

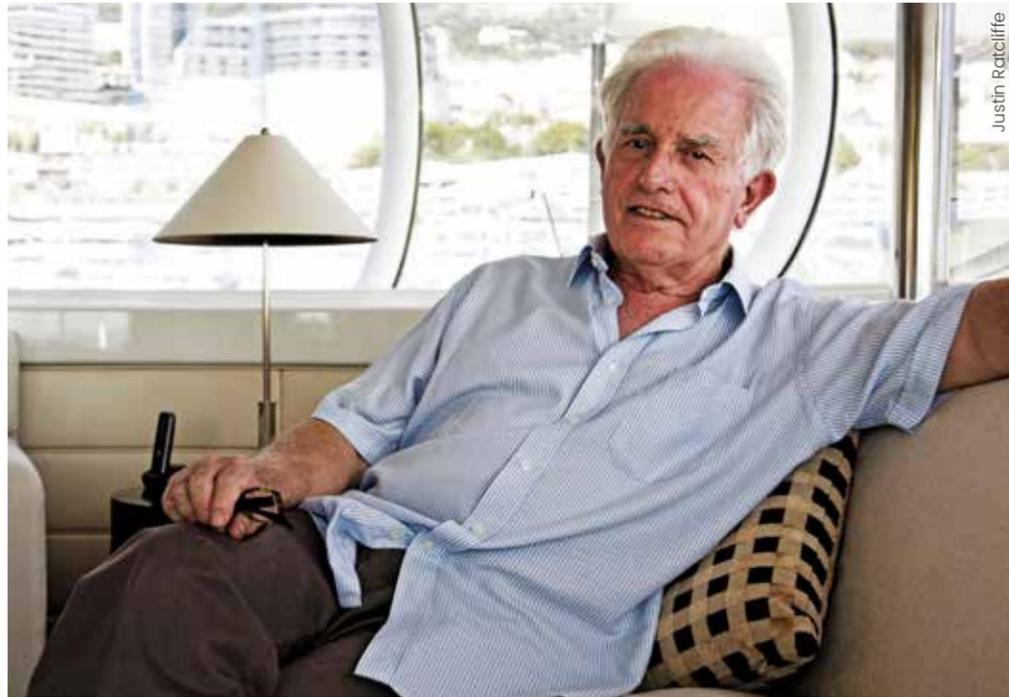


The enduring enigma



Guillaume Plisson

'Iconic' is an overused word in the yachting media. The truth is, there are very few genuinely seminal designs out there. To find out what makes a superyacht truly memorable, Justin Ratcliffe went aboard 75m Enigma (formerly Katana and Eco) with veteran designer Martin Francis during the Monaco Yacht Show. A full 25 years after her launch, Enigma is still one of the most iconic superyachts ever built.



Justin Ratcliffe

BY JUSTIN RATCLIFFE

What constitutes good design? The standard answer is a combination of essential ingredients that range from what the object does to how it performs and what it looks like. Timeless design is a more nebulous concept. Of course, it should comprise all the above qualities, but it is easier to define in terms of what it is not. The opposite of timeless design is trendy design, which is fleeting and arty as opposed to enduring and creative. Trendy design drifts out of fashion – and out of mind – before its usefulness has a chance to come to an end.

“I hate the word ‘styling’ and the way trainers, for example, are made to look exotic regardless of function,” says Martin Francis in a blunt criticism of trendy design, or what he calls the ‘Nike syndrome’. “When this happens in yacht design, it results in boats that are designed to be looked at rather than lived in.”

Enigma was launched in 1991 by Blohm+Voss for the Mexican billionaire Emilio Azcárraga. Following his death in 1977, she was acquired by Larry Ellison and was sold on to her current owner when the co-founder of Oracle Corporation took delivery of 138m *Rising Sun*. *Enigma* is currently listed for sale with Edmiston, and during the Monaco Yacht Show she was tied up alongside the cruise-ship terminal. Unlike the other yachts moored stern to in Port Hercule, this meant that her radical profile – as innovative and edgy today as when she was launched a quarter of a century ago – was on full display.



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Top: Martin Francis pictured aboard *Enigma* during the Monaco Yacht Show.

Above: The 75m yacht at top speed.

THOSE WINDOWS

Much has been written about *Enigma*'s bug-eyed windows, her most distinctive exterior design feature, but the story is worth repeating. Although Francis began as a furniture and product designer (with an intermediate spell as assistant production manager during the Rolling Stones' European Tour in 1970), his interest in architecture and engineering led him to collaborate with Norman Foster on buildings in glass and steel and I. M. Pei on the glass Louvre Pyramid in Paris. This early experience of structural glass informed every aspect of his design for *Enigma*, and Francis has been regarded as something of a glass guru in superyacht circles ever since.

The initial inspiration for the elliptical windows came from the windscreens of Parisian buses that were designed to reduce internal reflections. A German manufacturer – ironically called Flat Glass – was contracted to make the toughened panes using the tempering process by which glass is heated to a semi-plastic state and then chilled very quickly with cold air. In this way, the surfaces harden to form a crust while the inside cools more slowly and shrinks to pull the outer skins into compression.

But the real challenge was how to bend the glass at a time when curved glass – especially the compound curves of the corner windows – was still in its infancy. The heated panes had to be passed between two matching moulds to deform them into the desired elliptical shape. When these moulds were pulled apart, the air jets then had to follow the exact same curvature to cool the glass uniformly to avoid distortion. The necessary tooling was very expensive, especially as two different radii and thicknesses were required.

Francis estimates the final cost of each pane to be around 6,000 Deutschmarks, or roughly 3,000 euros in today's money – one of the reasons *Enigma*'s experimental windows have never been emulated, at least to the same degree of curvature, despite the advent of modern chemical toughening and improved bending processes. The final cost was even higher because spares were made of each pane (in fact, only two have ever failed. Both broke when the yacht was undergoing maintenance, probably due to thermal shock resulting from cold nights followed by hot, sunny days).

Right: Those windows ... as cutting-edge today as they were 25 years ago.

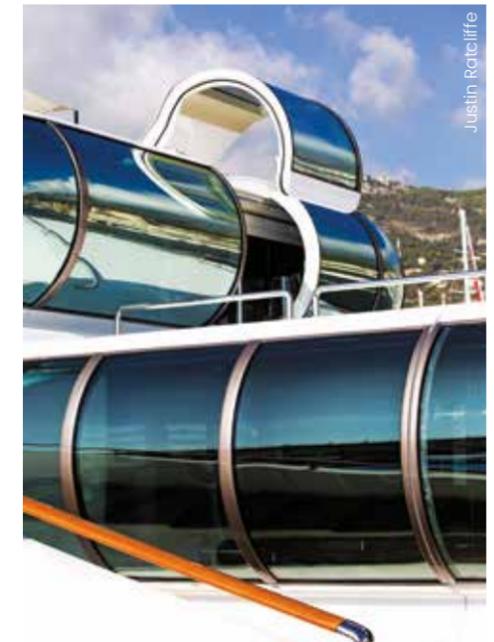
HERE COME THE SURVEYORS

Unusually, Francis also project-managed the build for the owner, and having made the windows both curved and distortion-free, he then had to prove to the Lloyd's surveyors that they were strong enough for the job, especially the bridge windscreen on the main deck.

“We did finite element analysis based on a worst-case scenario of asymmetric loading if a wave went over the foredeck and wedged itself under the bottom of the glass,” says Francis. “Lloyd's accepted our calculations but required additional storm shutters that could be fitted from the inside, which have never been used. Because of her low freeboard in the bow, we also designed a foredeck locker that acts as a buffer to redirect green water into the centre of the curved glass at its strongest point.”

Enigma's trademark windows very nearly didn't happen. Azcárraga's original brief called for a smaller yacht with faceted exterior lines, much like *Paraiso* and *Azteca*, his two Feadship yachts designed by Jon Bannenberg. Francis spent more than two years developing multiple concepts from SWATHs to catamarans, but a definitive design for his first large motoryacht eluded him. The impasse prompted Azcárraga to commission styling exercises from Bannenberg and Giorgetto Giugiaro, the Italian car designer. He also expressed interest in buying *Carinthia VI*, the classic Bannenberg-designed yacht that was sadly destroyed by fire in early 2016.

“This galvanised me to throw out the rulebook and introduce the curved windows,” says Francis. “I presented my colour renderings on the same day as Jon; Azcárraga took one look at the profile and said, ‘That's it – you've got the job!’”



Justin Ratcliffe



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Right: The designer with Stuart Lees, Enigma's long-serving captain.

Facing page: It was his experience gained working on Le Louvre that led Francis to devise 'those windows' and he is still seen as something of a structural glass specialist.

“WOW! LOOK AT THAT.”

Stepping aboard *Enigma*, which has never been chartered, was a rare privilege. Doing so in the company of her designer was an added bonus and we started our tour in the wheelhouse. Its position on the main deck is unconventional, but the forward visibility, thanks in part to the unusual windows, is surprisingly good. Francis designed a Perspex bubble above the pilot's chair that offered the helmsman a higher vantage point, but it was never used and was later removed. The only other change has been the addition of a small helm wheel that her long-serving captain, Stuart Lees, likes to use in conjunction with the 'fly-by-wire' technology that was also new at the time.

“I remember being a deckhand when *Eco*, as she was then called, arrived in Palma on her maiden voyage,” recalls Captain Lees. “Everybody stopped work and walked down the dock to watch her coming in. I thought, ‘Wow! Look at that’, never for a moment thinking I would later be her captain.”

Viewed closely from the inside, it is just possible to make out the stretch marks at the edges of the glass panes where they were lifted with tongs from

the moulds. The secret behind their mirrored effect also becomes apparent. At the time, curved glass could not be coated during the manufacturing process so adhesive strips of reflective film were applied to the inside of the windows for privacy and to block UV rays. The degree of mirroring actually varies from deck to deck, with less on the bridge due to safety regulations. The only drawback is that the strips have to be replaced every few years as the edges become dog-eared through cleaning.

Francois Zuretti's Art Deco interior design is only now beginning to age – not through wear and tear as the yacht is immaculately maintained throughout (used principally in the summer months, a full crew is kept on throughout the year for precisely this purpose) – but because tastes have changed since 1991. Ellison substituted some materials such as the granite countertops, but most of the interior decor, including the burl ash and maple veneers, has remained intact, and the custom detailing is as relevant today as it was 25 years ago. Francis is quick to point out, for example, the bespoke fixtures and fittings and bathroom doors he designed to create a soundproof seal for acoustic privacy.



Guillaume Plisson

*Facing page, clockwise from top left:
Espen Oino and Francois Zuretti
reviewing interior solutions;
a young Dan Lenard testing the
reflective film for the windows;
one of many models of the
curved windows.*

*Below: Francis experimented with
several different concepts before
he settled on the Eco design.*



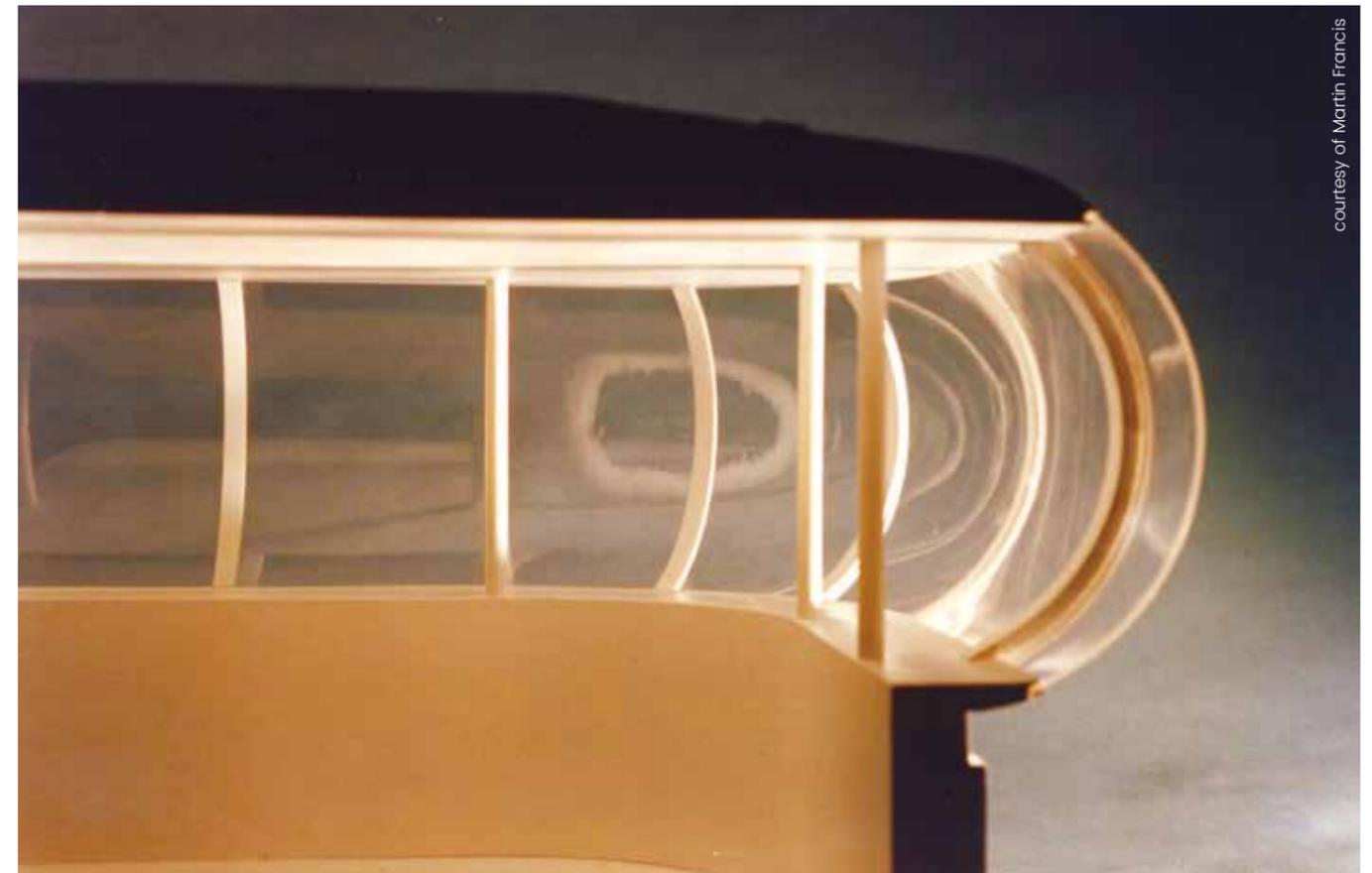
courtesy of Martin Francis



courtesy of Martin Francis



courtesy of Martin Francis



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Another innovation was the submarine hydrofoil under the transom that reduces drag to improve performance in both cruising and high-speed modes.

Enigma (formerly Eco) is just as radical below the waterline with her foil and booster jet.



IN-FLIGHT FUELLING

From the very beginning, Azcárraga wanted a fast yacht, and *Enigma's* engine room reveals another reason why she has stood the test of time: her power train comprises twin diesels driving wing jets for cruising, and a central gas turbine drives a booster jet for higher speeds. Although Blohm+Voss had extensive experience of building naval vessels equipped with gas turbines, *Enigma* broke new ground as the first customer for the General Electric LM1600 gas turbine, and its Kamewa waterjet was the largest of its kind at that time. Another innovation was the submarine hydrofoil under the transom that reduces drag to improve performance in both cruising and high-speed modes.

Gas turbines like cold air and *Enigma's* top speed increases in winter when she can touch 36 knots with full tanks, which means she is still the fastest superyacht of her size on the water. At high speed, she burns around five tonnes of fuel an hour, and Azcárraga purchased a small oil tanker, the Eco Supporter, for 'in-flight' refuelling during transatlantic crossings. At a more sedate cruising speed of 18 knots without the central booster, the yacht routinely covers up to 12,000nm during the Med season, and her current owner cruised for nearly three months last summer.

ANYONE FOR BASKETBALL?

Francis has always experimented with exterior deck layouts. On *Diablesse*, for example, a 92ft aluminium sloop launched in 1985, he was the first to introduce completely flush decks and steps down the full beam of the transom. *Enigma* presented another set of challenges as Azcárraga's list of tenders and toys included a Riva Aquarama, a Tullio Abbate custom tender, a Fat Boy Harley Davidson and Maule turboprop seaplane. These were all stowed on the open aft deck and deployed using one or both deck cranes with a connecting boom.

When Larry Ellison acquired the yacht, Francis redesigned the space to accommodate a glass-walled gym where the front end of the aircraft fitted under the overhanging owner's deck. Ellison also added his famous basketball hoop, which remains to this day. Until the recent trend for explorer-style yachts, the logic of stowing tenders on deck had largely gone out of fashion, but there is no getting away from the fact that tender garages take up valuable interior real estate. Ellison later admitted to Francis that the tender garage aboard *Rising Sun* was a waste of space.

ONE OF A KIND

The reasons for *Enigma's* longevity are hard to pinpoint. Her many innovations, which include a fibreglass superstructure and Teflon-coated textiles derived from architectural applications for the permanent awnings, are only part of the equation. Even Francis struggles to find an answer. *Enigma* was undoubtedly ahead of her time, but that in itself is no guarantee of a long shelf life. For example, Francis points to the ill-fated Ford Edsel in the late 1950s. Touted as the car of the future, the overpriced and overhyped model was a total flop. What is certain is that *Enigma* was not immediately understood: for eight years after her launch, Francis didn't receive a single enquiry for another superyacht project.

The most compelling reason *Enigma* has endured is because she continues to challenge our preconceived notions of what a superyacht should look like. And thanks to her designer's passion for problem-solving, she does so by balancing innovative design with technical solutions that work. The few systems that have been replaced, such as the Interling anti-heeling system for at-anchor stabilisation, have been updated because more efficient technologies became available. She has influenced a whole generation of yacht designers, from Espen Øino, Dan Lenard, Clifford Denn, Jonny Horsfield and Mark Smith, all of whom worked for Francis early in their careers, to the American designer Patrick Knowles, who simply gazed on from afar:

"I was in awe of *Eco's* forward-thinking design and incredible performance," says Knowles. "I'd never seen anything like her before. Consider the fact that all of her bent and curved windows are optically correct – a solution that is difficult to achieve even today. Her exterior styling is aggressive, yet sleek and graceful at the same time. The lines of her rise and fall from deck to deck are breathtaking, and the genius of her profile cleverly disguises the mass of her structure and the length of her hull. I think we can assume that the meetings between owner, builder and designer were quite intense. I'm sure the entire process of bringing her to life was an enormously rewarding experience for all involved." JR