

Hull examples with Gene-Hull VE Dinghy 2,41

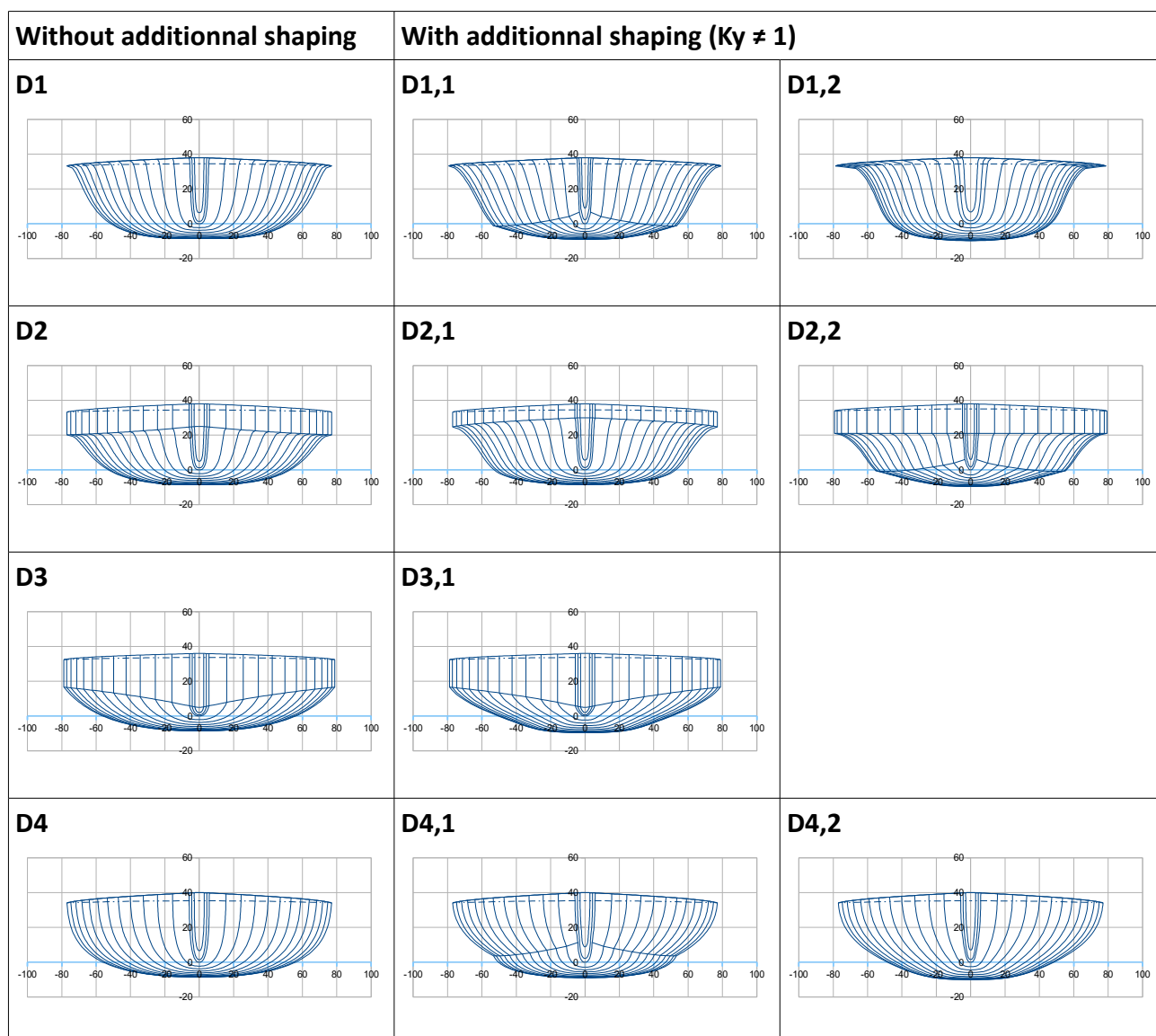
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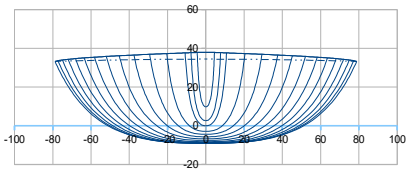
Gene-Hull VE Dinghy 2,41 is here tested through the generation of various hulls on the theme of a 14 ft cat-boat, with Lhull : 4,27 m and Bhull : 1,60 m as fixed dimensions for all the versions. The mass units are also common, so the light weights of the versions vary very little from ~ 60 to 64 kg. All the versions are studied with a payload (crew) of 100 kg, positioned either at center crouching under the boom (to assess the stability issue through the computation of the GM1°) or in a hiking posture (to compute the righting moment).

A wide range of hull shapes is investigated, including the ones that can be generated with using the option of 3 additionnal parameters (Ky, Kz, Ksoft), acting on the hull shape when $K_y \neq 1$. Each version change is introduced by the evolution of the input data in Gene-Hull.

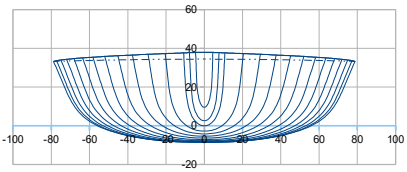
At the end of the document, a simplified comparison of the versions is proposed.



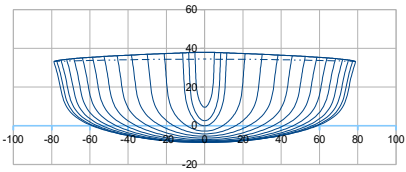
D5



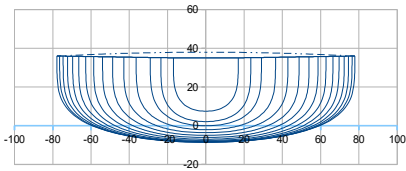
D5,1



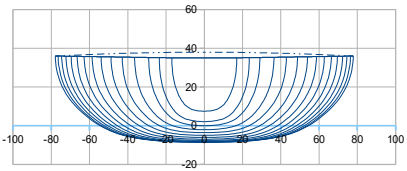
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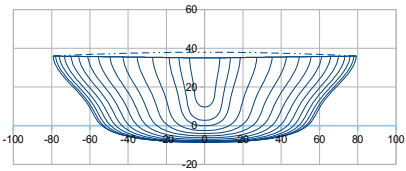
D6



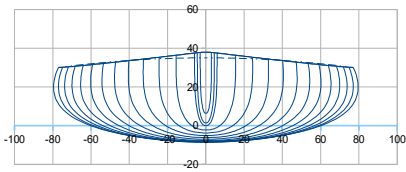
D6,1



D6,2



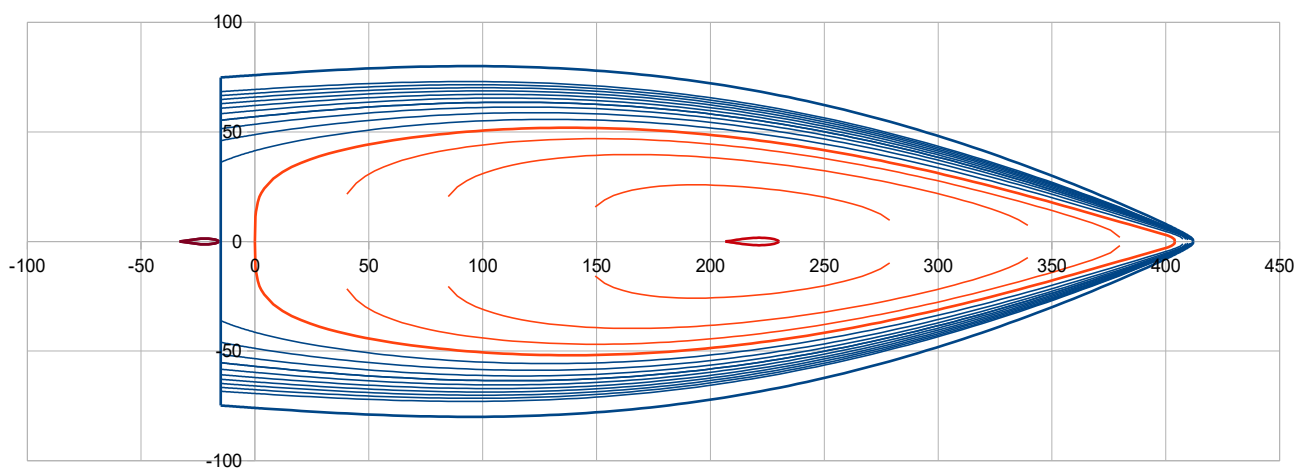
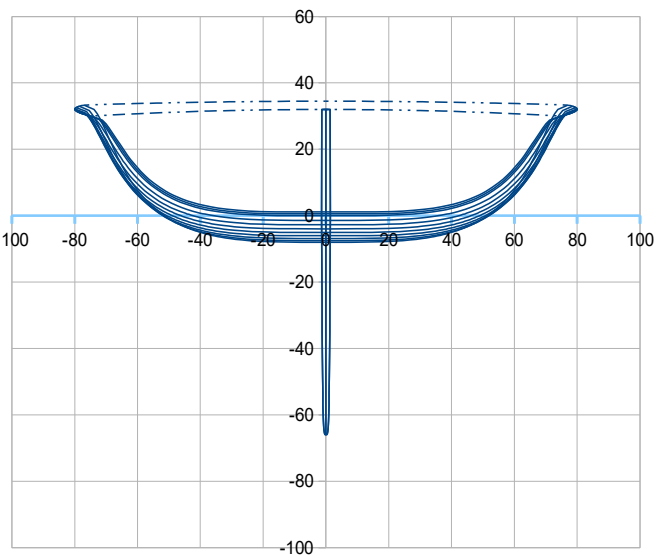
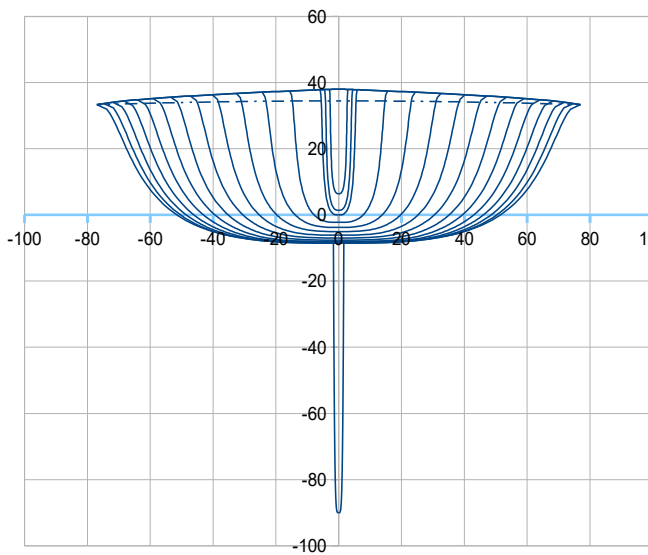
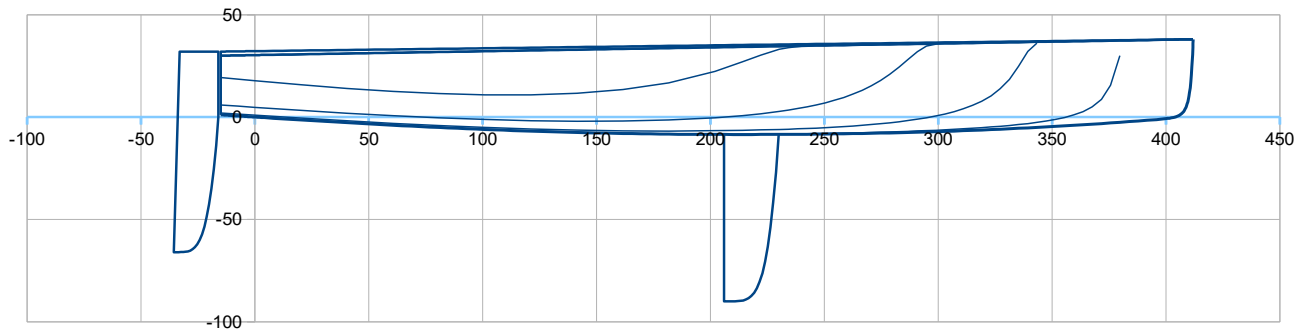
D7

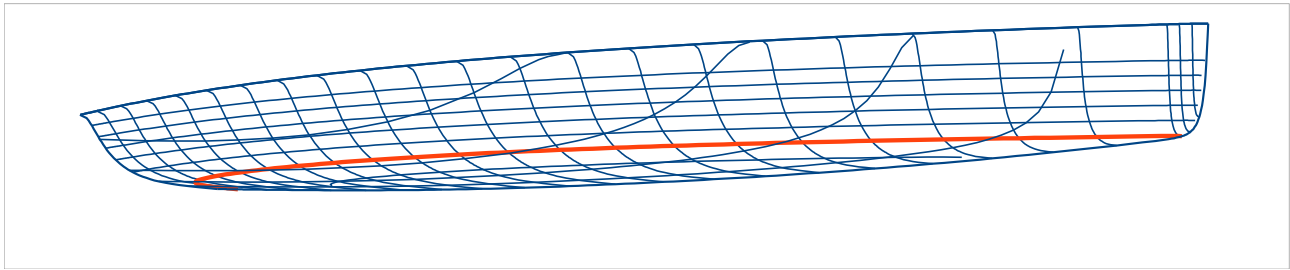


D1 (reference boat)

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 4,04 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 60,6 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 160,6 kg ; **Bwl = 1,04 m**





D1 - Hydrostatics data (for Displacement 160,6 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	4,04	> Hull speed	4,9	(at Fn 0,4)		
>> ft	14,01		13,25					
Bsheer (m)	1,60	at X (% Lwl)	23,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,04	at X (% Lwl)	34,0	> Bwl / B	0,649			
>> ft	3,40							
Tc (m)	0,085	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,28					>> ft	0,30	0,33
							0,98	1,08
Displacement at H0 (m3)	0,15199	at LCB (m)	1,881	LCB (%Lwl)	46,55	at ZCB (m)		Fore
(kg)	155,8	>> ft	6,17			>> inch		0,38
>> lbs	343,5	with water mass / vol. of	1025					1,25
Cp (%)	56,68							-1,23
Sf (m2)	3,03	at X (m)	1,715	X (%Lwl)	42,45	>>> Xc - Xf (%Lwl)		4,10
>> ft2	32,63	>> ft	5,63					
Angle immersed sheer li (°)	23,4	at section C4 (40% Lwl)						
Sw (m2)	3,06	>Sw/D^(2/3)	10,76					
>> ft2	32,97							
Shull (m2)	6,93	at X (m)	1,768	Z (m)	0,063			
>> ft2	74,62	>> ft	5,80	>> ft	0,21			
Sdeck (m2)	5,17	at X (m)	1,576					
>> ft2	55,65	>> ft	5,17					

2.2 Daggerboard

Volume (m3)	0,00308	at X (m)	2,182	X (%Lwl)	54,01	Z (m)	-0,41
Draft oa (m)	0,90		Sw (m2)	0,34		Sxz (m2)	0,16
>> ft	2,95		>> ft2	3,65		>> ft2	1,75
CLR (m)	2,240	CLR (%Lwl)	55,45	method : profile extended to the waterline, then 25% c at 45% draft oa			
>> ft	7,35						

2.3 Rudder(s)

Number	1						
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,11	Z (m)	-0,108
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10
>> ft2	2,23					>> ft2	1,07
							per rudder

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15669	at LCB (m)	1,865	LCB (%Lwl)	46,15	ZCB (m)	-0,040
Disp. (kg)	160,6	>> ft	0,57			>> ft	-0,13
>> lbs	354						
Sw (m2)	3,61	>Sw/D^(2/3)	12,42	Lwl/D^(1/3)	7,49		
>> ft2	38,85			DLR	68		M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	160,6	at Xg (m)	1,666	Xg (%Lwl)	41,24	at Zg (m)	0,576
Light boat	60,6		1,743				0,454

D1 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	60,59	1,743	0,454	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	160,59	1,666	0,576	0,000	Crew at center
Disp. (m3)	0,15668		0,390	0,592	Crew at hiking
		Cor H (cm)	0,030	at Xg	

For Heel = 0° >>> Trim = 0,60° ; Lwl = 3,97 m ; Bwl = 1,05 m ; Draft = 0,083 m ; Sw = 3,76 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15668 / Disp. (m3) 0,15668	Relevant only when heel = 0°
Height (cm) 0,2385	Xc heel (m) 1,666 / Xg (m) 1,666	Lwl (m) 3,965
Trim (°) 0,598	Yc heel (m) 0,000 Yg heel (m) 0,592	Bwl (m) 1,049
	Zc heel (m) -0,038 > GZ (m) 0,592	Draft (m) 0,083
	Sw heel (m2) 3,76 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,35	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

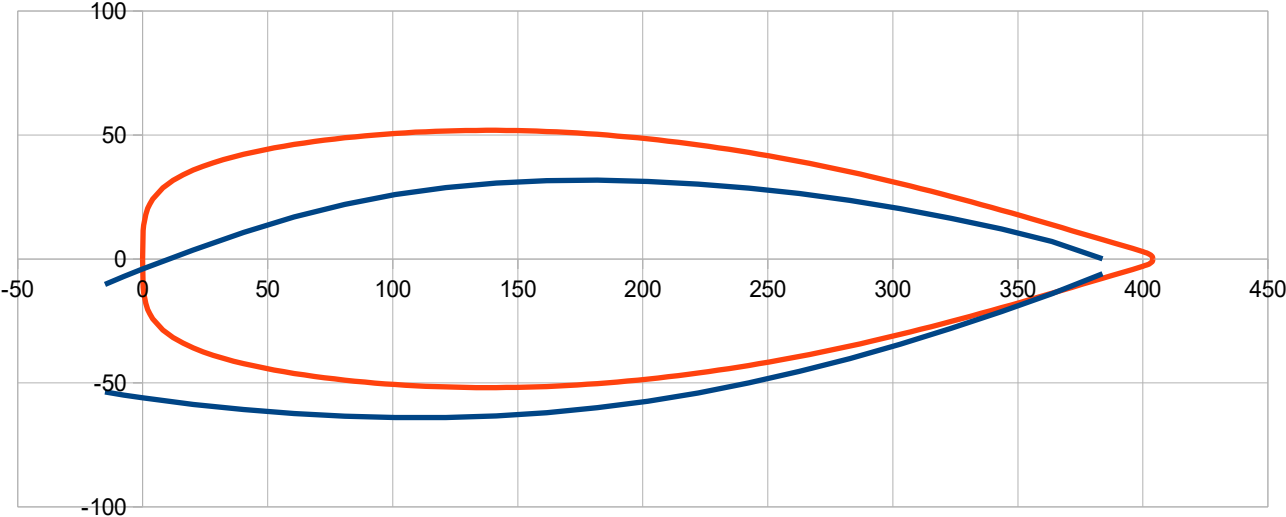
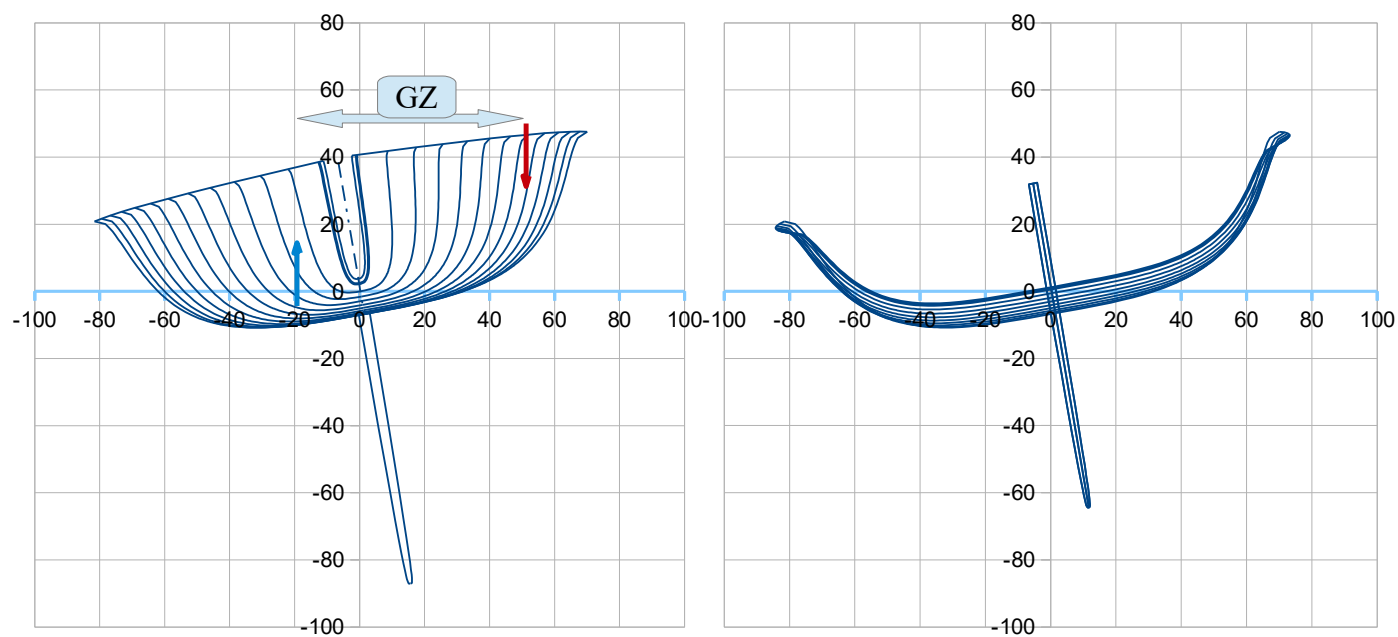
For Heel = 1° >>> GM1° = 0,68 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15669 / Disp. (m3) 0,15668	Relevant only when heel = 0°
Height (cm) 0,2503	Xc heel (m) 1,666 / Xg (m) 1,666	Lwl (m) 3,965
Trim (°) 0,594	Yc heel (m) -0,022 Yg heel (m) 0,585	Bwl (m) 1,047
	Zc heel (m) -0,038 > GZ (m) 0,607	Draft (m) 0,082
	Sw heel (m2) 3,75 RM (kN.m) 0,956	Relevant only when heel = 1°
	Freeboard minimum (cm) 27,06	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,33	Gz (m) 0,012
		> GM1° (m) 0,68

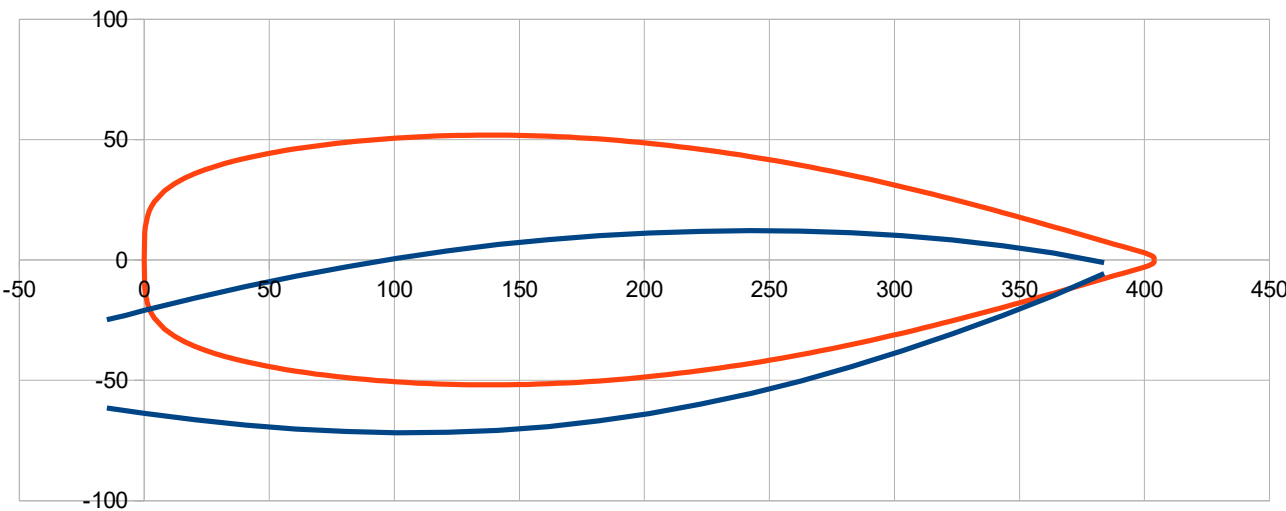
For Heel = 10° >>> Trim = 0,23° ; GZ = 0,705 m ; RM = 1,110 kN.m ; Sw = 3,42 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15668 / Disp. (m3) 0,15668	Relevant only when heel = 0°
Height (cm) 1,4962	Xc heel (m) 1,666 / Xg (m) 1,666	Lwl (m) 3,977
Trim (°) 0,230	Yc heel (m) -0,192 Yg heel (m) 0,513	Bwl (m) 0,940
	Zc heel (m) -0,043 > GZ (m) 0,705	Draft (m) 0,070
	Sw heel (m2) 3,42 RM (kN.m) 1,110	Relevant only when heel = 1°
	Freeboard minimum (cm) 17,30	Yg heel (m) -0,103 with crew at center
	Obliquity (°) 3,81	Gz (m) 0,090
		> GM1° (m) 0,52

D1 - at 10° heel angle :



At 20° heel angle



D1

Sailplan – early stage definition with a cat-boat configuration

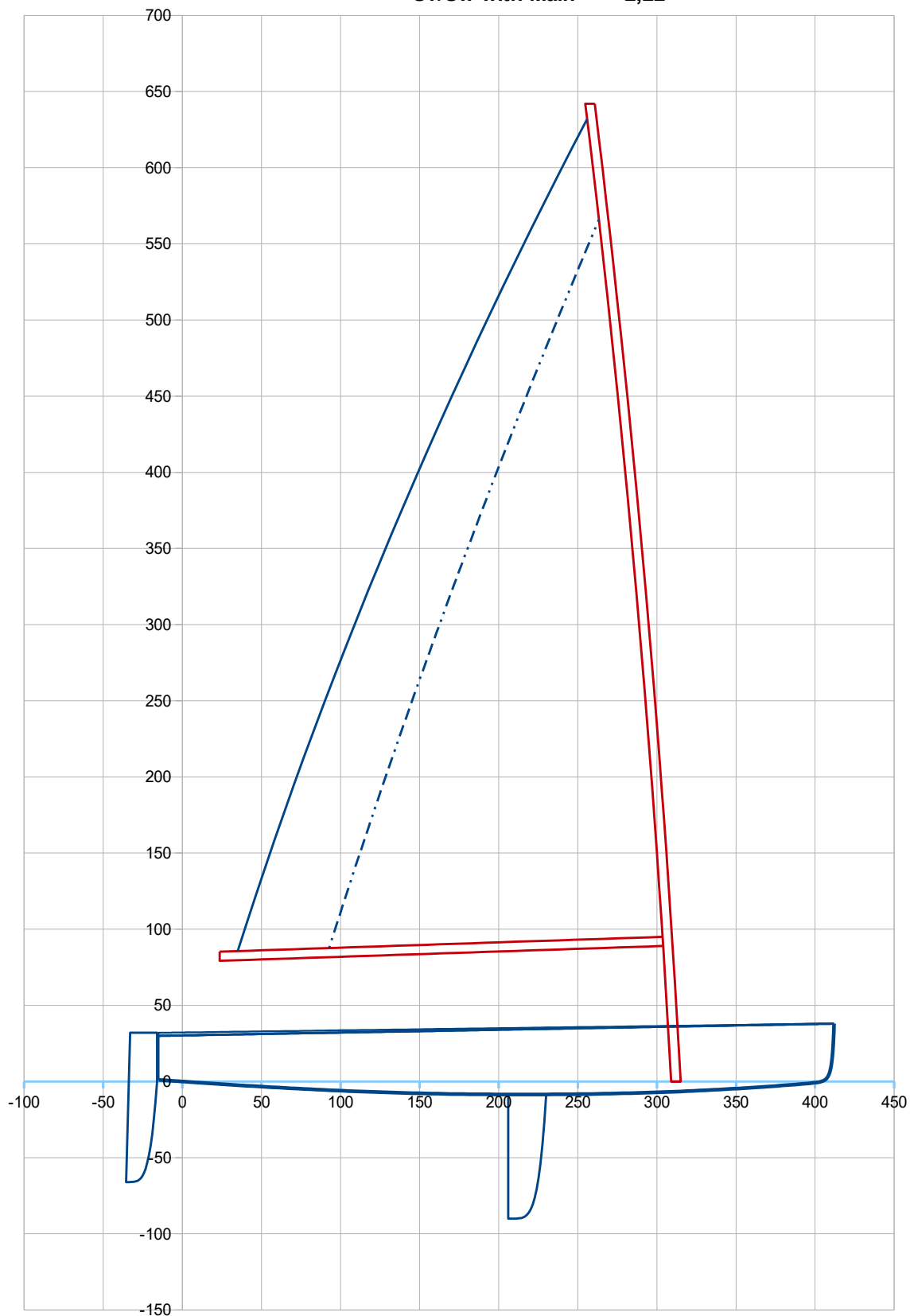
Data to enter

>> in feet

Xmast (m)	3,15	10,33
Zmast (m)	6,42	21,06
Zboom (m)	0,95	3,12
Lboom (m)	2,80	9,19

Results for the Sailplan

Main sail (m2)	8,01	Small sail	5,36
Lead Xv – Xd (%)	2,4	Xv – Xd (%)	6,1
Scaggerboard/Sv (%)	2,0		
Srudder/Sv (%)	1,2		
Sv/Sw with Main	2,22		



D1

Mass spreadsheet – Preliminary

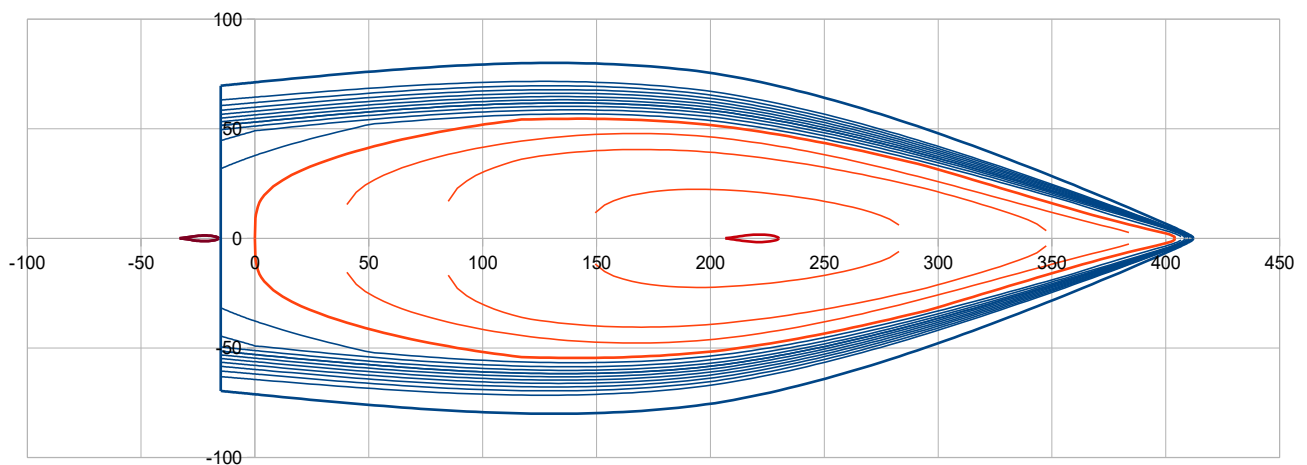
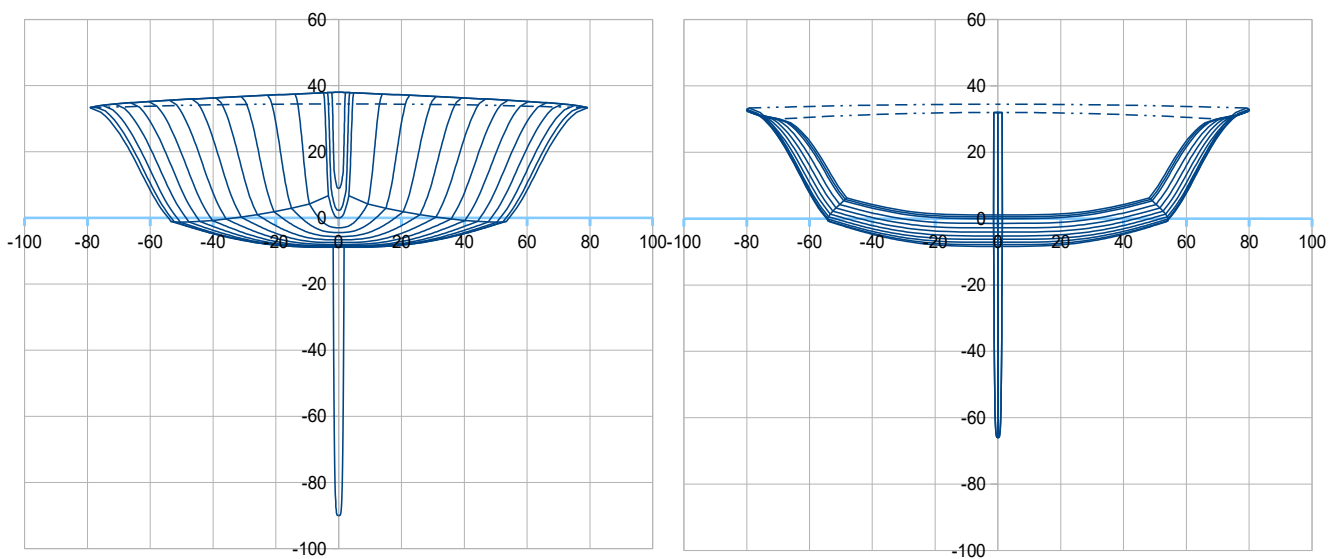
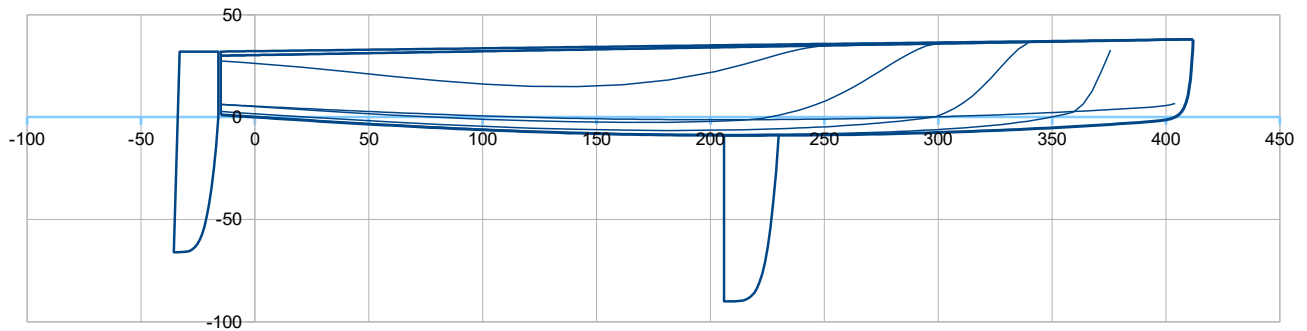
Eléments	L m	S m2	V m3	Mass units to enter	Masse (kg)	X (cm)	M X	Z (cm)	M Z
Hull :									
Hull assuming at ~ 4 kg/m2	6,93			4,00	27,73	176,8	4903,143	6,3	173,366
Transom assuming at ~ 4 kg/m2	0,34			4,00	1,35	-15,0	-20,203	17,0	22,922
Deck									
Deck assuming at ~ 3 kg/m2	5,17			3,00	15,51	157,6	2443,727	38,0	589,383
Daggerboard :									
Daggerboard system, assuming ~ 3 kg				3,00	3,00	218,2	654,590	-30,0	-90,000
Rudder :									
Rudder system, assuming ~ 2 kg				2,00	2,00	-24,5	-49,000	-10,79	-21,574
Rig and sails :									
Mast carbon Dia 64 Ep 2 >> 0,7 kg/m	6,420			0,70	4,72	284,9	1344,230	321,0	1514,703
Boom carbon Dia 54 Ep 2 >> 0,6 kg/m	2,800			0,60	1,76	163,6	288,537	87,1	153,664
Mainsail 300g/m2	8,01			0,30	2,52	233,9	590,047	149,1	376,093
Deck & cockpit equipment :									
Various deck equipment ~ 2,1 kg provision				2,00	2,00	202,0	404,000	17,0	34,000
Light weight >>>					60,59 %Lf >>>	174,3 43,1	10559,072	45,4	2752,558

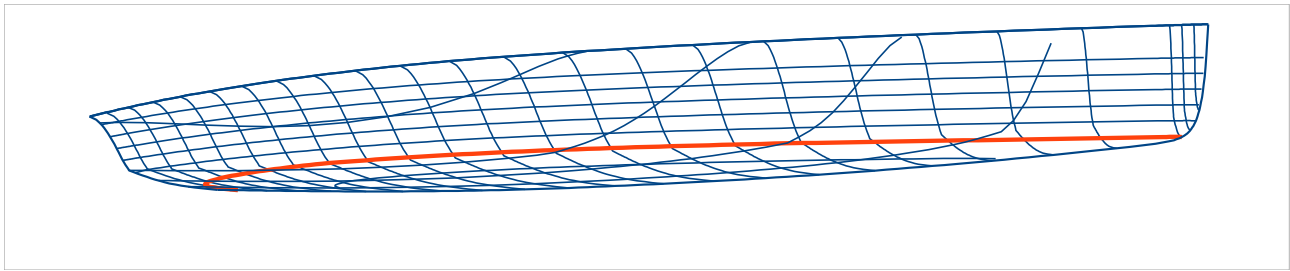
Evolution	D1	>>>	D1,1
1.1 Hull data			
Lenght of water			
Lwl (m)	4,04		4,04
Maximum draft (m)			
Tc (m)	0,0850	>>>	0,0890
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,38		0,38
Shape coefficient			
Cet	80,0	>>>	57,0
Polynomials of 1			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0110		0,0110
Sheer line, in hc			
Bg (m)	0,56	>>>	0,79
X Bg (% Lwl)	55,0	>>>	50,0
Alfa (°)	11,84	>>>	9,58
Pui liv y	2,00	>>>	1,80
Cor Pui liv	0,020	>>>	0,040
Pui Cor Pui	2,00	>>>	1,50
Scow	0,07	>>>	0,04
Option Hard Ch			
Type	0		0
1,2 Zhc av (m)	0,15		0,15
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,10		0,10
Pui hc z	3		3
Sheer line, in ve			
Z liv m (m)	0,35		0,35
Z liv ar (m)	0,30		0,30
Pui liv z	1		1
Deck / central li			
Z p m (m)	0,38		0,38
Z p ar (m)	0,32		0,32
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	3,00		3,00
C Hv m	6,00		6,00
C Hv ar	5,00		5,00
Pui Hv	3,00		3,00
Pui V av	20,00	>>>	12,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	0,30	>>>	0,500
Pui E2	8,67	>>>	4,107
mix VE av	0,25	>>>	0,15
mix VE ar	0,15	>>>	0,00
Pui mix VE	1,00		1,00
Option addition			
Ky	1,00	>>>	1,235
Kz	0,40	>>>	0,40
Ksoft	2,00	>>>	0,850

D1,1

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 4,04 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 60,3 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 160,3 kg ; **Bwl : 1,09 m**





D1,1 - Hydrostatics data (for Displacement 160,3 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	4,04	> Hull speed	4,9	(at Fn 0,4)		
>> ft	14,01		13,25					
Bsheer (m)	1,60	at X (% Lwl)	33,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,09	at X (% Lwl)	35,0	> Bwl / B	0,682			
>> ft	3,58							
Tc (m)	0,089	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,29						0,30	0,33
							>> ft	1,08
Displacement at H0 (m3)	0,15169	at LCB (m)	1,890	LCB (%Lwl)	46,77		at ZCB (m)	-0,032
(kg)	155,5	>> ft	6,20				>> inch	-1,25
>> lbs	342,8	with water mass / vol. of	1025			kg/m3		
Cp (%)	54,38							
Sf (m2)	3,04	at X (m)	1,728	X (%Lwl)	42,77		>>> Xc – Xf (%Lwl)	4,00
>> ft2	32,76	>> ft	5,67					
Angle immersed sheer li (°)	22,8	at section C4 (40% Lwl)						
Sw (m2)	3,08	>Sw/D^(2/3)	10,84					
>> ft2	33,18							
Shull (m2)	6,92	at X (m)	1,774	Z (m)	0,066			
>> ft2	74,50	>> ft	5,82	>> ft	0,22			
Sdeck (m2)	5,14	at X (m)	1,589					
>> ft2	55,30	>> ft	5,21					

2.2 Daggerboard

Volume (m3)	0,00307	at X (m)	2,182	X (%Lwl)	54,01	Z (m)	-0,42
Draft oa (m)	0,90		Sw (m2)	0,34		Sxz (m2)	0,16
>> ft	2,95		>> ft2	3,63		>> ft2	1,74
CLR (m)	2,240	CLR (%Lwl)	55,45	method : profile extended to the waterline, then 25% c at 45% draft oa			
>> ft	7,35						

2.3 Rudder(s)

Number	1						
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,11	Z (m)	-0,108
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10
>> ft2	2,23					>> ft2	1,07
							per rudder

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15638	at LCB (m)	1,873	LCB (%Lwl)	46,37	ZCB (m)	-0,040
Disp. (kg)	160,3	>> ft	0,57			>> ft	-0,13
>> lbs	353						
Sw (m2)	3,63	>Sw/D^(2/3)	12,49	Lwl/D^(1/3)	7,50		
>> ft2	39,03			DLR	68		M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	160,3	at Xg (m)	1,670	Xg (%Lwl)	41,34	at Zg (m)	0,634
Light boat	60,3		1,753				0,457

D1,1 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)

6.1 Mass spreadsheet with input of a load

	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Data to enter : yellow cells					
Dinghy light weight (kg)	60,33	1,753	0,457	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	160,33	1,670	0,634	0,000	Crew at center
Disp. (m3)	0,15642		0,447	0,593	Crew at hiking
		Cor H (cm)	5,695	at Xg	

For Heel = 0° >>> Trim = 0,65° ; Lwl = 4,01 m ; Bwl = 1,10 m ; Draft = 0,086 m ; Sw = 3,78 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15642 / Disp. (m3) 0,15642	Relevant only when heel = 0°
Height (cm) 0,2535	Xc heel (m) 1,670 / Xg (m) 1,670	Lwl (m) 4,007
Trim (°) 0,645	Yc heel (m) 0,000 Yg heel (m) 0,593	Bwl (m) 1,097
	Zc heel (m) -0,038 > GZ (m) 0,593	Draft (m) 0,086
	Sw heel (m2) 3,78 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,20	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

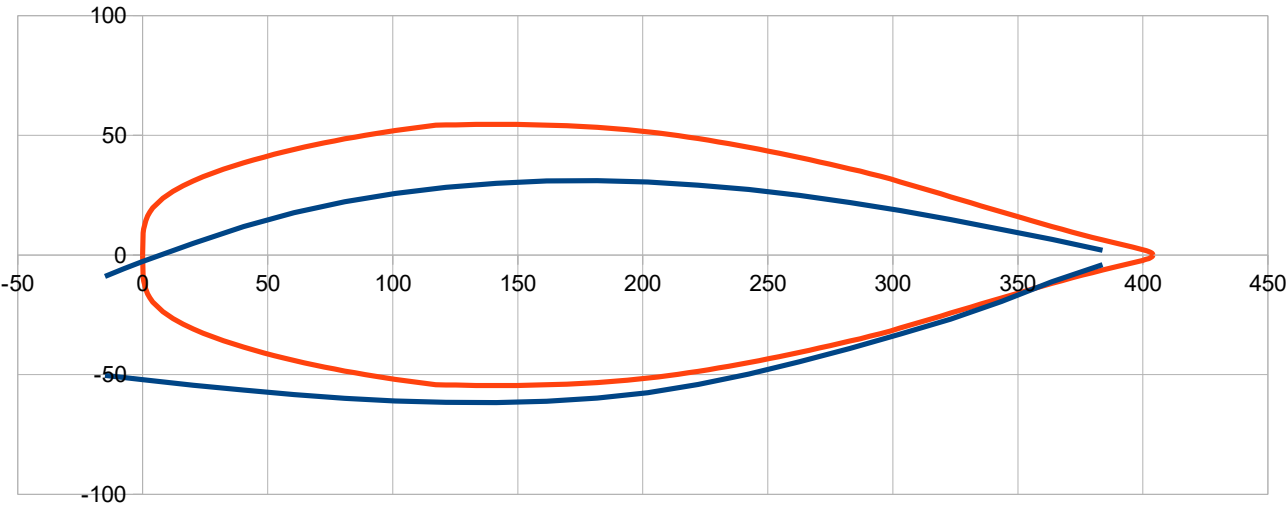
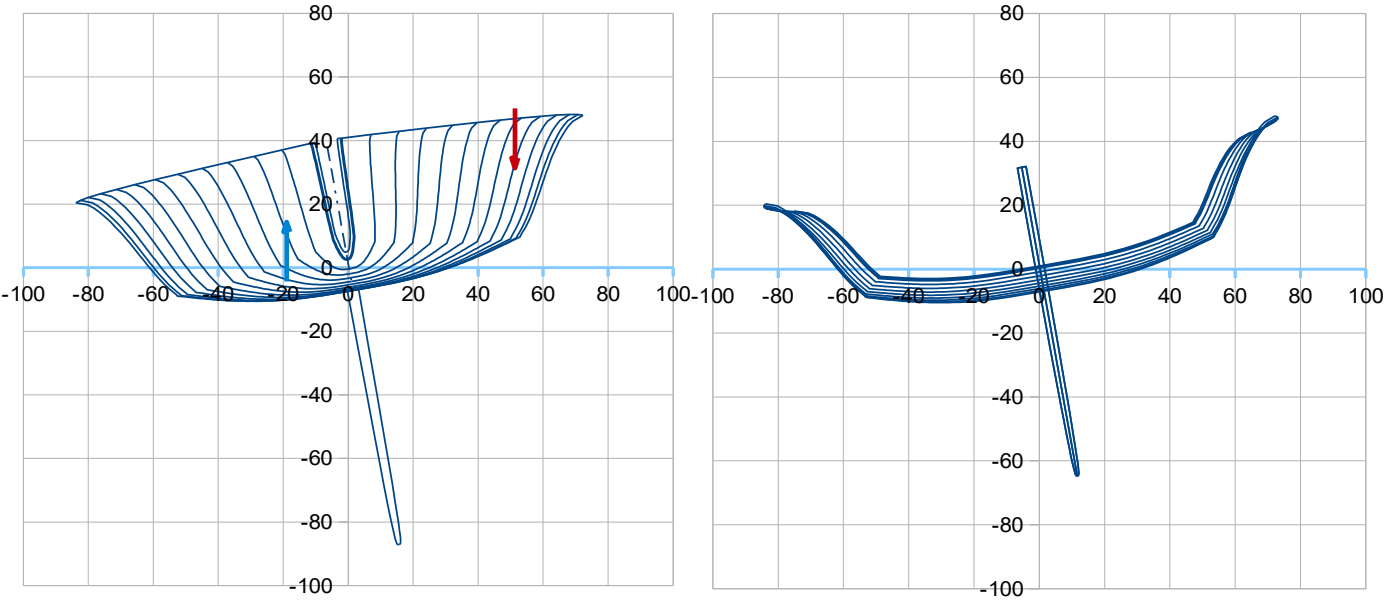
For Heel = 1° >>> GM1° = 0,79 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15642 / Disp. (m3) 0,15642	Relevant only when heel = 0°
Height (cm) 0,2650	Xc heel (m) 1,670 / Xg (m) 1,670	Lwl (m) 4,008
Trim (°) 0,640	Yc heel (m) -0,024 Yg heel (m) 0,586	Bwl (m) 1,095
	Zc heel (m) -0,039 > GZ (m) 0,610	Draft (m) 0,086
	Sw heel (m2) 3,78 RM (kN.m) 0,959	Relevant only when heel = 1°
	Freeboard minimum (cm) 27,00	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,51	Gz (m) 0,014
		> GM1° (m) 0,79

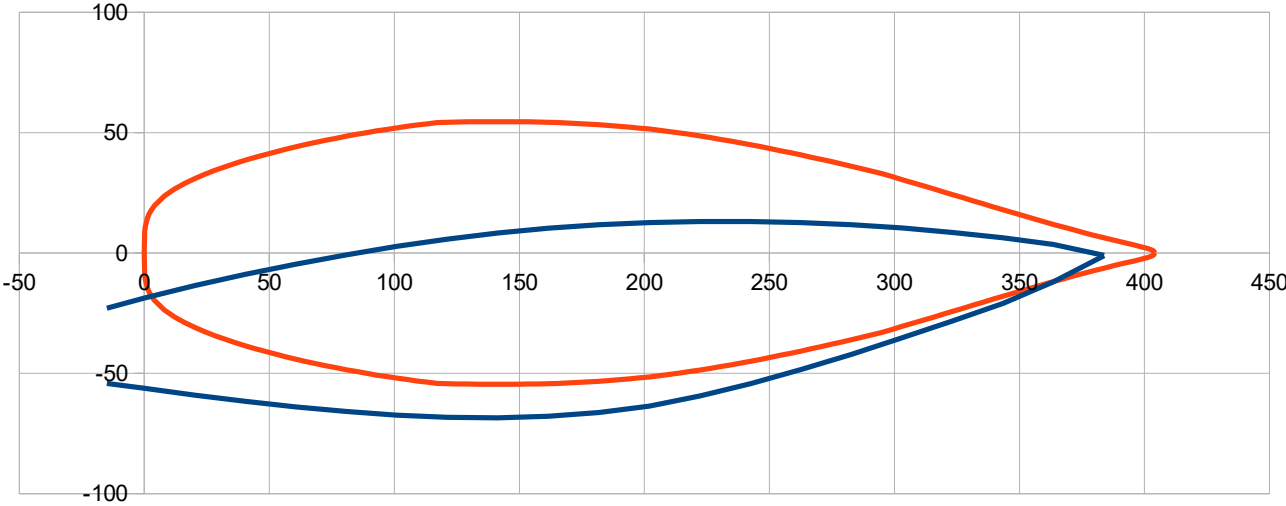
For Heel = 10° >>> Trim = 0,31° ; GZ = 0,702 m ; RM = 1,105 kN.m ; Sw = 3,36 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15642 / Disp. (m3) 0,15642	Relevant only when heel = 0°
Height (cm) 1,5350	Xc heel (m) 1,670 / Xg (m) 1,670	Lwl (m) 4,006
Trim (°) 0,310	Yc heel (m) -0,189 Yg heel (m) 0,513	Bwl (m) 0,921
	Zc heel (m) -0,044 > GZ (m) 0,702	Draft (m) 0,074
	Sw heel (m2) 3,36 RM (kN.m) 1,105	Relevant only when heel = 1°
	Freeboard minimum (cm) 17,93	Yg heel (m) -0,103 with crew at center
	Obliquity (°) 3,53	Gz (m) 0,086
		> GM1° (m) 0,50

D1,1 - at 10° heel angle :



At 20° heel angle

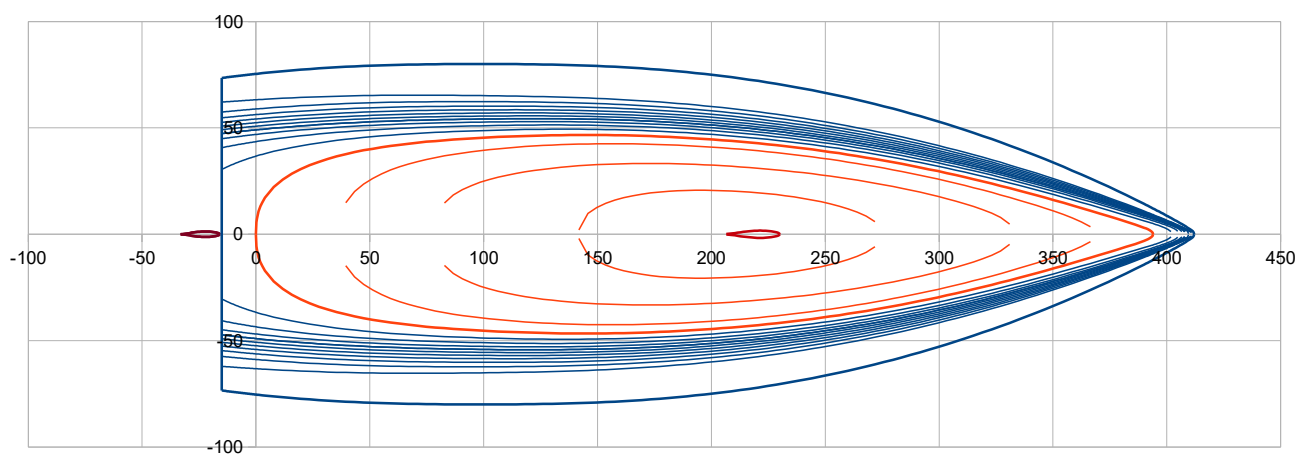
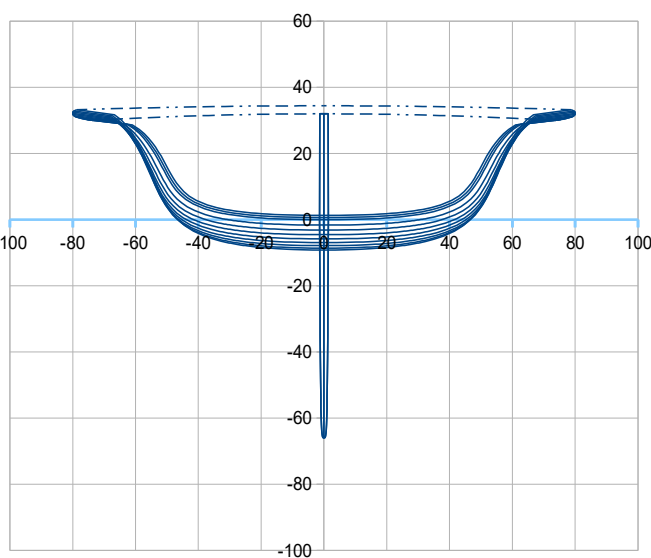
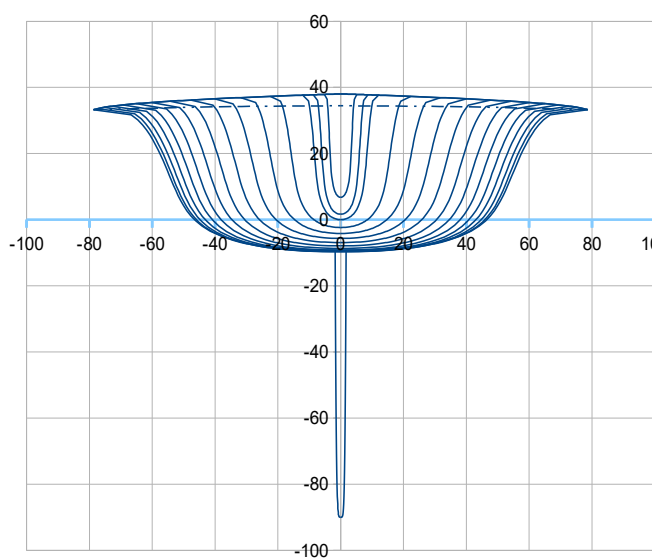
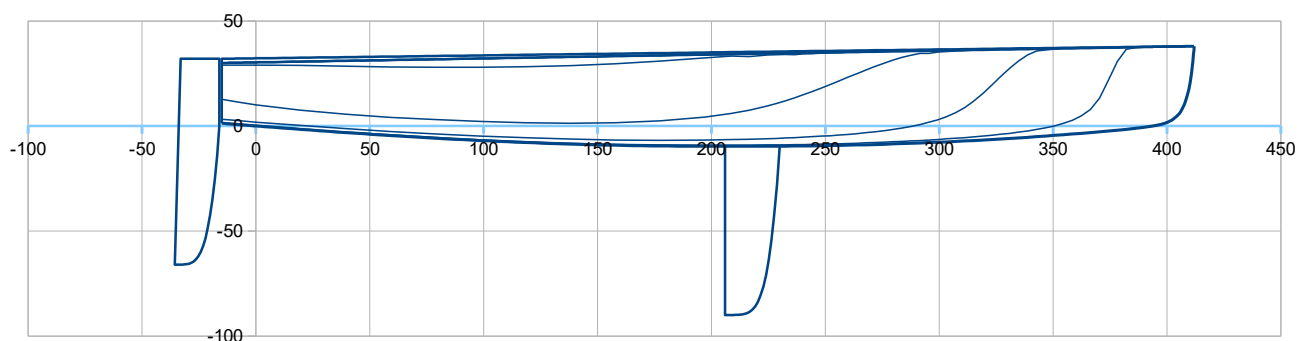


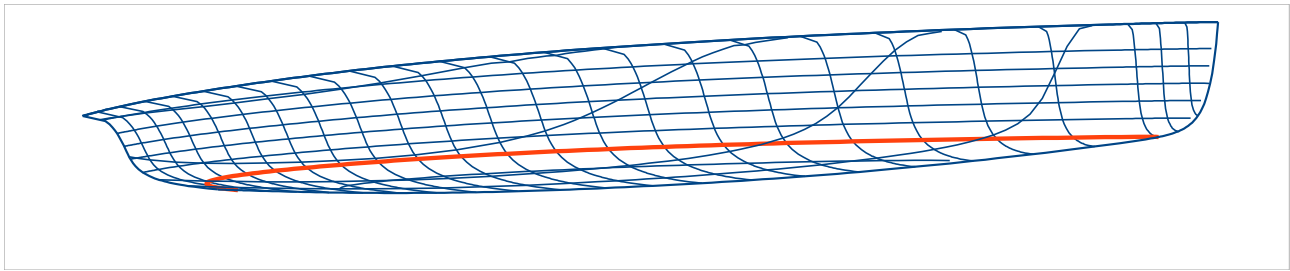
Evolution	D1,1	>>>	D1,2
1.1 Hull data			
Lenght of water			
Lwl (m)	4,04	>>>	3,94
Maximum draft (m)			
Tc (m)	0,0890	>>>	0,0970
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,38		0,38
Shape coefficient			
Cet	57,0	>>>	40,0
Polynomials of t			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0110	>>>	0,0130
Sheer line, in hc			
Bg (m)	0,79	>>>	1,60
X Bg (% Lwl)	50,0	>>>	25,0
Alfa (°)	9,58	>>>	0,00
Pui liv y	1,80	>>>	2,50
Cor Pui liv	0,040	>>>	0,020
Pui Cor Pui	1,50	>>>	2,00
Scow	0,04	>>>	0,06
<i>Option Hard Ch</i>			
Type	0		0
1,2 Zhc av (m)	0,15		0,15
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,10		0,10
Pui hc z	3		3
Sheer line, in ve			
Z liv m (m)	0,35		0,35
Z liv ar (m)	0,30		0,30
Pui liv z	1		1
Deck / central li			
Z p m (m)	0,38		0,38
Z p ar (m)	0,32		0,32
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	3,00	>>>	6,00
C Hv m	6,00		6,00
C Hv ar	5,00		5,00
Pui Hv	3,00		3,00
Pui V av	12,00		12,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	0,500	>>>	0,14
Pui E2	4,107	>>>	4,875
mix VE av	0,15	>>>	0,25
mix VE ar	0,00	>>>	0,15
Pui mix VE	1,00		1,00
<i>Option addition</i>			
Ky	1,235	>>>	1,30
Kz	0,40	>>>	0,25
Ksoft	0,850	>>>	2,00

D1,2

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 3,94 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 61,5 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 161,5 kg ; **Bwl : 0,93 m**





D1,2 - Hydrostatics data (for Displacement 161,5 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	3,94	> Hull speed	4,8	(at Fn 0,4)		
>> ft	14,01		12,93					
Bsheer (m)	1,60	at X (% Lwl)	25,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	0,93	at X (% Lwl)	37,0	> Bwl / B	0,583			
>> ft	3,06							
Tc (m)	0,097	at X (%Lwl)	50					
>> ft	0,32							
Displacement at H0 (m3)	0,15290	at LCB (m)	1,867	LCB (%Lwl)	47,37			
(kg)	156,7	>> ft	6,12					
>> lbs	345,5	with water mass / vol. of	1025					
Cp (%)	57,25							
Sf (m2)	2,74	at X (m)	1,726	X (%Lwl)	43,80			
>> ft2	29,49	>> ft	5,66					
Angle immersed sheer li (°)	22,9	at section C4 (40% Lwl)						
Sw (m2)	2,80	>Sw/D^(2/3)	9,79					
>> ft2	30,15							
Shull (m2)	7,09	at X (m)	1,769	Z (m)	0,088			
>> ft2	76,30	>> ft	5,80	>> ft	0,29			
Sdeck (m2)	5,34	at X (m)	1,614					
>> ft2	57,49	>> ft	5,29					

2.2 Daggerboard

Volume (m3)	0,00304	at X (m)	2,182	X (%Lwl)	55,38	Z (m)	-0,42	
Draft oa (m)	0,90							
>> ft	2,95							
CLR (m)	2,240	CLR (%Lwl)	56,85	method : profile extended to the waterline, then 25% c at 45% draft oa				
>> ft	7,35							

2.3 Rudder(s)

Number	1							
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,27	Z (m)	-0,108	
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10	per rudder
>> ft2	2,23					>> ft2	1,07	

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15756	at LCB (m)	1,851	LCB (%Lwl)	46,98	ZCB (m)	-0,043	
Disp. (kg)	161,5	>> ft	0,56			>> ft	-0,14	
>> lbs	356							
Sw (m2)	3,34	>Sw/D^(2/3)	11,45	Lwl/D^(1/3)	7,29			
>> ft2	35,96			DLR	74			M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	161,5	at Xg (m)	1,672	Xg (%Lwl)	42,44	at Zg (m)	0,632	
Light boat	61,5		1,757				0,462	

D1,2 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	61,50	1,757	0,462	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	161,50	1,672	0,632	0,000	Crew at center
Disp. (m3)	0,15756		0,446	0,588	Crew at hiking
		Cor H (cm)	5,364	at Xg	

For Heel = 0° >>> Trim = 0,62° ; Lwl = 3,88 m ; Bwl = 0,94 m ; Draft = 0,095 m ; Sw = 3,46 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15756 / Disp. (m3) 0,15756	Relevant only when heel = 0°
Height (cm) 0,2167	Xc heel (m) 1,672 / Xg (m) 1,672	Lwl (m) 3,883
Trim (°) 0,623	Yc heel (m) 0,000 Yg heel (m) 0,588	Bwl (m) 0,940
	Zc heel (m) -0,042 > GZ (m) 0,588	Draft (m) 0,095
	Sw heel (m2) 3,46 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,26	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

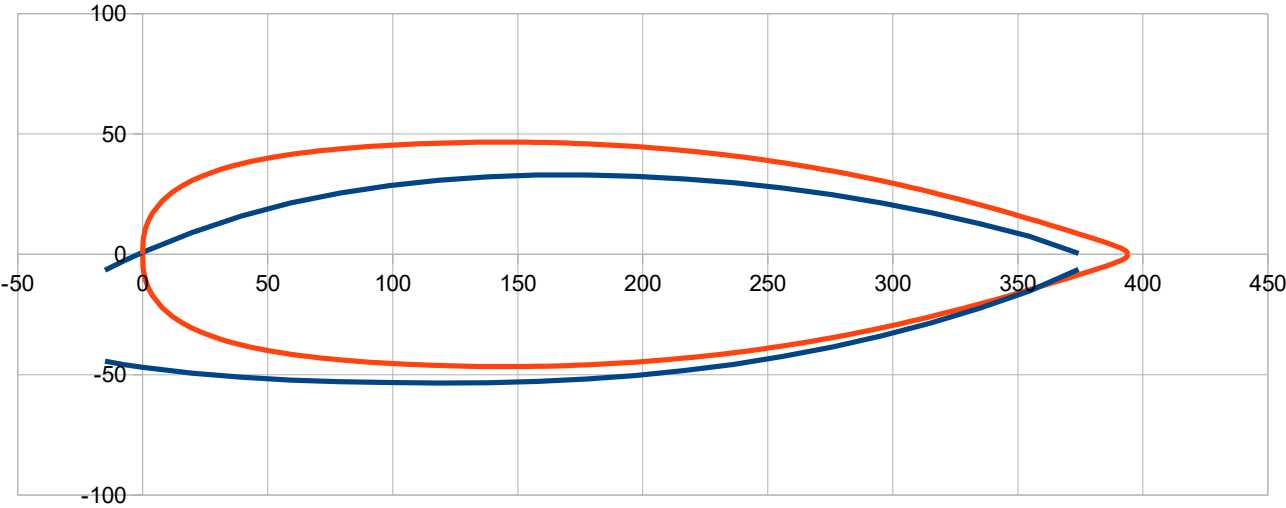
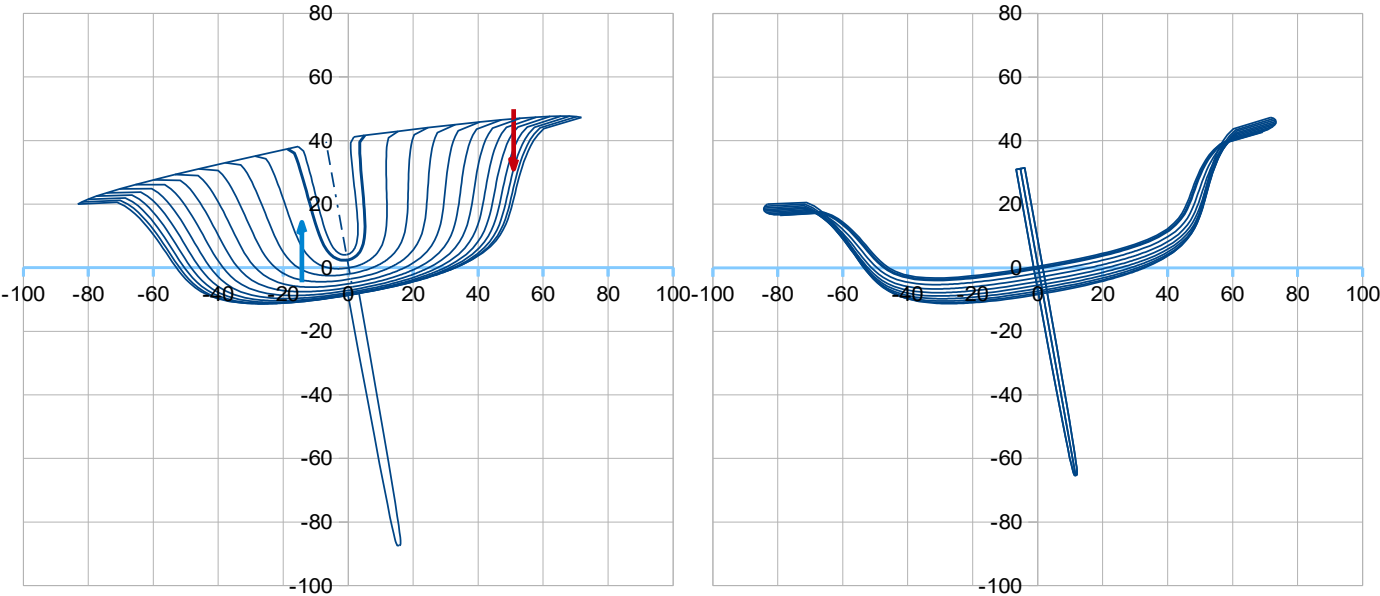
For Heel = 1° >>> GM1° = 0,33 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15756 / Disp. (m3) 0,15756	Relevant only when heel = 0°
Height (cm) 0,2260	Xc heel (m) 1,672 / Xg (m) 1,672	Lwl (m) 3,884
Trim (°) 0,620	Yc heel (m) -0,016 Yg heel (m) 0,581	Bwl (m) 0,938
	Zc heel (m) -0,042 > GZ (m) 0,597	Draft (m) 0,095
	Sw heel (m2) 3,46 RM (kN.m) 0,946	Relevant only when heel = 1°
	Freeboard minimum (cm) 26,98	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,24	Gz (m) 0,006
		> GM1° (m) 0,33

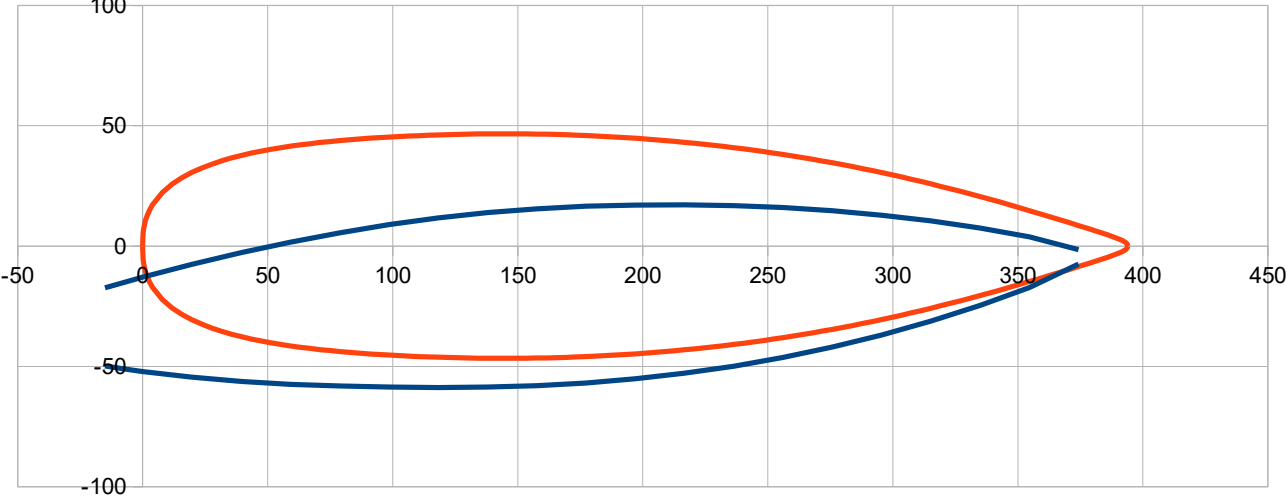
For Heel = 10° >>> Trim = 0,37° ; GZ = 0,652 m ; RM = 1,033 kN.m ; Sw = 3,22 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15756 / Disp. (m3) 0,15756	Relevant only when heel = 0°
Height (cm) 1,1020	Xc heel (m) 1,672 / Xg (m) 1,672	Lwl (m) 3,886
Trim (°) 0,373	Yc heel (m) -0,143 Yg heel (m) 0,509	Bwl (m) 0,859
	Zc heel (m) -0,046 > GZ (m) 0,652	Draft (m) 0,086
	Sw heel (m2) 3,22 RM (kN.m) 1,033	Relevant only when heel = 1°
	Freeboard minimum (cm) 16,60	Yg heel (m) -0,102 with crew at center
	Obliquity (°) 2,49	Gz (m) 0,041
		> GM1° (m) 0,23

D1,2 – At 10° heel angle



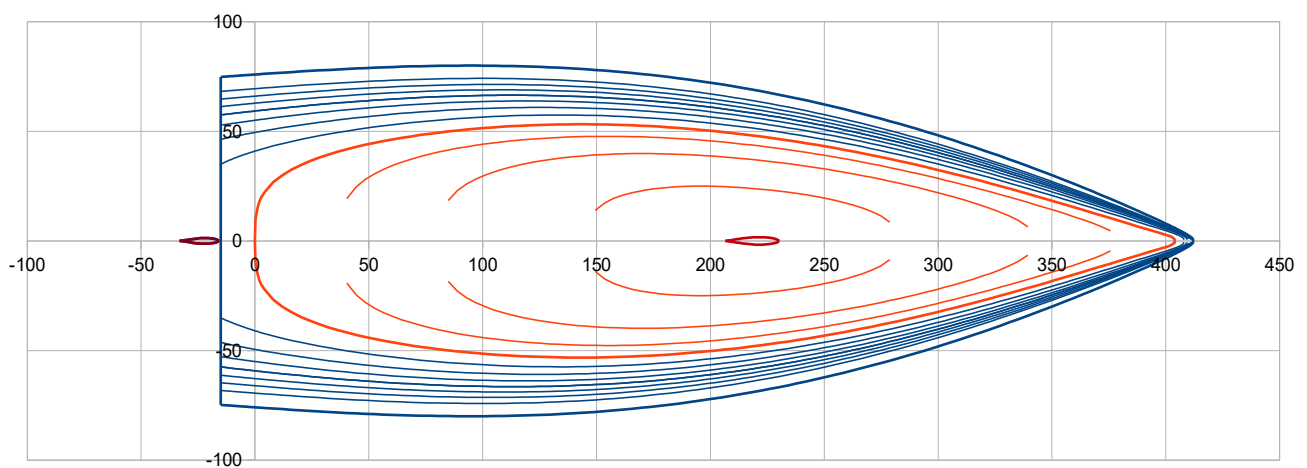
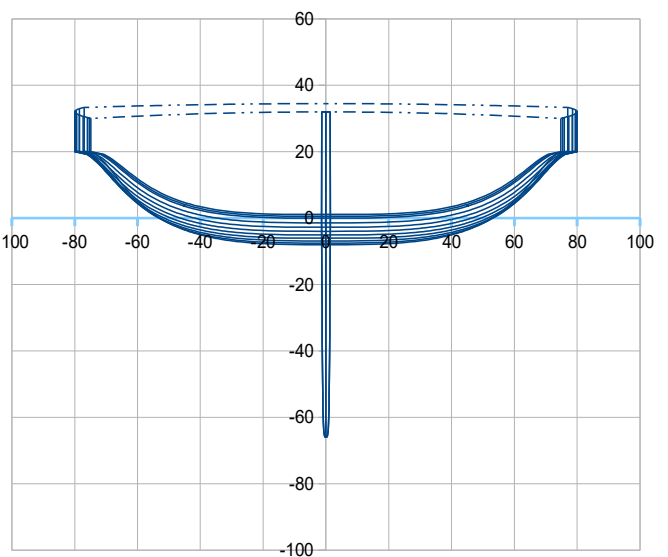
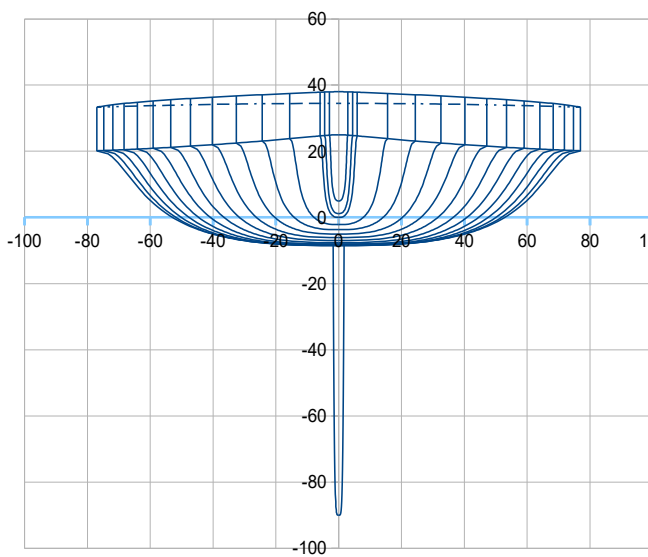
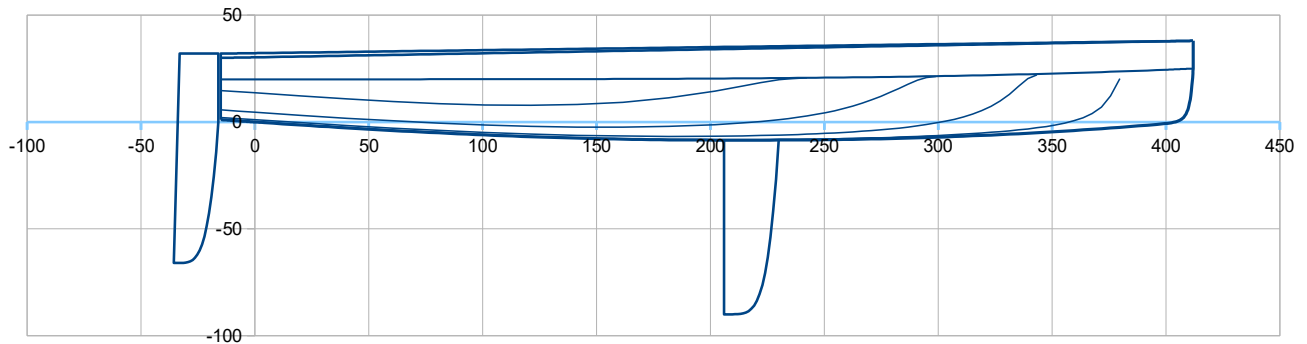
D1,2 - At 20° heel angle

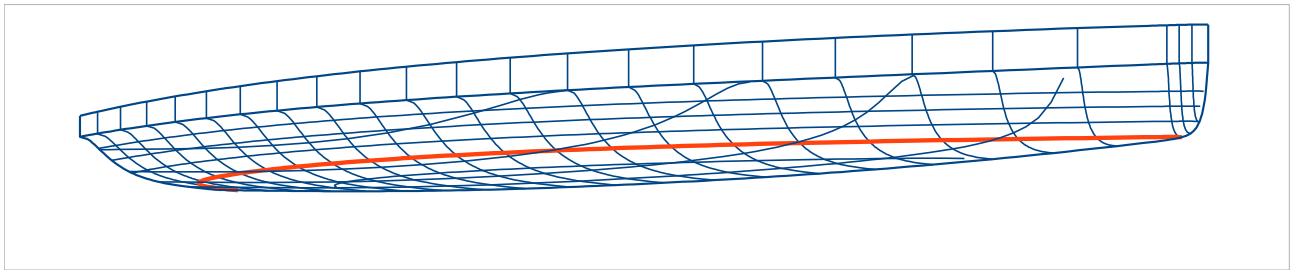


Evolution	D1,2	>>>	D2
1.1 Hull data			
Lenght of water			
Lwl (m)	3,94	>>>	4,04
Maximum draft (m)			
Tc (m)	0,0970	>>>	0,0850
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,38		0,38
Shape coefficient			
Cet	40,0	>>>	80,0
Polynomials of 1			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0130	>>>	0,0110
Sheer line, in hc			
Bg (m)	1,60	>>>	0,56
X Bg (% Lwl)	25,0	>>>	55,0
Alfa (°)	0,00	>>>	11,84
Pui liv y	2,50	>>>	2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,06	>>>	0,07
Option Hard Ch			
Type	0	>>>	1
1,2 Zhc av (m)	0,15	>>>	0,25
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,10	>>>	0,20
Pui hc z	3	>>>	4
Sheer line, in ve			
Z liv m (m)	0,35		0,35
Z liv ar (m)	0,30		0,30
Pui liv z	1		1
Deck / central li			
Z p m (m)	0,38		0,38
Z p ar (m)	0,32		0,32
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	6,00	>>>	3,00
C Hv m	6,00		6,00
C Hv ar	5,00		5,00
Pui Hv	3,00		3,00
Pui V av	12,00	>>>	20,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	0,14	>>>	0,35
Pui E2	4,875	>>>	6,135
mix VE av	0,25		0,25
mix VE ar	0,15		0,15
Pui mix VE	1,00		1,00
Option addition			
Ky	1,30	>>>	1,00
Kz	0,25	>>>	0,40
Ksoft	2,00		2,00

D 2*with Gene-Hull VE Dinghy 2,41*

Loa 4,27 m ; Lwl : 4,04 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 61,6 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 161,6 kg ; **Bwl : 1,06 m**





D2 - Hydrostatics data (for Displacement 161,6 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	4,04	> Hull speed	4,9	(at Fn 0,4)		
>> ft	14,01		13,25					
Bsheer (m)	1,60	at X (% Lwl)	23,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,06	at X (% Lwl)	35,0	> Bwl / B	0,665			
>> ft	3,49							
Tc (m)	0,085	at X (%Lwl)	50					
>> ft	0,28							
Displacement at H0 (m3)	0,15293	at LCB (m)	1,890	LCB (%Lwl)	46,79			
(kg)	156,8	>> ft	6,20					
>> lbs	345,6	with water mass / vol. of		1025	kg/m3			
Cp (%)	56,40							
Sf (m2)	3,09	at X (m)	1,731	X (%Lwl)	42,84	>>> Xc – Xf (%Lwl)		3,95
>> ft2	33,30	>> ft	5,68					
Angle immersed sheer li (°)	23,4	at section C4 (40% Lwl)						
Sw (m2)	3,12	>Sw/D^(2/3)	10,92					
>> ft2	33,60							
Shull (m2)	7,17	at X (m)	1,760	Z (m)	0,059			
>> ft2	77,13	>> ft	5,77	>> ft	0,19			
Sdeck (m2)	5,17	at X (m)	1,576					
>> ft2	55,65	>> ft	5,17					

2.2 Daggerboard

Volume (m3)	0,00308	at X (m)	2,182	X (%Lwl)	54,01	Z (m)	-0,41	
Draft oa (m)	0,90		Sw (m2)	0,34		Sxz (m2)	0,16	
>> ft	2,95		>> ft2	3,65		>> ft2	1,75	
CLR (m)	2,240	CLR (%Lwl)	55,45	method : profile extended to the waterline, then 25% c at 45% draft oa				
>> ft	7,35							

2.3 Rudder(s)

Number	1							
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,11	Z (m)	-0,108	
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10	per rudder
>> ft2	2,23					>> ft2	1,07	

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15763	at LCB (m)	1,874	LCB (%Lwl)	46,39	ZCB (m)	-0,039	
Disp. (kg)	161,6	>> ft	0,57			>> ft	-0,13	
>> lbs	356							
Sw (m2)	3,67	>Sw/D^(2/3)	12,57	Lwl/D^(1/3)	7,48			
>> ft2	39,47			DLR	68	M(lbs/2240)/(Lwl(ft)/100)^3		

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	161,6	at Xg (m)	1,664	Xg (%Lwl)	41,20	at Zg (m)	0,613	
Light boat	61,6		1,737				0,446	

D2 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	61,61	1,737	0,446	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	161,61	1,664	0,573	0,000	Crew at center
Disp. (m3)	0,15767		0,387	0,588	Crew at hiking
		Cor H (cm)	0,017	at Xg	

For Heel = 0° >>> Trim = 0,63° ; Lwl = 3,95 m ; Bwl = 1,08 m ; Draft = 0,083 m ; Sw = 3,81 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15767 / Disp. (m3) 0,15767	Relevant only when heel = 0°
Height (cm) 0,2490	Xc heel (m) 1,664 / Xg (m) 1,664	Lwl (m) 3,945
Trim (°) 0,630	Yc heel (m) 0,000 Yg heel (m) 0,588	Bwl (m) 1,076
	Zc heel (m) -0,038 > GZ (m) 0,588	Draft (m) 0,083
	Sw heel (m2) 3,81 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,25	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

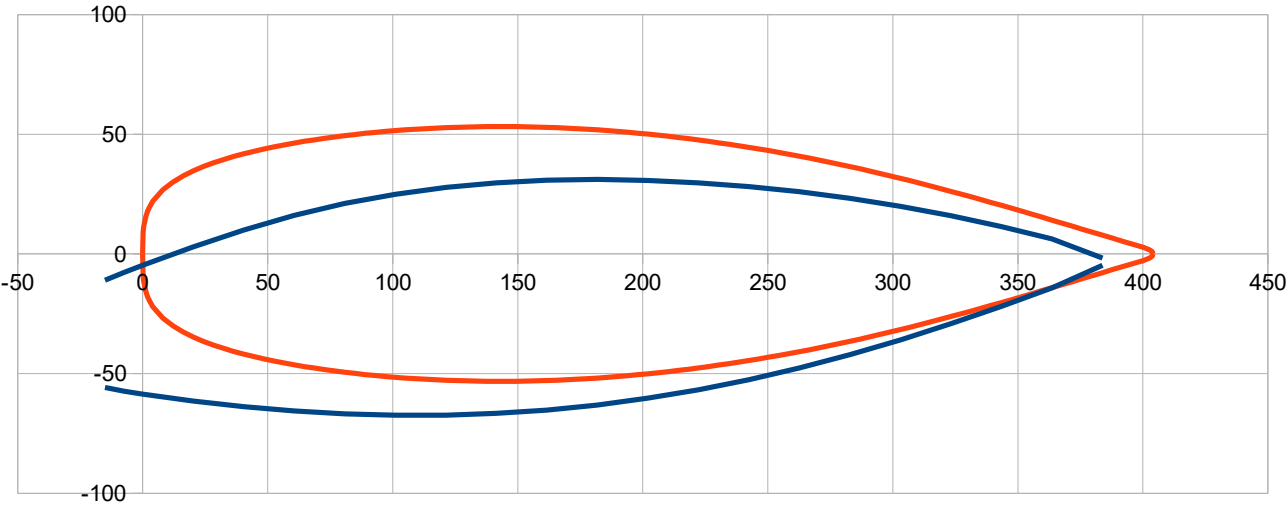
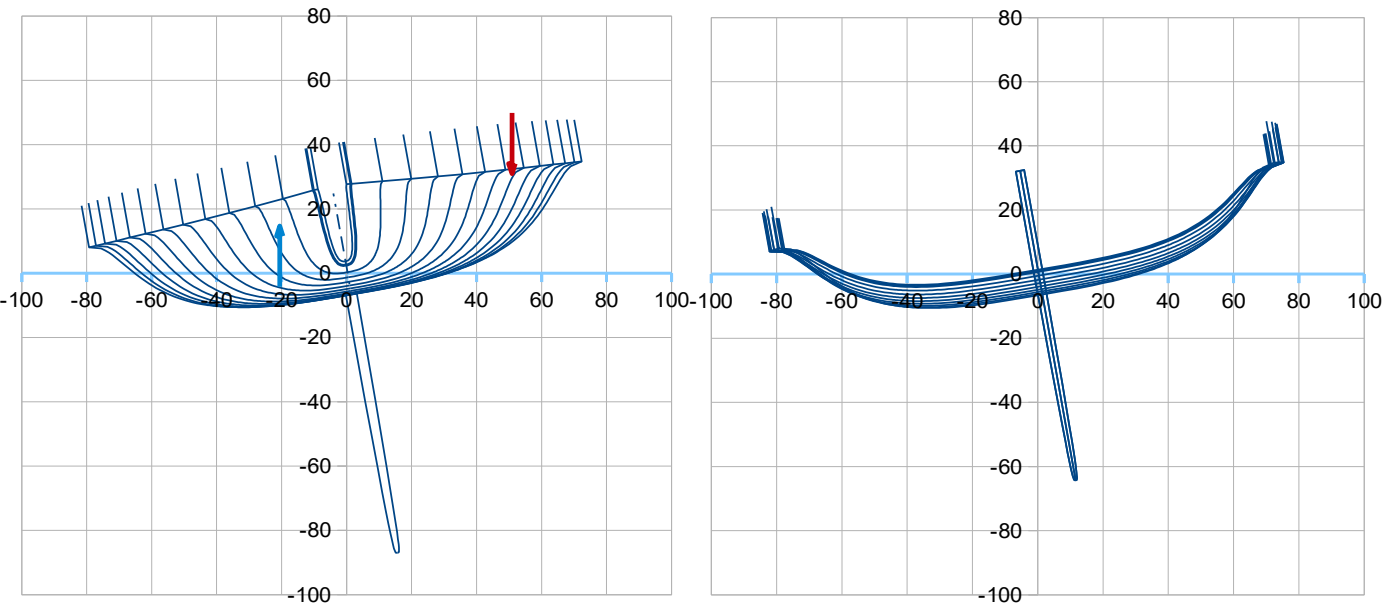
For Heel = 1° >>> GM1° = 0,77 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15767 / Disp. (m3) 0,15767	Relevant only when heel = 0°
Height (cm) 0,2620	Xc heel (m) 1,664 / Xg (m) 1,664	Lwl (m) 3,946
Trim (°) 0,625	Yc heel (m) -0,023 Yg heel (m) 0,581	Bwl (m) 1,074
	Zc heel (m) -0,038 > GZ (m) 0,604	Draft (m) 0,082
	Sw heel (m2) 3,80 RM (kN.m) 0,958	Relevant only when heel = 1°
	Freeboard minimum (cm) 26,96	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,38	Gz (m) 0,013
		> GM1° (m) 0,77

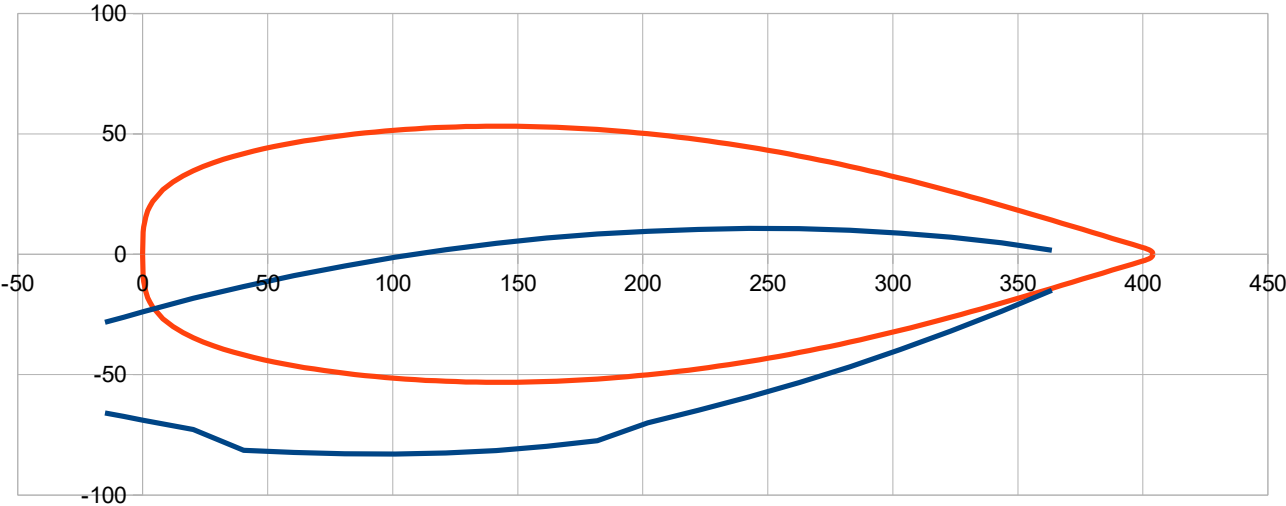
For Heel = 10° >>> Trim = 0,24° ; GZ = 0,715 m ; RM = 1,133 kN.m ; Sw = 3,46 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15767 / Disp. (m3) 0,15767	Relevant only when heel = 0°
Height (cm) 1,6480	Xc heel (m) 1,664 / Xg (m) 1,664	Lwl (m) 3,952
Trim (°) 0,240	Yc heel (m) -0,206 Yg heel (m) 0,509	Bwl (m) 0,964
	Zc heel (m) -0,043 > GZ (m) 0,715	Draft (m) 0,069
	Sw heel (m2) 3,46 RM (kN.m) 1,133	Relevant only when heel = 1°
	Freeboard minimum (cm) 17,41	Yg heel (m) -0,102 with crew at center
	Obliquity (°) 4,06	Gz (m) 0,104
		> GM1° (m) 0,60

D2 - at 10° heel angle



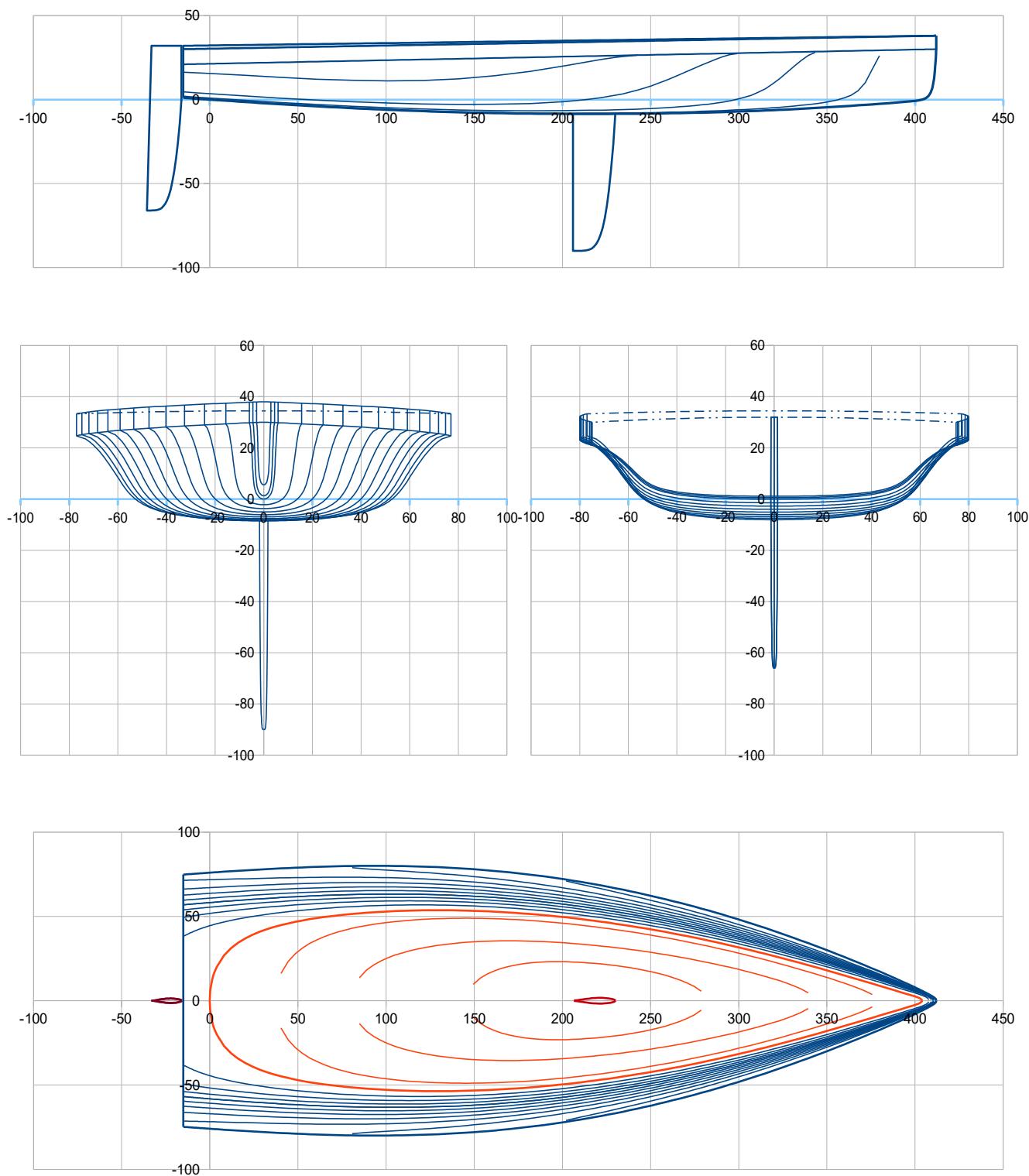
At 20° heel angle

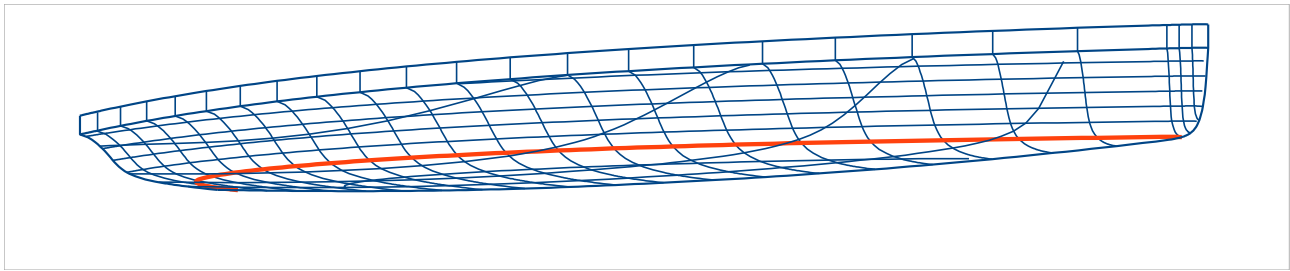


Evolution	D2	>>>	D2,1
1.1 Hull data			
Lenght of water			
Lwl (m)	4,04		4,04
Maximum draft (m)			
Tc (m)	0,0850		0,0850
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,38		0,38
Shape coefficient			
Cet	80,0		80,0
Polynomials of 1			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0110		0,0110
Sheer line, in hc			
Bg (m)	0,56		0,56
X Bg (% Lwl)	55,0		55,0
Alfa (°)	11,84		11,84
Pui liv y	2,00		2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,07		0,07
Option Hard Ch			
Type	1		1
1,2 Zhc av (m)	0,25	>>>	0,30
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,20	>>>	0,21
Pui hc z	4	>>>	1
Sheer line, in ve			
Z liv m (m)	0,35		0,35
Z liv ar (m)	0,30		0,30
Pui liv z	1		1
Deck / central li			
Z p m (m)	0,38		0,38
Z p ar (m)	0,32		0,32
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	3,00		3,00
C Hv m	6,00		6,00
C Hv ar	5,00		5,00
Pui Hv	3,00		3,00
Pui V av	20,00	>>>	12,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	0,35	>>>	0,50
Pui E2	6,135	>>>	3,567
mix VE av	0,25		0,25
mix VE ar	0,15		0,15
Pui mix VE	1,00		1,00
Option addition			
Ky	1,00	>>>	1,50
Kz	0,40	>>>	0,20
Ksoft	2,00		2,00

D 2,1*with Gene-Hull VE Dinghy 2,41*

Loa 4,27 m ; Lwl : 4,04 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 61,3 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 161,3 kg ; **Bwl : 1,07 m**





D2,1 - Hydrostatics data (for Displacement 161,3 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	4,04	> Hull speed	4,9	(at Fn 0,4)		
>> ft	14,01		13,25					
Bsheer (m)	1,60	at X (% Lwl)	23,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,07	at X (% Lwl)	32,0	> Bwl / B	0,671			
>> ft	3,52							
Tc (m)	0,085	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,28					>> ft	0,30	0,33
							0,98	1,08
Displacement at H0 (m3)	0,15267	at LCB (m)	1,873	LCB (%Lwl)	46,37	at ZCB (m)		Fore
(kg)	156,5	>> ft	6,15			>> inch		0,38
>> lbs	345,0	with water mass / vol. of	1025					1,25
Cp (%)	56,34							-1,20
Sf (m2)	3,11	at X (m)	1,706	X (%Lwl)	42,23	>>> Xc - Xf (%Lwl)		
>> ft2	33,51	>> ft	5,60					
Angle immersed sheer li (°)	23,4	at section C4 (40% Lwl)						
Sw (m2)	3,15	>Sw/D^(2/3)	11,02					
>> ft2	33,88							
Shull (m2)	7,09	at X (m)	1,755	Z (m)	0,062			
>> ft2	76,29	>> ft	5,76	>> ft	0,20			
Sdeck (m2)	5,17	at X (m)	1,576					
>> ft2	55,65	>> ft	5,17					

2.2 Daggerboard

Volume (m3)	0,00308	at X (m)	2,182	X (%Lwl)	54,01	Z (m)	-0,41
Draft oa (m)	0,90		Sw (m2)	0,34		Sxz (m2)	0,16
>> ft	2,95		>> ft2	3,65		>> ft2	1,75
CLR (m)	2,240	CLR (%Lwl)	55,45	method : profile extended to the waterline, then 25% c at 45% draft oa			
>> ft	7,35						

2.3 Rudder(s)

Number	1						
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,11	Z (m)	-0,108
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10
>> ft2	2,23					>> ft2	1,07
							per rudder

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15737	at LCB (m)	1,857	LCB (%Lwl)	45,98	ZCB (m)	-0,039
Disp. (kg)	161,3	>> ft	0,57			>> ft	-0,13
>> lbs	356						
Sw (m2)	3,69	>Sw/D^(2/3)	12,67	Lwl/D^(1/3)	7,48		
>> ft2	39,75			DLR	68		M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	161,3	at Xg (m)	1,663	Xg (%Lwl)	41,17	at Zg (m)	0,637
Light boat	61,3		1,734				0,450

**D2,1 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)**

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	61,30	1,734	0,450	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	161,30	1,663	0,637	0,000	Crew at center
Disp. (m3)	0,15736		0,451	0,589	Crew at hiking
		Cor H (cm)	6,329	at Xg	

For Heel = 0° >>> Trim = 0,58° ; Lwl = 3,97 m ; Bwl = 1,08 m ; Draft = 0,083 m ; Sw = 3,85 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15736 / Disp. (m3) 0,15736	Relevant only when heel = 0°
Height (cm) 0,2342	Xc heel (m) 1,663 / Xg (m) 1,663	Lwl (m) 3,966
Trim (°) 0,580	Yc heel (m) 0,000 Yg heel (m) 0,589	Bwl (m) 1,083
	Zc heel (m) -0,037 > GZ (m) 0,589	Draft (m) 0,083
	Sw heel (m2) 3,85 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,42	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

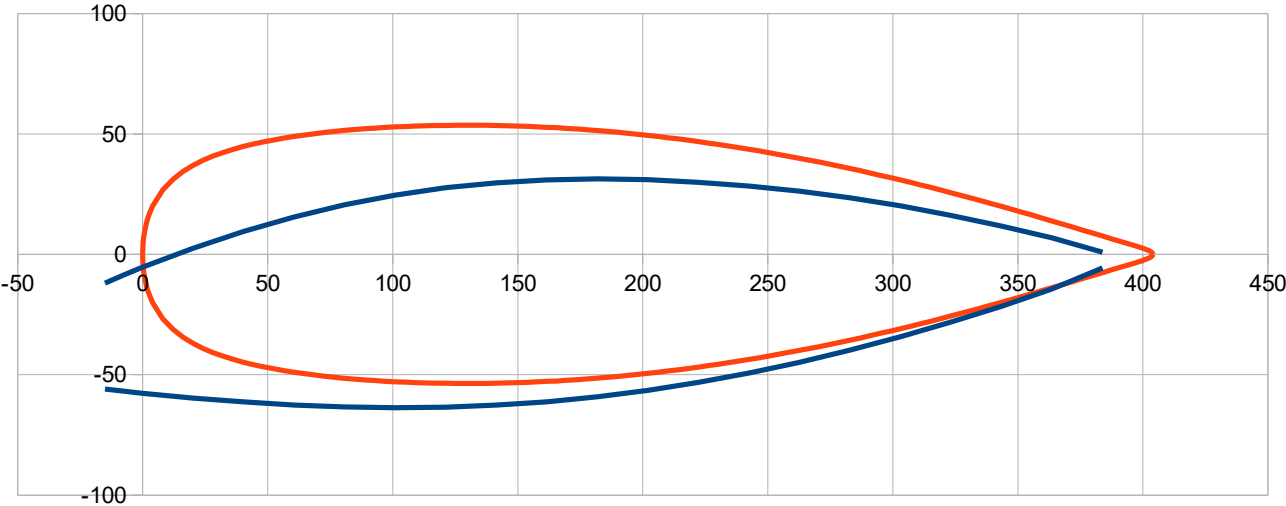
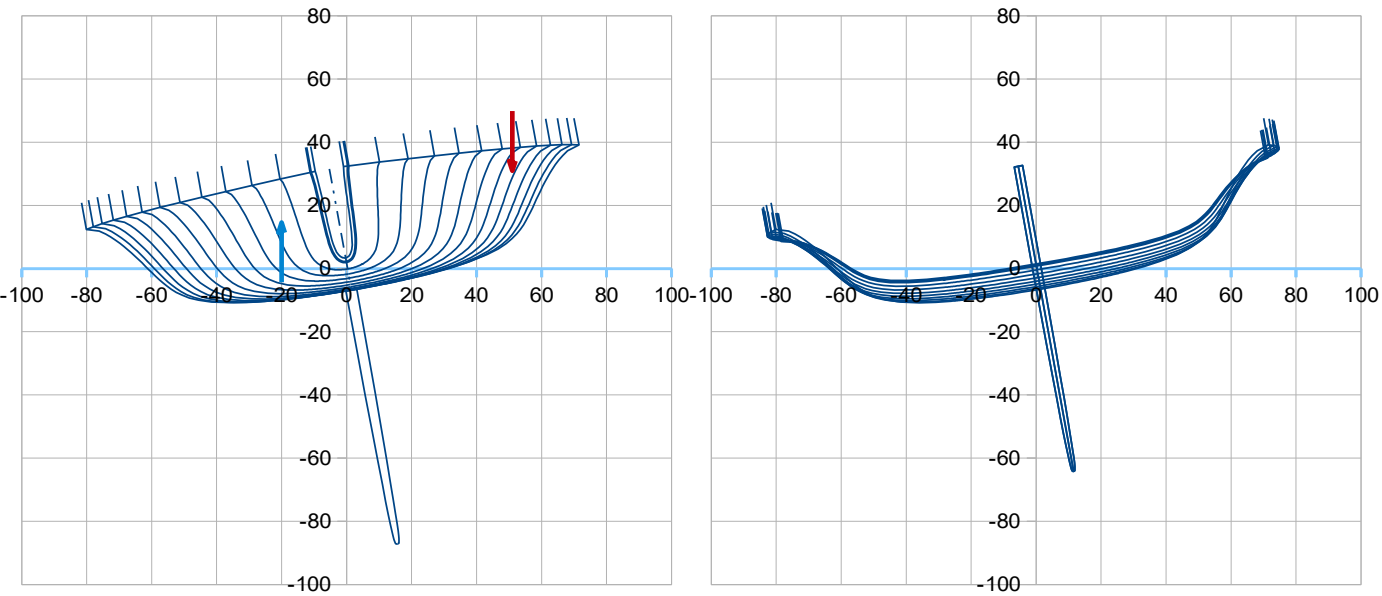
For Heel = 1° >>> GM1° = 0,80 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15736 / Disp. (m3) 0,15736	Relevant only when heel = 0°
Height (cm) 0,2443	Xc heel (m) 1,663 / Xg (m) 1,663	Lwl (m) 3,968
Trim (°) 0,573	Yc heel (m) -0,024 Yg heel (m) 0,582	Bwl (m) 1,082
	Zc heel (m) -0,037 > GZ (m) 0,606	Draft (m) 0,083
	Sw heel (m2) 3,85 RM (kN.m) 0,959	Relevant only when heel = 1°
	Freeboard minimum (cm) 27,13	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,37	Gz (m) 0,014
		> GM1° (m) 0,80

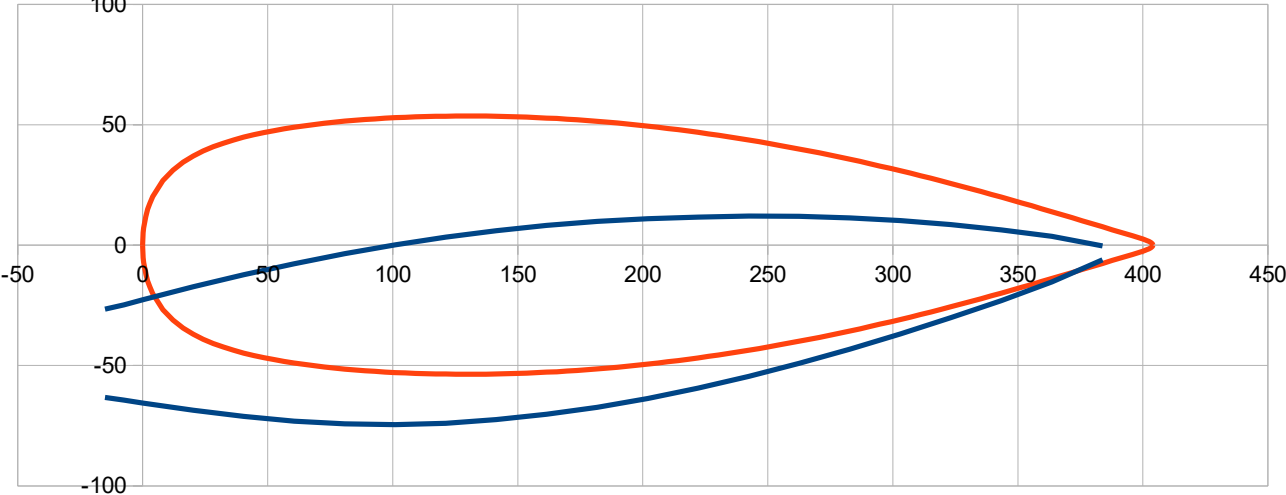
For Heel = 10° >>> Trim = 0,17° ; GZ = 0,710 m ; RM = 1,124 kN.m ; Sw = 3,40 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15736 / Disp. (m3) 0,15736	Relevant only when heel = 0°
Height (cm) 1,4980	Xc heel (m) 1,663 / Xg (m) 1,663	Lwl (m) 3,994
Trim (°) 0,167	Yc heel (m) -0,200 Yg heel (m) 0,510	Bwl (m) 0,924
	Zc heel (m) -0,043 > GZ (m) 0,710	Draft (m) 0,070
	Sw heel (m2) 3,40 RM (kN.m) 1,124	Relevant only when heel = 1°
	Freeboard minimum (cm) 17,51	Yg heel (m) -0,102 with crew at center
	Obliquity (°) 3,92	Gz (m) 0,098
		> GM1° (m) 0,56

D2,1 - At 10° heel angle



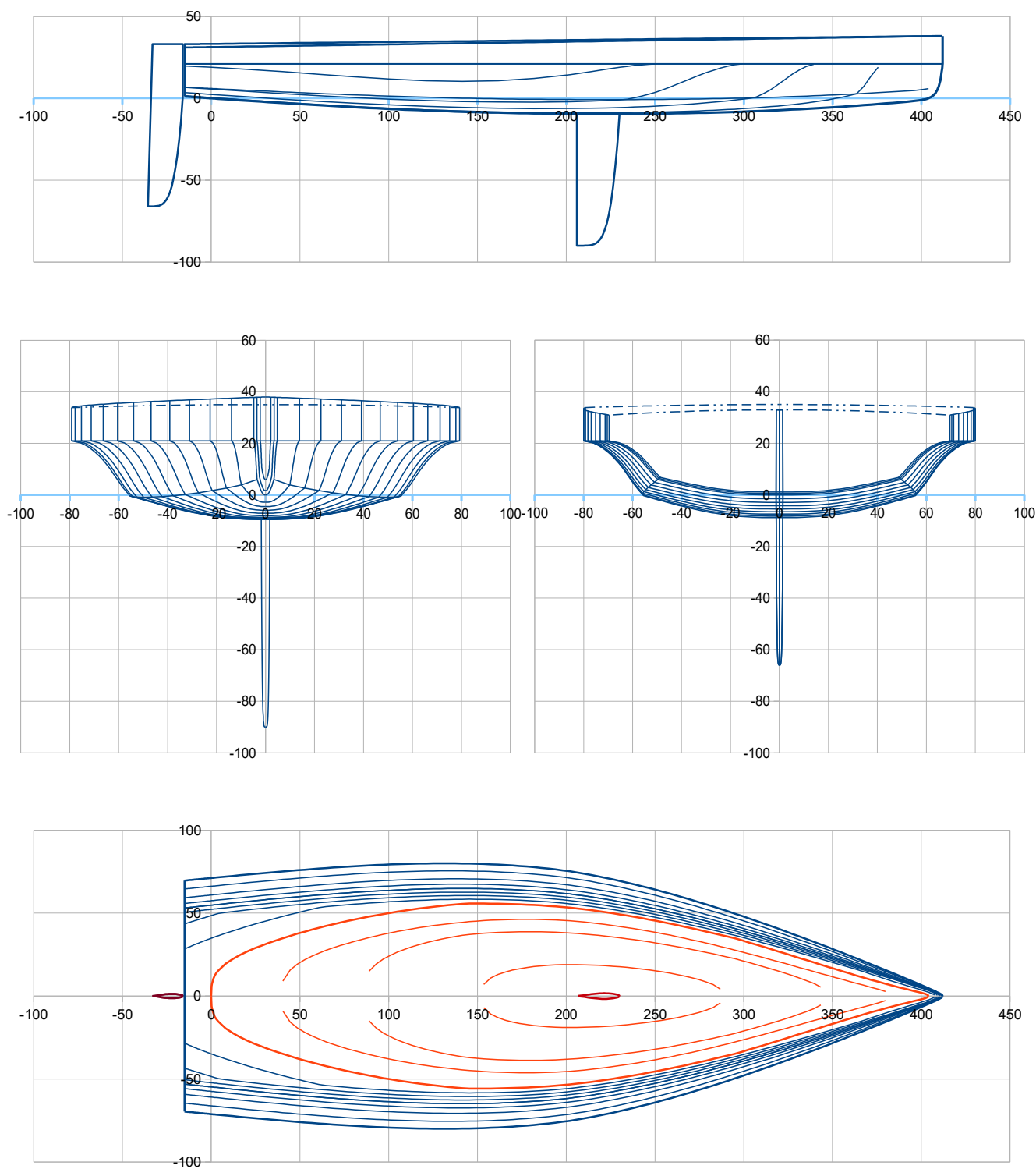
At 20° heel angle

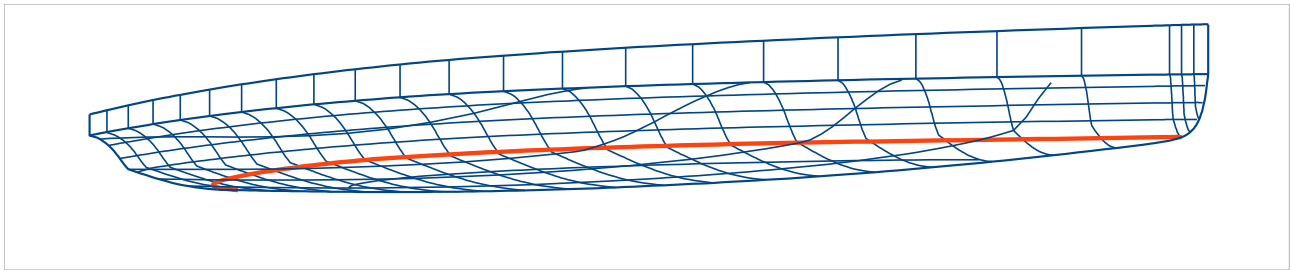


Evolution	D2,1	>>>	D2,2
1.1 Hull data			
Lenght of water			
Lwl (m)	4,04		4,04
Maximum draft (m)			
Tc (m)	0,0850	>>>	0,095
X Tc (%Lwl)	53,00	>>>	55,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,38		0,38
Shape coefficient			
Cet	80,0	>>>	57,0
Polynomials of 1			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0110	>>>	0,0115
Sheer line, in hc			
Bg (m)	0,56	>>>	0,79
X Bg (% Lwl)	55,0	>>>	50,0
Alfa (°)	11,84	>>>	9,58
Pui liv y	2,00	>>>	1,80
Cor Pui liv	0,020	>>>	0,040
Pui Cor Pui	2,00	>>>	1,50
Scow	0,07	>>>	0,04
Option Hard Ch			
Type	1		1
1,2 Zhc av (m)	0,30	>>>	0,21
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,21		0,21
Pui hc z	1		1
Sheer line, in ve			
Z liv m (m)	0,35	>>>	0,37
Z liv ar (m)	0,30	>>>	0,31
Pui liv z	1		1
Deck / central li			
Z p m (m)	0,38	>>>	0,40
Z p ar (m)	0,32	>>>	0,33
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	3,00		3,00
C Hv m	6,00		6,00
C Hv ar	5,00		5,00
Pui Hv	3,00		3,00
Pui V av	12,00		12,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	0,50	>>>	0,521
Pui E2	3,567	>>>	3,200
mix VE av	0,25	>>>	0,15
mix VE ar	0,15	>>>	0,00
Pui mix VE	1,00		1,00
Option addition			
Ky	1,50	>>>	1,240
Kz	0,20	>>>	0,55
Ksoft	2,00	>>>	0,900

D 2,2*with Gene-Hull VE Dinghy 2,41*

Loa 4,27 m ; Lwl : 4,04 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 61,6 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 161,6 kg ; **Bwl : 1,12 m**





D2,2 - Hydrostatics data (for Displacement 161,6 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	4,04	> Hull speed	4,9	(at Fn 0,4)		
>> ft	14,01		13,25					
Bsheer (m)	1,60	at X (% Lwl)	33,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,12	at X (% Lwl)	36,0	> Bwl / B	0,698			
>> ft	3,66							
Tc (m)	0,095	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,31					>> ft	0,31	0,34
							1,02	1,10
Displacement at H0 (m3)	0,15297	at LCB (m)	1,926	LCB (%Lwl)	47,68	at ZCB (m)		
(kg)	156,8	>> ft	6,32			>> inch		
>> lbs	345,7	with water mass / vol. of		1025	kg/m3			
Cp (%)	54,30							
Sf (m2)	3,05	at X (m)	1,774	X (%Lwl)	43,92	>>> Xc – Xf (%Lwl)		3,77
>> ft2	32,78	>> ft	5,82					
Angle immersed sheer li (°)	23,2	at section C4 (40% Lwl)						
Sw (m2)	3,09	>Sw/D^(2/3)	10,79					
>> ft2	33,22							
Shull (m2)	7,20	at X (m)	1,771	Z (m)	0,063			
>> ft2	77,51	>> ft	5,81	>> ft	0,21			
Sdeck (m2)	5,14	at X (m)	1,589					
>> ft2	55,30	>> ft	5,21					

2.2 Daggerboard

Volume (m3)	0,00304	at X (m)	2,182	X (%Lwl)	54,01	Z (m)	-0,42
Draft oa (m)	0,90		Sw (m2)	0,33		Sxz (m2)	0,16
>> ft	2,95		>> ft2	3,60		>> ft2	1,73
CLR (m)	2,240	CLR (%Lwl)	55,45	method : profile extended to the waterline, then 25% c at 45% draft oa			
>> ft	7,35						

2.3 Rudder(s)

Number	1						
Volume (m3)	0,00163	at X (m)	-0,247	X (%Lwl)	-6,11	Z (m)	-0,103
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10
>> ft2	2,23					>> ft2	1,07
							per rudder

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15764	at LCB (m)	1,909	LCB (%Lwl)	47,25	ZCB (m)	-0,041
Disp. (kg)	161,6	>> ft	0,58			>> ft	-0,13
>> lbs	356						
Sw (m2)	3,63	>Sw/D^(2/3)	12,43	Lwl/D^(1/3)	7,48		
>> ft2	39,05			DLR	68	M(lbs/2240)/(Lwl(ft)/100)^3	

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	161,6	at Xg (m)	1,669	Xg (%Lwl)	41,30	at Zg (m)	0,633
Light boat	61,6		1,748				0,454

D2,2 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	61,57	1,748	0,454	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	161,57	1,669	0,633	0,000	Crew at center
Disp. (m3)	0,15763		0,448	0,588	Crew at hiking
		Cor H (cm)	5,821	at Xg	

For Heel = 0° >>> Trim = 0,78° ; Lwl = 3,96 m ; Bwl = 1,12 m ; Draft = 0,092 m ; Sw = 3,78 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15763 / Disp. (m3) 0,15763	Relevant only when heel = 0°
Height (cm) 0,3190	Xc heel (m) 1,669 / Xg (m) 1,669	Lwl (m) 3,961
Trim (°) 0,783	Yc heel (m) 0,000 Yg heel (m) 0,588	Bwl (m) 1,123
	Zc heel (m) -0,039 > GZ (m) 0,588	Draft (m) 0,092
	Sw heel (m2) 3,78 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,73	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

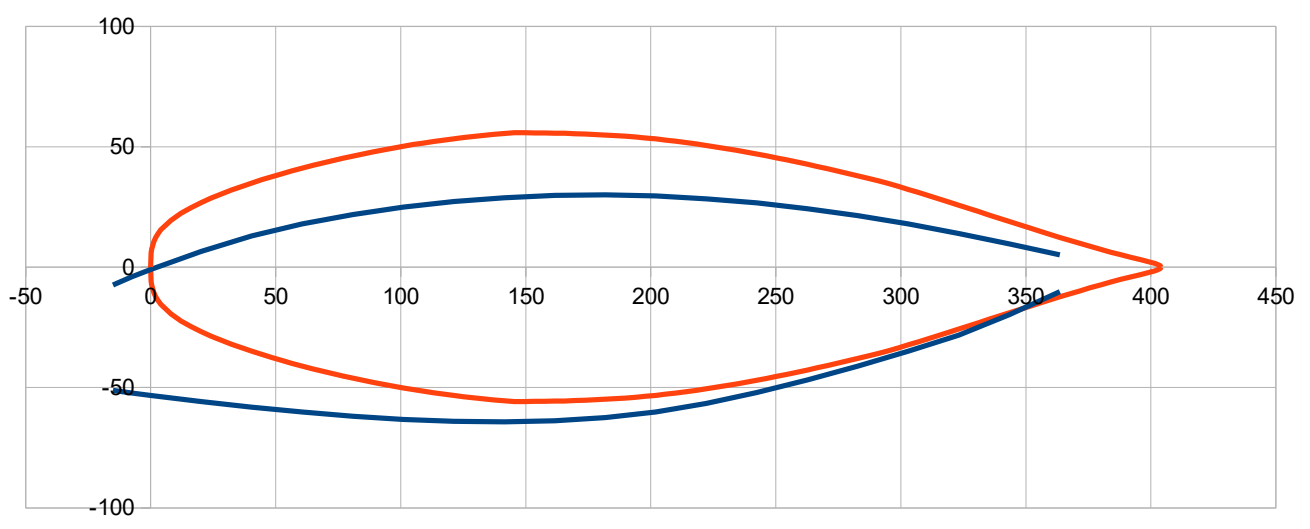
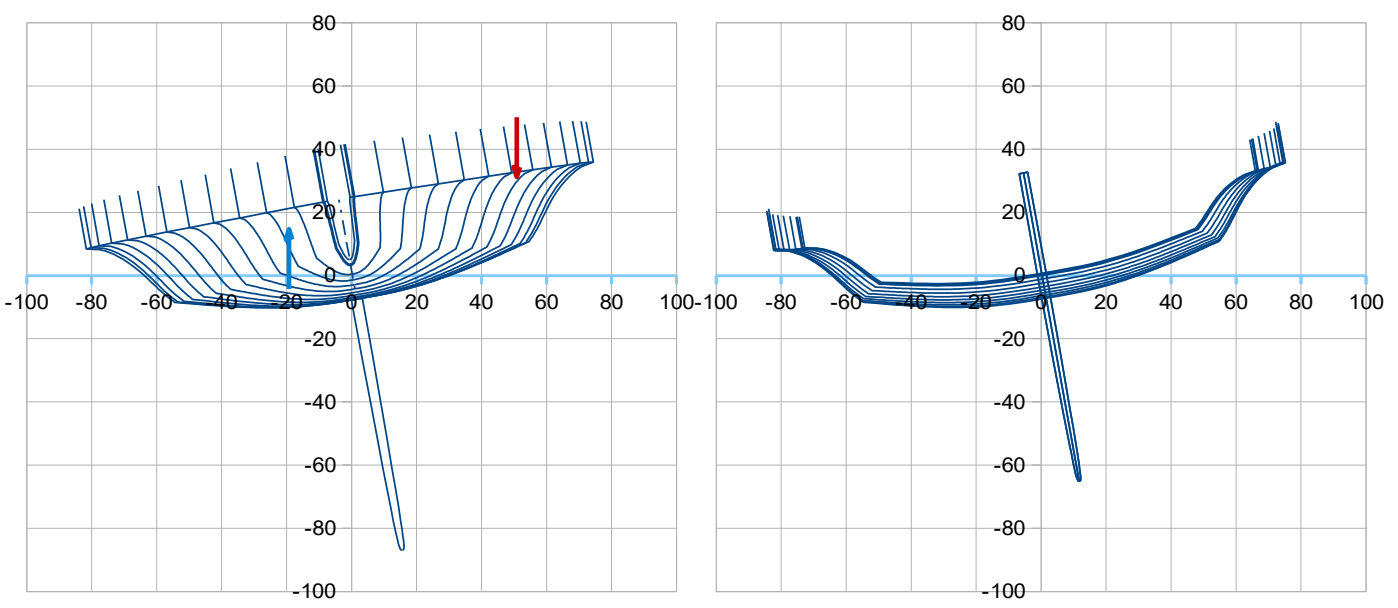
For Heel = 1° >>> GM1° = 0,82 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15763 / Disp. (m3) 0,15763	Relevant only when heel = 0°
Height (cm) 0,3365	Xc heel (m) 1,669 / Xg (m) 1,669	Lwl (m) 3,960
Trim (°) 0,780	Yc heel (m) -0,024 Yg heel (m) 0,581	Bwl (m) 1,105
	Zc heel (m) -0,039 > GZ (m) 0,605	Draft (m) 0,092
	Sw heel (m2) 3,76 RM (kN.m) 0,960	Relevant only when heel = 1°
	Freeboard minimum (cm) 27,53	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,55	Gz (m) 0,014
		> GM1° (m) 0,82

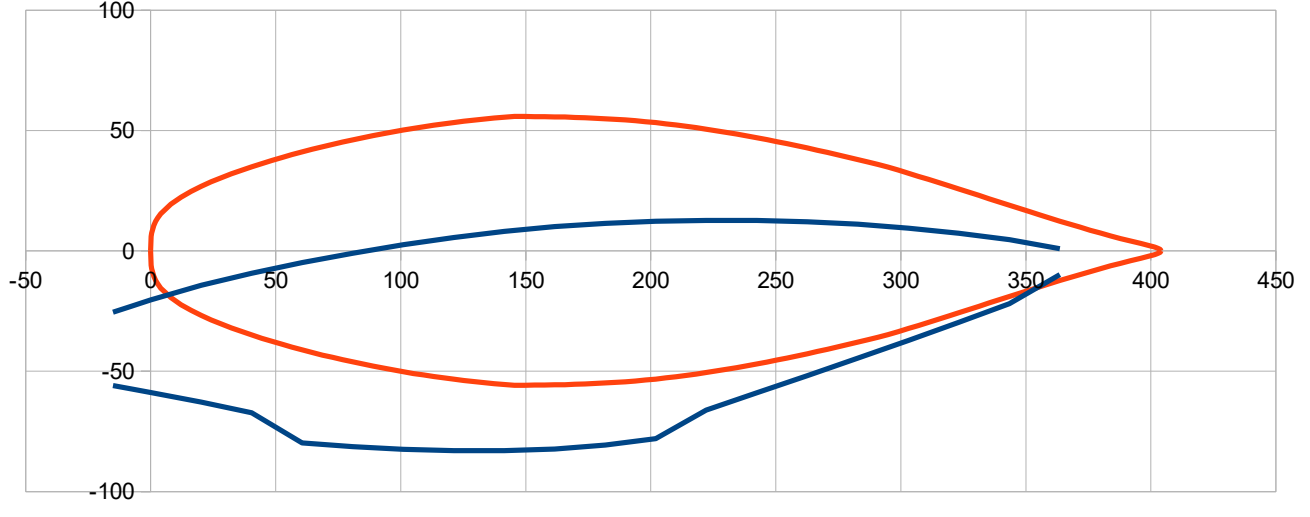
For Heel = 10° >>> Trim = 0,46° ; GZ = 0,702 m ; RM = 1,112 kN.m ; Sw = 3,37 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15763 / Disp. (m3) 0,15763	Relevant only when heel = 0°
Height (cm) 1,7670	Xc heel (m) 1,669 / Xg (m) 1,669	Lwl (m) 3,943
Trim (°) 0,463	Yc heel (m) -0,193 Yg heel (m) 0,509	Bwl (m) 0,937
	Zc heel (m) -0,043 > GZ (m) 0,702	Draft (m) 0,077
	Sw heel (m2) 3,37 RM (kN.m) 1,112	Relevant only when heel = 1°
	Freeboard minimum (cm) 18,59	Yg heel (m) -0,103 with crew at center
	Obliquity (°) 3,55	Gz (m) 0,090
		> GM1° (m) 0,52

D2,2 – At 10° heel angle



D2,2 – At 20° heel angle

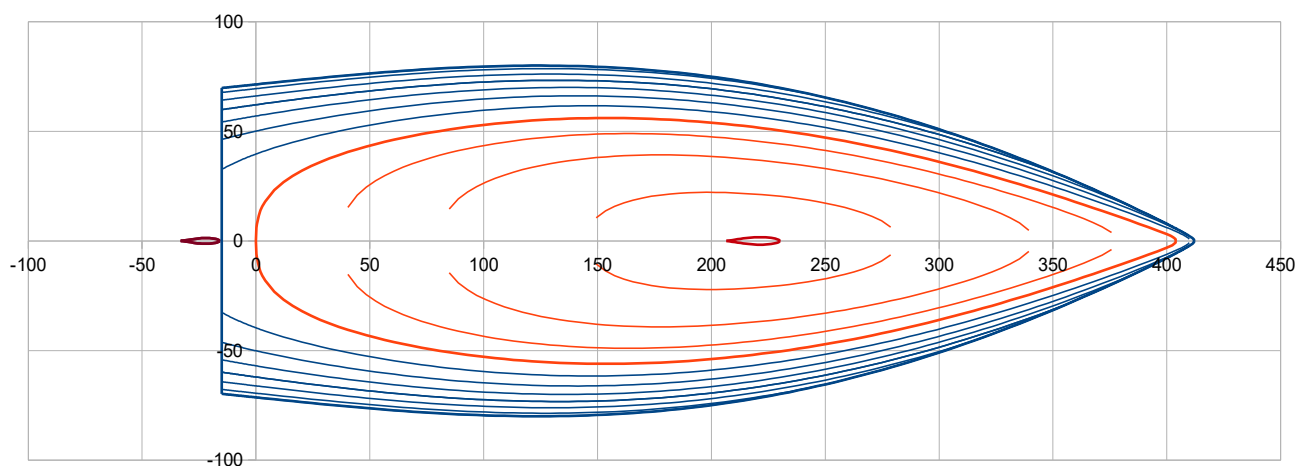
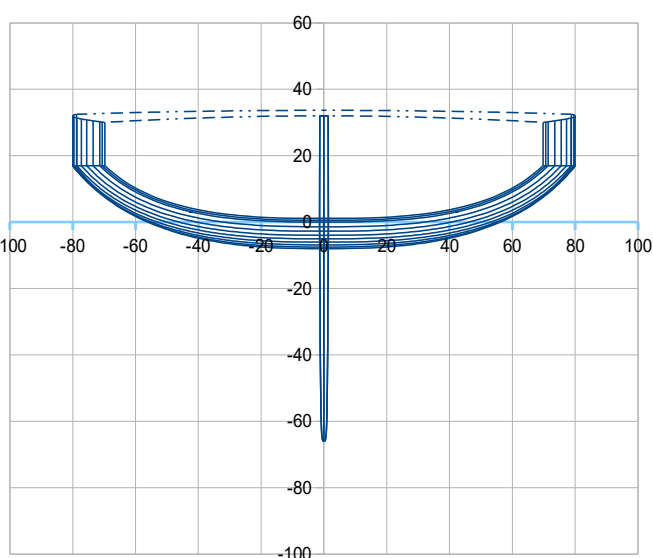
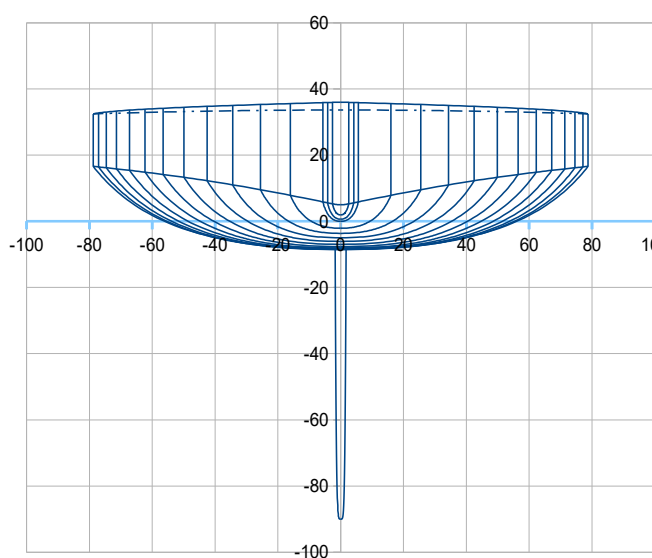
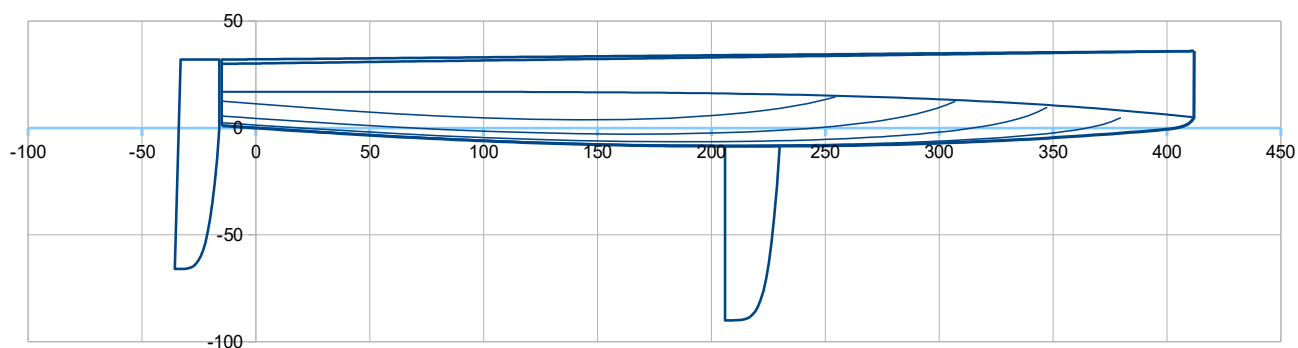


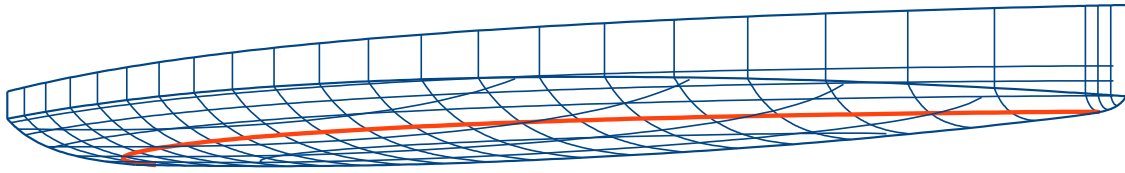
Evolution	D2,2	>>>	D3
1.1 Hull data			
Lenght of water			
Lwl (m)	4,04		4,04
Maximum draft (m)			
Tc (m)	0,095	>>>	0,0850
X Tc (%Lwl)	55,00	>>>	53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,38	>>>	0,36
Shape coefficient			
Cet	57,0	>>>	60,0
Polynomials of 1			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0115	>>>	0,0110
Sheer line, in hc			
Bg (m)	0,79	>>>	0,60
X Bg (% Lwl)	50,0	>>>	57,5
Alfa (°)	9,58	>>>	12,28
Pui liv y	1,80	>>>	2,00
Cor Pui liv	0,040	>>>	0,020
Pui Cor Pui	1,50	>>>	2,00
Scow	0,04	>>>	0,05
Option Hard Ch			
Type	1		1
1,2 Zhc av (m)	0,21	>>>	0,05
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,21	>>>	0,17
Pui hc z	1	>>>	4
Sheer line, in ve			
Z liv m (m)	0,37	>>>	0,35
Z liv ar (m)	0,31	>>>	0,30
Pui liv z	1		1
Deck / central li			
Z p m (m)	0,40	>>>	0,38
Z p ar (m)	0,33	>>>	0,32
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	3,00		3,00
C Hv m	6,00		6,00
C Hv ar	5,00		5,00
Pui Hv	3,00		3,00
Pui V av	12,00	>>>	6,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	0,521	>>>	1,00
Pui E2	3,200	>>>	3,895
mix VE av	0,15	>>>	0,25
mix VE ar	0,00	>>>	0,15
Pui mix VE	1,00		1,00
Option addition			
Ky	1,240	>>>	1,00
Kz	0,55	>>>	0,40
Ksoft	0,900	>>>	2,00

D3

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 4,04 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 62,1 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 162,1 kg ; **Bwl : 1,12 m**





D3 - Hydrostatics data (for Displacement 162,1 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	4,04	> Hull speed	4,9	(at Fn 0,4)		
>> ft	14,01		13,25					
Bsheer (m)	1,60	at X (% Lwl)	31,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,12	at X (% Lwl)	38,0	> Bwl / B	0,701			
>> ft	3,68							
Tc (m)	0,085	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,28					>> ft	0,30	0,32
							0,98	1,06
Displacement at H0 (m3)	0,15345	at LCB (m)	1,917	LCB (%Lwl)	47,44	at ZCB (m)		Fore
(kg)	157,3	>> ft	6,29			>> inch		0,36
>> lbs	346,7	with water mass / vol. of	1025	kg/m3				1,18
Cp (%)	56,36							
Sf (m2)	3,26	at X (m)	1,782	X (%Lwl)	44,11	>>> Xc – Xf (%Lwl)		3,33
>> ft2	35,08	>> ft	5,85					
Angle immersed sheer li (°)	22,4	at section C4 (40% Lwl)						
Sw (m2)	3,28	>Sw/D^(2/3)	11,43					
>> ft2	35,27							
Shull (m2)	7,26	at X (m)	1,779	Z (m)	0,049			
>> ft2	78,17	>> ft	5,84	>> ft	0,16			
Sdeck (m2)	5,22	at X (m)	1,613					
>> ft2	56,22	>> ft	5,29					

2.2 Daggerboard

Volume (m3)	0,00308	at X (m)	2,182	X (%Lwl)	54,01	Z (m)	-0,41
Draft oa (m)	0,90		Sw (m2)	0,34		Sxz (m2)	0,16
>> ft	2,95		>> ft2	3,65		>> ft2	1,75
CLR (m)	2,240	CLR (%Lwl)	55,45	method : profile extended to the waterline, then 25% c at 45% draft oa			
>> ft	7,35						

2.3 Rudder(s)

Number	1						
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,11	Z (m)	-0,108
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10
>> ft2	2,23					>> ft2	1,07
							per rudder

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15815	at LCB (m)	1,900	LCB (%Lwl)	47,02	ZCB (m)	-0,038
Disp. (kg)	162,1	>> ft	0,58			>> ft	-0,13
>> lbs	357						
Sw (m2)	3,82	>Sw/D^(2/3)	13,07	Lwl/D^(1/3)	7,47		
>> ft2	41,14			DLR	69		M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	162,1	at Xg (m)	1,672	Xg (%Lwl)	41,38	at Zg (m)	0,629
Light boat	62,1		1,755				0,439

**D3 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)**

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	62,13	1,755	0,439	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	162,13	1,672	0,629	0,000	Crew at center
Disp. (m3)	0,15818		0,444	0,586	Crew at hiking
		Cor H (cm)	5,957	at Xg	

For Heel = 0° >>> Trim = 0,66° ; Lwl = 3,93 m ; Bwl = 1,13 m ; Draft = 0,083 m ; Sw = 3,97 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15818 / Disp. (m3) 0,15818	Relevant only when heel = 0°
Height (cm) 0,2433	Xc heel (m) 1,672 / Xg (m) 1,672	Lwl (m) 3,928
Trim (°) 0,657	Yc heel (m) 0,000 Yg heel (m) 0,586	Bwl (m) 1,134
	Zc heel (m) -0,037 > GZ (m) 0,586	Draft (m) 0,083
	Sw heel (m2) 3,97 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,08	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

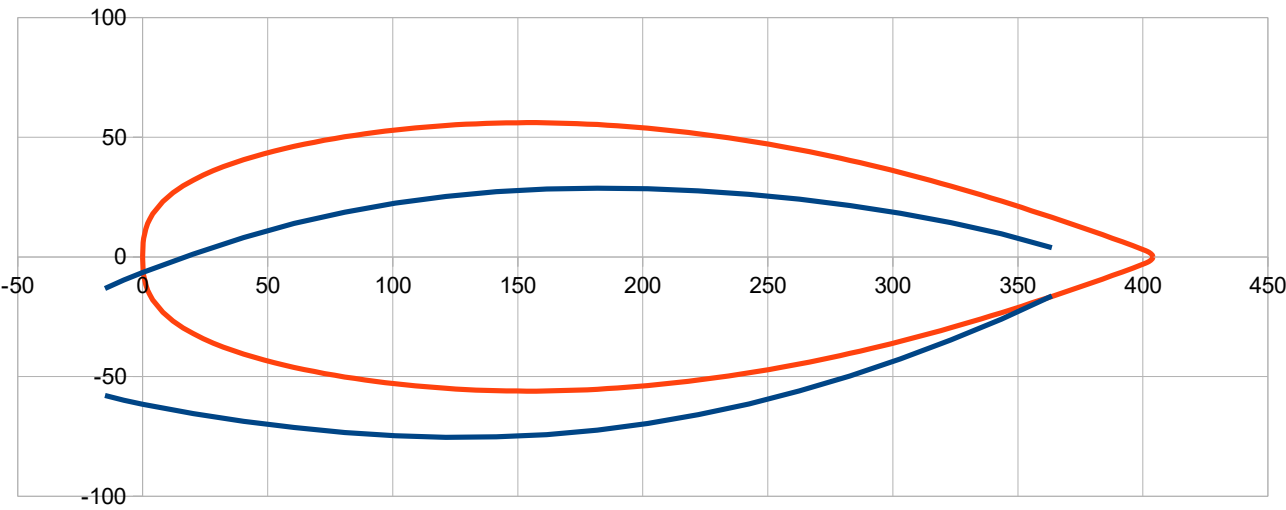
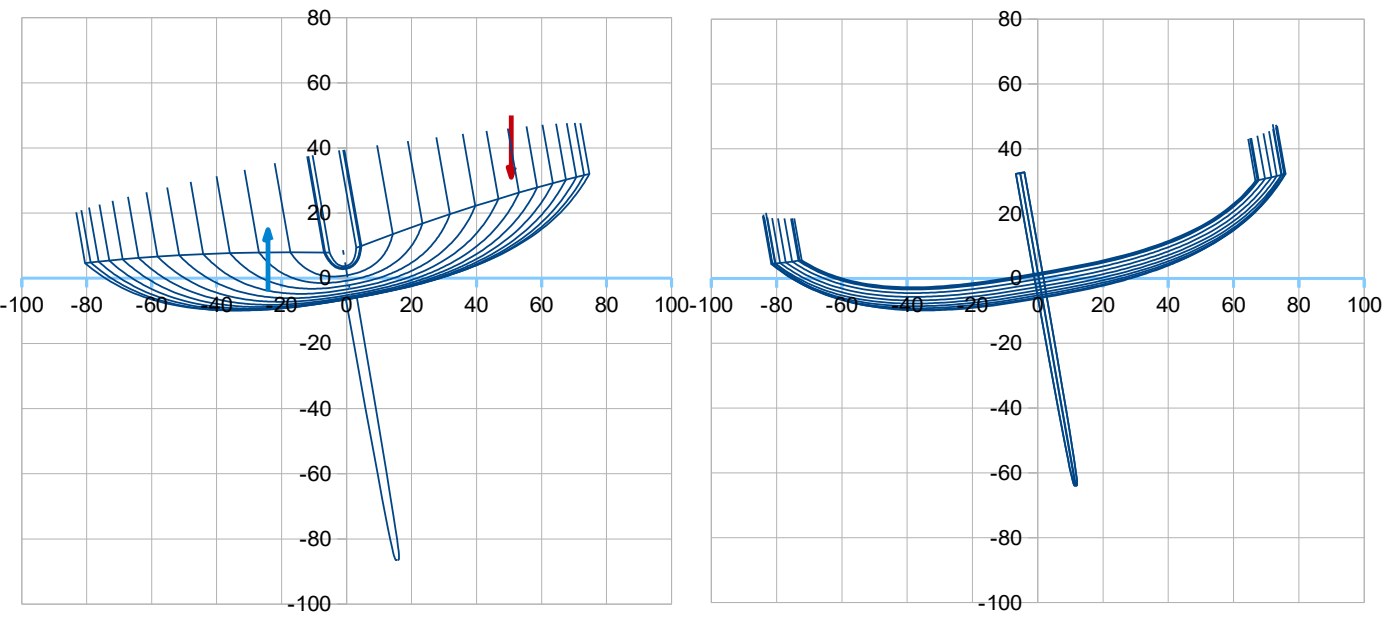
For Heel = 1° >>> GM1° = 0,99 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15818 / Disp. (m3) 0,15818	Relevant only when heel = 0°
Height (cm) 0,2617	Xc heel (m) 1,672 / Xg (m) 1,672	Lwl (m) 3,928
Trim (°) 0,653	Yc heel (m) -0,027 Yg heel (m) 0,579	Bwl (m) 1,132
	Zc heel (m) -0,037 > GZ (m) 0,606	Draft (m) 0,082
	Sw heel (m2) 3,98 RM (kN.m) 0,964	Relevant only when heel = 1°
	Freeboard minimum (cm) 26,88	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,44	Gz (m) 0,017
		> GM1° (m) 0,99

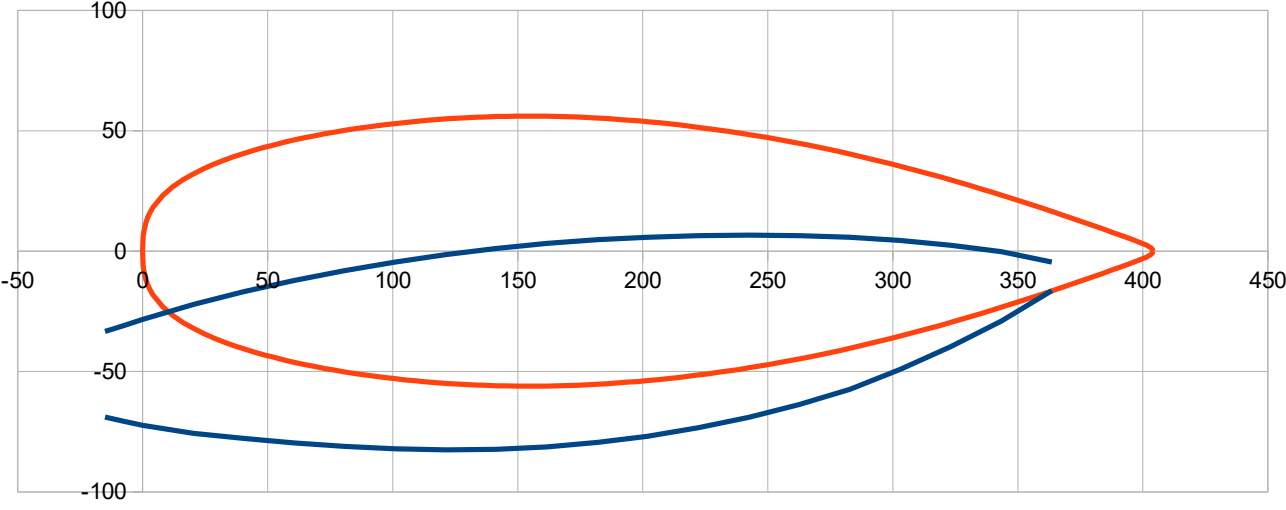
For Heel = 10° >>> Trim = 0,28° ; GZ = 0,749 m ; RM = 1,192 kN.m ; Sw = 3,63 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15818 / Disp. (m3) 0,15818	Relevant only when heel = 0°
Height (cm) 2,0967	Xc heel (m) 1,672 / Xg (m) 1,672	Lwl (m) 3,885
Trim (°) 0,280	Yc heel (m) -0,242 Yg heel (m) 0,507	Bwl (m) 1,027
	Zc heel (m) -0,041 > GZ (m) 0,749	Draft (m) 0,064
	Sw heel (m2) 3,63 RM (kN.m) 1,192	Relevant only when heel = 1°
	Freeboard minimum (cm) 18,51	Yg heel (m) -0,102 with crew at center
	Obliquity (°) 4,26	Gz (m) 0,140
		> GM1° (m) 0,81

D3 - At 10° heel angle



At 20° heel angle

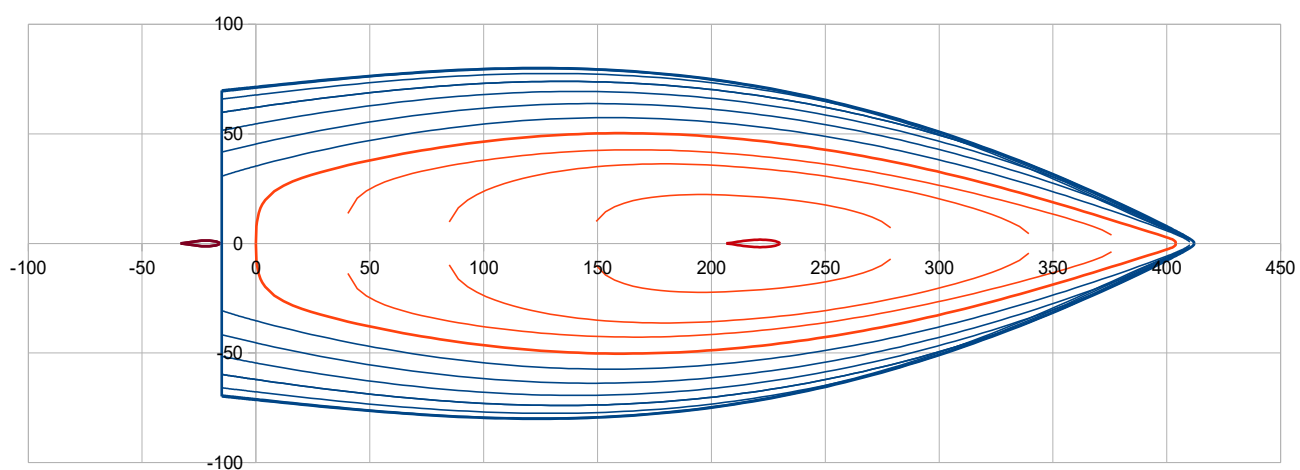
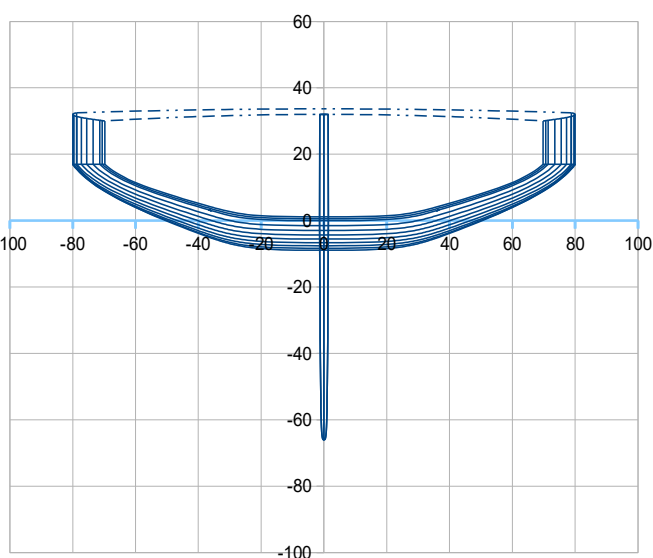
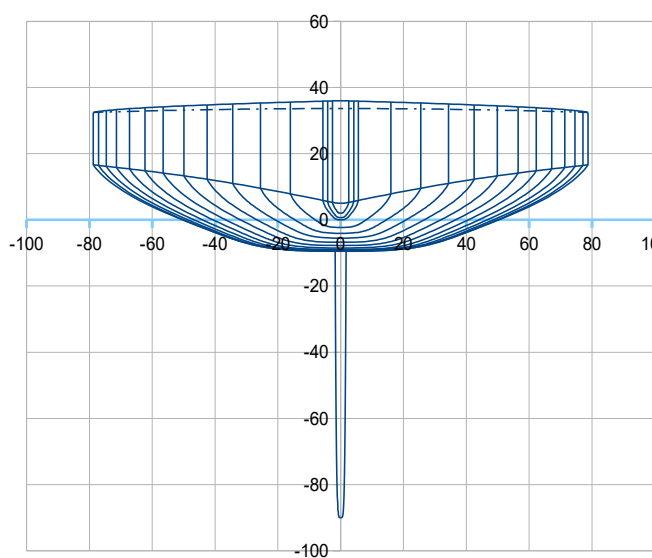
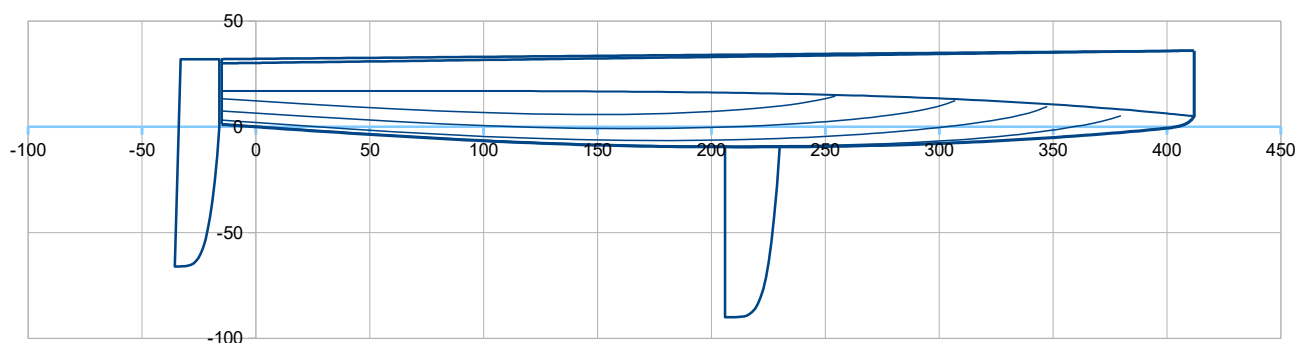


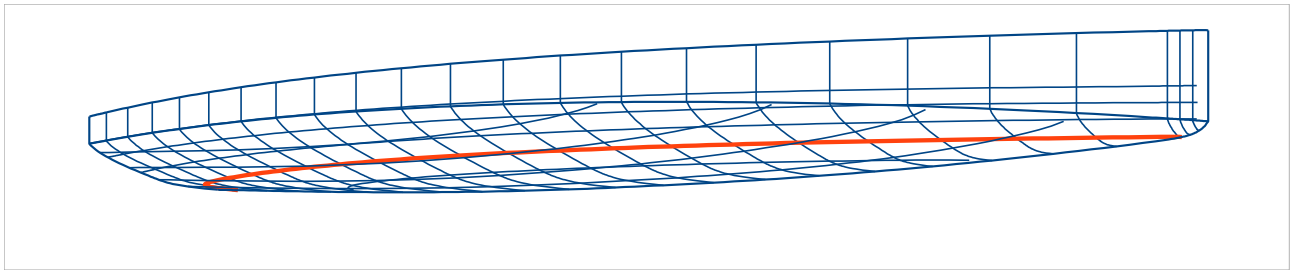
Evolution	D3	>>>	D3,1
1.1 Hull data			
Lenght of water			
Lwl (m)	4,04		4,04
Maximum draft (m)			
Tc (m)	0,0850	>>>	0,0950
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,36		0,36
Shape coefficient			
Cet	60,0		60,0
Polynomials of 1			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15	>>>	-0,15
Z tab ar (m)	0,0110		0,0115
Sheer line, in hc			
Bg (m)	0,60		0,60
X Bg (% Lwl)	57,5		57,5
Alfa (°)	12,28		12,28
Pui liv y	2,00		2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,05		0,05
Option Hard Ch			
Type	1		1
1,2 Zhc av (m)	0,05		0,05
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,17		0,17
Pui hc z	4		4
Sheer line, in ve			
Z liv m (m)	0,35		0,35
Z liv ar (m)	0,30		0,30
Pui liv z	1		1
Deck / central li			
Z p m (m)	0,38		0,38
Z p ar (m)	0,32		0,32
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	3,00		3,00
C Hv m	6,00		6,00
C Hv ar	5,00		5,00
Pui Hv	3,00		3,00
Pui V av	6,00		6,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	1,00		1,00
Pui E2	3,895	>>>	4,04
mix VE av	0,25	>>>	0,24
mix VE ar	0,15	>>>	0,10
Pui mix VE	1,00		1,00
Option addition			
Ky	1,00	>>>	0,82
Kz	0,40		0,40
Ksoft	2,00		2,00

D3,1

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 4,04 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 61,9 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 161,9 kg ; **Bwl : 1,01 m**





D3,1 - Hydrostatics data (for Displacement 161,9 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	4,04	> Hull speed	4,9	(at Fn 0,4)		
>> ft	14,01		13,25					
Bsheer (m)	1,60	at X (% Lwl)	31,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,01	at X (% Lwl)	40,0	> Bwl / B	0,629			
>> ft	3,30							
Tc (m)	0,095	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,31						0,30	0,32
							>> ft	1,06
Displacement at H0 (m3)	0,15325	at LCB (m)	1,916	LCB (%Lwl)	47,43		at ZCB (m)	-0,034
(kg)	157,1	>> ft	6,29				>> inch	-1,34
>> lbs	346,3	with water mass / vol. of	1025			kg/m3		
Cp (%)	56,18							
Sf (m2)	2,92	at X (m)	1,783	X (%Lwl)	44,14	>>> Xc – Xf (%Lwl)		3,29
>> ft2	31,45	>> ft	5,85					
Angle immersed sheer li (°)	22,4	at section C4 (40% Lwl)						
Sw (m2)	2,96	>Sw/D^(2/3)	10,33					
>> ft2	31,86							
Shull (m2)	7,22	at X (m)	1,780	Z (m)	0,052			
>> ft2	77,76	>> ft	5,84	>> ft	0,17			
Sdeck (m2)	5,22	at X (m)	1,613					
>> ft2	56,22	>> ft	5,29					

2.2 Daggerboard

Volume (m3)	0,00305	at X (m)	2,182	X (%Lwl)	54,01	Z (m)	-0,42
Draft oa (m)	0,90		Sw (m2)	0,33		Sxz (m2)	0,16
>> ft	2,95		>> ft2	3,60		>> ft2	1,73
CLR (m)	2,240	CLR (%Lwl)	55,45	method : profile extended to the waterline, then 25% c at 45% draft oa			
>> ft	7,35						

2.3 Rudder(s)

Number	1						
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,11	Z (m)	-0,108
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10
>> ft2	2,23					>> ft2	1,07
							per rudder

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15791	at LCB (m)	1,899	LCB (%Lwl)	47,01	ZCB (m)	-0,042
Disp. (kg)	161,9	>> ft	0,58			>> ft	-0,14
>> lbs	357						
Sw (m2)	3,50	>Sw/D^(2/3)	11,98	Lwl/D^(1/3)	7,47		
>> ft2	37,68			DLR	68	M(lbs/2240)/(Lwl(ft)/100)^3	

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	161,9	at Xg (m)	1,672	Xg (%Lwl)	41,40	at Zg (m)	0,648
Light boat	61,9		1,757				0,442

**D3,1 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)**

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	61,94	1,757	0,442	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	161,94	1,672	0,648	0,000	Crew at center
Disp. (m3)	0,15799		0,462	0,587	Crew at hiking
		Cor H (cm)	7,742	at Xg	

For Heel = 0° >>> Trim = 0,73° ; Lwl = 3,93 m ; Bwl = 1,02 m ; Draft = 0,092 m ; Sw = 3,61 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15799 / Disp. (m3) 0,15799	Relevant only when heel = 0°
Height (cm) 0,2723	Xc heel (m) 1,672 / Xg (m) 1,672	Lwl (m) 3,926
Trim (°) 0,730	Yc heel (m) 0,000 Yg heel (m) 0,587	Bwl (m) 1,016
	Zc heel (m) -0,041 > GZ (m) 0,587	Draft (m) 0,092
	Sw heel (m2) 3,61 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 27,86	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

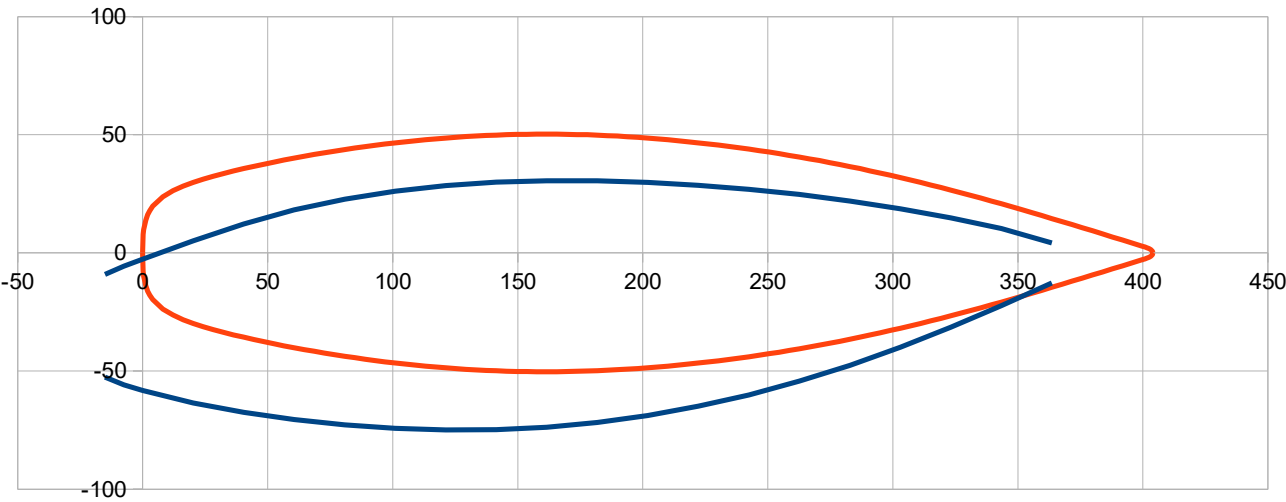
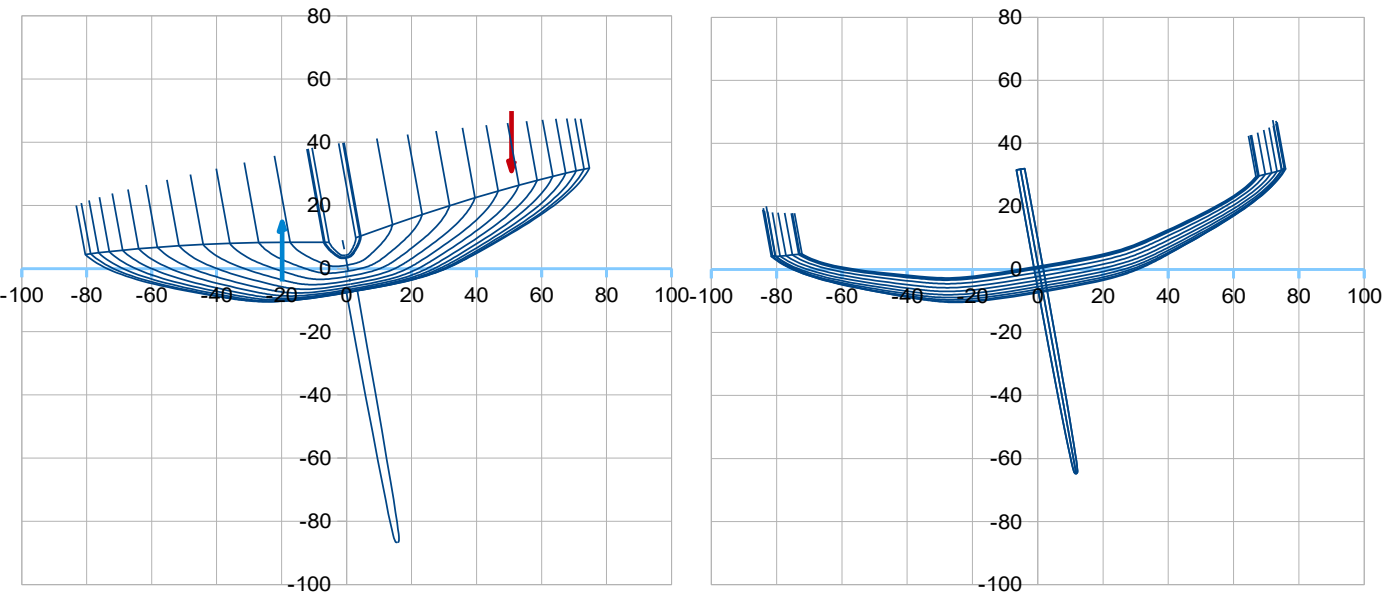
For Heel = 1° >>> GM1° = 0,52 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15799 / Disp. (m3) 0,15799	Relevant only when heel = 0°
Height (cm) 0,2883	Xc heel (m) 1,672 / Xg (m) 1,672	Lwl (m) 3,926
Trim (°) 0,727	Yc heel (m) -0,019 Yg heel (m) 0,580	Bwl (m) 1,017
	Zc heel (m) -0,041 > GZ (m) 0,599	Draft (m) 0,092
	Sw heel (m2) 3,61 RM (kN.m) 0,951	Relevant only when heel = 1°
	Freeboard minimum (cm) 26,65	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,35	Gz (m) 0,009
		> GM1° (m) 0,52

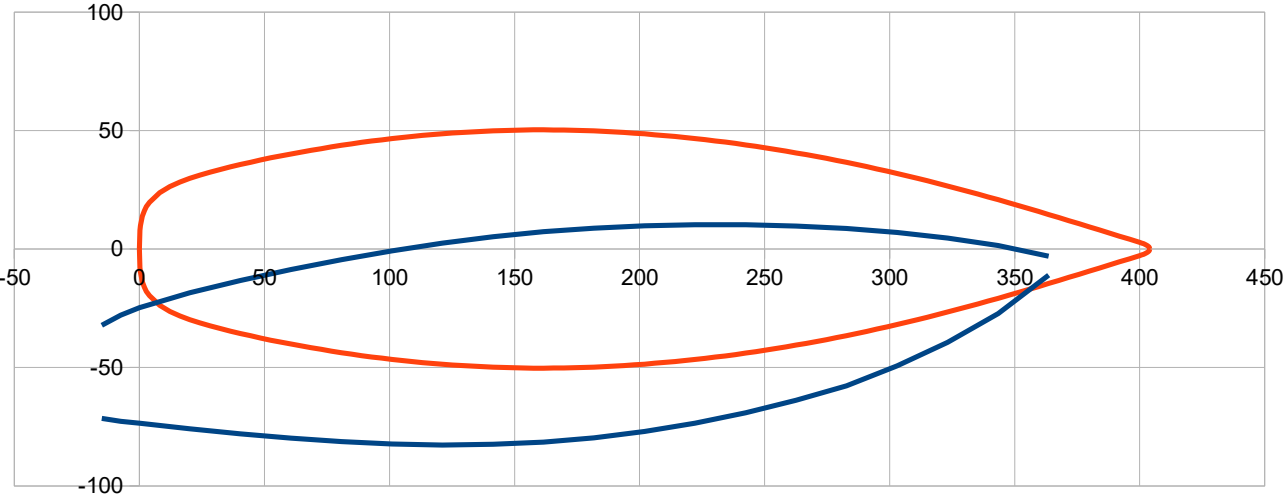
For Heel = 10° >>> Trim = 0,43° ; GZ = 0,706 m ; RM = 1,122 kN.m ; Sw = 3,63 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15799 / Disp. (m3) 0,15799	Relevant only when heel = 0°
Height (cm) 1,9450	Xc heel (m) 1,672 / Xg (m) 1,672	Lwl (m) 3,877
Trim (°) 0,432	Yc heel (m) -0,198 Yg heel (m) 0,508	Bwl (m) 1,047
	Zc heel (m) -0,041 > GZ (m) 0,706	Draft (m) 0,076
	Sw heel (m2) 3,63 RM (kN.m) 1,122	Relevant only when heel = 1°
	Freeboard minimum (cm) 17,84	Yg heel (m) -0,102 with crew at center
	Obliquity (°) 4,14	Gz (m) 0,096
		> GM1° (m) 0,55

D3,1 - At 10° heel angle



At 20° heel angle

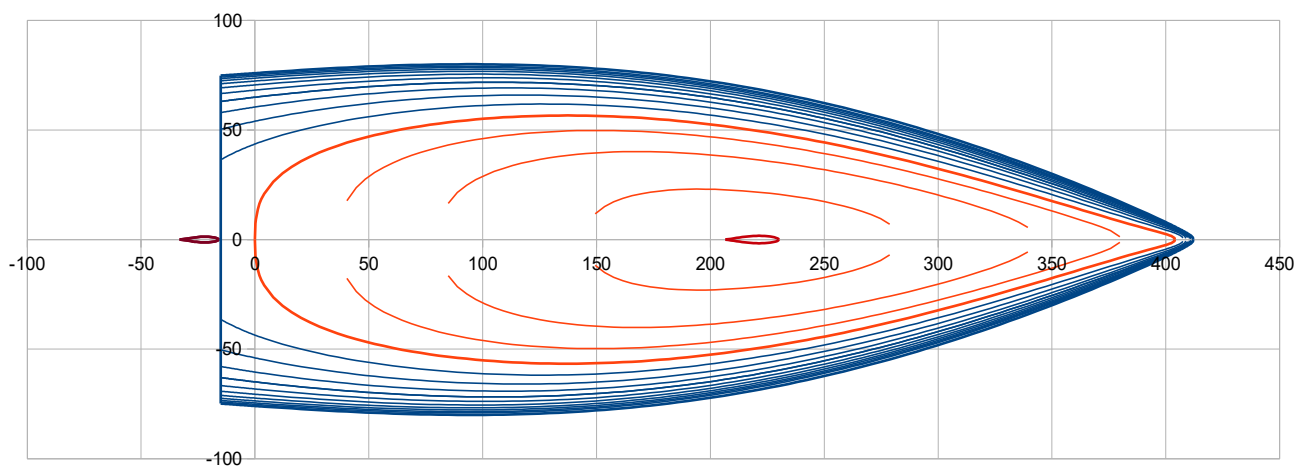
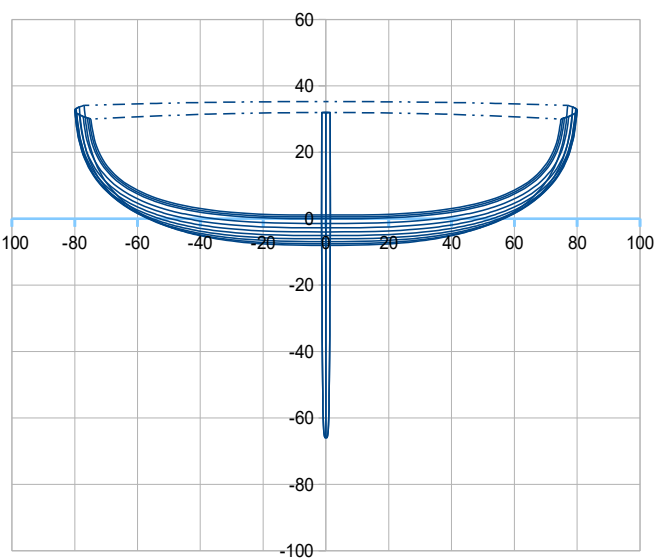
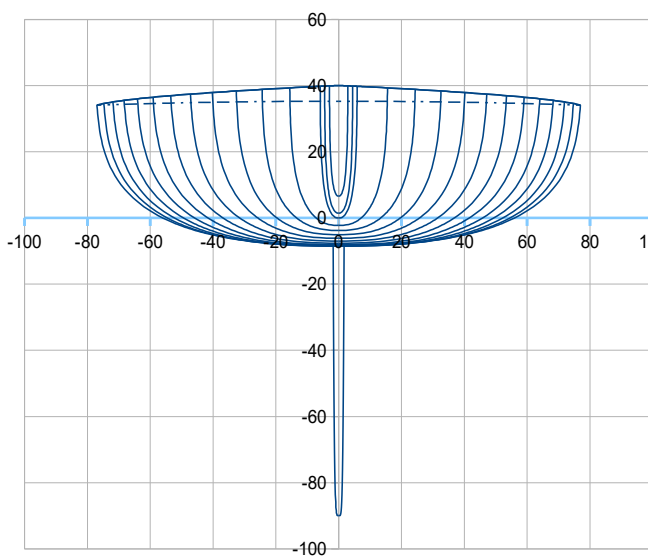
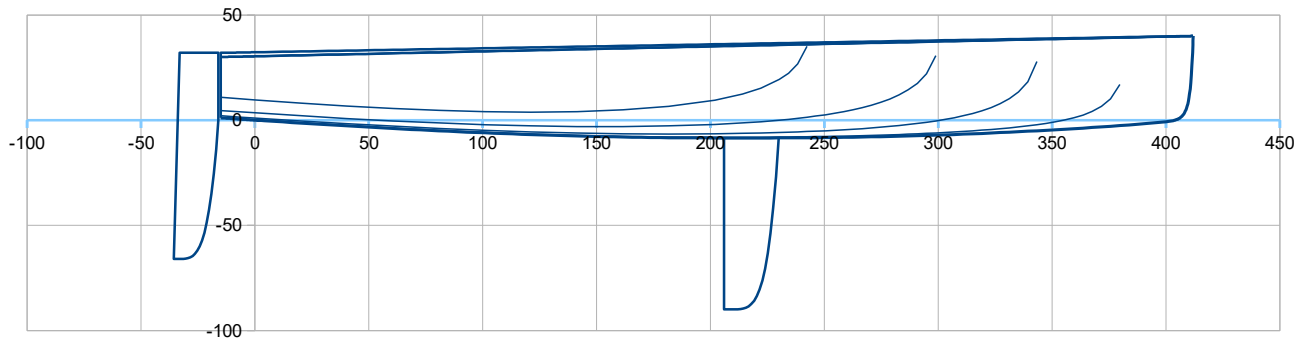


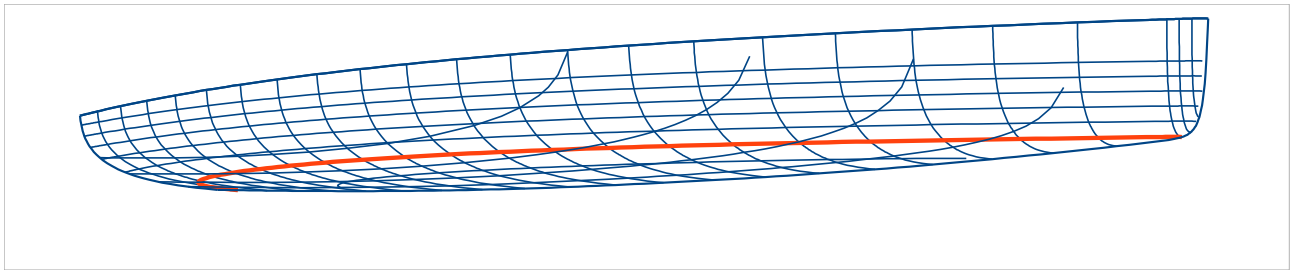
Evolution	D3,1	>>>	D4
1.1 Hull data			
Lenght of water			
Lwl (m)	4,04		4,04
Maximum draft (m)			
Tc (m)	0,0950	>>>	0,0850
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,36	>>>	0,40
Shape coefficient			
Cet	60,0	>>>	80,0
Polynomials of 1			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0115	>>>	0,0110
Sheer line, in hc			
Bg (m)	0,60	>>>	0,56
X Bg (% Lwl)	57,5	>>>	55,0
Alfa (°)	12,28	>>>	11,84
Pui liv y	2,00		2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,05	>>>	0,07
Option Hard Ch			
Type	1	>>>	0
1,2 Zhc av (m)	0,05	>>>	0,15
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,17	>>>	0,10
Pui hc z	4	>>>	3
Sheer line, in ve			
Z liv m (m)	0,35		0,35
Z liv ar (m)	0,30		0,30
Pui liv z	1		1
Deck / central li			
Z p m (m)	0,38	>>>	0,37
Z p ar (m)	0,32		0,32
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	3,00		3,00
C Hv m	6,00		6,00
C Hv ar	5,00	>>>	6,00
Pui Hv	3,00		3,00
Pui V av	6,00	>>>	12,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	1,00	>>>	3,00
Pui E2	4,04	>>>	4,31
mix VE av	0,24	>>>	0,25
mix VE ar	0,10		0,15
Pui mix VE	1,00		1,00
Option addition			
Ky	0,82	>>>	1,00
Kz	0,40		0,40
Ksoft	2,00		2,00

D4

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 4,04 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 61,8 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 161,8 kg ; **Bwl : 1,13 m**





D4 - Hydrostatics data (for Displacement 161,8 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	4,04	> Hull speed	4,9	(at Fn 0,4)		
>> ft	14,01		13,25					
Bsheer (m)	1,60	at X (% Lwl)	23,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,13	at X (% Lwl)	34,0	> Bwl / B	0,708			
>> ft	3,72							
Tc (m)	0,085	at X (%Lwl)	50					
>> ft	0,28							
Displacement at H0 (m3)	0,15311	at LCB (m)	1,869	LCB (%Lwl)	46,26			
(kg)	156,9	>> ft	6,13					
>> lbs	346,0	with water mass / vol. of	1025					
Cp (%)	55,78							
Sf (m2)	3,21	at X (m)	1,708	X (%Lwl)	42,28	>>> Xc – Xf (%Lwl)		3,98
>> ft2	34,57	>> ft	5,60					
Angle immersed sheer li (°)	23,9	at section C4 (40% Lwl)						
Sw (m2)	3,23	>Sw/D^(2/3)	11,30					
>> ft2	34,80							
Shull (m2)	7,19	at X (m)	1,768	Z (m)	0,056			
>> ft2	77,43	>> ft	5,80	>> ft	0,18			
Sdeck (m2)	5,17	at X (m)	1,576					
>> ft2	55,65	>> ft	5,17					

2.2 Daggerboard

Volume (m3)	0,00308	at X (m)	2,182	X (%Lwl)	54,01	Z (m)	-0,41	
Draft oa (m)	0,90		Sw (m2)	0,34		Sxz (m2)	0,16	
>> ft	2,95		>> ft2	3,65		>> ft2	1,75	
CLR (m)	2,240	CLR (%Lwl)	55,45	method : profile extended to the waterline, then 25% c at 45% draft oa				
>> ft	7,35							

2.3 Rudder(s)

Number	1							
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,11	Z (m)	-0,108	
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10	per rudder
>> ft2	2,23					>> ft2	1,07	

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15781	at LCB (m)	1,853	LCB (%Lwl)	45,88	ZCB (m)	-0,039	
Disp. (kg)	161,8	>> ft	0,56			>> ft	-0,13	
>> lbs	357							
Sw (m2)	3,78	>Sw/D^(2/3)	12,94	Lwl/D^(1/3)	7,48			
>> ft2	40,68			DLR	68			M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	161,8	at Xg (m)	1,665	Xg (%Lwl)	41,22	at Zg (m)	0,642	
Light boat	61,8		1,739				0,442	

**D4 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)**

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	61,78	1,739	0,442	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	161,78	1,665	0,642	0,000	Crew at center
Disp. (m3)	0,15783		0,457	0,587	Crew at hiking
		<i>Cor H (cm)</i>	<i>7,174</i>	<i>at Xg</i>	

For Heel = 0° >>> Trim = 0,56° ; Lwl = 3,98 m ; Bwl = 1,15 m ; Draft = 0,083 m ; Sw = 3,94 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15783 / Disp. (m3) 0,15783	Relevant only when heel = 0°
Height (cm) 0,2177	Xc heel (m) 1,665 / Xg (m) 1,665	Lwl (m) 3,979
Trim (°) 0,562	Yc heel (m) 0,000 Yg heel (m) 0,587	Bwl (m) 1,147
	Zc heel (m) -0,037 > GZ (m) 0,587	Draft (m) 0,083
	Sw heel (m2) 3,94 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,50	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

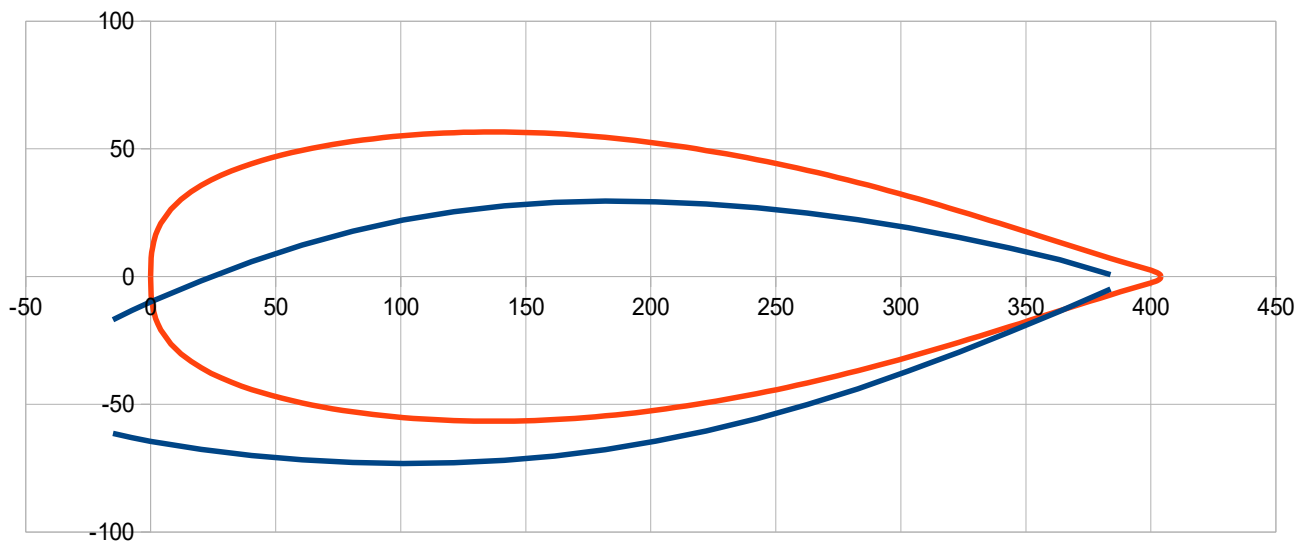
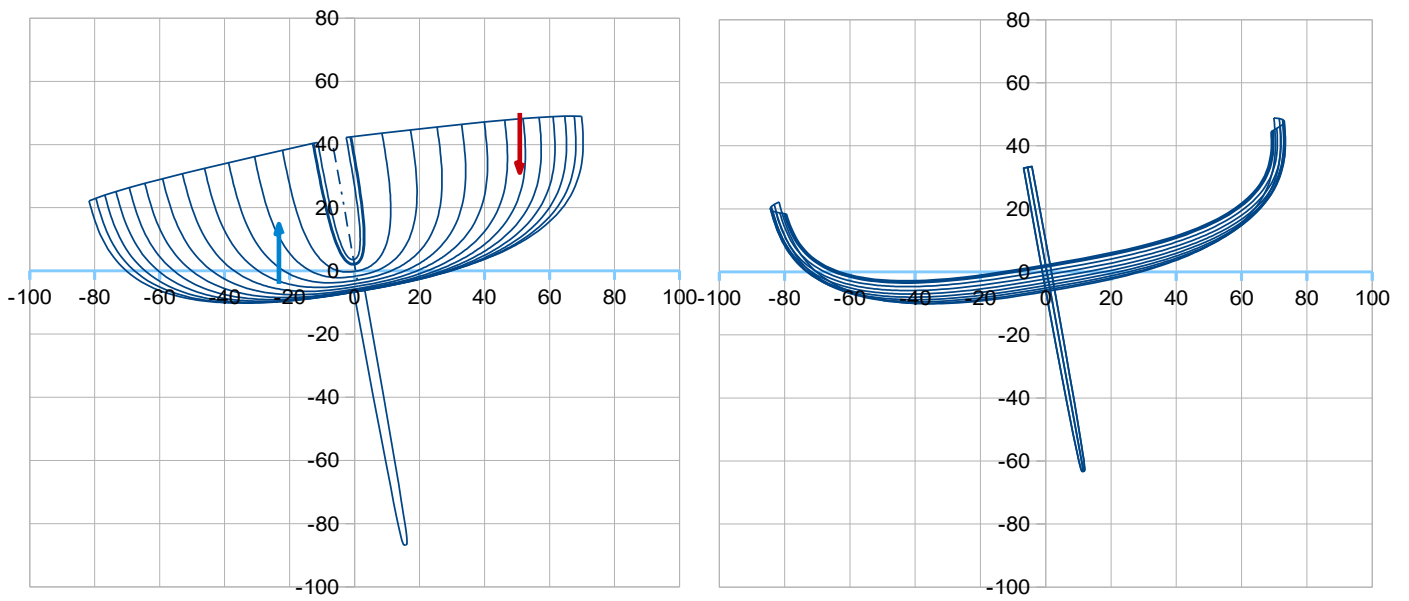
For Heel = 1° >>> GM1° = 0,99 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15783 / Disp. (m3) 0,15783	Relevant only when heel = 0°
Height (cm) 0,2345	Xc heel (m) 1,665 / Xg (m) 1,665	Lwl (m) 3,980
Trim (°) 0,555	Yc heel (m) -0,027 Yg heel (m) 0,580	Bwl (m) 1,145
	Zc heel (m) -0,037 > GZ (m) 0,608	Draft (m) 0,083
	Sw heel (m2) 3,93 RM (kN.m) 0,964	Relevant only when heel = 1°
	Freeboard minimum (cm) 27,22	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,54	Gz (m) 0,017
		> GM1° (m) 0,99

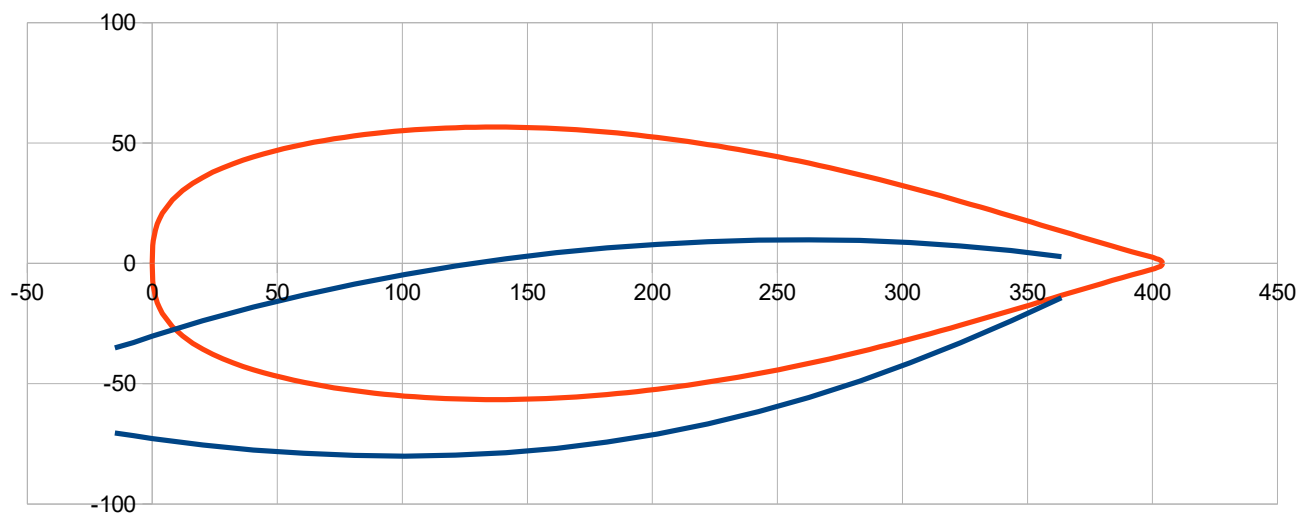
For Heel = 10° >>> Trim = 0,07° ; GZ = 0,741 m ; RM = 1,175 kN.m ; Sw = 3,54 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15783 / Disp. (m3) 0,15783	Relevant only when heel = 0°
Height (cm) 1,9493	Xc heel (m) 1,665 / Xg (m) 1,665	Lwl (m) 3,993
Trim (°) 0,065	Yc heel (m) -0,233 Yg heel (m) 0,508	Bwl (m) 0,997
	Zc heel (m) -0,041 > GZ (m) 0,741	Draft (m) 0,066
	Sw heel (m2) 3,54 RM (kN.m) 1,175	Relevant only when heel = 1°
	Freeboard minimum (cm) 18,33	Yg heel (m) -0,102 with crew at center
	Obliquity (°) 5,06	Gz (m) 0,130
		> GM1° (m) 0,75

D4 - At 10° heel angle



At 20° heel angle

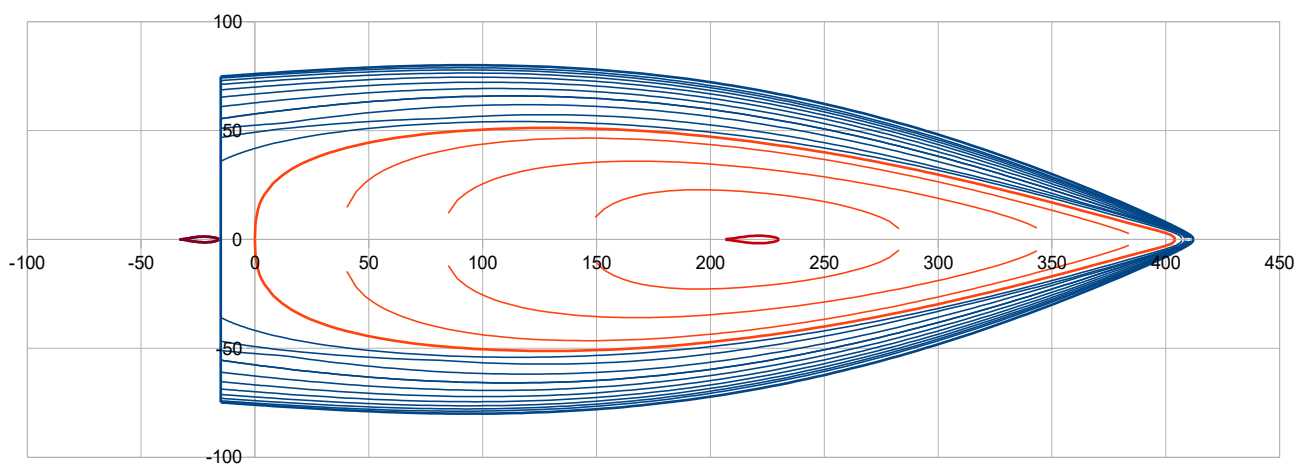
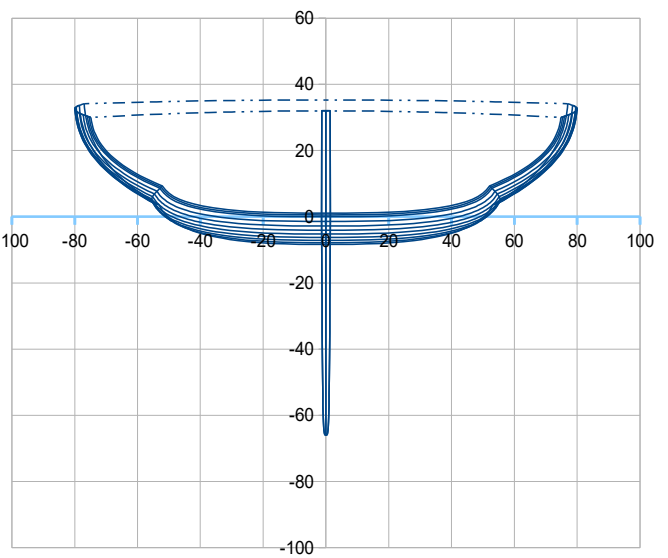
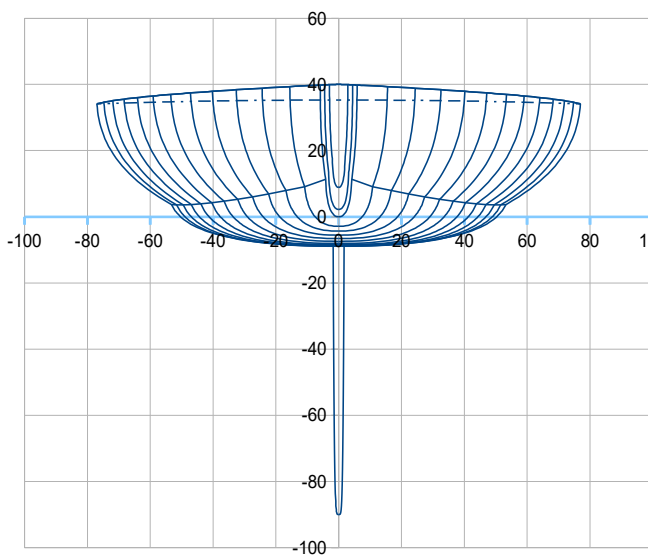
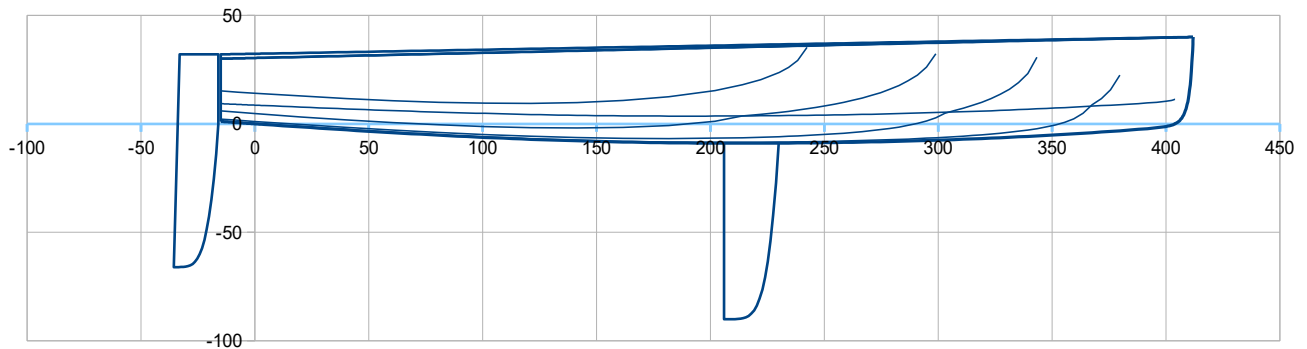


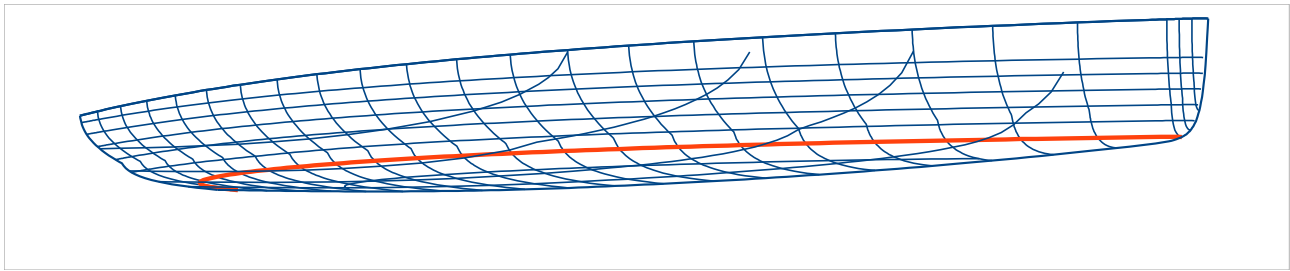
Evolution	D4	>>>	D4,1
1.1 Hull data			
Lenght of water			
Lwl (m)	4,04		4,04
Maximum draft (m)			
Tc (m)	0,0850	>>>	0,0890
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,40		0,4
Shape coefficient			
Cet	80,0	>>>	60,0
Polynomials of the hull			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the hull			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0110		0,0110
Sheer line, in hull			
Bg (m)	0,56		0,56
X Bg (% Lwl)	55,0		55,0
Alfa (°)	11,84		11,84
Pui liv y	2,00		2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,07		0,07
Option Hard Chine			
Type	0		0
1,2 Zhc av (m)	0,15		0,15
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,10		0,10
Pui hc z	3		3
Sheer line, in vertical			
Z liv m (m)	0,35		0,35
Z liv ar (m)	0,30		0,30
Pui liv z	1		1
Deck / central line			
Z p m (m)	0,37		0,37
Z p ar (m)	0,32		0,32
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	3,00		3,00
C Hv m	6,00		6,00
C Hv ar	6,00		6,00
Pui Hv	3,00		3,00
Pui V av	12,00		12,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	3,00		3,00
Pui E2	4,31	>>>	4,20
mix VE av	0,25		0,25
mix VE ar	0,15		0,15
Pui mix VE	1,00		1,00
Option additional			
Ky	1,00	>>>	0,85
Kz	0,40	>>>	0,55
Ksoft	2,00	>>>	1,00

D4,1

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 4,04 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 61,0 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 161,0 kg ; **Bwl : 1,02 m**





D4,1 - Hydrostatics data (for Displacement 161,0 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	4,04	> Hull speed	4,9	(at Fn 0,4)		
>> ft	14,01		13,25					
Bsheer (m)	1,60	at X (% Lwl)	23,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,02	at X (% Lwl)	32,0	> Bwl / B	0,640			
>> ft	3,36							
Tc (m)	0,089	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,29					>> ft	0,30	0,34
							0,98	1,10
Displacement at H0 (m3)	0,15235	at LCB (m)	1,883	LCB (%Lwl)	46,62	at ZCB (m)		Fore
(kg)	156,2	>> ft	6,18			>> inch		0,40
>> lbs	344,3	with water mass / vol. of	1025	kg/m3				1,31
Cp (%)	56,31							-1,27
Sf (m2)	2,95	at X (m)	1,705	X (%Lwl)	42,20	>>> Xc – Xf (%Lwl)		4,41
>> ft2	31,80	>> ft	5,59					
Angle immersed sheer li (°)	23,9	at section C4 (40% Lwl)						
Sw (m2)	3,00	>Sw/D^(2/3)	10,53					
>> ft2	32,33							
Shull (m2)	7,03	at X (m)	1,772	Z (m)	0,063			
>> ft2	75,68	>> ft	5,81	>> ft	0,21			
Sdeck (m2)	5,17	at X (m)	1,576					
>> ft2	55,65	>> ft	5,17					

2.2 Daggerboard

Volume (m3)	0,00307	at X (m)	2,182	X (%Lwl)	54,01	Z (m)	-0,42	
Draft oa (m)	0,90		Sw (m2)	0,34		Sxz (m2)	0,16	
>> ft	2,95		>> ft2	3,63		>> ft2	1,74	
CLR (m)	2,240	CLR (%Lwl)	55,45	method : profile extended to the waterline, then 25% c at 45% draft oa				
>> ft	7,35							

2.3 Rudder(s)

Number	1							
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,11	Z (m)	-0,108	
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10	per rudder
>> ft2	2,23					>> ft2	1,07	

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15704	at LCB (m)	1,867	LCB (%Lwl)	46,22	ZCB (m)	-0,041	
Disp. (kg)	161,0	>> ft	0,57			>> ft	-0,13	
>> lbs	355							
Sw (m2)	3,55	>Sw/D^(2/3)	12,19	Lwl/D^(1/3)	7,49			
>> ft2	38,18			DLR	68			M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	161,0	at Xg (m)	1,667	Xg (%Lwl)	41,25	at Zg (m)	0,646	
Light boat	61,0		1,743				0,449	

**D4,1 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,35 m , Zg = 0,95 m (crew at hiking)**

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	61,04	1,743	0,449	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	161,04	1,667	0,646	0,000	Crew at center
Disp. (m3)	0,15711		0,460	0,590	Crew at hiking
		Cor H (cm)	7,248	at Xg	

For Heel = 0° >>> Trim = 0,62° ; Lwl = 4,01 m ; Bwl = 1,04 m ; Draft = 0,086 m ; Sw = 3,71 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15711 / Disp. (m3) 0,15711	Relevant only when heel = 0°
Height (cm) 0,2587	Xc heel (m) 1,667 / Xg (m) 1,667	Lwl (m) 4,007
Trim (°) 0,620	Yc heel (m) 0,000 Yg heel (m) 0,590	Bwl (m) 1,036
	Zc heel (m) -0,039 > GZ (m) 0,590	Draft (m) 0,086
	Sw heel (m2) 3,71 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,33	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

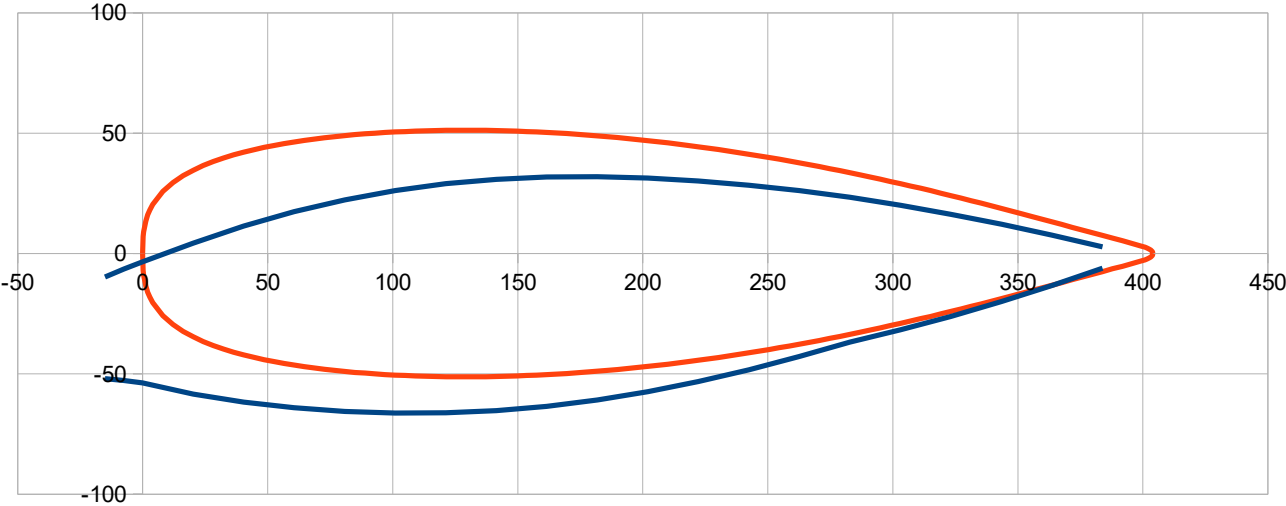
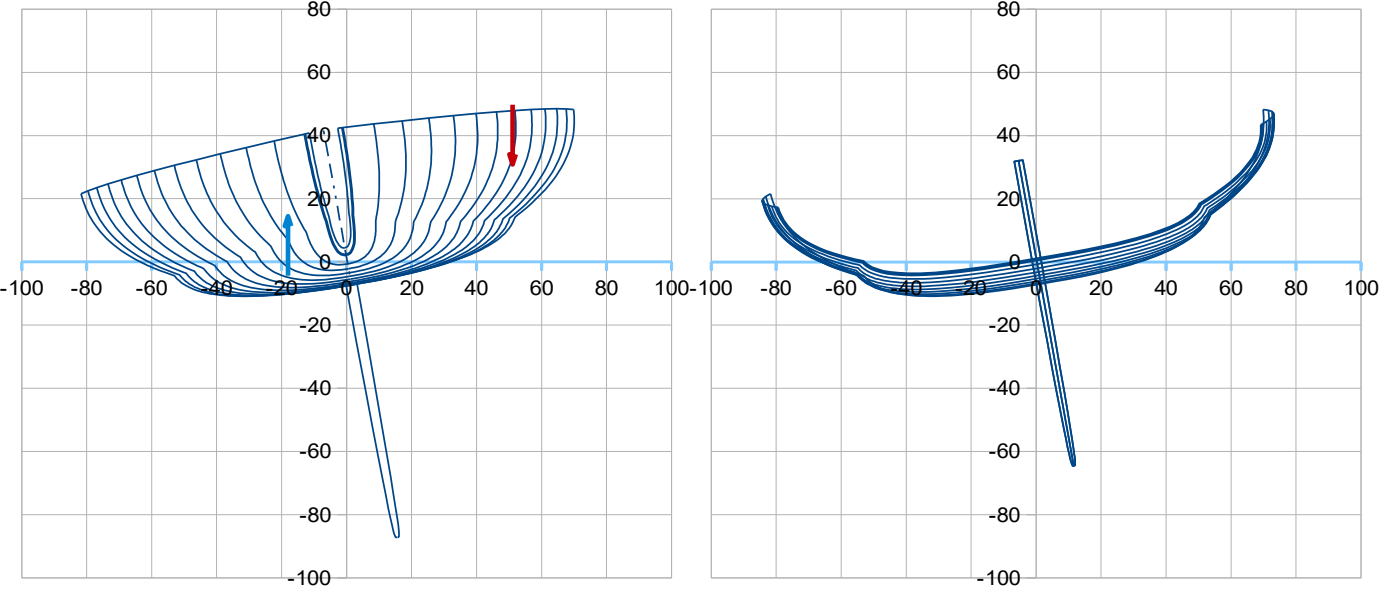
For Heel = 1° >>> GM1° = 0,61 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15711 / Disp. (m3) 0,15711	Relevant only when heel = 0°
Height (cm) 0,2693	Xc heel (m) 1,667 / Xg (m) 1,667	Lwl (m) 4,007
Trim (°) 0,617	Yc heel (m) -0,021 Yg heel (m) 0,583	Bwl (m) 1,034
	Zc heel (m) -0,039 > GZ (m) 0,604	Draft (m) 0,086
	Sw heel (m2) 3,71 RM (kN.m) 0,954	Relevant only when heel = 1°
	Freeboard minimum (cm) 27,03	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,35	Gz (m) 0,011
		> GM1° (m) 0,61

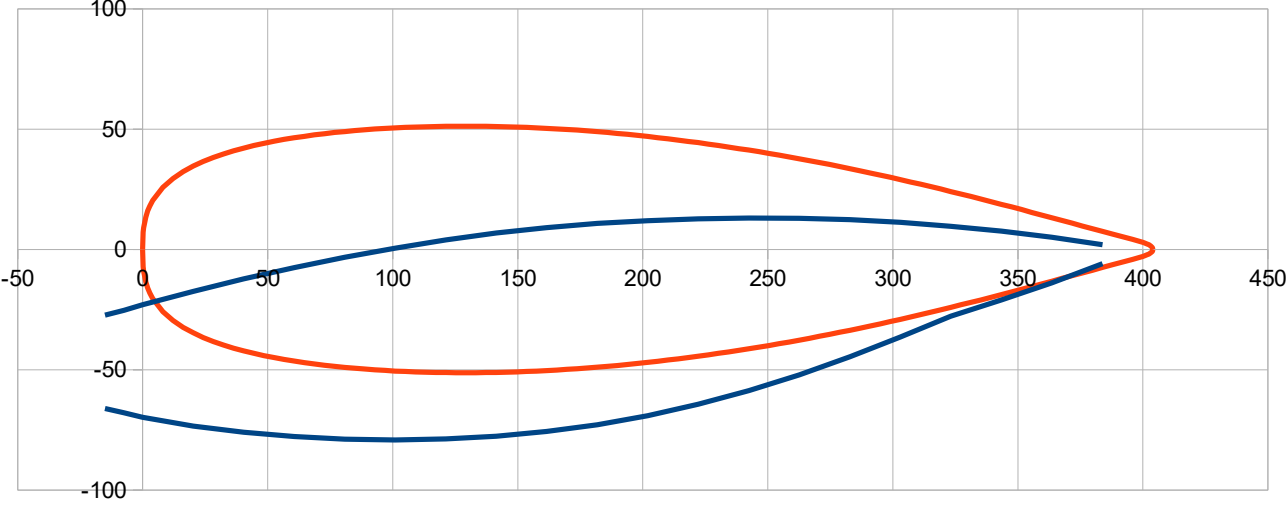
For Heel = 10° >>> Trim = 0,24° ; GZ = 0,692 m ; RM = 1,093 kN.m ; Sw = 3,42 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15711 / Disp. (m3) 0,15711	Relevant only when heel = 0°
Height (cm) 1,4133	Xc heel (m) 1,667 / Xg (m) 1,667	Lwl (m) 4,027
Trim (°) 0,240	Yc heel (m) -0,180 Yg heel (m) 0,511	Bwl (m) 0,961
	Zc heel (m) -0,044 > GZ (m) 0,692	Draft (m) 0,075
	Sw heel (m2) 3,42 RM (kN.m) 1,093	Relevant only when heel = 1°
	Freeboard minimum (cm) 17,22	Yg heel (m) -0,102 with crew at center
	Obliquity (°) 3,95	Gz (m) 0,078
		> GM1° (m) 0,45

D4,1 - At 10° heel angle



At 20° heel angle

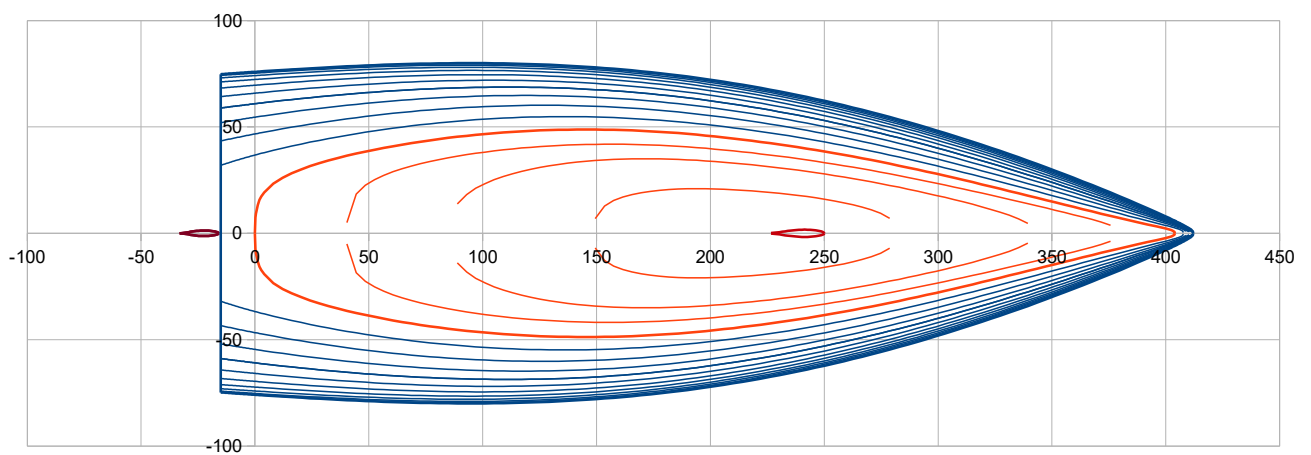
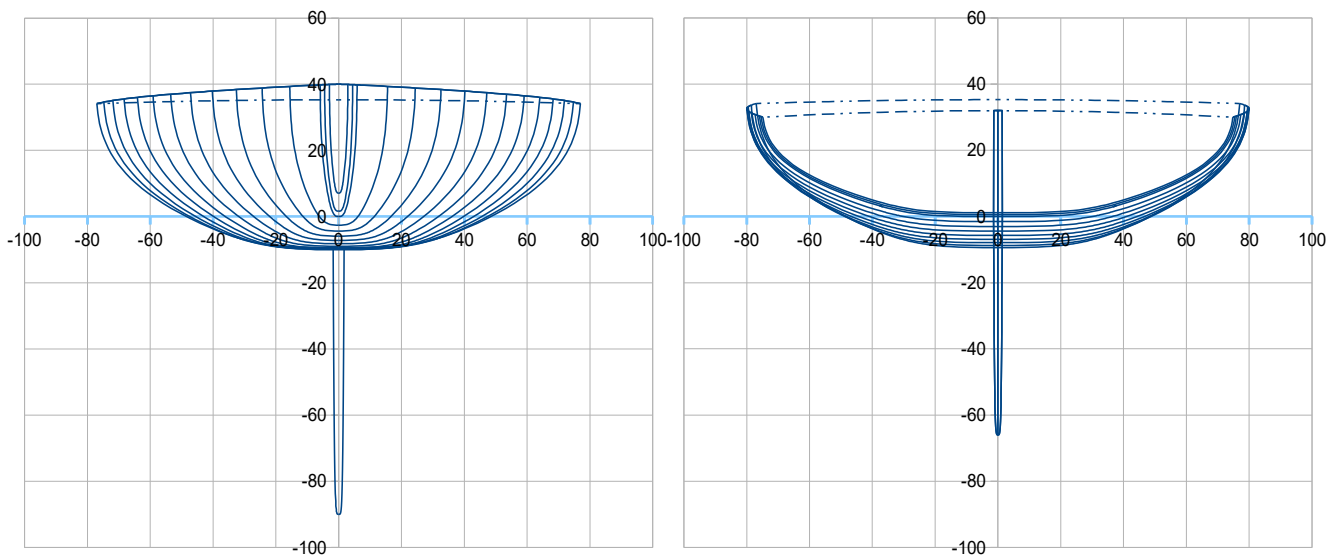
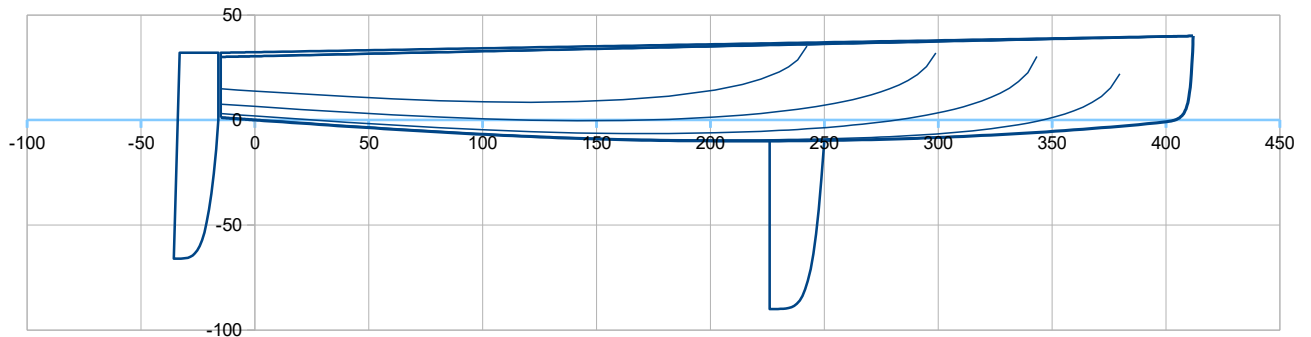


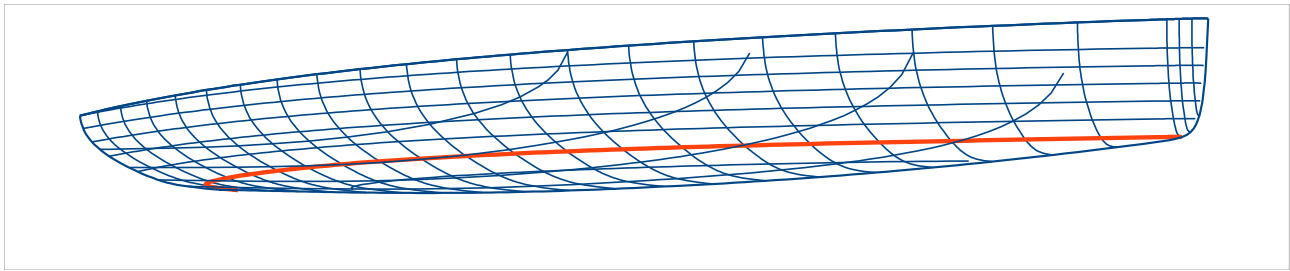
Evolution	D4,1	>>>	D4,2
1.1 Hull data			
Lenght of water			
Lwl (m)	4,04		4,04
Maximum draft (m)			
Tc (m)	0,0890	>>>	0,1000
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,4		0,40
Shape coefficient			
Cet	60,0	>>>	80,0
Polynomials of the hull			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the hull			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0110	>>>	0,0115
Sheer line, in hull			
Bg (m)	0,56		0,56
X Bg (% Lwl)	55,0		55,0
Alfa (°)	11,84		11,84
Pui liv y	2,00		2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,07		0,07
Option Hard Chine			
Type	0		0
1,2 Zhc av (m)	0,15		0,15
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,10		0,10
Pui hc z	3		3
Sheer line, in vertical			
Z liv m (m)	0,35		0,35
Z liv ar (m)	0,30		0,30
Pui liv z	1		1
Deck / central line			
Z p m (m)	0,37		0,37
Z p ar (m)	0,32		0,32
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	3,00		3,00
C Hv m	6,00		6,00
C Hv ar	6,00		6,00
Pui Hv	3,00		3,00
Pui V av	12,00		12,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	3,00		3,00
Pui E2	4,20	>>>	4,34
mix VE av	0,25		0,25
mix VE ar	0,15		0,15
Pui mix VE	1,00		1,00
Option additional			
Ky	0,85	>>>	0,80
Kz	0,55	>>>	0,30
Ksoft	1,00	>>>	2,00

D4,2

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 4,04 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 60,9 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 160,9 kg ; **Bwl : 0,98 m**





D4,2 - Hydrostatics data (for Displacement 160,9 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	4,04	> Hull speed	4,9	(at Fn 0,4)		
>> ft	14,01		13,25					
Bsheer (m)	1,60	at X (% Lwl)	23,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	0,98	at X (% Lwl)	36,0	> Bwl / B	0,610			
>> ft	3,20							
Tc (m)	0,1	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,33					>> ft	0,30	0,34
							0,98	1,10
Displacement at H0 (m3)	0,15235	at LCB (m)	1,885	LCB (%Lwl)	46,65	at ZCB (m)		Fore
(kg)	156,2	>> ft	6,18			>> inch		0,40
>> lbs	344,3	with water mass / vol. of	1025					1,31
Cp (%)	55,09							-1,40
Sf (m2)	2,75	at X (m)	1,716	X (%Lwl)	42,49	>>> Xc - Xf (%Lwl)		
>> ft2	29,59	>> ft	5,63					
Angle immersed sheer li (°)	23,9	at section C4 (40% Lwl)						
Sw (m2)	2,81	>Sw/D^(2/3)	9,85					
>> ft2	30,23							
Shull (m2)	7,00	at X (m)	1,771	Z (m)	0,063			
>> ft2	75,38	>> ft	5,81	>> ft	0,21			
Sdeck (m2)	5,17	at X (m)	1,576					
>> ft2	55,65	>> ft	5,17					

2.2 Daggerboard

Volume (m3)	0,00303	at X (m)	2,182	X (%Lwl)	54,01	Z (m)	-0,42	
Draft oa (m)	0,90		Sw (m2)	0,33		Sxz (m2)	0,16	
>> ft	2,95		>> ft2	3,58		>> ft2	1,72	
CLR (m)	2,240	CLR (%Lwl)	55,45	method : profile extended to the waterline, then 25% c at 45% draft oa				
>> ft	7,35							

2.3 Rudder(s)

Number	1							
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,11	Z (m)	-0,108	
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10	per rudder
>> ft2	2,23					>> ft2	1,07	

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15699	at LCB (m)	1,869	LCB (%Lwl)	46,25	ZCB (m)	-0,044	
Disp. (kg)	160,9	>> ft	0,57			>> ft	-0,14	
>> lbs	355							
Sw (m2)	3,35	>Sw/D^(2/3)	11,50	Lwl/D^(1/3)	7,49			
>> ft2	36,03			DLR	68			M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	160,9	at Xg (m)	1,667	Xg (%Lwl)	41,25	at Zg (m)	0,632	
Light boat	60,9		1,743				0,450	

**D4,2 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)**

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	60,91	1,743	0,450	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	160,91	1,667	0,632	0,000	Crew at center
Disp. (m3)	0,15698		0,446	0,590	Crew at hiking
		<i>Cor H (cm)</i>	<i>5,814</i>	<i>at Xg</i>	

For Heel = 0° >>> Trim = 0,70° ; Lwl = 3,96 m ; Bwl = 0,99 m ; Draft = 0,097 m ; Sw = 3,46 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15698 / Disp. (m3) 0,15698	Relevant only when heel = 0°
Height (cm) 0,2900	Xc heel (m) 1,667 / Xg (m) 1,667	Lwl (m) 3,964
Trim (°) 0,698	Yc heel (m) 0,000 Yg heel (m) 0,590	Bwl (m) 0,988
	Zc heel (m) -0,042 > GZ (m) 0,590	Draft (m) 0,097
	Sw heel (m2) 3,46 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,10	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

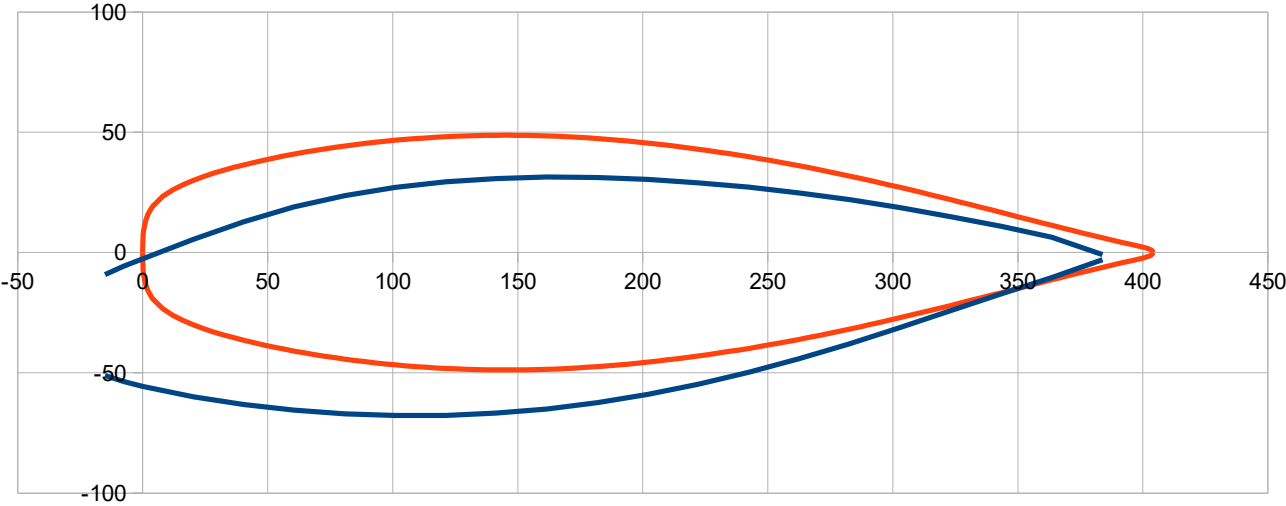
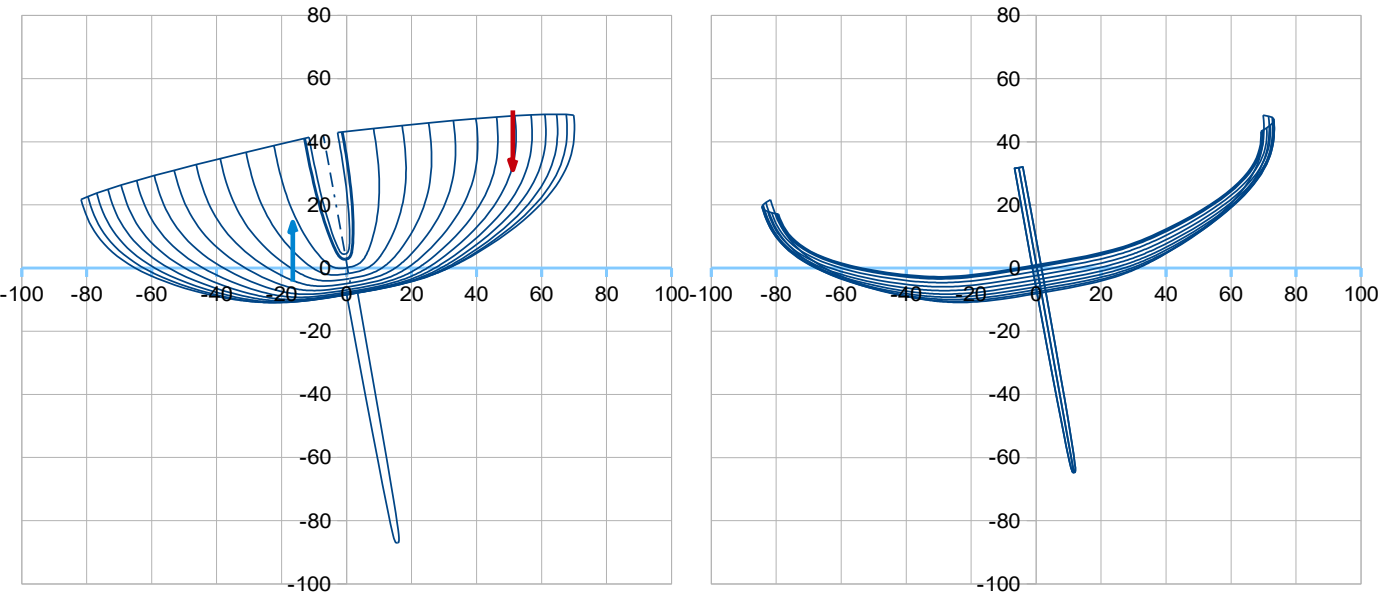
For Heel = 1° >>> GM1° = 0,39 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15698 / Disp. (m3) 0,15698	Relevant only when heel = 0°
Height (cm) 0,3013	Xc heel (m) 1,667 / Xg (m) 1,667	Lwl (m) 3,965
Trim (°) 0,692	Yc heel (m) -0,017 Yg heel (m) 0,584	Bwl (m) 0,988
	Zc heel (m) -0,042 > GZ (m) 0,600	Draft (m) 0,097
	Sw heel (m2) 3,49 RM (kN.m) 0,948	Relevant only when heel = 1°
	Freeboard minimum (cm) 26,81	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,37	Gz (m) 0,007
		> GM1° (m) 0,39

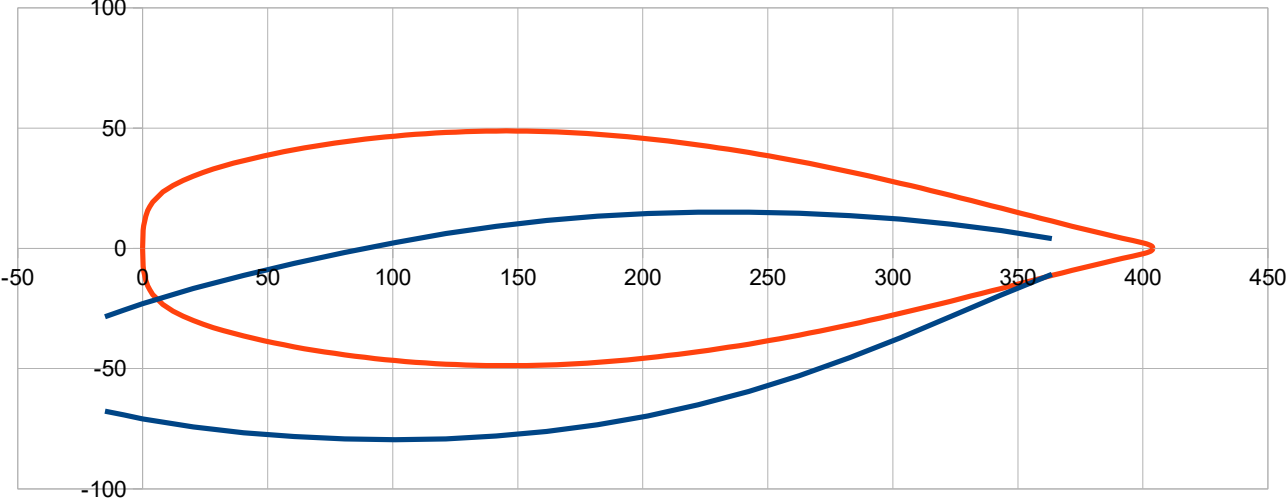
For Heel = 10° >>> Trim = 0,34° ; GZ = 0,677 m ; RM = 1,068 kN.m ; Sw = 3,41 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15698 / Disp. (m3) 0,15698	Relevant only when heel = 0°
Height (cm) 1,6070	Xc heel (m) 1,667 / Xg (m) 1,667	Lwl (m) 3,966
Trim (°) 0,342	Yc heel (m) -0,165 Yg heel (m) 0,511	Bwl (m) 0,976
	Zc heel (m) -0,043 > GZ (m) 0,677	Draft (m) 0,084
	Sw heel (m2) 3,41 RM (kN.m) 1,068	Relevant only when heel = 1°
	Freeboard minimum (cm) 17,07	Yg heel (m) -0,102 with crew at center
	Obliquity (°) 4,10	Gz (m) 0,063
		> GM1° (m) 0,36

D4,2 - At 10° heel angle



At 20° heel angle

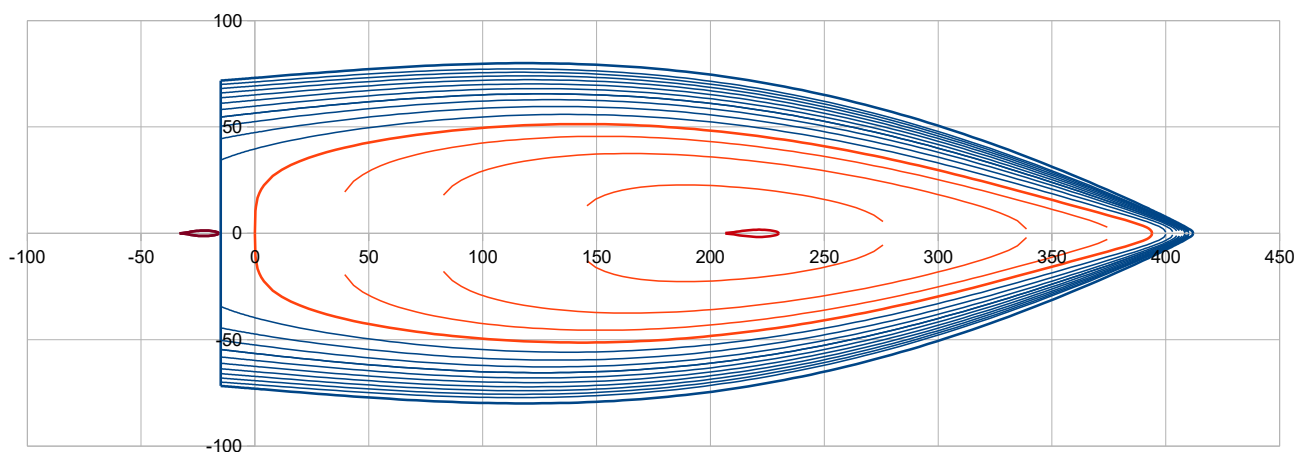
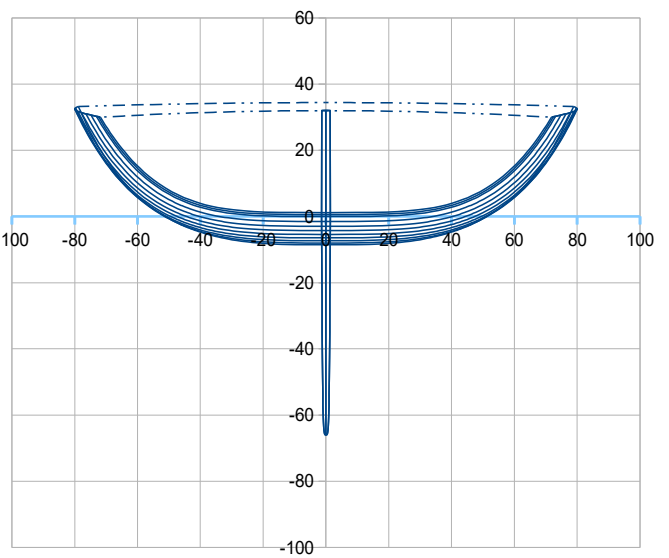
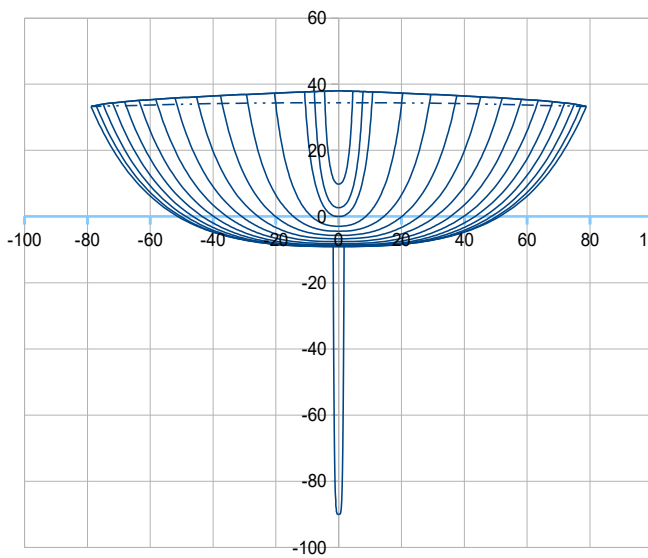
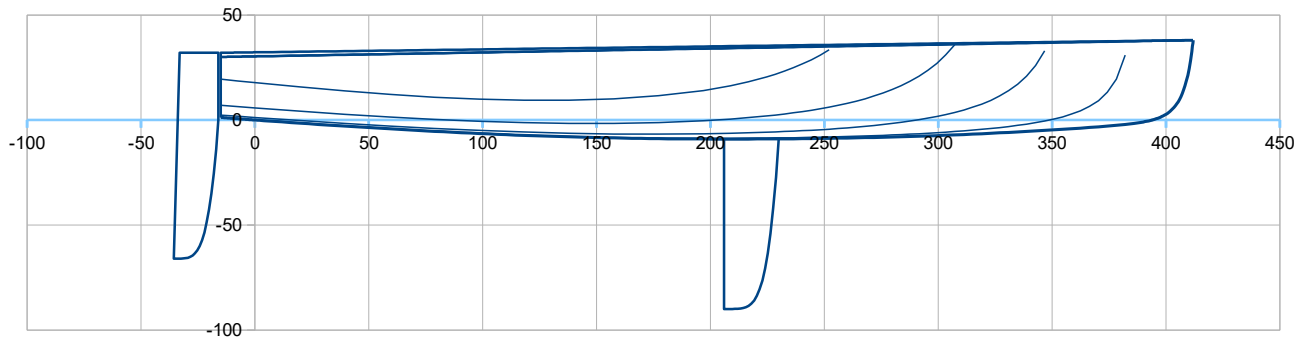


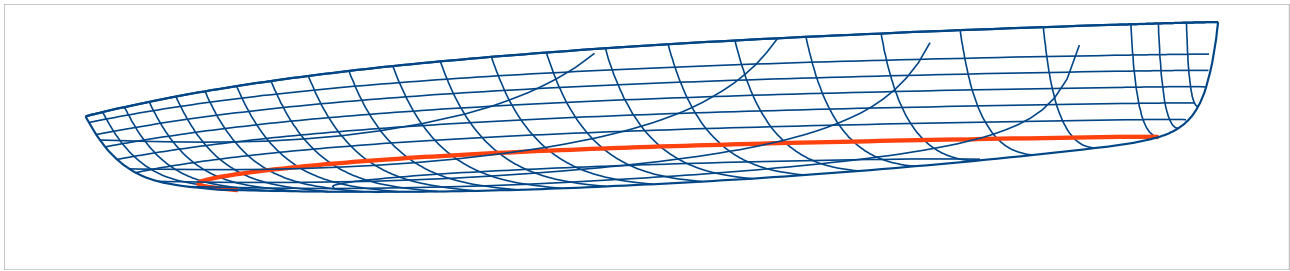
Evolution	D4,2	>>>	D5
1.1 Hull data			
Lenght of water			
Lwl (m)	4,04	>>>	3,94
Maximum draft (m)			
Tc (m)	0,1000	>>>	0,0907
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,40	>>>	0,38
Shape coefficient			
Cet	80,0	>>>	25,0
Polynomials of 1			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0115	>>>	0,0120
Sheer line, in hc			
Bg (m)	0,56		0,56
X Bg (% Lwl)	55,0	>>>	60,0
Alfa (°)	11,84	>>>	12,80
Pui liv y	2,00		2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,07		0,05
Option Hard Ch			
Type	0		0
1,2 Zhc av (m)	0,15	>>>	0,30
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,10	>>>	0,12
Pui hc z	3	>>>	4
Sheer line, in ve			
Z liv m (m)	0,35		0,35
Z liv ar (m)	0,30		0,30
Pui liv z	1		1
Deck / central li			
Z p m (m)	0,37		0,38
Z p ar (m)	0,32		0,32
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	3,00		3,00
C Hv m	6,00		6,00
C Hv ar	6,00		6,00
Pui Hv	3,00		3,00
Pui V av	12,00		12,00
Pui V ar	12,00	>>>	16,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	3,00	>>>	1,00
Pui E2	4,34	>>>	4,00
mix VE av	0,25		0,25
mix VE ar	0,15	>>>	0,00
Pui mix VE	1,00		1,00
Option addition			
Ky	0,80	>>>	1,00
Kz	0,30	>>>	0,40
Ksoft	2,00		2,00

D5

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 3,94 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 60,4 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 160,4 kg ; **Bwl : 1,03 m**





D5 - Hydrostatics data (for Displacement 160,4 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	3,94	> Hull speed	4,8	(at Fn 0,4)		
>> ft	14,01		12,93					
Bsheer (m)	1,60	at X (% Lwl)	30,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,03	at X (% Lwl)	36,0	> Bwl / B	0,642			
>> ft	3,37							
Tc (m)	0,0907	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,30					>> ft	0,30	0,33
							0,98	1,08
Displacement at H0 (m3)	0,15177	at LCB (m)	1,846	LCB (%Lwl)	46,86	at ZCB (m)		
(kg)	155,6	>> ft	6,06			>> inch		
>> lbs	343,0	with water mass / vol. of	1025			kg/m3		
Cp (%)	56,79							
Sf (m2)	2,93	at X (m)	1,697	X (%Lwl)	43,06	>>> Xc – Xf (%Lwl)		3,80
>> ft2	31,56	>> ft	5,57					
Angle immersed sheer li (°)	22,9	at section C4 (40% Lwl)						
Sw (m2)	2,96	>Sw/D^(2/3)	10,42					
>> ft2	31,91							
Shull (m2)	6,86	at X (m)	1,764	Z (m)	0,059			
>> ft2	73,83	>> ft	5,79	>> ft	0,19			
Sdeck (m2)	5,23	at X (m)	1,603					
>> ft2	56,28	>> ft	5,26					

2.2 Daggerboard

Volume (m3)	0,00306	at X (m)	2,182	X (%Lwl)	55,38	Z (m)	-0,42	
Draft oa (m)	0,90		Sw (m2)	0,34		Sxz (m2)	0,16	
>> ft	2,95		>> ft2	3,62		>> ft2	1,74	
CLR (m)	2,240	CLR (%Lwl)	56,85	method : profile extended to the waterline, then 25% c at 45% draft oa				
>> ft	7,35							

2.3 Rudder(s)

Number	1							
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,27	Z (m)	-0,108	
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10	per rudder
>> ft2	2,23					>> ft2	1,07	

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15646	at LCB (m)	1,831	LCB (%Lwl)	46,47	ZCB (m)	-0,041	
Disp. (kg)	160,4	>> ft	0,56			>> ft	-0,13	
>> lbs	354							
Sw (m2)	3,51	>Sw/D^(2/3)	12,08	Lwl/D^(1/3)	7,31			
>> ft2	37,75			DLR	73			M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	160,4	at Xg (m)	1,668	Xg (%Lwl)	42,32	at Zg (m)	0,635	
Light boat	60,4		1,746				0,454	

D5 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	60,45	1,746	0,454	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	160,45	1,668	0,635	0,000	Crew at center
Disp. (m3)	0,15653		0,448	0,592	Crew at hiking
		<i>Cor H (cm)</i>	<i>5,907</i>	<i>at Xg</i>	

For Heel = 0° >>> Trim = 0,53° ; Lwl = 3,95 m ; Bwl = 1,04 m ; Draft = 0,089 m ; Sw = 3,64 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15653 / Disp. (m3) 0,15653	Relevant only when heel = 0°
Height (cm) 0,1863	Xc heel (m) 1,668 / Xg (m) 1,668	Lwl (m) 3,945
Trim (°) 0,534	Yc heel (m) 0,000 Yg heel (m) 0,592	Bwl (m) 1,036
	Zc heel (m) -0,040 > GZ (m) 0,592	Draft (m) 0,089
	Sw heel (m2) 3,64 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,55	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

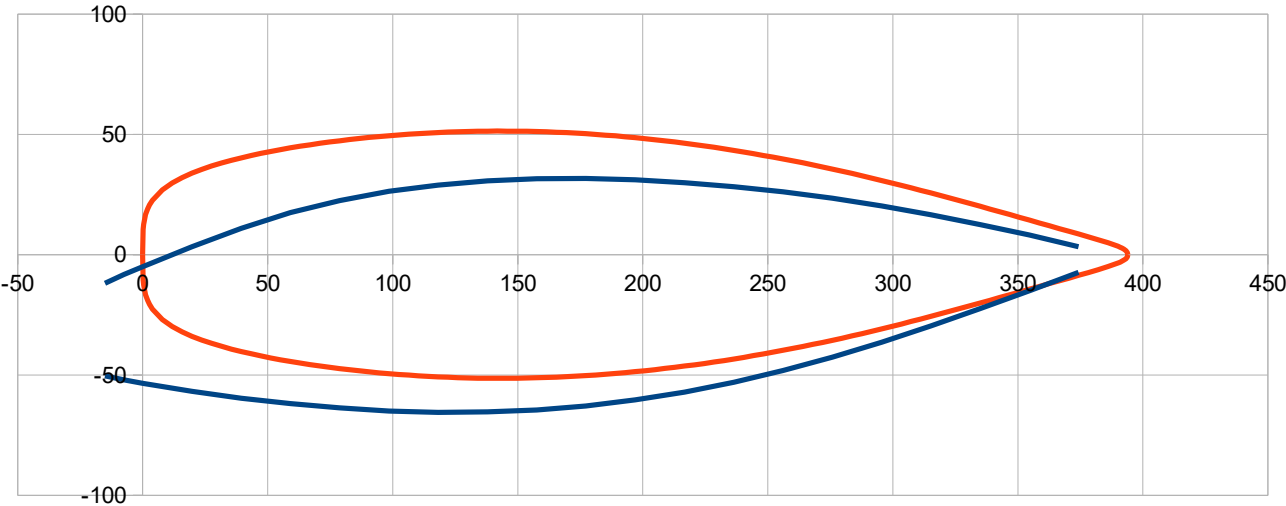
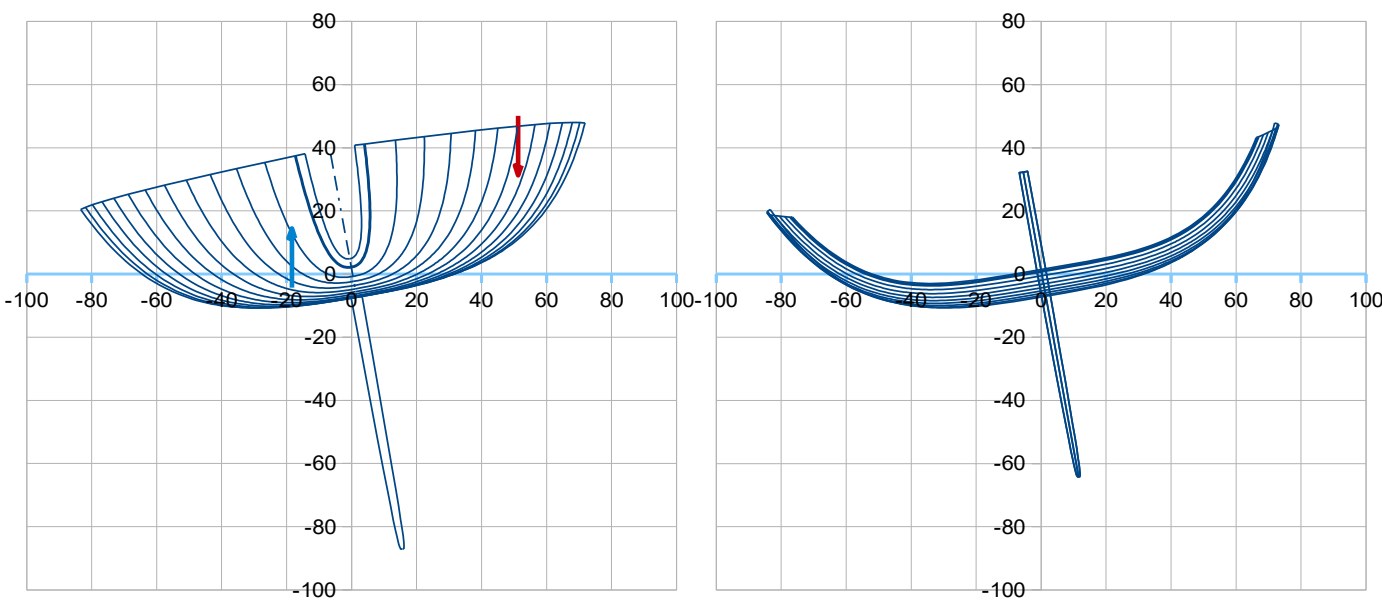
For Heel = 1° >>> GM1° = 0,59 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15653 / Disp. (m3) 0,15653	Relevant only when heel = 0°
Height (cm) 0,2000	Xc heel (m) 1,668 / Xg (m) 1,668	Lwl (m) 3,945
Trim (°) 0,530	Yc heel (m) -0,020 Yg heel (m) 0,585	Bwl (m) 1,035
	Zc heel (m) -0,040 > GZ (m) 0,606	Draft (m) 0,089
	Sw heel (m2) 3,65 RM (kN.m) 0,953	Relevant only when heel = 1°
	Freeboard minimum (cm) 27,31	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,34	Gz (m) 0,010
		> GM1° (m) 0,59

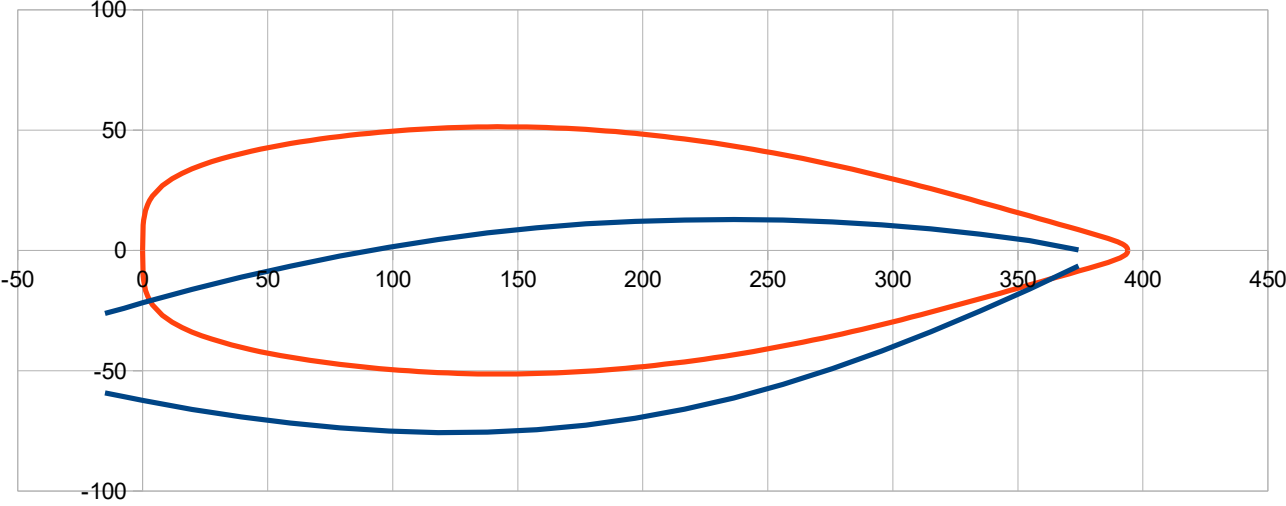
For Heel = 10° >>> Trim = 0,19° ; GZ = 0,697 m ; RM = 1,097 kN.m ; Sw = 3,36 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15653 / Disp. (m3) 0,15653	Relevant only when heel = 0°
Height (cm) 1,5243	Xc heel (m) 1,668 / Xg (m) 1,668	Lwl (m) 3,940
Trim (°) 0,193	Yc heel (m) -0,184 Yg heel (m) 0,513	Bwl (m) 0,962
	Zc heel (m) -0,043 > GZ (m) 0,697	Draft (m) 0,075
	Sw heel (m2) 3,36 RM (kN.m) 1,097	Relevant only when heel = 1°
	Freeboard minimum (cm) 17,98	Yg heel (m) -0,103 with crew at center
	Obliquity (°) 3,80	Gz (m) 0,081
		> GM1° (m) 0,47

D5 - At 10° heel angle



At 20° heel angle

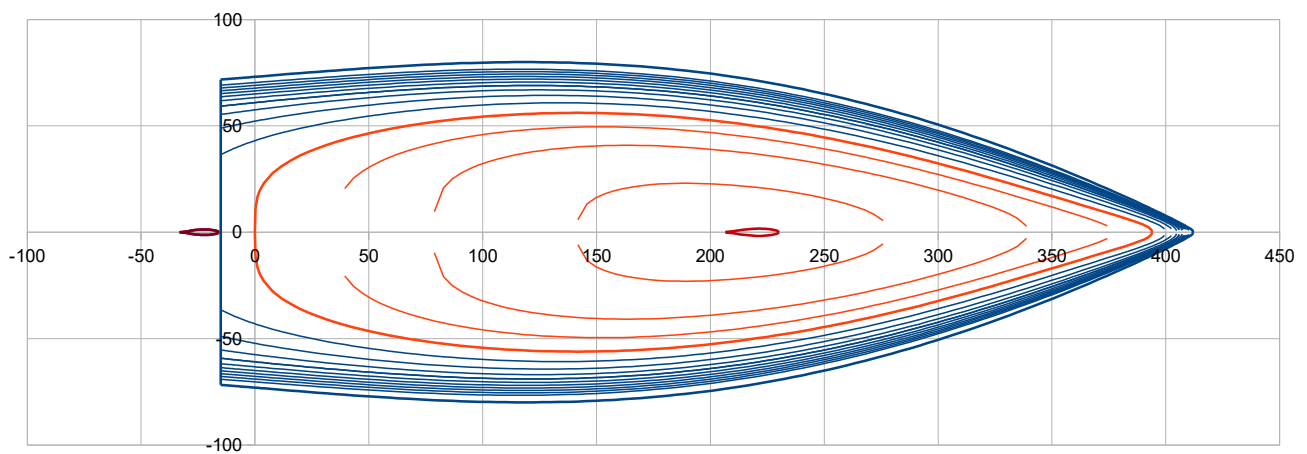
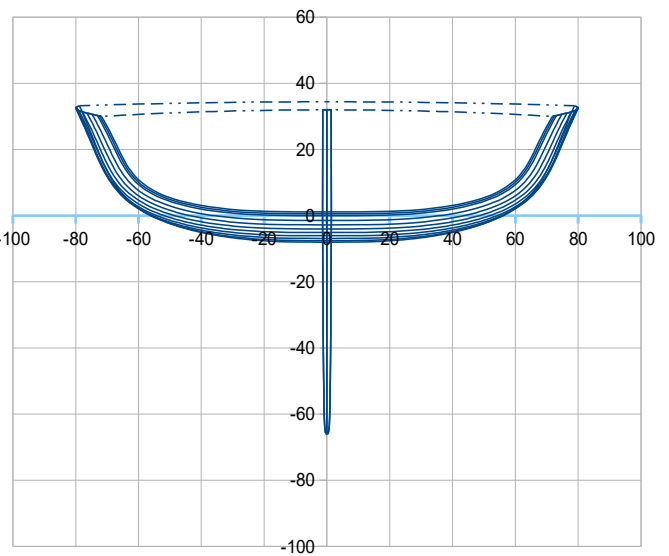
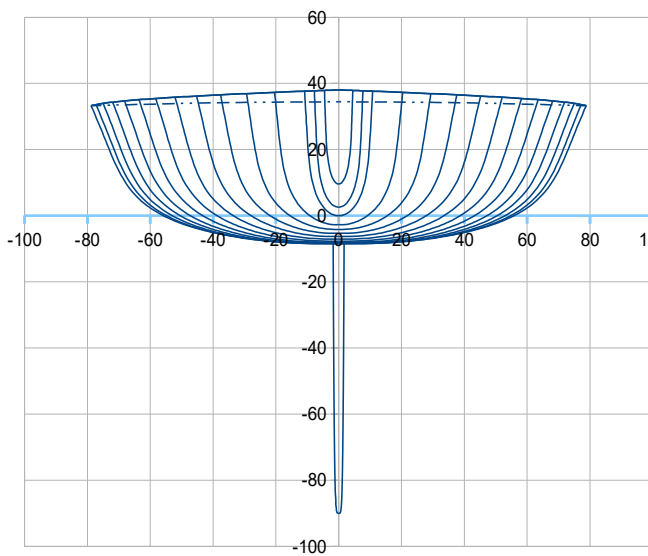
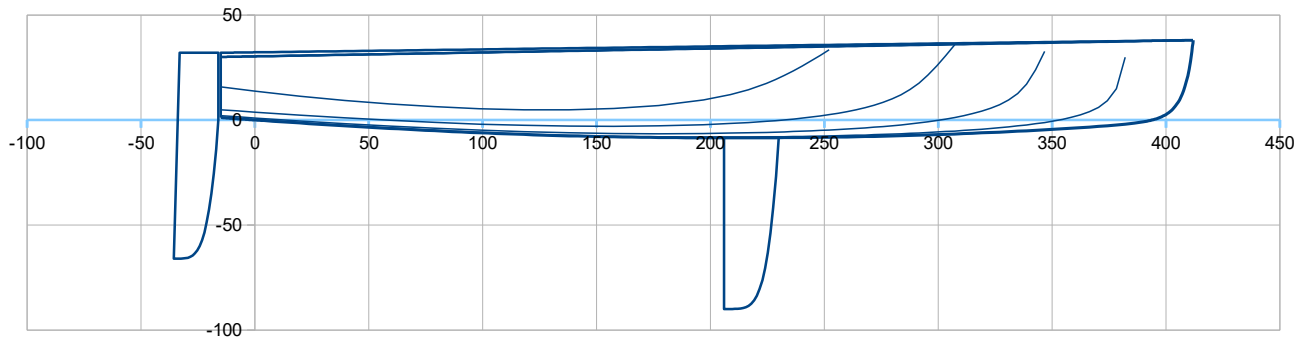


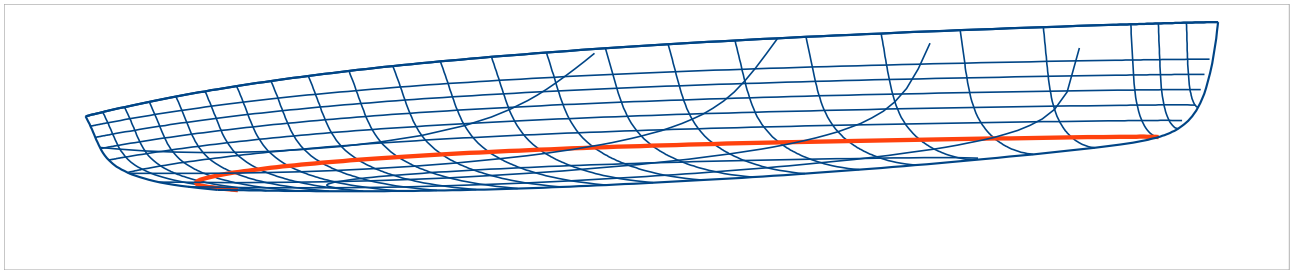
Evolution	D5	>>>	D5,1
1.1 Hull data			
Lenght of water			
Lwl (m)	3,94		3,94
Maximum draft (m)			
Tc (m)	0,0907	>>>	0,0850
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,38		0,38
Shape coefficient			
Cet	25,0		25,0
Polynomials of t			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15	>>>	-0,15
Z tab ar (m)	0,0120		0,0115
Sheer line, in hc			
Bg (m)	0,56		0,56
X Bg (% Lwl)	60,0		60,0
Alfa (°)	12,80		12,80
Pui liv y	2,00		2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,05		0,05
Option Hard Ch			
Type	0		0
1,2 Zhc av (m)	0,30		0,30
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,12		0,12
Pui hc z	4		4
Sheer line, in ve			
Z liv m (m)	0,35		0,35
Z liv ar (m)	0,30		0,30
Pui liv z	1		1
Deck / central li			
Z p m (m)	0,38		0,38
Z p ar (m)	0,32		0,32
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	3,00		3,00
C Hv m	6,00		6,00
C Hv ar	6,00		6,00
Pui Hv	3,00		3,00
Pui V av	12,00		12,00
Pui V ar	16,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	1,00	>>>	1,00
Pui E2	4,00		4,02
mix VE av	0,25		0,25
mix VE ar	0,00		0,00
Pui mix VE	1,00		1,00
Option addition			
Ky	1,00	>>>	1,12
Kz	0,40		0,40
Ksoft	2,00		2,00

D5,1

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 3,94 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 61,1 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 161,1 kg ; **Bwl : 1,12 m**





D5,1 - Hydrostatics data (for Displacement 161,1 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	3,94	> Hull speed	4,8	(at Fn 0,4)		
>> ft	14,01		12,93					
Bsheer (m)	1,60	at X (% Lwl)	30,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,12	at X (% Lwl)	36,0	> Bwl / B	0,702			
>> ft	3,68							
Tc (m)	0,085	at X (%Lwl)	50					
>> ft	0,28							
Displacement at H0 (m3)	0,15248	at LCB (m)	1,844	LCB (%Lwl)	46,80			
(kg)	156,3	>> ft	6,05					
>> lbs	344,6	with water mass / vol. of	1025					
Cp (%)	56,75							
Sf (m2)	3,19	at X (m)	1,698	X (%Lwl)	43,10	>>> Xc – Xf (%Lwl)		3,70
>> ft2	34,34	>> ft	5,57					
Angle immersed sheer li (°)	22,9	at section C4 (40% Lwl)						
Sw (m2)	3,20	>Sw/D^(2/3)	11,22					
>> ft2	34,48							
Shull (m2)	7,00	at X (m)	1,762	Z (m)	0,054			
>> ft2	75,33	>> ft	5,78	>> ft	0,18			
Sdeck (m2)	5,23	at X (m)	1,603					
>> ft2	56,28	>> ft	5,26					

2.2 Daggerboard

Volume (m3)	0,00308	at X (m)	2,182	X (%Lwl)	55,38	Z (m)	-0,41	
Draft oa (m)	0,90		Sw (m2)	0,34		Sxz (m2)	0,16	
>> ft	2,95		>> ft2	3,65		>> ft2	1,75	
CLR (m)	2,240	CLR (%Lwl)	56,85	method : profile extended to the waterline, then 25% c at 45% draft oa				
>> ft	7,35							

2.3 Rudder(s)

Number	1							
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,27	Z (m)	-0,108	
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10	per rudder
>> ft2	2,23					>> ft2	1,07	

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15718	at LCB (m)	1,829	LCB (%Lwl)	46,42	ZCB (m)	-0,039	
Disp. (kg)	161,1	>> ft	0,56			>> ft	-0,13	
>> lbs	355							
Sw (m2)	3,75	>Sw/D^(2/3)	12,87	Lwl/D^(1/3)	7,30			
>> ft2	40,35			DLR	73			M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	161,1	at Xg (m)	1,667	Xg (%Lwl)	42,30	at Zg (m)	0,632	
Light boat	61,1		1,743				0,448	

D5,1 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	61,08	1,743	0,448	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	161,08	1,667	0,632	0,000	Crew at center
Disp. (m3)	0,15715		0,446	0,590	Crew at hiking
		Cor H (cm)	5,865	at Xg	

For Heel = 0° >>> Trim = 0,50° ; Lwl = 3,95 m ; Bwl = 1,13 m ; Draft = 0,083 m ; Sw = 3,90 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15715 / Disp. (m3) 0,15715	Relevant only when heel = 0°
Height (cm) 0,1730	Xc heel (m) 1,667 / Xg (m) 1,667	Lwl (m) 3,948
Trim (°) 0,496	Yc heel (m) 0,000 Yg heel (m) 0,590	Bwl (m) 1,132
	Zc heel (m) -0,037 > GZ (m) 0,590	Draft (m) 0,083
	Sw heel (m2) 3,90 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,67	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

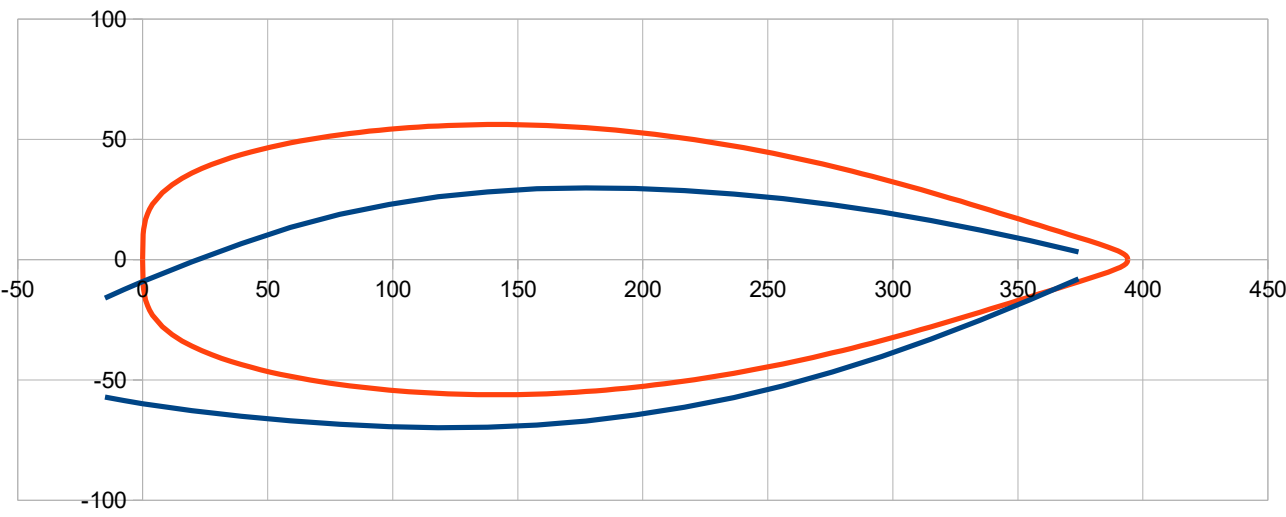
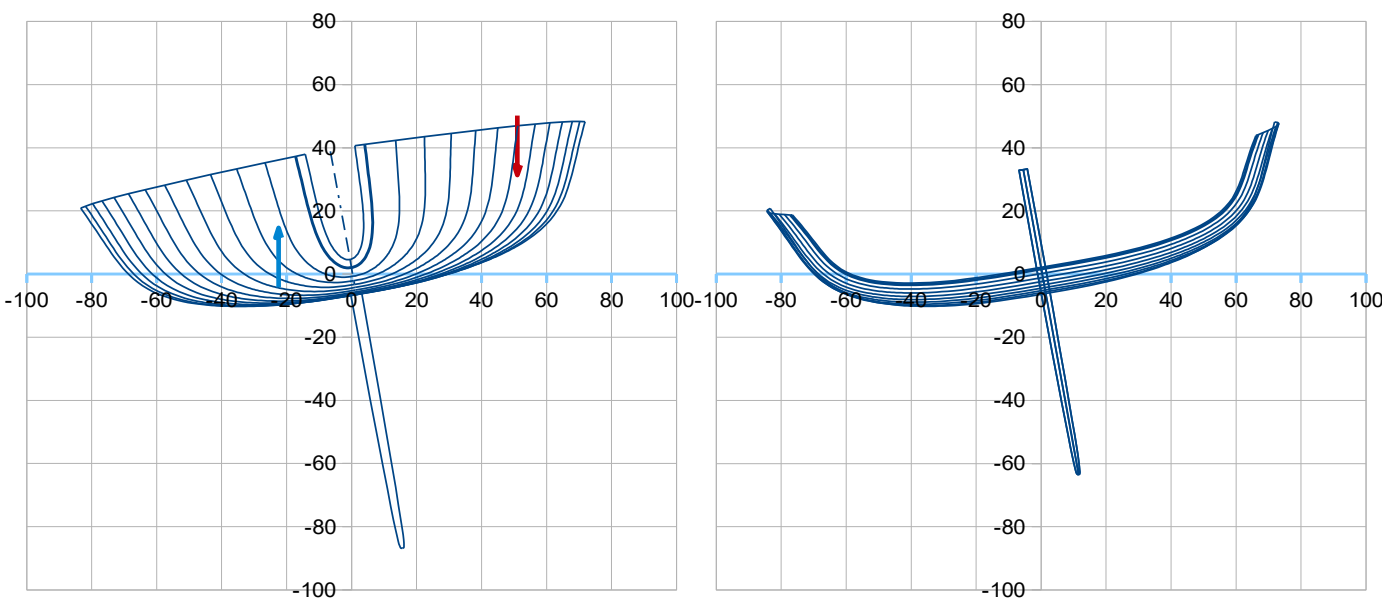
For Heel = 1° >>> GM1° = 0,95 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15715 / Disp. (m3) 0,15715	Relevant only when heel = 0°
Height (cm) 0,1897	Xc heel (m) 1,667 / Xg (m) 1,667	Lwl (m) 3,948
Trim (°) 0,490	Yc heel (m) -0,027 Yg heel (m) 0,583	Bwl (m) 1,130
	Zc heel (m) -0,038 > GZ (m) 0,609	Draft (m) 0,083
	Sw heel (m2) 3,90 RM (kN.m) 0,963	Relevant only when heel = 1°
	Freeboard minimum (cm) 27,43	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,48	Gz (m) 0,016
		> GM1° (m) 0,95

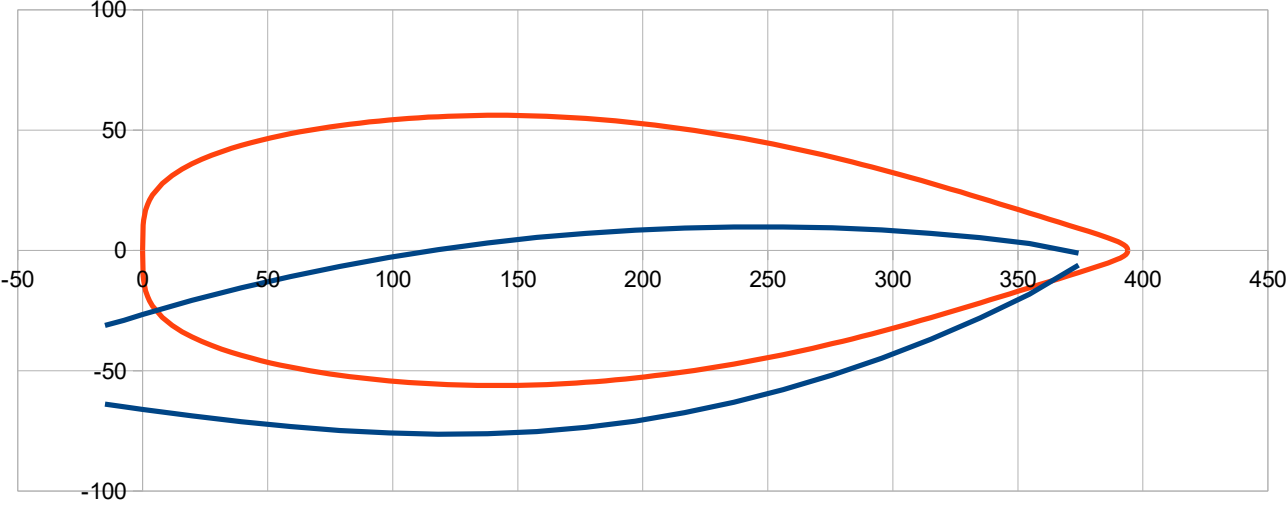
For Heel = 10° >>> Trim = 0,07° ; GZ = 0,735 m ; RM = 1,162 kN.m ; Sw = 3,48 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15715 / Disp. (m3) 0,15715	Relevant only when heel = 0°
Height (cm) 1,8443	Xc heel (m) 1,667 / Xg (m) 1,667	Lwl (m) 3,941
Trim (°) 0,070	Yc heel (m) -0,225 Yg heel (m) 0,510	Bwl (m) 0,982
	Zc heel (m) -0,042 > GZ (m) 0,735	Draft (m) 0,067
	Sw heel (m2) 3,48 RM (kN.m) 1,162	Relevant only when heel = 1°
	Freeboard minimum (cm) 18,69	Yg heel (m) -0,103 with crew at center
	Obliquity (°) 4,50	Gz (m) 0,122
		> GM1° (m) 0,70

D5,1 - At 10°heel angle



At 20° heel angle

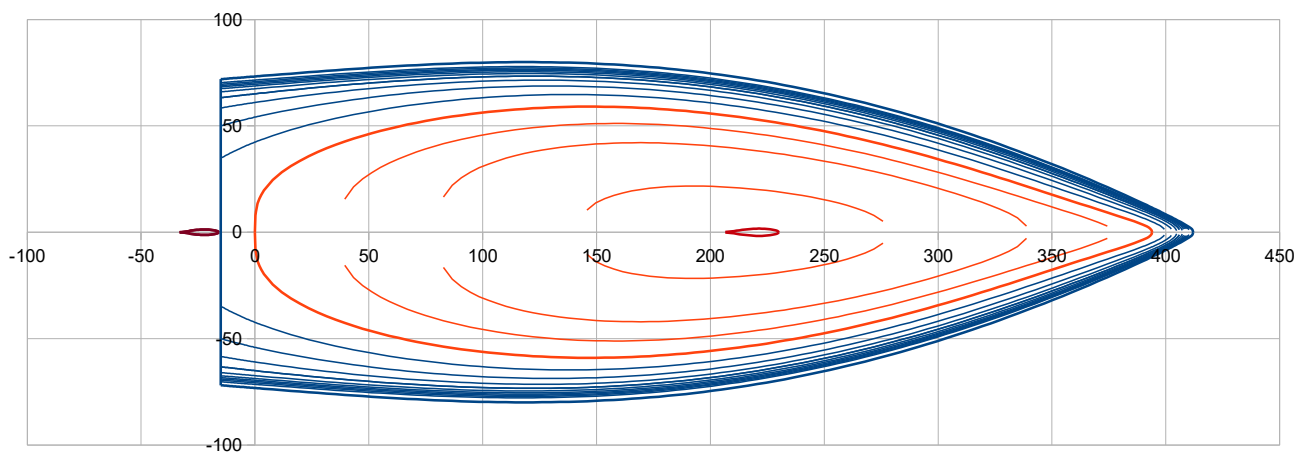
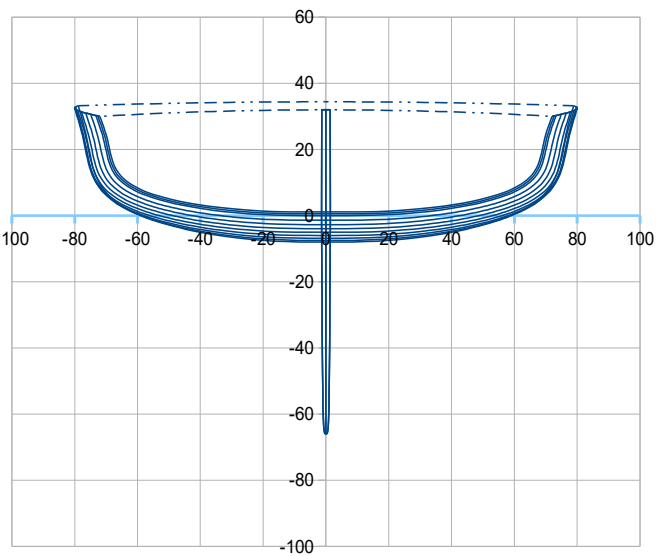
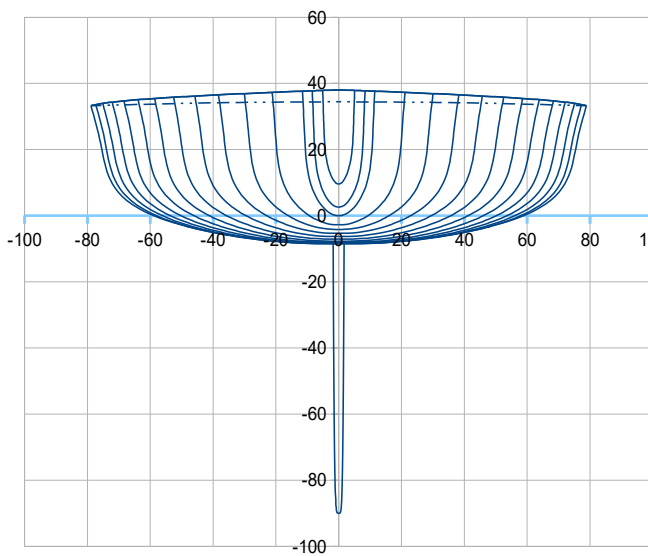
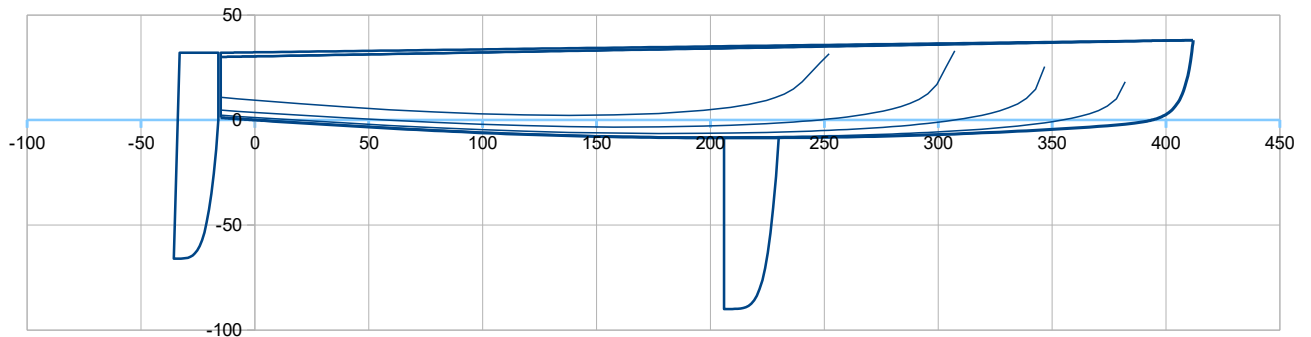


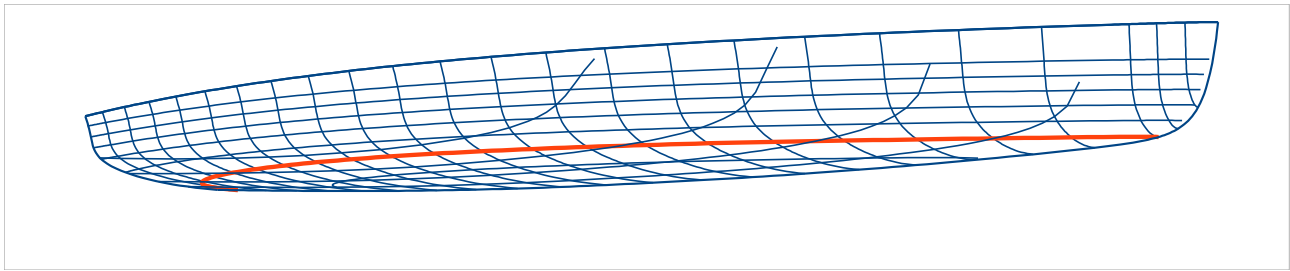
Evolution	D5,1	>>>	D5,2
1.1 Hull data			
Lenght of water			
Lwl (m)	3,94		3,94
Maximum draft (m)			
Tc (m)	0,0850		0,0850
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,38		0,38
Shape coefficient			
Cet	25,0		25,0
Polynomials of 1			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0115	>>>	0,0110
Sheer line, in hc			
Bg (m)	0,56		0,56
X Bg (% Lwl)	60,0		60,0
Alfa (°)	12,80		12,80
Pui liv y	2,00		2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,05		0,07
Option Hard Ch			
Type	0		0
1,2 Zhc av (m)	0,30		0,30
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,12		0,12
Pui hc z	4		4
Sheer line, in ve			
Z liv m (m)	0,35		0,35
Z liv ar (m)	0,30		0,30
Pui liv z	1		1
Deck / central li			
Z p m (m)	0,38		0,38
Z p ar (m)	0,32		0,32
Pui deck z	1,0		1,0
Sections : as a			
Sections V :			
C Hv av	3,00	>>>	6,00
C Hv m	6,00		6,00
C Hv ar	6,00		6,00
Pui Hv	3,00		3,00
Pui V av	12,00		12,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	1,00	>>>	1,20
Pui E2	4,02	>>>	3,397
mix VE av	0,25	>>>	0,20
mix VE ar	0,00		0,00
Pui mix VE	1,00		1,00
Option addition			
Ky	1,12	>>>	1,20
Kz	0,40	>>>	0,45
Ksoft	2,00		2,00

D5,2

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 3,94 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 61,9 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 161,9 kg ; **Bwl : 1,18 m**





D5,2 - Hydrostatics data (for Displacement 161,9 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	3,94	> Hull speed	4,8	(at Fn 0,4)		
>> ft	14,01		12,93					
Bsheer (m)	1,60	at X (% Lwl)	30,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,18	at X (% Lwl)	37,0	> Bwl / B	0,738			
>> ft	3,87							
Tc (m)	0,085	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,28					>> ft	0,30	0,33
							0,98	1,08
Displacement at H0 (m3)	0,15322	at LCB (m)	1,864	LCB (%Lwl)	47,32	at ZCB (m)		Fore
(kg)	157,1	>> ft	6,12			>> inch		0,38
>> lbs	346,2	with water mass / vol. of	1025					1,25
Cp (%)	56,08							-1,17
Sf (m2)	3,31	at X (m)	1,722	X (%Lwl)	43,71	>>> Xc – Xf (%Lwl)		
>> ft2	35,61	>> ft	5,65					
Angle immersed sheer li (°)	22,9	at section C4 (40% Lwl)						
Sw (m2)	3,32	>Sw/D^(2/3)	11,59					
>> ft2	35,73							
Shull (m2)	7,18	at X (m)	1,761	Z (m)	0,050			
>> ft2	77,28	>> ft	5,78	>> ft	0,16			
Sdeck (m2)	5,25	at X (m)	1,609					
>> ft2	56,51	>> ft	5,28					

2.2 Daggerboard

Volume (m3)	0,00308	at X (m)	2,182	X (%Lwl)	55,38	Z (m)	-0,41
Draft oa (m)	0,90		Sw (m2)	0,34		Sxz (m2)	0,16
>> ft	2,95		>> ft2	3,65		>> ft2	1,75
CLR (m)	2,240	CLR (%Lwl)	56,85	method : profile extended to the waterline, then 25% c at 45% draft oa			
>> ft	7,35						

2.3 Rudder(s)

Number	1						
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,27	Z (m)	-0,108
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10
>> ft2	2,23					>> ft2	1,07
							per rudder

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15793	at LCB (m)	1,849	LCB (%Lwl)	46,93	ZCB (m)	-0,038
Disp. (kg)	161,9	>> ft	0,56			>> ft	-0,12
>> lbs	357						
Sw (m2)	3,87	>Sw/D^(2/3)	13,23	Lwl/D^(1/3)	7,29		
>> ft2	41,60			DLR	74		M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	161,9	at Xg (m)	1,667	Xg (%Lwl)	42,31	at Zg (m)	0,639
Light boat	61,9		1,743				0,441

D5,2 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	61,91	1,743	0,441	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	161,91	1,667	0,639	0,000	Crew at center
Disp. (m3)	0,15797		0,453	0,587	Crew at hiking
		<i>Cor H (cm)</i>	<i>6,851</i>	<i>at Xg</i>	

For Heel = 0° >>> Trim = 0,55° ; Lwl = 3,93 m ; Bwl = 1,19 m ; Draft = 0,083 m ; Sw = 4,02 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15797 / Disp. (m3) 0,15797	Relevant only when heel = 0°
Height (cm) 0,1930	Xc heel (m) 1,667 / Xg (m) 1,667	Lwl (m) 3,934
Trim (°) 0,547	Yc heel (m) 0,000 Yg heel (m) 0,587	Bwl (m) 1,192
	Zc heel (m) -0,037 > GZ (m) 0,587	Draft (m) 0,083
	Sw heel (m2) 4,02 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,50	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

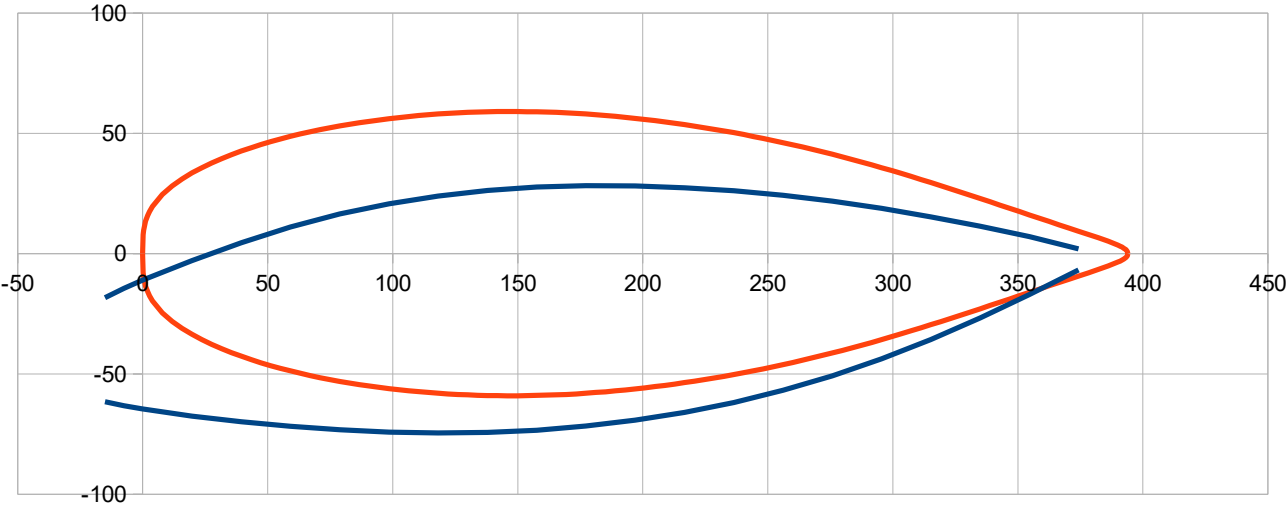
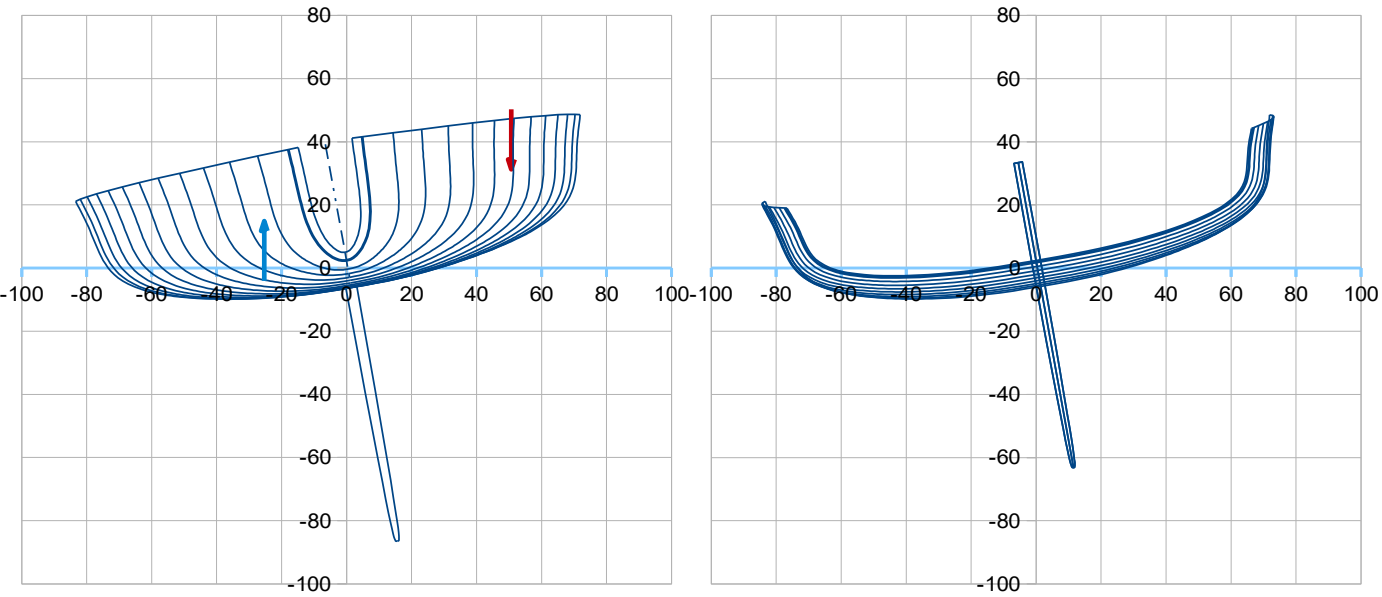
For Heel = 1° >>> GM1° = 1,16 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15797 / Disp. (m3) 0,15797	Relevant only when heel = 0°
Height (cm) 0,2147	Xc heel (m) 1,667 / Xg (m) 1,667	Lwl (m) 3,934
Trim (°) 0,543	Yc heel (m) -0,030 Yg heel (m) 0,580	Bwl (m) 1,190
	Zc heel (m) -0,037 > GZ (m) 0,610	Draft (m) 0,083
	Sw heel (m2) 4,01 RM (kN.m) 0,969	Relevant only when heel = 1°
	Freeboard minimum (cm) 27,26	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,62	Gz (m) 0,020
		> GM1° (m) 1,16

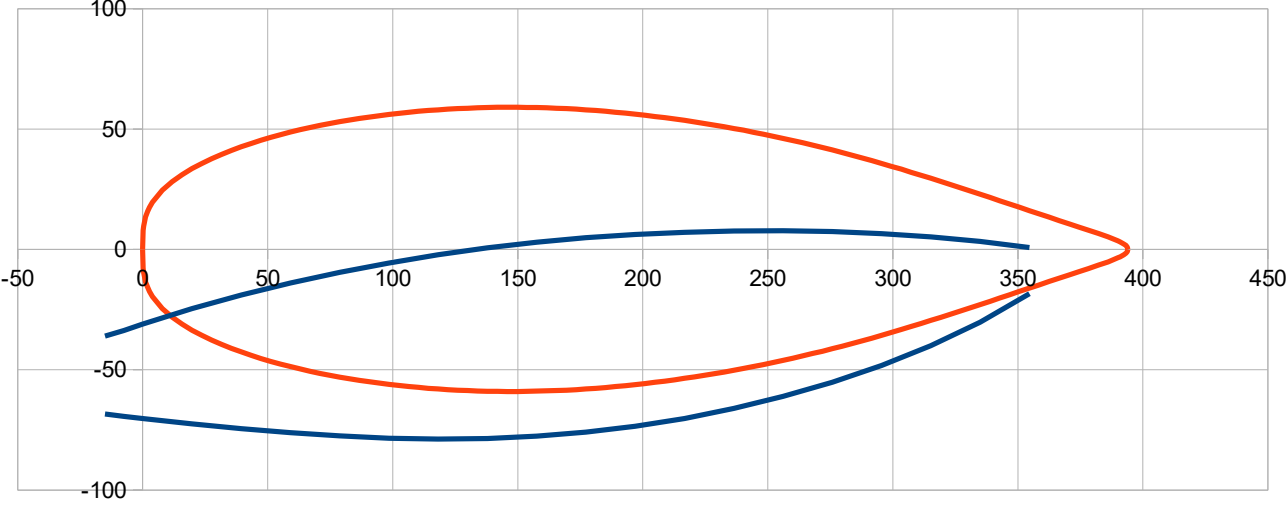
For Heel = 10° >>> Trim = 0,08° ; GZ = 0,761 m ; RM = 1,208 kN.m ; Sw = 3,58 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15797 / Disp. (m3) 0,15797	Relevant only when heel = 0°
Height (cm) 2,1837	Xc heel (m) 1,667 / Xg (m) 1,667	Lwl (m) 3,914
Trim (°) 0,080	Yc heel (m) -0,253 Yg heel (m) 0,507	Bwl (m) 1,010
	Zc heel (m) -0,041 > GZ (m) 0,761	Draft (m) 0,063
	Sw heel (m2) 3,58 RM (kN.m) 1,208	Relevant only when heel = 1°
	Freeboard minimum (cm) 18,96	Yg heel (m) -0,103 with crew at center
	Obliquity (°) 5,02	Gz (m) 0,151
		> GM1° (m) 0,87

D5,2 - At 10°heel angle



At 20° heel angle

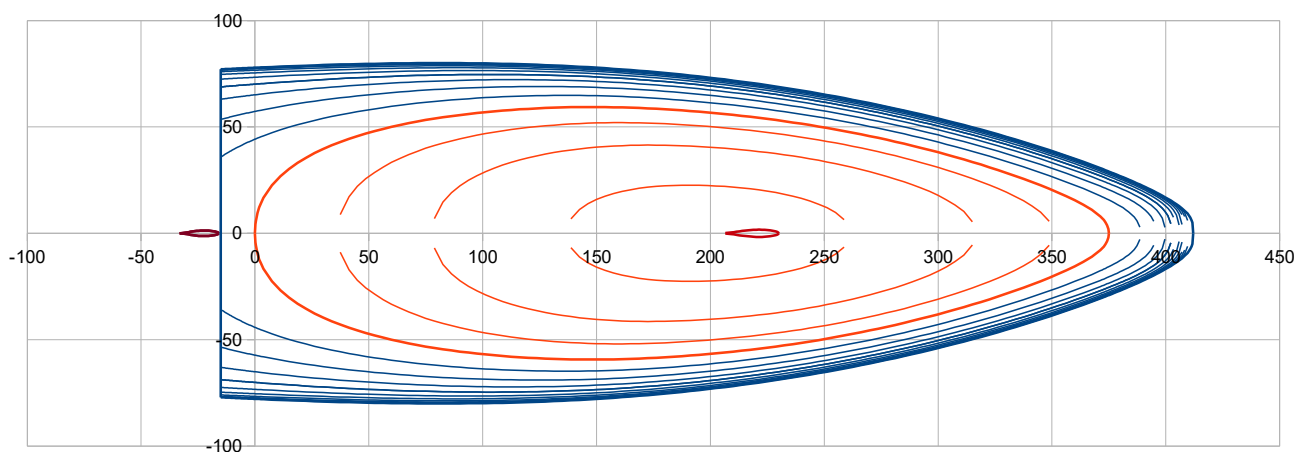
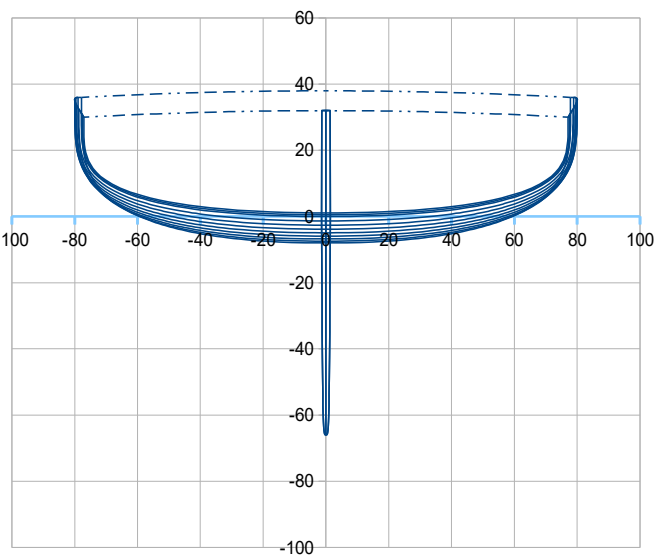
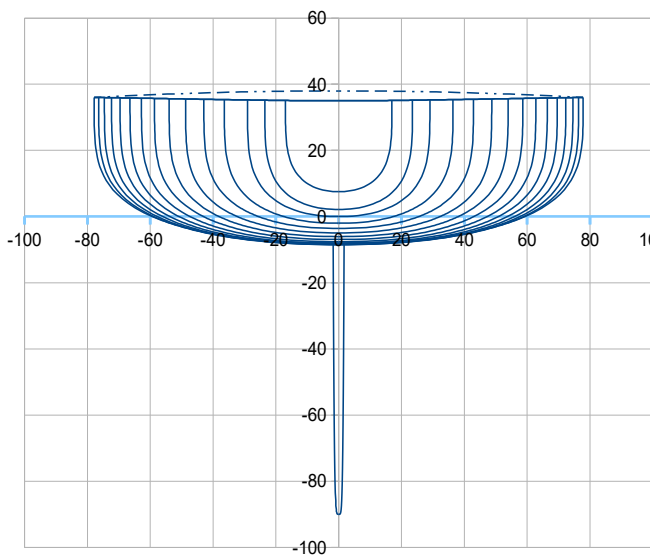
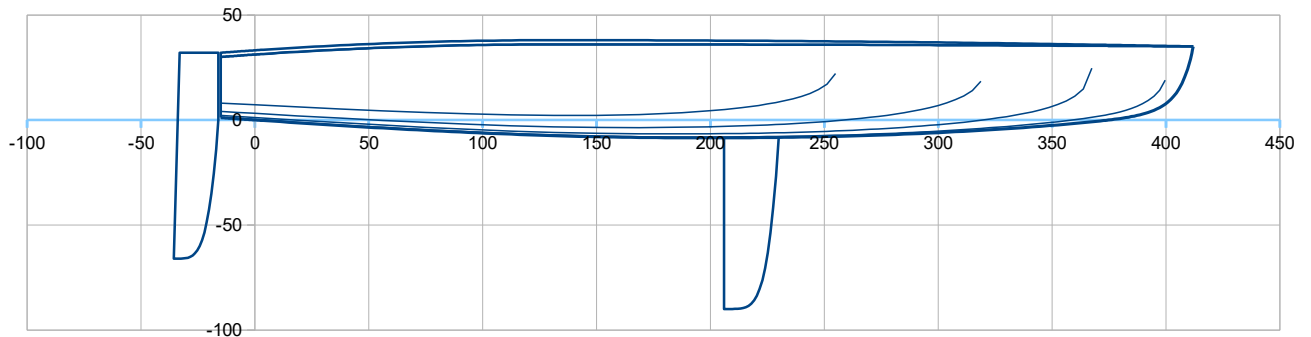


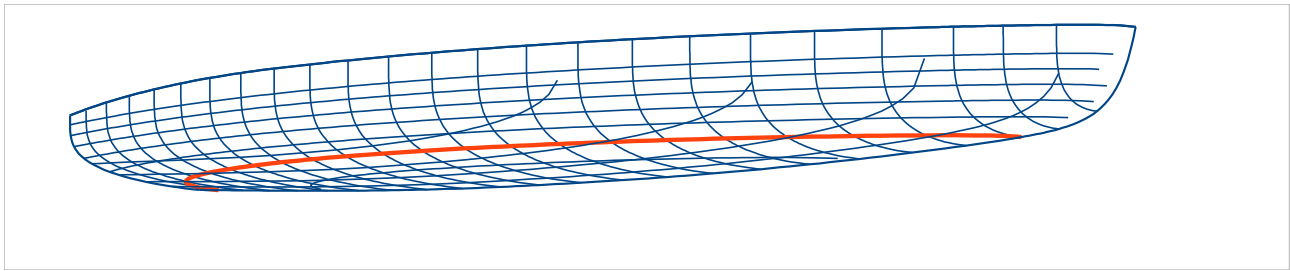
Evolution	D5,2	>>>	D6
1.1 Hull data			
Lenght of water			
Lwl (m)	3,94	>>>	3,75
Maximum draft (m)			
Tc (m)	0,0850		0,0850
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,38		0,35
Shape coefficient			
Cet	25,0	>>>	20,0
Polynomials of 1			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0110		0,0110
Sheer line, in hc			
Bg (m)	0,56	>>>	0,60
X Bg (% Lwl)	60,0	>>>	55,0
Alfa (°)	12,80	>>>	10,73
Pui liv y	2,00		2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,07	>>>	0,35
Option Hard Ch			
Type	0		0
1,2 Zhc av (m)	0,30	>>>	0,05
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,12	>>>	0,22
Pui hc z	4		4
Sheer line, in ve			
Z liv m (m)	0,35		0,36
Z liv ar (m)	0,30		0,30
Pui liv z	1		2
Deck / central li			
Z p m (m)	0,38		0,38
Z p ar (m)	0,32		0,32
Pui deck z	1,0		2,0
Sections : as a			
Sections V :			
C Hv av	6,00	>>>	3,00
C Hv m	6,00		6,00
C Hv ar	6,00	>>>	5,00
Pui Hv	3,00		3,00
Pui V av	12,00	>>>	20,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	1,20	>>>	4,00
Pui E2	3,397	>>>	2,194
mix VE av	0,20	>>>	0,00
mix VE ar	0,00		0,00
Pui mix VE	1,00		1,00
Option addition			
Ky	1,20	>>>	1,00
Kz	0,45	>>>	0,40
Ksoft	2,00		2,00

D6

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 3,94 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 63,7 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 163,7 kg ; **Bwl : 1,19 m**





D6 - Hydrostatics data (for Displacement 163,7 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	3,75	> Hull speed	4,7	(at Fn 0,4)		
>> ft	14,01		12,30					
Bsheer (m)	1,60	at X (% Lwl)	22,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,19	at X (% Lwl)	39,0	> Bwl / B	0,742			
>> ft	3,89							
Tc (m)	0,085	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,28					>> ft	0,30	0,36
							0,98	1,18
Displacement at H0 (m3)	0,15502	at LCB (m)	1,841	LCB (%Lwl)	49,10	at ZCB (m)		Fore
(kg)	158,9	>> ft	6,04			>> inch		0,35
>> lbs	350,3	with water mass / vol. of	1025					1,15
Cp (%)	58,16							-1,16
Sf (m2)	3,39	at X (m)	1,735	X (%Lwl)	46,27	>>> Xc - Xf (%Lwl)		2,83
>> ft2	36,46	>> ft	5,69					
Angle immersed sheer li (°)	24,8	at section C4 (40% Lwl)						
Sw (m2)	3,39	>Sw/D^(2/3)	11,75					
>> ft2	36,50							
Shull (m2)	7,48	at X (m)	1,742	Z (m)	0,052			
>> ft2	80,53	>> ft	5,72	>> ft	0,17			
Sdeck (m2)	5,41	at X (m)	1,637					
>> ft2	58,26	>> ft	5,37					

2.2 Daggerboard

Volume (m3)	0,00309	at X (m)	2,182	X (%Lwl)	58,19	Z (m)	-0,41
Draft oa (m)	0,90	Sw (m2)	0,34			Sxz (m2)	0,16
>> ft	2,95	>> ft2	3,65			>> ft2	1,75
CLR (m)	2,240	CLR (%Lwl)	59,73	method : profile extended to the waterline, then 25% c at 45% draft oa			
>> ft	7,35						

2.3 Rudder(s)

Number	1						
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,59	Z (m)	-0,108
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10
>> ft2	2,23					>> ft2	1,07
							per rudder

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15973	at LCB (m)	1,827	LCB (%Lwl)	48,71	ZCB (m)	-0,038
Disp. (kg)	163,7	>> ft	0,56			>> ft	-0,12
>> lbs	361						
Sw (m2)	3,94	>Sw/D^(2/3)	13,37	Lwl/D^(1/3)	6,91		
>> ft2	42,37			DLR	87		M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	163,7	at Xg (m)	1,664	Xg (%Lwl)	44,38	at Zg (m)	0,642
Light boat	63,7		1,734				0,433

**D6 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)**

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	63,74	1,734	0,433	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	163,74	1,664	0,566	0,000	Crew at center
Disp. (m3)	0,15975		0,382	0,580	Crew at hiking
		<i>Cor H (cm)</i>	<i>0,006</i>	<i>at Xg</i>	

For Heel = 0° >>> Trim = 0,50° ; Lwl = 3,73 m ; Bwl = 1,20 m ; Draft = 0,084 m ; Sw = 4,08 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15975 / Disp. (m3) 0,15975	Relevant only when heel = 0°
Height (cm) 0,1458	Xc heel (m) 1,664 / Xg (m) 1,664	Lwl (m) 3,732
Trim (°) 0,495	Yc heel (m) 0,000 Yg heel (m) 0,580	Bwl (m) 1,197
	Zc heel (m) -0,037 > GZ (m) 0,580	Draft (m) 0,084
	Sw heel (m2) 4,08 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 29,10	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

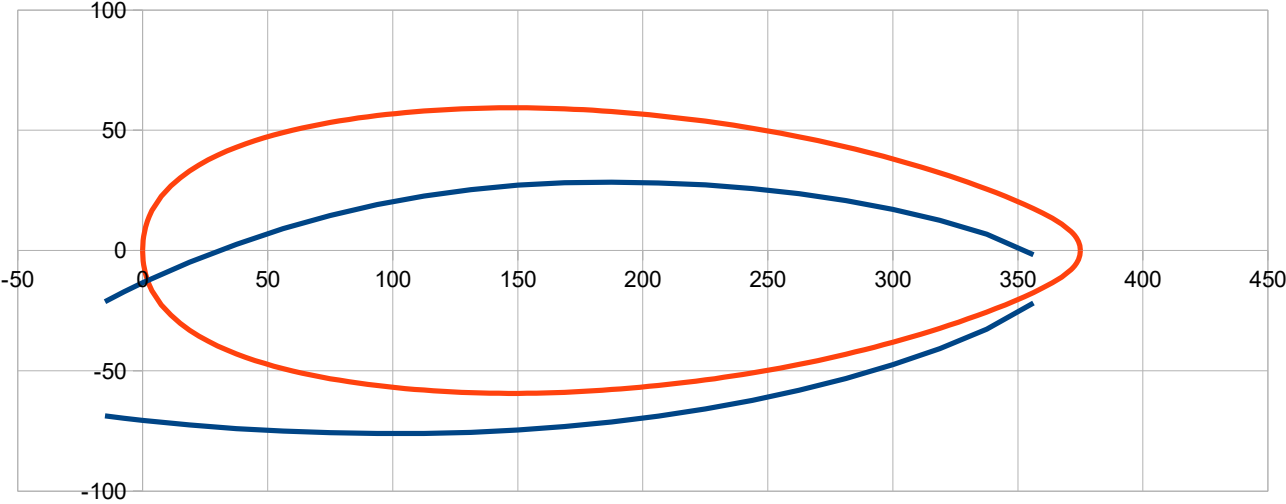
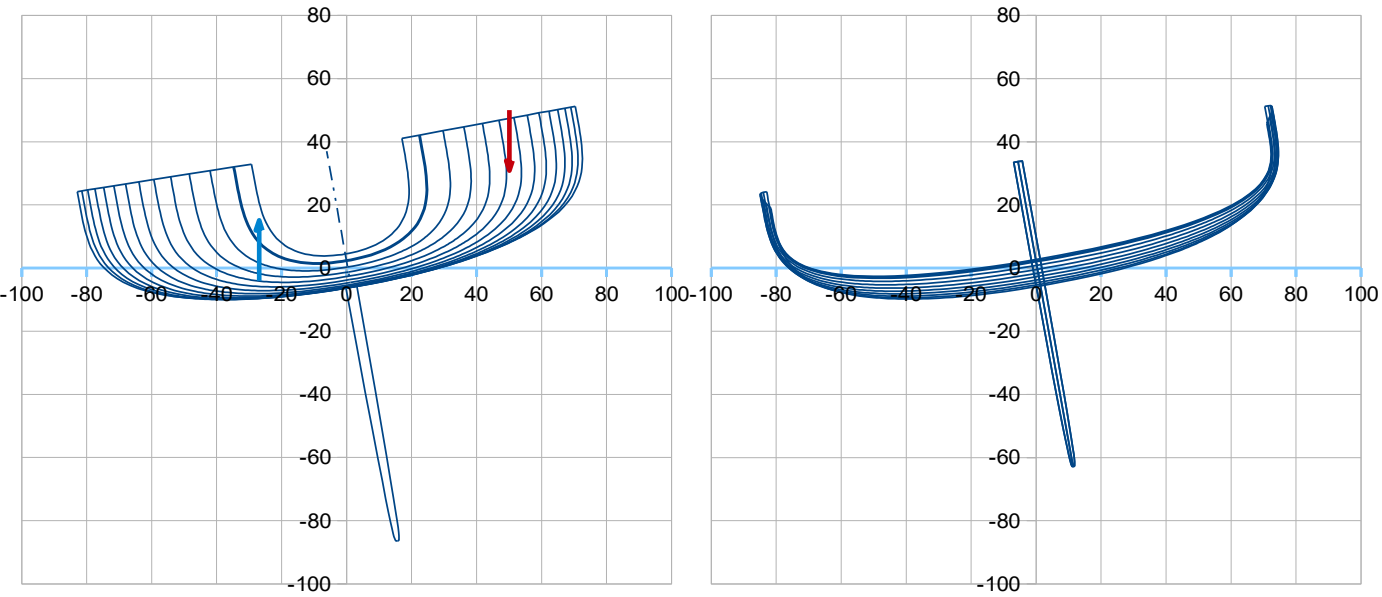
For Heel = 1° >>> GM1° = 1,27 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15975 / Disp. (m3) 0,15975	Relevant only when heel = 0°
Height (cm) 0,1683	Xc heel (m) 1,664 / Xg (m) 1,664	Lwl (m) 3,731
Trim (°) 0,490	Yc heel (m) -0,032 Yg heel (m) 0,573	Bwl (m) 1,195
	Zc heel (m) -0,037 > GZ (m) 0,605	Draft (m) 0,083
	Sw heel (m2) 4,08 RM (kN.m) 0,972	Relevant only when heel = 1°
	Freeboard minimum (cm) 27,78	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,56	Gz (m) 0,022
		> GM1° (m) 1,27

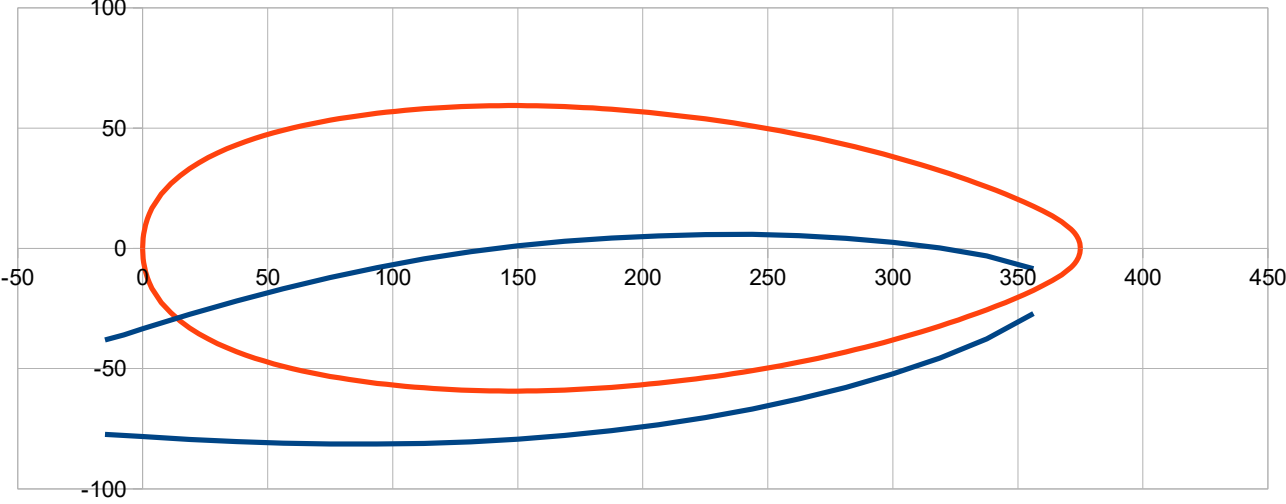
For Heel = 10° >>> Trim = 0,02° ; GZ = 0,770 m ; RM = 1,237 kN.m ; Sw = 3,64 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15975 / Disp. (m3) 0,15975	Relevant only when heel = 0°
Height (cm) 2,2947	Xc heel (m) 1,664 / Xg (m) 1,664	Lwl (m) 3,679
Trim (°) 0,023	Yc heel (m) -0,269 Yg heel (m) 0,501	Bwl (m) 1,018
	Zc heel (m) -0,041 > GZ (m) 0,770	Draft (m) 0,062
	Sw heel (m2) 3,64 RM (kN.m) 1,237	Relevant only when heel = 1°
	Freeboard minimum (cm) 18,86	Yg heel (m) -0,102 with crew at center
	Obliquity (°) 4,34	Gz (m) 0,167
		> GM1° (m) 0,96

D6 – At 10° heel angle



At 20° heel angle

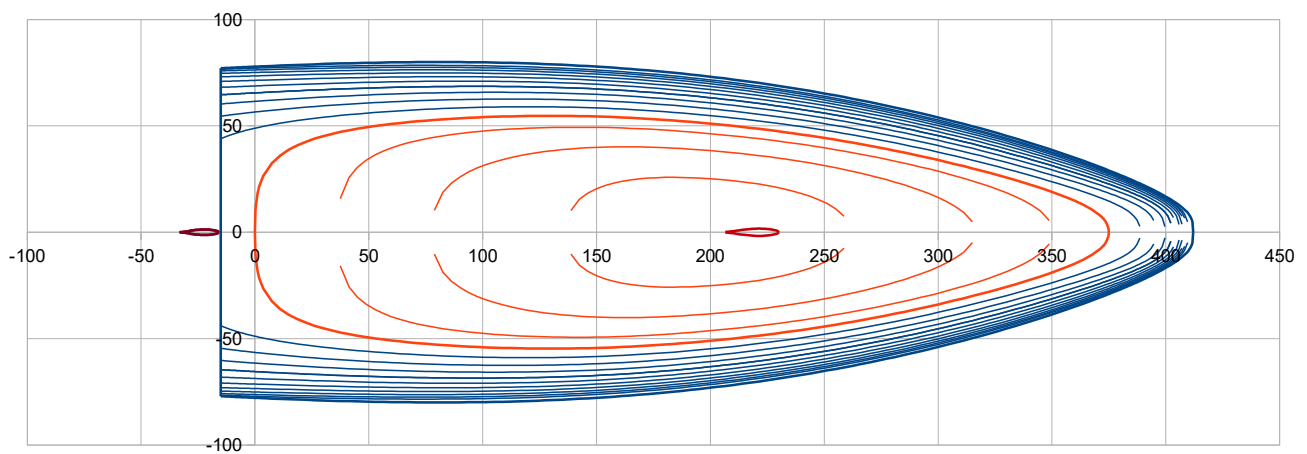
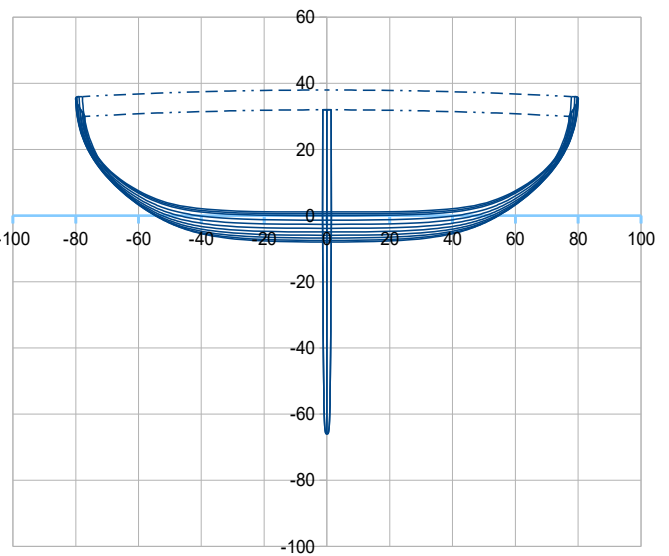
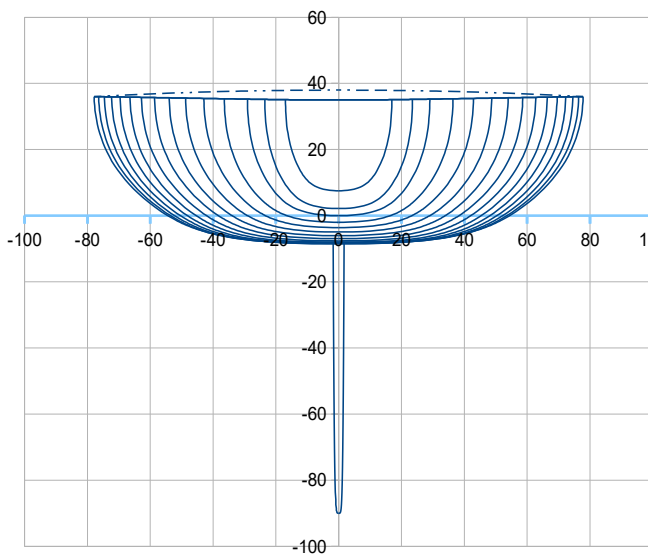
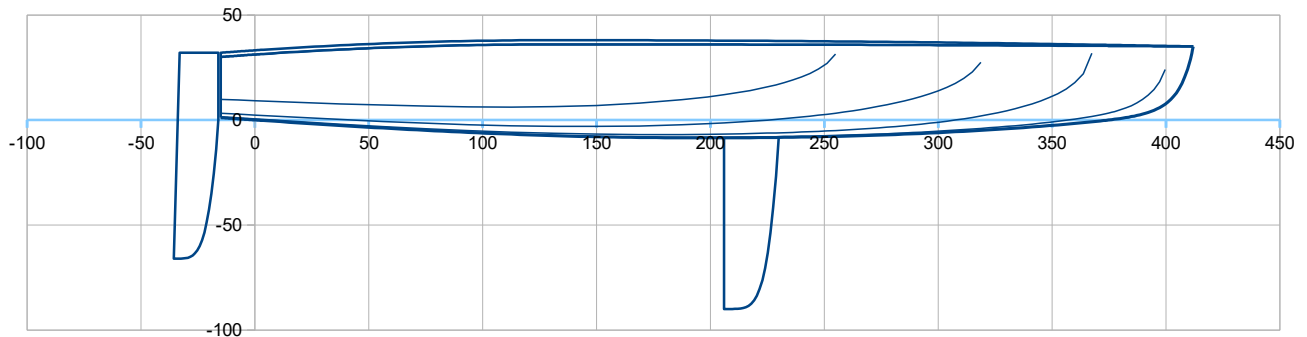


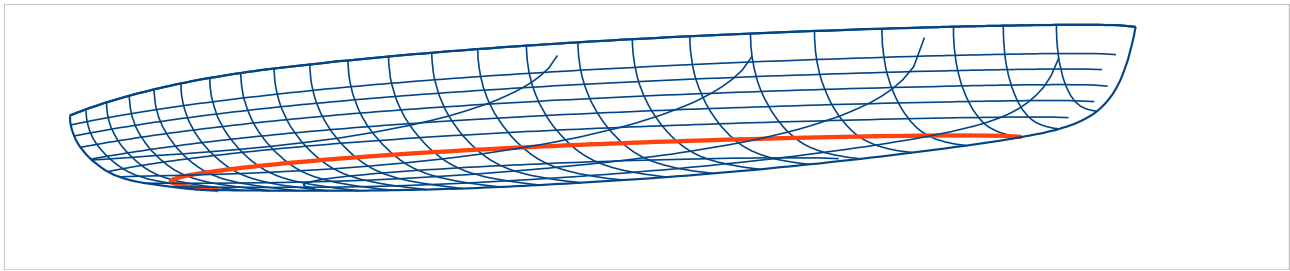
Evolution	D6	>>>	D6,1
1.1 Hull data			
Lenght of water			
Lwl (m)	3,75		3,75
Maximum draft (m)			
Tc (m)	0,0850		0,0850
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,35		0,35
Shape coefficient			
Cet	20,0		20,0
Polynomials of t			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0110		0,0110
Sheer line, in hc			
Bg (m)	0,60		0,60
X Bg (% Lwl)	55,0		55,0
Alfa (°)	10,73		10,73
Pui liv y	2,00		2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,35		0,35
Option Hard Ch			
Type	0		0
1,2 Zhc av (m)	0,05		0,05
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,22		0,22
Pui hc z	4		4
Sheer line, in ve			
Z liv m (m)	0,36		0,36
Z liv ar (m)	0,30		0,30
Pui liv z	2		2
Deck / central li			
Z p m (m)	0,38		0,38
Z p ar (m)	0,32		0,32
Pui deck z	2,0		2,0
Sections : as a			
Sections V :			
C Hv av	3,00		3,00
C Hv m	6,00		6,00
C Hv ar	5,00		5,00
Pui Hv	3,00		3,00
Pui V av	20,00		20,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	4,00	>>>	5,68
Pui E2	2,194	>>>	3,00
mix VE av	0,00	>>>	0,25
mix VE ar	0,00		0,00
Pui mix VE	1,00		1,00
Option addition			
Ky	1,00	>>>	0,85
Kz	0,40		0,40
Ksoft	2,00		2,00

D6,1

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 3,94 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 62,7 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 162,7 kg ; **Bwl : 1,09 m**





D6,1 - Hydrostatics data (for Displacement 162,7 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	3,75	> Hull speed	4,7	(at Fn 0,4)		
>> ft	14,01		12,30					
Bsheer (m)	1,60	at X (% Lwl)	22,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,09	at X (% Lwl)	35,0	> Bwl / B	0,684			
>> ft	3,59							
Tc (m)	0,085	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,28					>> ft	0,30	0,36
							0,98	1,18
Displacement at H0 (m3)	0,15400	at LCB (m)	1,796	LCB (%Lwl)	47,90	at ZCB (m)	-0,031	Fore
(kg)	157,9	>> ft	5,89			>> inch	-1,20	
>> lbs	348,0	with water mass / vol. of	1025	kg/m3				
Cp (%)	59,02							
Sf (m2)	3,21	at X (m)	1,672	X (%Lwl)	44,57	>>> Xc – Xf (%Lwl)	3,32	
>> ft2	34,60	>> ft	5,48					
Angle immersed sheer li (°)	24,8	at section C4 (40% Lwl)						
Sw (m2)	3,22	>Sw/D^(2/3)	11,19					
>> ft2	34,61							
Shull (m2)	7,22	at X (m)	1,737	Z (m)	0,056			
>> ft2	77,67	>> ft	5,70	>> ft	0,18			
Sdeck (m2)	5,41	at X (m)	1,637					
>> ft2	58,26	>> ft	5,37					

2.2 Daggerboard

Volume (m3)	0,00309	at X (m)	2,182	X (%Lwl)	58,19	Z (m)	-0,41
Draft oa (m)	0,90	Sw (m2)	0,34			Sxz (m2)	0,16
>> ft	2,95	>> ft2	3,65			>> ft2	1,75
CLR (m)	2,240	CLR (%Lwl)	59,73	method : profile extended to the waterline, then 25% c at 45% draft oa			
>> ft	7,35						

2.3 Rudder(s)

Number	1						
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,59	Z (m)	-0,108
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10
>> ft2	2,23					>> ft2	1,07
							per rudder

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15871	at LCB (m)	1,783	LCB (%Lwl)	47,54	ZCB (m)	-0,039
Disp. (kg)	162,7	>> ft	0,54			>> ft	-0,13
>> lbs	359						
Sw (m2)	3,76	>Sw/D^(2/3)	12,83	Lwl/D^(1/3)	6,93		
>> ft2	40,48			DLR	86	M(lbs/2240)/(Lwl(ft)/100)^3	

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	162,7	at Xg (m)	1,663	Xg (%Lwl)	44,35	at Zg (m)	0,652
Light boat	62,7		1,732				0,442

**D6,1 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)**

6.1 Mass spreadsheet with input of a load

	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Data to enter : yellow cells					
Dinghy light weight (kg)	62,65	1,732	0,442	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	162,65	1,663	0,652	0,000	Crew at center
Disp. (m3)	0,15869		0,468	0,584	Crew at hiking
		Cor H (cm)	8,243	at Xg	

For Heel = 0° >>> Trim = 0,37° ; Lwl = 3,77 m ; Bwl = 1,10 m ; Draft = 0,084 m ; Sw = 3,90 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15869 / Disp. (m3) 0,15869	Relevant only when heel = 0°
Height (cm) 0,1103	Xc heel (m) 1,663 / Xg (m) 1,663	Lwl (m) 3,772
Trim (°) 0,369	Yc heel (m) 0,000 Yg heel (m) 0,584	Bwl (m) 1,103
	Zc heel (m) -0,038 > GZ (m) 0,584	Draft (m) 0,084
	Sw heel (m2) 3,90 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 29,51	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

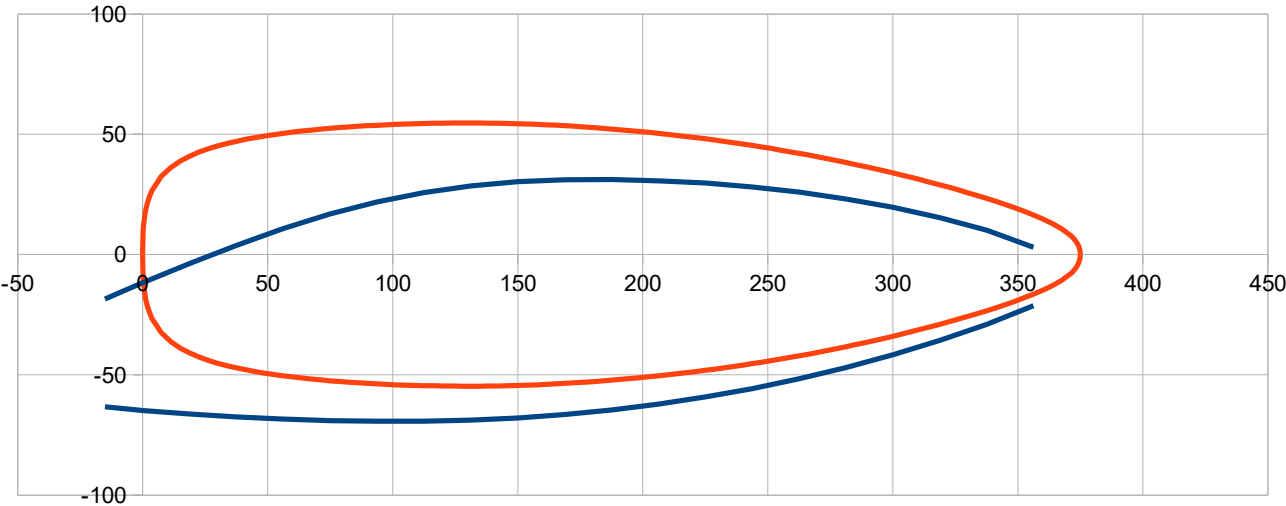
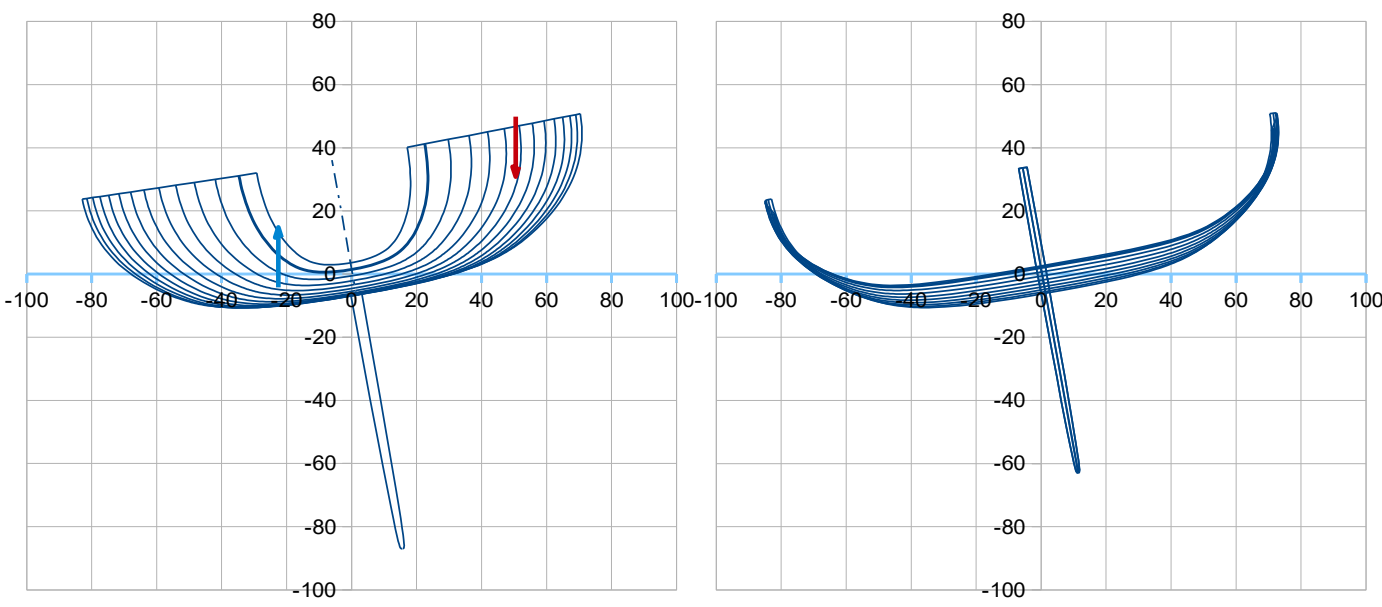
For Heel = 1° >>> GM1° = 0,92 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15869 / Disp. (m3) 0,15869	Relevant only when heel = 0°
Height (cm) 0,1267	Xc heel (m) 1,663 / Xg (m) 1,663	Lwl (m) 3,772
Trim (°) 0,363	Yc heel (m) -0,026 Yg heel (m) 0,577	Bwl (m) 1,102
	Zc heel (m) -0,038 > GZ (m) 0,603	Draft (m) 0,084
	Sw heel (m2) 3,90 RM (kN.m) 0,963	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,19	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,36	Gz (m) 0,016
		> GM1° (m) 0,92

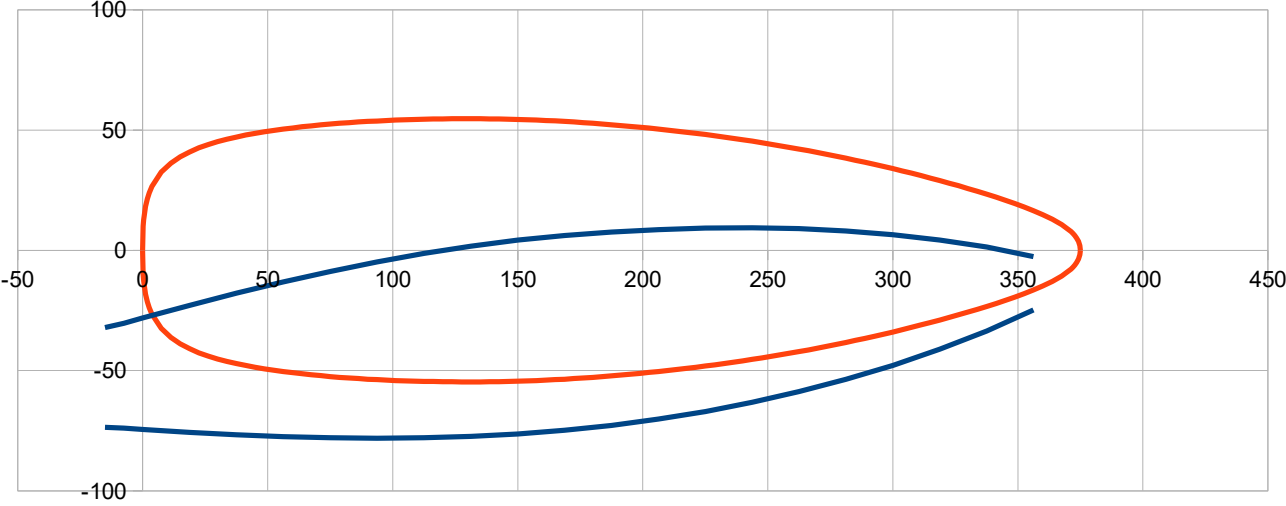
For Heel = 10° >>> Trim = -0,09° ; GZ = 0,731 m ; RM = 1,166 kN.m ; Sw = 3,51 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15869 / Disp. (m3) 0,15869	Relevant only when heel = 0°
Height (cm) 1,7833	Xc heel (m) 1,663 / Xg (m) 1,663	Lwl (m) 3,763
Trim (°) -0,090	Yc heel (m) -0,225 Yg heel (m) 0,505	Bwl (m) 0,982
	Zc heel (m) -0,043 > GZ (m) 0,731	Draft (m) 0,067
	Sw heel (m2) 3,51 RM (kN.m) 1,166	Relevant only when heel = 1°
	Freeboard minimum (cm) 18,72	Yg heel (m) -0,102 with crew at center
	Obliquity (°) 4,26	Gz (m) 0,123
		> GM1° (m) 0,71

D6,1 – At 10° heel angle



At 20° heel angle

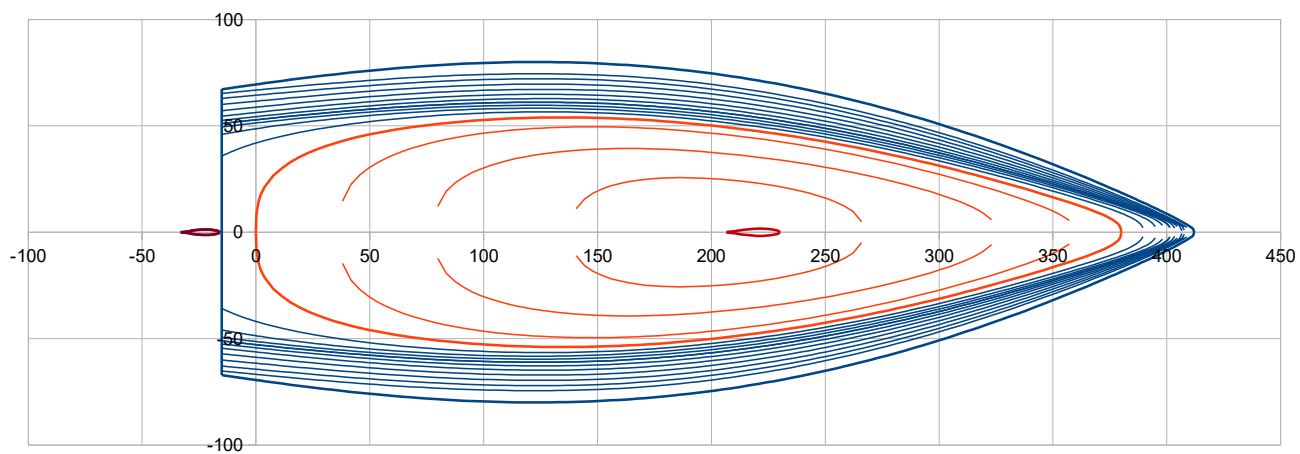
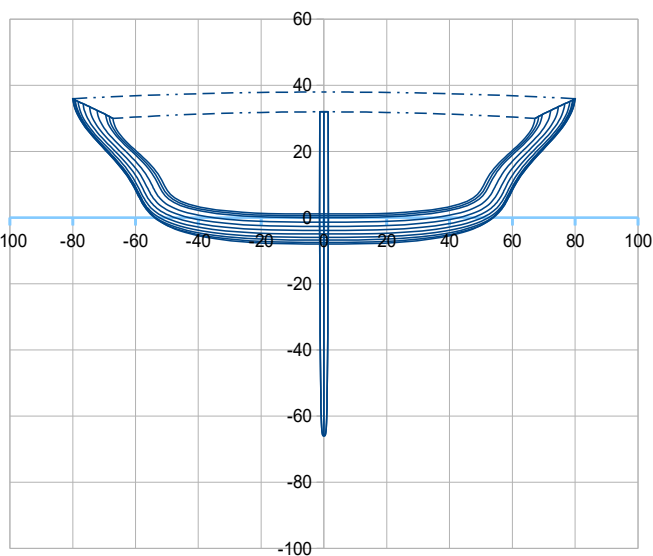
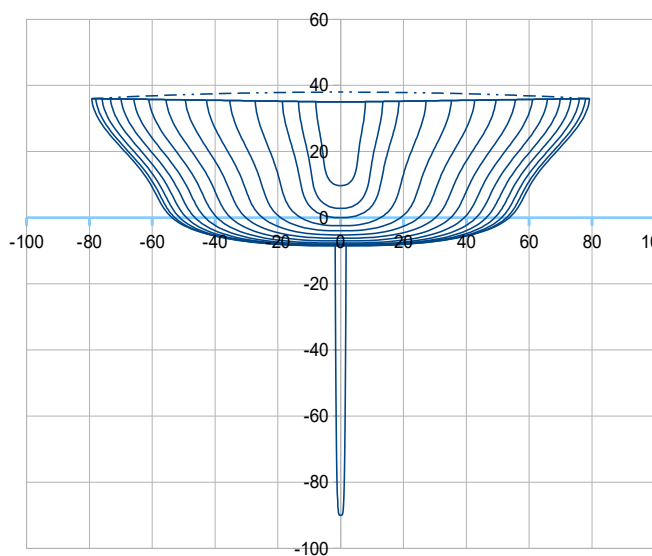
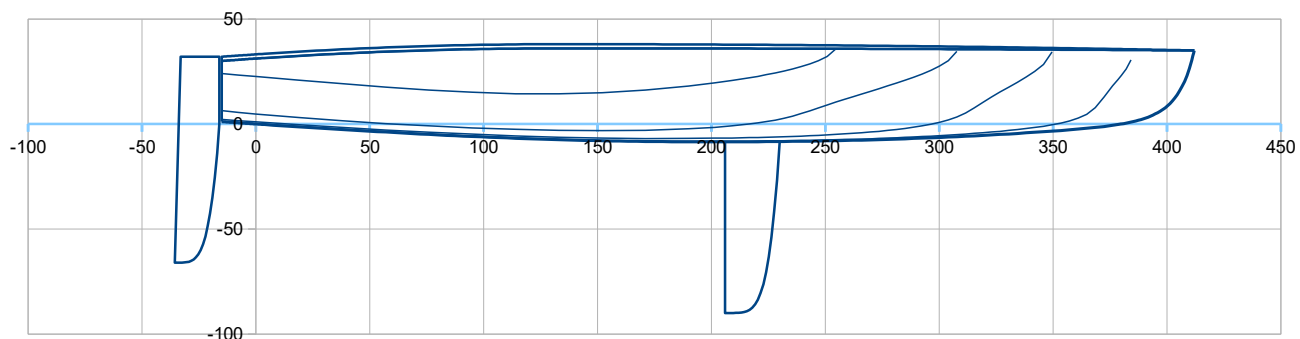


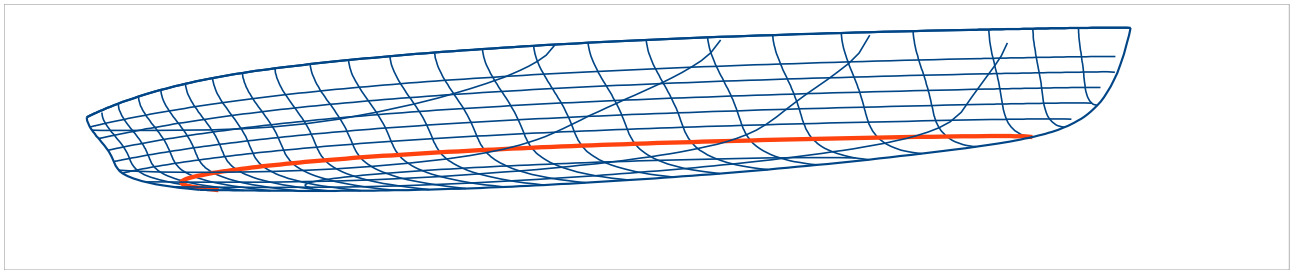
Evolution	D6,1	>>>	D6,2
1.1 Hull data			
Lenght of water			
Lwl (m)	3,75	>>>	3,80
Maximum draft (m)			
Tc (m)	0,0850		0,0850
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,35		0,35
Shape coefficient			
Cet	20,0	>>>	15,0
Polynomials of 1			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0110		0,0110
Sheer line, in hc			
Bg (m)	0,60	>>>	0,75
X Bg (% Lwl)	55,0		55,0
Alfa (°)	10,73	>>>	9,85
Pui liv y	2,00		2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,35	>>>	0,08
Option Hard Ch			
Type	0		0
1,2 Zhc av (m)	0,05		0,05
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,22		0,22
Pui hc z	4		4
Sheer line, in ve			
Z liv m (m)	0,36		0,36
Z liv ar (m)	0,30		0,30
Pui liv z	2		2
Deck / central li			
Z p m (m)	0,38		0,38
Z p ar (m)	0,32		0,32
Pui deck z	2,0		2,0
Sections : as a			
Sections V :			
C Hv av	3,00		3,00
C Hv m	6,00		6,00
C Hv ar	5,00		5,00
Pui Hv	3,00		3,00
Pui V av	20,00	>>>	6,00
Pui V ar	12,00		12,00
Pui Pui V	1,00		1,00
Sections E and			
Pui E1	5,68	>>>	4,00
Pui E2	3,00	>>>	4,79
mix VE av	0,25		0,25
mix VE ar	0,00	>>>	0,15
Pui mix VE	1,00		1,00
Option addition			
Ky	0,85		0,85
Kz	0,40	>>>	0,79
Ksoft	2,00		2,00

D6,2

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 3,80 m ; B 1,60 m ; Draft 0,90 m ; Light weight : 60,5 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 160,5 kg ; **Bwl : 1,08 m**





D6,2 - Hydrostatics data (for Displacement 160,5 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	3,80	> Hull speed	4,7	(at Fn 0,4)		
>> ft	14,01		12,47					
Bsheer (m)	1,60	at X (% Lwl)	32,0	Boa (m)	1,60			
>> ft	5,25							
Bwl (m)	1,08	at X (% Lwl)	36,0	> Bwl / B	0,674			
>> ft	3,54							
Tc (m)	0,085	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,28					>> ft	0,30	0,36
							0,98	1,18
Displacement at H0 (m3)	0,15184	at LCB (m)	1,820	LCB (%Lwl)	47,89	at ZCB (m)	-0,031	Fore
(kg)	155,6	>> ft	5,97			>> inch	-1,22	
>> lbs	343,1	with water mass / vol. of	1025					
Cp (%)	57,35							
Sf (m2)	3,06	at X (m)	1,679	X (%Lwl)	44,17	>>> Xc - Xf (%Lwl)	3,71	
>> ft2	32,97	>> ft	5,51					
Angle immersed sheer li (°)	24,4	at section C4 (40% Lwl)						
Sw (m2)	3,09	>Sw/D^(2/3)	10,85					
>> ft2	33,23							
Shull (m2)	6,90	at X (m)	1,737	Z (m)	0,064			
>> ft2	74,27	>> ft	5,70	>> ft	0,21			
Sdeck (m2)	5,20	at X (m)	1,617					
>> ft2	55,97	>> ft	5,31					

2.2 Daggerboard

Volume (m3)	0,00309	at X (m)	2,182	X (%Lwl)	57,42	Z (m)	-0,41	
Draft oa (m)	0,90		Sw (m2)	0,34		Sxz (m2)	0,16	
>> ft	2,95		>> ft2	3,65		>> ft2	1,75	
CLR (m)	2,240	CLR (%Lwl)	58,95	method : profile extended to the waterline, then 25% c at 45% draft oa				
>> ft	7,35							

2.3 Rudder(s)

Number	1							
Volume (m3)	0,00162	at X (m)	-0,247	X (%Lwl)	-6,50	Z (m)	-0,108	
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10	per rudder
>> ft2	2,23					>> ft2	1,07	

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15655	at LCB (m)	1,805	LCB (%Lwl)	47,51	ZCB (m)	-0,039	
Disp. (kg)	160,5	>> ft	0,55			>> ft	-0,13	
>> lbs	354							
Sw (m2)	3,63	>Sw/D^(2/3)	12,51	Lwl/D^(1/3)	7,05			
>> ft2	39,10			DLR	82			M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	160,5	at Xg (m)	1,664	Xg (%Lwl)	43,80	at Zg (m)	0,647	
Light boat	60,5		1,738				0,455	

D6,2 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)

6.1 Mass spreadsheet with input of a load

Data to enter : yellow cells	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Dinghy light weight (kg)	60,47	1,738	0,455	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	160,47	1,664	0,647	0,000	Crew at center
Disp. (m3)	0,15655		0,461	0,592	Crew at hiking
		Cor H (cm)	7,084	at Xg	

For Heel = 0° >>> Trim = 0,46° ; Lwl = 3,81 m ; Bwl = 1,09 m ; Draft = 0,083 m ; Sw = 3,77 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15655 / Disp. (m3) 0,15655	Relevant only when heel = 0°
Height (cm) 0,1517	Xc heel (m) 1,664 / Xg (m) 1,664	Lwl (m) 3,813
Trim (°) 0,460	Yc heel (m) 0,000 Yg heel (m) 0,592	Bwl (m) 1,085
	Zc heel (m) -0,038 > GZ (m) 0,592	Draft (m) 0,083
	Sw heel (m2) 3,77 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 29,23	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

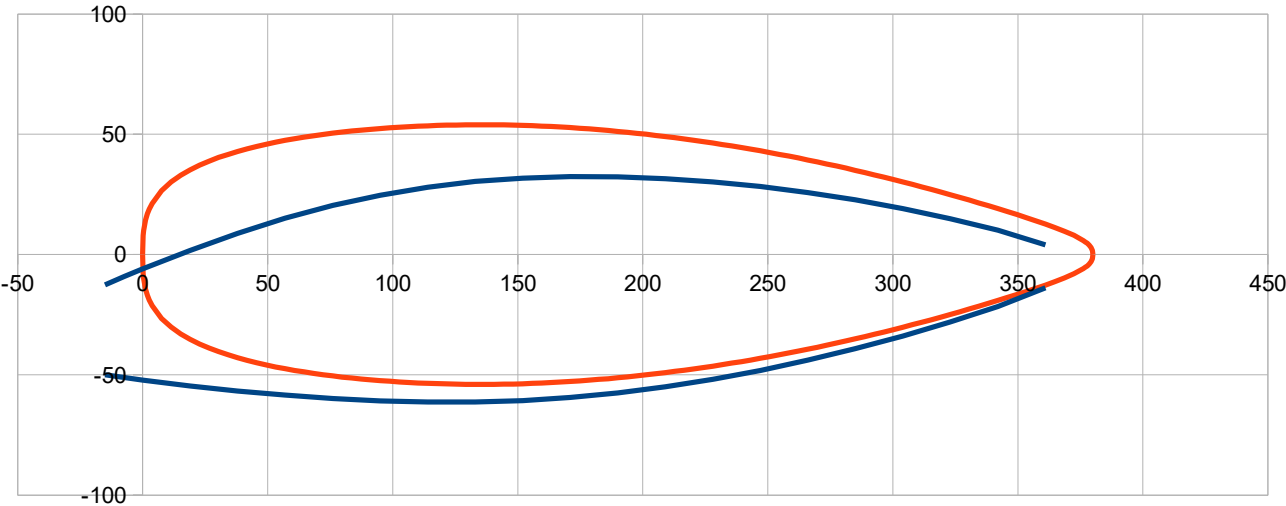
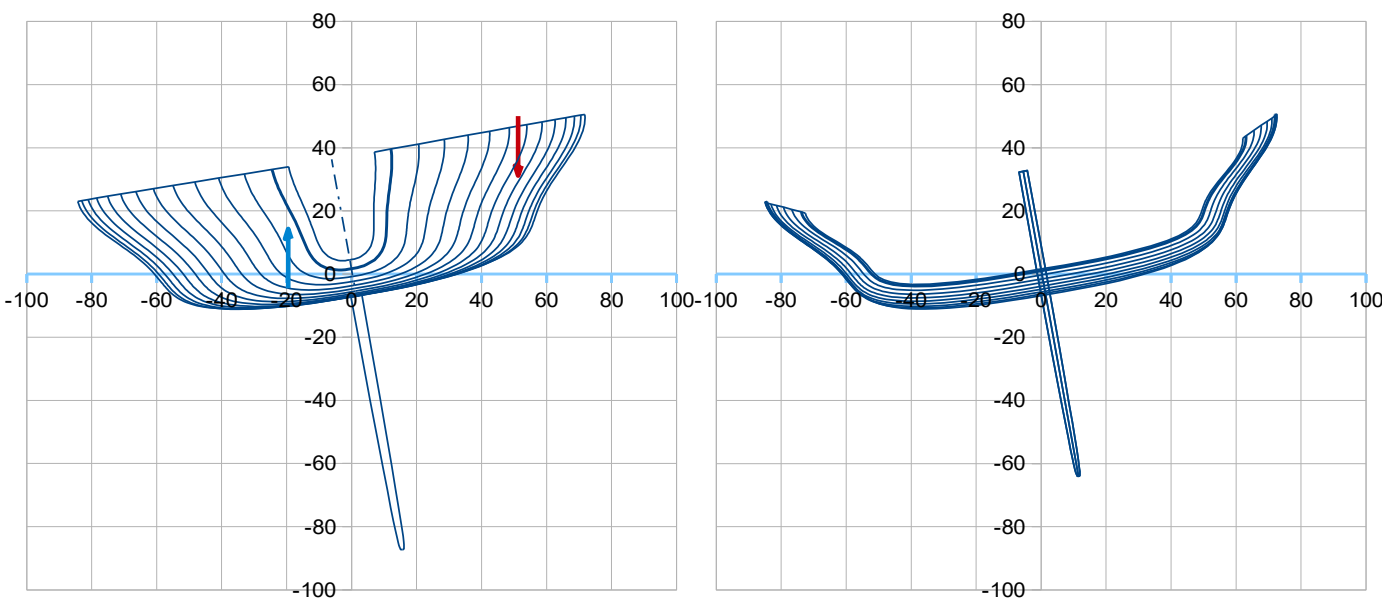
For Heel = 1° >>> GM1° = 0,78 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15655 / Disp. (m3) 0,15655	Relevant only when heel = 0°
Height (cm) 0,1633	Xc heel (m) 1,664 / Xg (m) 1,664	Lwl (m) 3,814
Trim (°) 0,455	Yc heel (m) -0,024 Yg heel (m) 0,585	Bwl (m) 1,083
	Zc heel (m) -0,038 > GZ (m) 0,609	Draft (m) 0,083
	Sw heel (m2) 3,76 RM (kN.m) 0,958	Relevant only when heel = 1°
	Freeboard minimum (cm) 28,07	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,36	Gz (m) 0,014
		> GM1° (m) 0,78

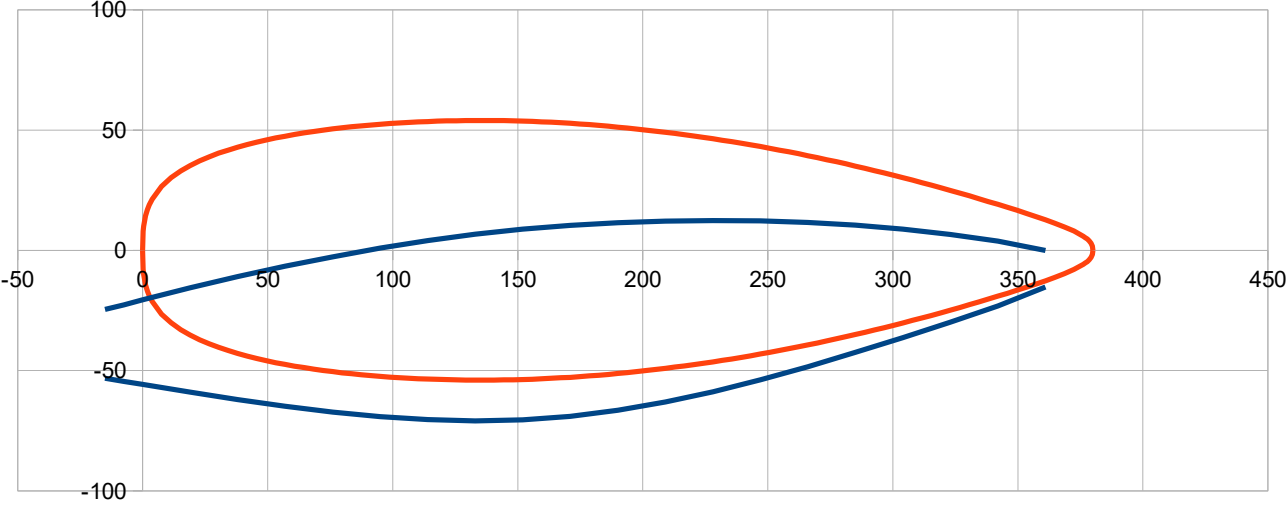
For Heel = 10° >>> Trim = -0,10° ; GZ = 0,708 m ; RM = 1,115 kN.m ; Sw = 3,31 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15655 / Disp. (m3) 0,15655	Relevant only when heel = 0°
Height (cm) 1,3760	Xc heel (m) 1,664 / Xg (m) 1,664	Lwl (m) 3,817
Trim (°) 0,095	Yc heel (m) -0,195 Yg heel (m) 0,513	Bwl (m) 0,925
	Zc heel (m) -0,045 > GZ (m) 0,708	Draft (m) 0,071
	Sw heel (m2) 3,31 RM (kN.m) 1,115	Relevant only when heel = 1°
	Freeboard minimum (cm) 19,31	Yg heel (m) -0,102 with crew at center
	Obliquity (°) 3,43	Gz (m) 0,093
		> GM1° (m) 0,53

D6,2 – At 10° heel angle



At 20° heel angle

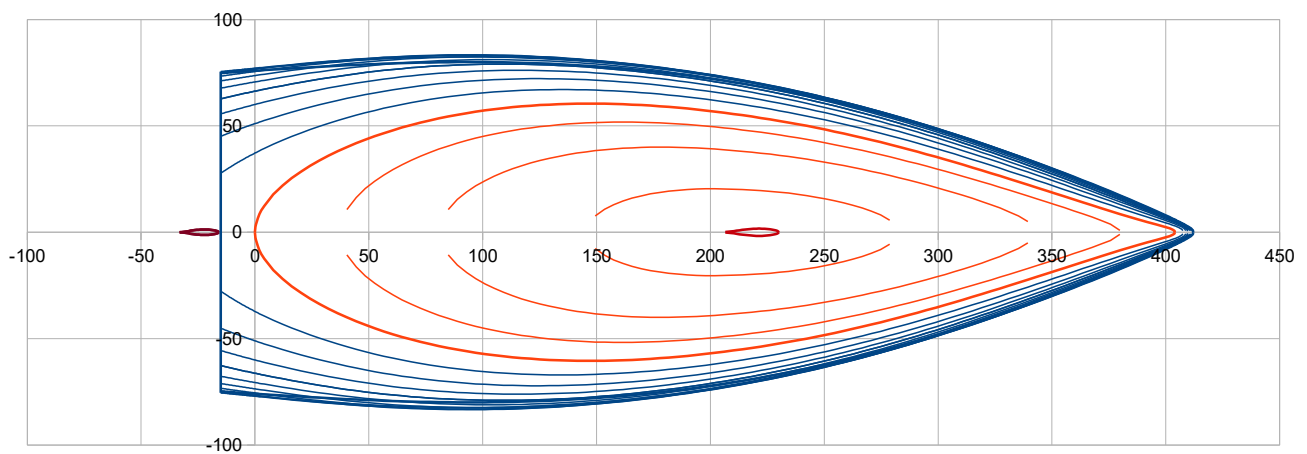
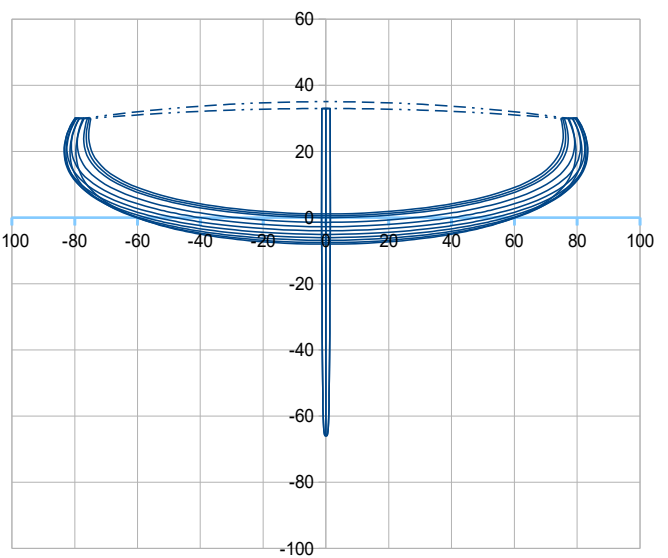
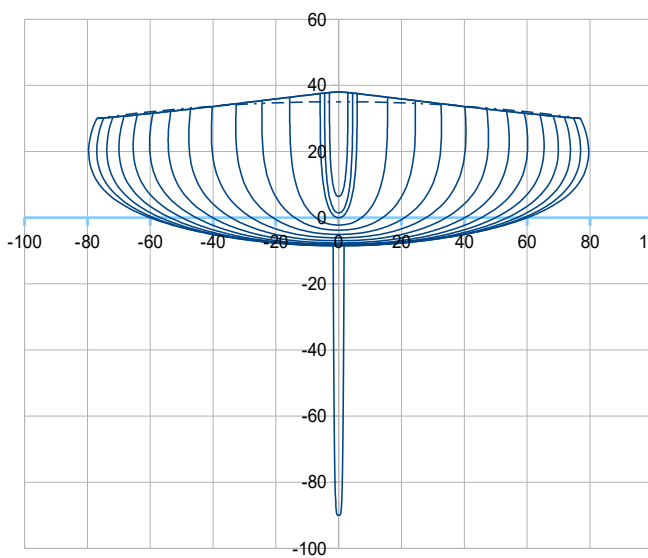
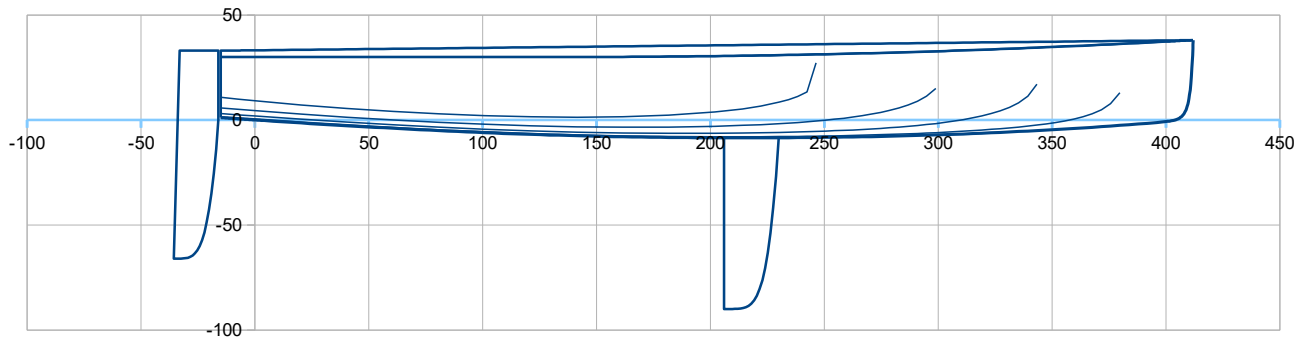


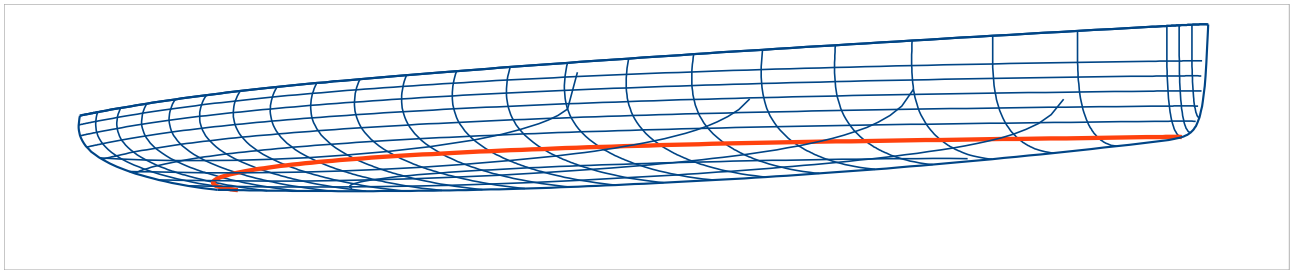
Evolution	D6,2	>>>	D7
1.1 Hull data			
Lenght of water			
Lwl (m)	3,80	>>>	4,04
Maximum draft (m)			
Tc (m)	0,0850		0,0850
X Tc (%Lwl)	53,00		53,00
Hull bow :			
Xbow (m)	4,12		4,12
Zbow (m)	0,35	>>>	0,38
Shape coefficient			
Cet	15,0	>>>	80,0
Polynomials of 1			
Pui q av	2,2		2,2
Pui q ar	2,2		2,2
Rear end of the			
X tab ar (m)	-0,15		-0,15
Z tab ar (m)	0,0110		0,0110
Sheer line, in hc			
Bg (m)	0,75	>>>	0,56
X Bg (% Lwl)	55,0		55,0
Alfa (°)	9,85	>>>	11,84
Pui liv y	2,00		2,00
Cor Pui liv	0,020		0,020
Pui Cor Pui	2,00		2,00
Scow	0,08	>>>	0,07
Option Hard Ch			
Type	0		0
1,2 Zhc av (m)	0,05	>>>	0,10
2 Zhc m (m)	0,20		0,20
1,2 Zhc ar (m)	0,22	>>>	0,20
Pui hc z	4	>>>	3
Sheer line, in ve			
Z liv m (m)	0,36	>>>	0,30
Z liv ar (m)	0,30		0,30
Pui liv z	2		2
Deck / central li			
Z p m (m)	0,38		0,40
Z p ar (m)	0,32		0,33
Pui deck z	2,0	>>>	1,0
Sections : as a			
Sections V :			
C Hv av	3,00	>>>	0,80
C Hv m	6,00	>>>	0,52
C Hv ar	5,00	>>>	0,80
Pui Hv	3,00		3,00
Pui V av	6,00	>>>	2,00
Pui V ar	12,00	>>>	2,00
Pui Pui V	1,00	>>>	2,00
Sections E and			
Pui E1	4,00	>>>	3,50
Pui E2	4,79	>>>	2,220
mix VE av	0,25	>>>	0,00
mix VE ar	0,15		0,15
Pui mix VE	1,00		1,00
Option addition			
Ky	0,85	>>>	1,000
Kz	0,79	>>>	0,50
Ksoft	2,00		2,00

D7

with Gene-Hull VE Dinghy 2,41

Loa 4,27 m ; Lwl : 4,04 m ; B 1,21 m ; Draft 0,90 m ; Light weight : 62,0 kg ; Design payload : 100 kg
2D Linesplan with waterline for displacement 162,0 kg ; **Bwl : 1,21 m**





D7 - Hydrostatics data (for Displacement 162,0 kg)

2.1 Hull

Loa (m)	4,27	Lwl (m)	4,04	> Hull speed	4,9	(at Fn 0,4)		
>> ft	14,01		13,25					
Bsheer (m)	1,60	at X (% Lwl)	23,0	Boa (m)	1,67			
>> ft	5,25							
Bwl (m)	1,21	at X (% Lwl)	36,0	> Bwl / B	0,756			
>> ft	3,97							
Tc (m)	0,085	at X (%Lwl)	50			Freeboards (m) >	Aft	Midship
>> ft	0,28					>> ft	0,30	0,30
							0,98	0,98
Displacement at H0 (m3)	0,15336	at LCB (m)	1,908	LCB (%Lwl)	47,23	at ZCB (m)		Fore
(kg)	157,2	>> ft	6,26			>> inch		0,38
>> lbs	346,5	with water mass / vol. of	1025					1,25
Cp (%)	54,74							-1,16
Sf (m2)	3,33	at X (m)	1,762	X (%Lwl)	43,61	>>> Xc – Xf (%Lwl)		3,62
>> ft2	35,80	>> ft	5,78					
Angle immersed sheer li (°)	21,3	at section C4 (40% Lwl)						
Sw (m2)	3,35	>Sw/D^(2/3)	11,70					
>> ft2	36,09							
Shull (m2)	7,25	at X (m)	1,738	Z (m)	0,044			
>> ft2	78,02	>> ft	5,70	>> ft	0,14			
Sdeck (m2)	5,18	at X (m)	1,577					
>> ft2	55,79	>> ft	5,17					

2.2 Daggerboard

Volume (m3)	0,00308	at X (m)	2,182	X (%Lwl)	54,01	Z (m)	-0,41
Draft oa (m)	0,90		Sw (m2)	0,34		Sxz (m2)	0,16
>> ft	2,95		>> ft2	3,65		>> ft2	1,75
CLR (m)	2,240	CLR (%Lwl)	55,45	method : profile extended to the waterline, then 25% c at 45% draft oa			
>> ft	7,35						

2.3 Rudder(s)

Number	1						
Volume (m3)	0,00163	at X (m)	-0,247	X (%Lwl)	-6,11	Z (m)	-0,103
Sw (m2)	0,21	>> ft	-0,81			Sxz (m2)	0,10
>> ft2	2,23					>> ft2	1,07
							per rudder

2.4 Hull + Daggerboard + Rudder(s)

Displacement at H0 (m3)	0,15806	at LCB (m)	1,891	LCB (%Lwl)	46,82	ZCB (m)	-0,038
Disp. (kg)	162,0	>> ft	0,58			>> ft	-0,12
>> lbs	357						
Sw (m2)	3,90	>Sw/D^(2/3)	13,33	Lwl/D^(1/3)	7,47		
>> ft2	41,96			DLR	68		M(lbs/2240)/(Lwl(ft)/100)^3

2.5 Data from the mass spreadsheet

Dinghy with payload M(kg)	162,0	at Xg (m)	1,660	Xg (%Lwl)	41,10	at Zg (m)	0,625
Light boat	62,0		1,726				0,442

**D7 - With a loading of 100 kg at Xg 1,62 m, Yg = 0 m , Zg = 0,65 m (crew at center)
Yg = 0,95 m , Zg = 0,35 m (crew at hiking)**

6.1 Mass spreadsheet with input of a load

	Mass (kg)	Xg (m)	Zg (m)	Yg (m)	(in the coordinates of the 2D plan views above)
Data to enter : yellow cells					
Dinghy light weight (kg)	62,02	1,726	0,442	0	from the mass spreadsheet
Load >> Crew (kg)	100,00	1,62	0,65	0	Crew at center
			0,35	0,95	Crew at hiking
Total >>> Mass (kg)	162,02	1,660	0,625	0,000	Crew at center
Disp. (m3)	0,15807		0,440	0,586	Crew at hiking
		<i>Cor H (cm)</i>	<i>5,505</i>	<i>at Xg</i>	

For Heel = 0° >>> Trim = 0,70° ; Lwl = 3,93 m ; Bwl = 1,23 m ; Draft = 0,082 m ; Sw = 4,07 m2

Data to enter : yellow cells	Results	Specific results
Heel (°) 0,0	Disp. (m3) 0,15807 / Disp. (m3) 0,15807	Relevant only when heel = 0°
Height (cm) 0,2703	Xc heel (m) 1,660 / Xg (m) 1,660	Lwl (m) 3,931
Trim (°) 0,696	Yc heel (m) 0,000 Yg heel (m) 0,586	Bwl (m) 1,228
	Zc heel (m) -0,036 > GZ (m) 0,586	Draft (m) 0,082
	Sw heel (m2) 4,07 RM (kN.m) 0,932	Relevant only when heel = 1°
	Freeboard minimum (cm) 27,88	Yg heel (m) 0,000 with crew at center
	Obliquity (°) 0,00	Gz (m) 0,000
		> GM1° (m) #DIV/0 !

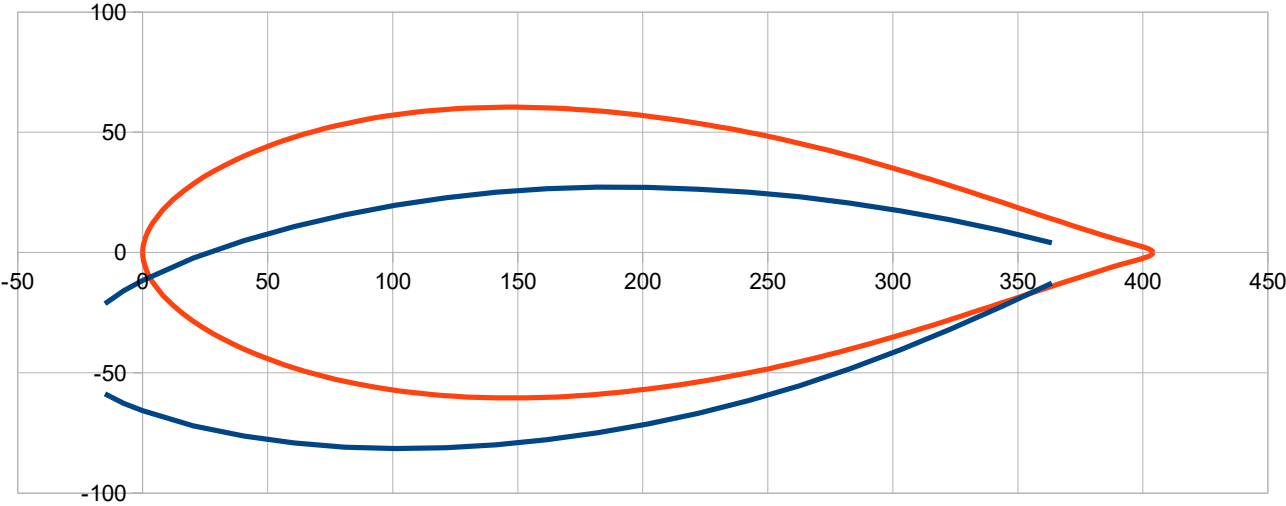
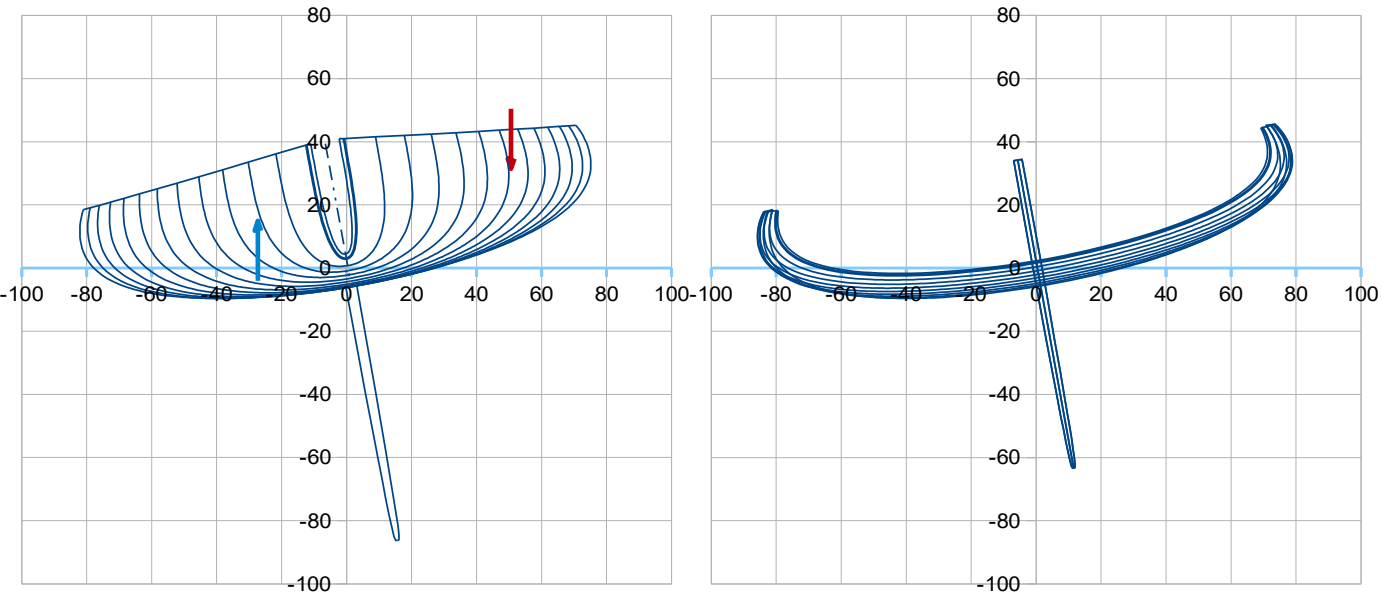
For Heel = 1° >>> GM1° = 1,27 m (with crew at center)

Data to enter : yellow cells	Results	Specific results
Heel (°) 1,0	Disp. (m3) 0,15807 / Disp. (m3) 0,15807	Relevant only when heel = 0°
Height (cm) 0,2930	Xc heel (m) 1,660 / Xg (m) 1,660	Lwl (m) 3,931
Trim (°) 0,690	Yc heel (m) -0,032 Yg heel (m) 0,580	Bwl (m) 1,225
	Zc heel (m) -0,036 > GZ (m) 0,612	Draft (m) 0,082
	Sw heel (m2) 4,05 RM (kN.m) 0,972	Relevant only when heel = 1°
	Freeboard minimum (cm) 26,61	Yg heel (m) -0,010 with crew at center
	Obliquity (°) 0,68	Gz (m) 0,022
		> GM1° (m) 1,27

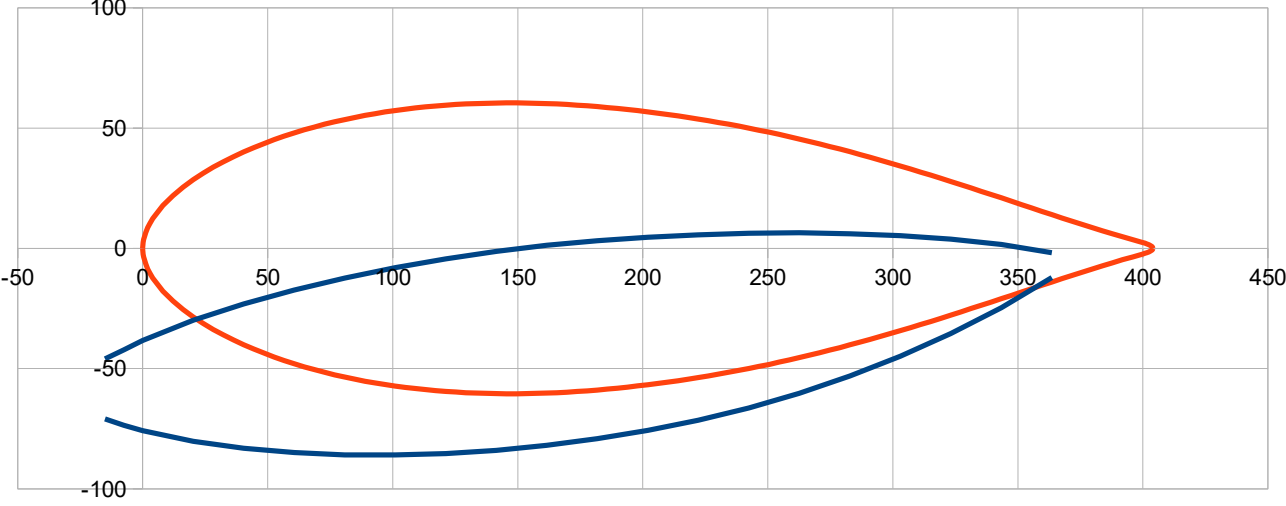
For Heel = 10° >>> Trim = -0,18° ; GZ = 0,780 m ; RM = 1,239 kN.m ; Sw = 3,63 m2 (with crew at hiking)

Data to enter : yellow cells	Results	Specific results
Heel (°) 10,0	Disp. (m3) 0,15807 / Disp. (m3) 0,15807	Relevant only when heel = 0°
Height (cm) 2,4037	Xc heel (m) 1,660 / Xg (m) 1,660	Lwl (m) 3,913
Trim (°) 0,180	Yc heel (m) -0,273 Yg heel (m) 0,506	Bwl (m) 1,049
	Zc heel (m) -0,040 > GZ (m) 0,780	Draft (m) 0,061
	Sw heel (m2) 3,63 RM (kN.m) 1,239	Relevant only when heel = 1°
	Freeboard minimum (cm) 17,71	Yg heel (m) -0,103 with crew at center
	Obliquity (°) 5,55	Gz (m) 0,170
		> GM1° (m) 0,98

D7 – At 10° heel angle



At 20° heel angle



Proposed simplified comparison of the versions :

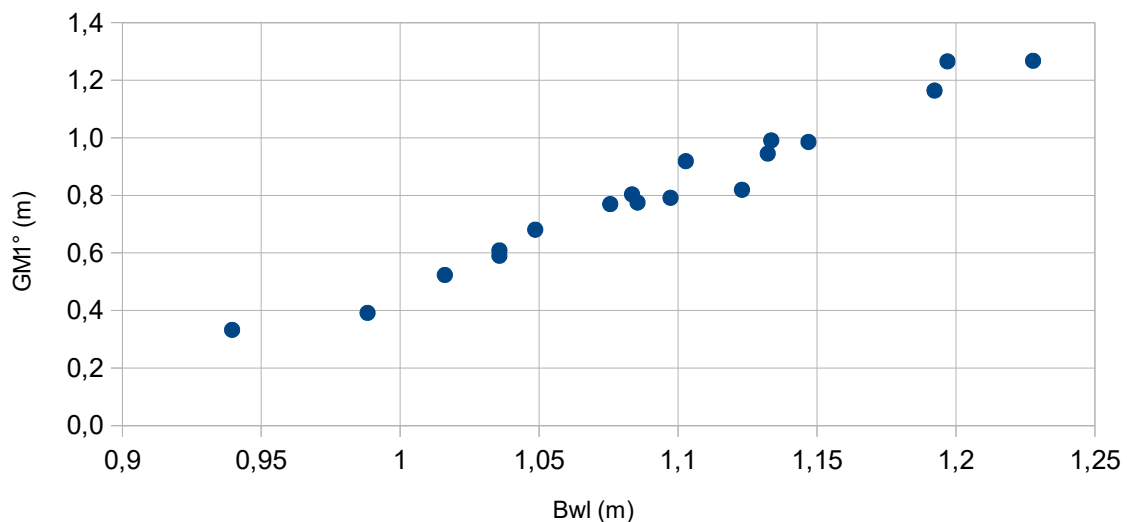
- GM1° (representative of the stability during a tack change),
- Wetted surface Sw and Rigthing moment RM at 10° heel angle (representatives of the performance capacities),
... versus the waterline beam Bwl (taken when upright with centered payload) which, when Loa and Boa are fixed, seems to be the relevant data to use.

The ratio $RM_{10^\circ} / RM_{0^\circ}$ is used to highlight on the hull contribution to the righting moment, RM_{0° being the main contribution of the crew in hiking posture, here a constant equals to 0,932 kN.m (as Boa is constant for all versions).

The output data, classified by increasing Bwl :

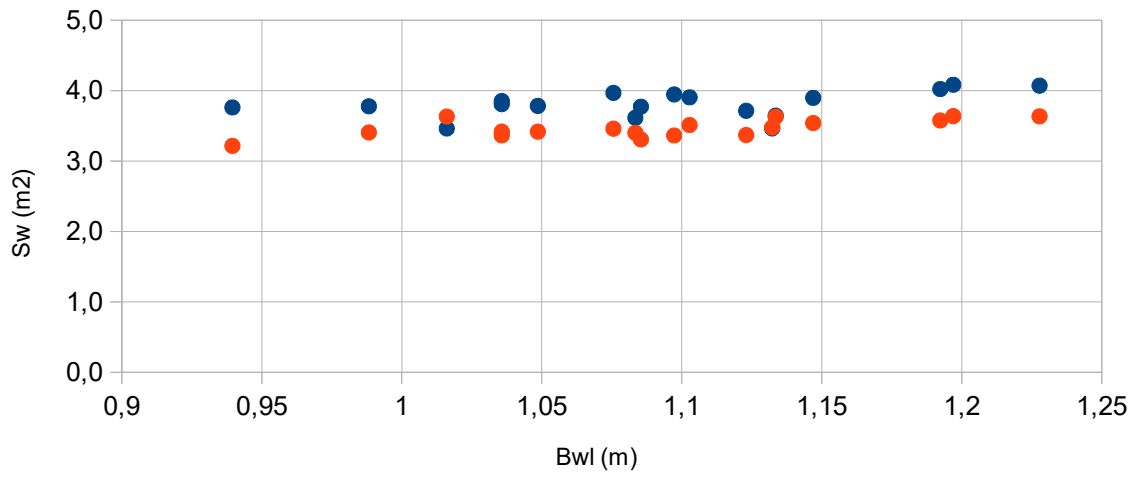
Version	Bwl (Heel 0°) (m)	Bwl/Boa	GM1° (m)	Sw0° (m2)	Sw10° (m2)	Sw10°/Sw0°	RM10° (kN.m)	RM10°/RM0°	RM20° (kN.m)	RM20°/RM0°
D1,2	0,940	0,59	0,33	3,76	3,22	0,85	1,03	1,11	1,00	1,08
D4,2	1,097	0,69	0,79	3,94	3,36	0,85	1,10	1,19	1,09	1,17
D3,1	1,085	0,68	0,78	3,77	3,31	0,88	1,12	1,20	1,10	1,18
D5	1,049	0,66	0,68	3,78	3,42	0,90	1,11	1,19	1,10	1,18
D4,1	0,988	0,62	0,39	3,78	3,41	0,90	1,07	1,15	1,10	1,19
D1	1,083	0,68	0,80	3,61	3,40	0,94	1,12	1,21	1,11	1,19
D2	1,036	0,65	0,59	3,81	3,36	0,88	1,10	1,18	1,11	1,19
D2,1	1,036	0,65	0,61	3,85	3,42	0,89	1,09	1,17	1,11	1,19
D1,1	1,123	0,70	0,82	3,71	3,37	0,91	1,11	1,19	1,12	1,21
D2,2	1,076	0,67	0,77	3,97	3,46	0,87	1,13	1,22	1,15	1,23
D5,1	1,132	0,71	0,95	3,46	3,48	1,00	1,16	1,25	1,17	1,25
D3	1,103	0,69	0,92	3,90	3,51	0,90	1,17	1,25	1,18	1,27
D4	1,147	0,72	0,99	3,90	3,54	0,91	1,18	1,26	1,19	1,28
D5,2	1,016	0,64	0,52	3,46	3,63	1,05	1,12	1,20	1,20	1,29
D6	1,192	0,75	1,16	4,02	3,58	0,89	1,21	1,30	1,22	1,31
D6,1	1,134	0,71	0,99	3,64	3,63	1,00	1,19	1,28	1,24	1,33
D6,2	1,197	0,75	1,27	4,08	3,64	0,89	1,24	1,33	1,26	1,35
D7	1,228	0,77	1,27	4,07	3,63	0,89	1,24	1,33	1,27	1,37

GM1° versus Bwl



Wetted surface Sw versus Bwl

Blue : Sw at 0° ; Red : Sw at 10°



Righting moment / Hull contribution ratio RM10°/RM0° versus Bwl

