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Surface vessels and submarines of the Colombian Navy in formation.

All photos and graphics courtesy Colombian Navy.
Navies generally have two main tasks: protecting their homeland and adjacent sea-space against seaborne threats, and participating in international crisis management and Humanitarian Aid/Disaster Relief (HADR) operations in consonance with the political interests of their country. This alone is a considerable task for a navy like that of Colombia, which has to be present in two oceans – the Pacific and the Caribbean Sea.

But, contrary to most other navies, the threat the Colombian Navy is facing is not so much coming FROM the sea. It is already IN the country or comes FROM within the country TO the sea, using Colombia’s main communication means: the almost 25,000km long river system, of which 15,000km are navigable.

Basically, there are two main inland threats that require special attention: drug trafficking and insurgent groups of which FARC (Fuerzas Armadas Revolucionarias de Colombia) is the most dominant one. These groups have made use of terrorism as their strategy and drug trafficking as a way to finance their activities.

At the turn of the century, 2.5 tons of cocaine left Colombia every day. Figure 2 of the article on the “National Navy’s Strategy to Fight against Transnational Crimes” shows that 50% of the confiscated cocaine was seized by the Navy, showing the important role the Navy is playing on this front. The Colombian Navy is currently undergoing a modernization process that will better enable it to fulfil these difficult tasks. Modern helicopter-carrying Offshore Patrol Vessels (OPV), Coastal Patrol Vessels (CPV) and submarines will strengthen the Navy’s capabilities to defend the country’s security and political interests in the two oceans. River Patrol Craft of different sizes, hovercraft and helicopters contribute to the Navy’s success in fighting indigenous asymmetric threats such as drug trafficking and terrorism. These assets will also enable the Navy to face the above-mentioned threats through international cooperation agreements and multinational training, exercises and operations.

The fact that Colombia is now planning to participate in anti-piracy operations off the Horn of Africa shows that the Colombian Navy is taking on responsibilities far away from its normal operating area.

I thank Admiral Wills Vélez for the opportunity to publish a Special Issue on this professional Navy. And I thank his staff for contributing such profound articles that showcase its capabilities and spirit.

I wish the Colombian Navy always “Fair winds and following seas”.

Jan Wiedemann
Editor-in-Chief of this Special Issue
Maritime solutions
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Millions of critical decisions are made every day in maritime safety and security. Thales is at the heart of this. Trusted and deployed by over 50 navies, our radars and sonars, fire control, C4ISR solutions, lead system integration and warfare modernisation programmes all feature our world-leading integrated smart technologies.

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Two centuries have passed since the Navy began contributing to the defence of the Nation by means of the exercise of its flexible naval power over maritime, riverine and land settings with the constitutional purpose of protecting the interests of the Colombian population.

The commitment of the Navy is no other than safeguarding the sovereignty of the seas and rivers of our country. This Force began strengthening since Mr. José María García de Toledo created the Comandancia General de Marina on 17 September 1810, under the command of Captain Juan Nepomuceno Eslava.

Since then, the Navy has become a world leader thanks to the unceasing fight of its people to eradicate transnational crimes and definitely triumph against crimes committed in maritime and riverine settings, and its invaluable defence of sovereignty.

To a great extent, this is due to the Navy’s acquisition of important equipment after the post-war period (1950-1960), including the strongest patrolling fleet of the Caribbean, which has allowed the Institution to participate in one of the world’s most important naval exercises, the Rim of the Pacific, which took place near Hawaii in the middle of 2014.

At the end of the nineties, and especially during the first decade of the twenty-first century, the Colombian armed conflict forced the State to strengthen its maritime and riverine capabilities, mainly by means of the research and development of new patrolling boats that are already navigating across the rivers and seas that flow through the Nation. This was achieved as a result of the governmental decision to support the naval industry in all aspects through the Science and Technology Corporation for the Development of Naval, Maritime and Riverine Industries (Cotecmar).

This is how the National Navy has successfully carried out national and international operations to become a solid force that not only faces the increasingly varying challenges imposed by criminality, but which is also prepared to face those which are to come, whatever may be the context.

These constant and positive results, which have been essential to direct the country towards peace, have opened up doors to the international acknowledgement due to its naval reinforcement, which has simultaneously contributed to the country’s economic growth.

The everyday commitment of this Force is to the wellbeing of those who are in the service of the Navy through constant education and training in different national and foreign universities, an element that guarantees excellent performance in the medium and long terms.

This is already tangible: the Navy has recently led a historical event for our country, as the Antarctic expedition. Tens of men and women arrived to this distant place on board the ARC “20 de Julio” to show scientific presence in order to contribute to the world and the country’s development and knowledge.

To the more than 35,000 men and women that comprise the Navy, I want to give a salute and tell you that your work is reflected on the tranquility of the Colombian population. I want to express my eternal gratitude to all the officers, petty-officers and civilians that make up this glorious Force because they not only protect the blue of the flag, but are also an invaluable element of the genuine architects of peace, our Armed Forces.

Juan Carlos Pinzón Bueno
Minister of National Defence
I express my gratitude to the NAVAL FORCES journal for providing us with this opportunity to talk about our country and how the Colombian Navy is preparing for the forthcoming periods of change. I want to provide special recognition to those men and women that make part of the Institution, who daily risk their lives to fulfill their mission: consolidating peace for every Colombian citizen.

The Colombian Navy’s special edition PROJECTING COLOMBIA’S FUTURE AND MARITIME POWER is an opportunity to present our Navy, our people and our resources to the naval world, as well as the challenges that the future holds and our compromise to consolidate the Nation’s development and progress.

It is probable that Colombia will experience a post-conflict period during the upcoming years, so we can expect an increase in maritime economic activities, as well as in domestic and foreign investment. This possible scenario demands the Colombian Navy to concentrate its efforts and resources on the intensification of the degree of control it maintains over our seas and rivers and on the protection of the marine and riverine environments by means of strategies of comprehensive maritime and riverine safety, thereby contributing to national development, environmental conservation, safety and prosperity of the citizens.

Likewise, there will be continuation of the development of the strategy known as Modernization and Strengthening of Naval Capabilities (Modernización y Fortalecimiento de Capacidades Navales) for the protection of the sovereignty, independence and integrity of the national territory. By way of this, it is expected to contribute to the creation of a safer regional and global maritime setting.

The Colombian Navy will remain at the forefront of the fight against drug trafficking, which, due to its transnational character and its capability to react to market dynamics, is not exclusively circumscribed within the context of internal conflict. Therefore, its continuance during post-conflict times can be anticipated. For this reason, in the fight against this threat, the Colombian Navy has recently updated its strategy, which is called Naval Net (Red Naval). It is essentially a set of efforts, capabilities and information aimed at increasing danger levels to the finance of drug trafficking-terrorist organizations and diminishing their profitability.

Coupled with the former, a regional initiative to create an academic international centre for anti-drug research and analysis in Cartagena has been materialized. By means of international cooperation, this centre aims at contributing to the creation of a safer maritime setting, which offers advantages to national, regional and global development and prosperity.

It is precisely through international cooperation that the Colombian Navy considers that the safety of the regional and global marine setting will be strengthened. This is why the Navy has been working on the development of an international collaboration strategy with the intention of promoting cooperation with other navies, in that way stimulating contribution mechanisms and recommending collective regional safety initiatives, such as intelligence exchange, training in other countries of the region and creating on-call combined task organizations. These organizations may be called upon to respond to threats or emergencies rapidly and will play an essential role in anticipating and countering transnational threats, as well as in supporting disaster management and humanitarian assistance operations.

In this sense, Colombia has been strengthening capabilities that will allow the country to participate as a provider of international maritime safety through bi-national or triangular programmes for information exchange, training in naval operations to respond to transnational threats, and combined maritime operation drills. The ultimate goal is to achieve a safer maritime atmosphere in the Caribbean and Pacific regions, as well as at a global scale, which is essential for the development and prosperity of all nations.

The Colombian Navy projects its future to become a medium-sized navy with regional projection capacity, able to face future threats and contribute to the development and wellbeing of the Colombian population.

**Hernando Wills Vélez**
Admiral, Chief of the Colombian Navy
The Colombian Navy pays daily tribute to Admiral José Padilla López. He was an eminent Colombian citizen born in our beloved Guajira, model of great patriotism and picture of a subjugated race looking for freedom. All of his life was marked by the trace of naval combats. For him, flags were not lowered but in the sober quietness that arrived after every single victory. He was trained in the art of conquest at the Spanish galleons, an art, which gave the peninsula such a vast might. He was baptized in fire in the battle of Trafalgar, during the colossal encounter that consolidated the British power represented by Admiral Horatio Nelson’s magnificent pedestal.

It was 192 years ago that Lake Maracaibo’s epic battle took place, when the patriot forces, after boarding the “San Carlos” brig and leaving the enemy fleet disabled, decided on the fate of this clash that would finally drive the Spanish away from American coasts. This fact contributed to the consolidation of liberty in riverine influence areas and to the clearance of maritime waters from Spanish naval forces. Together with Renato Beluche, Nicolás Yoly, Rafael Tono and many other brig and schooner commanders, the Admiral would face and defeat the Spanish forces led by the bloodthirsty Admiral Laborde, a Spanish naval officer that had previously assured his homeland safe vessel traffic through the Caribbean area. His capability to keep his promise was a source of pride and complete calm for the colours of the Spanish flag. Admiral Padilla was captured and rescued afterwards. He was later an immigrant, who arrived at the Cartagena shores, where the land was promising and starting to feel the seizures of freedom, and the Admiral, keeping his proved bravery in his heart, was prepared to be at the forefront of any battle. The glorious July 24 of 1823, with fair winds and tides, he stood toward the enemy. Admiral Laborde, on the other hand, had set two schooners followed by other units at the northern extreme of the “San Carlos” brig and two brigs leading their subtle forces in the South. Padilla gave his heroic mariners these instructions:

“Mariners and troops should be barefoot since wet sand will be spread on the open deck in case of fire in order not to slip because of the blood. Blankets should be soaked so they could extinguish any fire. Cooks and waiters will throw hand grenades and fire bombs, instead of cooking meals. Everybody should wear a black lace in their left arm to be distinguished at night from our enemies. Hatchets will be blocked to prevent everybody from running away and his only option is fighting. The signal to fight will be a gunshot in order not to warn the enemy about our charge, but when we are already on board.”

He also pointed out to each officer the enemy vessels they should address.

Once Laborde’s squadron changed its route, La Patriota maneuvered and its large vessels, strongly driven by the wind, moved towards the adversary that vainly tried to restrain them by using sustained gunfire. However, the patriot forces kept moving forward, undisturbed and magnificent, with the sails rounded, the bow heading up, and the top of the mast holding the frightening boarding signal beside the Colombian tricolor. The dreadful moment had come: Admiral Padilla finally gave the order of shooting the handguns. Then deafening and wild shouts of joy came from countless patriot throats mixed with the boom of large caliber pieces that released in unison a frightening message of death and devastation.

When the smoke of the first bombardments vanished, the two armies appeared face to face, listening to each other’s threats and imprecations. Then the canons restarted their incessant resound, the fire became more intense and the woodwork began crunching while the sticks broke and dragged their sails, surrounding whoever was beneath them as if they would become their shrouds. Each patriotic vessel attacked the contraries full and by, but spaniards units were numerically superior. Some lunged with the end of the bowsprits if it were huge rapier and the
blood ran abundantly over the sea, dyeing it purple.

When the act was not still decided, one of Admiral Padilla’s fleet flagship vessels, “El Independiente”, commanded by Captain Renato Beluche, veered on a side to rage against the “San Carlos” brig, the heaviest armed of Laborde’s boats. The rig was destroyed by the first discharge and then the ratchet and the wood fragments began flying through the air as new projectiles. Battered and riddled, the enemy’s ship tried to save its own fate by reaching the coast, but the water gushed in through two thousand holes opened in the hull, hindering their march. The crewmembers then left the vessel by throwing themselves to the sea, watching the boarding axes falling off their defeated flanks.

Meanwhile, “El Confianza” was beating an adversary schooner and “La Emprendedora” was attacking “La Esperanza” brig. The Captain of this enemy vessel had determined to set fire to “La Santabárbara”, making it blow up with its crewmembers. Such a huge blast resounded in that dreadful scenario from end to end, frightening every present mariner in such a way that they had to stop the fight to contemplate the spectacle. The patriots felt sorry for the loss of the “Antonia Manuela” schooner, which was boarded by the spaniards, who slashed Captain Jean Rastique de Bugard and the rest of the crew. Later the schooner and its deceased and wounded mariners would be rescued by the “Leona” schooner and a boat of “El Independiente”. Despite the fact that Admiral Laborde was able to escape, the victory was overwhelming and the invincible admiral was defeated once and for all, so he would never navigate across our seas again.

Admiral Padilla subsequently dedicated his life to strengthen and manage the navies of the newly formed countries, giving birth to our current Institution in May 26 of 1828. Found involved in a disorder incident, together with several officers, he was sent to prison in Bogotá, where he remained locked up until September 25 at night, when the so-called September Conspiracy took place: a premeditated offence against the Liberator occurred and some conspirators climbed up the walls of the building that functioned as jail and murdered Colonel José Bolivar, who was guarding the Admiral, in order to set Admiral Padilla free and designate him as their leader. Those incidents caused him to be put on trial later by the Conspirators Law, and he was condemned to die. He was then executed by firearm in the public square of the Plaza de la Constitución in Bogota and his remains rest today in the Nuestra Señora de los Remedios Cathedral at Riohacha, a sacred place declared part of the Colombian cultural heritage. In 1831, however, the Congress vindicated Padilla’s name and described his condemnation as unfair and unjustified.

Born under the role model of brave and patriotic mariners and after overcoming the ups and downs of its history, the Colombian Navy has gotten back on the path of glory since the middle of the last century and has been preparing itself to accomplish the duties derived from its primary mission, which includes to protect our rivers and marine borders and the life and assets of our territorial seas; to ensure safety, order and respect for life, and the heritage and natural resources located within its jurisdiction. These activities have been competently performed, demonstrating professionalism and attitude for service, engaged with the wellness of every Colombian citizen. All of this has been possible thanks to the reminded message of our forerunner, Admiral Padilla, whose words referring to the heroic Cartagena de Indias stated: “...I have already told you that Cartagena is free and we will enter this land in triumph. Do not forget that the people on the public square are our brothers and sisters, so you must treat them as such.”

The Maracaibo Battle was more than a clash between ships, crews and boarding forces; it established our independence. In this way, it consolidated Venezuela’s freedom and allowed Bolivar to undertake the campaigns in the South to set Ecuador and Peru free. For that reason, the Maracaibo Battle was not just a fight that produced local effects, but one with continental outreach.

Today the Colombian Navy navigates through other seas, with cutting edge technology, consistent with the current world state of affairs and a crew professionally qualified to face the challenges of the 21st century. The search for the elusive peace is a compelling need for a nation that has suffered more than fifty years in the midst of an armed conflict that has violated the most basic human rights, and the armed groups outside of the law keep striving to bleed the noble Colombian people day after day.

From that glorious day, paths of light and example were traced for all Colombian mariners to follow them. The unfairly spilled blood of our Admiral over the Plaza de la Constitución will be the perpetual legacy and aim for everyone who proudly wears the naval uniform and badges.
Colombia is the only Latin American country that has two coasts, one in the Caribbean Sea and one in the Pacific, and 97% of its total trade relies on maritime transportation. Hence, maritime safety and regional stability are national interests of utmost importance to guarantee its development and prosperity.

The Navy has the mission to contribute to national defence by means of the effective operation of a multi-purpose naval power in the maritime, riverine and land areas under its responsibility. Its purpose is to accomplish its constitutional function and participate in the progress of maritime sovereignty and the protection of the interests of Colombian citizens. This mission guarantees and demonstrates its total commitment to the thorough fulfilment of its fundamental purpose, established by the National Constitution, which stipulates the contribution to the maintenance of the sovereignty, independence and integrity of the national territory and the constitutional order - the Nation’s vital interests.

The country has been immersed in a war against armed groups outside the law during the last fifty years. These groups have made use of terrorism as their strategy and drug trafficking as a way to finance their activities. These violence-generator agents exceeded the ability of the Police, the body responsible for the maintenance of the public order in the Colombian territory, which made the National Government use the military forces in an attempt to keep the peace and security of the population and to combat these organizations, which came to endanger the stability both of the State and of the democratic system.

This circumstance had an effect on the evolution of the military forces during the last decades by strengthening the capabilities, which are mainly utilized for counterinsurgency and counterterrorism operations. These kinds of military actions primarily imply to guarantee an appropriate control over the territory, and at the same time suggest a thorough effort in manpower strength at the expense of the use of other means.

The Colombian Navy has significantly contributed to these ends through the development
of operations at the country’s seas and rivers, inhibiting the utilization of these areas as corridors for the trafficking of drugs, arms, explosives, raw materials for drug fabrication, and for human trafficking and smuggling. It has also strengthened the capabilities of both the marine infantry and riverine units to develop counterinsurgency and counterterrorism operations so as to contribute to the territorial consolidation within the jurisdiction it has been assigned, as much for the Caribbean region as for the Pacific.

Currently, negotiations between the National Government and the country’s main insurgent group, the FARC, are being carried out in Havana, Cuba. If this peace agreement is signed, it will change the future overall picture of our Nation and demand, no less than ten years after, a readjustment of the type of operations to be performed internally. However, it is clear that transnational criminal activities such as drug trafficking, illegal mining, human trafficking, among others, would eventually be adopted by other illegal organizations of eminently criminal character, without any political background. This implies that the Public Forces will have to maintain their capabilities to counteract these kinds of activities.

The evolution of the transnational threats mostly associated to organized crime, such as drug trafficking, illegal migration, terrorism, human trafficking, and the like demands the Navy to utilize its broad experience fighting against these kinds of criminal actions. This may lead to the consolidation of the Navy as a regional leader able to give support to other navies, coastguard bodies and maritime services of partner countries. The main objective is to strengthen the capabilities needed to face these kinds of threats through international cooperation agreements that involve training and practice activities, and technological solutions such as coastal patrol vessels, open sea patrol vessels, and riverine patrol vessels, among others.

In addition, the Navy, as part of the Colombian Military Forces, has the responsibility to contribute to National Defence. This implies the generation of a credible conventional deterrence within the regional scenario and the commitment to effectively use force in case that an external threat becomes an aggression toward the country.

A conventional war scenario in the 21st century is highly unlikely, even more in South America, given the dynamics of the relationships between the countries of the region and the political, economic and social implications involved. However, the possibility that an incident that threatens
national security and eventually demands the legitimate use of force compels the country to maintain military power that satisfies the needs for the security and defence of its strategic assets.

The lack of prevision or the acceptance of the strategic risk that implies not having a military power carefully planned and prepared to face threats can cause highly negative consequences for security. Eventually, this fact could endanger Colombia’s territorial integrity, independence and sovereignty. For this reason, the Navy is going through a process of modernization and adaptation to other operational settings, which entails the strengthening of naval power and its impact over the next twenty years. During this period, greater participation in multinational operations is expected from the country, especially in peace, collective maritime safety and humanitarian actions. This also involves a renewal of its strategic means, as well as the implementation of new capabilities.

All the capabilities just described are conceived to serve a dual purpose: to perform actions in support of the population and of the development of the Nation.

**Institutional strategy**

The Navy performs its duties framed within five essential vectors that make up a strategic system known as Naval Strategic Pentagon (Pentágono Estratégico Naval). In essence, it is the navigational chart on which the Navy updates its route depending on upcoming events. This demands the institution’s readiness and permanent willingness to deploy its capabilities with a high degree of dynamism and flexibility so as to adapt to multiple scenarios and situations during the fulfillment of its mission.

**Defence and National Security Vector**

The contribution of the Navy in this respect is basically to guarantee security to the nation and defend its citizens, their resources, rights, freedom, and prosperity, in brief, to create suitable conditions for a sustainable socioeconomic development that will allow Colombia, as a state, to reach the strategic height it deserves in the national and international ambit.

The responsibilities of the Navy in this vector are shared, in the internal sphere, with the totality of the armed forces and security organisms of the State and the external sphere with the rest of the military forces. Its capabilities should effectively contribute to strategic deterrence, to utilize force in case that an external aggression materializes as an attack, invasion or blockade, and to neutralize any kind of internal threat including subversion, terrorism, transnational crime and drug trafficking as they may affect the Nation’s security and its inhabitants.

**Maritime and Riverine Security Vector**

The Navy aims at guaranteeing the safety of human life at sea and vessels navigating through Colombian jurisdictional waters, besides protecting and preserving the Nation’s maritime and riverine areas and interests. In the same way, it is committed to enforce national laws and international regulations related to the use of sea and rivers.

Colombia is a country whose trade is carried out using maritime transportation 95% of the time and it is the only South American country that has coasts on two oceans. Also, it benefits from the use of the sea to perform living and non-living resource exploration, and to lay cables and underwater pipelines. On the other hand, it is one of the richest countries in the world regarding hydric resources: its river network has an extension of 24,725km, 15,000km of them navigable. Hence, the responsibility of the Navy in this context is to protect and safeguard those who contribute to the use of our seas and rivers.

**International Vector**

The Navy is essentially a tool for supporting the Government’s external policies in multiple scenarios. Within this framework, mutual cooperation, regional leadership focused on Central America and the Caribbean, sustainable development and border security are of extreme importance.

In this vector, the Navy participates in combined operations of many kinds, some of them of particular interest, such as the maritime interdiction against drug trafficking, and training operations. In compliance with various international agreements signed with different countries, its projection involves the participation of its units in combined peace and humanitarian aid operations as part of multinational forces. They may be called by intergovernmental organizations to support the efforts of the international community regarding peace keeping, maritime safety and provision of humanitarian assistance in response to natural or man-made disasters in different parts of the world.

**Maritime Development Vector**

The Navy contributes to the development of the country, not only through surveillance and control of maritime areas, but also by means of protecting and driving its maritime interests. Enforcing the maritime legal framework is among its most important objectives, especially in relation to sea use, so as to guarantee rational resource utilization and hence subsistence for the benefit of future generations. Besides, it carries out and promotes marine scientific research in conjunction with the National Maritime Authority (Dimar) with the purpose of generating greater understanding of the marine environment. Similarly, it considers of utmost importance to preserve and drive the cartographic, hydrographical and meteorological services in order to provide the best possible tools for those who make use of the sea as a source of economic production and job creation, which are fundamental factors for the country’s maritime development.

**Environmental Protection**

Environmental protection is a fundamental element of the Navy’s strategy, not only by implementing an environmental management system within its institutional activities and processes, but also by performing actions that are directly related to the prevention of activities with potential sources of natural resource pollution.

Some of the actions the institution performs across the length and breadth of the national territory include the protection of seas and oceans, the fight against illegal wildlife trade and the enforcement of current regulations on the protection of endangered species or species for which prohibitions exist. Likewise, the Navy contributes to the performance of control and security operations when incidents that impact the environment noticeably have occurred, such as oil spills caused by the terrorist actions of groups outside of the law. There is already a clear
Raytheon Anschütz GmbH is a German-based subsidiary of Raytheon Company and one of the world’s leading navigation and maritime systems integrators. More than 35,000 ships worldwide are equipped with Raytheon Anschütz navigation systems. Besides this, Raytheon Anschütz has decades of experience with maritime surveillance technologies. The company’s headquarters are located in Kiel, Germany, where today all core products are developed, produced and engineered. A global network of own subsidiaries and service partners takes care of installation and highest system availability during operation.

Among our many references in the surface ship segment are the new generation of German Navy Frigates F125, the 2nd batch of the German Navy Joint Support Ship, the German Navy K130 Corvettes, the UK Royal Navy Type 45 Destroyers and the upcoming generation of the UK Royal Navy Type 26 Global Combat Ship. In South America, Raytheon Anschütz is primarily known for its supply of gyro compasses, inertial navigation systems, steering control systems, autopilots and radars to surface ships as well as various specialized sensors and applications for the U209, TR1700 and U206A class submarines.

SYNAPsis Integrated Navigation

With its SYNAPsis Integrated Navigation System (INS), Raytheon Anschütz was the first manufacturer to deliver a navigation system in full compliance with IMO’s latest INS Performance Standards. SYNAPsis is an affordable navigation system solution based on COTS technology.

Standard features of SYNAPsis are a common data back bone, a consistent common reference system (CCRS), central target management, intelligent central alert management, health monitoring for system status and availability and also an advanced user setting management system.

SYNAPsis decouples central services from individual applications and concentrates them on an innovative infrastructure software framework which follows service oriented architecture and is built entirely on a stack of open source solutions and standard industrial components. Within the bridge network the framework serves as a “Ship Integration Platform” with open data structures, data contents and interfaces to various surface and subsurface sensors and control systems, as well as to platform management, combat management system, and sonar and weapon control functions. The level of flexibility offered with the SYNAPsis architecture provides significant advantages over less integrated approaches, which often only interface separate, non-integrated systems without using consistent and unified system architecture.

Therefore, task-oriented multifunctional workstations not only provide the various individual tasks such as navigation radar, electronic sea chart and all other functionalities for navigation, but also the flexibility to integrate further applications such as Command and Control (C2) or Integrated Platform Management Systems (IPMS).

SYNAPs – SMART ANSWER TO NEW REQUIREMENTS

While modern navies continue to maintain assets and readiness for traditional conflicts, they must also be flexible and prepared to counter smaller and more volatile threats such as illegal immigration, smuggling, piracy, warlords or terrorist organizations. To fight asymmetrical threats with large ships equipped with complex and therefore expensive Combat Management Systems (CMS), including a large number of well-trained and experienced personnel, seems to be economically inefficient and operationally inappropriate.

Versatile platforms like Fast Patrol Boats, Fast Attack Craft, Offshore Patrol Vessels or Small Corvettes have become the primary work horses for navies in patrolling their EEZ’s. But most of these ships are not equipped with a CMS and are therefore not suitable for effectively countering these threats, due to a lack of Command and Control.

Raytheon Anschütz has recently innovated a cost-effective navigational bridge-embedded Command and Control (C2) system called SYNAPs (Synapsis Tactical Command System) to enhance such smaller naval combatants with tactical command and control functionalities formerly only known from classic CMS systems.

Based on the smart open architecture solutions introduced with the SYNAPsis Integrated Navigation System, SYNAPs is an affordable solution without specific hardware requirements but with all the benefits related to open architecture systems. Thus SYNAPs INS transforms into command and control oriented Mission Management, or - in other words - Capability Management System.

The SYNAPs bridge consists of multifunctional bridge workstations that not only integrate radar, ECDIS (or W ECDIS), and conning display for navigation but also a C2 capability including EOS and weapon control in a standardized but flexible manner. The versatile C2 application provides a geo-referenced workspace that brings together a combination of sensors and effectors. The operator benefits from advanced situational awareness and capabilities for detection, identification and tracking of targets of any size and speed in the vessel’s environment. The C2 is essentially a dashboard for sensor fusion and weapons control that can be readily adapted and scaled to suit the vessel type and mission at a real cost- and personnel-effective level.

Several projects around the world are already using this innovative concept of a tactical bridge enhancement on small boats or as extension on full mission ships. The French Shipbuilder CMN uses SYNAPs as command and control as well as navigation system aboard their Ocean Eagle and High Speed Interceptor boats. Further, there are European navies using the system aboard their OPV’s or frigates for tactical situation awareness on the navigation bridge to perform basic self-defense operations with the bridge crew. Consequently they are optimally equipped to face asymmetric threats on anchorage, in harbor or in transit with only half the crew.

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The strategic planning of the Navy shapes the cause-effect process oriented toward the achievement of the institutional objectives from each naval staff, taking into consideration its specific function, in the following manner:

<table>
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<tr>
<th>Naval Staff</th>
<th>Main duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief of Naval Operations (JONA)</td>
<td>Carrying out successful naval operations</td>
</tr>
<tr>
<td>Chief of Naval Planning (JEPLAN)</td>
<td>Strategically guiding and planning sustainability and force projection</td>
</tr>
<tr>
<td>General Inspection (IGAR)</td>
<td>Guaranteeing the quality of operations, processes and resources</td>
</tr>
<tr>
<td>Chief of Family and Human Development (JEDHU)</td>
<td>Managing and optimizing human talent skills</td>
</tr>
<tr>
<td>Marine Infantry Command (CIMAR)</td>
<td>Guaranteeing the effective isolation of the marine infantry</td>
</tr>
<tr>
<td>Chief of Naval Training, Instruction and Education (JINEN)</td>
<td>Providing trained personnel in line with institutional needs</td>
</tr>
<tr>
<td>Chief of Logistic Operations (JOLA)</td>
<td>Guaranteeing availability of resources for logistic support</td>
</tr>
<tr>
<td>Chief of Naval Intelligence (JINA)</td>
<td>Providing intelligence and counterintelligence in an opportune, effective, trustable, efficient and integral way</td>
</tr>
<tr>
<td>Chief of Naval Materials (JEMAT)</td>
<td>Providing naval material to keep units available</td>
</tr>
</tbody>
</table>

The Navy is a complex military force with maritime, land and riverine responsibilities. It implies the availability of specialized units capable of performing operations in each of these scenarios individually or simultaneously. For this reason, the Colombian Navy has divided its operational units into four components: fleet, coastguard, riverine and marine infantry.

The **Naval Fleet** comprises the Surface Force (Fuerza de Superficie), composed of guided missile frigates, the Submarine Force (Fuerza Submarina), composed of large submarines; auxiliary vessels, including multi-purpose vessels, among others; amphibious landing craft (Buques de Desembarco Anfíbio, BDA) and oceanographic research vessels. Naval aviation is a key element of this component since it consists of fixed-wing aircraft, including maritime patrol aircraft and transport and support aircraft, as well as rotary-wing aircraft, comprising transport and support helicopters.

The **Coastguard** comprises Offshore Patrol Vessels, Coastal Patrol Vessels, interceptor and other boat types. It also includes first, second, and third level Coastguard Stations, which are responsible for the coverage of our territorial sea and contiguous zone, guaranteeing maritime safety and fighting against transnational threats.

The **Marine Infantry** comprises five marine infantry brigades with land jurisdiction and riverine duties. Its tactic units include Marine Infantry Battalions (Batallones de Infantería de Marina), a Mobility Battalion (Batallón de Movilidad), Command and Support Battalions (Batallones de Comando y Apoyo) and Naval Military Police Battalions (Batallones de Policía Naval Militar). This component also operates through riverine units such as Riverine Assault Patrol Craft (both heavy and light), riverine patrol boats, heavy and light elements for riverine combat, hovercraft and riverine support mobile stations.

In addition, the **Special Naval Forces Command** has under its responsibility the Special Forces Marine Infantry Battalion (Batallón de Fuerzas Especiales de Infantería de Marina) and the Naval Command Groups of each of the Naval Force (Caribbean, Pacific, Eastern and Southern).
- Leading the scientific and technological development of the Colombian Navy
- Serving the needs and support development of its fleet
- Promoting the sustainable growth of the naval, shipping & riverine industry in the region.

**Main Business Lines**

**Shipbuilding**
Law enforcement and combat | Workboats

**S&T Activities**
Products and services derived from Science and Technology Activities

**Ship Repair and Maintenance**
Docking | A-boat repairs | Modernization

**Services for the General Industry**
Mining and energy sector
Metal-mechanical structures | Tanks | Spools

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By nature, each component has a specific orientation to function in an operational environment. Nevertheless, there is some flexibility thanks to factors such as interoperability, interconnectivity and command and control, which allows them to operate in a coordinated and synchronized manner. Hence, depending on the operational status, the units involved, no matter what component they belong to, are complementary to each other. This makes it easier for the Navy to more effectively use its resources in any kind of scenario or situation at the tactical, operational and strategic levels.

To perform operations, the Navy is structured into four Naval Forces (Figure 2): Caribbean (FNC), Pacific (FNP), Southern (FNS) and Eastern (FNO).

These forces are commanded by their respective headquarters and have units of every component to achieve their missions. They comprise the following elements:

- Surface Flotilla
- Submarine Flotilla
- Naval Aviation Group
- Marine Infantry Brigade
- Coastguard Group
- Naval Command Group

### Institutional Future Projection

In the event that the peace talks can be successfully completed, a wide range of factors will demand that the Navy permanently review its strategy: the political and strategic dynamics of the regional setting, the challenges intrinsic to maritime safety; the duties related to environmental protection, and the threats and emergent hazards of the national and international maritime domain. The objective of this action will be to upgrade the Navy’s strategy to be consistent with future circumstances in the short, middle and long term.

The Navy structured its forces in line with its development plan, which includes the capabilities and resources needed to effectively contribute to the constitutional duty of the military forces. This process has reached a consolidation stage that establishes the foundations for a future Navy, which achieves a balance between the resources available and the projected ideal structure.

The Institution started a resource upgrading process by means of the advance of projects generated within the general frame of investment of extraordinary resources obtained through the implementation of wealth taxes, which permitted the consolidation of the first and second phases of the Orion plan.

During the different stages of this process new capabilities were acquired, maintenance was performed on the existing ones and some of those that had been made unusable because of normal wear and obsolescence were recovered. These elements have allowed the Navy to perform a sustained operational effort against drug-trafficking organizations and, at the same time, to guarantee deterrence capability within the regional strategic setting.

Nevertheless, limited resources and the need for enhancing the State’s efforts to neutralize the armed groups outside the law have caused the delay of some fundamental projects in the modernization plan known as Transformation and Future of the Military Forces. These capabilities will allow sustaining operations against transnational crime, providing a safer marine setting, combating terrorism and protecting national maritime territories in order to guarantee the safety, freedom and prosperity of the Colombian population.

The upgrading process is being led by the Ministry of Defence and involves all the military forces. Among its objectives it is expected to achieve greater complementariness, coordination and synchronization in the planning and performance of joint, coordinated, combined and inter-agency operations. The fact that there is shared responsibility to achieve common strategic goals causes that one of the most important considerations would be reaching high levels of joint interoperability. This implicates aspects such as logistics, technology, codes, procedures, interconnectivity, command and control, and demands a strong participation of the human resource. This process not only involves upgrading and acquiring resources, but also permanently reviewing and upgrading the codes, as much for the interior of the Navy as for the shared doctrine, and training at all levels, together with the programmes of naval training institutions.

Current strategic circumstances are highly demanding and imply the full commitment of every man and woman, which make part of our Institution. The Navy is the central pillar that guarantees that the State benefits from having coastlines on two oceans. In conjunction with the rest of the military forces, it becomes an essential support apparatus for foreign policy and a guarantor of sovereignty, territorial integrity and national defence.
Maritime, riverine, coastal and archipelagic scenario: a country of three seas

Colombia is a privileged country because of its geographic position in a strategic corner of the world. This position allows sea access to the main economic centres of the globe. The vast amount of possibilities that the renewable and non-renewable natural resources of our oceans offer is a cradle of progress and economic growth.

Besides being a privileged country bordered by two oceans, the Atlantic and the Pacific, Colombia is truly rich in terms of rivers: of a total of 24,000 kilometres of river channels, 15,000 are navigable and 3,800 consist of transboundary rivers and international borderlands. From this area, the Amazon River stands out due to its forest environment and its interconnected riverine network. The adequate utilization and exploitation of the maritime, riverine, coastal and archipelagic territories demands a highly effective naval force in operational terms, composed of leaders prepared and committed to its constitutional mission and a cutting-edge organization, flexible and ready to adapt to the changes of its setting.

The Navy has been recognized as an exemplary institution that has guaranteed the protection and development of national interests, both at the national and regional level, well-known because of its human capital in extraordinary technical and professional conditions. These assets are always put at the service of citizens in order to safeguard national sovereignty, keep territorial integrity and guarantee the utilization of seas and rivers as multipliers of richness, prosperity and wellbeing for the entire Colombian population.

Bearing in mind the operational and strategic environment, the Navy has been structured into four naval forces: the Caribbean and Pacific
Naval Forces, designed to operate in both maritime and riverine environments, and the Southern and Eastern Naval Forces, which are intended to operate exclusively in riverine environments. This organization allows the Navy to have total coverage of the whole Colombian territory in its riverine, maritime and archipelagic areas. To achieve its mission and perform its corresponding diverse roles, the Colombian National Navy has three elements: the Naval Fleet, the Coastguard Component, and the Marine Infantry Component. This triad allows facing the threats, challenges and opportunities of the 21st century, since they are the source of qualified and well-trained personnel, as well as of the assets needed to fulfil that mission. These elements generate the required synergy and constitute unique capabilities within the regional and global spheres, supported by integral logistic processes and a highly effective maintenance system.

**Naval Fleet**

The Naval Fleet comprises all the components that develop typical fleet operations and are focused on different administrative commands that are subsequently presented.

**Fleet Command**

This command includes large units, both offshore and riverine. It is responsible for carrying out the maintenance, modernization and upgrading plans, as well as supervising combat training processes and generating operational doctrine. In short, it is responsible for the operational preparation and availability of the fleet resources.

The fundamental base of the fleet is the ARC Almirante Padilla Type guided-missile frigates and the 209 and 206A Class submarines. All these units have recently concluded a technology upgrade and renewal process in conformity with the country’s needs, which has contributed to extend their useful lives until 2030.
The technological challenges and strategic objectives of the Navy to contribute to the development and economic growth of the country include the goal to achieve independence and autonomy in the construction and operation of the future naval fleet. This project involves the construction of the new ARC 7 de Agosto Type Offshore Patrol Vessels (OPV) at the shipyards of the Science and Technology Corporation for the Development of Naval Maritime and Riverine Industry (Corporación de Ciencia y Tecnología para el Desarrollo de la Industria Marítima y Fluvial, Cotecmar), located in Cartagena de Indias, based on the Fassmer OPV-80 model. A programme to build six vessels of this class was proposed and the third one is now in progress, which, once concluded, will result in the strengthening of maritime control and surveillance over the Exclusive Economic Zone (EEZ). Moreover, the programme for the construction of Punta Espada Type Coastal Patrol Vessels (CPV) at the Cotecmar shipyards has already started, framed within a programme for the renewal of capabilities, whose purpose is to build sixteen vessels.

The Navy also has two multi-purpose logistic vessels with the capability to provide support at sea through the performance of bunkering operations, providing ships with drinking water, supplies, ammunition and replacement parts. They also have the capability to work as command and control units in interdiction operations by means of their interceptor boats and flight decks to support naval aviation operations.

There are also auxiliary units that provide support to all kinds of operations: the ARC “Golfo de Tribugá”, a unit built at the Cotecmar shipyards within the frame of a programme to build eight vessels in order to renovate the existing fleet. This programme aims at guaranteeing that the Navy provides permanent support to all the country’s coastal and riverine communities as part of the social commitment of the Colombian State to construct a better society immersed in a process of peace and reconciliation.

Continued on page 22
Personnel – Heart and Brain of the Colombian
Navy
As a leader of national marine scientific research, the Navy owns two Oceanographic and Hydrographic Research Vessels equipped with modern sensors and research tools devoted to provide the information needed to guarantee comprehensive maritime safety. As well, there is a sail training ship, the ARC “Gloria”, which is the Navy’s flagship that serves to strengthen the tenacity and mariner spirit of the future naval Commissioned and Non-commissioned Officers.

For riverine settings the naval fleet comprises heavy and light Riverine Patrol Craft built by Cotecmar, which are unique in their kind and have resulted from the operational needs demanded by the environments and the dangers that the terrorist armed insurgency represent. After a learning, testing and continuous improvement process, it was finally possible to put these highly effective riverine units to work, with weapon systems, technology and logistic and operational capabilities that allow guaranteeing the presence, control and surveillance of every riverine channel of the country. These units have been tested in combat and have shown very satisfactory results. So, they promise fire support, logistic support and projection to all riverine combat and land units. Their high capabilities to support firepower and armouring have been very important in the fight against drug trafficking-terrorist organizations and have contributed to put pressure on them to participate in the current peace talks. The first gunfire control system (Barracuda), designed and made in the country, has been implemented in these craft and CPV units.

To carry out riverine assault offensive operations, Fast Patrol Boats (Patrulleras Rápidas Fluviales) are used. Built with national technology at the Navy’s shipyards, Cotecmar, these boats perform surveillance and riverine interdiction operations and are characterized by their high speed, manoeuvring and firepower capabilities.

Rivers are the main communication channels in the majority of our geography, many of them bordered by settlements on the riverbanks. For this reason, the Navy incorporated hovercraft units, with the aim of strengthening riverine monitoring and interdiction, as well as the development of riverine operations. It also owns riverine auxiliary units that, besides performing riverine operations in terms of logistics, also provide support to other State bodies to deliver basic services such as health, education, communication and transportation.

Naval Aviation

Colombian Naval Aviation carries out planning, organization and naval aviation operations with the purpose of contributing to the different components of the Navy in naval operations performed at maritime, coastal, archipelagic, and land settings. The assigned missions arise from the conceptual framework of joint operations of the Colombian Military Forces, and are established in consonance with the Navy’s role within that frame. Its duties are defined through four paths:

– Force Application
– Force Multiplication
– Force Development
– Force Projection

These duties comprise different missions to bring naval aviation capabilities into operational practice. Some examples of these operations are
in the Pacific and the Riverine Support and Transport Group (Grupo de Apoyo y Transporte Fluvial, GATAF), which supports the Eastern and Southern Naval Forces, as well as their respective organic units.

Naval Aviation represents an extension of the sensors and consequently broadens the reach of the Fleet during peace, crisis, conflict and warfare times. It works as a multiplier of the combat range of the naval power, a fundamental factor for maritime interdiction operations. For this reason, this component is framed under the Development Plan and aims at increasing means and, subsequently, exploration and detection abilities. In this way it will guarantee the combination of tactical data as well as the expansion and clearance of the tactical panorama of the Organized Naval Force to guard and be actively present in the maritime, riverine and island territories of the country.

Unmanned Aerial Vehicles (UAV) are the current greatest achieved innovation intended to competently support naval aviation missions carried out in close connection with naval intelligence. This capability allows for greater surveillance capability, control and presence over maritime and riverine territories of the country thanks to different aspects, such as versatility, economy, operational sustainability, data link capability, real-time information transmission, flexibility, high reach, discretion and stealth.

Search and Rescue is one of the tasks of Naval Aviation in the Pacific and the Riverine Support and Transport Group (Grupo de Apoyo y Transporte Fluvial, GATAF), which supports the Eastern and Southern Naval Forces, as well as their respective organic units.

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Coastguard Component

This component has emerged from the need to hold a special element in charge of performing surveillance and control, exerting authority and being actively present in Colombian maritime areas in support of the National Maritime Authority (Dimar) in the enforcement of regulations, laws and maritime agreements, as well as in the neutralization of crimes committed at sea, framed within a permanent fight against transnational threats.

This element is operationally divided into four commands located at the Naval Forces, hence achieving total coverage of the areas under its responsibility. The administrative area is responsibility for a Coastguard Command located in Bogotá, where the policies, guidelines, doctrinal concepts, operational procedures, training plans, programmes, development projects and future projections of the Coastguard Component are established.

The criteria for classifying Coastguard Stations is based on operations and logistics requirement: the constant and real time control of ports and nearby marine areas (islands, shallow waters, bays and inland waters) by means of surveillance, control and interdiction actions. The stations are classified as primary, secondary and tertiary. Primary Stations include the main ports of Cartagena, Santa Marta and Buenaventura, where much of the marine activity occurs. Secondary Stations comprise alternative ports with significant marine activity, such as Turbo, San Andrés and Tumaco. Tertiary Stations encompass ports with lower development in the maritime sector, including Coveñas, Bahía Solano and Providencia.

The Colombian Coastguard Component is a regional model, especially regarding matters related to the fight against illicit narcotic trade by sea. It has seized 997 tons of Cocaine Chlorhydrate over the last twelve years, which represent forty-nine percent of the Cocaine that has been confiscated by security bodies in Colombia.

The Colombian Navy has an International Training Centre for Maritime Interdiction (Escuela Internacional de Interdicción), where 196 students from twenty-three countries have been educated and trained since it was created. This has helped Colombia to be internationally acknowledged in the fight against drug trafficking and maritime interdiction. In addition, there is a Coastguard Mobile Training Group available to develop coastguard training courses in different countries of the region, such as Honduras, Panama, Costa Rica, Dominican Republic, Guatemala and El Salvador, where 261 students have been trained according to the organizational and operational needs that are specific to their own countries.

Colombia also leads the International Maritime Centre against Drug Trafficking (Centro Marítimo Internacional de Análisis contra el Narcotráfico, CIMCON). It is an initiative focused on knowledge development on the topic of the illegal drug trade phenomenon through researchers, professors, academics, and public servants from different countries. Its core objective is to evaluate the evolution of this threat so as to allow the States to design policies, strategies and plans to combat it according to the dynamics of the circumstances.

Marine Infantry

During the last five decades, the need to combat the terrorist threats that have been part of the internal conflict, characterized by violence and irregular warfare, compelled the Marine Infantry Component to undergo some changes in its organization, doctrine, means, capabilities and conditions, and to adapt to new dangers within an atypical operational setting. The development and strengthening of its riverine capabilities, counterinsurgent warfare and special operations has transformed this component into a valuable force to guarantee the security and defence of national interests.

The Marine Infantry Component has five riverine brigades that make part of the naval forces and cover its whole area of responsibility and border-rivers. It also has a training base, which comprises four instruction battalions and two training centres that are responsible for educating, instructing and training for combat. This mission is complemented by special tactic units, such as the Special Forces Battalion, the Unified Action Groups for Personal Freedom, the Group for Explosives and Demining and the Naval Command Groups, which support the achievement of the mission through special operations.

Aware of its commitment to Colombia, the Marine Infantry has implemented a plan of continuous improvement over several decades. This has empowered it to show its ability to dominate riverine settings by means of resources, technology, doctrine, training, and the quality of its actions.

The riverine doctrine developed by the Marine Infantry is unique and the most advanced regar-
dung tactics and procedures for fighting in asymmetric and irregular warfare, given the fact that it adapts to the particular environment of the country’s complex hydrographic network and the tropical rainforest, hence transforming rivers into highways of safety and progress.

The acquisition of hovercraft complements the coverage, presence, control, and strategy that the Navy carries out in rivers. These craft contribute to the doctrine with versatility, manoeuvrability and fire power and also allow extending the ability until shallow level areas of rivers, tertiary riverine channels, and riverside areas. As a consequence, the State’s military power is allowed to reach difficult access areas.

The development of riverine operations has been a fundamental aspect for the implementation of the joint doctrine of the Colombian Military Forces. It has been useful to combine land, aerial and naval capabilities in waterways where lots of staple products are carried to the communities. It was there where the joint military strategy was able to establish the presence of a grey zone that was crucial to conclude the conflict, since rivers were the corridors preferred by criminals of transnational organizations out of law for transportation.

The Marine Infantry has contributed to the economic and social development of the country through the implementation of riverine operations, which has transformed hydric basins into the country’s future. Thanks to security, rivers are nowadays surrounded by an atmosphere of progress and development that favours riverside populations and has opened doors for international investment in the country.

The Navy’s contribution to the joint strategy regarding special operations was led by the Special Forces Marine Infantry Battalion (Batallón de Fuerzas Especiales de Infanteria de Marina, BFEIM), a tactical unit that, thanks to its expeditionary nature, utilizes its capabilities to perform operations using airborne troops in maritime, land or riverine scenarios with the ability to exert force from water and carry out operations in the deep. The BFEIM comprises amphibious commands composed of highly qualified men trained in parachuting, lancer, special forces, combat, amphibious survey, underwater demolitions, and riverine actions.

Once the conflict stopped being exclusively a rural problem and moved toward cities, the military analysis determined the creation of the Urban Special Forces (Fuerzas Especiales Urbanas, AFEUR) in the Caribbean and Pacific areas. These units actively contributed to the consolidation of security in urban centres by means of fighting the urban militias, breaking their logistic chain and the strategic corridors that linked industrial production centres to rural areas. Additionally, the United Action Groups for Personal Freedom (Grupos de Acción Unificada para la Libertad Personal, GAULA) were created to complement this task in specific places, where the financial support of the criminal groups was based on extortion and kidnapping. The action of these units motivated the return of national and international tourism and enhanced development and local economy.

Special Naval Forces

Coherent with the Nation’s interests, the joint military strategy defined a flexible and convincing campaign plan that aims at exploiting available resources and acquired capabilities. A detailed analysis of the operational scenario, the enemy, the surroundings, and other different key factors to be considered within an irregular conflict defined the needs for Special Forces with specific combat capabilities for offensive operations.

The former analysis concluded that special operations with small units and irregular tactics, new techniques that made use of technical and human intelligence, specialized training, sophisticated and modern artillery, and its own doctrine, would be a determining factor for the conflict and the performance of operations in future scenarios. Naval intelligence was the essential element to perform special operations, reason why its strengthening and acquisition of acquired capabilities became an essential element for the operations.

These units are characterized by high mobility thanks to assault aircraft, which are able to perform night infiltrations, disembark troops in maritime, terrestrial and riverine settings, and make use of agile and hard detection tactics. They are also supported by combat aircraft that guarantee their safety and intelligence aircraft that send real-time information essential for the performance of the operations.

The effective action of the Special Forces was consolidated through the creation of the Special Forces Naval Command (Comando Especial de Fuerzas Especiales Navales, COFEN). This event aimed at leveraging the operational and tactical efforts of the Special Force Units in conjunction with the planning and performance of special operations against threats in the country’s different operational scenarios. Likewise, Naval Command Groups (Grupos de Comando Navales, GRUCON) were created. These groups combine special operational counterterrorism and counterinsurgency capabilities in urban and rural areas, special maritime operations, special operations of riverine assault, amphibious survey, and amphibian incursions launched from sea to beaches or riversides that are used by illegal actors to perpetrate transnational crimes.

COFEN is projected as one of the units that will provide the greatest protection in the future because of its ability to carry out tasks in any environment or operational scenario. Its high levels of preparation, readiness and availability allows it to participate in international missions of humanitarian assistance and disaster management, peacekeeping and crises, besides multinational training exercises and combined tasks to fight against organized transnational criminality.

Colombian Infantry, operating against narco-terrorists
Since the ARC “20 de Julio” and the ARC “7 de Agosto” vessels were built, the Navy has demonstrated its industrial and technological development to the region. Cotecmar is an entity that develops scientific and technological work through the innovation of products, services, and processes to satisfy the necessities of the Colombian Navy, and the naval, maritime and riverine industry. It is framed within a culture that stimulates the integral growth of its collaborators and respects the natural environment.

Navigating toward the Future

During the last few years, the company has undergone profound changes in research and technology and makes them evident through the building of two naval assets that will contribute to the fulfilment of the National Navy’s strategic aims.

The history of innovation in the Colombian Navy is relatively young. Since 1934, when the Marine Department (Departamento de Marina) was created as a direct division of the War Ministry (Ministerio de Guerra) by means of Decree 1634 of 21 September, the necessity to incorporate, maintain and repair the naval units required by the Navy to accomplish its duties triggered an evolutionary process of continuous improvement within the Institution.

Important administrative, technical and industrial changes occurred between 1947 and 1960. They gave birth to future projects that would transform the Navy into a leading institution within the riverine-maritime ambit thanks to the creation of the Magdalena Shipyard Society (Sociedad de Astilleros Magdalena, ASTIMAG), and of the first riverine shipyard, able to lift 600 tons. It was constructed with the aid of the German engineer Reynaldo Paschke, in Puerto Leguízamo, Putumayo, in 1948. Some craft were built at that time, such as the “Mora Anguiera R-2” tugboat and the “Antares” schooner.

In 1954 the engineers Reynaldo Paschke and Rodrigo Puentes built the fitting-out basin of the naval shipyard at the ARC Bolívar Naval Base with the capacity to lift 1,000 tons to assist the small vessels of the Navy in the Caribbean. At present, thanks to Cotecmar’s investments, this shipyard is able to lift 1,800 tons. In 1956, the Colombian Company for Shipyard and Naval Services (Empresa de Astilleros y Servicios Navales de Colombia, Edasco) was created, a State’s industrial and commercial organization affiliated to the Ministry of Defence. The first two offshore patrol vessels were built at the Cartagena naval shipyard, three gunboats at the Unial shipyards in Barranquilla, and the ARC “Leticia”, ARC “Arauca” and ARC “Riohacha” vessels.

Understanding that the main communication and trade means between 1952 and 1960 were riverine and that it was there where violent actions were increased within the national territory, the Navy strengthened its riverine capabilities in the Magdalena and Orinoco rivers through an improvement in its building capacity by 25 craft to counteract those actions along these important watercourses.

In spite of the immersion of the country in a dynamics of economic growth, Consatil, a company which had been created by means of private investment and was a leading industry toward the 80s, had to finish its operations, so ship building stopped developing.

With the support of the National Government, the Navy reopened its shipyard in the territories of the former Consatil in 1977 and it was named Cotecmar. The construction of riverine patrol vessels for the Marine Infantry started at the ARC Bolívar Naval Base, using the knowledge resulted from the experience with units that provided logistic support and were used in combat as armoured patrol vessels on national rivers. As a result, important floating assets were built for the institution as it is described below:

- Eight riverine units, whose third generation advanced to have shallow draft armoured craft with high manoeuvrability.
- Two Riverine Light Support Patrol Craft (Patrulleras de Apoyo Fluvial Livianas, PAF-L) with characteristics similar to those of the heavy patrol craft, but with smaller dimensions to be able to navigate across secondary channels.
Launching of OPV “7 de Agosto”, observed by the President Juan Manuel Santos, the First Lady María Clemencia Rodríguez de Santos, the Minister of Defence Juan Carlos Pinzón Bueno, the Minister of Home Affairs Juan Fernando Cristo, Admiral Hernando Wills Vélez, Chief of the Colombian Navy, and other distinguished guests.

Evolution of the Riverine Support Patrol Craft – Heavy (PAF), designed and built by Cotecmar to protect Colombia’s rivers.

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process of technological development of this product, the design was optimized by means of the competencies of the HSVA Centre in Germany, in order to guarantee its adequate performance in Colombian Caribbean waters and to minimize fuel consumption, hence favouring the cost of the vessel’s life cycle.

Conceived and materialized as the biggest vessel ever built in the country until the present, OPVs have the following characteristics:

- Girder (length): 80.6 m
- Breadth: 13 m
- Maximum draft (depth): 3.60 m
- Water displacement (volume in the water): 1,723 tons
- Crew capacity: 66 people
- Endurance distance: 4,400 nm, navigating at a speed of 18 knots, and 10,900 nm navigating at a speed of 12 knots.
- Capacity to transport a medium-sized helicopter and self-sufficient interceptor boat.

These vessels are also equipped with the BARRACUDA system, a system designed and developed by members of the Arms and Electronics Department (Departamento de Armas y Electrónica) of the ARC Bolívar Naval Base. This design provides both precision attack and capabilities for surface warfare, point defence and protection against asymmetric threats.

The BARRACUDA system is configured on ARC “7 de Agosto” with the following characteristics:

- One 40mm L/70 twin cannon
- One 20mm cannon
- Two .50 Remote Weapon Stations (RWS) (12.7 mm)

These stations are part of Dynamic, a programme developed by the Department of Artillery and Electronics of the Colombian Navy (Departamento de Artillería y Electrónica, DARET) to design and produce Colombian weapon stations for three calibers: T-12, for 12.7mm calibres, T-20 and T-25 for 20 and 25mm calibres.

- One surface search radar
- One naval radar
- Four electro-optical systems

Everything is controlled from two multi-purpose consoles in the Combat Information Centre (CIC) of the unit, which allows performing surveillance and identification tasks, target following, and weapon assignment and shooting.

**Product Development and International Projection**

*Cotecmar*’s strategic horizon for 2022 is focused on the technological development of the Colombian shipyard industry, which will allow building a new generation of surface vessels for the Navy. Thanks to this, the country will be self-sufficient regarding the construction of its own fleet, which at the same time constitutes an ambitious, necessary, but reachable technological challenge.

Likewise, this building and innovation capacity has already transcended the limits through the selling of four Fast Patrol Riverine Craft to the Brazilian Government and the possibility of negotiating and selling more of these and other kinds of vessels to other countries within the region and the Caribbean.

With a view to improving and continuing the contribution to national defence by means of creating the best designs and innovative products, *Cotecmar* is currently working on the second generation of Offshore Patrol Vessels, with sensors and weapons that will augment their surveillance and action capability to face future threats. Thanks to a technological transfer programme, three Coastal Patrol Vessels (CPV) were built in 2014, one in Colombia and two in the STX Korean shipyard, all of them based on exclusively Colombian designs. These craft are designed to conform to the operational needs demanded by the strategy that the coastguard component has developed so that each metre of coast can be protected and surveyed by the Navy.

*Cotecmar* has also built the ARC “Golfo de Tribugá”, the first of two Amphibious Landing Craft that will begin providing logistic support services to the country’s least favoured zones in terms of land communication.

Currently, a project to construct a Riverine Patrol Craft to operate in the Amazon River is being carried out in conjunction with the Brazilian Navy. Its development is in an advanced stage and it is based on a Colombian model, a design similar to that of the Riverine Heavy Patrol Craft, described as a technological innovation by the National Council of Science and Technology.

For *Cotecmar*, having the Colombian Navy as a founder and strategic partner has been a key element to shape and take a leading role in the development of products for the defence sector. The technological support provided by the organization in terms of design and innovation converts the Nation into a leader and shows its abilities and competences embodied by a growing industry that pursues competitiveness and technological independence, working together toward achieving the strategic objectives of the National Navy.

*Cotecmar* has also built the ARC “Golfo de Tribugá”, the first of two Amphibious Landing crafts that will begin providing logistic support services to the country’s least favoured zones in terms of land communication.
Navy’s strategy to fight transnational crimes

As mentioned by Francis Fukuyama in *The end of History and the last man*, democracy is conceived today as the ideal form of government and involves three conditions: market economy, representative government and the ability to preserve legal rights. However, it should be understood that threats and their targets change as the global order does: new threats aim at disturbing the civilian population, the institutional order, the economic development, and the public security.

In a global scenario, where the concept of security has transformed as a result of the proliferation of new transnational threats, especially regarding concerns such as terrorism, drug trafficking, and other kinds of crimes with global impact, it can be perceived that the nation’s interests are better supported when promoted by means of a worldwide system composed of interdependent networks of trade, finance, information, laws, people and forms of government. These threats may cause regional and global impacts and the states, conscious about this fact, ask international organisms for support in order to adopt new strategies or tools to counteract those threats. New initiatives have arisen in this respect, such as the UN’s Office on Drugs and Crime and the AOS’ Inter-American Drug Abuse Control Commission (CICAD), among others, which play a crucial role as they constitute an international forum for the proposal of ideas and strategies to neutralize new threats by means of an international approach, in an organized and coordinated way.

In these there is plenty of room for the principles that have guided maritime strategy throughout history. The relevance of basic manuals of naval strategy and their application at all times and places has always been called into question: maritime strategy cannot be applied within a theoretical context, but in the real world with a variety of aspects such as logistics, political confrontation, among others, cannot be ignored since they directly affect the achievement of naval operations.

Institutional policies of the Colombian Navy comprise, among other things, operational plans to guarantee defence and security: fights against drugs and associated crimes, illegal mining and migration, and contraband; efforts to achieve safety offshore activities, and guarantee a complete maritime and riverine safety; plans derived from policies which strive for the defence and complete safety of the citizens’ right to economic development, access to social justice and freedom of personal development.

Experiences and Reflections on the Colombian Case

South America is characterized by geographic and climatological conditions that favour the cultivation of coca, marihuana and opium poppy (to a lesser degree). In Colombia, there were almost 163,000 hectares with a potential production capacity of almost 900 tons of Cocaine Chlorhydrate by the end of the 20th and beginnings of the 21st century; that means, 2.5 tons of this product left the country every day. A political decision to face public order difficulties generated by cartels was made in the middle of the 1980s. Together with the conceptual

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1 Estrategia Marítima Ensayos de las Américas, La Nueva Estrategia Marítima de EE UU y comentario sobre Una Estrategia Cooperativa para el Poder Naval en el Siglo XXI. (P. D. TAYLOR, Ed.) Newport, Rhode Island, USA.

global change regarding other threats, it made the military forces focus their efforts on the fight against them. Within the Colombian context, especially regarding the Navy, three phases can be perceived:

One phase in which the main efforts focused on the use of surface assets to perform maritime interdiction operations, which led to partial outcomes that affected the structure and/or organizations dedicated to transnational crime only slightly, at high operational costs. In 1997, a maritime interdiction agreement was signed between the United States of America and the Colombian Republic with the purpose of improving resources and capabilities to perform control over sea. This phase was started from the time the agreement was signed and ended in 2006.

The second phase started with the development of the Closing Spaces (Cerrando Espacios) strategy, whose main focus was to combine the use of naval, aerial, riverine and terrestrial power in national maritime (Caribbean Sea, Pacific Ocean), riverine and land settings. This strategy was structured around four pillars: intelligence, resource combination and strengthening, and cooperation. Intelligence was expected to optimize the use of means and resources through their utilization in specific missions with detailed objectives. In brief, operational planning had to be supported by intelligence information. Resource combination was expected to face the illicit utilization of the territory, riverine waterways, coastlines and sea through a differentiated but combined effort of the capabilities of the Colombian Navy.

Resource strengthening was triggered by their ineffective utilization to exert control over relevant areas or scenarios. Finally, national and international cooperation were evidently needed because of the high potential and agility of the agents that carry out actions to affect national security. This phase continued from 2006 to 2013.

For the meantime the strategy of the Colombian Navy was being implemented, drug trafficking organizations advanced in the implementation of sea lines of communication through innovation processes, with the intention of enhancing illicit drug trade. As shown in figure 1 they have used ships of the line, fishing vessels, speed boats and, by means of research and development, they have created and permanently used semisubmersible and submersible crafts.

These kinds of craft became an operational challenge for the Navy and a juridical problem for the State since there was no legal framework that would allow classifying this activity as a crime, so that it could be prosecuted. For this reason, the Institution promoted a law at the Congress of the Republic, which bore fruit through Law 1319 of 9 July 2009. This law states that people who finance, construct, store, commercialize, transport, acquire or use semisubmersible or submersible craft will be

A semi-submersible craft seized by the Navy

Figure 1: Drug trafficking machinery
(Source: National Department of Naval Operations, Operational Geographic Information System, January of 2015)
prosecuted. Through this measure, the strategy employed by drug traffickers, to submerge craft when they were detected in order to transform interdiction operations into search and rescue operations, has been counteracted.

The evolution of the strategy against drugs and related crimes has successfully limited spaces to the organizations devoted to those ends. The new strategy against drugs has been named Naval Network (Red Naval). It is a combination of efforts, capabilities and information that incorporates concepts as fusion centres. Their main objective is to collect all the information generated by different agencies so as to produce leading intelligence to support planning and operational development, as well as to simplify the legalization process in order to promote the achievement of integral results through the participation of national and international agencies, judges and district attorneys.

The creation of new Maritime Task Forces Against Drug Trafficking (Fuerzas de Tarea Marítima Contra el Narcoférico, FTCN), the Poseidon Task Force (Fuerza de Tarea Poseidón) in the Pacific and the Neptuno Task Force (Fuerza de Tarea Neptuno) in the Caribbean, as well as Task Groups Against Drug Trafficking (Grupo de Tarea contra el Narcotráfico, GTCN), aim at concentrating tools and resources in an attempt to optimize their utilization to fight against transnational crimes.

Likewise, the Direction against Drugs (Dirección contra las Drogas, DICODE) was established as an entity responsible for the creation and guidance of the Navy’s anti-drug policies to give advice on political decisions on the matter. It is also responsible for the creation and activation of the International Centre for the Analysis of Drug Trafficking (Centro Internacional de Análisis del Narcotráfico Marítimo, CIMCOM), which is projected to involve the participation of every naval service, army, and agency somehow committed to fight against drug trafficking by waterways within the region. Its goal is to study the phenomenon from an academic standpoint, accumulate reflections and operational experiences and generate knowledge and proposals that may foresee and counteract this transnational crime. At the same time, this centre is expected to function as a consultant body for the naval authority regarding the creation of the anti-drug policy by sea and riverine waterways.

To contextualize the responsibilities that the Navy has been performing regarding the fight against transnational crimes, figure 2 shows the behavior of the direct fight to seize drugs from 1997 until the present. It is worth highlighting that the Navy has been responsible for the seizure of nearly 50% of the total results obtained throughout the country.

Figure 2: Seized cocaine from 1997 until 2014  
(Source: National Department of Naval Operations, Operational Geographic Information System, (SIGO), January 2015)

Some of the semi-submersibles have amazingly good sea-keeping capabilities
According to the analysis and review of the current anti-drug naval strategy implemented by the Navy, and based on the aforementioned plans:

- The global, regional and national threats that drug trafficking represent still prevail and will continue in the middle term due to the fact that drug trafficking is a crime that promotes diverse forms of violence and terrorism, and that the worldwide demand is still increasing and new markets are appearing (Latin America, Africa and Asia).

- The great efforts of the Colombian State to defeat drug trafficking have allowed it to reduce this threat although it mutates, adapts and persists.

- The crime impacts negatively, affecting national social, economic, and political domains and causing damage to the country’s international image.

- Changes in the national scenario help us predict that drug trafficking will continue existing as a threat both at the national and international scales.

- The Navy, as one of the leading institutions in the war on drugs at the national and international ambit, needs to adopt a new strategy focused on the strengthening of international cooperation with an emphasis on the Caribbean, Africa and Eastern Europe.

Therefore it is important for the Navy to strengthen the efforts produced by the strategy of the Naval Network against Drugs, especially the power of current resources in order to be at the forefront of the fight against this crime. Also, it is vital to strengthen intelligence, command, control and innovation capabilities so as to be effective in the fight against transnational crimes. The main goal is to combine efforts and continually perform operations against those crimes and, finally, to reinforce joint, combined and inter-agency cooperation, both international and inter-institutional, to enhance and spread control measures for transnational crimes that may destabilize regional security.
The procedures that drove interoperability, strengthening of mutual trust, exchange of operational experiences, doctrines and combined training were strengthened during the 20th century. In this way, the Colombian Navy has been continuously engaged in Unitas operations since 1960, outstanding, along with the US Navy, as the only navies that have been present in all its editions. Thanks to the experience acquired by the Colombian Navy regarding the fight against illegal drug trafficking and the direct fight against the internal conflict, it currently demonstrates regional leadership in the Caribbean and South America mainly regarding information exchange and training and mutual consulting to counteract and decrease illegal activities at sea through naval operations.

The National Navy has as well promoted activities regarding military cooperation, exchange of information and experiences, and technical scientific cooperation among friendly navies in relation to naval design and construction. Among the international exercises, in which the Navy has participated, the following are worth mentioning:
- **Unitas** operations since 1960
- **Panamax** since 2002
- **Caribbean** since 2005
- **Navy Days** since 2007
- **Rimpac**, in June of 2014, where Colombia participated with one of its missile frigates

**Current state of affairs and future of the Navy’s international vision**

The Navy has planned a naval strategy against drugs called Aggregate Naval Network of Efforts, Capabilities and Information (Red Naval Sumatoria de Esfuerzos, Capacidades e Información), which incorporates dominant intelligence and other components such as the naval fleet, marine infantry and coastguard, who are a marine and riverine components. In this way Colombia contributes through the experience of many decades of fighting against drugs and through the flexibility of its components in pursue of a synergy that helps eradicate this threat from the region. As an innovation of this strategy, it is worth noting the consolidation of the General Office Against Drugs (Dirección contra las Drogas), the creation of the International Maritime Centre for the Analysis of Drug Trafficking (Centro Internacional Marítimo de Análisis Contra el Narcotráfico, CIMCON), the initiative to generate an International Risk Zone, and the conformation of the Combined Task Forces, elements which are described below:

**International Maritime Centre for the Analysis of Drug Trafficking (CIMCON)**

The creation of this centre arose from the regional need for having an institution that could lead research, analysis and training on the threat of drug trafficking and its related crimes, as well as the political, economic, social, and security implications for the hemisphere. Also, it arose from the need to promote international cooperation in order to achieve standardization procedures, high interoperability standards at the tactic and operational levels between the navies, coastguard services, and similar maritime services and international agencies within the region in an attempt to develop improved strategies to counteract drug trafficking through maritime waterways. The idea of establishing this centre originated in the Inter-American Naval Conference carried out in Cartagena in 2009, and it will start operating in June of 2015.

**International Risk Zone**

The analysis of drug trafficking crimes determined that once Colombia started fighting against these crimes, they moved towards territories with lower degrees of security, and hence, with lower risks for the illegal business, resulting in the recovery of the level of their financial return. For this reason, the initiative of the Colombian National Navy has been to comprehensively attack the crime, regardless of whether borders have been crossed, in order to create a zone where the crime can be faced in a consistent way from the strategic, operational and legal points of view.
Combined Task Force

This is an enterprise of the Colombian Navy that aims at integrating the capabilities and resources of the navies, coastguard and maritime services to safeguard the maritime territories of the countries of the hemisphere against the scourge of drug trafficking. This plan resulted from the excellent outcomes yielded by the Navy’s Task Forces against Drug trafficking, where different capabilities were combined to achieve a common objective. This international force will be activated on demand, so its character is temporary and will depend on the needs and operational requirements generated by crime analysis. It will be used to address the weaknesses of the areas under risk and exploit the strengths that each member state can contribute.

Capability transfer

The experience of the men and women of the Navy has been constructed around three lines: domination of the operational environment in rivers, development of the capabilities and techniques in maritime interdiction and dominant intelligence. They have provided Colombia with the expertise needed to train and share knowledge with the rest of the region.

Riverine operations

Riverine waterways that were used by narco-terrorist groups in the past as mobility corridors and pathways of logistic distribution are today waterways of progress and development for Colombian riverine communities and the countries with riverine borders.

As a complement, the International Centre for Amphibious Training (Centro Internacional de Entrenamiento Anfíbio, CIEAN) and the Riverine Combat Training Centre (Escuela de Combate Fluvial, ESCOFLU) have become sources of experience and doctrine in specific abilities against terrorism and transnational threats that affect the contemporary world: the marine infantry has been offering twenty-two technical and combat training programmes since 2000, which have trained 1031 international students coming from fifteen countries, interested in learning from the Colombian expertise by means of courses on riverine operations, basic humanitarian demining, basic artifact and explosive detection, narcotic detection, non-lethal weapons, martial arts, piloting, riverine gunners and designated marksmen, among others. These courses complement the competences of the apprentices to face the antidrug war.

Maritime interdiction

The experience of coastguard marines, who daily fight against drugs at sea, have allowed them to establish and standardize operational and legal procedures. Thanks to this, the Navy is now positioned as the Colombian military force with the highest level of drug seizures. As a complement, the International Coast Guard Training Centre has trained 196 students coming from twenty-three countries in its Maritime Interdiction Course, which was established in 2009.

Dominant intelligence

In the case of naval intelligence, Colombia has been offering knowledge exchange to twenty-three countries with 101 international students since 2003, in which analysis and knowledge of crimes after crossing border areas has been especially beneficial.

The most important innovation regarding knowledge exchange has been developed by marine infantry and coastguard mobile training groups, which have trained 378 students coming from ten countries that were visited.

In addition, the Navy started the creation of the International Centre for Advanced Training in January of 2015, which is projected to be the academy of international training that will com-

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**Regional Leadership Doctrine 2000-2015**

- **Argentina**
- **Australia**
- **Brazil**
- **Canada**
- **Chile**
- **Costa Rica**
- **Cuba**
- **Ecuador**
- **El Salvador**
- **France**
- **Germany**
- **Guatemala**
- **El Salvador**
- **Honduras**
- **India**
- **Indonesia**
- **Iran**
- **Italy**
- **Japan**
- **Mexico**
- **Morocco**
- **Peru**
- **Philippines**
- **Portugal**
- **Panama**
- **Paraguay**
- **Peru**
- **República Dominicana**
- **San Vicente y Granadinas**
- **Trinidad y Tobago**
- **Uruguay**
- **Venezuela**

**24 COUNTRIES 1293 STUDENTS**
bine aerial, amphibious and land training for the naval forces of the region in order to make use of the capabilities of operations launched from aerial or naval platforms to subsequently direct naval power against transnational crimes from land.

International experts in drug-trafficking at a conference in Cartagena, organized by the Inter-American Drug Abuse Control Commission (CICAD) of the Organization of American States (OAS)

**Naval construction, innovation, science and technology**

The distinguishing element in the implementation of the Navy’s strategy against violence-generator actors and the fight against drug trafficking has been the transformation of a Navy prepared to face a regular conflict into a flexible and adaptable navy that changes to combat an irregular threat.

The Science and Technology Corporation for the Development of Naval, Maritime and Riverine Industry (Cotecmar) has designed, built and improved riverine support patrol craft (PAF), both heavy and light, and riverine patrol boats (LPR), unique in their kind, which today navigate Colombian rivers and exert sovereignty in the Colombian Amazon rainforest, which has triggered the interest of the countries of the region.

In consonance with the institutional vision to develop and build the naval assets that the warfare navy requires, the Navy developed three projects: one to build an Offshore Patrol Vessel (OPV), another to build a Coastal Patrol Vessel (CPV), and the last one to build Amphibious Landing Craft (BDA). Thanks to innovation and institutional development, today the fleet comprises two OPVs, three CPVs, two BDAs, eight heavy PAFs, two light PAFs and eight LPRs, built by Colombian workforce at the Cotecmar shipyards in the city of Cartagena. Moreover the construction of the Strategic Surface Platform (PES) is projected for 2030.

**Agreements and conventions for the security and development of border areas**

Aware of the need to serve as a unifying agent to all the nations of the region, whose aim is to combat threats that may endanger security, the Navy has adopted agreements and maritime cooperation conventions consistent with its international role, which pursue to develop deeper relationships with other navies, coastguards and similar maritime services.

The Aggregate Naval Network of Efforts, Capabilities and Information naval web, is supported by international anti-drug organizations. Some of them are specialized bodies of
the UN, such as the International Maritime Organization (IMO), the United Nations Office on Drugs and Crime (UNODC), the Division for Ocean Affairs and the Law of the Sea (OLA), etc.; and some others are nongovernmental organizations, such as the Maritime Analysis and Operations Centre – Narcotics (MAOC-N), among others.

In the regional sphere, the Inter-American Naval Conference is considered a suitable scenario to strengthen the role of the Navy. In this context, it has been planned to create a specialized chapter on maritime interdiction to invite the navies to join international efforts to fight against drug trafficking and learn from the Colombian experience in this field of action. It is also expected to promote a portfolio of capabilities, experiences and services.

With regard to the development of border areas, nearly sixty percent of Colombian borderlands are riverine. The Navy uses its naval and marine infantry capabilities to prevent them from being used by international criminals by way of combined operations and bi-national journeys to assist communities. All these elements are expected to improve the living conditions of the inhabitants of those areas and to promote sustainable development. The Bracolper operation can illustrate this fact: an operation developed by ships belonging to the Colombian, Brazilian and Peruvian navies in the border shared by those nations in the Amazon rainforest, which has been continuously implemented during the last forty years.

Moreover, the Navy has signed agreements with twelve countries, which has become one of its strengths. They have contributed to the fulfillment of the strategic objective of the global fight against transnational crimes. Besides, there is participation of the Navy’s assets in international assistance and scientific expeditions in the following manner:

**International cooperation in international assistance**

The Navy participated in the humanitarian assistance operation that took place in Haiti in January of 2010, when the ARC “Cartagena de Indias” and ARC “Buenaventura” vessels served as hospital ships. They also carried assistance, diesel fuel and drinking water. The Navy is now planning to participate with the ARC “7 de Agosto” in the Atalanta and Ocean Shield operations to fight against piracy off the Horn of Africa.

**Scientific expeditions and climate change**

Some scientific expedition projects are currently being developed in oceanic areas, mainly in the fields of oceanography and hydrography. To these ends, the Navy has two research centres available. Caribbean Oceanographic and Hydrographic Research Center and the Pacific Oceanographic and Hydrographic Research Center. Since 1982 Colombia has been participating in expeditions organized by other countries in the Antarctica through invited personnel. However, the first Colombian scientific expedition in Antarctica left the country in December of 2014 on board the ARC “20 de Julio” vessel within the frame of the Caldas operation, which was named after the eminent Colombian scientist Francisco José de Caldas, an independence hero. This research project has the goal to foster the scientific research of the navies in this region of the world and convert the country into a consultative member of the Antarctic Treaty.

Among its plans to participate and cooperate internationally, the Colombian Navy has formally solicited to become a member of the Western Pacific Naval Symposium (WPNS), since it is considered that Colombia can make a contribution through its knowledge and experiences to this important world naval meeting.
Over the last five decades, Colombia has gone through an internal conflict fed by illegal drug trade and other transnational crimes. This situation has made it compulsory for security forces, including the Navy, to modify their competences in order to defeat drug trafficking terrorist organizations and compel them to sit at the negotiation table in view of their disarmament and demobilization. These decades have also politically privileged the capabilities directed to solve the internal problem over the conventional capabilities of a Warfare Navy.

In this context, the Colombian Navy has been successful: it has been influential and valuable in defeating the intentions of drug trafficking-terrorist organizations operating within the country to keep fighting. This has been possible thanks to factors such as the control over the country’s rivers, the performance of intelligence operations that allowed capturing or eliminating enemy ringleaders, and the reduction of the finances of those organizations through the effective fighting against drug-trafficking, illegal mining, kidnapping and citizen extortion. It has also been possible thanks to activities carried out at land, which is unusual for any Navy, but which has allowed having the first country’s area free from terrorist threats, where reintegration programmes and economic development in peace and equity have yielded good results, in this way becoming a model to be followed by the rest of the country.

It is also important to highlight that notable events have taken place during this period. These include the creation of groups for the detection and deactivation of mine fields, the performance of operations against kidnapping and extortion, and operations to protect sea lines of communication in the Pacific in order to counteract drug trafficking-terrorist actions against the coastal trading vessels that arrive at the different ports of this coast. All these capabilities and operations were focused on the protection of the civil population and on keeping control, in an attempt to strengthen the relationship between the population and the public force, the most effective mechanism to defeat terrorism.

Today the Colombian Navy has new challenges, framed within the ratification of a General Agreement to End the Conflict with the FARC (Fuerzas Armadas Revolucionarias de Colombia), to resume the activities proper of a Warfare Navy and strengthen its natural capabilities appropriate to a country that is strengthening maritime power step by step. To this end, the Navy has established the Strategy of the Four Focal Points (EP4C):

The first focal point, Education and Welfare (Educación y Bienestar), is related to the most valuable asset of the organization, its human resource, and focuses its strategy on the generation of new educational models that allow reaching goals such as reinforcing the maritime and riverine competences of the personnel, promoting the professionalization of Non-commissioned Officers and the engagement of Commissioned Officers in master and doctorate programmes, gathering academic programmes together in education and training centres in order to achieve knowledge mainstreaming and create education centres such as the Postgraduate of the Navy Cadet School (Escuela Naval de Cadetes) and the Technological Training Centres (Centros de Formación Tecnológica).

The welfare element has focused on individual, family and community transformation. To achieve this goal, the Family Office (Dirección de la Familia) was created to promote respect for human dignity by focusing on the internal-
ization of institutional values and principles. This is accompanied by the development of infrastructure projects aimed at improving the life quality of the men and women that are members of the Institution.

The second focal point is known as Operational Plans (Planes Operacionales), and it is divided into five sub plans that fit current roles, future threats and the challenges that may arise during the post-conflict period of a country longing for consolidated peace and equity for its citizens:

1. Defence and National Security. Provided that our country still faces the threat of terrorism against the Colombian population and the State, this first plan, besides focusing on national defence aspects related to threats that could develop against Colombia, also expects to contribute to the joint efforts of the Sword of Honour (Espada de Honor) Warfare Plan proposed by the General Command of the Military Forces (which also gives birth to our campaign plan) through active participation by means of resources, personnel, intelligence and coordination with the Task Forces across the whole national territory.

2. Strategy against drugs and related crimes. Focused on the fight against drug trafficking, the second plan is the upgrade of the Navy’s former plans, which have successfully been blocking opportunities to the organizations dedicated to this crime. The Naval Network strategy against drugs integrates concepts as a fusion centre, collected by all related national and international intelligence agencies, police force divisions to fight against drugs, and other investigating and prosecuting bodies against this crime, and contemplates the creation and incorporation of new maritime and riverine task forces against drugs to the present Poseidon Task Force in the area of Tumaco in the Colombian Pacific. At the same time it plans the creation of the Anti-Drug Division (DICOD) in the Navy and the opening of the International Centre for Anti-Drug Research and Analysis, in which every naval service and navy of the region will participate, enjoying an academic environment to study the phenomenon, accumulate reflections and operational experiences and generate proposals to competently anticipate and face this transnational crime. Combating organized crime also includes fighting against illegal mining, migration and smuggling.

3. Security of off-shore activities. The pre-exploitation stage of some blocks authorized by the State, mainly in the Caribbean, to search the Colombian continental shelf for energetic resources, such as gas and petroleum, is a process, which is already in its final stage. The imminent materialization of the exploration stage makes it necessary that all these activities, which accomplished across Colombian maritime and coastal settings, be supervised by the Navy as the only operational authority that supports the management of administrative authorities, which have competences on Colombian maritime jurisdictional waters. This supervision will have to be carried out in terms of safety, maritime traffic monitoring, prevention of natural disasters, risk management, and sustainable exploitation of resources derived from offshore activities. For this reason, in the exploration stages, the authorized companies have been accompanied by the Colombian Navy and its operational capabilities.

Given the promising perspectives coming from off-shore resource exploitation, it is a plan related to provide security in the exploitation activity, which includes the legal aspects, the public availability of information regarding the activity, the dedicated use of resources and the readiness to respond to any kind of situation or emergency that may occur. Given this possibility and the lack of technical resources to provide disaster assistance at open sea (in case of fires and oil spills), it is necessary to strengthen the Navy by means of technical means to carry out
an effective labour, from prevention to incident management, which may be generated accidentally or intentionally, or due to natural causes in maritime areas.

4. Maritime safety. The fourth plan is the result of Colombia’s high reliance on the sea and it is aimed at protecting the Nation’s maritime interests. The National Tax and Customs Department (DIAN) states that “freights that enter and leave the country reflect to a large extent the dynamics of the Colombian economy”. Such dynamics are supported by data that show that 96% of the total cargo that arrived in the country between January and June of 2013 was sent by sea and 98.8% of the total cargo that left the country used this same transportation mean. Colombia’s macroeconomic variables and its gross domestic product are largely derived from sea trade, so it must be protected and stimulated to carry out sustainable and responsible exploitation. Henceforth, the Maritime Safety plan is focused on taking care of the trade channels and guaranteeing the safety of all the activities developed at sea or shores, which represent a source of benefit for the State and the private sector.

However, it is compulsory to continue strengthening safety mechanisms by implementing a maritime systemic focus (sea – shore – port - sea) in line with the country’s growth and development expectations and international current regulations and laws in order to generate suitable conditions for trade and tourism, and extractive sustainable activities, as well as any other related to sea utilization and exploitation of the sea. This will allow contribution to competent administrative authorities in the management of Colombia’s jurisdictional maritime waters.

Riverine safety. Colombia is a privileged country endowed with lots of rivers (more than 24,000 kilometres, of which more than 15,000 are navigable). This fortunate condition must be exploited to enhance the development of all riverside communities.

The Navy has experience and knowledge on Colombian rivers thanks to the patrolling carried out over decades, which has guaranteed safety and protection. In turn, the Institution uses these competences to prevent illegal groups from using rivers to commit criminal actions. In this way, it provides safety and protection to riverside populations and to the Nation’s most important infrastructure located on waterways.

In the so-called post-conflict stage, it is planned that the Navy be present in main and border rivers. Its mission includes their protection and surveillance, riverine environmental protection, and support for the development of riverside communities. Around sixty percent of the 6,342 kilometres of borderlands, that exist between Colombia and Venezuela, Brazil, Peru and Ecuador, are shared by rivers (about 3,800 kilometres). For this reason, the plan promotes cooperation between Colombia and its neighbouring counterparts to foster stronger ties of bi-national and multinational integration for the sake of the safety and prosperity of borderland areas.

Finally, environmental protection by means of the implementation of preventive activities, risk mitigation plans, disaster response, neutralization of predatory activities, and security of riverine navigation are transversal axes carried out in coordination with the relevant authorities of the rivers.

The fourth focal point is called International Projection (Proyección Internacional), which guides the following strategic lines: providing training to friendly countries of the region in the fight against transnational threats, participating in humanitarian aid operations, collaborating with international security, contributing to peace international operations to support the United Nations Organization, as well as supporting vessel traffic monitoring in the Western Caribbean and international scientific contributions to operations in Antarctica.

The fourth focal point, termed Capabilities and Resources (Capacidades y Medios), has already started a planning process in the company of the Ministry of Defence, termed Transformation and Future (Transformación y Futuro). It aims at optimizing resources by giving priority to the joint application of force for the defence and security of national sovereignty. This process coincides with the transformation that is being independently carried out by the Naval Institution, which is specified in the 2030 Force Planning Document of the Development Plan of the National Navy.

This up-to-date plan has anticipated two subsequent scenarios without a fixed schedule: in the first one the efforts of the police force focuses on beating drug trafficking organizations to subsequently reach peace consolidation after carrying out peace talks; in the second scenario, the Institution’s strategic capabilities become technologically obsolete, making its upgrade mandatory in order to adjust to new threats and to the political strategic setting of the moment.

To this end, the development of three macro-plans raise: the first contemplates phases I and II of the Orion Plan, whose end is to complement the strategic capabilities of naval assets and expand their useful life; the second, the Bridge Plan, has the purpose of maintaining the capabilities that were expanded by the preceding plan and finish complementing those capabilities that may not have been reached because of budget resources; finally, the Lighthouse Plan has the aim of upgrading capabilities to adjust them to future threats and recovering those that could become technologically obsolete, and projecting the Force in the international arena.

Conventional submarines are versatile assets for the protection of national interests at sea by using their surveillance capability for the fight against drug-trafficking.
With regard to resource upgrading, the fact that the Military Forces’ greatest operational efforts were directed toward countering a terrorist threat system against the State during the latest decades caused that greater amount of resources and means were invested in the internal conflict in order to preserve the constitutional order. Geopolitical, operational, and tactic analysis were undertaken and determined the existence of gaps between the capabilities our Warfare Navy should have and the following:
- Its constitutional commitment to provide external defense
- Its constitutional obligation to serve the community and promote general prosperity more efficiently
- Its consistency regarding the maritime and riverine potentialities that fortunately belong to Colombia, so that national maritime power could be promoted. This last point refers to the State’s capability to create, develop, exploit and protect its maritime interests during peace, crisis, and warfare times despite existing antagonisms, understanding maritime interests as sea goods and attributes protected by its naval power, which is represented by its Navy.

With a view to close those gaps and in consonance with the plan to upgrade the capabilities of the military forces, led by the Defense Ministry, the Navy conducted an activity that resulted in eighteen capability groups. The country should focus its strategy of naval upgrading and its force structure on these groups by 2030, which would help the achievement of the following aims:
- Total coverage of the territorial sea and the adjacent area (up to 24 nautical miles)
- Performing control over the exclusive economic zone (up to 200 nautical miles)
- Completing capabilities of strategic defense
- Strengthening riverine resources in central and borderland rivers
- Consolidating regional presence and leadership.

Capability groups mainly refer to:
- Implementing the capabilities of the surface and submarine strategic force
- Implementing naval aviation capabilities for the development of naval operations involved in surveillance, detection, and naval warfare actions
- Upgrading and reinforcing the strategic naval force
- Upgrading naval fleet supply capacity at sea
- Implementing the capability to perform amphibious operations
- Strengthening long-distance air-sea exploitation, mobility and shipping
- Completing the capabilities of riverine, coastguard and naval intelligence operations.

These capabilities will allow Colombia to have a Naval Force coherent with its needs for support in order to build a safer global environment. This will stimulate the country’s worldwide recognition; its possibility to exercise influence on maritime concerns; the protection of its interests; the national and international projection of its industry; the fostering of maritime activities; a significant contribution to progress, equity, education, and well-being for the population and hence peace consolidation.

Furthermore, the Navy will be thoroughly able to conduct and maintain naval operations in the national maritime jurisdiction, and in central and borderland rivers. In addition, it will have the capability to develop naval operations with regional projection; generating greater credible deterrence; defending sovereignty, autonomy, territorial integrity, and constitutional order; and leading multinational operations to contribute to regional safety in national and international marine areas, as required.

To conclude, Colombia is a country that holds the privileges of being in its bi-oceanic and geopolitical position, rich in marine resources, and highly reliant on maritime trade. Its successful experience in the fight against transnational threats, as well as its need for countering the maritime ambitions of other states at the expense of Colombia’s and its regional and global projection demand that the country procures a robust, professional and modern navy: a medium-size navy which projects in the regional ambit and foresees a future with capabilities of its own and contributions of strategic partners for the sake of national wellbeing and the progress and development of the Colombian population, navigating toward a peaceful, educated and egalitarian country, a fair legacy we must inherit to future generations.

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