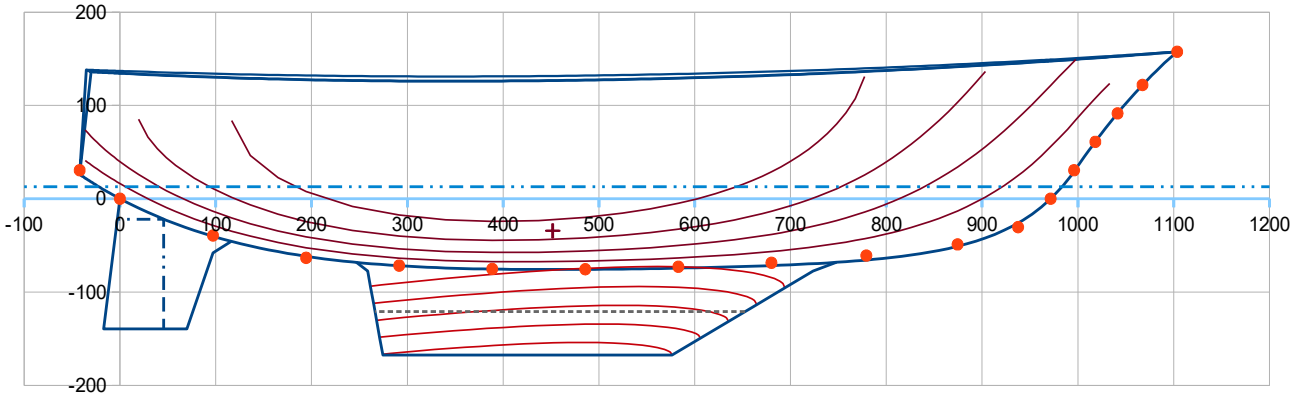
Proxi 39 V0 – First approach of Proxi39 and hydrostatics output

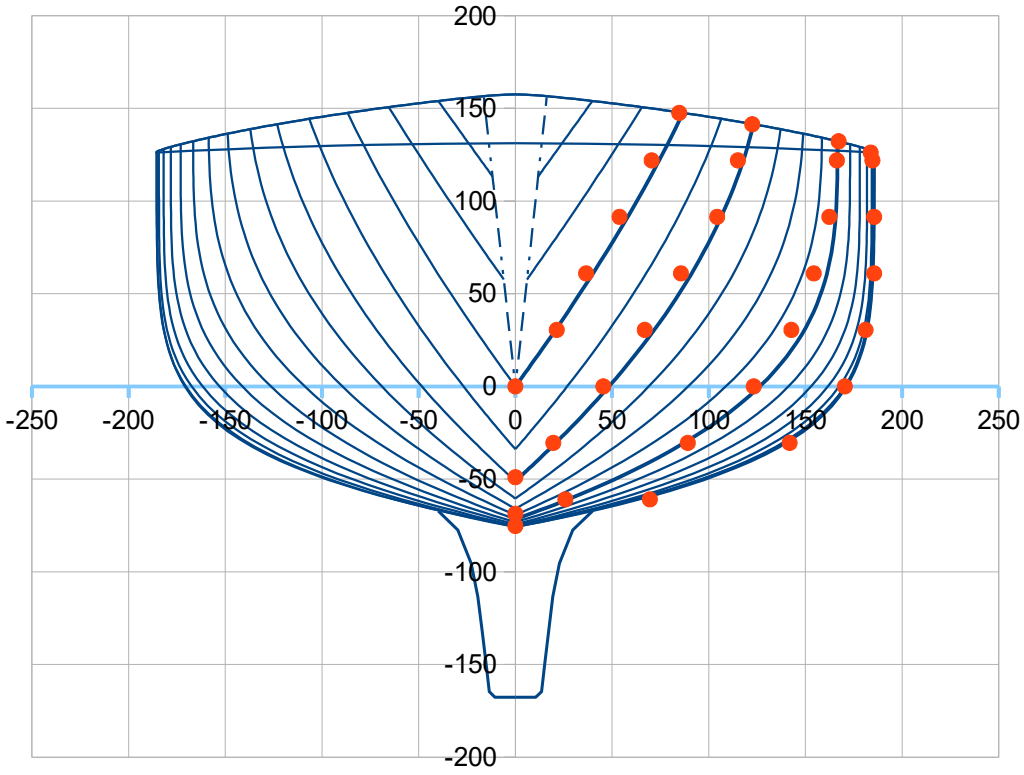
Main figures (all the hydrostatics data being given here after) :
Lwl : 9,716 m ; Boa : 3,710 m ; Bwl : 3,42 m ; Hull body draft : 0,759 m ; Draft oa : 1,676 m
>>> Displacement (Hull + Keel + Rudder) : 10,57995 m3, with 1025 kg/m3 >> 10 844 kg
>>>For 14 000 kg and assuming no trim, the extra draft is 12,87 cm >> the dot-dash blue line



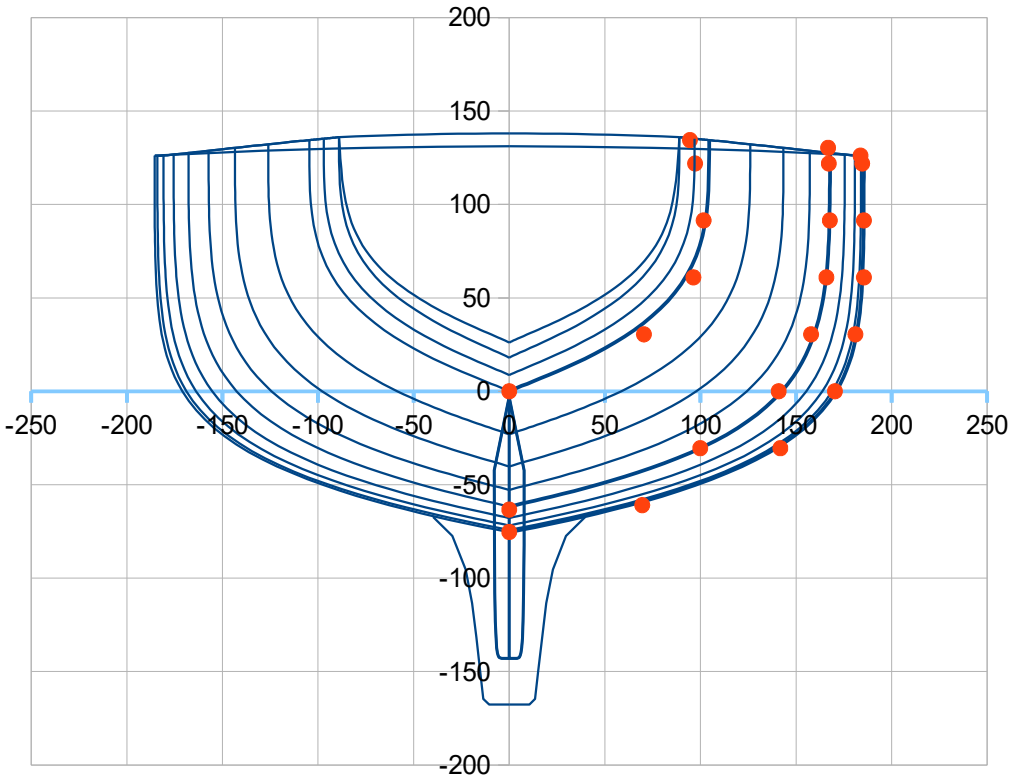
Comments :

- The points are the ones of the Corbin 39 linesplan for the keel line.
- The aft overhang has been cut off about half way to avoid the complex aft geometry uneasy to represent with Gene-Hull. No consequence for the purpose of our study.
- The coordinates used in Gene-Hull are reversed with regard the ones of the Corbin 39 plan : X = 0 <=> the aft perpendicular ; X = Lwl : the fore perpendicular ;

Z positive = up ; Z negative = down (i.e. below the waterline Z0) ; Units : cm (by default)
Stations : C0 in Gene-Hull = S10 in Corbin 39 plan ; C10 in Gene-Hull = S0 in Corbin 39 plan

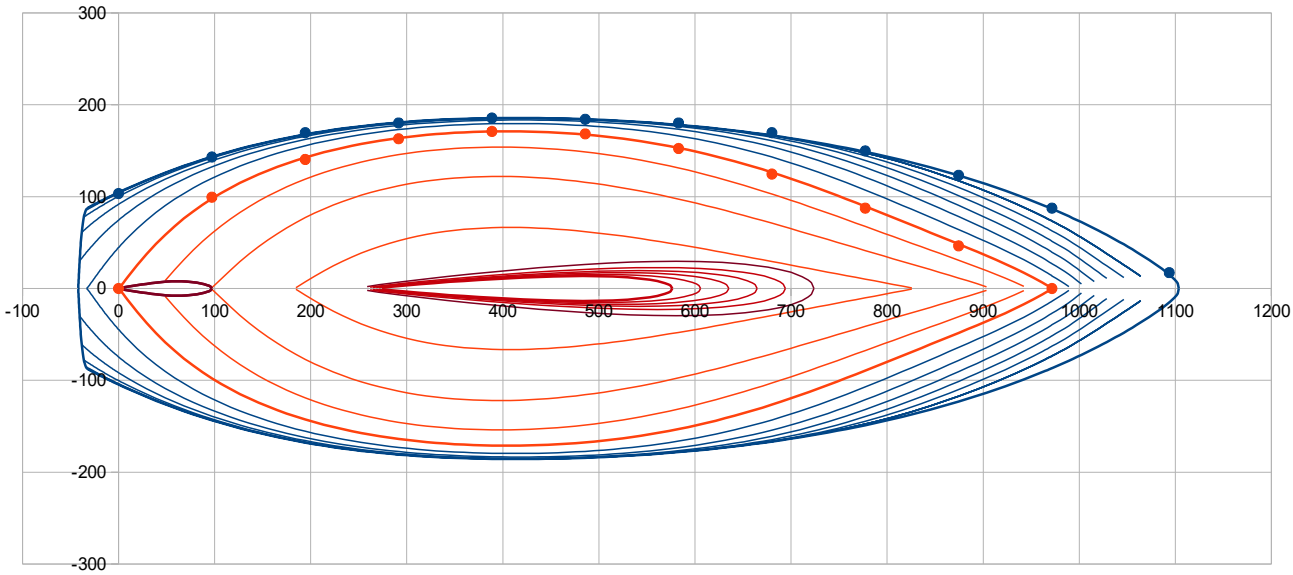


Fore stations : control points are those of C4 (S6) , C7 (S3) , C9 (S1) and C10 (S0)

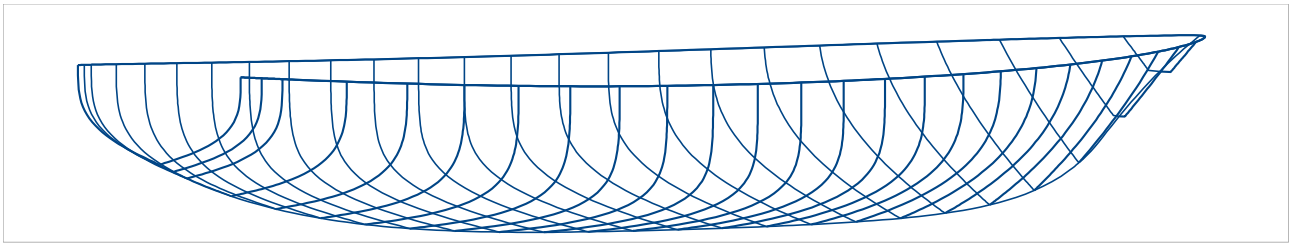


Rear stations : control points are those of C0 (S10) , C2 (S8) and C4 (S6)

The upper tumblehome shape of C0 (S10) is not taken into account, complex to do with Gene-Hull and anyway this aft upper volume in not at stake for our study (never in contact with the water).



Control points are those of the sheer line and of the waterline Z0



Hydrostatics output data (with waterline Z0) :

2.1 Hull

Loa (m)	**11,46**	**Lwl (m)**	**9,7155**	> Hull speed (Knots)	7,6	at Froude 0,4			
>> ft	*37,59*		*31,88*						
Boa (m)	**3,71**	**at X (% Lwl)**	**43,0**						
>> ft	*12,17*								
Bwl (m)	**3,42**	**at X (% Lwl)**	**42,0**	> Bwl / B	0,922				
>> ft	*11,22*				**Freeboards (m) >**		**Aft**	**Midship**	**Fore**
Tc (m)	**0,759**	**at X (%Lwl)**	**50**				**1,36**	**1,26**	**1,5748**
>> ft	*2,49*					*>> ft*	*4,46*	*4,13*	*5,17*
Displacement at H0 (m3)	**9,52691**	**at LCB (m)**	**4,516**	**LCB (%Lwl)**	**46,49**	**ZCB (m)**	**-0,259**		
>> lbs	*21528*	*w. seawater*	*1025*	*kg/m3*		*>> ft*	*-0,85*		
Cp (%)	**57,53**								
Sf (m2)	**22,86**	**at Xf (m)**	**4,461**	**Xf (%Lwl)**	**45,92**	>>> Xc – Xf (%Lwl)	0,56		
>> ft2	*246,06*	*>> ft*	*14,64*						
Sw (m2)	**26,09**	>Sw/D^(2/3)	5,81						
>> ft2	*280,86*								
Shull (m2)	**57,21**	**at X (m)**	**4,852**	**Z (m)**	**0,159**				
>> ft2	*615,78*	*>> ft*	*15,92*	*>> ft*	*0,52*				
Sdeck (m2)	**32,42**	**at X (m)**	**4,825**						
>> ft2	*348,98*	*>> ft*	*15,83*						

2.2 Keel

Up. keel (m3)	**0,59934**	**at X (m)**	**5,076**	**X (%Lwl)**	**52,25**	**Z (m)**	**-0,960**
		>> ft	*16,65*			*>> ft*	*-3,15*
Ballast (m3)	**0,35968**	**at X (m)**	**4,686**	**X (%Lwl)**	**48,23**	**Z (m)**	**-1,416**
> Mass (kg)	**4082,34**	*>> ft*	*15,37*			*>> ft*	*-4,65*
>> lbs	*9000*						
Draft oa (m)	**1,676**		**Sw (m2)**	**7,59**		**Sxz (m2)**	**3,53**
>> ft	*5,50*		*>> ft2*	*81,69*		*>> ft2*	*38,00*

>>> the grey dashed line in the side view shows the ballast interface with the keel up wing, adjusted to give exactly a lead ballast of 9000 lbs.

2.3 Skeg and Rudder

Volume (m3)	**0,09403**	**at X (m)**	**0,460**	**X (%Lwl)**	**4,74**	**Z (m)**	**-0,890**
Sw (m2)	**2,44**	*>> ft*	*1,51*			**Sxz (m2)**	**1,17**
>> ft2	*26,22*					*>> ft2*	*12,60*

2.4 Hull + Keel + Skeg-Rudder

Displacement at H0 (m3)	**10,57995**	**at LCB (m)**	**4,518**	**LCB (%Lwl)**	**46,50**	**at ZCB (m)**	**-0,344**
(kg)	**10844**	*>> ft*	*14,82*			*>> ft*	*-1,13*
>> lbs	*23908*						
, of wich Ballast (kg)	**4082**	**at Xg (m)**	**4,686**	**Xg (%Lwl)**	**48,23**	**at Zg (m)**	**-1,416**
>> lbs	*9000*	*>> ft*	*15,37*			*>> ft*	*-4,65*
>> % Ballast	37,6						
Sw (m2)	**36,12**	>Sw/D^(2/3)	7,49	Lwl/D^(1/3)	4,43		
>> ft2	*388,76*			***DLR***	***330***	*M(lbs/2240)/(Lwl(ft)/100)^3*	

>>> the global LCB is at X 4,518 m and Z -0,344 m (the cross drawn in the side view)

For a weight of 14 000 kg, asuming the trim is 0° :

>>> Extra draft : 12,87 cm (+7,7%)

Lwl : 10,03 m (+ 3,2%)

Bwl : 2,55 m (+ 5,4%)

Sw : 39,33 m2 (+ 8,9%)

DLR 386,7 (+ 17 %)

Waterlines : Red , at 10 844 kg ; Blue at 14 000 kg