

March 03, 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

China's commercial rocket SD-3 to make maiden flight in 2022

Xinhua, March 03, 2021

Smart Dragon-3 (SD-3), the third member of China's Dragon series commercial carrier rockets family, will make its maiden flight in 2022, its developer said. A four-stage solid-propellant rocket, the SD-3 will be the largest and have the highest carrying capacity among the Dragon series, according to the China Academy of Launch Vehicle Technology. With a maximum diameter of 2.64 meters and a takeoff weight of 140 tonnes, the rocket is capable of sending a payload of 1.5 tonnes to the solar synchronous orbit at an altitude of 500 km.

To meet the large-scale commercial launch demands, the rocket's multi-satellite launch capability enables it to carry more than 20 satellites in a single mission, while the cost is just 10,000 U.S. dollars per kg, making it competitive in the market. The rocket maker said the SD-3 was designed for both land and sea launches. China's Dragon series rockets were launched in 2019 for commercial space launch market. The first-generation rocket SD-1 made its maiden flight in August 2019, and it is scheduled to conduct two to three launches this year.

[http://www.xinhuanet.com/english/202103/03/c_139780048.htm#:~:text=BEIJING%2C%20March%203%20\(Xinhua\),2022%2C%20its%20developer%20said%20Wednesday.](http://www.xinhuanet.com/english/202103/03/c_139780048.htm#:~:text=BEIJING%2C%20March%203%20(Xinhua),2022%2C%20its%20developer%20said%20Wednesday.)

China, ROK sign revised memorandum of understanding: Defense Ministry

China Military Online, March 02, 2021

The defense ministries of the People's Republic of China (PRC) and the Republic of Korea (ROK) has signed a revised memorandum of understanding (MOU) on the establishment and use of direct communication lines between the air forces and navies of the two countries, said Senior Colonel Tan Kefei, spokesperson for the Chinese Ministry of National Defense (MND). Tan made the remarks when asked by press to confirm media reports saying the defense ministries of China and ROK has revised the MOU on the establishment and use of direct communication lines between the air forces and navies of the two countries and to give more details of the MOU. This current hotline is the first direct telephone link between the front-line troops of the Chinese military and a foreign military, which has played a positive role in preventing misunderstandings and misjudgments between the Chinese and ROK naval and air forces' front-line troops and strengthening crisis management and control by the two sides, Tan said.

In recent years, the armed forces of China and the ROK have successively carried out Institutional reforms and organizational changes, thus the relevant contents of the MOU no longer conformed to the actual situation of both parties, Tan noted. The defense ministries of the two countries had made consultations and agreed to revise the document and formally signed it on March 2, 2021, the spokesperson added.

http://eng.chinamil.com.cn/view/2021-03/02/content_9994875.htm

China's top 10 scientific advances in 2020

China Daily, March 02, 2021

1. Chinese scientists make remarkable progress in tackling COVID-19
2. Chang'e 5 probe's retrieval of lunar samples
3. Deep-sea manned submersible Fendouzhe's diving record
4. Research on transmission of human genetic materials
5. Transparent ferroelectric single crystals with ultrahigh piezoelectricity
6. Measuring the new height of Mount Qomolangma
7. Ancient DNA reveals evolution and migration history of Chinese populations
8. Recreating history of over 300 million years of biodiversity changes on Earth
9. Biomarkers and potential intervention targets for organ aging in mammals
10. Quantum interference in chemical reactions

https://www.chinadaily.com.cn/a/202103/02/WS603ddcf8a31024ad0baac2df_1.html

Lunar soil sample on display at museum

Lin Qi

China Daily, March 01, 2021

A 100-gram sample of lunar soil was added to the collection of the National Museum of China on Saturday and unveiled for public viewing. It was among nearly 2 kilograms of lunar samples retrieved by China's Chang'e 5 mission late last year. Chang'e 5, launched from the Wenchang Space Launch Center in Hainan province on Nov 24, touched down on the moon on Dec 1. The 23-day mission, which brought back lunar rocks and soil, was China's first such space endeavor.

The lunar soil is on display inside a specially designed transparent container at the museum. The synthetic quartz vessel replicates a zun, a bronze wine holder often used at rituals in the Shang (c.16th century-11th century BC) and Western Zhou (c.11th century-771 BC) dynasties. The container is 38.44 centimeters tall, representing the average distance from Earth to the moon of 384,400 kilometers. The soil fills a globe, symbolizing the moon, in the center of the container, which has a map of China at the base. The sample is at the heart of an exhibition on the National Museum's ground floor that opened on Saturday and charts China's progress in space missions, especially lunar exploration.

<https://www.chinadaily.com.cn/a/202103/01/WS603c402ea31024ad0baabae2.html>

China to conduct 40-plus space launches in 2021

An Puzhong and Wang Lingshuo

China Military Online, March 01, 2021

China Aerospace Science and Technology Corporation (CASC) released the 2020 blue paper on China's space exploration activities in Beijing on February 24, 2021, which reviewed the

world's space activities in 2020 and unveiled the CASC's plan for space missions in 2021. As a leading force in China's space industry, the CASC's Long March carrier rockets had conducted 34 space launch missions in 2020, sending a total of 82 spacecraft into space, accounting for 92.1% of the total number and 99.2% of the total weight launched by China in 2020. In this way, the CASC led its global peers in the volume of space launch missions.

According to the blue paper, China is expected to launch more than 40 times in 2021; the manned space station project will enter the stage of key technical verification and construction; the Tianwen-1, China's first Mars probe, will reach Mars to achieve orbiting, landing and roving; several civil space infrastructure satellites will be launched to meet China's needs for economic and technological development. It is learnt that China's crewed space exploration program has entered the stage of preparation for space station construction. The core module of the space station is planned to be launched by the Long March-5B rocket at China's Wenchang Satellite Launch Center this spring. The crewed space exploration program plans to complete a total of 11 space launch missions from 2021 to 2022 to send the space station's core module, experiment modules, crewed spacecraft and cargo vessel into space.

http://eng.chinamil.com.cn/view/2021-03/01/content_9993945.htm

China-India border dispute: Delhi security officials fear DMZ favours Beijing

South China Morning Post, March 01, 2021

India and China are forming demilitarised zones along their disputed Himalayan border and will no longer patrol a 9km stretch at Pangong Tso. But Indian defence and security officials are concerned about pulling back from strategic high ground. After the deadliest fighting in decades, India and China are setting up demilitarised areas along their Himalayan border – a move that has rankled some members of India's security establishment. Soldiers from both countries for now will no longer patrol a 9km (6 mile) stretch on the north bank of Pangong Tso, a glacial lake where troops clashed last year, according to two Indian officials aware of the developments.

The agreement would result in India pulling back from strategic high ground occupied in a stealth operation last August, they said.

<https://www.scmp.com/news/asia/south-asia/article/3123595/china-india-border-dispute-delhi-security-officials-fear-dmz>

Three candidate names for China's Mars rover come out after global poll

Xinhua, March 02, 2021

Three possible names for China's first Mars rover have come out after a 40-day global online poll. "Zhurong," a fire god in ancient Chinese mythology, tops the list while "Nezha," a beloved Chinese mythological figure, and "Hongyi," which means having a broad and strong mind in Chinese, ranked second and third, respectively. The China National Space Administration in January unveiled a list of 10 selections for the name after a global naming campaign that kicked off in late July 2020. Netizens at home and abroad were invited to vote

on 10 candidates from Jan. 20 to Feb. 28.

Starting Tuesday, a panel of experts will also vote for the final candidates. The administration will decide the top three names based on public voting and expert opinions.

http://www.xinhuanet.com/english/2021-03/02/c_139777663.htm

New ground-to-air missile weapon system commissioned to Army brigade

China Military Online, March 01, 2021

Recently, a new ground-to-air missile weapon system was commissioned to a brigade under the PLA 78th Group Army. The new weapon system can perform multiple operations for the field air defense with high mobility, quick response, high-precision interception and good counter-jamming performance, which will substantially promote the troops' capability to conduct diversified military tasks.

Yang Hongsheng, a battalion commander under this brigade, said that they will give full play to the high-end information technologies of this weapon system, and conduct training with new methods in severe environments, aiming to form combat capability as soon as possible.

http://eng.chinamil.com.cn/view/2021-03/01/content_9993966.htm

China-Russia comprehensive strategic partnership serves as an example of international relations: Defense Ministry

China Military Online, March 01, 2021

China-Russia comprehensive strategic partnership of coordination for the new era serves as an example of new-type international relations featuring mutual respect, justice and win-win cooperation, said the Information Office of China's Ministry of National Defense in a written statement. It is reported that the foreign ministers of the two countries said in a phone discussion in early February that there's no limit or restricted area for China-Russia strategic coordination, which is all-weather and all-dimensional. Some scholars thought that facing military threat from the NATO, Russia will probably seek military alliance with China. In responding to the above comment, the statement stressed that the relations between China and Russia are different from military alliance among some countries, noting that China-Russia relations are non-aligned, non-confrontational and not against third parties. China-Russia mil-to-mil relations continues to remain high, which is an important hallmark of the high-level and special relations between the two countries and constitutes the highlights and important support of strategic cooperation, said the statement.

2021 marks the 20th anniversary of the signing of the China-Russia Treaty of Good-neighborliness and Friendly Cooperation. "China is willing to work with Russia to implement important consensus reached by the two heads of state, enhance cooperation on high level visits, strategic coordination, joint exercise and training, equipment and technology," stressed the statement. It also pointed that the two countries will develop a new type of military

relations in the new era in an all-round way and provide positive energy for protecting common interests of the two countries and maintaining world peace and stability.

http://eng.chinamil.com.cn/view/2021-03/01/content_9993977.htm

China enters heavy rocket race with planned 100-tonne launch vehicle

Kristin Huang

South China Morning Post, March 01, 2021

Rocket's payload will make it more powerful than world-leading SpaceX Falcon Heavy with development expected over next five years. Lunar exploration commander Luan Enjie said it will speed up the country's space programme including infrastructure building. China is developing a super heavy-lift rocket that will be significantly more powerful than the SpaceX Falcon Heavy and capable of reaching the moon, according to the head of its lunar exploration programme.

In an interview with state broadcaster CCTV, Luan Enjie said feasibility studies for the 100-tonne launch vehicle had been completed and the project was now at the follow-up research stage.

<https://www.scmp.com/news/china/science/article/3123623/china-enters-heavy-rocket-race-planned-100-tonne-launch-vehicle>

China urges relevant countries not to provoke in South China Sea and escalate tensions: Defense Ministry

China Military Online, March 01, 2021

Currently, the situation in South China Sea is generally stable and countries in the region are committed to making it a sea of peace, friendship and cooperation, said the Information Office of China's Ministry of National Defense in a written statement, urging relevant countries to make constructive contributions to the peace and stability of the South China Sea. The statement came in response to some comments that the South China Sea might become a wrestling ground for major powers, as warships of the French Navy sailed through the South China Sea recently and British Royal Navy claimed that they are preparing for an operation in the region.

Noting that China is resolved to maintain peace and stability in the South China Sea, the statement voiced strong opposition to the military presence ramped up by any country in the name of "freedom of navigation," and pointed out that such moves create tension, intervene in regional affairs and damage common interests of regional countries. The statement stressed that China hopes relevant countries will make constructive contributions to the peace and stability of the South China Sea, instead of making provocations and heating up tensions.

http://eng.chinamil.com.cn/view/2021-03/01/content_9993924.htm

PLA Navy commissions two Type 056A corvettes

China Military Online, February 25, 2021

Two Type 056A corvettes, Nanyang (Hull 619) and Shangqiu (Hull 618) were recently commissioned to the Chinese People's Liberation Army (PLA) Navy, according to a report by China Central Television (CCTV) recently. According to the designing unit of these two ships, the 701st Institute of China Shipbuilding Industry Corporation (CSIC), the Type 056 series guided missile corvette is independently developed and manufactured by China, with a displacement of more than 1,300 tons. It is learnt that the prototype 056 and its variant Type 056A are the main force of China's coastal defense ships. The Type 056 is mainly used for offshore defense and daily patrol tasks, while the Type 056A has enhanced anti-submarine capabilities on the basis of the prototype.

http://eng.chinamil.com.cn/view/2021-02/25/content_9991981.htm

Chinese bombers in strike exercises after US escalation in South China Sea

Teddy Ng

South China Morning Post, February 25, 2021

At least 10 Chinese bombers took part in maritime strike exercises in the South China Sea, immediately after an escalation of US military presence in the disputed waterway. Military experts said the exercises – which involved the Chinese navy's most advanced H-6J bomber – aimed to show China's capability of countering recent US activities, which included dual carrier operations in February. One day after state broadcaster CCTV revealed details of the PLA exercises, a US destroyer transited the Taiwan Strait, further ratcheting up tensions in the region.

<https://www.scmp.com/news/china/military/article/3123076/chinese-bombers-strike-exercises-after-us-escalation-south>

PLA naval escort taskforce carries out armed rescue drill in Gulf of Aden

China Military Online, February 25, 2021

The 37th escort taskforce of the Chinese People's Liberation Army (PLA) Navy, who is carrying out escort missions in the Gulf of Aden, held an anti-terrorism and anti-piracy drill featuring the rescue of hijacked merchant ships. In the first stage, the comprehensive supply ship Honghu (Hull 963) simulated the hijacked merchant ship. Upon receiving the distress message, the command post of the escort taskforce immediately organized troops to go forward for rescue. A helicopter took the special operations force (SOF) members into the air for close reconnaissance. Then the command post sent out two SOF groups for the hostages

rescue task by rigid-hull inflatable boats. Under the cover of shipboard firepower, the two groups of special operations members boarded the hijacked ship and successfully rescued the "hostages".

In the second stage, the guided-missile destroyer Changsha (Hull 173) was set as the hijacked merchant ship. According to the actual situation, the command post quickly dispatched a helicopter for rescue operation. The SOF members boarded the hijacked ship by rope-rappelling, carried out cabin search, and successfully rescued all the hostages. Besides, the escort taskforce also carried out training on light weapons shooting and rescue for battle wounds.

http://eng.chinamil.com.cn/view/2021-02/25/content_9991998.htm

Chinese surveillance plane test flight hints at advanced aircraft carrier design

Liu Zhen

South China Morning Post, February 24, 2021

There are stronger signs that China's next aircraft carrier will be fitted with an advanced type of aircraft launch system, with official confirmation of a test flight of a carrier-based early warning plane. State broadcaster CCTV confirmed in a report on the weekend that the KJ-600, the country's first domestically developed fixed-wing early warning aircraft, had a test flight in Xian, Shaanxi province, in late January. The KJ-600 is designed to operate from an aircraft carrier but its weight and turboprop engines make it less powerful than a jet, requiring help from a catapult for take-off.

<https://www.scmp.com/news/china/military/article/3122827/chinese-surveillance-plane-test-flight-hints-advanced-aircraft>

Tianwen 1 probe enters preset parking orbit

Zhao Lei

China Daily, February 24, 2021

China's Tianwen 1 robotic probe entered its preset parking orbit above Mars and will fly in this orbit for about three months before releasing its landing capsule, said the China National Space Administration. The spacecraft, which has entered a crucial stage in China's first interplanetary exploration mission after seven months of lengthy space voyage, conducted its third near-Mars deceleration maneuver at 6:29 am and then moved into an orbit with a perigee of about 280 kilometers, the administration said in a brief statement.

All of the seven mission payloads on the probe's orbiter will be gradually activated during the probe's three-month stay in the orbit to carry out scientific tasks and also to observe and analyze the landforms and weathers of the optimal landing site, it noted. Tianwen 1, the country's first independent Mars mission, was launched by a Long March 5 heavy-lift carrier rocket on July 23 from the Wenchang Space Launch Center in Hainan province, kicking off

the nation's planetary exploration program. The 5-metric ton probe, which consists of two major parts - the orbiter and the landing capsule- has flown for 215 days and about 475 million km on its journey to Mars. The average flight speed was about 100,000 km per hour. Currently, it is about 212 million km away from Earth, the space administration said.

<https://global.chinadaily.com.cn/a/202102/24/WS6035a607a31024ad0baaa9f0.html>

102nd China-Laos-Myanmar-Thailand joint patrol on Mekong River kicks off

Wang Yan

China Military Online, February 24, 2021

As three law enforcement boats set sail at Jingha Port, Xishuangbanna Dai Autonomous Prefecture in southwest China's Yunnan Province, at 9 a.m. on February 23, the 102nd China-Laos-Myanmar-Thailand joint patrol on Mekong River officially kicked off, according to a news release by the Press Office of Yunnan Provincial Public Security Department. According to a report by the Joint Command of the patrol, the four sides will adopt a combination of full-line and segmented patrols to carry out this joint patrol and law enforcement operation. They will strengthen the management and control of key water areas of the Mekong River and build a dense safety net for pandemic control.

Before the operation, the commanders from China, Laos, Myanmar and Thailand held a multilateral information exchange meeting through video conference. The four parties notified and exchanged information on the recent security situation in the Mekong River Basin, as well as the works on the fight against drug cases and the COVID-19 pandemic.

http://eng.chinamil.com.cn/view/2021-02/24/content_9991359.htm

China, Singapore hold joint naval exercise

Mo Xiaoliang and QianXiaohu

China Military Online, February 24, 2021

The 36th Chinese naval escort taskforce held a joint naval exercise with the Singapore navy in waters near Singapore on February 24, according to the PLA Navy Spokesperson Senior Captain Gao Xiucheng. The joint exercise mainly practiced training subjects among the fleet formations such as rendezvous, maneuver and separation of the ships, as well as communication, joint search and rescue and other operations. Senior Captain Gao Xiucheng said that the exercise resulted from a consensus reached by the navies of the two countries to enhance mutual trust, deepen friendship, promote cooperation and jointly promote the building of a maritime community with a shared future.

http://eng.chinamil.com.cn/view/2021-02/24/content_9991205.htm

**China has made great efforts and played a key role to bring the JCPOA back on track:
FM**

Global Times February 24, 2021

China's Foreign Ministry Spokesperson Wang Wenbin's Regular Press Conference on February 24, 2021.

Q: Iran said on February 23 it had started to restrict some site inspections by the IAEA. The foreign ministers of France, Germany, and Britain said in a joint statement that they "deeply regret" the move by Iran. Permanent Representative of Russia to the IAEA said that Moscow hopes Iran's suspension of the Additional Protocol of the Joint Comprehensive Plan of Action (JCPOA) will not last for a long period of time. Do you have any comment on this? We noted that there have been frequent interactions on the issue of U.S. return to the JCPOA in recent days. What has China done with respect to that?

A: China highly values the Iranian nuclear issue, actively advances the political and diplomatic settlement process, and upholds the international non-proliferation regime as well as peace and stability in the Middle East. China has made great efforts and played a key role in order to bring the JCPOA back on track. Besides, the principal official of the MFA's Department of Arms Control stays in close communication with all parties of the Iranian nuclear deal. China will continue to preserve the JCPOA, work for the resumption of full and effective compliance at an early date so as to better safeguard peace and stability in the Middle East. The Iranian nuclear situation is at a critical juncture, presenting both opportunities and challenges. China always holds that U.S. return to the JCPOA and lifting of sanctions on Iran holds the key to breaking the deadlock. China appreciates the reaching of a temporary bilateral technical understanding on the safeguards issue between Iran and the IAEA and noticed that both sides have spoken highly of this result. China hopes that the relevant understanding could be faithfully implemented and urges other parties to play a constructive role in this process.

<https://www.globaltimes.cn/page/202102/1216483.shtml>

Real war: China to change the way it fights

Dave Makichuk

Asia Times, February 23, 2021

The Chinese military said it will build a new type of training system that would strengthen its capability 'to win wars'. The noose, shall we say, is slowly tightening. America, now angered and awakened, is slowly turning all of its military might in one direction, for one reason — the containment of China.

According to a Global Times report over the weekend, which quotes Xinhua sources, the Chinese military announced it will build a new type of training system that would improve military training in all respects, strengthen the capability “to win wars” and build the Chinese military into a world-class one. The new military training system will focus on ensuring PLA exercises are the same as real wars to deal with rapidly changing global situations and external threats, Chinese military analysts said. Approved by Chinese President Xi Jinping, also chairman of the Central Military Commission (CMC), the CMC has released a decision on fostering a new type of military training system, the Xinhua News Agency reported. The decision stressed efforts to speed up the establishment of the training system, to improve

military training in all respects and to build the PLA into a world-class armed force, Xinhua said. It also underscored promoting combat-oriented training, exploring new training paradigms and improving the management of training operations, Xinhua reported. A more detailed report, published by the PLA Daily, explained that the decision asked the Chinese military to train as if exercises are real wars, boost joint exercises, enhance training with technology, strengthen talent support and follow patterns and laws of training and ... again, winning wars.

<https://asiatimes.com/2021/02/real-war-china-to-change-the-way-it-fights/>

Chinese weapons shine at Mideast expo

Liu Xuanzun

Global Times, February 23, 2021

China's arms industry has brought a broad selection of weapons and equipment to an ongoing major large-scale international arms expo in the Middle East, attracting wide interest, with analysts saying on Tuesday that Chinese arms have prospects in the defense market in the region despite the COVID-19 pandemic. Multiple Chinese arms firms joined the 15th International Defense Exhibition and Conference (IDEX) in Abu Dhabi, the United Arab Emirates, under the unified brand of "China Defense" on Sunday, China Central Television (CCTV) reported on Tuesday.

The HJ-12 portable anti-tank missile, SR-5 multiple launch rocket system, CM-501GA multipurpose tactical strike missile system, WS-43 loitering munitions system, L-15 advanced training jet, CH series drones and Wing Loong II armed reconnaissance drone are among key Chinese items at IDEX 2021, the report said, noting that they garnered wide interest. These products are carefully selected to meet the demands of countries in the Middle East, Wei Dongxu, a Beijing-based military expert, told the Global Times.

<https://www.globaltimes.cn/page/202102/1216343.shtml>

China explores space with self-reliance, open mind

Xinhua, February 23, 2021

Chinese President Xi Jinping met representatives of space scientists and engineers who participated in the research and development of the Chang'e-5 lunar mission in Beijing. Xi, also general secretary of the Communist Party of China Central Committee and chairman of the Central Military Commission, also visited an exhibition on the lunar samples brought back by the Chang'e-5 probe and the achievements of China's lunar explorations. The Chang'e-5 probe, comprising an orbiter, a lander, an ascender and a returner, was launched on Nov. 24, 2020. The return capsule landed on Dec. 17, retrieving about 1,731 grams of lunar samples. As China's most complicated space project, the Chang'e-5 mission has achieved extraterrestrial sampling and returning for the first time. It is another major achievement in overcoming difficulties by giving full play to the advantages of the new system of pooling national resources and strength, marking a great step forward in China's space industry.

With the goal of realizing the country's self-reliance and self-improvement in science and technology, Chinese scientists are doing their best to ensure core technologies are self-developed and controllable by China, while keeping the initiative for innovation and development securely in its own hands. Self-confidence can keep a nation moving forward steadily on the road to the future. Independent innovation improves such confidence remarkably. It is self-reliance that has enabled China to stand firmly among the nations of the world, and no country or force can stop China's step toward new heights in science and technology.

http://www.xinhuanet.com/english/2021-02/23/c_139760803.htm

China refits combat trucks in Tibet to take on Indian military

Kristin Huang

South China Morning Post, February 23, 2021

Wheel bases have replaced tracks on two kinds of vehicles to streamline logistics and for faster deployment, report says. Changes will allow troops to use various weapons while maintaining one system, analyst says. The Chinese military has given two of its combat vehicles a major makeover to improve their ability to take on Indian troops in high-altitude warfare, according to a Chinese defence technology magazine. On its official WeChat social media account on Saturday, the magazine said the track chassis on a number of howitzers and anti-tank missile carriers had been replaced with wheel bases to allow for quicker deployment over mountainous terrain. “The change of chassis was no coincidence – it was specifically prepared for plateau warfare against the Indian army,” the Ordnance Industry Science Technology report said.

<https://www.scmp.com/news/china/military/article/3122802/china-refits-combat-trucks-tibet-take-indian-military>