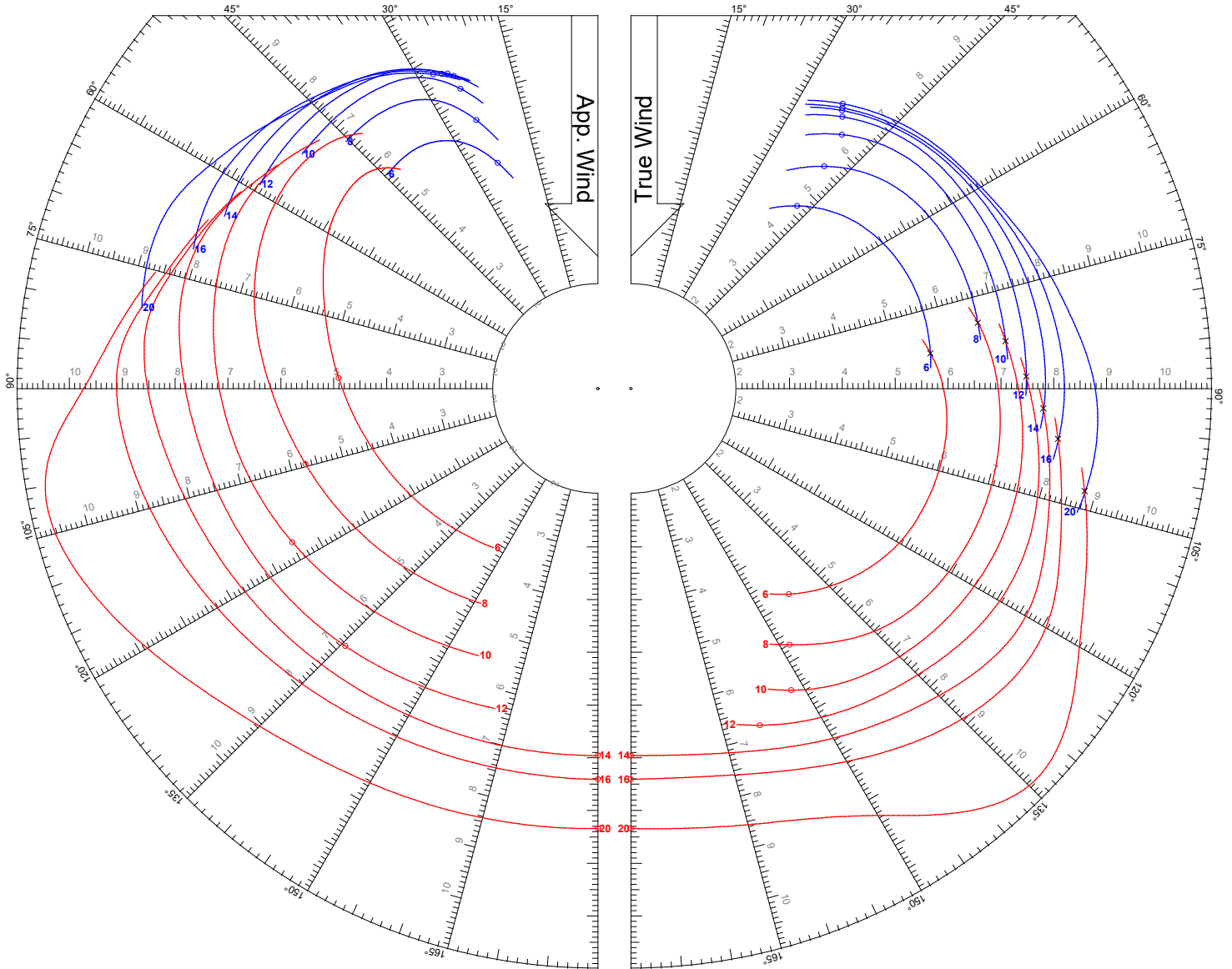




World Leader in Rating Technology

# Speed Guide



### Polar Plot for Boat

Name **J/99 Standard Keel**  
Sail Number  
Class **J/99**  
Designer **R. Alan Johnstone**  
Builder **J Boats, Inc.**  
Issued On **9/17/2018 - VPP 2018 1.00**

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

**Jib**

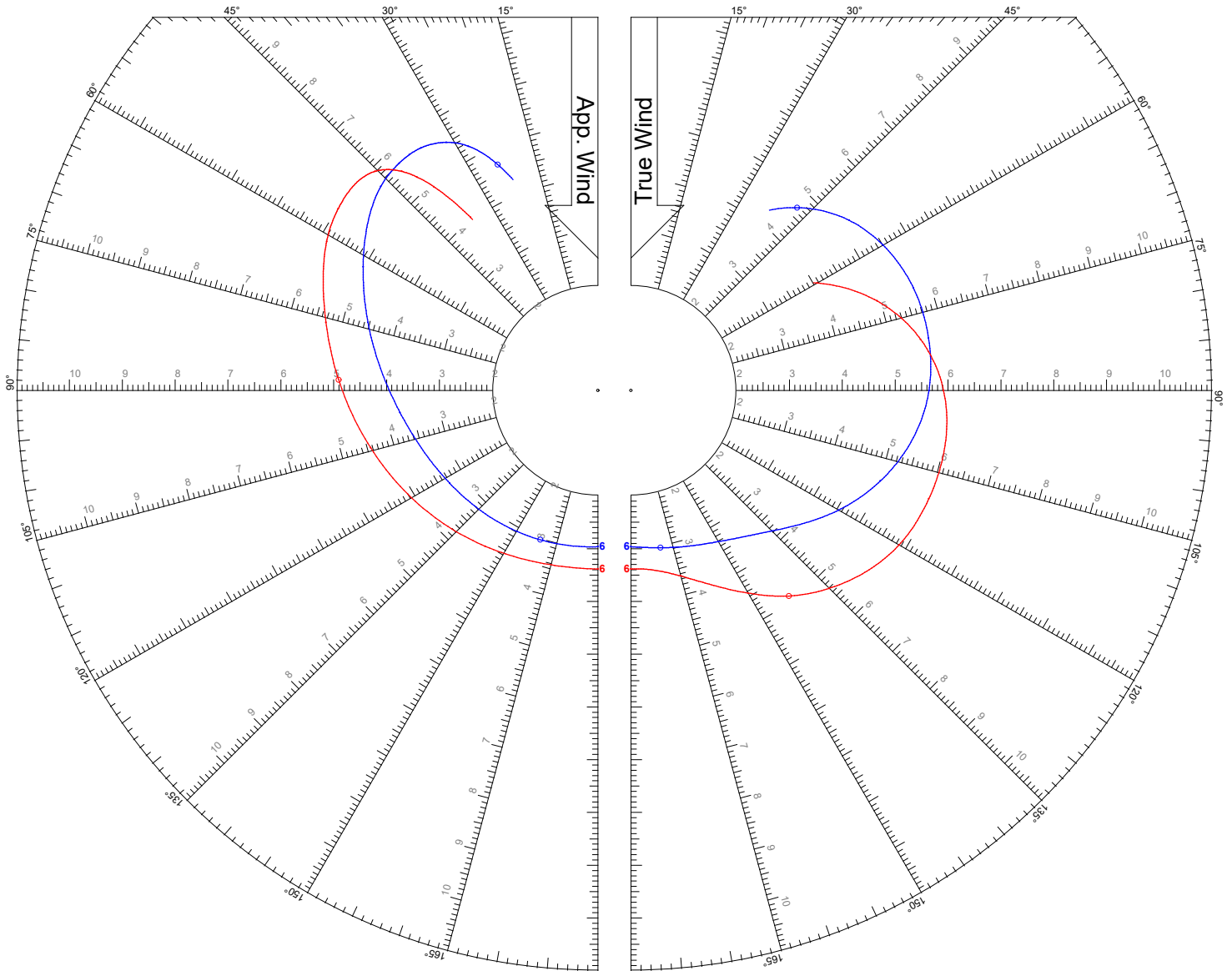
**Symmetric Spinnaker**

**Asymmetric Spinnaker on Pole**



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## Polar Plot for Boat

Name **J/99 Standard Keel**  
Sail Number  
Class **J/99**  
Designer **R. Alan Johnstone**  
Builder **J Boats, Inc.**  
Issued On **9/17/2018 - VPP 2018 1.00**

**TWS: 6 kts**

**Jib**

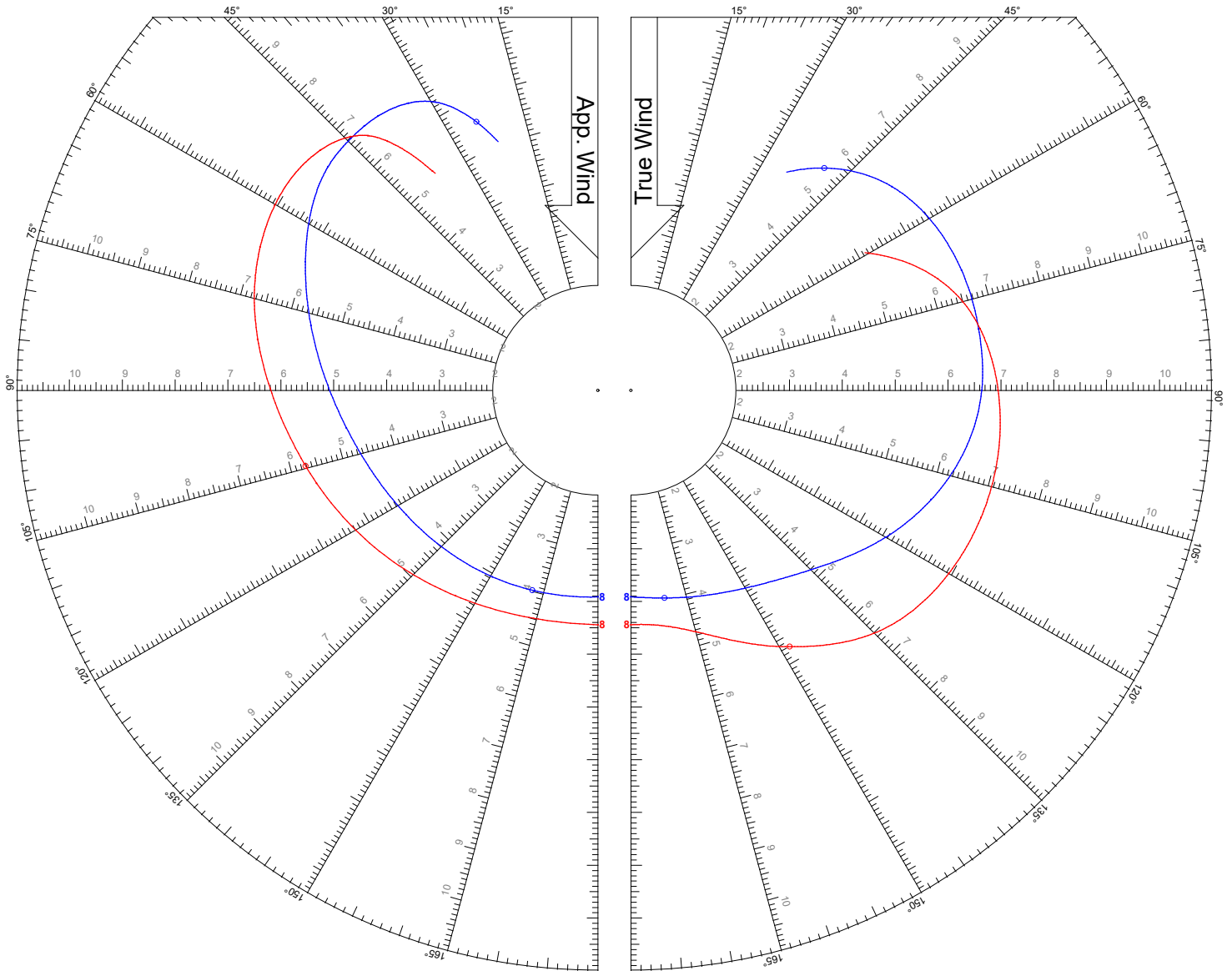
**Symmetric Spinnaker**

**Asymmetric Spinnaker on Pole**



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## Polar Plot for Boat

Name **J/99 Standard Keel**  
Sail Number  
Class **J/99**  
Designer **R. Alan Johnstone**  
Builder **J Boats, Inc.**  
Issued On **9/17/2018 - VPP 2018 1.00**

**TWS: 8 kts**

**Jib**

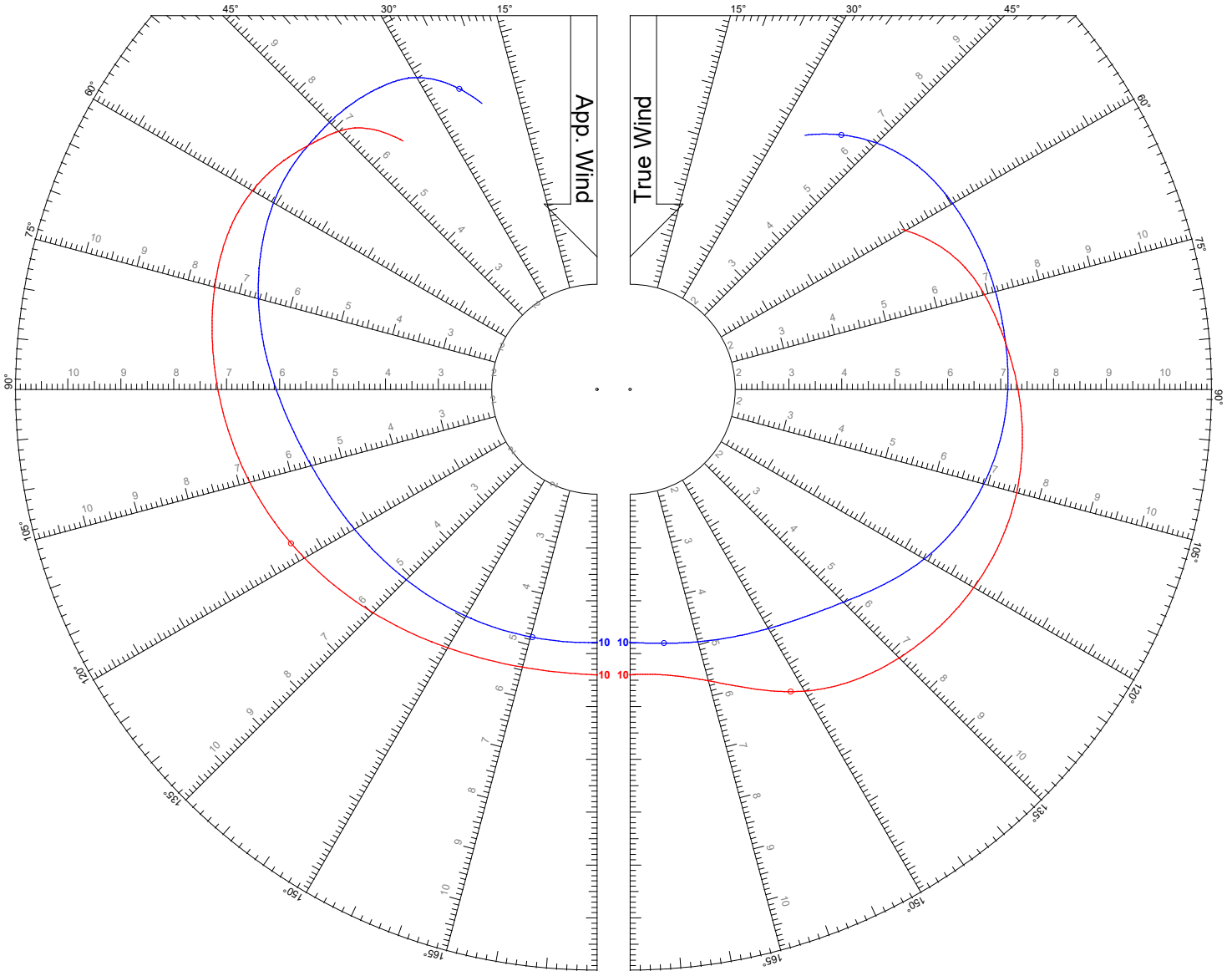
**Symmetric Spinnaker**

**Asymmetric Spinnaker on Pole**



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## Polar Plot for Boat

Name **J/99 Standard Keel**  
Sail Number  
Class **J/99**  
Designer **R. Alan Johnstone**  
Builder **J Boats, Inc.**  
Issued On **9/17/2018 - VPP 2018 1.00**

**TWS: 10 kts**

**Jib**

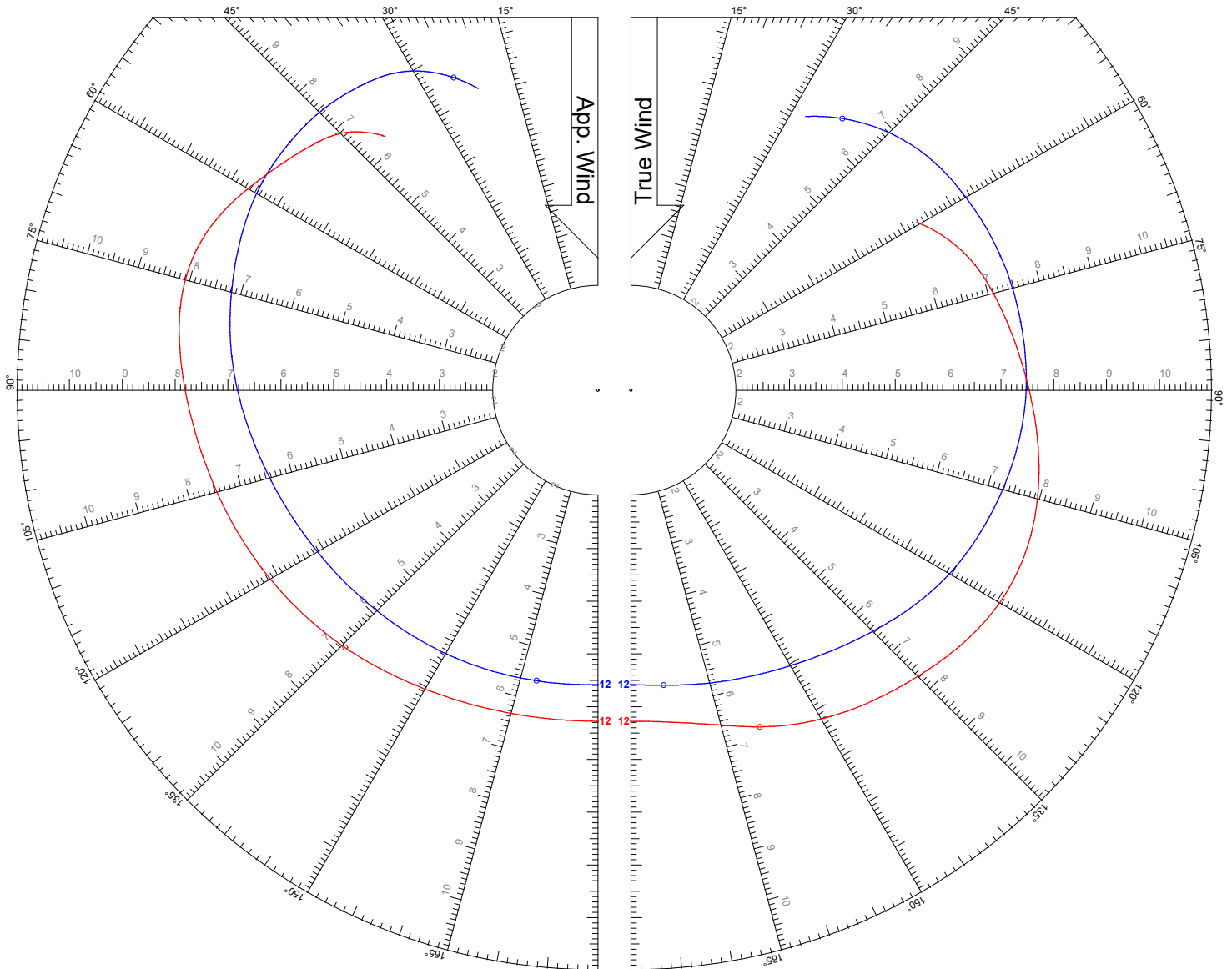
**Symmetric Spinnaker**

**Asymmetric Spinnaker on Pole**



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## Polar Plot for Boat

Name **J/99 Standard Keel**  
Sail Number  
Class **J/99**  
Designer **R. Alan Johnstone**  
Builder **J Boats, Inc.**  
Issued On **9/17/2018 - VPP 2018 1.00**

**TWS: 12 kts**

**Jib**

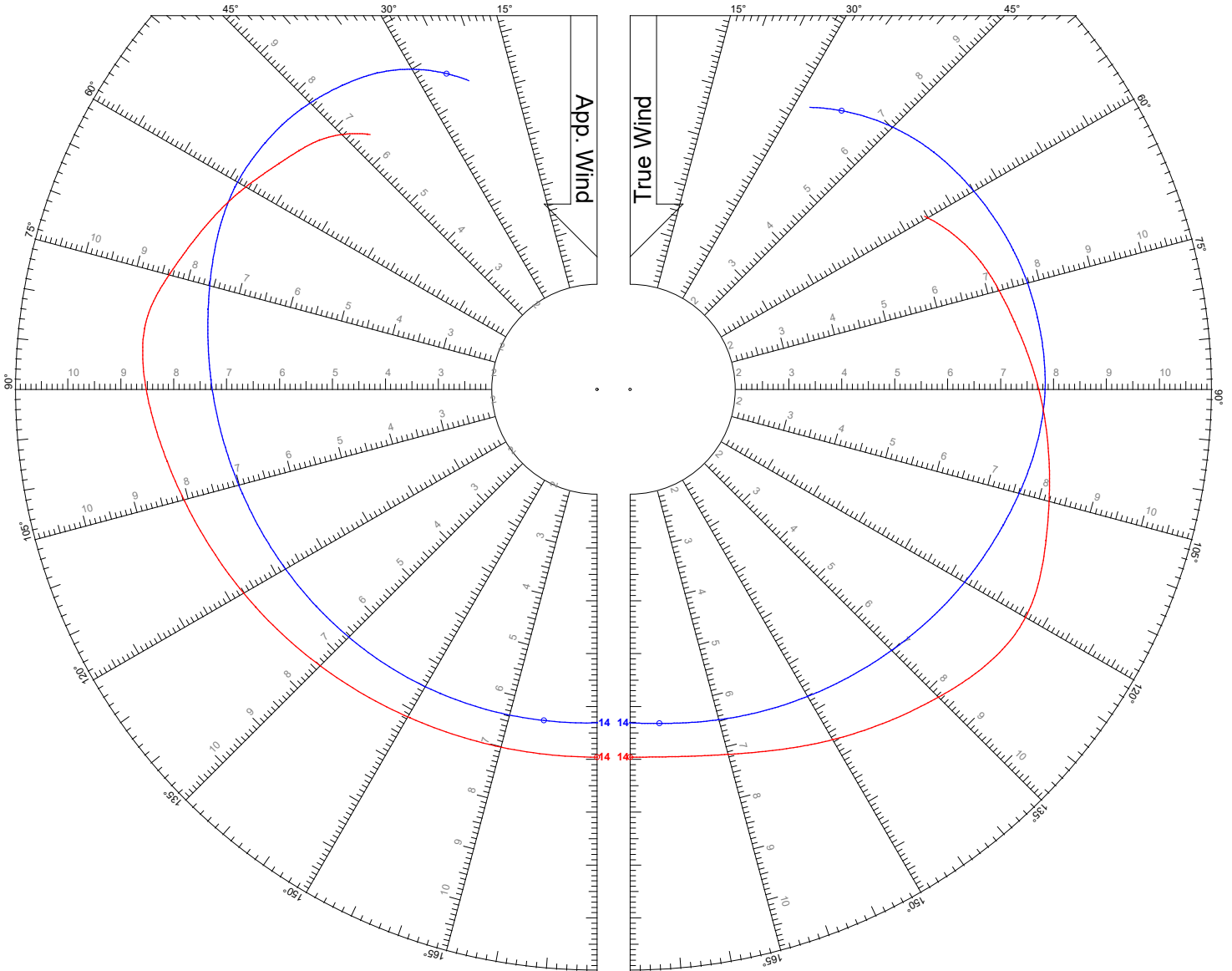
**Symmetric Spinnaker**

**Asymmetric Spinnaker on Pole**



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### Polar Plot for Boat

Name **J/99 Standard Keel**  
Sail Number  
Class **J/99**  
Designer **R. Alan Johnstone**  
Builder **J Boats, Inc.**  
Issued On **9/17/2018 - VPP 2018 1.00**

**TWS: 14 kts**

**Jib**

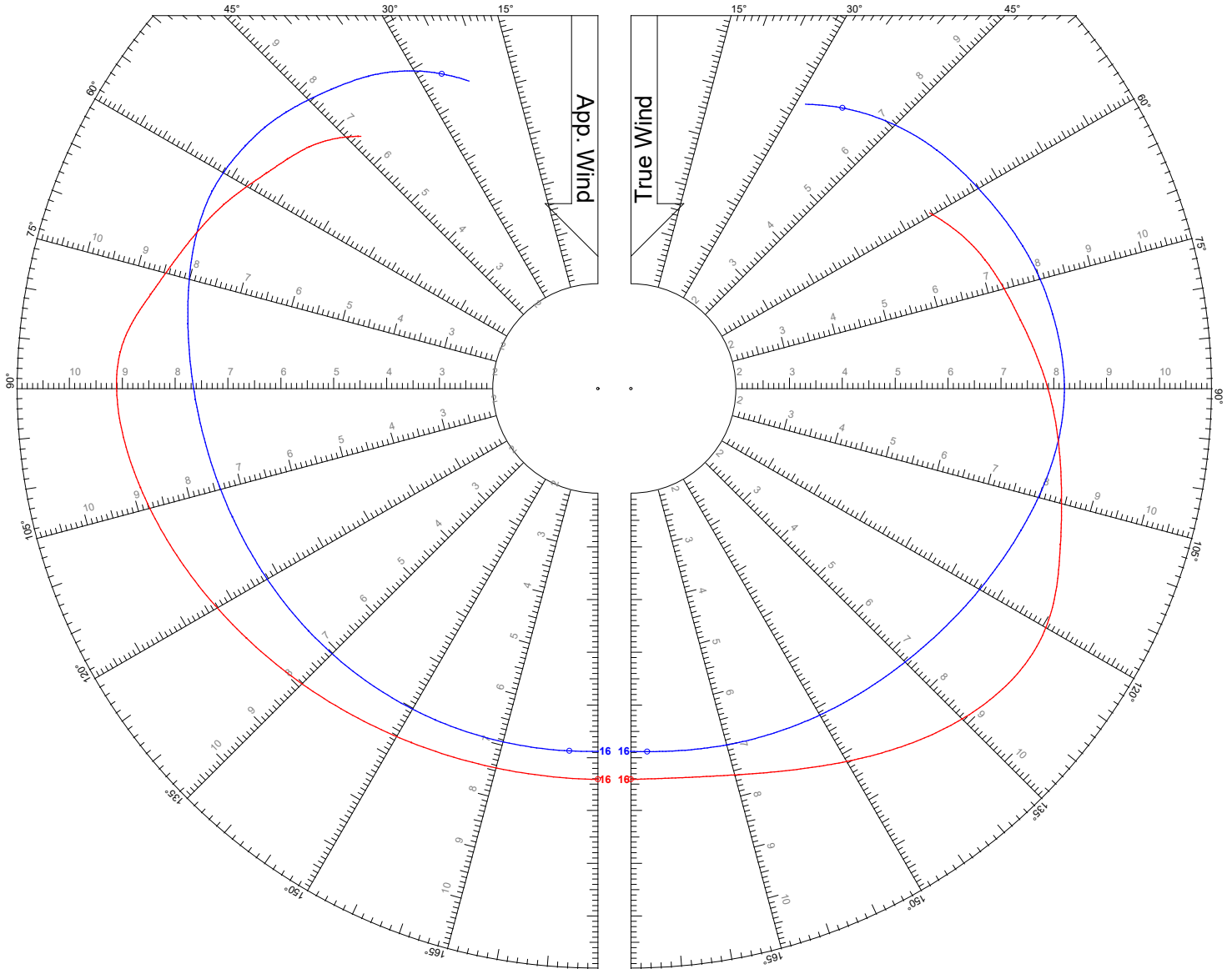
**Symmetric Spinnaker**

**Asymmetric Spinnaker on Pole**



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## Polar Plot for Boat

Name **J/99 Standard Keel**  
Sail Number  
Class **J/99**  
Designer **R. Alan Johnstone**  
Builder **J Boats, Inc.**  
Issued On **9/17/2018 - VPP 2018 1.00**

**TWS: 16 kts**

**Jib**

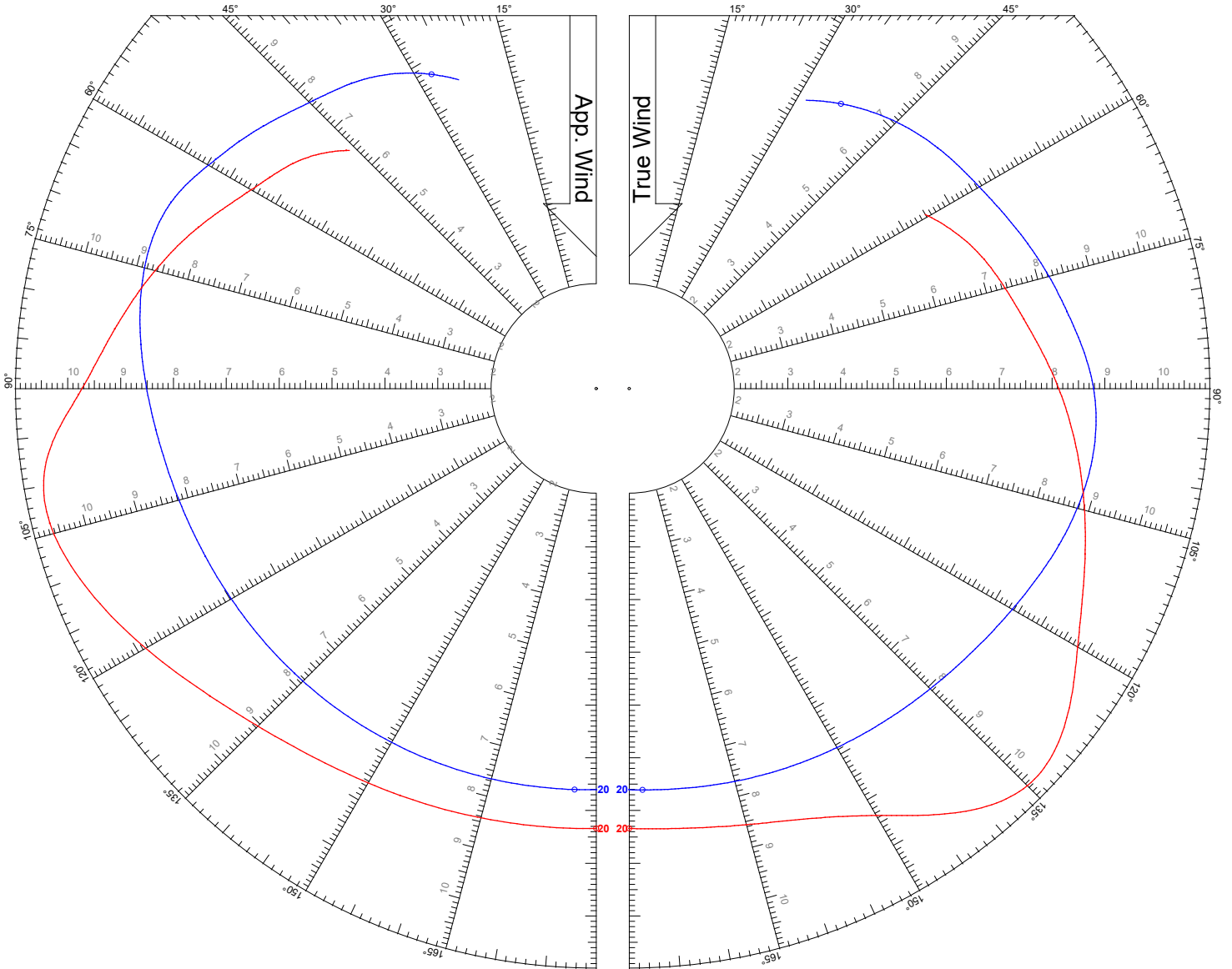
**Symmetric Spinnaker**

**Asymmetric Spinnaker on Pole**



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## Polar Plot for Boat

Name **J/99 Standard Keel**  
Sail Number  
Class **J/99**  
Designer **R. Alan Johnstone**  
Builder **J Boats, Inc.**  
Issued On **9/17/2018 - VPP 2018 1.00**

**TWS: 20 kts**

**Jib**

**Symmetric Spinnaker**

**Asymmetric Spinnaker on Pole**



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Polar Tables	
Boat Name: <b>J/99 Standard Keel</b>	
Sail No:	
Sail: <b>Best Performance</b>	
Issued On: <b>9/17/2018 - VPP 2018 1.00</b>	

TWS = 6 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
42.3° (b)	4.68	3.46	9.97	23.9°	9.1°	1.00	1.00
52°	5.24	3.22	10.11	27.9°	9.2°	1.00	1.00
60°	5.51	2.75	9.97	31.4°	9.1°	1.00	1.00
70°	5.69	1.94	9.57	36.1°	9.0°	1.00	1.00
75°	5.72	1.48	9.30	38.6°	8.9°	1.00	1.00
80°	5.72	0.99	8.98	41.2°	8.8°	1.00	1.00
90°	5.92	0.00	8.43	45.4°	8.0°	1.00	0.97
110°	6.00	2.05	6.88	55.0°	7.1°	1.00	1.00
120°	5.86	2.93	5.93	61.2°	6.5°	1.00	1.00
135°	5.31	3.75	4.37	75.9°	5.6°	1.00	1.00
150°	4.44	3.84	3.09	104.2°	4.9°	1.00	1.00
165°	3.64	3.52	2.65	144.2°	4.7°	1.00	1.00
180°	3.39	3.39	2.61	180.0°	4.6°	1.00	1.00
142.5° (r)	4.91	3.90	3.65	87.7°	5.2°	1.00	1.00

TWS = 8 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
41.0° (b)	5.58	4.21	12.75	24.3°	10.3°	1.00	1.00
52°	6.27	3.86	12.85	29.4°	10.3°	1.00	1.00
60°	6.52	3.26	12.59	33.4°	10.2°	1.00	1.00
70°	6.66	2.28	12.03	38.7°	9.9°	1.00	1.00
75°	6.68	1.73	11.68	41.4°	9.7°	1.00	1.00
80°	6.71	1.17	11.30	44.2°	16.6°	1.00	0.95
90°	6.95	0.00	10.60	49.0°	15.1°	1.00	0.96
110°	7.05	2.41	8.67	60.2°	9.2°	1.00	1.00
120°	6.94	3.47	7.53	67.0°	7.6°	1.00	1.00
135°	6.51	4.60	5.72	81.5°	6.1°	1.00	1.00
150°	5.61	4.85	4.21	108.3°	5.1°	1.00	1.00
165°	4.74	4.57	3.64	145.3°	4.7°	1.00	1.00
180°	4.44	4.44	3.56	180.0°	4.6°	1.00	1.00
148.3° (r)	5.71	4.86	4.35	104.5°	5.2°	1.00	1.00

TWS = 10 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
39.7° (b)	6.25	4.81	15.34	24.6°	14.2°	1.00	0.99
52°	6.88	4.24	15.23	31.1°	14.0°	1.00	1.00
60°	7.04	3.52	14.83	35.7°	12.4°	1.00	1.00
70°	7.13	2.44	14.13	41.7°	11.1°	1.00	1.00
75°	7.15	1.85	13.71	44.8°	10.7°	1.00	1.00
80°	7.15	1.24	13.26	47.9°	10.4°	1.00	1.00
90°	7.36	0.00	12.41	53.7°	21.9°	1.00	0.93
110°	7.57	2.59	10.27	66.2°	16.0°	1.00	1.00
120°	7.50	3.75	9.01	73.9°	9.1°	1.00	1.00
135°	7.19	5.08	7.07	89.1°	6.6°	1.00	1.00
150°	6.59	5.71	5.41	112.5°	5.3°	1.00	1.00
165°	5.71	5.51	4.72	146.8°	4.8°	1.00	1.00
180°	5.40	5.40	4.60	180.0°	4.7°	1.00	1.00
152.1° (r)	6.47	5.72	5.25	116.8°	5.2°	1.00	1.00

TWS = 12 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
37.9° (b)	6.52	5.15	17.61	24.7°	20.8°	1.00	0.94
52°	7.16	4.41	17.35	33.0°	20.6°	1.00	0.97
60°	7.32	3.66	16.89	38.0°	19.6°	1.00	1.00
70°	7.44	2.55	16.14	44.3°	16.0°	1.00	1.00
75°	7.48	1.93	15.69	47.6°	14.0°	1.00	1.00
80°	7.49	1.30	15.21	51.0°	11.9°	1.00	1.00
90°	7.57	0.00	14.19	57.8°	21.9°	0.90	0.93
110°	8.05	2.75	11.95	70.7°	21.7°	1.00	0.95
120°	8.06	4.03	10.59	78.8°	14.1°	1.00	1.00
135°	7.67	5.43	8.52	95.5°	7.1°	1.00	1.00
150°	7.20	6.23	6.80	118.0°	5.6°	1.00	1.00
165°	6.57	6.35	5.90	148.2°	4.9°	1.00	1.00
180°	6.28	6.28	5.72	180.0°	4.7°	1.00	1.00
159.1° (r)	6.83	6.38	6.12	135.6°	5.1°	1.00	1.00

TWS = 14 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
37.2° (b)	6.62	5.27	19.68	25.5°	23.1°	1.00	0.82
52°	7.28	4.49	19.36	34.8°	25.4°	1.00	0.90
60°	7.50	3.75	18.90	39.9°	24.8°	1.00	0.94
70°	7.70	2.63	18.14	46.5°	21.9°	1.00	0.97
75°	7.77	2.01	17.69	49.9°	20.6°	1.00	1.00
80°	7.82	1.36	17.18	53.4°	17.7°	1.00	1.00
90°	7.84	0.00	16.05	60.8°	11.7°	1.00	1.00
110°	8.40	2.87	13.64	74.7°	21.9°	0.96	0.94
120°	8.63	4.31	12.23	82.3°	20.9°	1.00	1.00
135°	8.24	5.82	10.04	99.5°	7.9°	1.00	1.00
150°	7.65	6.63	8.31	122.6°	5.8°	1.00	1.00
165°	7.15	6.91	7.33	150.4°	5.0°	1.00	1.00
180°	6.96	6.96	7.04	180.0°	4.7°	1.00	1.00
180.0° (r)	6.96	6.96	7.04	180.0°	4.7°	1.00	1.00

TWS = 16 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
37.0° (b)	6.66	5.32	21.69	26.3°	23.4°	1.00	0.70
52°	7.34	4.52	21.32	36.3°	26.1°	1.00	0.78
60°	7.59	3.80	20.86	41.6°	27.0°	1.00	0.84
70°	7.89	2.70	20.12	48.4°	27.3°	1.00	0.93
75°	8.02	2.07	19.66	51.8°	25.3°	1.00	0.95
80°	8.10	1.41	19.15	55.4°	23.0°	1.00	0.98
90°	8.20	0.00	17.98	62.9°	16.8°	1.00	1.00
110°	8.69	2.97	15.37	77.9°	21.9°	0.89	0.94
120°	9.11	4.56	13.90	85.4°	21.9°	1.00	0.95
135°	8.86	6.26	11.58	102.2°	9.1°	1.00	1.00
150°	8.16	7.07	9.82	125.4°	6.2°	1.00	1.00
165°	7.58	7.32	8.89	152.3°	5.2°	1.00	1.00
180°	7.41	7.41	8.59	180.0°	4.7°	1.00	1.00
180.0° (r)	7.41	7.41	8.59	180.0°	4.7°	1.00	1.00

TWS = 20 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
36.6° (b)	6.72	5.40	25.71	27.6°	20.9°	0.52	0.62
52°	7.41	4.56	25.25	38.6°	22.7°	0.73	0.62
60°	7.65	3.82	24.73	44.5°	27.6°	1.00	0.65
70°	8.03	2.74	23.96	51.7°	29.2°	1.00	0.74
75°	8.22	2.13	23.51	55.3°	29.6°	1.00	0.80
80°	8.41	1.46	23.00	58.9°	29.3°	1.00	0.86
90°	8.79	0.00	21.84	66.3°	26.2°	1.00	0.96
110°	9.23	3.16	18.95	82.8°	22.0°	0.79	0.94
120°	9.89	4.94	17.32	90.4°	22.0°	0.89	0.94
135°	10.65	7.53	14.57	103.9°	18.7°	1.00	1.00
150°	9.35	8.09	12.79	128.6°	6.9°	1.00	1.00
165°	8.56	8.27	11.94	154.3°	5.5°	1.00	1.00
180°	8.34	8.34	11.66	180.0°	4.8°	1.00	1.00
180.0° (r)	8.34	8.34	11.66	180.0°	4.8°	1.00	1.00



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**Polar Tables**

Boat Name: **J/99 Standard Keel**

Sail No:

Sail: **Jib**

Issued On: **9/17/2018 - VPP 2018 1.00**

**TWS = 6 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
42.3° (b)	4.68	3.46	9.68	23.1°	9.1°	1.00	1.00
52°	5.24	3.22	9.82	26.9°	9.2°	1.00	1.00
60°	5.51	2.75	9.69	30.3°	9.1°	1.00	1.00
70°	5.69	1.94	9.30	34.8°	9.0°	1.00	1.00
75°	5.72	1.48	9.03	37.2°	8.9°	1.00	1.00
80°	5.72	0.99	8.72	39.7°	8.8°	1.00	1.00
90°	5.64	0.00	7.99	45.1°	8.5°	1.00	1.00
110°	5.02	1.72	6.15	60.1°	8.0°	1.00	1.00
120°	4.54	2.27	5.20	71.3°	7.7°	1.00	1.00
135°	3.77	2.67	4.05	94.3°	7.5°	1.00	1.00
150°	3.31	2.87	3.30	120.3°	7.4°	1.00	1.00
165°	3.08	2.98	2.84	149.0°	7.3°	1.00	1.00
180°	2.96	2.96	2.75	180.0°	7.2°	1.00	1.00
169.4° (r)	3.03	2.98	2.78	158.0°	7.3°	1.00	1.00

**TWS = 8 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
41.0° (b)	5.58	4.21	12.35	23.4°	10.3°	1.00	1.00
52°	6.27	3.86	12.45	28.3°	10.3°	1.00	1.00
60°	6.52	3.26	12.20	32.2°	10.2°	1.00	1.00
70°	6.66	2.28	11.64	37.3°	9.9°	1.00	1.00
75°	6.68	1.73	11.29	40.0°	9.7°	1.00	1.00
80°	6.68	1.16	10.90	42.8°	9.5°	1.00	1.00
90°	6.64	0.00	10.03	48.6°	9.2°	1.00	1.00
110°	6.05	2.07	7.89	64.2°	8.3°	1.00	1.00
120°	5.57	2.78	6.79	75.2°	8.0°	1.00	1.00
135°	4.81	3.40	5.42	96.6°	7.6°	1.00	1.00
150°	4.33	3.75	4.44	121.2°	7.5°	1.00	1.00
165°	4.06	3.92	3.84	149.3°	7.4°	1.00	1.00
180°	3.91	3.91	3.70	180.0°	7.3°	1.00	1.00
170.8° (r)	3.98	3.93	3.73	161.1°	7.3°	1.00	1.00

**TWS = 10 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
39.7° (b)	6.25	4.81	14.79	23.4°	14.2°	1.00	0.99
52°	6.88	4.24	14.66	29.7°	14.0°	1.00	1.00
60°	7.04	3.52	14.28	34.3°	12.4°	1.00	1.00
70°	7.13	2.44	13.60	40.2°	11.1°	1.00	1.00
75°	7.15	1.85	13.19	43.2°	10.7°	1.00	1.00
80°	7.15	1.24	12.75	46.3°	10.4°	1.00	1.00
90°	7.14	0.00	11.79	52.8°	9.7°	1.00	1.00
110°	6.78	2.32	9.55	68.4°	8.7°	1.00	1.00
120°	6.42	3.21	8.37	78.8°	8.2°	1.00	1.00
135°	5.70	4.03	6.81	99.2°	7.8°	1.00	1.00
150°	5.22	4.52	5.64	122.8°	7.6°	1.00	1.00
165°	4.94	4.78	4.90	150.1°	7.5°	1.00	1.00
180°	4.79	4.79	4.73	180.0°	7.3°	1.00	1.00
172.4° (r)	4.85	4.80	4.75	164.8°	7.4°	1.00	1.00

**TWS = 12 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
37.9° (b)	6.52	5.15	16.79	22.8°	20.8°	1.00	0.94
52°	7.16	4.41	16.44	30.6°	20.6°	1.00	0.97
60°	7.32	3.66	15.97	35.5°	19.6°	1.00	1.00
70°	7.44	2.55	15.31	42.2°	16.0°	1.00	1.00
75°	7.48	1.93	14.94	45.7°	14.0°	1.00	1.00
80°	7.49	1.30	14.52	49.3°	11.9°	1.00	1.00
90°	7.48	0.00	13.51	56.4°	10.4°	1.00	1.00
110°	7.18	2.46	11.14	73.0°	9.0°	1.00	1.00
120°	6.96	3.48	9.92	83.0°	8.5°	1.00	1.00
135°	6.47	4.57	8.23	101.7°	8.1°	1.00	1.00
150°	6.03	5.22	6.89	124.5°	7.8°	1.00	1.00
165°	5.75	5.55	6.05	151.0°	7.6°	1.00	1.00
180°	5.58	5.58	5.84	180.0°	7.3°	1.00	1.00
173.7° (r)	5.63	5.59	5.85	167.7°	7.4°	1.00	1.00

**TWS = 14 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
37.2° (b)	6.62	5.27	18.61	23.2°	23.1°	1.00	0.82
52°	7.28	4.49	18.03	31.3°	25.4°	1.00	0.90
60°	7.50	3.75	17.50	36.3°	24.8°	1.00	0.94
70°	7.70	2.63	16.81	43.3°	21.9°	1.00	0.97
75°	7.77	2.01	16.41	46.9°	20.6°	1.00	1.00
80°	7.82	1.36	16.06	50.9°	17.7°	1.00	1.00
90°	7.84	0.00	15.23	59.0°	11.7°	1.00	1.00
110°	7.50	2.57	12.76	76.8°	9.4°	1.00	1.00
120°	7.30	3.65	11.50	87.1°	8.9°	1.00	1.00
135°	6.99	4.94	9.72	105.0°	8.4°	1.00	1.00
150°	6.71	5.81	8.22	126.4°	8.0°	1.00	1.00
165°	6.47	6.25	7.26	151.9°	7.7°	1.00	1.00
180°	6.31	6.31	7.02	180.0°	7.4°	1.00	1.00
175.0° (r)	6.34	6.32	7.02	170.6°	7.5°	1.00	1.00

**TWS = 16 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
37.0° (b)	6.66	5.32	20.40	23.9°	23.4°	1.00	0.70
52°	7.34	4.52	19.69	32.6°	26.1°	1.00	0.78
60°	7.59	3.80	19.02	37.5°	27.0°	1.00	0.84
70°	7.89	2.70	18.09	43.9°	27.3°	1.00	0.93
75°	8.02	2.07	17.75	47.8°	25.3°	1.00	0.95
80°	8.10	1.41	17.41	52.0°	23.0°	1.00	0.98
90°	8.20	0.00	16.72	60.6°	16.8°	1.00	1.00
110°	7.86	2.69	14.42	79.5°	9.9°	1.00	1.00
120°	7.62	3.81	13.12	90.2°	9.2°	1.00	1.00
135°	7.33	5.19	11.28	108.1°	8.7°	1.00	1.00
150°	7.15	6.19	9.70	128.8°	8.3°	1.00	1.00
165°	6.99	6.76	8.65	153.2°	7.8°	1.00	1.00
180°	6.88	6.88	8.35	180.0°	7.4°	1.00	1.00
177.4° (r)	6.89	6.88	8.35	175.4°	7.5°	1.00	1.00

**TWS = 20 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
36.6° (b)	6.72	5.40	23.87	25.5°	20.9°	0.52	0.62
52°	7.41	4.56	23.17	35.6°	22.7°	0.73	0.62
60°	7.65	3.82	22.21	40.1°	27.6°	1.00	0.65
70°	8.03	2.74	21.02	46.7°	29.2°	1.00	0.74
75°	8.22	2.13	20.42	50.3°	29.6°	1.00	0.80
80°	8.41	1.46	19.87	54.0°	29.3°	1.00	0.86
90°	8.79	0.00	19.08	62.6°	26.2°	1.00	0.96
110°	8.66	2.96	17.74	83.2°	11.7°	1.00	1.00
120°	8.37	4.18	16.39	94.3°	10.3°	1.00	1.00
135°	8.05	5.69	14.44	112.4°	9.5°	1.00	1.00
150°	7.86	6.81	12.80	132.6°	8.8°	1.00	1.00
165°	7.71	7.45	11.73	155.4°	8.2°	1.00	1.00
180°	7.61	7.61	11.43	180.0°	7.5°	1.00	1.00
178.1° (r)	7.61	7.61	11.43	176.8°	7.6°	1.00	1.00



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**Polar Tables**

Boat Name: **J/99 Standard Keel**

Sail No:

Sail: **Asymmetric Spinnaker on CL**

Issued On: **9/17/2018 - VPP 2018 1.00**

**TWS = 6 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	4.05	2.03	8.61	35.8°	6.8°	1.00	0.96
70°	4.94	1.69	8.83	38.2°	7.4°	1.00	0.96
75°	5.27	1.36	8.81	39.6°	7.6°	1.00	0.96
80°	5.54	0.96	8.70	41.1°	7.8°	1.00	0.96
90°	5.89	0.00	8.27	44.6°	7.8°	1.00	0.97
110°	5.96	2.04	6.75	54.2°	6.9°	1.00	1.00
120°	5.80	2.90	5.81	60.4°	6.4°	1.00	1.00
135°	5.20	3.68	4.27	76.0°	5.5°	1.00	1.00
150°	4.36	3.77	3.02	104.2°	4.9°	1.00	1.00
165°	3.24	3.13	2.85	148.0°	4.7°	1.00	1.00
180°	3.06	3.06	2.78	180.0°	4.6°	1.00	1.00
144.2° (r)	4.70	3.81	3.43	91.3°	5.0°	1.00	1.00

**TWS = 8 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	5.19	2.59	11.28	36.3°	9.0°	1.00	0.95
70°	6.17	2.11	11.36	39.0°	12.9°	1.00	0.95
75°	6.49	1.68	11.20	40.6°	14.5°	1.00	0.95
80°	6.70	1.16	10.94	42.6°	15.1°	1.00	0.96
90°	6.93	0.00	10.28	47.6°	13.6°	1.00	0.97
110°	7.02	2.40	8.46	59.1°	8.7°	1.00	1.00
120°	6.91	3.45	7.36	66.0°	7.4°	1.00	1.00
135°	6.42	4.54	5.58	80.9°	5.9°	1.00	1.00
150°	5.50	4.77	4.11	108.3°	5.0°	1.00	1.00
165°	4.25	4.11	3.86	148.5°	4.8°	1.00	1.00
180°	4.04	4.04	3.76	180.0°	4.6°	1.00	1.00
147.7° (r)	5.65	4.78	4.28	103.3°	5.1°	1.00	1.00

**TWS = 10 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	6.03	3.02	13.49	36.2°	18.8°	1.00	0.94
70°	6.77	2.32	13.15	39.9°	21.9°	0.98	0.88
75°	6.96	1.80	12.84	42.5°	21.9°	0.98	0.87
80°	7.10	1.23	12.45	45.2°	21.9°	0.96	0.92
90°	7.36	0.00	11.62	50.7°	21.9°	1.00	0.93
110°	7.55	2.58	9.84	64.6°	14.1°	1.00	1.00
120°	7.46	3.73	8.76	72.9°	8.6°	1.00	1.00
135°	7.14	5.05	6.87	88.1°	6.4°	1.00	1.00
150°	6.48	5.61	5.27	112.3°	5.2°	1.00	1.00
165°	5.16	4.98	4.96	149.5°	4.9°	1.00	1.00
180°	4.93	4.93	4.82	180.0°	4.7°	1.00	1.00
149.0° (r)	6.55	5.61	5.35	110.1°	5.3°	1.00	1.00

**TWS = 12 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	6.37	3.18	15.28	37.4°	21.8°	0.92	0.88
70°	6.97	2.38	14.81	42.6°	21.9°	0.89	0.85
75°	7.13	1.85	14.43	45.6°	22.0°	0.89	0.86
80°	7.27	1.26	14.00	48.6°	21.9°	0.87	0.92
90°	7.57	0.00	13.10	54.7°	21.9°	0.90	0.93
110°	8.04	2.75	10.98	68.3°	21.3°	1.00	0.99
120°	8.01	4.00	10.15	77.8°	12.2°	1.00	1.00
135°	7.62	5.39	8.26	94.6°	6.9°	1.00	1.00
150°	7.08	6.13	6.59	117.7°	5.4°	1.00	1.00
165°	5.99	5.79	6.09	150.4°	5.0°	1.00	1.00
180°	5.75	5.75	5.92	180.0°	4.7°	1.00	1.00
150.8° (r)	7.03	6.13	6.52	119.3°	5.4°	1.00	1.00

**TWS = 14 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	6.54	3.27	17.01	39.0°	21.8°	0.83	0.87
70°	7.09	2.42	16.40	44.9°	21.9°	0.79	0.92
75°	7.25	1.88	16.02	48.1°	21.9°	0.81	0.86
80°	7.41	1.29	15.55	51.3°	21.9°	0.80	0.93
90°	7.76	0.00	14.60	57.9°	21.9°	0.83	0.93
110°	8.40	2.87	12.38	72.3°	21.9°	0.96	0.94
120°	8.59	4.29	11.33	81.0°	18.4°	1.00	1.00
135°	8.17	5.78	9.70	98.9°	7.5°	1.00	1.00
150°	7.43	6.43	8.09	122.9°	5.7°	1.00	1.00
165°	6.69	6.46	7.36	151.5°	5.2°	1.00	1.00
180°	6.48	6.48	7.13	180.0°	4.7°	1.00	1.00
174.3° (r)	6.53	6.50	7.14	169.2°	4.9°	1.00	1.00

**TWS = 16 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	6.65	3.32	18.68	40.5°	21.8°	0.76	0.86
70°	7.16	2.45	18.02	46.9°	21.8°	0.75	0.86
75°	7.34	1.90	17.57	50.2°	21.9°	0.73	0.92
80°	7.52	1.31	17.10	53.7°	21.9°	0.74	0.93
90°	7.93	0.00	16.12	60.5°	21.9°	0.76	0.93
110°	8.69	2.97	13.82	75.6°	21.9°	0.89	0.94
120°	9.11	4.56	12.54	83.8°	21.9°	1.00	0.95
135°	8.77	6.20	11.16	101.8°	8.4°	1.00	1.00
150°	7.78	6.74	9.64	126.4°	6.0°	1.00	1.00
165°	7.15	6.91	8.85	153.0°	5.4°	1.00	1.00
180°	7.01	7.01	8.54	180.0°	4.7°	1.00	1.00
177.0° (r)	7.03	7.02	8.54	174.5°	4.9°	1.00	1.00

**TWS = 20 Kts**

TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	6.64	3.32	21.92	43.1°	22.3°	0.69	0.74
70°	7.21	2.47	21.21	50.1°	22.3°	0.69	0.73
75°	7.42	1.92	20.74	53.8°	22.3°	0.69	0.74
80°	7.65	1.33	20.25	57.4°	22.2°	0.69	0.76
90°	8.19	0.00	19.19	64.7°	22.1°	0.69	0.86
110°	9.23	3.16	16.75	80.6°	22.0°	0.79	0.94
120°	9.89	4.94	15.40	88.9°	22.0°	0.89	0.94
135°	10.47	7.40	13.67	103.9°	15.4°	1.00	1.00
150°	8.62	7.46	12.72	130.5°	6.8°	1.00	1.00
165°	7.91	7.64	11.99	155.3°	5.9°	1.00	1.00
180°	7.76	7.76	11.68	180.0°	4.8°	1.00	1.00
177.0° (r)	7.78	7.77	11.68	175.1°	5.0°	1.00	1.00



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Polar Tables							
Boat Name: <b>J/99 Standard Keel</b>							
Sail No:							
Sail: <b>Asymmetric Spinnaker on Pole</b>							
Issued On: <b>9/17/2018 - VPP 2018 1.00</b>							

TWS = 6 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	4.07	2.03	8.64	35.8°	6.9°	1.00	0.96
70°	4.96	1.70	8.87	38.2°	7.5°	1.00	0.96
75°	5.30	1.37	8.85	39.6°	7.8°	1.00	0.96
80°	5.57	0.97	8.74	41.1°	8.0°	1.00	0.96
90°	5.92	0.00	8.31	44.6°	8.0°	1.00	0.97
110°	6.00	2.05	6.79	54.0°	7.1°	1.00	1.00
120°	5.86	2.93	5.85	60.1°	6.5°	1.00	1.00
135°	5.31	3.75	4.30	74.6°	5.6°	1.00	1.00
150°	4.44	3.84	3.01	102.8°	4.9°	1.00	1.00
165°	3.64	3.52	2.54	143.3°	4.7°	1.00	1.00
180°	3.39	3.39	2.48	180.0°	4.6°	1.00	1.00
142.5° (r)	4.91	3.90	3.57	86.1°	5.2°	1.00	1.00

TWS = 8 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	5.20	2.60	11.32	36.3°	9.4°	1.00	0.95
70°	6.18	2.11	11.37	38.8°	14.2°	1.00	0.95
75°	6.50	1.68	11.20	40.5°	15.9°	1.00	0.95
80°	6.71	1.17	10.94	42.5°	16.6°	1.00	0.95
90°	6.95	0.00	10.27	47.4°	15.1°	1.00	0.96
110°	7.05	2.41	8.49	59.1°	9.2°	1.00	1.00
120°	6.94	3.47	7.38	65.9°	7.6°	1.00	1.00
135°	6.51	4.60	5.60	80.1°	6.1°	1.00	1.00
150°	5.61	4.85	4.09	107.0°	5.1°	1.00	1.00
165°	4.74	4.57	3.48	144.5°	4.7°	1.00	1.00
180°	4.44	4.44	3.38	180.0°	4.6°	1.00	1.00
148.3° (r)	5.71	4.86	4.23	103.3°	5.2°	1.00	1.00

TWS = 10 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	6.01	3.01	13.46	36.1°	20.2°	1.00	0.94
70°	6.74	2.30	13.15	40.1°	21.9°	0.97	0.87
75°	6.93	1.79	12.82	42.6°	21.9°	0.94	0.92
80°	7.07	1.23	12.47	45.4°	21.9°	0.97	0.87
90°	7.33	0.00	11.62	50.9°	21.9°	0.98	0.93
110°	7.57	2.59	9.79	64.4°	16.0°	1.00	1.00
120°	7.50	3.75	8.78	72.8°	9.1°	1.00	1.00
135°	7.19	5.08	6.89	87.9°	6.6°	1.00	1.00
150°	6.59	5.71	5.25	111.3°	5.3°	1.00	1.00
165°	5.71	5.51	4.53	146.1°	4.8°	1.00	1.00
180°	5.40	5.40	4.38	180.0°	4.7°	1.00	1.00
152.1° (r)	6.47	5.72	5.08	115.6°	5.2°	1.00	1.00

TWS = 12 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	6.32	3.16	15.27	37.6°	21.8°	0.91	0.88
70°	6.93	2.37	14.81	42.7°	21.9°	0.87	0.85
75°	7.10	1.84	14.44	45.7°	21.9°	0.87	0.86
80°	7.24	1.26	14.01	48.7°	21.9°	0.86	0.93
90°	7.54	0.00	13.10	54.9°	21.9°	0.88	0.93
110°	8.05	2.75	10.98	68.3°	21.7°	1.00	0.95
120°	8.06	4.03	10.10	77.5°	14.1°	1.00	1.00
135°	7.67	5.43	8.28	94.5°	7.1°	1.00	1.00
150°	7.20	6.23	6.57	117.0°	5.6°	1.00	1.00
165°	6.57	6.35	5.65	147.6°	4.9°	1.00	1.00
180°	6.28	6.28	5.45	180.0°	4.7°	1.00	1.00
159.1° (r)	6.83	6.38	5.88	134.8°	5.1°	1.00	1.00

TWS = 14 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	6.49	3.25	17.00	39.2°	21.8°	0.81	0.86
70°	7.05	2.41	16.43	45.0°	21.9°	0.79	0.86
75°	7.22	1.87	16.00	48.2°	21.9°	0.78	0.92
80°	7.37	1.28	15.56	51.5°	21.9°	0.78	0.93
90°	7.72	0.00	14.61	58.1°	21.9°	0.81	0.93
110°	8.36	2.86	12.38	72.5°	21.9°	0.93	0.94
120°	8.63	4.31	11.18	80.7°	20.9°	1.00	1.00
135°	8.24	5.82	9.73	98.7°	7.9°	1.00	1.00
150°	7.65	6.63	8.02	121.8°	5.8°	1.00	1.00
165°	7.15	6.91	7.02	149.8°	5.0°	1.00	1.00
180°	6.96	6.96	6.71	180.0°	4.7°	1.00	1.00
180.0° (r)	6.96	6.96	6.71	180.0°	4.7°	1.00	1.00

TWS = 16 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	6.59	3.30	18.67	40.7°	21.8°	0.74	0.86
70°	7.13	2.44	18.00	46.9°	21.9°	0.71	0.92
75°	7.31	1.89	17.58	50.3°	21.9°	0.72	0.92
80°	7.49	1.30	17.11	53.8°	21.9°	0.72	0.93
90°	7.89	0.00	16.12	60.7°	21.9°	0.75	0.93
110°	8.65	2.96	13.82	75.8°	21.9°	0.87	0.94
120°	9.07	4.53	12.54	84.0°	22.0°	0.98	0.94
135°	8.86	6.26	11.17	101.5°	9.1°	1.00	1.00
150°	8.16	7.07	9.48	124.8°	6.2°	1.00	1.00
165°	7.58	7.32	8.54	151.8°	5.2°	1.00	1.00
180°	7.41	7.41	8.21	180.0°	4.7°	1.00	1.00
180.0° (r)	7.41	7.41	8.21	180.0°	4.7°	1.00	1.00

TWS = 20 Kts							
TWA	BTV	VMG	AWS	AWA	Heel	Reef	Flat
60°	6.54	3.27	21.92	43.4°	22.4°	0.69	0.70
70°	7.15	2.45	21.24	50.3°	22.4°	0.69	0.69
75°	7.36	1.91	20.77	53.9°	22.3°	0.69	0.70
80°	7.58	1.32	20.27	57.6°	22.3°	0.69	0.72
90°	8.13	0.00	19.21	65.0°	22.2°	0.69	0.81
110°	9.18	3.14	16.75	80.7°	22.0°	0.77	0.94
120°	9.80	4.90	15.41	89.3°	22.0°	0.86	0.94
135°	10.65	7.53	13.44	103.5°	18.7°	1.00	1.00
150°	9.35	8.09	12.34	128.1°	6.9°	1.00	1.00
165°	8.56	8.27	11.48	154.0°	5.5°	1.00	1.00
180°	8.34	8.34	11.19	180.0°	4.8°	1.00	1.00
180.0° (r)	8.34	8.34	11.19	180.0°	4.8°	1.00	1.00