

Nuclear, Missile & Space Digest

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A Fortnightly Newsletter from the MP-IDSA

November 30, 2024

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A. India

India should secure supply chains for nuclear fuel, says MEA special secretary

Mint, November 19, 2024

Speaking at the CII Energy Security Conference in New Delhi on Tuesday, Kumaran noted that India's energy transition has drawn the country into global supply chains of solar modules, wind-turbines, critical minerals and semiconductors, and that control over these resources could cause geopolitical tensions and give rise to new coalitions.

The Indian government is looking to increase India's nuclear power capacity from 7 GW at present to 22 GW by 2032 and has identified 18 potential sites to set up nuclear power plants. It hopes nuclear power will play a key role in helping the country achieve its target of 500 GW of non-fossil-fuel energy by 2030.

<https://www.livemint.com/industry/energy/india-should-secure-supply-chains-for-nuclear-fuel-says-mea-special-secretary-11732020918750.html>

China outpaces India in nuclear aircraft carrier race with new breakthrough

Business Standard, November 25, 2024

On November 11, the *Associated Press* reported that a prototype reactor for a large surface warship had been constructed at a mountain site near Leshan in Sichuan province. Research, conducted by the Middlebury Institute of International Studies in California and provided to the news agency, suggested that China's 701 Institute, which oversees aircraft carrier development, had acquired reactor equipment "intended for installation on a large surface warship".

This conclusion was drawn from publicly accessible documents, including an environmental impact report identifying the project as "national defence-related", and satellite imagery captured between 2020 and

2023 that showed the development of reactor-related facilities.

Currently, the United States (US) operates 11 nuclear-powered carriers, while France has one, the *Charles de Gaulle*. China's ambitions for a nuclear-powered aircraft carrier have long been speculated upon, with many seeing it as a critical step towards equipping the People's Liberation Army (PLA) Navy with blue-water capabilities. The *Associated Press* report may be the clearest indication yet that Beijing is pursuing this goal.

https://www.business-standard.com/external-affairs-defence-security/news/china-outpaces-india-in-nuclear-aircraft-carrier-race-with-new-breakthrough-124112500654_1.html

NTPC may invest Rs 4 lakh crore in nuclear power over two decades

The Economic Times, November 27, 2024

NTPC Ltd, India's largest power producer, plans to invest ¹ 3-4 lakh crore in nuclear power, aiming for 20 GW capacity by 2047. A joint venture with NPCIL will kickstart the initiative with the 2,800 MW Mahi Banswara project. NTPC also targets 60 GW of renewable energy by 2032, with a significant investment planned for solar, wind, and green fuels.

<https://economictimes.indiatimes.com/industry/energy/power/ntpc-may-invest-rs-4-lakh-crore-in-nuclear-power-over-two-decades/articleshow/115741715.cms?from=mdr>

Why India's latest Sun mission finding is crucial for the world

BBC, November 27, 2024

Scientists in India have reported the "first significant result" from Aditya-L1, the country's first solar observation mission in space.

The new learnings, they said, could help keep power grids and communication satellites out of harm's way the next time solar activities threatened infrastructure on Earth and space.

On 16 July, the most important of the seven scientific instruments Aditya-L1 is carrying – Visible Emission Line Coronagraph, or Velc – captured data that helped scientists estimate the precise time a coronal mass ejection (CME) began.

Studying CMEs – massive fireballs that blow out of the Sun’s outermost corona layer – is one of the most important scientific objectives of India’s maiden solar mission.

“Made up of charged particles, a CME could weigh up to a trillion kilograms and can attain a speed of up to 3,000km [1,864 miles] per second while travelling. It can head out in any direction, including towards the Earth,” says Prof R Ramesh of the Indian Institute of Astrophysics that designed Velc.

<https://www.bbc.com/news/articles/c0qdy5dg7v7o>

India successfully tests K-4 nuclear-capable ballistic missile from INS Arighaat

The Indian Express, November 28, 2024

India has tested a nuclear-capable ballistic missile with a range of around 3,500 km from a nuclear-powered submarine in the Bay of Bengal, in a major boost to its nuclear deterrence and strategic capabilities, people familiar with the matter said on Thursday.

With the test, India became part of a small group of nations having the capability to fire a nuclear missile from land, air and undersea.

The K-4 missile was tested from submarine INS Arighaat off the coast of Visakhapatnam on Wednesday, they said. It was the first test of the submarine-launched ballistic missile (SLBM) from a submarine, the people said. The solid-fuelled missile was tested at least five times in the last few years from submersible platforms.

<https://indianexpress.com/article/india/india-k-4-nuclear-capable-ballistic-missile-nuclear-ins-arighaat-9695058/>

Indian astronauts selected for joint ISRO-NASA mission to International Space Station complete initial training

The Hindu, November 29, 2024

The Indian Space Research Organisation (ISRO) on Friday (November 29, 2024) said that Indian astronauts Group Captain Shubhanshu Shukla and Group Captain Prasanth Balakrishnan Nair who have been selected for the upcoming Axiom-4 mission to the International Space Station (ISS) have completed the initial phase of training.

“Towards the goal of accomplishing a joint ISRO-NASA effort to the International Space Station, the two Gaganyatris (Prime-Group Captain Shubhanshu Shukla and Backup-Group Captain Prasanth Balakrishnan Nair) assigned for Axiom Mission 4 (Ax-4) commenced their training in the U.S.A from first week of August, 2024. The initial phase of training has been completed successfully by the Gaganyatris,” ISRO said.

<https://www.thehindu.com/sci-tech/science/indian-astronauts-selected-for-joint-isro-nasa-mission-to-international-space-station-complete-initial-training/article68926601.ece>

India-Russia strengthen nuclear cooperation: Key visit fosters energy collaboration

Financial Express, November 29, 2024

A high-level delegation from the Indian Embassy in Russia recently completed a two-day visit to key Russian nuclear facilities, underscoring the deepening energy cooperation between the two countries. The delegation, which included Nikhilesh Giri, Deputy Chief of Mission at the Indian Embassy, Vivek Singha, First Secretary, and Swapnil Srivastava, Head of the Nuclear Power Corporation of India Limited (NPCIL) Representative Office in Russia, visited the Izhora plant and Leningrad Nuclear Power Plant (NPP),

two critical sites in Russia's nuclear energy infrastructure.

This visit follows important discussions held earlier this year in both Russia and Mumbai, where India and Russia reviewed their ongoing nuclear energy projects and explored further avenues for collaboration, particularly in nuclear plant construction in India.

<https://www.financialexpress.com/business/defence-india-russia-strengthen-nuclear-cooperation-key-visit-fosters-energy-collaboration-3680143/>

B. China

Satellite images and documents indicate China working on nuclear propulsion for new aircraft carrier

Associated Press, November 11, 2024

China has built a land-based prototype nuclear reactor for a large surface warship, in the clearest sign yet Beijing is advancing toward producing its first nuclear-powered aircraft carrier, according to a new analysis of satellite imagery and Chinese government documents provided to The Associated Press. China's navy is already the world's largest numerically, and it has been rapidly modernizing. Adding nuclear-powered carriers to its fleet would be a major step in realizing its ambitions for a true "blue-water" force capable of operating in seas far from China in a growing global challenge to the United States.

<https://apnews.com/article/china-nuclear-aircraft-carrier-3e693365eb914324cc5e6b7dd33df73b>

Commercial space firm launches first satellite for foreign client

China Daily, November 12, 2024

CAS Space, a Beijing-based rocket maker owned by the Chinese Academy of Sciences, conducted the fifth flight of its Kinetica 1 rocket model, transporting 15 satellites, including one built by China for Oman, into space. It marked the first time that a Chinese commercial space company has launched any satellite for a foreign client. It is also the

first time that an Omani satellite has been successfully put into orbit. Among the satellites launched by the rocket, the IRSS-1 was designed and built by the China Academy of Space Technology, a subsidiary of the State-owned space conglomerate China Aerospace Science and Technology Corp, for the Omani space industry startup Oman Lens.

<https://www.chinadaily.com.cn/a/202411/12/WS6732b0bba310f1265a1cccb8.html>

Chang'e-6 lunar samples on display at 15th Airshow China

CGTN, November 12, 2024

Samples collected from the moon's far side by China's Chang'e-6 mission are on display at the 15th China International Aviation and Aerospace Exhibition (Airshow China) in Zhuhai City, south China's Guangdong Province, according to the China National Space Administration (CNSA). The lunar soil on display, weighing about 75 milligrams, represents

the first public welfare samples from Chang'e-6. It was collected from the largest, deepest and oldest impact crater on the far side of the moon, where the lunar crust is at its thinnest.

Visitors to the event will be able to view the samples up close. "The lunar samples are expected to draw significant public interest," said Zhang Tao, an official with the CNSA.

<https://news.cgtn.com/news/2024-11-12/Chang-e-6-lunar-samples-on-display-at-15th-Airshow-China-1ysAP6NhlS/p.html>

Domestically developed missiles of internationally acknowledged defence-penetration technologies showcased at Airshow China

Global Times, November 13, 2024

Cruise missiles including CM-98, YJ-12E and YJ-18E showcasing two globally acknowledged defence-penetration technologies have been put on display at

the ongoing 15th Airshow China, which experts noted highlighting the range and diversity in China's cruise missile development. The air launched stealth cruise missile CM-98 developed by China Aerospace Science and Industry Corporation Limited (CASIC), China's biggest developer of defence weapons and equipment, made its debut at the 15th Airshow China, which kicked off in Zhuhai, South China's Guangdong Province.

<https://www.globaltimes.cn/page/202411/1322984.shtml>

US acts greatest threat to space security and biggest instigator of space arms race: Defence Spokesperson

Ministry of National Defence of the People's Republic of China, November 15, 2024

Facts have proven that the US is the greatest threat to space security and the biggest instigator of space arms race," said Senior Colonel Zhang Xiaogang, spokesperson for China's Ministry of National Defence, at the press briefing. The spokesperson made these remarks in response to the recent irresponsible words from the commander of the United States Space Command (USSPACECOM), which blamed China for developing a large number of different categories of space weapons, and threatened to deploy anti-satellite weapons targeting Russia and China in 2025. "The US has been using the so-called 'China threat in space' as a pretext to deploy anti-satellite weapons.

It is a pure distortion of facts," said Zhang, adding that the US defines space as a "war-fighting domain", continues to expand its space forces, forms military alliances in this regard, and keeps militarizing the space, which pose grave threats to the common security and development interests in space of all countries.

http://eng.mod.gov.cn/xb/News_213114/TopStories/16352106.html#:~:text=Ministry%20of%20National%20Defense,-Home&text=BEIJING%2C%20Nov.,press%20briefing%20on%20Friday%20afternoon.

China issues list for export control of dual-use items, showing prudent approach: MOFCOM

Global Times, November 16, 2024

China's Ministry of Commerce (MOFCOM), along with the Ministry of Industry and Information Technology, the General Administration of Customs, and the State Cryptography Administration, issued a list for export control of dual-use items, which will take effect on December 1, MOFCOM said. The list will be implemented along with a regulation taking effect on the same day. China has always adhered to the principles of rationality, prudence, and moderation in the control of dual-use items, a MOFCOM spokesperson said, noting that there are only around 700 items on the list, far fewer than those from other major countries and regions.

<https://www.globaltimes.cn/page/202411/1323176.shtml>

Tianzhou 7 cargo spacecraft leaves; successor docks at Tiangong

China Daily, November 18, 2024

China's Tianzhou 7 cargo spacecraft burned up as it reentered Earth's atmosphere as planned, according to the China Manned Space Agency. Tianzhou 7 detached from the Tiangong space station on November 10 and then started a weeklong solo flight before beginning the process of atmospheric re-entry. During its solo flight, the craft fulfilled its final task — releasing a small educational satellite into its preset orbit. The cargo vessel was launched in January from the Wenchang Space Launch Center in Hainan province.

<https://www.chinadaily.com.cn/a/202411/18/WS673a96faa310f1265a1cdf9a.html>

Chinese researchers working on six-legged robot for future lunar missions

Global Times, November 18, 2024

Chinese researchers are working on the development of future hexapod robots,

aiming to achieve a qualitative breakthrough in the robot for lunar exploration. The six-legged robot offers enhanced stability, smoother motion, and superior load-bearing capacity, China Central Television (CCTV) reported. When the hexapod robot walks, it raises three legs at a time, while the remaining three form a stable triangular base to support the body. This allows the robot to maintain stability even if one leg is damaged. "For future lunar robot development, we have also created an integrated landing and walking robot, to achieve a significant breakthrough in lunar exploration technology," said Gao, a professor at the School of Mechanical Engineering at Shanghai Jiao Tong University, who is in charge of the robot's development.

<https://www.globaltimes.cn/page/202411/1323290.shtml>

Chang'e-6 Sample Studies Cast Light on the Moon's Far Side

Chinese Academy of Sciences, November 18, 2024

The latest discoveries achieved via studies of lunar rock samples retrieved by China's Chang'e-6 spacecraft were published in the world's leading scientific journals, revealing the volcanic history of the moon's lesser-known far side, which is distinct from its near side. Rock samples returned by Chang'e-6, which had touched down on the lunar surface a few months earlier, have revealed two volcanic events that occurred on the moon's far side 2.8 billion years ago and 4.2 billion years ago, respectively, according to a new study published in the journal *Nature*. In the study, researchers at the Institute of Geology and Geophysics of the Chinese Academy of Sciences (CAS) analyzed 108 basalt fragments from lunar samples collected at the Chang'e-6 landing site.

https://english.cas.cn/newsroom/cas_media/202411/t20241118_694563.shtml

The true aims of China's nuclear buildup

Foreign Affairs, November 21, 2024

Since 2018, American defence analysts have repeatedly identified China as the greatest threat to U.S. national security. They have variously described Beijing as a "systemic challenge," a "pacing threat," and even a "peer adversary," owing to China's massive military buildup, belligerent behavior in the Asia-Pacific, and global campaign of economic coercion. These vague, buzzy phrases point to a growing consensus: that China's ambitions greatly imperil American national interests. There is no consensus, however, on the intention behind China's strategic moves, chief among them its rapid buildup of nuclear weapons.

<https://www.foreignaffairs.com/china/true-aims-chinas-nuclear-buildup>

US should fulfill its special and priority responsibility for nuclear disarmament: FM

Ministry of Foreign Affairs, the People's Republic of China, November 21, 2024

In recent years, the US has kept upgrading its nuclear triad, increasing the role of nuclear weapons in national security policies, strengthening nuclear sharing and extended deterrence with its allies, and promoting forward deployment of medium-range missiles and anti-missile systems. These moves seriously disturb global strategic balance and stability, intensify military competition and confrontation, and increase nuclear risks. The US should earnestly fulfill its special and primary responsibility for nuclear disarmament, further make drastic and substantive cuts to its nuclear arsenal, create conditions for the ultimate realization of complete and thorough nuclear disarmament, and contribute to reducing strategic risks and upholding regional peace and stability.

https://www.fmprc.gov.cn/eng/xw/fjrbt/lxjzh/202411/t20241121_11530614.html

China's Non-Proliferation Policy and Measures

Ministry of Foreign Affairs, the People's Republic of China, November 21, 2024

China has always stood for the complete prohibition and thorough destruction of weapons of mass destruction (WMD), including nuclear, biological and chemical weapons, and is firmly against the proliferation of such weapons and their means of delivery. China does not support, encourage or assist any country in developing WMD and their means of delivery. China firmly supports international non-proliferation efforts, and stands for the attainment of the non-proliferation goal through political and diplomatic means. To this end, on the one hand, the international non-proliferation mechanism should be constantly improved and export controls of individual countries further strengthened; on the other hand, proliferation issues should be dealt with through dialogue and international cooperation.

https://www.mfa.gov.cn/eng/wjb/zzjg_663340/jks_665232/kjlc_665236/fkswt_665240/202406/t20240606_11405135.html

China's Nuclear Rise

The National Interest, November 22, 2024

Does the rise of China as a nuclear strategic superpower present a fundamental threat to deterrence, arms control, and arms race stability? Experts contend that China has set in motion an ambitious nuclear modernization program that could result in a world with three significant nuclear peer great powers by the mid-2030s. A potential Chinese nuclear superpower also contributes to arguments in favor of the widespread modernization of the entire U.S. nuclear enterprise. The following analysis first considers authoritative threat assessments of China's potential nuclear modernization and its implications for future international security. The second section provides some futuristic scenario analysis relevant to the possible combination of Russian and Chinese deployed strategic

nuclear forces compared to those deployed by the United States.

<https://nationalinterest.org/feature/china%E2%80%99s-nuclear-rise-213850>

Chinese envoy: Pressure and power politics are not diplomacy, confrontation will not solve the Iran nuclear issue

Permanent Mission of The People's Republic of China to the United Nations and Other International Organizations in Vienna, November 22, 2024

On November 21, the International Atomic Energy Agency (IAEA) Board of Governors reviewed the Iranian nuclear issue. Ambassador Li Song, the Permanent Representative of China to the IAEA, attended the meeting. Ambassador Li pointed out that the fundamental solution to properly addressing non-proliferation hotspot issues lies in political and diplomatic efforts as well as constructive cooperation on multilateral platforms. China welcomes Iran's cooperation with IAEA on outstanding safeguards issues and highly commend the active interactions and positive outcomes during DG's visit to Iran last week. Several years ago, due to a reason known to all, the authority, effectiveness and smooth implementation of the JCPOA were seriously undermined.

http://vienna.china-mission.gov.cn/eng/dbthd/202411/t20241122_11531365.htm

PLA fires up world's first underwater boron ramjet for unstoppable anti-ship missiles

South China Morning Post, November 22, 2024

Chinese scientists have built the dream engine they proposed just two years ago. The engine, originally meant for hypersonic weapons, has been modified so that it not only flies through the air, but can also then plunge into the sea to reach its target – at very high speeds and over long distances. It does this by not only

inhaling air, but also water, as oxidising agents. In laboratory tests, the engine has achieved a nearly 90 per cent combustion efficiency while operating in submarine mode, meeting the requirements for practical use.

<https://www.scmp.com/news/china/science/article/3287475/pla-fires-worlds-first-underwater-boron-ramjet-unstoppable-anti-ship-missiles>

Have China's plans for a nuclear-powered aircraft carrier taken another step forward?

South China Morning Post, November 24, 2024

Reports that China has built a prototype nuclear reactor for its next aircraft carrier have prompted renewed focus on its supposed long-term ambition to project naval power far from its shores. Carriers powered by nuclear reactors do not need to refuel as often as conventionally powered ones. This gives them much greater range and also allows them to carry more fuel and weapons for their aircraft. Associated Press reported on November 11 that China had built a prototype reactor for a large surface warship on a mountain site outside the city of Leshan, in the southwestern province of Sichuan.

<https://www.scmp.com/news/china/military/article/3287853/have-chinas-plans-nuclear-powered-aircraft-carrier-taken-another-step-forward>

Chinese researchers eye building egg-shaped house on the moon using traditional Chinese woodworking technique

Global Times, November 25, 2024

With simulated lunar soil bricks sent to Chinese space station aboard the Tianzhou-8, the development team responsible said in an interview on Monday that it is considering shaping the bricks into mortise and tenon joints – a traditional Chinese construction technique – to build an egg-shaped house on the moon, China Central Television (CCTV) reported. As the only extraterrestrial body that humans have ever

reached, the moon has always been a significant point of focus in scientific research. Around the world, major spacefaring nations have proposed plans for middle- and long-term human presence on the moon, sparking a new wave of lunar exploration enthusiasm.

<https://www.globaltimes.cn/page/202411/1323755.shtml>

China, the US, and Averting Nuclear Götterdämmerung

Centre for European Policy Analysis, November 25, 2024

Too much reckless talk of nuclear war (take a bow, Vladimir Putin) has shaken China and might, paradoxically, lead to serious engagement between the People's Republic and the West on strategic arms. That's if the new US administration is up to it, and if Europe can stay in the game. Here is a clue: the final meeting between Xi Jinping and Joe Biden produced a surprise agreement that control over nuclear weapons must rest with humans, not artificial intelligence (AI). China is uncommunicative in military affairs as a matter of principle and recently delivered a petulant snub to the US Defence Secretary to convey indignation over Taiwan.

<https://cepa.org/article/china-the-us-and-averting-nuclear-gotterdammerung/>

New rocket in China's Long March series to make maiden flight, laying foundation for reusability

Global Times, November 26, 2024

After being transported to a launch pad at the Hainan Commercial Space Launch Site on Tuesday, a new member of China's Long March carrier rocket family, the Long March-12, has been scheduled to undertake its maiden flight in the next few days. Experts said due to its enhanced overall capacity, the new rocket, which is the country's first single-core liquid carrier rocket with a diameter of 3.8 meters, will gradually replace China's older 3.35-meter diameter series. With better reliability in attitude

control, the Long March-12 is expected to become the basic model for future reusable rockets in China.

<https://www.globaltimes.cn/page/202411/1323828.shtml>

China highly concerned about nuclear risks arising from Ukraine crisis, Chinese FM says over reports of US considering giving Ukraine nuclear weapons

Ministry of Foreign Affairs, the People's Republic of China, November 27, 2024

China is paying close attention to the nuclear risks triggered by the Ukraine crisis and has reiterated time and again that nuclear weapons should not be used and nuclear war must not be fought. Under the current circumstances, all parties need to remain calm and exercise restraint, and jointly seek to cool down the situation through dialogue and consultation to reduce strategic risks.

https://www.fmprc.gov.cn/eng/xw/fyrbt/lxjzh/202411/t20241128_11534881.html

China to build next-gen BeiDou system, planning test satellite launches in 2027 and system completion by 2035

People's Daily Online, November 28, 2024

China Satellite Navigation Office (CSNO) released major plans for the next stage of Beidou Navigation Satellite System (BDS), featuring cutting-edge technologies and enhanced services. The plan includes the launch of three pilot test satellites around 2027 and the completion of the system by 2035. The BDS Development Plan for 2035 was announced at a symposium in Beijing to mark the 30th anniversary of the Beidou project. More than 100 participants attended the event, including representatives from national authorities, as well as key personnel from the project's engineering leadership and design teams. The timeline specifies that breakthroughs in key technologies are expected by 2025. By 2027, three pilot satellites will be launched to test new technologies, and by 2029, the deployment of the system's network satellites will begin.

The full completion of the next-generation BDS is expected by 2035, according to the plan.

<http://en.people.cn/n3/2024/1128/c90000-20247978.html>

Why China is probably on board with Putin's nuclear threats

The Hill, November 29, 2024

"Under the current situation, all relevant parties need to remain calm and restrained and jointly seek de-escalation and lower strategic risks through dialogue and consultation," said Chinese foreign ministry spokesperson Lin Jian on Nov 20. China's comments came a day after Vladimir Putin approved a decree lowering the threshold for nuclear strikes. At first glance, it looks as if Beijing is worried that the war in Ukraine will escalate. It's sometimes hard to know for sure what the Chinese leadership actually thinks but leader Xi Jinping is almost surely comfortable with Vladimir Putin's threats to use his most destructive weapons against Ukraine.

<https://thehill.com/opinion/international/5012484-china-putin-nuclear-threats/>

Long March 12 makes debut flight at new commercial spaceport

China Daily, November 30, 2024

China's newest type of carrier rocket, the Long March 12, made its maiden flight on Saturday night, which also marked the debut mission of the Hainan International Commercial Aerospace Launch Center, the nation's first spaceport dedicated to facilitating commercial operations. After flying a short while, two satellites separated from the rocket and entered their preset orbit, marking the success of the launch mission. Designed by the Shanghai Aerospace System Engineering Institute, the Long March 12 is the 22nd member of the Long March family, the backbone of China's space sector, and the 17th in the operating fleet.

<https://www.chinadaily.com.cn/a/202411/30/WS674b28ffa310f1265a1d065b.html>

C. Russia

Russia vows 'tangible' response if US missiles used against its territory

Reuters, November 19, 2024

Russia says the use of US long-range missiles by Ukraine will lead to "an appropriate and tangible" response.

Such an attack inside Russian territory "would represent the direct involvement of the United States and its satellites in hostilities against Russia", a foreign ministry statement said.

President Joe Biden approved the use of the missiles on targets in Russia in a major change of US policy - two months before he is due to leave the White House.

It is not clear if his successor, President-elect Donald Trump, was consulted or whether he will stick by the decision, having promised to end the Russia-Ukraine war.

Ukraine has had US ATACMS (Army Tactical Missile System) with a range of 300km (190 miles) - as well as French and British Storm Shadow missiles of a similar range - but the Western allies had barred Kyiv from hitting Russia with them.

Biden's decision to lift that condition is a significant moment in the war, which marks its 1,000th day on Tuesday.

<https://www.bbc.com/news/articles/crr91nn9n79o>

Russia has fired its new 'Oreshnik' hypersonic ballistic missile - Putin

RT, November 21, 2024

The Russian military has launched a state-of-the-art intermediate-range ballistic missile against a Ukrainian target, President Vladimir Putin said in a public address on Thursday.

As part of what the president called a "combat test," the hypersonic missile, dubbed 'Oreshnik' ('Hazel'), successfully struck a military industrial facility in the Ukrainian city of Dnepropetrovsk (known as Dnipro in Ukraine), Putin added.

The strike was a response to Ukrainian attacks on military facilities located on internationally recognized Russian territory, the president stated. Kiev's forces launched the strikes on Tuesday and Thursday, using US-made ATACMS and HIMARS systems as well as British-made Storm Shadow missiles, he said.

The president also vowed to publicly announce any future strikes against the Ukrainian targets involving the 'Oreshnik' system "for humanitarian reasons" to let civilians leave a potentially dangerous zone. The announcements would not affect the effectiveness of the strikes, he added. A ballistic missile travelling at between 2.5 and 3 kilometers per second, or 10 times faster than the speed of sound, cannot be countered with any existing air defense systems, Putin said.

Earlier, international media reported that Kiev had received approval from Washington and London for the use of Western-made long-range systems for strikes deep into Russia.

<https://www.rt.com/russia/608003-ukraine-putin-oreshnik-missile/>

Russia Fired Experimental Hypersonic Missile at Ukraine in Response to Western Long-Range Missiles - Putin

The Moscow Times, November 21, 2024

Russia launched an experimental hypersonic ballistic missile at Ukraine overnight in response to Kyiv being permitted to strike Russia with U.S. and British long-range missiles, President Vladimir Putin said Thursday, vowing to respond to further "escalation."

While the Russian leader has previously said that letting Kyiv use long-range arms against Russian targets would put NATO "at war" with Moscow, Thursday's statement marked his most direct warning yet. "In response to the use of American and British long-range weaponry, on November 21, the Russian Armed Forces conducted a combined strike on a Ukrainian defense industry

facility," Putin said in televised comments. "Among the operations carried out was the testing of one of Russia's latest medium-range missile systems. In this case, a ballistic missile equipped with a non-nuclear hypersonic warhead was used," the Kremlin leader said. "Russian missile operators named the system 'Oreshnik.' The tests were deemed successful, with the target being hit as intended."

<https://www.themoscowtimes.com/2024/11/21/russia-fired-hypersonic-missile-at-ukraine-in-response-to-western-long-range-missiles-putin-says-a87095>

Putin warns West as Russia hits Ukraine with new missile

BBC, November 22, 2024

Russian President Vladimir Putin has said that an attack by his forces on the eastern Ukrainian city of Dnipro on Thursday morning was carried out using "a new conventional intermediate-range missile".

He said that the missile, codenamed Oreshnik, was a response to the use by Ukraine of US and UK long-range weaponry to hit targets inside Russia.

Putin added that Russia could attack military facilities of those countries which allowed their weapons to be used for this purpose.

The US and the UK authorised the use of US ATACMS and UK-supplied Storm Shadow missiles this week, in a major change of policy.

Ukrainian President Volodymyr Zelensky said Russia's use of the new missile was "a clear and severe escalation in the scale and brutality of this war."

"[This] is yet more proof that Russia has no interest in peace," he wrote on X, adding: "Putin is not only prolonging the war - he is spitting in the face of those in the world who genuinely want peace to be restored."

Earlier, Zelensky said the missile had the characteristics of an intercontinental ballistic

missile (ICBM), even as Western officials cast doubt on this theory.

<https://www.bbc.com/news/articles/cy4n9vgwnnyo>

How Should the West Respond to Russia's Missile Threats?

The Moscow Times, November 27, 2024

Since the start of this month, global anxiety about the prospect of nuclear war has risen to levels not seen since the end of the Cold War. But despite the headlines, in reality, the risk of nuclear war still seems very low in reality and, importantly, has not increased despite the recent posturing of the Kremlin. In mid-November, the Biden administration finally approved Ukraine's use of its ATACMS (Army Tactical Missile System) against targets inside Russia. This was followed shortly afterward by Britain's approval of similar use for its Storm Shadow missiles.

President Vladimir Putin responded quickly and dramatically. First, he announced a revised Russia's nuclear doctrine. Then, Moscow used a nuclear-capable hypersonic Oreshnik missile against Ukraine and followed up with a statement asserting their right to strike the military installations of those states allowing Ukraine to use their weapons to attack Russia.

The world responded with alarm. The day's news around the globe was dominated by huge headlines about nuclear strikes and images of ICBMs. Many people in the West were understandably frightened. Russian TV reported all this with relish. But Putin's threats and the use of an apparently new missile do not suggest that escalation to nuclear use is likely. On the contrary, they are a strong indication that it is unlikely. The Russian response seems to show that Biden has finally called Putin's nuclear bluff over yet another so-called red line.

<https://www.themoscowtimes.com/2024/11/27/how-should-the-west-respond-to-russias-missile-threats-a87126>

Russia Will Respond to 'Each' Use of U.S.-Supplied Missiles, Kremlin Tells Biden

The Moscow Times, November 29, 2024

Moscow will continue attacks on Ukrainian targets "each time" Russia is hit with U.S.-supplied missiles, the Kremlin said Friday in response to U.S. President Joe Biden's condemnation of the strike on Ukraine's energy grid.

Biden on Thursday said the "horrific" and "outrageous" attack, which left a million Ukrainians without power, showed the "urgency" of backing Kyiv ahead of President-elect Donald Trump's return to office in January.

"[Russian President Vladimir] Putin had warned that the authorization to use U.S. and other foreign-made missiles was an irresponsible and escalatory step," Kremlin spokesman Dmitry Peskov told reporters.

"And if these missiles are used, there will be an appropriate response every time," he added.

Putin said Russia launched more than 90 missiles and around 100 drones during Thursday's overnight barrage in response to "continued attacks on our territory by [U.S.-made] ATACMS missiles."

Putin also said he did not rule out using the new intermediate-range hypersonic ballistic missile called the Oreshnik against Ukraine's military and "decision-making centers."

<https://www.themoscowtimes.com/2024/11/29/russia-will-respond-to-each-use-of-us-supplied-missiles-kremlin-tells-biden-a87181>

D. The United States of America

SpaceX launches Super Heavy-Starship on 6th test flight, with Trump in attendance. Here's what to know.

CBS News, November 19, 2024

With President-elect Donald Trump and newly-minted efficiency czar Elon Musk looking on, SpaceX launched the

world's most powerful rocket on its sixth test flight Tuesday, an up-and-down trip to space by a gargantuan Super Heavy-Starship to evaluate a variety of safety and performance upgrades.

Shattering the afternoon calm with an ear-splitting roar, the huge 30-foot-wide, 397-foot-tall rocket blasted off from Musk's sprawling Boca Chica, Texas, manufacturing and test facility on the Gulf Coast near Brownsville at 5 p.m. EST, the opening of a 30-minute launch window.

With its 33 Raptor engines gulping 40,000 pounds of liquid oxygen and methane fuel per second, the Super Heavy-Starship majestically climbed away to the east over the Gulf of Mexico atop a brilliant plume of white-hot flame and a churning cloud of exhaust.

Two-and-a-half minutes after liftoff, after pushing the rocket out of the dense lower atmosphere, the Starship's six Raptor engines ignited to continue the climb to space while the Super Heavy booster fell away, reversed course and began flying back to the launch site.

<https://www.cbsnews.com/news/spacex-starship-launch-6-what-to-know/>

Putin issues warning to United States with new nuclear doctrine

Reuters, November 20, 2024

Russian President Vladimir Putin on Tuesday lowered the threshold for a nuclear strike in response to a broader range of conventional attacks, and Moscow said Ukraine had struck deep inside Russia with U.S.-made ATACMS missiles.

Putin approved the change days after two U.S. officials and a source familiar with the decision said on Sunday that U.S. President Joe Biden's administration allowed Ukraine to use U.S.-made weapons to strike deep into Russia.

<https://www.reuters.com/world/europe/putin-issues-warning-us-with-new-nuclear-doctrine-2024-11-19/>

DOD Adjusts Nuclear Deterrence Strategy as Nuclear Peer Adversaries Escalate

US Department of Defense, November 21, 2024

Multiple nuclear peer adversaries challenge the U.S. and its allies' and partners' security, according to the Defense Department.

"We are now in a world where we're facing multiple nuclear competitors, multiple states that are growing, diversifying and modernizing their nuclear arsenals and also, unfortunately, prioritizing the role that nuclear weapons play in their national security strategies," said Richard C. Johnson.

As the security environment evolves, adjustments to the 2022 Nuclear Posture Review may be required to sustain the ability to achieve nuclear deterrence, in light of enhanced nuclear capabilities of China and Russia and possible lack of nuclear arms control agreements after February, said Johnson, deputy assistant secretary of defense for nuclear and countering weapons of mass destruction policy, who spoke on a panel at the Center for Strategic and International Studies' Project on Nuclear Issues event, yesterday in Washington, D.C.

The underlying logic of nuclear deterrence remains sound. Also, the U.S. remains committed to a safe, secure and reliable nuclear deterrent, he said.

<https://www.defense.gov/News/News-Stories/Article/Article/3975117/dod-adjusts-nuclear-deterrence-strategy-as-nuclear-peer-adversaries-escalate/>

Russians Launch New Missile at Dnipro, U.S. Provides Ukraine With New Tactical Weapons

US Department of Defense, November 21, 2024

The Russians today launched a new kind of missile at Ukraine, what the Defense Department is calling an "intermediate-range ballistic missile," or IRBM, said the deputy Pentagon press secretary.

"I can confirm that Russia did launch an experimental intermediate range ballistic missile," said Sabrina Singh during a briefing today at the Pentagon. "This IRBM was based on Russia's RS-26 Rubezh intercontinental ballistic missile model. In terms of notifications to the United States, the United States was prenotified, briefly, before the launch, through nuclear risk reduction channels."

The IRBM missile was launched at the city of Dnipro. While Singh said the missile carried a conventional warhead, she also said it's possible the missile could be fitted with other warheads as well.

"It could be refitted to certainly carry different types of ... conventional or nuclear warheads," she said.

The Defense Department has characterized the IRBM as "experimental" in that it's the first time a weapon of its kind has been used on the battlefield in Ukraine, Singh said.

<https://www.defense.gov/News/News-Stories/Article/article/3975321/russians-launch-new-missile-at-dnipro-us-provides-ukraine-with-new-tactical-wea/>

US Space Forces Indo-Pacific marks two years of accomplishments, growth

United States Space Force, November 22, 2024

Over the past two years, the first U.S. space service component has tripled in size, established a 24/7 space watch cell, executed three Tier 1 Combatant Command exercises, signed the service's first component support plan, and has been pivotal in expediting the fielding of space capabilities in the U.S. Indo-Pacific Command Area of Responsibility.

Brig. Gen. Anthony Mastalir, U.S. Space Forces Indo-Pacific commander, emphasized the importance of continued development to meet increasing demands.

"We're growing the component to keep pace with the rapidly increasing security

threat,” Mastalir said. “Joint Force planners know that if you want to put together a synchronized, all-domain operational plan, you’d be well-advised to have a Guardian on the team.”

The command has also showcased its capability to support humanitarian assistance and disaster relief by leveraging commercial space assets to provide timely, critical imagery to both local and international response teams. These efforts were instrumental in helping rescue efforts after an earthquake in Japan, landslides in Papua New Guinea, tropical storms in the Philippines and wildfires in Hawaii.

<https://www.spaceforce.mil/News/Article-Display/Article/3976333/us-space-forces-into-pacific-marks-two-years-of-accomplishments-growth/>

E. Europe

Ukraine fires US-made longer-range missiles into Russia for the first time

CNN, November 19, 2024

Ukraine hit a Russian weapons arsenal with US-made ATACMS missiles that it fired across the border for the first time, according to two US officials, in a major escalation on the 1,000th day of war. The attack comes just two days after the Biden administration gave Kyiv the green light to use the longer-range American weapons against targets inside Russia.

Russia’s Defense Ministry said Ukraine fired six ballistic missiles at a facility in Bryansk at 3:25 a.m. local time (7:25 p.m. ET) Tuesday and that ATACMS missiles had been used in the attack.

The attack marks the first time Ukraine has used the longer-range American weapons to strike targets deep inside Russia, and shows that Kyiv has wasted little time in making use of its newly-granted powers.

Ukrainian President Volodymyr Zelensky declined to confirm or deny the attack during a Tuesday news conference but said: “Ukraine has long-range capabilities. Ukraine has long-range drones of its own production. We now have a long ‘Neptune’ (Ukrainian cruise missiles) and not just one.

And now we have ATACMS. And we will use all of this.” Russian air defenses said they shot down five of the missiles and another was damaged. Fragments from the damaged missile fell on the territory of a military facility, causing a fire that has since been extinguished. There were no casualties or damage.

<https://edition.cnn.com/2024/11/19/europe/ukraine-russia-atacms-biden-strike-intl/index.html>

First delivery of Pinaka MLRS to Armenia showcases India’s rising defence exports

Army Recognition, November 25, 2024

In November 2024, India initiated exporting its domestically developed Pinaka multi-barrel rocket launcher (MBRL) systems to Armenia, marking a key moment in its defence export efforts, as reported by IDRW. This delivery, part of a contract finalized after two years of negotiations, highlights the strengthening defence partnership between the two nations and India’s increasing prominence in the global arms market. The Pinaka MBRL, developed by the Defence Research and Development Organisation (DRDO) in collaboration with private companies and public sector firms like Bharat Earth Movers Limited (BEML), is a mobile and versatile artillery system designed for rapid deployment and effective firepower. Primarily employed for bombardment, it targets enemy positions, infrastructure, and troop concentrations with precision and range. Since its induction, Pinaka has undergone significant advancements, resulting in variants that enhance range, accuracy, and payload options to meet modern battlefield demands. The Pinaka Mk-I, the system’s initial version, has a range of up to 40 kilometers and supports multiple warheads. It delivers high-explosive (HE) munitions for impactful blast and fragmentation effects, effective against personnel and lightly fortified targets.

<https://armyrecognition.com/news/army-news/army-news-2024/first-delivery-of-pinaka-mlrs-to-armenia-showcases-indias-rising-defense-exports>

Greece may hand over Russian air defence systems to Armenia – Enikos

Arka News Agency, November 26, 2024

Greece is preparing to transfer the S-300 and two other Russian-made air defense systems, previously used by the country, to Armenia. In exchange, Greece plans to replace them with Israeli-made systems, Russian TASS reports, citing the Greek portal Enikos. According to it, the leadership of the Greek Armed Forces is determined to withdraw Russian weapons systems from Greece's military arsenal and replace the old systems with new Western technologies. According to the portal, "The General Staff of Greece's National Defense is at an advanced stage of providing Armenia with Russian-made weapons systems." The portal notes that "it was previously assumed these systems could be transferred to Ukraine, but the General Staff is now considering other, equally advantageous alternatives. According to available information, strengthening Armenia's defence is not solely a Greek initiative but a result of cooperation with France, which will also contribute to arming the country, the publication adds. For Athens, strengthening Yerevan instead of Kiev is a strategic choice for many reasons, the portal continues.

<https://arka.am/en/news/politics/greece-may-hand-over-russian-air-defense-systems-to-armenia-enikos/>

West Asia

F. Bahrain

Bahrain and Leonardo announce advanced radar systems upgrade at Manama Airport

Aerospace Global News, November 22, 2024

The Kingdom of Bahrain's Ministry of Transportation and Telecommunications has signed a contract with Leonardo to enhance air traffic control and radar systems at Bahrain International Airport. The three-year project, running until early 2027, is designed to improve aviation safety, airspace efficiency, and regional navigation

services at the airport in Manama. The agreement includes the installation of Leonardo's ATCR 33S NG primary surveillance radar and SIR S/I secondary surveillance radar. These advanced systems will provide real-time, high-resolution monitoring of Bahrain's airspace, significantly enhancing its air traffic management capabilities. Comprehensive in-service support and remote services will ensure long-term operational effectiveness. Bahrain International Airport, a key hub in the Middle East, serves as a critical gateway for regional and international travel. With its modern facilities and growing passenger demand, the airport is a central pillar in Bahrain's aviation strategy.

<https://aerospaceglobalnews.com/news/bahrain-and-leonardo-announce-advanced-radar-systems-upgrade-at-manama-airport/>

Batelco signs up Almoayyed to build Bahrain's first white space data centre

Zawya, November 25, 2024

Batelco, part of the Beyon Group, has signed up Almoayyed Contracting Group to develop Bahrain's first-ever White Space Data Center. The new facility will be strategically located within the Beyon Data Oasis and adjacent to a scalable solar farm highlighting the project's emphasis on both sustainability and innovation. Batelco's new White Space Data Center will cater to a wide array of customers, including cloud providers, AI-driven platforms, content delivery networks, internet exchanges and global submarine cable systems, leveraging the latest technologies to meet their evolving needs, said Beyon in a statement. Once completed, the facility will stand as the largest and most power-dense in the kingdom, ensuring high availability, redundancy and industry-leading energy efficiency, it stated.

<https://www.zawya.com/en/business/technology-and-telecom/batelco-signs-up-almoayyed-to-build-bahrains-first-white-space-data-centre-ujefsgr9>

Bahrain participates in chemical weapons convention conference

Bahrain News Agency, November 28, 2024

A Bahraini delegation, led by Brigadier Samir Ahmed Al Zayani, First Deputy Chairman of the National Committee on the Prohibition of Weapons of Mass Destruction and a representative of the Bahrain Defence Force, participated in the 29th Conference of the States Parties to the Chemical Weapons Convention, held in The Hague, Netherlands, from November 25 to 29, 2024. The delegation included Shaikh Hamad bin Salman Al Khalifa, Assistant Undersecretary for Domestic and Foreign Trade at the Ministry of Industry and Commerce. Brigadier Samir Ahmed congratulated Ambassador Almir Šahoviae of Bosnia and Herzegovina on his election as Chair of the 29th session, wishing him success in managing the conference. He affirmed Bahrain's readiness to cooperate to ensure the session's success. Brigadier Samir commended the Organisation for the Prohibition of Chemical Weapons (OPCW) report, prepared by its Technical Secretariat, for enhancing the organisation's role in eliminating weapons of mass destruction and implementing the convention.

<https://www.bna.bh/en/news?cms=q8FmFJgiscL2fwlZON1%2BDs%2Bar4mpkCTcYn7ZSgRVOag%3D>

G. Iran

Iran says 'window of diplomacy' open to restore nuclear deal

Tehran Times, November 17, 2024

Iranian Foreign Minister Abbas Araghchi told a televised program on Saturday night that the Islamic Republic of Iran is "quite ready" for talks to revive the 2015 nuclear deal in its new form, noting that Tehran sees "window of diplomacy" open if the other parties show serious will. "We still see the window of diplomacy open provided that the other side have serious will" Araghchi told the 'special talk' program. However, he said, if there is no such a determination Iran will normally adopt

another policy. The chief diplomat told the West that Iran is ready both for 'interaction' and 'confrontation' in regard to its nuclear program. "We are completely ready for each path, as we announced we are ready for every scenario in regard to the issue of the Zionist regime. Now we tell the Western side that we are ready for different scenarios. We are ready if we reach the point of confrontation. We are still ready if we also reach to the point of interaction" the foreign minister stated.

<https://tehrantimes.com/news/506363/Iran-says-sees-window-of-diplomacy-open-to-restore-nuclear-deal>

The West's hypocrisy on Iran's nuclear program: a failure of diplomacy

Islamic Republic News Agency, November 18, 2024

The narrative surrounding Iran's nuclear program often leans on alarmist speculation, portraying Tehran as a regional aggressor while sidelining its legitimate security concerns and adherence to international agreements. These accounts obscure the broader geopolitical inequities that drive Iran's policies, perpetuating myths that derail meaningful dialogue. In an article published by Foreign Policy, Sina Azodi explores the complexities of Iran's nuclear program amid escalating regional tensions. However, the piece inadvertently highlights a recurring theme: the West's inability – or unwillingness – to uphold agreements, particularly the 2015 Joint Comprehensive Plan of Action (JCPOA). At the heart of Azodi's analysis is Iran's growing debate over its nuclear stance. While much attention is given to Iran's "threshold" nuclear capability, it is essential to place this in the context of the West's handling of the JCPOA. The agreement, signed in 2015, was a landmark deal in which Iran made substantial concessions, reducing its stockpile of enriched uranium, limiting

enrichment activities, and subjecting its facilities to rigorous inspections by the International Atomic Energy Agency (IAEA).

<https://tehrantimes.com/news/506454/The-West-s-hypocrisy-on-Iran-s-nuclear-program-a-failure-of>

West's nuclear blackmail

Tehran Times, November 20, 2024

The already strained relationship between Iran and Europe seemed destined for a further deterioration Wednesday, as the International Atomic Energy Agency (IAEA) director-general held a press conference in Vienna following his return from Iran, and in advance of a critical IAEA Board of Governors vote scheduled for Thursday. Rafael Grossi seemed to carry a cautious glimmer of hope in his remarks. While acknowledging some remaining hurdles, he reported 'concrete results' from his talks with Iranian officials, suggesting a shift towards 'less confrontational and more constructive' relations. Grossi highlighted a willingness to engage: 'What I see is a disposition to engage and to work with us — not only with the president but also with the foreign minister,' he stated, adding that he'd been in 'intense' contact with Iranian Foreign Minister Abbas Araghchi even the night before. The IAEA chief revealed that Iran had agreed to cap its stockpile of 60%-enriched uranium and accept new inspectors. He, however, quickly tempered his optimism: "I cannot exclude the possibility that this commitment might falter as a result of further developments," he said without mentioning that a looming anti-Iran Board of Governors resolution was among those "further developments".

<https://tehrantimes.com/news/506562/West-s-nuclear-blackmail>

Iran calls on IAEA board members to resist E3 moves

Tehran Times, November 21, 2024

Iran's Foreign Minister Abbas Araghchi calls on certain countries member to the IAEA

Board of Governors to stand against the moves by the European trio (Britain, France and Germany) who are trying to turn the board into a tool into the hands of few nuclear armed Western countries to advance their political greed. Araghchi contacted the foreign ministers of Brazil, South Africa, Bangladesh, Algeria, Burkina Faso, Pakistan and France on Wednesday night and the need to guard the technical and independent status of this body. The telephone conversations came as the 35-member board plans to vote on an anti-Iran resolution drafted by the European trio, also known as E3. The Iranian foreign minister called the moves the European trio "unjustifiable" that can undermine the IAEA in conducting its technical and professional duties. Denouncing the "unconstructive" measures by the E3, Araghchi said the three European countries are not paying attention to the fruitful talks between Iran and IAEA Director General Rafael Grossi during his visit to Tehran last week.

<https://tehrantimes.com/news/506564/Iran-FM-calls-on-IAEA-board-members-to-resist-E3-moves>

Iran to deploy new advanced centrifuges in response to 'unjust' IAEA resolution

Tehran Times, November 22, 2024

Iran has decided to activate new advanced centrifuges, rejecting an International Atomic Energy Agency (IAEA) Board of Governors resolution that rebuked Tehran despite its offer of new concessions. The Atomic Energy Organization of Iran (AEOI) and the Iranian Foreign Ministry released a joint statement early Friday, criticizing the IAEA's resolution as politically driven, unrealistic, and unjust. A significant number of advanced centrifuges will be deployed in response to the unconstructive move, the statement read. The resolution, passed by the IAEA's Board of Governors with a vote of 19 to 3 and 12 abstentions, accused Iran of "insufficient cooperation" and demanded

a comprehensive report on its nuclear activities by spring 2025. The statement added that despite taking new measures to accelerate its nuclear program, Iran will maintain its technical cooperation with the IAEA based on previous agreements. Referring to the IAEA chief's recent trip to Iran, the statement explained that Rafael Grossi's meetings with senior Iranian officials and his subsequent visits to the Fordow and Natanz nuclear sites showed a solid foundation for enhanced collaboration between Iran and the nuclear agency.

<https://tehrantimes.com/news/506614/Iran-to-deploy-new-advanced-centrifuges-in-response-to-unjust>

Iran to expand enrichment capacity after IAEA censure: AEOI

Islamic Republic News Agency, November 23, 2024

Iran will significantly accelerate its uranium enrichment activities by installing thousands of new advanced centrifuges over the next few months, following the Western-backed censure at the International Atomic Energy Agency (IAEA). Behrouz Kamalvandi, a spokesman for the Atomic Energy Organization of Iran (AEOI), made the remarks in an article published by IRNA on Saturday. He said the window of opportunity for cooperation still remained open if the other side reversed course. "There is still an opportunity for interaction and cooperation, setting aside the approach of pressure and threats. While Iran has prepared itself to confront threats, it prefers interaction over confrontation." Kamalvandi pointed out that the Western sponsors of the resolution, which was passed by the IAEA's Board of Governors on Thursday night, had prepared the draft of the censure even before IAEA chief Rafael Grossi departed for Tehran for high-level talks with Iranian officials aimed at resolving outstanding issues surrounding Iran's nuclear program. The AEOI spokesman said that Grossi, during his visit, had proposed that Iran halt enriching uranium above 60 percent purity to create a positive

atmosphere for continued cooperation in resolving outstanding safeguards issues.

<https://en.irna.ir/news/85668537/Iran-to-expand-enrichment-capacity-after-IAEA-censure-AEOI>

Iran could change nuclear doctrine if West reimposes sanctions on Tehran: FM

Islamic Republic News Agency, November 28, 2024

Iran's Foreign Minister Abbas Araghchi says that the nuclear debate inside Iran is likely to shift towards the possession of its own weapons if the west goes ahead with a threat to reimpose all UN sanctions. Araghchi told reporters in Lisbon before a meeting between Iranian and European negotiators in Geneva on Friday, the Guardian reported on Thursday. He described talks in Geneva as a brainstorming session to see if there was a way out of their impasse. He admitted he was pessimistic about the meeting, saying he was not sure Iran was speaking to the right party. Iran already had the capability and knowledge to create nuclear weapons, but said they did not form part of its security strategy, he said. There is a debate right now in Iran that it was perhaps a wrong policy. Why? Because it proved we did whatever they wanted and when it was their turn to lift sanctions, in practice, they didn't happen. So maybe something is wrong in our policy, he added.

<https://en.irna.ir/news/85673935/Iran-could-change-nuclear-doctrine-if-West-reimposes-sanctions>

H. Israel

IDF downs drone from Iraq fired toward Eilat

Times of Israel, November 18, 2024

The Israel Defence Forces says it shot down a UAV fired "from the east," after sirens were activated in the Red Sea resort city of Eilat. The IDF generally uses "from the east" to denote projectiles launched from

Iraq. The military says the air force downed the drone before it entered Israeli territory. It does not comment on videos appearing to show a failed interceptor rocket falling in the city. The United Hatzalah rescue service says it is treating a number of people seeking help for acute anxiety following a drone alert that sounded in Eilat. The Magen David Adom rescue service says it is also responding to a call related to the attack, but that it does not yet have any details on possible casualties. The launch is claimed by the Islamic Resistance in Iraq, an Iran-backed militia, which claims it targeted a "vital asset" in the Eilat area.

https://www.timesofisrael.com/liveblog_entry/idf-downs-drone-from-iraq-fired-toward-eilat/

Israel likely partner for Greece as it looks for integrated air defence systems

Breaking Defense, November 21, 2024

Greece is kicking the tires on Israeli-made air defense systems, as the NATO nation seeks to build a multi-layered air defence system capable of countering both enemy jets and low-level drones, sources confirm to Breaking Defence. News of Greece's interest was first reported by Reuters, with the Greek daily Ekathimerini reporting that the multi-layered systems could surpass \$2 billion in cost. "The defenses would likely mimic Israel's Iron Dome and other systems that intercept short- and long-range missiles launched during strikes from its neighbors amid the ongoing conflicts in Gaza and Lebanon," per Ekathimerini. A pair of sources told Breaking Defence that Greece is in the fact-finding process of what systems Israeli might be willing to sell, and while it appears Athens plans to cast a wide net as it looks for options, the two are a clear match: Israel, which has grown closer to Greece in recent years, already possesses a multi-layered air defense system, all parts of which are in varying states of being sold or used by other countries. Rafael Advanced Defence Systems makes the short-range Iron Dome system, used primarily against rockets and small drones; that system is soon to incorporate laser air defenses as well. Rafael also makes the medium-range system

David's Sling, which was jointly developed with the US and has been sold to Finland, as well as the Spyder, which can defend against aircraft and other threats.

<http://breakingdefense.com/2024/11/israel-likely-partner-for-greece-as-it-looks-for-integrated-air-defense-systems/>

IMOD to acquire Reshef missile ships from Israel Shipyards

Naval Technology, November 26, 2024

This decision follows interim recommendations from the Nagel Committee, which was established to examine the defence budget and force buildup. Following the events of 7 October

2023 when the Israel-Hamas War began between Israel and Palestinian militants, and the ongoing conflict, the Nagel Committee was established to review defence acquisitions and force buildup. According to a GlobalData report, Israel's defence budget, including US aid, is projected to grow at a compound annual growth rate (CAGR) of more than 2% from 2024 to 2028. Under the latest agreement, the IMOD will acquire five advanced Reshef missile ships from Israel Shipyards. Israel Shipyards is said to have been the first in the Western world to design and build a fast-attack missile boat, the Reshef Class SAAR 4, in the late 1960s.

<https://www.naval-technology.com/news/imod-acquire-reshef-missile-ships/>

I. Saudi Arabia

Saudi Arabia abandons pursuit of US defence treaty over Israel stalemate

Reuters, November 29, 2024

Saudi Arabia has abandoned its pursuit of an ambitious defence treaty with Washington in return for normalising relations with Israel and is now pushing for a more modest military cooperation agreement, two Saudi and four Western officials told Reuters. In a drive to get a

wide-ranging mutual security treaty over the line earlier this year, Riyadh softened its position on Palestinian statehood, telling Washington that a public commitment from Israel to a two-state solution could be enough for the Gulf kingdom to normalise relations. But with public anger in Saudi Arabia and the wider Middle East at fever pitch over Israel's military actions in Gaza, Crown Prince Mohammed bin Salman has again made recognition of Israel conditional on it taking concrete steps to create a Palestinian state, two Saudi and three Western sources said. Israeli Prime Minister Benjamin Netanyahu is still eager to secure normalisation with the Saudi powerhouse as a historic milestone and a sign of broader acceptance in the Arab world, Western diplomats said.

<https://www.reuters.com/world/saudi-arabia-abandons-pursuit-us-defence-treaty-over-israel-stalemate-2024-11-29/>

J. Syria

US base in Syria comes under missile attack

Mehr News Agency, November 26, 2024

Local sources reported that several explosions were heard from inside the US occupation military base in the al-Shaddadi area located in the southern suburbs of al-Hasakah, Syria. There were no immediate reports of possible damage or casualties. No group has claimed responsibility for the missile attack as of yet. The Islamic Resistance in Iraq has been launching attacks on Israeli targets ever since the occupying regime started the genocidal war on Gaza in early October. The Resistance has also been hitting American military bases in Iraq and neighboring Syria in retaliation for Washington's support for the Israeli genocide in Gaza. Israel has been waging an atrocious onslaught against the Gaza Strip, targeting hospitals, residences, and houses of worship after Palestinian Resistance movements launched a surprise attack, dubbed Operation Al-Aqsa Storm, on October 7.

<https://en.mehrnews.com/news/224910/US-base-in-Syria-comes-under-missile-attack>

K. United Arab Emirates

BrahMos for UAE, 6th-Gen GCAP for Saudi: Middle East nations expand suppliers for military hardware

Eurasian Times, November 28, 2024

The BrahMos supersonic cruise missile, developed by India in collaboration with Russia, is gaining traction among global buyers. According to reports, Vietnam, Indonesia, and the United Arab Emirates are the latest prospective customers. This development was revealed by Alexander Maksichev, Co-Director of BrahMos Aerospace, during a statement to the Russian news agency TASS on November 27. "Talks are being held with Indonesia, Vietnam, and the UAE," Maksichev stated, adding that these nations are at the forefront of discussions for potential contracts. He refrained from providing further details about the ongoing negotiations but confirmed their active interest in the missile system. The BrahMos missile, currently operational in the Indian Armed Forces, has already found international buyers. The Philippines was the first to sign a deal. In January 2022, the Southeast Asian nation secured a US\$375 million contract for three batteries of the shore-based anti-ship variant of the BrahMos. The first batch was successfully delivered earlier this year, cementing BrahMos's entry into the global defense market.

<https://www.eurasiantimes.com/brahmos-for-uae-6th-gen-gcap-for-saudi/>

Khalifa University, Lockheed Martin sign deal to enhance collaboration on aerospace, defence technologies

Zawya, November 29, 2024

Khalifa University of Science and Technology and Lockheed Martin, a leader in global security and aerospace, today announced the signing of a Memorandum of Understanding (MoU) to broaden their collaboration in advancing aerospace and

defense technologies and fostering human capital development in the UAE. The MoU was signed by Prof. Ebrahim Al Hajri, President Khalifa University, and Frank St. John, Chief Operating Officer, Lockheed Martin, in Abu Dhabi. Senior officials from both partners were present on the occasion. As a first step under the agreement, Lockheed Martin will expand its Center for Innovation and Security Solutions (CISS) to Khalifa University's Main Campus, creating a platform for long-term innovation, training, and technological leadership, thereby strengthening the UAE's position as a global leader in aerospace and defense capabilities. Prof. Ebrahim Al Hajri said: "The agreement is part of Khalifa University's continued commitment to developing national competencies and supporting innovation in aerospace and defense technologies. It also stands as a testament to the confidence that global industries have in the university's capability to provide innovative solutions to their challenges. This agreement by Lockheed Martin, a global defense industry leader, is the result of a strategic cooperation with Khalifa University that began several years ago and culminates in the university's selection as a partner to host the expanded research centre."

<https://www.zawya.com/en/business/technology-and-telecom/khalifa-university-lockheed-martin-sign-deal-to-enhance-collaboration-on-aerospace-defence-technologies-y3pjo5bz>

L. East Asia

N Korea leader calls for increasing nuclear forces "without limits"

ANI, November 18, 2024

Addressing a conference of Battalion Commanders and Political Instructors of the Korean People's Army (KPA) on Friday in Pyongyang, the Korean Central News Agency (KCNA) reported that Kim called for military officials to focus on completing war preparations.

Earlier this month, Ukrainian President Volodymyr Zelenskyy confirmed the first combat engagement between North Korean

troops and Ukrainian forces and said that 11,000 North Korean soldiers were already in Russia's Kursk region.

US Secretary of Defence Lloyd Austin has called the North's presence in the war a "very serious" escalation that would have ramifications in Europe and Asia. Russia and North Korea have stepped up military cooperation since the beginning of the conflict between Moscow and Kiev in February 2022.

"We will strengthen our self-defence power, centred on nuclear forces, without limitation, not being content (with our current level) and ceaselessly," Kim was cited as saying in his speech as reported by North state media, Yonhap said.

<https://www.aninews.in/news/world/asia/n-korea-leader-calls-for-increasing-nuclear-forces-without-limits20241118120924/>

Japan's space agency halts Epsilon S rocket engine test after large fire at site

CNA, November 26, 2024

Japan's space agency has halted an engine combustion test of its Epsilon S rocket, a spokesperson said on Tuesday (Nov 26), after a fire broke out at the test site, the Tanegashima Space Center in southwestern Japan.

Footage from public broadcaster NHK showed a blaze breaking out shortly after the ground combustion test started, with an explosion heard as well.

No damage has been reported, NHK said citing local police and fire departments.

The Japan Aerospace Exploration Agency (JAXA) is checking the situation at the site, the spokesperson said.

NHK said the fire happened during a combustion test that began at around 8.30am, with media stationed around 600m away.

About 30 seconds later, a large explosion was heard, and what appeared to be

something on fire flew towards the sea, it reported.

The Sankei Shimbun reported that orange flames burst out from the rocket engine placed on a horizontal platform before the explosion.

There were no reports of any injuries in the incident in the remote Kagoshima region of southern Japan.

<https://www.channelnewsasia.com/east-asia/japan-tanegashima-space-center-rocket-engine-testing-halted-fire-4770551>

M. Southeast Asia

Indonesia in talks with US, Russia for nuclear power technology

Reuters, November 29, 2024

Indonesia is in talks with the United States and Russia about acquiring technology to develop nuclear power plants, an Indonesian government deputy minister told Reuters on Friday.

Southeast Asia's biggest economy is looking at operating nuclear power plants as early as 2036 to cut its dependence on fossil fuels, said Vivi Yulaswati, deputy minister at the Ministry of National Development Planning.

It is open to both small modular reactors and conventional nuclear technology, she said in a video interview.

In Indonesia, nuclear power plants have been a controversial topic as the country is prone to earthquakes. When asked if orders have been placed, Yulaswati said it was too early for that to have happened.

"We have to get a blessing from the president, and of course, we have to talk with international partners. I think, very long journey still," she said.

<https://www.reuters.com/business/energy/indonesia-talks-with-us-russia-nuclear-power-technology-2024-11-29/>

Canada to help South-east Asia go nuclear with new Singapore-based working group

The Strait Times, November 29, 2024

Canada, a veteran in nuclear energy, is working with South-east Asia as the region seeks to capture atomic opportunities.

A nuclear energy working group was launched by the Singapore-based Canada-Asean Business Council on Nov 29 at the inaugural Canada-Asean Energy Transition Summit held in the Republic.

It is a platform for businesses, policymakers and regulators to collaborate in areas such as building nuclear energy capacity, raising a nuclear workforce, unlocking investments and educating the public about the energy source.

Initial members of the nuclear energy working group include the Canada-Asean Business Council, engineering services and nuclear organisation AtkinsRealis, the Canadian Nuclear Association, and universities and colleges.

The working group is looking to collaborate with the Asean Centre for Energy.

<https://www.straitstimes.com/singapore/canada-to-help-south-east-asia-go-nuclear-with-new-singapore-based-working-group>

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