

The Muggiano Shipyard between past and future

The birth of the shipyard at the end of the 19th century

The conformation of the Gulf of La Spezia and its geographical location in the Mediterranean basin first aroused Napoleon's interest and then that of the Count of Cavour, Prime Minister to the Kingdom of Sardinia of Vittorio Emanuele II. In 1857, Cavour founded in La Spezia the first Maritime Department of the Kingdom of Sardinia. In those years, Cavour entrusted Domenico Chiodo with a study for the creation of the Arsenal of La Spezia.

But the intentions of the Count went further. He knew that in the Gulf of Toulon an important shipyard had been established, one that could work for both the French Navy and other countries. He also grasped the opportunity of building a great shipyard on the oriental part of the Gulf of La Spezia, one that could meet the needs of the Italian Royal Navy, and work for the Foreign Navies as well. He had begun negotiations with a New York industrialist, Mr. William Webb, for the creation of this shipyard; however Mr. Webb died and the project fell through.

Nevertheless, the coastline between the S. Teresa inlet and reclaimed swamp of Stagnoni had the ideal characteristics for a shipyard, so that in 1883 the company "GEORGE HANFREY & Co." founded the Muggiano Shipyard on whose slipways were built, and then launched, two cargo steamers and four small tugs 14 meters long and with 75 HP.

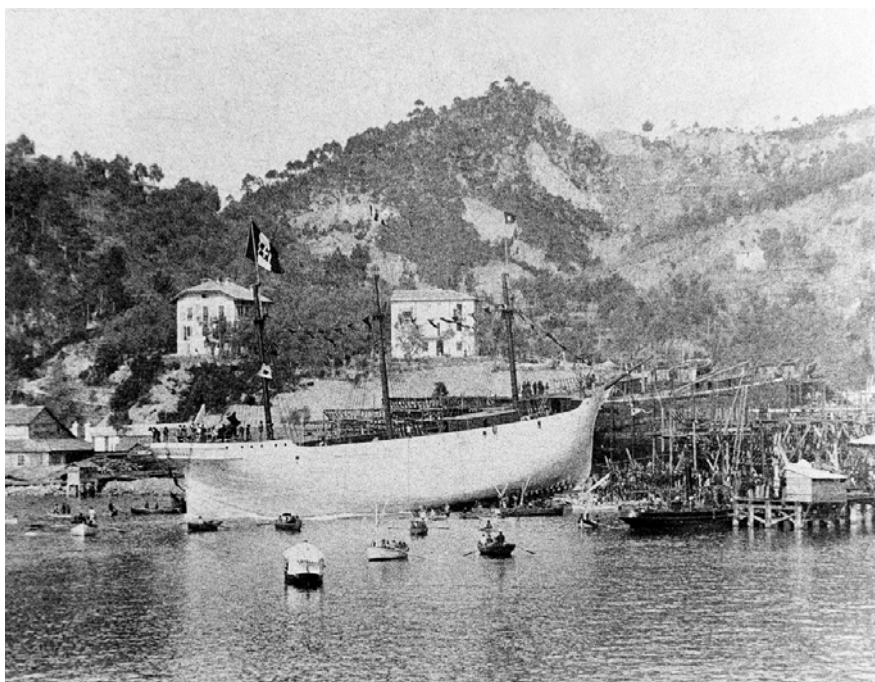


Figura 1 : varo del veliero "Beppe", 1889

The development of the shipyard between the end of the 19th century and the beginning of the 20th century.

In this period, the history and development of two adjacent shipyards intertwined, later to merge into a single shipyard in 1913. First of all, there was the Muggiano Shipyard, taken over in 1887 by the CONTINENTAL LEAD AND IRON COMPANY Ltd", and in 1897 by the "HOFER, MANAIRA & C." This shipyard showed remarkable boldness with the construction of large four-masted ships.

In 1898, some Piedmontese capitalists joined the board of directors of the "HOFER, MANAIRA & C." increasing finances and the means of production. Soon after, in the water just in front of the slipways, a dock was built with workshops for the outfitting of launched vessels.

In 1900, the shipyard's workforce numbered about 1500, the workers mostly coming from the Lunigiana inland.

Some of the larger and more famous Italian steel sailing ships were launched in that period, including the "ITALIA", the largest sailing ship ever built in an Italian shipyard.



Figura 2 : "Italia", 1903

In 1904, the shipyard was equipped with six slipways for the building of iron ships from 105 to 170 meters in length. In those years, the shipyard, under Engineer Manaira's direction, mostly built cargo ships for the import of raw materials from North America to the cotton mills in Piedmont.

Between 1899 and 1913, the shipyard, whose name first changed to "SOCIETA' ANONIMA CANTIERE NAVALE DEL MUGGIANO" and then, in 1906, to "CANTIERI NAVALI RIUNITI", built 33 ships -- cargo steamers, passenger ships and others. Two of this shipyard's most relevant undertakings were the construction of the transatlantic liners "DUCA DEGLI ABRUZZI" and "DUCA DI GENOVA", launched in 1907 and 1908 for the Italian General Navigation and destined for the Genoa – New York line.



Figura 3 : panoramica del cantiere, 1906

In 1905, another shipyard named “FIAT MUGGIANO” was built next to the existing one. The new yard was founded with the aim of building motorboats in cooperation with FIAT’s mechanical workshops in Turin. However, this activity didn’t deliver the expected economic results.

In 1907, the new shipyard was refinanced by the San Giorgio company in Sestri Ponente, becoming “FIAT-S.GIORGIO”. It was decided to employ the shipyard in the building program of submarines, a vessel that was emerging strategically in all European and American navies. Technicians and specialized workers were hired, in particular Engineer Cesare Laurenti, already captain of the Naval Engineers: the first submarines were built in those years.



Figura 4 : Cesare Laurenti, 1906



Figura 5 : cartellone pubblicitario dei sommergibili tipo “Foca”, 1910

In 1907, the first submarine built in the Muggiano Shipyard was launched, the “FOCA”, 185 tons. In 1908, two submarines for two foreign Navies were built, the Swedish “HWALEN”, 185 tons, and the Danish “DYKKEREN”, 105 tons, all designed by Laurenti, appointed Director of the Shipyard in the same year.

These submarines, all with petrol engines for navigation on the surface of the sea, gave impressive results: the “HWALEN”, crossed from La Spezia to Stockholm on its own power despite a stormy conditions in the Gulf of Biscaglia.



Figura 6 : cartolina commemorativa del viaggio del sommergibile “Hwaleu”, 1908

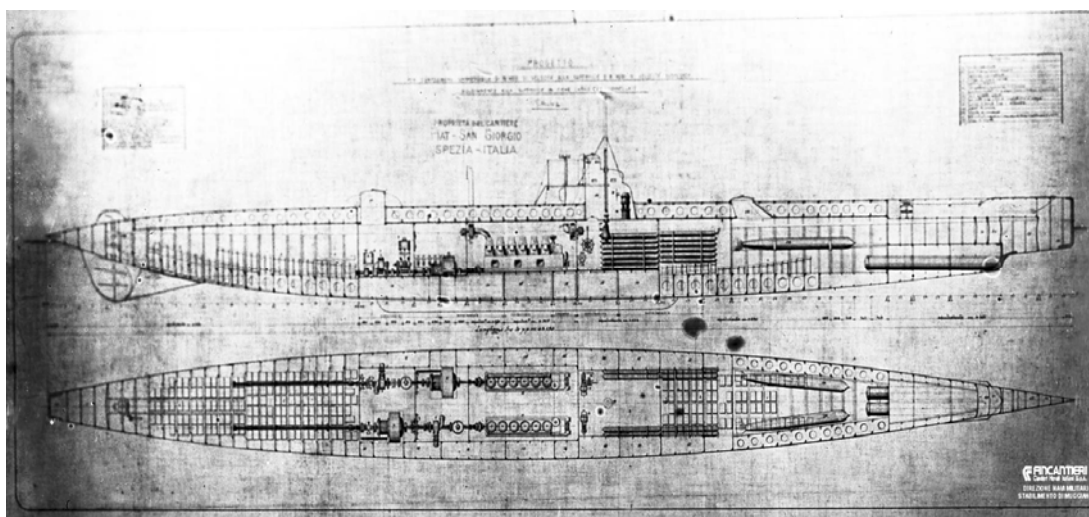


Figura 7 : piano generale del “Medusa”, 1911

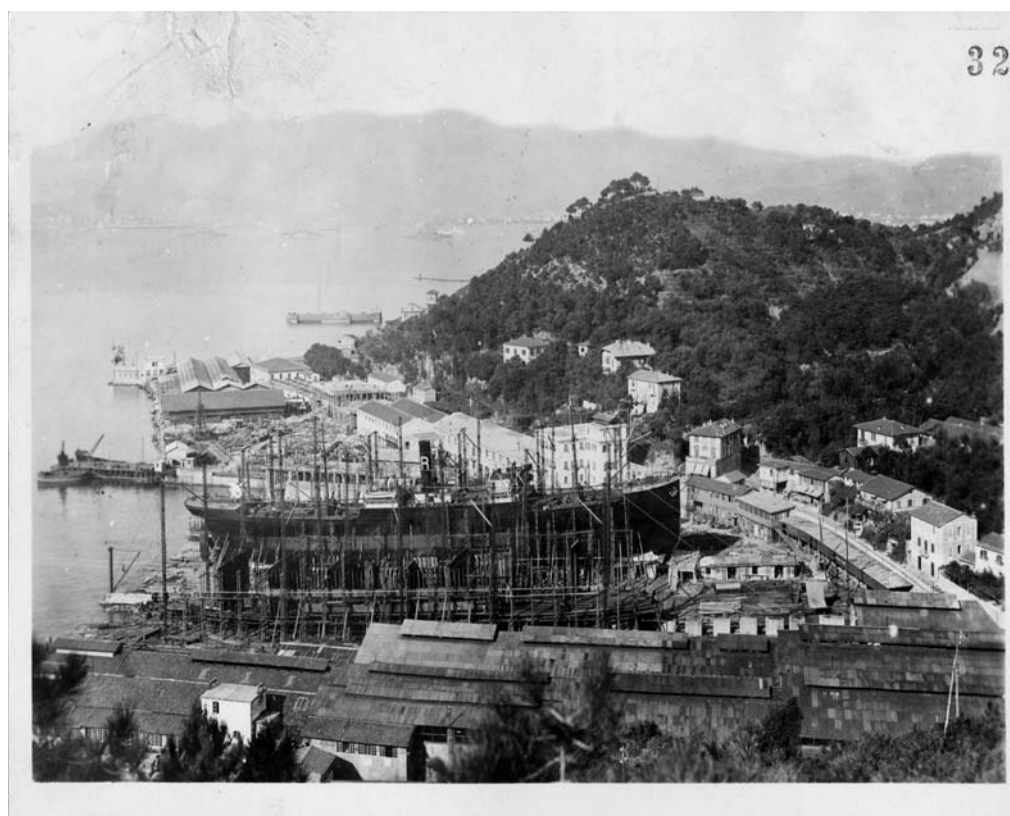


Figura 8 : panoramica dei Cantieri, 1912

Valenti	Rinato	Orsola	21 Maggio 1897	23 Settembre 1912	Socialisti Capp. in ferro
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Figura 9 : Fiat-S.Giorgio, estratto dal registro del personale 1897-1914

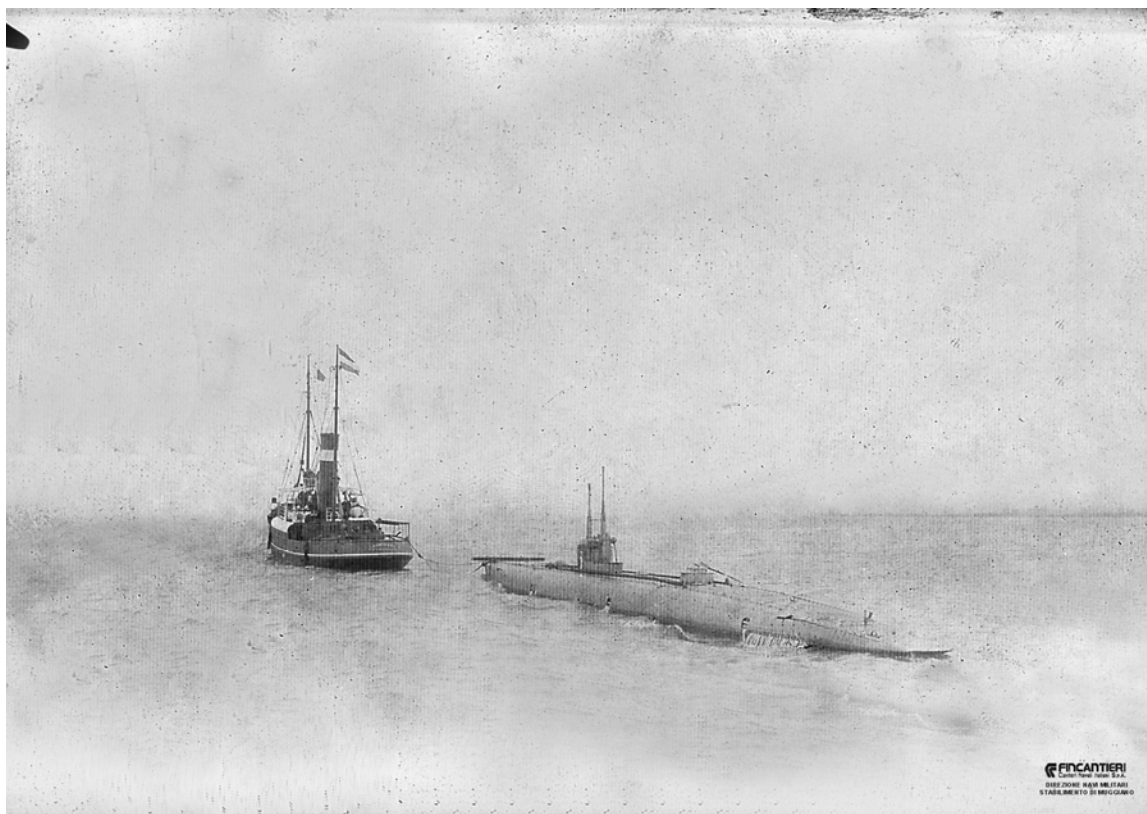


Figura 10 : sommergibile “F1”, partenza a rimorchio per il Brasile, 1912

In 1913, the stepping-up of submarine construction required an increase in personnel and finance. “FIAT-S.GIORGIO” acquired the company “CANTIERI NAVALI RIUNITI” incorporating its productive skills.



Figura 11 : piano dei fabbricati del Cantiere del Muggiano, 1914 (disegno dell’ing. Giacomo Mattè Trucco)

One remarkable project should be remembered from that period: the building of “CEARA”, commissioned by Brazil and designed by Laurenti. Overcoming considerable technical difficulties, the CEARA was the support ship for the squadrons of submarines operating in open sea. giving them technical and logistical assistance as well as carrying out any kind of careenage. The “CEARA” could save a sunken submarine at a depth of 40 meters and recover a submarine of 400 tons.

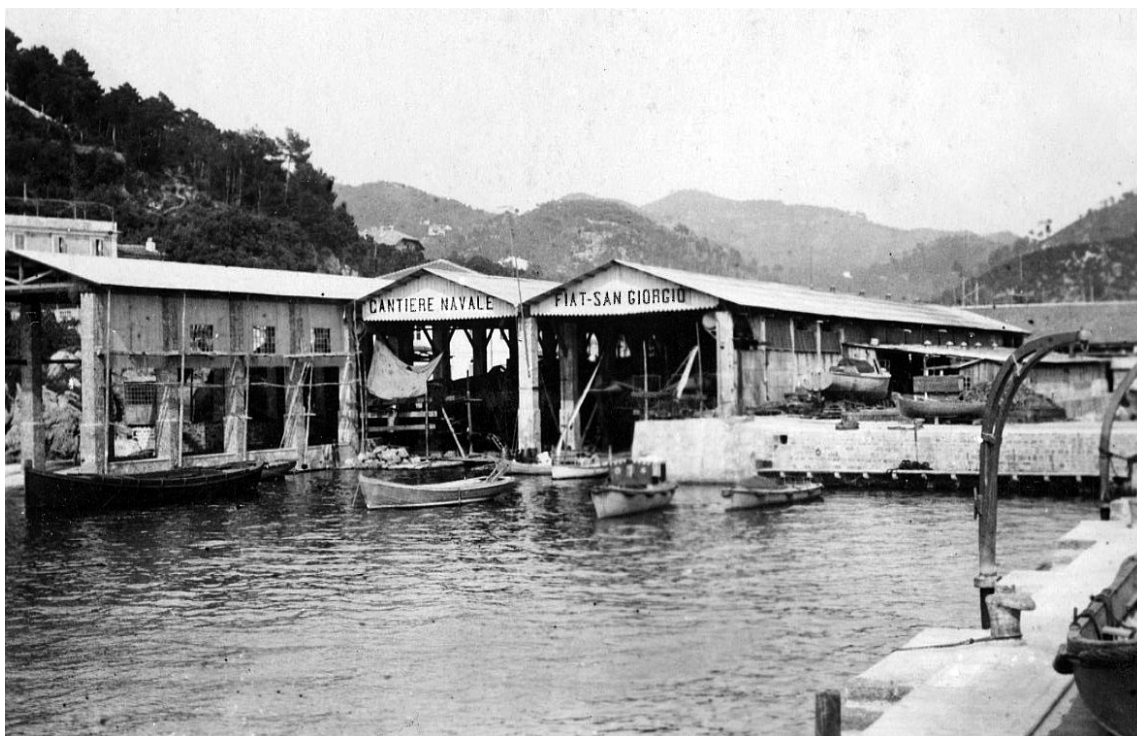


Figura 12 : panoramica del Cantiere, 1914

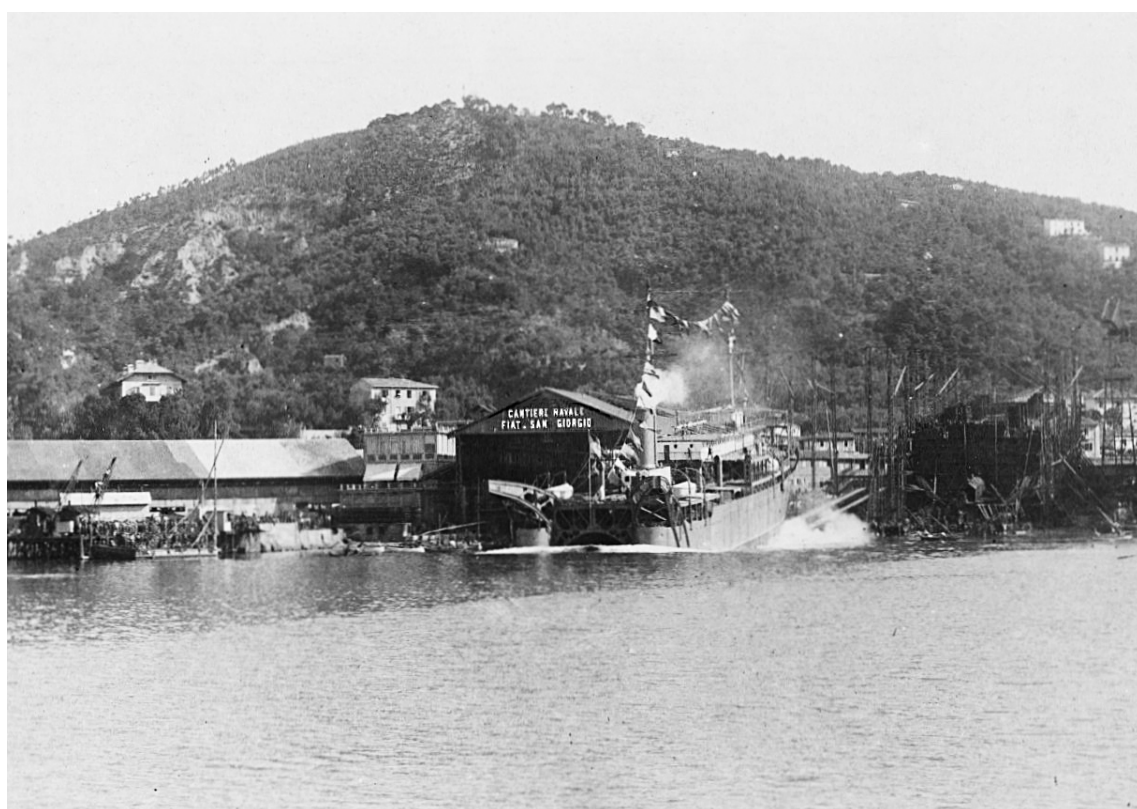


Figura 13 : varo “Cearà”, 1915

The First World War

From 1915 to 1918, the shipyard worked feverishly to face the needs of the Italian Navy, not only building and consigning 15 submarines of the “MEDUSA” modified type, but also completing the construction job orders of 7 submarines for foreign Navies.

Moreover, the shipyard had the possibility of working on building projects that, although not in the naval field, were similar in their processing. That's how the shipyard came to build gun carriages, wagons used as railway workshops, blast furnaces, cranes, etc. During 1917, it became clear that industrial shipyards and factories had to accept and complete repairs of any type both to the hulls and to the engines of the ships worn out or damaged by the war.



Figura 14 : darsena del Cantiere, 1916



Figura 15 : varo sommergibile "F5", 1916

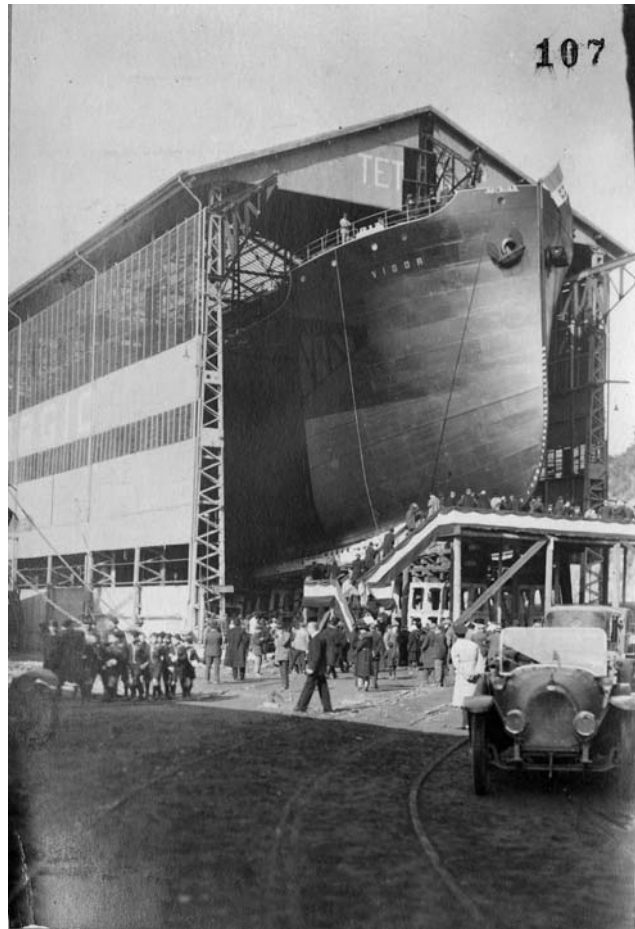


Figura 16 : piroscalo cisterna “Vigor” ,1923

The period after the First World War

The company name changed to “ANSALDO S.GIORGIO in 1918, with the entrance of the Perrone family, owner of Ansaldo. Once again, in 1927, it became “ODERO-TERNI” and finally, in 1930 , to “ODERO-TERNI-ORLANDO”.



Figura 17 : Attilio Otero (terzo da sinistra) , 1927

These were highly productive years given the shipyard's strengthened infrastructures. In the 1930s the shipyard employed 4000 blue collar workers, 400 white collar workers, and was equipped to build ships with a length up to 220 meters. The enterprise was developed on an area of 259.000 square meters, 60.000 of which were covered; it owned eight slipways, including a covered one for ships up to 125 meters long and weighing up to 13.000 tons. The zincing and nickel-plating plants and some electric and oxy-acetylene welding works were considered state-of-the-art.

During the first period after the war, military construction received a new impulse, in particular with the building of more than 50 submarines and, with the building of the cruisers "ZARA", (10600 tons), "DIAZ" and "DUCA DEGLI ABRUZZI", (each 7000 tons). That same period saw significant development in the building of cargo boats, as well as transport ships for both passengers and goods. Among these, an outstanding example is the motorship Arborea for the transport of passengers and goods, famous for its interiors designed by the architect Melchiorre Bega.

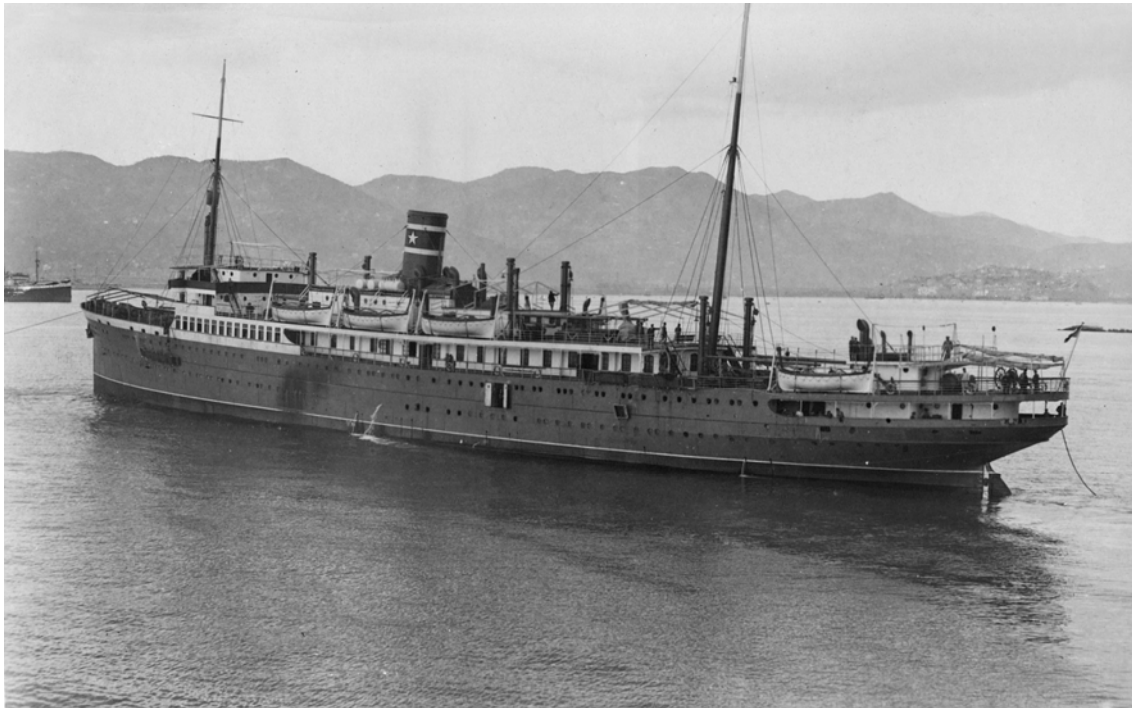


Figura 18 : "Arborea" , 1928

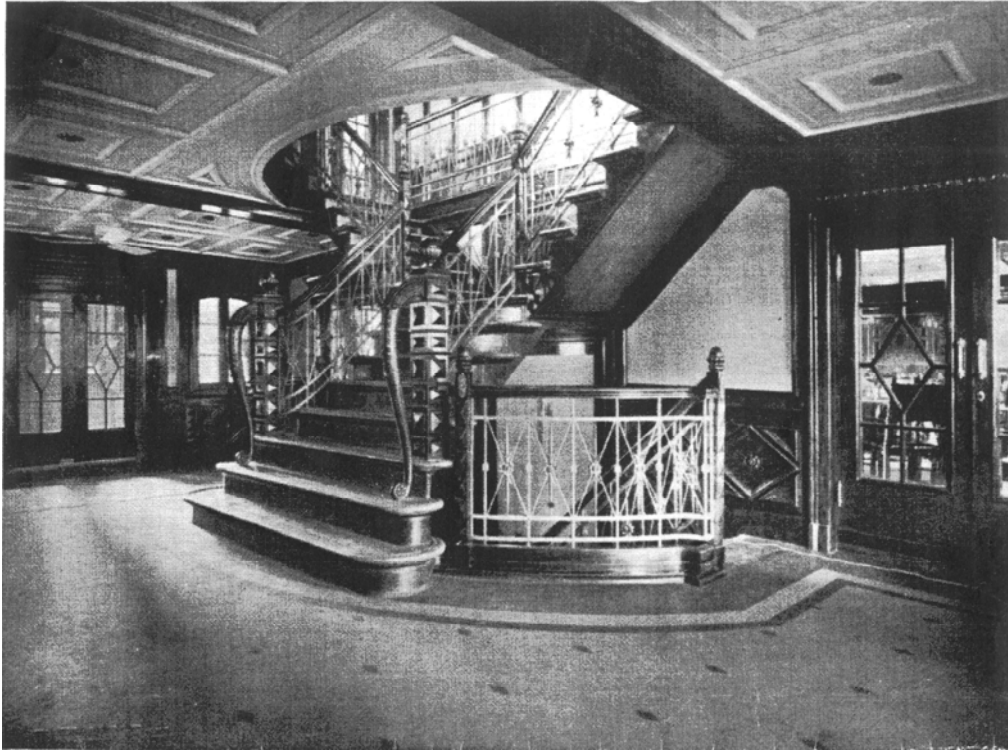


Figura 19 : "Arborea", grande ingresso con scalone (progetto dell'arch. Melchiorre Bega)

L'aeropoema del Golfo della Spezia

*A tutti insegna Muggiano
 classe di geometria descrittiva
 con piani obliqui di tetti rossi
 verticalità grigie di lamiere
 sferiche vampe
 iracondo pettegolezzo di martelli
 superbia di magli
 fughe di seghe nastriformi
 e celestiali gru
 triangoloni giranti sulle loro coordinate
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F.T. Marinetti, 1935

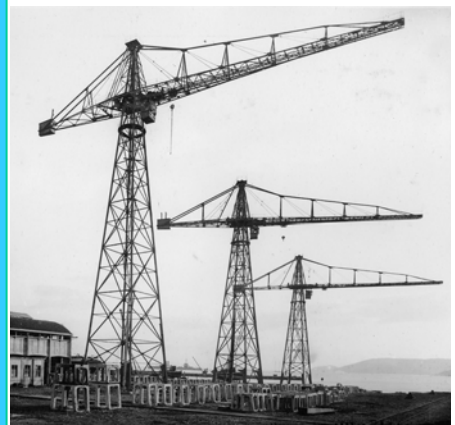


Figura 20 : le "...celestiali gru", 1934



Figura 21 : varo sommergibile “Finzi”, 1935

The Second World War

With the outbreak of WWII, the shipyard “ODERO-TERNI-ORLANDO” stepped up work intensively, specializing even more in the building and in the assembling of submarines, but always continuing with the construction of merchant vessels and specialized boats for the Royal Navy (10 motor ships and 6 landing craft). In this period, in which the shipyard was at its height in terms of employment (4122 factory workers), 21 submarines were started but only 9 were actually consigned to the Royal Navy because of the war.

Between June 10th, 1940 and 1943, the “MALASPINA” and the “BARACCA” (1940), the “PLATINO” and the “ACCIAIO” (1941), the “COBALTO” and the “NICHELIO” (1942), the “SPARIDE”, the “MURENA” and the “GRONGO” (1943) were completed and delivered.

The other submarines had a different destiny: “ALLUMINIO”, “MANGANESE”, “ZOLFO”, “SILICIO”, “FOSFORO”, “ANTIMONIO” as well as constructions 296, 297, 298 were begun from 9 December 1942. These, at different stages of their construction, were captured after September 8th, 1943 and subsequently dismantled to reclaim their materials.

The transport submarines “R10”, “R11” and “R12”, begun in 1943 and launched in 1944, had short lives: “R10” and “R12” were sunk to create obstacles near the Arsenal in La Spezia and the “R11”, towed to Genoa, was bombed and sunk.

In April 1945, the Muggiano Shipyard was reduced to desolate conditions; the war had caused the destruction of three warehouses and a long portion of the quay, the devastation of a part of the large square and the emptying of the storehouses from which about 15000 tons of iron and steel materials had been removed.



Figura 22 : sommergibili “Cobalto” e “Acciaio”, 1941



Figura 23 : motonave “Pascoli” sullo scalo, 1943

The changes in the second post-war period

The 25th of April, 1945, on the slipways, lay the incomplete hulls of three 3100 ton ships ordered by the Royal Italian Navy, and the hull of the 3200 ton cargo boat “BORSI”, bombed in an air attack on the 26th of December, 1944. Even in these dramatic conditions and with the very few tools available, the work in the shipyard started up again, immediately after the war, to finish the “BORSI”(launched in 1946) and the other three motor ships “MAURANGER”, “GARNES”, “MICA” (launched in 1947, 1948, 1949 respectively).

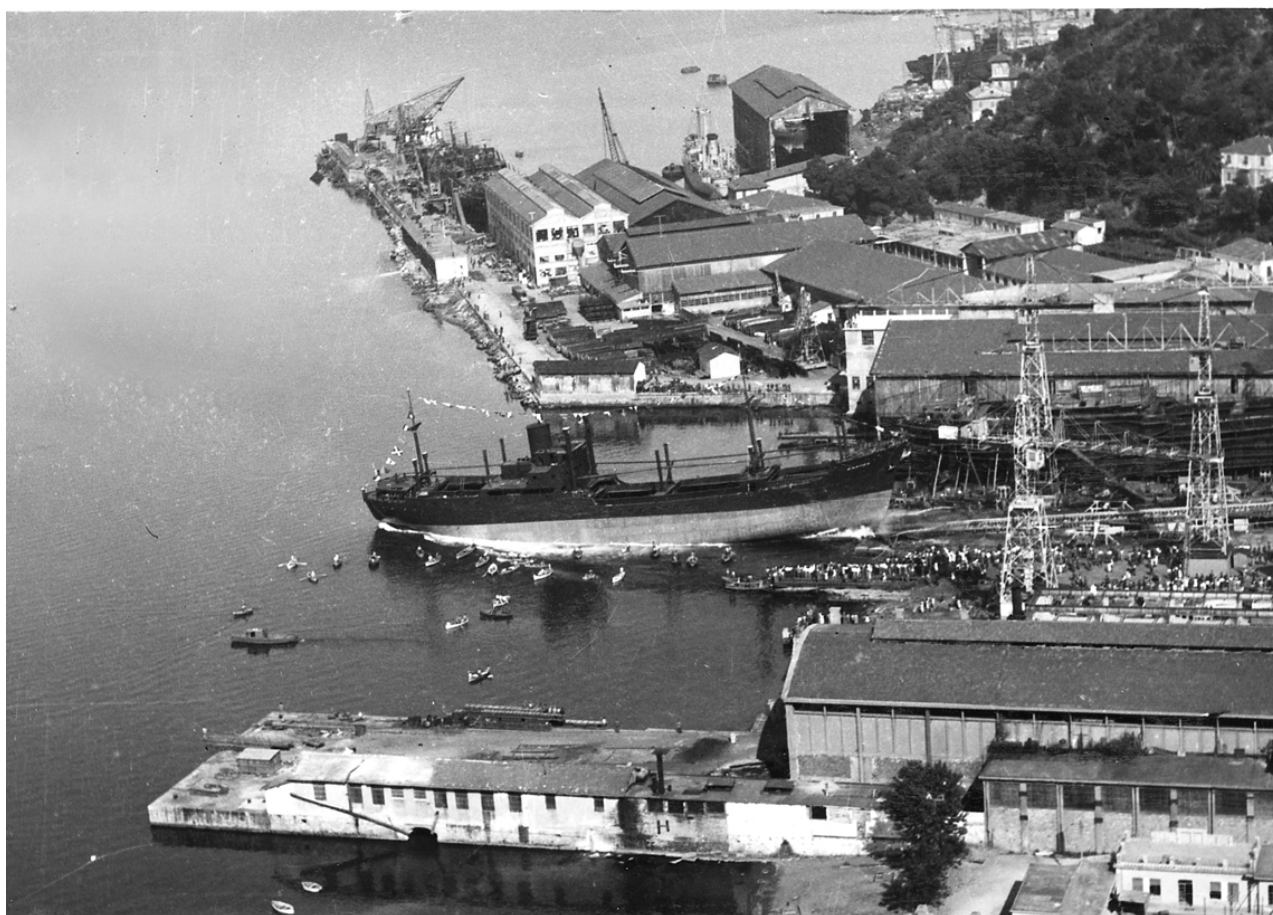


Figura 24 : varo motonave “Garnes”, 1948

The shipyard, while rebuilding its workplace, dedicated particular efforts to the repairing, transforming and reclaiming of sunken ships: among these, should be mentioned the recovery , under drastic working conditions, of the motorship “RAVELLO”, 10000 tons, sunk near the west entrance of the dam.

By the end of 1946, following an improvement in international relations, the USSR ordered 12 90-tons tugs, while Norwegian outfitters ordered three 2400 tons cargo boats.

With strong determination, the shipyard was reorganized, adopting the most recent naval techniques, such as prefabrication and electric welding.

In November 1949, the Muggiano Shipyard was unbundled by the “ODERO TERNI ORLANDO” group and taken over by “ANSALDO S.p.A.” in Genoa. In October 1951, the passenger motorship “EUROPA” (11400 tons), ordered by Lloyd Triestino, was launched. In 1955, other relevant activities began with the building of six ships for the transport of bulk dry cargos.



Figura 25 : panoramica del Cantiere con yacht “Mharoussa”, 1952

These were the ships of the series “Capitani del lavoro” (15800 tons, “SINIGAGLIA”, “DONEGANI”, “AGNELLI”, “ANSALDO”, “MOTTA”, “CANEPA”) to name a few. In 1961, the Shipyard built another prototype: the motorship “EDERA”, 32650 tons, for the transport of dry cargos. The 28th of December 1971, the company was transferred to “CANTIERE NAVALE DI MUGGIANO S.p.A.” with offices in Muggiano.

During the period between 1970 and 1975, transformation and expansion works were started , leading to the current structure of the shipyard:

- Between 1970 and 1972, the old eastern slipways were demolished, this area was filled up and the offshore dam was extended
- In 1973, the canteen building was entirely rebuilt and the machine shop was completely restored
- In 1975, the shipyard was equipped with a floating basin of 400,000 tons and restoration began of the welding works, which was equipped with mobile roofing.

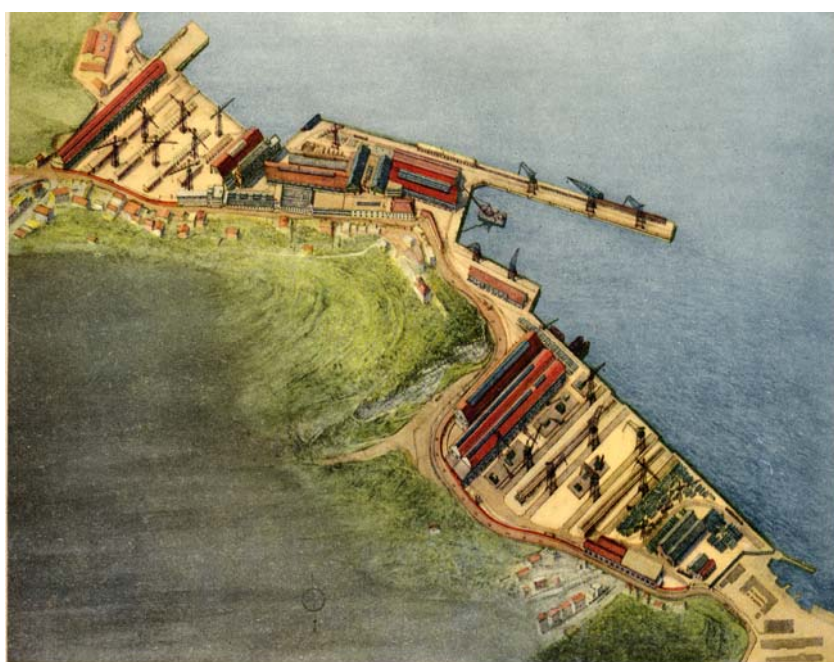


Figura 26 : panoramica del Cantiere, anni ‘60



Figura 27 : varo petroliera “Satuket”, 1971

The return to the military

In 1975, the shipyard, resuming its old tradition, started a series of building for the Italian Navy and for various foreign Navies.

During the period between 1978 and 1982 the following constructions were completed and delivered:

- “VESUVIO”, a refueling ship 8700 tons , for the Italian Navy
- Four “WADI” class corvettes, for the Libyan Navy
- Four “ESMERALDAS” class corvettes, for the Ecuadorian Navy
- Six “NIBBIO” class hydrofoils, for the Italian Navy

The hydrofoils, extremely fast and entirely built in light alloy, represented, a fundamental shift in Muggiano’s history, towards highly innovative technology and the upgrading of skills acquired by the factory workers. In the years to follow, these two factors brought positive consequences, in the field of traditional shipbuilding and in the development of productive models of fast ships and high technology.

In 1981, the property of the Muggiano Shipyard passed to the “CANTIERI NAVALI RIUNITI” (C.N.R.) in Genoa. In the new organizational structure (and following a yet valid productive model), the Muggiano Shipyard was gradually and successfully integrated with the one in Riva Trigoso.



Figura 28 : panoramica del cantiere, 1981



Figura 29 : panoramica Cantiere, 1989



Figura 30 : pattugliatore “Vizzari”, 1990

In 1984, with the absorption of “C.N.R.” from “FINCANTIERI Cantieri Navali Italiani S.p.A.”, the Muggiano Shipyard was assigned to the Direction for the Military Constructions together with the shipyard in Riva Trigoso. Both shipyards maintained and developed other stages of productive integration as well. During the period between 1982 and 1999, as a result of the synergies between the two shipyards, the Muggiano Shipyard received the following orders:

- Eight Maestrale class frigates for the Italian Navy
- Three L.P.D. (Landing Platform Dock) “SAN GIORGIO”, “SAN MARCO”, “SAN GIUSTO”, for the Italian Navy
- Eight Minerva class corvettes for the Italian Navy
- Two helicopter corvettes for the Iraqi Navy
- Four vigilance units for the Department of the Merchant Navy
- Two “Zara” class patrol ships for the Financial Police
- Two “Durand de la Penne” class Guided Missile Destroyers for the Italian Navy
- Four “Artigliere” class patrol vessels for the Italian Navy
- Four corvettes for the Royal Malay Navy
- “ALLIANCE”, a oceanographic research unit for the UN
- “TA KUAN”, a oceanographic research unit built for the Department of Transport and Communication of the Republic of China (Taiwan)

- “DESTRIERO”, a prestigious ship in light alloy, which owns the “Blue Ribbon” for its Atlantic crossing at a medium speed of more than 53 knots
- “ETNA”, a naval replenishment and logistic support ship, for the Italian Navy
- “DENARO”, a patrol vessel for the Financial Police



Figura 31 : il “Destriero” conquista il Nastro Azzurro, 1992

In the second half of the 1990s, in correspondence with the drop in demand for military ships, the Naval Vessel Business Unit of Fincantieri diversified its production in the field of ships with special technology, whose building and outfitting procedures derive from those used for military vessels. In Muggiano and in Riva Trigoso construction began of fast mono bottom ferries, the Pegasus, 1200 tons, and the Jupiter, 3000 tons, for fast transport, 40 knots, of passengers and vehicles .

During the period between 1997 and 1999, the following ships were completed and delivered:

- six fast ferries 1200 tons (two of them in steel and the others, in light alloy) for foreign ship-owners
- four fast ferries 3000 tons in steel for Tirrenia: “ARIES”, “TAURUS”, “SCORPIO”, “CAPRICORN”

At the end of the 1990s, FINCANTIERI decided to bring back and concentrate the production of submarines in the Muggiano shipyard. The program of the new U212A submarines consequently re-launched the shipyard into the very field where it had already reached high levels of quality in the past.

A new phase of transformation and modernization of the productive capacities of the Plan started, oriented towards open and covered construction of both ships and submarines.



Figura 32 : panoramica del Cantiere, 1999

The Muggiano Shipyard in the third millennium

The 1990s proved to be a period of highs and lows, with a discontinuous workload as a consequence of the slowing down in renewal programs for the Italian Navy fleet. This lack of continuity was partially covered with temporary productive diversification in the mercantile field, starting the production of fast ferries, and ships with special and innovative technology.

For the Muggiano Shipyard this period of instability proved to be a good training ground to prepare for the challenges of the third millennium. At the end of the 1990s, a series of initiatives began for the renewal of both the plant and the general organization. As a result, the shipyard once again demonstrated its versatility - in operational handling of a large number of products, and in the productive phases in the field of highly technological and medium-dimension naval construction for both surface and underwater vessels.



In the field of plant engineering, in the first years of the new millennium the following projects were accomplished:

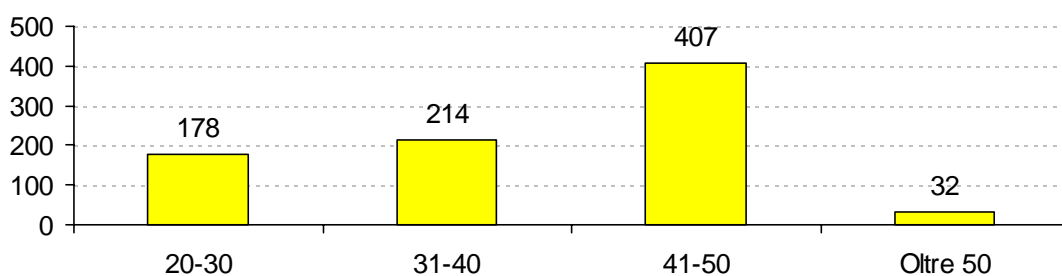
- construction of the new assembly warehouse in the area of the ex western slipway and the burial of the sheet of water in front of it, thus increasing the covered areas by about 6000 square meters, and the external equipped and dock areas by about 10000 square meters.
- renewal of equipment and the machinery for the new line of submarine production
- rationalization of the spaces of the Naval Workshop with the recovery of some areas for small prefabrication
- implementation of a modern data processing network doubling the speed of the previous one and with a total coverage of the various areas of the shipyard, for a better use of the new data processing corporate applications.
- start-up of new automation projects for the production of flat thin panels and for welding activities
- modernization, rationalization and expansion program of the lifting apparatus in the assembly area and in the outfitting dock



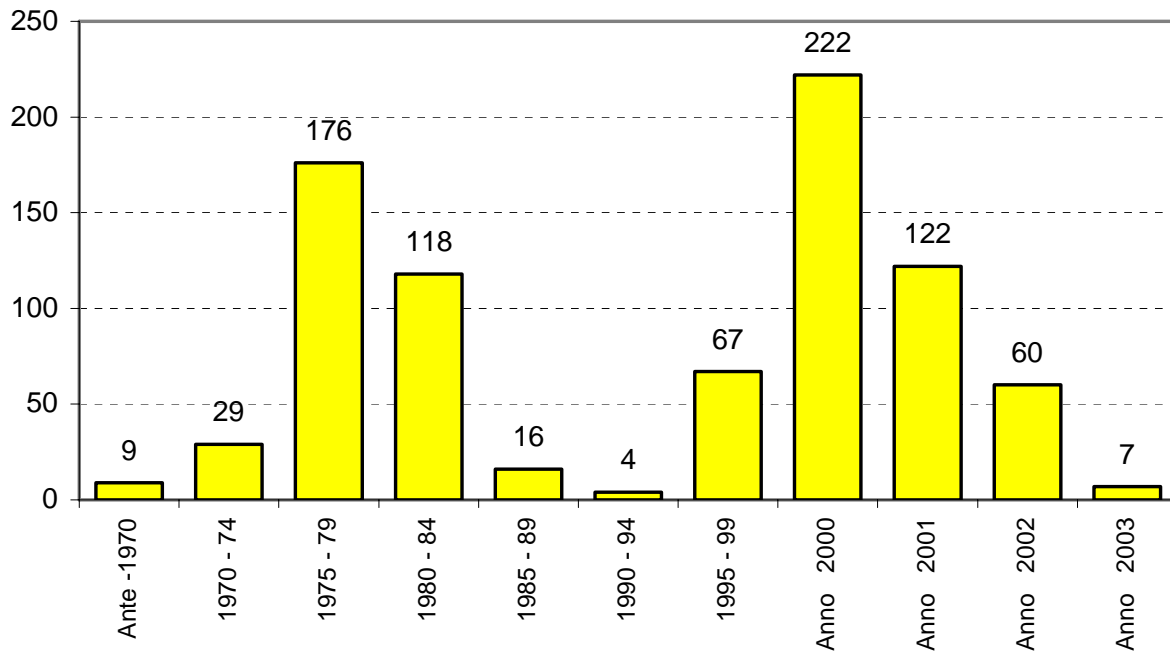
Figura 33 : Panoramica del Cantiere con operazioni di interrimento, 2002

In terms of organization in the same period, the following achievements are worth mentioning:

- organization of the production in three Nerve Centers, each responsible for its product (Submarines, Ships, Outfitting and Refitting)
- renewal of human resources, with the departure of 400 employees and the hiring of 500 new employees in order to reach the planned number of 850 employees. The average employee age fell to 42 years old.
- implementation of a professional training/retraining program which involved the most of human resources, depending on the various production fields. This kind of investment was particularly demanding regarding the new production line of submarines, with innovations both from a technological and an organizational point of view.



dipendenti attuali suddivisi per fascia di età *



dipendenti attuali suddivisi per anno di assunzione *

*** = dati luglio 2003**

Thanks to all these initiatives, the Muggiano Shipyard has readied itself for the demanding program of renewal of the Italian Navy of the new millennium:

- the production of the submarines U212A started with the confirmation of positive choices made in the plant-engineering field and with satisfactory results in terms of both technological and image development. The first of the two submarines, “S. TODARO”, was launched in 2003 and handed over to the Italian Navy in 2005. The second one, “SCIRÈ”, was launched in 2004 and will be handed over by the end of 2006. Demanding new productive phases, have been faced with renewed enthusiasm and good results, such as the setting up, running and testing of submarines in port and in navigation.
- between 2001 and 2006, 23 units were handed over such as:
 - six “Com.te CIGALA-FULGOSI” and “SIRIO” class patrol vessels for the Italian Navy, launched in Riva Trigoso
 - five “U. DICIOTTI” class patrol vessels for the Coast Guard
 - a polyvalent ship “ELETTRA” for the Italian Navy
 - four “SAURO” class submarines, third and fourth series, subjected to maintenance and a complete renewal of the Combat System
 - four “LUPO” class frigates subjected to maintenance and renewal work for the Peruvian Navy
 - a patrol vessel “P61” for the Armed Force of Malta
 - two U212A submarines



Figura 34 : “Elettra”, 2003.



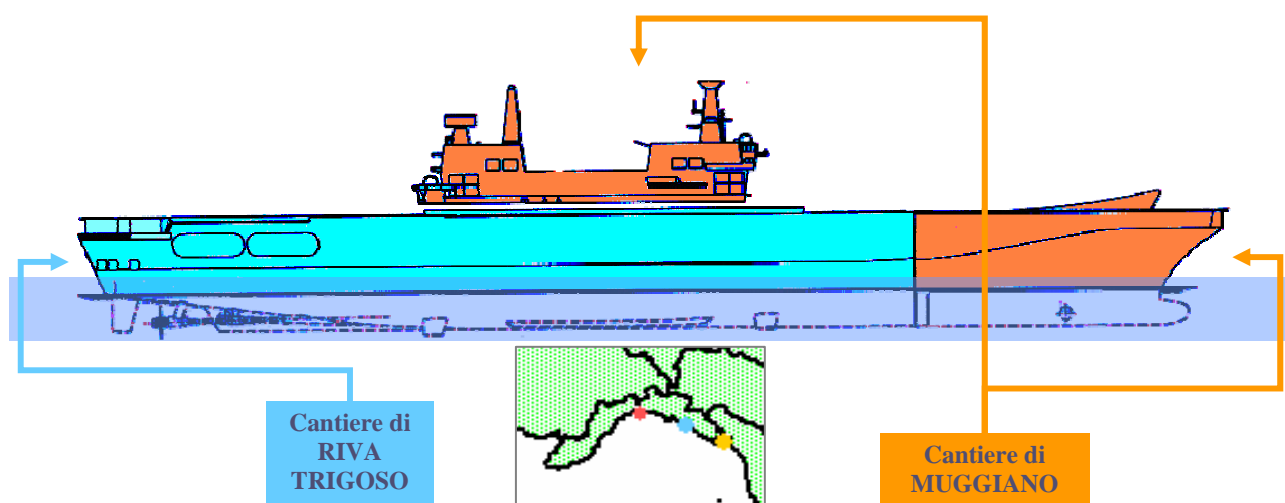
Figura 35 : “Palacios” e “Aguirre”, 2005.



Figura 36 : “Todaro”, 2005.



Figura 37 : “P61” e “Todaro”, 2005.



- the building of the prow section and the superstructure of the “CAVOUR”, the new aircraft carrier of the Italian Navy; in 2004, the two prow sections were linked together in the Muggiano floating basin, and the superstructures were added. This vessel is currently the most complex, but also the most prestigious undertaking of the shipyard, consisting in the completion of the outfitting and in the stages of activation and testing of the Platform plant and Combat System up to its handover in 2007.

The building of the “CAVOUR”, the largest for its size and for its planning requirements represents the most significant expression of the productive integration between the two shipyards of the Naval Vessel Business Unit.

- the building of the frigates “ANDREA DORIA” and “CAIO DUILIO” is almost finished. These ships, launched in Riva Trigoso, will be transferred to Muggiano in 2006 to be completed, tested and handed over to the Italian Navy in 2007 and 2008 respectively.



Figura 38 : “Cavour”, unione dei blocchi, 2005.



Figura 39 : “Cavour”, imbarco sovrastrutture, 2005.

With this fervor, the Muggiano Shipyard, supported by 120 years of history, is getting ready to continue its outstanding tradition, moving towards the new technological challenges of the third millennium, with renewed commitment and modern criteria for productive and quality efficiency. In a short time there will be new programs of the Italian Navy centered on the series of FREMM frigates, a combined project with the French Navy and the French industry, and on a series of submarines derived from the “TODARO” class. Along with these programs, production will also begin on special ships for foreign Navies as well as a new line of mega yachts.



Figura 40 : progetto mega yacht, 2006

