

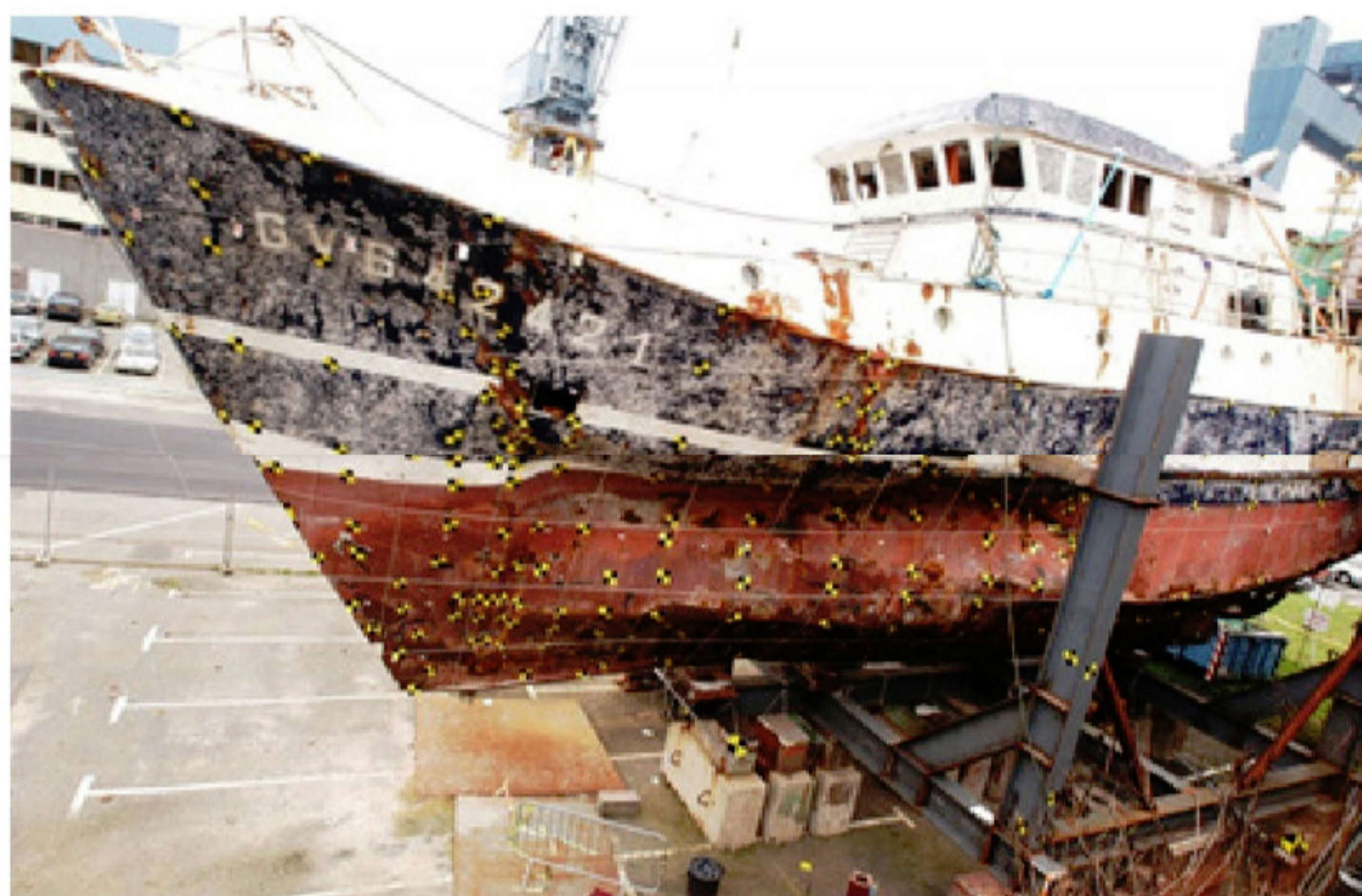
The Case for Photogrammetry in Maritime Surveys

An Interview with Experts-Yachts' Jean Sans



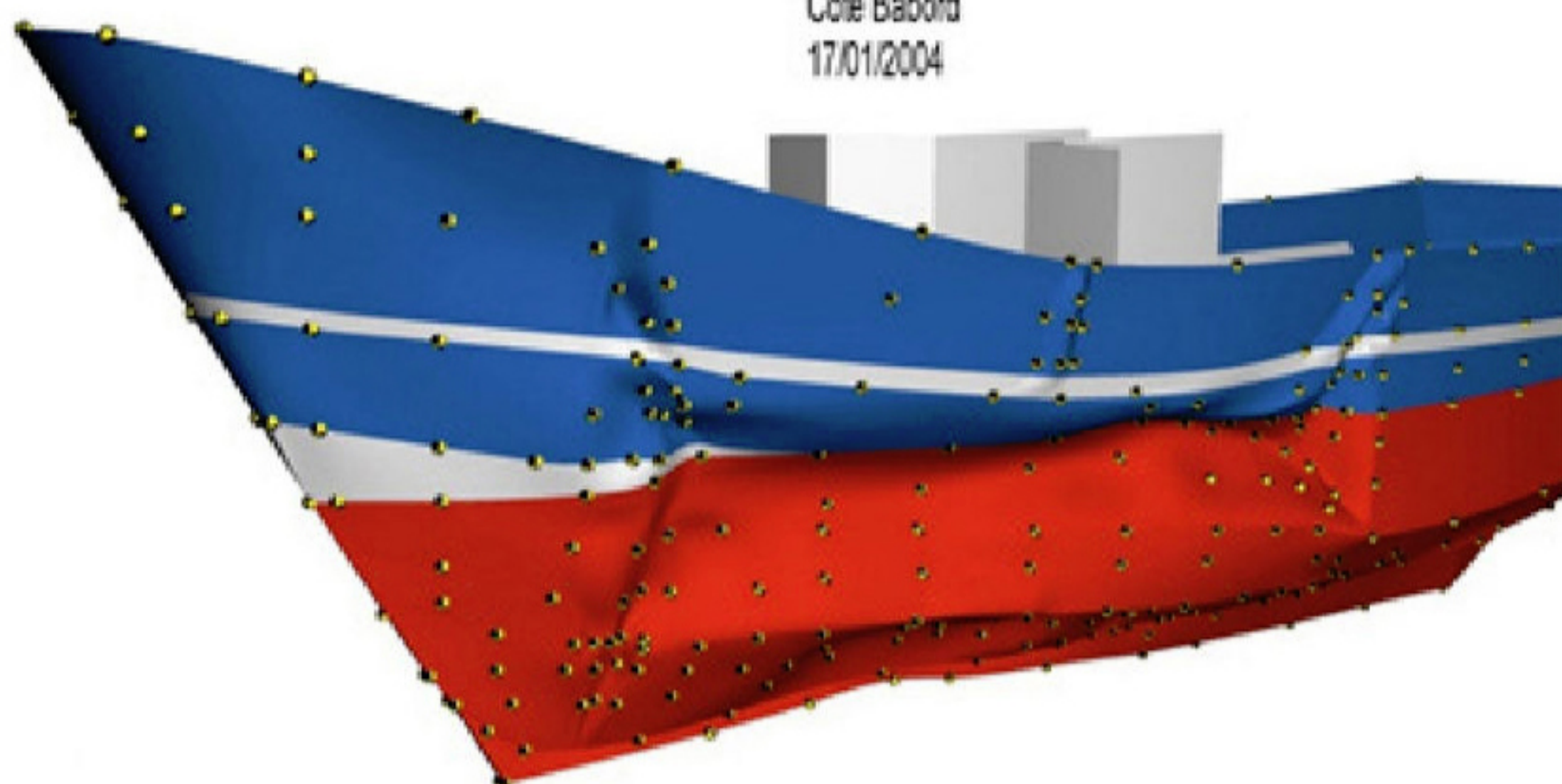
BY JEAN SANS

In this interview, we talk to Jean Sans of Experts-Yachts about the uses of photogrammetry in maritime surveys. An early adopter of the technology, Jean has been employing photogrammetry in his practice since 1983.



Bugaled Breizh - Vue Babord n°20

BUGALED-BREIZH
Image de synthèse Bean/JS -relevé photogrammétrique-
Côté Babord
17/01/2004



Could you tell us a bit about your work, and who your typical clients are?

My client base is very diverse, and includes people from a variety of different fields.

One week, I might be surveying the hull of a commercial craft to perform stability calculations. The following week, I could be assessing the maximum speed potential of a racing yacht, or identifying deformities in a fishing vessel.

I am also often called as an expert witness in maritime court cases, where I am required to evaluate the condition of boats after accidents at sea.

The variety of my work is what has kept this job interesting for me for over 30 years!

How did you first learn about photogrammetry?

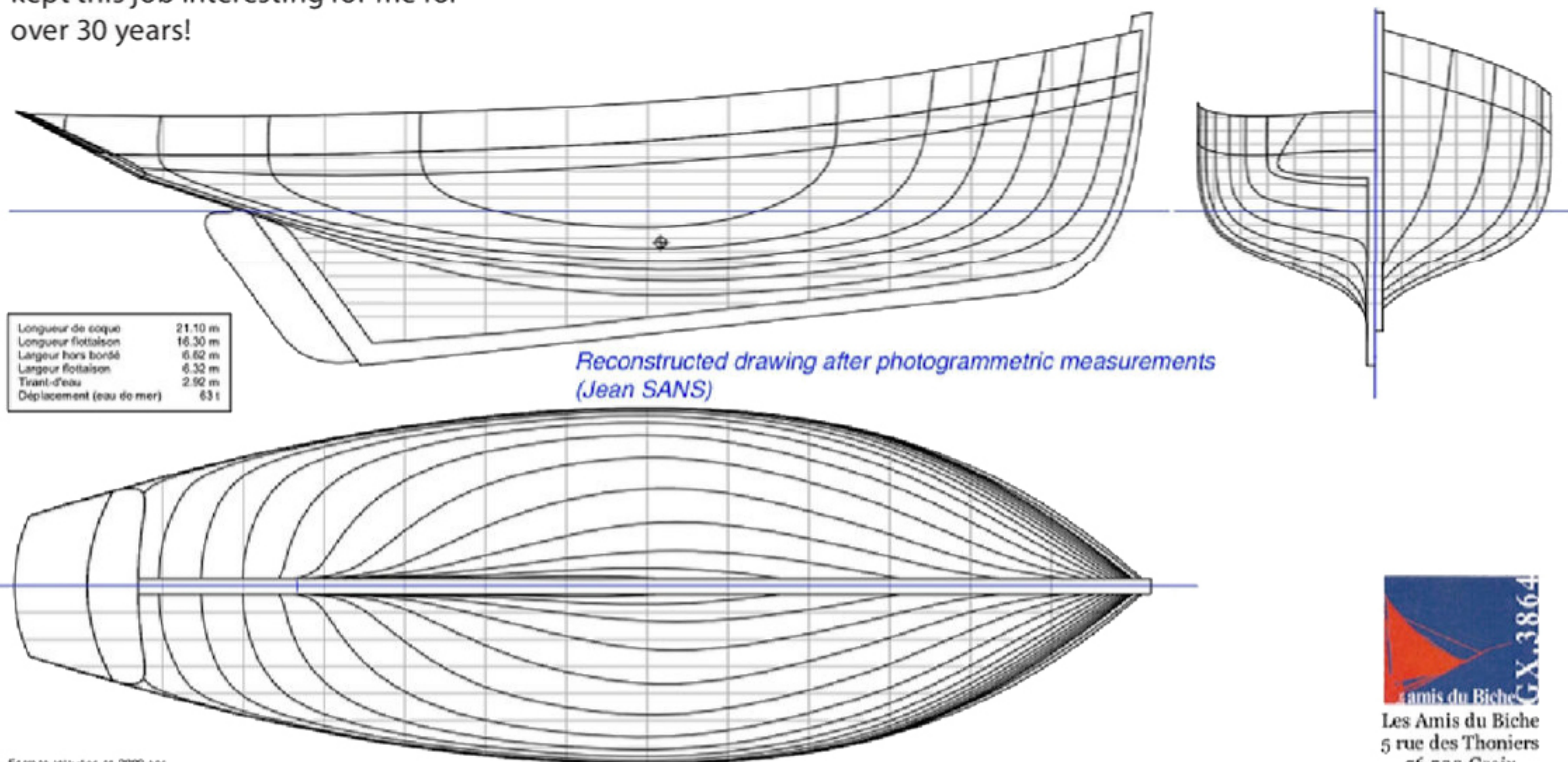
I first discovered photogrammetry in 1983, when the Offshore Racing Council (ORC) began calculating the handicaps of offshore racing yachts with a Velocity Prediction Program (VPP).

In simple terms, a VPP is a software program that calculates the performance of yachts in various wind conditions by balancing hull and sail forces. To do this, the system first requires a 3D virtual model of the yacht – and my friends at the ORC wanted me to help them create these models.

At first, we designed and built specialized measuring machines to

complete this task, and that worked pretty well for a time. But one day I read an article in a technical journal describing a stereoscopic process for reproducing these 3D models with standard photographs – what we now know as photogrammetry. I quickly realized this was the perfect method for the ORC's needs.

At the time, photogrammetry was much more complex than it is today. We had to use a Rolleiflex SLX 6X6 silver process camera to take analog photos. Then, we used a digitizing tablet and some custom software written in GW BASIC to process these photos into digital form. It was practically prehistoric!



Formes relevées en 2009 par
François Vivier Architecte Naval
et Expert-Yachts Jean Sans

Les Amis du Biche
GX 3864
Les Amis du Biche
5 rue des Thoniers
56 590 Groix
02 97 37 53 33

BICHE

Thonier dundée construit en 1934 aux Sables d'Olonne, immatriculé à Groix GX 3864

Formes extérieur bordé - Echelle 1/40





That's a really interesting historical perspective. As one of the early photogrammetry adopters, would you say the technology has progressed since then?

Absolutely.

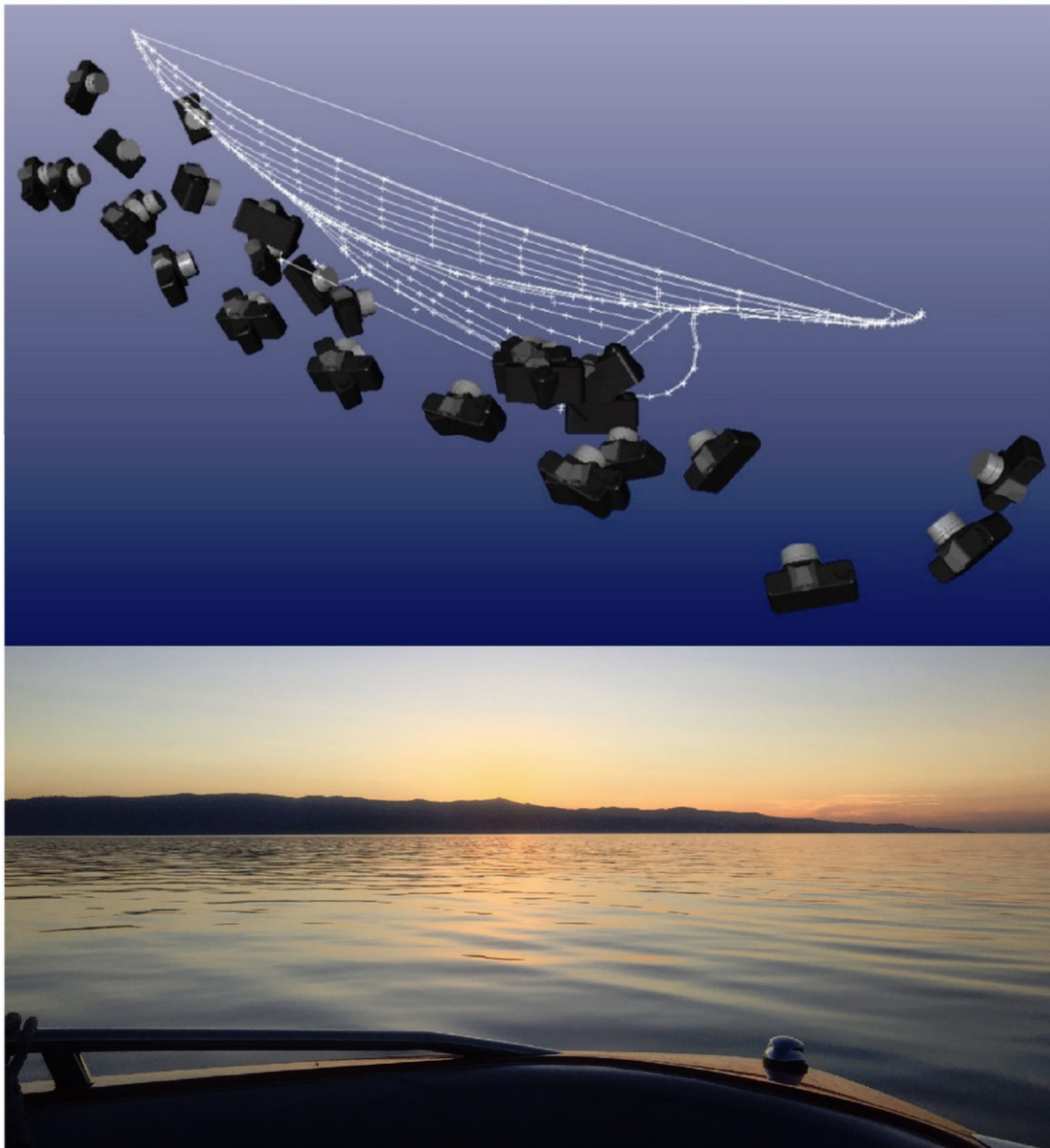
Photogrammetry has come a long way in the past three decades, and modern, high-resolution digital cameras have transformed the field. On the software side, affordable and user-friendly tools like PhotoModeler have made the process very accessible for a wide range of applications.

I actually met a professor of topography in 1998, and he told me he had been using a commercial software suite designed for

photogrammetry. At the time, this was quite cutting-edge, as only the military had access to such software.

The name of that software suite was PhotoModeler. I bought a copy of the software from a PhotoModeler rep in Germany and have never looked back since.

Today, I use photogrammetry as my primary 3D boat survey method – using PhotoModeler and a NIKON D2X with a 14mm aspherical lens.





Quite an upgrade. What made you decide to adopt photogrammetry as your main survey method, and would you recommend it to others in your field?

I find that photogrammetry is sufficiently accurate for the types of calculations you would need to do in a boat survey – such as identifying deformities, assessing stability and determining speed potential. At the same time, it's a very versatile, convenient and adaptable method.

The most common alternative in my field is laser-based surveying, which requires the use of theodolites and specialized scanners. But not only is this a lot more expensive, it can also be impractical in many real-life maritime settings.

For example, a laser-based system requires the boat to be stationary, and for multiple pieces of equipment to be precisely repositioned each time you "capture" the boat from another angle. This is often impossible in a busy port.

With photogrammetry, I can simply move around the boat with a portable digital camera

and take pictures of the boat from any angle I want. This is especially helpful for surveying the inside of the boat, such as when I am doing a piping survey.

Another important benefit of photogrammetry is that it leaves behind a repository of photos. This makes it possible to verify the results with other photogrammetry software in case of any disputes about my model.

All in all, I would definitely recommend photogrammetry to other maritime surveyors looking for a robust, flexible method for 3D surveys.

Jean Sans is a veteran maritime surveyor with over 30 years of experience. A Judicial Expert at the Court of Appeal of Rennes and member of the National Chamber of Maritime Experts Plaisance, he is widely recognized as an expert in his field. To contact Jean or learn more about his work, visit his website at www.experts-yachts.com.