the past
il passato

Frigate

Leghorn,
Italian Naval Academy

The picture shows the armoured frigate “Principe Umberto” in the waters of Cape Horn. She was one of the first frigates of the newly constituted (1861) Regia Marina (Italian Royal Navy). The vessel was built in Genoa, in 1862. She had one steam reciprocating engine of 600 HP, one propeller and was able to steam at 12 knots. The “Principe Umberto” was the first Italian Navy ship to pass Cape Horn. By the turn of the century the name “Frigate” had disappeared and the class names were “Torpedo boats” for displacements up to 1,000 t, Destroyers up to 3,000 t, and Cruisers for heavier displacements. The class name Frigate was back after WW II, and here is another Italian breakthrough: the “Bergamini”, the class ASW Frigate of the late Fifties. They were the first escort vessels in the world fitted with an organic ASW helicopter. More recently (the late Seventies) the “Lupo” class entered service, a technological cornerstone, soon followed by the heavier “Maestrale” class ASW frigate. The next step is the “Bergamini” class, the Italian design of the FREMM frigates (European Multi-Mission Frigates).

L’illustrazione riporta la fregata armata “Principe Umberto” nelle acque di Capo Horn. La nave era una delle prime fregate della neocostituita (1861) Regia Marina. Fu costruita a Genova nel 1862 e dotata di un motore a vapore di 600 HP ed un’elica; era in grado di navigare a 12 nodi. Il “Principe Umberto” fu la prima nave della Marina Militare italiana a doppiare Capo Horn. Alla fine del secolo il nome “Fregata” era già scomparso e sostituito da “Torpediniera” per indicare unità navali con dislocamento fino a 1.000 t, Cacciatorpediniere fino a 3.000 t e Incrociatore per dislocamenti superiori. Il nome di classe Fregata fece ritorno dopo la seconda guerra mondiale, quando ci fu il ritorno di un’altra grande nave italiana: il “Bergamini” classe ASW Fregata della fine degli anni cinquanta. Furono le prime unità di scorta nel mondo dotate di un elicottero ASW. Più recentemente (fine anni settanta) è entrata in servizio la classe “Lupo”, di grande rilievo tecnologico, seguita dalla classe “Maestrale” di dimensioni maggiori. Il prossimo passo è rappresentato dalla classe “Bergamini”, cioè la versione italiana delle fregate FREMM (Fregata Europea Multi Missione).

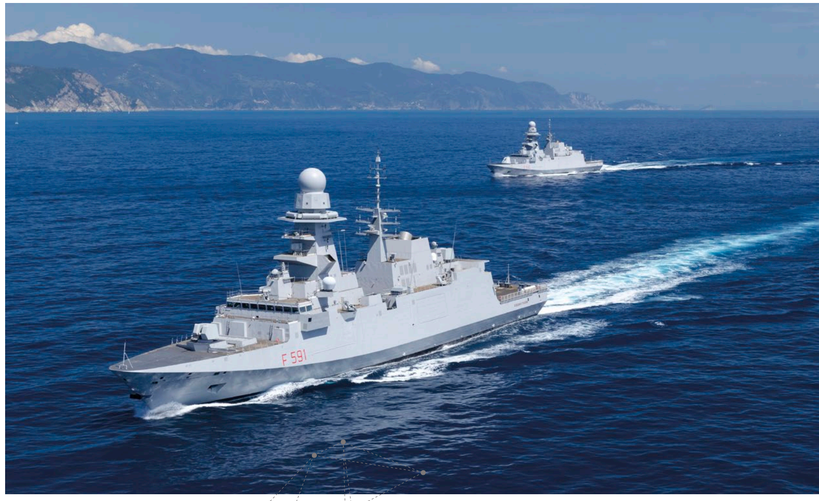
FINCANTIERI
The sea ahead

Head Office
Via Genova, 1 - 34121 Trieste (Italy)
ph. +39 040 3193111 - fax +39 040 3192305

Naval Vessels
Via Cipro, 11 - 16129 Genova (Italy)
ph. +39 010 59951 - fax +39 010 5995379/272

fincantieri.com

sanesmarketing M-02/16



Fremm Frigate
Bergamini Class

FINCANTIERI
The sea ahead

Fremm Frigate

Bergamini Class

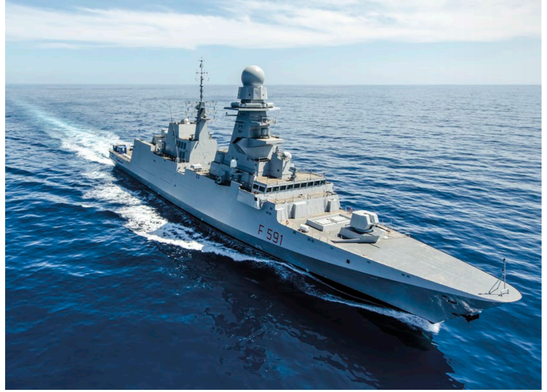
_ overview

— Fincantieri is one of world's largest shipbuilding groups and the number one by diversification and innovation. The Group is a reference player in design and construction of high-tech naval vessels and has among its clients the Italian Navy and the U.S. Navy as well as several foreign ones. It is one of the partners in important multinational programmes, such as the European FREMM frigates, the Horizon destroyers and the U212A submarines. The Group is capable of designing and building a broad and complete product portfolio, including surface combatant ships, auxiliary and special vessels as well as submarines. Fincantieri can act as Prime Contractor, managing a full ship life-cycle support, from design to construction, to logistic support, to after sales assistance. The Group can also carry out design activities and provide technical assistance to design and production of naval vessels at third parties shipyards, in the frame of agreements that often include also transfer of technology and training.

— Fincantieri è uno dei più importanti complessi cantieristici al mondo e il primo per diversificazione e innovazione. Il Gruppo è operatore di riferimento per quanto riguarda la progettazione e la costruzione di navi militari ad alto contenuto tecnologico e ha nel suo portafoglio clienti la Marina Italiana, la US Navy oltre a numerose Marine estere. È partner nell'ambito di importanti programmi sovranazionali quali i programmi europei per le fregate FREMM, i cacciatorpediniere classe Orizzonte e i sommergibili U212. Il Gruppo è in grado di progettare e costruire un ampio e completo portafoglio prodotti, che comprende navi combattenti di superficie, navi ausiliarie e speciali, nonché sommergibili. Fincantieri gestisce in qualità di Prime Contractor tutte le fasi del ciclo di vita della nave, dalla progettazione alla costruzione, al supporto logistico, all'assistenza post-vendita. È inoltre in grado di svolgere attività di progettazione e assistenza tecnica a progettazione di dettaglio e produzione di navi militari presso cantieri terzi, nel quadro di accordi che sovente includono anche trasferimento di tecnologia e training.

Fremm

Carlo Bergamini
Virginio Fasan
Carlo Margottini
Carabiniere
Alpino
Luigi Rizzo



_ main characteristics

Length overall	144.00 m
Length between perpendiculars	132.50 m
Max breadth	19.70 m
Full load displacement	abt. 6 500 t
Draft	5.10 m
Max continuous speed (GT mode)	≥27 kn
Max continuous speed (Electric mode)	16 kn
Max speed (auxiliary propulsion)	7 kn
Range at 15 kn	6 000 nm
Endurance	45 days
Crew	145 people
Total accommodation	200 people

ENERGY AND PROPULSION SYSTEM

Propulsion System CODLAG with:
- 1 x 32 MW Gas Turbine
- 2 x 2.2 MW EPM

Electrical Generating System	4 x 2.1 MWe DD/GG
Propellers	2 FCPP
Azimuthal propeller	1 electrical driven

HELO CAPABILITIES

Flight deck and 2 hangars for EH101/NH90

_ combat system

Anti Submarine Warfare (ASW)

1 Combat Management System
1 Bow Mounted Sonar
1 Mine Avoidance Sonar
1 Underwater Telephones
2 25 mm machine guns
1 Torpedo Launching System (2 triple launchers)
1 Anti-Submarine Rocket System (2 x 2)
+ 1 Surface to Surface Missile (2 x 2)
1 Vertical Launching System (2 x 8 A43 or A50)
1 Torpedo Decoy Launching System (2 launchers)
1 Variable Depth Sonar + Towed Array
2 76 mm Gun Strales
2 Fire Control System
1 Anti Air Warfare Decoy Launching System (2 launchers)
2 Navigation Radars
1 Communication - Electronic System Measure
1 Radar - Electronic System Measure
1 Radar - Electronic Countermeasures
1 Multifunctional Radar
1 Surface Surveillance Radar
1 Identification Friend or Foe
1 Transponder
1 Optronic system (only Infra-red)
1 Integrated Communication System
1 Navigation System

General Purpose (GP)

1 Combat Management System
1 Bow Mounted Sonar
1 Mine Avoidance Sonar
1 Underwater Telephones
2 25 mm machine guns
1 Torpedo Launching System (2 triple launchers)
1 Surface to Surface Missile (4 x 2)
1 Vertical Launching System (2 x 8 A43 or A50)
1 Torpedo Decoy Launching System (2 launchers) (fitted for)
1 Towed Array (fitted for)
1 76 mm Gun Strales
1 127 mm Gun
2 Fire Control System
1 Anti Air Warfare Decoy Launching System (2 launchers)
2 Navigation Radars
1 Communication - Electronic System Measure
1 Radar - Electronic System Measure
1 Radar - Electronic Countermeasures
1 Multifunctional Radar
1 Surface Surveillance Radar
1 Identification Friend or Foe
1 Transponder
1 Optronic system (only Infra-red)
1 Integrated Communication System
1 Navigation System

Aegis Fremm

_ main characteristics

Length overall	abt. 144.00 m
Length between perpendiculars	132.50 m
Max breadth	19.70 m
Depth to weather deck	11.30 m
Max continuous speed (GT mode)	≥30 kn
Max continuous speed (Diesel mode)	≥18 kn
Cruising speed	15 kn
Range at 15 kn	6 000 nm
Accommodation capacity	165 + 63 people

ENERGY AND PROPULSION SYSTEM

CODAG type propulsion system, with two independent propelling plants
- two x 20.5 MW power Gas Turbines (38°C air inlet temperature)
- two Diesel Engines each of about 6.5 MW power
- two Reduction Gears (two inputs one output) driving two shaftlines with FCP propellers

One Azimuthal Retractable Thruster of about 1 MW power to assure the Auxiliary Propulsion function, up to 7 kn ship speed, and to manoeuvre inside harbour.
Two Electrical Power Stations for a total power of about 6 400 kW.
Option for aft boat ramp for special forces.

COMBAT SYSTEM

1 BMS	1 VDS	1 RESM + CESM
1 RECM	1 CIWS	1 SAM VLS (up to 48 cells)
1 SSM (2 x 4)	2 FCS	1 Main gun 76/62
1 TLS (2 x 3)	2 AAW + ASW DLS	

Escort Vessel

_ main characteristics

Length overall about	144.00 m
Length between perpendiculars	132.50 m
Max breadth	19.70 m
Depth to weather deck	11.30 m
Full load displacement (EOL) about	6 550 t
Max continuous speed (GT mode)	≥28 kn
Max continuous speed (Diesel mode)	≥20 kn
Cruising speed	15 kn
Range at 15 kn	6 000 nm
Accommodation capacity	165 + 63 people

ENERGY AND PROPULSION SYSTEM

CODOG type propulsion system, with two independent propelling plants.
One Azimuthal Retractable Thruster of about 1 MW power to assure the Auxiliary Propulsion function, up to 7 kn ship speed, and to manoeuvre inside harbour.
Two Electrical Power Stations for a total power of about 6 400 kW.

COMBAT SYSTEM

1 BMS	2 FCS
2 SRA 25 mm	1 AAW DLS (2 launchers)
2 SCG 40 mm + E/O System	1 2D Surveillance Radar
1 TLS (2 x 3)	1 SSM (2 x 4)
1 VDS	1 RESM
1 RECM	1 SAM (4 x 8) + MFR
1 CIWS from 20 to 76 mm	1 IFF-PA
1 ASW DLS (2 launchers)	1 LCG 127/64