



Lake Tahoe PHRF Frequently Asked Questions

What is PHRF?

Performance Handicap Racing Formula (PHRF) is a commonly used handicapping system for the sport of sailboat racing. Its purpose is to provide a means for unlike boats to compete equitably. Thus, the Tahoe Yacht Club uses PHRF for all its racing except one-design racing of identical boats such as Lasers, Melges 24s, and Corsair 24s.

To implement PHRF racing at Lake Tahoe, the Tahoe Yacht Club board of directors established a standing PHRF committee to implement the system at Lake Tahoe. This committee acts in accordance with its bylaws, which are published on the Tahoe Yacht Club Web Site (www.tahoeyc.com/phrf-bylaws). These bylaws comply with the prescriptions of US Sailing's USPHRF committee (www.ussailing.org/racing/offshore-big-boats/phrf), US Sailing being the governing body in the US for the sport of sailing. The USPHRF committee provides instructions and guidelines on how to manage a PHRF committee in a geographic area and consults with local PHRF committees such as the Lake Tahoe PHRF committee. For example, the Lake Tahoe committee has from time to time consulted with USPHRF on boat handicaps, boat measurements, and other race-related matters.

How does PHRF Work?

For each boat type, the Tahoe PHRF committee establishes and publishes a numerical PHRF rating. When a race committee scores a boat, it multiplies the boat's *actual time* to finish by the boat's PHRF-based conversion factor. The result is the boat's *corrected time*, which is used in scoring that boat against competing boats. The conversion formula is described in detail below under "What is TOT?" The Tahoe Yacht Club implements the so called time-on-time (TOT) method of PHRF handicapping, which weighs the actual time of each boat as well as weather conditions in calculating *corrected time*.

What are the PHRF ratings for Lake Tahoe?

The PHRF handicaps for Lake Tahoe are published on-line on the Tahoe Yacht Club Web site: (www.tahoeyc.com/phrf-chart-for-tahoe). These are updated from time to time, especially as new boats begin sailing in the TYC's racing program.

Who sets PHRF ratings?

The Lake Tahoe PHRF Committee consists of a chair plus two to five committee members. The chair is appointed by the board of the Tahoe Yacht Club, and the chairmanship renews automatically each year until changed by the then current board. The chair of the PHRF committee appoints each committee member, and these memberships renew automatically until changed by the PHRF chair. The PHRF chair and committee members are expected to interact with the national USPHRF chair and members in order to obtain current data and procedures for PHRF. Also, the Lake Tahoe PHRF chair is expected to attend the annual USPHRF meeting and represent the local, Lake Tahoe fleet.

What criteria are used for setting PHRF ratings?

The PHRF handicap for each boat type is based on these and other factors:

- (1) *Manufacturer's Recommendation*—The manufacturer, when the boat becomes available on the market, typically recommends a PHRF rating based on the manufacturer's expert opinion as to how the boat compares with existing, PHRF-rated boats. The manufacturer usually considers boat weight, keel weight, rudder size, and sail plan, as well as observed speed in various wind and wave conditions.
- (2) *Southern California/San Diego Rating*—For a boat that is new to racing in Lake Tahoe, the Lake Tahoe PHRF Committee, as a starting point, often assigns the PHRF rating that is used for this boat type in Southern California and San Diego. This is because Southern California/San Diego wind conditions are similar to those of Lake Tahoe, while the conditions in San Francisco Bay for example are windier on average and unlike what exists at Lake Tahoe. Also the Southern California/San Diego PHRF committee rates a large fleet of racing boats of differing types and typically observes several boats of any given boat type.
- (3) *Venues with Similar Boats*—The Lake Tahoe PHRF committee frequently looks at ratings in venues other than Southern California/San Diego, as when a venue has a concentration of a particular boat type. For example, Melges 24, J 70, and Antrim 27 are sports boats of similar design, so the committee might look at the *relative* ratings for these boats in venues that have conditions similar to those of Lake Tahoe.
- (4) *Local Observation*—Regardless of how a boat performs in other venues, local PHRF committees throughout the US continually observe how it performs against other boats in their local fleets. Thus, the Lake Tahoe PHRF committee maintains historical records of regatta results and often uses these when considering rating changes.
- (5) *Not Crew and Condition*—PHRF committees always attempt to rate a boat, not its crew or its condition. Thus, a committee will base its rating on a boat having a competent crew, faired bottom, crisp sails—a race-ready boat.
- (6) *Wind and Wave Conditions*—A local PHRF committee might find that wind and wave conditions in its locale have a decided effect on how boats compare with one another. For example, in very light and dying conditions at Lake Tahoe, a J 24 may need more seconds per mile handicap than in San Francisco Bay. This is one reason why the Tahoe Yacht Club's standing PHRF committee bases its ratings on unique, Lake Tahoe conditions.
- (7) *Boat Modifications*—Whenever a boat is modified by its owner, there is likelihood that the PHRF rating will change accordingly. For example, if a J 105 carries an oversize spinnaker, this should result in a ratings change for that particular boat. For this reason, when an owner requests a rating from the Lake Tahoe PHRF Committee, the request must include information on any changes to the boat's weight, equipment, rigging, and so forth—any change that might affect boat speed. This requirement for owners to specify modifications is in accordance with guidelines published by the USPHRF committee and by the Tahoe PHRF Committee bylaws (www.tahoeyc.com/phrf-bylaws). Boats with non-standard configurations are difficult to rate, and those ratings may be adjusted multiple times based on observations of performance in different conditions against different competitors. If a boat has a rating for an oversize sail or other non-standard feature, that boat must use the modified rating even though, in a given race, the crew has made no use of the special feature. For that boat to obtain a standard rating, the owner must declare that the special sail or equipment is no longer aboard the boat.
- (8) *Course Selection*—PHRF ratings are normally based on the assumption that a race will have both windward-leeward and reaching legs. For this reason, TYC race committees favor mixed courses for PHRF-rated boats

What is a base rating?

The Tahoe PHRF committee has established base ratings for Moore 24, Santa Cruz 27, Melges 24, J 24 and certain other boat types. These boats have a long history of racing at Lake Tahoe against one another so there is good evidence that their current ratings are fair and correct for well-prepared and well-sailed boats. Should an owner request a rating for a modified boat of these types, the Tahoe PHRF committee would start with the base rating for the boat and make an adjustment based only on the specific modifications.

What is a provisional rating?

When the Lake Tahoe PHRF committee provides a rating for a new or modified boat, it usually assigns a “provisional rating.” Thereafter, the boat may sail under its provisional rating until the committee notifies the owner and publishes a “designated base” rating. Normally, the provisional rating remains in place for the duration of a series in which a boat is entered.

How can a PHRF rating be established or changed?

At any time, the owner of a boat who wishes to compete under PHRF in the Tahoe Yacht Club racing program may request an initial PHRF certificate or a revised PHRF certificate by submitting a request to the chair of the Lake Tahoe PHRF committee. In addition, the PHRF committee itself may at any time establish or change a rating. The procedure to request a change is via email as follows:

- (1) The requester submits a Request for Rating Review—available at the Tahoe Yacht Club Web site, www.tahoeyc.com/PHRFratingForm to the chair of the Lake Tahoe PHRF Committee, whose contact information is on the form.
- (2) The chair of the PHRF committee convenes the other members to evaluate the request. This usually takes more than one week, so the requestor should submit the petition well in advance of any regatta date or other deadline. If the petition deals with a boat that is modified or otherwise non-standard, then the time for response may be longer.
- (3) The committee considers the request and may ask for additional information from the petitioner. This process is intended to be fair and impartial and may include the finding of facts and the testimony of the requester and other affected parties. In the past, due diligence for non-standard boats has entailed inspecting boats, measuring boat parts, reviewing regatta results, consulting with boat manufacturers, consulting with USPHRF experts, and measuring the actual speed of boats in regattas.
- (4) The fee for obtaining a Lake Tahoe PHRF certificate is \$5 per year and is paid when registering for any Tahoe Yacht Club regatta.

What is a PHRF Certificate?

Each year, the PHRF committee creates PHRF certificates for each participant who has paid the \$5 PHRF fee. These are posted on the Tahoe Yacht Club Web site: www.tahoeyc.com/PHRFCertificates. The information in these certificates—boat type, displacement, length, beam, sail number, owner, PHRF handicap, *etc.*—is used in scoring races. Thus, participants should check their on-line certificates for accuracy. Participants may print their certificates as needed.

What Is TOT?

In recent years, PHRF committees in the US—including the Lake Tahoe PHRF committee—have adopted the Time-on-Time PHRF method (TOT). Under TOT, the time allowance for a given race depends on the elapsed time of the race. The reasoning is that smaller boats are at a disadvantage if the race is a slow race. Many PHRF fleets have adopted TOT scoring and find it helpful when there is a large handicap spread in a class, *i.e.* very fast and very slow boats competing against one another.

All TYC handicap races are scored using the Tahoe PHRF Handicap System with Time-on-Time scoring as described by US Sailing: www.ussailing.org/racing/offshore-big-boats/phrf/time-on-time-scoring

Time Correction Factor (TCF) = $A / (B + \text{PHRF})$

Where A is 650

Where B is assigned by the race committee:

B = 480 for heavy air, 550 for average conditions, 600 for very light air

A boat's *corrected time* for a race is equal to its *actual time* in seconds times the TCF as computed above.

Note that the race committee has complete discretion as to which B factor should be used.

Are PHRF ratings fair?

The singular goal of the Lake Tahoe PHRF committee is to make races fair and competitive. This means rewarding well-configured and well-sailed boats with victories. To accomplish this—as is discussed above—the committee examines a wide variety of factors in setting any rating, and it establishes a well-considered rating that is the consensus of the committee and, in most cases, the unanimous consensus.

Whenever the committee establishes a new rating or changes a rating, it creates an internal document, the Lake Tahoe PHRF Rating Note, which summarizes the deliberations of the committee in establishing that rating. If requested, the PHRF chair will share this document with the petitioner. Thus the committee's procedures are to provide transparency as well as fairness.