

# Nacra **INFUSION**



PHOTO: JEREMY EVANS

The Infusion made its debut in top level competition at Eurocat in May. **Jeremy Evans** goes flying on the very latest Formula 18.

**A**ny new racing boat is judged by its results. At their first major regatta – Eurocat in Carnac in early May, ranked alongside the F18 World championship and Round Texel as a top grade event – Nacra Infusions finished second, third and sixth in a fleet of 142 Formula 18. Why not first? The simple answer is that Darren Bundock and Glenn Ashby, who won Eurocat in a Hobie Tiger are currently the most hard-to-beat cat racers in the world,

although the Dutch guys racing the top Infusions were clearly pretty good as well.

This is the third new Formula 18 cat produced by Nacra in 10 years. They started with the Inter 18 in 1996, designed by Gino Morrelli and Pete Melvin based in the USA. It was quick, but having the main beam and rig so unusually far forward made it tricky downwind. Five years later, the Inter 18 was superseded by a new Nacra F18 designed by Alain Comyn. It was quick and popular, but could

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**Above** The Infusion's 'gybing' daggerboards have a thicker trailing edge at the top, allowing them to twist in their cases and provide extra lift upwind.

**Right** Helming on the wire, the Infusion appears not only big and steady but a very powerful boat.



never shift the Hobie Tiger's domination of major F18 events. So Nacra opted for a third generation Formula 18, the curiously named Infusion which was launched at the start of this year. Nacra went back to Morrelli & Melvin for the design, following the success of M&M's Nacra A2 which won last year's A-Class world championship for ultimate singlehanded cats.

### Build and finish

The name 'Infusion' relates to the vinylester resin-infusion system, which is used to mould the foam sandwich hulls. Instead of manually saturating fibreglass cloth with paint brushes and squeegees, resin-infusion uses vacuum pressure to pull resin into the laminate. This technique has become widely used in the USA, removing the need for skilled hand laminators and the nasty chemical stench associated with laying on resin. It clearly has the potential to produce consistently identical mouldings with resin maximised throughout the laminate.

While testing the system, Nacra built several of their previous F18 designs with resin-infusion which they described as significantly lighter, so that additional fibreglass could be used for extra strength, stiffness and durability. Only time will show if resin-infusion really does produce superior catamaran hulls. In the meantime, it's clear that Infusion hulls look beautifully finished and don't have the obvious seam lines of the hand-laminated Nacra F18.

### Design and rig

We sailed the first Infusion in Britain, so new that the hulls had been flown to Europe from the USA! Paul Butler (ex-commodore of Highcliffe SC) had just taken delivery as a replacement for his trusty

## What is Formula 18?

**F**ormula 18 is a development class open to all boat builders, sailmakers and mast makers. The 2006 F18 world championship has an entry of 160 teams from 16 countries racing at Hyères. Next year's eighth F18 world championship will be held in Australia.

Carbon fibre and other expensive materials are forbidden to keep cost down to the current level of around £12,000 ready-to-race. F18 cats have a maximum length of 18ft, minimum racing weight of 180kg ex-crew, and a rating of 1.01 (measured by the Small Cat Handicap Rating System). The mainsail area is 17sq m. Two sizes of jib (4.15/3.45sq m) and spinnaker (21/19 sq m) are used – crews weighing less than 140kg must race with the smaller sails. Weight equalisation is required for 140-150kg crews. In practice, most competitive F18s have crews just under 160kg.

Nacra F18. Our sailing locations were Portland Harbour and Weymouth Bay.

The Infusion stands out in terms of design. M&M describe the hulls as 'third generation wave piercing' to prevent pitching and increase resistance to pitchpoling, but what really strikes you is that this cat looks bigger than the Capricorn, Tiger or any other F18 with massive volume in the main hull area to carry both rig and crew. What's more, both hulls are canted outwards by about four degrees. Nacra claim this increases righting moment, reduces water resistance, improves steering response and reduces pitchpoling downwind. Whatever else, it sure makes the Infusion recognisable!

This new cat is also packed with neat design features. 'Gybing' daggerboards have a thicker trailing edge at the top, allowing them to twist in their cases and provide extra lift upwind. The rear beam is angled to align the monster 10:1 mainsheet – topped by five sexy sheaves with tapered Maffioli sheet as standard – with the traveller which should clearly reduce friction. The front beam is aligned with compression of the mast and also sunk into the decks. This is designed to deflect water smoothly over the top when the cat hits waves at top speed, instead of being slowed down by a spray explosion.

Nacra have followed the Capricorn's example with a 380cm circumference wing mast that is almost full depth under F18 rules. Interestingly, it's the only part of the boat made in Europe and by Paul Butler's rating feels extremely light when you rig the boat. Tornado-style diamond wires finishing inside the mast base are another neat feature, reflecting the expert attention to detail on this boat.

## Sailing

How easy a cat is to handle on the water will be reflected in its performance. The first thing you notice sailing the Infusion is that it feels like quite a big boat, with a style that's steady, smooth, fast and reassuring in moderate winds. For sure, crew control requirements will ramp up in stronger winds – normal for any high performance boat – but all that volume should help keep the Infusion on course and under control, without unpleasant tendencies to take trips down the mine.

The ergonomics of the boat appear superb. On many older cats, it can feel uncomfortably clumsy to go in and out on the wire. On the Infusion trapezing is a perfectly fluid movement, with the ultra-rigid trampoline flowing into the side of the hull and no 'Mind the gap!' feeling. When you're out, the side of the windward hull feels nicely rounded and comfortable under your feet. Moving aft to sail downwind, the crew can trapeze very comfortably by the rear beam – this position felt really secure, which is just as well when you feel the power of that 21sq m kite.

Talking of kites, the hoist is very neat. The spinnaker tackline is led under the trampoline so it can be pulled or let off by the helm or crew on either side of the boat, on or off the trampoline. Normal racing sequence is for the helm to stay on the wire for the spacer leg at the top of the course, pulling the tackline out while the crew stands on the tramp and pulls the chest high halyard hand-over-hand which gets the kite up in a few seconds. Not forgetting to lift the



daggerboards 60cm above the deck, or the 'gybing' design will twist upwind rather than down!

Helming on the wire, the Infusion appears not only big and steady but a very powerful boat. However, it may not be easy to sail the Infusion to its maximum. As with any current F18, the size of the roach on the square top mainsail makes mainsheet tension, downhaul and sailing angle critical upwind – lee helm shows you're stopping the boat. This is clearly a matter of learning to sail the Infusion specifically, so it's good to find precise (right down to measurements in cms) tips on the Nacra Europe website relating to mast rotation, jib cars and daggerboards.

## The verdict

Nacra is a hybrid cat range, built in California and marketed on this side of the Atlantic by two of Holland's leading cat racers who run Nacra Europe. Gunnar Larsen and Peter Vink have a long history of racing Nacra in Formula 18 and helped develop the Infusion alongside top American sailors. Peter Vink also runs the specialist cat sailmaker Performance Sails, which produces the stock mainsail, spinnaker and jib for the Infusion.

It's early days yet, but at Eurocat the Infusion appeared fully competitive with the current top F18s – Hobie Tiger, Cirrus, Capricorn and Diam. The wind at Carnac was mainly light or moderate and with those big hulls the Infusion could find plenty more speed in stronger winds. What's more, Infusions will surely get quicker as people learn to press all the right buttons to maximise performance.

Paul Butler is certainly delighted with his new cat. 'The gybing boards are brilliant. You need to come out of the tack without pinching to get enough pressure to let them bite. Then go to work on the mainsheet and the boat climbs to windward – we did a mid-line start at the cat open on Lake Bala, then sailed faster and higher to cover the whole fleet.'



**Above top** The front beam is sunk into the decks and designed to deflect water smoothly over the top when the cat hits waves at top speed.

**Above** The Infusion's monster 10:1 mainsheet is topped by five sexy sheaves and a tapered Maffioli sheet as standard.

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## ANSWER BACK

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He continues, 'I have never sailed a cat that can be driven downwind in breezy conditions like this one. Even with my crew weighing less than 60kg out on the wire, I can sail high to pick up speed and drive off downwind as the boat accelerates. The only time I've not been confident is downwind in light conditions when it seems very difficult to get the hull "unstuck". More time on the water is obviously needed!'

So is this third time lucky for Nacra? Whatever happens, the Infusion is a beautifully presented and very welcome newcomer to high performance sailing, while the F18 class of open design cats is clearly on a roll. ■

**Above** The hoist is very neat. The spinnaker tackline is led under the trampoline so it can be pulled or let off by the helm or crew on either side of the boat, on or off the trampoline.

### Infusion specifications

DESIGN:	Morrelli & Melvin in 2005	
BUILDER:	Nacra, California	
LENGTH:	5.52m	
BEAM:	2.6m	
SAILING WEIGHT:	180kg	
SAIL AREA:	MAIN	17sq m
	JIB	4.15sq m
	SPINNAKER	21sq m
SCHRS:	1.01	
PRICE:	<b>£11,950</b>	

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### COMPARISONS... Where does the Nacra Infusion fit in? Here are some alternatives...



#### ■ Hobie Tiger

The Tiger is the biggest class within F18 and a one-design class in its own right with world and European championships. It has won five out of six F18 worlds to date. Same F18 specification as Infusion.

LOA:	5.51m	
BEAM:	2.6m	
SAILING WEIGHT:	180kg	
SAIL AREA:	UPWIND	22.9sq m
	SPINNAKER	N/A
SCHRS:	1.01	
GUIDE PRICE:	<b>£11,295*</b>	



#### ■ Capricorn

Very hot F18 built in Australia with slimmer hulls than the Infusion. Top performers include three 'Corinthian' GBR teams who regularly manage to embarrass pro-am sailors. Same F18 specification as Infusion.

LOA:	5.52m	
BEAM:	2.6m	
SAILING WEIGHT:	180kg	
SAIL AREA:	UPWIND	21.15sq m
	SPINNAKER	21/19sq m
SCHRS:	1.01	
GUIDE PRICE:	<b>£12,499*</b>	