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Revamping DRDO and defence PSUs

The need is increasingly felt of involving the private sector and other agencies , i.e.; academic institutions like universities, IITs, Indian Institute of Science etc for a complete revamping and reorientation of Defence Research Development Organisation . These recommendations having come from the Parliamentary Standing Committee on Defence with an aim to reduce dependence on foreign vendors need thorough exercise and planning. These objectives, though not possible to be achieved in the short run, however, can progressively pave way for defence related requirements being met indigenously.

Private and Public sectors needed to work together as less dependence on foreign sellers meant massive research and investments in the country. Dependence on foreign sellers has often proved full of hassles and delays and not enough procurement from our own sources has added to the problems. It shall definitely prove economically and militarily favourable if procurement were made from indigenous available sources besides the same giving a chance to home sector to develop and expand. Collaboration with foreign manufacturers by the Indian private firms would provide a level playing field in manufacturing and providing items required for our defence needs.

A Committee headed by Dr. P. Rama Rao was constituted by the Government for reviewing the functioning of Defence Research and Development Organisation (DRDO).

The Organisation has implemented the following recommendations of the Committee within its powers:

- Nomination of Nodal Officers for structured interaction between DRDO and Services
- Introduction of Integrated Financial Advice (IFA) Scheme for financial decentralisation
- Appointment of a dedicated Chief Controller for Human Resources (HR)
- Creation of Seven Technology Domain based Clusters headed by Director's General, Restructuring of DRDO HQrs, Creation of Directorate of Systems Analysis and Modelling (SAM) and Directorate of Quality, Reliability and Safety (QR&S)
- Efforts have also been made to increase budget for Extramural Research as recommended by the Committee
- Note has been initiated by DRDO for approval of the Cabinet for:
- Creation of empowered Defence Technology Commission (DTC)
- Creation of a Commercial Arm of DRDO
- Renaming of Director General, DRDO as Chairman, DRDO
- Creation of 5 Senior Administrative Grade (SAG) posts along with 162 other posts for full scale implementation of IFA Scheme

At present, there is no proposal to revamp the Defence Public Sector Undertakings (DPSUs) to make them capable for developing advance weapons systems. The DPSUs have a strategy for strengthening their capabilities for producing and supplying various Weapon Systems and Platforms required by Defence Forces within the agreed timeframe. Some of the DPSUs have also collaborated with DRDO and other R&D institutions in this regard. With the objective of achieving self-reliance in defence production, the Ordnance Factories and DPSUs have been continuously modernising and upgrading their capabilities and widening their product range. Adequate resources have been made available by the government to DRDO for carrying out research and development works. Government continuously monitors the capacity utilisation of DPSUs and emphasis is given for augmentation and modernisation of their capacities to meet the growing demand of the Armed Forces.

<http://www.indiandefensenews.in/2019/12/revamping-drdo-and-defence-psus.html>



Tue, 31 Dec 2019

India's Advanced Towed Artillery Gun achieves milestone with record firing in a minute

New Delhi: Over the last 18 months, the Indian Army has inducted American M-777 and South Korean K9 Vajra artillery units as well as its domestically-made Dhanush howitzer. The army has plans to modernise its entire artillery system in the next seven years.

India's domestically produced advanced towed artillery gun system (ATAGS) has achieved yet another breakthrough, successfully firing five rounds in 62 seconds.

The 155 mm x 52 calibre ATAGS achieved the milestone during evaluation trials at a firing range in the Pokharan region of India's Rajasthan state. It offered the key parameters for the howitzer to pass the evaluation trials.

The howitzer is being developed by the private firm Tata SED with support from the state-funded Defence Research and Development Organisation (DRDO), the country's premier military R&D organisation.

In manned firing, the system surpassed 20 rounds in 12 minutes without reporting any stoppage. The system has a range of over 40 km with advanced features in terms of high mobility, and quick deployability.

The ATAGS towed artillery gun system project is fully made in India, and was presented by the DRDO as part of the Indian Army's artillery modernisation programme.

The Armament system of the ATAGS includes its barrel, breech mechanism, muzzle brake and recoil mechanism, allowing it to fire 155 mm calibre at a longer range, and with accuracy and precision; additionally, it provides greater firepower.

The army had procured Swedish Bofors in the 1990s — a deal which later triggered enormous controversy involving political big-wigs accused of receiving kickbacks from the supplier. The purchase of howitzers was put on hold until earlier this year, when the Indian Army received its first tranche of the American ultralight Howitzer M-777s.

The delay of almost 30 years has been a major stumbling block for the Indian Army's field artillery rationalisation plan (FARP). According to the plan, the army needs over 1,500 155 mm 52 calibre towed Howitzers and an 814 mounted gun system of the same calibre.

<https://sputniknews.com/military/201912301077903088-indias-advanced-towed-artillery-gun-achieves-milestone-with-record-firing-in-a-minute---video-/>

IAF fighter jet fleet in need of immediate attention

Centre to push for faster production of Tejas I First lot of Rafale expected early next year

New Delhi: With the MiG-27 fleet having been phased out of the Indian Air Force (IAF), reducing the fighting fleet further, the Ministry of Defence will now push for faster production of Tejas fighter jets and look for other options.

As of yesterday, the IAF was having 31 squadrons (16-18 planes in each) as against the mandated 42 for simultaneous two-front war with Pakistan and China. Of these are some half a dozen MiG 21 squadrons that are also being phased out gradually. The engine upgrade of the Jaguar jets has been shelved and the fleet of 100-odd jets will start getting phased out from 2025 onwards.

Another squadron of the Sukhoi 30 MKI is being raised at Thanjavur early next year.

The first lot of Rafale jets from France will start arriving early next year. A total of 36 are on order. Separately, a global tender is out in the open, asking foreign companies to come and make 114 jets in India. It is slowly inching forward.

The real issue is with the pace of the domestic production of fighter jets and the IAF has suggested to the government that it needed a speedier “make in India” by public sector giant Hindustan Aeronautics Limited.

Over the next 16-18 years, the IAF would require more than 300 jets made by the HAL. At the present pace of 11-12 planes per annum, the HAL would take 25-26 years to make various versions of Tejas, Tejas Mark II (called medium-weight fighter) and also the advanced medium combat aircraft (AMCA), a fifth generation state-of-the-art plane. All three planes are part of the projected 300 jets.

The IAF wanted the HAL to ramp up to make 16 planes per annum and outsource work, so that the speed could be increased to 20 planes. The HAL reports to the Department of Defence Production in the Ministry of Defence (MoD). The HAL is listed to make 40 Tejas Mark I jets. The order for the remaining 83 for the Tejas Mark 1A, which will come with 43 improvements, needs to be placed immediately.

The IAF has told the MoD that it would need 170 (10 squadrons) Tejas Mark II (known as MWF) planes, the test flight of which is slated for 2022.

Squadrons being phased out

- The IAF has 31 squadrons (16-18 planes in each) as against the mandated 42 for two-front war with Pakistan and China
- Of these are some half a dozen MiG 21 squadrons that are being phased out gradually. The fleet of 100-odd Jaguar jets will start getting phased out from 2025

With China’s help, Pak rolls out jets

- Pakistan has rolled out the first batch of its eight indigenous fighter jets, manufactured in collaboration with its all-weather ally China
- Pakistan's Air Chief Marshal Mujahid Anwar Khan, Chinese Ambassador Yao Jing and Aviation Industries of China Vice President Hao Zhaoping were present during the rollout near Islamabad PTI

<https://www.tribuneindia.com/news/iaf-fighter-jet-fleet-in-need-of-immediate-attention-18319>

General Rawat appointed India's 1st Chief of Defence Staff

India's first Chief of Defence Staff (CDS) will be a four-star officer responsible for heading the department of military powers in the defence ministry

By Rahul Singh

New Delhi: The Union government on Monday announced that General Bipin Rawat will be India's first Chief of Defence Staff (CDS), heading the newly created department of military affairs and acting as the principal military adviser to the defence minister on all matters related to the tri-services, an announcement that came a day before his retirement as the Indian Army Chief.

The development, perhaps the most significant reform in top military management in India, comes four months after Prime Minister Narendra Modi announced in his Independence Day speech the creation of the post for more effective coordination between the three armed forces. Rawat will take over as CDS on Tuesday.

The creation of a CDS was suggested almost two decades ago by the Kargil Review Committee (KRC) in February 2000.



“Government has decided to appoint General Bipin Rawat... as the Chief of Defence Staff with effect from 31.12.2019 and until further orders and extension in service of General Bipin Rawat... with effect from 31.12.2019 and till such period he holds the office of CDS,” an official statement said.

As CDS, Rawat will have the same salary and perquisites as the three service chiefs (who are also four-star officers). Apart from heading the department of military affairs, Rawat will also hold the charge of permanent chairman, chiefs of staff committee (CoSC).

“Chief of the Defence Staff shall pursue greater coordination amongst the three Services and ensure unison in employment of military power in line with the dynamic security requirement,” the Indian Army's Twitter handle said.

Until now, the chairmanship of the committee, which consists of the three service chiefs, was held in rotation by the senior-most service chief for brief periods and the arrangement was found to be unsatisfactory.

Though the government has said the CDS will not exercise any military command, including over the three service chiefs, it is expected that Rawat will be the “first among equals”, also because he is senior to all the other chiefs in terms of service. Experts said Rawat will have his work cut out to fulfil his wide-ranging mandate.

Admiral Arun Prakash, who retired as navy chief and chairman, CoSC, in October 2006, said the principal challenge for the country's first CDS will be to integrate the armed forces into the government edifice to enable them to participate fully in decision-making.

“Another challenge would be to integrate the department of military affairs with the department of defence. He will have to work out an arrangement for cross-postings — civilians and uniformed personnel — between the two wings of the defence ministry. He will also have to integrate the acquisition requirements of the three services and groom people to take over theatre commands in

future,” said Prakash, who was the commander-in-chief of India’s first tri-services command at Port Blair. He headed the Andaman and Nicobar Command during 2001-02.

According to the Union defence ministry, one of the key responsibilities of the department of military affairs under Rawat would be to facilitate the restructuring of military commands for optimal utilisation of resources by bringing about jointness in operations, including through the establishment of joint/theatre commands.

Such commands will come under the operational control of an officer from any of the three services, depending on the function assigned to that command. Currently, the three services are not in agreement on theatre commands.

“Theaterisation should not be done in a hurry. The Indian armed forces don’t need that at the moment. The CDS will have to deal with all those issues. He will also have to set up robust structures for cross-service cooperation,” said Air Chief Marshal PV Naik, who retired as IAF chief and chairman, CoSC, in July 2011.

The government has said while the CDS will act as the principal military adviser to the defence minister on all tri-services matters, the three service chiefs will continue to advise the minister on matters exclusively concerning their respective services. The department of military affairs will focus on promoting jointness in procurement, training and staffing for the tri-services.

The KRC, headed by K Subrahmanyam, recommended the appointment of a CDS as a means to provide single-point professional military advice to the political leadership. Two years after the 1999 Kargil war, the group of ministers strongly recommended that India should have a CDS. The need for appointing a CDS was also highlighted by several committees and parliamentary panels between 2002 and 2016. But successive governments were unable to build political consensus around a CDS before Prime Minister Narendra Modi announced the creation of the post on August 15 this year.

A gazette notification issued on Saturday set 65 as the maximum serving age for the CDS. It puts the post on par with the comptroller and auditor general, the chief election commissioner and the central vigilance commissioner in terms of the retirement age. The three service chiefs end their term after three years of service or when they turn 62, whichever is earlier.

<https://www.hindustantimes.com/india-news/general-rawat-appointed-india-s-1st-chief-of-defence-staff/story-MiC28skswmtkBkes3aJiPL.html>

General Bipin Rawat: A leader not afraid of tough calls, challenging status quo

Those who have known the 61-year-old general for several decades say Rawat thinks outside the box, takes hard decisions and is not afraid of challenging the status quo

By Rahul Singh

New Delhi: From changing the face of United Nations peacekeeping in the Democratic Republic of Congo (DRC) to initiating the biggest exercise to restructure the army to closely supervising India's two publicly acknowledged surgical strikes on foreign soil, Bipin Rawat, a rare general who does not play golf, brings enormous experience to the table as India's first Chief of Defence Staff.

Those who have known the 61-year-old general for several decades say Rawat thinks outside the box, takes hard decisions and is not afraid of challenging the status quo.

When Rawat took charge of the UN's North Kivu Brigade in DRC 11 years ago, things weren't going too well for the world's costliest peacekeeping mission, known by its French acronym MONUC. Rawat reworked the velvet-glove strategy to an iron fist within a month of his arrival in 2008, frequently authorising the use of attack helicopters to strafe positions held by rebel groups responsible for recruiting child soldiers, displacing millions of people, and civilian deaths.

Under Rawat's leadership, the Indian brigade saved a key Congolese province from being overrun by rebels. Lieutenant General Babacar Gaye, the then Force Commander of the UN mission in the Congo, wrote in the commendation awarded to Rawat that it was due to his "leadership, courage and experience" that North Kivu's capital Goma never fell, the country's eastern region was stabilised and the main rebel group was forced to come to the negotiating table.

"General Rawat is extremely hardworking and bold in pursuing the organisation's objectives. He has the ability to think differently and take tough decisions without bothering about the accompanying criticism," said Lieutenant General BS Sandhu (retd), who has known Rawat for almost 45 years and was his course mate at the Khadakwasla-based National Defence Academy.

Son of a three-star general, Rawat was commissioned into the army in December 1978 after graduating from the Dehradun-based Indian Military Academy where he was awarded the coveted Sword of Honour for exceptional performance. He was commissioned into the 5/11 Gorkha Rifles.

The National Democratic Alliance government superseded two top generals — Lieutenant Generals Praveen Bakshi and PM Hariz — to appoint him army chief exactly three years ago on December 31, 2016. Rawat's experience in Jammu and Kashmir and the Northeast tipped the scales in his favour.

"General Rawat is the rare amalgam of intellect and hard work. He is extremely upright and fair," said Lieutenant General Rakesh Sharma (retd), who was Rawat's commanding officer in the late 1990s. Sharma, who retired as the army's adjutant general in March 2017, was also the aide-de-camp to Rawat's father, Lieutenant General LS Rawat, in the early 1980s.

Rawat was closely involved in the planning of the army's surgical strikes in Myanmar in 2015 followed by targeted operations against terror pads in Pakistan-occupied Kashmir a year later.

In his three-year term as army chief, Rawat courted controversies on several occasions — his recent comments that were widely seen as being aimed at the anti-Citizenship (Amendment) Act protests across India; awarding the Chief of Army Staff's Commendation card to Major Leetul Gogoi (who bound a Kashmiri civilian to the front of his jeep) and his position on the disability pension.

“He may have courted controversies a few times with his comments but he is an outstanding soldier and military leader. He is very outspoken too. If you ask him a question, he will give you an answer,” said a senior officer, asking not to be named.

General Rawat is the brain behind a mammoth restructuring drill, based on four comprehensive studies led by the army’s topmost generals, which could change the complexion and direction of the 1.2 million- strong Indian Army and transform it into a deadlier fighting machine fully prepared for future wars.

The implementation of the four studies in their totality will reduce troops (by about 100,000), allow the army to tap technological advances in warfare, create integrated brigades that can be mission-deployed swiftly, improve the army’s tooth-to-tail ratio and enhance career prospects for officer and men.

Rawat miraculously survived a chopper accident when he was the commander of the Dimapur-based Headquarters 3 Corps a few years ago.

<https://www.hindustantimes.com/india-news/gen-bipin-rawat-a-leader-not-afraid-of-tough-calls-challenging-status-quo/story-oG7rhzImioecbf8a76SpWO.html>

जनरल बिपिन रावत देश के पहले चीफ ऑफ डिफेंस स्टाफ नियुक्त, 31 को ही शपथ लेंगे नए आर्मी चीफ नरवणे

हाइलाइट्स

- जनरल बिपिन रावत को चीफ ऑफ डिफेंस स्टाफ बनाने की पुष्टि रक्षा मंत्रालय ने की है
- जनरल बिपिन रावत का आर्मी चीफ के तौर पर तीन साल का कार्यकाल कल पूरा होगा
- उनकी जगह लेफ्टिनेंट जनरल मनोज मुकुंद नरवाने देश के अगले आर्मी चीफ होंगे
- पीएम मोदी ने लालकिले से 15 अगस्त के भाषण में CDS पद को लेकर ऐलान किया था

नई दिल्ली: 31 दिसंबर 2019 को एक तरफ लेफ्टिनेंट जनरल मनोज मुकुंद नरवणे बतौर आर्मी चीफ भारतीय सेना की कमान संभालेंगे तो इसी दिन देश को पहले चीफ ऑफ डिफेंस स्टाफ भी मिल जाएंगे। रक्षा मंत्रालय ने सोमवार देर शाम आर्मी चीफ [जनरल बिपिन रावत](#) को देश का पहला चीफ ऑफ डिफेंस स्टाफ नियुक्त किए जाने की औपचारिक घोषणा की। रक्षा मंत्रालय ने बताया है कि [सीडीएस](#) के तौर पर जनरल रावत का कार्यकाल 31 दिसंबर से शुरू होगा और अगले आदेश और उनके सेवा विस्तार तक रहेगा।

आपको बता दें कि आर्मी चीफ जनरल रावत मंगलवार को सेवानिवृत्त हो रहे थे। सरकार द्वारा 65 साल तक रिटायरमेंट की उम्र सीमा किए जाने के बाद अब जनरल रावत अगले 3 साल तक पद पर बने रहेंगे। CDS का पद '4 स्टार' जनरल के समकक्ष होगा और सभी सेनाओं के प्रमुखों में ऊपर होगा। CDS का दफ्तर साउथ ब्लॉक में होगा। भारतीय सेना ने अपने ट्विटर हैंडल से जनरल बिपिन रावत को देश का पहला CDS बनाए जाने पर बधाई दी है।

जनरल बिपिन रावत को CDS बनाए जाने की घोषणा होने के फौरन बाद ही भारत में अमेरिकी राजदूत केन जस्टर ने ट्वीट कर बधाई दी। उन्होंने उम्मीद जताई कि भारत और अमेरिका के रक्षा संबंध और मजबूत होंगे। उधर, उत्तराखंड के मुख्यमंत्री त्रिवेन्द्र सिंह रावत ने भी आर्मी चीफ को बधाई देते हुए कहा कि जनरल बिपिन रावत को देश का पहला CDS बनाया जाना पूरे राज्य के लिए गर्व और सम्मान की बात है।

28वें आर्मी चीफ होंगे लेफ्टिनेंट जनरल नरवणे

उधर, लेफ्टिनेंट जनरल मनोज मुकुंद नरवाने देश के 28वें आर्मी चीफ होंगे। वह भी 31 दिसंबर को ही पद की शपथ लेंगे। नरवाने जनरल बिपिन रावत का स्थान लेंगे। लेफ्टिनेंट नरवणे फिलहाल सेना उपप्रमुख हैं। लेफ्टिनेंट नरवणे सितंबर में सेना उपप्रमुख बनने से पहले सेना के ईस्टर्न कमान के प्रमुख थे, जो चीन के साथ लगती करीब चार हजार किमी लंबी सीमा की देखभाल करती है। अपने 37 वर्षों के सेवा काल में लेफ्टिनेंट जनरल नरवणे जम्मू-कश्मीर और पूर्वोत्तर में कई महत्वपूर्ण पदों पर रहे।

लेफ्टिनेंट जनरल नरवणे जम्मू-कश्मीर में राष्ट्रीय राइफल्स बटैलियन की कमान संभाली और पूर्वी मोर्चे पर इन्फैंट्री ब्रिगेड का नेतृत्व किया। वह श्रीलंका में भारतीय शांति रक्षक बल का हिस्सा थे और तीन वर्षों तक

म्यांमार स्थित भारतीय दूतावास में डिफेंस अटैची रहे। लेफ्टिनेंट जनरल नरवणे राष्ट्रीय रक्षा अकादमी और भारतीय सैन्य अकादमी के छात्र रहे हैं। वह जून 1980 में सिख रेजिमेंट की सातवीं बटैलियन में कमीशन प्राप्त हुए। उन्हें 'सेना मेडल', 'विशिष्ट सेवा मेडल' और 'अतिविशिष्ट सेवा मेडल' प्राप्त है।

CDS के लिए सेना के नियमों में संशोधन

गौरतलब है कि रक्षा मंत्रालय ने सेना नियमों, 1954 में कार्यकाल और सेवा के नियमों में संशोधन किया है। मंत्रालय ने 28 दिसंबर की अपनी अधिसूचना में कहा है कि चीफ ऑफ डिफेंस स्टाफ (CDS) या ट्राई-सर्विसेज प्रमुख 65 साल की आयु तक सेवा दे सकेंगे। इसमें कहा गया, 'बशर्ते की केंद्र सरकार अगर जरूरी समझे तो जनहित में चीफ ऑफ डिफेंस स्टाफ की सेवा को विस्तार दे सकती है।' जनरल बिपिन रावत, सेना प्रमुख पद से 31 दिसंबर को सेवानिवृत्त होंगे। मौजूदा नियमों के अनुसार, तीन सेवाओं के प्रमुख 62 साल की आयु तक या तीन साल तक सेवा दे सकते हैं।

कैबिनेट की बैठक में पद और चार्टर को मिली थी मंजूरी

प्रधानमंत्री नरेंद्र मोदी की अध्यक्षता में केंद्रीय मंत्रिमंडल ने 24 दिसंबर को CDS पोस्ट और इसके चार्टर एवं इयूटीज को मंजूरी दे दी थी। खास बात यह है कि सीडीएस, पद छोड़ने के बाद किसी भी सरकारी पद को ग्रहण करने के पात्र नहीं होंगे। बता दें कि प्रधानमंत्री नरेंद्र मोदी ने इसी साल लालकिले से 15 अगस्त को दिए भाषण में इसका ऐलान किया था। पीएम ने कहा था कि चीफ ऑफ डिफेंस स्टाफ होने के बाद तीनों सेनाओं के बीच समन्वय और तालमेल बैठाने में आसानी होगी।

कौन हैं नए आर्मी चीफ?

लेफ्टिनेंट जनरल मनोज मुकुंद नरवणे फिलहाल आर्मी के वाइस चीफ के तौर पर अपनी सेवाएं दे रहे हैं। सितंबर में वाइस चीफ का पद संभालने से पहले, लेफ्टिनेंट जनरल नरवणे आर्मी की ईस्टर्न कमांड का नेतृत्व कर रहे थे। यह कमांड भारत और चीन के बीच करीब 4 हजार किलोमीटर की सीमा की रक्षा करती है। अपनी 37 वर्षों की सेवा में लेफ्टिनेंट जनरल नरवणे ने जम्मू-कश्मीर और पूर्वोत्तर की बेहद खतरनाक जगहों पर काम किया है। उन्होंने इंडियन पीस कीपिंग फोर्स में श्रीलंका में भी काम किया है और म्यांमार में भारत के राजदूत के डिफेंस अटैच के तौर पर भी काम कर चुके हैं।

करगिल युद्ध के बाद दिया गया था सुझाव

CDS थलसेना, वायुसेना और नौसेना के एकीकृत सैन्य सलाहकार होगा। 1999 में गठित की गई करगिल सुरक्षा समिति ने इस संबंध में सुझाव दिया था। चीफ ऑफ डिफेंस स्टाफ की नियुक्ति का मकसद भारत के सामने आने वाली सुरक्षा चुनौतियों से निपटने के लिए तीनों सेनाओं के बीच तालमेल बढ़ाना है। प्रधानमंत्री नरेंद्र मोदी की घोषणा के बाद राष्ट्रीय सुरक्षा सलाहकार अजीत डोभाल की अध्यक्षता में एक कार्यान्वयन समिति का गठन किया गया जो CDS की नियुक्ति के तौर-तरीकों और उसकी जिम्मेदारियों को अंतिम रूप देने का काम किया।

<https://navbharattimes.indiatimes.com/india/army-chief-general-bipin-rawat-has-been-appointed-as-the-first-chief-of-defence-staff-said-defence-ministry/articleshow/73035420.cms>

देश के पहले CDS पीएम के नेतृत्व वाले न्यूक्लियर कमांड अथॉरिटी को भी देंगे सलाह

जनरल बिपिन रावत आज देश के पहले चीफ ऑफ डिफेंस स्टाफ का पद संभालने वाले हैं।
चार स्टार जनरल बिपिन रावत के सामने इस पद पर बैठने के साथ कई तरह की चुनौतियां भी होंगी।

By रजत पंडित

हाइलाइट्स

- जनरल बिपिन रावत आज संभालेंगे देश के पहले CDS का कार्यभार
- 65 साल की उम्र तक वह इस पद पर बने रह सकते हैं
- जनरल रावत आज ही आर्मी चीफ से हो रहे हैं रिटायर
- पीएम मोदी ने 15 अगस्त को लाल किले से CDS पद के गठन की घोषणा की थी

नई दिल्ली: [जनरल बिपिन रावत](#) आज देश के पहले चीफ ऑफ डिफेंस स्टाफ (CDS) का चार्ज लेने वाले हैं। जनरल रावत को अब थलसेना, वायुसेना और नौसेना के साथ-साथ रक्षा मंत्रालय एवं [पीएम के नेतृत्व वाले](#) न्यूक्लियर कमांड अथॉरिटी के सलाहकार के तौर पर भूमिका निभानी होगी। जनरल रावत आज ही आर्मी चीफ के पद से रिटायर हो रहे हैं। उनकी जगह मनोज मुकुंद नरवणे नए आर्मी चीफ का पद संभालेंगे।

करगिल युद्ध के बाद उठी थी मांग

करगिल युद्ध के बाद से ही तीनों सेनाओं के बीच तालमेल बिठाने के लिए इस पद के गठन की मांग उठी थी। पीएम नरेंद्र मोदी ने इस साल 15 अगस्त को लालकिले से इसके गठन की घोषणा भी की थी। करीब चार महीने की लंबी प्रक्रिया के बाद जनरल रावत CDS बनाने का फैसला किया गया।

CDS के पास कितनी ताकत?

एक वरिष्ठ अधिकारी ने बताया कि कैबिनेट द्वारा 24 दिसंबर को स्वीकृत

किया गया CDS का चार्टर काफी व्यापक है। अगर इसे पूरी तरीके से लागू किया जाए तो यह तीनों सेनाओं के बीच बेहतरीन समन्वय को अंजाम दे सकता है क्योंकि कई बार सैन्य बजट में हिस्सेदारी के लिए तीनों सेनाओं के बीच खींचतान भी चलती है। इसके अलावा CDS हथियार खरीद के लिए इंटर सर्विस की प्राथमिकताओं के आधार पर कोई फैसला कर सकता है। CDS इसके अलावा सरकार को सिंगल पॉइंट मिलिटरी अडवाइस भी दे

कितने साल का होगा कार्यकाल?

ऑफिशल गजट के मुताबिक सीडीएस के लिए 65 साल तक की उम्र की सीमा रखी गई है। हालांकि सीडीएस का कार्यकाल कितने साल का होगा यह तय नहीं है। आर्मी, नेवी और एयरफोर्स के चीफ का कार्यकाल 3 साल का होता है या फिर 62 साल की उम्र होने तक वह चीफ रह सकते हैं। मुमकिन है कि रावत का सीडीएस के तौर पर कार्यकाल उनके आर्मी चीफ के कार्यकाल से ज्यादा लंबा हो।

आरटीआई के दायरे में होंगे CDS

सरकार ने शीतकालीन सत्र में एक सवाल के जवाब में संसद में बताया था कि चीफ ऑफ डिफेंस स्टाफ (सीडीएस) का पद आरटीआई के दायरे में आएगा। सीडीएस के पास सेक्रेटरी लेवल की पावर होगी। रक्षा मंत्रालय के तहत एक नया डिपार्टमेंट बनाया जाएगा, जिसका नाम होगा डिपार्टमेंट ऑफ मिलिट्री अफेयर्स (डीएमए) और सीडीएस इसके प्रमुख होंगे।

सकता है। इसके अलावा वह पीएम के नेतृत्व वाले [न्यूक्लियर कमांड](#) अथॉरिटी के सलाहकार की भी भूमिका निभाएगा।

चुनौतियां भी कम नहीं

जनरल रावत ने सुरक्षाबलों की युद्ध क्षमता बढ़ाने के लिए संयुक्त युद्धक गुप बनाने की वकालत की थी। अब बतौर CDS रावत को, जो चीफ ऑफ स्टाफ कमिटी का स्थायी चैयरमैन होगा और रक्षा मंत्रालय में सैन्य मामलों के विभाग का प्रमुख भी होगा, तीनों सेनाओं की प्लानिंग, खरीदारी और ट्रेनिंग जैसे मुद्दे को भी एकीकृत करने के लिए कई प्रयास करने होंगे।

नए क्षेत्रों पर देना होगा ध्यान

सूत्रों ने बताया कि 2016 में दो लेफ्टिनेंट जनरल की वरिष्ठता को किनारे कर देश के आर्मी चीफ बनाए गए जनरल रावत को तीनों सेनाओं के एक ऐसे कमांड बनाने पर भी मेहनत करनी होगी जो स्पेस और साइबर स्पेस वाले अपेक्षाकृत नए जोन में मिलकर काम कर सके।

<https://navbharattimes.indiatimes.com/india/cds-gen-bipin-rawat-rawat-will-also-advise-pm-led-nuclear-command-authority/articleshow/73039830.cms>

CDS will wear many hats

HARSHA KAKAR

It was an idea whose time had come. On 24 December, the government approved the appointment of a Chief of Defence Staff (CDS) for the armed forces. The announcement was made 20 years after it was initially proposed by the Kargil and Arun Singh committees. The model adopted is almost akin to the UK system where there are two advisors to the defence minister, the CDS and the Principal Undersecretary for Defence. Presently there are questions being raised in some quarters on the impact of the government's decision.

In my opinion, this is a major step which needs to be nurtured and developed patiently, without stepping on many toes and damaging the complex environment in which the armed forces operate. An analysis of the press release would convey that the government hopes this step would set the ball rolling for more positive changes in the management of defence.

As per the announcement, the CDS is expected to wear multiple hats. First, he would be the perma-

nent chairman of the Chiefs of Staff Committee (COSC). Second, he would administer all tri service organizations, while commanding the Andaman and Nicobar Command, Cyber and Space agencies. Other tri-service organisations would function under nominated service chiefs.

The creation of the Department of Military Affairs (DMA) is a welcome step, though it renders the existing HQ Integrated Defence Staff (IDS) partially redundant. The DMA would have a mix of military and civilian staff and function as a separate vertical in the MoD. The CDS, as the head of the DMA, would hold a post equivalent to a secretary. This is the third hat he will wear and his role here requires clarification.

As per the Transaction of Business rules 1961, all departments of the government are headed by Secretaries. As secretary DMA, the CDS would handle all military matters flowing from the services to the defence minister, as in the UK model. These have been removed from the existing charter of the defence secretary. The defence secretary also coor-

dinates the functioning of the MoD and would continue to do so. The appointment nowhere lowers his protocol, as his rank (four star), places him senior to all secretaries.

The structuring of the DMA has yet to be determined. Being a separate vertical within the MoD, cases emanating from the DMA would move direct to the defence minister. Hence, a branch of the uniformed services has been included in the MoD for the first time.

The other hats the CDS would wear includes that of the principal military advisor to the defence minister on tri-service matters, with service chiefs handling their own. The MoD handles more than just military matters; the CDS' role is restricted to military matters. Finally, the CDS would be the military advisor to the Nuclear Command Authority, member of the Defence Planning Council, Defence Planning Committee and the Defence Acquisition Council.

A major change flows from this sentence of the official press release, 'Facilitation of restructuring of Military Commands for optimal utilisation

of resources by bringing about jointness in operations, including through establishment of joint/theatre commands.' Theatre commands cannot be established unless there has been an in-depth analysis of the same, especially in the Indian context. It cannot be copied from any global model. This would be amongst the CDS's major responsibilities.

Creation of theatre commands implies common laws for the three services as also enhancing joint training in major educational institutes of the services, which is presently superficial. There are no joint doctrines or concepts for war fighting. These need to be created. In addition, it is necessary to determine the number, structure, role, area of responsibility and command chain of theatre commands. Merging independent logistic establishments of different services into a common logistics command needs analysis. Simultaneously, concerns of services also need to be addressed.

All these would need study groups under the CDS, working on a time-bound schedule. The level of approval would be the cabinet as

establishment and chain of reporting of theatre commands would need an Act of parliament.

Joint planning and acquisition have been the bane of the services. As Admiral Arun Prakash stated, "there is rarely a meaningful debate amongst the informed professionals (the Armed Forces) because of the unstated understanding amongst the Chiefs that 'if you don't interfere with my plans, I'll not comment on yours'." With this responsibility under the DMA, there would be better coordination of capability development.

The CDS will also be responsible for Out of Area Contingencies. This implies that any deployment overseas will operate under the CDS, obviating the creation of adhoc commands.

However, there are other actions which should be implemented by the government. The first is changing the Allocation of Business/Transaction of Business rules, to accommodate the appointment of a CDS. The second is changing responsibility of national defence from the defence minister and defence secretary to the defence minister and the CDS.

The next is determining what constitutes military matters. This may flow in subsequent discussions between the defence secretary and the CDS. The structuring of the DMA needs to be carefully evolved keeping seniority of military versus bureaucracy in mind. The organization of HQ IDS needs to be reassessed and its strength reduced to cater for the creation of DMA.

The roles and task of the CDS have been announced despite seven decades of resistance. The appointment has not been given powers which it should have had. However, these are early days. There is intense work to be done by the DMA in the coming years to make the system receptive to the idea of greater integration and jointness. There would be teething problems, however they would be overcome.

Most important is the CDS must be given support from the MoD and service chiefs to enable the model to be a success and transform the forces into theatre commands at an early date. Military personnel, serving and veterans, need to be patient and let the appointment settle rather than raise voices against it, even before it takes root.

The writer is a retired Major-General of the Indian Army.

Lt Gen Manoj Mukund Naravane to take over as new Army Chief on Tuesday

Before taking charge as vice-chief of the Army staff in September, Lt Gen Naravane was heading the Eastern Command of the Army which takes care of India's nearly 4,000-km border with China

By Manjeet Singh Negi

HIGHLIGHTS

- **Lieutenant General Manoj Mukund Naravane will on Tuesday take over as the next chief of Army staff**
- **Army Chief Gen Bipin Rawat is due to retire on December 31 after a three-year stint as the Army chief**
- **Mukund Naravane is currently serving as vice-chief of the army**

New Delhi: Lieutenant General Manoj Mukund Naravane will on Tuesday take over as the next chief of Army staff leading the 1.3 million-strong force. He is currently serving as vice-chief of the army. Army Chief Gen Bipin Rawat is due to retire on December 31 after a three-year stint as the Army chief.

Before taking charge as vice-chief of the Army staff in September, Lt Gen Naravane was heading the Eastern Command of the Army which takes care of India's nearly 4,000-km border with China.

"It is an honour to be given this responsibility," Lt Gen MM Naravane said in his first reaction after appointment as next Army chief.

When asked about challenges that may lay ahead of him in his new posting, Lt Gen MM Naravane had said that it was too early to say about it right now as to what would be the focus areas. "Will have to deliberate on it in times to come."

In his 37 years of service, Lt Gen Naravane has served in numerous command and staff appointments in peace, field and highly active counter-insurgency environments in Jammu and Kashmir and the Northeast. He has also commanded a Rashtriya Rifles Battalion in Jammu and Kashmir and an infantry brigade on the eastern front.

He was also part of the Indian Peace Keeping Force in Sri Lanka and had served as India's defence attache at the Indian Embassy in Myanmar for three years.

<https://www.indiatoday.in/india/story/gen-manoj-mukund-naravane-to-take-over-as-new-army-chief-on-tuesday-1632698-2019-12-30>



परमाणु हमले की क्षमता बढ़ाने के मिशन पर भारतीय नौसेना

जनसत्ता संवाद

भारतीय नौसेना ने 18 पारंपरिक और छह परमाणु क्षमता से लैस पनडुब्बियों का एक बेड़ा तैयार करने की योजना बनाई है। रक्षा पर संसद की स्थायी समिति ने संसद के शीत सत्र में सदन के पटल पर एक रिपोर्ट रखी। इसमें कहा गया है, '18 (पारंपरिक) और छह एसएसएन (परमाणु हमले की क्षमता से युक्त) पनडुब्बियों की योजना है, लेकिन 15 पारंपरिक और एक एसएसएन की मौजूदा क्षमता लीज पर उपलब्ध है।'

भारत के पास दो परमाणु पनडुब्बियां भी हैं - आइएनएस चक्र और आइएनएस अरिहंत। पनडुब्बियों के मामले में चीन को भारत से आगे माना जाता है।

नौसेना ने अरिहंत क्लास के परमाणु चालित युद्धपोतों के अलावा अलावा परमाणु आयुध से हमलावर छह पनडुब्बियां बनाने की योजना बनाई है। अरिहंत एक परमाणु हमले की क्षमता से युक्त एसएसबीएन पनडुब्बी है, जो जिसमें न्यूक्लियर मिसाइल लगे हैं। परमाणु हमलावर पनडुब्बियों का निर्माण देश में ही किए जाने की योजना है, जिसके लिए निजी क्षेत्र की कंपनियों के साथ साझेदारी की जाएगी।

भारतीय नौसेना अभी पारंपरिक पनडुब्बियों का इस्तेमाल कर रही है। इसमें रूसी मूल की किलो क्लास, जर्मन मूल की एचडब्ल्यूडी क्लास और आधुनिक फ्रांसीसी स्कोपीन क्लास पनडुब्बियों का इस्तेमाल कर रही है। वहीं, परमाणु क्षेत्र में एक आइएनएस चक्र है, जो रूसी मूल का अकुला क्लास का जहाज है। नेवी ने स्टैंडिंग कमिटी को यह भी बताया कि पिछले 15 वर्षों में सिर्फ दो नई पारंपरिक पनडुब्बियां ही बेड़े में शामिल हुईं, जिनमें

एक स्कोपीन क्लास का जहाज आइएनएस कलावरी है, जबकि दूसरा आइएनएस खंडेरी। रिपोर्ट में कहा गया है कि नौसेना के मुताबिक मौजूदा 13 पारंपरिक पनडुब्बियां 17 से 31 वर्ष पुरानी हैं।

भारतीय नौसेना के बेड़े में पहली स्वदेशी पनडुब्बी कलावरी 14 दिसंबर, 2017 को शामिल की गई थी। मेक इन इंडिया कार्यक्रम के तहत देश में रक्षा उत्पादन के मद्देनजर यह महत्वपूर्ण उपलब्धि है। देश में पनडुब्बियां बनाने की योजना 1999 में तैयार की गई थी। तब 30

साल का रोडमैप तैयार हुआ था, जिसके तहत 2029 तक 24 पनडुब्बियां बनाने की योजना थी। इसके पहले प्रोजेक्ट पी-75 के तहत स्कोपीन सीरीज की छह पनडुब्बियां बनाई जा रही हैं। 2005 से यह प्रोजेक्ट चलाया जा रहा है। करीब 23 हजार करोड़ रुपए के इस प्रोजेक्ट में चार साल की देरी हो चुकी है।

पारंपरिक पनडुब्बियां वे होती हैं, जो डीजल और अन्य पारंपरिक ईंधन से चलती हैं। इनके किसी भी ऑपरेशन को अंजाम देने की क्षमता सीमित होती है। जबकि परमाणु हमलावर पनडुब्बियों को कई साल तक ईंधन की जरूरत नहीं पड़ती। इनके अंदर लगा परमाणु रिएक्टर इन्हें वेशुमार ऊर्जा देता है। इसी वजह से यह लंबी दूरी तक

जा सकती हैं और लंबे समय तक सतह पर आए बिना पानी के अंदर छिपी रह सकती हैं। यह पनडुब्बियां लंबी दूरी तक मार करने वाली मिसाइलों की मदद से परमाणु हमला करने में भी सक्षम होती हैं।

मौजूदा समय में भारत के पास आइएनएस अरिहंत नाम की स्वदेशी परमाणु पनडुब्बी है और इसके अलावा एक अन्य स्वदेशी परमाणु पनडुब्बी आइएनएस अरिघात के जल्द ही नौसेना में शामिल होने की संभावना है।



चीन की बढ़ती घुसपैट

हिंद महासागर में चीन की बढ़ती घुसपैट के बीच भारत के लिए अपने पनडुब्बी बेड़े को मजबूत करना बेहद जरूरी हो गया है, क्योंकि पनडुब्बी समुद्री लड़ाई में दुश्मन देश पर अपना क्षमता का प्रभाव वाला बनाए रखने का अहम हथियार होता है। कुछ समय से हिंद महासागर में चीनी पनडुब्बियों की घुसपैट की खबरें सामने आती रही हैं।

Navy bans use of social media, smartphones for personnel

New Delhi: A new directive issued by the Indian Navy on Friday has banned the use of social media and smartphones for all its personnel.

The move has come after seven sailors in Vishakapatnam were arrested for allegedly passing on information to Pakistan, through a spying racket which had agents posing as women on social media. The case was cracked this month by the Andhra Pradesh police that found a 'hawala' operator managing the operation with the help of Navy personnel posted in Mumbai, Karwar and Vizag.

The order first reported by the Stratpost website says, "Recent case of inimical elements targeting naval personnel over social media to elicit sensitive/operational information is a matter of serious concern necessitating stringent correctives."

Listing out what will now be treated as contraband in the Navy, it says that Facebook will be banned and there will be no more smart phones on naval bases or dockyards and even ships. All staffers from the Chief and below will have to all delete their Facebook accounts.

The Navy spokesperson were unavailable for comment on the matter.

However, with the widespread use of social media sites, the order has proved to be quite a source of concern for many. The order says that they are also considering further ban on messaging apps, blogging, content sharing, and even e-commerce sites which means that online shopping will also be prohibited.

Explaining the move, Captain (retd) DK Sharma, a former spokesperson of the force said, "As they say, loose lips sink ships. You have to be absolutely discreet and this has to be drilled into the minds of one and all."

So far, the Navy and other forces only had an advisory on discreet use of social media, which meant that they were not allowed to upload any photos of themselves in uniform or share any work details. There is not restriction on family members of the personnel using social media yet.

A former officer said that they could expect lockers outside official rooms to deposit all phones and even someone deleting all user profiles. "There were honey trap cases earlier as well," he said, adding that he was unsure how effective the ban will be.

"A ban on use of social media may be introduced as a precautionary measure but the efficacy is debatable. Use through proxies or fictitious handles would have to be addressed. Procedures may have to be fine tuned as we go along since the use of social media is proliferating across multiple platforms," Commodore Uday Bhaskar said.

The Navy's own Facebook page, however, will continue to operate to showcase the work to all.

<https://www.hindustantimes.com/india-news/navy-bans-use-of-social-media-smartphones-for-personnel/story-I4i2pHXG9nl1ZnRDg952FK.html>

US Defence Authorisation act readies three strategies for Indo-Pacific region

The NDAA 2020, which was signed by US President Donald Trump a few days ago, authorises \$738 billion for fiscal year 2020 for military activities, including expansion of the aircraft fleet and the F-35 program. Both these will add teeth to the Ame...

By Shaurya Karanbir Gurung

New Delhi: The US National Defence Authorisation Act 2020 lays out for the first time a clear roadmap for leveraging the Indo-Pacific to counter Chinese expansionist moves. The document also makes it clear that the US Secretary of Defence will at any given point of time have ready 'three long-term competitive strategies' to meet the Chinese challenge. For this purpose, the act specifically states that the Pentagon will work closely with the Director of the Office of Net Assessment.

The Director of the Office of Net Assessment provides the Secretary of Defence with comparative assessments of the prospects of the US's military capabilities in relation to other countries, and political and regional implications of these assessments.

The NDAA 2020, which was signed by US President Donald Trump a few days ago, authorises \$738 billion for fiscal year 2020 for military activities, including expansion of the aircraft fleet and the F-35 program. Both these will add teeth to the American deployment in the Indo-Pacific region.

The NDAA envisages having a theatre campaign plan and widening the training of friendly countries in the Indo-Pacific region. For this, the act has amended a certain section of the NDAA of 2016, which deals with the US building the capacities of foreign countries in maritime security and domainawareness. New paragraphs have been added in regard to the US Secretary of Defence notifying the Congress on such assistance and training. An important one is on having a theatre campaign plan.

"A description of the elements of the theatre campaign plan of the geographic combatant command concerned and the interagency integrated country strategy that will be advanced by the assistance and training provided under subsection (a) (read as on military training to foreign countries)," the NDAA 2020 states.

The Act also requires the Secretary of Defence to explain, "the specific unit or units whose capacity to engage in activities under a program of assistance or training to be provided under subsection (a) will be built under the program, and the amount, type, and purpose of the support to be provided".

The report to the Congress will have the assessment of the capabilities and priorities of each country and how the US security cooperation can be used to enhance these capabilities, according to the Act.

India and the US have been regularly conducting wargames such as the Malabar naval exercise to ensure better cooperation and operability in the Indo-Pacific region. Also, the Indian Navy will be hosting one of its biggest exercises, Milan, at Visakhapatnam in March next year and 41 countries, including the US have been invited for it. The act is expected to build India's maritime security capabilities in the backdrop of an existing agreement called the Logistics Exchange Memorandum of Agreement with the US that provides reciprocal logistics support during port visits and training.

Meanwhile, the Secretary of Defence "acting through the Director of the Office of Net Assessment, shall conduct a study on not fewer than three possible long-term competitive strategies with respect to the People's Republic of China that focuses on the identification of opportunities to shape strategic competition to the advantage of the United States".

The results of the study will be submitted to the congressional defence committees within one year after the date of the enactment of the NDAA. This gains importance with India being watchful of China's continued presence in the Indian Ocean since 2008.

The US will also make a comprehensive strategy to address security concerns posed by China's PLA support base in Djibouti to US military installations in sub-Saharan Africa and the Middle East. This base is also a matter of concern to India, as it allows China to expand its naval reach.

The US is also clear on understanding the military activities, including infrastructure and force deployments, of Russia and China in the Arctic region. Prime Minister Narendra Modi and Russia President Vladimir Putin during a meeting in June at Bishkek, Kyrgyzstan, had decided to widen their economic partnership in the Arctic region.

<https://economictimes.indiatimes.com/news/defence/us-defence-authorisation-act-readies-three-strategies-for-indo-pacific-region/articleshow/73039383.cms>

Explained: Why Russia Avangard missile will have US worried

The manoeuvring capability of the Avangard hypersonic missile makes it difficult to predict its trajectory, and gives it the ability to protect itself from air and ballistic missile defences by delivering nuclear warheads to targets, for instance, in Europe and the US

On Friday, Russia's military deployed a new intercontinental weapon, the Avangard hypersonic missile system that can fly 27 times the speed of sound. This will be the Russian military's first Avangard hypersonic intercontinental ballistic missile (ICBM). Russian President Vladimir Putin has said that the Avangard hypersonic glide vehicle is a technological vehicle comparable to the 1957 Soviet launch of the first satellite.

Last month, Russia's Defense Ministry demonstrated the Avangard system to a team of US officials as part of transparency measures under the New Start nuclear arms treaty with the country.

What is the Avangard hypersonic missile?

Previously referred to as Project 4202, the Avangard hypersonic missile system is a reentry body carried atop an existing ballistic missile, which has the capability to manoeuvre. Its manoeuvring capability makes it difficult to predict its trajectory and gives it the ability to protect itself from the air and ballistic missile defences by delivering nuclear warheads to targets, for instance, in Europe and the US.

According to Missile Threat, the origins of the Avangard can be traced back to the mid-1980s, when Russia first started research on hypersonic warheads. It notes that in past Russia has repeatedly stated that it is developing hypersonic weapons to ensure that Russian strategic forces can penetrate future US air and missile defences.

The Avangard missiles have a range of over 6,000 km, weigh approximately 2,000 kg and can withstand temperatures of over 2000 degree celsius.

What does this mean for the US?

According to The Moscow Times, Putin has previously said that the nuclear-weapon will be launched by late 2019 and has touted the Avangard's ability to evade the US missile defence systems.

Putin had mentioned the development of the Avangard ICBM along with a few other systems during his annual State of the Nation address to the Federal Assembly in March 2018. In that speech, a report prepared by the Congressional Research Service (CSR) notes that Putin "explicitly linked" the development of Russia's strategic weapons to the US withdrawal from the Anti-Ballistic Missile Treaty (ABM) in 2002. CSR has quoted Putin as saying, "... the US is permitting constant, uncontrolled growth of the number of anti-ballistic missiles, improving their quality, and creating new missile launching areas. If we do not do something, eventually this will result in the complete devaluation of Russia's nuclear potential. Meaning that all of our missiles could simply be intercepted." In his speech, Putin also claimed that the missiles can travel at a speed of 6.28 km per second.

Significantly, the report claims that the US has not developed or deployed ballistic missile defence systems, which are required to intercept Russia's strategic ballistic missiles and warheads. It adds, "Hence, although the United States cannot defend against the existing warheads on Russian ballistic missiles, Russia has emphasised that Avangard poses a new challenge to the United States because missile defences cannot intercept a manoeuvring hypersonic glide vehicle."

Citing analysts and observers, the report says Avangard's development and deployment will not change the existing balance between the US defensive forces and the Russian offensive since the US maintains that it cannot defend against the existing warheads on Russian missiles, let alone the more advanced missiles such as Avangard.

<https://indianexpress.com/article/explained/explained-why-russia-avangard-missile-will-have-us-worried-6189727/>

2019: A year of several new beginnings for Indian space sector

By Mary Woods

Last year 2019 has been a year of numerous new starts for India's space industry that's currently on Mission 2.0 style.

Last year also saw that the Indian Space Research Organisation (ISRO) scoring a couple half centuries, including placing in to orbit 50 overseas satellites along with sending its 50th Polar Satellite Launch Vehicle (PSLV).

But, the only jarring note from the achievement symphony was that the crash landing of India's moonlander Vikram in the lunar surface.

Last year also found ISRO and Department of Space (DoS) taking firm steps towards establishing of next rocket launching pad at Tamil Nadu; flying Indian rockets using indigenously developed navigation chip; creation of NewSpace India Limited to call private industry in creating rockets and taking over the business activities of Antrix Corporation.

The NewSpace India had issued an Expression of Interest (EoI) for initial production five Polar Satellite Launch Vehicle (PSLV) rockets from personal industry.

The year 2019 watched the ISRO touching the markers 319-overseas satellite starts; choosing to go for one more moon landing mission known as Chandrayaan-3; establishing Individual Space Flight Centre; beginning that the young scientist programme; enrolling arrangement with Indian Air Force (IAF) to pick and prepare Indian astronauts to the nation's manned mission.

The area agency also set the foundation stone for a facility to track and safeguard high value distance resources from debris.

The ISRO started this season with the launching of defence satellite "Microsat R" to its Defence Research and Development Organisation (DRDO).

Later in March, the DRDO shot Microsat R to show its anti-satellite missile prowess.

Throughout 2019, ISRO also introduced several ground observation satellites such as the Emisat, a digital intelligence satellite for DRDO, Cartosat-3, radar imaging satellites RISAT-2B, also RISAT-2BR1.

Since India's eyes at the heavens, these satellites may serve the requirements of strategic businesses.

From the communication satellite area, the ISRO established the nation's 40F communication satellite GSAT-31 with an Ariane 5 rocket system attached to Arianespace.

About the side, whereas ISRO flew its own 50th PSLV and launched two new variations of this enemy – PSLV-DL (using 2 strap-on motors) and also PSLV-QL (using four strap-on motors).

The shuttle flew into a PSLV rocket three orbits during precisely the identical assignment and used the fourth phase as an orbital stage carrying three experimental payloads.

The area agency also gave finishing touches on the rocket-Small Satellite Launch Vehicle (SSLV) having a capability to transport 500 pound) The enemy is expected to be flown following calendar year.

Back in June, ISRO Chairman K. Sivan amazed the country by declaring that the nation would construct its 20-tonne space station within the upcoming five to seven years' time following the initial manned mission.

Between July-September that the attention was around the nation's second moon mission-Chandrayaan-2.

About July 22, the Rs. 375 crore, hefty elevator Geosynchronous Satellite Launch Vehicle (GSLV-Mk III) rocket slung the Rs. 603 crore," 3.8-tonne Chandrayaan-2 spacecraft in its planned ground parking orbit.

The Chandrayaan-2 spacecraft constituted of three sections — that the Orbiter (weighing two,379 lb, eight payloads), the lander 'Vikram' (1, 2 471 cm, four payloads) and rover 'Pragyan' (27 pound, 2 payloads).

Everything went well when the airplane mission was worried until the first early morning of September 7 when Vikram which was rushing to place its foot to the moon crashed to lunar surface at a really wonderful rate and broke in bits.

While ISRO had stated it had discovered Vikram's debris Sep 8 , it didn't discharge any picture in service.

The Indian space agency had sought the aid of US space agency NASA in finding Vikram about the moon surface.

This had been just lately a Chennai established 33-year old mechanical engineer Shanmuga Subramanian initially from Madurai and a Technical Architect in Lennox India Technology Centre who seen that the Vikram debris onto the images published by US space agency NASA.

The US space agency NASA has blamed him for detecting the debris of Vikram.

The 1 consolation is that the operation of this Chandrayaan Orbiter.

Meanwhile, the year also found ISRO placing into orbit 50 overseas satellites for a charge as well as flying the 50th PSLV rocket.

Based on Sivan, PSLV has raised a total of 52.7 tonne until date and from the 17 percent is made up of consumer satellites.

Sivan said the area agency has many more assignments lined in 2020 such as the first flight flight of this newest rocket SSLV.

Chandrayaan-2's Scientific Objectives Entirely Speeches, Minister Claims

Cartosat-3: ISRO Successfully Launches Earth Imaging Satellite Together With 13 US Nano Satellites

ISRO Successfully Inserts RISAT-2BR1 Satellite Into Orbit, Touches 319 Foreign Satellite Launch Mark

Chandrayaan-2 Vikram Lander: Space Failure Component of Big Game, NASA-JPL CTO claims

<https://thenewspocket.com/2019-a-year-of-several-new-beginnings-for-indian-space-sector>

IIT Guwahati develops materials to generate power from water

Guwahati: Researchers at the Indian Institute of Technology (IIT) Guwahati have developed new materials that can generate power from both stagnant and flowing water.

These new ways of producing energy on a small scale can be employed in household environments to support decentralisation of energy sources, according to the research published in the journal ACS Applied Nanomaterials.

The researchers employed the nanoscale phenomenon called "electrokinetic streaming potential" to harvest energy from flowing water on a small scale, like water flowing through household water taps.

They used another process called "contrasting interfacial activities" in which different types of semiconducting materials were employed to generate power from stagnant water.

A research team led by Kalyan Raidongia, from the Department of Chemistry at IIT Guwahati, noted that the impending energy crisis has arisen from the dual problems of dwindling fossil fuel reserves and environmental issues associated with the use of such fuel.

This has led to considerable research in alternative energy sources such as light, heat, wind, ocean waves, etc, the researchers said.

The generation of energy from water in various forms -- river flow, ocean tides, stagnant water, and even raindrops, is now known as "blue energy," they said.

While hydroelectric power from rivers is the traditional form of blue energy, there have been efforts to harness the power of water in other ways in recent years.

One out-of-the-box blue source is electrokinetic energy.

"When fluids stream through tiny channels that are charged, they can generate an electrical voltage, which may be harnessed through miniaturised generators," said Raidongia.

Although the exploration of such electrokinetic phenomena and their possible use for energy conversion have been known for over half a century, they have not been harnessed because of low efficiency arising from the unsuitability of channels for the fluid stream.

The humble efficiency of electrokinetic streaming potential based energy generating devices is attributed to the trade-off between high flow-rate and nanofluidic confinement, the researchers said.

The team, including Jumi Deka, Kundan Saha, Suresh Kumar, and Hemant Kumar Srivastava worked on this novel research.

The findings demonstrate that power output can be improved by thousand times by attaining the best out of these parameters, the researchers said.

The research team is currently working on such optimisation efforts.

In order to extract power from stagnant water, devices were fabricated by employing doped graphene flakes.

The complementary charge transfer activities of doped graphene flakes based devices generate power just upon dipping in any kind of water source, like lake, river or seawater.

Graphene is the sheet produced by oxidation followed by reduction of natural graphite flakes.

"What we have done is modified graphene in such a way that its electron density is manipulated; even stagnant water in contact with this form of graphene can produce energy," said Raidongia.

The researcher doped graphene oxide with boron and nitrogen, separately, loaded the two forms of graphene into two filter papers that served as electrodes in an electrochemical cell.

Dipping the two filter papers into water produces potential up to 570 millivolt, which was stable for 80 hours the researchers said.

"We improved the power generated by varying parameters like coating area, the extent of doping, annealing temperature, and ionic conductivity of the medium," said Raidongia.

(This story has not been edited by Business Standard staff and is auto-generated from a syndicated feed.)

https://www.business-standard.com/article/pti-stories/iit-guwahati-develops-materials-to-generate-power-from-water-119123000551_1.html