

## Introduction

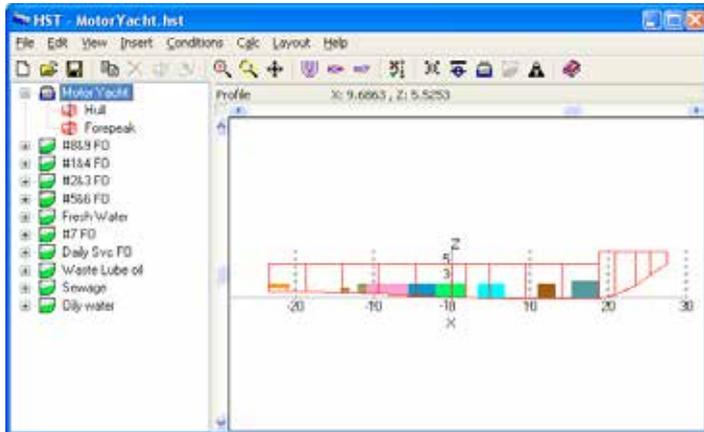
Engineers at the Wolfson Unit have written, and maintain, an extensive range of computer software for their specialised subject, Naval Architecture. The guiding principle behind the development of the programs is that they should enable a high level of accuracy.

Originally conceived for in-house use, the programs have undergone extensive development to facilitate their use by other naval architects working in a variety of fields, and over 350 organisations around the world now operate Wolfson Unit software.

For those individuals or organisations for whom purchase of the software is not warranted, any of the programs may be used via the Wolfson Unit's bureau service. This arrangement offers the advantage that the calculations will be carried out by an engineer fully conversant with all aspects of the programs and the implications of the results.

## STABILITY BOOKLETS AND INCLINING EXPERIMENTS

Stability investigations, and preparation of stability information booklets for national authority approval, are tasks with which the Unit has considerable experience. Engineers are available to conducting inclining experiments at short notice, and supply stability booklets to the approval of the appropriate authority. Costs depend on the complexity of the vessel.



Stress analysis of a 64m aluminium ketch

## POWERING PREDICTION AND PROPELLER SIZING

The Unit's various power prediction, propulsive coefficient, and propeller design programs are frequently used to provide information for new designs.

To support computer powering predictions, the Wolfson Unit has a wealth of towing tank data which may be used to provide further predictions for vessels similar in form to models tested previously.

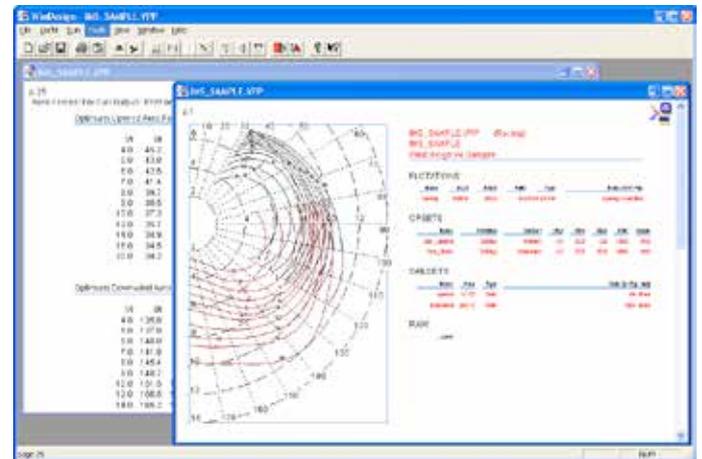
Whilst such predictions are no substitute for towing tank tests on the proposed vessel, they can provide valuable information at an early stage of the design, or for a small craft being built on a minimum budget. A fixed price quotation will be provided on request.

## SAILING YACHT PERFORMANCE PREDICTION

The WinDesign VPP is used by leading designers and by the Wolfson Unit for the analysis of towing tank and wind tunnel tests on conventional sailing vessels. This software package is also available through our bureau service to provide performance predictions for any sailing vessel.

This type of study is best suited to the preliminary design stage, where various options may be evaluated quickly and easily. Alternatively it may be used to assess the effect of modifications to an existing vessel.

Some forms of sailing craft can be evaluated using programs that are available only via the bureau service, WinCat for catamarans and WinGold for sailing dinghies and light keel boats.



Polar plot of sailing yacht performance in WinDesign

## SHIP MOTIONS

Using the Wolfson Unit's own software, developed by the University for the MOD, computer predictions can be provided for the motions at specified locations on the ship, effects of motions on shipboard personnel, and maximum sustained speed.

The calculations may be carried out for any speed, heading and seastate, and can include the effects of bilge keels, skegs, rudders and brackets. Active roll and yaw suppression by rudders and fin stabilisers can be modelled, as can passive roll suppression by stabilising tanks.

The programs are particularly useful for assessing parametric variations or alternative designs, and provide a wealth of information on crew performance and passenger sea sickness incidence.