

The MAEVA Chronicles

Solo skipper, Frédéric Waniart from St Brieuc in Brittany, gives us a fascinating insight into his choice of boat how he has optimized her to ensure the maximum performance available from the classic 1973 built design. Frédéric stands testament to the fact that you do not have to rush out and buy the latest carbon racer to get on the podium. Personal conviction and an analytical mind more than make up for having holes in your pockets! You only have to look at last season's SORC results to appreciate the success of Frédéric's approach.

In this series of articles Frédéric will be covering the following topics.

Introduction:

Why I bought Maeva and for what purpose?

Boat:

Why and how I changed my rigging and sails in 2012 with further keel/rudder changes in 2013

Why I changed the structure in 2011 & 2012

Why and how I will manage weight distribution in 2014

Electronics:

How and why I connected through NMEA a Tactick, a GPS and MAXSEA

Which pilot I chose, and why, and how I connected it

Safety:

ISAF and RORC check up

Selection of personal equipment

How to minimise risk

Power:

Why and where I placed 2 x 165 amp gel batteries and a solar panel

Check and following of electricity

Backup system

Preparation:

How to put together and use a task list

The winter preparation of the hull, keel, rudder, mast and gear

How to minimise the day to day maintenance

Racing:

How select races and put together a yearly program

How to prepare for a race and how to adapt your strategy at sea

Why and how make a debriefing and accept failure

Personal Preparation:

Why share your knowledge with your Exocet & Geofon (fellow competitors)

Why and how to prepare physically and mentally for single handed racing

Why, what and when to eat and drink

Future project:

The 2014 boat modifications

AZAB 2015 or Azores Jester Trophy

Maeva - the future after 2015

I hope you enjoy reading "The MAEVA Chronicles" which will be released as and when Frédéric has time between sanding and preparing his beautiful "Maeva" between the winter storms!

SORC Director of Racing – Nigel Colley – February 2014

INTRODUCTION

Why I bought Maeva and for what purpose?

Maeva is a Mauric design from 1971. She was built in 1973 by Quere at La Rochelle. I count at least 4 previous owners. The last one was a friend of mine: Remy Constantin. Remy was a very good single handed skipper who won 6 times the Normandie Solo, a record which still stands. He then decided to make a gift to his wife: a kitchen. My former boat (VIM), an A101, was clearly a dahu boat (10m long, 2.45m wide and 1.2 m height to deck). With VIM we won UNCL trophy double handed, 2 times Triangle de Dinard, the 270 miles Diagonale des Fous de Bassans, Cervantes Trophy... and many others regattas. But I was 56 and my neck and back were no longer flexible enough to accept two or three months of racing. I am French, pre-retired, and my wife already has a kitchen. Those four reasons made me change of boat.

Maeva was in good shape, structurally healthy and still had a lot of potential. I appreciated her mix of youthful care freeness and 40-year professional experience. My wife highly appreciated the double berth, the 16 HP engine AND fixed toilet (for a short time...). I bought and delivered her from Le Havre to St Brieuc with my favourite double handed crew in November 2011.

The programs for Maeva were to be

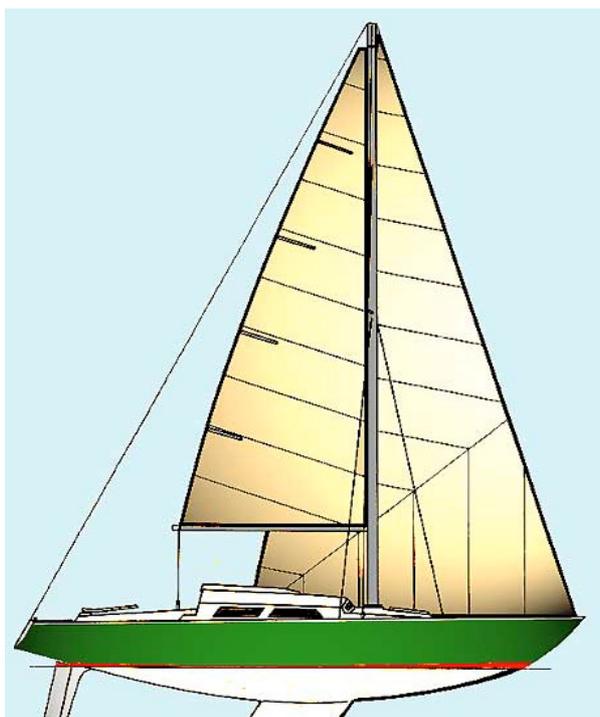
- single handed two months a year (as a minimum)
- double handed one month a year (as a average)
- full crewed 1 half ton cup a year (as a maximum)

1° THE BOAT

1-1 Why and how I changed my rigging and sail plan in 2011.

The original rigging meets only the fully crewed requirement. Partially the double handed and absolutely not the solo requirement. The original set up was a masthead rig with an inner forestay and a 155% overlapping Genoa, a small spinnaker and a low IRC handicap (0,875). I checked, made a lot of drawings and decided to put 55% of the fore sail in the top of the main sail by converting to a fractional rig: the centre of the sail plan should be at the same place compare to the centre of the hull.

Here is a comparison between the original sail plan and the present sail plan:



Minus Points	ORIGINAL VERSION	CUSTOM VERSION
	Cutter stay (hard to tack)	Hard to trim in small weather with chop
	Big Genoa (hard to tack)	
	Adjust sail area more earlier	

Plus Points	ORIGINAL VERSION	CUSTOM VERSION
	More powerful in chop	Easy to tack especially with Harken 40 vs. Lewmar 30
		Easier to trim in breeze (full batten mainsail)
		Faster off the wind +10M ² in main sail=> =10 m ² in spi

In summary Maeva now has an extra +10m² in the main sail than the standard super Arlequin, and she has – 10m² less in the Genoa. To balance the increase of the main sail the spinnaker is 10 m² bigger than the standard. So for offwind sailing that gives 20 m² more in total.

It is why in light wind a friend of mine wrote:

“In amongst the mayhem at the finish sailed in Maeva, coming from no where and with Breton music playing at full blast, calmly picking her way through the chaos and crossing the line to win Leg 2 overall by a massive 37 minutes on corrected time. The man from France had done it again!!! - SORC Report Portland and Back 2013

Do not worry I will explain the meaning of Breton music (part electronic) and why “coming from no where” is actually part of the strategy.

On the next page is the ORC certificate of MAEVA giving the measurement of all sails



World leader in Yacht Technology

2013 ORC Club Certificate

Rating Office
jeanloais@orc.fr
@jeanloais



Certificate
Number: 130884
Issued On: 23/03/2013
ORC ID of FR400064218
VPP Ver.: 2013 6.04
Valid until: 23/03/2014

Crew Weight
Declared: 420 kg
Default: 420 kg
New Member Pen: No

Special Scoring
Tall: 1x0
Dr. Hand: 0x0
New Sp. 0x0
S/S Post. 0x0

Race Limitations
Circuits: 8
Schedules: 3
Days: 4

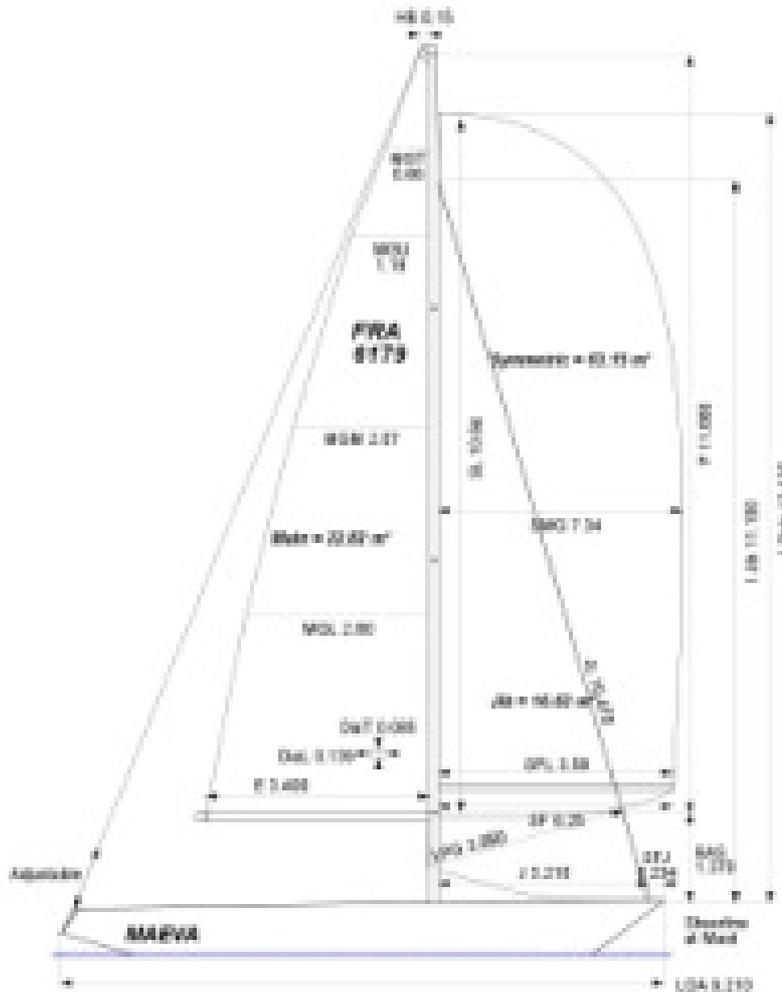
Equipment Restrictions
Sp. 1st/2nd: Yes
Any 1st/2nd: No
Cable Zaps: No
Open Ports: Yes

Stability
LPS (Minimum): 121.0°
Stability Index: 128.5
OSR Category: 5

Owner
FRANÇOIS AVOINE
15 Allée des Formiers
29160 - PLEVEN

Certificate is intended to be displayed on the vessel's cabin table and may be viewed

Signature



BOAT Name: MAEVA Sail Nr: FRA-8179		GPH 710.4	HULL Cock Pit: FR176 d44 L/Cd: 0.218 m Chest Pit: ABL00006.0P SB: 2.820 m Displacement: 3.012 kg Draft: 1.700 m		
CLASS Class: SUPER ALLEGRO 88 Designer: MAURIO AVOINE Number: 04098 Series: 06/1814 Age Date: 06/1814 Age Allowance: 0.488%		R/C Devices : Gears/Shaftgear Dynamic An: 0.000% Wind System : Yes Construction: Steel Wing Rigging : No Aerial Cam: No Cock Arm : No Carbon Fiber: No			
COMMENTS New Mast From Sp 40 0458 d44		W/L : 1.038 Wetted Area: 16.88 m² VCGM: 0.000			
PROPELLER Material: Steel PPD: 0.408 Type: Folding PPA: 0.000		CENTERBOARD N/A			
SCORING OPTIONS					
	OFFSHORE COASTAL / LONG DISTANCE		INSHORE WINDWARD / LEEWARD		
Time On Distance	881.0		787.6		
Time On Time	0.8810		0.8794		
Performance Line	PLT 0.784	PLD 134.7	PLT 0.750	PLD 208.6	
Triple Number	Low 0.8346	Medium 1.0680	High 1.1977	Low 0.6451	
			Medium 0.8718	High 1.0131	

As far handicap is concerned, after the 3 months of work I made an estimation of the new weight of the boat to be sure that the increase of sail area (penalised under IRC rules) will be balance by the weight increase (bonus under IRC rules). Please find it below.

I used this to negotiate my ORC HN OSIRIS handicap in 2012 and had a rebate of ... 20 seconds per hour of race, because in France you can negotiated your HN Handicap... with no beers to the umpire (rumours spread by a British sailing friend bad in strategy. James will recognize himself!!!).

	Serial Super Arlequin	MAEVA	Ecart	%
Main (m ²)	14	24	10	71%
Solent ou Genoa (m ²)	28	18	-10	-36%
Surface up Wind (m ²)	42	42	0	0%
Weight (kg)	3000	3300	300	10%
Spi (m ²)	58	63	5	9%
Total Surface Off Wind (m ²)	72	87	15	21%
M ² per Kg (up wind)	0,0140	0,0127	0,00127	-9%
M ² per Kg (backwind)	0,0240	0,0264	0,00236	10%

Red cells are unfavourable
Green cells are favourable

These modifications also had an interesting result under IRC. MAEVA's IRC handicap is little bit lower than the standard Super Arlequin (0.880). In 2014 with her carbon rudder (incurring an IRC penalty of 0.003) and her weight decrease (another 0.001 penalty) her handicap is going to actually be the same!!!

A Scottish Friend claims every where, every time "It is a bandit handicap". I confirm. I confirm you can NOT negotiate it under IRC (I never try!!!). But I also confirm than a handicap has to be prepared, optimized and adapted to your program. So why with 0.004 penalty in 2014 due to the new lighter carbon rudder is Maeva going to have the same handicap. Because, because

Because

- I balance the 36 kg weight loss with the carbon rudder by an osmosis treatment (+35kg). But the rudder is 4m aft of the centre of gravity, and the osmosis treatment is at the centre of gravity. (See below why a new rudder)
- I win in changing a 100 amp gel battery to start the engine with a Jet Ski battery and lose another 30 kg.
- I balance the weight loss by a re-measurement of the sails. It is no secret that laminate sails "shrink" with use and age, in Maeva's case by about 5%.

Said with other words, I exchange

- an old fashion heavy rudder by a better shaped lighter carbon rudder (you will not see it is carbon because I painted it in grey to respect the Maeva 2014 graphic design) and better pitching and rolling control (which are major black points of MAEVA in light up wind conditions)
- a useless heavy battery (see electrical chapter) by a smaller lighter one to improve further the pitching and rolling control (major black points of MAEVA in light up wind)

1-2 WHY I CHANGED MY RUDDER IN 2013

"Ding Dong took the early lead, with skipper Chris Rustom one of the first to hoist his symmetric spinnaker. He was followed by a trio of blue spinnakers on Truant, Juliette and Penrod, with Maeva going well under her Code Zero. Most of the other skippers opted for white sails. This left them underpowered at first, but many were glad of their choice later in the race! - "SORC report Portland and back 2013

I was not surprised to be under Code 0. Maeva's code 0 is the same size as the standard kite of the original boat!!! But when the wind increased to 30 knots with gusts I was not really proud. The rudder blade was heavy and induced resonant vibrations. These vibrations were so heavy I could not listen to the music!!! For me it is impossible to win with no music: Maeva finished 2nd in this race. Unfortunately.

In November a rudder check was planned (see maintenance chapter). And I realized MAEVA was no longer a beautiful young lady but a 40 year lady who needed some Botox or more: a lifting!!!! The rudder has it personal life and was no longer firmly secured to the rudder stock fixed to the hull. Black smelly water was leaking between the stock and the hull. A grinder in one hand and a hammer in the other I operated on the patient. He died during the surgery. Diagnostic: internal delamination of the glue resin and glass glove sheet. The adjustment screws were looking strange (see picture). A friend had a mould of an up dated racing 34 boat. And because he is a friend he helped me to modify his mould to get the right surface area (50% less than the old rudder and 40cm deeper) to get more control under spinnaker.

With the picture below you can imagine the effort on the tiller! A deep efficient rudder is essential. ... Especially single handed and when under pilot (see electronic chapter).

Sometimes I am jealous of the Sunfast 3200's with their twin rudders.



Why did we choose only 50% of the rudder area: Because Maeva is a very well balanced boat. And the new rudder is compensated with a more efficient shape, less wetted surface area, better rudder control, less power needed under pilot.... But the same IRC handicap (penalty compensated). I will tell you soon if this solution is good. In precaution I have kept my old rudder. If you want buy it... I will make a special price for you. For the carbon one, please look at the maintenance chapter.

...

Old rudder

Aileron
Stainless stock
Bad hydraulic drag
Flexes 1cm under water pressure
Turbulence and vibration
Weight 35 kg without teak tiller



New Rudder

Spade rudder
Carbon stock
Joubert Nivelte design
No Flex
Racket shaped tiller
Weight with tiller 8 Kg



1-3 WHY I REINFORCED BOAT STRUCTURE IN 2011 AND 2012

The boat is currently undergoing osmosis treatment and is under cover so there is no access. I will present my inside space frame next week! I hope the 7 virtual females' crews (see below) will not be onboard.

CONCLUSION PART ONE: Why and how I will manage weight distribution in 2014

MAEVA is a little more prone than other boats to rolling and pitching. At Haslar Marina, just before Channel Week a warship came up the river: her wake made my tenders jump on the pontoons. And my brand new hull decoration was destroyed.... Very very pleasant!!!!

At Normandie Solo 2013 after 3 windy races (half time) I was lying 2nd overall. Legs 4 and 5 were a disaster: light wind (races shortened) but still the Baie de Seine chop. I finished two times below 15th place out of 20 boats... Finished 9th overall out of 20 boats: my worst result in 2013. Very very disappointed.

Groupe GROUPE QUADRA après 6 courses (6 retenues) (20 inscrits)

(Cliquez sur les noms soulignés pour accéder à la fiche du coureur)

Rgs	Ident	Concurrents	P Ret	P tot	c.1	c.2	c.3	c.4	c.5	c.6	Club / Pays
9	6179	MAEVA (SUPER ARLEQU) <u>WANIART Frederic</u>	50.00	50.00	3	6	1 1.00	7	15	18	A N L Section régatè
					3.00	6.00		7.00	15.00	18.00	

This is why I made special efforts to solve this problem and improve Maeva's moment of inertia. A lot of things are easy to do (textile shackles takes ½ hour per shackles and there are 20 shackles to change). Other things are more complex (osmosis treatment, for example, needs 3 months drying with 4 heaters under a plastic tent, and a month for painting and sanding). But the results are shown below. This has impressed upon me that I will sail with 7 virtual females - Single handed!!! But I really don't care: I have only 4 berths and two usable....

HOW I IMPROVED INERTIA MOMENT

	Gross Weight	Position	Influence	Observations
Rudder	30	4	120	Carbon vs. Monolityque
Engine battery	30	2	60	Jet sky vs. 100 AMP
Forward partition	3	2	6	Jig Saw in no structural partition
Full tank	30	2	60	Advanced under the starboard berth
Kitchen	20	4	80	Food water plates... in spinnaker bag
Anchor	20	2	40	In spinnaker bag
Gear	5	3	15	Friction ring, dynemaa shackles vs. stainless steel
Tools and spare	25	2	50	In spinnaker bag
Transfer sails	10	3	30	Transfer with race sails
Toilets	25	2	50	Porti porti vs Ceramic no shut off valves on hull
Copper coat	-10	1	-10	Anti osmosis treatment and Nautix vs. Coppercoat
Backstay	-1	6	-6	Diam 4 to 6,

TOTAL

162

495

Equivalent to 5 men or 7 females

I already sail with nothing forward the mast or aft of the tiller. I will try to sail with NOTHING in the cockpit lockers and fit two rectangular spinnakers bags, 3m by 1 m... In one I put all the tools, food, spares, plates, small drift anchor, mooring ropes, spare computer, and clothes. In the other all the safety equipment and the regular anchor, chains and rope. Those two bags will be between the berths either side of the keel. The sails not being used will be above. My 6 females are virtual: they do not need to walk on the floor. And as usual I will walk on the berth... In the berth there will be the 3 spinnakers and the two solent jibs (heavy or medium or light one).

The full sail suit is 7 sails.

- Main sail (membrane Kevlar) full batten (more polyvalent in single handed) 2 reefs
- Solent (membrane Kevlar) light medium and heavy (consider as an ORC)
- Storm jib (Dacron) red
- 3 spinnakers (light medium and code 0)

For 2014 season, I have invested in a light Solent jib, deeper than the 2013 one (which has been promoted to be a medium sail).