

# PORTSMOUTH NUMBERS

## How to Calculate Results using Portsmouth Numbers

Use Portsmouth Handicap Numbers to calculate finish positions as corrected time for boats that are not alike and compete together on a common course for an unspecified distance. The Portsmouth Handicap Number of a boat assumes that each boat is sailed to its true potential by a perfect crew using flawless strategy, and that all boats and sails conform to class specifications and rules. Courses sailed may be triangular, modified Gold Cup, Olympic, or windward-leeward. US SAILING determines handicaps and uses the Thistle as the primary yardstick for one design centerboard boats, keelboats, and offshore boats.

Finish positions are calculated by corrected time using  $CT=(ET \times 100)/HC$  as the formula. CT is corrected time; ET is elapsed time; and HC is either the recommended Wind Handicap Number or the basic D-PN.

Work sheets and handicap lists are located on [gsbyra.org](http://gsbyra.org).

The Race Committee records:

- wind speed at the beginning, middle, and end of the race
- exact start time of the race
- exact finish time for every boat.

The Race Committee:

- averages the 3 recorded wind velocities and selects a corresponding Beaufort Number range to use as the wind handicap number in the formula, or instead uses the basic Portsmouth Number D-PN.

- determines elapsed time for every boat
- converts elapsed time into seconds for use in the formula.

- uses the formula:  $CT=(ET \times 100)/HC$  to calculate corrected times

- arranges finish order with the lowest corrected time in first place.

## Beaufort Scale of Wind Velocity

Beaufort Numbers characterize weather conditions. Use a meter to determine wind velocities and note that subjective annotations over force 5 do not apply on Great South Bay.

Beaufort Number	Wind Velocity (Knots)	Wind Velocity (MPH)	Seamans Term	Wave Height	Sea Conditions
0	0-1	0-1.7	Calm	Smooth	Glassy, mirrorlike
1	2-3	1.8-4.0	Light air	Ripples	Scale-like ripples
2	4-6	4.1-7.4	Light breeze	1/3 ft.	Small wavelets
3	7-10	7.5-12.0	Gentle breeze	1-2 ft.	Large wavelets, crest begins to break
4	11-16	12.1-18.9	Moderate breeze	2-3 ft.	Small waves, some whitecaps
5	17-21	19.0-24.7	Fresh breeze	3-4 ft.	Longer waves, many whitecaps
6	22-27	24.8-31.6	Strong breeze	4-5 ft.	Large waves, many whitecaps, foam & spray everywhere
7	28-33	31.7-38.5	Moderate gale	5-6 ft.	Sea heaps up streaks of foam
8	34-40	38.6-46.6	Fresh gale	6-7 ft.	High long waves, spindrift
9	41-47	46.7-53.3	Strong gale	7-9 ft.	Rolling seas

# PORTSMOUTH NUMBERS

## Centerboard

Consult [ussailing.org/portsmouth/](http://ussailing.org/portsmouth/) for boat Portsmouth Numbers not listed here.

CLASS	D-PN	HANDICAPS BY BEAUFORT WIND RANGE			
		BN 0-1	BN 2-3	BN 4	BN 5-9
29er	84.5	85.6	84.7	83.9	78.9
420 Club	97.6	103.4	100.0	95.0	90.8
470 International	86.3	91.4	88.4	85.0	82.1
Blue Jay	108.6	110.1	109.5	107.2	106.7
Byte	97.4	97.7	97.4	96.3	95.3
Cape Cod Mercury CB	107.0	107.0	107.0	107.0	107.0
Contender	90.1	95.9	91.0	82.0	-
Day Sailer O'Day 17	98.5	101.3	98.5	96.9	96.3
Fireball	85.6	87.9	87.0	85.4	82.4
Flying Junior	97.9	100.9	99.3	98.2	95.8
Flying Scot	89.6	92.1	90.4	89.1	87.5
Force 5	95.4	98.1	96.6	95.3	93.4
Holder 14	111.0	113.0	111.7	108.4	-
JY 15	91.9	92.5	92.4	91.9	-
Laser	91.1	93.7	92.3	91.0	88.2
Laser 4.7	95.4	96.1	95.2	94.9	-
Laser Radial	96.7	99.4	97.3	93.6	-
Laser Pico Uno	104.6	-	104.5	-	-
Lightning	87.0	92.6	87.6	85.4	83.9
Mariner 19	102.5	103.0	103.0	103.0	100.0
Marshall 15 Sandpiper	112.7	116.6	114.3	109.1	-
Marshall 18 Sanderling	104.5	107.5	105.0	102.2	-
Marshall 22	96.6				
Mobjack	91.3	96.5	92.4	88.0	86.5
Narrasketuck	89.7	89.0	89.0	89.0	85.0
Optimist	123.6	123.6	124.0	124.0	-
Raven	83.0	85.2	83.0	81.5	81.0
Sunfish	99.6	103.0	100.4	97.8	95.8
Tanzer 22 CB	96.0	99.0	97.2	95.3	93.1
Thistle	83.0	83.0	83.0	83.0	83.0
Vanguard 15	90.5	92.6	91.2	86.0	-
Windmill	89.5	92.9	91.4	88.3	86.2
Wood-Pussy	103.0	-	104.9	99.3	-

# PORTSMOUTH NUMBERS

## Keelboat and Offshore

Consult [ussailing.org/Portsmouth/](http://ussailing.org/Portsmouth/) for boat Portsmouth Numbers not listed here.

CLASS	D-PN	HANDICAPS BY BEAUFORT WIND RANGE			
		BN 0-1	BN 2-3	BN 4	BN 5-9
Bristol 27	90.7	92.2	90.4	89.9	89.7
Bristol 29	91.0	91.0	91.8	88.9	-
Bristol 32	91.9	91.9	92.1	88.0	-
Bristol 35	89.3	89.3	88.0	87.4	-
C & C 25	91.5	95.0	91.8	90.6	88.1
Hereshoff 12 1/2	110.9	114.7	112.2	109.7	109.7
Herreshoff America 18	116.9	116.9	117.0	115.6	-
Hobie Magic	72.3	73.0	72.0	71.0	71.0
Holder 20	85.8	88.2	87.8	85.7	81.7
J 22 Class Jib	82.7	84.2	82.7	82.2	82.0
J 22 Open	81.7	82.6	81.6	81.5	81.0
J 24	80.8	83.3	81.9	80.4	78.0
J 27	77.1	79.7	78.1	75.4	74.6
J30	76.9	78.7	78.3	76.2	73.9
Mercury CC (K)	105.0	105.0	105.0	105.0	105.0
Morgan 30	86.8	92.0	87.5	83.7	80.5
O'Day 222	98.3	99.9	99.1	97.3	-
O'Day 23 Deckstep	98.6	99.3	98.9	98.7	98.3
O'Day 23 Keel step	99.1	99.3	99.0	98.1	97.5
O'Day 25 spin	95.2	97.4	95.7	95.0	93.6
O'Day 25 CB spin	95.4	97.8	95.4	94.3	94.2
O'Day 25 T mast FK spin	92.8	93.6	93.0	-	-
O'Day 272 WK	93.6	94.2	93.6	91.4	-
O'Day322 WK	82.9	-	83.0	87.6	-
Rhodes 19	96.9	100.9	99.0	94.2	92.9
Star	83.1	83.9	83.3	82.4	81.5
Tartan 27	95.3	97.5	95.3	94.6	94.0

South Bay Cruising Club is a recognized handicapping authority of US SAILING.

For GSBYRA events, a PHRF Class boat is defined as a boat with length overall of twenty feet or greater, and designed with sleeping accommodations. Boats that meet these specifications shall race in the PHRF Class. PHRF Handicap forms are available from the SBCC Handicap Chairman Bill Danilczyk at 631 422-6627 or at [wjdanilczyk@aol.com](mailto:wjdanilczyk@aol.com). Handicap forms are also available under Racing at [www.sbccsail.org](http://www.sbccsail.org) and at [www.gsbyra.org](http://www.gsbyra.org). Each PHRF skipper is obligated to obtain a Handicap form in advance and submit the form to the SBCC Handicap Chairperson at least 7 days prior to the yacht's first race in order to be scored.

Boats that do not meet the specifications for the PHRF Class shall race in the Monohull Handicap Class and be scored with Portsmouth Number ratings.

US SAILING determined a difference of 1 D-PN equals a difference of 6 seconds PHRF. Use the formula **D-PN = PHRF / 6 + 55**.

# PORTSMOUTH NUMBERS

## Multihull

Consult [ussailing.org/Portsmouth/](http://ussailing.org/Portsmouth/) for boat Portsmouth Numbers not listed here.

CLASS	D-PN	HANDICAPS BY BEAUFORT WIND RANGE			
		BN 0-1	BN 2-3	BN 4	BN 5-9
Dragonfly 800	71.8	75.2	72.0	71.5	70.6
Dragonfly 920	68.2	68.2	68.2	68.2	68.2
F-24 Tri Mk I	76.1	79.9	76.9	76.6	74.5
F-27 Tri	70.5	72.4	73.0	71.4	65.1
Hobie 14	86.4	95.0	90.1	85.6	80.9
Hobie 14 Turbo	83.1	86.3	85.1	81.1	79.4
Hobie 16	76.0	81.5	78.7	74.1	71.3
Hobie 17	74.0	78.3	76.2	73.7	69.7
Hobie 18 and 18 Magnum	71.4	76.8	73.5	69.5	66.8
Hobie 20 Miracle	65.0	69.1	66.4	64.4	61.4
Hobie 21 no spinnaker	67.0	71.9	69.2	66.3	61.7
Inter 20 with spinnaker	59.3	62.0	60.2	58.5	57.5
NACRA 5.0 2 up	77.0	80.5	78.5	76.2	73.0
NACRA 5.2 sloop- 2	72.1	78.0	74.8	71.6	67.4
NACRA 5.5 sloop	67.0	73.5	69.5	65.7	61.2
NACRA 5.5 uni 8.5	69.7	74.4	71.9	69.0	64.5
NACRA 5.7 2 up	72.6	75.5	74.8	72.2	68.6
NACRA 5.8 original 2 up	66.6	70.4	68.5	65.4	62.0
NACRA 5.8 N.A.	66.5	70.4	68.5	65.4	62.0
NACRA 6.0 N.A.	62.6	65.4	64.3	61.9	59.5
Pacific Cat	73.7	80.6	76.0	75.0	69.5
Prindle 16	77.5	84.1	80.7	76.3	71.3
Prindle 18	74.8	81.0	77.8	74.7	70.5
Prindle 18-2	69.1	72.6	71.7	68.7	65.1
Prindle 19	66.4	71.7	68.9	64.5	62.3
Stiletto 27	74.8	79.0	76.6	75.4	69.5
Supercat 20	65.0	70.4	67.3	65.2	60.8
Tornado I trapeze	63.9	67.0	65.5	63.1	60.6
Tornado International	59.0	62.2	60.5	57.8	55.5