

CMC Texpan: "Pegasus" — the submarine project

By Dr. Dario Zoppetti



For over 25 years Siempelkamp Maschinen- und Anlagenbau GmbH & Co. KG and CMC Texpan S.r.l. have been shareholding companies. At the locations Colzate near Bergamo and Vimercate near Mailand, CMC Texpan has been working together with Siempelkamp on a project by the name "Pegasus". The project is extraordinary for the Siempelkamp Group and involves a new miniature submarine.



"Pegasus" in the machine shop



Submarine "Pegasus"



"Pegasus" with design engineers

In 2006 CMC had already made a name for itself in this industry sector when it produced two submarine bodies – so called battery pods – with a length of 28 meters (91 ft), a diameter of 5.5 meters (18 ft) and a total weight of 350 tons (386 US tons) for a Venezuelan power supplier: These submarines were used for civil purposes – they were used in maintenance operations in a water reservoir.

"This first underwater adventure of CMC Texpan was developed in cooperation with GSE Trieste. We have been working together with the highly specialized technicians of GSE for many years," explains Dr. Dario Zoppetti, president of CMC Texpan. Zoppetti, who worked as a teacher in the fields of mechanical technology and engineering in the 70's, instructed Maurizio Branchini, now managing director of GSE Trieste, and Franco Brembilla, now managing director of CMC Texpan.

2008 was influenced by "Pegasus", a new project whose completion, once again, involved a partnership with GSE Trieste. The four seat sport submarine is part of a mega yacht and will be used for civil purposes. The submarine will have a length of approx. 8 meters (26 ft) and a weight of 10 tons (11 US tons). It can dive to a depth of 160 meters (525 ft). CMC will complete the interior of the submarine, the hydraulic

parts and the electronic devices necessary for navigation.

In the summer of 2008 CMC's "Pegasus" had to undergo inspections by RINA. Since 1861 RINA has certified ships and yachts into the Italian maritime register. RINA guarantees the high quality and safety standards of all ship components and materials. The final configurations on the submarine were carried out in the fall of 2008 by CMC. Work is in progress on further underwater projects of the Italian company: another submarine with a similar design will be ready for delivery in the spring of 2009.

Submarines – multiple areas of use

While in the past submarines were manufactured primarily for military underwater purposes, today submarines have many uses for civil purposes. "Submarines are often used for research purposes, for example, when archeological findings and wreckages have to be retrieved. The expeditions of the submarines 'Alvin' and 'Bismarck' to the wreckage of the Titanic have become famous. Submarines also support environmental protection endeavors by securing harmful substances on the sea bed and protecting underwater nature parks," explains Dr. Dario Zoppetti.

Additional applications are far-reaching: For example, research in the field of maritime biology on the sea bed and geological analyses are further advanced with submarines. Underwater pipelines for natural gas and oil as well as electrical and data transfer pipes are examined and tested via submarines. The technology used in decompression chambers has gained importance in the medical field – keyword: "pressure chamber".

Further application areas: Civil submarines can give assistance to military submarines as well as carry out underwater shoreline monitoring. For example, smuggling can be prevented.

Last but not least, submarines are used as a tourist attraction by opening up the underwater world to travelers. The first submarine specifically created for this purpose was the "Auguste Piccard". On the occasion of the 1964 Swiss National Exhibition, 40 passengers descended into Lake Geneva inside this submarine.

Their numerous application areas and their high diversity of tasks have turned submarines into a promising niche product for CMC Texpan. The product, which still holds vast possibilities for development, is also an interesting enrichment for the portfolio of the Siempelkamp Group.

Submarine "Nautilus"



Decompression chamber

"Nautilus"

