

In Memory of the Engineer Giuseppe Carnevali



"Life is beautiful!" said Giuseppe Carnevali, on the afternoon of 7 November 2022. He was speaking from his home in Camaiore, and was tired and regretted that he was unable to attend the olive harvest taking place nearby. But the beauty of the autumn colours in Tuscany, which he could see from his window, eased his regret.

It was a long voice message, the one he sent me that day as a friend, and it sounded like a final farewell. His illness had advanced, and he was aware of it. Nevertheless, he was following medical attempts to slow its course, with the interest of the man of science that he was.

Giuseppe Carnevali was founder and president of Navionics, whose electronic charts for marine navigation are widely used around the world. The creation and presidency of Navionics was preceded by studies at high school in Tuscany, a naval engineering degree from the University of Genoa and a period in the Italian Navy as reserve officer. Giuseppe then became a naval engineer, married, had children and divided his time between working in a shipyard, his family, flying and sailing (he was a good sailor, winning prestigious regattas).

In the 1970s, Giuseppe was working in the shipyard when, as he wrote: "The OPEC cartel managed to cause an economic crash that makes the 2008 crash pale into insignificance, and life turned from fun to extraordinarily difficult. Living on a shoestring, my car had rust holes that you could put your hand through, and we could forget about taking the children out for a pizza, let alone a day of vacation. We worked very long hours, seven days (and many nights) a week. But we did not give up."

They (Carnevali and Bianchetti, see note 1) were working on the construction of a super yacht for a magnate who wanted the most advanced innovations in automation and digitalization. It was the early 1980s and, both fond of movies, they remembered James Bond in *Goldfinger*. Bond had a display in his Aston Martin showing a blip on a map where the villain was located.

"Fosco said 'Why don't we do that – a blip on a chart that says 'You are here'?' The client loved the idea, wanted to buy it, and we started developing it by leveraging on my experience on seamless computer graphics and seagoing both as a Navy officer and national sailing champion."

Based on the idea inspired by *Goldfinger*, the electronic chart adventure started. The first was called GEONAV, and was displayed at the nautical show in Genoa. Then, Giuseppe met the scientist Mortimer Rogoff in New York. As Giuseppe said: "He had developed an incredibly advanced device, featuring colour, area filling, differential Loran and radar overlay. I immediately flew to New York to see it on the Staten Island ferry, and it was spectacular, albeit a prototype composed of various elements arranged together in a couple of milk crates, with a sky-high price."

From that event on, Navionics, under the presidency of Giuseppe Carnevali, produced electronic charts for mariners, in accordance with the standard of the International Hydrographic Organization and in agreement with the National Hydrographic Offices, who had granted permission to use their official data.

Many thousands of craft are now fitted with Navionics electronic charts, which are aligned with the official charts produced by the national HOs. I myself experienced how easy it is to use a Navionics electronic chart last summer, onboard a ten-metre boat in the Alboran Sea.

In 2004, Giuseppe established the Carnevali Foundation in Hyderabad (India), to provide education for very disadvantaged communities. The foundation now also has schools in Nepal and Ethiopia and supports 4,000 students. His widow Jackie continues to follow the development of this splendid initiative; a very demanding task, as it includes preschool, adult literacy and post-secondary programmes for vocational college and university.

Giuseppe was not only a captain of industry, he was also a man of culture, and was fond of literature and poetry inspired by the sea, its harbours and the surrounding nature. He was also a philosopher, and last August he sent me a letter explaining his view of life and the role of science in the universe. This was a long letter, which he concluded by saying: "When I take the big step, I can serenely declare 'mission accomplished.'"

Well Giuseppe, your mission was greatly accomplished, as your legacy is enormous: descendants, people with a job in an industry that you founded, children and adults given the possibility to receive an education, and mariners who can sail the seas with confidence!

Note 1: When Carnevali says 'We', he means he and his friend the engineer Fosco Bianchetti, his classmate from childhood. Fosco and Giuseppe created Navionics and, a few years after they split, Bianchetti went on to create C-Map while Carnevali remained as president of Navionics. Both enterprises were sold between 2016 and 2017: C-Map to NAVICO and Navionics to Garmin. Both continue their production of electronic charts.

<https://www.hydro-international.com/content/news/in-memory-of-the-engineer-giuseppe-carnevali>
