YCC Theory

Catamarans and Multihulls

By Luigi Gallerani

Update: 2020

oil painting on canvas by Leonid Afremov

Yachting Club CERN – Activities and Course Structure

1st step: BECOME YCC MEMBER
ACTIVE or JUNIOR-ACTIVE
cern.ch/yachting

SAILING COURSES 2020

Register online to courses from 14 Feb to 13 Mar 2020

Register yourself, many places available, per-event registration will follow

- **LEVEL-ZERO course** *Free for beginners/newcomers*
- **Theory** classes
- **Navigation** Course *Ad-hoc outings*

Limited places awarded and assigned through the **lottery** extraction:

- **DINGHY - D** *level-0 required*
- **Competent Crew - CC** *level-0 recommended*
- **YNGLING - Y** *level-0 required*
- **EC Advanced Catamarans** *D/Y key required*
- **L Laser performance** *Key D required*
- **SU Surprise/J80** *Y+another key required*
- **Cabin Keel** *Y + another key required*

EXAMS – KEYS
To become skipper of each boat type

Opportunities on the water for members

- ***Thursday on all boats + Dinghy days practice** opportunities every week*
- *Regatta **training*** → *Internal/External **Regattas***
- *Maintenance + Surveillance outings*

Private sailing as **skipper** on ycc boats once you have the "key"

REMINDER View Calendar of YCC Activities

- This presentation it is still a DRAFT,

  it contains Copyrighted material and photos with not yet complete reference to the authors.

  It is NOT intended to be published in any form

Why a multihull design?

Differences
Advantages Disadvantages

A boat with two hulls...

Stability by shape instead of by weight

No mass in the keel = Lighter

Slim Hull Less water drag

Higher construction complexity
because of structural stress of the deck.. that is a real bridge!

Main Advantages

PERFORMANCE (and FUN)

Lighter/less drag = **FASTER**

Higher mast = larger sail
= **more power** available

Can sail on **1 hull only**

Easier to hydrofoil because of stability

Large trampoline = **more space**,
on cruise cat the advantages
for the interior are evident

low water draft ,
easy **beaching** (weight distributed on 2 hulls)

Safety: Hull Buoyancy **redundancy**.

Main Disadvantages

Take more space port and manouvering

Less cargo capacity

Bad performance in
in low/strong wind+waves

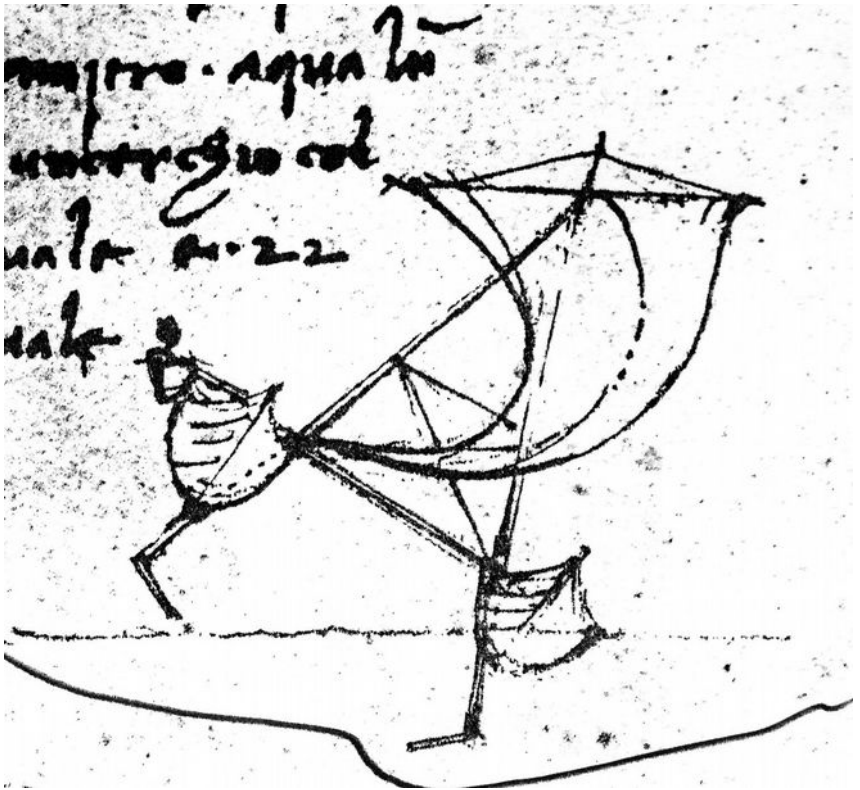
Best range 2-4 bft

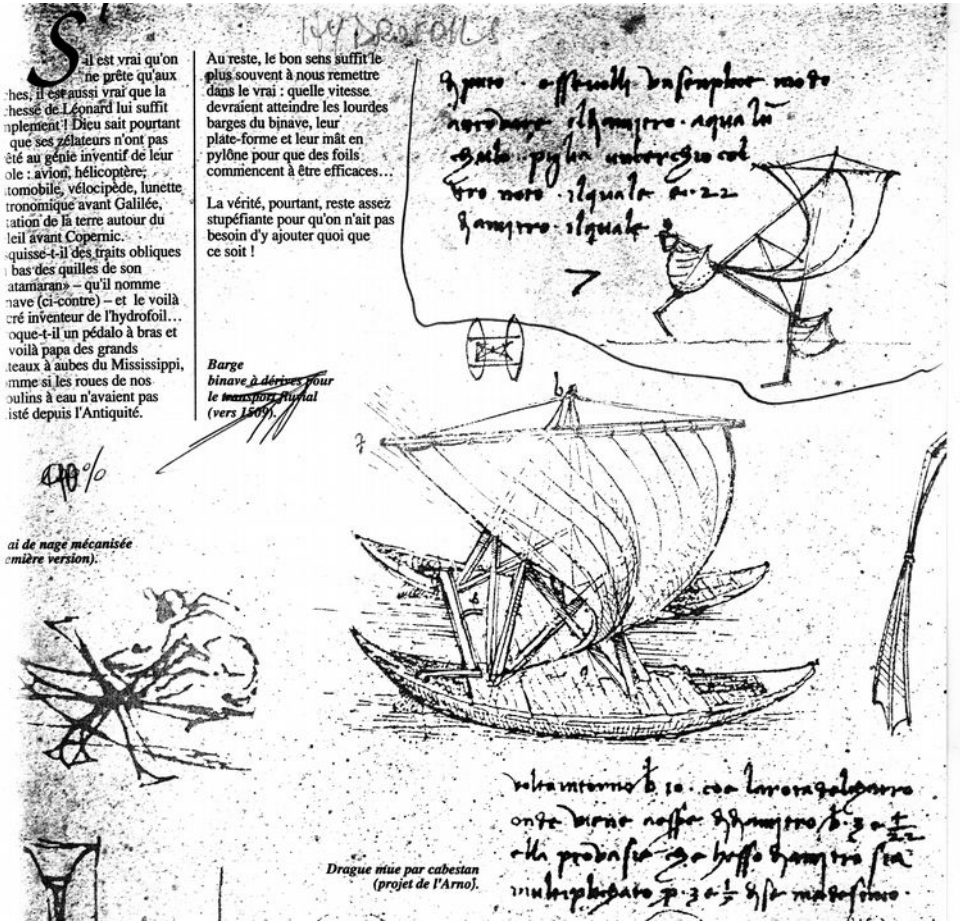
Sail **less closer** to the wind, and have **more drift** on models like SL16

do not self right after **Capsize**
(cruise cat have an opening on the bottom of the hull to escape)

Almost double **cost** compared to a mono-hull equivalent displacement.

Some history and design consideration





S'il est vrai qu'on ne prête qu'aux hes, il est aussi vrai que la hesse de Léonard lui suffit nplement ! Dieu sait pourtant que ses zélateurs n'ont pas êté au génie inventif de leur ole : avion, hélicoptère, tomobile, vélocipède, lunette tronomique avant Galilée, tation de la terre autour du leil avant Copernic. quisse-t-il des traits obliques bas des quilles de son atamaran» – qu'il nomme ave (ci-contre) – et le voilà cré inventeur de l'hydrofoil… oque-t-il un pédalo à bras et voilà papa des grands teaux à aubes du Mississippi, mme si les roues de nos oulins à eau n'avaient pas isté depuis l'Antiquité.

Au reste, le bon sens suffit le plus souvent à nous remettre dans le vrai : quelle vitesse devraient atteindre les lourdes barges du binave, leur plate-forme et leur mât en pylône pour que des foils commencent à être efficaces…

La vérité, pourtant, reste assez stupéfiante pour qu'on n'ait pas besoin d'y ajouter quoi que ce soit !

Barge binave à dérives pour le transport fluvial (vers 1509).

ai de nage mécanisée emière version).

Drague mue par cabestan (projet de l'Arno).

1509, drawing from Leonardo da Vinci, it seems he invented the hydrofoil cat 500 years ago!

Kattu-maram கட்டுமரம்

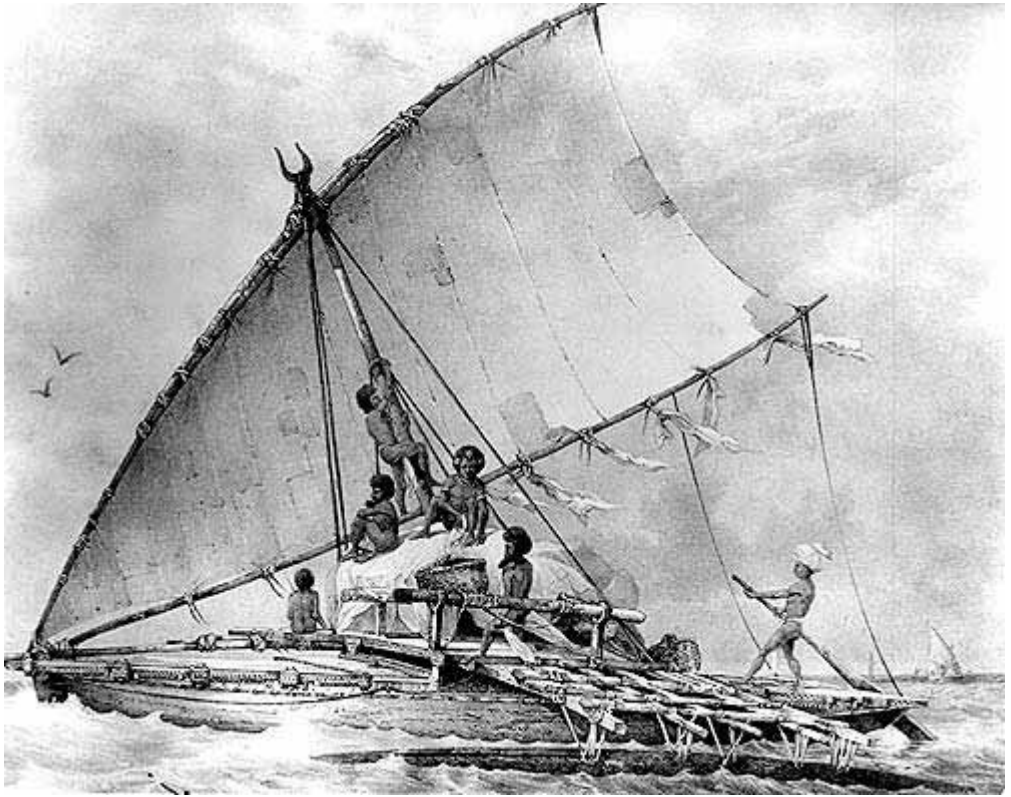
"Kattumaram" in Tamil means
logs tied together

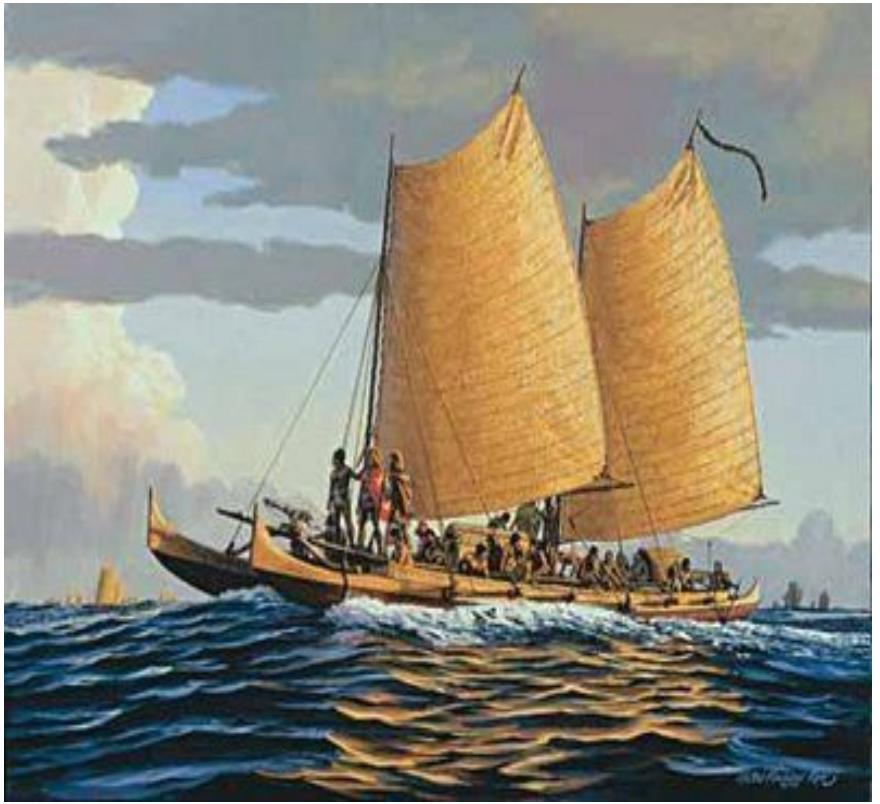
Indian Kattumaran… it is not a Catamaran, but… a basic hull design for canoe

Oceania: Anuta canoe, with outrigger stabilizer, guess what was invented for?

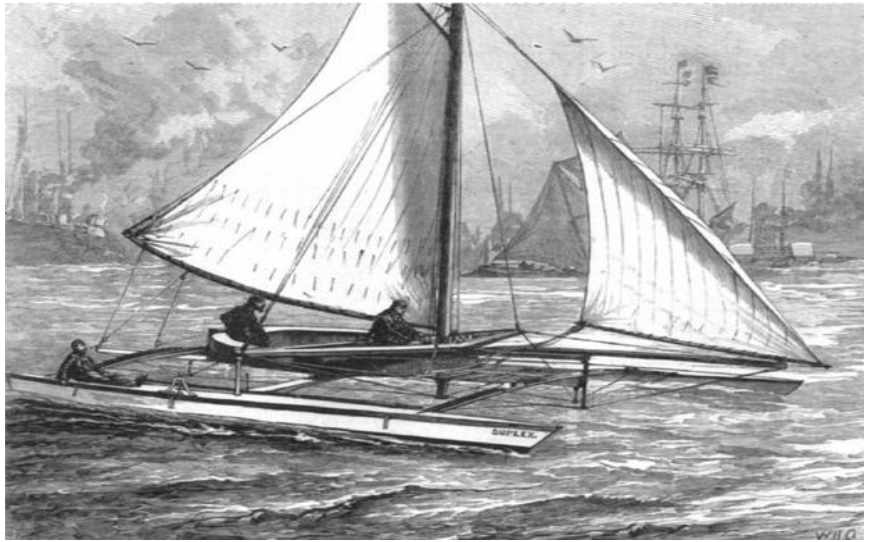
Philippine Fisherman Canoe, note the two outrigger stabilizers. Multi-hull design!

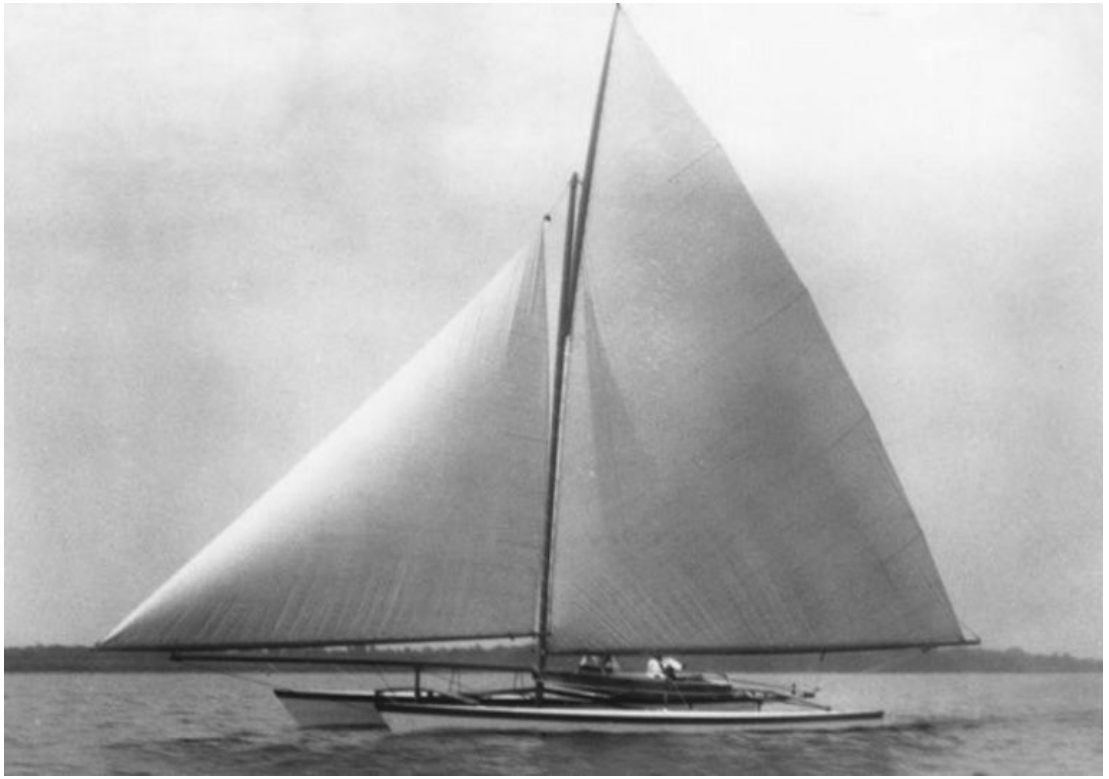
Tahiti sail canoe with outrigger,
and Hawaii double canoe with sails



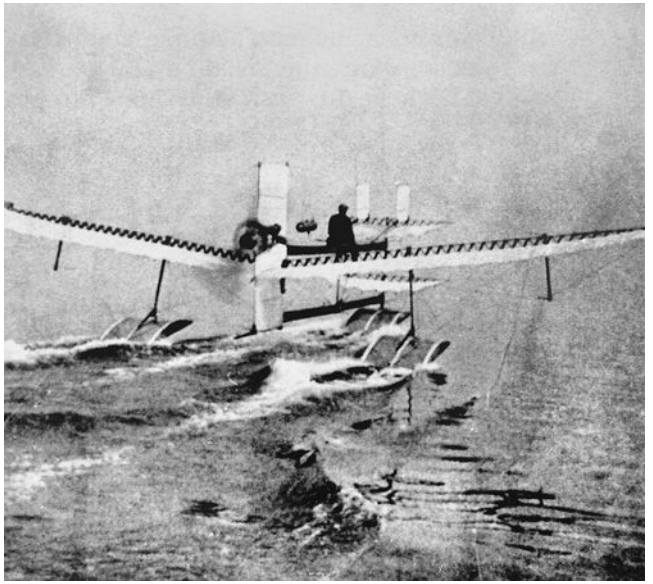


Fijian sailing canoe Lateen sail , and Hawaii large catamaran with Gaff Reefed sail, illustration around 1840





Nathaniel Herreshoff catamaran, Duplex, on the River Thames—1877, was 31 ft (9 m) long and the Amaryllis in 1878 (in the photo, a replica of 1933).



Idroplano by Enrico Forlanini with foil! 1906
Henri Fabre first hydroplane, 1910
A 1938 hydroplane with catamaran floaters

Moscone o Pattino Salvataggio a remi, (photo Riccione 1905), super stable leasure boat max diffusion in 60's, became mandatory as rescue boat on italian beach. Recreational version replaced by the "Pedal version". Rescue version is made today in polyester of fiberglass.

Pati a Vela / Pati Catala' ~ 1920
Still used today for regattas.
No rudders, no centreboard, no boom
You steer with your weight
and adjusting the main sail.

Seems originally was a rowing boat !

Modern catamarans

1960… economical boom+
+ fiberglass, dacron, aluminum, neoprene, polyester

= new design and mass production
of modern leisure/sport catamarans

IYRU catamaran classification

Class	Max Length	Max Beam	Max Sail Area	Crew
A-Class	18’	7’6”	150 ft²	1
B-Class	20’	10’	235 ft²	2
C-Class	25’	14’	300 ft²	2
D-Class	32’	16’	500 ft²	3

1960s and was part of the 4-tier IYRU (now ISAF) has defined 4 cartamaran classes

Hobie Alter, produced the 250-pound (110 kg) Hobie 14 in 1967, it is the start of the modern sport catamaran era. Note the trapeize, banana shaped hull with V profile, that acts as a dinghy centerboard, and the large full batten mainsail

Hobie 16, 1969 - more than 100.000 produced, still widely used. Note again the banana shape of the hull. Very common because it can be easily launched from a beach.

B class Tornado Catamaran, design 1969, first models 1971 ,by Rodney March, Terry Pierce, e Reg White. Olympic Class 1976-2008 It has a jib, a spinnaker, a rotating mast and retractable dagger-boards. Note the hull design.

1985 Hobie 17

1994 Formula18 and Hobie Tiger

2011: Hobie Mirage Adventure,
A special pedal kayak with 2 optional outrigger and a small rollable main sail

Quite successful and cheap design, back to the origin.. you can sail, pedal, kayak and FISH on this multihull.

Nacra 17

Designed in 2011 Olympic class 2016, Rio Gold Medal Argentina, world championship France.

Replace of Tornado

Sailing hydrofoil on Tokio 2020.

F1 A class catamaran, Australia 2018, LOA 5.49m, 43kg, 13sq meter sail area. 4 Point sail seems to be the configuration of the future catamarans.

2019, Flying Phantom Essentiel, in production
2019 Nacra F20 Carbon in production

And the Flight Phantom Ultimate, soon in production (2020), state of the art Technology for a F18 size boat.

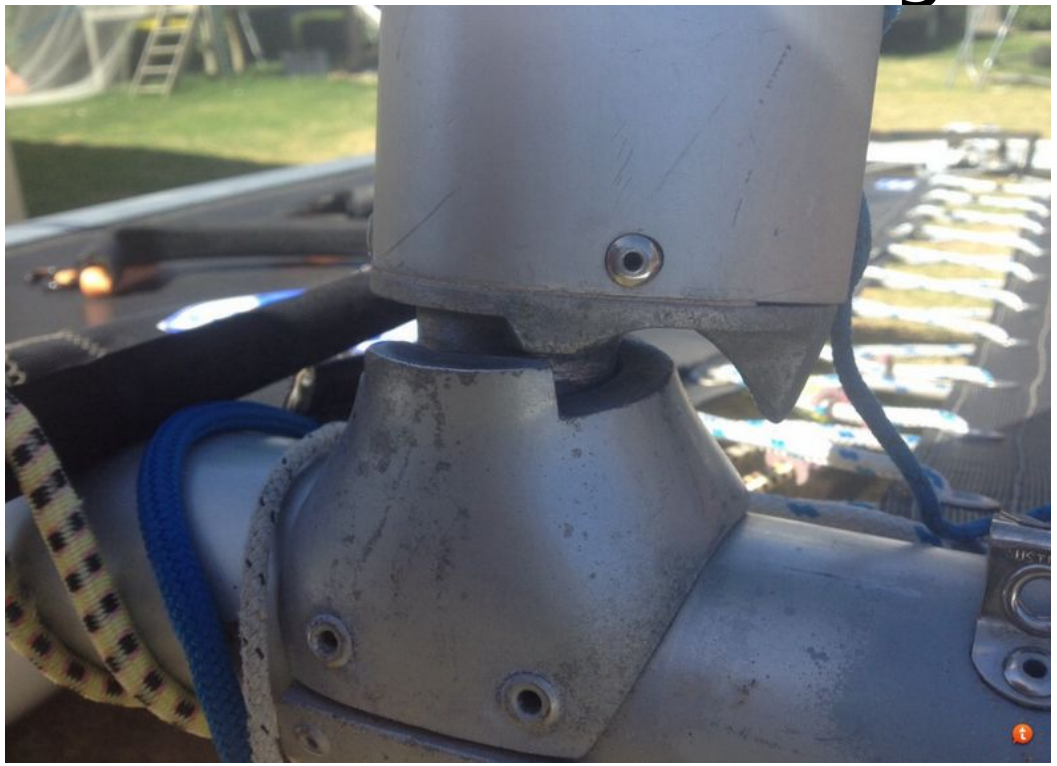
Common characteristics of small pleasure catamarans (like the one you will sail in YCC)

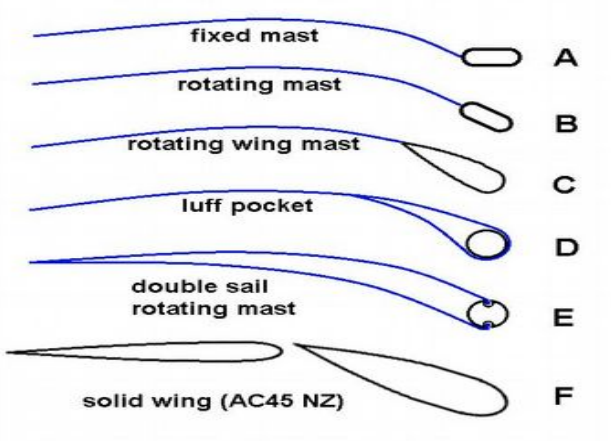
The Platform or trampoline / traveller

Common component in all fun catamaran, it is made by a tensioned mesh-net, water can pass trough. Reason of this is weight and safety, in case of capsize recovery you will be under it.

The Traveller it is long and it controls the angle of attack of the main. It is the main control of the boat, while the main sheet only controls the shape of the main.

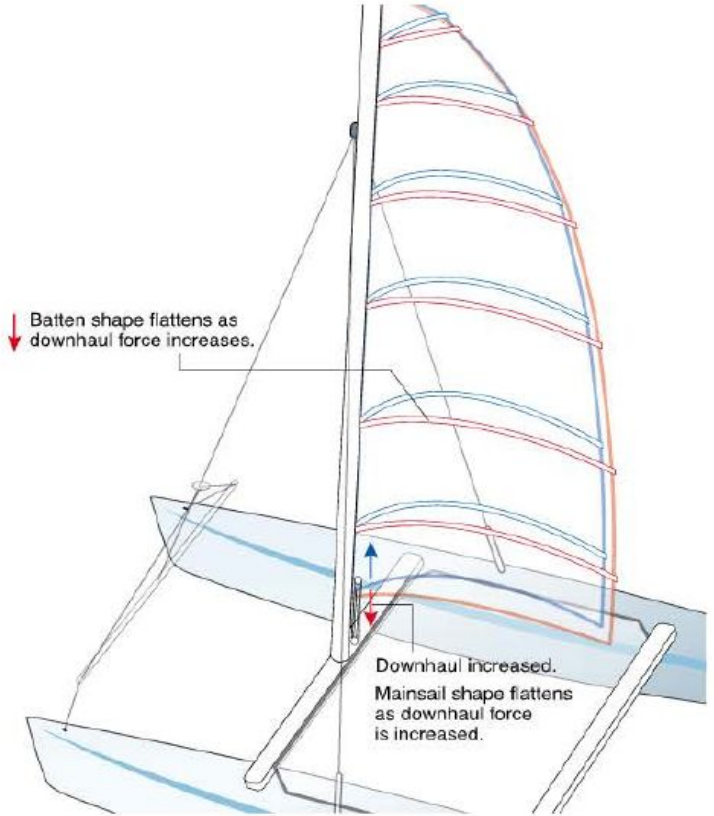
Rotating Mast





With the increasing apparent wind, the aereodynamic of the mast becomes significant, a rotating wing shaped mast improves the performance on a full batten main sail. It's a new parameter to control!

MainSail



Main is usually a full batten, the shape of the battens is controlled by the downhaul, the main sheet tension and the mast rotation. The boom is very light and the outhaul it is of minor importance.

Rudders / Dagger-boards

Rudder and daggerboard (when present) can operate both in combination or on a single side, when sailing on one hull only or during launching/re-entry. Daggerboards must be secured to the boat.

Double Trapeize

Double trapeize it is present on all our catamaran, the typical configuration is skipper at the back with rudder, traveller and main sheet, , and crew on jib and kite sheets, mast rotation, dagger-board and downhaul.

Capsize, recovery

Mast and main take some times to sink, so there are around 30-60 seconds to recover from this situation before turtling. Note that the trampoline it is a large surface exposed to the wind, and will act as a sail. The catamaran can drift far away from you and faster than you can swim while capsized.

Turtle

When turtle capsized a small cat can be recovered with the combined usage of weight, righting rope, righting bag. A floating areodynamic blimp on top the mast can prevent this. Large catamarans have no way to be recovered, crew can escape from emergency hatch in the keel.

Pitch Pole

At high speed if not properly controlled and depowered, the bow sink easily in the water/waves, resulting in a pitch pole with catapulting effect on the crew and immense stress on the mast and structure. As a danger situation should be avoided.

Pitch pole on large catamaran, the event it is so fast that even expert crew can not do anything to stop it once started. Note the danger for the crew of falling into the structure from very high elevation.

Catamarans are the key
to win the
sailing speed record…

….that you will not sail at YCC

1975 Tim Colmann on CrossBow I, 500m 31,80 Knots
1980 Tim Colmann on CrossBow 2, 500m 36 Knots

Dan and Greg Ketterman built five prototypes (TF20, TF2, TF3, Longshot 1) and four production prototypes (Avocet 1, Avocet 2, Avocet 3, and TFP).

Trifoil Model 1981, First TF20 1988, Longshot2 1992, TFP 1993

Commercially available as Hobie Trifoil

Longshot 2 1992: 38.8knots!

On 4 September 2009, the Hydroptère by Alain Thébault and VPLP design broke the outright world record, sustaining a speed of 52.86 knots (97.90 km/h; 60.83 mph) for 500 m (1,600 ft) in 30 knots (56 km/h; 35 mph) of wind. The research done on this multihull has made modern cat hydrofoil a reality

Vestas Sail Rocket 2, Paul Larsen, 24 Nov 2012,
65.45 Knots, fastest sailing 500m, peak 68Knots (121km/h)
55.32 Knots, fastest sailing 1 nautical miles

High performance catamarans for international regattas

you could spot some of the world most amazing multihull on the Lac Leman!

2010...
the advent of huge catamarans

2010: The Golden Gate Challenge match was sailed in gigantic, specialized 90 ft (27 m) multihull yachts in a best-of-three race series in Valencia, Spain from 8 to 14 February 2010.
The rigid wing sail of the challenging trimaran USA-17 provided a decisive advantage, and it won the 2010 America's Cup 2\u20130

27m Team Alinghi – America's Cup Defender 2007 & 2010. Note the huge Genoa/Code0, and the integrated rudders, the inverted bow, that maximizes speed (at cost of buoyancy/wave stability)

Emirates New Zeland - AC72 2013 (22m) Hydrofoil catamaran note the C-Z shaped foil and the rigid wing hydraulic controlled.

2017
The AC50 (defined in the America's Cup rules as AC Class yacht, or ACC) was a wingsail catamaran development rule that governed the construction of the yachts used in the 2017 Louis Vuitton Cup and the 2017 America's Cup.
The defending yacht 17 undergoing sea trials

Like the larger AC72s used in the 2013 America's Cup, AC50s used L-shaped daggerboard stabilizers as well as T-shaped rudder elevators that were able to generate enough lift to allow the boats to exit displacement mode in winds in excess of 7kt.
Prototype versions of crossbeams, wingsails, appendages, as well as steering and trimming systems had been tested on AC45 before building their AC50.

2017, Oman, first GC23 Championship hydrofoil system, L and T rudder (40knots)

Are new Foiling mono-hull catamarans?

AC75 foiling monohull looks more like catamarans, designed to fly most of the time, the hull privileges aerodynamics more than hydrodynamics (like a fuselage). They Capsize! No keel ballast

YCC – Catamaran Theory – Luigi Gallerani

Cruise catamarans

… a short look

1966 Iroquois Mk 1

US$

Dumbarton, West Dunbartonshire, United Kingdom

1979 Spronk 50 ketch rigged catamaran

US$ 2

Fort Lauderdale, FL

Photo | Video

1984 Multiplast 74 Racing

US$ 313,3

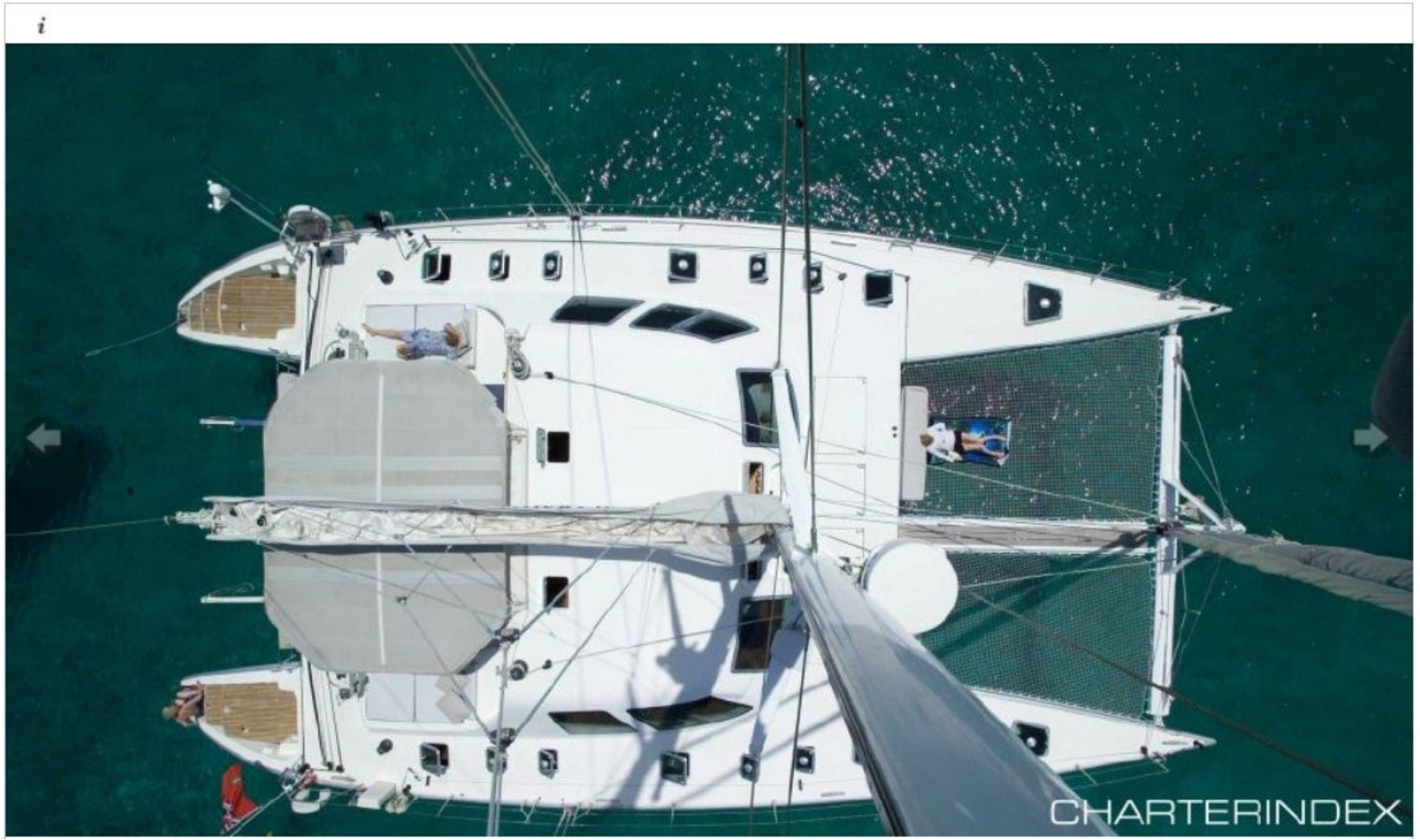
France

1999 Lagoon 67 CHARTER rev.

US$ 710,000

St. Maarten/St. Martin

Share



2001 Fountaine Pajot Tahiti 75 US$ 67

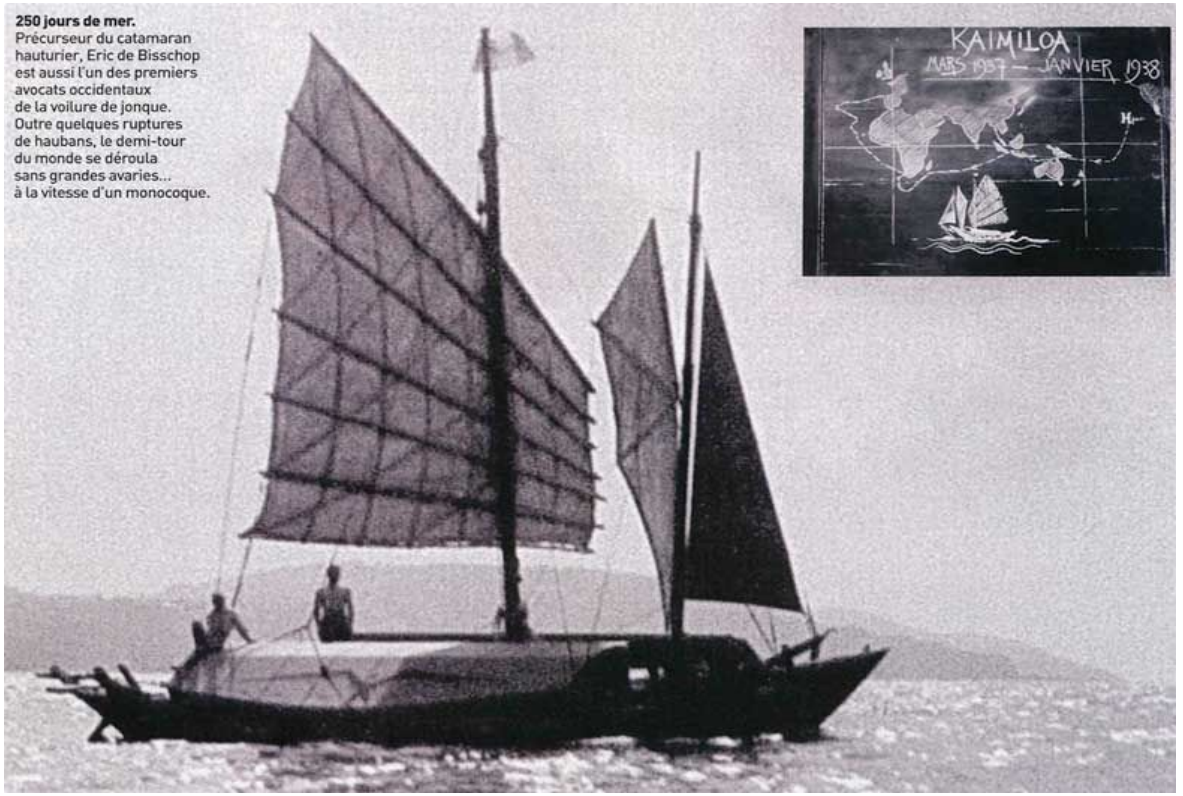
Greece

In the 90's lot of heavy sailing catamaran for confortable cruise and tourism are designed Here a 75feet (22m) example.

2011: Hemisphere, world largest sailing catamaran
42 meters

2020, Lagoon 50 (they have models from 38 to 70 feets)

Remarkable ocean cross on multi-hulls



In March 1937 Eric de Biscchop and Hawaiian wife Tatibouet left Honolulu aboard the Kaimiloa, reaching Cape Town in September, Tanger in December, and after a long stay Cannes in May 1938. In 1939, he published his book Kaimiloa, which was translated in English in 1940

8 July 2005 THOMAS COVILLE Beats the North Atlantic solo record and also comes in under the 5 day mark. 4 DAYS 11 HOURS 10 MINUTES 23 SECONDS * - 4d 11h restabilish record in 2017

B Populaire / Spindrift

Atlantic Cross records

2009 Pascal Bidegorry WE 3d 15h 25m + crew

2013 Dona Bertarelli EW 6d 14h 29m +crew

2014 EW Armel Le Cleac'h 6d 23h 42m SOLO

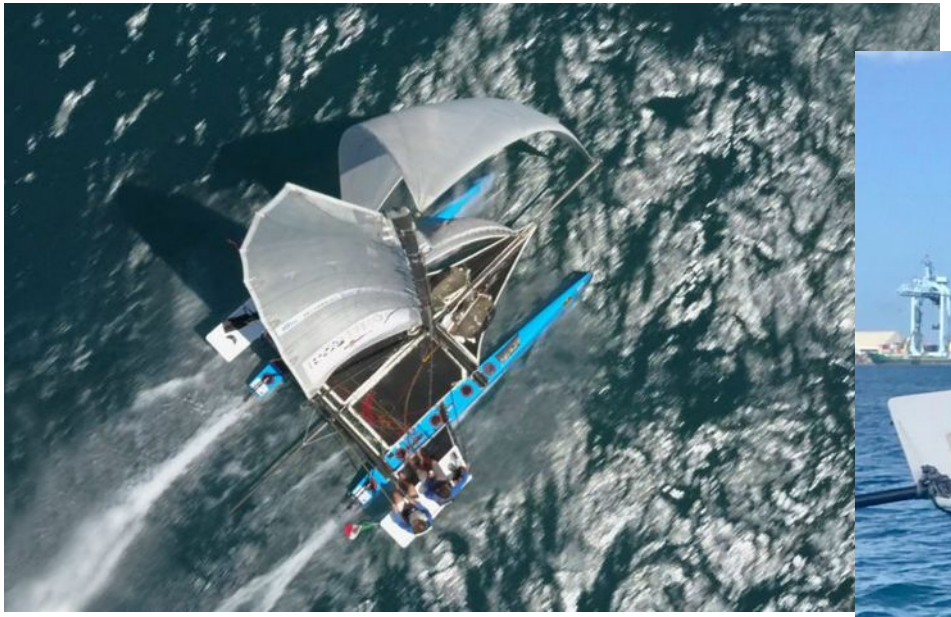
Blue Riband W→E just for comparison

2009 BP Pascal Bidegorry WE 3d 15h 25m

Blue Riband: 1938 - RMS Queen Mary – Cunard - 3d 21h 48s 31knots
1952 – USS United States – USL – 3d 10h 40m 35.5knots

François Gabart (Macif 30m) a réalisé dimanche 17 décembre 2017 ***le tour du monde en solitaire*** *en un temps canon de* ***42 jours 16 heures 40 minutes,*** *soit 6 jours et 10 heures de mieux que le précédent record.*

Ugo and Nico Malingri (father and son from Italy) On F20 catamaran Feel Good.
*World record Atlantic Cross from **Dakar to Guadalupa in 11 days**, on Apr 2017. The cat is very similar to our own Hobie Tiger!*



19.02.2019
TULLIO PICCIOLINI E GIAMMARCO SARDI on the same boat OCEAN CAT used by Malingri, in the (failed) attempt to beat their record,arrived to Guadalupe POINTE À PITRE in 14 days, 3h E 40Min

3 capisizes in the middle of the atlantic

February 23, 2018. Giovanni Soldini and Maserati Multi 70 crew crossed the finish line in London, under the Queen Elizabeth II bridge, at 13.20′ 26″ UTC on February 23rd, after 36 days, 2 hours, 37 minutes and 2 seconds of sailing, conquering the Tea Route record, from ***Hong Kong to London****.*

Catamaran at YCC

YCC SL16 Sirena “Catapult”
YCC F18 Hobie Tiger “Meerkat”
YCC Nacra 15 Hydrofoil
YCC Tornado

Hobie Tiger, Bruno Lenzi and Luigi Gallerani sailing during Bise, 3-4 bft, 2017

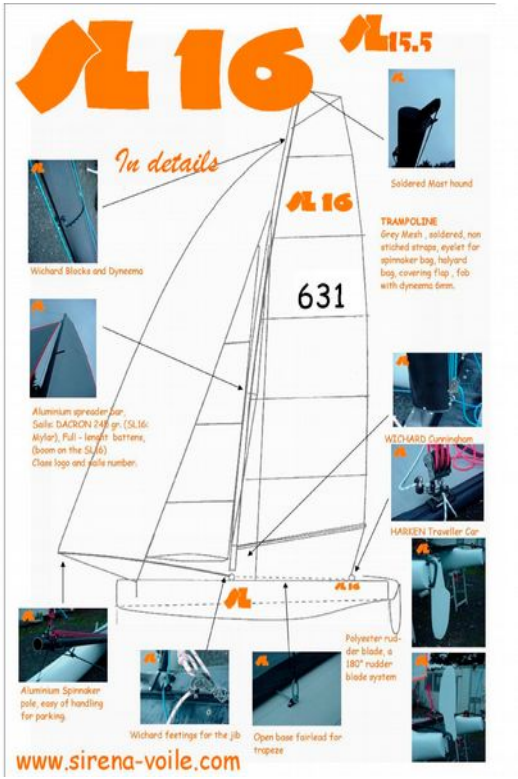
Massimo Paladin and Claudia Strabel and Luigi, Sailing YCC Hobie Tiger, 2015

Valentina Venturi and Luigi Gallerani sailing YCC SL16, 2016

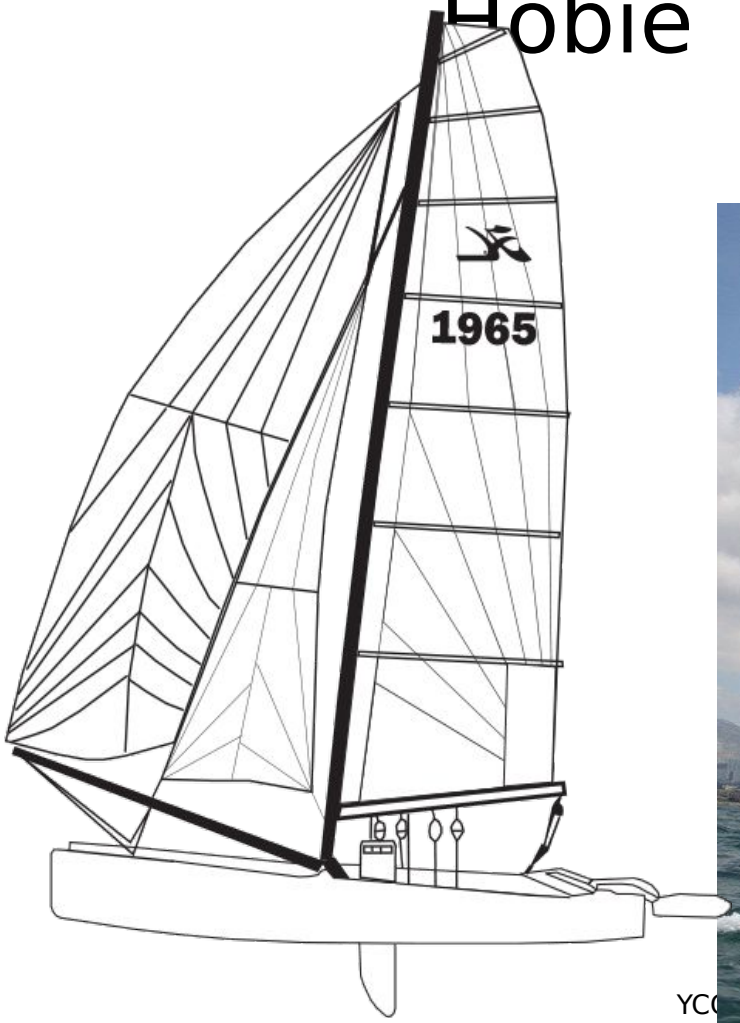
YCC Adv Course: Ariane McCabe and Alex Kasterine during YCC lesson 2016 (with Luigi)

YCC: Francesco e Vincenzo sailing in a private outing YCC Hobie Tiger

SL16 (YCC 2008)



Hobie Tiger (YCC 2010)



Tornado
(1990, YCC 2018)

Nacra 15 – (YCC 2019)

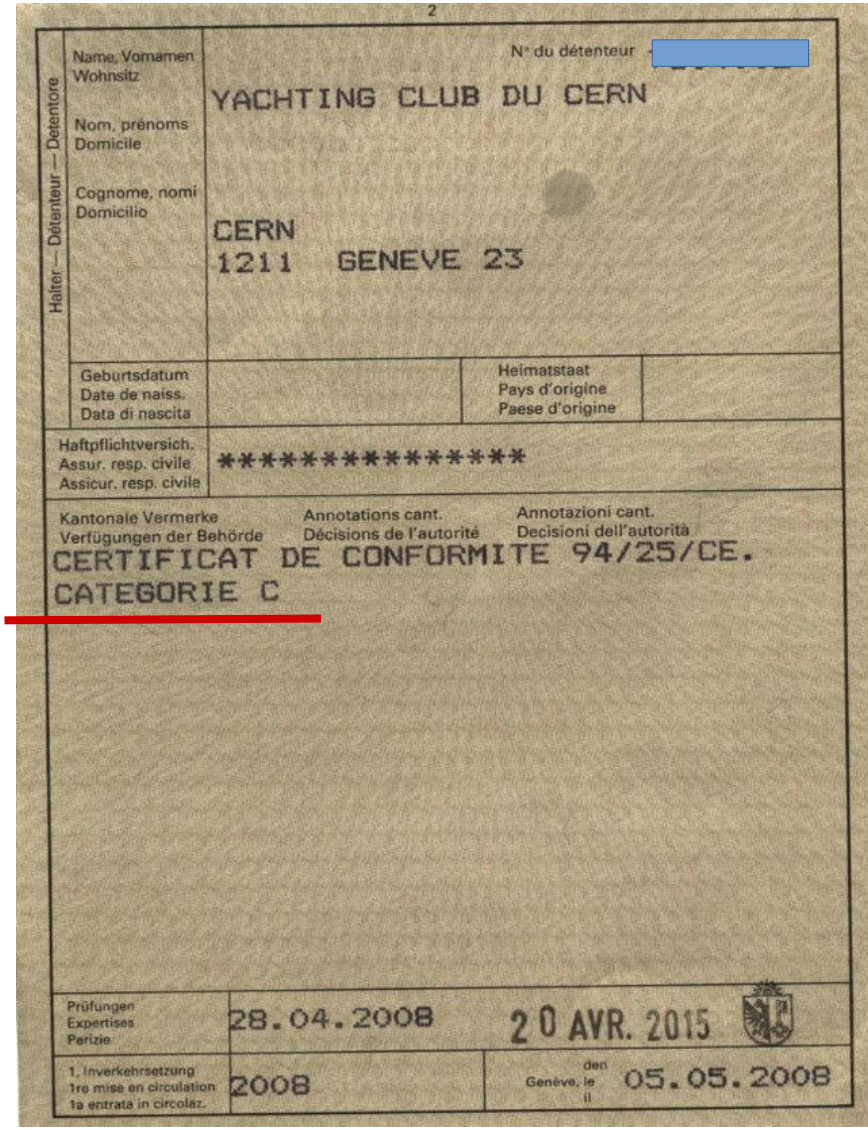
If you come from a Dinghy D/ED

- You will like it as all D emotions are amplified however...
- Catamaran requires you to be highly skilled:
  - **Speed:** Less time to manouver or counter react to mistakes
  - **Size:** i.e. you can't turn around in the Versoix channel
  - **Conditions:** Stronger apparent wind / Water spray
  - **Capsize / Pitchpole** are NOT a FUN option

  Let's compare the cat with a dinghy!

COMPARISON	SL16	Hobie Tiger	Tornado	Nacra 15	… RS500
LOA Lenght Overall	4.80m	5.51m	6.09m	4.70m	4.34m
Beam	2.32m	2.60m	3.08m	2.35m	1.58m
Mast lenght	8.0m	9.00m	9.08m	8.10m	
Weight	**152Kg**	**180Kg**	**155Kg**	**140Kg**	77Kg
With 2/3 crew displacement	312 Kg 392 Kg	340Kg 420Kg	315Kg 395Kg	300Kg	237Kg
MainSail	13.75 m^2	17 m^2	16.61 m^2	13.0 m^2	9.5 m^2
Jib	3.75 m^2	4 m^2	5.33 m^2	3.3 m^2	3.6 m^2
Kite	17.00 m^2	21 m^2	25 m^2	16.5 m^2	14.0 m^2
Total Surface	**34.5 m^2**	**42 m^2**	**46.9 m^2**	**32.8 m^2**	**27.1** m^2
Places	**3**	**3**	**3**	**2**	**2**
Max Surf/min displ	0.110 m^2/kg	0.124 m^2/kg	0.148 m^2/kg	0.110 m^2/kg	0.114 m^2/kg
main+jib/min displ	0.056 m^2/kg	0.061m^2/kg	0.070m^2/kg	0.054 m^2/kg	0.055 m^2/kg

SL16



2

Halter — Détenteur — Detentore

Name, Vornamen, Wohnsitz
Nom, prénoms, Domicile
Cognome, nomi, Domicilio

N° du détenteur [redacted]

YACHTING CLUB DU CERN

CERN
1211 GENEVE 23

Geburtsdatum, Date de naiss., Data di nascita

Heimatstaat, Pays d'origine, Paese d'origine

Haftpflichtversich., Assur. resp. civile, Assicur. resp. civile: **********

Kantonale Vermerke, Verfügungen der Behörde / Annotations cant., Décisions de l'autorité / Annotazioni cant., Decisioni dell'autorità

CERTIFICAT DE CONFORMITE 94/25/CE.
CATEGORIE C

Prüfungen, Expertises, Perizie: 28.04.2008 — 20 AVR. 2015

1. Inverkehrsetzung, 1re mise en circulation, 1a entrata in circolaz.: 2008

den, Genève, le, il: 05.05.2008

Kennzeichen, Signes distinctifs, Contrassegni	GE [redacted]		
Bes. Verwendung, Usage spécial, Uso speciale	**********		
Stamm-Nummer, N° matricule, N° di matricola	991. [redacted]		
Art des Schiffes, Genre du bateau, Genere del natante	20000 BATEAU A VOILE		
Marke und Typ, Marque et type, Marca e tipo	SIRENA SL 16		
Schale-Nummer, N° de la coque (HIN), N° dello scafo	GBS [redacted]		
Material, Matière, Materiale	POLYESTER		
Länge, Longueur (cm), Lunghezza	480	Breite, Largeur (cm), Larghezza	235
Personenzahl, Nombre de personnes, Numero di posti	3	Ladung, Charge (t), Carico	******
Typenschein, Carte type, Certificato tipo	--------X	Segelfläche, Surface vélique (m²), Superficie velica	12
Motormarke & Typ, Motor Nr., Leistung (kW), Abgas-Typengenehm. / Marque & Type Moteur, N° du moteur, Puissance (kW), Approbation de type / Marca & tipo motors, Motore N°, Potenza (kW), Certificato d'omolog.	SANS MOTEUR		
Standort, Lieu de stationnement, Luogo di stazione			

CE Category: 1998 design standards for recreational boats from 2.5 to 24 meters

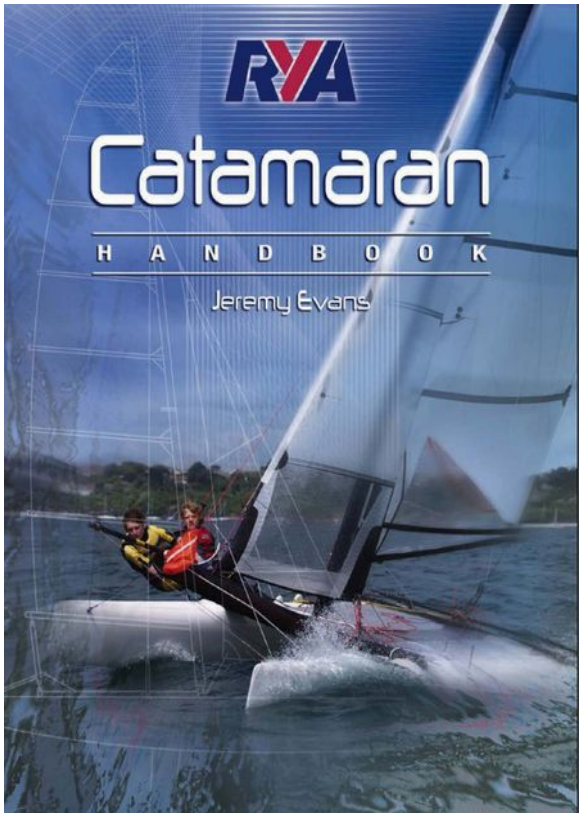
- Category A – Ocean: covers largely self-sufficient boats designed for extended voyages with winds of over Beaufort Force 8 (over 40 knots), and significant wave heights above 13 feet, but excluding abnormal conditions such as hurricanes.
- Category B – Offshore: includes boats operating offshore with winds to 40 knots and significant seas to 13 feet.
- **Category C – Inshore: is for boats operating in coastal waters and large bays and lakes with winds to Force 6, up to 27 knots, and significant seas 7 feet high (2m).**
- Category D – Inland or sheltered coastal waters: is for boats in small lakes and rivers with winds to Force 4 and significant wave heights to 18 inches.

How to sail

- Rigging
- Launching
- Tacking
- Gybing
- Power/Depower
- Trimming
- Trapeize
- Hull ouf the water / Hydrofoil…

Not today!

Will be covered during the lessons/practice on the water!



Equipment

SAFETY, Emergency call and Severe Weather

EC Test

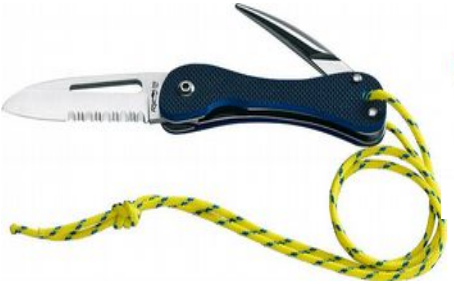
Safety Equipment

Mandatory:

- 50N life vest (YCC)
- Trapeize vest (YCC)
- Paddle (YCC)
- Sailing Knife with strap
- Whistle

Recommended

- First Aid kit
- Radio (YCC PMR submersible)
- **Helmet in high wind mandator always on NACRA 15**
- Lamp + basic tools



YCC The

Equipment – Neoprene Wetsuite

Depends on conditions.
What you have for Dinghy should be ok…
I suggest a modular approach.

- 2mm Tshirt
- 5mm Salopette
- 5mm Canyoning top
  (with zip and hood)

Do not invest in high quality diving wetsuite, you will damage easily.
Has to be confortable for movements

Equipment, part 2

- **Gloves**
- **Sailing Shoes**

- Spray top
- Bonnet
- Sunglasses

F18 sailing, note the equipment and t-shirt over the safety jacket to contain the straps, linkage of the equipment that could be entangled in some other component

Olympic Games 2016, note the bonnet and the neoprene hood

Nacra 17 World championship, they wear the helmet !

Water Temperature

How long can a person survive in cold water?

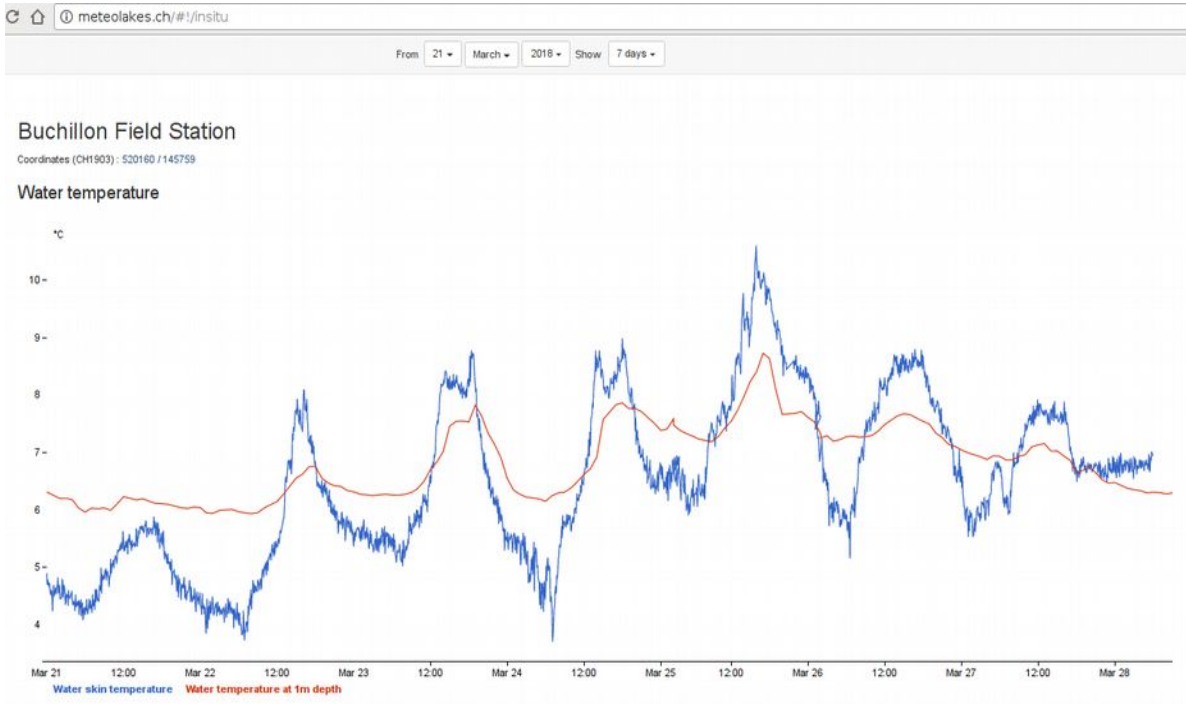
Water Temperature		Expected Time Before Exhaustion or Unconsciousness	Expected Time of Survival
(°F)	(°C)		
32.5°	0.3°	< 15 minutes	45 minutes
32.5–40°	0.3–4.4°	15 – 30 minutes	30 – 90 minutes
40–50°	3.3–10°	30 – 60 minutes	1 – 3 hours
50–60°	10–15.6°	1 – 2 hours	1 – 6 hours
60–70°	15.6–21.1°	2 – 7 hours	2 – 40 hours
70–80°	21.1–26.7°	3 – 12 hours	3 hours – indefinite
> 80°	> 26.7°	Indefinite	Indefinite

Lac	Température de l'eau	fluviomètre
Lac de Bienne	6 °C	429.17 m.ü.M.
Lac de Brienz	5 °C	563.26 m.ü.M.
Lac de Constance	5 °C	
Lac de Greifensee	5 °C	435.05 m.ü.M.
Lac de Lugano	6 °C	
Lac de Morat	6 °C	429.19 m.ü.M.
Lac de Neuchâtel	6 °C	429.18 m.ü.M.
Lac de Thoune	5 °C	
Lac de Walenstadt	4 °C	418.41 m.ü.M.
Lac de Zoug	5 °C	413.55 m.ü.M.
Lac de Zurich	5 °C	405.78 m.ü.M.
Lac des Quatre Cantons	5 °C	433.31 m.ü.M.
Lac Léman	6 °C	

Sources

Températures de l'eau: Prévisions MeteoNews

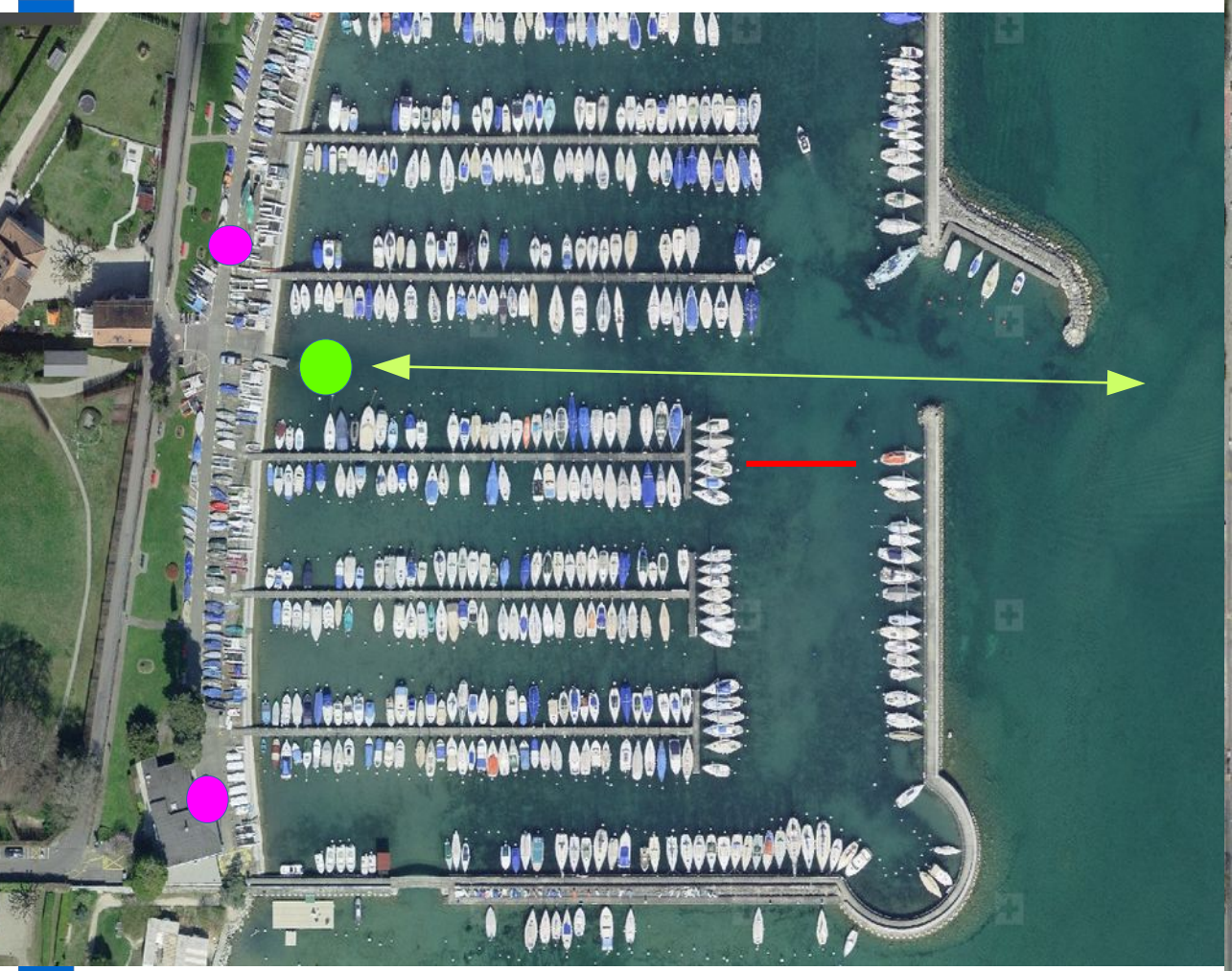
Niveaux des lacs et cours d'eau: Office fédéral de l'environnement (OFEV), bafu.admin.ch/fr



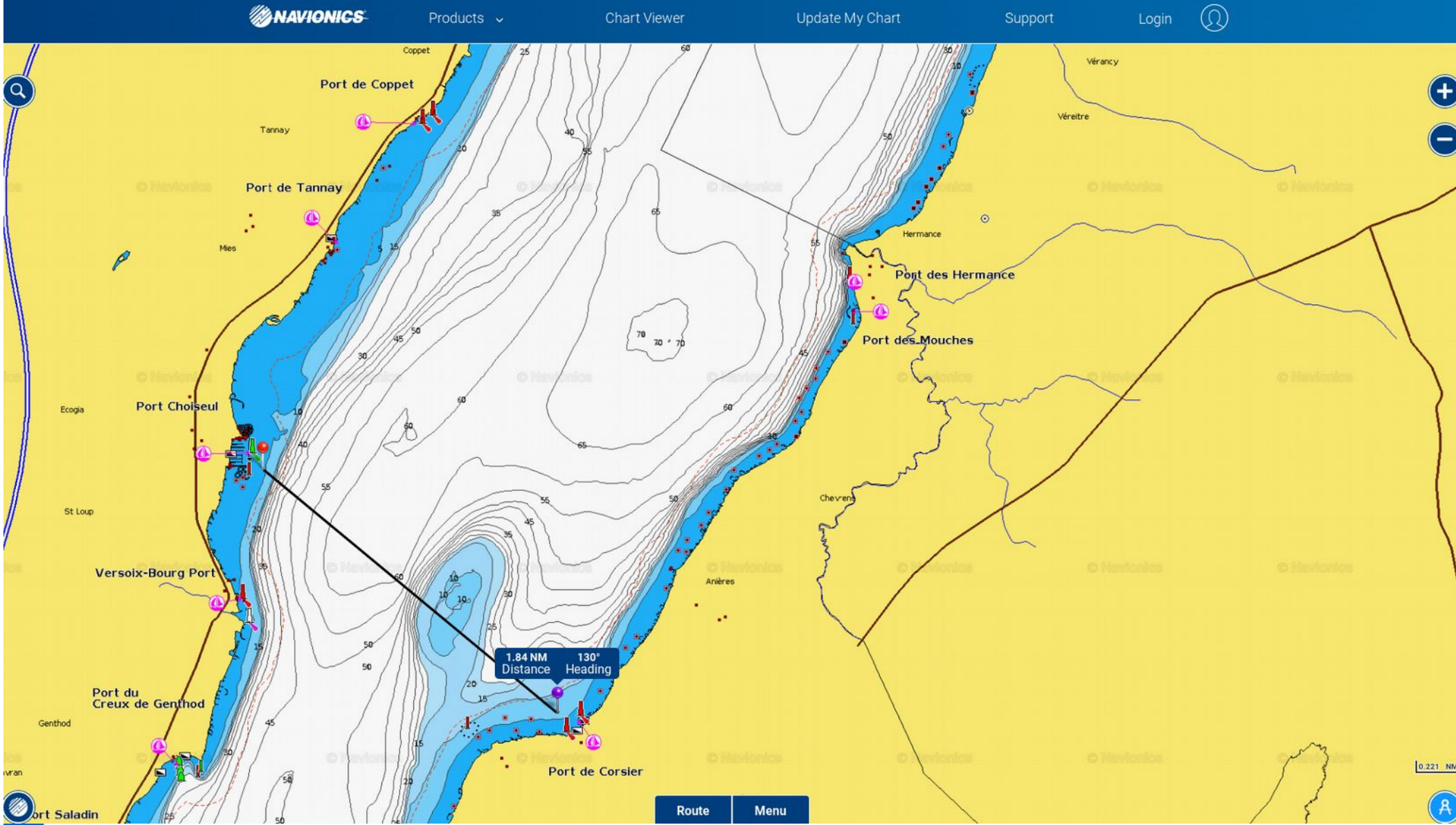
http://meteolakes.ch

Consideration for cat sailors:

- **HIGH PERFORMANCE BOATS**, high confidence sailors
- Rigging+Dressin takes longer than Dinghies **BE FAST**
- A Catamaran **blocks** the port launching channel
- **Points of NON return** in the narrow channel
- **Avoid CAPSIZE**
- Each instructor could have his own way/method of teaching and sailing during the course



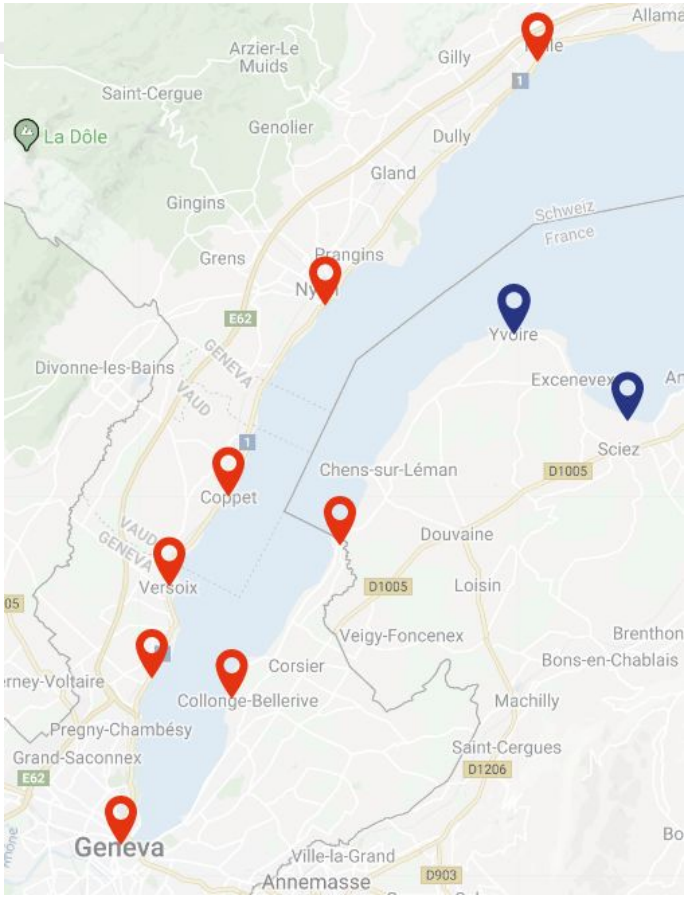
***Violet**,Location of Bouvette and Catamarans*
***Green** Launching ramp and channel – **Red** no sail zone*
***YELLOW** point, emergency zones.*


NAVIONICS
Products
Chart Viewer
Update My Chart
Support
Login
Coppet
Port de Coppet
Tannay
Port de Tannay
Mies
Vérancy
Véreitre
Hermance
Port des Hermance
Port des Mouches
Ecogia
Port Choiseul
St Loup
Versoix-Bourg Port
Chevrens
Anières
1.84 NM
Distance
130°
Heading
Port du
Creux de Genthod
Genthod
Port de Corsier
Route
Menu

Emergency Call

- Par téléphone mobile (voir aussi appel d'urgence sur le Léman)
- Par des fusées
- Par un pavillon rouge ou un sifflet de détresse
- Par n'importe quel moyen pour attirer l'attention d'un navigateur ou d'un résident côtier
- Par radio VHF sur le canal 16 (156.800 MHz)

Société Internationale de Sauvetage du Léman



Safety Equipment

Life Jackets

On keel-boats 100N when: water<12° / night / is windy
On dinghies and catamarans 50N buoyancy-aid always

Trapeze harness

Mandatory on catamarans: needed to recovery from capsize. On RS500 and 29er we recommend to wear it/have it always on board.

Whistle, Knife, Light

Ready to be used: A whistle, a knife, and a flashlight/light beacon for night sailing.

Personal protection

Use gloves, bonnet, spraytop, wetsuit, sunglasses for sailing or while doing maintenance. On catamarans use the helmet in strong wind.

Safety items on board

Extra mooring lines, paddles, 'gaffe', anchor, bailer, bilge pump, horn, red flag/firework... check their presence/status on board

First Aid

Bring with you a minimal first aid kit, at least 1 per boat

Radio

YCC default PMR channel is 4 subtone 4 (4^4)

Safety Actions

ALARM LAC
117 SUISSE
18 FRANCE

Safety briefing

Names of crew and their, experience, emergency numbers, safety equipment, engine startup, rigging check. Man-Overboard actions, outing planning, roles assignment, expected re-entry time
Ask for questions!

Conditions evaluation

Do not go out when wind > 4-5bft
Check the storm warning lights
Check meteo alerts/wind speed direction and forecast, water level and temperature.
Read previous boat log entries.

Mutual check

Look if there are other YCC boats sailing and if they are ok.
Use the binoculars to spot who is not coming back when expected. Help during dinghy re-entry/mooring.

Responsibility

Skippers are the ultimately responsible on board. YCC event organizers, Qboat drivers, the committee, can enforce additional safety measurements. Identify who is in charge to take responsibility/decisions!

Safe Sailing

Minimal risk

Choose the simplest maneuvers and plan it in advance and prepare your crew for it. Reduce the sailing time inside the harbor to the minimum necessary.

Call for tack/gybe

Call/answer loud for tack and gybe:
Ready to tack? READY! Tack!
Ready to Gybe? READY! Main in the center...Gybe!

Risks around you

Observe always around you, especially on the leeward side, behind the sails: boats,CGN, SUPs, wakeboards,swimmers. Have they seen you?

Position fixing

An approximate position is needed to call for help (i.e. I am in front of Corsier). Practice on the map, compass on coastal navigation!

Solo outing

On Laser, write on the log your destination, expected re-entry time, inform someone in the harbor, take the radio. Come back earlier

Be a good YCC sailor

Read and respect all the YCC rules, the people, the boats, the environment. Be a good sailor. Do all your best to avoid accidents and keep high sail and safety standards. Be an ambassador of the YCC! Thank you.

YACHTING CLUB CERN GENEVE

by Luigi Gallerani
YCC President 2019

https://yachting.web.cern.ch/yachting/Safety.html

Signalation Sonore (Art 33,34)

Art 33 [...] Pour les bateaux à rames et les bateaux à voile jusqu'à 15 m2 de surface vélique, un sifflet suffit.

[...]

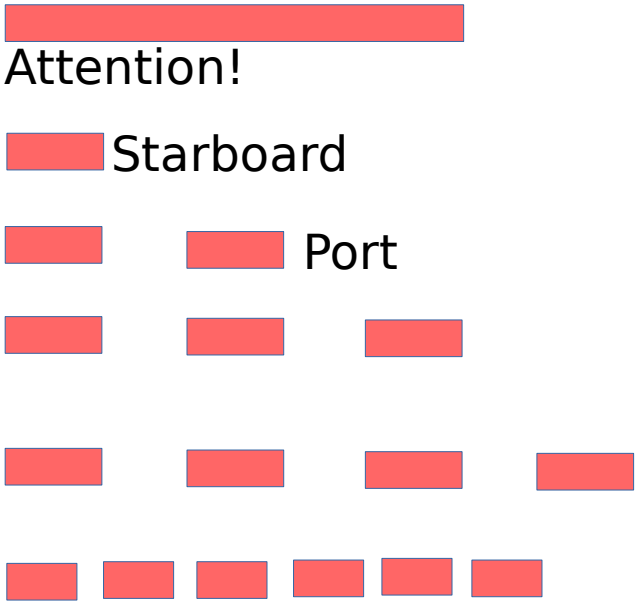
- Un son bref a une durée d'environ une seconde
- Un son prolongé, une durée d'environ quatre secondes.
- L'intervalle entre deux sons successifs est d'environ une seconde.

Signalation Sonore (RS 747.201.1 Art 33,3

Art. 34 Signaux sonores

Les signaux sonores ci-après ne doivent être émis que lorsque la sécurité de la navigation et des autres usagers de la voie navigable l'exige:

a.	un son prolongé:	«Attention» ou «j'avance en ligne droite»;
b.	un son bref:	«Je viens sur tribord»;
c.	deux sons brefs:	«Je viens sur bâbord»;
d.	trois sons brefs:	«Je bats en arrière»;
e.	quatre sons brefs:	«Je suis incapable de manoeuvrer»;
f.	série de sons très brefs:	«Danger d'abordage».



Signalation Sonore (COLREGS 72, Rule 34)

International Regulations for Preventing Collisions at Sea

(d) When vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by a light signal of at least five short and rapid flashes.

(e) A vessel nearing a bend or an area of a channel or fairway where other vessels may be obscured by an intervening obstruction shall sound one prolonged blast. Such signal shall be answered with a prolonged blast by any approaching vessel that may be within hearing around the bend or behind the intervening obstruction.

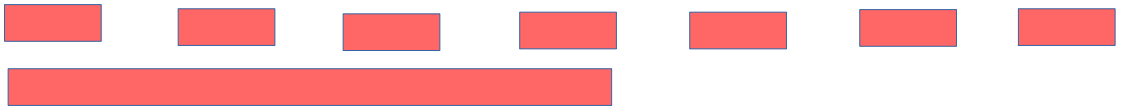
5 short:
I don't understand your intention / maneuver

1 long:
Attention!

Emergency Signal (COLREGS 72, Rule 4.1)

International Regulations for Preventing Collisions at Sea

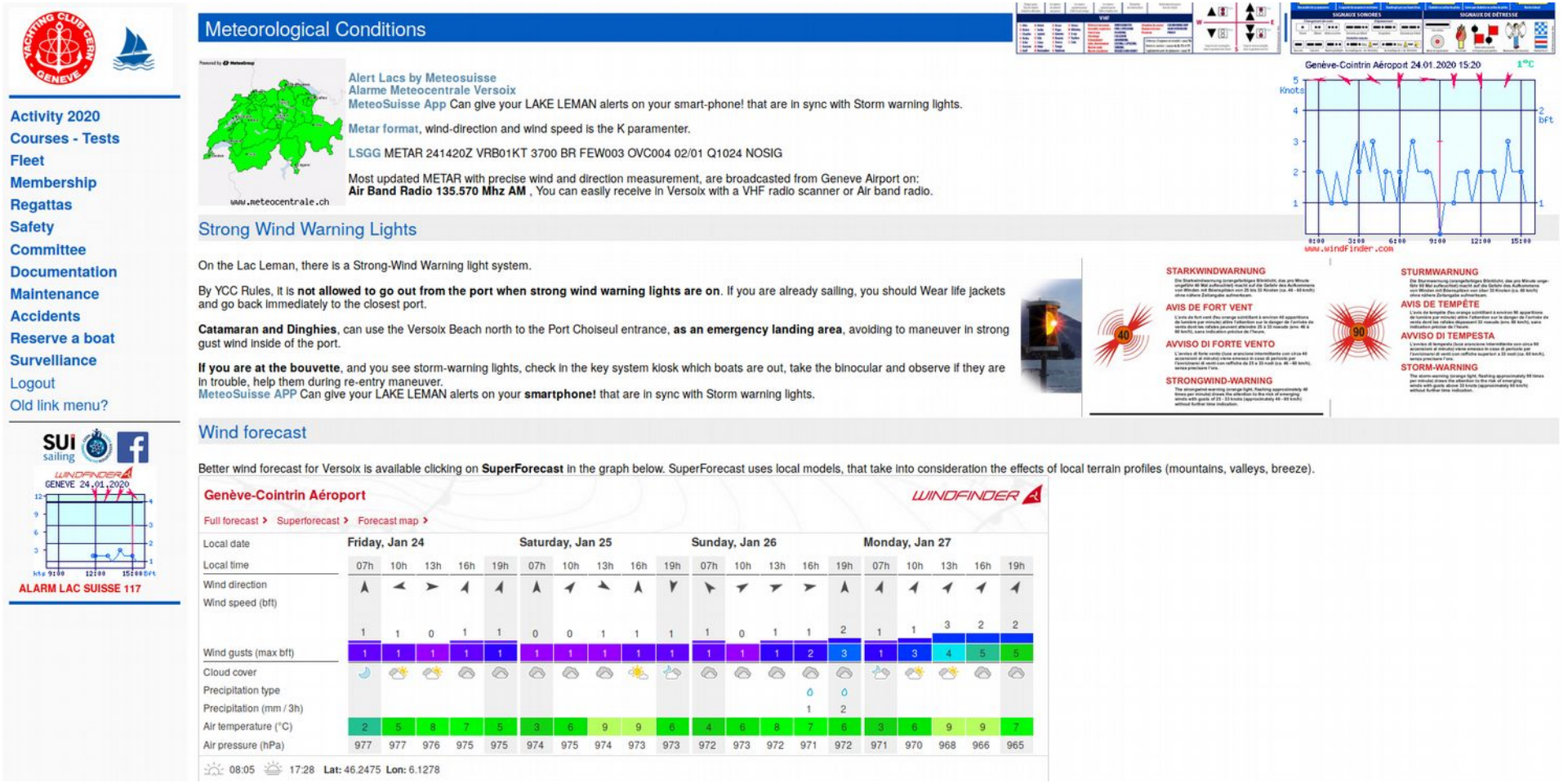
7 short + 1 long
GENERAL EMERGENCY



1 long 6sec repeated
Man OverBoard

2 long 6sec
FIRE!

Emergency: Imminent danger for people/ships/environment
Fire, Collision, Grounding, Sinking, Flood, Serious Injuries, bad weather, pollution

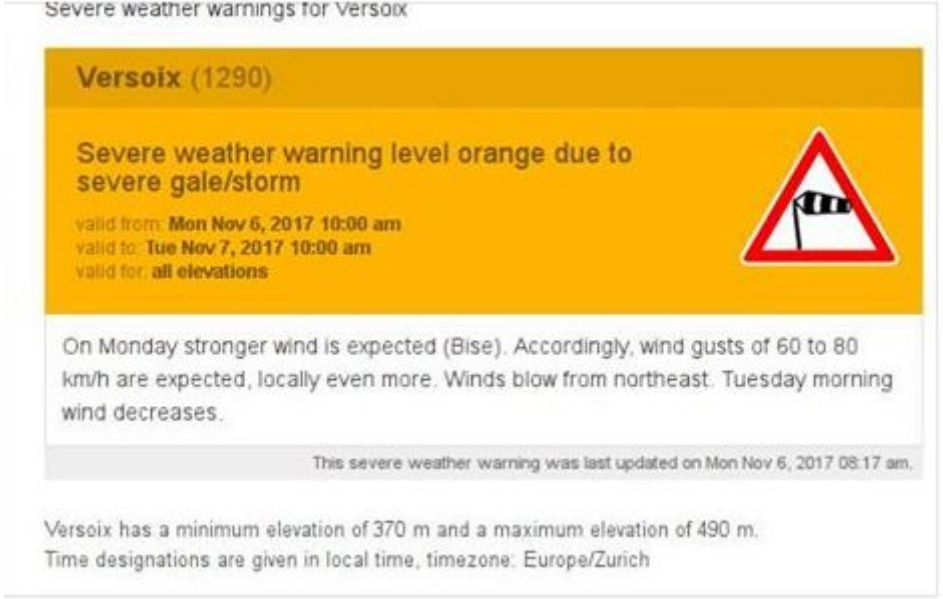


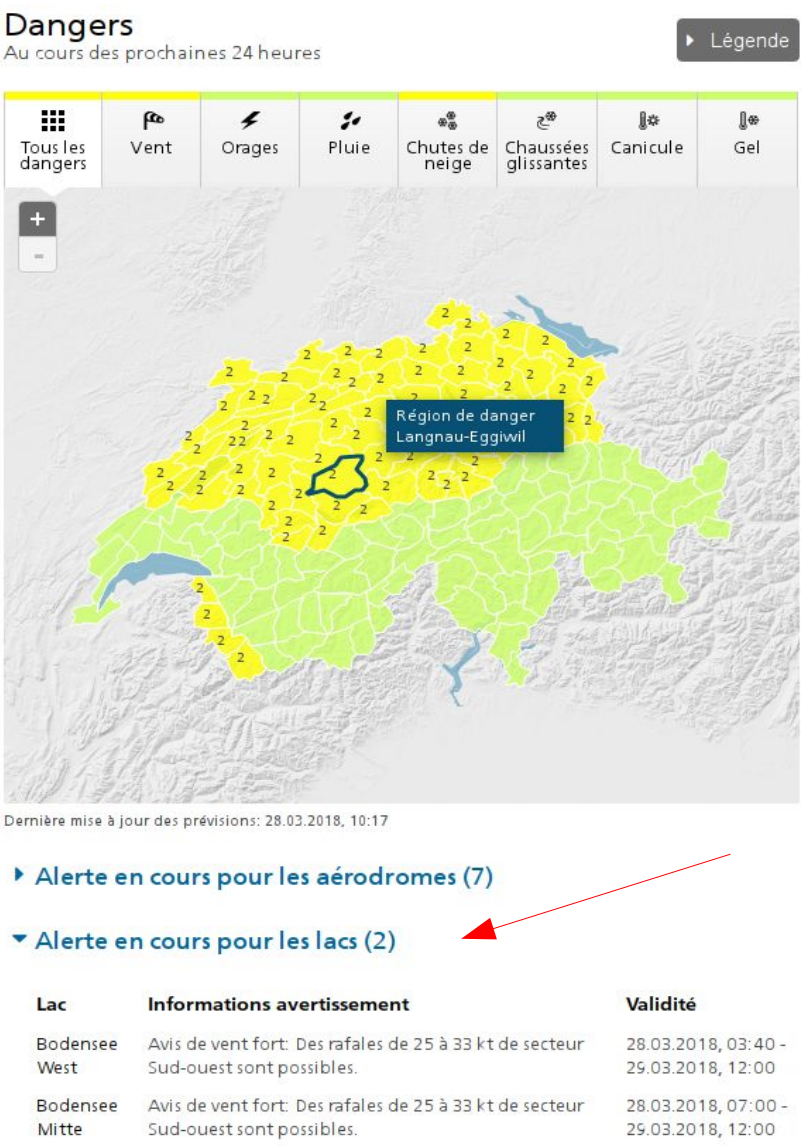
YCC RESERVE A BOAT AND SAFETY PAGE CONTAINS METEO INFORMATION
https://yachting.web.cern.ch/yachting/Safety.html

Severe Weather

www.meteosuisse.admin.ch/home.html?tab=alarm

http://alarm.meteocentrale.ch





EC Test

Eligibility

Any active YCC member who :

- has used spinnaker and trapeze on a catamaran this year
- & has sailed at least 4 times on a YCC catamaran this year
- & has done 2 surveillance sessions on the Q boat this year.

WIND: 2bft ore more.. In practice **you need 3-4 bft**.

EC Test

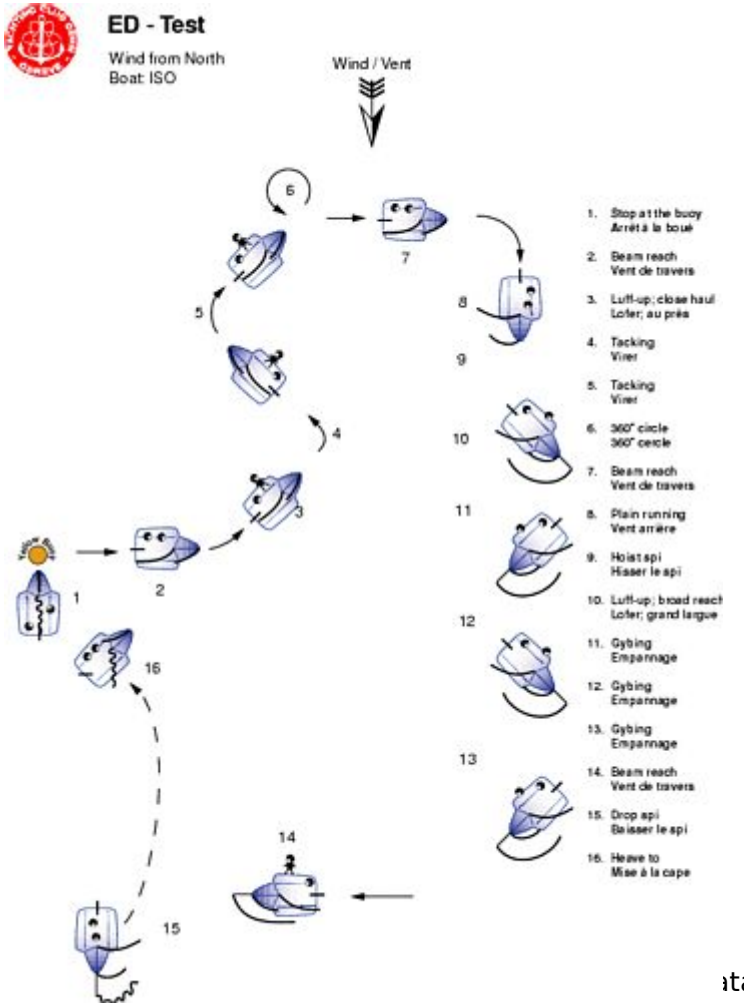
Please read the web page for

- **Procedure**

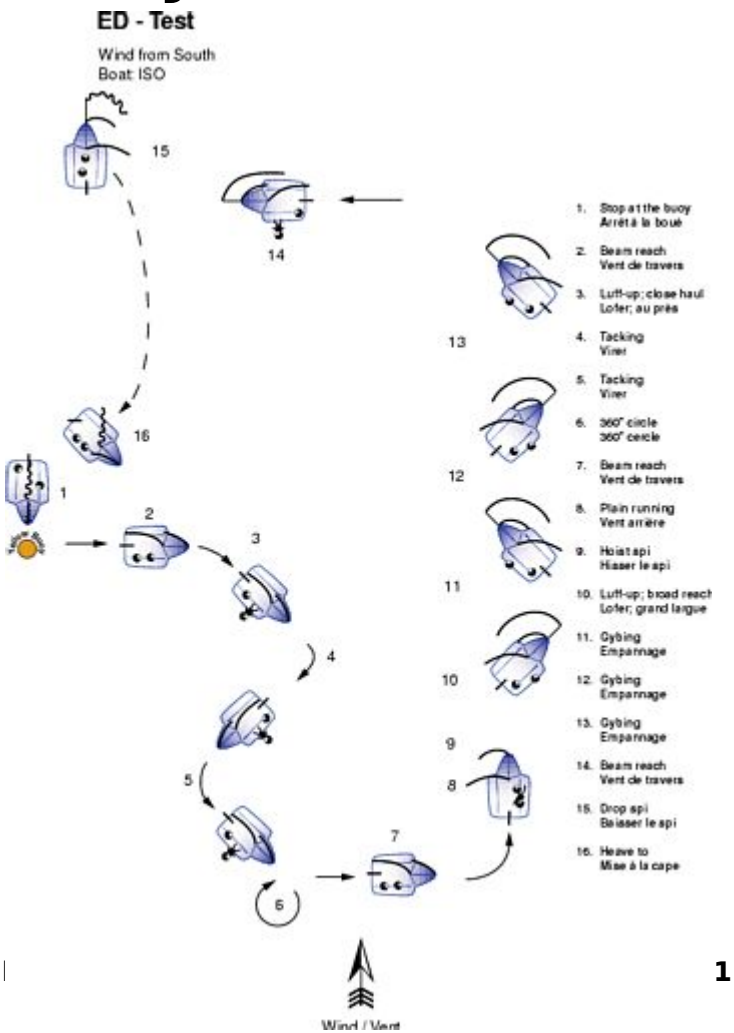
- **Content:** Club Rules, Swiss regulation, Knots, Terminology, Rigging, Sailing, Capsizing/Recovery, Safety, Performance/depower tuning…

- **Norms**: Severe Errors, Errors, Warning

EC Test for the key



... more than this



Cat sailors community at YCC

- Enthusiast
  Experienced
  Responsible
- Unique privilege to sail 4 expensive catamarans..
  - Respect equipment and do maintenance
  - Share your passion with other members
  - **Be a good example for everyone else in the club**

Thank you
for your attention

I hope to sail
catamaran
with you soon

Now Questions
and
Pane+Nutella
for everyone

YCC Theory

Catamarans and Multihulls

By Luigi Gallerani

Update: 2020

oil painting on canvas by Leonid Afremov