

March 16, 2021

# SYLLOGE ON CHINA

Focus: Nuclear, Space, Missiles and other Security Issues

An Initiative by Indian Pugwash Society and Centre for Nuclear Issues and Arms Control  
(MP - IDSA)



INDIAN PUGWASH SOCIETY



Prepared By: Diya Deep Singh

## **CNNC trials using radiation to kill coronavirus on cold-chain food**

Tao Mingyang

Global Times, March 14, 2021

Chinese companies have conducted trials that involve using nuclear radiation technology to kill COVID-19 on the surface and inside of the cold-food chain, in a bid to improve the disinfection process for imports that have been found to carry the deadly virus - a serious risk for anti-pandemic and economic revival efforts. The tests were carried out by the China Institute for Radiation Protection (CIRP) of the China National Nuclear Corp (CNNC) and three other companies and institutions, CNNC said on Saturday.

Utilizing the latest nuclear technologies worked out by CIRP, the China Isotope & Radiation Corp (CIRC), Nuctech, and the Institute of Microbiology at the Chinese Academy of Sciences (IMCAS) began a program in December 2020 and focused on disinfecting imported cold-chain foods. During the three-month experiment, research teams acquired a large amount of experimental data by disinfecting two simulated coronavirus samples. Liu Yaohong, deputy director of Nuctech's joint research institute, who is one of the program leaders, told Global Times on Sunday that the device's success rate of killing viruses - including the coronavirus - can reach nearly 100 percent. "The nuclear radiation can destroy the DNA chain of a virus to inactivate it or directly kill it," said Liu. The goal is to find the exact radiation dose that can kill the coronavirus without affecting food safety.

<https://www.globaltimes.cn/page/202103/1218266.shtml>

## **China planning to step up use of civilian know-how under drive to make military a modern fighting force**

Minnie Chan

South China Morning Post, March 14, 2021

The country's latest five-year plan includes pledges to encourage the private sector to work with the defence industry to improve the PLA's capabilities. The drive to modernise the military has already seen it develop a number of cutting-edge weapons systems as it seeks to match the United States

China is set to step up its plans to integrate civilian and military technology under its drive to modernise the armed forces, according to the latest five-year plan. The development plan, which was unveiled at this month's meeting of the National People's Congress, includes pledges to increase programmes to upgrade its weapons systems, improve its joint combat capabilities and encourage private enterprises to work with the defence industry. The drive to integrate civilian and military technology has already caused concern in the United States and other countries, but military analysts and insiders said Beijing still plans to up the pace.

<https://www.scmp.com/news/china/military/article/3125328/china-planning-step-use-civilian-know-how-under-drive-make>

## **Chinese military: fourth aircraft carrier likely to be nuclear powered, sources say**

Minnie Chan

South China Morning Post, March 13, 2021

China's next aircraft carrier is likely to be nuclear powered, according to two people close to the People's Liberation Army (PLA). After a two-year delay because of technical problems, construction work on the vessel resumed earlier this year, the South China Morning Post reported in January, citing a military source. "Shipbuilders and ship propulsion engineers are keen on making a significant breakthrough with the construction of the fourth carrier," a source close to the Chinese navy said on condition of anonymity.

<https://www.scmp.com/news/china/diplomacy/article/3125224/chinese-military-fourth-aircraft-carrier-likely-be-nuclear>

### **China launches medium-lift Long March-7A carrier rocket**

Xinhua, March 12, 2021

China launched its Long March-7A Y2 carrier rocket on Friday from the Wenchang Spacecraft Launch Site in south China's island province of Hainan. The rocket blasted off at 1:51 a.m. (Beijing Time) from the launch site, sending an experimental satellite into the planned orbit. The satellite will be mainly used for in-orbit tests of new technologies including space environment monitoring. A modified version of the Long March-7 rocket, the launch vehicle represents the new generation of China's medium-sized high-orbit rocket. It has a carrying capacity of at least 7 tonnes for the geosynchronous orbit. This was the 362nd flight mission of the Long March rocket series.

[http://www.xinhuanet.com/english/2021-03/12/c\\_139803827.htm](http://www.xinhuanet.com/english/2021-03/12/c_139803827.htm)

### **PLA Deputies discuss accelerating construction of smart border and coastal defense**

Nie Hongjie, Deng Xiguang, Li Lin and Dong Sisi

China Military Online, March 12, 2021

The border defense forces of the Chinese People's Liberation Army (PLA) vigorously carried out informatization construction and introduced various scientific and technological applications into border defense control during the 13th Five-Year Plan period (2016-2020), which have greatly promoted the border management and control capability and improved the work and living conditions of border defense troops. During this year's two sessions, military deputies to the National People's Congress (NPC) from the border and coastal defense forces put forward opinions and suggestions based on their own experience to further strengthen smart border and coastal defense construction.

During the 13th Five-Year Plan period (2016-2020), the military and local governments jointly launched the border defense power grid construction project, thanks to which more than 500 border defense posts are now connected to the national power grid. Microgrid system has been established for remote border defense outposts in plateau regions such as Xinjiang, Tibet, and islands and reefs that do not meet the conditions to connect the national power grid, helping the border and coastal defense troops gradually realize electrification. Moreover, the improved construction of communication base stations in their stationed areas makes it easier for service members to contact the families. The enhanced infrastructures have laid a solid foundation to promote the development of border and coastal defense.

[http://eng.chinamil.com.cn/view/2021-03/12/content\\_10002585.htm](http://eng.chinamil.com.cn/view/2021-03/12/content_10002585.htm)

## **China comes back from 2020 rocket failure with Long March 7A and satellite payload launch**

Kristin Huang

South China Morning Post, March 12, 2021

Technology verification satellite Shiyang-9 was sent to geosynchronous orbit. China plans to construct Tiangong Space Station through 11 launches carried out this year and next year. China's next-generation Long March 7A blasted off from its Wenchang launch site in the southern province of Hainan early on Friday, one year after a failed attempt. The launch sent a technology verification satellite, the Shiyang-9 developed by China Academy of Space Technology, into geosynchronous orbit, matching the Earth's rotation. China Aerospace Science and Technology Corporation (CASC), China's main space contractor, confirmed the launch was successful on its official social media account 40 minutes later.

<https://www.scmp.com/news/china/science/article/3125154/china-comes-back-2020-rocket-failure-successful-launch-long>

## **China advances space cooperation in 2020: blue book**

Forum on China Africa Cooperation, March 11, 2021

China actively promoted international space cooperation in 2020, offering satellite exports and launches, cooperative research and application services to the world, according to a recent report on China's aerospace industry. By the end of last year, 51 Chinese rockets had launched 59 foreign commercial satellites into space, said the 2020 Blue Book of China Aerospace Science and Technology. In January and November, China's Long March rockets took 12 commercial remote sensing satellites developed by Argentina's Satellogic into orbit. The company has agreed with the China Great Wall Industry Cooperation on plans to launch 90 satellites on Long March rockets.

In December, Ethiopia launched its second Chinese-backed satellite from the Wenchang Spacecraft Launch Site in south China's Hainan Province. The preliminary design of the satellite was done in Ethiopia, while a joint Ethiopian-Chinese engineering team did the technical and detailed design. The report said it set a new example of international aid on climate change. At the Johannesburg Summit of the Forum on China-Africa Cooperation in 2015, the Chinese government pledged to provide satellite television for 10,000 African villages. The report said 19 African countries completed project acceptance in 2020, covering 8,162 villages. The project also rolled out educational videos for primary and middle school students in countries like Kenya, South Africa, Ghana, Uganda, and the Democratic Republic of the Congo.

[https://www.fmprc.gov.cn/zfhzlt2018/eng/zjfz\\_1/jmzx/t1859945.htm](https://www.fmprc.gov.cn/zfhzlt2018/eng/zjfz_1/jmzx/t1859945.htm)

## **Chinese military denounces US destroyer's provocation in Taiwan Strait**

China Military Online, March 11, 2021

"The US guided-missile destroyer USS John Finn (DDG-113) sailed through the Taiwan Strait on March 10 to hype the so-called 'freedom of navigation'. China is firmly opposed to it," said Air Force Senior Colonel Zhang Chunhui, spokesperson for the Chinese PLA Eastern Theater Command, in a written statement. "The US naval vessel's action sent erroneous signals,

deliberately interfered and undermined the regional situation, seriously damaged the peace and stability across the Taiwan Strait. China firmly opposes it," stated the spokesperson. The troops of the PLA Eastern Theater Command have conducted whole-process tracking and monitoring on the US destroyer, keeping high alert and preparing to respond to all threats and provocations, Zhang stressed in the statement.

[http://eng.chinamil.com.cn/view/2021-03/11/content\\_10001431.htm](http://eng.chinamil.com.cn/view/2021-03/11/content_10001431.htm)

### **Nuke technology to be utilized for exploring space, deep sea, assisting carbon neutrality: CNNC**

Global Times, March 11, 2021

Nuclear power will provide reliable support in exploring space and deep sea, and achieving the goals of carbon neutrality by 2060, Gu Jun, president of China National Nuclear Corporation (CNNC), told Global Times on Wednesday. "Our techniques have been demonstrated to be the most advanced in the world by International Atomic Energy Agency (IAEA)," said Gu, who is also a deputy to the National People's Congress (NPC). Gu said the domestically designed third-generation nuclear reactor Hualong One is a representative of China's 66-year-nuclear industry development, which had reached a world leading standard. "CNNC had been reached by more than 40 countries to discuss the new nuclear power generator, related techniques and industry chain," said Gu. CNNC had exported seven nuclear reactor sets in three decades, according to Gu.

"Nuclear power will be used in more areas such as space and deep sea," added Gu. He believed that nuclear power can support space travel and deep sea resource exploitation. "By the middle of the 21 century, humans may stay in space and at great depths underwater for a longer period utilizing nuclear power," said Gu.

<https://www.globaltimes.cn/page/202103/1218098.shtml>

### **China, Russia to jointly build lunar post**

Zhao Lei

China Daily, March 10, 2021

China and Russia have agreed to join hands in building and running a robotic scientific outpost on the moon or in lunar orbit, according to the China National Space Administration. China and Russia have agreed to join hands in building and running a robotic scientific outpost on the moon or in lunar orbit, according to the China National Space Administration. The administration said in a statement on Tuesday evening that its head, Zhang Kejian, and his Russian counterpart, Dmitry Rogozin, director-general of state space corporation Roscosmos, signed a memorandum of understanding on joint efforts to build an "international lunar research station" during a teleconference earlier that day after receiving approval from both governments.

The CNSA and Roscosmos will negotiate on matters about the station's planning, design, construction and operations, and will work together to build and run it. Both nations want to open the station to international cooperation so it can serve as a platform to boost scientific exchanges and foster peaceful exploration and development of outer space, according to the statement. It said that the station will be a base on the lunar surface or in a lunar orbit for

comprehensive scientific research and technology demonstration.

<https://global.chinadaily.com.cn/a/202103/10/WS604801eda31024ad0baae0c6.html>

## **2nd Type 055 destroyer enters service**

Zhao Lei

China Daily, March 10, 2021

The People's Liberation Army Navy has recently commissioned its second Type 055 guided-missile destroyer and named it Lhasa, after the capital of the Tibet autonomous region. The Type 055 is often deemed a cruiser outside China as its large size and heavy displacement are comparable to that of the United States' Ticonderoga-class cruiser. Sources said the CNS Lhasa is part of the PLA Navy's North Sea Fleet and uses Qingdao, Shandong province, as its home port.

Developed and built by China State Shipbuilding Corp, the Type 055 is the country's newest class of guided-missile destroyer. According to sources, it has a displacement of more than 12,000 metric tons and is equipped with new types of air-defense, missile-defense, anti-ship and anti-submarine weapons. The vessel has 112 vertical launching cells capable of firing various kinds of missiles, including China's long-range land-attack cruise missile. Its firepower is believed to be double that of the Type 052D class of guided-missile destroyer, previously the PLA Navy's largest and most powerful surface combatant.

<https://www.chinadailyasia.com/article/160049?showpdf=true>

## **PLA to strengthen combat readiness as US calls China strategic threat**

Yang Sheng and Liu Xuanzun

Global Times, March 10, 2021

As a senior US military commander told lawmakers recently that China is "the greatest long-term strategic threat to security in the 21st century," though China has repeatedly said that it has no intention to challenge the US, Chinese experts warned Wednesday that such a hostile attitude held by the US military could increase the risks of conflicts in the region, and regional countries won't share US hostility against China.

Most countries in Asia hope to solve their sovereignty disputes with China, if any, through negotiations, but the US is an outside force trying to further militarize the region and interrupt the peaceful solution of regional issues, so US decision-makers should realize that it is the US, not China, that is the troublemaker, said analysts. China, whether for its own development and sovereignty or the peace of the region, should further reinforce its military power to deter any foreign intervention that threatens regional stability, experts said.

<https://www.globaltimes.cn/page/202103/1218021.shtml>

## **China makes important breakthrough in key technologies of powerful rocket engine**

China Military Online, March 09, 2021

Recently the 500-tonne thrust liquid oxygen and kerosene rocket engine developed by China

Aerospace Science and Technology Corporation (CASC) successfully passed the "half-system on full working condition" trial, marking an important breakthrough in the key technology of China's 500-tonne heavy-duty launch vehicle engine. It is reported the trial is the first full working condition trial run for this type of engine. The smooth start-up, shifting, changing conditions and shutdown process of the trial verified the engine design, manufacturing and trial plans, laying a foundation for the full engine trial run and the follow-up development work, according to the developer.

With fully digitalized design and management, the new engine is currently the world's most powerful twine-tube thrust chamber engine and its comprehensive performance indicators have reached the world's advanced standards, providing three times the thrust of a 120-tonne-thrust LOX kerosene high-pressure staged combustion engine, three percent more specific impulse, 25 percent higher thrust to weight ratio.

[http://eng.chinamil.com.cn/view/2021-03/09/content\\_10000159.htm](http://eng.chinamil.com.cn/view/2021-03/09/content_10000159.htm)

### **China adds 'aircraft hunter' field missile system to export weapons list**

Kristin Huang

South China Morning Post, March 09, 2021

HQ-17AE carries eight short-range missiles designed to protect frontline units from drone and helicopter attacks. It is believed to be the export version of the HQ-17A which made its debut in the 2019 National Day military parade. The latest member of China's home-grown "Flying Mongoose" family of field air defence missile systems has been cleared for export. The HQ-17AE, dubbed a "low altitude aircraft hunter", is designed to keep up with frontline units like tank battalions and protect them from drone and helicopter attacks. It consists of a six-wheeled launch vehicle carrying eight short-range air-defence missiles and a solid-state phased-array radar system.

<https://www.scmp.com/news/china/military/article/3124679/china-adds-aircraft-hunter-field-missile-system-export-weapons>

### **China's annual defense budget in 2021 will increase by 6.8%**

China Military Online, March 08, 2021

In 2021, China's defense expenditure will continue to maintain a moderate and steady growth with an increase of 6.8% over the previous year, said Senior Colonel Wu Qian, spokesperson for the Delegation of the Chinese People's Liberation Army (PLA) and Chinese People's Armed Police (PAP) Force to the 4th session of the 13th National People's Congress (NPC), in an interview with the press today.

According to the spokesperson, the increased defense expenditure will be mainly used in four areas: First, to ensure the launch of major projects and key programs in accordance with the layout of the "14th Five-Year Plan" for Chinese military construction; second, to accelerate the upgrading of armaments and promote the weaponry modernization drive; third, to quicken the transformation of military training, build a new-type military personnel training system, and improve and perfect training support conditions; fourth, conforming to the level of national economic and social development, to improve the lives and welfare of service members and support the military's grass-root construction.

[http://eng.chinamil.com.cn/view/2021-03/08/content\\_9998617.htm](http://eng.chinamil.com.cn/view/2021-03/08/content_9998617.htm)

### **‘China’s military must spend more’ to meet US war threat**

Jun Mai

South China Morning Post, March 08, 2021

China must increase military spending to prepare for a war with a dominant power, according to the country’s top general, raising the spectre of armed conflict with the United States. General Xu Qiliang, second in command of the armed forces after President Xi Jinping, said the spending was necessary to prepare the country for the “Thucydides trap”, the idea that conflict is inevitable when one power rises to displace a great one. “In the face of the Thucydides trap and border problems, the military must speed up increasing its capacity,” said Xu, who is also one of the 25 members of the Politburo, the Communist Party’s inner circle.

<https://www.scmp.com/news/china/politics/article/3124591/chinas-military-must-spend-more-meet-us-war-threat>

### **Nuclear power-related stocks rally despite huge market plunge**

Global Times, March 08, 2021

Nuclear power-related shares rose on Monday after the Government Work Report said that China would enhance nuclear power development, even though domestic stock markets plunged on concerns that the central bank may drain liquidity from the market. The Government Work Report, released during the two sessions, vowed to push forward the use of clean energy and new energy sources, and to develop nuclear power on the premise of safety, contributing to the goal of curbing carbon emissions and reaching carbon neutrality by 2030.

Analysts said that it was the first time that the report had mentioned a development plan for nuclear power in 10 years. Buoyed by the news, the nuclear power sector witnessed a sharp rise at Monday's opening. Shares of nuclear power companies including Lanzhou LS Heavy Equipment Co, Taihai Manoir Nuclear Equipment Co and Taiyuan Heavy Industry Co all rose by the daily limit. CGN Nuclear Technology Development Co was up 1.99 percent at the close.

<https://www.globaltimes.cn/page/202103/1217744.shtml>

### **China's BDS-3 system offers world-class global services**

Li Guoli and Qi Xiaojun

China Military Online, March 06, 2021

Since its official opening to global services, the BDS-3 system, under China’s BeiDou Navigation Satellite System, has been operating stably and continuously providing world-class quality services to users around the world. The results of a real-time test by the Interactive Geophysical Modelling Application System (iGMAS), an international monitoring and assessment system, have showed that the performances on positioning, speed measurement, timing accuracy, and the service availability and continuity of the BDS-3 system all meet the index requirements.



[http://eng.chinamil.com.cn/view/2021-03/06/content\\_9997546.htm](http://eng.chinamil.com.cn/view/2021-03/06/content_9997546.htm)

### **China's defense budget maintains single-digit growth for six consecutive years**

Xinhua, March 05, 2021

China's annual defense budget will maintain single-digit growth for a sixth consecutive year by increasing 6.8 percent in 2021, according to a draft budget report made public. This year's planned defense spending will be about 1.35 trillion yuan (about 209 billion U.S. dollars), read the draft submitted to the fourth session of the 13th National People's Congress for deliberation.

[http://www.xinhuanet.com/english/2021-03/05/c\\_139785389.htm](http://www.xinhuanet.com/english/2021-03/05/c_139785389.htm)

### **To comprehensively boost military training and war preparedness: Chinese Premier**

China Military Online, March 05, 2021

China will boost military training and war preparedness across the board and make overall plans to deal with security risks in all areas, said Chinese Premier Li Keqiang in his government work report on Friday morning. Premier Li Keqiang delivered a government work report at the opening meeting of the fourth session of the 13th National People's Congress (NPC) on March 5 in Beijing. In the report he summarized that in the past year, new major achievements have been made in the construction of national defense and armed forces. China must thoroughly implement Xi Jinping's thinking on strengthening the military, focus on the military's centenary goal, boost the military training and war preparedness across the board, make overall plans to deal with security risks in all areas and in all directions, and enhance the military's strategic capacity to protect the country's sovereignty, security and development interests, Li stated. Premier Li Keqiang also pointed out that China will optimize the layout of national-defense related science and technology industry and improve the national defense mobilization system.

[http://eng.chinamil.com.cn/view/2021-03/05/content\\_9997421.htm](http://eng.chinamil.com.cn/view/2021-03/05/content_9997421.htm)

### **China draws up plan for carbon emissions to peak by 2030, to take active, well-ordered steps to develop nuclear energy**

Cao Siqi

Global Times, March 05, 2021

Aerial photo taken on Aug. 31, 2020 shows a panoramic view of Fuqing project in the city of Fuqing, southeast China's Fujian Province. Fuel loading started Friday at China's first nuclear power unit using Hualong One technology, a domestically developed third-generation reactor design, bringing the unit one step closer to operation. China will draw up an action plan for carbon emissions to peak by 2030 and take active and well-ordered steps to develop nuclear energy on the basis of ensuring its safe use, according to a government work report submitted Friday to the national legislature for deliberation.

China's industrial structure and energy mix will be improved. While promoting the clean and efficient use of coal, we will make a major push to develop new energy sources, and take active and well-ordered steps to develop nuclear energy on the basis of ensuring its safe use, Premier Li Keqiang said while delivering the work report.

<https://www.globaltimes.cn/page/202103/1217411.shtml>

### **China's military steps up drone training in mountainous border areas**

Kristin Huang

South China Morning Post, March 04, 2021

Recent exercises in southwest and far west of the country highlighted by PLA and state television. Meanwhile, military academy says it bought a drone simulation training system that can operate a 'super swarm' China's military is stepping up its use of surveillance and strike drones in the country's mountainous border regions, with recent training highlighted by the PLA and state television. The People's Liberation Army on Thursday released images of about 200 troops taking part in exercises using drones in the southwest of the country. In a post on its official WeChat social media account, the PLA said the training by the 75th Group Army was aimed at improving soldiers' skills in using drones for aerial surveillance and precision strikes.

<https://www.scmp.com/news/china/military/article/3124101/chinas-military-steps-drone-training-mountainous-border-areas>

### **China's AG600 amphibious aircraft begins firefighting capacity testing**

Xinhua, March 04, 2021

China's locally developed AG600 large amphibious aircraft has entered a new flight test phase targeting its firefighting capacities, announced its developer. The AG600 aircraft on Thursday completed the first flight test of its aerial water-dropping functions in Jingmen, central China's Hubei Province, said the Aviation Industry Corporation of China (AVIC). It marked a major step forward for the development of the large amphibious aircraft model, which is of great importance to the country in strengthening its natural disaster prevention and emergency rescue capacities.

The aircraft performed well during the test of its water-dropping capabilities, which is one of the key functions of the amphibious aircraft model. It is expected that the AG600 aircraft will proceed to conduct flight tests dropping water over fire sites before the end of the year, the AVIC said.

[http://www.xinhuanet.com/english/2021-03/04/c\\_139783551.htm](http://www.xinhuanet.com/english/2021-03/04/c_139783551.htm)