

Article 2.1

Formula based handicap systems

- At national and international levels of racing, handicap formulas have more than 50 years of history. Handicapping at this level is regarded by many as something of a dark art. What appears to be a scientific approach is undoubtedly combined with an element of judgement, and the legendary secrecy (of e.g. RORC's IRC) keeps users in the 'dark'.
- The basic idea is that a handicap formula is a function of various measured characteristics of a boat. The simplest form of such a function is linear, i.e. the handicap number, Y , is given by $Y = a_0 + a_1X_1 + a_2X_2 + \dots$, where the X_i are boat measurements and the a_i have to be estimated. Such a formula might be extended by use of multiplicative factors that represent other features of the boat that might be more qualitative than quantitative.
- A formula that is easy to use (particularly at club level) needs to only use data that boat owners have readily to hand. Usually this means the data given in the boat's 'papers' - the standard description of the boat. These standard variables are described and discussed and illustrated in Article 2.2.
- Attempts have been made by various people working in different parts of the world to come up with workable algorithmic descriptions of handicap numbers. One of the most useful pieces of work was done by T Schell, a US scientist and sailor, and his university colleagues in California. He based his linear model on 500 boats given a PHRF rating (which is based on performance). He recognised that there were aspects that could be improved upon but he did no more work on the formula post 1996. The company Byron Software has used the Schell formula as the basis for its business of providing a calculated Portsmouth Number for customers completing a boat owner application form.
- My work has been based on the premise of providing clubs with a formula that they can easily use themselves based on simple and to hand data.