

PORTSMOUTH NUMBER HANDICAPS

How to Calculate Results for Handicap Races

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 startegy, 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 $CT=(ETX100)/HC$ 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.

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.
- detemines elapsed time for every boat
- converts elapsed time into seconds for use in the formula.
- uses the formula: $CT=(ETX100)/HC$ 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 NUMBER HANDICAPS

Centerboard

Consult ussailing.org/portsmouth/ for 2008 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 |
| Herreshoff 12 1/2 | 110.9 | 114.7 | 112.2 | 109.7 | 109.7 |
| Hobie Magic | 72.3 | 73.0 | 72.0 | 71.0 | 71.0 |
| Holder 14 | 111.0 | 113.0 | 111.7 | 108.4 | - |
| Holder 20 | 86.0 | 88.1 | 87.5 | 85.3 | 81.8 |
| J 22 Class Jib | 82.7 | 84.1 | 82.6 | 82.2 | 81.9 |
| J 22 Open | 81.7 | 82.6 | 81.6 | 81.5 | 81.0 |
| J 24 | 80.8 | 83.3 | 81.3 | 80.4 | 78.0 |
| 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 | - |
| Mobjack | 91.3 | 96.5 | 92.4 | 88.0 | 86.5 |
| Narrasketuck | 89.7 | 89.0 | 89.0 | 89.0 | 85.0 |
| O'Day 23 (deckstep) | 98.6 | 99.3 | 98.9 | 98.7 | 98.3 |
| 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 |
| 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 NUMBER HANDICAPS

Keelboat and Offshore

Consult ussailing.org/portsmouth/ for 2008 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 |
| Hereshoff 12 1/2 | 110.9 | 114.7 | 112.2 | 109.7 | 109.7 |
| Mercury CC (K) | 105.0 | 105.0 | 105.0 | 105.0 | 105.0 |
| Rhodes 19 | 96.9 | 100.9 | 99.0 | 94.2 | 92.9 |
| Star | 83.1 | 83.9 | 83.3 | 82.4 | 81.5 |
| 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 |
| Herreshoff America 18 | 116.9 | 116.9 | 117.0 | 115.6 | - |
| Hobie 33 | 72.1 | 73.2 | 72.6 | 71.8 | 70.5 |
| 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 |
| 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 | - |
| Tanzer 22 CB | 96.0 | 99.0 | 97.2 | 95.3 | 93.1 |
| 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 sponsored events, a PHRF Class boat is defined as a yacht with length overall of twenty feet or greater, and designed with sleeping accommodations. Yachts 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. Handicap forms are also available under Racing at sbccsail.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.

Yachts that do not meet the specifications 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 = PRHRF / 6 + 55**.

PORTSMOUTH NUMBER HANDICAPS

Multihull

Consult ussailing.org/portsmouth/ for 2008 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 |