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# समाचार पत्रों से चयित अंश Newspapers Clippings

डीआरडीओ समुदाय को डीआरडीओ प्रौद्योगिकियों, रक्षा प्रौद्योगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों और विज्ञान एवं प्रौद्योगिकी की नूतन जानकारी से अवगत कराने हेतु दैनिक सेवा

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### **DRDO Builds Drones for Himalayas; Innovation to Lower Casualties**

The Indian military has been looking for drones to aid logistical operations in high-altitude border areas such as the Himalayan mountain chain. Back in 2019, Financial Express Online reported on the Indian Army contemplating procuring drones that could carry rations and materials in the unfriendly terrain of the Himalayas. In October 2022, the Indian Army issued tenders for procuring 363 drones to enhance its logistics chain and boost operational preparedness along sensitive border territories.

Now, the Defence Research and Development Organisation (DRDO) has created an unmanned aerial vehicle (UAV) that can detect explosives without risking the personnel. Given that it has a payload capacity of 5 kg, the multi-copter can drop supplies such as medicines and rations.

Both these features are further complemented by the drone's ability to carry out autonomous missions with waypoint navigation within a 5 km radius. Not only can the UAV drop its payload and return to base on its own, but it can also do so while maintaining a speed of 6 m/s and flying up to 200 metres high. Additionally, the multi-copter has features such as a beacon-based landing accuracy of 100 mm, ground vehicle follow mode and modular design. DRDO displayed it at the 108th Indian Science Congress.

According to an official of DRDO, the successful trials of the multi-copter were conducted in Sikkim at a 14,000 ft altitude. After two successful trials, the product would be ready for induction in the forces.

The DRDO has developed the multi-copter with a payload capacity from 5 kg to 25 kg and is working to increase the capacity up to 30 kg, he said.

The multi-copter has an onboard Li-Ion battery bank. The advantage of the multi-copter is that it has a high payload capacity and endurance of 30 minutes. It has the feature of payload release. So it can travel to a designated location in auto mode, release payload, and return to the home location.

<https://www.financialexpress.com/defence/drdo-builds-drones-for-himalayas-innovation-to-lower-casualties/2949753/>

## Defence Strategic : National/International



Press Information Bureau  
Government of India

Ministry of Defence

Mon, 16 Jan 2023

### **Prime Minister Shri Narendra Modi Addresses First Batch of Agniveers through Video Conferencing; Congratulates them on being the Pioneers of Path-Breaking AGNIPATH Scheme**

**The transformative policy will be a game changer in strengthening the Armed Forces & making them future ready: PM**

**“Efforts underway to modernise the Armed Forces as well as make them ‘Aatmanirbhar’”**

**Discussing challenges of new fronts of contactless warfare, PM says technologically-advanced soldiers will play a key role in Armed Forces**

**Discusses how AGNIPATH will empower women; Says, he looks forwards to seeing women Agniveers in all three forces**

**RakshaMantri describes the scheme as a pioneering step towards building a strong & prosperous ‘New India’**

**Strengthening the country’s security apparatus is Government’s top priority amidst ever-evolving global scenario: ShriRajnath Singh**

Prime Minister Shri Narendra Modi addressed the first batch of Agniveers of the three Services, who have commenced their basic training, via video conferencing on January 16, 2023. He congratulated the Agniveers on being the pioneers of the path-breaking Agnipath scheme. He highlighted that this transformative policy will be a game changer in strengthening the Armed Forces and making them future ready for the challenges that lie ahead. The Prime Minister affirmed that the young Agniveers will make the Armed Forces more youthful and tech-savvy.

Hailing the potential of Agniveers, the Prime Minister said that their spirit is reflective of the bravery of the Armed Forces which has always kept the flag of the nation flying high. He said

that the experience which they will acquire through this opportunity will be a source of pride for life.

The Prime Minister said that 'New India' is filled with renewed vigour, and efforts are underway to modernise the Armed Forces as well as make them 'Aatmanirbhar'. He said that in the 21st century, the way wars are fought is changing. Discussing the new fronts of contactless warfare and challenges of cyber warfare, he said technologically-advanced soldiers will play a key role in the Armed Forces. He added the current generation of youth especially have this potential and so the Agniveers will play a leading role in our armed forces in the times to come.

The Prime Minister also spoke about how the scheme will further empower women. He expressed happiness at how women Agniveers are adding pride to the Naval forces, and said that he looks forward to seeing women Agniveers in all three forces. The Prime Minister also recalled how women are leading armed forces on various fronts, citing examples of woman soldier posted in Siachen and women driving modern fighter planes.

The Prime Minister said that getting posted in different regions will give them an opportunity to get diverse experiences and that they should try to learn different languages and also about different cultures and ways of living. He said that teamwork and honing of leadership skills will add a new dimension to their personality. He exhorted Agniveers to remain curious about learning new things while simultaneously working on bettering their skills in the fields of their choice. Hailing the potential of youth and Agniveers, the Prime Minister concluded by saying that they are the ones who are going to provide leadership to the nation in the 21st century.

In his welcome remarks, RakshaMantriShriRajnath Singh lauded the Prime Minister's vision of 'Ek Bharat Shrestha Bharat', under which all sectors have set new targets and are making giant strides towards achieving them. He stated that the Ministry of Defence (MoD) has taken a number of decisions to empower the nation, terming AGNIPATH scheme as one of the most important and unprecedented reforms.

The RakshaMantri asserted that strengthening the security apparatus of the country is the Government's top-most priority amidst the ever-evolving global scenario and geopolitical uncertainty. In such a situation, the AGNIPATH scheme will make the profile of the Armed forces more youthful and tech-savvy, he said. ShriRajnath Singh added that all efforts are being made so that the Agniveers are able to serve the society, along with the Armed Forces, with their strength and knowledge. The scheme is a pioneering step towards building a strong and prosperous 'New India'.

ShriRajnath Singh appreciated the fact that the scheme received encouraging response, with a large number of applicants turning up for the recruitment. He made special mention of the women Agniveers who are also being trained along with their male counterparts.

The RakshaMantri pointed out that several ministries, including MoD, are coming forward for the welfare of Agniveers. "Reservation is being ensured for Agniveers on a number of posts in various departments of Ministry of Defence, Central Armed Police Forces and Ministry of Railways. Arrangements are being made jointly by MoD& Ministry of Education to ensure proper education to the Agniveers. In collaboration with Ministry of Finance, arrangements are being made to provide loans at reasonable rates to Agniveers, who wish to start self-employment or any business after service. Agniveers will not only become Surakshaveers, but also

Samridhiveers,” he said. ShriRajnath Singh exuded confidence that all the Agniveers will be greatly inspired and guided by the vision & meaningful thoughts of the Prime Minister.

The Prime Minister’s address was telecast live on all Agniveer Training Centres and was attended by Chief of Defence Staff General Anil Chauhan, Chief of the Air Staff Air Chief Marshal VR Chaudhari, Chief of the Naval Staff Admiral R Hari Kumar, Chief of the Army Staff General ManojPande and other senior officers of Ministry of Defence.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1891550>



**Press Information Bureau**  
**Government of India**

**Ministry of Defence**

*Mon, 16 Jan 2023*

## **21st Edition of India France Bilateral Naval Exercise 'VARUNA' – 2023**

The 21st Edition of the Bilateral Naval Exercise between India and France – Exercise Varuna commenced on the Western Seaboard today, 16 Jan 23. While the bilateral exercise between the two navies were initiated in 1993, it was christened as 'VARUNA' in 2001 and has become a hallmark of India – France strategic bilateral relationship.

This edition will witness participation of indigenous guided missile stealth destroyer INS Chennai, guided missile frigate INS Teg, maritime patrol aircraft P-8I and Dornier, integral helicopters and MiG29K fighter aircraft. The French Navy will be represented by the aircraft carrier Charles De Gaulle, frigates FS Forbin and Provence, support vessel FS Marne and maritime patrol aircraft Atlantique. The exercise will be conducted over five days from 16 to 20 January 2023 and will witness advanced air defence exercises, tactical manoeuvres, surface firings, underway replenishment and other maritime operations. Units of both navies will endeavour to hone their war-fighting skills in maritime theatre, enhance their inter-operability to undertake multi-discipline operations in the maritime domain and demonstrate their ability as an integrated force to promote peace, security and stability in the region.

Having grown in scope and complexity over the years, this exercise provides an opportunity to learn from each other’s best practices. The exercise facilitates operational level interaction between the two navies to foster mutual cooperation for good order at sea, underscoring the shared commitment of both nations to security, safety and freedom of the global maritime commons.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1891610>



## **India, France Joint Naval Exercise ‘Varuna’ Commences, Set to Include Tactical Manoeuvres, Surface Firings**

The 21st edition of the bilateral naval exercise between India and France titled ‘Varuna’ began on the western seaboard on Monday. The bilateral naval exercise will be conducted from January 16-20 and will include advanced air defence exercises, tactical manoeuvres, surface firings, underway replenishment and other maritime operations.

“The exercise will be conducted over five days from 16 to 20 January 2023 and will witness advanced air defence exercises, tactical manoeuvres, surface firings, underway replenishment and other maritime operations,” the Ministry of Defence said in the press release.

Initiated in 1993, the exercise was christened ‘Varuna’ in 2001 and has become a “hallmark of India-France strategic relationship,” the Ministry of Defence said in the press release. The bilateral naval exercise will see the participation of indigenous guided missile stealth destroyer INS Chennai, guided missile frigate INS Teg, maritime patrol aircraft P-8I and Dornier, integral helicopters and MiG29K fighter aircraft.

The French navy will be represented by the aircraft carrier Charles De Gaulle, frigates FS Forbin and Provence, support vessel FS Marne and maritime patrol aircraft Atlantique. The units of both navies in the bilateral exercise will endeavour to hone their war-fighting skills in maritime theatre and bolster their interoperability to undertake multidiscipline operations in the maritime domain.

The Exercise Varuna allows operational-level interaction between the two navies to strengthen mutual cooperation for good order at sea, underscoring the shared commitment of both nations to security, safety and freedom of the global maritime commons.

“Units of both navies will endeavour to hone their war-fighting skills in maritime theatre, enhance their inter-operability to undertake multi-discipline operations in the maritime domain and demonstrate their ability as an integrated force to promote peace, security and stability in the region,” the Ministry of Defence said in the press release.

It further said, “Having grown in scope and complexity over the years, this exercise provides an opportunity to learn from each other’s best practices. The exercise facilitates operational level interaction between the two navies to foster mutual cooperation for good order at sea, underscoring the shared commitment of both nations to security, safety and freedom of the global maritime commons.”

<https://theprint.in/world/india-france-joint-naval-exercise-varuna-commences-set-to-include-tactical-manoevres-surface-firings/1317988/>



*Mon, 16 Jan 2023*

## **India, Japan Begin First Joint Fighter Jet Drill Near Tokyo: Japanese Defence Ministry**

The Japanese defence ministry confirmed that the first-ever joint fighter jet drill between Japan and India began on Monday. The exercises, which are being conducted at the Air Self-Defence Force's (ASDF) Hyakuri Air Base in the northeastern Ibaraki prefecture, northeast of Tokyo, will end on January 26.

The motive of the drills is to “promote mutual understanding, strengthen defence cooperation between the air forces” and enhance the force's tactical skills, the ASDF said in a statement, Japan Times reported.

The military exercises are being carried out in a bid to fortify defence and security ties amid China's expanding military power in the Indo-Pacific area.

While Japan's ASDF is anticipated to field four F-2 and four F-15 planes for the 11-day air combat training, the Indian Air Force is planning to send four Su-30MKI fighters, two C-17 Globemaster transport planes, an IL-78 aerial refuelling tanker, and nearly 150 personnel, as per Kyodo News.

The exercise, which will train participants for a variety of "air combat missions in a complex environment," will strengthen a “long-standing bond of friendship” and pave the way for greater communication between the two air forces, the Indian defence ministry said.

As Tokyo broadens its network of security allies across the world, India has now joined the United States, Australia, Britain and Germany as the fifth nation to send fighter jets to Japan for joint exercises. Joint exercises between Indian and Japanese ground and maritime self-defence troops have already been held.

The drills which were first agreed upon in November 2019 during a security meeting were postponed due to the coronavirus pandemic. Both nations decided to intensify their security cooperation through measures, such as joint manoeuvres, towards a “common strategic goal of achieving a free and open Indo-Pacific, that is inclusive and resilient, based on the rule of law and free from coercion,” La Prensa Latina reported.

Japan and India are members of the Quad, along with Australia and the US. Quad is a multilateral security arrangement designed to thwart Beijing's expanding influence in the area. The last Quad summit was held in May 2022 in Tokyo.

<https://www.wionews.com/east-asia/india-japan-begin-first-joint-fighter-jet-drill-near-tokyo-japanese-defence-ministry-553109>



## India's MI-17s Gets Indigenous Armour to Stave off Fire from Small Arms, Snipers

The Indian Air Force (IAF) is arming its fleet of the earlier variants of Mi-17 helicopters with indigenous armour to withstand fire from small arms and snipers in close contact operations, like in Naxal-infested areas.

Sources in the defence and security establishment said that while the latest variants of Mi-17 – the V5s – have Russian clip on, clip off armour, the earlier variants do not. They also said the new armour being bought from state-run Mishra Dhatu Nigam Limited (MIDHANI) is much lighter and durable than the Russian product.

The sources added that all new Mi-17 V5 helicopters sent for Naxal operations already have armour protection — additional plates that are fitted on the choppers.

“The Mi-17 V5s came with additional armour protection. However, the earlier variants of Mi-17s did not have them. The IAF is now procuring them from Midhani which are also lighter,” a source in the defence establishment said.

Sources explained that unlike the steel-made Russian armour, the ones manufactured indigenously are made of composite that reduces its weight by 40 per cent.

Lighter weight means a helicopter can carry more personnel during operations and is also able to fly higher and faster than it would when fitted with a heavier Russian armour.

This also means that it will become tougher to hit these light-weight choppers with small arms.

Sources explained that the armour manufactured by Midhani are also clip on and clip off, which means they can be fitted and taken down depending on operational needs.

HAL plans new helicopters to replace Mi-17s

The IAF currently operates about 250 Mi-17 helicopters and these can carry up to 24 passengers, or 36 troops, in full combat gear. It is derived from the Mi-8 series of helicopters which entered India in 1971 and was decommissioned in 2017.

The phasing out of the earlier versions of these helicopters was to begin around 2028. The latest versions — Mi-17 V5 (inducted since 2011) — was to be the last ones to be phased out.

As reported by ThePrint, French defence major Safran and the state-run Hindustan Aeronautics Limited (HAL) are also in talks to jointly and indigenously manufacture a new engine that will power India's plans to have its own medium weight military helicopters.

These helicopters will eventually replace the Mi-17 V5s.

<https://theprint.in/defence/indias-mi-17s-gets-indigenous-armour-to-stave-off-fire-from-small-arms-snipers/1317142/>

*Mon, 16 Jan 2023*

## **Army Seeks Special Helmets for Sikh Soldiers. Will it be ‘Veer’ Helmets for the Veer Sikh Soldiers?**

Soon Sikh soldiers in the Army will wear specially designed helmets as the Ministry of Defence (MoD) has recently issued a Request for Proposal (RfP) to acquire around 12, 730 helmets. Out of these 12, 730 helmets – the proposal has stated that there is a requirement for 8,911 in Large Size and the balance 3,819 in Extra Large size.

These helmets are being procured under the emergency procurement procedure. These helmets have been so designed that they will in no way be uncomfortable for the Sikh soldier and will be indigenous in design and make and will have a bulge in the centre and will cover the whole head. It will be able to withstand extreme temperatures — ranging from minus 20 degree Celsius to 45 degrees Celsius and bullets.

The requirement mentioned in the RfP is that it should be delivered in Kanpur, UP. And the warranty period specified states minimum 96 months for the Ballistic Helmet Shell and minimum 36 months for all other components other than pads for which the warranty is specified as to be minimum 24 months from the date of acceptance post Joint Receipt Inspection.

### **What have the soldiers been wearing so far?**

So far for all military operations the Sikh soldiers have been wearing “bulletproof Patkas” and are also worn over turban by the Sikh soldiers in Kashmir for protection against bullets.

Now the RfP for special helmets is going to cover the entire head and will also ensure that it helps in unhindered use of communication radio, respirators, in-service night vision devices as well as personal spectacles.

The House of MKU released ‘Veer’ helmet for the veer jawans last year

Last February Financial Express Online had reported that Kanpur based Global Defense and Homeland Security Company MKU, had unveiled a Combat Helmet which has been specially designed for and is dedicated to the Sikh soldiers. This helmet can be easily worn by the soldiers over their under-turban cloth, if they wish to do so. It has the capability to give all round ballistic protection and fragments up to Level III A.

### **About the MKU Helmet ‘Veer’**

According to industry sources the Kanpur based company is perhaps the only one in India which has designed and developed the special helmet for the Sikh soldiers.

Last year, Financial Express Online had reported first quoting company officials that like all other Karvo ballistic helmets ‘Veer’ is compatible with Modular Accessory Connector System (MACS).

### **What is MACS?**

It is first of its kind multi-accessory mounting system and this enables communication systems, cameras on helmets, head-mounted sensors, and modern combat equipment like night vision goggles.

The helmet from the House of MKU is according to the company anti-allergic, water resistant, chemical safe, shock absorption, flame resistant, anti-fungal and most importantly it is light weight which is the major requirement in the battlefield or other operations.

The company officials have said that the special helmet 'Veer' has been dedicated to the spirit and valour that Sikh soldiers have embodied for generations not only in India but overseas too.

<https://www.financialexpress.com/defence/army-seeks-special-helmets-for-sikh-soldiers-will-it-be-veer-helmets-for-the-veer-sikh-soldiers/2950162>

## **Business Standard**

*Mon, 16 Jan 2023*

### **Saab Scraps Agreement with Adani to Build Fighter Aircraft in India**

Swedish aerospace and defence company, Saab, which had entered into a partnership with Adani Group to manufacture the Gripen E fighter in India, said on Monday that it was no longer going ahead with that agreement.

“We have decided not to pursue the arrangement with the Adanis,” said Mats Palmberg, chairman and managing director of Saab India, at a media interaction in New Delhi on Monday.

Saab and Adani Group had announced their partnership on August 31, 2017. The agreement between the two would come into effect if Saab were selected as the foreign partner, to supply the Gripen E fighter.

Saab is one of seven global aerospace giants that are competing in the tender, estimated to be worth over Rs 60,000-70,000 crore for 114 medium multirole fighter aircraft for the Indian Air Force (IAF).

Besides Saab, these include Boeing with its F/A-18E/F Super Hornet (US), Lockheed Martin with its F-21 (US), Dassault with the Rafale (France), Eurofighter Typhoon (Europe), and two fighters from Russia: the MiG-35 and the Sukhoi-35.

Asked who Saab would partner for building the Gripen E in India, Palmberg said that provided the Indian defence MINISTRY allowed Saab to hold 74 per cent of the manufacturing entity — which was permitted under the foreign direct investment cap on defence and aerospace manufacture — it would opt to manufacture the fighters in a company in which Saab owned 74 per cent.

The defence ministry has issued a request for information and is understood to be evaluating responses from the original equipment manufacturers.

The ministry's next step will be to draw up an acceptance of necessity and then to issue a request for proposal.

With a detailed media briefing on Monday on the performance attributes of the Gripen E fighter, Saab has been the first of the foreign vendors to make its play in what the aerospace industry expects to be a tightly-contested acquisition.

This fighter acquisition has been necessitated by the cancellation of an earlier fighter tender, issued in 2007 for 126 medium multirole combat aircraft. That ended in the government-to-government purchase from Dassault of 36 Rafale fighters.

However, this left the IAF with a serious shortfall of fighter aircraft, necessitating the fresh tender for 114 medium fighters.

In its briefing, Saab highlighted the new-generation networking technology that has gone into the Gripen E. Powered by a new, more powerful General Electric F-414 engine, Saab claims that its aircraft offers maximum operational availability with minimum logistics requirements.

However, it will be the IAF, through a series of flight tests, that will have the last word on the quality of the seven fighters.

[https://www.business-standard.com/article/companies/saab-scrap-agreement-with-adani-to-build-fighter-aircraft-in-india-123011601014\\_1.html](https://www.business-standard.com/article/companies/saab-scrap-agreement-with-adani-to-build-fighter-aircraft-in-india-123011601014_1.html)



*Mon, 16 Jan 2023*

## **Defence Cooperation Important Pillar in India-Egypt Ties: Egyptian Envoy**

Defence and security cooperation has become an important pillar in India-Egypt relations and both countries are linked through their efforts to ensure peace and stability in the Indian Ocean, Egyptian ambassador Wael Mohamed AwadHamed said on Monday.

Defence and security cooperation has become an important pillar in India-Egypt relations and both countries are linked through their efforts to ensure peace and stability in the Indian Ocean, Egyptian ambassador Wael Mohamed AwadHamed said on Monday.

Though India and Egypt have enjoyed close ties in past decades, especially as founding members of the Non-Aligned Movement (NAM) in 1961, Sisi will be the first Egyptian leader to be hosted for the Republic Day celebrations.

Hamed said the visit is an opportunity to forge a strategic relationship based on the similar priorities and national interests of Sisi and Prime Minister NarendraModi.

Hamed referred to the centrality of the Indian Ocean in growing defence and security ties.

“India is the major country in the Indian Ocean. The security of the Indian Ocean starts from the security of the Red Sea in the west, and for Egypt, the security of the Suez Canal starts with the security of the Red Sea. We are both linked together in this respect,” he said.

“The Indian Ocean, Suez Canal and Red Sea – this is one continuum that flows from one into the other and both of them depend on each other for security,” he said, adding the militaries of both countries are “forces of peace in their respective regions”.

He noted that Egypt's Special Forces are currently conducting exercises with their Indian counterparts in Jodhpur.

Shortly after Egypt approved India as a wheat supplier in April 2022, the Indian side banned exports of the commodity to cope with domestic demand.

While expressing understanding for India's decision, Hamed said, "We hope that this ban will be lifted sometime soon if the weather conditions allow for this. Wheat from India and fertilisers from Egypt can help address food security on both sides."

There is scope to boost trade and investment through cooperation in areas such as pharmaceuticals, education and climate transition and the two sides have set a target for boosting bilateral trade from the current level of \$7.2 billion a year to \$12 over the next five years. Besides, Hamed said, Egypt provides India with the opportunity to access huge markets in Europe, Middle East and Africa thanks to the country's free trade agreements in these regions.

Acknowledging that the issue Palestine will figure during Sisi's visit, Hamed said, "Palestine is and remains very close to our heart. Palestine is and remains the number one international issue that we always stand for. Of course, this is going to be one of the issues that we are going to discuss with the Indian side."

The envoy said there isn't "much difference" between the two countries on this issue.

The two sides also have good relations with Israel and they "both can talk to the Israelis, to influence [them] and bridge the differences", he said.

Hamed also acknowledged the heyday of relations in the 1950s and 1960s under Gamal Abdel Nasser and Jawaharlal Nehru but said this was no longer the era of NAM since the world is facing polarisation arising from the Ukraine crisis and food and energy security.

Egypt, which is a guest country in the G20 process, and India can both join hands to take up the interests of the Global South, he said.

<https://www.hindustantimes.com/india-news/defence-cooperation-important-pillar-in-india-egypt-ties-egyptian-envoy-101673879457383.html>



*Tue, 17 Jan 2023*

## **Japan's Swift Response to Chinese Threat**

*By Nishtha Kaushiki*

China poses an active threat to the countries of the South China Sea and the Indian Ocean. By avoiding contact warfare, it wishes to avoid heavy casualties and the associated international repercussions, especially the tag of a 'war initiator'. Hence, its strategies of wolf warrior diplomacy and salami slicing aim for a fait accompli, i.e., situations in which the revisionist power can revise the current system without a direct confrontation.

Xi Jinping's 'China Dream' encompasses "informatised local wars" with disruptive technologies of artificial intelligence (AI), unmanned systems, and directed-energy weapons. Thus, adopting

an 'Integrated Network Electronic Warfare' blends computer network attacks and electronic warfare. This dominance is seen as a force multiplier in the capabilities of the PLA.

For this purpose, China has adopted a leapfrog approach in making advancements in non-kinetic physical directed energy weapons (DEW), which could be a future game changer. A plethora of DEW platforms, such as targeted high-powered lasers and wave emitters or particle beam waves, enhance Beijing's electromagnetic warfare capabilities. DEWs can disable the satellite sensors and jam automated signal and communication systems.

Washington's Defence Intelligence Agency Report, Challenges to Security in Space (2022), assessed that Beijing owns "multiple ground-based laser weapons of varying power levels to disrupt, degrade, or damage satellites that include a current limited capability to employ laser systems against satellite sensors". Thus, it has the capability to produce reversible and non-reversible effects against the space systems of its adversaries.

Beijing's Intelligence, Surveillance and Reconnaissance (ISR) satellite fleet, which has doubled since 2018, stood at 250 systems in 2022. These satellites allow the PLA to monitor and map the maritime and terrestrial bodies in the Indian Ocean, the South China Sea and the Korean peninsula. At an international level, Russia and China are leaving no stone unturned in implementing their "no limits partnership" and jointly continue to develop and test their ASAT weapons in their military exercises. Given the technological developments related to the PLA, East and South Asia's overall balance of power has been disturbed.

In East Asia, Japan is trying to stand up against the Chinese threats to what it calls "the most severe and complex security environment since World War II". It understands that it is becoming crucial to counter China at two fronts simultaneously, i.e. first, to counter its naval expansion along with its numerical superiority, and second its expanding scope of electromagnetic warfare.

Consequently, the change in Tokyo's strategic stance on Beijing from an economic partner to an active military threat has given the leadership strategic clarity of its security requirements and policy formulation. By 2026, Japan intends to deploy Lockheed Martin's Tomahawk and Joint Air-to-Surface Standoff missiles at several bases. On the other hand, it is also going ahead with its military-civil integration with Mitsubishi Heavy Industry, aiming to develop a surface-to-ship guided missile.

Moreover, Japan has contemplated a possible Chinese electromagnetic attack that can disable power grids and other critical military assets like jet aircraft even before hostilities are initiated. It has incorporated the new technologies under "multi-domain defence force" for "cross-domain operations". For its immediate need, Japan has plans to deploy an Electronic Warfare unit to Yonaguni, Okinawa prefecture, to enhance its analytical and data collection capabilities.

From an international political perspective, Japan has rapidly moved beyond the partnership domain and entered formal institutionalised security cooperation. Thus, it is no longer in the stage of a 'reluctant realist'. The foundations laid by late PM Shinzo Abe are now reaping fruits which make Japan more secure and allow it to stand up against the Chinese threat.

Two crucial developments last year are much appreciated. First, Japan and Germany agreed to set up a "legal framework to facilitate joint activities between Japan's Self-Defence Forces and the German military". With agreements in place for intelligence-sharing mechanisms and promoting transfers of defence equipment and technology, interoperability between Japan and Germany would be a welcome step.



Second, Japan signed a bilateral security agreement with Australia that encompasses "practical cooperation and interoperability" in the emerging domains. These areas include intelligence, surveillance and reconnaissance... advanced defence science and technology, defence industry and high-end capabilities".

Although 2023 has just begun, Japan is already in action. The recent Japan-UK Reciprocal Access Agreement for "cooperative activities" will expand the narratives of a "free and open Indo-Pacific", thereby having profound consequences for the region. Also, the US-Japan agreement for "exploration, science, and research" in deep space has provisions for joint activities between the two countries in various areas such as space operations and technology, space transportation, safety and mission assurance.

Against the above backdrop, there are important messages for India, as it also faces an aggressive China on the land and in the maritime domain. A possible Sino-Pak collaboration, apart from challenges from the sea, can make the situation for India worrisome. Thus, it is time for India to come out of its reluctant approach and initiate dual-use critical technologies agreements with credible partners like Japan, France and Germany.

India should not be left behind in institutionalising multi-faceted security agreements. Although there are unsaid similarities in the objectives of Quad and the AUKUS, a very different approach shouldn't make the geographical contours of Quad more vulnerable to the Chinese threat. Needless to say that Galwan and Tawang skirmishes have demonstrated that the future of the India-China relationship does not seem to be stable at all, thereby posing multiple tactical as well as strategic challenges for the country.

India and Japan have common objectives in forging military agreements beyond military exercises and trade. Various dimensions of security agreements, such as joint research and production of technologies in the electromagnetic spectrum, increase the interoperability between the two forces, apart from developing cyber offensive mechanisms that can bring stability and peace in the Indo-Pacific order.

China, in future conflicts, will provoke either of the two countries at one point in time and would naturally expect stability at the other international border. Thus, it becomes essential to frustrate China in its own game; hence, Indo-Japan defence relations need to be boosted.

<https://www.dailypioneer.com/2023/columnists/japan---s-swift-response-to-chinese-threat.html>

## Army Technology

*Mon, 16 Jan 2023*

### **EDA Launches Project to Enhance Automatic Targeting Technology**

The European Defence Agency (EDA) has launched a new project to enhance the automatic target/threat recognition, identification, and targeting for land systems (ATRIT).

Launched on 13 January, the project is valued at approximately €2m and has a performance period of 18 months.

This ATRIT effort is being managed by the EDA as a ‘Category-B project’, and co-funded by member nations and other participants interested in joining the project.

The programme aims to address future requirements of European militaries to equip their soldiers with more technologically effective platforms and weapon systems.

The project’s initial phase is being led by Germany and will involve the participation of other member nations including Greece, Norway, France, Poland, and the Netherlands.

This phase will be executed by a consortium led by German company Rheinmetall.

Other multi-nation companies in the consortium include France’s Safran and Thales, Germany’s Industrieranlagen-Betriebsgesellschaft (IABG), Greece’s Integrated Systems Development (ISD), Polish company PCO, the Netherlands Organisation for Applied Scientific Research (TNO) and Thales’ Dutch subsidiary, and Norway’s Rheinmetall.

Under this phase, the companies will work on the design system architecture and determine associated requirements to develop a cross-platform capacity for allocating military targets on the basis of their behaviour.

According to the EDA, ATRIT analysis will depend on different modules such as the integration of fused sensor information, target allocation, 360° situation awareness, human behaviour, and the presentation of fused data, including command, control, communications, computers, and intelligence (C4I) data, historical and real-time sensor data.

In the second step, the EDA aims to develop a physical demonstrator and test it in an operationally relevant environment.

The new platform is expected to feature enhanced software, better automatic target identification, and the capacity to fuse different sensor data to simplify it for use by warfighters.

<https://www.army-technology.com/news/eda-project-automatic-targeting-technology/>



*Tue, 17 Jan 2023*

## **Poland's PM Calls on Germany to Send More Weapons to Ukraine**

Poland's prime minister said on Monday that he wants the German government to supply a wide range of weapons to Kyiv and voiced hope that Germany would soon approve a transfer of battle tanks to strengthen Ukraine's defence against Russian forces in the war.

The comments by Prime Minister Mateusz Morawiecki came as German Chancellor Olaf Scholz faces mounting pressure to approve German-made battle tanks for Kyiv.

Germany's government has given Ukraine substantial military aid since Russia invaded, but has also faced criticism, including from inside Germany's governing coalition, that it could be doing far more.

Morawiecki said that he believed that the German government would respond to growing international pressure to provide battle tanks to Ukraine as Russia carries out relentless attacks on civilians, apartment buildings and power infrastructure.

“I can't imagine that Germany would make us wait long for such an agreement,” Morawiecki said as he was departing for Germany.

He noted that Germany promised a Patriot air defence system after pressure, including from Warsaw.

Poland's president said recently that his country wants to send a company of German-made Leopard 2 tanks, meaning 14 tanks, to Ukraine, but wanted that transfer to be part of a coordinated effort by NATO allies.

That public statement by President Andrzej Duda in Lviv, Ukraine, was seen as part of the growing international pressure on Germany to better arm Ukraine.

Under common arms sales rules, the German government would need to give its approval for Poland and any other countries to provide the German-made tanks to a third country.

The German government spokeswoman Christiane Hoffmann said Monday that Poland hasn't asked Germany yet whether it can ship its own Leopards to Ukraine.

In Berlin, Morawiecki argued that the West must do much more for Ukraine, because “today Ukrainians are fighting not only for their freedom, but also in defence of Europe.”

“I call on the German government to act decisively and deliver all types of weapons to Ukraine,” Morawiecki said, according to statements reported by the Polish state news agency PAP.

He was in Berlin to honor Wolfgang Schäuble, the conservative politician who was marking 50 years in the Bundestag.

The Polish leaders visit came as German Defence Minister Christine Lambrecht announced her resignation on Monday.

Lambrecht was overseeing a ministry seeking to modernise the military and expand military aid for Ukraine.

Poland is also waiting for a delivery of German Patriot systems, something Berlin offered after a stray missile fell in Poland near the Ukraine border in November and killed two Poles.

The German press agency dpa reported that the deployment of the Patriot systems and German soldiers would begin on Monday.

At one point, Polish officials said that Germany should send its Patriots to Ukraine instead of Poland, creating some tensions between the two governments before Warsaw finally said it would accept them.

<https://www.dailypioneer.com/2023/world/poland-s-pm-calls-on-germany-to-send-more-weapons-to-ukraine.html>

# THE ECONOMIC TIMES

*Mon, 16 Jan 2023*

## **Russia, Belarus Launch Joint Air Force Drills**

Russia and Belarus on Monday launched joint air force drills, an exercise that underlines close defence ties between the two allies amid the fighting in neighbouring Ukraine. The Belarusian Defence Ministry said that Russia has deployed its warplanes to Belarus for the maneuvers, which will last until February 1.

It noted that all of the country's air bases and firing ranges will be involved in the drills.

The exercise will feature joint air patrols, action to support ground forces, airborne operations, air reconnaissance and transport flights, the ministry said. It didn't mention the number of aircraft that will be involved in the drills.

Last year, Russia and Belarus announced a plan to modernise Belarusian aircraft to make them nuclear-capable, and Belarusian President Alexander Lukashenko said in December that Belarusian crews were training with Russia to operate those planes, which would need to be modified to carry nuclear weapons.

Russian troops used the territory of Belarus to roll into Ukraine from the north on February 24. Ukraine says that it has maintained forces alongside the country's border with Belarus to fend off any potential incursions in the future.

The Pentagon said last week that it hadn't seen any Russian troop movement in Belarus that would indicate an imminent attack.

<https://economictimes.indiatimes.com/news/defence/russia-belarus-launch-joint-air-force-drills/articleshow/97032728.cms>

# The Tribune

*Tue, 17 Jan 2023*

## **Japan, US Bolstering Ties to Contain China**

*By Manoj Joshi*

January has been a month of dramatic developments in the geopolitics of the Indo-Pacific. Last Friday's meeting between Japan's Prime Minister Fumio Kishida and US President Joe Biden capped the weeklong developments in the US-Japan relationship that have huge implications for the Indo-Pacific, especially for China.

Japan's decision to sharply boost its defence spending and alter its pacifist posture has now been underwritten by a qualitative shift in the nature of US-Japan ties. Sixty per cent expansion of the defence expenditure of the world's third largest economy and a major industrial power in the coming five years is a paradigm shift.

As part of this, Tokyo will acquire military capabilities it has till now chosen not to have — counter-strike missiles to deter North Korea and China by their precision-strike capabilities. In addition, Japan will sharply enhance its cyber capabilities, unmanned systems and satellites to support counter-strike missions. Besides, there will be broad-based investments in defence R&D and possibly the emergence of a dedicated Japanese defence industry.

The Kishida-Biden meeting was preceded by the latest round of the US-Japan ‘2+2’ meeting between their defence and foreign ministers, after which the two sides signed a joint statement titled “A new era of strategic competition”.

The statement and the remarks to the media after the meeting suggest that this is a historic shift and that the US and Japan are seriously preparing for the possibility of a major conflict in the region. There are three major components of this effort. First, the doubling of Japanese defence expenditure and outlining a new defence strategy; second, restructured command relationships in the existing US-Japan security alliance and third, substantial posture and capability enhancements.

Japan is establishing a new joint military headquarters for its armed services and the US and Japan say they will explore new command and control arrangements to coordinate with their forces. Till now, where the US-NATO and US-South Korea had considerable combined command experience, there was no comparable experience between the US and Japan.

Tokyo has already announced that it will acquire hundreds of American Tomahawk cruise missiles and an outcome of last week’s meeting is the US commitment to Japan’s space security. According to US Secretary of State Antony Blinken, any attack on Japanese satellites would trigger Article V of the US-Japan Security Treaty, requiring the two to “act to meet the common danger”.

In addition to this, it was announced that the US would, by 2025, station a US Marine littoral regiment in Okinawa equipped with anti-ship missiles to defend the southwest islands of Japan that stretch to the proximity of Taiwan. And this is just the beginning; in future we could possibly see Japan joining the core US intelligence alliance — ‘Five Eyes’ — and emerging as a major player in the military export business.

All these developments are hardly pleasing to China. Not only will they change the Japanese relationship with the US and its allies, but also that between Japan and China. The South China Morning Post quoted Liu Jiangyong, a Japanese specialist at Tsinghua University in Beijing, as saying that the developments not only exposed Tokyo’s regional ambitions, but of Washington’s efforts to encircle and contain China.

Within a few years, Japan’s new strategy will begin impacting its place in the international order and in the geopolitics of the Indo-Pacific. So far, Tokyo has chosen to use only its financial clout to establish its influence in the region. It provides substantial official development assistance to Bangladesh, India, Indonesia, Malaysia, Philippines, Vietnam and even China. It also has a major stock of the FDI in the Indo-Pacific region. Its FDI in ASEAN countries like Singapore, Thailand, Indonesia and Vietnam is double of what it has in China. Other countries like Australia, South Korea, India and Taiwan are also major recipients of Japanese investments.

The substantial increase in Japan’s defence expenditure, and more important, its move away from its pacifist policies will now provide Tokyo a new military muscle in the region. Even now the Japan Maritime Self-Defence Force is one of the most powerful in the world and larger than

those of the UK and France combined. In the coming years, it will become more powerful and expand its footprint in the western Pacific and, possibly, Indian Ocean.

Before arriving in Washington DC, PM Kishida signed an agreement with the UK to facilitate more joint military exercises. This came after a similar agreement with the other AUKUS member — Australia. The Japanese have also been reaching out to other friends to strengthen their defence ties. As a result, French, Dutch and German warships have been sailing in the region and exercising with the US and Japan.

Last week, too, four Indian Su-30MKI multirole fighters landed at Japan's Hyakuri Air Base near Tokyo accompanied by two IAF C-17 Globemasters and an Il-78 tanker to participate in exercise 'Veer Guardian'. The exercise was originally planned for 2020, but was postponed. Japan and India have been participating with the US and Australia in the naval exercise 'Malabar' for a few years now.

New Delhi and Tokyo enjoy robust ties, both bilaterally and as members of the Quad. Japan's new orientation offers opportunities for India in both economic and military fields. India could gain from the Japanese efforts to shift high-tech industries away from China, besides from the overall mood in the Indo-Pacific to establish secure and resilient supply chains.

<https://www.tribuneindia.com/news/comment/japan-us-bolstering-ties-to-contain-china-470979>



*Mon, 16 Jan 2023*

## **UK Defence Minister Sets Out Further Military Aid Package to Ukraine**

Britain's defence minister Ben Wallace on Monday outlined further military support for Ukraine, confirming the supply of 14 Challenger 2 tanks and setting out a number of other details.

"Today, I can announce the most significant package of combat power to date to accelerate Ukrainian success. This includes a squadron of Challenger 2 tanks with armoured recovery and repair vehicles," Wallace said to parliament.

### **The package also included:**

- Eight AS90 guns
- Hundreds more armoured and protective vehicles including Bulldog personnel carriers.
- A manoeuvre support package including minefield breaching and bridging capabilities
- Dozens more "uncrewed aerial systems" to support artillery
- Another 100,000 artillery rounds
- Hundreds more sophisticated missiles including Guided Multiple Launch Rocket System (GMLRS), Starstreak air defence, medium range air defence missiles
- A package of spares to refurbish up to 100 Ukrainian tanks and infantry fighting vehicles.

<https://www.reuters.com/world/europe/uk-defence-minister-sets-out-further-military-aid-package-ukraine-2023-01-16/>



## Science & Technology News



Press Information Bureau  
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Ministry of Science & Technology

Mon, 16 Jan 2023

### First Evidence of Solitary Waves Near Mars may Decode the Mystery Behind Ion Loss in the Planet

Scientists have reported the first evidence of the presence of solitary waves or distinct electric field fluctuations in the Martian magnetosphere. The study of these waves is crucial as they directly control particle energization, plasma loss, transport, etc., through wave-particle interactions.

Our Earth is a giant magnet, and its magnetic field protects us from high-speed charged particles that are continuously emitted from the Sun in the form of solar wind. Unlike Earth, the planet Mars do not have any intrinsic magnetic field. This allows the high-speed solar wind to interact directly with the Mars atmosphere, like an obstacle in flow. It has been suggested that even in a weak and thin magnetosphere as that of the Mars, one can observe frequent occurrences of solitary waves. However, despite several missions to Mars, the presence of solitary waves in the Martian magnetosphere has never been reported earlier.

For the first time, a research team from the Indian Institute of Geomagnetism (IIG), an autonomous institute of the Department of Science and Technology (DST), has identified and reported the solitary waves in the Martian magnetosphere with the help of high-resolution electric field data recorded by Langmuir Probe and Waves instrument on the Mars Atmosphere and Volatile Evolution (MAVEN) spacecraft of NASA (<https://pds-ppi.igpp.ucla.edu>). The magnetosphere is weak but highly dynamic and formed due to the direct interaction of solar winds with the Martian atmosphere.

Solitary waves are the distinct electric field fluctuations (bipolar or monopolar) that follow constant amplitude-phase relations. Their shape and size are less affected during their propagation. The magnitude and duration of these pulses are found to be 1-25 milivolt/meter and 0.2–1.7 milliseconds, respectively. These pulses are dominantly seen in the dawn and afternoon-dusk sectors at an altitude of 1000–3500 km around the Mars. The dominant occurrence of solitary waves in the dawn and dusk sector is still a mystery and needs further investigation. Through simulations, it is found that the spatial extent of these structures is very small (30-330 meters). As these waves are known to be responsible for the plasma energization and its transport in Earth's magnetosphere, the team is further exploring their role in the particle dynamics in the Martian magnetosphere and whether such waves play any role in the loss of atmospheric ions on the Mars.

**Publication link:** DOI 10.3847/1538-4357/ac7b8b

<https://pib.gov.in/PressReleasePage.aspx?PRID=1891584>

*Tue, 17 Jan 2023*

## **IIT Madras Employs Solar Thermal Energy to Recycle Waste Concrete**

Indian Institute of Technology Madras (IIT Madras) researchers have developed a treatment process involving solar thermal energy to recycle construction and demolition debris. The waste concrete from demolition was heated using solar radiation to produce recycled concrete aggregate (RCA) that was higher in quality when compared to those obtained from mechanical crushing. The concrete made using this technology met the requirements for typical structural applications. The demonstration was done at the India One Solar Thermal Power Plant located in Shantivan, the headquarters of the Brahma Kumaris organisation in Rajasthan. It has 770 solar concentrators to produce electricity using steam generated at high pressure. The plant has been operational since 2017 and provides power to a community of about 25,000 people at a reasonable cost and low maintenance. Two of the concentrators were used in the full-scale trials for treating the waste concrete, says a release.

By using concentrated solar energy for the heating, the thermo-mechanical beneficiation of the concrete waste results in high-quality recyclable materials, which can substitute stone (blue metal) aggregates and sand in concrete. In this pioneering study, concrete from a demolition site was heated using solar radiation concentrated through large reflectors and cast iron receivers to more than 550 °C and subsequently, scrubbed mechanically to yield coarse and fine RCA, with properties similar to those of pristine aggregates.

RavindraGettu, VS Raju Chair Professor, Department of Civil Engineering, IIT Madras, said that the intention of the study was to develop the proof-of-concept that solar radiation could be used in the thermomechanical beneficiation of concrete waste to produce good quality recyclable material for new concrete. The study presents evidence for the use of concentrated solar energy for recycling waste concrete, with promise for large-scale waste concrete recycling. This would reduce the energy footprint of construction and demolition waste processing significantly, and lead to savings in raw material and electricity, towards a circular economy.

<https://www.thehindubusinessline.com/news/education/iit-madras-employs-solar-thermal-energy-to-recycle-waste-concrete/article66382999.ece>

*Mon, 16 Jan 2023*

## **ISRO Pushing Venus Mission ‘Shukrayaan’ to 2031? Premium**

In a talk on January 9, P. Sreekumar, the SatishDhawan Professor at the Indian Space Research Organisation (ISRO) and advisor to its space science programme, said that the organisation is yet

to receive approval from the Indian government for the Venus mission and that the mission could as a result be postponed to 2031.

ISRO's Venus mission, called Shukrayaan I, was expected to be launched in December 2024. The idea was born in 2012; five years later, ISRO commenced preliminary studies after the Department of Space received a 23% hike in the 2017-2018 budget. The organisation sought payload proposals from research institutes in April 2017.

Optimal launch windows from Earth to Venus occur once around every 19 months. This is why ISRO has 'backup' launch dates in 2026 and 2028 should it miss the 2024 opportunity. But even more optimal windows, which further reduce the amount of fuel required at liftoff, come around every eight years.

Sreekumar, speaking at an Indo-French astronomy meeting at the Indian Institute of Astrophysics, Bengaluru, said that Shukrayaan I was "originally scheduled for a 2023 launch" but that "right now the 2031 window is very good". He added that the mission is "waiting for formal approval and money", which are required before spacecraft assembly and testing.

According to him, both the U.S. and the European space agencies have Venus missions planned for 2031 — referring to VERITAS and EnVision, respectively — while "China might go anytime: 2026, 2027, whenever they want to go".

ISRO had originally hoped to launch Shukrayaan I in mid-2023 but cited the pandemic when it pushed the date to December 2024. Other ISRO missions, including Aditya L1 and Chandrayaan III, have also been affected by manufacturing delays and commercial launch commitments.

Shukrayaan I will be an orbiter mission. Its scientific payloads currently include a high-resolution synthetic aperture radar and a ground-penetrating radar. The mission is expected to study Venus's geological and volcanic activity, emissions on the ground, wind speed, cloud cover, and other planetary characteristics from an elliptical orbit.

ISRO received an allocation of ₹13,700 crore in the 2022-2023 budget, marginally higher than the year before. The bulk was diverted to the human spaceflight mission, Gaganyaan. Ahead of the forthcoming budget announcement, and following recent reforms in the private spaceflight sector, various industry groups have drafted a wishlist, including boosts to local manufacturing and procurement.

<https://www.thehindu.com/sci-tech/science/isro-pushing-venus-mission-shukrayaan-to-2031/article66382110.ece>

