



Climatological Study for squid-bestsailsdemo

run:
squid-bestsailsdemo-08-05-18-9b552e37-59ac-44b9-9b9d-e6ebbc541e2d-gs43-rhum
Part: ALL
2018-05-08

1 Input

Customer: squid-bestsailsdemo

RUN: squid-bestsailsdemo-08-05-18-9b552e37-59ac-44b9-9b9d-e6ebbc541e2d-gs43-rhum

1.1 General Parameters

Departure Point: lat=48.65559303004337 lon=-2.0585632324218754

Arrival Point: lat= 16.20049843484491 lon=-61.51691436767579

Waypoint : lat=48.69311337056026 lon=-2.3181152343750004 (tolerance: 1 nm)

Waypoint : lat=16.45715879614139 lon=-61.65527343750001 (tolerance: 1 nm)

Waypoint : lat=15.935580656785602 lon=-61.71981811523438 (tolerance: 1 nm)

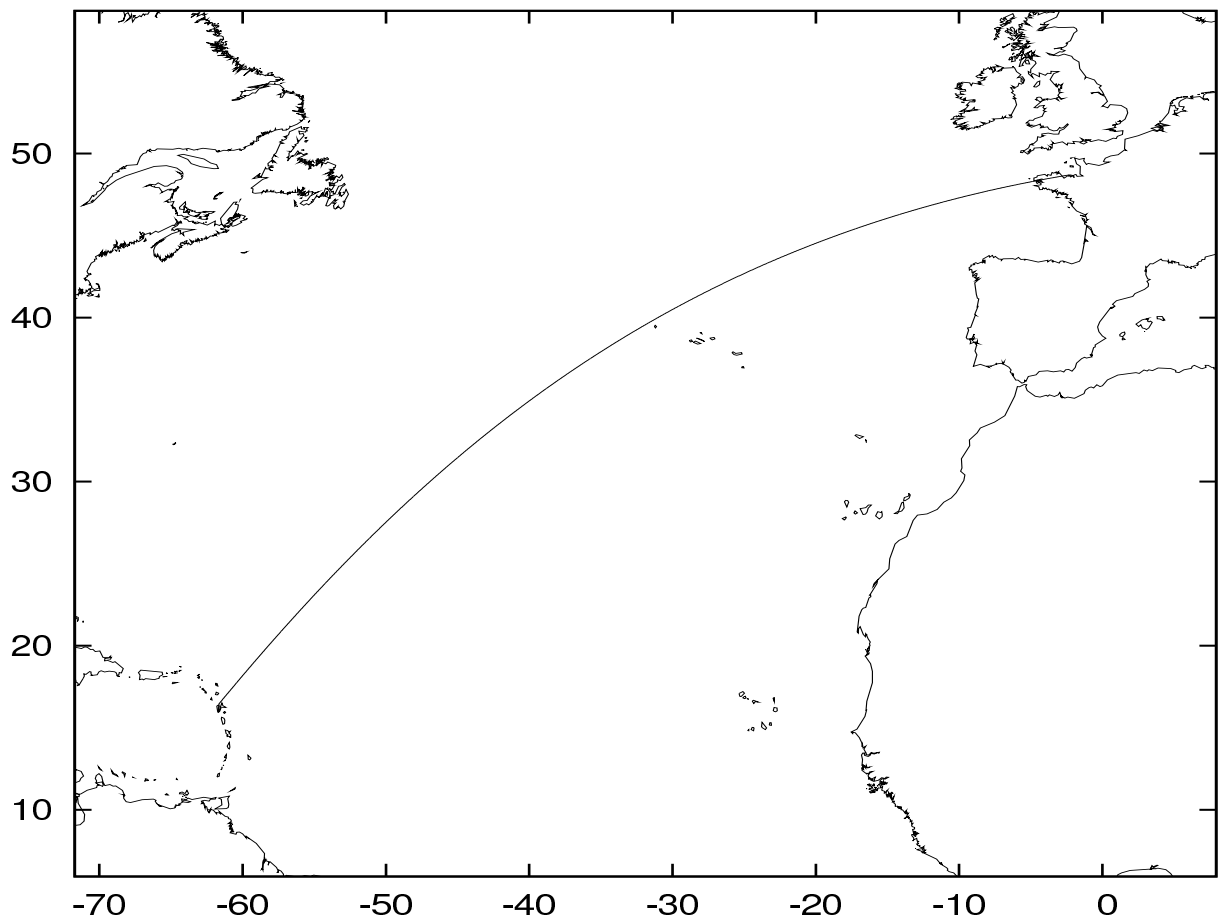


Figure 1: Orthodromy

Time: Run starts every 24 hours, between 1018 and 1118 (format MMDD, where MM=month; DD=day)

Year: 2008 2009 2010 2011 2012 2013 2014 2015 2016

Number of theoretical departure: 288

1.2 Routing Parameters

Polar: grandsoleil43-2.pol (see 3.3)

Sail: see 3.4

Polar Factor: 1

Tack Penalty (second): 900

Isochrone timestep (second): 3600

Isochrone heading increment (degree): 3.6

Isochrone sector width (nm): 5

Max boat speed (kt): 50

Max Wind kill boat (kt): 70

Max Wind stop boat (kt): 65

Max Wave kill boat (m): 50

Max Wave stop boat (m): 10

Sea State effect on the boat speed following user table: No

Wind Grib factor following user table: No

Exclusion Area:

2 Statistiques

Statistics	t (hours)	t (days)	dist (NM)	boat speed (kt)	max wind (kt)	max wave (m)
Mean	449.85	18.74	3759.19	8.37	32.17	5.75
Stddev	21.05	.87	89.82	0.32	4.32	1.49
Q10	424.58	17.69	3656.69	7.92	26.74	4.02
Q50	446.72	18.61	3750.80	8.39	32.15	5.61
Q90	480.43	20.01	3863.73	8.81	38.22	7.66

Table 1: Statistics

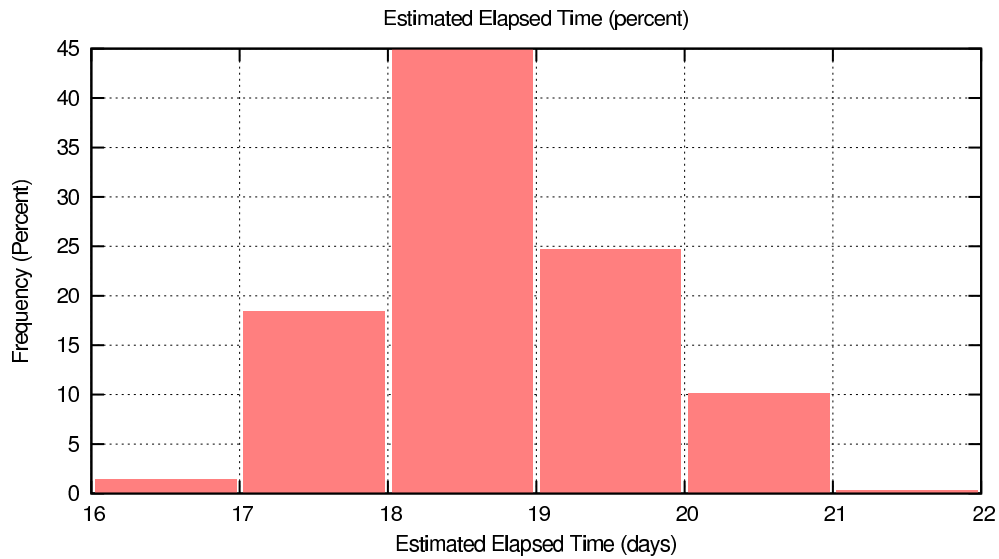


Figure 2: Estimated Elapsed Time (percent)

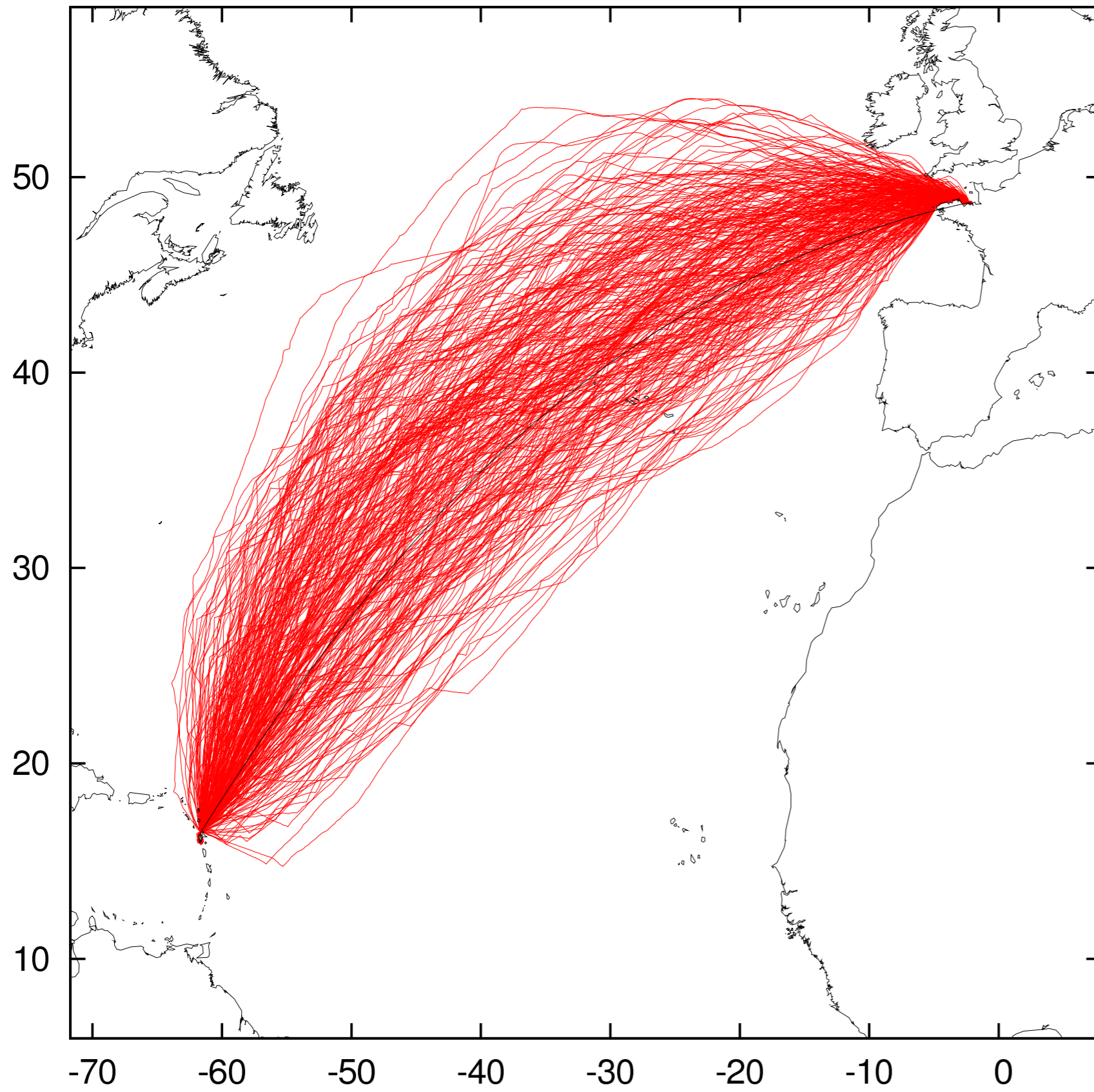


Figure 3: All simulated routes

2.1 Instantaneous Boat Speed

Boat Speed (kt)	Frequency (%)
0	0.1
1	0.3
2	0.4
3	0.8
4	1.5
5	3.7
6	5.6
7	19.5
8	34.8
9	22.7
10	8.0
11	2.7

Table 2: Frequency of instanteneous boatspeed

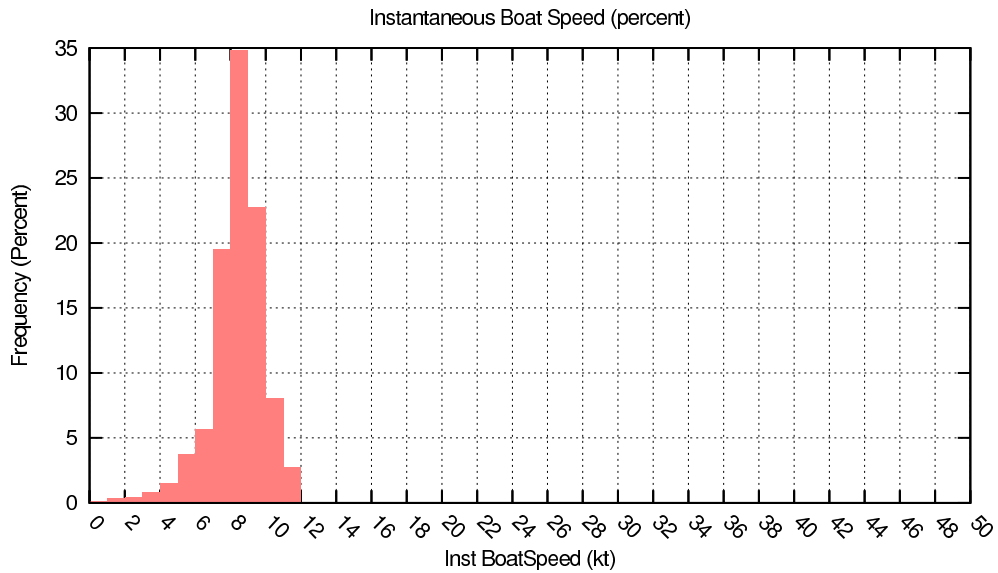


Figure 4: Frequency of Instantaneous Boat Speed (percent)

	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	26-28	28-30	30-32	32-34	34-sup	
TWS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TWA	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10	0-10
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.3	1.8	3.0	4.0	5.5	6.6	7.0	7.3	7.4	7.4	7.6	7.6	7.6	7.4	7.1	6.7	6.0	5.6	5.6
	0.8	2.0	3.4	4.8	6.4	7.3	7.6	7.7	7.9	8.0	8.0	8.1	8.1	7.8	7.6	7.2	6.6	6.2	6.2
	1.0	2.3	4.1	5.5	6.9	7.8	8.1	8.2	8.4	8.5	8.6	8.6	8.7	8.4	8.1	7.6	7.0	6.6	6.6
	1.2	2.7	4.4	5.9	7.3	8.2	8.4	8.6	8.7	8.8	8.9	9.0	9.1	8.8	8.5	7.9	7.3	6.8	6.8
	1.2	2.9	4.6	6.1	7.5	8.3	8.6	8.8	9.0	9.1	9.2	9.4	9.4	9.1	8.8	8.2	7.6	7.1	7.1
	1.5	3.0	4.8	6.2	7.6	8.5	8.8	9.0	9.2	9.4	9.5	9.7	9.8	9.8	9.8	9.4	8.5	8.1	8.1
	1.2	3.0	4.9	6.3	7.7	8.6	8.9	9.1	9.4	9.6	9.8	10.0	10.1	10.1	10.1	9.9	9.3	9.1	9.1
	1.1	2.9	4.8	6.3	7.7	8.6	9.0	9.3	9.6	9.8	10.0	10.2	10.4	10.5	10.5	10.2	9.7	9.4	9.4
	1.2	2.8	4.5	6.1	7.6	8.6	9.0	9.4	9.7	10.0	10.3	10.6	10.8	10.8	10.9	10.7	10.0	9.8	9.8
	1.0	2.5	4.2	5.8	7.3	8.3	8.8	9.3	9.7	10.0	10.4	10.8	11.2	11.3	11.3	11.1	10.6	10.2	10.2
	0.8	2.0	3.7	5.2	6.8	7.9	8.4	8.9	9.4	9.9	10.4	11.0	11.5	11.6	11.6	11.4	10.9	10.5	10.5
	0.6	1.9	3.1	4.6	6.3	7.3	8.0	8.5	8.9	9.4	9.9	10.5	11.0	11.1	11.1	10.8	10.4	10.1	10.1
	0.5	0.0	2.6	3.9	5.7	6.8	7.5	8.0	8.5	8.9	9.4	9.9	10.3	10.5	10.4	10.2	9.9	0.0	0.0
	0.0	0.0	1.9	3.6	5.0	6.3	7.0	7.6	8.0	8.5	8.9	9.3	9.7	9.7	9.8	9.6	9.0	9.0	9.0
	0.2	1.2	0.0	3.3	4.5	5.8	6.6	7.2	7.8	8.2	8.6	9.0	9.3	9.5	9.4	9.3	8.9	8.8	8.8

Figure 5: Instantaneous Boat Speed (kt): TWS (kt) - column; TWA (deg) - line

2.2 Weather condition

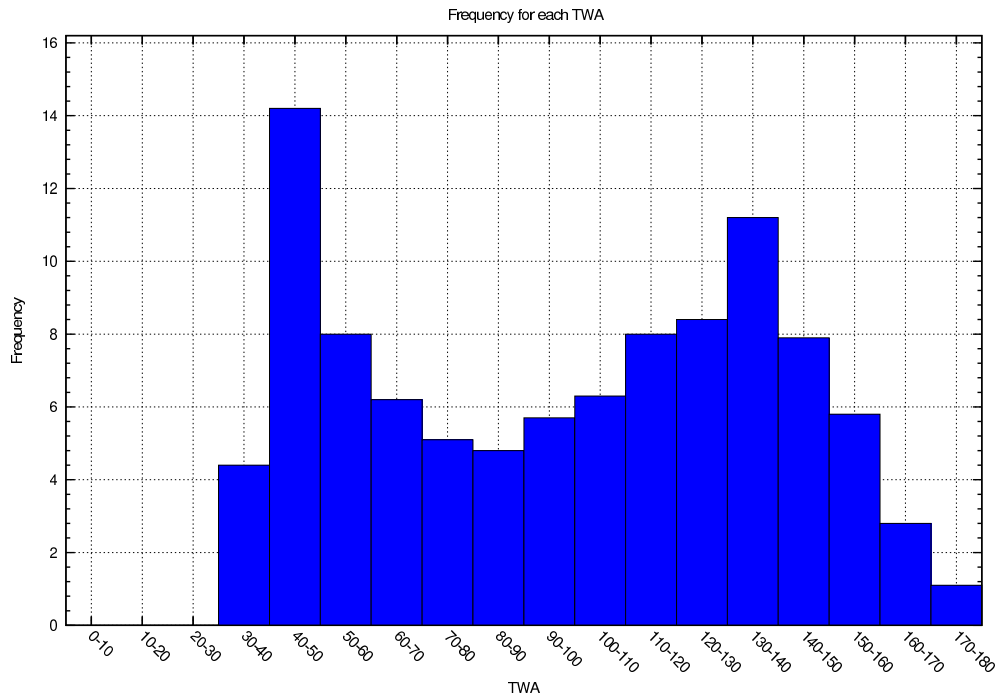


Figure 6: Frequency (%) for each TWA

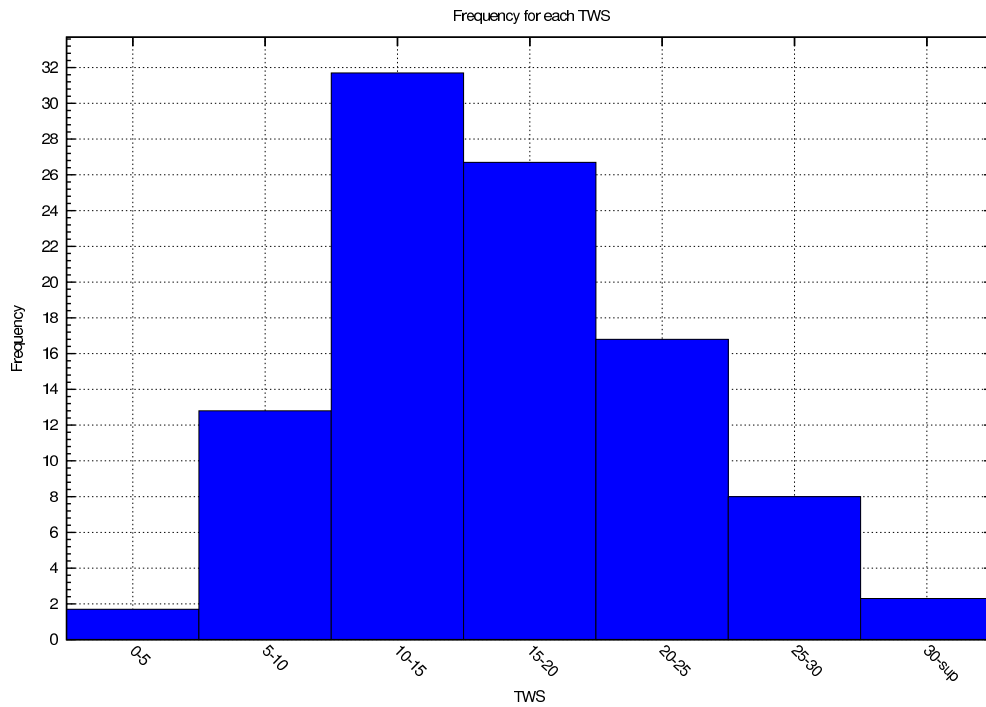


Figure 7: Frequency (%) for each TWS

TWA \ TWS	0-5	5-10	10-15	15-20	20-25	25-30	30<	Σ
0-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-40	0.0	0.2	1.1	1.2	1.1	0.6	0.2	4.4
40-50	0.0	1.0	3.7	3.8	3.3	1.7	0.5	14.2
50-60	0.2	1.6	1.9	1.7	1.3	0.8	0.3	8.0
60-70	0.2	0.9	1.8	1.4	1.2	0.6	0.2	6.2
70-80	0.2	0.7	1.6	1.3	1.0	0.4	0.0	5.1
80-90	0.1	0.8	1.3	1.2	0.8	0.5	0.1	4.8
90-100	0.2	1.3	1.6	1.0	0.7	0.7	0.3	5.7
100-110	0.2	1.4	2.6	1.0	0.6	0.3	0.2	6.3
110-120	0.2	1.4	3.5	2.1	0.6	0.2	0.0	8.0
120-130	0.2	1.2	3.2	2.8	0.8	0.2	0.1	8.4
130-140	0.1	1.5	3.4	3.1	2.1	0.9	0.2	11.2
140-150	0.0	0.6	3.4	2.1	1.2	0.4	0.1	7.9
150-160	0.0	0.1	2.2	2.1	1.0	0.4	0.1	5.8
160-170	0.0	0.0	0.5	1.4	0.7	0.2	0.0	2.8
170-180	0.0	0.0	0.1	0.5	0.4	0.1	0.0	1.1
Σ	1.7	12.8	31.7	26.7	16.8	8.0	2.3	100.0

Figure 8: Weather conditions (%): TWS (kt) - column; TWA (deg) - line .See annexe for details

	0.0-0.5	0.5-1.0	1.0-1.5	1.5-2.0	2.0-2.5	2.5-3.0	3.0-3.5	3.5-4.0	4.5-5.0	5.0-5.5	5.5-6.0	6.0<	Σ
$\overline{\text{TWA}}^{\text{TWH}}$													
0-22.5	0.2	0.4	0.4	0.9	1.3	1.5	1.5	1.2	0.8	0.4	0.3	0.3	9.2
22.5-45	0.1	0.4	0.6	0.9	1.4	1.5	1.4	1.2	1.0	0.7	0.4	0.5	10.1
45-67.5	0.1	0.4	0.5	0.8	1.3	1.5	1.4	1.3	1.0	0.8	0.5	0.8	10.5
67.5-90	0.0	0.3	0.3	0.8	1.5	1.7	1.7	1.6	1.2	0.7	0.5	0.8	11.1
90-112.5	0.0	0.2	0.3	1.1	1.8	1.8	1.8	1.3	0.8	0.6	0.4	0.4	10.6
112.5-135	0.0	0.2	0.6	2.8	3.0	2.1	1.5	0.9	0.5	0.2	0.1	0.1	12.1
135-157.5	0.0	0.1	0.9	5.3	5.4	3.0	1.6	0.9	0.4	0.2	0.1	0.1	17.9
157.5-180	0.0	0.1	0.7	5.3	5.8	3.5	1.6	0.8	0.4	0.2	0.1	0.0	18.6
Σ	0.5	2.1	4.5	18.0	21.5	16.4	12.5	9.2	6.2	3.8	2.4	3.0	100.0

Figure 9: Wave conditions (%): TWheight (m) - column; TWaveA (deg) - line

2.3 Sail

Percentage Port	57.5
Percentage Starboard	42.5
Average tack number	7.69
Average gybe number	3.82

Table 3: Tack Statistics

Type	Percent of time	Total time (hours)	Total distance (nm)	Mean time (hours)
NA	100.00	446 \pm 21	3747 \pm 89	446 \pm 21

Table 4: Sail Statistics

squid-bestsailsdemo_08-05-18_gb552e37-59ac-44b9-9b9d-e6ebbc541e2d_g_s43_r_hum - Sailect

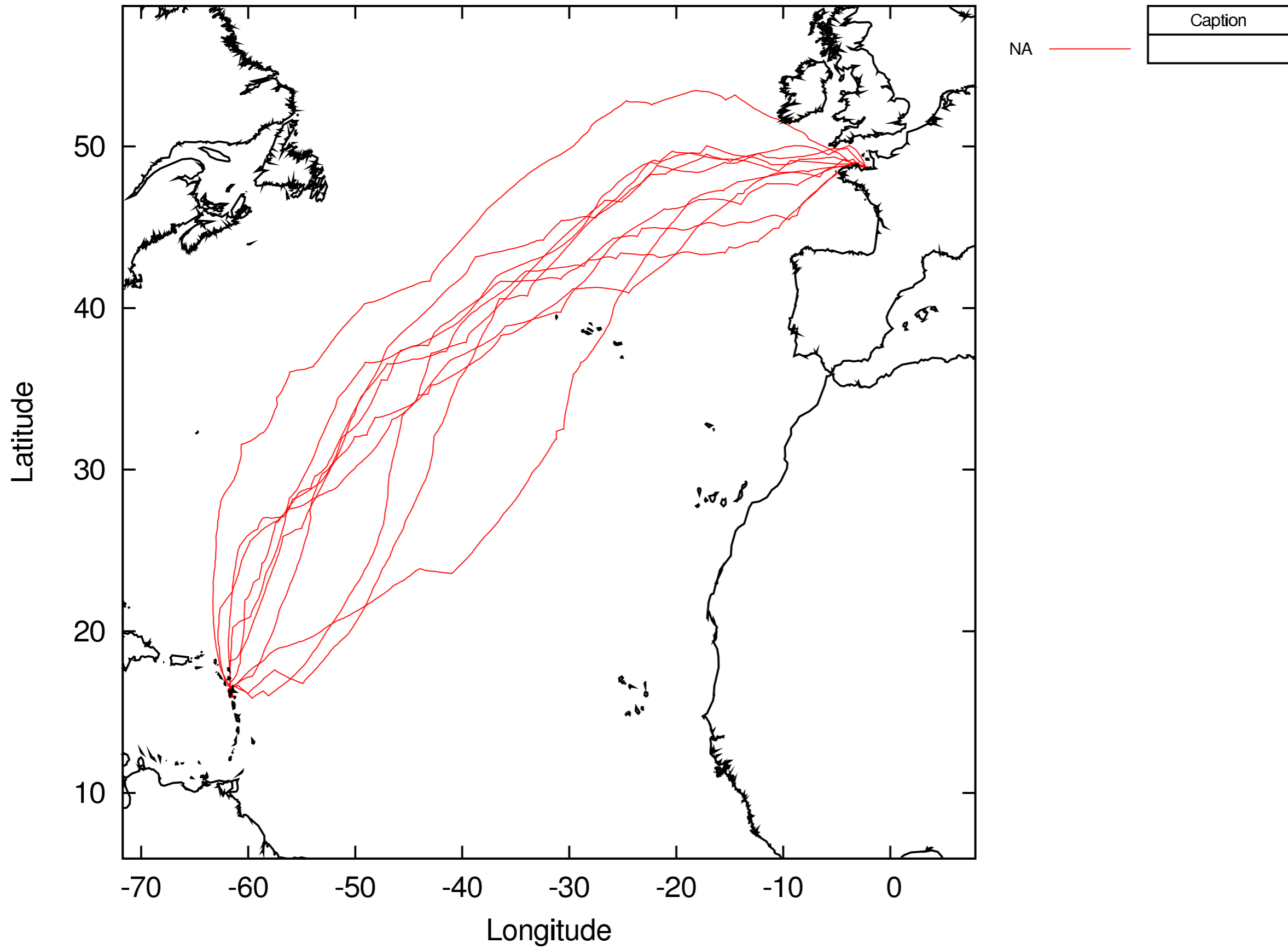


Figure 10: TOP10 routes: Sailmap

2.3.1 NA

Type	Percent
NA	100.00

Table 5: NA Sail Statistics

TWA \ TWS	0-5	5-10	10-15	15-20	20-25	25-30	30<	Σ
0-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-40	0.0	0.2	1.1	1.2	1.1	0.6	0.2	4.4
40-50	0.0	1.0	3.7	3.8	3.3	1.7	0.5	14.2
50-60	0.2	1.6	1.9	1.7	1.3	0.8	0.3	8.0
60-70	0.2	0.9	1.8	1.4	1.2	0.6	0.2	6.2
70-80	0.2	0.7	1.6	1.3	1.0	0.4	0.0	5.1
80-90	0.1	0.8	1.3	1.2	0.8	0.5	0.1	4.8
90-100	0.2	1.3	1.6	1.0	0.7	0.7	0.3	5.7
100-110	0.2	1.4	2.6	1.0	0.6	0.3	0.2	6.3
110-120	0.2	1.4	3.5	2.1	0.6	0.2	0.0	8.0
120-130	0.2	1.2	3.2	2.8	0.8	0.2	0.1	8.4
130-140	0.1	1.5	3.4	3.1	2.1	0.9	0.2	11.2
140-150	0.0	0.6	3.4	2.1	1.2	0.4	0.1	7.9
150-160	0.0	0.1	2.2	2.1	1.0	0.4	0.1	5.8
160-170	0.0	0.0	0.5	1.4	0.7	0.2	0.0	2.8
170-180	0.0	0.0	0.1	0.5	0.4	0.1	0.0	1.1
Σ	1.7	12.8	31.7	26.7	16.8	8.0	2.3	100.0

Figure 11: NA sail utilisation (%): TWS (kt) - column; TWA (deg) - line. See annexe for details

3 Annexe

3.1 Weather Conditions

	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	26-28	28-30	30-sup	Σ
TWS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TWA	0.5	1.0	1.1	1.0	0.5	0.6	0.4	0.6	0.5	0.5	0.5	0.4	0.4	0.3	0.2	0.2	4.4
0-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35-40	0.0	0.0	0.0	0.0	0.2	0.3	0.4	0.6	0.5	0.5	0.5	0.4	0.4	0.3	0.2	0.2	4.4
40-45	0.0	0.0	0.0	0.1	0.3	0.8	1.0	1.1	1.0	1.0	1.0	0.9	0.8	0.5	0.4	0.3	9.1
45-50	0.0	0.0	0.0	0.2	0.4	0.6	0.5	0.6	0.5	0.5	0.4	0.4	0.3	0.2	0.2	0.2	5.0
50-55	0.0	0.1	0.2	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	4.7
55-60	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	3.3
60-65	0.0	0.0	0.1	0.2	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	3.2
65-70	0.0	0.0	0.1	0.1	0.2	0.4	0.4	0.3	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.1	3.0
70-75	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.0	0.0	2.8
75-80	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.1	0.0	0.0	0.0	2.3
80-85	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	2.2
85-90	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.1	0.2	0.1	0.1	0.1	2.6
90-95	0.0	0.0	0.1	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	2.8
95-100	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	2.9
100-105	0.0	0.0	0.1	0.3	0.4	0.5	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.2	3.0
105-110	0.0	0.0	0.1	0.2	0.4	0.6	0.7	0.5	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	3.3
110-115	0.0	0.1	0.1	0.2	0.4	0.7	0.8	0.6	0.3	0.2	0.1	0.1	0.1	0.0	0.0	0.0	3.7
115-120	0.0	0.0	0.1	0.2	0.4	0.7	0.7	0.7	0.6	0.4	0.2	0.1	0.1	0.0	0.0	0.0	4.4
120-125	0.0	0.1	0.1	0.2	0.4	0.7	0.7	0.9	0.8	0.5	0.3	0.2	0.1	0.0	0.0	0.0	5.0
125-130	0.0	0.0	0.1	0.1	0.3	0.5	0.5	0.5	0.5	0.3	0.2	0.1	0.1	0.1	0.0	0.0	3.5
130-135	0.0	0.0	0.1	0.2	0.5	0.7	0.6	0.6	0.6	0.6	0.4	0.3	0.3	0.2	0.1	0.1	5.2
135-140	0.0	0.0	0.1	0.2	0.5	0.8	0.7	0.6	0.7	0.6	0.5	0.5	0.3	0.2	0.2	0.1	6.0
140-145	0.0	0.0	0.0	0.1	0.3	0.6	0.7	0.5	0.4	0.4	0.3	0.2	0.1	0.1	0.1	0.0	3.9
145-150	0.0	0.0	0.0	0.0	0.2	0.7	0.8	0.6	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.0	4.0
150-155	0.0	0.0	0.0	0.0	0.1	0.5	0.8	0.6	0.5	0.4	0.3	0.2	0.2	0.1	0.1	0.0	3.6
155-160	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.0	0.0	2.3
160-165	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4	0.3	0.2	0.1	0.1	0.0	0.0	0.0	1.6
165-170	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.0	0.0	0.0	1.2
170-175	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.6
175-180	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.4
Σ	0.2	0.7	1.9	4.0	7.6	12.3	13.0	12.7	11.0	9.5	7.7	6.4	5.1	3.4	2.3	2.3	100.0

Figure 12: Weather conditions (%): TWS (kt) - column; TWA (deg) - line

3.2 Sail

3.2.1 NA

$\frac{TWS}{TWA}$	TWS (kt)																		Σ
	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	24-26	26-28	28-30	30-sup			
0-5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15-20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20-25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30-35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35-40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40-45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45-50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50-55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55-60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60-65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65-70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70-75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75-80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80-85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90-95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100-105	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105-110	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110-115	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115-120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120-125	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125-130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130-135	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135-140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140-145	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145-150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150-155	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155-160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160-165	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165-170	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170-175	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175-180	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Σ	0.2	0.7	1.9	4.0	7.6	12.3	13.0	12.7	11.0	9.5	7.7	6.4	5.1	3.4	2.3	2.3	2.3	2.3	100.0

Figure 13: NA sail utilisation (%): : TWS (kt) - column; TWA (deg) - line

3.3 VPP

TWA	4	6	8	10	12	14	16	20	25	30	34
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	2.1	3.54	4.67	6.52	6.9	7.16	7.24	7.43	7.57	6.88	5.69
40	2.34	3.88	5.03	6.94	7.37	7.58	7.72	7.91	8.06	7.33	6.06
45	2.6	4.22	5.57	7.38	7.67	7.85	7.98	8.17	8.32	7.56	6.25
52	3.18	4.92	6.18	7.72	7.96	8.13	8.26	8.46	8.63	7.85	6.49
60	3.45	5.23	6.44	7.97	8.21	8.39	8.53	8.74	8.94	8.13	6.72
70	3.65	5.46	6.58	8.14	8.47	8.65	8.8	9.06	9.31	8.46	6.99
80	3.72	5.53	6.73	8.22	8.59	8.87	9.05	9.35	9.65	8.77	7.25
90	3.74	5.72	6.86	8.41	8.68	8.93	9.25	9.63	9.98	9.98	8.25
100	3.82	5.77	6.87	8.49	8.85	9.11	9.35	9.84	10.33	10.33	9.39
110	3.73	5.64	6.76	8.41	8.88	9.28	9.56	10.02	10.64	10.64	9.67
120	3.49	5.32	6.55	8.2	8.7	9.18	9.63	10.3	11.04	11.04	10.04
135	2.85	4.55	5.92	7.66	8.19	8.67	9.15	10.15	11.71	11.71	10.65
150	2.15	3.57	4.86	6.73	7.52	8.06	8.5	9.38	10.72	10.72	9.75
160	1.82	3.03	4.21	5.94	6.9	7.59	8.1	8.95	10.1	10.1	9.18
170	1.64	2.74	3.82	5.45	6.4	7.22	7.72	8.67	9.72	9.72	8.84
180	1.55	2.59	3.62	5.18	6.09	6.94	7.5	8.47	9.46	9.46	8.6

3.4 Sail Chart

	-1	2	4	6	8	10	12	14	16	18	20	22	25	28	32	36	40	45	50
30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
60	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
65	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
125	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
130	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
135	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
145	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
150	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
155	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
160	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA