

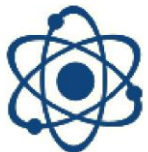
Weekly Dispatch

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SYLLOGE ON CHINA

Focus: Nuclear, Space, Missiles and other Security Issues

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INDIAN PUGWASH SOCIETY



INSTITUTE FOR DEFENCE
STUDIES & ANALYSES

रक्षा अध्ययन एवं विश्लेषण संस्थान

Prepared by:
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China's space sector resists COVID-19 impact

Zhang Hongpei

Global Times, March 11, 2020

Wuhan bears the brunt of the blow, with production, supply affected. iSpace engineers prepare the company's first orbital carrier rocket. Photo: Courtesy of iSpace. Compared with traffic-dependent industries like catering, aviation and tourism, China's fledging commercial space sector has not been severely disrupted by the outbreak of novel coronavirus pneumonia (COVID-19) which has claimed over 3,000 lives nationwide and continues to spread globally. However, the epidemic's impact on Wuhan is still very obvious, industry insiders told the Global Times.

"The Kuaizhou rocket team under the state-owned China Aerospace Science and Industry Corp (CASIC) as well as its relevant suppliers have forged a major force in Wuhan [in Central China's Hubei Province]," said an industry investment manager who asked to remain anonymous. Kuaizhou-1A solid-propellant rockets developed by Expace Technology, subordinate to the CASIC, will mainly be used to launch low-orbit microsattellites. A Kuaizhou-1A carrier rocket lifted the Galaxy-Space 1, China's first 5G-capable satellite built by a private Chinese company, at the Jiuquan Satellite Launch Center on January 16. The company completed its first mission, launching eight to nine rockets, at the beginning of the year. For the first half of 2020, the company was scheduled to conduct four or five launches, a representative told the Global Times in December.

<http://www.globaltimes.cn/content/1182278.shtml>

Chinese nuclear project honored at quality innovation awards

CNNC, March 12, 2020

The 2019 Quality Innovation Award, also known as QIA, was recently announced in Tel Aviv in Israel, where a Chinese project -- R&D of Hualong One nuclear power plant steam generators -- won second prize, according to local reports. It is a project of the Nuclear Power Institute of China, also known as the NPIC, which is a unit of China National Nuclear Corporation, or CNNC. Due to current novel coronavirus epidemic, the team was absent from the awards ceremony and officials from the Embassy of China in Israel instead received it on their behalf.

Experts said the project demonstrates how the systematic application of quality innovation methods by the NPIC assist the research and development of the steam generators in the Chinese-designed Hualong One, or HPR 1000 nuclear reactors. The project won the top award in the national quality innovation contest in July 2019, among more than 1,000 projects, and was recommended by the China Association for Quality for the international competition. The HPR 1000 is a third-generation reactor design and currently steam generators have been installed in all HPR 1000 domestic and international units, according to CNNC officials.

http://en.cnn.com.cn/2020-03/12/c_461869.htm

Chinese drones see rapid production despite epidemic, indicating high demand

Liu Xuanzun

Global Times, March 12, 2020

Production of the CH-4, one of the top selling armed reconnaissance drones in the world developed by China, has now resumed as the novel coronavirus epidemic is being brought under control in the country. A workshop was seen full of drones being assembled, as analysts predicted on Thursday the CH-4 will see great demand in the international market in 2020. CH UAV Co Ltd, a company affiliated with China Aerospace Science and Technology Corp's Chinese Academy of Aerospace and Aerodynamics, on Tuesday released a set of photos showcasing its production progress since resumption of work after the extended Spring Festival holidays due to the COVID-19 outbreak.

One of the photos showed at least eight CH-4 drones being assembled in one large workshop, with no space left to spare in the facility. The drones were seemingly in different stages of assembly, as drones on one side were near completion and those on the other side had just started and were just frames that had no paint and no electronic devices installed. This demonstrated the high production capacity for the CH-4 drones, said Weihutang, a column on military affairs affiliated with China Central Television, on Wednesday.

The high rate of production indicated that the CH-4 drone remains an item that is very much in demand on the international market in 2020, as the manufacturer was attempting to keep up with the original production schedule to deliver the drones on time, a military expert who asked not to be named told the Global Times on Thursday. Drones are becoming increasingly popular in regional conflicts around the world, and Chinese companies can offer them at very reasonable prices, offering good performances and after-sales services and not attaching political conditions, which are all advantages they have over Western countries' products, the expert said. The CH drones are particularly popular as they are very easy to operate and do not require very intensive and professional training, the expert noted.

<http://www.globaltimes.cn/content/1182386.shtml>

Air-defense missiles get ready for training

Global Times, March 16, 2020

HQ-16 medium-range air-defense missile systems attached to an air-defense brigade under the PLA 80th Group Army are erected during a realistic training exercise on March 9, 2020. Soldiers assigned to an air-defense brigade under the PLA 80th Group Army operate cranes to hoist and load HQ-16 medium-range air-defense missile systems onto missile launching trucks during a realistic training exercise on March 9, 2020.

<http://www.globaltimes.cn/content/1182721.shtml>

PLA warplanes conduct rare nighttime exercises near Taiwan: reports

Liu Xuanzun

Global Times, March 17, 2020

Warplanes of the Chinese People's Liberation Army (PLA) reportedly conducted rare nighttime exercises near the island of Taiwan on Monday, and mainland analysts on Tuesday predicted that similar drills will become more frequent if Taiwan secessionist forces remain stubborn and continue their secessionist activities. Multiple PLA warplanes including the KJ-500 early warning aircraft and J-11 fighter jets conducted nighttime flight exercises at around 7:00 pm on Monday above the waters southwest of the island of Taiwan, Taiwan media reported on Monday, citing Taiwan's defense authority. This is the first time the PLA has conducted this kind of exercise at night, said Taiwan's defense authority, according to the report.

The PLA nighttime drills showed that it is fully capable of launching military operations on the island at any time of a day, a military expert who asked not to be named told the Global Times on Tuesday. Similar drills are expected to become more frequent in order to let Taiwan secessionists get a clear idea of the power gap between the mainland and the island, the expert said. The latest exercises near Taiwan came after concentrated PLA exercises in February. On February 9 and 10, the PLA conducted two consecutive drills featuring naval and air forces near the island and crossed the "middle line" of the Taiwan Straits, in a warning to Taiwan secessionists. Island encirclement patrols used to be rare, crossing the "middle line" used to be rare and consecutive drills used to be rare, but they are not rare any more, and the same could apply for the nighttime drills, the expert said.

<https://www.globaltimes.cn/content/1182876.shtml>

Long March-3A rocket series send 58 Beidou satellites into orbits

Yu Jianbin

China Military Online, March 17, 2020

The 54th navigation satellite of the BeiDou system was successfully launched at the Xichang Satellite Launch Center a few days ago, which means that the completion of BeiDou global navigation network is only one step away. The series of Long March 3A(LM-3A) rockets are indispensable for each launch mission of the Beidou project and thus known as the "BeiDou Express". This time, the LM-3A rockets also set a new launch record again.

The construction of the BeiDou Navigation Satellite System (BDS) has gone through three phases of BDS-1, BDS-2 and BDS-3. The BDS-3 consists of 30 satellites, and the onelaunched this time is the 29th BeiDou satellite. The last geostationary satellite will be launched in May as planned.

By then, the deployment of the BDS-3 satellite constellation with global coverage will be fully completed. The LM-3A series mainly include three configurations: the launch capability of the Long March 3A is 2.6 tons, the Long March 3B 5.5 tons, and the Long March 3C 3.9 tons. According to the carrying capacity, different configurations can be selected to perform different tasks.

http://eng.chinamil.com.cn/view/2020-03/17/content_9771157.htm

Research stations established in South China Sea

China Military Online, March 20, 2020

The Chinese Academy of Sciences has established two research stations on Yongshu and Zhubi islands in the South China Sea to allow scientists to live and conduct field studies on ecology, geology and environment. The Yongshu station already has systems monitoring coral reef biomes, the island's flora and fresh water conservation. On the Zhubi islands, it recently finished the designs for its seismic stability and fresh water monitoring systems.

The academy said the stations will help scientists expand their research into deep sea ecology, geology, environment, material sciences and marine energy. They also play a part in monitoring ecological and seismic changes in key regions of the South China Sea. The two stations are branches of the academy's general research center on Meiji Island, which was built to support China's undertakings in ecological protection, resource utilization and sustainable development in the South China Sea.

http://eng.chinamil.com.cn/view/2020-03/20/content_9773606.htm \

China-made military aircraft FTC-2000G makes key progress

China Military Online, March 20, 2020

According to domestic news reports, recently, Guizhou Aviation Industry Corporation (GAIC) under the Aviation Industry Corporation of China (AVIC) recently launched a massive internal campaign for high-quality FTC-2000G multi-role aircraft. Comprehensive schemes for the development and production work of the FTC-2000G aircraft were formulated in details, in a bid to improve scientific research and production in an all-round manner and deliver high-quality aircraft to the users.

FTC-2000G is a new-type military aircraft specifically developed for foreign trade by GAIC in full accordance with customer needs. Being the remodeling of the second-generation aircraft closest to the third-generation, it is attack-based and integrated with functions of both air combat and coaching, highly practical and cost-effective. What's more, the FTC-2000G is featured with night-viewing and night-fighting capabilities, and strong at functional expansion, By installing

related mission equipment or pods, it can also carry out reconnaissance and electronic warfare missions to meet the needs of different users.

http://eng.chinamil.com.cn/view/2020-03/20/content_9773597.htm

Combined arms battalion becomes basic combat unit of PLA

Liu Xuanzun

Global Times, March 22, 2020

The powerful combined arms battalion, each one including almost all types of basic military arms and professions, has now become a basic combat unit of the Chinese People's Liberation Army (PLA), enabling the service to react much more quickly in the fast-paced dynamic of modern warfare, gaining more advantages, experts said on Sunday.

As the PLA is accelerating its transformation process, the combined arms battalion has now become an all-new basic combat unit and joined combat sequences, the PLA Daily reported on Friday. Compared with a traditional battalion, a combined arms battalion has almost all types of basic military arms and professions that the army has to offer, including dozens of professions and hundreds of positions, the report said. This means a combined arms battalion could have more than a dozen types of different units at its disposal, including infantry units, tank units, artillery units, aviation units, light armor vehicle units and amphibious assault units, rather than, for instance, a battalion full of only tank units like in the past, a military expert who asked not to be named told the Global Times, noting that each different combined arms battalion could have different focuses based on the battlefield situation.

"The combined arms battalion is not a simple permutation and combination, it requires highly efficient management of all different arms units and integrated utilization," said a senior officer at the PLA Army Staff's training department, noting that this modularized, multifunctional force structure can achieve fast and flexible combinations based on the situation on the battlefield, forming different kinds of combat patterns and letting all combat factors make the best of the system's potential. Multiple types of combined arms battalions are already embedded into the PLA Army's combat system, achieving multiple source perception in combat command, high integration in combat factors and multidimensional expansion of combat space, the PLA Daily said, noting that the army troops' mobilization combat, multidimensional offense and defense capabilities have been greatly enhanced.

<http://www.globaltimes.cn/content/1183390.shtml>

China completes new large solar telescope

Xinhua, March 24, 2020

The solar telescope will be used to observe solar activity, offering data support for solar research and space weather forecast. Scientists from the Chinese Academy of Sciences announced Tuesday

that they have built the country's first and one of the world's largest solar telescope, to better observe and forecast solar activity. The Chinese Large Solar Telescope (CLST), with a 1.8-meter aperture, was developed by the academy's Institute of Optics and Electronics. It caught the first batch of high-resolution images of the solar atmosphere on Dec. 10, 2019, an academy statement said. Many countries have stepped up efforts to build 2-meter and larger solar telescopes in recent years. The world's large solar telescopes that have been built include the 1.6-meter GST in the United States and the 1.5-meter GREGOR in Germany.

The U.S. 4-meter solar telescope DKIST has not yet been put into operation, and the European 4-meter EST has just begun designing and developing. Previous to the CLST, the largest solar telescope in China was the 1-meter New Vacuum Solar Telescope developed by the academy's Yunnan Observatories. According to Rao Changhui, leading the project, the CLST will be equipped with a group of systems for adaptive optics, magnetic field detection and velocity field detection. As solar activity are increasingly frequent, space weather events will become more severe. In the future, the solar telescope will be used to observe solar activity, offering data support for solar research and space weather forecast, Rao said.

http://www.xinhuanet.com/english/2020-03/24/c_138912565.htm

China launches new remote sensing satellites

China Military Online, March 24, 2020

China successfully sent a group of new remote sensing satellites into orbit from the Xichang Satellite Launch Center in southwest China's Sichuan Province on Tuesday. The satellites have entered the planned orbits. This satellite group will work as a constellation for electromagnetic environment detection and related technological tests. The satellites were developed by the Innovation Academy for Microsatellites of the Chinese Academy of Sciences. And the carrier rocket was developed by the China Academy of Launch Vehicle Technology under the China Aerospace Science and Technology Corporation. This launch was the 329th mission of the Long March rocket series.

http://eng.chinamil.com.cn/view/2020-03/24/content_9775907.htm

Vaccine pursuer dedicated to finding bio shield against possible germ warfare

Global Times, March 26, 2020

People familiar with Chen Wei, a military major general, all know one thing very well - she is fast. Chen walks fast, speaks fast, and works at a fast pace. Chen is now working to speed up the development of the vaccine of COVID-19 in China. On March 16, the novel coronavirus vaccine developed by Chen and her team entered clinical trials. On March 20, 108 volunteers were injected with the COVID-19 vaccine developed by China. Major General Chen Wei, one of the developers

of the vaccine, was the first to be injected, reported domestic news site ifeng.com. One volunteer for the vaccine said that Chen is the real pathfinder.

Chen is a leading epidemiologist and virologist, the doctoral supervisor of the Academy of Military Medical Sciences (AMMS), and an academic at the Chinese Academy of Engineering.

On January 26, 54-year-old Chen led a team and headed to Wuhan in Central China's Hubei Province, the frontline to fight the epidemic. After arriving in Wuhan, Chen's team started building a portable testing lab, which was in operation on January 30. Experts from Chen's team researched and developed a testing kit, which works together with automated nucleic acid extraction technology to speed up the testing of suspected patients. This is not Chen's first time confronting an epidemic. As a leading figure of a team of experts at China's Biological Hazards Prevention and Control Program, she made great contributions in fighting against the severe acute respiratory syndrome (SARS), and achieved remarkable results in treating many viruses including Ebola and anthrax. After the SARS broke out in China in 2003, Chen's team took the leading role in successfully isolating the coronavirus.

<http://www.globaltimes.cn/content/1183887.shtml>

Domestically developed high-end missile sees first export delivery despite pandemic

Liu Xuanzun

Global Times, March 29, 2020

A leading Chinese arms firm has delivered a batch of advanced portable HJ-12E anti-tank missiles to an undisclosed foreign buyer amid the pandemic of novel coronavirus pneumonia (COVID-19) in the first export case of this type of high-end weaponry, prompting Chinese analysts to note on Sunday that this showcased the company's reliability and its potential share of the market. Despite the COVID-19 outbreak that had brought difficulties in personnel exchanges since the Spring Festival holidays in late January and early February, state-owned China North Industries Group Corporation (Norinco) was able to deliver containers carrying the missiles to foreign clients as of Wednesday, before the scheduled shipment date, according to a statement the company released Wednesday on its WeChat account. It was the first time a third-generation anti-tank weapon system developed by the Chinese company has been exported, according to the statement. As the client was in urgent need of the missiles, the successful delivery had significant meaning for establishing Norinco's market position and further opening up the market, the company said.

Norinco did not disclose more details on the deal in the statement, including the name of the buyer, the quantity purchased and the value of the deal. The delivery demonstrated the Chinese arms firm's reliability and proved it can fulfill a contract even under seeming force majeure, overcoming difficulties and prioritizing the client's interest, a military expert who asked not to be named told the Global Times. This would win trust not only from the buyer for this deal, but also other potential clients, the expert said, noting the product would also get a chance to shine on the international market.

Often compared with the FGM-148 Javelin missile used by the US military, the HJ-12, or Red Arrow 12, is a portable, fire-and-forget anti-tank missile domestically developed by China, Weihutang, a column on military affairs affiliated with China Central Television, reported. It can hit targets including tanks, bunkers, ships and helicopters from above, where armor is likely the thinnest, with a penetration capability of 1,100 millimeters, Weihutang reported. The HJ-12 enables soldiers to lock on target, fire and then move on without maintaining position to guide the missile to its target, providing many tactical advantages, the expert said. The missile is capable of destroying even the most advanced tanks in the world, he noted. It is expected to be a high-end weapon that not every military can afford in mass quantities, but it should be more cost-efficient than its competitors like the Javelin, the expert said.

<http://www.globaltimes.cn/content/1184117.shtml>

Airshow China schedule unchanged despite COVID-19, major improvement expected

Global Times, March 31, 2020

While several air shows around the world have been cancelled due to the ongoing novel coronavirus pneumonia (COVID-19) pandemic, the most important one in China, the Airshow China, remains set to take place in November, and will be "considerably different and significantly improved" from previous editions, the organizer said on Monday.

Since the start of the epidemic, the organizer of the air show actively communicated with partnering organizations to ensure previous participants are still coming, and also to seek out new ones. More than 400 companies from countries and regions including Germany, Russia, France, the US, Sweden, Ukraine and the UK, as well as Chinese companies, have already confirmed participation in the 2020 edition of the air show, the organizer announced in a statement released in its WeChat public account on Monday. More flight performances from military aerobatics teams are also being arranged. In addition to the Chinese Air Force's August 1st Air Demonstration Team, the Russian Knights aerobatic demonstration team of the Russian Aerospace Forces will hopefully also join the exhibition, the organizer said, noting that ground equipment shows will also see more real-combat oriented and professional performances that fully display the capabilities of tanks and armored vehicles compared to previous editions.

All related work is being carried out to ensure the exhibition will be held from November 10-15 in Zhuhai, South China's Guangdong Province as planned, it said. Traders and public visitors will be able to book tickets on the air show's website, but the ticket buying function is not yet online. Many other air shows have been cancelled due to the COVID-19 pandemic, raising concerns among aviation fans and military enthusiasts that the Airshow China could also be scrapped.

<http://www.globaltimes.cn/content/1184341.shtml>

China General Nuclear continues clean energy growth

Zheng Xin

China Daily, March 31, 2020

China General Nuclear Power Corp, one of the country's largest nuclear power companies, has seen its total installed nuclear power capacity reach 27.14 million kilowatts and installed capacity under operation reaching 58.18 million kilowatts as of 2019. Total assets by the end of last year reached 750 billion yuan, it said in a report released.

The company, China's largest and the world's third-biggest nuclear energy company, has actively promoted clean energy development including nuclear, wind and solar power in the past few years. Its clean energy business has covered 28 countries worldwide as of last year, with on-grid power reaching 261.6 billion kilowatts, equal to a carbon dioxide reduction of more than 210 million tons, it said. The company's 19 power plants in China's Hubei province, which was hit hardest by the novel coronavirus pandemic, have generated power up to 368 million kilowatt hours from Jan 24 to March 27, it said.

<https://global.chinadaily.com.cn/a/202003/31/WS5e82d45da3101282172834fb.html>

China's lunar rover travels over 424 meters on moon's far side

Global Times, April 1, 2020

China's lunar rover Yutu-2, or Jade Rabbit-2, has driven 424.455 meters on the far side of the moon to conduct scientific exploration of the virgin territory. Both the lander and the rover of the Chang'e-4 probe have ended their work for the 16th lunar day, and switched to dormant mode for the lunar night due to the lack of solar power, according to the Lunar Exploration and Space Program Center of the China National Space Administration. China's Chang'e-4 probe, launched on Dec. 8, 2018, made the first-ever soft landing on the Von Karman Crater in the South Pole-Aitken Basin on the far side of the moon on Jan. 3, 2019. Yutu-2 has worked much longer than its three-month design life, becoming the longest-working lunar rover on the moon. The rover has helped scientists unveil the secrets buried deep under the surface on the far side of the moon, enriching human's understanding about the history of celestial collision and volcanic activities and shedding new light on the geological evolution on the moon.

The scientific tasks of the Chang'e-4 mission include conducting low-frequency radio astronomical observations, surveying the terrain and landforms, detecting the mineral composition and shallow lunar surface structure and measuring neutron radiation and neutral atoms. The Chang'e-4 mission embodies China's hope to combine wisdom in space exploration with four payloads developed by the Netherlands, Germany, Sweden and Saudi Arabia. China plans to launch its first Mars probe and the Chang'e-5 probe to bring lunar samples back to Earth later this year. CNSA said it was making all-out efforts to carry out the missions amid the coronavirus pandemic.

<http://www.globaltimes.cn/content/1184402.shtml>

Wuhan's military industry back in action as epidemic situation eases

Global Times, April 2, 2020

As the novel coronavirus pneumonia (COVID-19) epidemic begins to subside in Wuhan, the city most severely affected by COVID-19 in China, the military industry of the city is now going back to normal and making up for time lost during the city's lockdown. The Wuhan-based No.701 Institute under the state-owned China State Shipbuilding Corporation Limited (CSSC), a major design institute for China's warships, has been working overtime since March 3 to ensure that an undisclosed major project is not affected by the epidemic, according to a statement the institute released on its WeChat public account on Wednesday.

Wuchang Shipbuilding Industry Group Co Ltd, another CSSC subsidiary known for manufacturing submarines and surface vessels, welcomed a second batch of workers back to their positions on March 26, and its factory in Wuhan's Shuangliu reopened on March 27, with assembly lines there beginning to be gradually activated, the company said in two separate statements on its WeChat public account over the past week. The situation facing military industry institutes and factories in Wuhan has drawn the attention of military observers since the start of the COVID-19 outbreak, as the city was the most hit place by the epidemic in China. Military experts told the Global Times in early February that China prioritized the health and safety of its weapon developers to avoid fatalities, which meant that any impact on weapons and equipment programs was just short-term.

The statements by the companies and institutes were positive signs, as any delay caused by the epidemic would only be two to three months, and even less if taking compensation for overtime work into consideration, analysts said. In response to media reports that COVID-19's impact on the strategically important city of Wuhan could also impact China's weapons and equipment plan, Ministry of National Defense spokesperson Ren Guoqiang said at a routine press conference on March 26 that the Chinese People's Liberation Army's determination, will, and ability to defend national sovereignty and territorial integrity will not be shaken by any force or disturbed in any way.

<https://www.globaltimes.cn/content/1184552.shtml>