In February 2021, the Defense Industry Promotion Act came into force in the ROK, requiring the government to prioritize domestic manufacturing. South Korea has allocated 176.6 billion won ($159 million) to support the defense industry, a sharp jump from 93.8 billion won in 2020. The government will spend 49.6 billion won to support defense exports, up from 43 billion won in 2020.

On April 23, 2020, the southeastern city of Changwon and the surrounding South Gyeongsang Province have been named the host for the government's first regional defense industry innovation center aimed at promoting development of home-grown parts and revitalizing regional economies.

The area was chosen as the region already houses a large number of small defense companies and the local governments have been active in backing the industry. It is expected to create more than 1,000 jobs and lead to production worth 84.3 billion won over the next five years.

Finally, the Defense Procurement Agency will help defense companies with public relations and online advertising of their products, since virtually all international arms shows have been canceled due to the COVID-19 pandemic. Companies most affected by the COVID-19 pandemic will be able to receive government-guaranteed loans totaling up to 40 billion won ($32,200,000). Loans will be granted to companies whose production capacity is used by less than 40% as a result of a reduction in the volume of orders.

It's worth noting, in the first half of 2020, weapons were sold for 3.3 trillion won ($2.75 billion), with 329 billion won exported. The number of people employed by defense firms as of June was 33,103. However, in 2019, arms were sold...
for 14 trillion won, including 1.77 trillion won in exports.

In fact, South Korea was the 10th-largest arms exporter in the 2015-2019 period, accounting for 2.1 percent of the world’s total defense exports. The main buyers of South Korean defense products during this period were the United Kingdom, Iraq and Indonesia.

Next, let us go into more detail about what these funds are spent on.

**General Issues of Troop Management**

On January 25, 2021, South Korea completed the development of a command post vehicle that allows commanders to lead combats while moving around and is equipped with devices to defend against enemy’s chemical, biological and radiological attacks. It is planned to start production in 2022.

There are reports of upgrades to the command and control system and troop control (what in English stands for C4I) to improve military officers’ ability to make decisions in real time. The new system has new analytical functions, such as automatically calculating combat capabilities and recommending optimal attack methods.

Before we move on, let us also mention tactical observation systems. An agreement has been signed with Hanwha Systems Corporation to produce prototypes of unmanned surveillance sensors that respond to vibration and visual contact. Supposedly, they will supplement the system of control of border areas in places where there are no military posts, or in the “blind zones”.

In addition, by 2023, there will be an artificial intelligence surveillance system along the inter-Korean border and coastal areas. By 2022, 112 thermal observation devices will be deployed, and by 2029, 129 coastal radar observation stations will be deployed.

Finally, in 2021, the military will introduce a Samsung smartphone-based combat information device on a trial basis that will enable troops to view real-time battle information without relying on communications networks.

Designed using the South Korean tech giant’s Galaxy S20 Tactical Edition, the handheld device also provides a night display mode and a covert communication lock feature.

Influenced by the pandemic, South Korea has set a course to provide more hospital beds in order to better respond to the spread of infectious diseases. By 2023, the ROK Armed Forces will have more ambulances and infectious disease rooms, and an epidemiological research center will be established at the Armed Forces Medical Command.

**Ground Forces**

On January 26, 2021, South Korea completed the deployment of K-14 sniper rifles. The domestically developed rifle was first deployed for the Special Forces in 2013 and distributed to infantry battalions in 2017. With the deployment of observation devices used in conjunction with the weapon, the project was completed. The K-14 hits targets in the range of 0.8 to 1 kilometer with high accuracy and low recoil. And the new daytime telescopic sight detects targets at ranges of 1.5 to 2.5 kilometers, while at night thermal sights are used at ranges of 0.5 to 1.5 kilometers.

The deployment of K-9 self-propelled howitzers has also been completed. The 155 mm K-9 self-propelled artillery unit was developed by South Korean defense company Hanwha Defense. Today they have become one of the major artillery weapons of the South Korean land forces.

The third stage of serial production of the country’s main battle tank, the K2, has been approved. About 50 units of the homegrown K2 Black Panther will be built by 2023, requiring about 2.83 trillion won. The new tanks will be equipped with a foreign-made transmission along with a local engine, due to the fact that the domestically produced transmission did not meet the standards.

Beginning in 2021, South Korea plans to mass-produce a newly developed self-propelled anti-aircraft system as part of a project to replace the obsolete Vulcan automatic gun. The 250 billion won ($200 million) contract was signed with Hanwha Defense Co. The 30mm AAGW anti-aircraft gun has a range of 3 kilometers, which is 1.6 times that of the Vulcan and requires fewer personnel to maintain. It features an electro-optical targeting system (EOTS) developed by Hanwha Systems Co. and is expected to help improve the military’s low-altitude air defense capability against low-flying aircraft and drones.

Production of the new 120 mm self-propelled mortar system will begin later this year at the end of 2021. By 2025,
770 billion won ($648 million) will be invested in mass production. The new system, developed on the basis of domestic technology, will replace the obsolete 107 mm mortars on the K200A1 armored vehicles. The novelty has a maximum speed of 70 km/h and a projectile range of 12 km. According to the agency, its range and firepower is about twice as much as the 107 mm mortar. In addition, the new development has an autonomous fire control system.

Domestic manufacturers have also developed a smoke canister that can block an enemy's infrared search. It will greatly improve the operational capabilities of the Armed Forces by preventing enemy surveillance, plus the new compound is designed with a low-toxicity agent to minimize its impact on the health of soldiers as well as the environment.

Hanwha Defense, mentioned above, in an 18 billion won ($16 million) project, will build a small self-propelled robot capable of detecting and disposing of explosives that will be equipped with a variety of advanced equipment, including an X-ray fluoroscope, shotgun and cable-cutting machine, and can be controlled remotely. The development is expected to be completed by June 2023 and will be operationally deployed as early as 2024.

In addition to the future robot, a new mine detector developed by Hanwha Systems will be deployed in 2022, capable of finding nonmetal explosives, such as wooden-boxed land mines. Equipped with a GPR, the PRS-20K also has an improved metal mine detection rate compared to the PRS-17K currently used by the military since the late 1990s. The new mine detector is expected to help minimize possible casualties during the rainy season from land mines that wash into civilian areas. It can also be used for a project to excavate military remains inside the demilitarized zone.

**Air Forces**

On June 9, 2020, defense and science ministers visited an Air Force unit that was designed as a “test bed” for military reform using advanced technology. During the visit, ministers familiarized themselves with a new pilot training program using three-dimensional video to simulate combat situations based on unmanned and satellite imagery. With the new technology, the military will be able to create three-dimensional video of an area of 10 square kilometers with 100 buildings in 90 minutes, a stark contrast to the current system, which requires about 300 hours. “By establishing a smart unit based on new technologies of the fourth industrial revolution, such as AI and big data, all ongoing circumstances within a base and operational situations will become visible to commanders in real time”.

On June 26, 2020, South Korea has approved a plan to purchase more AEW&C early warning and control aircraft. According to the plan approved at a meeting of the defense advancement committee, the country will launch the project next year in order to introduce more aircraft from abroad by 2027. The Air Force has currently operated four Peace Eye-based Boeing 737s since 2011, but the military is pushing to buy two more early warning aircrafts. The AEW&C aircraft, equipped with advanced radar systems, is designed to detect aircraft and other vehicles at long range and control the battlefield in aerial combat by directing fighter strikes.

On June 29, the Defense Acquisition Program Administration (DAPA) signed a deal to procure 20 new homegrown trainer jets for the Air Force. Under the 688.3 billion-won ($573.34 million) deal, Korea Aerospace Industries (KAI) will supply 20 TA-50 Block-2 aircraft by 2024. TA-50 Block-2 is an upgraded version of KAI’s T-50 trainer jet, which is now in service.

A large-scale replacement of the fleet of UH-1H attack helicopters is planned. In 52 years of service, 129 American-made UH-1H helicopters have logged a total of 792,000 hours over 146 million kilometers. The KUH-1 Surion multipurpose helicopter, developed by Korea Aerospace Industries, comes to replace them. In total, KAI intends to supply 220 Surions to the South Korean Armed Forces and Marine Corps by 2023.

In addition, on December 15, 2020, South Korea decided to buy 12 MH-60R Seahawks at a cost of 960 billion won ($878 million). These multi-purpose helicopters used by the US Navy for hunting submarines, destroying small surface ships with Hellfire anti-tank missiles, rescuing downed aircraft crews, etc. The 12 helicopters will arrive in the country in phases by 2025, but the decision to buy them from US aerospace and defense giant Lockheed Martin instead of the Italian Lenardo AW159 Wildcat is widely seen as a diplomatic choice that benefits Washington.

Earlier in 2016, the ROK purchased eight Wildcat helicopters from Italy and planned to sign a direct commercial sales agreement for the additional 12 helicopters. But the US government offered Seoul a deal with Lockheed Martin, and Seoul decided to opt for American-made helicopters. Although the Seahawk and Wildcat each have their merits and demerits, President Trump has openly and repeatedly demanded that President Moon Jae-in buy more American weapons.
Finally, by 2025, South Korea will invest 2.6 trillion won ($2.3 billion) to improve its safety management system. According to this plan, the government will train more flight safety specialists and insist on a big data-based information system.

**Naval Forces**

On March 16, 2020, Hyundai Heavy Industries Co. won a 400 billion won ($330 million) order to build one frigate for the national navy by 2024.

On April 27, South Korea approved a 670 billion won ($546 million) plan to develop a combat system to be equipped on the country's next-generation 6,000-ton-class destroyers. These warships are often called “mini Aegis destroyers” because they are smaller than the 7,600-ton KDX-III equipped with the advanced Aegis combat system, but larger than the 4,200-ton KDX-II destroyer.

The basic design of the 6,000-ton Korea Destroyer Next Generation (KDDX), an Aegis-equipped local destroyer, is well underway. Once the design is completed by the second half of 2023, construction will begin in 2024.

In addition, Hyundai Heavy is in the early stages of the design process to build a next-generation amphibious assault ship called Landing Platform eXperimental (LPX) -2.

A domestic CIWS system designed to detect and destroy aircraft and anti-ship short-range missiles is being developed for new destroyer designs. By 2030, these weapons will be installed on the country’s largest naval vessels, including the 6,000-ton class destroyers that were built under the Next Generation Design (KDDX) as well as the 3,000-ton-III frigates.

Information about the joint development with the Americans of a low-cost missile with infrared homing is also related to the development of the Naval Forces. This is a development of the American unguided Hydra-70 aircraft missile manufactured by General Dynamics. It is assumed that such salvo firing is especially effective against the enemy’s “mosquito fleet,” which includes the North Korean one. The missile is also expected to be useful against a swarm of droids.

An autonomous underwater mine detector is expected to be developed by 2023. The 12 billion won ($11 million) contract with LIG Nex1 Co. to develop the robot capable of autonomously searching for mines in waters some hundreds of meters below the surface for over 20 hours. The new device will reduce the time it takes to search for explosives in water and enhance the safety of the troops involved in this task. It can also be used to monitor possible enemy infiltration and support rescue operations in maritime accidents or gather topographic information on the seafloor.

In addition to new ship projects, old ships are being modernized. For example, they has upgraded the combat system and underwater target detection capability of the 3200-ton Yang Manchun destroyer of the KDX-I series. Following the improvement, the Yang Manchun destroyer can now handle three times as much data on targets at a speed 100 times faster than the previous version. The ship’s towed antenna sonar system has also been upgraded to enhance the Navy’s ability to conduct anti-submarine operations.

On October 21, 2020, the ROC Navy adopted the Hansando (ATH-81), a state-of-the-art training ship built with stealth reduced-visibility technology. The ship can accommodate about 400 people on board and also has training facilities. It has a computer-based training system that allows it to simulate various combat situations. There is a medical ward aboard the ship that includes three operating rooms, an examination room and a negative pressure room to handle potential virus outbreaks on board or other emergencies.

On December 31 the Navy received a new guided missile frigate with enhanced anti-submarine warfare capabilities. The 2,800-ton Gyeongnam ship has a low-visibility design and is equipped with a towed antenna sonar system (TASS) and long-range anti-submarine torpedoes, which improves its detection and strike capabilities. It uses an electric-drive hybrid propulsion system, which reduces noise levels and enables fast maneuvers. By 2023, six more frigates will enter service.

Thus, we are dealing with comprehensive armament programs, largely built on the support of the domestic manufacturer.

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