

VIGIA

CHILEAN NAVY MAGAZINE

www.revistavigia.cl



Special Edition
The Chilean Navy

Contents



3

**From the Admiral
Commander-in-Chief of the Navy**
The Chilean Navy

3



4

Our Country
Geographical Location
Navy Areas of Responsibility
Naval Zones
• Maritime Territory
• Maritime Transport: Essential for the Country

4

5

6

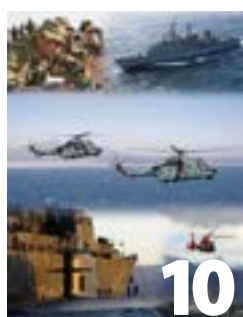


7

Who we are
Organization Chart
• Commitment and Professionalism
• The Naval Family
• The Blanca Estela Foundation
Our History
• Commander Prat's legacy

7

8



10

What we do
National Defence
Our Strategy
Main International Activities
• Peacekeeping Operations
Maritime Activities

10

11

12

14

16



17

How we do it
Forces and Materiel
Our Units
The SIRATH-Ice Project
Our commitment with safety at sea
Civilian support and disaster relief
ASMAR - Naval Shipyards
On Course Towards the Future

17

18

20

22

23

24

25

26



VIGIA
THE CHILEAN NAVY MAGAZINE 2005

Chilean Navy Public Affairs Director:

Captain Felipe García-Huidobro.

Vigía Magazine Director:

Captain Fernando Mingram.

Vigía Magazine Editor:

First Lieutenant Jorge Bastias.

Journalists: Daniela Rosa; Javiera Sepúlveda; Nelson Garcés.

Photographers: Eduardo Leiva, Mario González, Rolando Vejar, Jose Luis Cancino, Carlos Olivares, Rubén Cabrera, Américo Duarte, Luis Bustos.

Production: Sipimex Ltda., Editorial Kactus.

General Manager: Dominique Verhasselt.

Design and Digital Production:

Jaime Alegría; Víctor Toro; Andrea del Pinco.

Photography: Armada de Chile, Sipimex/Kactus Foto.

Print: Morgan Impresores.

WEB SITES

Chilean Navy

www.armada.cl

Maritime Territory and Merchant Marine General Directorate

www.directemar.cl

Naval Hydrographical and Oceanographic Service

www.shoa.cl

ASMAR-Shipbuilding and Ship Repair Co.

www.asmar.cl

Vigia Magazine

<http://www.revistavigia.cl>



The Chilean Navy

Those who believe that the main actions and responsibilities of the Chilean Navy are restricted to the defence of sovereignty and territorial integrity need to know that our mission as an institution of National Defence also includes the protection and development of maritime interests and support for the foreign policy of the state. In accordance with this, we have developed our strategy, the "Three Vectors Strategy", in reference to the sphere of our major responsibilities: Defence, Maritime and International.

MARITIME AREA OF RESPONSIBILITY

The Navy is the extension of the State towards the sea, where Chile has commitments and responsibilities in an area covering approximately 26,476,005 sq Kms. in contrast with the almost 2,000,000 sq Kms. of our continental, insular and Antarctic territory.

In this vast ocean, the Navy protects human life, assumes search and rescue responsibilities and controls maritime traffic. Within the Exclusive Economic Zone, the Navy controls an area which covers more than 4,542,990 sq Kms., in prevention of depredation of all our natural resources and to ensure that the ecosystem is not affected by unauthorized activities.

We contribute to the oceanographic research along the whole maritime territory, and also, in the adjacent zone, we must prevent illegal activities, such as drug trafficking. Due to the geographical condition of the country, our Navy has always supported the people living in isolated areas and in the nation's overseas territories.

As well, in order to support the maritime traffic that sails through our area of responsibility, we provide navigational charts and maritime aids as required.

GLOBAL AREAS OF RESPONSIBILITY

The Navy's presence is not restricted to an area delimited by parallels and meridians. We are, and always will be, where the interests of Chile are involved. The new international situation requires us to participate in collective security measures in accordance with international law. This is particularly important in the case of our country which has an open economy and where 80 percent of imports and exports are conveyed by sea.

This demands efficient sea lines of communication which make possible an efficient flow of people, services and goods. Therefore, the challenge for the Navy is to be prepared with human resources and a force structure to enable it to contribute to the stability and order where our national interests lie. To do this, we direct our efforts to achieve an authentic and efficient interoperability with other navies in the region and in those areas in the world related to these interests. We must also be prepared to face up emerging threats, such as terrorism, drug traffic and illegal immigration by sea. To minimize these risks, we must cooperate with our neighbours, contribute with humanitarian assistance and disaster relief if needed and participate in peace missions, among other tasks, all part of our international responsibilities and commitment.

None of these duties could be performed without adequate assets; there so, in order to increase our capabilities and skills, during 2008 the Navy will complete its most important unit renovation plan of the last hundred years, incorporating a total of eight second-hand frigates from the Royal Netherlands Navy and the Royal Navy, and two new Scorpene submarines. Also, we are working hard in the Danubio IV Project, the construction in our own shipyards of two Maritime Zone Patrol Vessels, one of them already finished and commissioned. Besides, the Naval Aviation is developing the Alcatraz Project to replace the old P-3ACH Orion with three new EADS/CASA C-295, maritime patrol aircrafts.

My intention with these few words is to introduce you to a great and historical institution of which I'm extremely proud to be its Commander-in-Chief.

This magazine provides a brief overview about our Navy, who we are, our crew and forces, and what we do to strengthen our Nation. I hope you will enjoy it and, welcome you the Chilean Navy!

Rodolfo Codina

Admiral

Commander – in – Chief of the Chilean Navy

Our Country

Geographical Location

Chile is a country with a population of slightly more than 15 million inhabitants, located in south-western South America. Its territory extends along a 4,329 sq. Kms. strip, with an average width of 180 Kms. Chile borders Peru to the north, Bolivia and Argentina to the east. To the west it extends into the Pacific Ocean, and to the south it reaches the Pole through the Chilean Antarctic Territory. For administrative purposes, its territory is divided into 15 Regions, which include areas far out in the Pacific Ocean, such as Easter Island, the Archipelago of Juan Fernández and the islands Salas and Gómez, San Ambrosio and San Félix. Chile has a presence in three continents: America, Oceania and the Antarctica.



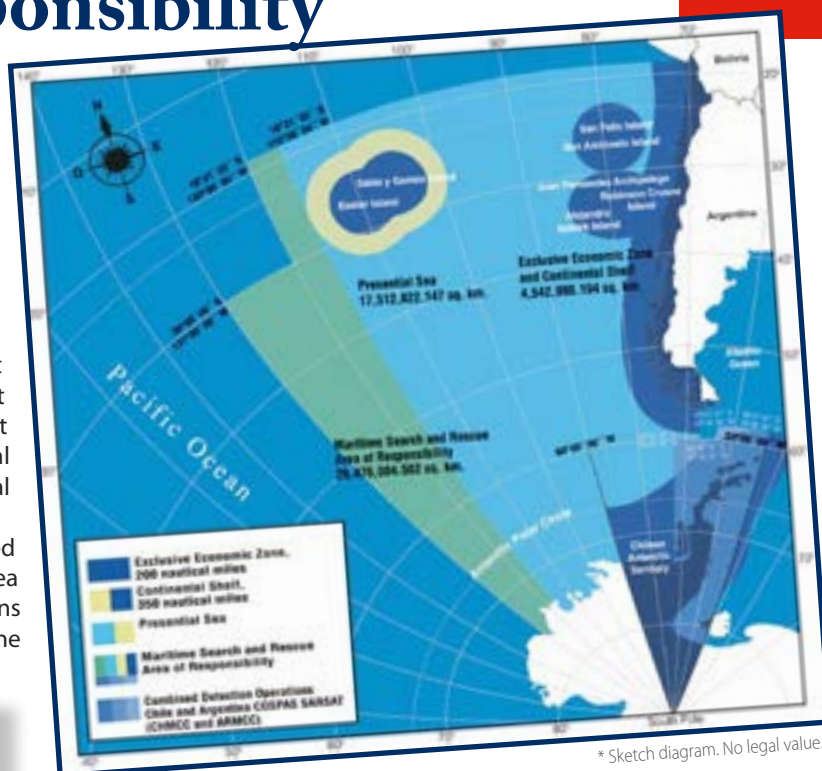
Across most of its territory, Chile features different types of climates which include the driest area in the world - the Atacama Desert in the north - while in the south, annual rainfall averages 5,000 millimetres. The northern region is rich in mineral resources; agricultural and farming activity is concentrated in the Central Valley, while in the south, forestry and cattle raising are main activities. Fishing and fish-farming are carried out along the coast, particularly in the south, where the 5,000 islands of the great archipelagos offer ideal conditions for these activities. Along the northern and central coast of Chile, the nice beaches are ideal for highly popular nautical sports. Tourism is also well developed in the area of the lakes in the south, and towards Patagonia.

The Navy carries out its activities in a well-defined geographical context, which includes the Chilean maritime territory. Its distinctiveness and its huge potential for contributing to the development of the country require it to be a professional institution with an adequate force structure.

Navy Areas of Responsibility

Chile's Exclusive Economic Zone (EEZ) is approximately 5 million square kilometres, this is, more than six times its mainland territory, not considering the Chilean Antarctic Territory. Including the Presential Sea, shown in the diagram, the national maritime area increases to 18 million square kilometres. This maritime zone corresponds to an area in the Pacific Ocean where the State of Chile projects its maritime interests, undertaking different duties and responsibilities such as environmental protection and preservation of marine resources, in strict accordance with the law of the Sea. This has a direct impact on the biomass present in the area and on our development as a nation, because the living organisms in the Presential Sea and in the Exclusive Economic Zone share their natural habitat as part of the cycle of life.

If additionally we include areas in which Chile has acquired responsibilities for maritime search and rescue, this area increases to almost 30 million square kilometres, which means that the Chilean Area of Responsibility is almost five times the size of the whole South American Continent mainland.



The Navy operates in all scenarios



Naval Zones

Chilean Maritime Territory

The activities carried out in the maritime territory - including inner waters and ocean areas - provide political, strategic, economic, scientific and social benefits that contribute to the developing of the country. These activities include mining, fishing, fish-farming, tourism and shipping, the main link with the rest of the world.

The potential wealth that this represents implies the responsibility to protect it. This need is stressed when considering the huge extension of the areas involved.

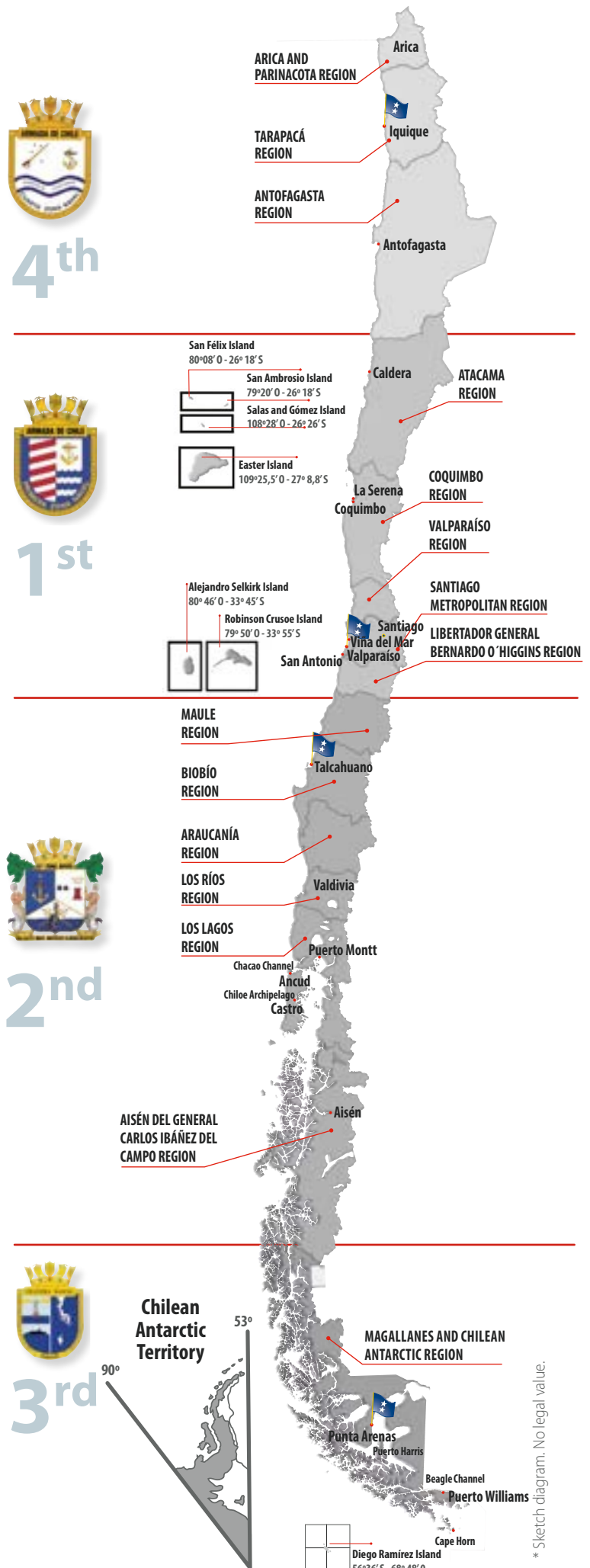
To efficiently accomplish their duties throughout the national maritime territory, the Chilean Navy has divided the country into four Naval Zones, operational and logistics Commands, intended to contribute to the coastal defence and the control and protection of maritime traffic in their respective areas.



The sea is essential for the economic model and commerce of our country. More than 80% of the Chilean foreign trade is carried out by sea.

Maritime Transport: Essential for the Country

Chile's location in the Pacific along with its geographical condition, make maritime transportation the most convenient and efficient way to trade products with the rest of the world. More than 80% of all Chilean foreign trade is carried out by sea. This is even more important given the increase in free trade agreements such as those signed with Australia, China, Japan, South Korea, United States of America and the European Union, or the preferential trade agreement with India. Consequently, Chilean ports are undergoing a significant modernization process through a network of concessions with private companies. This highlights the importance of merchant shipping and the need for maintaining the existing routes free of any kind of threats.

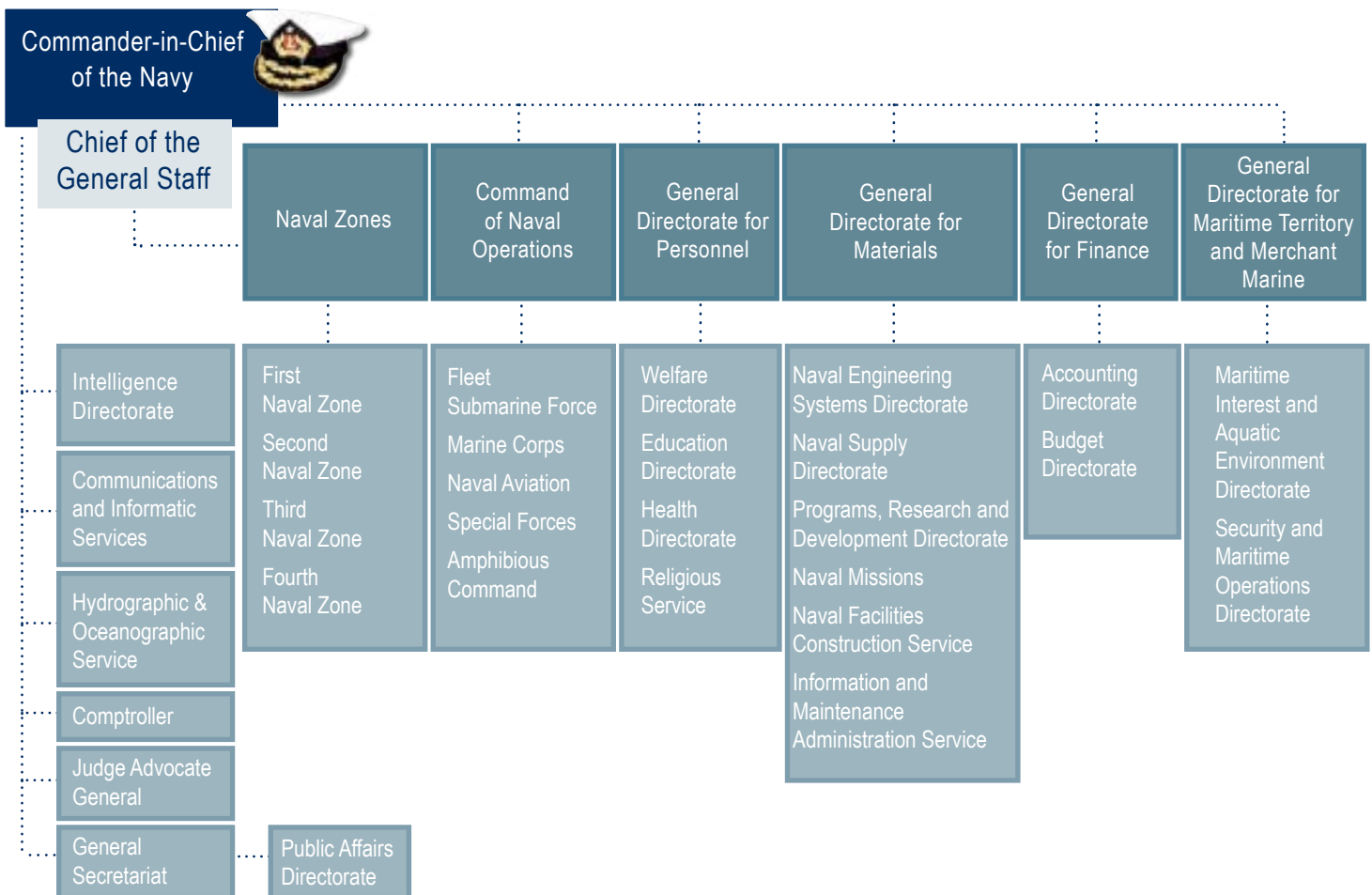




Who we are

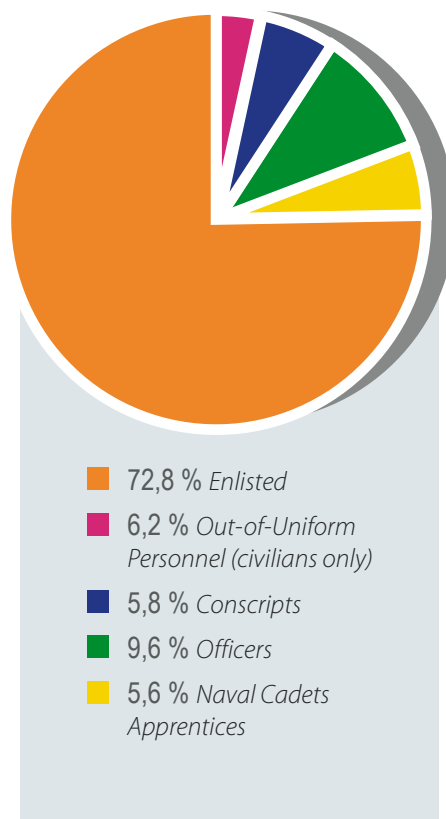
The main assets of the Chilean Navy are the more than 22,000 men and women, professionals that make up naval crews, working throughout the national maritime territory and overseas. All of them have strong service vocation and solid principles and values, revealed not only in their day-to-day activities but also within their families. Their strong service vocation is a heritage developed from its history and a long list of naval heroes.

Organization Chart



Commitment and Professionalism

The Chilean Navy is present with units and shore facilities throughout the nation and overseas. Uniformed and civilian personnel, men and women, live and work together, performing different duties through a wide range of professions, all of which are essential for the various responsibilities entrusted to the Navy and for its contribution to the development of the Country. Our challenge is to provide the best qualified personnel, both technically and operationally. On board our surface ships we are gradually incorporating women.



The Naval Family

Just as the Chilean Navy finds its strength in its people, the members of the institution in turn have a significant foundation: the family.

This basic core of society, which in the Navy is known as the Naval Family, enables individuals to act correctly in all duties and activities.

Blanca Estela Foundation

The Blanca Estela Foundation, a non profit organization, is formed by the wives of active and retired Navy Officers, who accomplish important support duties at Naval Hospitals. They also carry out fund-raising activities for the direct benefit of naval personnel in need.

The Foundation has taken the name of the daughter of our greatest hero, Commander Arturo Prat and his wife Carmela Carvajal. Its current president is Mrs. Gloria Macchiavello de Codina, wife of the Commander-in-Chief of the Navy.

THE FIRST FLEET 1818



THE FLEET IN THE PACIFIC WAR, 1879



FLAG SHIP "LATORRE" IN 1920



CRUISERS HEADING FORMATION, 1978



THE FLEET IN 1995



THE FLEET TODAY



Our History, The legacy of Commander Arturo Prat

Greatest Hero of the Chilean Navy



"Mates, the odds are against us. Our colours have never been lowered to the enemy, and I trust this will not be so today. As long as I live that flag shall fly high in its place and, if I die, my officers know how to fulfil their duty."

The beginnings of the Chilean Navy dates back to 1818, the same year that Chile was proclaimed an independent nation. A year before, following the Battle of Chacabuco, General Bernardo O'Higgins prophetically declared "This victory and another hundred shall be of no significance if we do not gain Sea Control". This led to the development of Chile's Naval Power, and the first legal resolutions outlining the Navy's organization were promulgated. Chile's First National Fleet was created and the Academy for Young Midshipmen (predecessor of the current Naval Academy) was founded, as well as the Marine Corps and the Supply Commissary, allowing the early Governors to have an extraordinary capability: Sea Control.

A history written by their own members...

The Chilean Navy lifelong allegiance to its country has been shaped throughout the years by notable men who, when needed, have been ready to give their lives. The most outstanding example of this commitment is that of Commander Arturo Prat, whose name went down in history on the 21st of May 1879 for his exceptional heroism demonstrated on that day at the Naval Battle of Iquique, during the Pacific War against Peru and Bolivia. Prat, while in command of the fragile corvette "Esmeralda" and despite the inferiority of his own forces, fought to the end against the imposing Peruvian ironclad monitor "Huascar". He valiantly chose to give his life alongside his crew rather than surrender his ship to the enemy. Prat's act of bravery is commemorated every year on May 21st. On that day, the country pays tribute to the courage shown by Prat and his men, whose deeds motivated the nation and its military forces to victory. Throughout Chile's naval history, other exceptional individuals have nevertheless also contributed great deeds towards the development of our Navy making it the proud and reputable institution it is today.



What we do

As almost all the modern navies around the world, the basic purpose of the Chilean Navy is to gain Sea Control. This control of the areas under the navy responsibility provides to our country benefits and capabilities that help to the national development. To achieve these main tasks, our Navy has developed the Three Vectors Strategy, valid likewise in peace and wartime. These three vectors are: the Defence one, thus to preserve Chilean sovereignty and territorial integrity; the Maritime one, thus to protect and develop the national maritime interests; and, the International one, thus to support Chilean Foreign Policy.



National Defence

The Chilean Navy is part of a National Defence Strategy. The joint training and readiness is vital to preserve sovereignty and territorial integrity of our country. For that purpose, the Armed Forces are well prepared to operate and combat in any place, under any condition, considering the different possible scenarios. Both Army and Air Force have also conducted their modernization process that ensures Chile a modern and well prepared force, capable to deterrence.



"OUR PRESENCE IN ANTARCTICA"

The Navy has maintained an unrelenting presence in the Antarctic Continent from the onset of the XXth century. The salvage in 1916 of Endurance's survivors led by Ernest Shackleton, by means of Commander Luis Pardo and his crew on board the "Yelcho", reflects the Navy's dedication in the waters of the white continent, where it has been permanently involved. In 1947 the "Arturo Prat" Naval Antarctic Base began to operate, having been recently refurbished. Various Port Authorities operate throughout the area claimed by our country. The icebreaker "Almirante Viel" and other units carry out logistic campaigns during the summer period to provide supplies to the Chilean bases and perform surveillance in the watercourses. Both Argentinean and Chilean Navies have jointly created the Antarctic Combined Naval Patrol.



OUR STRATEGY

The Navy carries out its activities in accordance with the Three Vectors Strategy, for the purpose of establishing Sea Control.

Our Mission

- Preserve national security
- Safeguard sovereignty and territorial integrity
- Promote national interests overseas
- Boost national development



THREE VECTOR STRATEGY

Defending sovereignty and territorial integrity

DEFENCE VECTOR

Jointly with the Armed Forces

The contribution of the navy to the Country is primarily safety, so to generate a peaceful environment and provide socio-economic development. Furthermore, the Navy's power is excellent deterrence to face and manage an international crisis.

These objectives are contained in the following main functions:

- Safeguarding sovereignty and territorial integrity
- Maintaining a deterrence capability
- Managing Crisis
- Confronting low, medium, and high intensity conflicts

Protecting and Promoting Maritime Interests

MARITIME VECTOR

Institutional, with other State's Services

The Navy contributes to the development of the country, through the surveillance and control of its maritime areas of responsibility, and the protection of its maritime interests. In recent years, thanks to the economic growth, its responsibilities have increase considerably and as a result, the need for human and material resources for surveillance and control duties have raise. Both of these elements structure the Maritime Vector with the following functions:

- Protection of human life at sea
- Prevention and pollution control
- Navigation security
- Publication of nautical charts
- Navigation aids
- Meteorological support
- Coastal communications
- Support to isolated areas
- Scientific marine research
- Promotion of nautical sports



Supporting National Foreign Policy

INTERNATIONAL VECTOR

In conjunction with other Countries

The Navy's contribution is aimed at supporting National Foreign Policy by participating in multinational operations within International Law, making use of the benefits achieved to preserve peace and global stability. This also contributes to the economic and social development of the country, as a more secure world stimulates maritime transport, essential for foreign trade.

Within the scope of the International vector, the main functions of the Navy include:

- Participation in peace operations
- Combined exercises and operations
- Humanitarian support
- Naval presence
- Professional exchanges
- Mutual trust measures



Main International Activities

Combined Operations

On a yearly basis, the Navy participates in multinational exercises directed to establish and strengthen operational, technical and human ties with other Navies, and to be ready to participate in peacekeeping operations sponsored by United Nations. Moreover, the Navy seeks to consolidate its positioning in the Pacific Rim to make a better contribution to Chilean Foreign Policy in this area.

RIMPAC Hawaii (USA)

Combined Multinational Exercise
Surface Unit



TEAM WORK NORTH San Diego (USA)

Combined Multinational Exercise
Surface and Submarine Unit



PANAMAX Panama

Multinational Maritime Interdiction Exercise
Surface and Air assets



MARARA French Polynesia

Amphibious Exercise with
French Navy
LST and Marine Corps Group



ANFIBIO Chile (North area)

Amphibious Exercise with French Marine Corps
Chilean Marine Corps and Amphibious Command



INALAF Chile

Amphibious Exercise with Argentinean Marine Corps
Chilean Marine Corps



UNITAS

West coast Southern Phase
Combined Multinational Exercise
Surface unit



BOGATUN Valparaiso (Chile)

Combined Exercise with Argentinean Fleet units
National Fleet



TEAM WORK SOUTH Chile

Combined Multinational Exercise
Surface, Submarine and Air assets



VIEKAREN Chile

Search and Rescue (S&R) exercise with
Argentinean Navy
Third Naval Zone units



Peacekeeping Operations



MINUSTAH

(United Nations Mission in Haiti)

The United Nations Security Council Resolution called for a peacekeeping mission in Haiti to re-establish order and peace in that country. The Chilean Navy has been participating with a contingent since June 1st 2004, as part of a group that also includes members of the Army, Air Force and Police Forces, sent by the Government of Chile.



UNFICYP

(United Nations Forces for Peacekeeping in Cyprus)

UNFICYP was created in 1964 to avoid the expansion of the fight amongst the Cypriot, Greek and Turkish communities.

After the hostilities started in 1974, the responsibilities of this Mission increased. Today, UNFICYP remains on the island to supervise cease-fire, maintaining the buffer zone and undertaking humanitarian activities.

PEACEKEEPING OPERATIONS

Haiti

3,104.7 nautical miles
5,749.9 kms

PEACEKEEPING OPERATIONS

Cyprus

7,163 nautical miles
13,266 kms



TRAINING SHIP "ESMERALDA"

Every year, our tall ship "Esmeralda" carries out an intense training and instruction 6 or 7 month cruise around different parts of the world, with recently graduated Officers and Enlisted, showing the flag and calling upon ports of all five continents.



SOLIDARIDAD

Argentina

Disaster Relief Exercise with Argentinean Navy Flag Staff



INTERCAMBIO SUR

Chile - Argentina

Peacekeeping Operation Exercise



INTEGRACIÓN

Chile - Argentina (South area)

Combined Exercise with Argentinean Fleet units National Fleet



ANTARCTIC COMBINED NAVAL PATROL (PANC)

Antarctica

Antarctic Combined Naval Patrol with Argentinean Units AP "Almirante Viel" and other logistic units



Maritime Activities

Navigation Aids



Navigation Security



Prevention and Pollution Control



Search & Rescue and Protection of Life at Sea





How we do it

The Navy has human and material resources that are used in all of its areas of activity. Our units, our land-based facilities and our efforts are focused to achieve the different tasks to be accomplished. How we can do it? Hardworking, high-tech capabilities, commitment, professionalism, strong friendship and respect are our tools for success in our mission. We are the naval and maritime actors of our country and this is the way we do it.

Forces & Materiel

All forces are shaped as standard organizations responsible for the provision of trained and prepared units, for the structuring of task forces and for the accomplishment of assigned missions. The above mentioned assets are subordinated to the Command of Naval Operations

NATIONAL FLEET



Today the National Fleet is concluding a full renovation plan, since its ships have exceeded a 30-year service average. This renovation process is being accomplished with the incorporation of one Type 22 and three Type 23 British frigates, in addition to two "M" and two "L" Class frigates from the Royal Netherlands Navy.

NAVAL AVIATION



The Naval Aviation comprises all institutional air assets together with its on-land support infrastructure, organized, equipped and trained to be used by Naval Forces. Their main duties are air and maritime patrol and surveillance, surface warfare, antisubmarine warfare, personnel and cargo transport and contribute to protection of life at sea.

SUBMARINE FORCE



This force, that has recently finished a complete renovation process, operates two Scorpene units, SS "Carrera" and SS "O'Higgins", and two U-209 units, SS "Simpson" and SS "Thompson", build up the force. The submarine tender ship "Almirante Merino" completes the force by providing the necessary logistic support.

NORTH AND SOUTH MISSILE BOATS COMMANDS



These units are forces in presence in our Third and Fourth Naval Zones which operate under the authority of the respective Commander-in-Chief.

MARINE CORPS



These forces boast an enormous combative power that enhances Chile's deterrent capability. They are under the authority of the Commander-in-Chief of the Fourth and Third Naval Zones, respectively.

AMPHIBIOUS COMMAND



A centralized Command comprised of amphibious and transport assets, responsible for planning, directing and coordinating units and personnel training. As well, it performs all the requirements for support of the isolated areas and our overseas territories.

SPECIAL FORCES



This force has expanded its original functions in a way that currently includes not only ship-to-ship attacks, but also minesweeping operations, military artefacts neutralization, amphibious support and other special operations.



Type 22 Frigate
FF-19 "Almirante Williams"



Type 23 Frigate
FF-05 "Almirante Cochrane" - FF-06 "Almirante Condell"
FF-07 "Almirante Lynch"



"L" Class Frigate
FFG-11 "Capitán Prat"
FFG-14 "Almirante Latorre"



"M" Class Frigate
FF-15 "Almirante Blanco Encalada"
FF-18 "Almirante Riveros"



Oiler
AO-53 "Araucano"



Submarines

U-209 Class
SS-20 "Thomson"
SS-21 "Simpson"

Scorpene Class
SS-22 "Carrera"
SS-23 "O'Higgins"



Submarine Tender
BMS-42 "Almirante Merino"



Newport Class Landing Ship
LST-93 "Valdivia"



Fleet Tug
ATF-66 "Galvarino"
ATF-67 "Lautaro"



Batral Class Landing Ship
LST-92 "Rancagua"(*)
LST-95 "Chacabuco"(*)



Transport Ship
AP-41 "Aguiles"(*)



Icebreaker
AP-46 "Almirante Viel"



Saar 4 Class Missile Boat
LM-30 "Casma"
LM-31 "Chipana"
LM-34 "Angamos"



Tiger 148 Class Missile Boat
LM-36 "Riquelme"
LM-37 "Orella"
LM-38 "Serrano"
LM-39 "Uribe"



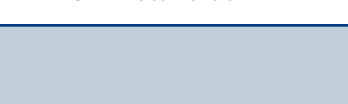
Buoy Ship
BRS-63 "Ingeniero Slight"



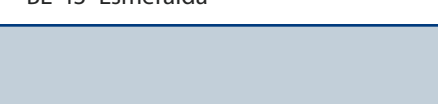
Research Ship
AGOR-60 "Vidal Gormáz"



Maritime Zone Patrol Vessel
PZM-81 "Piloto Pardo"



Training Ship
BE-43 "Esmeralda"



The Chilean Navy has carried out an acquisition process to purchase new vessel to safeguard its power and deterrence capability whilst preserving international presence.

Type 23 Frigates



"Almirante Cochrane"
"Almirante Condell"
"Almirante Lynch"

M Class Frigates



"Almirante Riveros"
"Almirante Blanco Encalada"

Our Units

L Class Frigates



Scorpene Submarines



Taitao Class Patrol Ships

PSG-71 "Micalvi"(*) PSG-73 "Isaza"(*)
PSG-72 "Ortiz"(*) PSG-78 "Sibbald"(*)



LSM Landing Ship

LSM-90 "Elicura"(*)
LSM-94 "Orompello"



Taitao Class Hydrographic Ship

PSG-77 "Cabrales"(*)



Taitao Class Medical Ship

PMD-74 "Cirujano Videla"(*)



Dabur Class Coastal Patrol Boat

LPC-1814 "Díaz"
LPC-1815 "Bolados"
LPC-1816 "Salinas"
LPC-1817 "Tellez"
LPC-1818 "Bravo"
LPC-1820 "Machado"
LPC-1822 "Troncoso"
LPC-1823 "Hudson"



Protector Class

18 General Service Patrol Boats(*)

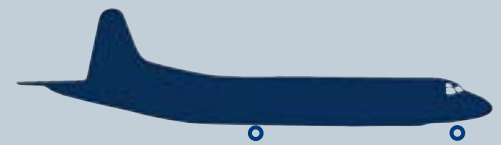


44 Small Patrol Boat



4 Defender Class Boat

(*) Ship build in Chilean ASMAR Shipyards



Orion P-3 ACH



CASA-212 (for general purpose)



P-111 (for MP)



PC-7 Pilatus

Skymaster



SH-32 "Cougar"



Dauphin HH-65



Jet Ranger UH-57



Bolkow UH-05



4 Marine Corps Detachments

DIM "Lynch", DIM "Miller",
DIM "Aldea", DIM "Cochrane"



Special Forces

1 SEAL Unit
1 Marine Corps Commando Units

Contribution to our national development

The SIRAHT - Ice Project: Revealing the mysteries that lie in the ice

The Chilean Navy has always contributed to the development of many projects of all kind. Among these, one of the most important recent year's contributions on scientific research is its participation in the SIRAHT-Ice Project, which aim is to determine the internal structure of large ice masses and the volume of water they contain.

The increasing level of the sea as a result of the planets large ice masses thawing causes climate changes that affect millions of people worldwide. This project enables models and projections to predict future glacier retreat, an indicator of global warming.

The project began in November and December 2002 with the first joint campaigns between the Valdivia Centre for Scientific Research (CECS), NASA and the Chilean Navy; repeated in 2004, they consisted on carrying out unprecedented exploratory flights by our P-3 ACH aircraft over Antarctic glaciers and "Campos de Hielo" ice field of the Chilean Patagonia.

The Antarctic stages of the project were

highly successful and provided significant data for the international scientific community as well as being subject of intense discussion in leading journals and publications.

However, in "Campos de Hielo", practically no radar data was collected from ice glaciers due to their nature in Southern Chile, which contains a large amount of water just at melting point, for which reason it is named temperate ice.

It was because of this that the need of a new airborne sensor capable of measuring at least 1000 meters thickness of temperate ice, something which had never been achieved in "Campos de Hielo" before, was defined. With this aim in mind in 2005, the CECS and the Chilean Navy signed a protocol agreement for the development of a device with such capabilities, known as the SIRAHT (Airborne Radar System for Temperate Ice) Project, to be financed in equal parts by both parties.

The system was to be backed by one of the Navy's C-212 aircraft to transport the radar and deploy the corresponding transmitter and aerial.

During November and December 2006, the first campaign was carried out in the area of Torres del Paine and Tyndall Glacier, succeeding in measuring 650 meters of temperate ice. This campaign represented the first successful aerial measurement of its kind in Patagonia, unlike previous expeditions by glaciologists of several nationalities.

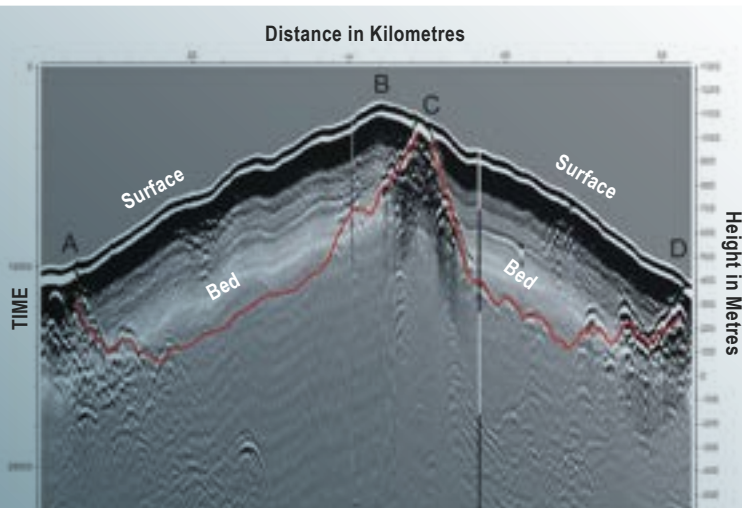
In March 2007, a second campaign in "Campos de Hielo Norte" managed to penetrate nearly 1000 meters of temperate ice. This latest campaign marked the achievement of the objective of the project and placed the Chilean Navy and the CECS at the forefront of world scientific technology.



Development of the SIRAHT

The SIRAHT system was designed by the CECS with the support of engineers from the Navy's Program, Research and Development Section (DIPRIDA), whilst building, including the prototype radar system, transmitter, receiver, control stage and storage, was commissioned from the state company LINKTRONIC.

Engineers from CECS and the Navy were responsible for the aerial and for fitting the entire system on board the aircraft. The first prototype was completed in mid 2006.



General Directorate for Maritime Territory and Merchant Marine

Our Commitment with safety at sea

The General Directorate for Maritime Territory and Merchant Marine (DIRECTEMAR) is the entity of the Chilean Navy, by which the Government of Chile watches over the compliance of international standards in force, in order to protect life at sea, the marine environment, natural resources and to control activities carried out within its jurisdiction and thus contributing to the maritime development of our nation.



Maritime concessions



Maritime control of shipping



Maritime signaling



Sea resources and fishing marine

Civilian support and Disaster Relief

One of the main tasks of the Chilean Navy is to provide support to all our isolated areas and overseas territories that require our help. During the year, our units sail to our island territories, such as Juan Fernandez and Easter Island, to provide medical and logistic support, accomplishing the requirements from the regional governments. Also, in the southern territories, our Medical Ship "Cirujano Videla", provides assistance to the isolated communities, having on board complete and modern medical equipments and facilities, with a team of doctors and nurses. This is part of the Navy's contribution to our national development, supporting our fellow citizens undertaking sovereignty along the country.

Being Chile a seismic country and where natural disasters, like floods or barrages occur from time to time, our Navy is well prepared to provide assistance facing catastrophes or emergencies through units that promptly can be deployed towards the distressed areas. The supplying of water, provisions, support personnel and when required, the necessary evacuation assistance are among their capabilities. The best example of the Navy's operational versatility and capacity was recorded recently in Chaiten, a small town in the southern part of the country, where due to a volcano outbreak, the immediate evacuation by sea of over 5.000 inhabitants was promptly achieved.



The Medical Ship "Cirujano Videla" provides assistance to the isolated communities.



Eruption of a volcano in Chaiten, 2008 (Chilean Patagonia).



Support to Easter Island (2000 nm from the mainland).



Transport of supplies to Juan Fernández Archipelago



Earthquake and tsunami in Aisén, 2007

ASMAR - Shipbuilding and Ship Repair



Following the creation of the First National Fleet in the years immediately after Independence, the Navy made a concerted effort to achieve its own shipbuilding and ship repair facilities, first in 1817 in Valparaíso and later in 1895 in Talcahuano. Over time, these installations have developed and consolidated, to become what is nowadays known as ASMAR Naval Shipyards.

The yard operates as an autonomous State-owned enterprise, with a legal structure dating back to 1960 and which

currently has three industrial shipyards in Valparaíso, Talcahuano and Punta Arenas.

The largest plant is Talcahuano, where large scale new buildings, repairs and conversions are carried out for the Navy. Furthermore, all three yards, which have built up considerable international prestige for themselves over the years, are open and offer their repair and shipbuilding capacities to both Chilean and the worldwide ship owning companies.



On Course Towards the Future

DANUBIO IV Project

The first Maritime Zone Patrol Vessel is now in service



A significant milestone for the Navy was achieved in June this year when the first Maritime Zone Patrol Vessel (known as PZM in Spanish), built at ASMAR's Talcahuano Shipyard, was commissioned upon successfully completion her acceptance trials.

This is the first of two units to be built under the Danubio IV Project, which will allow Chile to reinforce its control within the waters of its 200 miles Economic Exclusive Zone.

The first PZM, that initiated her sea trials in early April, was named "Piloto Pardo". The second unit, "Comandante Toro" is currently under construction, also at the ASMAR plant in Talcahuano.

During her trials "Piloto Pardo" demonstrated her excellent manoeuvring, hi-tech support communications capability and the outstanding performance of her automated systems, which all together allow simple, safe and reliable operating and handling. Based on a German design,

MEDUSA Project

The "Medusa" Project: new capabilities for scientific and fishery research



The coastal waters and continental shelf of Chile are rich in fishing resources, so the study of them is of vital importance to guarantee sustainable exploitation. The Chilean navy has contributed to this purpose for a long time by supporting ocean research work with its vessel "Vidal Gormaz". However, this ship has now been active for over 42 years and is close to the end of its service life. Consequently, a new vessel, which will be named as her predecessor, is currently under construction at the ASMAR Naval Shipyard.

The project is a joint initiative between the Navy and the Undersecretary for Fishery, backed up also by the Undersecretary of the Navy. This new construction represents the materialisation of a long-standing desire of Chile's oceanographic and fishing community, as it will allow

ALCATRAZ Project

modified by ASMAR to fulfil the Chilean Navy requirements, the ship has surpassed the original performances in sea keeping and systems.

The main characteristics of these new units are:

- **Design:** Fassmer GmbH & Co. KG
- **Length:** 80.6 metres
- **Breadth:** 13 metres
- **Depth deck 1:** 6.5 metres
- **Design draught:** 3.8 metres
- **Loaded displacement:** 1728 tons
- **Speed:** 20 knots
- **Range:** 30 days
- **Range at full load:** 8000 nautical miles at 12 knots
- **Max. complement:** 60 heads

enhanced marine studies, greater knowledge of Chilean seas and the gathering of invaluable information for the best management of our natural resources.

The new vessel will have an overall length of 71.3 metres, a breadth of 15.6 metres and a main draught of 5.8 metres. She will be fitted with research equipment and installations capable of carrying out gas hydrate studies, experimental fishing operations, oceanographic studies and other scientific tasks.

She is due to be ready for launch on November 2009, and to be commissioned the following year. Her area of operations will be the southern seas of Chile and, thanks to the advanced systems on board, she will be capable of deploying research teams into Antarctica.



To efficiently achieve maritime-air activities such as Maritime Patrol, Search and Rescue, Contamination and Pollution Control, as well as other responsibilities, the Naval Aviation is nowadays in the process of replacing its fixed-wing aircrafts.

The "Alcatraz" Project is intended for the replacement of all P-3 ACH, P-111 and C-212 airplanes, in a number of eleven in all, with eight suitable equipped units capable of performing their role in naval and maritime functions.

After an extensive process of analysis and assessment, it was decided the acquisition of new EADS CASA C-295 planes, manufactured in Spain and equipped with the manufacturer's Mission Fits System with a useful life of 25 to 30 years.

These aircraft can perform patrol duties and will be equipped with the latest detection and communications technology systems.

The contract with EADS CASA was signed for the acquisition of the first three units and also included an option of a further purchase for five other planes.

The aircrafts will be received by the Navy in 2009.

These new aircraft will carry out tasks for the Fleet such as for maritime patrol and antisubmarine warfare. Also, the new C-295 will perform military and logistic cargo tasks and will have medical evacuation capabilities, for supporting disaster relief operations.

Multi-Purpose Aircraft

- | | | | |
|-------------------------|--|------------------------|-------------------------------------|
| • Troop transport | : 71 soldiers | • Width of cargo cabin | : 2.70 m (8 ft 10 in) |
| • Cargo transport | : Five 88" x 108" pallets\ (one on the ramp), or three fighter engines | • Max. take-off weight | : 23,200 kg (51,150 lb) |
| • Medical evacuation | : 24 stretchers and 5/7 medical attendants | • Total length | : 24.50 m (80 ft 4 in) |
| • Length of cargo cabin | : 12.69 m (41ft 8 in) | • Max. speed | : 480 km/h (260 kts) |
| | | • Engines | : 2 x Pratt & Whitney Canada PW127G |



Maximum payload: 9,250 kg



Wing span: 25.81 m (84 ft 8 in)

BICENTENNIAL TALL SHIP RACE

2010....South American Adventure Begins!

Coinciding with the Bicentennial of the establishment of the First National Governments (1810-2010), the Chilean and Argentinean Navies have joined to organize a continental naval event as part of the celebrations that both countries will hold to recall these significant historical events that marked the independence birth for both nations.

The plan is to hold an International Tall Ships Gathering and Race in the first half of year 2010. Both civilian and military Brigantines, Frigates, Corvettes and Schooners from different countries will sail the seas of South America, as well as visiting places that have stood as landmarks for sailors of all times, such as the "End of the World Lighthouse" on Staten Island or the mythical Cape Horn, where crewmembers are forged into true seamen and authentic Cape Horniers.

With the aim to provide sufficient time to ensure participation, in 2005 both Navies sent out an official joint invitation to 24 different countries which Military Forces or other Official Organisms operate today's Tall Ships.

This invitation is additional to the general announcement which is being made since 2007, to call upon other vessels of similar characteristics run by civilian authorities or private enterprises that already sail around the world to join the challenge.

For further information, please visit
The Chilean Navy's website:
www.armada.cl where a section is
specially dedicated to the race

Fair winds and following seas!



Photograph: MAX MUDDIE / Book "B.E. Esmeralda"

Current Participating Ships

	Argentina Libertad 		España Juan Sebastián de Elcano 
	Argentina Bernardo Houssay 		India Varuna-Taranguini 
	Brasil Cisne Branco 		México Cuauhtemoc 
	Chile Esmeralda 		Polonia Iskra 
	Colombia Gloria 		Uruguay Capitán Miranda 
	Ecuador Guayas 		Venezuela Simón Bolívar 

Track for the race and calling ports



©Photographs: Max Muddie, Thad Koza, Kactus Foto, DR.