



# **SUBMARINES IN AFRICA**

**A glimpse into the undersea warfare capabilities of Africa's  
Navies**

MILITARY AFRICA SUBMARINE DATABASE

**SUBMARINES IN  
AFRICA  
2022**

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# **Underwater warfare**

**The proliferation of submarines continues to rise as global maritime security realities necessitates the need for undersea defence.**

**Naval warfare is constantly evolving. New technologies are reshaping the way wars are fought and opening up new opportunities for the future. At the same time, existing weapons systems are proving their worth, and adapting to counter these new challenges on the battlefield.**

**Just like today, tomorrow's oceans will also be more complex and contested, with new threats constantly emerging and evolving, Yet the submarine will continue to provide unrivaled conventional superiority to the few navies which can operate them. In Africa, only Egypt, Algeria, and South Africa operates these deadly vessels.**

**Across the world, navies continue their efforts to build, purchase, and operate submarines. These underwater vessels are considered the pinnacle of capability of any navy short of aircraft carriers, and for good reason.**

**Submarines provide unrivalled conventional superiority over an adversary naval forces. Their discreet operating nature, and lethal anti-ship weaponry complicates countering them, such as by ship-based anti-submarine warfare weapons.**

**Ekene Lionel  
Editor**





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**Submarines, particularly the attack variants, remain one of the most powerful warships. But the small number of navies which can operate them, is an exclusive club.**

**A GLIMPSE OF AFRICA'S  
UNDERSEA WARFARE CAPABILITIES**



# SUBMARINES IN AFRICA

A glimpse into the undersea capabilities

Submarines in Africa are owned and operated by navies aiming to dominate their undersea domain.

A submarine is a naval vessel capable of independent operation underwater.

In Africa, denying enemy surface ships access to seas is an important mission for submarines. Submarines operate as an organic part of a naval force.

Their duties and roles are essential in providing anti-access force structure in the maritime domain, to achieve

military dominion.

From general warfare against a naval force to blockages of enemy ports, attacks against enemy surface ships, naval fleet, merchant shipping, and opposing submarines as well as land targets. These are the typical missions performed by submarines in African navies.

With the significant advances in technology bringing about changes in mission requirements, submarines are an important multimission naval component capable of conducting a variety of operations.



# LITTLE KNOWN NAVAL SKIRMISH BETWEEN ALGERIAN NAVY AND ISRAELI SUBMARINE

The Israeli submarine was carrying out covert intelligence mission



Algerian Navy Lynx helicopter and Improved Kilo submarine. (Algerian Navy)



Israeli Navy Dolphine class submarine (Israeli MOD)

**In** the history of naval operations, sideliners have been regaled with stories of intriguing naval battles between great powers. However, unlike their surface cousins, stories of submarine exploits are usually kept in the dark consistent with their “silent” nature.

This has reinforced the mystery usually surrounding submarine operations by those not in the naval branch. Nevertheless, few times we're opportune to glimpse into

some past daring or heroic acts of this silent underwater vessels.

One of such occasion was reported to have occurred on September 30, 2021 between Algerian naval anti-submarine forces, and an Israeli submarine around the Algerian coast.

Off the coast of Algeria, an Israeli Dolphin-class submarine tried to track a training launch of a cruise missile Club-S from a submarine

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of project 636, but in turn, it was discovered and pursued by two submarines of Project 636. They forced it to surface and leave the area.

The Algerian National Navy detected an Israeli Dolphin submarine on the edge of Algerian international waters, chased it and forced it to rise to the surface before leaving the area.

The training exercise, which saw the participation of many Algerian naval units, was intended to demonstrate the capabilities of in-depth attack or stealth destruction of targets at sea at very long distances, during the drill, an Israeli Dolphin class submarine was spotted by passive detection.

The decision was quickly taken to pursue it aggressively without the use of sonar in order to avoid counter detection. Two Super Lynx anti-submarine warfare helicopters were launched from BDSL Kalaat Beni Abbas, which was part of the training as a command ship. The two helicopters continued the pursuit while two Kilo submarines pushed the intruder back to the north.

The two Super Lynx anti-submarine warfare helicopters tracked the Israeli Dolphin-class submarine, after which it was cornered by two Algerian navy project 636 submarines, and then forced to surface in international waters and leave the area.

After having being surrounded, the Dolphin surfaced to indicate that it was abandoning the mission and moved away from the Algerian coast. It surfaced 5 km north of Kalaat Ben Abbès, on the edge of international waters outside the training zone.

Apparently, it was gathered that the Israeli submarine was carrying out covert intelligence mission in order to gather information about the land-attack capabilities of Algerian Project 636 submarines which had earlier fired Kalibr Club-S submarine-launched cruise missiles. The same the missiles used by the Russian army in Syria.

During the exercise, the Algerian Project 636 submarines had launched multiple Kalibr Club-S submarine-launched cruise missiles against land targets which successfully hit their marks.

The Israeli Dolphin submarine intended to obtain critical acoustic signature indicating the opening of the missile racks and would have recorded the sound of the firing preparation and firing routine. Such valuable information that could help predict the actions taken by Algerian crews in the event of a conflict. The mission was also an opportunity to make electronic intelligence and collect data on the transmissions of the Algerian Navy and their encryption.

Based at Haifa, the Israeli Navy (IN) currently operates five modern diesel-electric Dolphin-class submarines. All were designed and constructed by Germany's Howaldtswerke-Deutsche Werft (HDW).

Israel currently possesses five Dolphin-class diesel-electric submarines. Three of the five are old Dolphin type vessels. The older Dolphin-class are 57.3 meters long with a 6.8-meter-wide beam and can travel up to 20 knots when submerged. They can remain submerged for 30 days without

**MILITARY AFRICA**

## **A GLIMPSE OF AFRICA'S UNDERSEA WARFARE CAPABILITIES**

surfacing. Their weapons systems are capable of firing torpedoes.

The modernized Dolphin II-class vessels instead run on a conventional diesel led-acid battery system. They have an AIP system which allows the vessels to travel extremely quietly and to remain submerged for up to a week without surfacing. Reports dictate that these vessels have a maximum speed of 25 knots and a range of 4,500km. The submarines are equipped with four enlarged 650mm torpedo tubes which lead to much speculation that the Israelis intend to outfit the submarines with nuclear-armed cruise missiles.

One the other side, the Algerian submarine force consists of six submarines, including four brand-new Kilo 636 and two Kilo 877EKM class units, received in the 1980s and modernized in Russia between 2005 and 2010.

The versatile diesel-electric submarine of the 636 Varchavianska project (Improved Kilo, according to NATO code) belongs to the third generation of submarines. It has a displacement of 2,350 tons in surface and 3,950 tons in diving, and a speed of 17 to 20 knots. This class of submarine has 45 days of

autonomy. It can be equipped with four Kalibr missiles, 18 torpedoes of 533 millimetres (six tubes) and 24 mines, and dive to 300 meters deep. Its crew is 52 people.

The exercise which the Israeli submarine intended to spy on, was conducted under the supervision of Lieutenant General Ahmed Gaïd Salah, Chief of Staff of the National People's Army (ANP) and Deputy Minister of National Defense. And is said to be the first of its kind, as the submarines successfully hit ground targets, says the Algerian Navy.

In a statement, the Algerian navy said the Chief of Defence Staff of the National People's Army supervised the execution of a missile-firing exercise from two submarines against land targets, and that "this exercise is intended to ensure the operational efficiency of these two submarines".

"Thus, the firing was carried out successfully by destroying the ground targets with great precision, which constitutes a new success of the good control from the crews, the different equipment and armaments, and confirms, also, the progress and readiness achieved by Algerian naval units in recent years, "the statement said.



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**In Africa, denying enemy surface ships access to seas is an important mission for submarines. Submarines operate as an organic part of a naval force.**

## A GLIMPSE OF AFRICA'S UNDERSEA WARFARE CAPABILITIES



Egyptian Navy has received its fourth Type 209 submarine "S44" from Thyssenkrupp Marine Systems

# EGYPTIAN NAVY SUBMARINE WARFARE

**E**gyptian Navy owns four Romeo class submarines that are the upgraded variants of the Chinese ES5B (upgraded Type 033) design. Egypt acquired eight boats in the 1970s. In the mid-1980s, China won a contract to upgrade Egypt's Romeo-class submarine fleet. Quite frankly,

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the Romeo class submarines are considered obsolete in today's standard, however, four were modernized by the US to be able to carry Harpoon missiles.

Egypt's Romeo-class submarines are now used for training and surveillance duties. During the Six-Day War and

## SUBMARINES IN AFRICA

Yom Kippur War, Egyptian Navy submarines were hunted down by Israeli warships, prompting Egypt to undertake several steps to improve its undersea capabilities.

Egypt's interest in maintaining a robust, modern, and capable submarine fleet is borne out a strategic response to regional threats and challenges.

Egypt entered a deal with Germany's ThyssenKrupp Maritime systems in 2011 for four Type 209/1400mod-class diesel-electric attack submarines.

The Egyptian Type 209/1400mod-class diesel-electric attack submarines are armed with 8 x 21-inch (533 mm) torpedo tubes able to launch up to 14 UGM-84L Harpoon Block II missiles and SeaHake mod 4 torpedoes, as well as naval mines.



Egyptian Type 209/1400mod-class diesel-electric attack submarines



Asides from underwater assets, as part of Egypt's anti-submarine warfare (ASW) structure, the north African country recently upgraded its Chinese-made Hainan anti-submarine warfare patrol boats to better detect submarine activities.

In addition, the Egyptian navy recently procured five naval versions of the Westland SeaKings helicopters, 10 ex-United States SeaSprite ASW helicopters upgraded to the SH-2G(E) standard, and 46 Ka-52Ks attack helicopters, all equipped with anti-ship missiles and anti-submarine torpedoes.

### List of Egyptian Navy submarines

Type209/1400mod-class submarine	Romeo-class submarine
• S41 (861)	• 849
• S42 (864)	• 852
• S43 (867)	• 855
	• 858
• S44 (870)	

## Future Challenges Technology Opportunities

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### The Operating Environment

- Dominated by Information
- Multi-Domain Systems
- Fleeting opportunities
- Contested environments
- Sovereign capability

### Technology Drivers

- Artificial Intelligence
- 'Trusted' Autonomy
- Open Architecture Interoperability

### Conceptual Approach

- Foundation of 'Common Smarts'
- Goal-Base Autonomy
- Battlespace Management Information Systems
- Multi-Domain Networking
- Autonomous Air, Maritime and Land-Based platforms



# ALGERIAN NAVY SUBMARINE WARFARE

Uniquely, Algeria prefers Soviet/Russian-made submarines



Algerian Navy submarines

**A**s an important player in the Western Mediterranean, with the primary role of monitoring and defending Algeria's territorial waters against all foreign military intrusion, the Algerian Navy requires a potent anti-submarine force.

Algeria has decommissioned its two Soviet Romeo class submarines.

Uniquely, Algeria prefers Soviet/Russian-made submarines. The country has four Project 636M Improved Kilo-

class diesel-electric submarines (known locally as Rais Hadi Slimane), and two Project 887EKM Kilo-class diesel-electric submarines (known locally as Rajs Hadi Mubarek).

Algerian Navy Kilo-class submarines were vastly upgraded in 2010/11, and are now able to launch Klub (Club-S Kalibr) anti-ship cruise missiles which can also be used against ground targets.

In 2019, two Algerian Navy Project 887EKM Kilo-class diesel-electric



## A GLIMPSE OF AFRICA'S UNDERSEA WARFARE CAPABILITIES



Algerian Navy (021) Messali el Hadj

submarines successfully hit land targets with their Club-S cruise missiles during an exercise.

This Kilo-class submarine has a displacement of 2,350 tons on the surface and 3,950 tons underwater, and a speed of 17 to 20 knots. It can stay submerged for 45 days.

Algerian Navy versions can be equipped with four Kalibr missiles, 18 torpedoes of 533 millimeters (six tubes), and 24 mines, and dive to 300 meters deep. is crewed by 52 sailors.

The Improved Kilo-class submarines were refitted and upgraded in 1993 and 1996. An additional two units were ordered and to be delivered in mid-2021/22.

### List of Algerian Navy submarines

Algerian Navy Project 636M Improved Kilo-class submarines

- 021 Messali el Hadj
- 022 Akram Pacha
- 031 El Ouarsenis
- 032 El Hoggar

Algerian Navy Project 887EKM Kilo-class submarines

- 012 Rais Hadj Mubarek
- 013 El Hadj Slimane

Romeo-class submarines

- Two boats decommissioned

## SUBMARINES IN AFRICA

# SOUTH AFRICAN NAVY SUBMARINE WARFARE

Simon's Town is the homeport of the South African Navy's frigate and submarine flotillas, and training facilities.



SAN fleet conducting a training exercise.

**A**t the moment, the South African Navy (SAN) is the only naval force in the Sub-Saharan region that is operating submarines.

The South African Navy has achieved significant underwater warfare supremacy against any naval threat in the region

The SAN traces its submarine warfare capabilities since the Second World War. At the time, between 1942 and 1945, the South African Defence Force (SDF) alongside its Royal Navy counterpart conducted coastal patrol, mine clearance, and anti-submarine operations around

South African waters, enabling naval dominance and control around the strategic Cape Coast route.

During the conflict, German U-Boats carried out an offensive campaign around the South African coast and sinking over 100 allied merchant shipping.

With hard lessons learned during WWII, the South African Navy acquired two ex-Royal Navy W-class destroyers SAS Jan van Riebeeck and SAS Simin van der Stel in 1959 and 1952 respectively.

Later on, a Type 15 anti-submarine

## A GLIMPSE OF AFRICA'S UNDERSEA WARFARE CAPABILITIES

The South African Navy has achieved significant underwater warfare supremacy against any naval threat in the region

frigate SAS Vrystaat (formerly HMS Wrangler) was acquired to strengthen the naval capabilities.

Furthermore, the SAN anti-submarine warfare strength peaked between 1962 to 1964 after it received three first-rate, ocean-going fast fleet anti-submarine escorts Type-12 President-class frigates: SAS President Kruger, SAS President Steyn, and SAS President Pretorius respectively.

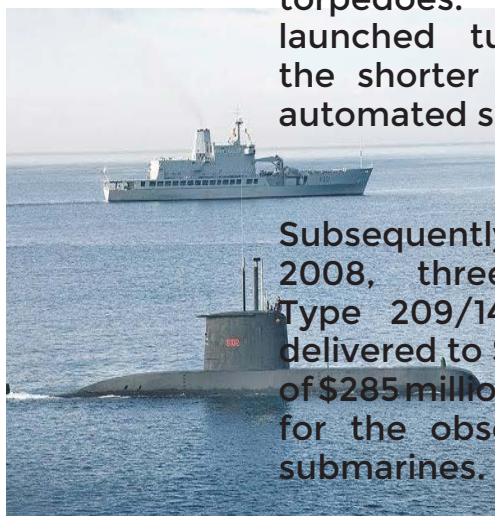
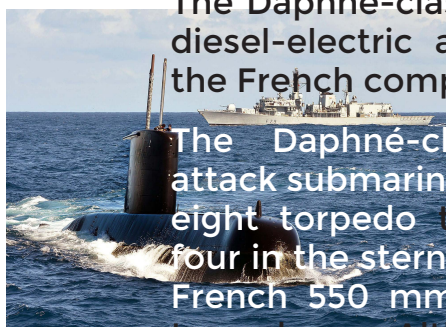
The South African Air Force (SAAF) implemented the navy by operating the Westland Wasp helicopters for anti-submarine warfare.

Later on, three Daphné-class submarines were ordered from France in 1968, allowing the South African Navy to operate submarines for the first time.

The Daphné-class submarine was a diesel-electric attack designed by the French company, DCNS.

The Daphné-class diesel-electric attack submarines were armed with eight torpedo tubes forward, and four in the stern. They launched the French 550 mm (21.7 in) diameter torpedoes. Although, the stern launched tubes could only fire the shorter version torpedoes for automated self-defense.

Subsequently, between 2004 and 2008, three new German-built Type 209/1400 submarines were delivered to South Africa at the cost of \$285 million each as a replacement for the obsolescent Daphné-class submarines.



## SUBMARINES IN AFRICA



S103 SAS QUEEN MODJADJI



S102 SAS CHARLOTTE MAXEKE



S99 SAS JOHANNA VAN DER MERWE - RENAMED SAS ASSEGAI

## **A GLIMPSE OF AFRICA'S UNDERSEA WARFARE CAPABILITIES**

Known as the Heroine-class in SAN service, the submarines - a variant of Type 209 diesel-electric attack submarine developed by Howaldtswerke-Deutsche Werft (HDW) of Germany represented a significant undersea warfare upgrade for the navy due to their advanced equipment,

The Heroine-class submarines are named after powerful South African women.

Simon's Town is the homeport of the South African Navy's frigate and submarine flotillas, and training facilities.

### **LIST OF SOUTH AFRICAN NAVY SUBMARINES**

#### **DAPHNÉ-CLASS SUBMARINE**

- S97 SAS MARIA VAN RIEBEECK - RENAMED SAS SPEAR (DECOMMISSIONED BY 2003)
- S98 SAS EMILY HOBHOUSE - RENAMED SAS UMKHONTO (DECOMMISSIONED BY 2003)
- S99 SAS JOHANNA VAN DER MERWE - RENAMED SAS ASSEGAAI (DECOMMISSIONED BY 2003 - CONVERTED TO MUSEUM SHIP).

#### **HEROINE-CLASS SUBMARINES**

- S101 SAS MANTHATISI
- S102 SAS CHARLOTTE MAXEKE
- S103 SAS QUEEN MODJADJI

## SUBMARINES IN AFRICA



A derelict Foxtrot-class submarine  
belonging to the Post-Chadafi era Libyan  
Navy. S311 Al Badr. in Kronstadt, Russia.

# LIBYAN NAVY SUBMARINE WARFARE

Most of Libya's naval fleet was destroyed in 2011 by NATO forces.



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The Libyan Navy's submarines although now derelict, have likely seen more action than those of the other African nations.

**T**he Libyan Navy's submarines have likely seen more action than those of the other African nations.

Six Foxtrot-class submarines were acquired in 1982. Their acquisition from the Soviet Union raised significant concerns in the United States at the time considering that they

were the main threat to the United States' Navy in the Mediterranean Sea.

Other anti-submarine warfare capabilities of four well-armed and powerful Russian-made Nanuchka-class Corvettes, and four Italian-made four Assad-class Corvettes. Both had sonar and light torpedoes.

## SUBMARINES IN AFRICA

But the most potent ASW vessel at the time was a Koni class frigate; the Libyan Navy flagship Al Hani (212). Acquired from the Soviet Union, Al Hani (212) was armed with 4x SS-N-2C Styx anti-ship missiles, 2x SA-N-4 SAMs, 4x 76mm guns, 4x 30mm guns, 4x 406mm torpedoes, a RBU-6000 A/S mortar and can carry and launch 20 mines.

The Koni class frigate was considered a credible threat to NATO's submarine flotilla in the Mediterranean Sea and it was attacked by NATO on 20 May 2011 while it was moored in Tripoli Harbour.

Before the Libyan Civil War, the Libyan Navy was fairly small by comparison, with a few guided-missile frigates, submarines, corvettes, and patrol boats to defend the coastline.

Most of Libya's naval fleet was destroyed in 2011 by NATO forces.

For the six Foxtrot submarines, since 1984, no submarine patrols were carried out, they're believed to have been inactive due to lack of spares.

One submarine was reported sunk in 1993, and another one was left in Lithuania due to international sanctions.

Anti-government rebels captured



A Foxtrot-class submarine



## A GLIMPSE OF AFRICA'S UNDERSEA WARFARE CAPABILITIES

one submarine along with a frigate and a corvette at the Benghazi naval base in 2011, during the Libyan civil war.

The foxtrot submarines were

equipped with 10 torpedo tubes (6 in the bow, and 4 in the stern), and can carry 22 torpedoes.



A Foxtrot-class submarine

## MOROCCO SEEKS IMPROVED ANTI-SUBMARINE WARFARE AIRCRAFT TO COUNTER RIVAL

The new aircraft will help protect Morocco's interests in the 81,000-square-nautical mile Exclusive Economic Zone.

The Royal Moroccan Navy (RMN) plans to acquire at least two new anti-submarine and maritime patrol turboprop aircraft to enhance its maritime capabilities.

The new aircraft will help protect Morocco's interests in the 81,000-square-nautical mile Exclusive Economic Zone. Given Morocco's 2,952 km coastline, and strategic position overseeing the Strait of Gibraltar, along with Spain and the United Kingdom.

Morocco intends to keep its arch-rival Algeria's six Kilo-class submarine in check, since it does not possess any submarine of its own.

Two airframes, Italian Leonardo ATR 72 MPA, and Airbus C-295 MPA are currently being considered by Morocco. Evaluation

for both maritime patrol aircraft will be carried out in the next few months.

Besides the two European candidates currently being considered, Boeing is pitching its P-8 Poseidon, while Lockheed Martin is offering its SC-130J Sea Hercules to fill this role. Both American aircraft are believed to have been eliminated from the contest due to cost grounds.

Morocco already operates 14 Britten-Norman Defender acquired from the United Kingdom, and four Beech King Air 350ER aircraft for maritime patrol duties.

The North African country is waiting for the delivery of a General Dynamics Gulfstream G550 transport and reconnaissance aircraft from the United States

## **A GLIMPSE OF AFRICA'S UNDERSEA WARFARE CAPABILITIES**

to augment its forces, this could be later retrofitted for the MPA role similar to the Israeli version and equipped with technologies developed and manufactured by IAI's radar and electronic warfare subsidiary Elta Systems.

Whichever MPA platform Morocco chooses, it will be integrated with the newer MQ-9B SeaGuardian drones acquired for \$1 billion from the United States administration led by former President Donald Trump.



**Two airframes, Italian Leonardo ATR 72 MPA, and Airbus C-295 MPA are currently being considered by Morocco.**

# EGYPT RECEIVES FOURTH TYPE 209 SUBMARINE “S44”

The Type 209/1400s are able to launch missiles and torpedoes - it is believed they will be fitted with Harpoon anti-ship missiles.



Type 209 submarine of the Egyptian Navy during the hand over ceremony on 8 July, 2021 i Kiel.

**T**he Egyptian Navy has received its fourth Type 209 submarine “S44” from Thyssenkrupp Marine Systems, following strict coronavirus prevention measures at the shipyard.

The handover took place in Kiel on the 8 of July, of last year.

Dr. Rolf Wirtz, CEO of thyssenkrupp Marine Systems, “I would like to thank everyone involved for the open dialogue and the trusting cooperation.

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The success would not have been possible without the professionalism and competence of our employees, customers and suppliers. The handover of the fourth and last HDW Class 209/1400mod submarine in the project means, that our Egyptian colleagues will return home. We wish them all the best for the future and hope to welcome them back at our shipyard for further projects soon.”

Egypt signed the contract for two  
**MILITARY AFRICA**

## A GLIMPSE OF AFRICA'S UNDERSEA WARFARE CAPABILITIES

Type 209/1400 mod submarine in 2011 however, in 2015, the North African country opted for two additional boats in 2015.

The first submarine, named S41, was handed over in December 2016 and the second submarine, named S42, in August 2017.

The third boat of its class "S43" was handed over and commissioned in May 2019, after traveling a distance of 7 800 kilometers, from ThyssenKrupp Marine Systems (TKMS's) yard in Germany, S43 arrived at Alexandra Naval Base in Egypt on May 5th, and was received by a military delegation.

The programme is planned to end with the handover of the fourth submarine in 2021.

In September 2020, the fourth boat was launched at the shipyard of

thyssenkrupp Marine Systems in Kiel, and officially named "S44" by Vice Admiral Ahmed Khaled Hassan Said, Commander-in-Chief of the Egyptian Navy.

All four submarines will enhance Egypt's defense capabilities and combat efficiency, achieve maritime security, and protect Egyptian coasts as well as the economic interests between the Red Sea and the Mediterranean Sea.

Egypt said the Type 209/1400s will be able to launch missiles and torpedoes - it is believed they will be fitted with Harpoon anti-ship missiles.

The new Type 209s will most likely replace the Egyptian Navy's four elderly Romeo class vessels delivered in 1983/84.

Dr. Rolf Wirtz, CEO of thyssenkrupp Marine Systems handing over the certificates to the Egyptian Naval leadership.



# IMPROVED EGYPTIAN NAVY SUBMARINE WARFARE DRAWS ATTENTION

During the Six Day War, Egyptian submarines were hunted down by Israeli warships and aircraft.

**E**gypt is in the process of modernizing its naval warfare capabilities.

Since the last decade, Egypt has taken a number of steps to improve the extent of its naval strength especially in underwater domain.

Traditionally, submarine warfare has been Cairo's Achilles heel, as clearly witnessed during the Six-day and Yom Kippur War. Both Egyptian and Israeli warships attempted to intimidate each other throughout the war, but did not engage each other.

However, Egyptian submarines were hunted down by Israeli warships and aircraft.

## **Egyptian Navy submarine fleet**

In 2011, Egypt signed a deal with Germany to buy two German-made Type-209 submarines, Egypt decided to take the option for two additional units

in 2015.

The type 209/1400 is a class of diesel-electric attack submarine developed for export by Howaldtswerke-Deutsche Werft (HDW) of Germany.

It features recent technology, extraordinary battery payload and low signatures. The class can be armed with a variety of torpedo.

Equipped with an advanced offensive weapons, a torpedo fire control system, an electronic weapons control system, along with capability of launching anti-ship missiles and planting naval mines.

With the new Type 209 in place, Egypt will have one for maintenance, one for training, one ready to dive and one at sea, an indication of a significant upgrade of the Egyptian Navy's operational capabilities.

Besides the type 209/1400 submarines, Egypt also has four

## A GLIMPSE OF AFRICA'S UNDERSEA WARFARE CAPABILITIES

Egyptian Navy has received its fourth Type 209 submarine "S44" from Thyssenkrupp Marine Systems



## SUBMARINES IN AFRICA



**Egypt's Romeo class submarines which has undergone upgrades such as fire control systems, sonars and improved weapon systems including addition of Harpoon missiles.**



## **A GLIMPSE OF AFRICA'S UNDERSEA WARFARE CAPABILITIES**

Chinese-built Romeo class submarines which has undergone upgrades such as fire control systems, sonars and improved weapon systems including addition of Harpoon missiles.

Although, the Chinese-made Romeo-class submarines have exceeded their service life, but a recent US funded upgrade has enabled these submarines to remain in service for years to come.

With its burgeoning submarine fleet, Egypt is still planning on acquiring additional boats.

Recent reports indicate that the Egyptian Navy is currently in contact with Chinese government regarding the acquisition of additional Chinese-made submarines.

The Egyptian Navy expressed an interest in Chinese S26T diesel-powered submarines, an export configuration of the Type 39 submarine.

The S26T diesel-powered submarine manufactured by the China Shipbuilding and Offshore International Company (CSOC).

The 1,900 tons S26T diesel-powered submarine has a crew of 38, is about 66 meters long with a maximum surface speed is about 20 knots. Its maximum operating depth is up to 300 meters.

Utilizing the revolutionary Air Independent Propulsion (AIP) system, the S26T can remain submerged for up to 20 days while its maximum sea endurance is 60 days.

Another significant strategic implication of this submarine is its ability to launch the CM-708UNB anti-ship missiles.

The CM-708UNB submarine-launched missiles are based on the C-802 family of anti-ship missiles, they can be fired underwater without the need to

surface.

With a range of 300 km and fitted with advanced guidance and navigation system including GPS, the C-708 missiles can engage deep inland targets with high accuracy.

Furthermore, S26T submarine is also armed with the Chinese-made Yu-6 type torpedoes, capable of engaging surface vessels and submarines at ranges of up to 45 kilometers using active homing, passive homing and wake homing.

These torpedoes has the ability to engage an enemy vessel by following its wake. This is an advanced capability that will complicate counter-torpedo actions.

### **Improving Egypt Naval Antisubmarine warfare capability**

Beyond submarines, Egypt has also recently acquired and upgraded several antisubmarine surface vessels from the USA, Russia, Germany and France.

Its Chinese-made Hainan-class coastal ASW patrol boats were upgraded by the installation and integration of cutting-edge, US-made sonar systems.

It also received 10 ex-US Navy Seasprite ASW helicopters upgraded to SH-2G(E) standards, and 5 Westland Sea King helicopters mounted with antiship missiles and antisubmarine torpedoes

In December 2015, Russia confirmed the sale of 46 Ka-52Ks to Egypt. These would strengthen the navies ASW capacity.

### **Addressing the challenges and threats in the Middle East**

Egypt's investment in a modern submarine fleet can be considered as a strategic response to regional challenges and threats.

## SUBMARINES IN AFRICA

On April 19, 2017, Commander-in-Chief of the Egyptian Navy, Rear Admiral Khaled Hassan Said commented during the commissioning of the Type-209/1400 (S-41) submarine that the “Navy is working to enhance its combat capacities in order to ensure full and comprehensive control over the coasts of the Arab Republic of Egypt and safeguard its territorial and economic waters.”

As Egypt’s submarine warfare

capability is being built-up, it has attracted the attention of neighboring countries.

For example, Cmdr. (res.) Eyal Pinko of the Israeli Navy believes that “state-of-the-art weapon systems on board this [Egypt] submarine [fleet] and its various capabilities would add up to a significant threat to the Israeli Navy offshore, deep under the surface and even on land.”



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## BRIEF ANALYSIS

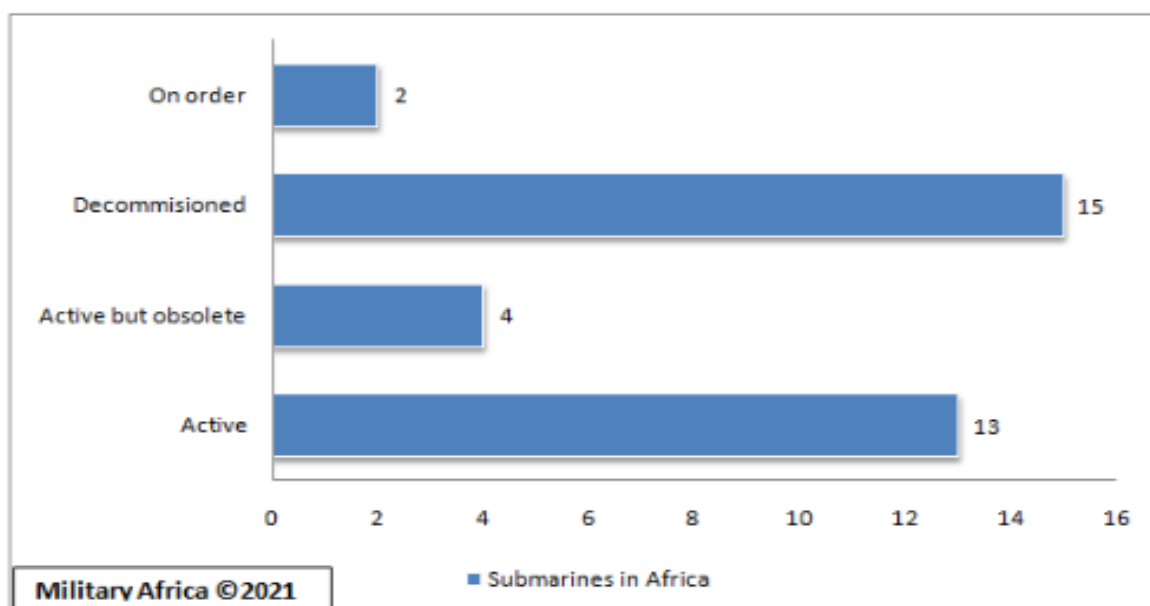
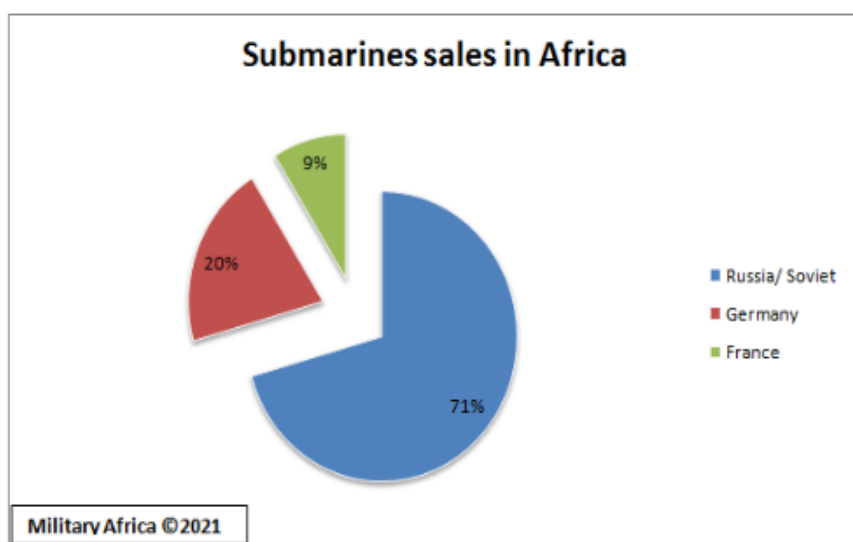
Only a handful of countries in Africa owns or have operated submarines. A total of 32 submarines have sailed with African navies.

Out of these, 15 are retired, decommissioned, or scrapped. Another four have exceeded their service life, and two are currently on order.

Our research shows that regarding export successes, the Soviet Union/ Russia exported 69% of the total submarines in Africa, Germany 22%, while France just 9%.

The following African countries operate or have operated submarines;

1. Egypt
2. Libya
3. Algeria
4. South Africa



## KEY FINDINGS

**T**he Soviet Union/ Russia remains a major supplier of submarines in Africa, with Egypt, Algeria, and Libya being the main recipient of these boats.

Nevertheless, German boats have remains a favourite for countries that prefers the quantitative edges they offer. Germany's ThyssenKrupp Maritime systems (TKMS) between 2004-2008 supplied three new Type 209/1400 submarines to South Africa at the cost of \$285 million, likewise in 2011 TKMS supplied four Type 209/1400mod-class diesel-electric attack submarines to Egypt.

On the other hand, France which is has enjoyed relative successes in submarine export in Africa has failed to secure additional sales after three Daphné-class were sold to South Africa in 1968, spearheading the country's submarine operations.

Egypt continues to rely on its policy of diverse procurement so as not to depend solely on one supplier. The fact that Cairo still fields its fleet of eight upgraded variants of the Chinese ES5B (upgraded Type 033) boats it acquired in the 1970s shows that the north African nation hopes to keep presenting to its rivals that it is a formidable submarine power even though half of its fleet is largely obsolete.

In contrast to Egypt, its north African neighbor Algeria operates one of Africa's most modrn and potent attack submarine fleet comprising only of Soviet/Russian-made submarines. Algeria sails four Project 636M Improved Kilo-class diesel-electric submarines (known locally as Rais Hadi Slimane), and two Project 887EKM Kilo-class diesel-electric submarines (known locally as Rajs Hadi Mubarek).

Algerian Navy Kilo-class submarines were vastly upgraded in 2010/11, and are now

able to launch Klub (Club-S Kalibr) anti-ship cruise missiles which can also be used against ground targets.

In 2019, two Algerian Navy Project 887EKM Kilo-class diesel-electric submarines successfully hit land targets with their Club-S cruise missiles during an exercise.

Post-Ghadaffi Libya has lost all of its submarine capacity following NATO's attack on the country and the subsequent civil war that ensued. Most of Libya's submarines which comprises of six Soviet-built Foxtrot-class are now derelict. Although, the former Libya maintained a small naval force, however, its poseesed other anti-submarine warfare capabilities of four well-armed and powerful Russian-made Nanuchka-class Corvettes, and four Italian-made four Assad-class Corvettes. Both had sonar and light torpedoes.

But the most potent ASW vessel at the time was a Koni class frigate; the Libyan Navy flagship Al Hani (212), which was considered a credible threat to NATO's submarine flotilla in the Mediterranean Sea and it was attacked by NATO on 20 May 2011 while it was moored in Tripoli Harbour.

Down South, South Africa operates three Type 209/1400 submarines which are readily supported by four Valour (A200) multi-mission guided missile frigates. South African Navy submarine has the distiction of being one of the few submarines in the world to penetrate a NATO naval battle group during an excercise. The South African Navy submarine force remains a highly skilled and professional fighting formation.

**A GLIMPSE OF AFRICA'S  
UNDERSEA WARFARE CAPABILITIES**



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