

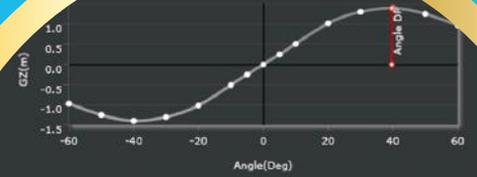


# CyberMaster

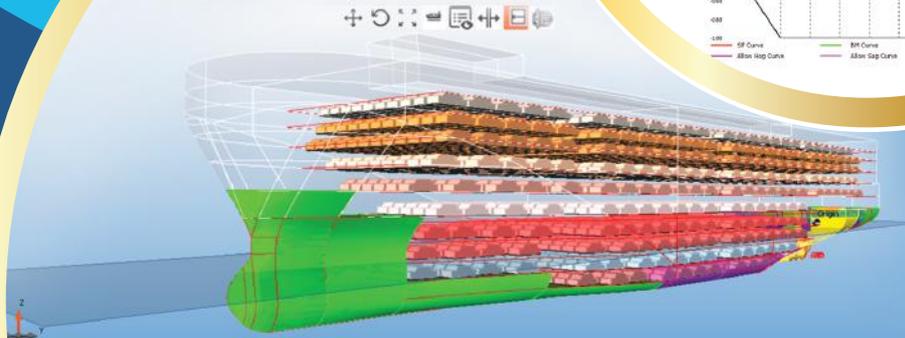
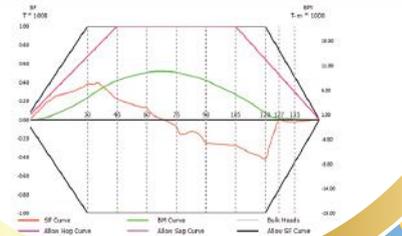
# 3D

## Advanced Ship Loading Software

### Ro-Ro Vessel



Maximum GZ Occurs at 38.75 Deg  
 Area Upto 30 deg 0.38 m-rad  
 Area Upto 40 deg/Angle DF 0.62 m-rad  
 Area 30 deg - 40 deg/Angle DF 0.23 m-rad  
 Maximum GZ 1.40 m  
 GoMt 2.83 m



New Condition Cybermaster Automation

Stability Graph

Graphics 3D

Result Bar

Tree View

Data Grid

Tank Name	Tank Type	Sounding	Weight	Density	Volume	Percont	LCG	TCG	VCG	PM
ROSE DECK TANK	C	0.00	0.00	1.025	0.00	0.00	146.576	0.000	0.000	0.00
NO2 W.B.T.K.	C	0.00	0.00	1.025	0.00	0.00	146.571	0.000	0.011	0.00
NO2 W.B.T.K.	C	0.00	0.00	1.025	0.00	0.00	123.910	0.000	0.011	0.00
NO2 W.B.T.K.	P	0.00	0.00	1.025	0.00	0.00	95.040	-4.500	0.010	0.00

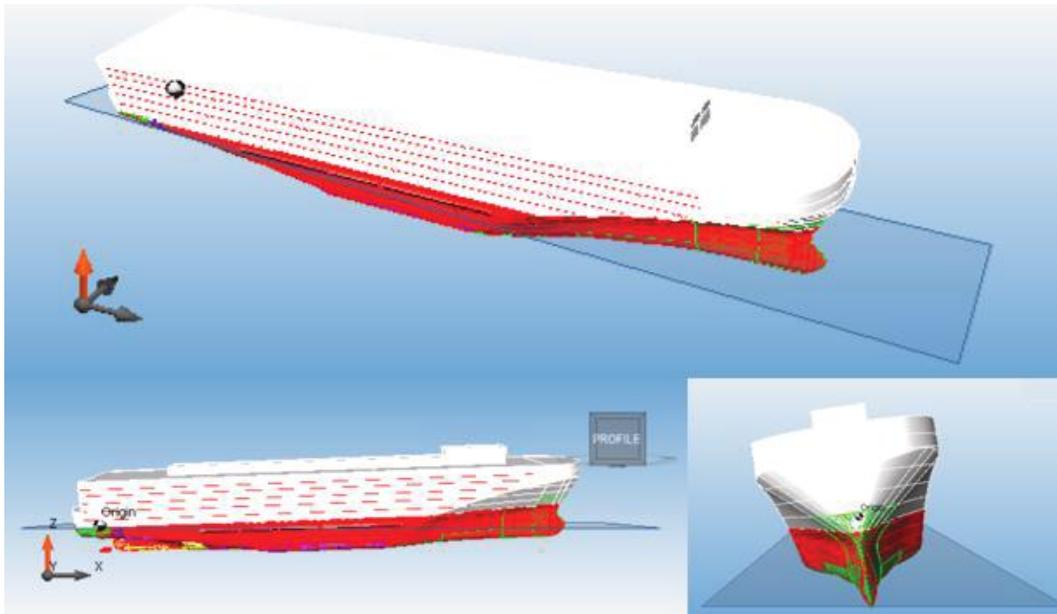


# Cybermarine



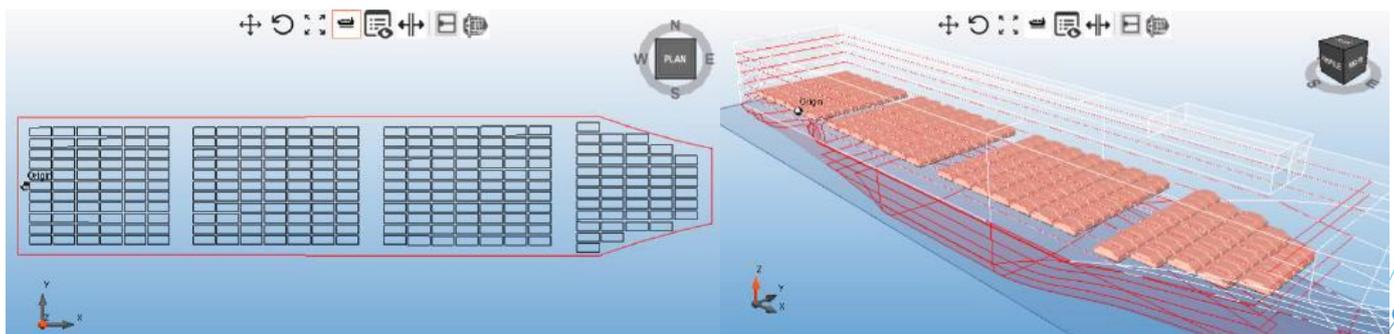
## GUI

- **CyberMaster**'s 3-D graphics facilitate the operator to work on dual monitors.
- Superior GUI enables the operator to view the vessel with its space arrangement in 3-D.
- Enhanced 3D display enables real-time filling of vehicle decks and tanks through 3-D GUI.
- Advanced 3-D GUI and Live computation simulates real time vessel behaviour with loading & discharge.



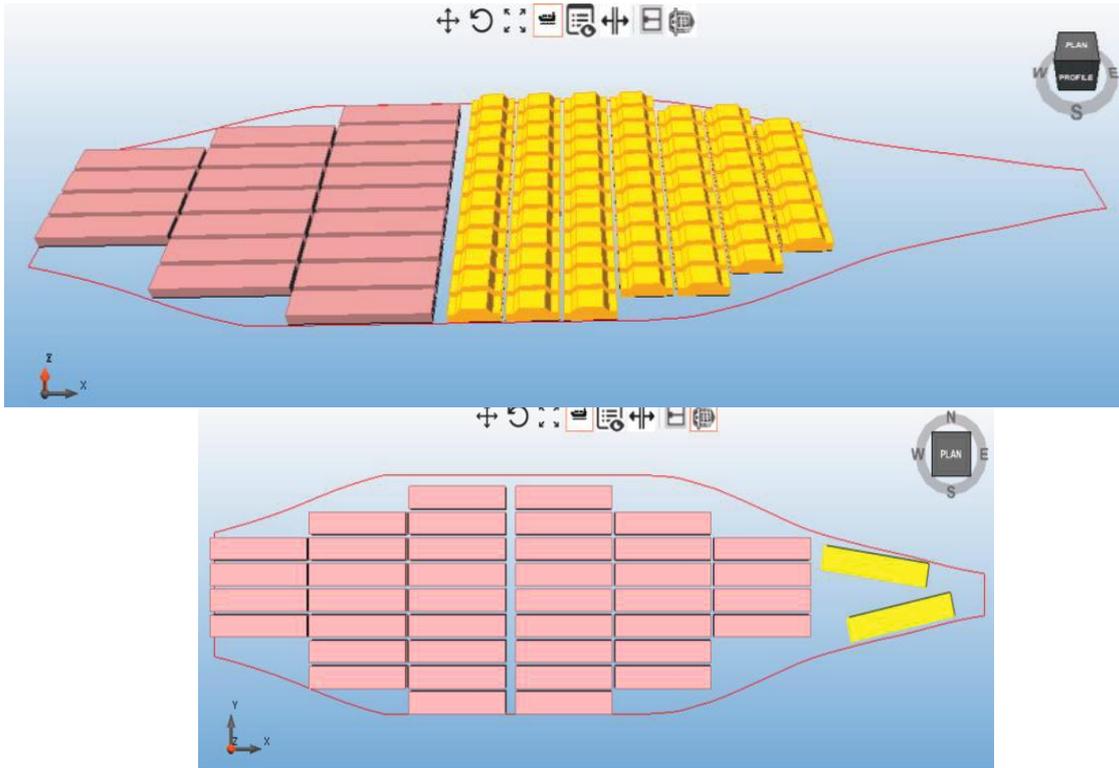
## STANDARD STOWAGE MODULE

- Approved vehicle stowage arrangements can be pre-loaded as a ready reusable data.
- Provision to store multiple stowage arrangements.
- Choice to load required stowage arrangement as per loading condition.
- Stowage Plans are converted to Vehicle Slots at each deck to facilitate interactive loading



## CUSTOM STOWAGE MODULE

- Built-in option to generate non-standard or user-defined stowage arrangement.
- Provision to define vehicles of various sizes at different locations.
- Provision to arrange multiple vehicle type on same deck.
- Option to drag n' drop & rotation of vehicle for optimum space utilization.



## RO-RO WORKSHEET MODULE

- Facilitates the generation of stowage arrangement through worksheet based input option.
- Choice to create empty stowage template in worksheets.
- Import external stowage arrangement using worksheet.
- Provision to back-up and restore stowage arrangements.
- Email existing stowage arrangement in a spreadsheet.

StowagePlanView					
Standard Sized Cargo					
Deck	HoldName	Length	Width	Spacing (Longi...	Spacing (Trans...
Deck 1	Hold 1	6.096	2.48	0.4	0.4
Deck 1	Hold 2	6.096	2.48	0.4	0.4
Deck 2	Hold 1	12.096	2.48	0.4	0.4
Deck 2	Hold 2	12.096	2.48	0.4	0.4
Deck 2	Hold 3	12.096	2.48	0.4	0.4
Deck 3	Hold 1	6.096	2.48	0.4	0.4
Deck 3	Hold 2	6.096	2.48	0.4	0.4
Deck 3	Hold 3	6.096	2.48	0.4	0.4
Deck 4	Hold 1	12.096	2.48	0.4	0.4
Deck 4	Hold 2	12.096	2.48	0.4	0.4
Deck 4	Hold 3	12.096	2.48	0.4	0.4
Deck 5	Hold 1	12.096	2.48	0.4	0.4
Deck 5	Hold 2	12.096	2.48	0.4	0.4
Deck 5	Hold 3	12.096	2.48	0.4	0.4
Deck 5	Hold 4	12.096	2.48	0.4	0.4

## INBUILT LIBRARY MODULE

- Provision to pre-load vehicle data based on the approved documents.
- Pre-defined vehicle library consisting up to 10 vehicle data.
- Option to choose specific vehicle type for the respective vehicle slot by means of a simple drop down mouse click.
- Choice to add user defined vehicle cargo.

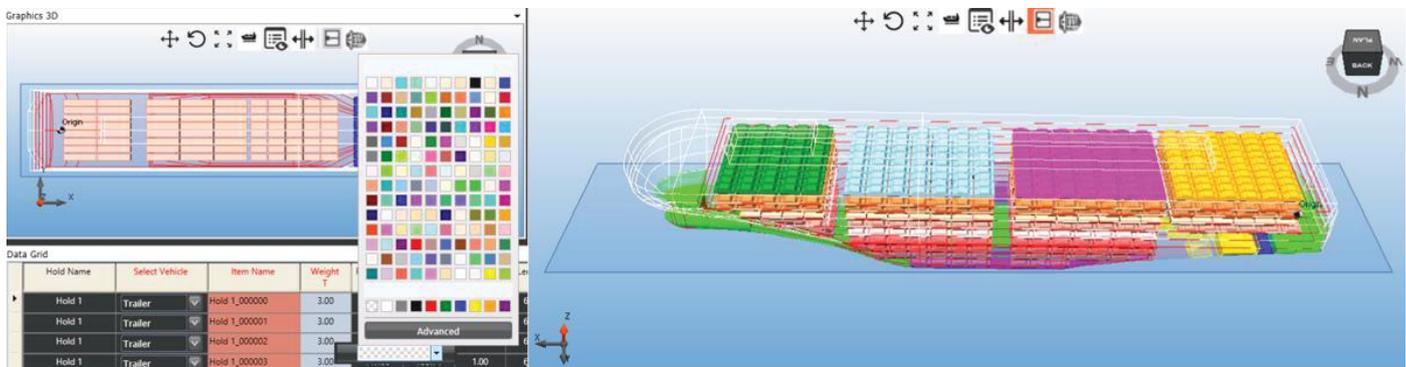
Data Grid

Hold Name	Select Vehicle	Item Name	Weight T	From Fra...	To Frame	Self Height m	Length m	Width m	LCG m	TCG m	VCG m
Hold 1		Hold 1_000001	3.00	147.00	155.93	1.80	6.25	4.30	118.325	2.550	10.060
Hold 1	Car	Hold 1_000002	3.00	147.00	155.93	1.80	6.25	4.30	118.325	-2.150	10.060
Hold 1	Trailer	Hold 1_001001	3.00	156.50	165.43	1.80	6.25	4.30	124.975	2.550	10.060
Hold 1	Truck	Hold 1_001002	3.00	156.50	165.43	1.80	6.25	4.30	124.975	-2.150	10.060

## VEHICLE STOWAGE MODULE

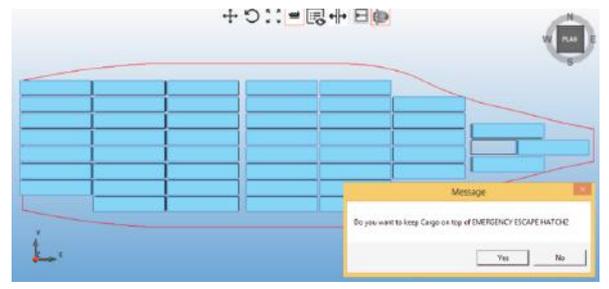
### Colour Coding of Vehicle Cargo

- Facilitates user defined colour coding for the vehicles for easy identification.
- Automatic colour coding feature enables grouping of vehicles belonging to the specific category.
- Option to provide colour codes based on port of load & discharge.



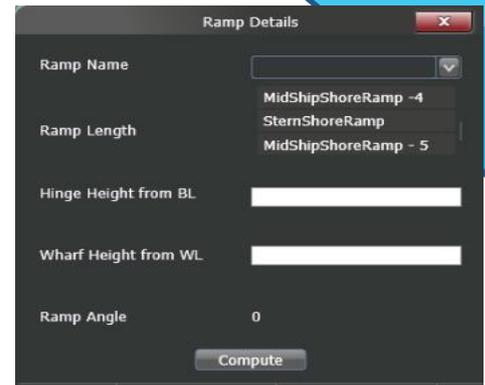
### Stowage Constraints of Vehicle Cargo

- Deck Interference Checks with on deck outfits such as Hatches, Vents, Air Pipes and Railings.
- Ceiling Interference Check with Fire Sprinklers.
- Stowage Constraints like Escape paths, Location of Fire Extinguisher, Fire hydrants pre-defined.
- Warning message for violations



## RAMP OPERATION MODULE

- Accurate consideration of the ramp orientation with vessel's equilibrium.
- Continuous monitoring of the ramp angle with the draft and trim of the vessel through ballasting / de-ballasting
- Pre-Load Multiple Ramp data.



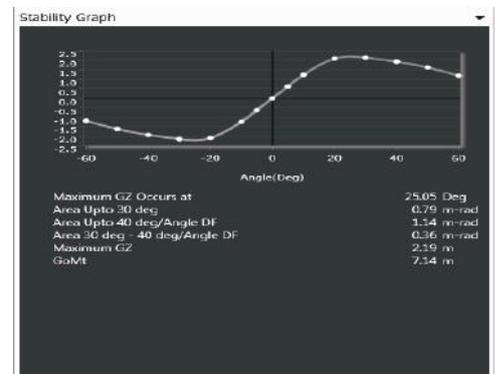
## BASIC MODULE

### Methodology of Computation

- Innovative mathematical modelling with high accuracy & computing speed.
- A Novel 'discretised hull form concept' mapping the volumetric properties on a 3-D grid with draft, trim and heel as the axes.
- Equilibrium is computed from the 3-D grid by solving the force (vertical) and moment (longitudinal and transverse) balance.
- Free surface effects accounted by either virtual free surface moments or real wedge shift moments.

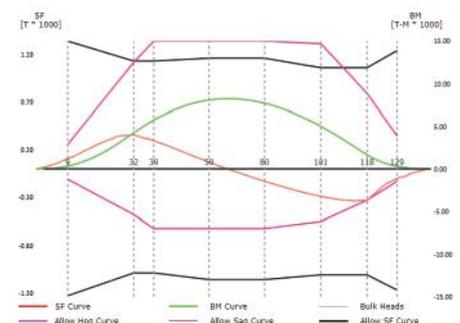
### Loading Conditions & Intact Stability Computation

- Preparation of Loading Conditions via percentage filling, volume, weight or sounding/ullage depth.
- Use of accurate tank soundings from 3-D models.
- Computation of Draft, Trim & Heel
- Displacement & Deadweight Calculation
- GM & GoM Calculation
- Intact Stability computation as per I.S Code 2008 & compliance comparison



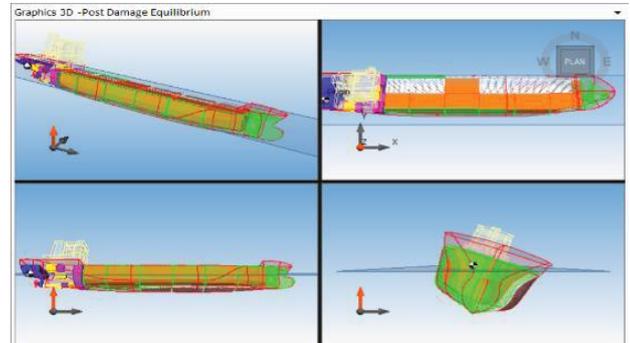
### Longitudinal Strength Computation

- SF/BM Computations
- Graphical Representation throughout length of vessel.
- Option to input allowable values for SF & BM as per service restriction.
- Printable Reports with SF/BM values against Permissible allowable.
- Warnings for violation.



## Damage Stability Module

- Graphical view of equilibrium in damaged condition of the vessel.
- Flexibility to choose from various pre-loaded Damage cases.
- Report showing equilibrium of the vessel before & after damage.
- All required significant criteria – MARPOL, IGC, IBC, OSV and SPS
- Stability during intermediate stages of flooding.
- Capability to specify actual user defined damage cases
- Progressive Flooding through hull openings

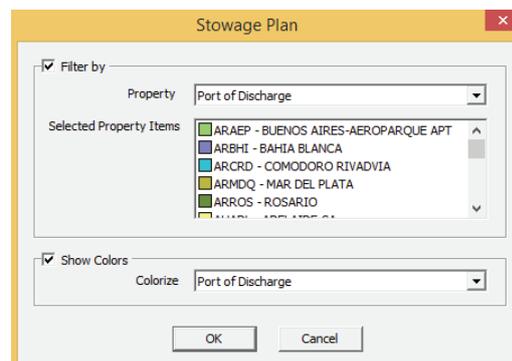


## Generation of Reports

- Executive summary of deadweight distribution during operations.
- Loading Condition Reports
- Detailed Intact Stability, Longitudinal Strength & Damage Stability Reports
- Damage Summary Report to quickly assess the results.
- Option to print functional reports such as Stowage Plan, Ullage Report.
- Choice to create stowage report based on special filters such as Port of Load & Port of Discharge.

Tree View

Consumables	3098.48	T	3249.19	Cu.M
Fresh Water	347.80	T	347.80	Cu.M
Fuel Oil	2186.83	T	2301.92	Cu.M
Diesel Oil	289.21	T	321.34	Cu.M
Lube. Oil	31.40	T	34.89	Cu.M
Miscellaneous	243.24	T	243.24	Cu.M
Water Ballast	1844.08	T	1799.10	Cu.M
Deck 1	213.00	T		
Deck 2	135.00	T		
Deck 3	258.00	T		
Deck 4	162.00	T		
Deck 5	156.00	T		
Deck 6	318.00	T		
Deck 7	210.00	T		
Deck 8	216.00	T		
Deck 9	216.00	T		
Upper Deck	189.00	T		
Deadweight Constants	132.00	T		



## User Defined Parameters

- Enables master to provide operational constraints.
- User defined limits for Trim, Heel, Air Draft and Bow Thruster Draft.
- Warnings if violation is observed

Draft Details

	Computed Values	Permitted Values	Messages
Mean Draft(Extr.)	2.868 m	3.950 m	OK
Trim	0.619 m	0.642 m	OK
Draft(Prop Immer.)	3.178 m	2.100 m	OK
Air Draft	21.276 m	100.000 m	OK
Displacement	420.730 T	528.790 T	OK
Heel	-5.813 Deg.	3.000 Deg.	NOT OK

Loading Constraints OK



 **CyberMaster** **3D**  
*Advanced Ship Loading Software*

 **Cybermarine**

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