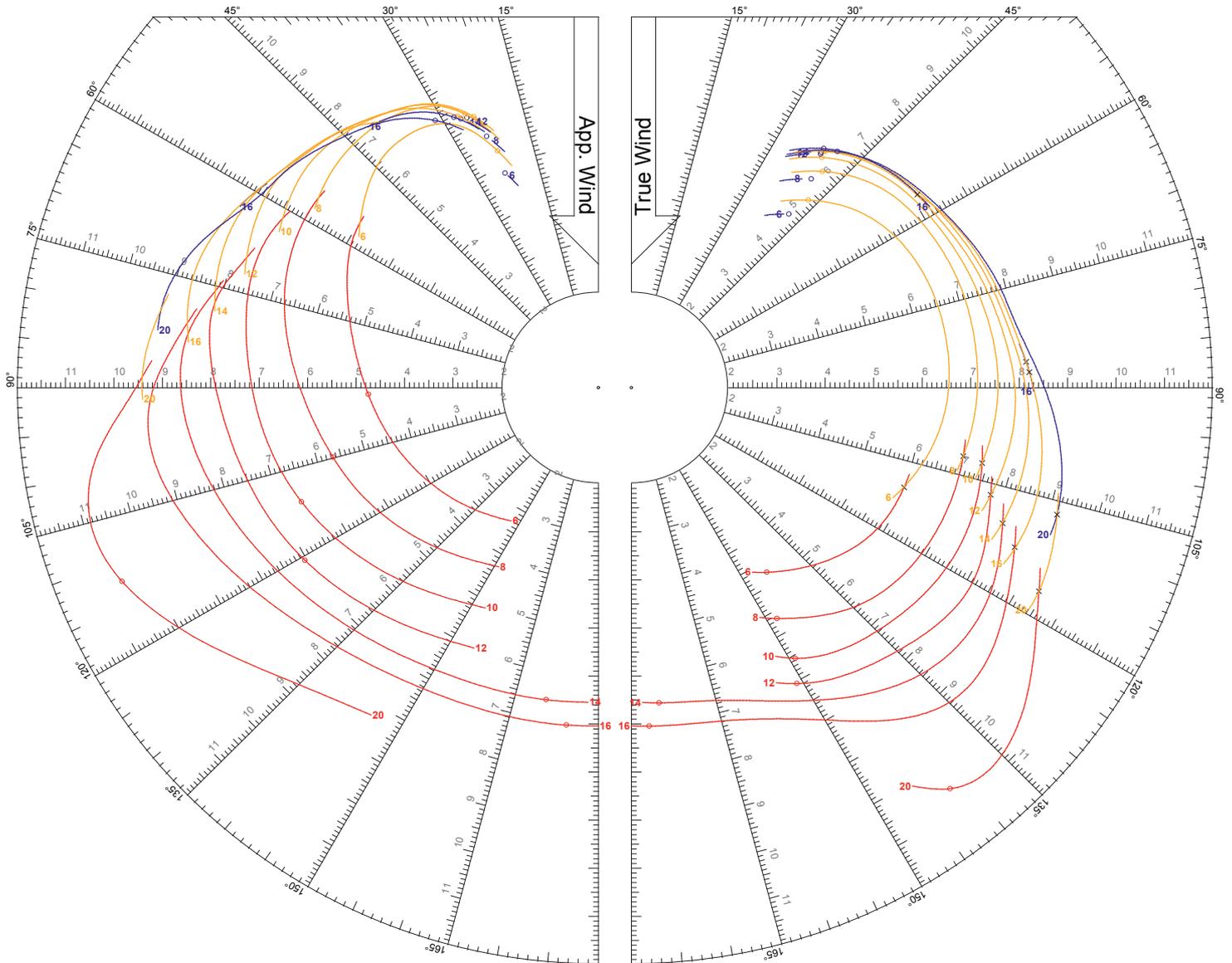


# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



TWS: 6, 8, 10, 12, 14, 16, 20 kts

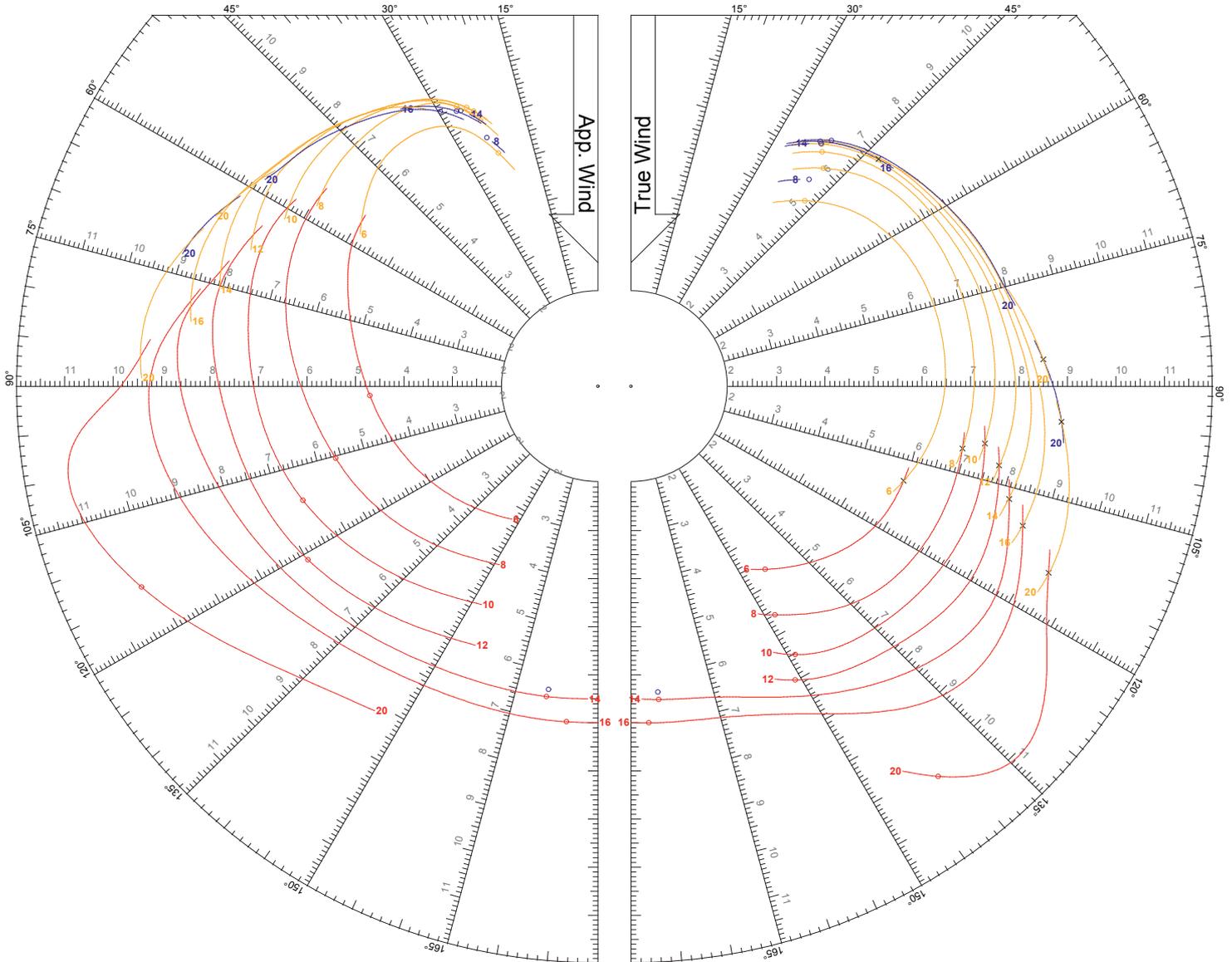
Headsail

Asymmetric Spinnaker on Centerline

Headsail set Flying

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



TWS: 6, 8, 10, 12, 14, 16, 20 kts

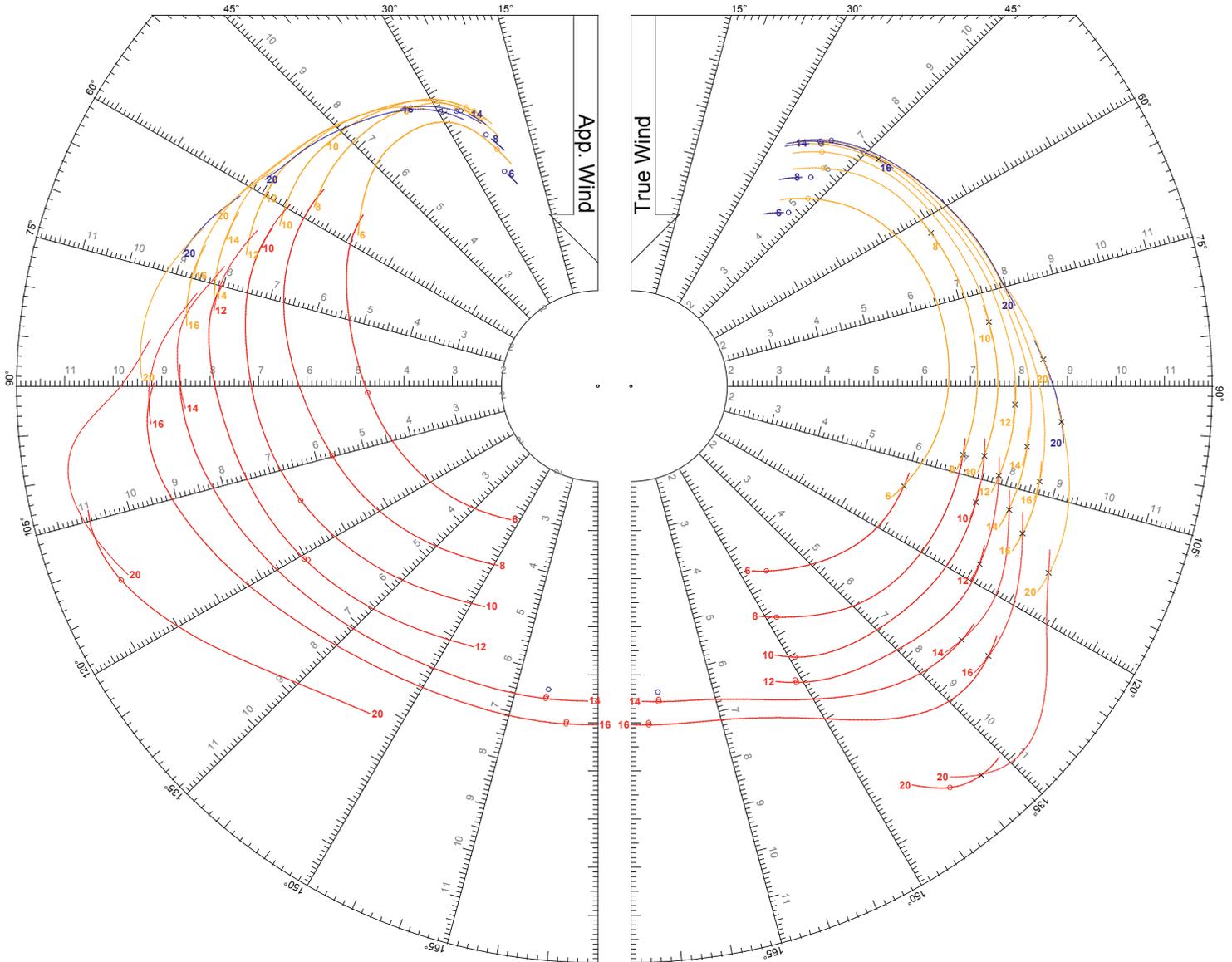
Headsail - Ballasted

Asymmetric Spinnaker on Centerline -

Headsail set Flying - Ballasted

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



TWS: 6, 8, 10, 12, 14, 16, 20 kts

Headsail

Asymmetric Spinnaker on Centerline

Headsail set Flying

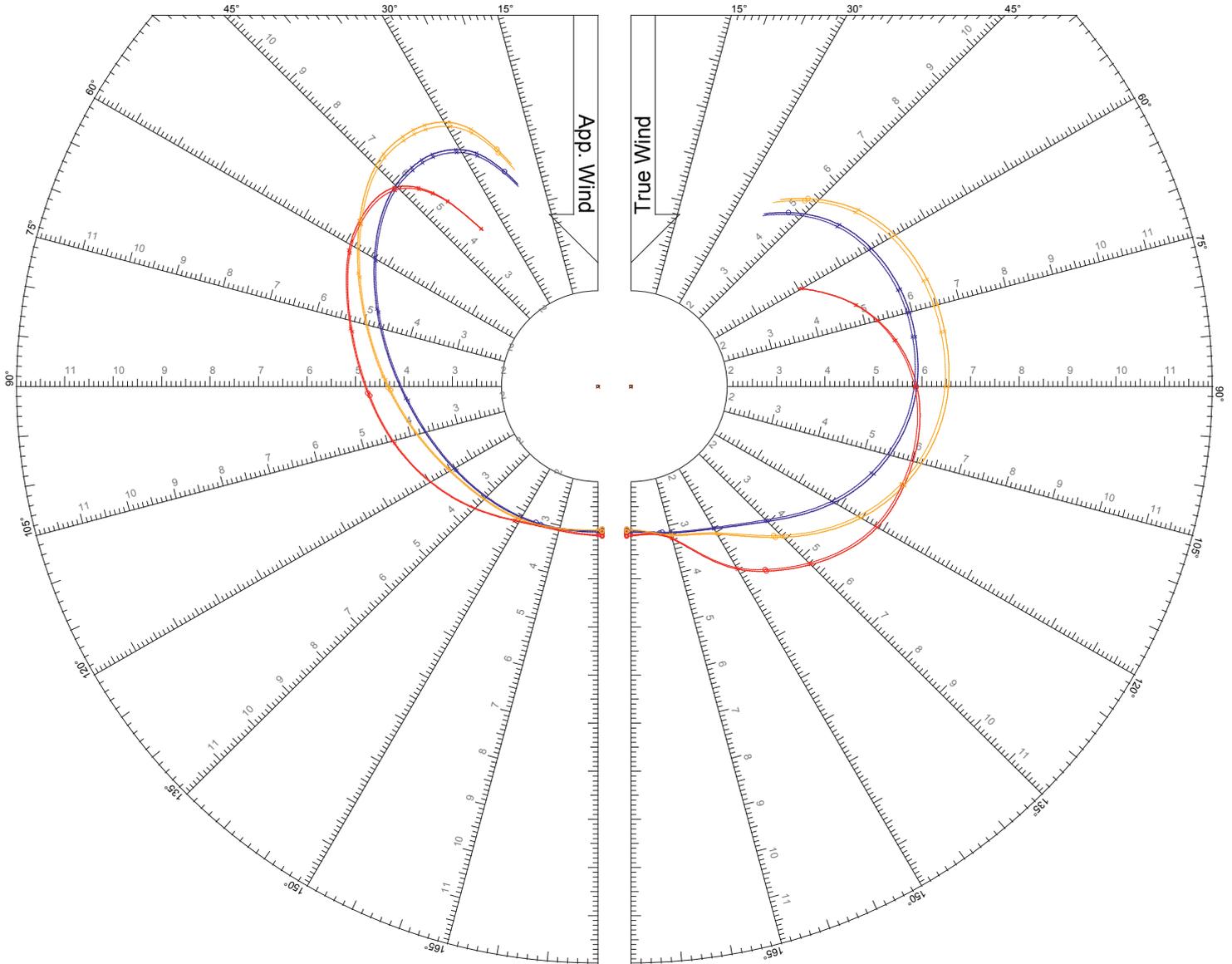
Headsail - Ballasted

Asymmetric Spinnaker on Centerline -

Headsail set Flying - Ballasted

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



**TWS: 6 kts**

**Headsail**

**Asymmetric Spinnaker on Centerline**

**Headsail set Flying**

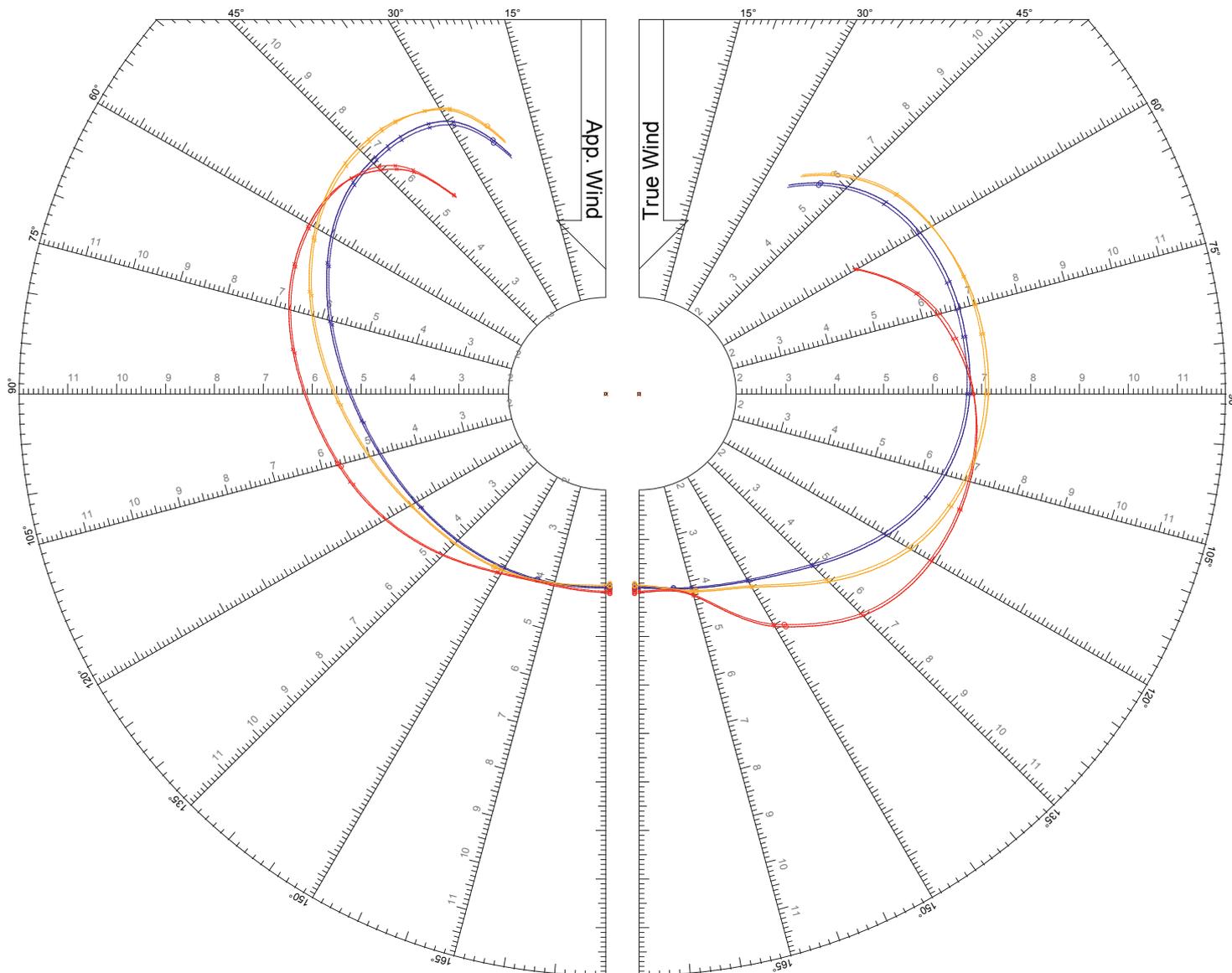
**Headsail - Ballasted**

**Asymmetric Spinnaker on Centerline -**

**Headsail set Flying - Ballasted**

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



**TWS: 8 kts**

**Headsail**

**Asymmetric Spinnaker on Centerline**

**Headsail set Flying**

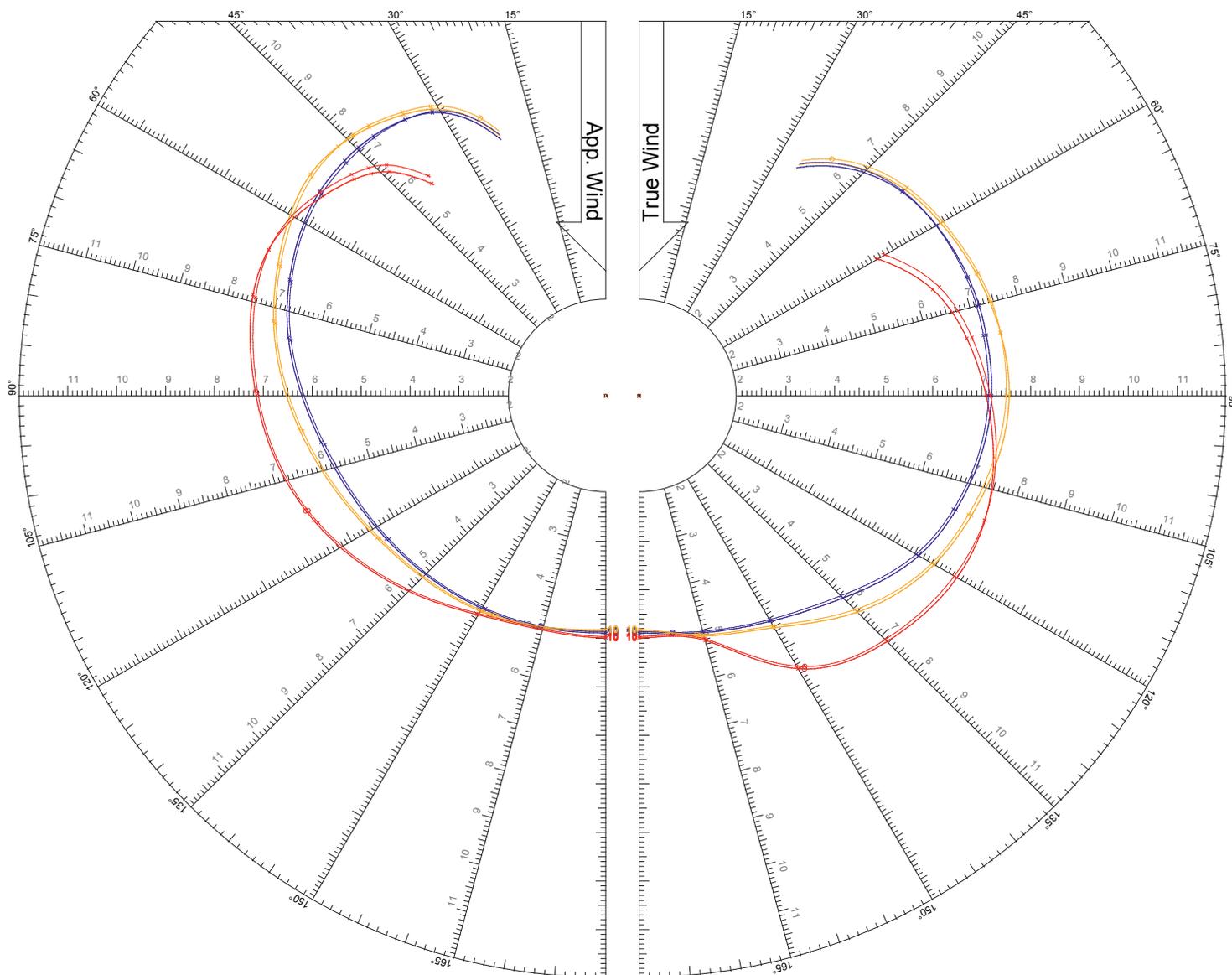
**Headsail - Ballasted**

**Asymmetric Spinnaker on Centerline -**

**Headsail set Flying - Ballasted**

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



**TWS: 10 kts**

**Headsail**

**Asymmetric Spinnaker on Centerline**

**Headsail set Flying**

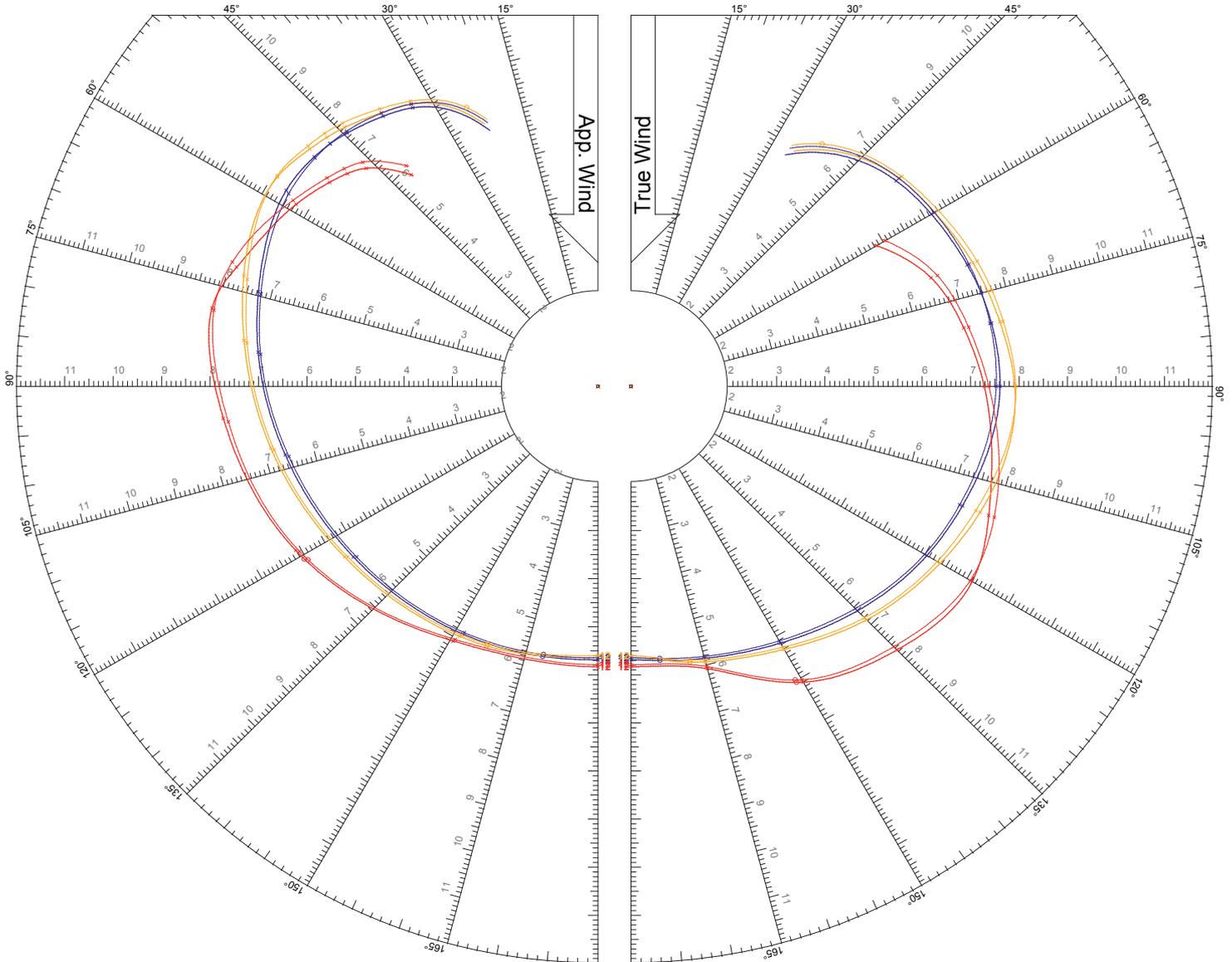
**Headsail - Ballasted**

**Asymmetric Spinnaker on Centerline -**

**Headsail set Flying - Ballasted**

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



**TWS: 12 kts**

**Headsail**

**Asymmetric Spinnaker on Centerline**

**Headsail set Flying**

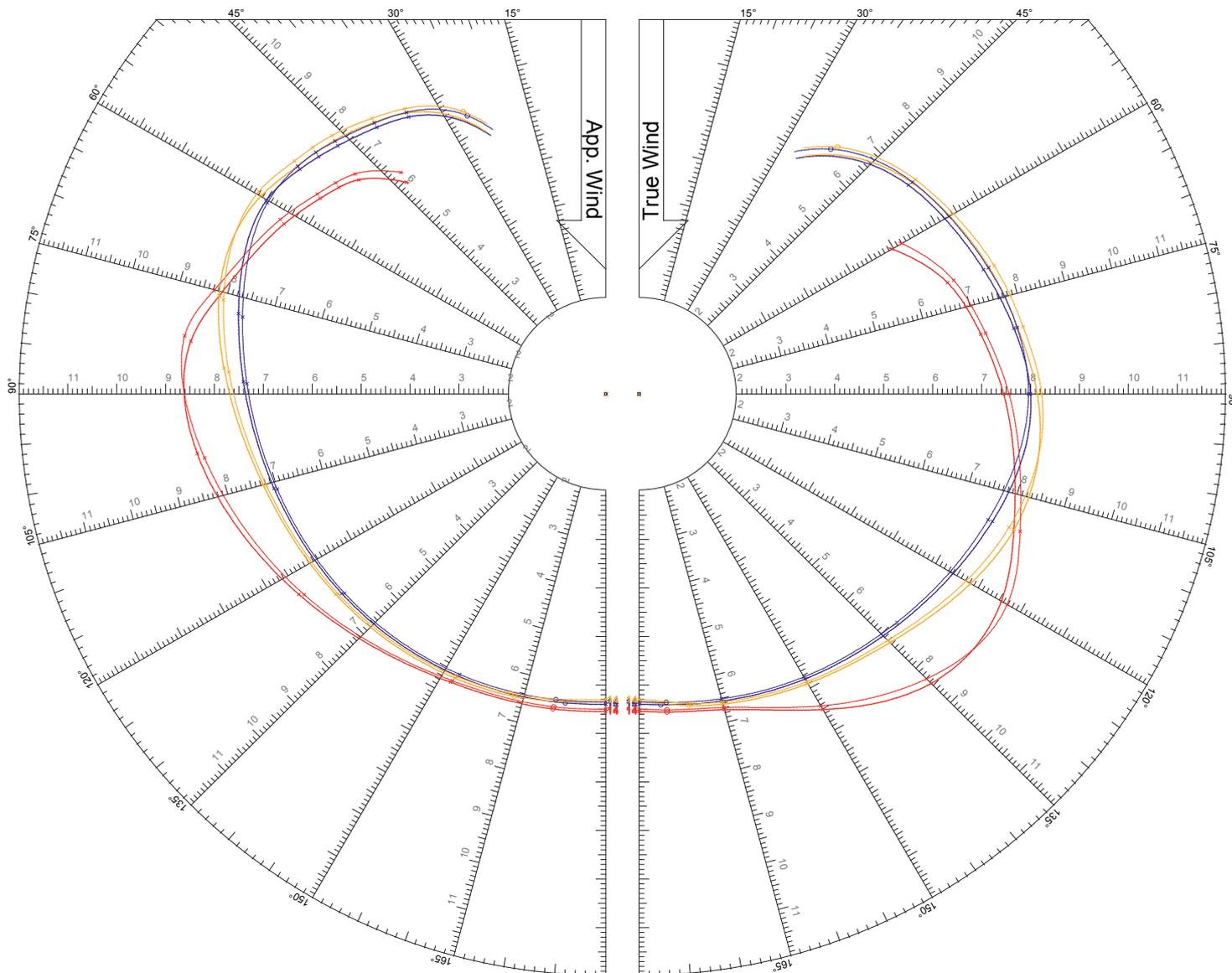
**Headsail - Ballasted**

**Asymmetric Spinnaker on Centerline -**

**Headsail set Flying - Ballasted**

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



**TWS: 14 kts**

**Headsail**

**Asymmetric Spinnaker on Centerline**

**Headsail set Flying**

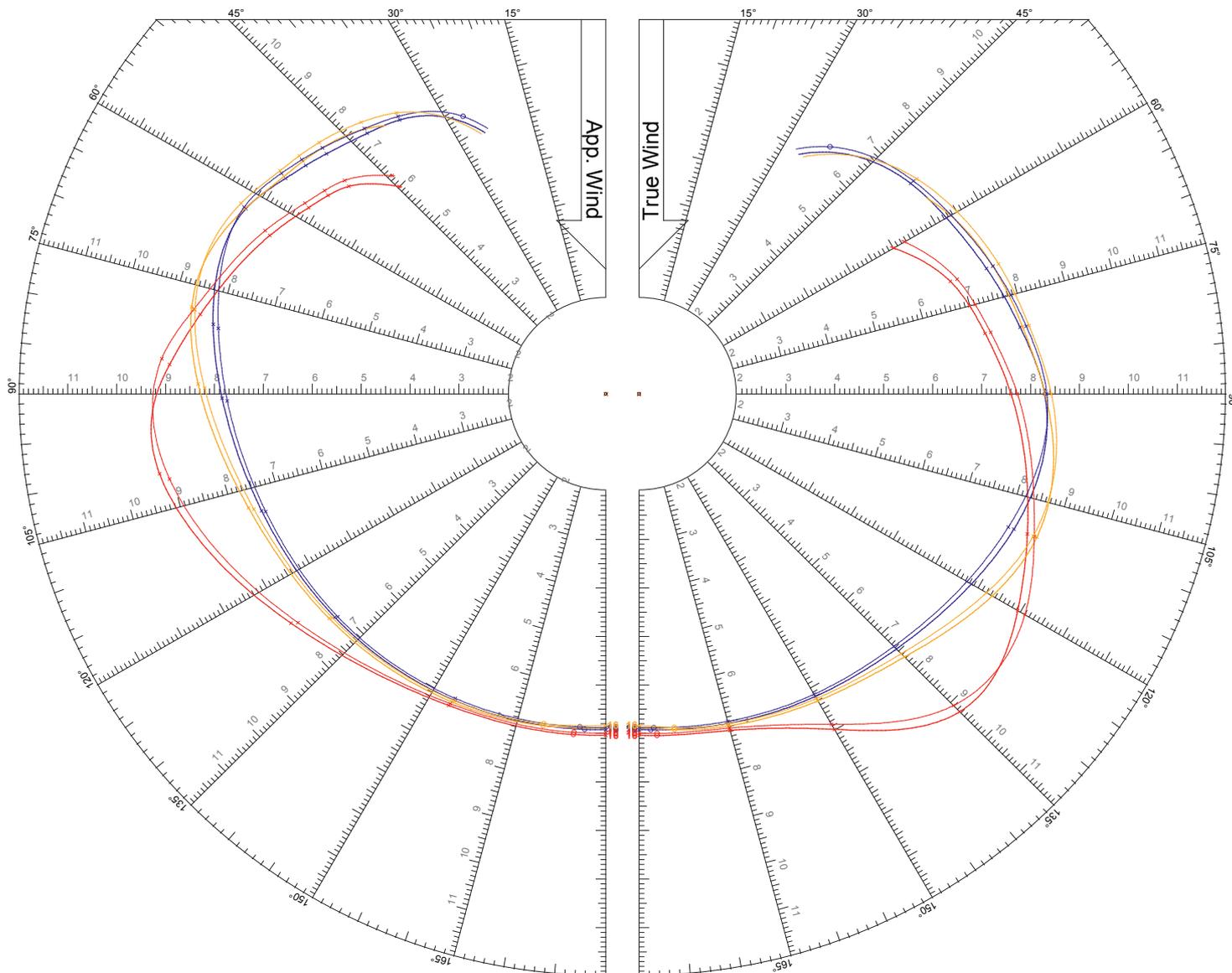
**Headsail - Ballasted**

**Asymmetric Spinnaker on Centerline -**

**Headsail set Flying - Ballasted**

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



**TWS: 16 kts**

**Headsail**

**Asymmetric Spinnaker on Centerline**

**Headsail set Flying**

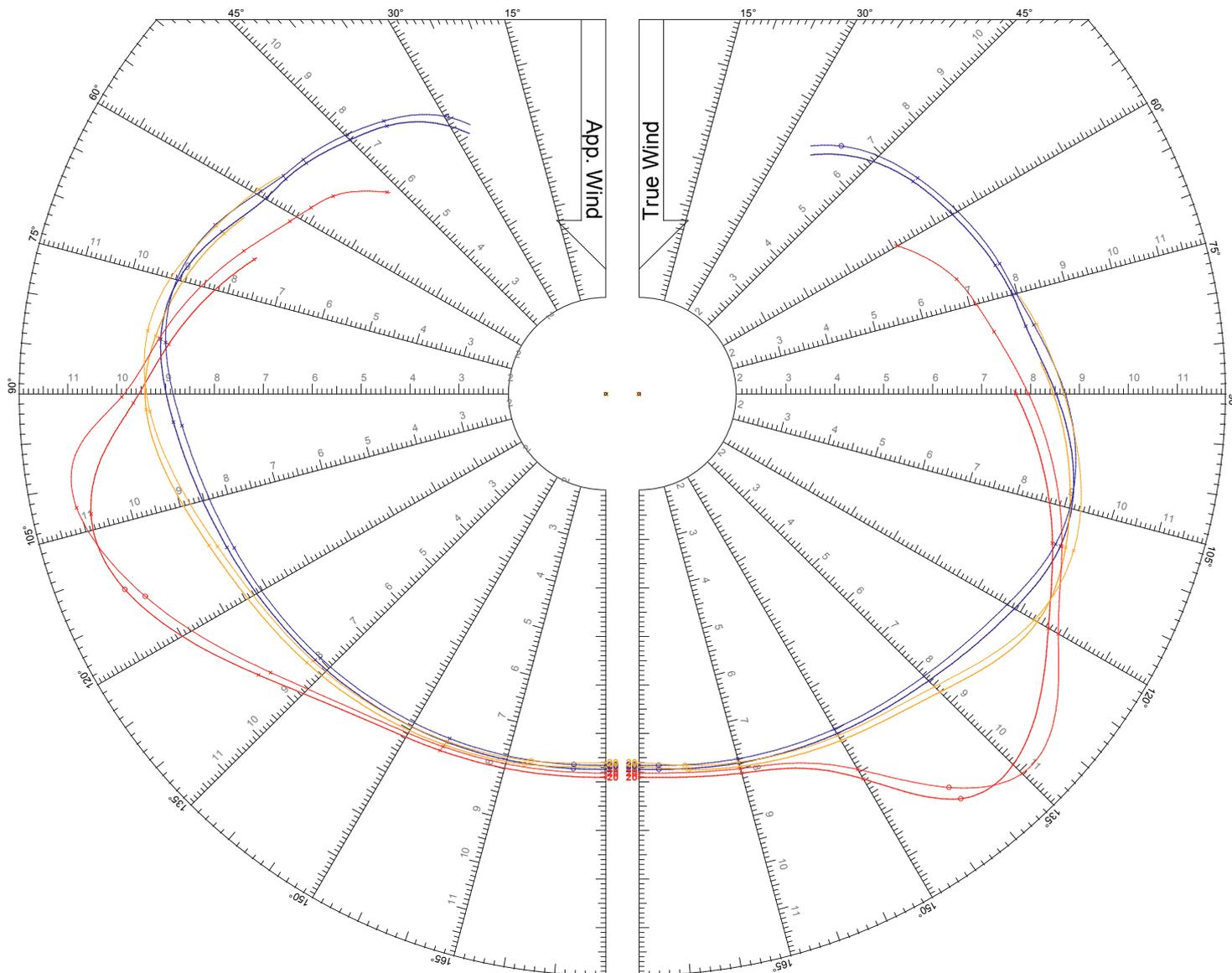
**Headsail - Ballasted**

**Asymmetric Spinnaker on Centerline -**

**Headsail set Flying - Ballasted**

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



**TWS: 20 kts**

**Headsail**

**Asymmetric Spinnaker on Centerline**

**Headsail set Flying**

**Headsail - Ballasted**

**Asymmetric Spinnaker on Centerline -**

**Headsail set Flying - Ballasted**

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



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TWS = 6 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
43.1° (b)	5.34	3.90	10.55	22.9°	13.9°	1.00	0.94
52°	5.95	3.66	10.74	26.1°	15.0°	1.00	0.95
60°	6.29	3.14	10.64	29.2°	14.8°	1.00	0.96
70°	6.50	2.22	10.24	33.4°	13.6°	1.00	0.97
75°	6.55	1.69	9.96	35.6°	12.8°	1.00	0.98
80°	6.57	1.14	9.63	37.8°	13.4°	1.00	0.98
90°	6.55	0.00	8.88	42.5°	10.4°	1.00	1.00
110°	6.00	2.05	6.88	55.0°	4.6°	1.00	1.00
120°	5.86	2.93	5.93	61.1°	6.0°	1.00	1.00
135°	5.24	3.71	4.36	76.8°	1.6°	1.00	1.00
150°	4.39	3.80	3.11	105.1°	3.0°	1.00	1.00
165°	3.28	3.17	2.95	148.3°	2.4°	1.00	1.00
180°	3.10	3.10	2.90	180.0°	2.1°	1.00	1.00
144.0° (r)	4.75	3.84	3.53	91.7°	0.0°	1.00	1.00

TWS = 8 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
41.3° (b)	6.03	4.53	13.15	23.7°	17.7°	1.00	0.89
52°	6.69	4.12	13.22	28.5°	19.5°	1.00	0.93
60°	6.91	3.45	12.92	32.4°	18.5°	1.00	0.95
70°	7.08	2.42	12.36	37.5°	21.5°	1.00	0.95
75°	7.13	1.84	12.01	40.0°	19.8°	1.00	0.96
80°	7.15	1.24	11.62	42.7°	18.0°	1.00	0.97
90°	7.14	0.00	10.72	48.3°	15.1°	1.00	1.00
110°	7.00	2.39	8.64	60.5°	16.0°	1.00	1.00
120°	6.91	3.46	7.51	67.2°	11.0°	1.00	1.00
135°	6.47	4.57	5.71	81.8°	4.1°	1.00	1.00
150°	5.54	4.79	4.24	109.2°	3.5°	1.00	1.00
165°	4.31	4.16	4.00	148.8°	2.7°	1.00	1.00
180°	4.09	4.09	3.91	180.0°	2.1°	1.00	1.00
148.0° (r)	5.66	4.80	4.39	104.8°	2.6°	1.00	1.00

TWS = 10 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
39.0° (b)	6.27	4.87	15.38	24.1°	20.4°	1.00	0.74
52°	6.96	4.28	15.30	31.0°	22.7°	1.00	0.79
60°	7.17	3.58	14.94	35.4°	23.1°	1.00	0.84
70°	7.38	2.52	14.32	41.0°	23.3°	1.00	0.92
75°	7.46	1.93	13.94	43.9°	22.1°	1.00	0.95
80°	7.50	1.30	13.50	46.8°	25.0°	1.00	0.93
90°	7.57	0.00	12.54	52.9°	20.8°	1.00	0.96
110°	7.52	2.57	10.25	66.4°	22.0°	1.00	0.94
120°	7.50	3.75	9.01	73.9°	16.1°	1.00	1.00
135°	7.16	5.07	7.07	89.2°	7.4°	1.00	1.00
150°	6.50	5.63	5.45	113.4°	4.1°	1.00	1.00
165°	5.22	5.04	5.14	149.8°	3.0°	1.00	1.00
180°	4.99	4.99	5.01	180.0°	2.2°	1.00	1.00
149.0° (r)	6.57	5.63	5.53	111.2°	3.4°	1.00	1.00

TWS = 12 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
38.1° (b)	6.39	5.03	17.48	25.0°	21.4°	0.99	0.61
52°	7.08	4.36	17.28	33.2°	23.5°	0.96	0.71
60°	7.31	3.66	16.89	38.0°	24.1°	0.97	0.75
70°	7.60	2.60	16.25	43.9°	25.2°	1.00	0.79
75°	7.71	1.99	15.85	47.0°	25.2°	1.00	0.83
80°	7.79	1.35	15.40	50.1°	25.3°	1.00	0.88
90°	7.93	0.00	14.39	56.5°	22.0°	1.00	0.95
110°	7.97	2.73	11.92	71.1°	21.8°	0.97	0.94
120°	8.12	4.06	10.61	78.5°	21.6°	1.00	0.97
135°	7.75	5.48	8.52	94.9°	8.9°	1.00	1.00
150°	7.11	6.15	6.84	118.7°	4.7°	1.00	1.00
165°	6.08	5.87	6.33	150.6°	3.6°	1.00	1.00
180°	5.83	5.83	6.17	180.0°	2.3°	1.00	1.00
151.0° (r)	7.04	6.16	6.77	120.7°	3.7°	1.00	1.00

TWS = 14 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
38.6° (b)	6.51	5.08	19.51	26.6°	22.1°	0.93	0.61
52°	7.17	4.41	19.26	34.9°	23.9°	0.96	0.61
60°	7.42	3.71	18.84	40.1°	24.6°	0.95	0.67
70°	7.72	2.64	18.16	46.4°	25.9°	0.95	0.75
75°	7.85	2.03	17.74	49.7°	26.4°	0.96	0.77
80°	7.97	1.38	17.27	53.0°	26.8°	0.98	0.79
90°	8.23	0.00	16.24	59.6°	26.9°	1.00	0.89
110°	8.29	2.83	13.61	75.1°	22.0°	0.93	0.87
120°	8.69	4.34	12.24	82.1°	21.9°	1.00	0.95
135°	8.44	5.97	10.01	98.4°	12.1°	1.00	1.00
150°	7.51	6.51	8.38	123.4°	5.3°	1.00	1.00
165°	6.74	6.51	7.69	151.9°	4.4°	1.00	1.00
180°	6.55	6.55	7.45	180.0°	2.4°	1.00	1.00
175.0° (r)	6.58	6.56	7.46	170.6°	1.3°	1.00	1.00

TWS = 16 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
37.5° (b)	6.41	5.09	21.45	27.0°	21.5°	0.83	0.61
52°	7.20	4.43	21.21	36.5°	26.4°	0.91	0.61
60°	7.50	3.75	20.79	41.8°	24.8°	0.92	0.61
70°	7.82	2.68	20.07	48.5°	26.2°	0.94	0.66
75°	7.96	2.06	19.63	52.0°	26.9°	0.94	0.71
80°	8.09	1.41	19.14	55.4°	27.3°	0.94	0.75
90°	8.43	0.00	18.08	62.2°	27.7°	0.97	0.83
110°	8.65	2.96	15.37	78.1°	24.3°	1.00	0.99
120°	9.10	4.55	13.90	85.4°	22.0°	0.94	0.94
135°	9.27	6.55	11.50	100.3°	16.4°	1.00	1.00
150°	7.98	6.91	9.92	126.3°	6.1°	1.00	1.00
165°	7.18	6.94	9.25	153.4°	5.4°	1.00	1.00
180°	7.04	7.04	8.96	180.0°	2.5°	1.00	1.00
177.0° (r)	7.05	7.04	8.97	174.6°	1.3°	1.00	1.00

TWS = 20 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
39.0° (b)	6.57	5.11	25.44	29.6°	22.8°	0.46	0.61
52°	7.22	4.45	25.10	38.9°	26.5°	0.50	0.61
60°	7.52	3.76	24.63	44.7°	24.2°	0.50	0.61
70°	7.84	2.68	23.85	52.0°	24.0°	0.74	0.61
75°	7.98	2.07	23.37	55.7°	24.0°	0.89	0.61
80°	8.25	1.43	22.92	59.3°	27.6°	0.91	0.62
90°	8.71	0.00	21.81	66.5°	29.3°	1.00	0.83
110°	9.45	3.23	18.97	82.1°	28.7°	1.00	0.94
120°	9.89	4.95	17.32	90.3°	22.0°	0.83	0.93
135°	11.07	7.83	14.47	102.3°	21.8°	1.00	0.99
150°	9.16	7.94	12.90	129.2°	7.8°	1.00	1.00
165°	8.09	7.82	12.36	155.2°	7.9°	1.00	1.00
180°	7.91	7.91	12.09	180.0°	2.8°	1.00	1.00
141.8° (r)	10.62	8.34	13.38	112.3°	16.6°	1.00	1.00

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



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TWS = 6 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
42.0° (b)	4.81	3.57	9.83	22.8°	4.9°	1.00	0.98
52°	5.39	3.32	9.98	26.7°	5.5°	1.00	1.00
60°	5.67	2.83	9.85	30.1°	5.1°	1.00	1.00
70°	5.85	2.00	9.47	34.5°	4.2°	1.00	1.00
75°	5.89	1.52	9.21	36.8°	3.6°	1.00	1.00
80°	5.89	1.02	8.90	39.3°	3.0°	1.00	1.00
90°	5.84	0.00	8.17	44.4°	1.5°	1.00	1.00
110°	5.27	1.80	6.32	58.4°	0.0°	1.00	1.00
120°	4.77	2.39	5.33	69.1°	0.0°	1.00	1.00
135°	3.93	2.78	4.08	92.1°	0.0°	1.00	1.00
150°	3.39	2.94	3.28	119.1°	5.9°	1.00	1.00
165°	3.14	3.03	2.82	148.4°	5.6°	1.00	1.00
180°	3.01	3.01	2.73	180.0°	5.3°	1.00	1.00
168.0° (r)	3.10	3.03	2.77	154.7°	5.5°	1.00	1.00

TWS = 8 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
40.5° (b)	5.65	4.30	12.42	22.9°	11.8°	1.00	0.99
52°	6.34	3.91	12.49	28.0°	12.2°	1.00	1.00
60°	6.56	3.28	12.22	31.9°	11.5°	1.00	1.00
70°	6.69	2.29	11.67	37.2°	9.6°	1.00	1.00
75°	6.71	1.74	11.33	40.0°	8.5°	1.00	1.00
80°	6.72	1.17	10.96	42.8°	7.4°	1.00	1.00
90°	6.70	0.00	10.13	48.6°	5.1°	1.00	1.00
110°	6.23	2.13	8.05	63.3°	0.1°	1.00	1.00
120°	5.76	2.88	6.91	73.8°	0.0°	1.00	1.00
135°	4.98	3.52	5.46	94.9°	0.0°	1.00	1.00
150°	4.43	3.83	4.41	120.2°	6.3°	1.00	1.00
165°	4.13	3.99	3.80	148.8°	5.9°	1.00	1.00
180°	3.98	3.98	3.67	180.0°	5.4°	1.00	1.00
170.0° (r)	4.06	4.00	3.71	159.1°	5.7°	1.00	1.00

TWS = 10 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
39.0° (b)	6.17	4.80	14.65	22.6°	19.4°	1.00	0.95
52°	6.84	4.21	14.49	29.0°	19.9°	1.00	0.98
60°	7.01	3.50	14.09	33.5°	18.7°	1.00	1.00
70°	7.12	2.43	13.47	39.7°	15.5°	1.00	1.00
75°	7.14	1.85	13.10	42.9°	13.9°	1.00	1.00
80°	7.15	1.24	12.70	46.2°	12.2°	1.00	1.00
90°	7.14	0.00	11.82	52.8°	8.7°	1.00	1.00
110°	6.84	2.34	9.67	68.4°	2.0°	1.00	1.00
120°	6.53	3.27	8.49	78.2°	0.0°	1.00	1.00
135°	5.83	4.12	6.87	98.1°	0.1°	1.00	1.00
150°	5.33	4.61	5.61	122.0°	7.0°	1.00	1.00
165°	5.03	4.86	4.87	149.7°	6.2°	1.00	1.00
180°	4.86	4.86	4.70	180.0°	5.5°	1.00	1.00
172.0° (r)	4.93	4.88	4.72	163.7°	5.9°	1.00	1.00

TWS = 12 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
38.1° (b)	6.32	4.98	16.53	23.0°	22.2°	1.00	0.82
52°	7.02	4.32	16.16	30.1°	24.3°	1.00	0.88
60°	7.22	3.61	15.66	34.7°	24.5°	1.00	0.93
70°	7.42	2.54	15.02	41.2°	21.8°	1.00	0.97
75°	7.48	1.94	14.64	44.6°	20.5°	1.00	0.99
80°	7.52	1.31	14.27	48.3°	18.2°	1.00	1.00
90°	7.53	0.00	13.45	55.9°	12.9°	1.00	1.00
110°	7.21	2.47	11.26	73.1°	4.1°	1.00	1.00
120°	6.99	3.50	10.05	83.0°	1.2°	1.00	1.00
135°	6.54	4.62	8.24	101.3°	7.6°	1.00	1.00
150°	6.11	5.29	6.87	124.0°	7.9°	1.00	1.00
165°	5.81	5.62	6.03	150.7°	6.6°	1.00	1.00
180°	5.65	5.65	5.83	180.0°	5.7°	1.00	1.00
174.0° (r)	5.69	5.66	5.83	168.2°	6.0°	1.00	1.00

TWS = 14 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
37.9° (b)	6.39	5.04	18.32	23.9°	23.2°	1.00	0.70
52°	7.09	4.36	17.84	31.7°	24.9°	1.00	0.75
60°	7.32	3.66	17.29	36.6°	25.2°	1.00	0.79
70°	7.59	2.60	16.44	42.6°	25.8°	1.00	0.88
75°	7.74	2.00	15.98	45.8°	25.8°	1.00	0.93
80°	7.85	1.36	15.64	49.6°	23.8°	1.00	0.96
90°	7.96	0.00	14.92	57.8°	18.3°	1.00	1.00
110°	7.59	2.60	12.87	76.5°	6.7°	1.00	1.00
120°	7.34	3.67	11.65	87.0°	3.2°	1.00	1.00
135°	7.00	4.95	9.75	104.9°	8.1°	1.00	1.00
150°	6.74	5.83	8.22	126.4°	9.0°	1.00	1.00
165°	6.51	6.29	7.27	151.8°	7.2°	1.00	1.00
180°	6.35	6.35	7.03	180.0°	5.8°	1.00	1.00
175.0° (r)	6.38	6.36	7.04	170.5°	6.3°	1.00	1.00

TWS = 16 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
37.5° (b)	6.41	5.09	20.10	24.8°	21.5°	0.83	0.61
52°	7.12	4.38	19.53	33.2°	24.8°	1.00	0.64
60°	7.36	3.68	18.90	38.2°	25.5°	1.00	0.68
70°	7.69	2.63	17.96	44.5°	26.7°	1.00	0.76
75°	7.87	2.04	17.48	47.8°	26.8°	1.00	0.81
80°	8.04	1.40	16.92	51.0°	27.2°	1.00	0.88
90°	8.33	0.00	16.14	58.9°	23.9°	1.00	0.98
110°	8.03	2.75	14.46	78.9°	9.8°	1.00	1.00
120°	7.74	3.87	13.25	89.8°	5.6°	1.00	1.00
135°	7.36	5.21	11.30	108.1°	8.6°	1.00	1.00
150°	7.15	6.19	9.70	129.1°	10.5°	1.00	1.00
165°	6.99	6.75	8.70	153.3°	8.0°	1.00	1.00
180°	6.88	6.88	8.42	180.0°	6.0°	1.00	1.00
177.5° (r)	6.89	6.88	8.41	175.5°	6.3°	1.00	1.00

TWS = 20 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
39.0° (b)	6.57	5.11	23.36	27.1°	22.8°	0.46	0.61
52°	7.22	4.45	22.60	34.9°	26.5°	0.50	0.61
60°	7.52	3.76	22.17	41.0°	24.2°	0.50	0.61
70°	7.84	2.68	21.32	48.3°	24.0°	0.74	0.61
75°	7.98	2.07	20.85	52.1°	24.0°	0.89	0.61
80°	8.19	1.42	19.80	54.7°	28.5°	1.00	0.68
90°	8.71	0.00	18.52	62.0°	29.3°	1.00	0.83
110°	9.06	3.10	17.21	81.5°	18.4°	1.00	1.00
120°	8.69	4.34	16.29	93.2°	11.8°	1.00	1.00
135°	8.23	5.82	14.47	111.7°	8.1°	1.00	1.00
150°	7.98	6.91	12.75	132.4°	10.0°	1.00	1.00
165°	7.79	7.52	11.71	155.4°	9.8°	1.00	1.00
180°	7.65	7.65	11.46	180.0°	6.4°	1.00	1.00
177.0° (r)	7.67	7.66	11.45	175.0°	7.2°	1.00	1.00

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



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TWS = 6 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	4.06	2.03	8.62	35.9°	4.3°	1.00	0.95
70°	4.93	1.69	8.81	38.2°	6.7°	1.00	0.95
75°	5.25	1.36	8.77	39.6°	7.7°	1.00	0.95
80°	5.51	0.96	8.66	41.1°	8.2°	1.00	0.95
90°	5.85	0.00	8.22	44.7°	8.1°	1.00	0.96
110°	5.95	2.04	6.75	54.1°	4.8°	1.00	1.00
120°	5.81	2.91	5.83	60.3°	2.3°	1.00	1.00
135°	5.19	3.67	4.30	76.4°	0.0°	1.00	1.00
150°	4.35	3.77	3.05	104.5°	1.2°	1.00	1.00
165°	3.26	3.15	2.84	147.9°	5.4°	1.00	1.00
180°	3.08	3.08	2.78	180.0°	5.0°	1.00	1.00
144.0° (r)	4.71	3.81	3.47	91.2°	0.1°	1.00	1.00

TWS = 8 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	5.15	2.57	11.18	36.1°	12.3°	1.00	0.95
70°	6.07	2.07	11.16	38.6°	17.0°	1.00	0.94
75°	6.37	1.65	10.97	40.2°	18.7°	1.00	0.94
80°	6.58	1.14	10.70	42.2°	19.3°	1.00	0.94
90°	6.84	0.00	10.07	47.2°	17.6°	1.00	0.95
110°	6.95	2.38	8.35	59.0°	11.4°	1.00	1.00
120°	6.86	3.43	7.32	66.1°	6.8°	1.00	1.00
135°	6.41	4.53	5.60	81.0°	0.4°	1.00	1.00
150°	5.48	4.75	4.14	108.7°	4.6°	1.00	1.00
165°	4.28	4.14	3.85	148.4°	5.8°	1.00	1.00
180°	4.07	4.07	3.75	180.0°	5.1°	1.00	1.00
148.0° (r)	5.61	4.76	4.30	104.3°	0.4°	1.00	1.00

TWS = 10 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	5.81	2.90	13.16	36.1°	21.6°	0.98	0.92
70°	6.53	2.23	12.90	40.5°	21.8°	0.94	0.85
75°	6.75	1.75	12.62	43.0°	21.9°	0.94	0.84
80°	6.91	1.20	12.26	45.6°	21.9°	0.94	0.85
90°	7.18	0.00	11.45	51.1°	21.8°	0.94	0.93
110°	7.51	2.57	9.59	64.0°	18.7°	1.00	0.99
120°	7.44	3.72	8.64	72.7°	11.4°	1.00	1.00
135°	7.11	5.03	6.88	88.1°	2.6°	1.00	1.00
150°	6.43	5.57	5.31	112.7°	2.2°	1.00	1.00
165°	5.19	5.01	4.95	149.4°	6.3°	1.00	1.00
180°	4.96	4.96	4.80	180.0°	5.4°	1.00	1.00
148.8° (r)	6.53	5.58	5.40	109.9°	1.2°	1.00	1.00

TWS = 12 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	6.05	3.03	14.93	38.0°	21.6°	0.86	0.89
70°	6.72	2.30	14.56	43.1°	22.0°	0.86	0.79
75°	6.92	1.79	14.22	46.0°	21.9°	0.87	0.79
80°	7.07	1.23	13.83	49.1°	21.9°	0.87	0.80
90°	7.38	0.00	12.95	55.3°	21.9°	0.90	0.81
110°	7.97	2.73	10.85	68.3°	21.8°	0.97	0.94
120°	8.08	4.04	9.87	76.7°	17.3°	1.00	1.00
135°	7.66	5.42	8.25	94.1°	5.0°	1.00	1.00
150°	7.05	6.10	6.52	117.9°	8.6°	1.00	1.00
165°	6.03	5.83	6.03	150.2°	6.9°	1.00	1.00
180°	5.79	5.79	5.87	180.0°	5.4°	1.00	1.00
151.0° (r)	6.98	6.11	6.44	119.9°	8.7°	1.00	1.00

TWS = 14 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	6.20	3.10	16.64	39.7°	21.7°	0.79	0.84
70°	6.84	2.34	16.18	45.4°	21.9°	0.79	0.79
75°	7.03	1.82	15.79	48.6°	21.9°	0.79	0.79
80°	7.19	1.25	15.37	51.9°	21.9°	0.80	0.79
90°	7.56	0.00	14.44	58.4°	22.0°	0.83	0.79
110°	8.29	2.83	12.27	72.5°	22.0°	0.93	0.87
120°	8.69	4.34	11.03	79.9°	21.9°	1.00	0.95
135°	8.31	5.87	9.63	97.9°	7.8°	1.00	1.00
150°	7.42	6.43	8.05	122.8°	5.6°	1.00	1.00
165°	6.69	6.46	7.32	151.6°	7.7°	1.00	1.00
180°	6.50	6.50	7.09	180.0°	5.5°	1.00	1.00
175.0° (r)	6.54	6.51	7.10	170.5°	6.3°	1.00	1.00

TWS = 16 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	6.26	3.13	18.29	41.2°	21.8°	0.73	0.82
70°	6.91	2.37	17.76	47.3°	21.9°	0.73	0.79
75°	7.11	1.84	17.35	50.7°	22.0°	0.73	0.79
80°	7.30	1.27	16.91	54.2°	21.9°	0.74	0.79
90°	7.73	0.00	15.96	61.0°	22.0°	0.76	0.80
110°	8.59	2.94	13.70	75.7°	22.0°	0.87	0.86
120°	9.10	4.55	12.41	83.4°	22.0°	0.94	0.94
135°	9.09	6.42	10.93	100.0°	11.5°	1.00	1.00
150°	7.86	6.81	9.55	125.9°	6.0°	1.00	1.00
165°	7.13	6.89	8.82	153.2°	8.5°	1.00	1.00
180°	6.99	6.99	8.54	180.0°	5.8°	1.00	1.00
177.0° (r)	7.01	7.00	8.54	174.6°	6.3°	1.00	1.00

TWS = 20 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	6.10	3.05	21.46	44.1°	22.2°	0.69	0.64
70°	6.90	2.36	20.95	50.7°	22.2°	0.69	0.63
75°	7.14	1.85	20.50	54.3°	22.2°	0.69	0.64
80°	7.37	1.28	20.02	58.0°	22.1°	0.69	0.65
90°	7.96	0.00	19.00	65.2°	22.1°	0.69	0.74
110°	9.20	3.15	16.58	80.3°	22.0°	0.74	0.92
120°	9.89	4.95	15.23	88.4°	22.0°	0.83	0.93
135°	11.07	7.83	12.93	101.5°	21.8°	1.00	0.99
150°	8.94	7.74	12.46	129.3°	6.6°	1.00	1.00
165°	8.00	7.72	11.82	155.4°	11.1°	1.00	1.00
180°	7.82	7.82	11.60	180.0°	6.2°	1.00	1.00
142.0° (r)	10.29	8.11	12.73	113.1°	11.6°	1.00	1.00

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



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TWS = 6 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
42.9° (b)	5.27	3.86	10.10	21.8°	11.3°	1.00	0.94
52°	5.87	3.62	10.29	24.9°	12.3°	1.00	0.96
60°	6.20	3.10	10.18	27.8°	12.8°	1.00	0.96
70°	6.41	2.19	9.82	31.9°	10.6°	1.00	0.97
75°	6.47	1.67	9.58	34.2°	8.4°	1.00	0.98
80°	6.49	1.13	9.28	36.4°	7.3°	1.00	0.98
90°	6.47	0.00	8.57	40.9°	5.4°	1.00	0.99
110°	5.93	2.03	6.64	53.0°	0.8°	1.00	1.00
120°	5.40	2.70	5.53	62.3°	0.0°	1.00	1.00
135°	4.38	3.10	4.04	84.9°	0.0°	1.00	1.00
150°	3.52	3.05	3.19	116.8°	6.0°	1.00	1.00
165°	3.19	3.08	2.76	147.7°	5.6°	1.00	1.00
180°	2.98	2.98	2.76	180.0°	5.3°	1.00	1.00
136.5° (r)	4.28	3.10	3.92	87.9°	0.0°	1.00	1.00

TWS = 8 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
41.3° (b)	6.03	4.53	12.54	21.9°	17.7°	1.00	0.89
52°	6.69	4.12	12.57	26.2°	19.5°	1.00	0.93
60°	6.91	3.45	12.28	30.0°	18.5°	1.00	0.95
70°	7.05	2.41	11.74	35.1°	16.3°	1.00	0.97
75°	7.08	1.83	11.41	37.8°	14.9°	1.00	0.98
80°	7.09	1.23	11.05	40.6°	13.4°	1.00	0.99
90°	7.08	0.00	10.22	46.2°	10.6°	1.00	1.00
110°	6.73	2.30	8.20	59.5°	3.5°	1.00	1.00
120°	6.34	3.17	7.03	68.6°	0.3°	1.00	1.00
135°	5.41	3.83	5.37	89.6°	0.0°	1.00	1.00
150°	4.57	3.96	4.30	118.2°	6.5°	1.00	1.00
165°	4.19	4.05	3.72	148.2°	5.9°	1.00	1.00
180°	3.94	3.94	3.71	180.0°	5.4°	1.00	1.00
164.0° (r)	4.21	4.05	3.75	146.1°	5.9°	1.00	1.00

TWS = 10 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
39.0° (b)	6.27	4.87	14.54	22.1°	20.4°	1.00	0.74
52°	6.96	4.28	14.35	28.0°	22.7°	1.00	0.79
60°	7.17	3.58	13.93	32.1°	23.1°	1.00	0.84
70°	7.38	2.52	13.26	37.2°	23.3°	1.00	0.92
75°	7.46	1.93	12.92	40.2°	22.1°	1.00	0.95
80°	7.50	1.30	12.56	43.5°	19.8°	1.00	0.96
90°	7.50	0.00	11.71	50.2°	16.0°	1.00	0.99
110°	7.16	2.45	9.65	65.9°	6.0°	1.00	1.00
120°	6.91	3.45	8.47	75.1°	2.2°	1.00	1.00
135°	6.24	4.41	6.74	94.1°	0.0°	1.00	1.00
150°	5.47	4.74	5.49	120.5°	7.2°	1.00	1.00
165°	5.10	4.92	4.78	149.2°	6.3°	1.00	1.00
180°	4.82	4.82	4.75	180.0°	5.5°	1.00	1.00
166.5° (r)	5.06	4.92	4.74	152.2°	6.2°	1.00	1.00

TWS = 12 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
38.1° (b)	6.39	5.03	16.41	22.8°	21.4°	0.99	0.61
52°	7.08	4.36	16.03	29.9°	23.5°	0.96	0.71
60°	7.31	3.66	15.55	34.3°	24.1°	0.97	0.75
70°	7.60	2.60	14.80	39.7°	25.2°	1.00	0.79
75°	7.71	1.99	14.37	42.6°	25.2°	1.00	0.83
80°	7.79	1.35	13.88	45.5°	25.3°	1.00	0.88
90°	7.93	0.00	13.06	52.6°	22.0°	1.00	0.95
110°	7.56	2.59	11.14	70.6°	9.1°	1.00	1.00
120°	7.29	3.65	9.94	80.7°	4.5°	1.00	1.00
135°	6.81	4.81	8.09	99.0°	8.1°	1.00	1.00
150°	6.26	5.42	6.73	122.7°	8.3°	1.00	1.00
165°	5.89	5.69	5.93	150.3°	6.7°	1.00	1.00
180°	5.60	5.60	5.88	180.0°	5.7°	1.00	1.00
168.0° (r)	5.82	5.70	5.86	156.2°	6.5°	1.00	1.00

TWS = 14 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
38.6° (b)	6.51	5.08	18.14	24.2°	22.1°	0.93	0.61
52°	7.17	4.41	17.71	31.6°	23.9°	0.96	0.61
60°	7.42	3.71	17.17	36.2°	24.6°	0.95	0.67
70°	7.72	2.64	16.30	41.9°	25.9°	0.95	0.75
75°	7.85	2.03	15.80	44.9°	26.4°	0.96	0.77
80°	7.97	1.38	15.27	48.0°	26.8°	0.98	0.79
90°	8.23	0.00	14.20	54.6°	26.9°	1.00	0.89
110°	8.05	2.75	12.58	73.7°	13.2°	1.00	1.00
120°	7.72	3.86	11.45	84.6°	7.4°	1.00	1.00
135°	7.19	5.08	9.58	103.5°	8.5°	1.00	1.00
150°	6.85	5.93	8.08	125.5°	9.5°	1.00	1.00
165°	6.57	6.35	7.17	151.5°	7.3°	1.00	1.00
180°	6.30	6.30	7.09	180.0°	5.8°	1.00	1.00
170.5° (r)	6.47	6.38	7.04	161.9°	6.8°	1.00	1.00

TWS = 16 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
39.8° (b)	6.42	4.93	19.45	25.0°	28.2°	0.91	0.61
52°	7.20	4.43	19.20	32.5°	26.4°	0.91	0.61
60°	7.50	3.75	18.78	37.8°	24.8°	0.92	0.61
70°	7.82	2.68	17.83	43.9°	26.2°	0.94	0.66
75°	7.96	2.06	17.26	47.1°	26.9°	0.94	0.71
80°	8.09	1.41	16.69	50.4°	27.3°	0.94	0.75
90°	8.43	0.00	15.56	57.2°	27.7°	0.97	0.83
110°	8.57	2.93	13.84	75.7°	18.6°	1.00	1.00
120°	8.20	4.10	12.90	87.2°	10.9°	1.00	1.00
135°	7.58	5.36	11.21	106.6°	5.2°	1.00	1.00
150°	7.25	6.28	9.54	128.5°	11.0°	1.00	1.00
165°	7.04	6.80	8.61	153.0°	8.1°	1.00	1.00
180°	6.84	6.84	8.47	180.0°	6.1°	1.00	1.00
174.0° (r)	6.92	6.88	8.42	169.1°	6.8°	1.00	1.00

TWS = 20 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	16.62	47.7°	30.9°	0.91	0.61
60°	-0.01	-0.01	16.28	56.1°	30.9°	0.91	0.61
70°	-0.01	-0.01	15.92	67.1°	30.9°	0.91	0.61
75°	-0.01	-0.01	15.79	72.7°	30.9°	0.91	0.61
80°	8.25	1.43	19.61	54.4°	27.6°	0.91	0.62
90°	8.68	0.00	18.27	61.6°	28.6°	0.91	0.76
110°	9.45	3.23	15.67	78.7°	28.7°	1.00	0.94
120°	9.32	4.66	15.27	90.4°	20.7°	1.00	1.00
135°	8.53	6.04	14.17	110.4°	9.6°	1.00	1.00
150°	8.13	7.04	12.56	131.7°	9.7°	1.00	1.00
165°	7.86	7.59	11.59	155.3°	10.2°	1.00	1.00
180°	7.60	7.60	11.53	180.0°	6.5°	1.00	1.00
173.0° (r)	7.72	7.66	11.45	168.4°	8.2°	1.00	1.00

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



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TWS = 6 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
42.0° (b)	4.86	3.61	9.86	22.5°	9.0°	1.00	0.99
52°	5.45	3.36	10.01	26.3°	9.6°	1.00	1.00
60°	5.73	2.86	9.88	29.6°	9.2°	1.00	1.00
70°	5.91	2.02	9.49	34.1°	8.2°	1.00	1.00
75°	5.95	1.54	9.23	36.4°	7.5°	1.00	1.00
80°	5.95	1.03	8.92	38.8°	6.8°	1.00	1.00
90°	5.89	0.00	8.20	44.0°	5.2°	1.00	1.00
110°	5.33	1.82	6.35	58.0°	1.8°	1.00	1.00
120°	4.84	2.42	5.35	68.5°	0.3°	1.00	1.00
135°	3.97	2.81	4.08	91.5°	0.0°	1.00	1.00
150°	3.42	2.96	3.28	118.6°	2.6°	1.00	1.00
165°	3.15	3.05	2.81	148.1°	2.3°	1.00	1.00
180°	3.03	3.03	2.71	180.0°	2.1°	1.00	1.00
169.0° (r)	3.11	3.05	2.75	156.6°	2.2°	1.00	1.00

TWS = 8 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
40.5° (b)	5.71	4.34	12.42	22.4°	16.2°	1.00	0.97
52°	6.42	3.95	12.47	27.2°	17.4°	1.00	1.00
60°	6.64	3.32	12.20	31.2°	16.2°	1.00	1.00
70°	6.76	2.31	11.65	36.5°	14.1°	1.00	1.00
75°	6.78	1.75	11.31	39.3°	12.9°	1.00	1.00
80°	6.78	1.18	10.94	42.2°	11.7°	1.00	1.00
90°	6.76	0.00	10.11	48.1°	9.1°	1.00	1.00
110°	6.30	2.15	8.06	62.8°	3.8°	1.00	1.00
120°	5.84	2.92	6.93	73.2°	1.7°	1.00	1.00
135°	5.03	3.55	5.46	94.4°	0.2°	1.00	1.00
150°	4.46	3.86	4.42	119.8°	3.1°	1.00	1.00
165°	4.15	4.01	3.79	148.6°	2.6°	1.00	1.00
180°	4.00	4.00	3.65	180.0°	2.1°	1.00	1.00
170.0° (r)	4.09	4.02	3.69	158.9°	2.4°	1.00	1.00

TWS = 10 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
39.4° (b)	6.12	4.73	14.49	22.3°	23.1°	1.00	0.90
52°	6.82	4.20	14.33	28.2°	24.2°	1.00	0.93
60°	7.01	3.51	13.94	32.7°	23.1°	1.00	0.96
70°	7.15	2.45	13.29	38.6°	21.2°	1.00	1.00
75°	7.19	1.86	12.95	41.9°	19.2°	1.00	1.00
80°	7.21	1.25	12.58	45.3°	17.1°	1.00	1.00
90°	7.20	0.00	11.74	52.1°	13.1°	1.00	1.00
110°	6.89	2.36	9.65	68.0°	5.8°	1.00	1.00
120°	6.60	3.30	8.49	77.7°	3.3°	1.00	1.00
135°	5.90	4.17	6.86	97.6°	1.0°	1.00	1.00
150°	5.37	4.65	5.62	121.6°	3.8°	1.00	1.00
165°	5.06	4.88	4.86	149.4°	2.9°	1.00	1.00
180°	4.89	4.89	4.68	180.0°	2.2°	1.00	1.00
172.0° (r)	4.96	4.91	4.70	163.6°	2.6°	1.00	1.00

TWS = 12 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
38.8° (b)	6.23	4.86	16.34	23.3°	23.7°	1.00	0.74
52°	6.94	4.27	16.02	30.0°	25.5°	1.00	0.79
60°	7.15	3.58	15.50	34.4°	26.1°	1.00	0.84
70°	7.38	2.52	14.72	40.2°	26.3°	1.00	0.92
75°	7.48	1.94	14.38	43.6°	24.8°	1.00	0.95
80°	7.55	1.31	14.00	47.2°	23.2°	1.00	0.98
90°	7.61	0.00	13.24	54.9°	18.0°	1.00	1.00
110°	7.27	2.49	11.19	72.6°	8.2°	1.00	1.00
120°	7.04	3.52	10.02	82.6°	5.0°	1.00	1.00
135°	6.60	4.67	8.26	100.9°	6.2°	1.00	1.00
150°	6.17	5.34	6.88	123.5°	4.7°	1.00	1.00
165°	5.86	5.66	6.01	150.4°	3.4°	1.00	1.00
180°	5.69	5.69	5.79	180.0°	2.3°	1.00	1.00
174.0° (r)	5.73	5.70	5.80	168.1°	2.7°	1.00	1.00

TWS = 14 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
38.6° (b)	6.27	4.90	18.10	24.3°	24.3°	1.00	0.62
52°	6.99	4.30	17.67	31.6°	26.2°	1.00	0.67
60°	7.22	3.61	17.09	36.4°	26.7°	1.00	0.71
70°	7.49	2.56	16.23	42.4°	27.3°	1.00	0.79
75°	7.64	1.98	15.77	45.6°	27.4°	1.00	0.84
80°	7.78	1.35	15.24	48.7°	27.8°	1.00	0.91
90°	8.00	0.00	14.51	56.5°	23.8°	1.00	0.99
110°	7.69	2.63	12.75	75.9°	10.9°	1.00	1.00
120°	7.41	3.71	11.58	86.6°	7.0°	1.00	1.00
135°	7.05	4.99	9.75	104.6°	7.4°	1.00	1.00
150°	6.79	5.88	8.25	125.9°	5.8°	1.00	1.00
165°	6.55	6.33	7.25	151.5°	4.0°	1.00	1.00
180°	6.40	6.40	6.99	180.0°	2.5°	1.00	1.00
176.0° (r)	6.42	6.41	6.99	172.3°	2.8°	1.00	1.00

TWS = 16 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
38.6° (b)	6.36	4.97	19.84	25.4°	22.9°	0.61	0.60
52°	7.04	4.34	19.40	33.5°	23.9°	0.76	0.60
60°	7.25	3.63	18.82	38.6°	24.7°	0.93	0.60
70°	7.55	2.58	17.75	44.5°	27.6°	1.00	0.68
75°	7.73	2.00	17.21	47.6°	28.3°	1.00	0.73
80°	7.91	1.37	16.68	50.9°	28.6°	1.00	0.79
90°	8.29	0.00	15.61	57.9°	28.5°	1.00	0.94
110°	8.15	2.79	14.22	78.1°	14.4°	1.00	1.00
120°	7.84	3.92	13.12	89.3°	9.6°	1.00	1.00
135°	7.44	5.26	11.29	107.7°	8.4°	1.00	1.00
150°	7.20	6.24	9.73	128.6°	7.2°	1.00	1.00
165°	7.03	6.79	8.69	153.0°	4.7°	1.00	1.00
180°	6.92	6.92	8.38	180.0°	2.7°	1.00	1.00
178.0° (r)	6.93	6.92	8.38	176.3°	1.3°	1.00	1.00

TWS = 20 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
40.9° (b)	6.50	4.91	22.92	27.9°	26.0°	0.45	0.60
52°	7.11	4.38	22.33	34.8°	27.4°	0.46	0.60
60°	7.39	3.70	21.65	40.2°	28.1°	0.49	0.60
70°	7.75	2.65	20.99	48.0°	25.5°	0.51	0.60
75°	7.90	2.04	20.52	51.8°	25.4°	0.66	0.60
80°	8.02	1.39	19.98	55.7°	25.7°	0.86	0.60
90°	8.52	0.00	17.98	61.7°	32.0°	1.00	0.76
110°	9.16	3.13	16.46	80.7°	24.5°	1.00	1.00
120°	8.86	4.43	15.91	92.6°	16.5°	1.00	1.00
135°	8.36	5.91	14.30	111.3°	11.0°	1.00	1.00
150°	8.08	7.00	12.67	132.1°	10.6°	1.00	1.00
165°	7.88	7.61	11.67	155.1°	6.6°	1.00	1.00
180°	7.74	7.74	11.39	180.0°	3.2°	1.00	1.00
177.0° (r)	7.75	7.74	11.39	175.0°	2.1°	1.00	1.00

# SPEED GUIDE

## COMPOSITE KEEL WITH LEAD BULB



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TWS = 6 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	4.07	2.03	8.60	35.6°	8.0°	1.00	0.95
70°	4.94	1.69	8.79	37.8°	10.6°	1.00	0.95
75°	5.28	1.37	8.75	39.1°	11.6°	1.00	0.95
80°	5.54	0.96	8.63	40.5°	12.3°	1.00	0.95
90°	5.89	0.00	8.20	44.0°	12.3°	1.00	0.96
110°	6.00	2.05	6.74	53.6°	8.6°	1.00	0.99
120°	5.86	2.93	5.83	59.8°	6.0°	1.00	1.00
135°	5.24	3.71	4.31	75.7°	1.6°	1.00	1.00
150°	4.39	3.80	3.04	103.8°	3.0°	1.00	1.00
165°	3.28	3.17	2.83	147.6°	2.4°	1.00	1.00
180°	3.10	3.10	2.76	180.0°	2.1°	1.00	1.00
144.0° (r)	4.75	3.84	3.47	90.5°	0.0°	1.00	1.00

TWS = 8 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	5.12	2.56	11.07	35.6°	16.5°	1.00	0.94
70°	6.02	2.06	10.98	37.9°	21.6°	1.00	0.93
75°	6.30	1.63	10.80	39.8°	22.0°	0.99	0.92
80°	6.51	1.13	10.54	41.9°	22.0°	0.98	0.92
90°	6.83	0.00	9.90	46.3°	22.1°	1.00	0.93
110°	7.00	2.39	8.24	58.2°	16.0°	1.00	1.00
120°	6.91	3.46	7.27	65.4°	11.0°	1.00	1.00
135°	6.47	4.57	5.60	80.4°	4.1°	1.00	1.00
150°	5.54	4.79	4.13	108.0°	3.5°	1.00	1.00
165°	4.31	4.16	3.83	148.1°	2.7°	1.00	1.00
180°	4.09	4.09	3.73	180.0°	2.1°	1.00	1.00
148.0° (r)	5.66	4.80	4.29	103.7°	2.6°	1.00	1.00

TWS = 10 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	5.63	2.82	12.96	36.5°	21.9°	0.92	0.92
70°	6.39	2.18	12.74	40.7°	22.2°	0.90	0.82
75°	6.63	1.72	12.49	43.2°	22.2°	0.90	0.80
80°	6.80	1.18	12.16	45.9°	22.2°	0.91	0.79
90°	7.09	0.00	11.37	51.4°	22.1°	0.93	0.82
110°	7.52	2.57	9.41	63.4°	22.0°	1.00	0.94
120°	7.50	3.75	8.49	71.8°	16.1°	1.00	1.00
135°	7.16	5.07	6.83	87.6°	7.4°	1.00	1.00
150°	6.50	5.63	5.28	112.2°	4.1°	1.00	1.00
165°	5.22	5.04	4.93	149.1°	3.0°	1.00	1.00
180°	4.99	4.99	4.78	180.0°	2.2°	1.00	1.00
149.0° (r)	6.57	5.63	5.36	109.9°	3.4°	1.00	1.00

TWS = 12 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	5.85	2.92	14.69	38.3°	22.0°	0.81	0.91
70°	6.59	2.25	14.39	43.3°	22.2°	0.81	0.81
75°	6.80	1.76	14.08	46.2°	22.2°	0.82	0.79
80°	6.97	1.21	13.70	49.2°	22.2°	0.83	0.79
90°	7.28	0.00	12.83	55.4°	22.1°	0.85	0.81
110°	7.85	2.68	10.77	68.7°	22.1°	0.94	0.88
120°	8.12	4.06	9.62	76.0°	21.6°	1.00	0.97
135°	7.75	5.48	8.16	93.5°	8.9°	1.00	1.00
150°	7.11	6.15	6.54	117.3°	4.7°	1.00	1.00
165°	6.08	5.87	6.00	149.9°	3.6°	1.00	1.00
180°	5.83	5.83	5.84	180.0°	2.3°	1.00	1.00
151.0° (r)	7.04	6.16	6.47	119.3°	3.7°	1.00	1.00

TWS = 14 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	5.97	2.98	16.38	40.1°	22.0°	0.74	0.85
70°	6.70	2.29	15.99	45.6°	22.2°	0.74	0.80
75°	6.92	1.79	15.63	48.7°	22.3°	0.74	0.80
80°	7.09	1.23	15.22	52.0°	22.2°	0.75	0.79
90°	7.45	0.00	14.31	58.6°	22.1°	0.78	0.80
110°	8.15	2.79	12.16	72.8°	22.1°	0.88	0.86
120°	8.55	4.28	10.95	80.4°	22.0°	0.95	0.94
135°	8.44	5.97	9.47	97.1°	12.1°	1.00	1.00
150°	7.51	6.51	8.01	122.2°	5.3°	1.00	1.00
165°	6.74	6.51	7.31	151.3°	4.4°	1.00	1.00
180°	6.55	6.55	7.05	180.0°	2.4°	1.00	1.00
175.0° (r)	6.58	6.56	7.07	170.3°	1.3°	1.00	1.00

TWS = 16 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	6.01	3.00	17.99	41.6°	22.3°	0.69	0.82
70°	6.77	2.32	17.56	47.5°	22.4°	0.69	0.79
75°	6.99	1.81	17.18	50.8°	22.3°	0.69	0.80
80°	7.18	1.25	16.74	54.3°	22.2°	0.69	0.80
90°	7.60	0.00	15.80	61.2°	22.1°	0.71	0.81
110°	8.45	2.89	13.58	76.1°	22.2°	0.81	0.87
120°	8.94	4.47	12.32	83.9°	22.2°	0.89	0.93
135°	9.27	6.55	10.65	99.1°	16.4°	1.00	1.00
150°	7.98	6.91	9.48	125.3°	6.1°	1.00	1.00
165°	7.18	6.94	8.80	152.9°	5.4°	1.00	1.00
180°	7.04	7.04	8.50	180.0°	2.5°	1.00	1.00
177.0° (r)	7.05	7.04	8.51	174.5°	1.3°	1.00	1.00

TWS = 20 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
60°	-0.01	-0.01	17.13	57.3°	26.3°	0.69	0.62
70°	-0.01	-0.01	16.87	67.9°	26.3°	0.69	0.62
75°	-0.01	-0.01	16.77	73.4°	26.3°	0.69	0.62
80°	-0.01	-0.01	16.70	78.9°	26.3°	0.69	0.62
90°	7.70	0.00	18.83	65.9°	22.6°	0.69	0.62
110°	8.99	3.08	16.44	80.8°	22.2°	0.70	0.93
120°	9.66	4.83	15.12	89.1°	22.2°	0.78	0.93
135°	10.81	7.64	12.91	102.5°	22.2°	0.98	0.95
150°	9.16	7.94	12.30	128.5°	7.8°	1.00	1.00
165°	8.09	7.82	11.77	155.0°	7.9°	1.00	1.00
180°	7.91	7.91	11.52	180.0°	2.8°	1.00	1.00
141.8° (r)	10.62	8.34	12.37	111.7°	16.6°	1.00	1.00

# SPEED GUIDE

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TWS = 6 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
43.1° (b)	5.34	3.90	10.15	21.5°	13.9°	1.00	0.94
52°	5.95	3.66	10.33	24.4°	15.0°	1.00	0.95
60°	6.29	3.14	10.24	27.3°	14.8°	1.00	0.96
70°	6.50	2.22	9.86	31.4°	13.6°	1.00	0.97
75°	6.55	1.69	9.60	33.5°	12.8°	1.00	0.98
80°	6.57	1.14	9.27	35.5°	13.4°	1.00	0.98
90°	6.55	0.00	8.58	40.2°	10.4°	1.00	1.00
110°	6.00	2.05	6.67	52.4°	4.6°	1.00	1.00
120°	5.47	2.74	5.56	61.6°	2.1°	1.00	1.00
135°	4.44	3.14	4.05	84.2°	-0.1°	1.00	1.00
150°	3.55	3.07	3.19	116.2°	2.7°	1.00	1.00
165°	3.21	3.10	2.75	147.4°	2.3°	1.00	1.00
180°	3.00	3.00	2.74	180.0°	2.1°	1.00	1.00
136.5° (r)	4.33	3.14	3.93	87.1°	0.0°	1.00	1.00

TWS = 8 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
41.3° (b)	5.98	4.50	12.46	21.7°	20.0°	1.00	0.81
52°	6.65	4.10	12.47	25.8°	22.1°	1.00	0.85
60°	6.90	3.45	12.16	29.2°	23.1°	1.00	0.91
70°	7.08	2.42	11.63	34.1°	21.5°	1.00	0.95
75°	7.13	1.84	11.32	36.8°	19.8°	1.00	0.96
80°	7.15	1.24	10.97	39.7°	18.0°	1.00	0.97
90°	7.14	0.00	10.16	45.4°	15.1°	1.00	1.00
110°	6.79	2.32	8.16	58.9°	9.3°	1.00	1.00
120°	6.41	3.21	7.04	68.0°	4.0°	1.00	1.00
135°	5.48	3.87	5.37	88.9°	0.7°	1.00	1.00
150°	4.61	3.99	4.31	117.8°	3.3°	1.00	1.00
165°	4.22	4.07	3.71	147.9°	2.6°	1.00	1.00
180°	3.97	3.97	3.69	180.0°	2.2°	1.00	1.00
164.0° (r)	4.24	4.08	3.73	145.8°	2.6°	1.00	1.00

TWS = 10 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
39.4° (b)	6.19	4.79	14.42	22.2°	21.8°	1.00	0.65
52°	6.90	4.25	14.24	27.8°	24.1°	1.00	0.71
60°	7.11	3.56	13.81	31.8°	24.7°	1.00	0.75
70°	7.34	2.51	13.14	36.9°	25.0°	1.00	0.83
75°	7.43	1.92	12.75	39.6°	25.0°	1.00	0.88
80°	7.50	1.30	12.32	42.3°	25.0°	1.00	0.93
90°	7.57	0.00	11.55	49.1°	20.8°	1.00	0.96
110°	7.23	2.47	9.59	65.3°	10.3°	1.00	1.00
120°	6.96	3.48	8.45	74.7°	6.0°	1.00	1.00
135°	6.31	4.46	6.69	93.5°	6.1°	1.00	1.00
150°	5.52	4.78	5.49	119.9°	4.1°	1.00	1.00
165°	5.13	4.95	4.76	148.9°	3.0°	1.00	1.00
180°	4.85	4.85	4.72	180.0°	2.2°	1.00	1.00
166.0° (r)	5.11	4.95	4.74	150.9°	2.9°	1.00	1.00

TWS = 12 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
39.0° (b)	6.32	4.91	16.21	23.2°	23.2°	0.96	0.60
52°	7.01	4.32	15.92	29.8°	24.8°	0.98	0.60
60°	7.23	3.62	15.39	34.1°	25.3°	0.94	0.72
70°	7.50	2.57	14.63	39.5°	26.3°	0.97	0.76
75°	7.62	1.97	14.17	42.3°	27.0°	0.98	0.78
80°	7.72	1.34	13.70	45.3°	27.0°	1.00	0.80
90°	7.91	0.00	12.68	51.4°	27.1°	1.00	0.92
110°	7.66	2.62	11.00	69.8°	13.6°	1.00	1.00
120°	7.36	3.68	9.87	80.2°	8.4°	1.00	1.00
135°	6.87	4.86	8.10	98.6°	7.2°	1.00	1.00
150°	6.32	5.47	6.74	122.2°	5.1°	1.00	1.00
165°	5.93	5.73	5.90	150.0°	3.5°	1.00	1.00
180°	5.64	5.64	5.85	180.0°	2.4°	1.00	1.00
168.0° (r)	5.87	5.74	5.83	156.0°	3.2°	1.00	1.00

TWS = 14 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
39.2° (b)	6.35	4.92	17.82	24.1°	25.7°	0.91	0.60
52°	7.07	4.35	17.53	31.4°	25.1°	0.92	0.60
60°	7.33	3.67	17.01	36.1°	25.8°	0.94	0.60
70°	7.61	2.60	16.12	41.9°	26.9°	0.94	0.70
75°	7.74	2.00	15.61	44.9°	27.4°	0.94	0.73
80°	7.86	1.36	15.09	48.1°	27.6°	0.95	0.77
90°	8.14	0.00	14.00	54.5°	28.3°	0.99	0.82
110°	8.16	2.79	12.30	72.7°	18.4°	1.00	1.00
120°	7.82	3.91	11.30	83.9°	11.6°	1.00	1.00
135°	7.25	5.13	9.58	103.1°	8.3°	1.00	1.00
150°	6.90	5.97	8.11	125.1°	6.3°	1.00	1.00
165°	6.62	6.39	7.15	151.2°	4.1°	1.00	1.00
180°	6.35	6.35	7.05	180.0°	2.5°	1.00	1.00
171.0° (r)	6.51	6.43	7.00	162.7°	3.4°	1.00	1.00

TWS = 16 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	13.13	47.2°	32.5°	0.91	0.60
60°	7.35	3.68	18.29	36.9°	29.5°	0.91	0.60
70°	7.70	2.63	17.62	43.9°	27.3°	0.93	0.60
75°	7.83	2.03	17.10	47.2°	27.5°	0.94	0.62
80°	7.96	1.38	16.53	50.6°	27.8°	0.94	0.67
90°	8.30	0.00	15.32	57.2°	28.8°	0.94	0.81
110°	8.65	2.96	13.30	74.6°	24.3°	1.00	0.99
120°	8.33	4.17	12.64	86.5°	15.6°	1.00	1.00
135°	7.67	5.42	11.11	106.2°	8.1°	1.00	1.00
150°	7.31	6.33	9.58	128.0°	7.8°	1.00	1.00
165°	7.08	6.84	8.59	152.8°	4.9°	1.00	1.00
180°	6.88	6.88	8.43	180.0°	2.7°	1.00	1.00
174.0° (r)	6.96	6.92	8.39	169.0°	1.8°	1.00	1.00

TWS = 20 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
0.0° (b)	-0.01	-0.01	0.00	0.0°	0.0°	0.00	0.00
52°	-0.01	-0.01	16.49	47.3°	32.1°	0.91	0.60
60°	-0.01	-0.01	16.12	55.8°	32.1°	0.91	0.60
70°	-0.01	-0.01	15.73	66.8°	32.1°	0.91	0.60
75°	-0.01	-0.01	15.59	72.5°	32.1°	0.91	0.60
80°	-0.01	-0.01	15.48	78.3°	32.1°	0.91	0.60
90°	8.47	0.00	18.12	62.1°	29.0°	0.94	0.62
110°	9.28	3.17	15.51	79.1°	29.1°	0.95	0.94
120°	9.40	4.70	14.47	89.9°	27.0°	1.00	1.00
135°	8.69	6.15	13.89	110.0°	13.8°	1.00	1.00
150°	8.25	7.14	12.47	131.3°	10.4°	1.00	1.00
165°	7.95	7.68	11.54	154.9°	6.8°	1.00	1.00
180°	7.68	7.68	11.46	180.0°	3.3°	1.00	1.00
172.5° (r)	7.81	7.74	11.39	167.4°	4.9°	1.00	1.00