

समाचार पत्रों से चयित अंश Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा
A daily Current Awareness Service

Vol. 43 No. 109 26-28 May 2018



रक्षा विज्ञान पुस्तकालय
Defence Science Library
रक्षा वैज्ञानिक सूचना एवं प्रलेखन केन्द्र
Defence Scientific Information & Documentation Centre
मैटकॉफ हाऊस, दिल्ली 110054
Metcalf House, Delhi- 110054

Rustom-2 drones set to be ready by 2020: DRDO chief

The Defence Research and Development Organization (DRDO) on Friday said the Rustom-2 drone would be ready for use in two years. Speaking on the sidelines of the convocation ceremony of the Defence Institute of Advanced Technology (DIAT) here on Friday, DRDO chairman S Christopher said the drone will be delivered to the Indian armed forces by 2020. Rustom drones are medium-altitude, long-endurance unmanned aerial vehicles (UAV). They are a part of India's Rs1,500 crore UAV project that will cater to the needs of the Indian Army, Navy and Air Force.



Rustom-2 is being developed on the lines of USA's predator drones. It will carry out surveillance and reconnaissance for the armed forces and has a 24-hour endurance cycle. Christopher said Rustom-2 was successfully tested earlier this year at the Aeronautical Test Range in Karnataka's Chalakere. "With the help of production partners Hindustan Aeronautics Limited and Bharat Electronics Limited (BEL) our endeavour now is to deliver the drone by 2020. As of now, we are evaluating its endurance capacity, which is 24 hours with all types of payload," he said. A DRDO official said the army and navy together require 150 drones. "The United States and other western countries have for long used drones against their enemies. The US forces used UAVs against terrorist organizations in Afghanistan. Considering the security scenario in the north and northeastern

regions of India, the army should be equipped with advanced drones," said a senior DRDO scientist.

"There is a growing demand for 'Akash', an all-weather, medium-range, surface-to-air missile from several countries," Christopher said, while declining to name the countries as "we are negotiating with them". The Centre has allocated Rs18,000 crore to DRDO for the 2018-19 fiscal year. "The airborne early warning and control system (AWACS), stealth technology for unmanned combat aerial vehicle, indigenous technology for cruise missile, etc, are on top of our priority," he said. "We are currently working on various artificial intelligence (AI) projects," said G Athithan, DRDO's director general for micro electronic devices and computational systems. "High-altitude trials of the indigenously developed advanced towed artillery gun system were successful. More trials will be held at the Pokhran firing range," said Pravin Kumar Mehta, DRDO's director general for armament and combat engineering systems.

<https://timesofindia.indiatimes.com/city/pune/rustom-2-drones-set-to-be-ready-by-2020-drdo-chief/articleshow/64324935.cms>



BrahMos CEO & MD Dr Sudhir Mishra receives Doctorate degree from Shobhit University

Dr. Sudhir Mishra, Distinguished Scientist and Director General(BrahMos), DRDO & CEO&MD, BrahMos has been conferred with the prestigious Doctorate Degree by the Shobhit University, Gangoh (Saharanpur) for his valuable contribution in developing and improving India's missile technology and successful execution of a series of defence-diplomatic missions.

The Doctorate Degree was conferred on Dr. Mishra by Shri Ram Naik, Hon'ble Governor of Uttar Pradesh, during the University's convocation organised at its campus in Gangoh, Saharanpur, Uttar Pradesh on Thursday, 24th May 2018. The varsity bestowed the esteemed honour on the BrahMos Aerospace CEO & MD "in recognition of his able leadership and successful execution of production-administration tenures and projects within the DRDO and in its allied structures." Dr. Mishra has obtained his Bachelor's Degree in Mechanical Engineering from University of Jabalpur, M.Tech from Indian Institute of Technology Madras and PhD from National Institute of Technology Warangal. Dr. Mishra, a top DRDO scientist, has been associated with all major missile projects during his tenure of over three decades in India's premier defence research institution. He has also been a part of major defence-diplomatic missions abroad as



Technical Adviser (Defence Technology) in the Embassy of India, Moscow. Dr. Mishra assumed charge as the CEO & MD of BrahMos Aerospace, the JV entity between DRDO of India and NPOM of Russia, on 1st August, 2014. He has taken the BrahMos Aerospace to next level by achieving major milestones like the first successful test firing of the advanced air-launched cruise missile from Su-30MKI fighter aircraft, bringing steep dive capability for land attack missiles and so many others.

<http://www.dailypioneer.com/business-and-finance/brahmos-ceo-and-md-dr-sudhir-mishra-receives-doctorate-degree-from-shobhit-university.html>



Mon, 28 May, 2018

India, Russia conclude negotiations for S-400 Triumph deal

India has concluded price negotiations with Russia for a nearly Rs 40,000 crore deal to procure S-400 Triumph air defence missile systems for the Indian Air Force, officials said. They said the two countries are now trying to find a way out to evade the provisions of a US law that seeks to punish countries and entities engaged in transactions with the defence or intelligence establishment of Russia. "The negotiations for the missile deal have been concluded. The financial component has been finalised," a top official involved in the negotiations for the deal with Russia told. The official said both Russia and India are likely to announce the deal before an annual summit between Prime Minister Narendra Modi and Russian President Vladimir Putin in October. Two other officials said both sides are now looking at ways to insulate the deal from the sanctions announced by the US against Russia under its Countering America's Adversaries Through Sanctions Act (CAATSA).



The issue is understood to have figured during Modi's informal talks with Putin in Sochi last week. There has been mounting concerns in India over the US sanctions against Russian defence majors including Rosoboron export as billions of dollars of military purchases may be impacted because of the punitive measure. The US had announced sanctions against Russia under the stringent law for its alleged meddling in the American presidential election in 2016. CAATSA, which came into effect in January, mandates the Donald Trump administration to punish entities engaging in significant transaction with the defence or intelligence establishment of Russia. US Defence Secretary Jim Mattis last month appealed to the Congress to urgently

provide India the national security waiver, saying imposing sanctions under CAATSA for the S-400 air defence missile deal would only hit the US.

India wants to procure the long-range missile systems to tighten its air defence mechanism, particularly along the nearly 4,000-km-long Sino-India border. In 2016, India and Russia had signed an agreement on the 'Triumph' interceptor-based missile system which can destroy incoming hostile aircraft, missiles and even drones at ranges of up to 400 km. S-400 is known as Russia's most advanced long-range surface-to-air missile defence system. China was the first foreign buyer to seal a government-to-government deal with Russia in 2014 to procure the lethal missile system and Moscow has already started delivery of unknown number of the S-400 missile systems to Beijing. The S-400 is an upgraded version of the S-300 systems. The missile system, manufactured by Almaz-Antey, has been in service in Russia since 2007.



Mon, 28 May, 2018

US warships sail close to islands claimed by Beijing, angers china

Two U.S. Navy warships sailed near South China Sea islands claimed by China on Sunday, two U.S. officials told Reuters, in a move that drew condemnation from Beijing as President Donald Trump seeks its continued cooperation on North Korea. The operation was the latest attempt to counter what Washington sees as Beijing's efforts to limit freedom of navigation in the strategic waters. While this operation had been



planned months in advance, and similar operations have become routine, it comes at a particularly sensitive time and just days after the Pentagon uninvited China from a major U.S.-hosted naval drill. The U.S. officials, speaking on condition of anonymity, said the Higgins guided-missile destroyer and the Antietam, a guided-missile cruiser, came within 12 nautical miles of the Parcel Islands, among a string of islets, reefs and shoals over which China has territorial disputes with its neighbours.

The U.S. military vessels carried out manoeuvring operations near Tree, Lincoln, Triton and Woody islands in the Parcels, one of the officials said. Trump's cancellation of a summit with North Korean leader Kim Jong Un has put further strain on U.S.-China ties amid a trade dispute between the world's two largest economies. China's Defence Ministry expressed its anger, saying it had sent ships and aircraft to warn the U.S. warships to leave, saying they had entered the country's territorial waters without permission. The move "contravened Chinese and relevant international law, seriously infringed upon Chinese sovereignty (and) harmed strategic mutual trust between the two militaries," it said. In a separate statement, China's Foreign Ministry urged the United States to stop such actions.

THE ASIAN AGE

Mon, 28 May, 2018

Element with magnetic properties discovered

Scientists have discovered that the chemical element ruthenium (Ru) is the fourth element to have unique magnetic properties at room temperature. The discovery, led by researchers at the University of Minnesota in the US, could be used to improve sensors, devices in the computer memory and logic industry, or other devices using magnetic materials. The use of ferromagnetism, or the basic mechanism by which certain

materials (such as iron) form permanent magnets or are attracted to magnets, reaches back as far as ancient times when lodestone was used for navigation. Since then only three elements on the periodic table have been found to be ferromagnetic at room temperature - iron (Fe), cobalt (Co), and nickel (Ni). The rare earth element gadolinium (Gd) nearly misses by only 8 degrees Celsius.

The study, published in the journal Nature Communications, opens the door to fundamental studies of this new ferromagnetic Ru. Magnetic materials are very important in industry and modern technology and have been used for fundamental studies and in many everyday applications such as sensors, electric motors,



generators, hard disk media, and most recently spintronic memories. As thin film growth has improved over the past few decades, so has the ability to control the structure of crystal lattices - or even force structures that are impossible in nature. Researchers showed that Ru can be the fourth single element ferromagnetic material by using ultra-thin films to force the ferromagnetic phase. "We are excited and grateful to be the first group to experimentally demonstrate and add the fourth ferromagnetic element at room temperature to the periodic table," said Jian-Ping Wang, a professor at

University of Minnesota. "This is an exciting but hard problem. It took us about two years to find a right way to grow this material and validate it. This work will trigger magnetic research community to look into fundamental aspects of magnetism for many well-known elements," Wang added. "The ability to manipulate and characterize matter at the atomic scale is the cornerstone of modern information technology," said Paul Voyles, a professor at the University of Wisconsin-Madison.

Magnetic recording is still the dominant player in data storage technology, but magnetic based random-access memory and computing is beginning to take its place. These magnetic memories and logic devices put additional constraints on the magnetic materials, where data is stored and computed, compared to traditional hard disk media magnetic materials. This push for novel materials has led to renewed interest in attempts to realise predictions which show that under the right conditions, non-ferromagnetic materials, such as Ru, palladium (Pd) and osmium (Os) can become ferromagnetic. Building upon the established theoretical predictions, researchers used seed layer engineering to force the tetragonal phase of Ru, which prefers to have a hexagonal configuration, and observed the first instance of ferromagnetism in a single element at room temperature. From an application perspective, Ru is interesting because it is resistant to oxidation, and additional theoretical predictions claim it has a high thermal stability - a vital requirement for scaling magnetic memories.



Sun, 27 May, 2018

The soldiers' General who fought all of India's wars



India's greatest wartime hero was laid to rest unsung at the ripe previous age of 97 on Might 24. It marked the top of an period. There was no ceremonial send-off, no ritual last rites on the crematorium, no final submit, no rise, and only one wreath was laid. The omissions were not made good on the prayer ceremony on Might 25. India's true army icon, Lt Gen Zorawar Chand Bakshi, unarguably India's biggest soldier, didn't die. He merely pale away. He deserved a farewell befitting the Bakshis of all occasions. Without naming them, lesser soldiers have been made much of, because they have been politically

related. Zoru was not. He was a true skilled and was utterly apolitical. For a government that trumpets its devotion to the lads in uniform, and that too on its fourth anniversary, Zoru, as he was endearingly referred to as, received a shabby send-off. No minister, not even a junior one, and no one from the army got here for the prayer meeting or his cremation. Not even a tweet of condolence from the Prime Minister. Might India's army history have been written without Zoru Bakshi's incomparable feats on the battlefield? He was the one officer to have fought India's wars -all of them-in each rank, from Lieutenant to Major Basic. In World Conflict II, as a subaltern within the Baloch Regiment, he was a pain within the neck for the Japanese advancing in Burma. He was awarded a Mention in Despatches for his skilful and successful ambushes.

After Partition, he joined the two/fifth Gorkha Rifles (Frontier Pressure) and, as a Brigade Main in the Kashmir conflict in 1947, was awarded the Vir Chakra. As a Main disguised as a fellow traveller, he trekked 400 miles throughout Tibet to win the primary McGregor Medal for acquiring very important strategic intelligence. Time magazine wrote after his secret Tibet reconnaissance: "Bakshi is a short man with a tall ego". It should have added: "and large initiative". He commanded 2/5 Gorkha Rifles, the three Victoria Cross battalion, in Congo, sent on a peacekeeping mission, whose mandate changed to peace enforcement, i.e. from Chapter 6 to Chapter 7. Main the battalion together with his cane and crafty, he defeated the mercenary-led Katangese gendarmerie in battle after battle, ending up profitable a Vishisht Seva Medal. But his most historic army feat was as a Brigade Commander: he captured the legendary Hajpir Cross and straightened the Uri-Poonch bulge within the 1965 struggle. The Maha Vir Chakra was added to the gongs on his chest. In 1971, as a Divisional Commander, he severed the Hen's Neck in the Jammu sector. After a distinguished document preventing struggle, he commanded the counter insurgency division in Nagaland where Zoru was feared by the rebel commanders.

Zoru's relentless battlefield heroics and strategic steerage ensured a period of no warfare. The soldiers' Common was promoted to Lieutenant Basic to command the premier 2 Corps, the most important single offensive pressure ever mustered for conflict. For somebody with outstanding valour, he was a really shy man with an impish smile and infectious laughter. When not in uniform, he wore his trademark makhmali (velvet) Nepali cap designed by the battalion's tailor, famously referred to as Charlie. When the Siachen skirmishes have been being fought after he had hung up his boots, strategic specialists would search his recommendation on the utility of holding Siachen Ridge. He would say: "India should hand over Siachen altogether: however solely on the condition that Pakistan deploys a brigade there". So infructuous, he thought, was its strategic value. Zoru has gone, and with him the artwork of battle and expertise of soldiering of that vintage. The institution should make up for its neglect of the grand previous soldier by bestowing on him the rank of an honorary Common for valour. The writer, a retired Main Basic, served with Lt Gen Zorawar Chand Bakshi.

MAIL TODAY

Sat, 26 May, 2018

Time to review our nuke policy

By Harsh V Pant

This month marks two decades since India crossed the nuclear rubicon in 1998 and declared itself as a de facto nuclear weapon state. It has been a long journey since then and the US-India civil nuclear deal was the culmination, making India part of the global nuclear architecture and its integration into the global nuclear order. But as New Delhi works towards entering the Nuclear Suppliers Group and recalibrates its deterrence vis-à-vis China and Pakistan, debates continue about the future of India as a nuclear power.

Strategic stability A crude nuclear stability has emerged in South Asia as India's calibrated responses to the three major region crises since May1998 demonstrate. Nuclear weapons have contributed to regional strategic stability by reducing the risk of full-scale war in the region. Despite repeated provocations by Pakistan — in 1999, 2001-02 and 2008-and a resentful Indian public that wanted its government to retaliate, the Indian policymakers demonstrated an extraordinary measure of restraint in the aftermath of all three crises, refusing to launch even small-scale limited attacks against Pakistan. The Indian government forbade the

military to cross the Line of Control despite the Indian military officials clearly wanting to pursue such a posture. In 2016, the Modi government changed that when the Indian Army's special forces took out several suspected terror camps across the volatile Line of Control in Kashmir in response to an attack on an Indian Army post in Kashmir by Pakistan-based terrorists that killed 20 soldiers. The Indian response came almost 11 days after the initial attack and reflected an attempt by the Modi government to pressurise Pakistan on multiple fronts, thereby gaining leverage over an adversary that had long used terrorism and proxies to challenge India. The Modi government decided to use the instrumentality of military power- a tool which New Delhi had avoided for long. What was new was not that cross-border raids took place, but that India decided to publicise them to the extent it did. Pakistan's reaction was contradictory.

While the nation's military issued a flat denial of Indian claims and insisted that only cross-LoC firing had taken place, Pakistani Prime Minister Nawaz Sharif decried India's "naked aggression", and suggested that the move had exacerbated the civil military divide in the country. With its move, India did not discard strategic restraint, contrary to what many have suggested, but managed to reset the terms of military engagement with Pakistan. For years now, Pakistan had raised the bogey of nuclear weapons to put India in a state of strategic limbo.

After the Uri attacks, Pakistan's defence minister Khawaja Muhammad Asif had waved the nuclear sabre and threatened to "annihilate" India if attacked. But with its strikes, India has managed to convey to Pakistan and to other external stakeholders that Pakistan's nuclear blackmail has no legs to stand on and that India has military room to operate below the threshold that would trigger major conventional, or even nuclear, escalation. India is also trying to shape a counter narrative about the ability of India to inflict pain on Pakistan. By constantly deciding not to react militarily to Pakistani provocations, New Delhi was losing its deterrence credibility, further fuelling Pakistan's adventurism. Policy change Indian policymakers cutting across the ideological spectrum have been trying to grapple with Pakistan's adventurous foreign policy for years now. In fact, former National Security Advisor Shiv Shankar Menon's book talks of Pakistan's nuclear shield permitting it to undertake terrorist attacks on India without fear of retaliation, a key variable that is resulting in new ways of looking at India's posture. Though the BJP-led government has so far not proposed any change in the doctrine or the 'No First Use' (NFU) on which India's declaratory nuclear doctrine is based, it had promised in its 2014 election manifesto to "study in detail India's nuclear doctrine, and revise and update it, to make it relevant to challenges of current times". Manohar Parrikar, India's defence minister till early 2017, questioned India's NFU policy on nuclear weapons, asking, "Why a lot of people say that India has No First Use policy."

I should say I am a responsible nuclear power and I will not use it irresponsibly... And as an individual, I get a feeling sometime why do I say that I am not going to use it first. I am not saying that you have to use it first just because you don't decide that you don't use it first. The hoax can be called off." Seismic shift But what really set the cat among the pigeons is a passage in a recent book by India's former national security advisor, Shiv Shankar Menon, wherein he writes: "There is a potential grey area as to when India would use nuclear weapons first against another NWS (nuclear weapons state). Circumstances are conceivable in which India might find it useful to strike first, for instance, against an NWS that had declared it would certainly use its weapons, and if India were certain that adversary's launch was imminent."

This has led some to argue that there is a major doctrinal shift happening in India whereby New Delhi may abandon its NFU nuclear policy and launch a preemptive strike against Pakistan if it feared that Islamabad was likely to use the weapons first. This is being viewed by many in the West as a seismic shift in India's nuclear posture, one which may have significant consequences for South Asian strategic stability. But as we complete 20 years since Pokhran II, it is time to re-assess Indian nuclear policy and posture. Indian nuclear doctrine was articulated in 1999 and it certainly needs to be reviewed. All doctrines require regular reappraisals and Indian nuclear doctrine will inevitably have to respond to contemporary challenges. New Delhi should not shy away from this debate. The writer is Professor of International Relations, King's College London. The views expressed are personal.

New AI system can identify people from their walk

Scientists have developed an artificial intelligence (AI) that can identify people by measuring their gait or walking pattern. The technology could be used at airport security instead of fingerprinting and eye-scanning. It can successfully verify an individual simply by analysing the footstep 3D and time-based data. The AI system, developed by researchers at University of Manchester in the UK and University of Madrid in Spain, correctly identified an individual almost 100 per cent of the time, with just a 0.7 error rate. Physical biometrics, such as fingerprints, facial recognition and retinal scans, are currently more commonly used for security purposes. However, so-called behavioural biometrics, such as gait recognition, also capture unique signatures delivered by a person's natural behavioural and movement patterns.

The team tested their data by using a large number of so-called 'impostors' and a small number of users in three different real-world security scenarios. These were airport security checkpoints, the workplace, and the home environment. The approach offers the potential to complement current security systems at airports, offices and the home as the research has shown. "Each human has approximately 24 different factors and movements when walking, resulting in every individual person having a unique, singular walking pattern. Therefore monitoring these movements can be used, like a fingerprint or retinal scan, to recognise and clearly identify or verify an individual," said Omar Costilla Reyes, from University of Manchester. One the key benefits of using footprint recognition is, unlike being filmed or scanned at an airport, the process is non-intrusive for the individual and resilient to noise environmental conditions.



Why do we always choose to focus more on the negative?

innervoice



Gokul Nanda

A friend of mine was out on a date, which she said was going great, until her boyfriend brought up an old incident and made fun of how she had reacted then. "It left me teary eyed... I felt humiliated and it spoiled my evening completely," she said.

The boyfriend apologised profusely, assuring her that he meant it as a joke and did not mean to hurt her. The laughter and the good times that had preceded that incident almost ceased to exist for my friend and all she could think of was the jibe that

had been made. In return she showered him with angry comments.

The incident left me thinking, in life, do we prefer to dwell more on the negative than on the positive? A great relationship, job or a friendship suddenly seem less than they actually are, the moment there is an unsavoury turn of events. Many of us find it impossible to forget that incident or forgive the people attached to it. If we do not reward our friends, partners, colleagues constantly for the good things they do for us, why punish them the moment something goes wrong? To step back and look at the bigger picture may show how truly insignificant that one negative incident is, in the face of all the good times.