lines	95.63	122	50	78.7	131.5	164.9	658	657	13.87	12.72	SenseBoard	SenseBoard	SenseBoard

Distance Summary

	Karl Maeder	SenseBoard
Distance [m]	919.004144	934.871148
Straight Line [m]	918.191019	933.875084
Distance as Percentage of Straight Line [%]	100.088557	100.106659

Gain of Karl Maeder with respect to SenseBoard

	Forward	Lateral	VMG
Initial Deficit	12.581505	35.169869	11.552769
Final Deficit	28.268839	41.965848	3.296600
Total Gain	15.687334	6.795979	-8.256168
Gain per Minute	14.327423	6.206846	-7.540454

Interval 2: Downwind from 2025-06-10 13:42:16 to 2025-06-10 13:43:22: Karl Maeder vs SenseBoard - Parameters over time