

Space an established domain of warfare: CDS

Will cast its influence on air, maritime, land



NEW DELHI, Apr 18 (PTI)

CHIEF of Defence Staff (CDS) General Anil Chauhan has said, he believes that space is already an established domain of warfare and it will "cast its influence" on air, maritime and land domains.

In a recorded video address that was played at the inaugural session of the three-day Indian Defence Space Symposium in Delhi on Thursday, General Chauhan also said that "space diplomacy" will soon become a reality.

Navy Chief Admiral R Hari Kumar, Defence Research and Development Organisation (DRDO) Chairman Samir V Kamat and other senior officers of the Armed Forces attended the event held at the Manekshaw Centre here.

In his address, General Chauhan underlined the role of space evolving in future warfare. "I will touch upon where we are and where we need to go," he said.

"Space is called the final frontier. Space is infinite in its expanse and is also expanding. Like all other frontiers, it is difficult to define its edges very clearly. Mankind has a long way to go to unravel the mystery of space. India wants to be part of that journey," the CDS said.

He also spoke about the four "cosmonauts under training" as part of India's "Gaganyaan" programme.

"Space is also referred to as an emerging domain of warfare. I believe that it is already an established domain of warfare. My belief is premised on the fast-paced development occurring in this particular domain," he said.

General Chauhan said, the history of warfare has "taught us that in any war, the initial contest generally occurs in a new domain".



Chief of Naval Staff Admiral R Hari Kumar with DRDO Chairman Samir V Kamat, Indian Space Association Chairman, Jayant D Patil, and others during 'Indian Defspace Symposium' 2024, at Manekshaw Centre on Thursday. (Top) CDS General Anil Chauhan virtually addresses. (ANI/PTI)

India has will, wisdom, wherewithal to be ace in space: Navy chief

NEW DELHI, Apr 18 (PTI)

DESPITE countless challenges and denial of technology, Indian space scientists have shown the world that India has the "will, wisdom and wherewithal" to be an "ace in space", Navy chief Admiral R Hari Kumar said. In his address at the inaugural session of the three-day Indian Defence Space Symposium here on Thursday, Admiral Kumar also said that it is not rocket science to realise that in "Amrit Kaal", India is "leading the charge at escape velocity" in the space sector.

Domain experts and senior offi-

"Indian space sector and scientists today represent the soul and spirit of a 'resurgent Bharat' that is proud to wear its identity as an 'Aatmanirbhar Bharat'", said Admiral Hari Kumar.

cial from the Armed Forces are taking part in the symposium that is being held at the Manekshaw Centre here from April 18 to April 20.

The Navy chief said with the capability today to "conceptualise, construct, commission, launch and sustain" space assets, "our country has demonstrated to the world that the sky is definitely not the limit for Bharat". India has made its mark as one of the few countries to have created a "complete space ecosystem" and its space sector is rapidly evolving into one of the most "dynamic and defining endeavours of the 21st century, offering increasing opportunities for investment and growth, which in space terms, I would say, offer astronomical returns", he added.

Army chief attends opening ceremony of India-Uzbek joint military exercise

NEW DELHI, Apr 18 (PTI)

ARMY chief General Manoj Pande on Thursday visited the training area and attended the opening ceremony of India-Uzbekistan joint military exercise 'DUSTLIK' in Termez, sources said.

General Pande is visiting Uzbekistan from April 15-18 to explore new avenues of bilateral military collaboration. Exercise 'DUSTLIK' aims to foster military cooperation and enhance combined capabilities to execute joint operations in mountainous as well as semi-urban terrain. It would focus on high degree of physical fitness, joint planning, joint tactical drills and basics of special arms skills, the sources said.



General Manoj Pande

General Pande visited the training area and attended the opening ceremony of the exercise on Thursday. He was accompanied by Deputy Minister of Defence for Combat Training and the Chief of Southern Operations Command from the Uzbekistan side, they said. On arrival at the exercise area, General Pande was briefed by the contingent commanders about the exercise plan.

Post briefing, he witnessed the training activities that included display of martial arts and other tactical activities.

General Pande also addressed and interacted with troops of both contingents and appreciated their hard work and joint efforts while undertaking this exercise.

Dubai airport still deluged post record rains

Dubai: Dubai airport, one of the world's busiest, witnessed major disruption for a third straight day Thursday after the heaviest rains on record drenched the desert United Arab Emirates. Emirates, Dubai's state-owned flagship airline, and sister carrier flydubai resumed check-ins after telling passengers to stay away on Wednesday, when thousands of delayed passengers clogged the airport.

The airport, which handles more international passengers than any other, hopes to resume "something approaching normality" within 24 hours, Dubai Airports CEO Paul Griffiths told AFP. Some 1,244 flights were cancelled and 41 diverted Tuesday and Wednesday, after torrential rains flooded Dubai, including its homes, malls and offices, and highways. Traffic congestion remained severe on Thursday, with at least one major road completely blocked by water and multiple junctions cut off by flooding.

Dubai airport has witnessed chaotic scenes with crowds of marooned travellers clamouring for information about their flights. Even as Emirates and flydubai resumed check-ins, more than 200 departures were listed as delayed or cancelled on the airport's website. Griffiths said it was "challenging" to get the airport fully functional, with supplies and staff also held up on flooded roads.

Although schools and public sector offices have been closed until next week, traffic returned to the roads with some motorists, finding their route blocked, driving the wrong way down highways. Supermarkets were seen with empty shelves as deliveries failed to arrive. Taxis were hard to book and hail. AFP

Scientists dismiss link with cloud seeding, blame climate change

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Many wondered whether it was cloud seeding — a weather modification technique to induce rains — that led to flooding of Dubai, but scientists involved in such projects in India categorically dismissed any link, and meteorologists and climatologists blamed climate change for the record precipitation in arid West Asia.

Since parched UAE periodically conducts cloud seeding to increase level of its dwindling groundwater, extreme rainfall between Monday night and Tuesday evening raised questions on the artificial rain mechanism. The country received a record 255mm of rain in less than 24 hours. Though it rained heavily in neighbouring Qatar, Oman, Bahrain and Saudi Arabia as well, Dubai in UAE faced the maximum impact.

IIT Kanpur professor Sachchida Nand Tripathi, who is closely involved with the cloud seeding project in India, said there was no connection between cloud seeding and the floods. "Seeding is tried at an early stage of storm development. In this case, when the system progressed from Gulf of Oman it was already an intensified storm. It is highly unlikely and unsafe to seed such systems. Seeding can at max contribute to 25% enhancement in rainfall. In this case, the total rainfall was 25cm. So even without seeding, 20cm would have happened," Tripathi told TOI.

INDUCING ARTIFICIAL RAINS

What's cloud seeding?

Cloud seeding is a weather modification technique to induce rains in water-starved areas. It is also used to disperse fog banks near some airports

How does it work?

> Scientists use aircraft to inject silver iodide, potassium iodide, dry ice (solid carbon dioxide), liquid propane or salts into clouds to mimic ice nuclei

> Clouds often lack naturally occurring ice nuclei. So, injecting them with silver iodide particles (which are very similar in structure to ice) and other substances increases the number of nuclei leading to rains

How does it happen?

> Injection of such particles makes clouds more efficient at generating ice crystals that either fall as snowflakes or



melt to produce raindrops, depending on temperatures in and beneath the cloud

> The amount of rain or snow a cloud can produce depends on a balance between the number of ice nuclei inside it and the amount of water available to grow around those nuclei

Where is it tested in India?

> IIT Kanpur successfully tested it over a limited area on its sprawling campus

> It's also tested by different scientific bodies in water-starved regions of Maharashtra, Karnataka and Andhra Pradesh

Even distinguished climate scientist and former secretary in ministry of earth science, Madhavan Rajeevan, dismissed the possibility of any link. "This is absolutely a clear signal of climate change. It was a huge thunderstorm caused by a synoptic system which was moving across the Gulf region. With global warming, there is now a tendency that if it rains, it rains very heavily. We should expect this kind of event more frequently in any part of the world and at any time," he said.

Former chief of India Me-

teorological Department (IMD), K J Ramesh, too said cloud seeding was not the primary cause for the downpour. said, "Southward extension of passing westerly wave trough, supported by additional moisture feed from Arabian Sea, basically caused extreme weather events, causing unprecedented quantum of rainfall. Prior to this, a similar westerly wave gave heavy rainfall spells for two days over Afghanistan, leading to floods, and thunderstorms and lightning over Pakistan".

Over To The People

Voting starts today to elect the 18th Lok Sabha. From Udhampur to Kanyakumari and Ganganagar to Itanagar, 102 constituencies in 17 states and 4 UTs go to polls in the first and largest phase, the only one with 100+ seats in the 7-phase election. BJP-led NDA is aiming for a hat-trick and the oppn, under INDIA bloc, is out to stop Modi

WHAT'S AT STAKE IN PH 1

NDA

TO DEFEND: 43 seats, including 11 out of 12 in Rajasthan, 5 out of 6 in MP, all 5 in Uttarakhand, all 4 in Bihar, 4 out of 5 in Maharashtra, 3 out of 8 in west UP and all 3 in West Bengal. 36 of the 43 seats were won by BJP, 2 by LJP and 1 each by Sena (Shinde), JD(U) and NE allies.

CAN GAIN IN: Tamil Nadu, where the current alliance partners got no seats in 2019. UP, where it will hope to do better than it did against SP-BSP in 2019. And the lone seats voting in Chhattisgarh, Puducherry, Andamans & Lakshadweep.

INDIA

TO DEFEND: 48 seats, including 38 of 39 in Tamil Nadu, 2 out of 8 in UP and 1 each in Rajasthan, Madhya Pradesh, Maharashtra, Chhattisgarh, Meghalaya, Puducherry, Andaman & Nicobar and Lakshadweep. Of the 48 seats, 24 were won by DMK in 2019, 14 by Cong, 4 by Left parties, 2 by SP and 1 each by VCK, IUML, NCP and RLP, which is a new ally.

CAN GAIN IN: Rajasthan, where it won only 1 of these 12 seats last time, UP, where it will hope to gain from the farmer protests, Bihar where it had none of the 4 and Manipur, which is facing ethnic strife.

THE ASSAM SCENARIO: 5 of Assam's 14 seats go to polls today but it is not possible to categorise seats in the state as having been won by any party last time. That's because seat boundaries have been redrawn since 2019. In the broad area in which the 5 seats lie though, mainly Upper Assam, BJP was dominant last time with Gaurav Gogoi the lone Cong winner from what was then the Kaliabor seat.

Lok Sabha
**PHASE 1
TODAY**

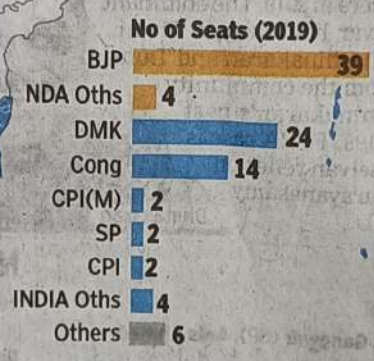
**102
seats**

2019 RESULTS	
NDA	43
INDIA	48
Others	6

21 states/UTs



*Assam seats have been redrawn since 2019



HIGH-STAKES BATTLES

Tamil Nadu: The state with 39 LS seats, all voting in this phase, witnesses a high-voltage triangular contest in which DMK has an arithmetical advantage after ADMK and BJP parted ways in Sept 2023. Chief minister MK Stalin has been unleashing a frontal attack on the PM and the Centre, which he calls "fascist". While DMK, which won 38 of the 39 seats along with its allies in 2019, has vowed to win it all this time, BJP has shown how serious it is by fielding

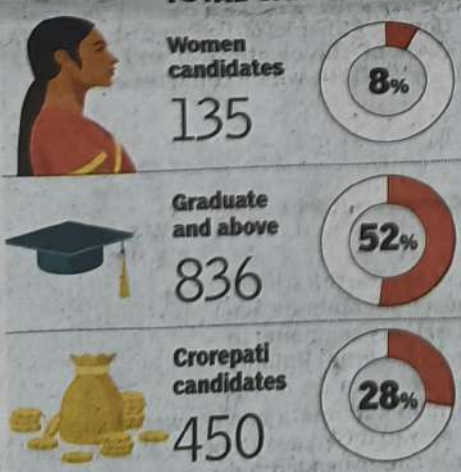
ex-Telangana governor Tamilisai Soundararajan, its state chief K Annamalai and Union minister L Murugan. Since elections were announced, Modi has visited TN three times. The DMK alliance comprising Congress, CPM, CPI, VCK and IUML, is a cohesive team. BJP has managed to not only retain most of its allies, including the Vanniyar-backed PMK, but also rope in TTV Dhinakaran's AMMK. ADMK, now not at its best, had a higher vote share than BJP in 2019.



...& Rajasthan, West UP, Uttarakhand: Elections to 12 of the 25 LS seats in Rajasthan see BJP claiming advantage, eyeing momentum from its assembly polls victory last year. But the INDIA bloc is confident of making gains too. Union ministers Bhupender Yadav and Arjun Ram Meghwal are in the fray as BJP, like it did in the state polls, runs a campaign around Modi. All five constituencies of Uttarakhand, where BJP will hope for a hat-trick of sweeps, also vote today, as do eight crucial seats in west UP, where RLD is now in the saffron camp.



TOTAL CANDIDATES: 1,625



Note: Based on affidavits (1,618) analysed by ADR

A LOOK AT UNION MINISTERS & OTHER HEAVYWEIGHTS IN THE FRAY TODAY

Udhampur 2019 WINNER - BJP

India tests indigenous tech long-range cruise missile for precision strikes

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PTI

New Delhi: India on Thursday tested the indigenous technology cruise missile (ITCM), with a strike range of 1,000-km, from the Chandipur integrated test range off the Odisha coast.

This subsonic long-range land-attack cruise missile, with a canister-launch system, will eventually be one of the mainstays of the tri-service Integrated Rocket Force to be raised for conventional (non-nuclear) combat capabilities and deterrence.

The missile's performance on Thursday, powered by the indigenous Manik turbofan engine instead of the earlier Russian one, was monitored by several radars, electro-optical tracking systems and telemetry sensors deployed at different locations to ensure complete coverage of the flight path.

The flightpath of the missile, which is a derivative of the original Nirbhay missile with indigenous systems, was also monitored by Sukhoi-30MKI fighters. "All subsystems performed as per expectation. The missile followed the desired path using waypoint navigation and demonstrated a very low altitude sea-skimming flight," a DRDO official said.

"This successful flight-test also established the reliable performance of the indigenous propulsion system developed by the Gas Turbine Research Establish-



STRIKE RANGE OF 1,000 KM

ment, Bengaluru. The missile is equipped with advanced avionics and software to ensure better and reliable performance. After one more test, it will be offered for user-trials," he added.

With conflicts like the ongoing Russia-Ukraine one underscoring the need for long-range precision-strike vectors, as also the four-year-long military confrontation with China in eastern Ladakh, have led India to begin the initial groundwork for the proposed Integrated Rocket Force (IRF).

The IRF, which will have a mix of conventional cruise and ballistic missiles, will be separate from the tri-service Strategic Forces Command (SFC) created in 2003 to handle the country's nuclear arsenal, as reported by TOI earlier.

We support reform: US after Musk backs India's UNSC bid

But Says 'No Specifics'; Tech Czar Had Termed India's Absence 'Absurd'

TNN & AGENCIES

New Delhi: The US supports much-needed reform of the United Nations, including the security council, to make it reflective of the 21st-century world, a senior Biden administration official has said, amidst growing calls for inclusion of India as the permanent member of the powerful organ of the world body.



FOR A SEAT AT THE HIGH TABLE: Elon Musk

State department's principal deputy spokesperson Vedant Patel's remarks came as he responded to a question about billionaire tech magnate Elon Musk's assertion that there is no meaning in having the UN without India's permanent seat on the United Nations security council (UNSC).

He said President Joe Biden has spoken about this (the need for reforms) before in his remarks to the UN general assembly.

"We certainly support reforms to the UN institution, including the security council, to make it reflective of the 21st-century world that we live in. I don't have any specifics to offer

on what those steps are, but certainly, we recognise that there is a need for reform," Patel said during a press briefing on Wednesday.

While all P5 members except China have backed India's bid for permanent membership, they have also continued to drag their feet on the broader issue of UNSC expansion. Foreign minister S Jaishankar has accused them of being shortsighted on the issue.

"The problem is in many cases the very people who are the problem are also whose concurrence you need to do the reform. If you are

going to ask five countries, saying would you mind changing the rules...that you would have less power, guess what the answer is going to be," he had said earlier.

Earlier this year, Tesla CEO Musk advocated for India's inclusion in the UNSC.

Musk had said the current structure of UN does not adequately represent the world's most populous nations. "At some point, there needs to be a revision of the UN bodies," he had said.

"The problem is that those with excess power don't want to give it up. India not having a permanent

seat on the security council, despite being the most populous country on Earth, is absurd," Musk, 52, had said.

Musk is expected to visit India later this month and is likely to announce the company's investment plans in the country.

India has been at the forefront of years-long efforts to reform the security council, saying it rightly deserves a place as a permanent member at the UN high table, which in its current form does not represent the geopolitical realities of the 21st century. Currently, the UNSC has five permanent members — China, France, Russia, the UK and the US. Only a permanent member has the power to veto any substantive resolution.

Last month, India presented a detailed model on behalf of the G4 nations of Brazil, Germany, Japan and itself for security council reform. The G4 model proposes that the security council's membership increase from the current 15 to 25-26, by adding six permanent and four or five non-permanent members.

US, UK & EU impose sanctions targeting Iran's drone output

Israel Pushes For Global Coalition Against Tehran

The US and Britain on Thursday imposed new sanctions on Iranian military leaders and weapons manufacturers to punish Tehran for its missile and drone attack on Israel last weekend, even as they implored Israeli officials not to retaliate too strongly and set off a wider war.

White House officials said the sanctions were aimed at disrupting Iran's ability to produce the unmanned aerial vehicles that its military used to attack Israel by cutting off global financial transactions with companies and individuals involved in building them. The sanctions will also try to block exports by Iran's steel industry that bring Tehran billions of dollars in revenue.

Prez Biden said the sanctions would "further degrade Iran's military industries," adding: "Let it be clear to all those who enable or support Iran's attacks: The US is committed to Israel's security." In a coordinated move, Britain said it had imposed sanctions on seven people and six entities linked to Iran's regional military activity and its attack on Israel, which PM Rishi Sunak called a "reckless act and a dangerous escalation."

Earlier, the prez of the European Council announced that new EU sanctions would be imposed on Iran's drone and missile programmes in an effort "to isolate Iran". The US and European allies have been looking for ways to punish Iran while urging Israel not to retaliate in a way that could inflame a wider conflict.

Israel welcomed the new sanctions, with foreign minister Israel Katz saying: "This is our opportunity to form a global front and a regional coalition against Iran."



Senior US and Israeli officials held a virtual meeting on Thursday expected to include a discussion of Israel's plans for Rafah. Prez Biden has urged Israel not to conduct its planned large-scale offensive in the Gaza city

After Red Sea menace, Houthis conduct 'ops' in Indian Ocean

Dubai: The leader of Yemen's Iran-aligned Houthis, who have been attacking shipping in the Red Sea, said Thursday the group had carried out "operations" in the Indian Ocean and towards southern Israel. Abdul Malik al-Houthi's comments made clear that the Houthis have acted on earlier threats to expand operations to the Indian Ocean region and attacks towards southern Israel.

The Houthis have repeatedly launched attacks towards the southern Israeli port of Eilat in what they have described as a direct con-

frontation with Israel. Al-Houthi said in a televised speech that the Houthis had launched 14 operations in two weeks in the Red Sea, the Gulf of Aden, the Arabian Sea, the Bab al-Mandeb Strait and the Indian Ocean. The Houthis say their attacks on shipping, which started in the Red Sea region last Nov, are carried out in solidarity with Palestinians who are under fire from Israel in Gaza. "There is no danger to maritime traffic related to (ships linked to) European countries that are not heading to Israel," he added. REUTERS

Tehran has warned it will act harshly against any aggression. Maj. Gen. Ahmad Haghatab, the Islamic Revolutionary Guards Corps commander in charge of protecting Iran's nuclear sites, said that if Israel were to hit one of those targets, "the hands are on the trigger" to strike Israeli nuclear facilities in response. NYT

'Israel told US moments before striking Iran's Syria consulate'

Tel Aviv: Israel was mere moments away from an air strike on April 1 that killed several senior Iranian commanders at Iran's embassy complex in Syria before it told the US what was about to happen.

Israel's closest ally had just been caught off guard. Publicly, US officials voiced support for Israel, but privately, they expressed anger. The Israelis had badly miscalculated, thinking that Iran would not react strongly, according to multiple US officials — a view shared by a senior Israeli official. On Saturday, Iran launched a retaliatory barrage of over 300 drones and missiles at Israel — an unexpectedly large-scale response, if one that did minimal damage.

From the day of the strike, Iran vowed retaliation both publicly and through diplomatic channels. But it also sent messages privately that it did not want outright war with Israel — and even less so with the US. US officials found themselves in an odd position: They had been kept in the dark about an important action by ally Israel even as Iran, a longtime foe, telegraphed its intentions well in advance.

The Israelis have acknowledged that they had badly misjudged the consequences, US officials said. Defence secretary Lloyd Austin complained to Israel's defence minister, Yoav Gallant, in a call on April 3, US officials said. Austin said the attack put US forces in the region at risk, and the lack of warning had left no time to ratchet up their defences. NYT