

# MARITIME STRATEGIC EVALUATION FOR ISRAEL 2017/18

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## Force Buildup of the Egyptian Navy

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### Background

The Egyptian navy is the largest in the Middle East. It operates in two theaters: the Mediterranean (the Northern Command) and the Red Sea (the Southern Command). Serving in the Egyptian navy are about 18,000 officers and sailors with another 14,000 in the reserves.

At the beginning of 2017, the Egyptian navy was rated as the six strongest navy in the world.<sup>1</sup>

The missions of the Egyptian navy are to protect the country's vital interests at sea, including the protection of shipping lanes, essential maritime infrastructures in the Mediterranean and the Red Sea (oil and gas rigs) and the Suez Canal, as well as warfare in the above-water and underwater domains against its adversaries. It is the responsibility of the Coast Guard to protect the ports against terror and prevent smuggling.<sup>2</sup>

In recent years, Egypt has come to view the Red Sea as a strategic zone that is essential to its national security, with emphasis on Bab el Mandeb Strait, which is the main entrance to the Suez Canal and the oil wells within it.<sup>3</sup> The Egyptian navy, which is implementing the Egypt's strategy, recently created a new and expanded headquarters for the Southern Command at the Safaga base and is reinforcing its forces there, including expansion of the naval commando force and the stationing of submarines, an aircraft carrier and other vessels.<sup>4</sup>

In its theater of operations, the Egyptian navy operates four Chinese Romeo-model submarines, 47 missile-carrying ships (frigates, corvettes and missile boats), eight anti-submarine ships, more than 20 mine sweepers and numerous auxiliary vessels. In addition, the Egyptian navy operates commando forces (at the Red Sea base<sup>5</sup> and they possess a number of capabilities, including the operation of speedboats and diving

1 Eleibe Ahmed (1/2017), *Egypt's Naval Operations Expanding Southwards*, retrieved from: <https://www.tesfanews.net/egypt-navy-operations-expanding-south>, accessed 1/2017.

2 Eleibe Ahmed (2016), The Suez Canal and the Egyptian Navy, *Canadian Naval Review*, Vol. 11 No.3, 27–29.

3 *Egypt Expends Navy with Formation of Southern Navy Fleet Command* (1/2017), retrieved from: <http://www.worldtribune.com/egypt-expands-navy-with-formation-of-southern-fleet-command>, accessed 1/2017.

4 Shaul Shay (1/2017), *Egyptian Navy in the Red Sea*, retrieved from: [http://www.herzliyaconference.org/\\_Uploads/dbsAttachedFiles/ShaulShay16\\_1\\_17.pdf](http://www.herzliyaconference.org/_Uploads/dbsAttachedFiles/ShaulShay16_1_17.pdf), accessed 1/2017.

5 Shaul Shay (1/2017), *Egyptian Navy in the Red Sea*, retrieved from: [http://www.herzliyaconference.org/\\_Uploads/dbsAttachedFiles/ShaulShay16\\_1\\_17.pdf](http://www.herzliyaconference.org/_Uploads/dbsAttachedFiles/ShaulShay16_1_17.pdf), accessed 1/2017.

vessels). In addition, it operates batteries of Italian-made Otomat missiles and Russian-made Styx missiles for protection of the coasts.<sup>6</sup>

The Egyptian navy also operates a large number of aircraft, including 20 SH-2G helicopters, Super Sea Sprite, Gazelle naval helicopters and F16 fighter aircraft, which are equipped with US-made Harpoon anti-ship missiles with a range of up to 120 kilometers.<sup>7</sup>

The Egyptian navy cooperates with numerous navies and holds joint annual exercises with a large number of countries, including the US, Britain, Saudi Arabia, Greece, France, Italy and NATO.<sup>8</sup> During these exercises, the Egyptian navy improves its operational capabilities and its fighting doctrine, while developing operational experience, learning and adopting Western military tactics for surface and submarine warfare.

Since 2011 and the removal of Mubarak from power, and with greater intensity since al Sisi came to power in 2013, Egypt has been carrying out a program to modernize the various branches of the Egyptian armed forces, which has involved acquisitions in the tens of billions of dollars. This process includes not only the purchase of new weapons but also significantly improved operational capabilities.<sup>9</sup>

The major buildup of force is occurring in all branches of the armed forces, including the air force, the army, the special forces and the navy, but special emphasis has been placed on the air force and the navy, as the strategic branches that can project power and operate in distant locations.

## The force buildup of the Egyptian navy – highlights

The military force buildup in Egypt, with emphasis on the navy (and also the air force), is based on acquisitions from a number of sources, the main ones being the US, France, Russia, Germany and even China.

6 *Egyptian Navy*, retrieved from: [https://www.ihs.com/pdf/IHS-Janes-Amphibious-and-Special-Forces-Egyptian-Navy\\_175592110913044232.pdf](https://www.ihs.com/pdf/IHS-Janes-Amphibious-and-Special-Forces-Egyptian-Navy_175592110913044232.pdf), accessed 1/2017.

7 *Order of Battle – Egypt*, retrieved from: <http://www.milaviapress.com/orbat/egypt/index.php>, accessed 1/2017.

8 Detailed descriptions of the exercises of the Egyptian navy can be found at the following sites: *Egyptian Navy*, retrieved from: <http://www.marsecreview.com/tag/egyptian-navy>, accessed 1/2017; *Egyptian Navy, NATO Maritime Group Conduct Joint Exercises*, retrieved from: <http://www.sis.gov.eg/Story/104536?lang=en-us>, accessed 1/2017. *Russia Announced 2<sup>nd</sup> Round of Naval Exercises with Egypt*, retrieved from: <http://www.dailynewsegypt.com/2016/06/25/russia-announces-2nd-round-naval-exercises-egypt>, accessed 1/2017. *Medusa 2016 Military Exercise: Egypt, Greece to Begin Joint Drills*, retrieved from: <http://www.ibtimes.com/medusa-2016-military-exercise-egypt-greece-begin-joint-drills-2454961>, accessed 1/2017.

9 Khan Bilal (9/2015), *The Egyptian Military's Build-Up*, retrieved from: <http://quwa.org/2015/09/18/egyptian-military-build-up>, accessed 1/2017.

The US dominance in Egyptian acquisitions is a result of the American financial assistance, in the amount of \$1.3 billion per year (since 1987).<sup>10</sup> According to the report of the US Government Accountability Office, since 2006 US military assistance has amounted to about 80 percent of the cost of Egyptian arms acquisitions. The 2013 report of the research service of the Congress states that US military support is estimated at one-third of Egypt's total defense budget. During 2014, the American support was frozen as a sign of dissatisfaction with the regime change; however, in 2015, the freeze was gradually lifted and the assistance continued.<sup>11</sup>

The freeze on US military assistance affected all areas (acquisition of weapon, training, support and techno-logistical systems) and led the Egyptians to the understanding that relying solely on the US is risky and that the sources of military equipment need to be diversified as much as possible. Therefore, Egypt turned to Russia, France and China for military assistance and acquisition.

The return of Egypt to Russian military assistance and its view of Russia as a strategic partner in place of the US were symbolically manifested in the joint naval maneuver held by the two countries in June 2015 and the delivery of vessels as a gift from Russia.<sup>12</sup>

Apart from the US financial assistance and the restoration of strategic relations with Russia, it is worth mentioning the massive Egyptian acquisition of weaponry and platforms based on Saudi financing and with a French guarantee of deals signed with France in the amount of about 3.3 billion euro.<sup>13</sup> In recent years, France has become the main source of arms for Egypt.

In the French context, it is worth mentioning that the air force has also benefited from the best French weapon systems and platforms and the acquisition of the Rafale aircraft which are equipped with advanced battle systems and missiles (including Scalp cruise missiles for the attack of ground targets).<sup>14</sup>

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10 Jeremy M. Sharp (2/2016), *Egypt: Background and U.S. Relations*, U.S. Congressional Research Service, retrieved from: <https://www.fas.org/sgp/crs/mideast/RL33003.pdf>, accessed 1/2017.

11 Shafir Yiftach, Peripiani Kashish (10/2013), *Egypt is Arming Itself*, *Strategic Update* 19:3, pp. 53–55. [Hebrew]

12 Shaul Shay, *Egypt's Arm Diversity Strategy*, retrieved from: <http://www.israeldefense.co.il/en/content/egypts-arms-diversity-strategy>, accessed 1/2017.

13 Tran Pierre, *In France, Relief Over Rafale Sale to Egypt* (2/2015), retrieved from: <http://www.defensenews.com/story/defense/air-space/strike/2015/02/15/france-relief-rafale-sale-to-egypt/23353207>, accessed 1/2017.

14 Rogoway Taylor (9/2015), *Why Is Egypt Buying Two Orphaned Mistral Class Aircraft Carriers from France?* Retrieved from: <http://foxtrotalpha.jalopnik.com/why-is-egypt-buying-two-orphaned-mistral-class-aircraft-1732595299>, accessed 1/2017.

During this period, the Egyptian navy's buildup of force included massive acquisitions of ships, including one French-made Fremm frigate,<sup>15</sup> four other French-made Go-Wind<sup>16</sup> frigates (one of which was built in France and three of which will be built in Egypt, including the transfer of infrastructure and shipbuilding capability to Egypt and advanced naval Exocet MM40 anti-ship missiles). The acquisitions also included four American-made<sup>17</sup> Ambassador (FMC) missile boats.<sup>18</sup>

In addition to the aforementioned, Egypt received a gift from Russia in the form of a Molniya missile boat.<sup>19</sup> This boat carries ultrasonic Moskit missiles (which went into service in the 1980s, have a range of up to 250 kilometers and a speed of Mach 3 and are outfitted with a self-guided radar head).<sup>20</sup> The ship was handed over, as mentioned, to Egypt as part of growing Egyptian-Russian cooperation and in particular after the aforementioned Egyptian distancing from the US.

In the underwater domain, which is becoming increasingly developed in the Egyptian navy, four advanced German U-209 submarines have been acquired (with possibly another two in the future). The new Egyptian submarines, like the old Romeo submarines, will be equipped with the Harpoon anti-ship missile, as well as advanced German torpedoes and sea mines.<sup>21</sup> This purchase of the submarines was part of the continuing upgrade of the old submarines that began in the late 1990s and the acquisition of American submarine detection sonar, which was installed on the Chinese Heinan submarine hunters.<sup>22,23</sup>

- 15 The Fremm frigate is a ship with a displacement of 6000 tons., with anti-ship capabilities (using Exocet MM40 missiles with a 200 kilometer range), air defense capabilities (by means of Aster-15 missiles with a 30-kilometer range) and anti-submarine capabilities.
- 16 This Go-Wind 2500 frigate has a displacement of 2600 tons and includes anti-ship capabilities and air defense capabilities (by means of MICA missiles).
- 17 Four FMC vessels were acquired as part of an American assistance contract (FMS), in the amount of \$807 million. The ship, which is 62 meters long, is equipped with Harpoon missiles, advanced surface-to-air radar and RAM and CIWS air defense systems.
- 18 *Egyptian Navy – Modernization*, retrieved from: <http://www.globalsecurity.org/military/world/egypt/navy-modernization.htm>, accessed 1/2017.
- 19 *Russia Hands Egypt Key to Brand New Corvette Warship* (6/2016), retrieved from: <https://sputniknews.com/world/201606251041953909-russia-egypt-corvette>, accessed 1/2017.
- 20 *P-270 Moskit*, retrieved from: [https://en.wikipedia.org/wiki/P-270\\_Moskit](https://en.wikipedia.org/wiki/P-270_Moskit), accessed 1/2017
- 21 *Germany delivers first of four attack submarines to Egypt* (12/2015), retrieved from: <http://www.middleeasteye.net/news/germany-delivers-first-four-million-dollar-attack-submarines-egypt-1822200022>, accessed 1/2017.
- 22 Four of eight Chinese Romeo submarines were upgraded by the Lockheed-Martin company in 1996, as part of a \$133 million contract. As part of the contract, the submarines were upgraded with the ability to fire Harpoon missiles, improved sonar and the ability to fire NT37 torpedoes. Retrieved from: Shay Shaul (12/2015), *Egypt's New Modern Submarine Fleet*, retrieved from: <http://www.israeldefense.co.il/en/content/egypts-new-modern-submarine-fleet>, accessed 1/2017.
- 23 Toppen Andrew, *World Navies Today: Egypt*, retrieved from: <http://www.hazegray.org/worldnav/africa/egypt.htm>, accessed 1/2017.

The acquisitions of the Egyptian navy are centered on two French-made Mistral<sup>24</sup> helicopter and troop carriers at a cost of 950 million euro. The ships carry Russian Ka-52 attack helicopters<sup>25</sup> (around 50 were purchased) and ground forces—mechanized and infantry. These ships provide the Egyptians with the capability to amphibiously land troops and tanks and to carry out air attacks deep in enemy territory.



Figure 1: A Fremm frigate<sup>26</sup>

The need for helicopter and troop carriers is apparently for the fighting in Yemen (about 600 Egyptian troops are participating in the war there) and the operational need to project power in Yemen and in the Red Sea. This is part of an overall strategy to create a naval force that controls the Red Sea and the Bab el Mandeb Strait with the goal of protecting vital shipping and Egyptian strategic assets in the Red Sea.<sup>27</sup>

24 The Mistral ships were originally destined for Russia, but prior to delivery France decided that it is not prepared to hand them over to Russia and they were again put up for sale. These ships can carry up to 16 helicopters, 24 tanks or armored vehicles and hundreds of troops.

25 Shay Shaul, *The Egyptian Navy is Stronger than Ever Before* (9/2016), retrieved from: <http://www.israeldefense.co.il/en/content/egyptian-navy-stronger-ever>, accessed 1/2017.

26 Retrieved from: <http://navaltoday.com/2015/04/16/italian-navy-to-receive-two-more-fremm-frigates-after-2020>

27 *Egypt sends up to 800 ground troops to Yemen's war – Egyptian security sources* (9/2015), retrieved from: <http://uk.reuters.com/article/uk-yemen-security-idUKKCN0R91I720150909>, accessed 1/2017.

28 Retrieved from: <http://www.veteranstoday.com/2014/12/05/russia-warns-france-over-mistral-class-warship-delivery-presstv>





Figure 2: Left – A cross-section view of the vessel including the configuration for carrying landing craft, armored vehicles and helicopters. Right – Ka-52 attack helicopter takes off from the deck of a Mistral<sup>28</sup> ship.

The buildup of the Egyptian navy will within the next few years bring it up to 8 submarines (German and Chinese) and 56 missile-carrying ships (in addition to other vessels).

### Principles of the Egyptian naval force buildup

The force buildup of the Egyptian navy, including the development of infrastructures for maintenance and production, while relying on diverse sources for the acquisition of arms, is based on a number of principles:

1. The increased importance of the Red Sea as a route for commerce and the transport of petroleum, with emphasis on the race between countries (the US, China, France, Saudi Arabia, Oman and Japan) to control its shipping routes (and in particular the Horn of Africa and Bab el Mandeb Strait). Egypt aspires to achieve regional hegemony in this theater based on an economic and strategic vision.<sup>29</sup>
2. The military challenges and threats facing Egypt have grown in recent years. These include the fighting in Sudan and Yemen and the potential threats from the direction of Libya and the growth of ISIS in Sinai. Together with these threats, which are asymmetric from Egypt's point of view, it has also come to regard Iran and Israel as threats, even if not in the immediate term.<sup>30</sup>
3. Egypt wishes to strengthen and consolidate its independence from foreign sources so as not to develop dependency on one source of arms. This desire is in particular the result of a feeling of isolation and disappointment with the US, which "abandoned" Egypt during the Arab Spring.<sup>31</sup>

29 Eleibe Ahmed (1/2017), *Egypt's Naval Operations Expanding Southwards*, retrieved from: <https://www.tesfanews.net/egypt-navy-operations-expanding-south>, accessed 1/2017.

30 Rogoway Taylor (9/2015), *Why Is Egypt Buying Two Orphaned Mistral Class Aircraft Carriers From France?*, retrieved from: <http://foxtrotalpha.jalopnik.com/why-is-egypt-buying-two-orphaned-mistral-class-aircraft-1732595299>, accessed 1/2017.

31 *Egyptian Navy – Modernization*, retrieved from: <http://www.globalsecurity.org/military/world/egypt/navy-modernization.htm>, accessed 1/2017.

4. The development of independent capabilities and infrastructure for the construction and maintenance of ships.
5. Egypt's desire to strengthen its image as a regional superpower and in particular as a naval superpower.<sup>32</sup>
6. Strengthening of the army's image and prestige both internally and externally.



Figure 3: The ceremony for the delivery of the Egyptian U-209 submarine in Germany<sup>33</sup>

### Analysis of the buildup of power and future trends

The force buildup of power in the Egyptian navy is intended to help transform Egypt into a regional superpower, with emphasis on the maritime domain, which for Egypt is the lifeline to commerce, energy infrastructure (oil and gas), food (fish) and major transportation routes for international trade, which is a primary component in the Egyptian economy. It should be mentioned that Egyptian economists expect that the Suez Canal and the adjoining industrial and commercial parks will account for up to one-third of the Egyptian economy.<sup>34</sup>

The Egyptian force buildup of power is directed toward the development of capabilities to meet the main symmetric threats it will need to deal with in the future, i.e. Israel and

32 Copley Gregory R. (10/2015), *Egypt's Return to Strategic and Economic Centrality*, retrieved from: <http://oilprice.com/Geopolitics/Middle-East/Egyptys-Return-To-Strategic-And-Economic-Centrality.html>, accessed 1/2017.

33 Retrieved from: <http://aagth1.blogspot.co.il/2016/12/type-2091400.html>

34 Egypt sees Suez Canal zone making up 30–35 pct of economy—minister, from REUTERS (<https://www.reuters.com/article/egypt-canal-minister/egypt-sees-suez-canal-zone-making-up-30-35-pct-of-economy-minister-idUSL5N0W74WT20150305>)



Iran. At the same time, the Egyptian force buildup also involves the development and reinforcement of capabilities for the regional power projection capabilities in all of its theaters of operation (the Mediterranean and the Red Sea) and the fighting against terrorist organizations that use asymmetric methods of warfare and which constitute an immediate threat to the Egyptian navy originating from Libya, Sudan and Sinai.

In other words, the force buildup is directed at providing a solution against symmetric threats and warfare against other navies, but at the same time it is directed at developing diverse capabilities that will provide rapid and flexible solutions against asymmetric threats, often at locations distant from Egyptian shores.

Another growing trend in Egypt is the increasing strength of the navy's Southern Command (the Red Sea) which is necessary in order to protect a 1500-kilometer coast and Egypt's aforementioned economic and strategic interests, primarily in the Horn of Africa and the Bab el Mandeb Strait.<sup>35</sup>

Following are the most prominent elements in the Egyptian buildup of power:

1. The reinforcement and development of above-water fighting capabilities, by means of acquiring additional vessels from various countries (as mentioned, the US, France, Russia and Germany). The new ships have highly advanced capabilities, including advanced detection systems, air protection capability against attacking aircraft and advanced missiles, as well as diverse attack capabilities (anti-ship missiles of various types, such as Exocet MM40, Moskit and Harpoon).
2. A major upgrade of outdated air defense systems for its ships (such as the use of French Aster-15 air defense missiles).
3. The development of underwater battle capabilities. Egypt views the sea as a strategic domain on the one hand (gathering of intelligence, implementation of commando operations, attacking of ships, with emphasis on supply convoys, and perhaps also maritime blockades). On the other hand, Egypt apparently views the underwater domain as a significant risk factor to its forces. Evidence of this is the number of ships with anti-submarine weaponry and mine detection capability.
4. Maintaining integrated battle capabilities for the attack of ships from the air, by means of F16 aircraft that carry the Harpoon anti-ship missile.
5. The development of capabilities for projection of power from the sea, maneuvering and firepower from helicopter and troop carriers, which enable the Egyptians to attack deep in enemy territory and to maneuver at sea in order to land ground forces on a significant scale.

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35 Eleibe Ahmed (1/2017), *Looking south: The expansion of Egypt's naval operations*, retrieved from: <http://english.ahram.org.eg/NewsContent/1/64/255116/Egypt/Politics-/Looking-south-The-expansion-of-Egypt%E2%80%99s-naval-opera.aspx>, accessed 1/2017.

6. The development of advanced naval commando capabilities by means of a large number of speedboats and underwater vessels for the transport of invading troops.

The advantages of this buildup of force lie in the broad development, as mentioned, of battle and attack capabilities both on the surface and under the water, together with the development of survival capabilities of the naval forces (by means of air defense systems).

The buildup of power involves a diversity of vessels and weapons and is the practical implementation of Egyptian policy, according to which Egypt should not rely on only one source of arms and must develop its own production capabilities.

This policy creates major differences between the various systems and platforms and forces the Egyptian navy to create separate and different maintenance facilities (with a high degree of complexity and a high cost) and to create operational doctrines and technological capacities that will enable integration between the systems and between the vessels. This constitutes a major disadvantage of the Egyptian acquisition strategy.

The coming years will be critical for the Egyptian navy. The fighting in Sudan and Yemen in which Egypt is involved requires the investment of attention, effort and resources. Nonetheless, the fighting enables the navy to accumulate valuable operational experience in projection-of-power scenarios in distant locations, while coordinating and integrating between the various branches.

In contrast and at the same time, the Egyptian navy will have to deal with the assimilation of new platforms and with them the development, integration and modification of new battle doctrines, which will be based on the acquired operational experience and the assimilation of the new capabilities. In parallel, it will have to maintain its old capabilities and vessels.

Another major issue that the Egyptian will have to deal with is the development and assimilation of infrastructures and maintenance facilities for the new platforms and systems, together with support for the old systems and platforms, such as the OHP, Knox and other types of ships. The development and preservation of maintenance and technological support capabilities for a highly diverse collection of vessels and systems will constitute a major challenge in terms of budget, logistics and infrastructure, as well as the training of manpower.

The last item on this list is the outdated coastal defense system, which is based on Russian Styx missiles and Italian Otomat missiles. These systems are several decades old and it appears that preference has not been given to upgrading them. It is possible that in coming years Egypt will take steps to upgrade these systems as well. In this

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context, it is worth mentioning reports in the Egyptian press during 2014 which concerned the possible acquisition of Russian Yakhont coast-to-sea missiles.<sup>36</sup>

## Summary and Conclusions

The force buildup is allowing the Egyptian navy to upgrade its vessels at a rate unprecedented in recent decades.

This process is making it possible for Egypt to rapidly consolidate its position as a regional maritime superpower, with major offensive capabilities to face both its symmetric and asymmetric adversaries and also in distant theaters, based on the ability to project power on land and sea and under an air defense umbrella.

This process is based on the Egyptian navy as the strategic long arm of Egypt, with emphasis on the ability to operate in the Red Sea and eastward.

The diversification of sources for military acquisitions makes it possible on the one hand for Egypt not have to rely on only one source of arms and on the other hand enables it to obtain advanced weapons and platforms and to create strategic collaborations with a variety of countries.

The diverse acquisitions and the international collaborations (acquisitions, training and exercises) enables Egypt to improve its capabilities and its military tactics, although it creates complexity in the maintenance of vessels and systems and requires it to create techno-logistical infrastructures and advanced training programs, particularly if Egypt wants to maintain its older vessels.

The fighting in Yemen and Sudan, in which Egypt is involved, and cumulative operational experience are enabling Egypt to improve its operational capabilities, its military tactics and also its ability to coordinate with the other military branches, with emphasis on the air force and the marines. The vessels that have been acquired, with emphasis on the Mistral ships, will in my opinion affect not only the navy's military tactics but also those of the Egyptian military forces as a whole.

The integration between the new platforms, the new weapons systems, Western training, joint maneuvers with international forces and the operational experience accumulated in recent years will lead to major strategic and operational changes in the navy's military tactics.

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36 *Russia's defense talks with Egypt part of regional arms drive* (2/2014), Retrieved from: <http://www.upi.com/Russias-defense-talks-with-Egypt-part-of-regional-arms-drive/12071392746896>, accessed 1/2017.