From Voiles & Voilers

Six new single handed dinghies tested by four young champions.

Take a classic single handed dinghy, augment the mainsail, and add a bit extra. Racks, trapeze and a gennaker, carbon cloth. There! A new high performance dinghy. Six of these extreme single handers – Vis, Contender, laser Vortex, Laser.eps, RS600 and Musto – are candidates for the Olympic Games in 2008…. A comparison.

Welcome to the Top Gun of Sailing joked Gilles Romanee, old teacher of the National Sailing School (ENV), as though welcoming the new apprentices. At the end of March 2000, the term applied itself perfectly to the event that stirred the ENV: the parking and the beach of the Beg Rohu school swarmed with Olympic medallists and high-tech dinghies. The task was daunting enough: to define which boat would be able to become the high performance one-design single hander for the Olympic games in 2008. The ISAF had invited six candidates: Vis, Contender, Laser Vortex, Laser.eps, RS600 and the Musto skiff. Common points of this new generation of single-handers: a planing hull, a trapeze, wings or racks, and a big sail. The RS600 and the Musto also have a gennaker. The Vortex, with its two hulls under a single deck raises the inevitable question: catamaran or dinghy. The definitive and official response: the hull is shaped like a tunnel, it will be classified with the dinghies.

And so to the programme for this week, essential for the boatbuilders in the enclosure: a comparison of these six boats by the testers appointed by the ISAF and races with the works drivers. For 'Voiles & Voiliers' magazine, four sailors from the youth squad of Brest and Quiberon, Valerian Lebrun, Eric D'Hooge, Vincent Joyeux and Frederic Moreau, respectively specialists in the Laser and 49er have given their impressions.

For my part, before all these superb guided missiles, I have only one wish: to try at least one! Between the two official tests, I want to take on the Musto, to my eyes the most tempting and the most extreme. The south westerly wind at 12 to 15 knots was raising a small chop. Last recommendations from Fred Moreau, who will follow me in the inflatable. "Particularly, try keep the boat flat. And in the first instant manage the balance of the helm.

Three capsizes in a few minutes

First contact. Having raced in Lasers for a few years with its rather sober deck layout I needed to identify all the strings in this racing machine: the kicking strap, the cunningham, the outhaul and the gennaker halyard, that one uses when out on the racks or in the bottom of the cockpit. OK, time to go. With a touch of anxiety I board and pull in a little sheet. I am emboldened. Tiller in one hand, sheet in the other, I set off close-hauled on port tack. There, not too bad. Hanging on the trapeze handle, before bending and supporting myself on the heeled boat, my feet search vainly for the edge of the rack. My attention is fixed on this wing that I can't find. I look for it and begin to wobble from side to side. I stabilise the boat. A look toward Fred, behind me. A little nod that all goes (even a little) well and a little advice: "Move right out". First sensation. With astonishment, I realise that the boat is not all physical. Nicely settled on the trapeze, the sight of the water is extraordinary. A single preoccupation: trying rapidly to collect my thoughts whilst keeping my attention on the steering. Naively, I tell myself that this Musto is somewhat different to a traditional dinghy, but not impossible. I am about to change my opinion quickly. First tack. From the trapeze, I try to get back into the boat: big wobble. Another look to Fred, who is still following me. "Let out four or five centimetres of sheet and sit on the rack. Then, continue to ease the sheet and push the tiller down. Pay attention, it easily stops in irons". I launch myself. The trapeze harness catches under the boom, I don't get quickly enough to the other side. First capsize. While leaning on the centreboard to right the boat I discover that the buckle of my trapeze belt has gashed the edge. Once upright, the Musto stays head to wind. With the mainsail backed and the rudder in the opposite direction, instead of backing on to the chosen tack, the skiff drives itself into the water while sailing backwards. Tangled in the sheet and the enormous tiller extension I try to move forward. The low boom hinders me. Capsize again. After many trials, I am sailing away on starboard tack for some time. Slowly I am getting more confident. After another try to tack, I capsized again. After 15 minutes trial to get back into the boat, I quit and leave the rest to a professional from Devoti. So there is no time left to maneuvers as gybing and sailing before the wind. At the end I spend 30 minutes of the 60 minutes sailing in the water swimming around. The only good thing is that Valerian, the champion in Moth Europe and Laser, had a similar experience as the one I had the day before. Obviously, to sail these new dinghies is more than just getting used to them. It is more like starting from scratch and being introduced by an expert into obtaining new skills. This is confirmed by Jacques Dubois, who is in

charge of the young 49er talents at Quiberon: “We are not speaking of reinventing sailing, but there is a long time of training necesary to obtain the right skills to get control over these boats. One needs about one year of professional coaching to be competitive in races”. It is clear that after some sails on the skiff, one tends to quit.

Sailing the Boats

Vis – Accessible but handicapped by the reaching

“Accessible” was the word used often by our home testers. Stable on all points of sailing because of its width, the wings conceal a trap. During manoeuvres, it is necessary to pay attention to the heel. If the leeward wing goes into the water, it trips the boat and the capsize is immediate. Opinions were divided. The Vis is a little hard on the tiller. “One sometimes has the impression of slapping in the waves” believes Valerian Lebrun. “It is a good boat” judges Eric d’Hooge. “It needs good co-ordination between the tiller and the sheet. It accelerates quickly and easily reaches maximum speed. On the other hand handicapped by the absence of a gennaker, the reaching remains its weak point.

Our opinion.
The Vis is a boat of homogeneous performance, where the convenience of the wings is appreciable. Its competitive price makes it affordable to a wide number of competitors. Third in the ISAF comparison, it makes a good compromise for racing.

Laser.eps – The logical evolution of the Laser.

Without doubt the least radical dinghy in the competition, it represents the logical evolution of classical dinghies, particularly the Laser. The agreeable eps has all the same kept the physical side of the olympic single hander. “Some would appreciate it,” conceded Valerian Lebrun, “and I am one of them”. “This boat would be inviting to the uninitiated, but a trapeze would have made it more competitive, “ regretted Vincent Joyeux. For Eric d’Hooge, “even without racks it is a boat which always brings back a couple of good memories”. The laser eps is pleasant on all points of sailing, but in terms of pure performance, cannot be compared to the others. From the end of the tiller, explains Eric, “it is very content from six knots of wind and above.”

Our opinion.
Even if it does not approach the “new dinghies”, the eps stays rather as a boat of transistion. It keeps a reasonable side and a sensible enough technique. A configuration that allows a maximum number of people to try for the Olympics.

Contender – Grandad makes the running/ Daddy fights back (Papy fait de la resistance)

Astonishing: at the time of this high tech comparison, this 32 year old boat is in second position! This good result comes without doubt from the incontestable quality of stability of this boat. Racey and elegant, the Contender clashes slightly with its aluminium mast and its relatively classical hull. Less extreme, but without doubt more seaworthy than the others, it is closer in its handling to the other singlehanders of its generation. More finely tuned, the Contender is, without doubt, a trustworthy asset for anyone who sets his hopes on dinghy sailing. Of course, this boat does not equal the sensation of the new boats assembled for this competition.

Our opinion:
The Contender, despite the weight of its years, was always threatening in the performance results. More traditional and finely tuned, it demonstrates the essential qualities for dinghy racing. Strong and seaworthy, it is solidly built.

Laser Vortex – The ugly duckling.

At its first outing at the London boat show, the Vortex had no real pretensions to become Olympic. Its bizarre appearance was a surprise at this ISAF competition. “It is a good boat to take out the family in, or for beginners to single-handed sailing, while having good sensations” explained Eric d’Hooge, Vincent Joyeux and Fred Moreau, the three testers who tried it. Without doubt, one of its strong points was its stability, both stationary and whilst sailing. On the beat its performance was surprising. When it is sufficiently heeled the sensations are familiar. On the other hand, when reaching, the three testers are agreed “its not terrible”.

Our opinion:

The Laser Vortex is an accessible boat, ideal for a single handed debut, but not a candidate for the games. The Vortex will not be distributed in France until this summer. One thing is certain: it won't pass un-noticed on the beach!

RS600 – Performance but difficult to get aboard ("access" or "difficult to get going"?).

For this comparison, the RS600 came in two versions, with and without a gennaker. A recognised class, it had the advantage of experience. However, the ergonomics were unanimaously contested "I was constantly uncomfortable" regretted Valerain Lebrun. The position in light winds is troublesome". It is a difficult boat because of its rack design especially when it agitates itself in manoeuvres. On its performance, opinion was divided. Valerian Lebrun found it remarkable on all points of sailing in a variable wind., while Eric came back from his sail disappointed, saying "It dosen't make much headway and you have to hunt for speed on the beat. You have to move the tiller a lot."

Our opinion.
Fourth in this comparison, opinion was divided into two camps. It needs a lot of technique and time to get used to it. Its racks make climbing on board and sailing difficult.

Musto – A bomb - handle with caution

Radical! – Powerful! – Impressive! – the extreme adjectives came flooding from our four testers. Unanimously the skiff from builder Devoti was classed at the head of the series for its speed, its trim shell which lifts rapidly onto the plane, the extra oomph offered by the genniker and its ability to skim over the chop. On the other hand, the difficulty of access is evident to all. It will appeal to sporting and acrobatic sailors emphasises Fred Moreau. It requires a very good physical condition and no mistakes confrimed Eric d'Hooge. In over 18-20 knots of wind it would be difficult to survive a race.

Our opinion
Today there are only three prototypes of the Musto, but in view of the performance it achieves, it is a class that ought to see the light of day. The sensations it procures are undeniable, but it is reserved for the highly skilled specialist.

Review of the Boats

Vis – Huge wings

The accessibility of this Italian skiff is well in evidence. Its full wings greatly help tacking and using the trapeze. A convenience appreciated by our testers, especially in light winds. The clear cockpit gives a clear all round vision. A common peculiarity to the majority of these new dinghies is the position of the mainsheet turret which requires a system of a cleat on the harness used when going out on the trapeze. Note the double tiller extension, most appreciated when tacking, and the foot straps for standing out at the back of the wing. The quality of the fittings are at the good end of this comparison.

The equalisation system allows adaptation of the dinghy to the size of the helmsman.

Laser eps – Original and traditional!

From the **skirt(?)** to the profile of the wings, passing by the low shrouds of the rig, the dinghy designed by Yves Loday has already been around for two years. The very traditional cockpit, remains on the other hand inspired by the classic dinghies, notably the Laser, while eliminating certain little faults, such as the scanty fittings. Like the original laser, the english boat builder offers the eps with two rigs: 8.4 or 9.3square metres. The Laser.eps is the only dinghy in this comparison to be endowed with toe straps at the bottom of the cockpit - another choice inspired by Laser – which allows the helmsman to board this new dinghy very easily.

The shrouds of the eps are fixed at the level of the gooseneck.

Contender – Both sturdy and refined

Most of our young champions were astonished by the quality of construction and the high quality of the gear of the Contender. "It is a fantastic dinghy with incomparable and refined gear" confirmes Valerian Lebrun. Eric d'Hooghe said "the possibilities of fine tuning the Contender are very interesting. These qualities are essential

for real regatta sailing but also they are important to train good sailors". To some however its mastfoot, the lines running at the bottom of the cockpit and all the controls, make it more look a racing machine. The only negative point is the low position of the boom which can make it more difficult to tack.

Laser Vortex – Simple and functional

Easy to use: its layout reflects its philosophy: open, easy to get onto and functional. Fitted with dagger-boards and dagger-rudder, our young sailors did not find it necessary to change them when sailing and just left them in the lower position. The empty cockpit of the Vortex leaves every room for manoeuvres, and the platform easies tacking. Characteristics which open the idea of 'family-sailing', but footstraps at the rear-end of the platform as well as the trapeze underline the wish of the builder that the Vortex it is also meant for more sporty single-handed sailing. But according to our young sailors, it will remain on the level of 'leisure-sport'.

RS 600 – Functional and acrobatic

The RS 600 is far from the 'little new one' as its builder has already six years of experience. This maturity is reflected in the quality and functionality of its fittings, not one fault therefore in the design of its cockpit. On the other hand, the choice for an empty space between the racks and the hull could not at all be appreciated by our test-sailors. Even though this option makes it possible to let the control lines run along the tubes, making them more accessible from the trapeze, this empty space has hampered them a lot. Furthermore its rather low boom makes certain manoeuvres difficult. A cleat on the trapeze harness is also necessary. Finally, in the gennaker version, the system of hoisting and lowering the gennaker with one hand makes a good coordination with the traveller necessary.

Musto - An extreme prototype

In its handling and in its fittings the Musto is reserved for a warned public. Opinions differ about its ergonomics. "The height of the boom facilitates manouvres and I have had the pleasure of finding out how handy the riggers were when I had to right her after a capzise", explains Valerian Lebrun. But to the other trial sailors the racks, which are too far from the gunwale, handicaped their movements when sailing. "The designer plans to install nets" confides Eric. Like with the other high tech single-handed trapeze dinghies the distance to the mainsheet requires the trapeze harnass to be fitted with a cleat, so that the mainsheet can be cleated there whilst running with the gennaker.

ISAF: a rather vague test protocol

For this big olympique comparison the ISAF had chosen to run the speed tests on two types of courses. Each builder was permitted to enter two dinghies for the competetion. On Wednesday two races were sailed, while on Friday the jury only ran one race. Above that tactics played a large role in these three races and differences in the level of the sailors influenced the results. Furthermore, all races were sailed in in an instable offshore wind. The ISAF did not choose to require the sailors to remain on one tack, with the obligatory passage of gates, which would have made it possible to realise much more precise real speed tests. The results below are therefore of relative relevance.

Results from the Three Races:

Race 1 (triangle – sausage)	**Race 2 (triangle – sausage)**	**Race 3 (windward – leeward x2)**
Musto; RS600; RS600; Vis; Musto; Vis; Contender; Laser Vortex; Contender; Laser EPS.	Musto; RS600; Musto; RS600; Vis; Contender; Laser Vortex; Contender; Laser Vortex; Vis.	Musto; Musto; RS600; Vis; RS600; Vis. Other boats not given.

A profile of four young sailors participating in the trials

Eric D'Hooghe: He obtained a licence from L'école de voile de Cherbourg at the age of 21. His height is 1.74 m and his weight 72 kg. At his age he is already a well known for his tactics as helms on 49er of the Pôle d'Espoir de Quiberon. He won the European Championship 1988 in the J24 class and finished first in the French championship on First Class 8 in 1999. He got a third place in the 470 class on the National France 470. His ultimate goal is to be selected in the 49er class in the Olympic games of Athens in 2004.

Valerian Lebrun: Since he is physically preparing himself very intensely (height 1.77m, weight 78kg) his nickname is "Sergueï". He is sailing on single handlers especially on Moth Europe and Laser. He became

Champion de France Espoir and vice-champion d'Europe junior in the Moth Europe class. He hopes to be selected for the Olympic games of Athens in 2004 in the Laser class.

Frederic Moreau and Vincent Joyeux: Both were born in the area around Orleans and are now 22 years old. In september 1988 they joined the Pôle d'Espoir de Quiberon. They moved from surf boards to the 49er class. Vincent who measures 1.78m with a weight of 76 kg, is the helmsman and Frederic (height 1.73m, weight 72kg) is the crew. They are training very intensively in the hope to be selected for the Olympic Games in Athens. They twice got a second place in the French championship (not classified) and at the International Week at Palavas. Frederic is also an instructor in the Optimist and Europe classes. Vincent is instructor in the Laser 4000 class at the ENV (Ecole National de Voile).

Four questions to a champion

Why a new single handed dinghy for the Olympic Games?

For the moment there are 3 single handed dinghies at the Olympic Games: Finn since 1952, Europe since 1992 for women and Laser since 1996. The Laser is taking the place of the Flying Dutchman in the category of "Open Dinghy". For the 49er a new discipline of "High Performance Dinghy" has been created.
At Quiberon the objective of ISAF was to evaluate the dinghies that might be selected for the class of "Fast Single Handed Dinghies".

Which classes will loose their Olympic status ?

Since the number women who are participating at the Games, is increasing, the Europe Class will probably maintain his Olympic status. But the Olympic status of both Finn and Laser is more questionable. In some countries the presence of both dinghies is necessary because they are tailored to different kind of helsmen. Therefore it might be interesting to replace both boats by a third boat that would fit a larger scale of helmsmen.

What are the characteristics of the boats present in Quiberon ?

There are 2 different types of dinghies, that are referred to in UK as "skiff" and "dinghy". The "skiff" is deduced from the 18 foot Australian boats similar to the 49er. The RS 600, Musto and Nautivela Vis can be considered as belonging to the "skiff" class. These main characteristics of these boats is the only dynamic stability. On the other hand we have the "dinghies" like the Contender and Laser EPS with more classic hull shapes, that are less extreme. The ISAF was looking for a performance boat with trapeze (and gennaker).

Who will be the winner ?

Difficult to tell. The difference between the "skiffs" and more classic "dinghies" is enormous. It is nearly impossible to replace Laser and Finn by a "skiff". In addition ISAF has to decide before the end of November 2004, (which is the dead line to choose a boat for the Games of 2008) on a keelboat for women (J22 or Yngling). One of the dinghies for men (Finn, Laser, 470 or 49er) will have to lose his Olympic status. All this will of course put the sailors and boat suppliers under pressure.

The Six Singlehanders under the Microscope

Boat	Vis	Contender	Laser Vortex	Laser EPS	RS 600	Musto
Length	**4.50 m**	**4.87 m**	**4.20 m**	**4.30 m**	**4.47 m**	**4.55 m**
Width	**1.42-2.10 m**	**1.50 m**	**1.53 m**	**1.85-2.40 m**	**1.37-2.13m**	**2.15-2.45 m**
Mainsail	**11 m2**	**10 m2**	**10.5 m2**	**8.4-9.3 m2**	**12.14 m2**	**11.4 m2**
Gennaker	**none**	**none**	**none**	**none**	**Option**	**15 m2**
Total sail area	**11 m2**	**10 m2**	**10.5 m2**	**8.4-9.3 m2**	**12.14 m2 + ?**	**26.4 m2**
Weight complete (specified)	75 kg	104 kg	90 kg	87 kg	68 kg	69 kg
Weight complete (measured)	**90.4 kg**	**104 kg**	**97.8 kg**	**87.6 kg**	**76.1 kg**	**81.7 kg**
Weight hull with gear (specified)	42 kg	83 kg	65 kg	63.5kg	52 kg	43 kg

Weight hull with gear (measured)	**67.4 kg**	**83 kg**	**65.2 kg**	**64.6 kg**	**54.7 kg**	**56.1 kg**
Material hull	Sandwich PVC Vinylester resin. Carbon reinforced.	Polyester. Foam sandwich	Polyester Kevlar, epoxy sandwich.	Foam sandwich	Foam sandwich, epoxy	Carbon, Foam sandwich, Epoxy
Material spar	Carbonfibre	Aluminium	Carbonfibre	Carbonfibre	Carbonfibre	Carbonfibre
Trapeze	yes	yes	yes	no	yes	yes
Wings	yes	no	no	yes	no	no
Racks	no	no	no	no	yes	yes
Ideal weight of sailor	68-84 kg	75-95 kg	Not known	60-95 kg	75-90 kg	75-90 kg
Weight Compensation	yes	no	no	yes	yes	yes
Weight / sail area upwind	8.2	10.4	9.3	10.4-9.4	6.3	7.2-7.5
Weight / sail area downwind	8.2	10.4	9.3	10.4-9.4	?	3.2-3.0
Sail area upwind / width	7.7-5.2	6.7	6.9	4.5-5.0 / 3.5-3.9	8.9-5.7	5.3-5.1 / 4.7-4.5
Sail area downwind / width	7.7-5.2	6.7	6.9	4.5-5.0 / 3.5-3.9	8.9-5.7 / ?	12.0-12.3 / 12.3-10.8
Year of design	1999	1968	2000	1998	1994	2000
Designer	Studio Felici (Italy)	Ben Lexan (Australia)	Jo Richards (GB)	Yves Loday (France)	C Everest & Nick Peters (GB)	Joachim Harpprecht (Germany)
Builder	Nautivela (Italy)	Various	Performance Sailcraft (GB)	Performance Sailcraft (GB)	LDC Racing Sailboats (GB)	Devoti Sailing (GB)
Price complete	£3,800 Introduction price	£4,200	£4,400	£5,100	£5,300	£6,200
Sailors Points (/5)						
Appearance (aesthetic, feel, ease to control)	4.1	3.3	1.6	3.2	3.8	3.6
Performance upwind	3.8	3.8	3.6	2.3	3.9	4.6
Performance downwind	3.1	2.5	1.3	2.7	3.9	4.0
Handling upwind	3.2	2.6	3.0	3.6	2.7	3.1
Handling downwind	2.8	3.6	4.0	4.0	2.4	2.2
Stability stationary	3.1	4.3	4.6	3.9	2.6	2.6
Stability sailing	3.5	4.1	4.0	4.0	3.4	3.6
Weight/ power of the boat	4.0	3.0	1.6	3.3	4.1	4.6
Power of the boat/ weight of the sailor	4.0	2.5	1.6	2.7	3.8	4.0
Boat capacity to adapt to weight of the sailor	4.1	3.1	2.0	3.5	2.9	4.1
Quality of construction	3.6	4.3	3.1	3.1	3.7	3.5
Quality of gear	3.3	4.3	1.6	3.0	4.0	3.5
Safety (capsize, draining)	2.8	4.1	3.8	3.9	2.5	2.6
Total	**45.4**	**45.5**	**35.8**	**43.2**	**43.7**	**46**
Mean	3.49	3.50	2.75	3.32	3.36	3.54
Ranking	**3**	**2**	**6**	**5**	**4**	**1**