

# I.O.R. Half Ton Racer

Project : I.O.R. Half Ton Racer  
Designer : Delta Consultants-P.Visser  
Filename : I:\freeships\halftonner02\ht02.fbm  
Length over all : 9.256 m  
Beam over all : 3.171 m  
Draft : 1.900 m  
Midship location : 3.600 m  
Water density : 1.025 t/m<sup>3</sup>  
Appendage coefficient : 1.0000

Volume properties:

Displaced volume	:	3.271 m <sup>3</sup>
Displacement	:	3.353 tonnes
Total length of submerged body	:	8.560 m
Total beam of submerged body	:	2.491 m
Block coefficient	:	0.0807
Prismatic coefficient	:	0.5619
Vert. prismatic coefficient	:	0.1223
Wetted surface area	:	19.067 m <sup>2</sup>
Longitudinal center of buoyancy	:	4.219 m
Longitudinal center of buoyancy	:	-0.488 %
Tranverse center of buoyancy	:	0.000 m
Vertical center of buoyancy	:	1.733 m

Midship properties:

Midship section area	:	0.680 m <sup>2</sup>
Midship coefficient	:	0.1437

Waterplane properties:

Length on waterline	:	8.486 m
Beam on waterline	:	2.491 m
Waterplane area	:	14.081 m <sup>2</sup>
Waterplane coefficient	:	0.6604
Waterplane center of floatation	:	3.910 m
Y coordinate of DWL area CoG	:	0.000 m
Half entrance angle of DWL	:	18.177 degr
Transverse moment of inertia	:	5.145 m <sup>4</sup>

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Longitudinal moment of inertia : 49.679 m<sup>4</sup>

Initial stability:

Vertical of transverse metacenter : 3.306 m

Tranverse metacentric radius : 1.573 m

Longitudinal transverse metacenter : 16.921 m

Longitudinal metacentric radius : 15.188 m

Lateral plane:

Lateral area : 3.949 m<sup>2</sup>

Longitudinal center of effort : 4.130 m

Vertical center of effort : 1.407 m

Hull characteristics above waterline:

Lateral wind area : 4.580 m<sup>2</sup>

Z coordinate of wind area CoG above DWL : 0.337 m

Distance from bow to wind area CoG : 2.808 m

The following layer properties are calculated for both sides of the ship:

Layer	Area	Thickness	Weight	COG X	COG Y	COG Z
	m <sup>2</sup>	mm	tonnes	m	m	m
hull	33.478	30.000	0.904	3.937	0.000	1.997
deck	21.762	20.000	0.392	3.629	0.000	2.457
Cabin	4.628	20.000	0.083	4.362	0.000	2.932
Trapezoidal keel NACA63	2.874	30.000	1.638	4.522	0.000	0.850
Trapezoidal rudder NACA	0.881	20.000	0.016	0.207	0.000	1.468
Various			0.300			
<b>Total</b>	<b>63.623</b>		<b>3.333</b>	<b>4.205</b>	<b>0.000</b>	<b>1.460</b>

Parameters of ship sinkage:

Difference of midship draft : -0.022 m

Midship draft : 1.878 m

Initial transverse metacentric height ho : 1.846 m

Initial longitudinal metacentric height Ho : 15.461 m

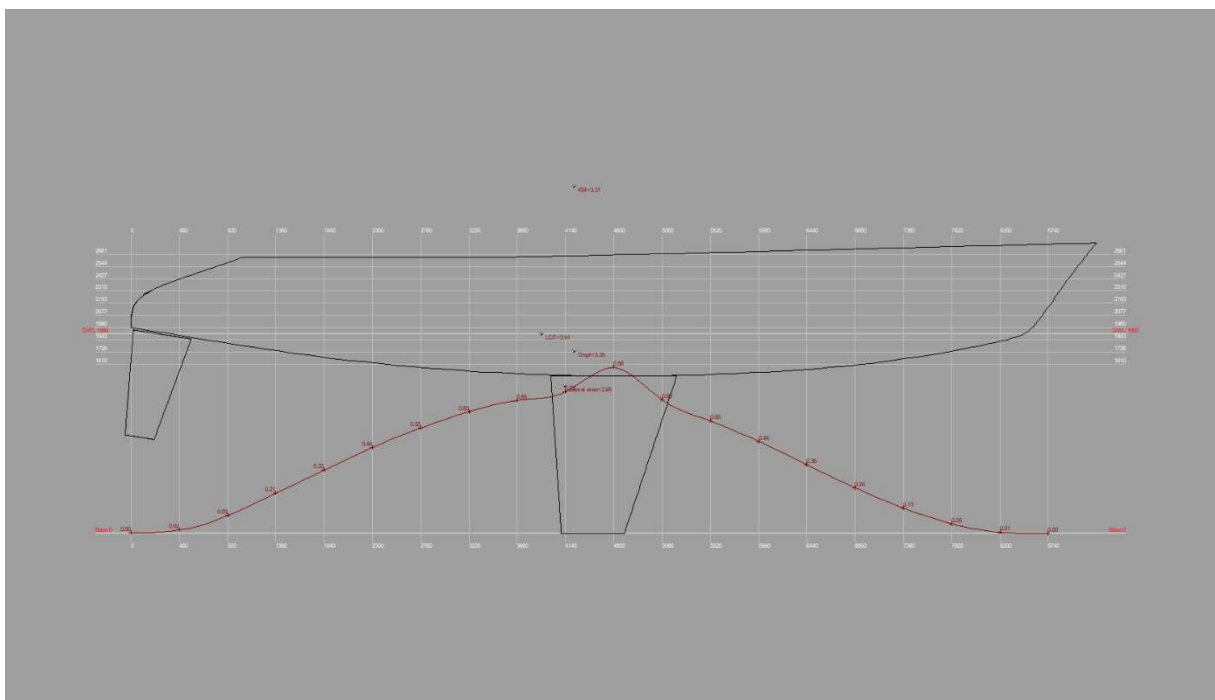
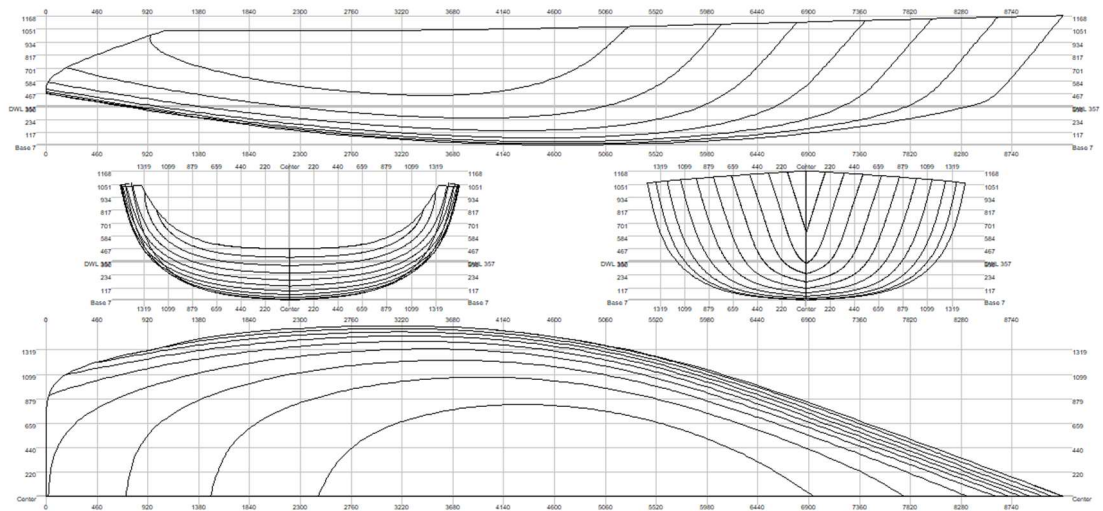
Angle of heel Psi : 0.000 degr

Angle of trim : -0.051 degr

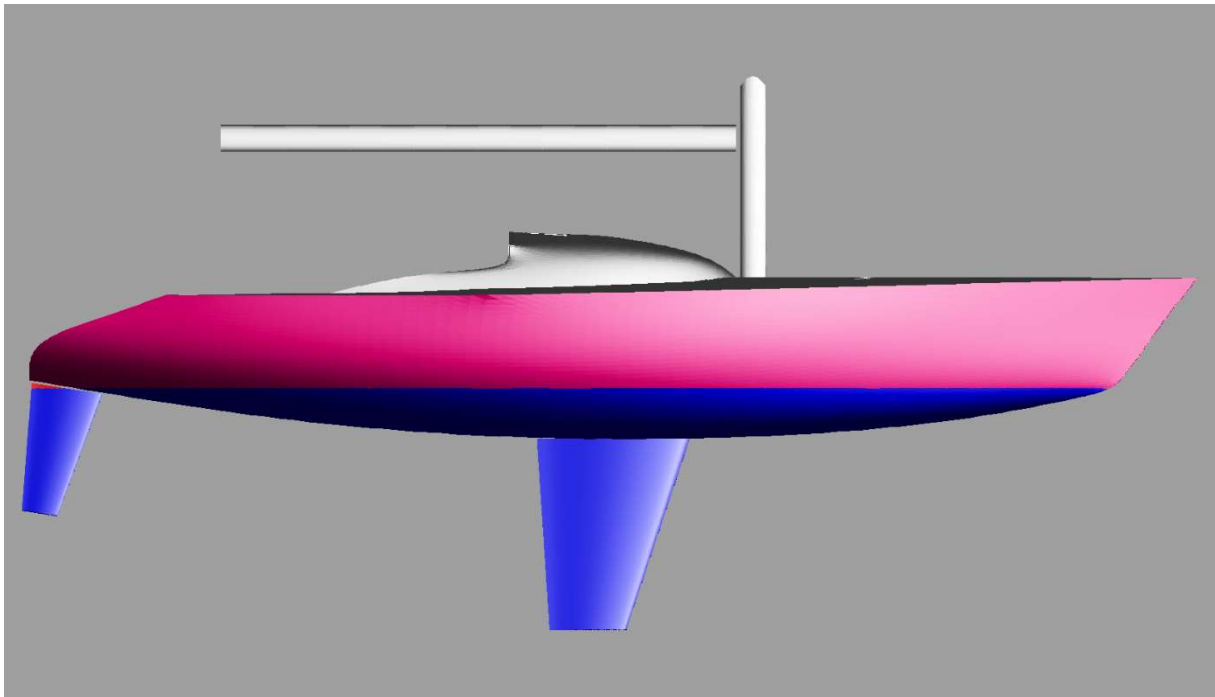
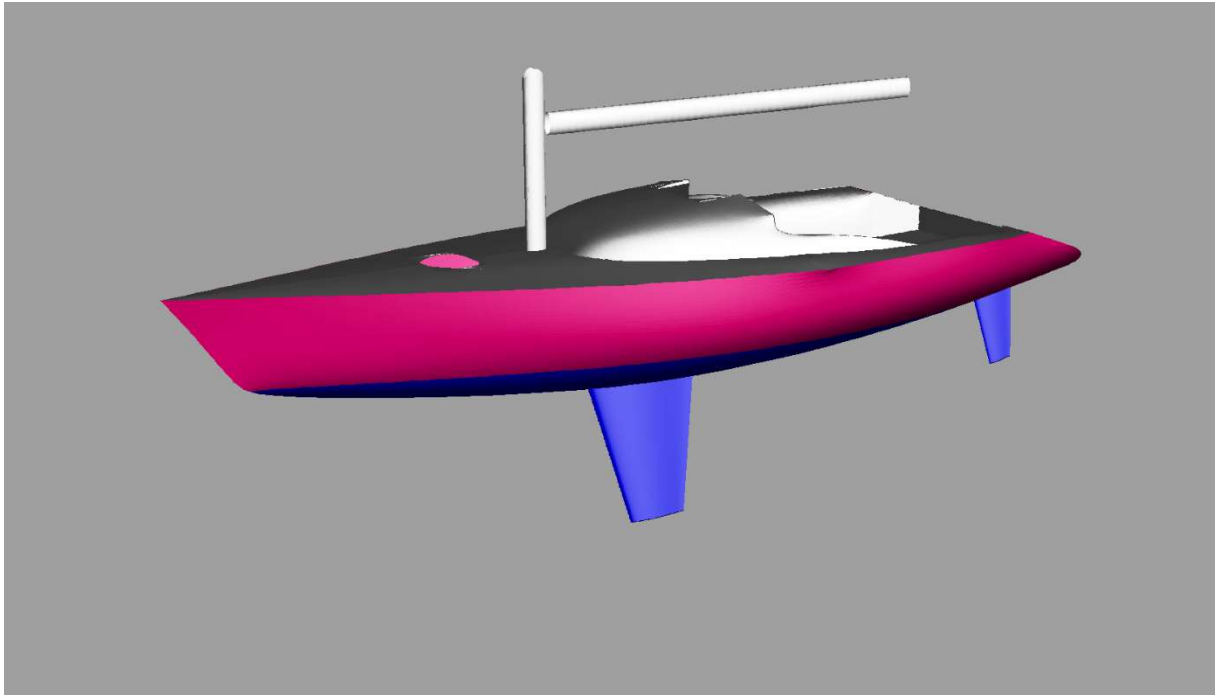
NOTE 1: Draft (and all other vertical heights) is measured above the lowest point of the hull! (Z= 0.000)

NOTE 2: All calculated coefficients based on actual dimensions of submerged body.

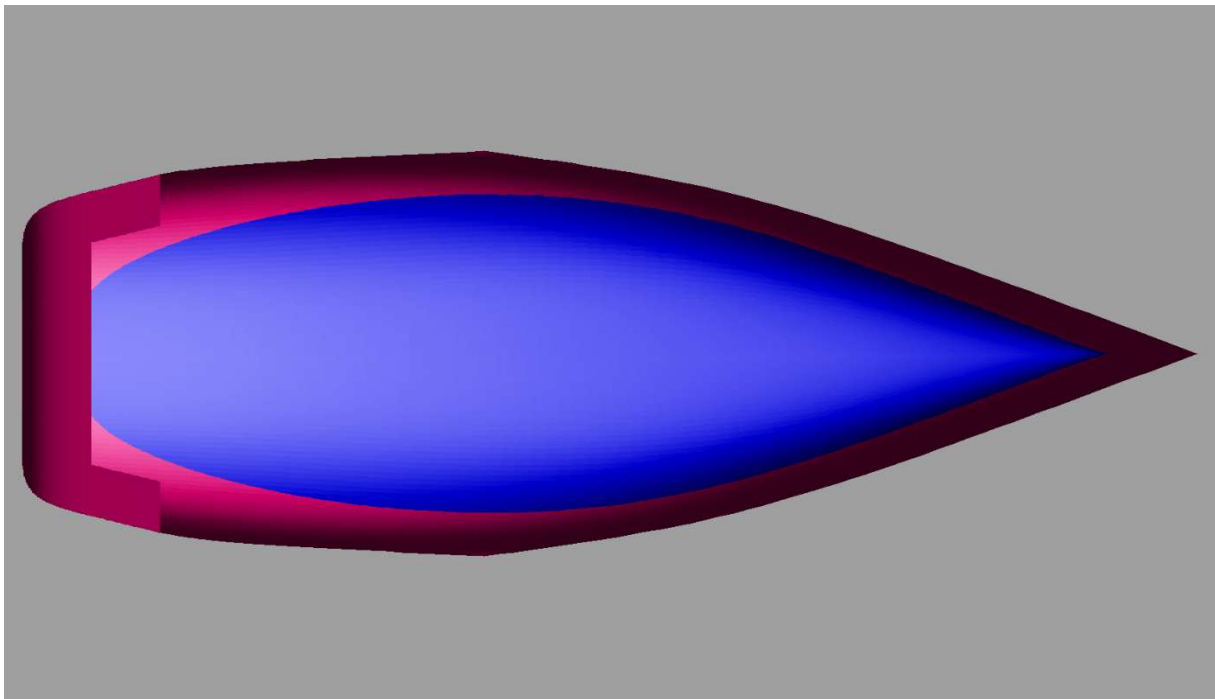
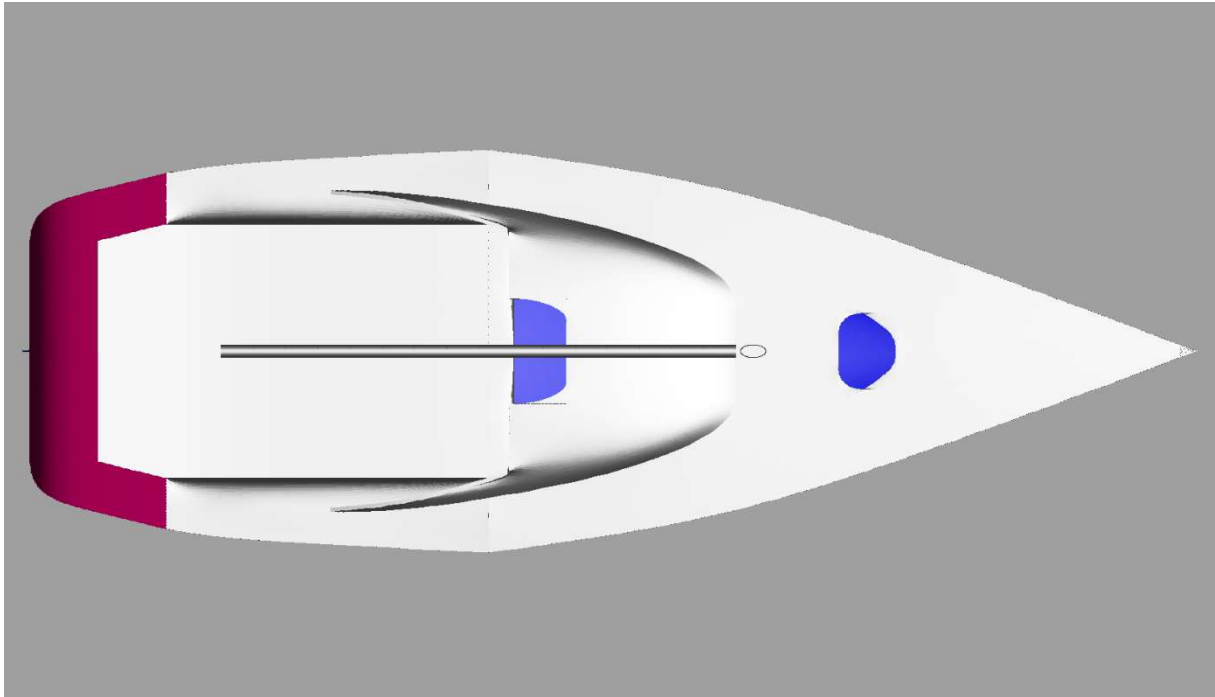
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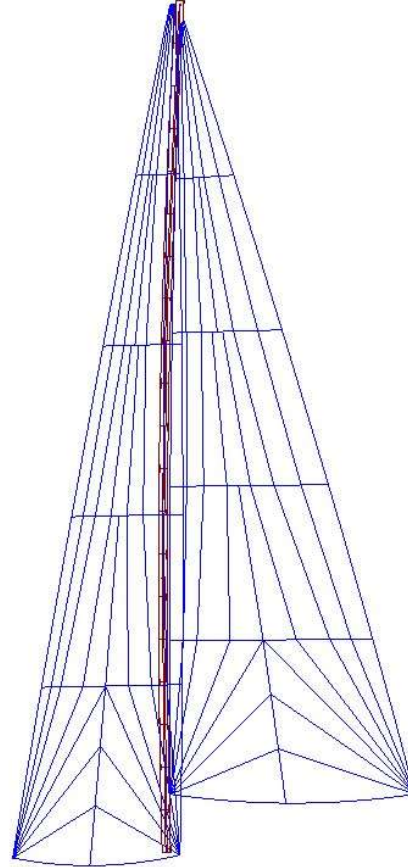
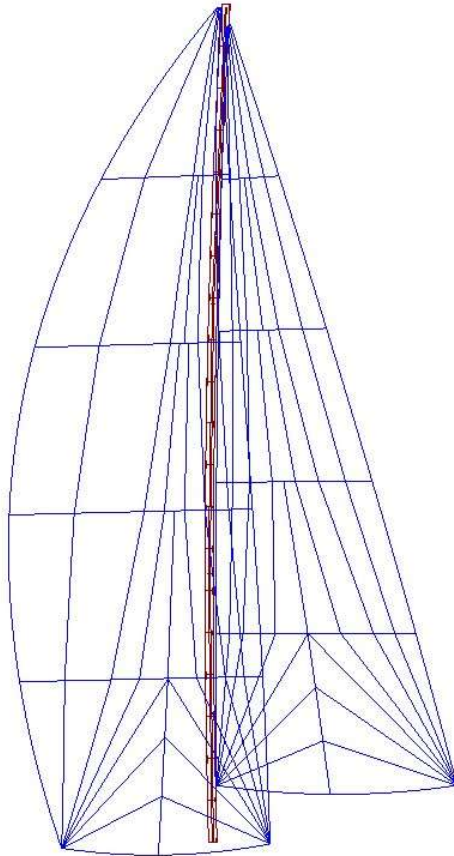
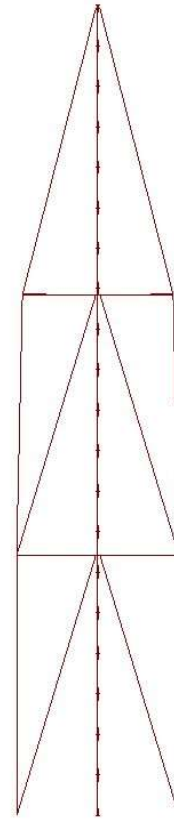
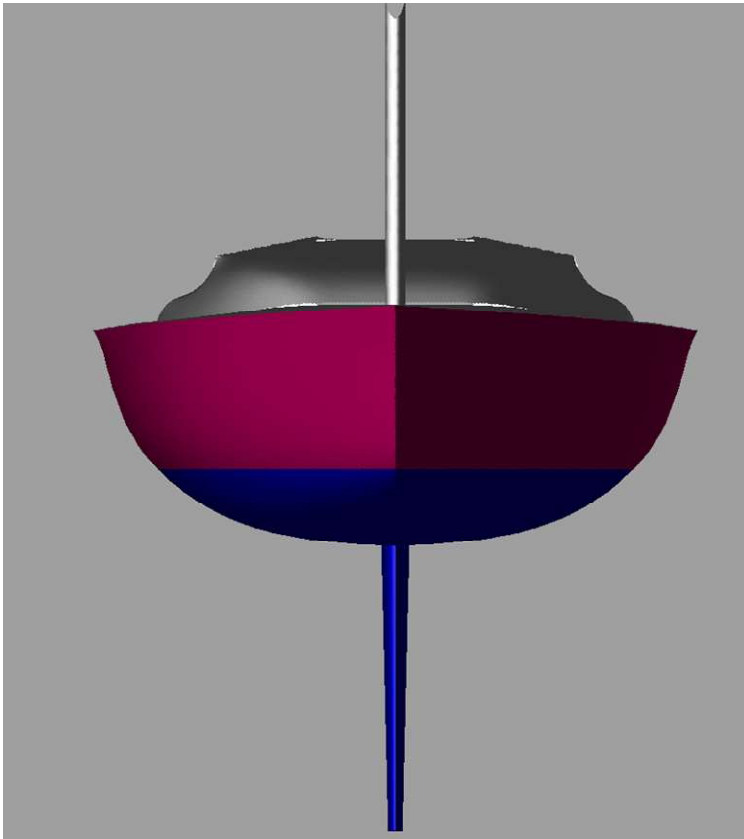
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Main 28m<sup>2</sup> High Aspect 22m<sup>2</sup> Code Zero 48m<sup>2</sup>