



**United States Sailing Association**  
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## **HISTORY OF US PHRF® AFFILIATED HANDICAPS**

**2016**

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## THE UNITED STATES PERFORMANCE HANDICAP RACING FLEET

The United States Performance Handicap Racing Fleet (USPHRF) is an empirical handicapping rule administered by a technical rule committee of US Sailing. The USPHRF Committee promotes performance handicap racing for monohull and multihull sail boats applying the PHRF rule. The Committee researches, develops, and distributes guidelines for performance handicapping using systematically applied empirical methodology to determine estimates of speed potential.

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USPHRF falls under the purview of US Sailing Association's Offshore Office. The Offshore team is as follows:

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This publication continues the long standing practice of making available handicap data from PHRF affiliated fleet handicaps on an annual basis. These data are derived from reports submitted by the fleets. The Offshore Office of US Sailing may also provide guidance when determining an initial handicap. In addition to this book, some documents are also available on the USPHRF website at: <http://www.ussailing.org/racing/offshore-big-boats/phrf/>.

## **Considerations when using this listing to determine a handicap by averaging fleet data**

Simply averaging handicap data presented in this collection to determine an initial handicap for a boat new to a fleet may result in a flawed estimate of its speed potential.

There are several reasons for this: Handicaps may not have been reported or updated for several years even though several are counted in this listing, no boats of a type are currently counted in this listing (showing zero boats), geographic differences in typical wind and water conditions and courses are not considered; extreme values will lead to spurious estimates of a handicap by artificially raising or lowering the calculated average; skipper and crew influences lead to a strong bias; or statute miles rather than nautical miles are used as a basis for handicaps. If averaging handicaps of other fleets is still wanted, a median rather than an arithmetic average is more desirable after eliminating the aforementioned problems in a particular boat types listing.

Determining an initial handicap for a boat new to a fleet can be problematic. While some may use a calculated average, a more effective method would be to utilize a handicap from a fleet that is similar and to speak with the fleet's handicappers to understand the basis for the handicap. Fleet characteristics are listed on the USPHRF website. After the initial handicap is chosen and the boat is raced, an empirical analysis of performance may permit a more refined estimate of its speed potential.

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**Monohull**

**Multihull**

**Section 1.**

**Table of Boat Versions**

<b>This Boat</b>	<b>With/Is A Version of</b>	<b>Is A Version Of or Known As</b>
Alden 45	Extended Stern	Alden 43
Alden 48	Extended Stern	Alden 46
Alden 50	Extended Stern	Alden 46/48
Alden 54	Extended Stern, Ketch	Alden 50/52
Allied 3030	ALSO KNOWN AS	Chance 3030
Allied 39	Skeg Rudder, New Transom	Borsa W 40/Owens 40
Aloha 8.2	ALSO KNOWN AS	Aloha 26
Annapolis 35	ALSO KNOWN AS	Young Sun 35
Annapolis 44	Sloop	Luders 44
Antigua 44	ALSO KNOWN AS	CSY 44 Walk-Through
Antigua 53	Updated	Morgan 0151
Aphrodite 101	ALSO KNOWN AS	International 101
Aquarius 23-2	Keel	Aquarius 23
Aquarius 7.0	Masthead, Outboard Rudder	Aquarius 23
Atlantic 44	ALSO KNOWN AS	Jeanneau Sun Odyssey/Sun Magic 44
Aura 10.7	ALSO KNOWN AS	Columbia 10.7
Aura 8.7	ALSO KNOWN AS	Columbia 8.7
Aura H35	ALSO KNOWN AS	Hughes 35
Aura H40	ALSO KNOWN AS	Hughes 40
Baba 40	ALSO KNOWN AS	Panda 40
Bahama 26	ALSO KNOWN AS	Islander 26
Bahama 28	ALSO KNOWN AS	Islander 28
Bahama 40	New Keel, Rudder & Deck	Islander 30-2 TM
Balboa 23	ALSO KNOWN AS	Aquarius 23
Balboa 8.2	ALSO KNOWN AS	Balboa 27
Balt Family 17	ALSO KNOWN AS	Jeanneau Sun Fast 17
Baltic 33	Sail Drive, Teak Dk Overlay, New Keel	C+C 33
Bayfield 25	ALSO KNOWN AS	Bayfield 2325
Bayfield 32	ALSO KNOWN AS	Bayfield 3032
Bayfield 32C	Tall Rig, Bow Sprit	Bayfield 32
BBM IMS 39	IM Sized	Peterson 38
Beneteau 305	More Freeboard, Mod. Stern	Beneteau 30E
Beneteau 30 ES	IOR Skirt Stern, Lead Keel, Frac Rig	Beneteau 30E
Beneteau 325	More Freeboard, Modified Stern	Beneteau 32
Beneteau Evasion 28	Pilot House	Beneteau Escapade 28
Beneteau Idylle 1150	Short Stern, Cruising	Beneteau 35 SD
Beneteau Oceanis 411	Ext. Stern, New Deck, More	Beneteau Oceanis 400
Beneteau Oceanis 300	Same Hull As	Beneteau 310

Beneteau Oceanis 351	Same Hull As	Beneteau 35s7
Bermuda 30	Modified	Herreshoff H28
Bianca 101	ALSO KNOWN AS	Aphrodite 101
Black Watch 37	Wooden Coach House	Tartan 37-1
Blazer 23	New Cabin/Deck/Rig	Sonar
Bodega 30	ALSO KNOWN AS	Farallon 29/30
Bombay 7.6	ALSO KNOWN AS	Bombardier 7.6
Borsaw 40	Slightly Modified	Owens 40
Brewer 12.8	CB, Tall Rig, Skeg, Rudder	Whitby 42
Bristol 19	ALSO KNOWN AS	Corinthian
Bristol 30	Modified House	Bristol 29
Bristol 31XL	Fin Keel, Spade Rudder	Bristol 32
Bristol 33S	Plainer	Bristol 33.3
Bristol 38.8	Slightly Modified	Little Harbor 38
Bristol 38S	Plainer	Bristol 38.8
Bristol 40	Diesel, Shower, Heavier	Bristol 39
Bristol 42	Extended Stern	Bristol 41.1
Bristol 43.3	Extended Stern	Bristol 41.1
Bristol 47.7	Extended Stern	Bristol 45.5
Buccaneer 245	Diesel Inboard	Buccaneer 240
Buccaneer 275	Diesel Inboard	Buccaneer 270
Buccaneer 277	Diesel Inboard	Buccaneer 272
Buccaneer 285	Center Cockpit	Buccaneer 275
Buccaneer 295	Slightly Modified	Chaser 29
Buccaneer 335	Slightly Modified	Chaser 33
C+C 3/4 Ton	Balsa Hull/New Deck/Interior	C+C 33
C+C 34-2	Cruising Int/Deck/Rig	C+C 34R
C+C 37-2/3	Cruising Int/Deck/Rig	C+C 37R
C+C 40	Tall Rig/ Full Keel/Bowsprit	C+C Crusader 40
C+C 41	Production	C+C Limited Ed 41
C+C Frigate 36	Centerboard, Larger Rig	C+C Invader 36
C+C LF38	Short Rig, Stern, & Keel	C+C 38-2
C+C Limited Ed 41	Narrower BWL, New Keel	C+C Custom 41 1982
Cal 29-2	Diesel	CAL 29
Cal 34-2/3	Diesel, Shower, Tall Rig	Cal 34
Cal 37	Modified	Cal 40
Cal 9.2R	Tall Rig, Deeper Lead Keel	Cal 9.2
Cal Cruising 36	Cruising	Cal 36
Cal T/2	Tall Deck House	Cal 27-1
Cambria 46/48	Extended Stern	Cambria 44
Cape Bay 31	ALSO KNOWN AS	Ericson 31 Independence
Cape Dory 22D	Diesel Inboard	Cape Dory 22



Cape Dory 26	Extended Stern, Outboard	Cape Dory 25D
Cape Dory 310	ALSO KNOWN AS	Cape Dory 30-2
Cape Dory 330	Cutter	Cape Dory 33
Cape Dory Typhoon SR	Fractional Rig	Cape Dory 22
Captiva 240	New Keel, Masthead	Rogers 24
Captiva 35	ALSO KNOWN AS	Allmand 35
Cardinal 46-2	New Interior	Cardinal 46
Carter 36	ALSO KNOWN AS	Texas One Ton
Catalina 30-3	Wide Stern	Catalina 30-1/2
Catalina 38	Modified	Yankee 38
Catalina 387	ALSO KNOWN AS	Catalina 380 and 390
Catalina XX-2/3	Widened Stern Above WL	Catalina XX
CC Capitan 26	Daysailing	CC Capri 26
Charger 23	ALSO KNOWN AS	Columbia 23T
Cheoy Lee Empire 40	ALSO KNOWN AS	Cheoy Lee Offshore 40
Cheoy Lee Sigma 36	ALSO KNOWN AS	Swan 36
Chesapeake 30	ALSO KNOWN AS	Seidelmann 30
Columbia 28-2	Tall Rig, Deep Keel	Columbia 28-1
Columbia 29-2	New Cabin	Columbia 29
Columbia 32-2	Long Stern, New Keel	Columbia 30
Columbia 33	Originally Made As	Arco 33
Columbia 34	Highly Modified	Columbia 33
Columbia 35	Same Hull As	Columbia 34-2
Columbia 39	Shortened Stern	Columbia 41
Columbia 45	External Stern, Short Rig, Center Cockpit	Columbia 43-1
Columbia Challenger	Daysailing	Columbia 24
Columbia Defender	Raised Deck	Columbia 29
Columbia Sabre	Cruising	Columbia 5.5
Columbia/Coronado 41	Extended Stern Motorsailing	Columbia 39
Compac 23-2	Bow Anchor Roller	Compac 23
Compac 25	Same Hull As	Watkins 25
Concept 40	ALSO KNOWN AS (Korean built)	Kalik 40
Concept 44	ALSO KNOWN AS (Korean built)	Kalik 44
Condor 37	UK Built	Tartan 37-2
Coronado 23	Cruising, Extended Bow	Columbia 22
Coronado 23-2	ALSO KNOWN AS	Columbia 23T
Coronado 27	Extended Stern	Columbia 26-2
Coronado 32	Extended Stern, Short Rig	Columbia 30
Coronado 35	Extended Stern, Motorsailing	Columbia 34-2
Creekmore 7M	Lengthened, Modified	Creekmore 22
Crown 31	ALSO KNOWN AS	Finngulf 31

CT 49	Extended Stern	CT 47
Delphia 24	ALSO KNOWN AS	Jeanneau Sun OD 24.2
Dehler 34	Same Hull As	DBI
Douglas 32	Reverse Transom	Douglas 31
DS 22	ALSO KNOWN AS	Vision 660
Elite 30	Ext Stern, IOR Bumped, Lighter	Elite 29
Elite 30S	Ext. Stern/New Appendages	Elite 29
Elite 364	Extended Stern	Elite 346
Endeavour 32	Short Boom	Irwin 32
Ensenada 20	Raised Deck	Balboa 20
Ensign	Daysailing, 3/4 Rig	Electra
Ericson 26-2	Very Slightly Modified	Ericson 25+
Ericson 28+	Hull is Shortened Stern	Ericson 30+
Ericson 32-200	Ext WL, New Rudder/Interior	Ericson 32-2
Ericson 34T	Trunk Cabin, Short Rig	Ericson 34
Ericson 381	Short Rig, New Interior	Ericson 38
Ericson 38-200	New Interior	Ericson 38
F36	Tall Rig, Deep Keel, New Deck	F3
Fast 303	ALSO KNOWN AS	Nicholson 303
Fast 345	ALSO KNOWN AS	Nicholson 345
Feeling 286	ALSO KNOWN AS	Elite 286
Feeling 326	ALSO KNOWN AS	Elite 326
Feeling 364	ALSO KNOWN AS	Elite 364
Feeling 364/1090	ALSO KNOWN AS	Elite 364
Feeling 446	ALSO KNOWN AS	Elite 446
Formosa 46	Extended Stern	Peterson 44
Freedom 32-2	Ext Stern, Deep Keel	Freedom 30
Frers 36	ALSO KNOWN AS	F36
Frers 38	ALSO KNOWN AS	Series 700
Fuji 45-2	Aft Cockpit, Modified Rig	Fuji 45
Gale Force 20	ALSO KNOWN AS	Wildwind 20
Goman Express 30M	Light, Hopped Up	Goman Express 30
Grampian Discovery 7.9	Raised Deck, Mast Aft, OB Rudder	Grampian 26
Hansa 33	ALSO KNOWN AS	Hans Christian 33
Heritage S27	Modified	Morgan 27
Hinckley 41	Slightly Modified	Owens 40
Hinckley Pilot 35	Enlarged	Knutson Pilot 33
Hinckley SW43	Ext Stern/Lighter/J+9	Hinckley SW42
Hinckley SW43	J+9, Lighter Hull	Hinckley SW42
Hinckley SW52	Ext Stern/Spade Rudder/Long J	Hinckley SW51
Holland 7.6	ALSO KNOWN AS	Bombardier 7.6

Horizon 26	ALSO KNOWN AS	Columbia 26T
Hotfoot 30	Shortened/Modified	Hotfoot 31
Hughes 22, 25, 29, 38	ALSO KNOWN AS	North Star 22, 25, 29, 38
Hughes 26	ALSO KNOWN AS	North Star 600
Hughes 31	Extended Stern	Northstar 1000
Hughes 35	ALSO KNOWN AS	North Star 1500
Hughes 36	ALSO KNOWN AS	Coronado 35
Hughes 38	ALSO KNOWN AS	Northstar 38
Hughes 38-2	New Interior	Hughes 38
Hughes 40	ALSO KNOWN AS	Northstar 80/20
Hullmaster 31	ALSO KNOWN AS	Douglas 31
Hunter 27-2	Inboard/More Interior	Hunter 26.5
Hunter 33.5T	Trunk Cabin	Hunter 33.5
Hunter 40	Tall Rig, Slightly Modified	Hunter 39
Hunter Legend 43	Fraction Rig/Dif Interior/AC	Hunter Passage 42
Hylas 47	ALSO KNOWN AS	Stevens 47
Impala 35	ALSO KNOWN AS	Sagitta 35
Inferno 31	ALSO KNOWN AS	Crown 31
Irwin 40 Citation	Short Rig	Irwin 39 Citation
Irwin 54	Extended Stern	Irwin 52
Islander 28-2	New Interior	Islander Bahama 28
Islander 30-1	Raised Deck	Islander 29
Islander 30-3	New Interior	Islander Bahama 30
Islander 33	Raised Deck	Islander 32-1
Islander 36-2	Tall Rig, New Interior	Islander 36
Islander 48	Same Hull As	Mariner 47
IW 31	ALSO KNOWN AS	She 31
J 110	Ext Stern, New Keel, P+1.5, MH Spin	J 35C
J 29	Lightened, Outboard, New Keel, Less FB	J 30
J 30C	New Deck/ House/ Interior	J 30
J 35	Masthead, Lightened, New Keel	J 36
J 35C	Ext Stern/ Real Keel/ Dif Deck	J 34C
J 37C	Different Interior	J 37
J 39	Ext Stern /Tall Rig /Light Interior	J 37
J 42	Ext Stern, New Keel, P+1.5, MH Spin	J 40
J 46	Extended Hull w/ New Rig	J 44
J 47	Ext Stern/Mod	J 44
J J Taylor 26	ALSO KNOWN AS	Contessa 26
Jeanneau Arcadia	ALSO KNOWN AS	Jeanneau Sun Dream/Sun

		<b>Way 28</b>
<b>Jeanneau 38 Sunshine</b>	<b>Extended Stern</b>	<b>Jeanneau 36 Sunshine</b>
<b>Jeanneau 39 Regatta</b>	<b>Long Stern, Lead Keel</b>	<b>Jeanneau 36 Sunshine</b>
<b>Jeanneau Sunkiss 47</b>	<b>Extended Stern</b>	<b>Jeanneau Sunkiss 45</b>
<b>Kirby 23</b>	<b>Same Hull As</b>	<b>Sonar 23</b>
<b>Laguna 26</b>	<b>ALSO KNOWN AS</b>	<b>Windrose 26</b>
<b>Laguna 33</b>	<b>Extended Stern</b>	<b>Laguna 30</b>
<b>Lancer 26</b>	<b>Based on</b>	<b>Endeavor 25</b>
<b>Lancer 29-3</b>	<b>Hull is Shortened Stern</b>	<b>Lancer 30-5</b>
<b>Lancer 39</b>	<b>Pilot House</b>	<b>Lancer 38</b>
<b>Lancer 44</b>	<b>Pilot House</b>	<b>Lancer 43</b>
<b>Lindenberg 30</b>	<b>Flush Deck</b>	<b>Santana Wavelength 30</b>
<b>Little Harbor 46</b>	<b>Extended Stern</b>	<b>Little Harbor 44</b>
<b>Little Harbor 53</b>	<b>Extended Stern</b>	<b>Little Harbor 50</b>
<b>Little Harbor 60</b>	<b>Extended Stern</b>	<b>Little Harbor 58</b>
<b>LM 28</b>	<b>Doghouse</b>	<b>LM 290 Mermaid</b>
<b>LM 30</b>	<b>Doghouse</b>	<b>LM 315 Mermaid</b>
<b>MacGregor 21, 22, 25</b>	<b>ALSO KNOWN AS</b>	<b>Venture 21, 22, 25</b>
<b>Magic 37</b>	<b>ALSO KNOWN AS</b>	<b>MRCB 37</b>
<b>Maple Leaf 50</b>	<b>Extended Stern</b>	<b>Maple Leaf 48</b>
<b>MarieHolm 26</b>	<b>Incr freeboard, Inboard</b>	<b>Folkboat</b>
<b>Mason 44</b>	<b>Heavier Keel, More Sail</b>	<b>Mason 43</b>
<b>Mason 54</b>	<b>New Deckhouse</b>	<b>Mason 53</b>
<b>Mason 64</b>	<b>New Deckhouse</b>	<b>Mason 63</b>
<b>Mirage 27-2</b>	<b>Reverse Transom</b>	<b>Mirage 26</b>
<b>Mirage 30SX</b>	<b>Lightened, big rig, deep keel</b>	<b>Kirby 30</b>
<b>Mirage 34</b>	<b>ALSO KNOWN AS</b>	<b>Mirage 338</b>
<b>Mirage 35</b>	<b>Reverse Transom</b>	<b>Mirage 33</b>
<b>Monson 31</b>	<b>ALSO KNOWN AS</b>	<b>Rasmus 31</b>
<b>Moore 24SC</b>	<b>Trunk Cabin</b>	<b>Moore 24</b>
<b>Morgan 24</b>	<b>ALSO KNOWN AS</b>	<b>Morgan 25</b>
<b>Morgan 250</b>	<b>ALSO KNOWN AS</b>	<b>Morgan 25</b>
<b>Morgan 27M</b>	<b>Modified Deck &amp; Mast</b>	<b>Morgan 27</b>
<b>Morgan 300</b>	<b>ALSO KNOWN AS</b>	<b>Morgan 30</b>
<b>Morgan 381</b>	<b>Same hull, slightly difft rig</b>	<b>Catalina 380/387/390</b>
<b>Morgan 44</b>	<b>Extended Stern</b>	<b>Morgan 43</b>
<b>Morgan 46-1/2/3</b>	<b>Same Hull As</b>	<b>Morgan 45-2</b>
<b>Morgan Classic 41</b>	<b>Mod Underbody/New Rig</b>	<b>Morgan 0I41</b>
<b>Morris 38</b>	<b>Ext Stern, 2' Taller Rig</b>	<b>Morris 36</b>
<b>MT 51</b>	<b>ALSO KNOWN AS</b>	<b>Skye 51</b>
<b>Mustang 22</b>	<b>ALSO KNOWN AS</b>	<b>PT 22</b>
<b>Nassau 42</b>	<b>Not As Fancy</b>	<b>Tatoosh 42</b>

Nauset 26	ALSO KNOWN AS	Parker Dawson 26
Newport 27-3	ALSO KNOWN AS	Newport 27S-2
Newport 27S	New Rudder, Coach house	Newport 27
Newport 27S-2	New Keel, Rudder, Tall Rig	Newport 27S
Newport 28-2	New Keel, Rudder	Newport 28-1
Newport 30-2	Tall Rig, Modified Deck	Newport 30-1
Newport 41-2	New Rudder	Newport 41S
Newport 41S	New Rudder, Tall Rig	Newport 41
Nonsuch 260	End Plate Keel, CF Rig	Nonsuch 26
Nonsuch 324	End Plate Keel, Large Main, CF Rig	Nonsuch 30
Nonsuch 354	End Plate Keel, Large Main, CF Rig	Nonsuch 33
Nordic 34	ALSO KNOWN AS	Islander 34-2
North American 23	ALSO KNOWN AS	Spirit 23
North American 32	ALSO KNOWN AS	Douglas 32
Northbridge Eclipse	3" More Freeboard	Southcoast 22
Northern 1/4 Ton	ALSO KNOWN AS	Mirage 24
Northstar 727	ALSO KNOWN AS	Farr 727
NY 48	Centerboard	Swan 47
Ocean 40	ALSO KNOWN AS	Kalik 40
Ocean 44	Charter Version	Kalik 44
Octavia 25	Updated	Cape Dory 25D
Octavia 26	Updated	Cape Dory 26
O'Day 31	Extended Stern, New Keel & Rudder	O'Day 30
O'Day 35	Extended Stern	O'Day 34
O'Day 39	New Interior	Jeanneau 39 Sun Fizz
O'Day 40	Extended Stern, Larger Rig	O'Day 39
Offshore 27	ALSO KNOWN AS	Cheoy Lee Newell Cadet
Olson 911S	Modified w/ Interior	Capo 30
Olympic Dolphin MK3	OB Rudder, Increased Ballast	Olympic Dolphin
Oyster 70	Extended Stern	Oyster 68
Paceship 29	Trunk Cabin	Paceship Northwind 29
Pacific Dolphin 24	ALSO KNOWN AS	Yankee Dolphin 24
Pacific Seacraft 34	ALSO KNOWN AS	Crealock 34
Parker Dawson 26	Heavier, Slightly Modified	Midship 25
Passport 41	Rev Transom, Tall Rig	Passport 40
Passport 50	Ext Stern	Passport 49
Pearson 18, 25, 27	ALSO KNOWN AS	Triton 18, 25, 27
Pearson 26 OD/W	Daysailing	Pearson 26
Pearson 32	Masthead, Squared off stern	Pearson 31
Pearson 34-2	Modified	Pearson 34
Pearson 36 Cutter	Deep Keel, Mast Moved Aft	Pearson 36S Sloop

Pearson 367	After Hull Number 51	Pearson 36 Cutter
Pearson 37-2	Modified Rig, Abnormal Interior	Pearson 36-2
Pearson 38	Rig of 36-2, Normal Interior	Pearson 37-2
Pearson 385	Center Cockpit	Pearson 386
Pearson 422	Center Cockpit	Pearson 424
Pearson Commander	Daysailing	Pearson Ariel
Pearson Lark	Raised Deck	Pearson 24
Pearson Wanderer	Centerboard	Pearson Coaster
Pilothouse 50	6 Deeper Keel	Stevens 50
Pinnacle 29	Lightened	Pinnacle 30
PJ 34	ALSO KNOWN AS	Swan 34
PJ 37	ALSO KNOWN AS	Swan 37
PJ 43	ALSO KNOWN AS	Swan 43
PJ 44	ALSO KNOWN AS	Swan 44
Precision 28	Ext. Stern, Inboard Rudder	Precision 27
PT 1/4 Ton	Increased Headroom	PT 22
Quest	Kit	Hunter
Ranger 30	Tall Rig, Deep Keel	O'Day 30
Ranger 8.5	Inboard	Choate 27
Ranger Fun 23	ALSO KNOWN AS	Jeanneau 23
Rhodes 41	Slightly Modified	Bounty 2
Robinhood 36	Updated	Cape Dory 36
Robinhood 40	Updated	Intrepid 40
Robinhood 45	Updated	Cape Dory 45
S2 11.0C	Center Cockpit, Shoal Draft	S2 11.0A
S2 8.0	ALSO KNOWN AS	S2 26
S2 9.1 SE	Tall Rig, Lightened Ends	S2 9.1
Sailcrafter 28	Kit	Columbia 28-2
Sailcrafter 36	Kit, Scimitar Keel	Columbia 36
Sailcrafter 39	Kit	Columbia 39
Sailcrafter 50	Kit	Columbia 50
Sailcrafter 56MS	Kit, shortened stern, Motorsailing	Columbia 57
Sailcrafter 57	Kit	Columbia 57
Sailmaster 26	ALSO KNOWN AS	Polaris
Sailstar Caravel	ALSO KNOWN AS	Bristol 22
Sailstar Corsair	ALSO KNOWN AS	Bristol 24
San Juan 21-1	Short Cockpit	San Juan 21-1
San Juan 33S	AKA	Eagle 33
San Juan 34	ALSO KNOWN AS	Crown 34
Santana 25-2	Lead Keel, Flush Deck	Santana 25-1
Santana 28-2	Tall Rig, Deep Keel, New Deck	Santana 28-1
Schock 23-2	Winged Keel	Santana 23

Schock 35	Redesigned	Santana 35
Scorpion 32	ALSO KNOWN AS	Ericson 32-1
Sea Nymph 1020	ALSO KNOWN AS	Farr 1020
Seafarer 30R	Tall Rig, Shortened, Incr Ballast	Seafarer 31-1
Seafarer 31-1	Modified	Tripp 30
Seasprite 27	ALSO KNOWN AS	Seasprite 28
Seidelmann 245	Cruising	Seidelmann 24
Seidelmann 30T	Increased Freeboard	Seidelmann 299
Shannon 37	Centerboard	Shannon 38
Shannon Aegean 51	Center Cockpit	Shannon 50
Sirius 22	Reverse Transom	Sirius 21
South Coast 23	ALSO KNOWN AS	Kenner Kittiwake 23
Southern 21	Tall Rig, Deep Keel, Modified	Newport 20
Spindrift 22	ALSO KNOWN AS	Spectrum 22
Starflight 38	Extended Stern	Graves 37
Starratt 45	Same Hull As	Morgan 45-1
Starwind 190	Modified Cockpit	Spindrift 19
Starwind 22	ALSO KNOWN AS	TMI 22
Sun 838	ALSO KNOWN AS	Sun 27
Tanzer 27	ALSO KNOWN AS	Paceship PY 26
Tartan 3000	Modified, Lightened	Tartan 30
Tartan 34-2	Extended Stern	Tartan 33R
Tartan 38	Keel, Tall Rig, Racing Interior	Tartan 37-2
Tartan 42	Shortened J, New Stern/Keel	Tartan 41
Tartan 44	Extended Stern	Tartan 41M
Tashiba 40	5.5 Draft	Baba 40
Tayana 37	ALSO KNOWN AS	CT 37
Tayana 37-2	New Deck & House	Tayana 37
Ticon 30	ALSO KNOWN AS	TMI 30
TMI 22	Same Hull As	Chrysler 22
TMI 26	ALSO KNOWN AS	Chrysler 26
TMI 27	ALSO KNOWN AS	Heritage Super 27
Trapper 250	Fixed Keel	Trapper 240
Trapper 400/28	Trapezoidal keel	Viking 28
Trapper 500/500	Iron Keel	C+C 27
Trapper 700	Based on	C+C 35-1
Trapper 850/31	Based on	Mistral 31
Triton 18, 21, 22	ALSO KNOWN AS	US 18, 21, 22
Triton 25, 27, 30	ALSO KNOWN AS	US 25, 27, 30
US 22	Deep Keel	Buccaneer 220
US 25	Deep Keel	Buccaneer 250
US 30	ALSO KNOWN AS	Buccaneer 295

US 33	Modified Keel	Buccaneer 335
US 35	ALSO KNOWN AS	Cooper 353
US 42	ALSO KNOWN AS	Cooper 416
Vagabond 42	ALSO KNOWN AS	Westwind 42
Valiant 37	ALSO KNOWN AS	Esprit 37
Vancouver 42	ALSO KNOWN AS	Tayana V42
Venture 222	Pop Top	Venture 22
Venture 224	Pop Top	Venture 24
Viking 34	Tall Rig, Deep Keel	Viking 33
Westerly Berwick	Shoal Draft	Westerly Longbow
Westerly Pentland	Shoal Draft Center Cockpit	Westerly Longbow
Westerly Renown	Center Cockpit	Westerly Longbow
Westerly Seahawk 34	Center Cockpit	Westerly Falcon 34
Westsail 43	ALSO KNOWN AS	Westsail 42
Windrose 25	8" longer, larger cabin	Windrose 24
Windship 63	Centerboard modified	Wellington 63
Winga 862	Winged Keel	Winga 860
World Cruising 36	ALSO KNOWN AS	Ericson 36C
X, 1 Ton	Full Race	X 402
X 3/4 Ton	Full Race	X 102
X 412-2	New Keel	X 412
Yachtcraft 32	Kit	Islander 32-2
Yachtcraft 34	Kit	Islander 34
Yachtcraft 37	Kit, 5.67 Draft	Islander 37
Yachtcraft 37 MS	KIT	Islander 37 MS
Yachtcraft 44	KIT	Islander 44
Yachtcraft 55	KIT	Islander 55
York Harbor 36	Tall Rig, Cored Hull, Deep Keel	Mariner 36
York Harbor 38	Tall Rig, Cored Hull, Deep Keel	Mariner 38



**Section 2. National Reference Ratings**

## **National Reference Ratings**

PHRF racing participation is declining across the country. While there are many factors that have caused this decrease in participation, one of the recurring complaints voiced by racers and race organizers alike is that PHRF handicaps are not always fair. The realities are that PHRF fleets suffer from two major disadvantages. (1) Most are constrained to one time-on-distance rating to cover all situations and (2) there is little crosstalk and observed performance information sharing available to the fleets. We believe the National Reference Ratings (NRR) concept described below can be a step in the right direction to resolve these problems and US Offshore is ready to provide the leadership and resources to make it happen.

Our approach is to create “National Reference Ratings” (NRR). There are two key components behind these NRRs. First, there must be a definition of what boat configuration the rating is based upon. Once defined, and only then, can one establish the base rating for boats. We plan to do this first for Standard Production classes and once those are completed move to One-Off designs. To ensure alignment with the existing PHRF ratings, NRR will set the J-35 time-on-distance rating to 72 sec/mile. NRR will be based on medium wind strengths. The applicability to light or heavy air conditions will be discussed later in this document.

US Offshore will publish these National Reference Ratings so they are available to the PHRF fleets. The NRR rating process will start with the popular classes. The US Offshore team, working in concert with a National Panel of Senior Handicappers selected from the major fleets across the US, will produce these NRR ratings. Currently, this panel is looking at the first block of 150 popular Standard Production classes. This is just the tip of the iceberg as there are several thousand designs racing in PHRF. Our Red, White and Blue PHRF Handicap book contains ratings for some 5,000 production classes.

This National Panel of Senior Handicappers has over 150 years of combined experience racing, evaluating, and creating PHRF ratings. The panel is comprised of:

Bruce Bingman

Dan Nowlan

Paul Ansfield

John Collins

June Hendricks

Jim Tischner

NRR will actually have two ratings: one for windward-leeward courses, the other will be for random leg courses. We believe that the introduction of a second rating tailored to distance courses will improve rating accuracy without introducing unpalatable complexity. The reasoning is simple: when only one rating is available, it gravitates towards a rating representing the types

of events a boat usually sails. As we know, there are many boats that do not perform when sailing windward-leeward courses, but sail well on a reach. Depending on the course preferences of boat owners, ratings for the same design can be markedly different from fleet to fleet. With two ratings, a poor windward-leeward boat would not carry the rating assessment for exceptional reaching performance. The net effect of introducing this second, distance rating should result in fairer racing for all.

NRR will also encourage the switch from Time on Distance (ToD) to Time on Time (ToT). This departure from the traditional PHRF format will increase accuracy and fairness. When racing under ToD, the ratings stay the same as wind speed increases or decreases. Hence, when the wind drops, the fast boats always enjoy a rating advantage and conversely small boats enjoy a rating advantage when the wind builds.

It has been shown through analysis that a medium air strength derived ToT rating will produce accurate club level racing scoring in light air. That fact is what drives us to promote ToT NRR as the base format.

Another benefit to ToT scoring is the reduction of work for a race committee. There is no need to measure course distances to determine the corrected times. This further increases the accuracy of the ratings since there is no error when setting a course distance plus it makes putting on races easier.

NRR will also review common changes from the base-rating configuration, e.g. a boat sailing with a 100% headsail when 155% is the standard for that boat's class or when a change is made to a longer spinnaker pole or sprit. Currently adjustments have the same value in seconds per mile for displacement boats and planing boats. Studies done by US Offshore for PHRF fleets have shown this not accurate. Revised NRR "Standard Adjustments" will be derived, published and applied to NRR certificates.

Heavy air racing has its own set of issues. A medium air based NRR rating will fail for planing boats if applied to heavy air racing. Therefore, we will eventually develop a heavy air offset table. This is not planned for the initial phase of this project.

### **Current Status and Expectations**

Bruce Bingman and his panel have completed the NRR windward-leeward ratings for about 150 of the most popular boats. This is our initial report of the W/L NRR handicaps for medium air.

The distance component and configuration summary are underway and will be reported as soon as they are available.

<b>Class</b>	<b>Recommended NRR</b>
J-35	72
CAL 20	273
CAL 25	225
Ranger 23 ( TM)	222
Pearson 26	213
Lindenberg 22	210
Catalina 27 (ob)	210
Saber 28-1	207
Ranger 26	198
CAL 27-1 (OB)	198
Ranger 29	189
Tartan 34 (S&S)	180
CAL 30-2	180
Tartan 30	177
Kirby 25	177
J-22 ODR	177
Pearson 30	174
Catalina 30 (TM/BS)	174
C&C 30-1	174
S2 7.9 (IB)	171
J-24 ODR	171
SR-21	168
S2 7.9 (OB)	168
Alerion EX 28	168
Saber 34 (CB)	165
Shock WaveL 24	162
Ranger 33	156
Colgate 26	156
Pearson 10M	150
CAL 36	150
C&C 34	144
J-30	141
Soverel 27 (IB)	138
Pearson Flyer	135
Laser 28	135
B-25	135
S2 9.1	132
C&C 36-1	132

C&C 35-1	132
Tartan 10/LS 10	126
Saber 38-2 (CB)	126
Melges 20	120
J-80 ODR	120
C&C 35-3 (DK)	120
Tripp 26	117
S2 10.3	117
J-70	117
Catalina 38	117
CAL 40	117
Ultimate 24	111
J-29 (OB-MH)	111
BENE OCN 411	111
New York 36	108
C&C 99 (std keel)	108
Saber 42 (CB)	105
JONMERI 40	105
VIPER 640 ODR (SB)	102
Olson 30 (OB)	102
BENE OCN 440	102
CARRERA 290	99
BENE FC 10	99
BALTIC 38 DP	99
Baltic 38	99
MELGES 24 ODR	96
J-92S	96
J-100/small asym	96
Hobie 33	96
EVELYN 32-2	96
CS 40	96
SWAN 391	90
SOVEREL 33-2	90
OUTBOUND 44	90
NAVY 44	90
Melges 24	90
J-105 ODR	90
HOBIE 33 ODR	90
FRERS 36	90
FARR-DKRSN 37	90
C&C 40-2 TM/DK	87

QUEST 33	84
QUEST 30	84
J-36	84
J-33	84
ISLANDER P40	84
BENE 36.7 SD	84
ANTRIM 27 UCAS (SB)	84
TRIPP 33	81
NAVY 44-2	81
J-105 PHRF	81
J-100 pole/155	81
C&C 110	81
BENE 42 TM	81
BENE 10R	81
SABRE 426 WK	78
BENE 36.7	78
SWAN 442	75
SABRE 426	75
SABRE 40-2	75
DEHLER 39	75
BENE 50 (5.9' draft)	75
J-35	72
THOMAS 35	72
SR-33 (Henderson)	72
SOVEREL 39	72
SCHOCK 35	72
JEANNEAU 3200 SUNFAST	72
FRERS 41	72
ESSE 850 UCAS (SB)	72
C&C 41	72
BENE 1 TON EVOL MOD	72
J-109 PHRF	69
C&C 44 CB	69
B-32 (ob)	69
VIPER 830	66
COL 30-2 SPORT	66
C&C 37/40 R	66
C&C 121	66
C&C 115	66
BENE 49 (7' draft)	66
IMX-38	63

TAYLOR 40-2 MOD OSOP	60
SABRE 452 WK	54
FARR/MUMM 30	54
J-120 AL	51
J-120 CF	48
FLYING TIGER 10M	48
BENE 40.7 RAC	48
MUMM 36 UC	45
HENDERSON 30 UCAS (SB)	45
J-46	39
J-111	39
EVELYN 42	39
BENE 44.7	39
J-122	33
FRERS 45	33
J-44	30
FARR 395	30
MELGES 32 ODR (SB)	24
BENE 47.7 TM	18
KING SUMMIT 40 UC	9
FARR 36 (OD)	9
TRIPP 41 MH MOD	6
J-125	-3
FARR 40 ODR	-6
SWAN 42 NYYC UCAS	-12
FARR 400 UCAS	-18
J-145	-21
1 D48	-33

**Section 3.**

**PHRF Handicaps Data**

**Monohull**

**Multihull**



## PHRF<sup>®</sup> Base Handicaps

In this section are tables giving the base handicaps for stock series produced models as reported by Member Fleets.

The list contains all handicaps reported before early February of 2014.

The tables are in alphabetic sequence by model name. Under each model name, the PHRF<sup>®</sup> fleet reporting a handicap for that model appears first, the seconds-per-mile handicap appears second, the “experience” code third, the year of the latest update to the handicap information fourth, followed by the total number of boats issued that handicap during the past season. In cases where no year is shown, the handicap was last adjusted prior to 1988.

“Experience” codes reflect each Fleet’s observational experience in handicapping each model. The codes can be understood as:

A = initial handicap

B = up to one season of experience

C = beyond one season of experience

Data from previous years will continue to be printed.

In reporting the base handicaps, Fleets were instructed to conform their handicaps to the following standard assumptions:

1. the spinnaker pole length is equal to ‘J’,
2. the spinnaker maximum width is 180% of ‘J’,
3. the spinnaker maximum length is equal to .95 of the jibstay length, i.e.,  $.95 \times$  ,
4. the genoa LP is between 150% and 155% of ‘J’,
5. the boat is in racing condition,
6. the boat has either a folding or feathering propeller, a two bladed solid propeller in aperture, or a retractable outboard motor,
7. the hull and appendages are unmodified, and
8. full length battens are usually allowed without penalty.

NOTE: See the “Standard Dimensions” section of the PHRF® Handbook for the definitions of the previous abbreviations.

The “Fleet Profiles” section of the **US SAILING PHRF® Fleet Handbook** should be referenced for descriptions of the racing conditions of the areas reporting handicaps.

### **USE OF PHRF® HANDICAPS**

PHRF® handicaps are used in the following manner:

1. Time on distance scoring
  - A) The seconds-per-mile handicap is multiplied by the course distance, producing the yacht’s time allowance for the race,
  - B) The time allowance for the yacht is subtracted from the yacht’s finish time, yielding the corrected time that determines the final ranking for scoring purposes.
  
2. Time on time scoring:
  - A) A time correction factor (TCF) is generated. A TCF that works over a variety of conditions is:  
  
\*\*If the course is purely windward-leeward, then a denominator of  $650 + \text{PHRF}^\circledast$  works better. If the race is a downwind port-port race, a denominator of  $450 + \text{PHRF}^\circledast$  works well.
  - B) The TCF multiplies the elapsed time to yield the corrected time:

$$\text{CT} = \text{TCF} \times \text{ET}$$

Time on time scoring sometimes works better when the conditions differ from ‘normal.’

## **ABBREVIATIONS**

<b>AC</b>	Aft Cockpit	<b>KTH, KET</b>	Ketch
<b>BS</b>	Bowsprit	<b>LK</b>	Lead Keel
<b>CAT</b>	Cat Rig	<b>MH</b>	Mast Head Rig
<b>CB</b>	Centerboard	<b>MS</b>	Motor Sailor
<b>CC</b>	Center Cockpit	<b>PH</b>	Pilot House
<b>CF</b>	Carbon Fiber	<b>SCH</b>	Schooner
<b>CUT, CTR</b>	Cutter	<b>SD</b>	Shoal Draft
<b>CWS</b>	Central Winch System	<b>SK</b>	Swing Keel
<b>DB</b>	Dagger Board	<b>SLP</b>	Sloop
<b>DK</b>	Deep Keel	<b>SM</b>	Short Mast
<b>FG</b>	Fiberglass	<b>T</b>	Ton
<b>FK</b>	Fin Keel	<b>TK</b>	Twin Keel
<b>FR</b>	Fractional Rig	<b>TM</b>	Tall Mast
<b>IK</b>	Iron Keel	<b>WD</b>	Wood
<b>IB</b>	Inboard	<b>WK</b>	Wing Keel
<b>K</b>	Keel	<b>VTM</b>	Very Tall Mast

ODR: Certain models are now identified as One-Design Rig (ODR) classes. ODR classes are marketed with standard rigs which may in some respect not conform to the base handicap assumptions, e.g., an over length spinnaker pole is standard on the J-30. ODR boats are raced in their one-design class rule configuration, are handicapped as though they meet the base handicap assumptions and are not further penalized for over length poles, etc. provided they essentially conform to their one-design class rig dimensions.

Caution should be used in looking at non-ODR handicaps for these boats. Some fleets report the ODR handicap as their base boat.

Some fleets have reported handicaps on open, one-design boats such as Soling, Etchells 22, and Star. These handicaps should be used with caution as these boats do not meet many of the normal PHRF guidelines. For example, hiking may or may not be allowed. Trapezes are not allowed when racing within PHRF<sup>®</sup> venues; therefore, they should not be reflected in a PHRF<sup>®</sup> handicap.

## **HANDICAPS FOR 'GENERIC' IOR RATINGS**

PHRF handicaps corresponding to the IOR rating limits of the various IOR Level rating classes are given on page 73. Ratings are listed for half ton, three-quarter ton; one ton and maxi boats.

## **COURSE LENGTHS**

Most fleets report their handicaps based on Nautical Miles. Those fleets which base their handicaps on Statute Miles or variants of Nautical Miles are listed below.

Chicago M.O.R.F. – Statute Miles + 10%

Lake Lanier – Statute Miles

Bellport Bay Y.C. – Statute Miles

## **AREA DIFFERENCES**

Caution should be used when comparing one fleet's handicaps with those of another fleet's. Some fleets seem to have a slight bias built in. For instance, the YRA of Long Island Sound, Narragansett Bay, and some of Chesapeake Bay's handicaps seem to be a little higher than the average while those of the Northwest and BC Sailing are ten percent higher, in general, than the average. Nova Scotia handicaps tend to be lower than average. These generalizations, however, are not always true.

## **GOLF HANDICAPS**

Some fleets have found it useful to adjust handicaps on race by race, based on performance in the last race. This is done by adjusting a handicap by a small percentage of the seconds per mile that the boat in question finished from a reference boat. A 10% of the seconds per mile difference is frequently used as is the third place boat as the reference boat. If the seconds per mile exceeds some number, say 40 seconds per mile, no adjustment is made.

## **DROP KEELS**

An "at" sign {@} preceding the model name indicates that this model has more than 10% of its displacement in a movable appendage capable of being raised or lowered. Some fleets require that this appendage be pinned to preclude vertical movement while racing.

## **MULTIHULLS**

Reported handicaps of multihulls are listed at the back of the book of handicaps.