Conte Di Cavour

Outlook

- Russian interest subsided after contract signed for construction of Mistral class for Russian Navy
- European economic crisis means Italian Navy is unlikely to order another ship of this class
- Conte di Cavour ranks third in prospects behind Canberra and Mistral classes, making exports unlikely

Orientation

Description. Multimission V/STOL fixed-wing and rotary-wing aircraft carrier/amphibious attack ship (CVS).

Sponsor. The Italian Ministry of Defense, through the Italian naval staff (MARISTAT).

Status. In service.

Total Produced. One ship in service.

Pennant List

Number & Name	Builder	Launch Date	Commission Date
C-552 *Conte di Cavour*	Italcantieri, Monfalcone	7/2004	9/2007

Mission. The primary mission of this ship will be command and control of a joint or combined task force, along with the support of air operations to forces ashore, fleet air defense, and civil air/disaster relief. Amphibious support and projection is stated as a subordinate requirement to the air support missions.

Price Range. In 1999, the price of the program, referred to as UMPA, was estimated at ITL1,500 billion ($854 million).

Contractors

Prime

Fincantieri Naval Shipbuilding Division	Via Erasmo Piaggio, Riva Trigoso, I-16037 Italy, Tel: + 39 185 48 31, Prime

Subcontractor

Conte Di Cavour

Avio SpA	http://www.aviogroup.com, Via I Maggio, 99, Rivalta di Torino, 10040 Torino, Italy, Tel: + 39 011 00 82111, Fax: + 39 011 00 82000 (LM2500 Marine Gas Turbine)
Calzoni Srl	http://www.calzoni.com, Via A De Gasperi, 7, Calderara di Reno, Bologna, 400 12 Italy, Tel: + 39 0514 1377, Fax: + 39 0514 1375 55, Email: calzoni@calzoni.com (Aircraft Handling Equipment)
Elettronica SpA	Via Tiburtina Km 13,700, Loc Settecamini, Rome, I-00131 Italy, Tel: + 39 6 415 41, Fax: + 39 6 419 28 69 (Electronic Countermeasures System)
Eurosam GIE	http://www.eurosam.com, Centre d'affaires de La, Boursidière Bâtiment Kerguelen, Le Plessis Robinson, 92357 France, Tel: + 33 1 41 87 14 16, Fax: + 33 1 41 87 14 42, Email: eurosam@eurosam.com (PAAMS)
Eurotorp	http://www.eurotorp.com, 399 route des Cretes-Les Bouillides, B.P. 113, Sophia Antipolis, 06902 France, Tel: + 33 4 92 96 38 50, Fax: + 33 4 92 96 38 55, Email: et@eurotorp.com (Torpedoes)
L-3 Communications - ELAC-Nautik GmbH	http://www.elac-nautik.de, Neufeldtstrasse, Kiel, 24118 Germany, Tel: + 49 431 883 0, Fax: + 49 431 883 496, Email: elac.marketing@L-3com.com (Echosounders)
Oto Melara SpA	http://www.otomelara.it, Via Valdilocchi 15, La Spezia, 19136 Italy, Tel: + 39 0187 5811 11, Fax: + 39 0187 58266, Email: press-office@otomelara.it (25mm Cannon)
SELEX Sistemi Integrati SpA	http://www.selex-si.com, Via Tiburtina, KM 12,400, Rome, 000131 Italy, Tel: + 39 06 41501, Fax: + 39 06 4131436, Email: info@selex-si.com (EMPAR Systems)
Whitehead Alenia Sistemi Subacquei (WASS)	http://www.wass.it, Via di Levante, 48, Livorno, 57124 Italy, Tel: + 39 0586 8401 11, Fax: + 39 0586 8540 60, Email: marketing@wass.it (Torpedo Decoys)

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Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; rich.pettibone@forecast1.com

Technical Data

	Metric	**U.S.**
Dimensions		
Length (overall)	244.0 m	807.6 ft
Length (between perpendiculars)	202.4 m	664 ft
Beam (overall)	39 m	128 ft
Beam (on waterline)	29.5 m	96.8 ft
Draft	8.7 m	28.5 ft
Flight Deck	184 x 34 m	603.7 x 111.5 ft
Hangar/Garage Deck Area	134 m x 21m	439 x 68.9 ft
Displacement		
Full Load	26,700 tonnes	26,219 tons
Standard	22,000 tonnes	21,600 tons
Performance		
Speed		
– Max	51 kmph	28 kt
– on Auxiliary Motors	16 kmph	9 kt
Range	13,000 km at 37 kmph	7,000 nm at 20 kt
Crew		1,210
	Type	**Number**
Military Lift		
Troops	Marines	360 - 450
Vehicles	MBT	24, or
	Trucks (in lieu of aircraft)	50

	Type	Number
Fixed-Wing Aircraft	AV-8B Harrier II	20
Rotary-Wing Aircraft	EH101 Merlin	12
Weaponry		
Missiles – SAM	Aster 15	32
Launcher for SAM	Sylver VLS cells	4x 8
Guns	25mm Oto Melara	3
Torpedoes	MU-90 Impact 324mm	2x 2
Electronics		
Radar		
– Air Search/Target Des./Tracking	SPY-790 EMPAR multifunctional	1
– Navigation	SMA SPN-748	2
Sonar	WASS mine avoidance	1
Electronic Warfare – Passive Intercept		
– Jammers	Active, on board	2
– Decoy Launchers	SCLAR-H	2
– Torpedo Decoys	SLAT/IT	2
Propulsion		
Main Engine Configuration	COGAG	
Gas Turbines	GE/Fiat LM2500 GT	4x 30,000 shp
Bow Thrusters	2 electric, bow and stern	2
Propellers	5-bladed cycloidal pitch	2

Design Features. This new multirole air-capable vessel was developed by SPMM (Italy's studies and projects directorate for warships and naval materiel) under MARISTAT. The *Conte di Cavour* displaces roughly 26,000 tonnes and is of standard light aircraft carrier configuration. The ship has been designed to provide a platform for fixed-wing VSTOL shipborne aircraft, and has a ski jump to assist in their launch. The deck can also be used to operate medium-lift helicopters.

The 5,900-square-meter flight deck is 232.6 meters long by 34.50 meters wide and has a 12° ski-jump takeoff ramp to port. There are six deck spots for EH101 or NH90 helicopters. The 2,500-square-meter combined garage and hangar is 134.2 meters long, 21 meters wide, and 6.0 meters high (with an 11-m-high area for maintenance). It has capacity for 12 EH101 helicopters or eight AV-8B or U.S. Joint Strike Fighter (JSF) aircraft and is also able to accommodate vehicles. The normal air group will consist of five Harriers and nine EH101 helicopters, but the elevators and hangar are sized to accommodate the JSF. There are two 30-ton elevators, one outboard aft to starboard and one just forward of the island, with the aft elevator doubling as a vehicle ramp for operations alongside a pier.

Substantial growth margins are built into this design, allowing for future provision of a new-generation STOVL aircraft, such as the JSF. This would cause an increase in standard displacement from 18,500 tonnes to 22,000 tonnes.

Thrusters are fitted in both the bow and the stern in order to provide better maneuverability in restricted waters and for slow-speed movements during landing operations. Two pairs of fin stabilizers are fitted. The generators power two electric motors to provide cruise and loitering speeds of up to 9 knots. Primary electrical current is 660-V, 50-Hz a.c., stepped down to 440 V, 380 V, and 115 V by eight converters, as needed. The ship has a hospital with three operating rooms and complete X-ray, CAT scan, dental, and laboratory services.

A number of technology elements have been incorporated in this design from other projects, helping to keep costs down. Among these are the combat management system, the superstructure, and the mast design.

Operating Characteristics. The ship has the capability to assume a number of different roles in order to accomplish a wide variety of operational tasks. These include power projection missions, protection of sea lines of communication, task group command and control, fleet air defense, amphibious launches, air support to forces on the shore, and civilian (humanitarian) aid and disaster relief. The ship's primary function is the command and control of a joint or combined task force and the support of air operations. Amphibious support is considered a secondary function.

The vessel's embarked armament is limited to air defense. The ship uses ASTER 15 surface-to-air missiles (SAMs), launched from four eight-cell

Sylver VLS units fitted on the starboard deck edge. The only other guns embarked are three 25mm cannon.

RIM *Conte di Cavour*

Source: Italian Navy

Variants/Upgrades

NUM. The original designation for this ship, an acronym for Nuova Unita Maggiore, or New Major (naval) Unit.

UMPA (Unita Maggiore Per Operazione Amfibe). New designation for this project reflecting the increased emphasis on air operations and the generally more aircraft carrier-like character of the ship.

Scaled-Up San Giorgio Class. Fincantieri is also offering a 12,000-tonne LHD/LPD design for export, capable of operating both helicopters and landing craft. At 154 meters in length, it is essentially a scaled-up version of the San Giorgio class, but not as large as the *Andrea Doria*. According to the builder, this design would be capable of carrying up to 513 embarked troops on board. A full-size well dock and through-deck flight deck would be offered, making the operation of up to eight EH101-sized helicopters possible. The weaponry consists only of two Otobreda 76mm L62 Super Rapid guns.

This design, which has not been sold, represents another interpretation of the basic concepts underlying the *Conte di Cavour*, but is configured as a slightly smaller platform. The design is aimed primarily at the market for amphibious-capable vessels in Latin America and Asia.

Program Review

Background. The acquisition of a new major surface vessel to replace the missile cruiser *Vittorio Veneto* has been planned since the *Giuseppe Garibaldi* was commissioned in 1985. Plans to build a second Garibaldi class ship (tentatively christened the *Giuseppe Mazzini*) were suspended in 1990 because of the parlous state of the Italian defense budget and experience with the *Giuseppe Garibaldi*, which quickly showed that the design was undersized and had been overloaded with unnecessary equipment. By mid-1995, the plans resurfaced in the form of a vessel almost twice the size of the *Garibaldi* that would provide added amphibious warfare capability at the expense of reduced air assets. This ship became known as the Nuova Unita Maggiore (NUM).

Initially, the main focus of the NUM was the support of air operations, but in 1996-97 those plans changed to a design oriented more toward amphibious operations. The U.S. LHD-1 Wasp class was seen as a role model for the NUM, with the Spanish *Principe de Asturias* and British HMS *Ocean* also influencing the design concept.

Funding Made Available

Initial funding for the through-deck ship was made available in the 1996-97 naval budget. This was understood to be a result of the Italian Navy's failure to provide funding for a fourth, slightly modified, enhanced San Giorgio-class amphibious landing dock (LPD). Another alternative considered was to convert selected merchant ships for the purpose of providing an amphibious dimension for the Navy.

As the new design evolved, it moved toward a more versatile, multimission role. The concept of an aircraft support vessel was de-emphasized in favor of a ship capable of supporting amphibious landing operations as well as acting as a command and control center. The capacity to undertake civilian emergency missions was incorporated as well. As the design moved further away from the original concept, it was renamed the Unita Maggiore Per Operazione Amfibe. At the same time, the name *Luigi Einaudi* became associated with the design. It should be noted that Italian warships are frequently "associated" with a specific name long before any metal is cut for their construction, and that such associations rarely reflect the final name given to the ship. This program was no exception, and the name *Luigi Einaudi* proved as ephemeral as so many others.

The final configuration was largely determined by the aircraft selected for use on board the vessel. In Italy's case, the fixed-wing STOVL aircraft is the McDonnell Douglas AV-8B Harrier Plus. However, this aircraft has a limited future life, and it is likely that a replacement will be procured. This issue was to have a major impact on the design.

Favorable Delays?

In hindsight, the financially dictated delay in obtaining approval for a second Garibaldi class ship may, in fact, have worked in favor of the Italian Navy. Having been forced to postpone the construction plans, the designers had time to change the vessel to better correspond with current and future operating requirements. Experience showed that both the *Giuseppe Garibaldi* and the San Giorgio class were undersized for their roles and that a larger ship was needed to carry out necessary operating requirements effectively. The San Giorgios had already required a significant series of modifications, including the extension of the helicopter deck, removal of the bow doors, and elimination of the forward 76mm gun in order to correct some of the design's deficiencies.

The UMPA project won approval for design definition on December 10, 1997. This was for a design that had a displacement of 22,500 tonnes in full load, and featured a well deck and a full-length flight deck with a ski jump. At the time, an in-service date had not been fixed, although the national Defense Model (*Modello di Difesa*) white paper indicated 2004 as a target date.

The Italian House and Senate parliamentary defense committees endorsed the plan for the building of this ship in February 1998, and the ship officially received its future name. At that time, a contract was expected to be awarded to Fincantieri in early 1999.

The proposed schedule suggested that construction would begin in 2001 for a 2005 launch. Sea trials were to follow in 2006, with a final handover to the Navy in 2007. It would then replace in service the guided-missile helicopter cruiser *Vittorio Veneto*.

However, the construction contract was not actually awarded until November 2000. Interestingly, the design had been further modified by this point: The well deck was deleted, and troop capacity was restricted to approximately 360 troops (450 in an overload condition), and optionally 20 tanks or 100 light vehicles could be carried on the hangar deck in lieu of aircraft. The vehicles would load via ramps. This change was accompanied by a further change in designation to aircraft carrier.

Contract Signed

The contract for this ship was registered with the Italian General Accounting Office in March 2001, this being the last hurdle before construction could actually commence. At this point, it was announced that the ship would be sized to provide a capability for operating either of the JSF prototypes currently being evaluated in the U.S. In other words, it had to be able to accommodate the heaviest likely outcome of that program. This resulted in a further increase in the ship's dimensions to more than 26,000 tonnes full load. In addition, features that would increase cost and adversely affect aircraft operations were deleted. This meant the deletion of the three planned 76mm guns and their Dardo-E fire control radar. The bow was slightly reconfigured to take advantage of the removal of the forward 76 millimeters.

In this final form, the first metal on the new ship was cut on July 17, 2001, and its name was formally announced. Contrary to press speculation, the ship was named the *Andrea Doria*, honoring an earlier helicopter-carrying cruiser and a World War II battleship. Activity during 2002 mainly involved ordering the various subsystems for the ship. The ship was constructed at Muggiano (bow) and Riva Trigoso (center and stern) and was joined, outfitted and tested at Muggiano. A second contract, for the development and supply of the combat system, was signed with an AMS-led industrial group in October 2002.

Conte Di Cavour

In July 2004, the ship was renamed the *Conte di Cavour*, honoring Italy's first prime minister and a battleship that was sunk early in World War II at Taranto. The names Andrea Doria and Caio Duilio were transferred to the two Horizon class destroyers being built for the Italian Navy. The *Conte di Cavour* was launched on July 20, 2004, at which time it was stated she would become operational in 2008. According to the Italian Navy, the *Conte di Cavour* formally commissioned in March 2008. She took part in the Haiti earthquake relief operations in January 2010.

New Amphibious Lift Ship

By mid-2005, the Italian Navy had issued a requirement for a new amphibious warfare ship that would maintain its amphibious lift capability at a battalion with helicopter and logistics support. This quickly evolved into an LHD-type vessel. Additional tasks for the new vessel included the transport of heavy vehicles and the provision of naval fire support. Two initial design concepts have been released, one of which features a combined superstructure and hangar amidships with flight decks for two helicopters fore and aft of that block. The other option has the superstructure and hangar block forward, with a single flight deck for four helicopters aft.

Another option mentioned in connection with this project was that the ship in question could become the replacement for the *Giuseppe Garibaldi*. In this respect, it has been noted that the currently announced specification for the new ship is very close to that which eventually led to the *Conte di Cavour*.

In 2008, the Russian Navy expressed an interest in purchasing European-built amphibious assault ships, including helicopter-carrying ships and amphibious transport docks. At that time, the Mistral class was the favored candidate for the former requirement, while the Dutch Enforcer class was prominent in the latter category. Unfortunately, the list of interested bidders for these contracts did not include Fincantieri, and it would appear that the Conte di Cavour class was not in the running for either of these applications at that time.

During 2009-10, Russian interest in the Mistral design appeared to cool somewhat, with corresponding increases in attention to alternative solutions. This resulted in the Conte di Cavour class being included in Russian approaches. However, the approaches in question were almost certainly a negotiating ploy that served its purposes. The stalled negotiations with the French picked up steam again and the governments of Russia and France finalized a deal for the purchase of Mistral assault ships in June 2011. The contract value is unclear at this time, as media reports vary. Some have reported Anatoly Isaikin, director of Russia's state-run arms exporter Rosoboronexport, as saying that Russia will pay France $1.2 billion for two Mistral-class helicopter carriers. However, other reports put the value at $1.7 billion. A second pair of Mistrals will be built in Russia. This appears to have eliminated any prospect of additional sales of the Conte di Cavour design.

Funding

In 1997 it was reported that ITL50 billion had been allocated in that year's defense budget for research into the development of a new short takeoff/vertical landing aircraft carrier or amphibious attack ship. In the summer of 1998, the total cost of the program was pegged at ITL1,500 billion ($854 million) by MARISTAT (the Italian naval staff). This figure excludes the SAAM/IT system (which is already funded by FSAF full-scale development), the initial production contract, and the cost of the air group. The latter is directly contingent on the type of aircraft to be selected.

Contracts/Orders & Options

Contractor	Award ($ millions)	Date/Description
Sol-Air Anti-Missiles	1,000	Jul 1996 – Anti-air missile systems, including four eight-cell vertical launchers for ASTER 15s (joint contract with French CVN *Charles de Gaulle*).
Fincantieri	780	Nov 2000 – Contract for building the *Conte di Cavour*.
FiatAvio	40	Feb 2002 – This agreement covered the supply, installation and maintenance of four LM2500 engines for the new *Andrea Doria* (since renamed *Conte di Cavour*) aircraft carrier. The first engines were to be delivered in 2003. Each engine has a General Electric/FiatAvio turbine and FiatAvio control unit and auxiliary systems.

Contractor	Award ($ millions)	Date/Description
Altair Filter Technology	N/A	Oct 2002 – Order for Vega intake filtration system placed by FiatAvio for a total of 12 packaged LM2500 turbines. Four units are on the Italian Navy's new *Conte di Cavour* aircraft carrier. In addition, two units will be on each of four Horizon class frigates.

N/A = Not Available.

Timetable

Month	Year	Major Development
Jul	1994	Chief of Navy expresses need for second light carrier
Summer	1995	Funding allocated for STOVL carrier design study
Jul	1996	ASTER 15 selected for future carrier
Dec	1997	Program approved for design definition
Feb	1998	Program wins parliamentary approval; ship name chosen
Fall	1998	Italian Navy outlines plans
Nov	2000	Contract awarded
Jul	2001	First metal cut
Jul	2004	*Andrea Doria* renamed and launched as *Conte di Cavour*
	2007	Sea trials begin
Mar	2008	*Conte di Cavour* commissioned

Worldwide Distribution/Inventories

Italy. One in service.

Forecast Rationale

The sovereign debt crisis that afflicts the European Union is likely to have a severe impact on all future building programs, with major capital items such as the *Conte di Cavour* being the worst affected. Essentially, those European Union countries that are at the center of the crisis cannot even think about affording such ships, and the rest will be too heavily committed to bailing out the first group to consider such a procurement. Therefore, landing an order for additional ships of this class is only a remote possibility.

The above is a realistic response to the perception that the Italian Navy is unlikely to order a sister ship for the *Conte di Cavour*. Although there are very good reasons why such a sister ship should be built, the funds for construction of the ship simply do not exist. The only ray of hope is that the Italian Navy has plans to build three LPDs to replace the small and aging San Giorgio class. The best that can be expected is that one of these will emerge as a semi-sister to the *Conte di Cavour*.

The type of ship represented by the Conte di Cavour class is a hot property on the export market at this time. There are at least six or seven possible short-term orders scattered around the world, but none seem likely to be signed in the near future. In competitions for such orders, the Conte di Cavour will be competing with the Spanish Strategic Projection Ship and Mistral. In such competitions, the terms of the debate will be set by the two leading competitors, making the chances of the third place competitor slim indeed.

Overall, it seems highly unlikely that an additional order, either from home or from the export market, will be forthcoming. This report will be maintained in the short term in case an export opportunity emerges, but this report will probably be archived next year.

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