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| Design | Maxsurf: | 3D hull modelling. |
| Analysis | Hydromax: | Intact and damaged hydrostatics and stability. |
| | Seakeeper: | Seakeeping performance prediction. |
| | Multiframe: | Structural analysis and design. |
| Construction | Workshop: | Construction detailing & plate development. |
| Output | Hydrolink: | Industry standard data exchange. |
| Performance Prediction | Hullspeed: | Resistance & power prediction. |
| | Span: | Sailing yacht performance prediction. |

The Maxsurf range is an integrated suite of software for the Design, Analysis & Construction of all types of marine vessels and offshore structures

Maxsurf provides naval architects, offshore engineers and shipbuilders with a complete range of software tools for all phases of the vessel design, analysis and construction process. All modules in the range operate from a [single 3D surface model](#) which allows design changes to flow through automatically and facilitates smooth communication and coordination between different design activities.

All Maxsurf modules share a consistent Microsoft Windows [graphical interface](#) which reduces training time, greatly increases ease of use, and helps designers and builders visualise complex configurations.

Maxsurf is based on [industry standards](#) like NURB surface modelling, DXF and IGES data exchange and smooth data transfer with Rhino, AutoCAD, ShipConstructor, SolidWorks and Microsoft Office programs.

KEY ADVANTAGES

The Maxsurf suite offers some key advantages over alternative software. Some of these include:

SINGLE 3D HULL MODEL

All programs in the Maxsurf suite work from a single design file, streamlining the design process by removing the need to create geometry files in different formats for downstream analysis programs.

TRUE WINDOWS INTERFACE

All modules in the Maxsurf range were designed from the start to operate with a Graphical User Interface, and the result is a consistent design that is easy to learn and use across all design & analysis modules.

HIGH QUALITY SURFACING

Maxsurf is optimised to help naval architects create high quality hull surfaces which are fair and can be used for all other analysis and CAD/CAM functions.

COMPREHENSIVE ANALYSIS

The Maxsurf suite includes intact and damage stability, longitudinal strength, structural analysis and design, resistance prediction, wake calculation, motions prediction, and a sailing VPP.

DYNAMIC TRIMMING

Surface trimming in Maxsurf is a simple point and click process. Most importantly, Maxsurf's trimming is fully dynamic, allowing you to modify trimmed surfaces and have the trimmed portions automatically update.

INTEROP WITH RHINO & OTHER SYSTEMS

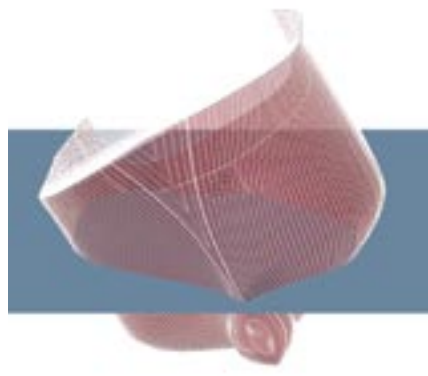
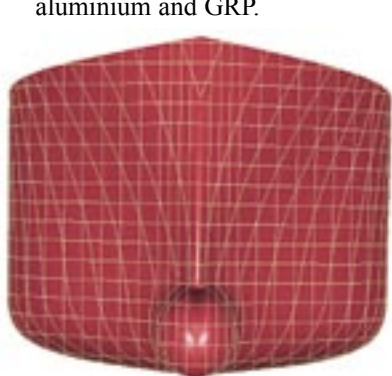
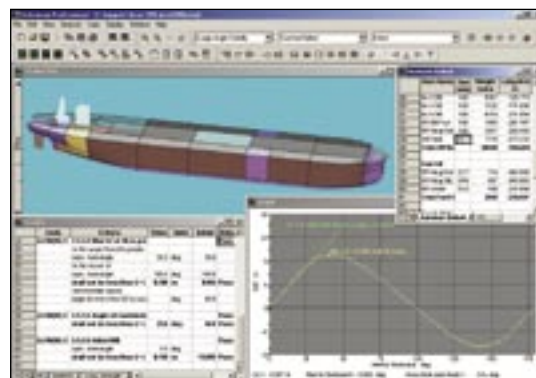
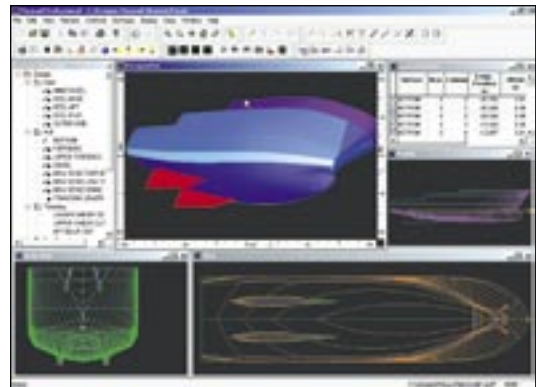
Maxsurf reads and write Rhino files and also features interchange with ShipConstructor, AutoCAD, SolidWorks, ShipFlow and other CAD/CAE/CAM systems.

CAPABILITIES

Maxsurf, the key program in the range, handles the creation of the complex 3D surfaces that make up the exterior of a vessel's hull. Designing with Maxsurf is a dynamic process, with tools that allow a designer to rapidly create fair, accurate hull shapes using a combination of automatic and interactive manipulation.

The remainder of the Maxsurf suite complements the initial hull design software with a sophisticated range of analysis programs to verify the stability, strength, performance and motions of the design. These programs work directly on the surface model created by Maxsurf, eliminating errors that commonly result from conversion of hull data between different formats.

Also available is a powerful structural module, Workshop, that performs complex tasks, such as plate development and stiffener path generation, that require detailed knowledge of the 3D surface. Part geometry is created in 3D and 2D and can then be exported to detailing and production systems, including AutoCAD and ShipConstructor. Workshop has been successfully applied to the construction of hundreds of vessels in steel, aluminium and GRP.



MAXSURF

3D hull modelling

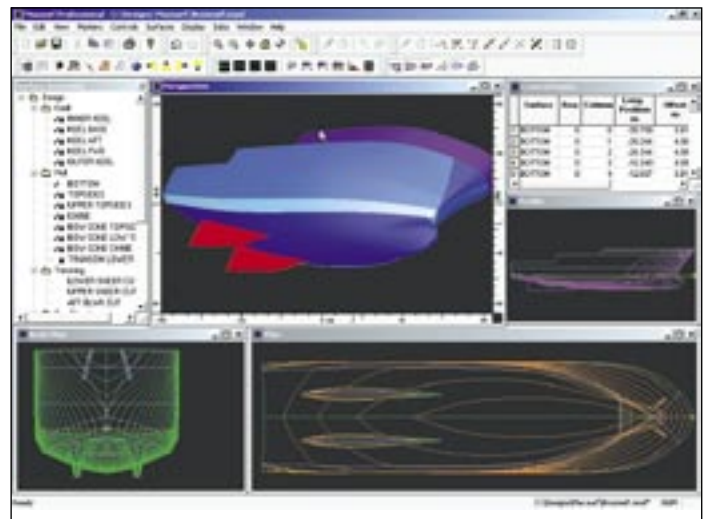
Maxsurf provides fast, flexible and intuitive modelling of all types of hulls, superstructures and appendages. An unlimited number of trimmed NURB surfaces can be used to model any vessel from yachts to workboats to the largest ships.

The core of the Maxsurf range, the Maxsurf design module provides naval architects with the design tools necessary to create optimised hull forms quickly, accurately and with limited training time. Any number of NURB surfaces can be joined, trimmed and manipulated to create a complete model ready for hydrostatic and performance analysis or construction detailing.

A range of commands provide direct interactive manipulation of the surface shape by mouse or keyboard. Control points can be dragged with the mouse, adjusted numerically, or manipulated with a range of fairing commands. Maxsurf also provides capabilities to automatically transform hull shapes to match desired dimensions and hydrostatic properties.

Fair and accurate surfaces are critical for optimal vessel performance and ease of construction. Maxsurf provides a comprehensive range of tools for evaluating curvature of the entire surface, as well as curvature along a particular surface contour such as a waterline or diagonal. Curvature displays are automatically and interactively updated as you modify the surface.

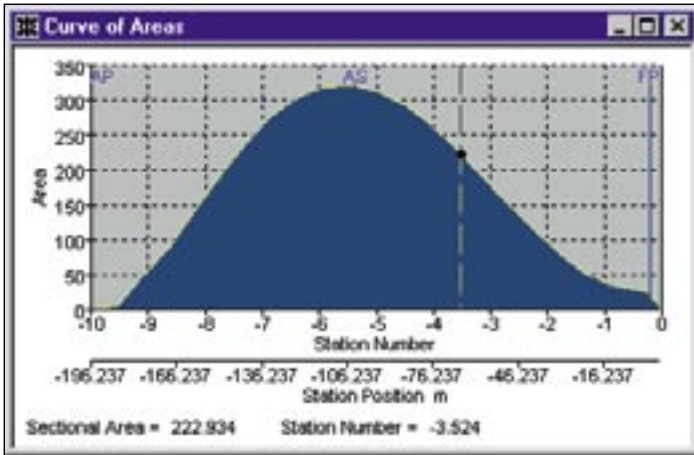
All Maxsurf designs are stored in a common 3D design file which is accessed directly by other modules for analysis, construction and performance prediction. Changes made in Maxsurf will automatically flow through when the design is opened in other modules. The design database files are extremely compact, making them ideal for transmission to designers or builders via email.



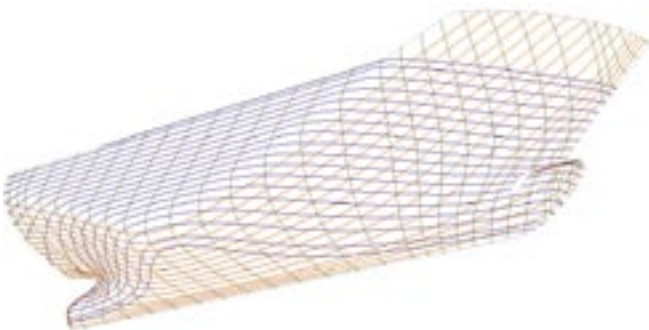
Maxsurf Advantages

- **Fast to learn and easy to master graphical user interface**
- **Model complex hull geometry with trimmed surfaces**
- **Visualise hull shape changes with dynamic updating of all views**
- **Match required hull parameters using parametric transformation**
- **Extract key design data via hull lines, tables of offsets, hydrostatic properties or curve of areas**





The interactive graphical environment in Maxsurf complies with Microsoft Windows standards and allows you to very quickly learn and master the many design tools provided. Multiple windows can be used to view and change the model as well as provide a tabular view of design data. Other windows provide on-the-fly checks of curve of areas, upright hydrostatic calculations and tables of offsets.



Data exchange is a key requirement in the modern design office and Maxsurf supports a wide range of industry standard formats. Copy and paste of numerical tables to and from Microsoft Excel allows for custom calculations and formatting. Copy and paste of all graphical views also helps you create presentation materials and reports. Import and export of industry standard DXF and IGES files, as well as reading and writing of Rhino files allows you to seamlessly exchange point, line or surface data with other systems.

Maxsurf's unique surface trimming capabilities allow you to model complex surface edges while maintaining fairness throughout the rest of the hull. An interactive display of surface/surface intersections lets you create the shapes you require even with complex configurations such as curved transoms, stepped sheerlines and appendages or bow thrusters. Surface trimming is automatically updated as you adjust the surfaces in the design.

Maxsurf provides all the hull, appendage and superstructure modelling capabilities you require. For users with a limited budget, the Maxsurf Plus and Maxsurf/T versions provide the same surface modelling capabilities with fewer surfaces at a reduced cost.

Maxsurf Features

- Unlimited number of NURB surfaces & curves
- Dynamic surface trimming
- Developable surfaces
- Parametric Transformation
- Proportional model resizing
- Surface/Surface intersections
- Dynamic surface contouring
- Shaded surface curvature display
- Contour curvature display
- Dynamic 3D rotation
- Interactive control point movement
- Bonding, grouping and masking
- Multiple dynamic views
- Edit graphically or numerically
- Merge multiple models
- Surface areas and upright hydrostatics
- Interactive curve of areas
- DXF and IGES import and export
- Read and write Rhino files
- Copy and paste to and from Excel

HYDROMAX

Intact and damaged hydrostatics and stability

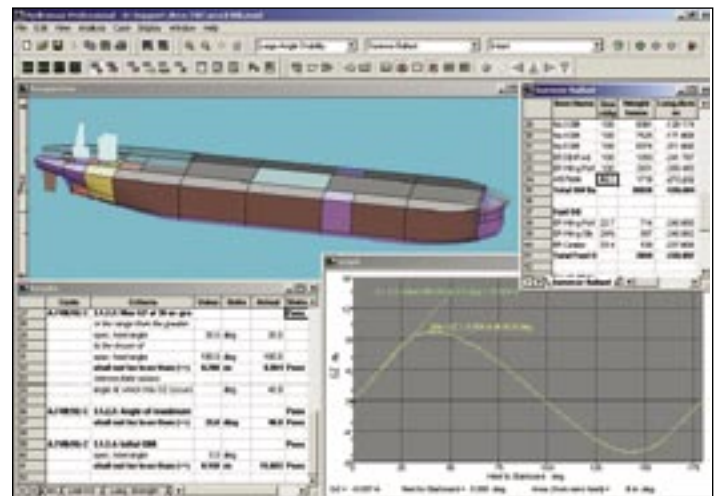
The Hydromax stability and strength module provides fast, graphical and interactive calculation of intact and damaged stability for all types of Maxsurf designs.

Once a design has been modelled using Maxsurf, its stability and strength characteristics can be assessed using the Hydromax analysis module. Hydromax provides the Maxsurf user with a range of **powerful analysis capabilities** to handle all types of stability and strength calculations. Precise calculations are performed directly from the trimmed Maxsurf NURB surface model without the need for offsets or batch file preparation.

All functions within Hydromax are performed using a **graphical multi-window environment** consistent with all other Maxsurf modules. All data is displayed simultaneously in graphical and tabular form and is automatically updated when changes are made and as the analysis progresses.

An **integrated load case editor** makes setting up any number of loading conditions simple and error free. Copy and paste data exchange to and from spreadsheets also makes it easy to prepare complex loading schedules in other programs and run them in Hydromax. Load cases can also be saved and reused with various design configurations.

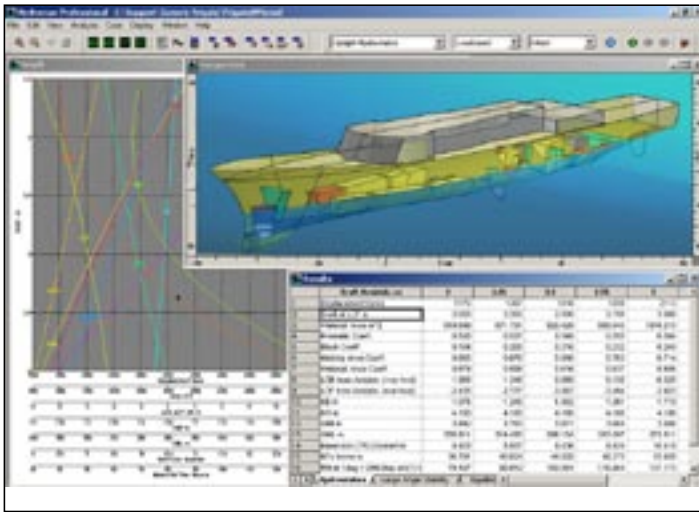
Tank and compartment modelling is integrated within Hydromax making it fast and easy to define the vessel's tank and compartment layout. More complex compartments can be defined using surfaces modelled in Maxsurf. Tanks are automatically included in the weight schedule and their parametric definition means they are automatically updated if the hull shape is changed as the design progresses.



Hydromax Advantages

- **Save time and reduce input errors** using direct surface integration
- **Visualise** hydrostatic behaviour while analysis runs
- **Ensure accurate load cases** with automatically linked tanks
- **Check standard or custom stability criteria** from the criteria library
- **Comprehensive analysis capabilities** let you analyse any hydrostatic condition





A tank calibration option is provided to give detailed volume and CG characteristics of all tanks.

Hydromax includes **intact and damaged options** for a range of analysis methods including upright hydrostatics, large angle stability, equilibrium analysis, KN tables and cross curves, limiting KG and longitudinal strength analysis. For each analysis method, Hydromax automatically highlights the required data to be entered and provides data entry dialogs to ensure data is entered correctly.

A wide range of **stability criteria** can be used to ensure compliance with class requirements. As well as providing the most commonly used standard criteria, Hydromax allows you to define your own custom criteria for any special requirements. When used in conjunction with Hydromax table of downflooding points, this provides a complete range of options for satisfying class.

Once an analysis has been run, all results are also presented in **tabular or graphical form**. You can click on any graph and drag with the mouse to obtain precise values at any location. You can also choose how tables are displayed, which columns are visible and sort results by any column.

An automatically formatted **on-screen report** window accumulates the results of analysis to help you prepare a stability book for your vessel. Descriptions, tables, graphics and graphs are automatically inserted and can be re-formatted or deleted by the user at any time. You can also enter your own notes into the report and paste in graphics copied from Hydromax, Maxsurf, or any other program. The entire report can be generated into a Microsoft Word template document if desired.

The wide range of analysis, data entry and data display options within Hydromax make it an indispensable tool for designers of all types of vessels. For designers with a limited budget, Hydromax is also available in a limited Hydromax/S version which contains only the intact hydrostatics and large angle stability analysis methods.

Hydromax Features

- *Direct integration of surface model*
- *Interactive display of analysis*
- *Integrated compartment definition*
- *Complex tank definition*
- *Integrated load case editor*
- *Probabilistic Damage Stability*
- *Upright hydrostatics*
- *Large angle stability*
- *Equilibrium calculations*
- *Damaged stability*
- *KN cross curves*
- *Limiting KG analysis*
- *Longitudinal strength*
- *Floodable length*
- *Standard and customisable criteria*
- *Interactive results graphs*
- *Customisable sounding pipes*
- *Downflooding points*
- *Copy and paste to and from MS Office*

WORKSHOP

Structural definition and plate development

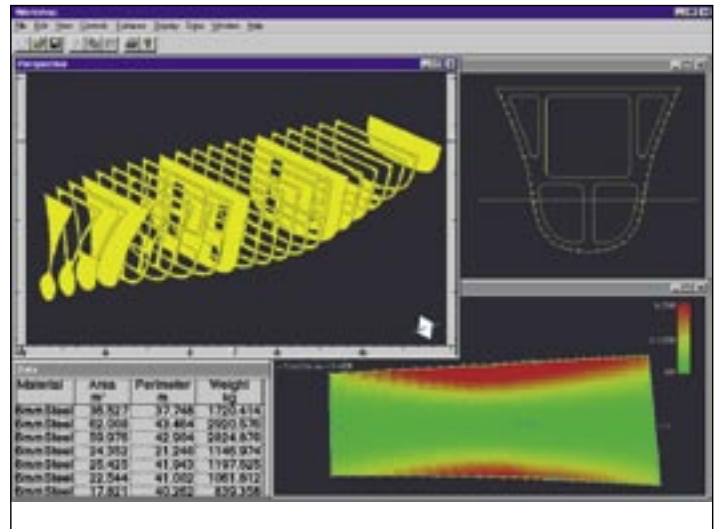
The Workshop structural module provides initial definition of structural parts including hull plates, stringers, transverse frames, decks and longitudinal structure for all types of Maxsurf designs.

The Workshop structural module is used to define the location of parts on the vessel, generate part geometry and define parts which can be passed to other CAD systems for further detailing. Workshop provides you with a range of interactive graphical tools, which are used to parametrically define parts directly from the Maxsurf NURB surface model.

Workshop's parametric part definition means that not only do parts match directly to the hull surface, they will also automatically adapt to any change in the hull definition. This allows more concurrent engineering, with design, analysis and construction detailing proceeding in parallel. This increases scope for weight optimisation and results in time savings in the detailing process.

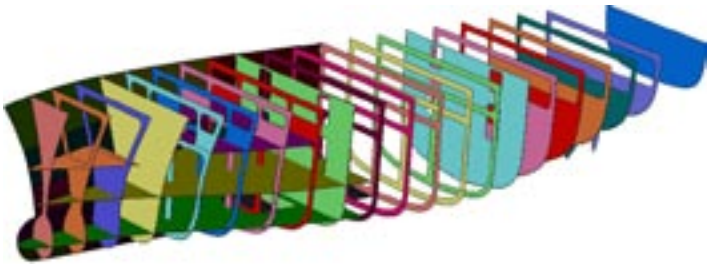
An integrated parts list within Workshop progressively contains all the parts you define and calculate. Quantities, areas, weights, centres of gravity and cutting lengths are calculated and tabulated. The parts database can be sorted by any criteria and each part can be renamed to suit your part naming conventions. All parts can be also be exported to spreadsheets or databases.

Workshop has particularly comprehensive functions for laying out stringers, or longitudinal stiffeners, on the hull surface. Stringers can be automatically aligned with particular contours, set to a specified girth spacing, or duplicated in groups on the hull. Girth positions and stringer manipulation work equally well for monohull or multi-hull vessels.



Workshop Features

- Longitudinal and stringer generation
- Automated girth spacing
- Perpendicular or twisted stringers
- Transverse frame generation
- Unlimited frame openings
- Automatic cutout insertion
- Cutout and materials database
- Plate definition and development
- Shell expansion
- Developed contour locations
- Interactive part creation
- Editable part tables
- 3D model rendering
- Plate strain display
- Parts database
- DXF and IGES export, copy and paste to Excel
- Export to ShipConstructor



Both developable and doubly curved plates can be defined and expanded using Workshop. A range of development methods are provided and the Part window also lets you display plate forming information. Girth differences, a colour map of in-plate strain and locations of frames and stringers can all be displayed on the developed plate.

The wide range of part creation, definition and display options within Workshop make it an ideal tool for preliminary layout of structure and plating. From the initial "point and click" definition of parts, through to the three dimensional shaded views of the complete structural model, Workshop provides everything you need to quickly and accurately develop the major structure for your vessels. Workshop is also available in a limited Workshop/P version which contains just the plate development capabilities.

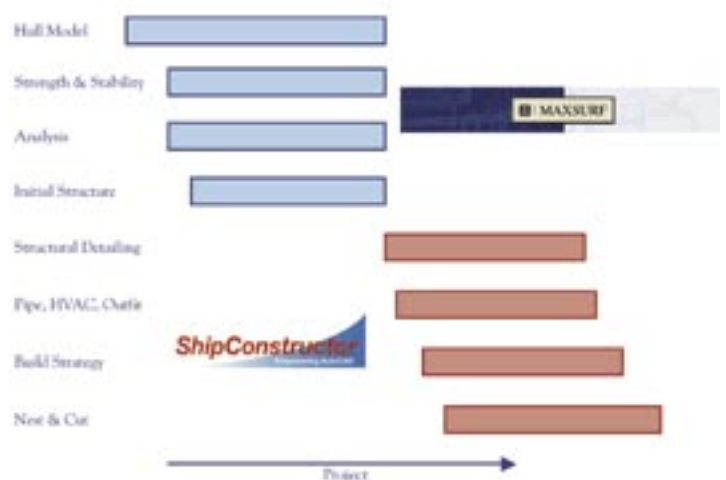
Workshop Advantages

- **Parametric model** instantly responds to design changes
- **Point and click** interface lets you define parts quickly and accurately
- **Integrated parts database** produces accurate construction information
- **Visualise construction** using a complete 3D rendered model
- **Automated stringer layout** lets you **optimise** structural weight
- **Rapidly** generate large numbers of frames and decks by sharing and re-using attributes
- **Estimate** structural weight and materials cost using integrated Bill of Materials
- **Integrates** with any downstream CAD system via industry standard IGES and DXF files

LINK TO SHIPCONSTRUCTOR

ShipConstructor, a product of ShipConstructor Software Inc., is an AutoCAD based detailing and production system which allows shipyards and design offices to leverage their existing investment in AutoCAD software and skills. ShipConstructor handles all detailing tasks, including structure, equipment, piping, penetrations, and HVAC. The generation of production drawings and reports is fully integrated with build strategy planning, plate nesting, profile nesting, assembly drawing and spool drawing generation, as well as NC-coding.

Workshop is an ideal precursor to ShipConstructor, generating the key components of the hull structure in an automated, parametric fashion direct from the Maxsurf hull definition. Workshop now has a function to smoothly export all parts into ShipConstructor, so that time-consuming re-entering of data is minimized.



SEAKEEPER

Seakeeping performance prediction

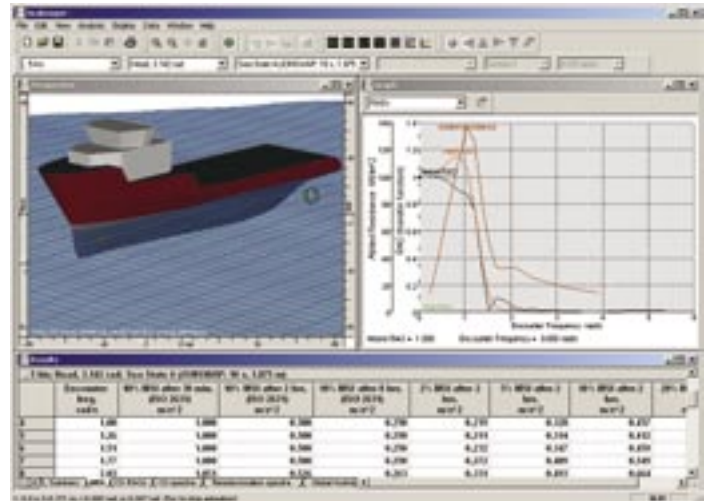
The Seakeeper hydrodynamic and seakeeping analysis program provides fast, reliable calculation of vessel response and seakeeping characteristics for many types of Maxsurf designs in a variety of sea states.

The Seakeeper program provides designers with the tools necessary to quickly predict the seakeeping performance of Maxsurf designs. Seakeeper takes advantage of the power of modern desktop computers to bring seakeeping prediction and analysis tools within the reach of all naval architects and designers. It is now possible, in a few seconds, to read in a Maxsurf design and calculate the vessels seakeeping characteristics.

The hull geometry required for the analysis is read directly from the trimmed Maxsurf NURB surface model. This eliminates the need to prepare batch or offsets files. In addition, all functions within Seakeeper are performed using a graphical multi-window environment consistent with the other programs in the Maxsurf suite.

All data is displayed simultaneously in graphical and tabular form and is automatically updated when changes are made and as the analysis progresses. All data may be copied to spreadsheets and other applications for presentation purposes or further analysis, e.g. calculation of probability of slamming, propeller emergence, etc.

Once the Maxsurf design file has been loaded into Seakeeper, the user specifies the wave spectrum and heading, vessel speed and several other analysis parameters. Response amplitude operators (RAOs) are computed as well as the added resistance, significant absolute and relative motions, velocities and accelerations of the vessel in the specified sea spectrum. Motion, velocity and acceleration and Motion Sickness Incidence (MSI) may also be computed for any position on the vessel.



Seakeeper Advantages

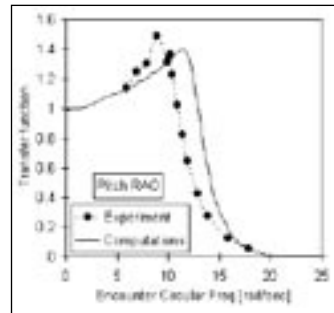
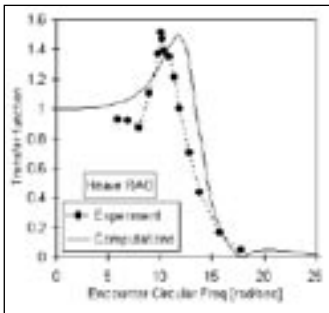
- *Save time and reduce errors using direct geometry input from any Maxsurf design.*
- *Fast calculation of response amplitude operators, added resistance and MSI.*
- *Determine response at vessel centre of gravity or at remote locations.*
- *Graphical and numerical display of results.*
- *Visualise seakeeping changes with various sea states.*
- *Visual displays of response to head seas or user specified heading.*
- *Proven calculation method validated against tank tests and full scale trials.*





Conformal mapping techniques are used to calculate the section added mass and damping for the vessel. Strip Theory is then used to calculate the global vessel added mass, damping and cross-coupling terms. The coupled heave and pitch equations are solved to obtain the vertical plane RAOs.

matter of seconds on a desktop computer. Comparisons of different vessels can be made by examining the RAOs or by computing the significant motions and accelerations for a specified sea spectrum. All data generated can be graphed in Seakeeper or exported for further analysis.

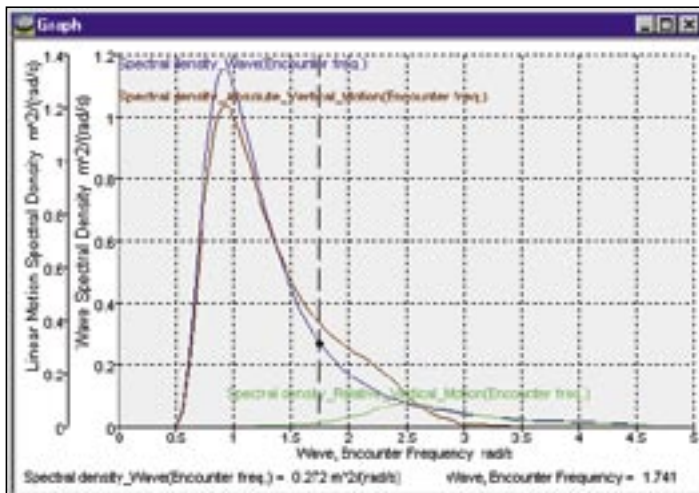


Heave response, Experiments and Seakeeper

Pitch response, Experiments and Seakeeper

Seakeeper is based on a Strip Theory analysis code originally developed by the Australian Maritime Engineering Co-operative Research Centre (AMECRC) at Curtin University of Technology in Western Australia. Formation Design Systems and AMECRC carried out a joint research program to enhance the software and make it available on the Windows platform. Seakeeper has now been integrated with the rest of the Maxsurf range to provide state of the art seakeeping performance prediction.

Seakeeper has been used extensively for both commercial and research applications. The software has been validated against a variety of data from various independent sources: including model tests, full scale trials and other numerical methods. Typical comparisons with results from towing tank experiments are shown above. These show heave and pitch RAOs for a slender, round bilge monohull in head-seas at $F_n=0.5$.



A number of alternative designs can easily be assessed and compared for seakeeping performance. Seakeeper is able to compute the heave and pitch response over a complete frequency range in a

Seakeeper Features

- Direct integration of surface model
- Calculation of vessel response amplitude operators
- Calculation of Motion Sickness Incidence (MSI) at any number of vessel locations
- Calculation of added resistance response and integration of added resistance for specified sea spectrum
- Calculation of motion, velocity and acceleration spectra at centre of gravity and specified positions on vessel (absolute and relative motions)
- Integration of significant vessel motions for specified sea spectrum
- Large number of standard spectra:
ITTC/Bretschneider 2 parameter; Bretschneider 1 parameter; JONSWAP; DNV and Peirson Moskowitz
- Graphical and tabular presentation of all data generated by the analysis
- Interactive results graphs
- Copy and paste to and from MS Office

HULLSPEED

Resistance & power prediction

Hullspeed estimates the resistance and power requirements for any Maxsurf design using industry standard prediction techniques.

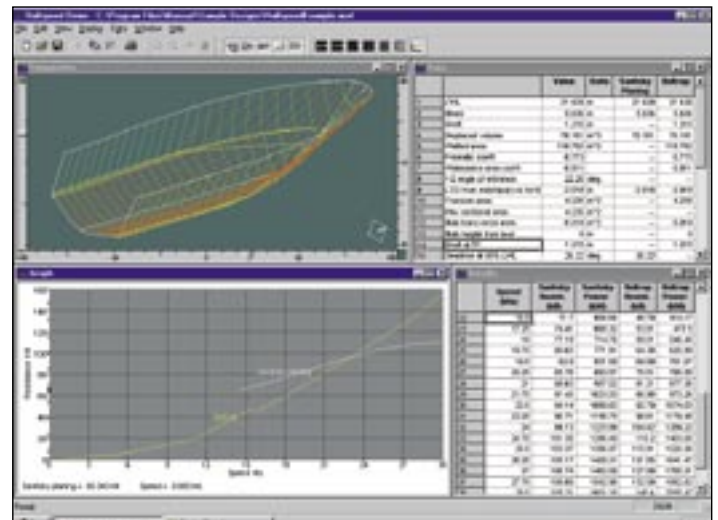
When designing a powered vessel using Maxsurf, Hullspeed provides a wide range of calculation methods to help you estimate the **resistance and powering requirements** of the hull. A range of industry standard algorithms are provided, allowing you to select the methods most appropriate for your hull shape.

Calculation methods provided in Hullspeed include: Savitsky pre-planing and planing; Lahtiharju for planing vessels; Blount & Fox for planing vessels, Holtrop and Compton for fast displacement hulls; Fung and Series 60 for ships; van Oortmerssen for full form hulls such as tugs and trawlers; and Delft systematic yacht series for sailing yachts. It is also possible to directly analyse the resistance of a Maxsurf hull using a Slender Body method which uses a potential flow CFD approach.

Hullspeed can **automatically read** in any Maxsurf design file and measure the required input parameters from it. You also have the option to override these automatically calculated values to fine tune the calculations to match your requirements.

Like all modules in the Maxsurf range, Hullspeed allows you to **copy and paste data** to and from other Windows programs allowing you to carry out your own data preparation or post-processing.

Output from Hullspeed is provided in both **tabular and graphical format** and is automatically recalculated as changes are made to input parameters.



Hullspeed Features

- *Interactive interface*
- *Automated hull measuring*
- *Multiple analysis methods*
- *Multihulls using Slender Body method*
- *Planing vessels*
- *Workboats*
- *Ships*
- *Yachts*



SPAN

Sailing yacht performance prediction

Span provides sailing performance analysis for yachts in a variety of sailing conditions and produces performance polar curves to show predicted speeds.

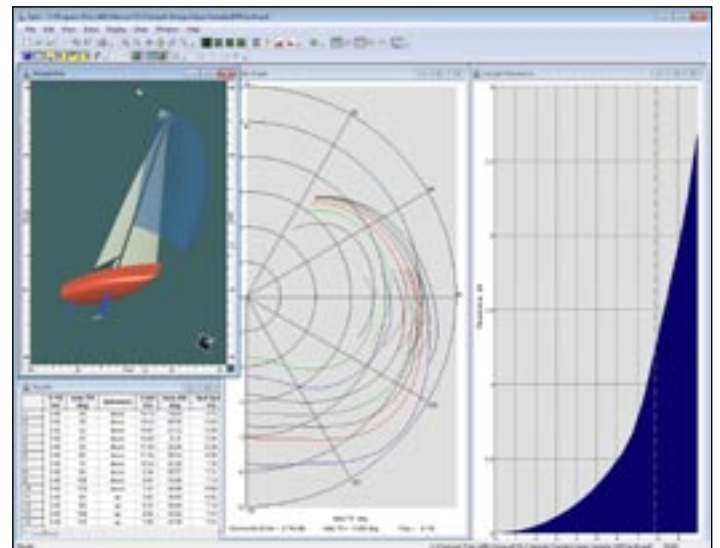
Designers of sailing yachts who use Maxsurf can take advantage of Span to predict the performance of their designs in a variety of sailing conditions.

Using calculation methods similar to the original IMS Velocity Performance Prediction Program, Span solves the **equations for lift and drag** for hull and rig and finds an equilibrium velocity and angle of heel. Span's calculations operate through a variety of true wind angles and speed and calculate with both spinnaker up and spinnaker down.

Integrated into Span is a **hull measuring capability** which automatically measures the Maxsurf design to extract the required input measurements and parameters. Alternatively a small number of key values may be entered directly from an IMS certificate.

Output from Span is provided in both tabular and graphical format

for each wind strength and direction. Results include apparent wind strength, hull velocity, Vmg, heel angle and the various lift and drag forces involved. The family of **polar performance curves** produced can be clicked on to find key values for any setting.



Span Features

- *Interactive interface*
- *Automated hull measuring*
- *Tabular and graphical results*
- *Polar performance curve output*
- *Upright resistance*
- *IMS based VPP*

MULTIFRAME

Structural analysis and design

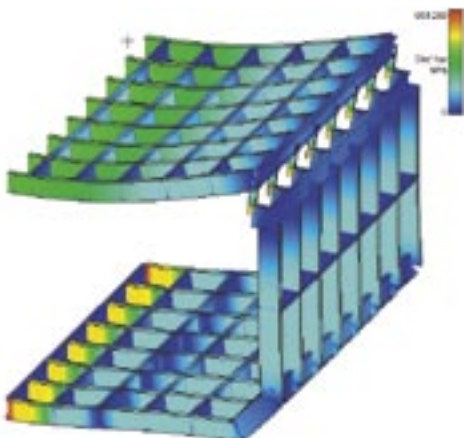
Multiframe helps structural experts check the structure of their vessel to comply with class requirements and optimise it for strength and weight.

When designing a steel or aluminium vessel, there are a range of structural analysis approaches which can be used to assess the ship's structural capacity and compliance with class requirements. Multiframe is a general purpose beam and plate element based system which allows you to very quickly model and analyse ship structures and carry out static or dynamic analyses of their structural behaviour. It is an ideal compliment to the more time consuming full finite element analysis and less accurate spreadsheet calculations.

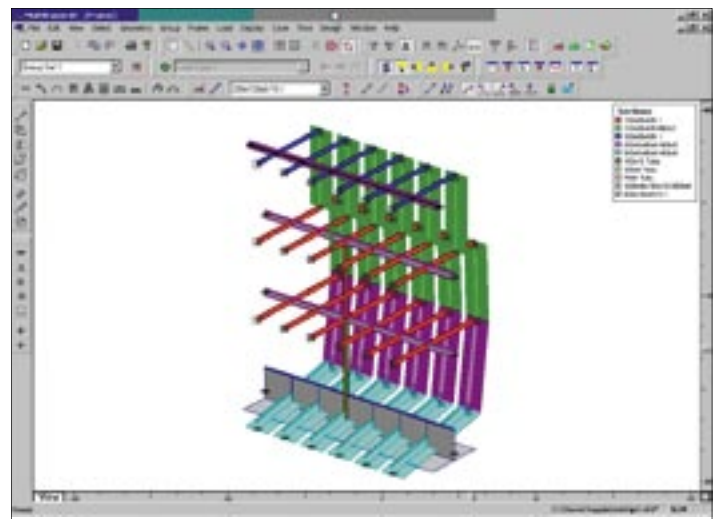
Multiframe can load in a geometry file from Workshop or any other structural modelling system, and then provides a wide range of tools to apply structural properties like restraints, materials and section shapes. Facilities are included to create a family of load cases and then perform a static or dynamic analysis. Static results can be reviewed in terms of displays of actions, stresses and deflections. Dynamic results include natural frequencies and mode shapes or more detailed time history results for time varying loads.

Multiframe's Automation interface with Excel means that you can optimise structural behaviour using your own custom calculations, as well as the built-in searching, sorting and checking functions. Automation is particularly useful both for post-processing of analysis data as well as pre-processing including generation of hydrostatic or wave loads.

Multiframe has a particularly strong set of 3D tools for easily managing the complex geometry which results from a detailed structural analysis model. Rendering and animation can be combined with the clipping, searching and sorting functions. This makes it easy to narrow your focus to critical areas.



Multiframe also includes SectionMaker, a section properties calculator as well a comprehensive library of common structural shapes.



Multiframe Features

- *Import Maxsurf or Workshop geometry*
- *Fast, intuitive, interactive interface*
- *Static and dynamic analysis methods*
- *Integrated and customisable section shapes library*
- *Automation link to Excel for optimisation and class checking*
- *OpenGL rendering and animation of static and dynamic results*
- *Beam and plate elements*
- *Colour stress and deflection displays*
- *User definable stress checks*

HYDROLINK

Industry standard data exchange

Hydrolink provides data exchange between a range of modelling, performance prediction and hydrostatics programs.

Although the Maxsurf range provides a complete suite of design and analysis tools, there may be occasions when you need to **transfer data** to and from other systems. Hydrolink provides a range of **data translation options** which allow you to move models both to and from Maxsurf and other programs.

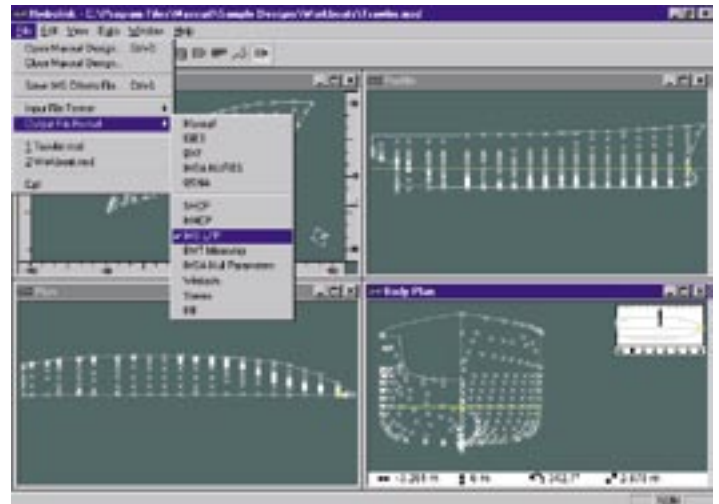
The Maxsurf modelling module provides import and export of DXF and IGES files. Hydrolink's data exchange options compliment this, with capabilities to read and write files of NURB surfaces and to **write offsets** files in a format compatible with a number of hydrostatics and VPP programs.

Each file format option has an associated **visual dialog** of any additional information allowing a complete and consistent file to be prepared, without additional text editing. Validation of key parameters is provided to ensure that input values lie within the required range.

Hydrolink supports the following file formats:

Input: Maxsurf, IGES, DXF, IMSA NURBS, USNA.

Output: (all of the above plus:) GHS, SHCP, MHCP, IMS LPP, BMT, Microship, IMSA Hull Parameters, Veres, Hydros, GHS, Wolfson, ShipFlow, nuShallo.



Hydrolink Features

- Supports a wide variety of hydrostatics programs
- Preview exported data points on-screen
- Automatically adjusts for different units and coordinate systems
- Exports to CFD and advanced motions programs



MAXSURF USERS

Maxsurf and its range of design tools offer advanced hull and superstructure modelling, comprehensive strength, stability and performance calculations, structural detailing and plate development. Over 1000 users around the world can testify to Maxsurf's effectiveness for all types of design including:

| LARGE SHIPS | WORKBOATS / FERRIES | NAVAL ARCHITECTS |
|---------------------------|---------------------|--------------------------------|
| US Navy | Austal Ships | Australian Marine Technologies |
| US Coast Guard | Damen | Burness Corlett |
| Bath Iron Works | Swiftships | German Frers |
| IHI Heavy Industries | Image Marine | Incat Crowther |
| Kawasaki Heavy Industries | Strategic Marine | Francis Design |
| Mitsui Zosen | SUPERYACHTS | Mulder Design |
| BAE Systems | Ferretti | Ron Holland Design |
| Samsung Heavy Industries | Benetti Azimut | Nelson/Marek Design |



Customer Profile | [Austal Ships](#)

Austal Ships commenced operations in 1988 with a vision to build high quality commercial vessels for the international market. Austal's early success in Asia and the introduction of a range of sophisticated, large vehicle-carrying fast ferries were the springboard for ongoing growth in Europe, the Mediterranean and the Asia-Pacific. From its inception Austal has used Maxsurf for the design of all its vessels, which have proven so popular that today, Austal is the world's largest builder of fast ferries.



Customer Profile | [Ishikawajima-Harima Heavy Industries Co \(IHI\)](#)

IHI, one of Japan's largest shipbuilders has used Maxsurf in several of its design offices for both new design work and ship repair. In particular, IHI utilises Predit, Maxsurf and Workshop to create hull plating geometry. This allows IHI to accurately prepare plates and plate assemblies, with the digital model of the new plates being transferred to IHI's innovative automatic plate forming system. The result is improved efficiency in the yard and a high quality hull surface.



Customer Profile | [Swiftships](#)

Swiftships, Inc. creates vessels to fulfill the demand for fast, reliable transportation for the offshore oil industry, personnel and weapon systems platforms for U.S. and other Navies, as well as luxury motoryachts for private and corporate use.

Since 1989, Swiftships' designers have used both Maxsurf and Hydromax extensively for hull and superstructure design as well as a wide range of hydrostatic and stability calculations.

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