

US Navy

The Ecuadorian Navy's BNA *Manabi* 'Tipo-550' class corvette seen here underway. Latin American navies have made scant investments into new corvettes in recent years.



CORVETTES ON COURSE

"Increasing demand for flexible ships that can adapt to multiple missions has been driving the corvette market over the last fifteen years," notes Stephane Fremont, director for combat ships at DCNS, "in response to growing traditional and non-traditional threats."

Dr. Alix Valenti

Western nations are increasingly designing corvettes "with an eye towards exports", says Matthew Caris, a senior associate at Avascent, a consultancy based in Washington DC, and many of these contracts include requirements for the customer to build a number of these ships themselves to facilitate technology transfer from the vendor country to the client.

REGIONAL TRENDS

Figures published by Defence IQ, a London-based defence events and research company, in its *Surface Warships Market Report* reveal startling differences in regional corvette procurement trends: 77.5 percent of current procurement programmes are based in the Asia-Pacific, with five percent in Europe and 17.5 percent of the programmes occurring in the Middle East and North Africa, while Latin America and



Sub-Saharan Africa remain largely absent in this market. Mr. Caris explains that these regional differences are "more a question of budget and politics, rather than a matter of whether corvettes are the right ship or not (for a potential customer)." According to the Stockholm International Peace Research Institute (SIPRI), a think tank, military spending in Latin America and Sub-Saharan Africa reduced by six percent between 2013 and 2014 and eleven percent between 2014 and 2015. These sharp decreases reveal the impact of severe economic and political crises in a number of these countries (such as Angola, Brazil, Chad and Venezuela), shifting military spending priorities away from navy modernisation, and hence the procurement of corvettes.

Western Europe has witnessed a decrease in its military spending since

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One of the Bulgarian Navy's 'Pauk' class corvettes, the *Bodri*, is seen here underway. This ship is optimised for anti-submarine warfare.

the financial and economic crises of last decade afflicting this region, when defence spending reduced by 13 percent between 2009 and 2015. That said, between 2013 and 2015 spending has risen by 20 percent and 14.7 percent in Central and Eastern Europe respectively. This spending decrease in Western Europe has had little impact for the corvettes market because “these navies (stopped using) corvettes in the 1960s,” says Mr. Caris. The increase in spending in Eastern Europe, on the other hand, largely driven by the growing fear of a resurgent Russia, is likely to bring an increase in corvette procurement for navies around the Black Sea, where their potent anti-surface punch, combined with their scalable design and more competitive prices than frigates, makes them highly desirable. Meanwhile, regional tensions also drive

military spending in North Africa, the Middle East and the Asia-Pacific, where concerns over traditional and non-traditional threats, as well as the importance of projecting naval power, are opening up a market for corvettes.

ALGERIA

Algeria's coastline runs for approximately 809 nautical miles/nm (1000 kilometres/km) along the Mediterranean Sea. As such the country is one of the main Mediterranean routes for refugees seeking to reach European shores from countries in Sub-Saharan Africa. Since 2000, Algeria has also been part of NATO's (North Atlantic Treaty Organisation) Mediterranean Dialogue which has translated into regular exercises between the Algerian Navy (*Forces Navales Algériennes/FNA*) and NATO.

As a result of this cooperation, since 2006 the FNA has been modernising, which has seen the acquisition of three 'C28A' class corvettes from the People's Republic of China (PRC), all of which had been commissioned by August. According to Chinese media sources, the 'C28A' class corvette has a displacement of 2800 tons and has four MTU 1163 series diesel engines. The ships are equipped with a hull-mounted sonar of Chinese origin, while their sensor suite includes a Thales Smart-S Mk.2 naval surveillance radar and two Kelvin Hughes SharpEye navigation radars. The corvettes are armed with an NG-16-176mm naval gun, two Type 730 Close-In Weapon Systems (CIWS) and eight seven-barrelled 30mm gun turrets, plus eight China Haiying Electro-Mechanical Technology Academy C-802 family anti-ship missiles and one FM-90N surface-to-air missile launcher.

EGYPT

Elsewhere in North Africa, although the Egyptian Navy historically received smaller budget shares and procurement funding in comparison with the other two branches (army and air force) of the Egyptian armed forces, in 1990 the Egyptian government inverted this tendency in an attempt to modernise its ageing fleet and expand it to better respond to changing threats. Since then, successive Egyptian governments have maintained this trend, driven, in particular, by the need to protect ships navigating the Suez Canal and the Red Sea, from the increasing threat posed by the Islamic State of Iraq and Syria insurgent organisation in the region, and more traditional concerns over Israeli and Iranian naval capabilities.

In this context, the Egyptian Navy signed, in July 2014, a contract with DCNS for the construction of four 'Gowind 2500' class corvettes worth approximately \$1 billion. Displacing 2600 tons, these ships will be equipped with DCNS' SETIS Combat Management System (CMS), as well as the firms' Panoramic Sensors and Intelligence Module mast which incorporate the vessel's electronic sensors and Operations Room.

The construction of the first Egyptian corvette began on 16 April 2015 in DCNS' Lorient shipyard on the French Atlantic coast and is scheduled for delivery in 2017, according to local media sources. The other three ships will be built domestically in Alexandria Shipyard in north central Egypt, where the cutting of the metal for the first-indigenously-built corvette began in on 17



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The Republic of Singapore Navy's (RSN) RSS *Vigilance* corvette is seen here in the foreground. These 'Victory' class ships will soon be replaced by the new 'Independence' class in the RSN.

April 2016. While DCNS was not authorised to divulge additional information on the ship, Mr. Fremont told *Armada* that "Egypt chose to have the first ship built in France in order to receive her as soon as possible, that is, within three years and two months."

QATAR

Looking towards the Middle East, Qatar's expansion and modernisation of the Qatar Emiri Naval Forces since 2011, reflects the country's desire to increase its military posture in the region. A larger and modern navy will primarily allow Qatar to play a more important security role in the Persian Gulf, contributing to guarding key ports and, in the long term, participating in anti-piracy operations to secure key trade routes. It will also increase the prestige of its military within the Gulf Cooperation Council (of which Qatar is a member alongside Bahrain, Kuwait, Oman, Saudi Arabia and the United Arab Emirates), a desire that had so far been thwarted by a lack of personnel affecting all of the country's armed forces. This gap is likely to be filled by the procurement of modern platforms designed with a high degree of automation to mitigate such personnel requirements.

In this context, on 16 June Qatar signed a contract with Leonardo/Finmeccanica worth \$4.2 billion for the construction of four new corvettes (plus one amphibious assault ship and two Offshore Patrol Ves-

sels). To date, little additional information is known about the class of the corvette to be provided to Qatar, other than the fact that they will displace around 3000 tons and will be deployed for maritime surveillance and patrolling territorial waters and Qatar's economic exclusion zone. In terms of their equipment fit, a Leonardo/Finmeccanica press release announcing the deal stated that the company will also provide the four corvettes with their CMS, radar and optronics. Their weapons fit will include a Leonardo/Finmeccanica C310 torpedo countermeasure system, a Leonardo/OTO Melara 76/62 main gun and Marlin-WS 30mm secondary armament. The ship's missile armament will include MBDA's MM40 Block-3 Exocet Anti-Ship Missile (AShM), and Aster-30 and VL MICA Surface-to-Air Missiles (SAMs). *Armada* approached Leonardo for further details regarding Qatar's order, including delivery schedules for the vessels, but had received no response by the time this edition went to press.

RUSSIA

Away from the Middle East, over the past few years, the Russian Navy has been undergoing significant modernisation and expansion. Russia's desire to maintain efficient sea denial and conventional deterrence against NATO forces is, undoubtedly, the largest factor driving this modernisation. To this end, Russia has four ongoing corvette programmes: The 'Project 20380/Steregushchy' class and the subsequently

improved 'Project 20381/Steregushchy' class which is a corvette designed with a low radar cross section with a displacement of 2000 tons intended to replace the navy's current 'Grisha' class corvettes. The 'Project 20380/Steregushchy' class is armed with one A-190 100mm naval gun or alternatively one Kalashnikov AK-176M 76.2mm naval gun, two 14.5mm machine guns and a DP-64 grenade launcher. Its modular design also allows the corvette to be equipped with anti-ship armament such as eight NPO Mashinostroyeniya P-800 Oniks, or alternatively, 16 Tactical Missile Corporation Kh-35U AShMs. Air defence for the vessels comes in the form of the KBM 9K38 Igla SAM and a single KBP Kashtan CIWS. The first ship, *Steregushchy*, was commissioned in October 2008 and the latest one, *Gromky*, could be delivered before the end of this year.

The 'Project 20385/Gremyashchy' class is an improved variant of the 'Project 20380/20381 Steregushchy' class. It has an increased displacement of 2200 tons, compared to the previous vessels. The 'Project 20385/Gremyashchy' class can fire Novator Design Bureau 3M-54 Klub AShMs, and its Anti-Submarine Warfare (ASW) capabilities have been enhanced with the Tactical Missiles Corporation Paket-E torpedo with air defence provided by the ship's Almaz-Antey 9M96 SAM. Additionally, the ship is armed with two Kalashnikov AK-630M 30mm anti-aircraft cannons and an A-190/01 100mm naval gun. Although construction began in 2012, and the first ship was slated for delivery in 2016, EU (European Union) sanctions imposed on Russia in 2014, in retaliation for the latter's involvement in the Ukraine civil war and Russia's annexation of Crimea, delayed the installation of the engines, which should have originally been supplied by MTU of Germany. Two Russian-made Kolomna 1DDA-12000 diesel turbines now outfit the eponymous vessel in the class, and delivery of this ship is now expected for 2017.

On 11 May 2016, the keel of the *Shtorm*, the first ship of 'Project 22800/Karakurt' class, was laid in the More Shipyard in Feodosiya, Crimea. This new class is considered an alternative to the 'Project 11356/Admiral Grigorovich' class frigates, which suffered from Ukraine's decision to stop exporting marine engines to Russia upon the latter's annexation of Crimea. With a much smaller displacement than the other corvettes (800 tons), the *Shtorm* will nevertheless pack a potent punch, capable of firing 3M-54 family AShMs. The first two ships of this class are

currently under construction at Pella Shipyard in St Petersburg, and delivery of the lead vessel, *Uragan*, is expected for late 2017.

UNITED ARAB EMIRATES

Much like its neighbours in the Gulf region (see above), the United Arab Emirate (UAE) is concerned with the rise of political violence in the Middle East region. Currently, the UAE armed forces' principal theatre of operations is the ten-nation Arab coalition deployed to Yemen to expel *Houthis* Shia clans from areas they control in Yemen's interior and its ports on the Red Sea. As such, the UAE has been expanding the fleet of the UAE Navy (UAEN) and the UAE Coast Guard (UAECG) with small, multipurpose vessels that can ensure fast force projection around the Red Sea and the Gulf of Aden.

In January 2004, the UAE awarded a contract to Abu Dhabi Shipbuilding (ADSB) for four 'Baynunah' class multipurpose corvettes. The contract was subsequently extended to six corvettes in July 2005. The new corvettes are progressively replacing the six 'Ardhana' class offshore patrol vessels in service with the UAEN. The ships' Leonardo/Selex IPN-S CMS integrates its NA-25XM fire control radar which provides targeting information for its Leonardo/OTO Melara 76/62mm Super Rapide main armament, and two Rheinmetall MLG-27 27mm guns. Additional armament includes the MM40 Block 3 AShM and Raytheon RIM-162 ESSM (Evolved Sea Sparrow Missile) and RIM-116 SAM. ADSB told Armada that five corvettes have been delivered to the UAEN to date, with the sixth ship expected to be delivered during the first quarter of 2017.



One of the Italian Navy's 'Comandanti' class vessels, variously described as both corvettes and as offshore patrol vessels.

ASIA-PACIFIC

The 'Force 2030' Bangladesh armed forces modernisation programme, which was launched in 2013, includes a ten-year programme originally published in 2009 to develop a three-dimensional navy (surface, underwater and naval aviation). Within its framework, Bangladesh has already received two 'Swadhinota' class corvettes, BNS *Shadhinota* and BNS *Prottoy*, from the China Shipbuilding Industry Corporation (CSIC) on 11 December 2015. Media reports have confirmed that Bangladesh has ordered an additional two 'Swadhinota' class corvettes, and that construction of these ships commenced in the PRC on 11 August 2016.

Over the next five years the PRC's People's Liberation Army Navy (PLAN) will be replacing its 'Type-054A/Jiangkai' class frigates with 'Type-056/Jiangdao' class corvettes that the PRC has been building since 2012. The PRC has not released any exact information on how many of these vessels it intends to build, although the NATO Association of Canada indicated in a

May 2015 report that estimates put the final total of corvettes to be delivered at between 40 to 50. The first ship was commissioned in February 2013 and the 26th example was commissioned on 8 June.

Malaysia's Boustead Naval Shipyard (BNS) is collaborating with DCNS for the construction of six Littoral Combat Ships (also known as the Second Generation Patrol Vessel), to be built by BNS. Construction of the first ship began in March 2015, and Mr. Fremont indicated that "the general conception phase, which saw DCNS work together with BNS to design the platform and the CMS, just ended. Now BNS will take the lead with DCNS staff as support and assistance." Although unconfirmed by DCNS, *Armada* understands that the first vessel will be delivered in 2019. DCNS was unable to provide further information regarding the launch and commissioning timelines of the remaining vessels before *Armada* went to press.

Mr. Caris indicates that corvettes "are good for deploying in territorial waters, but much less adequate for deploying elsewhere (i.e. on the high seas)." As such, while Western navies such as the *Marine Nationale*, the Royal Navy and the US Navy have long moved on from corvettes to acquire frigates, destroyers and OPVs, other navies are likely to turn to corvettes as a compromise between tight defence budgets and blue and brown water security challenges. Alix Donnelly, a spokesperson for DCNS, told the author that Bulgaria, Croatia and Poland were looking to acquire such ships as soon as defence budgets and priorities align. Similarly, Mr. Caris indicated that currently Latin America is "buying corvettes as excess defence articles from Western navies, especially from the UK and the Netherlands," which clearly indicates that, were economic conditions to improve in the future, countries such as Brazil and Venezuela could become key customers. □



The Brazilian Navy's sole 'Barroso' class eponymously-named corvette. Will the future see renewed investment into corvettes in Latin America?