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# समाचार पत्रों से चयित अंश Newspapers Clippings

A Daily service to keep DRDO Fraternity abreast with DRDO Technologies, Defence Technologies, Defence Policies, International Relations and Science & Technology

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Sat, 19 June 2021

## The gun battle inside South Block

*The Indian Army's urgent demand for guns has increased the pressure on the government's Aatmanirbhar Bharat policy*

*By Sandeep Unnithan*

New Delhi: Over the past few months, the ministry of defence (MoD) and the Indian Army have been at loggerheads over the acquisition of 400 towed artillery guns for Rs 4,000 crore. The army's proposal for acquiring 400 howitzers from Israel had reached the stage of approval by the director general (acquisitions) in September 2019, but was shelved after indigenous artillery programmes began showing promise. Earlier this year, as a nine-month standoff with China eased off in eastern Ladakh, the army revived the gun import proposal, citing an "urgent operational necessity" on the northern borders to justify the import of 20 regiments (each regiment has 20 guns). Adding to the army's urgency is the fact that deliveries of the 'Dhanush', an indigenously-built version of the Swedish FH-77B Bofors gun, have slowed down. Once the DG (acquisitions) clears the proposal, it can be sent to the Cabinet Committee on Security (CCS) for the final approval.

Defence ministry officials, however, want the army's towed gun import to be scrapped, arguing that any off-the-shelf import of guns at this stage will seriously impact indigenous artillery development. The MoD's Department of Defence Production (DoDP) is backing the Advanced Towed Artillery Gun System (ATAGS), designed by the Defence Research and Development Organisation (DRDO) and produced indigenously by their industry partners in the private sector, Bharat Forge and Tata Advanced Systems Ltd. The DoDP considers the howitzer programme to be a test for the government's Aatmanirbhar Bharat programme to achieve self-sufficiency in defence and is arguing for a larger number of ATAGS to be procured from the Indian industry, including from the Ordnance Factory Board (OFB).

The deadlock continues even as a December 31, 2021, deadline to stop imports of howitzers looms on the horizon. Howitzers of the 155/ 52 calibre are among the 101 items on the 'negative list' released by the MoD in August 2020. Now called the 'positive indigenisation list', it is meant to discourage imports in categories where local industry is self-sufficient. In 2007, when there were no indigenous programmes, the MoD had approved an army proposal to import and assemble 1,580 foreign howitzers for Rs 12,640 crore—400 howitzers were to be imported off the shelf and



**ATHOS Towed Artillery Gun System (155/ 52 howitzer) Manufactured by: Elbit, Israel Status: Elbit finished as lowest bidder in the Indian Army's towed gun contract in 2019. Procurement case pending in the MoD with DG (acquisitions). Army, citing urgent operational necessity, wants 400 guns to be processed quickly. MoD has said no.**

1,180 were to be built within the country through technology transfers. Since then, three indigenous gun programmes have slowly started delivering guns to the army—the ‘Dhanush’, the ATAGS and the OFB’s kit that upgrades existing Soviet-built 130 mm guns to 155 mm ‘Sharang’ howitzers.

Indian industry officials worry the 400-howitzer import will kill indigenous industry. “Such an order at a stage when Indian guns have matured will give a foreign gun maker a foot in the door,” says a developer who wished to not be named. “It will enable future localised production of foreign guns and kill indigenous industry and innovation.”

The industry is hopeful since earlier this year two ATAGS howitzers, one from each private developer, successfully completed winter trials in Sikkim. The two prototypes are headed to Rajasthan this month for summer trials. Successful completion of these trials will clear the acquisition of 150 ATAGS for Rs 3,365 crore. The order will be divided between the two private developers. The sudden move by China’s People’s Liberation Army’s (PLA) motorised divisions in eastern Ladakh last May has made upgrading the army’s firepower more urgent. The ATAGS is still in development trials and the OFB is yet to deliver even the first complete regiment of Dhanush howitzers. The very real possibility of a border conflict has seen the army beefing up its force levels along the northern borders—‘rebalancing’, as the army calls it, by moving troops and materiel away from the Pakistan border in the west and towards the disputed northern frontier with China.



Advanced Towed Artillery Gun System (ATAGS) | 155/ 52 howitzer

Howitzers are part of this rebalance. They can fire a 155 mm shell carrying over six kilograms of high explosive encased in more than 30 kg of steel. When they explode, they shower their targets with steel splinters travelling at supersonic speeds that can shred concrete and armour. Artillery is, hence, key to mountain warfare and is critical in offence and defence to support advancing infantry and armour through what is called ‘indirect fire’. During the 1999 Kargil War, Indian artillery shellfire accounted for the bulk of the casualties suffered by Pakistan’s army, destroying their supply lines and fortified bunkers. With its present commitments on two fronts, the Indian army doesn’t have enough guns for both. A former army commander mentions a critical shortfall of tube and rocket artillery as one of the most alarming gaps in army units along the 3,448 km northern frontiers. This is possibly why the army decided to revive the 2019 case for the howitzer import. (The Indian Army declined to comment for this story.) Chief of Defence Staff General Bipin Rawat is believed to have backed the army proposal to import the guns, but with the caveat that indigenous howitzer programmes are to also be given breathing space.

In April this year, top army officials told the MoD about the time, cost and operational advantages of Israel’s 155 mm ‘ATHOS’ (Autonomous Towed Howitzer Ordnance System). Under an accelerated delivery schedule, Israeli manufacturer Elbit has assured the army that the first 12 guns will be delivered within 14 months of signing the contract and all 400 guns will be delivered within 54 months. The Israeli gun’s 15-tonne weight offers it an advantage over the 18-tonne ATAGS, particularly in difficult terrain without properly developed road networks. Moreover, ATHOS costs Rs 9 crore per gun, while the ATAGS costs Rs 22 crore per gun. To sweeten the deal, the Israeli vendor has reportedly promised to source 70 per cent of the gun’s components from Indian industry to whom they will provide complete ToT (transfer of technology). ATHOS, the army told the MoD, is a one-time purchase to meet immediate operational requirements without impacting the indigenous programmes. But the ATHOS has problems of its own—it is not in service even in the Israeli army and had suffered structural failure during trials in India some years ago.

New offers from the Israeli vendor could open up a potential minefield for the MoD, for they could mean modifications in the original Acceptance of Necessity (AON) of 2007 and the Request

for Proposal issued in 2011. These deviations would need either a fresh CCS approval or, as in the case of the MMRCA fighter deal in 2016, a scrapping of the tender and a direct government-to-government buy, as was done with the 36 Rafale jets.

MoD sources told India today that no final decision has been taken on the proposal yet. “The Ministry of Defence is holding consultations with all concerned on this issue, keeping in mind the requirement of achieving the objectives of Aatmanirbhar Bharat, as well as giving the necessary teeth to our Armed Forces. We have to work towards indigenous design, development and production of weapon systems to reduce dependence on arms imports and this has to be achieved without compromising the objectives of national security,” they say.

Meanwhile, the DRDO-designed ATAGS successfully completed 90 days of winter trials in Sikkim between January and March 2021, putting a September 2020 incident, when an ATAGS barrel burst during firing trials, behind them. The guns displayed their mobility across a total of 500 km in night conditions, at temperatures of 15 degrees Celsius below zero and at altitudes of over 15,000 feet, and fired 160 rounds without any failures. “The gun has successfully cleared its winter trials and, if the army wants, they can be immediately deployed in the northern borders,” says a developer who wished to not be named.

Developers say their indigenous guns negotiated all kinds of narrow- and low-load classification bridges in self-propelled mode and put to rest apprehensions about the ATAGS’ mobility in mountainous terrain. The Elbit gun, they noted was put through far less rigorous trials in field trials in 2017, when it had been tested for mobility in high altitude areas only during day time. It was towed to Lukrep, the northernmost point of North Sikkim on the Tibetan plateau, and was tested at night in the snow-covered Menla and Changu Lake to ascertain operational efficiency.

Developers say the rarefied mountain air theoretically makes it possible for the gun to achieve ranges of up to 60 km, which would allow the army to engage the enemy’s brigade headquarters, bridges and fuel dumps deep in its territory, giving them a tactical advantage from the beginning of a conflict.

Experts, however, believe that ATAGS needs time to mature and that the army needs to fix the problematic Dhanush programme rather than push for imports. The Dhanush was a gun the army’s artillery directorate pushed the OFB to produce nearly a decade ago. It was built from blueprints supplied by Bofors AB in the 1980s. “I don’t think ATAGS is the alternative for urgent operational requirements,” says Lt General P. Ravi Shankar, former DG, artillery, who was involved in the design and development of both indigenous guns. “Why is a combat-proven gun system like the Dhanush not being operationalised despite production orders being given over a year ago? The programme needs hard decisions. If the Dhanush has a problem, it needs to be fixed. Call the original Bofors designers if need be,” he says. OFB officials, however, deny the gun has an operational defect and say that the first 12 guns were delivered to the army in 2019. They believe the order for 20 guns can be completed by the end of this year. It remains to be seen how the government’s June 16 decision to break up the monolithic OFB into seven companies will impact the Dhanush programme. In the short term, at least, fixing the Dhanush could give the army the guns it so badly needs.

<https://www.indiatoday.in/magazine/defence/story/20210628-the-gun-battle-inside-south-block-1816231-2021-06-18>

# Rustom-2 Drone: HAL on-course to develop India's most ambitious, powerful UAV Project?

By Younis Dar

India's ambitious home-grown Rustom-2 medium-altitude long-endurance (MALE) drone could be developed by state-owned Hindustan Aeronautics Limited (HAL) if 'feelers' are to be believed.

Rustom-2, now called TAPAS BH-201, is touted to be India's first indigenously built unmanned combat aerial vehicle (UCAV) and has an operational range of 1000 km, with a payload capacity of 350 kg.



Rustom-2

The second developmental trial of the drone had to be delayed due to the sudden upsurge in Covid-19 cases across the country. Under this, the UAV would undertake a 24-hour endurance test at 35,000 feet.

According to reports, a consortium of three private and four public sector companies would compete for the production rights of TAPAS (Tactical Advanced Platform for Aerial Surveillance). The private companies included Larsen & Toubro, TATA Power SED, and Godrej Aerospace Limited, and the government sector companies HAL and BEL had also submitted a joint bid.

## Did HAL Bag The Deal?

However, HAL recently released their project list which mentioned Rustom-2, raising speculations of HAL and BEL having won the bid for the production of the UAV. With the competing private companies having no experience or expertise in the drone development domain, it's expected that they will find it very hard to win the bid.

The private sector will also fail to pitch a lower bid for the project considering costly manhours and expensive production costs than a government company. It's, therefore, highly probable that the consortium of HAL and BEL could win the contract for the production of TAPAS.

Although most of the components required for the production of the drone are expected to go to private defense agencies, HAL could perform the role of a lead integrator. The avionics, electronics, sensors, and ground control systems could be manufactured by the state-owned defense sector behemoth BEL. DRDO's Defence Electronics Application Laboratory, Dehradun, was responsible for developing and integrating the data links for Rustom-II.

DRDO's Aeronautical Development Establishment (ADE) had recently released an RFP in which it sought a development-cum-production agency. According to ADE, the development of TAPAS will be complete by the year-end after which the drone will be tested with various payloads.

The drone is currently powered by a 180 HP engine and is expected to fly with indigenous engines in the 165-210 HP class, developed by DRDO's Vehicles Research and Development Establishment in partnership with Tech Mahindra. According to its makers, Rustom-II will fly to a maximum height of 32,000 feet. With a higher capacity in new engines, it is expected the drone will be able to carry more payloads, including weapons.

To boost its ISR capabilities, Rustom-II will carry multiple payloads such as Long-Range Electro-Optic (LREO) payload and Synthetic Aperture Radar (SAR) MPAR, electronic intelligence (ELINT), Communication Intelligence (COMINT), IFF, TCAS, UCR, and other equipment.

## **Public-Private Partnership**

The development of Rustom-II has involved numerous private industries, which helped in supplying the critical systems such as avionics subsystems, airframe, landing gear flight control among other components.

The project has been the hallmark of the Make in India initiative and once operational, the UAV will serve all the services of the Army, Navy, and Indian Air Force. The future production is expected to involve more private sector players and a thriving aerospace ecosystem that will have to work in tandem to push Rustom-II towards operationalization.

The later prototypes of Rustom-II involved the integration of a solid-state relay-based low weight power distribution unit; a domestically-built inertial navigation system (INS), by RCI Hyderabad, and most recently, the critical satellite communication (SATCOM) link and Lithium-ion batteries.

The drone is expected to go for final trials by this year's end and we could soon see the operationalization of Rustom-II with the Indian armed forces, supplementing the advanced imported fleets of drones currently in service. Rustom-II is expected to significantly boost the forces operating on the border with Pakistan and China, which have their own UAV capabilities in the region.

Both the countries have inducted the CH series of reconnaissance and armed UAVs, including other unmanned assets on the border with India. China is currently integrating a range of Unmanned Air Systems (UAS) into its war-fighting philosophy which is poised to change warfare in unprecedented ways, a domain in which India has been found lacking.

India's drone push is spearheaded by renowned state-owned companies, including the DRDO aerospace laboratories, Hindustan Aeronautics Limited (HAL), and Bharat Electronics Limited (BEL) which have decades of experience in developing such systems.

There have been partnerships with foreign as well as domestic firms such as the Israel Aerospace Industries (IAI), ideaForge Technology Pvt. Ltd., and Edall Systems, with whom meaningful projects have led to innovative drone projects.

India's drone innovation is also led by eminent academic institutions such as the Indian Institute of Technology (IIT) Bombay and IIT Kanpur, which are playing an important role in research and development.

Prime Minister Narendra Modi's 'Atmanirbhar Bharat' (self-reliant) initiative has encouraged indigenous innovation and research in unmanned systems, however, many roadblocks remain before any major development can be expected in this area.

Many Indian private sector firms remain enthusiastic about participating in advanced drone projects but lack expertise, and sometimes, funding, which among other things have played a spoilsport undermining any path-breaking outcomes.

<https://eurasianimes.com/rustom-2-drone-hal-on-course-to-develop-indias-most-ambitious-powerful-uav-project/>



## Will phase out MiG-21s in 3 years, induct Rafales by 2022: IAF Chief

Hyderabad: The phasing out of MiG-21 fighter jets, which have been involved in several accidents over the years, will happen over the next two to three years, Air chief marshal R K S Bhadauria said on Saturday.

He added that this would pave the way for the induction of the 36 Rafale jets by 2022, and then the Light Combat Aircraft (LCA) would be added.

Speaking at the combined graduation parade at the Air Force Academy in Dundigal, Bhadauria said that mere ageing of aircraft doesn't make them accident-prone. "Discontinuation of flying the MiG-21 immediately is not the answer. In another 2-3 years they will be phased out as soon as they get to their life's end. Our plan to induct 36 Rafales is on target. Once the Rafales are inducted, the focus will be on the induction of the LCA over the next three-and-a-half years," Bhadauria said.

He added that the country is focusing on indigenous projects, such as the advanced medium combat aircraft (AMCA) for the IAF and Navy. "The AMCA will be indigenously produced by DRDO in collaboration with industry. A decision in this regard has been taken in principle," he said.

In addition, Airbus 320-based airborne warning aircraft and follow-up on Embraer aircraft will take place," he said.

<https://timesofindia.indiatimes.com/india/will-phase-out-mig-21s-in-3-years-induct-rafales-by-2022-iaf-chief/articleshow/83680332.cms>



Air Chief Marshal RKS Bhadauria

# COVID 19: DRDO's Contribution



Mon, 21 June 2021

## Life in Science with Pallava Bagla-Indian Defence Scientists Fight Covid-19 (E)

They are better known for making atom bombs, missiles, submarines, fighter planes and knocking down flying satellites space have risen to the occasion and are contributing big time to save civilian lives in India by fighting Covid-19.



Defence scientists who normally contribute to protecting India on its borders have in the past one year given India more than 50 different life-saving technologies in bid to win this new war against the novel corona virus. Scientists and engineers from the Defence Research and Development Organisation (DRDO) have given India anti Covid-19 medicine called 2DG, a repurposed drug that reduces oxygen dependency. Very early in the pandemic when there was a massive hue and cry it was DRDO that gave the country made in India ventilators, so also N-95 masks and PPE kits.

Going well beyond the mandate DRDO also set up hospitals in several cities across India to take care of the massive surge in Covid-19 patients. During the ferocious second wave when oxygen was in short supply, DRDO transformed oxygen generators made for India's fighter plane Tejas, the same technology is now supplying oxygen to hospitals. Some says it is the leadership of Dr G Satheesh Reddy, the Chairman of DRDO that made all the difference. DRDO saving lives. "

<https://www.indiascience.in/videos/life-in-science-with-pallava-bagla-indian-defence-scientists-fight-covid-19-e>

## VHP plea for a 500-bed COVID children's hospital

Hyderabad: The Telangana unit of Vishwa Hindu Parishad (VHP) has requested the DRDO chairman G. Satheesh Reddy to establish an exclusive temporary 500-bed COVID hospital for children in the name of former President APJ Abdul Kalam on any of the vast open spaces available to the Defence Ministry in Secunderabad to prepare for a possible third wave of the pandemic.

In a communication to Dr. Reddy, a copy of which was released to the media on Friday, organisation spokesperson R. Shashidhar said the hospital could be on the lines of those already established in various places across the country, including the 750-bed Sardar Vallabhbhai Patel hospital in Delhi, 900-bed Dhanvantari hospital in Ahmedabad, a 500-bed ESI hospital in Patna, a 750-bed Pandit Rajan Mishra hospital in Varanasi, a 500-bed Atal Bihari Vajpayee hospital in Lucknow, 500-bed General Bipin Chandra Joshi hospital in Haldwani and so on.

He stated the former president had a special affinity to the twin cities as he had spent many years working as a scientist in many of the DRDO labs and had a special love for children, hence it would be fit to name the hospital after him, a press release said.

<https://www.thehindu.com/news/cities/Hyderabad/vhp-plea-for-a-500-bed-covid-childrens-hospital/article34850992.ece>

## Defence Minister Rajnath Singh visits DRDO Covid hospital in Guwahati

By Bikash Singh

### Synopsis

*While visiting the hospital the Defence Minister took stock of the critical care facilities put in place for the COVID patients. It may be noted that Assam Government with the help of DRDO has come up with a 300 bedded COVID hospital in a record time to give advanced medical care to the COVID patients.*

Union Defence Minister Rajnath Singh along with chief minister Himanta Biswa Sarma visited the 30- bedded COVID hospital at Sarusajai Sports Complex in Guwahati.

While visiting the hospital, the Defence Minister took stock of the critical care facilities put in place for the COVID patients. It may be noted that Assam Government with the help of DRDO has come up with a 300 bedded COVID hospital in a record time to give advanced medical care to the COVID patients.

While taking stock of the facilities put in place in the hospital, Minister Rajnath Singh said that the hospital is a huge fillip for rendering advanced treatment to all the COVID patients. He also hailed the state government's efforts in getting the hospital ready in a record time with the help of DRDO.

It may again be noted that this new Covid hospital has been made with financial involvement of Rs. 21.46 crore. The hospital was inaugurated by Chief Minister Himanta Biswa Sarma on June 10.

<https://economictimes.indiatimes.com/news/india/defence-minister-rajnath-singh-visits-drdo-covid-hospital-in-guwahati/articleshow/83643639.cms>



Rajnath Singh said that the hospital is a huge fillip for rendering advanced treatment to all the COVID patients.

## Rajnath Singh visits DRDO Covid hospital at Guwahati stadium

Guwahati: Defence Minister Rajnath Singh on Friday visited the COVID hospital set up by Defence Research and Development Organisation (DRDO) at the Sarusajai Stadium in Guwahati.

The hospital, set up in collaboration with the Assam government, has come 316 beds, Singh said.

"This hospital will help the state of Assam in its fight against the pandemic," he added.

The Union minister was accompanied by Chief Minister Himanta Biswa Sarma and state Health Minister Keshab Mahanta.

Sarma told reporters that the defence minister inspected the hospital and assured him that the facility will be made available to the state government as a flood shelter too, if required.

The hospital, which was inaugurated on June 10, will become functional from June 20, he said.

As the rate of positivity and even the number of cases have declined in the state, it has been decided to allow treatment of non-COVID patients at three COVID hospitals in Guwahati, the chief minister said.

The government was also considering allowing Gauhati Medical College and Hospital to treat non-COVID patients, while only DRDO and Kalapahar COVID Care will function as COVID hospitals, Sarma said.

Earlier, Singh visited the famed Kamakhya Temple atop the Nilachal Hills and offered his prayers.

The temple is currently closed due to the COVID restrictions and Singh offered his prayers from outside the main door that leads to the sanctum sanctorum.

Singh also circumambulated the temple and offered his obeisance to the goddess.

The minister arrived here on Thursday evening after dedicating 12 strategic roads, constructed by the Border Roads Organisation, at Kimin in Arunachal Pradesh.

He spent the night at Raj Bhavan where Governor Jagadish Mukhi hosted a dinner in his honour, which was also attended by Sarma, former chief minister Sarbananda Sonowal and Assembly Speaker Biswajit Daimary.

Singh left for New Delhi after the visit to the COVID hospital.

*(Disclaimer: This story has not been edited by Outlook staff and is auto-generated from news agency feeds. Source: PTI)*

<https://www.outlookindia.com/newscroll/rajnath-singh-visits-drdo-covid-hospital-at-guwahati-stadium/2104487>

## रक्षा मंत्री राजनाथ सिंह ने असम में डीआरडीओ के कोरोना अस्पताल का किया दौरा

मुख्यमंत्री सरमा ने पत्रकारों से बात करते हुए कहा कि रक्षा मंत्री ने अस्पताल का निरीक्षण किया और आश्वासन दिया कि जरूरत पड़ने पर इसका इस्तेमाल बाढ़ आश्रय शिविर के रूप में भी किया जा सकेगा।

10 जून को इस अस्पताल का उद्घाटन किया गया था।

By Dhyanendra Singh Chauhan

गुवाहाटी: रक्षा मंत्री राजनाथ सिंह ने शुक्रवार को गुवाहाटी के एक स्टेडियम में रक्षा अनुसंधान एवं विकास संगठन (DRDO) द्वारा बनाए गए कोरोना अस्पताल का दौरा किया। राजनाथ ने कहा कि असम सरकार के सहयोग से बनाए गए इस अस्पताल में 316 बेड हैं। उन्होंने कहा कि कोरोना वायरस के खिलाफ लड़ाई में यह अस्पताल असम की मदद करेगा। इस मौके पर राजनाथ के साथ असम के मुख्यमंत्री हिमंता बिस्व सरमा और स्वास्थ्य मंत्री केशब महंत भी मौजूद थे।



बाढ़ आश्रय शिविर के रूप में भी किया जा सकेगा इसका इस्तेमाल

सरमा ने पत्रकारों से बात करते हुए कहा कि रक्षा मंत्री ने अस्पताल का निरीक्षण किया और आश्वासन दिया कि जरूरत पड़ने पर इसका इस्तेमाल बाढ़ आश्रय शिविर के रूप में भी किया जा सकेगा। 10 जून को इस अस्पताल का उद्घाटन किया गया था। 20 जून से यह काम करना शुरू कर देगा।

सरमा ने बताया कि राज्य में संक्रमण की दर में कमी को देखते हुए फैसला लिया गया है कि गुवाहाटी के तीन कोरोना अस्पतालों में गैर-कोरोना मरीजों का भी इलाज किया जाएगा।

इससे पहले राजनाथ सिंह ने कामाख्या मंदिर जा कर पूजा अर्चना की

कोरोना वायरस संक्रमण को रोकने के लिए पाबंदी लागू होने के कारण मंदिर फिलहाल बंद चल रहा है और राजनाथ सिंह ने मुख्य द्वार के बाहर ही प्रार्थना की। रक्षा मंत्री बृहस्पतिवार की शाम को यहां पहुंचे। इससे पहले उन्होंने अरुणाचल प्रदेश के किमिन में सीमा सड़क संगठन द्वारा निर्मित 12 सामरिक सड़कों का लोकार्पण किया था। रक्षा मंत्री ने राजभवन में रात्रि विश्राम किया जहां राज्यपाल जगदीश मुखी ने उनके सम्मान में रात्रि भोज आयोजित किया। इस भोज में सरमा, पूर्व मुख्यमंत्री सर्वानंद सोनोवाल और विधानसभा अध्यक्ष विश्वजीत दैमारी भी मौजूद थे। नए कोविड अस्पताल का निरीक्षण करने के बाद सिंह नयी दिल्ली रवाना हो गए।

<https://www.jagran.com/news/national-defense-minister-rajnath-singh-visits-drdo-covid-19-hospital-in-assam-21749543.html>

## जेनरेटर प्लांट से शुरू हुई ऑक्सीजन की आपूर्ति

बस्ती: जिला अस्पताल में स्थापित ऑक्सीजन जेनरेटर प्लांट ने काम करना शुरू कर दिया है। ऑक्सीजन प्लांट की सुविधा वाला यह जिले का पहला अस्पताल बन गया है। इस प्लांट से लगभग 160 बेड पर सीधे ऑक्सीजन की आपूर्ति हो सकेगी। 990 लीटर प्रति मिनट ऑक्सीजन उत्पादन की प्लांट की क्षमता बताई जा रही है। केंद्र और प्रदेश सरकार की ओर से कोविड की तीसरी लहर का सामना करने के लिए की जा रही तैयारियों में इसे एक बड़े कदम के रूप में देखा जा रहा है।

पीएम केयर फंड से जिला अस्पताल में ऑक्सीजन प्लांट की स्थापना की गई है। काम की गुणवत्ता को बनाए रखने के लिए प्लांट लगाने की जिम्मेदारी जहां डीआरडीओ को दी गई थी, वहीं इसके लिए बेस और शेड आदि बनाने का जिम्मा राजमार्ग निर्माण करने वाली एजेंसी एनएचएआई को सौंपी गई थी। टाटा कंपनी के इस प्लांट को इंस्टाल करने की जिम्मेदारी लखनऊ की एक फर्म को सौंपा गया था।

कंपनी के कर्मियों ने शुक्रवार शाम तक प्लांट को चालू करने के साथ ही अस्पताल स्टाफ को इसे संचालित करने के लिए प्रशिक्षण भी दे दिया था। इसी के साथ प्लांट को अस्पताल प्रशासन को हैंडओवर करने की प्रक्रिया को भी पूरा किया गया। अस्पताल प्रशासन की ओर से प्लांट को संचालित करने के लिए शिफ्ट में स्टाफ की इयूटी लगाई है। अस्पताल के जिम्मेदारों का कहना है कि सभी बेड तक ऑक्सीजन की पाइप लाइन दौड़ाने का काम पहले ही पूरा हो चुका था। अब इसे प्लांट से जोड़ दिया गया है। प्लांट ने पूरी तरीके से काम करना शुरू कर दिया है। कोविड की दूसरी लहर के दौरान सबसे ज्यादा समस्या ऑक्सीजन की किल्लत की थी। ऑक्सीजन की कमी के कारण कई मरीजों को अपनी जान गंवानी पड़ी थी। समय से व्यवस्था न होने से चिकित्सक लाचार हो गए थे।

कोविड के किसी भी संभावित मरीज को सबसे पहले जिला अस्पताल लाया जाता है, यहां पर उसे भर्ती कर कोविड की जांच की जाती है। जांच में रिपोर्ट पॉजिटिव आने के बाद उसे कोविड अस्पताल मेडिकल कॉलेज के लिए रेफर किया जाता है। इस दौरान मरीज का इलाज जिला अस्पताल में किया जाता है। इसके अलावा ऐसे मरीज, जिनमें कोविड के लक्षण तो हैं, लेकिन उनकी कोविड रिपोर्ट निगेटिव है, उन्हें प्रिजेम्टिव कोविड मरीज के तौर अस्पताल में भर्ती कर इलाज किया जाता है। इस तरह के मरीजों को ऑक्सीजन की जरूरत पड़ती है। अस्पताल में ऑक्सीजन की अपनी व्यवस्था हो जाने के बाद इलाज में काफी सुविधा होगी। जिला अस्पताल के एसआईसी डॉ. आलोक वर्मा का कहना है कि प्लांट से ऑक्सीजन की आपूर्ति शुरू हो गई है। अब सिलेंडर पर निर्भरता कम हो जाएगी। इलाज में काफी सुविधा होगी।

जिला अस्पताल में शनिवार को ऑक्सीजन प्लांट का उद्घाटन भाजपा सांसद व राष्ट्रीय मंत्री हरीश द्विवेदी तथा विधायक सदर दयाराम चौधरी, विधायक संजय प्रताप जायसवाल, सीडीओ डॉ. राजेश प्रजापति और एसआईसी जिला अस्पताल डॉ. आलोक कुमार वर्मा ने किया। इसके साथ ही आमजन के इस्तेमाल के लिए इसे शुरू करा दिया गया। सांसद ने कहा कि कोरोना की चुनौती अभी समाप्त नहीं हुई है। ऐसे में तीसरे वेब आने की आशंका जताई जा रही है। कोरोना की इस चुनौती से लड़ने की पूरी तैयारी सरकार ने कर रखी है। इसी कड़ी में जिला अस्पताल में ऑक्सीजन जेनरेटर प्लांट स्थापित कराया गया है। इसके अलावा ओपेक चिकित्सालय कैली में तीन तथा हरैया में एक और प्लांट की स्थापना का प्रस्ताव है, जिस पर लगातार काम चल रहा है। कैली में तो एक प्लांट पहुंच भी गया है। शीघ्र ही उसे भी स्थापित कर दिया जाएगा।

<https://www.amarujala.com/uttar-pradesh/basti/oxygen-supply-started-from-generator-plant-basti-news-gkp3987316185>

## जिला अस्पताल में जनरेटर प्लांट से शुरू हुई आक्सीजन की आपूर्ति

990 लीटर प्रति मिनट आक्सीजन उत्पादन की क्षमता वाले इस प्लांट को केंद्र व प्रदेश सरकार की ओर से कोविड की तीसरी लहर का सामना करने के लिए की जा रही तैयारियों में एक बड़े कदम के रूप में देखा जा रहा है। पीएम केयर फंड से यह प्लांट जिला अस्पताल में स्थापित किया गया।

बस्ती: जिला अस्पताल में स्थापित आक्सीजन जनरेटर प्लांट ने काम करना शुरू कर दिया है। आक्सीजन प्लांट की सुविधा वाला यह जिले का पहला अस्पताल बन गया है। इस प्लांट से लगभग 160 बेडों पर सीधे मरीजों तक आक्सीजन की आपूर्ति हो सकेगी। सांसद हरीश द्विवेदी ने प्रमुख अधीक्षक जिला अस्पताल डा. आलोक वर्मा के साथ शनिवार को प्लांट का शुभारंभ किया।



990 लीटर प्रति मिनट आक्सीजन उत्पादन की क्षमता वाले इस प्लांट को केंद्र व प्रदेश सरकार की ओर से कोविड की तीसरी लहर का सामना करने के लिए की जा रही तैयारियों में एक बड़े कदम के रूप में देखा जा रहा है। पीएम केयर फंड से यह प्लांट जिला अस्पताल में स्थापित किया गया। गुणवत्ता को बनाए रखने के लिए प्लांट लगाने की जिम्मेदारी जहां डीआरडीओ को दी गई थी, वहीं प्लांट के लिए बेस व शेड आदि बनाने का जिम्मा राजमार्ग निर्माण करने वाली एजेंसी एनएचएआइ को सौंपी गई थी। टाटा कंपनी के इस प्लांट को इंस्टाल करने की जिम्मेदारी लखनऊ की एक फर्म को सौंपा गया था। कंपनी के कर्मियों ने शुक्रवार शाम तक प्लांट को चालू करने के साथ ही अस्पताल स्टाफ को इसे संचालित करने के लिए प्रशिक्षण भी दे दिया था। इसी के साथ प्लांट को अस्पताल प्रशासन को हैंडओवर करने की प्रक्रिया भी पूरी कर ली गई। अस्पताल प्रशासन द्वारा प्लांट को संचालित करने के लिए शिफ्टवार स्टाफ की इयूटी लगाई है। सभी बेड तक आक्सीजन की पाइप लाइन दौड़ाने का काम पहले ही पूरा हो चुका है।

कोविड की दूसरी लहर के दौरान सबसे ज्यादा समस्या आक्सीजन को लेकर थी। आक्सीजन की कमी के कारण कई मरीजों को अपनी जान गंवानी पड़ी थी। समय से व्यवस्था न होने से चिकित्सक लाचार हो गए थे। कोविड के किसी भी संभावित मरीज को सबसे पहले जिला अस्पताल लाया जाता है, यहां पर भर्ती कर जांच की जाती है। जांच में रिपोर्ट पाजिटिव आने के बाद उसे कोविड अस्पताल मेडिकल कालेज के लिए रेफर किया जाता है। यहां ऐसे मरीज जिनमें कोविड के लक्षण तो हैं, लेकिन उनकी कोविड रिपोर्ट निगेटिव है, उन्हें प्रिजेक्टिव कोविड मरीज के तौर अस्पताल में भर्ती कर इलाज किया जाता है। इस तरह के मरीजों को आक्सीजन की जरूरत पड़ती है। आक्सीजन की उपलब्धता से अब यहां इलाज में आसानी होगी। जिला अस्पताल के एसआइसी डा. आलोक वर्मा ने बताया कि प्लांट से आक्सीजन की आपूर्ति शुरू हो गई है। विधायक दयाराम चौधरी, संजय प्रताप जायसवाल, भाजपा जिलाध्यक्ष महेश शुक्ल, संजय चौधरी, सीडीओ डा. राजेश कुमार प्रजापति, डा. राम प्रकाश, अनूप खरे, राजेश पाल चौधरी, दुष्यंत विक्रम सिंह, सिद्धार्थ शंकर मिश्र, आदित्य उपाध्याय, डा. रामजी सोनी, डा. विवेक गौरव सचलन, डा. आलोक पांडेय, डा. सरफराज खान आदि मौजूद रहे।

<https://www.jagran.com/uttar-pradesh/gorakhpur-city-oxygen-supply-started-from-generator-plant-in-district-hospital-21755299.html>



## उपायुक्त ने व्यवस्थाओं का लिया जायजा

चरखी दादरी: उपायुक्त अमरजीत सिंह मान ने कहा कि आगामी तीन से चार दिन में दादरी के सरकारी अस्पताल में बनाए जा रहे आक्सीजन प्लांट से आक्सीजन का उत्पादन शुरू हो जाएगा। नेशनल हाईवे अथारिटी आफ इंडिया, एनएचएआइ के सहयोग से बनाए जा रहे आक्सीजन प्लांट में जल्द ही बिजली व जनरेटर का कनेक्शन हो जाएगा। जिसके बाद यहां से प्रति मिनट 500 लीटर आक्सीजन का उत्पादन हो सकेगा।

उपायुक्त अमरजीत सिंह मान ने शुक्रवार को यह जानकारी दी। उसके बाद उपायुक्त अमरजीत सिंह ने आक्सीजन प्लांट के कार्य और नागरिक अस्पताल में आक्सीजन की व्यवस्थाओं का जायजा भी लिया। इस दौरान सिविल सर्जन डा. सुदर्शन पंवार भी मौजूद रहे। उपायुक्त अमरजीत सिंह मान ने बताया कि दादरी के नागरिक अस्पताल में बनाए गए आक्सीजन प्लांट में



शुक्रवार से बिजली कनेक्शन का कार्य शुरू हो गया है। इसके साथ ही यहां पर जनरेटर का कनेक्शन भी दिया जा रहा है। ताकि बिजली आपूर्ति बाधित होने पर भी आक्सीजन का उत्पादन सुचारू रह सके। उन्होंने कहा कि बिजली कनेक्शन से संबंधित कार्य पूरा होते ही डीआरडीओ से आक्सीजन प्लांट की मशीनें चल पड़ेंगी। ऐसे में कयास लगाए जा रहे हैं कि आगामी दो दिन में बिजली कनेक्शन होने के बाद तीन से चार दिन में आक्सीजन उत्पादन कार्य शुरू हो जाएगा।

वार्डों में बिछाई पाइपलाइन: डा. पंवार

सिविल सर्जन डा. सुदर्शन पंवार ने बताया कि अस्पताल परिसर के पास बने आक्सीजन प्लांट का कार्य पूरा हो गया है तथा अस्पताल के सभी वार्डों में भी पाइपलाइन बिछा दी गई है। जल्द ही यहां डीआरडीओ के माध्यम से उपकरण लगा दिए जाएंगे। उन्होंने कहा कि प्लांट का सिविल व इलेक्ट्रिक कार्य पूरा हो गया है। आक्सीजन प्लांट से प्रति मिनट 500 लीटर आक्सीजन का उत्पादन होगा। प्रत्येक कमरे, वार्ड में हो

आक्सीजन पाइपलाइन: उपायुक्त

उपायुक्त ने सिविल सर्जन को निर्देश दिए कि आक्सीजन आपूर्ति का कार्य सुचारू रूप से जारी रहना चाहिए। उपायुक्त ने अस्पताल परिसर में बिछाई गई आक्सीजन पाइपलाइन का जायजा लिया तथा सिविल सर्जन को निर्देश दिए कि अस्पताल के प्रत्येक कमरे व वार्ड में आक्सीजन पाइपलाइन की व्यवस्था होनी चाहिए। उन्होंने कहा कि प्रशासन ने मरीजों की देखभाल व भोजन इत्यादि के लिए अपने स्तर पर बेहतर प्रबंध किए हैं। उपायुक्त ने अस्पताल में सभी वार्डों का दौरा किया और कहा कि रोगियों तथा उनके स्वजनों में शारीरिक दूरी का विशेष ध्यान रखा जाए। अस्पताल में हर व्यक्ति का चेहरा मास्क से ढका होना चाहिए। इस मौके पर डिप्टी सिविल सर्जन डा. संजय गुप्ता सहित अनेक अधिकारी व कर्मचारी मौजूद रहे।

<https://www.jagran.com/haryana/bhiwani-deputy-commissioner-inspected-the-arrangements-of-oxygen-plant-21753885.html>

## सीएचसी-पीएचसी में भी आइसीयू बेड की हो व्यवस्था, स्वास्थ्य महानिदेशक ने बैठक कर दिए निर्देश

कोरोना संक्रमण की संभावित तीसरी लहर को देखते हुए स्वास्थ्य महानिदेशक डा. तृप्ति बहुगुणा ने शनिवार को सभी जनपदों के मुख्य चिकित्सा अधिकारियों जिला व बेस अस्पतालों के मुख्य चिकित्सा अधीक्षकों व अन्य अस्पतालों के प्रभारी चिकित्साधिकारियों के साथ वीडियो कांफ्रेंसिंग के माध्यम से बैठक कर तैयारियों की समीक्षा की।

By Sumit Kumar

देहरादून: कोरोना संक्रमण की संभावित तीसरी लहर को देखते हुए स्वास्थ्य महानिदेशक डा. तृप्ति बहुगुणा ने शनिवार को सभी जनपदों के मुख्य चिकित्सा अधिकारियों, जिला व बेस अस्पतालों के मुख्य चिकित्सा अधीक्षकों व अन्य अस्पतालों के प्रभारी चिकित्साधिकारियों के साथ वीडियो कांफ्रेंसिंग के माध्यम से बैठक कर तैयारियों की समीक्षा की। उन्होंने चिकित्साधिकारियों को निर्देश दिए कि संक्रमण की गंभीरता को देखते हुए प्रत्येक चिकित्सा इकाई में उपचार की व्यवस्था व अन्य सुविधाएं दुरुस्त की जाएं। ताकि संक्रमण की संभावित तीसरी लहर के दौरान संक्रमित व्यक्ति को यथोचित उपचार दिया जा सके।

इस दौरान उन्होंने जनपदवार जिला व बेस चिकित्सालय के साथ ही सामुदायिक एवं प्राथमिक स्वास्थ्य केंद्रों पर बच्चों के उपचार से संबंधित सुविधाओं व संसाधनों के बारे में जानकारी ली। उन्होंने कहा कि संक्रमण की तीसरी लहर के मद्देनजर सभी चिकित्सालयों में आक्सीजन युक्त बेड, आइसीयू व पीडियाट्रिक आइसीयू की संख्या बढ़ाई जाए। अन्य जरूरी संसाधन भी यथासमय जुटाए जाएं। साथ ही चिकित्सकों व पैरा मेडिकल स्टाफ को समय से प्रशिक्षण दिया जाए। स्वास्थ्य महानिदेशक को बताया गया कि सभी सामुदायिक व प्राथमिक स्वास्थ्य केंद्रों पर आक्सीजन सिलिंडर, आक्सीजन कंसन्ट्रटर, रैपिड एंटीजन टेस्ट किट व होम आइसोलेशन किट उपलब्ध हैं। इस पर महानिदेशक ने कहा कि जिन जनपदों में सामग्रियों की कमी है, वह यथासमय डिमांड राज्य मुख्यालय को भेजें।

उन्होंने बताया कि भारत सरकार ने राज्य के लिए 25 आक्सीजन प्लांट स्वीकृत किए गए हैं। जिनके सापेक्ष जिला अस्पताल अल्मोड़ा, चमोली, कर्णप्रयाग, रुद्रप्रयाग, रुद्रपुर, उप जिला चिकित्सालय रानीखेत, खटीमा, एम्स ऋषिकेश और राजकीय मेडिकल कालेज हल्द्वानी में प्लांट जल्द ही कार्य कर शुरू कर देंगे। ये सभी प्लांट डीआरडीओ की ओर से स्थापित किए जा रहे हैं। स्वास्थ्य महानिदेशक ने चिकित्साधिकारियों को निर्देश दिए कि पीएम व सीएम हेल्पलाइन पर प्राप्त जन शिकायतों का समयबद्ध निस्तारण किया जाए। क्योंकि जन शिकायतों के निस्तारण से जहां एक ओर आम नागरिक की स्वास्थ्य समस्याओं को लेकर फीडबैक प्राप्त होता है, वहीं दूसरी ओर जन सामान्य में भी स्वास्थ्य सेवाओं की सकारात्मक छवि बनती है। उन्होंने कहा कि कोविड के उपचार के साथ अन्य स्वास्थ्य सेवाओं को भी नियमित रूप से संचालित किया जाए। उन्होंने निर्देश दिए कि मुख्यमंत्री की घोषणा के क्रम में कोविड इयूटी पात्र चिकित्सा क्लम्यों को दी जाने वाली प्रोत्साहन राशि से संबंधित जानकारी राज्य मुख्यालय को प्रेषित की जाए। ब्लॉक स्तर पर बनाए गए कोविड कंट्रोल रूम का संचालन भी प्रभावी तरीके से करने के निर्देश उन्होंने दिए हैं। बैठक में स्वास्थ्य निदेशक डा. एसके गुप्ता, अपर निदेशक डा. भागीरथी जंगपांगी, डा. मीतू शाह आदि भी मौजूद रहे।

<https://www.jagran.com/uttarakhand/dehradun-city-icu-beds-should-also-be-arranged-in-chc-phc-21756319.html>

## तीसरी लहर से पहले लगेंगे 25 ऑक्सीजन प्लांट

देहरादून: कोरोना की संभावित तीसरी लहर से निपटने के लिए केंद्र ने राज्य के अस्पतालों में 25 ऑक्सीजन प्लांट लगाने को मंजूरी दी है। इसमें से 9 बड़े प्लांट डीआरडीओ के द्वारा लगाए जाएंगे।

स्वास्थ्य महानिदेशक डॉ तृप्ति बहुगुणा ने शनिवार को सभी जिलों के मुख्य चिकित्साधिकारियों व चिकित्सा प्रमुखों के साथ हुई वीडियो कांफ्रेंसिंग के दौरान यह जानकारी दी। उन्होंने कहा कि डीआरडीओ तीसरी लहर से पहले अल्मोड़ा, चमोली, रुद्रप्रयाग, रुद्रपुर, रानीखेत, खटीमा, एम्स ऋषिकेश, मेडिकल कॉलेज हल्द्वानी में प्लांट स्थापित करेगा।



उन्होंने राज्य के सभी सीएमओ को निर्देश दिए कि तीसरी लहर से निपटने के लिए अस्पतालों में उन्हें जिन भी सुविधाओं व संसाधनों की आवश्यकता है तत्काल उसका विवरण भेजा जाए। उन्होंने ब्लॉक स्तर पर तैयारी रखने और प्राथमिक स्वास्थ्य केंद्रों में भी ऑक्सीजन सिलेंडर और कंस्टेटर उपलब्ध रखने के निर्देश दिए। इसके साथ ही उन्होंने तीसरी लहर से बच्चों को बचाने के लिए पूर्व में लिए गए निर्णयों पर अमल करने व बाल रोग विशेषज्ञों का प्रशिक्षण पूरा करने के निर्देश दिए।

उन्होंने कहा कि कोरोना संक्रमण को रोकने के लिए अस्पतालों को समय रहते तैयार किया जाए। स्वास्थ्य महानिदेशक ने ब्लॉक स्तर पर कोविड कंट्रोल रूम की स्थापना करने के साथ ही लोगों की स्वास्थ्य संबंधी शिकायतों का तत्काल समाधान करने के भी निर्देश दिए। उन्होंने राज्य में टीकाकरण की स्थिति की भी समीक्षा की।

<https://www.livehindustan.com/uttarakhand/dehradun/story-25-oxygen-plants-will-be-set-up-before-the-third-wave-4140387.html>

## डीआरडीओ बना रहा प्लांट, एक मिनट में दो हजार लीटर बनेगी आक्सीजन

एक हजार बिस्तर के अस्पताल में डीआरडीओ आक्सीजन प्लांट लगा रहा है।

ग्वालियर: निर्माणधीन एक हजार बिस्तर के अस्पताल में डीआरडीओ आक्सीजन प्लांट लगा रहा है। इसका बेस एनएचआइ तैयार करेगा। जेएच अधीक्षक डा. आरकेएस धाकड़ ने बताया, शनिवार को एनएचआइ के अफसर अस्पताल पहुंचे। यहां प्लांट के लिए जगह निर्धारित कर इंजीनियरों ने लंबाई-चौड़ाई नापी। जल्द ही प्लांट के लिए बेस तैयार करने का काम शुरू करेगा। इसके बाद डीआरडीओ आक्सीजन यूनिट लगाकर तैयार करेगी। इस दौरान जेएच अधीक्षक डा. आरकेएस धाकड़ व अधिकारी मौजूद रहे। यह प्लांट हवा से दो हजार लीटर आक्सीजन प्रति मिनट तैयार करेगा। 700 बेड पर आक्सीजन की आपूर्ति इस यूनिट से होगी।



<https://www.naidunia.com/madhya-pradesh/gwalior-gwalior-oxygen-crisis-news-drdo-is-building-a-plant-two-thousand-liters-of-oxygen-will-be-made-in-a-minute-6943579>



## DRDO Covid Hospital organizes special Vaccine drive for its staff

Jammu: On the directions of Principal GMC Hospital Jammu, a special Covid-19 Vaccination drive was today organized in DRDO Covid Hospital, Jammu.

A team from Dy. CMO Office was deputed to the DRDO Covid hospital, and a total 165 healthcare workers including 70 male 95 female Staff members were vaccinated.

Main aim of the camp was to provide vaccination coverage to the staff against Covid-19 virus so that they perform their duties in more protected way.

The attending staff has extended their gratitude for this act of DRDO Covid Hospital Jammu Administration. The camp was organized under the guidance of Medical Superintendent Dr. Narinder and monitored by Dy. Medical Superintendents Dr. Deepak Kumar, Dr. Sanjay Bhat and Dr. Manoj Bhagat, Dr. Tarun Gupta represented the team of officials deputed from Dy. CMO Office Jammu.

<https://indiaeducationdiary.in/drdo-covid-hospital-organizes-special-vaccine-drive-for-its-staff/>

## DRDO on Twitter



# Defence Strategic: National/International



Press Information Bureau  
Government of India

Ministry of Defence

Sat, 19 June 2021 5:10PM

## Combined Graduation Parade at Air Force Academy

The Combined Graduation Parade (CGP) was held at Air Force Academy (AFA) Dundigal Hyderabad on 19 June 2021, marking the successful culmination of training for 161 Flight Cadets of Flying and Ground Duty Branches in the Indian Air Force. Chief of the Air Staff, Air Chief Marshal RKS Bhaduria PVSM AVSM VM ADC was the Chief Guest and Reviewing Officer of the CGP, where he conferred the President's Commission upon the graduating flight cadets. On this occasion, 6 officers from the Indian Navy and 5 officers from the Indian Coast Guard were also awarded 'Wings' on successful completion of their flying training.



The Reviewing Officer was received by Air Marshal RD Mathur PVSM AVSM VSM ADC, Air Officer Commanding-in-Chief, Training Command and Air Marshal IP Vipin AVSM VM Commandant Air Force Academy. Chief of the Air Staff was presented with a general salute by the Parade on his arrival followed by an impressive march past. Highlight of the parade was the 'Pipping Ceremony' in which the graduating flight cadets donned their 'Stripes' and were awarded 'Wings' & 'Brevets' by the Chief Guest. The newly commissioned officers were then administered the 'Oath' by the Commandant of AFA in the presence of the Reviewing Officer and other dignitaries.

After the 'Pipping Ceremony', the Reviewing Officer presented awards to the Trainees who had excelled in various disciplines of their training. Flying Officer Prajwal Anil Kulkarni from Flying branch was awarded the President's Plaque as well as the Chief of the Air Staff Sword of Honour for standing first in overall order of merit in the Pilots' Course; while Flying Officer Kritika Kulhari was awarded the President's Plaque for being first in overall order of merit in Ground Duty branches.

Addressing the Parade, CAS commended the AFA and other Training Establishments for timely completion of the training despite severe Covid constraints placed upon the training infrastructure. He noted the significant milestone achieved by the Air Force Academy in achieving over 20,500 flying hours in the last one year - the highest ever in the Academy's history.

CAS referred to unprecedented and rapidly evolving security challenges and reminded the young officers that they were entering the IAF at a juncture when a rapid infusion of technologies and combat capabilities was driving a monumental transformation in the Air Force. He also highlighted the change in operational methodologies and functioning with development and operationalisation of major automation and networking projects. He exhorted them to hit the ground running and prove their mettle once they reach the field; in order to exploit the state of art aircraft, weapons, sensors and technologies to their fullest.

The grand ceremony culminated with the newly commissioned officers stepping out in slow march to the traditional notes of 'Auld Lang Syne'; as they received their first salute from the junior course. They then went past the Saluting Dias and passed through the portals of the Academy, symbolising the beginning of their journey in the IAF.

Flypast by Pilatus PC-7 Mk-II, Hawks, Kirans and Chetaks as well as display by Sarang, Suryakirans & Akash Ganga Sky Diving team added colour and cheer to an impressive graduation parade.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1728558>



पत्र सूचना कार्यालय  
भारत सरकार

रक्षा मंत्रालय

Sat, 19 June 2021 5:10PM

## वायुसेना अकादमी में कंबाइंड ग्रेजुएशन परेड

संयुक्त स्नातक परेड (सीजीपी) का आयोजन दिनांक 19 जून, 2021 को वायु सेना अकादमी (एएफए) डुंडीगल हैदराबाद में किया गया, जो भारतीय वायु सेना में फ्लाइट और ग्राउंड इयूटी शाखाओं के 161 फ्लाइट कैडेट्स के प्रशिक्षण के सफल समापन को चिह्नित करता है। वायुसेना प्रमुख एयर चीफ मार्शल आरकेएस भदौरिया, पीवीएसएम, एवीएसएम, वीएम, एडीसी, सीजीपी के मुख्य अतिथि और समीक्षा अधिकारी थे, जहां उन्होंने स्नातक फ्लाइट कैडेट्स को राष्ट्रपति कमीशन प्रदान किया। इस अवसर पर भारतीय नौसेना के 6 अधिकारियों और भारतीय तटरक्षक के 5 अधिकारियों को भी उनके उड़ान प्रशिक्षण के सफल समापन पर 'विंग्स' से सम्मानित किया गया।



समीक्षा अधिकारी की अगवानी एयर मार्शल आर डी माथुर पीवीएसएम एवीएसएम वीएसएम एडीसी, एयर ऑफिसर कमांडिंग इन चीफ, ट्रेनिंग कमांड और एयर मार्शल आईपी विपिन एवीएसएम वीएम कमांडेंट एयरफोर्स एकेडमी ने की। उनके आगमन पर परेड द्वारा वायुसेना प्रमुख को जनरल सैल्यूट दिया गया और इसके बाद शानदार मार्च पास्ट किया गया। परेड का मुख्य आकर्षण 'पाइपिंग सेयरमनी' था, जिसमें

स्नातक फ्लाइट कैडेट्स ने अपनी 'स्ट्रिप्स' धारण की और मुख्य अतिथि द्वारा 'विंग्स' और 'ब्रेवेट' से सम्मानित किया गया। इसके बाद नए कमीशंड अधिकारियों को समीक्षा अधिकारी और अन्य गणमान्य व्यक्तियों की उपस्थिति में एएफए के कमांडेंट द्वारा 'शपथ' दिलाई गई।

'पाइपिंग समारोह' के बाद, समीक्षा अधिकारी ने प्रशिक्षण के विभिन्न विषयों में उत्कृष्ट प्रदर्शन करने वाले प्रशिक्षुओं को पुरस्कार प्रदान किए। फ्लाइंग ब्रांच के फ्लाइंग ऑफिसर प्रज्वल अनिल कुलकर्णी को पायलट्स कोर्स में ऑर्डर ऑफ मेरिट में प्रथम स्थान पाने के लिए प्रेसिडेंट्स प्लाक के साथ-साथ एयर स्टाफ सोर्ड ऑफ ऑनर से सम्मानित किया गया; जबकि फ्लाइंग ऑफिसर कृतिका कुलहरि को ग्राउंड इयूटी शाखाओं में ओवरऑल ऑर्डर ऑफ मेरिट में प्रथम स्थान प्राप्त करने के लिए प्रेसिडेंट्स प्लाक से सम्मानित किया गया।

परेड को संबोधित करते हुए वायुसेना प्रमुख ने प्रशिक्षण की ढांचागत व्यवस्था पर गंभीर कोविड संबंधी बाधाओं के बावजूद प्रशिक्षण को समय पर पूरा करने के लिए एएफए और अन्य प्रशिक्षण प्रतिष्ठानों की सराहना की। उन्होंने पिछले एक वर्ष में 20,500 से अधिक उड़ान घंटों की प्राप्ति करने में वायु सेना अकादमी द्वारा हासिल महत्वपूर्ण मील का पत्थर हासिल करने का उल्लेख किया जो अकादमी के इतिहास में अब तक का सबसे अच्छा पदर्शन है।

वायुसेना प्रमुख ने अभूतपूर्व और तेजी से पैदा हो रही सुरक्षा चुनौतियों का उल्लेख किया और युवा अधिकारियों को याद दिलाया कि वे भारतीय वायु सेना में एक ऐसे मोड़ पर प्रवेश कर रहे हैं जब प्रौद्योगिकियों और युद्धक क्षमताओं के शामिल होने से वायु सेना में एक अभूतपूर्व परिवर्तन चल रहा है। उन्होंने प्रमुख स्वचालन और नेटवर्किंग परियोजनाओं के विकास और परिचालन के साथ सैन्य अभियान संबंधी पद्धतियों में हो रहे बदलाव और कामकाज पर भी प्रकाश डाला। उन्होंने आह्वान किया कि अत्याधुनिक विमानों, हथियारों, सेंसर और प्रौद्योगिकियों का पूरा फायदा उठाने के लिए वे उत्साह के साथ मैदान पर उतरें और वहां पहुंचने के बाद अपनी क्षमता साबित करें।

इस भव्य समारोह का समापन जूनियर कोर्स से पहली सलामी मिलने के साथ नए कमीशंड अधिकारियों के 'औल्ड लैंग सिने' की परंपरागत धुन के साथ धीमी गति से मार्च करने के साथ हुआ। इसके बाद वे सैल्यूटिंग डायस के पीछे गए और अकादमी के पोर्टल्स से गुजरे जो भारतीय वायु सेना में अपनी यात्रा की शुरुआत का प्रतीक है।

पिलेटस पीसी-7 एमके-II, हॉक्स, किरन और चेतक के साथ-साथ सारंग, सूर्यकिरन विमानों के फ्लाइपास्ट और आकाश गंगा स्काई डाइविंग टीम के प्रदर्शन से एक शानदार स्नातक परेड में रंग भर दिए।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1728659>





## **Address by the CAS: Combined Graduation Parade at AFA on 19 Jun 21**

- Air Officer Commanding-in-Chief Training Command, Commandant Air Force Academy, proud parents & relatives who are witnessing the Parade live on their screens, Instructors & Staff, Flight Cadets on parade, Ladies and Gentlemen.
- A Very Good Morning and my congratulations to the 161 graduating officers for being awarded the President's Commission.
- My congratulations also to the award winners for their outstanding performance during the training, and to the six officers from Indian Navy as well as the five officers from Indian Coast Guard for earning their coveted wings. Good Show and Keep it up.
- Today's Combined Graduation Parade is historic because despite severe COVID constraints placed upon the training infrastructure you all have succeeded in completing your training, that too within the stipulated period. In fact, the Air Force Academy has flown over 20,500 hrs over the last one year – the highest ever in our history. My special compliments on achieving this milestone and implementing significant enhancements in our training curriculum.
- Indeed, this day is a great testament to the grit and determination shown by each one of you as well as to the yeoman contribution by the instructors.
- I take this opportunity to commend the efforts put in by all our Training Establishments and the faculty for guiding, mentoring and teaching; not only the fundamentals of being a Military Leader, but also instilling in you IAF's core values of 'Mission, Integrity and Excellence'.
- Living by these core values and preserving our glorious traditions through selflessness and sacrifice will be your sacred duty from this day on.
- I would like to express my deep gratitude to all the proud parents who stood by their daughters and sons during an extremely rigorous training schedule. I am mindful of the fact that your wards did not come home during the term break and have been toiling non-stop in pursuit of their dreams. You - as their parents and their family - should be proud of the fact that your guidance, support and encouragement are here for all to see; as your children stand on the parade ground- resplendent in their blue uniforms and transformed into spirited and confident officers of the Indian Air Force.
- To all these graduating officers, I have this to say. In a short while from now, you will take your first steps into the IAF as Commissioned Officers. As you do so, it is essential for you to know where you are headed and the huge responsibilities that will come to rest on your young shoulders.
- IAF is undergoing a monumental transformation. Rapid infusion of niche technology and combat power in every facet of our operations has never been as intense as it is now!
- This is primarily because of the unprecedented and rapidly evolving security challenges that we face, coupled with a rising geo-political uncertainty in our neighbourhood and beyond.
- The last few decades have clearly established the critical role of Air Power in achieving victory in any conflict. It is in this backdrop that IAF's on-going capability enhancement assumes tremendous significance.
- All of you are very fortunate to be joining the Air Force at this juncture. The Pilots will get to fly fighters carrying an array of potent standoff precision weapons and connected in networks. The transport and helicopter fleets are equipped with C-17, C-130, ALH, Chinook and Apache

aircraft which are state of the art and capable of contributing equally effectively in war or HADR situations. Engineers will need to master e-MMS, which is one of the largest networked aircraft maintenance management systems in the world that we have established across diverse type of aircraft. Controllers will have to adapt to vectoring fighters in large formations using digitised and networked IACCS systems in the MAFI environment. Logisticians will use automation to drive procurement and resupply through totally automated and computerised networks on inventory management. All of you will be tied together with a completely paperless e-governance suite to enhance the efficiency of basic administration across the entire Air Force.

- I have always believed that the generation you belong to is technologically adept and well versed with exploiting the digital space. Now is the time for you to prove it. I can assure you that the environment you will step into, when you cross these portals will not only challenge, but stretch your capabilities. You will need to hit the ground running and work hard to deliver what the Air Force expects of you. It was with this focus that B Tech degree was introduced compulsorily for the Air Force cadets in NDA and I am happy to note that 81 of the 87 graduating officers from the Flying branch are B.Tech. I am sure this will facilitate rapid comprehension and exploitation of modern platforms, weapons, sensors and technologies. Notwithstanding all these advances in technology, as young leaders, you must know that IAF's core strength is in "OUR PEOPLE" and you must always nurture this strength.
- While maintaining operational readiness, IAF has also been proactively assisting in the national fight against the COVID-19 pandemic. Proactive vaccination and strict COVID discipline within IAF enabled us to undertake all COVID tasks on a war-footing. IAF's heavy lift capability was put into action for airlift of crucial COVID related equipment; wherein our transport fleet flew more than 3800 hours within two months in a huge effort across the globe and domestically to transport critical oxygen Tankers, and all related medical equipment and supplies. You all are joining the field that operates at this level, across the spectrum.
- It is also essential for all of you to bear in mind that as future leaders, you will stand shoulder to shoulder with your comrades in Olive Greens and Whites and prosecute integrated operations. You will be an integral part of this important transition in the years ahead.
- Before I conclude, I once again congratulate the newly commissioned officers for your achievements. As you grow in your career, face each challenge with determination and courage, conduct yourself with dignity and honour and aim for the highest professional standards. Lead by personal example and uphold the ethos and culture of IAF – always and every time.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1728457>



**Press Information Bureau  
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**Ministry of Defence**

*Fri, 18 June 2021 8:40PM*

## **Keel laying for second Frigate of P11356 Project at Goa Shipyard Limited**

Keel of the second frigate of additional follow-on ship of Project 1135.6 for the Indian Navy was ceremoniously laid on 18 Jun 2021 by Vice Adm G Ashok Kumar, Vice Chief of Naval Staff.

The ships under construction at Goa Shipyard Ltd (GSL) are part of indigenous shipbuilding program being executed under Inter Governmental Agreement with Russian Side for construction of two advanced frigates for the Indian Navy. The contract was signed on 25 January 2019 between Ministry of Defence and Goa Shipyard Limited. Keel Laying is a major milestone activity in the construction of any ship symbolising formal commencement of the construction process. Keel for the first ship was laid on 29 Jan 2021. The first ship would be delivered in 2026 and second ship subsequently after 06 months.



The ceremony was held virtually in the presence of Vice Admiral Kiran Deshmukh, Controller Warship Production & Acquisition (CWP&A), Cmde Sanjay Shrivastava, Cmde (SP), Cmde B B Nagpal (Retd), Chairman and Managing Director, GSL, Directors, and other senior officials of the Indian Navy and GSL.

Speaking on the occasion, Chief Guest Vice Adm G Ashok Kumar appreciated the efforts put in by the Shipyard in achieving this milestone despite COVID constraints. He highlighted that it was for the first time that these vessels, with such technological complexity, were being constructed indigenously at GSL and marked an important milestone in our journey towards Atma Nirbhar Bharat and Make in India initiative. He further added that a large number of major equipment are being substituted with indigenous equivalents, in addition to use of significant indigenous build material. The entire hulls of the ships are also being built with indigenous steel. He also highlighted major achievements of the Shipyard and commended the professionalism displayed by employees of GSL.

During his address, CMD-GSL highlighted various challenges faced by the Shipyard in executing this complex shipbuilding project. Despite challenges posed by the ongoing pandemic, the Shipyard continued the production activities with active support of employees and innovative solutions. He thanked the Indian Navy for their unstinted support and reiterated GSL's commitment to cater for the requirement of Maritime Defence Forces through indigenous shipbuilding.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1728343>



Press Information Bureau  
Government of India

Ministry of Defence

Fri, 18 June 2021 6:22PM

## Maiden Indian Navy - European Union Naval Force (EUNAVFOR) exercise in Gulf of Aden

Indian Naval Ship Triakand, mission deployed for Anti-Piracy Operations, is participating in the maiden *IN* – EUNAVFOR Joint Naval Exercise in the Gulf of Aden commencing today. A total of five warships from four navies are participating in the exercise on 18<sup>th</sup> and 19<sup>th</sup> June 2021. Other warships include Italian Navy Ship ITS Carabinere, Spanish Navy Ship ESPS Navarra, and two French Navy Ship FS Tonnerre and FS Surcouf.

The two day exercise will see high tempo-naval operations at sea, including advanced air defence and anti-submarine exercises, cross deck helicopter operations, tactical manoeuvres, boarding operations, underway replenishment, Search & Rescue, Man Overboard drills, and other maritime



security operations. Ships of the four navies will endeavour to enhance and hone their war-fighting skills and their ability as an integrated force to promote, peace, security and stability in the maritime domain. Concurrently, a virtual “Information sharing Exercise” is also being conducted between the Indian Navy Information Fusion Centre – Indian Ocean Region and Maritime Security Centre-Horn of Africa on 18 June 21.

EUNAVFOR and the Indian Navy converge on multiple issues including counter piracy operations and protection of vessels deployed under the charter of World Food Programme (UN WFP). Indian Navy and EUNAVFOR also have regular interaction through SHADE (Shared Awareness and De-confliction) meetings held annually at Bahrain. This engagement showcases increased levels of synergy, coordination and inter-operability between *IN* and EUNAVFOR. It also underscores the shared values as partner navies, in ensuring freedom of seas and commitment to an open, inclusive and a rules-based international order.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1728276>



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Fri, 18 June 2021 6:22PM

## अदन की खाड़ी में पहला भारतीय नौसेना-यूरोपीय संघ नौसैनिक बल (EUNAVFOR) अभ्यास

समुद्री डकैती रोधी अभियानों के लिए तैनात भारतीय नौसेना का जहाज त्रिकंद आज से एडन की खाड़ी में भारतीय नौसेना और यूरोपीय संघ नौसैनिक बल के बीच संयुक्त नौसैनिक अभ्यास के लिए पहली बार भाग ले रहा है। दिनांक 18 और 19 जून 2021 को होने वाले इस अभ्यास में चार नौसेनाओं के कुल पांच युद्धपोत हिस्सा ले रहे हैं। अन्य युद्धपोतों में इतालवी नौसेना जहाज आईटीएस कैराबिनेरे, स्पेनिश नौसेना जहाज ईएसपीएस नेवोरा, और दो फ्रांसीसी नौसेना जहाज एफएस टोन्नेरे और एफएस सोरकुर्फ शामिल हैं।



दो दिवसीय अभ्यास में समुद्र में उच्च स्तरीय नौसैनिक अभियान आयोजित होंगे, जिसमें उन्नत वायु रक्षा और पनडुब्बी रोधी अभ्यास, क्रॉस डेक हेलीकॉप्टर ऑपरेशन, सामरिक युद्धाभ्यास, बोर्डिंग ऑपरेशन, अंडरवे रिप्लेनिशमेंट, खोजबीन एवं बचाव, मैन ओवरबोर्ड ड्रिल्स तथा अन्य समुद्री सुरक्षा अभियान शामिल हैं। चार नौसेनाओं के जहाज समुद्री क्षेत्र में शांति, सुरक्षा और स्थिरता को बढ़ावा देने के लिए एक एकीकृत बल के रूप में अपने युद्धकौशल और उनकी क्षमता को बढ़ाने और निखारने का प्रयास करेंगे। इसके साथ ही दिनांक 18 जून 2021 को भारतीय नौसेना इन्फॉर्मेशन फ्यूजन सेंटर-हिंद महासागर क्षेत्र और मेरीटाइम सिक्यूरिटी सेंटर- हॉर्न ऑफ अफ्रीका के बीच एक आभासी ढंग से एक "सूचना साझा करने का अभ्यास" भी आयोजित किया जा रहा है।

यूरोपीय संघ नौसैनिक बल और भारतीय नौसेना विश्व खाद्य कार्यक्रम चार्टर (यूएन डब्ल्यूएफपी) के तहत तैनात समुद्री डकैती अभियानों और जहाजों की सुरक्षा सहित अनेक मुद्दों पर साथ काम करते हैं। भारतीय नौसेना और यूरोपीय संघ नौसैनिक बल बहरीन में सालाना आयोजित एसएचएडीई (शेयर्ड अवेयरनेस एंड डी-कोन्फ्लिक्शन) बैठकों के माध्यम से नियमित बातचीत भी करते हैं। यह आपसी संपर्क भारतीय नौसेना और यूरोपीय संघ नौसैनिक बल के बीच तालमेल, समन्वय और अंतर-संचालनशीलता के स्तर में वृद्धि को प्रदर्शित करता है। यह समुद्रों की स्वतंत्रता सुनिश्चित करने और एक खुली, समावेशी और नियम आधारित अंतरराष्ट्रीय व्यवस्था के प्रति प्रतिबद्धता के तौर पर साझेदार नौसेनाओं के रूप में साझा मूल्यों को भी रेखांकित करता है।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1728386>

## **‘Indian armed forces better equipped, more vigilant on Indo-China borders’: Air Chief Marshal Bhadauria**

*Bhadauria said the Indian armed forces were constantly monitoring the situation in terms of additional deployments or any changes on the Indian as well as the Chinese side*

*By Srinivasa Rao Apparasu*

Indian armed forces have been more vigilant and alert on the Indo-China border, especially after the last year’s clashes with Chinese forces in Eastern Ladakh, Air Chief Marshal RKS Bhadauria said on Saturday while interacting with media after the Combined Graduation Parade of newly-trained flight cadets of various branches of Indian Air Force at the Air Force Academy, Dundigal, on the outskirts of Hyderabad.

Bhadauria said the Indian armed forces were constantly monitoring the situation in terms of additional deployments or any changes on the Indian as well as the Chinese side.

He said the discussions were going on between India and China for the next round of talks. “There is a proposal for Commander-level talks and decisions will be taken. The first attempt is to continue with talks and do disengagement of balance friction points and follow it with de-escalation,” Bhadauria said.

He, however, said there was no question of letting the guard down on the borders and the Indian forces were better placed compared to the last year and were on high alert all through the year.

“Simultaneously, the ground reality is being monitored closely in terms of current leftover locations, deployments, or any changes. We are taking all required actions on our parts,” he said

Bhadauria said the IAF was undergoing rapid transformation with the rapid infusion of niche technologies. After Rafael and light combat aircraft (LCA), it had made giant steps in the case of capability enhancement, he said.

“The combat power in every facet of its operations has never been as intense as it is now. This is primarily because of the unprecedented and rapidly evolving security challenges that we face, coupled with the rising geopolitical uncertainty in our neighbourhood and beyond,” he added.

Earlier, the Air Chief Marshal reviewed the passing out parade of the flight cadets. In all, 161 flight cadets of flying and ground duty branches were commissioned as officers in the Indian Air Force. The Chief of Air Staff presented ‘Wings’ and ‘Brevets’ to the flying cadets who successfully completed flying and navigation training respectively

He also awarded ‘Wings’ to officers of the Indian Navy and Indian Coast Guard on successful completion of their flying training at the Air Force Academy.

The event was also marked by an aerobatic display by the famous Surya Kiran Aerobatic Team, Sarang Helicopter Display Team, Pilatus PC-7 trainer and Para jumping by the Akash Ganga Team. Similarly, there was an immaculate flypast formation by Hawk, Kiran, Pilatus aircraft and Chetak helicopters.

Due to the Covid-19 pandemic, parents of graduating Flight Cadets could not witness the combined graduation parade this time

<https://www.hindustantimes.com/india-news/indian-armed-forces-better-equipped-more-vigilant-on-indo-china-borders-air-chief-marshal-bhadauria-101624101570736.html>



**‘Indian armed forces better equipped, more vigilant on Indo-China borders’: Air Chief Marshal Bhadauria**

## Rafale fighter jets to be inducted into Indian Air Force by 2022, says Bhadauria

*India had signed an inter-governmental deal with France to buy 36 of these fighter jets at a cost of ₹59,000 crore in September 2016*

*By Prashasti Singh*

New Delhi: Indian Air Force (IAF) chief RKS Bhadauria on Saturday said the IAF is on its target to induct all the 36 Rafale fighter jets by 2022.

Speaking after reviewing the Combined Graduation Parade (CGP) at the Air Force Academy in Dundigal in Hyderabad, Bhadauria said, "The target is 2022. It is absolutely on target. I mentioned earlier. Except for one or two aircraft, minor delays because of Covid-related issues, but, in fact, some deliveries have been ahead of time. So, broadly, we are absolutely on target on the Rafale induction plan. On the operationalisation plan, you are aware, we are fully operational.. so, in terms of time, we will be absolutely on time.



Air chief marshal RKS Bhadauria (ANI Photo)

India had signed an inter-governmental deal with France to buy 36 of these fighter jets at a cost of ₹59,000 crore in September 2016.

In April 2021, Union defence minister Rajnath Singh also said that the whole batch of the aircraft would reach the country by April 2022. "I want to inform you that till now, 11 Rafale have arrived and by this March, 17 Rafale will be on our land. I also inform that all Rafale will reach India by April, 2022," he had said while replying to a question in the Rajya Sabha.

On the situation in eastern Ladakh on the Indo-China border, the IAF chief said there was a need to continue with the parley and carry out the disengagement at the "balance friction points," adding that talks between the two sides were underway.

"The first attempt is to continue with the talks and do the disengagement at the balance friction points. And, of course, follow it up with de-escalation," he said.

"However, in parallel, the ground realities are being monitored closely. Whatever is the reality across, in terms of current leftover locations, deployments, any changes, that is being monitored closely and whatever actions are required on our part, we are taking," he added.

<https://www.hindustantimes.com/india-news/rafale-fighter-jets-to-be-inducted-into-indian-air-force-by-2022-says-bhadauria-101624093362394.html>

## बड़े बदलाव के दौर से गुजर रही है भारतीय वायुसेना,

### बोले- IAF Chief RKS Bhadauria

वायु सेना प्रमुख ने संयुक्त स्नातक परेड (CGP) को संबोधित करते हुए कहा, 'भारतीय वायुसेना (IAF) परिवर्तन के महत्वपूर्ण दौर से गुजर रही है। हमारे अभियानों के हर पहलू में प्रौद्योगिकियों और लड़ाकू शक्ति का जितनी तेजी से समावेश अब हो रहा है, उतना पहले कभी नहीं हुआ।'

#### खास बातें

1. बदलाव के दौर से गुजर रही भारतीय वायु सेना
2. किसी भी तरह चुनौती से निपटने में सक्षम: IAF
3. 'तय समय पर शामिल होंगे 36 राफेल विमान'

हैदराबाद: भारतीय वायुसेना प्रमुख आरकेएस भदौरिया (IAF Chief RKS Bhadauria) ने शनिवार को कहा कि तेजी से बदल रही सुरक्षा चुनौतियों और पड़ोस एवं अन्य क्षेत्रों में बढ़ती भू-राजनीतिक अनिश्चितताओं के मद्देनजर हमारे देश की वायुसेना (Indian Air Force) प्रौद्योगिकियों को तेजी से शामिल करके परिवर्तन के महत्वपूर्ण दौर से गुजर रही है।



फोटो साभार: (ट्विटर @IAF\_MCC)

सुरक्षा चुनौतियों के कारण बदलाव

भदौरिया ने यहां वायु सेना अकादमी में संयुक्त स्नातक परेड (CGP) को संबोधित करते हुए कहा, 'भारतीय वायुसेना परिवर्तन के महत्वपूर्ण दौर से गुजर रही है। हमारे अभियानों के हर पहलू में प्रौद्योगिकियों और लड़ाकू शक्ति का जितनी तेजी से समावेश अब हो रहा है, उतना पहले कभी नहीं हुआ। यह हमारे पड़ोस और अन्य क्षेत्रों में बढ़ती भू-राजनीतिक अनिश्चितताओं के साथ हमारे सामने मौजूद अभूतपूर्व और तेजी से बदल रही सुरक्षा चुनौतियों के कारण है।'

#### परेड की समीक्षा

वायुसेना प्रमुख ने कहा कि भारतीय वायु सेना में निर्धारित समयानुसार 2022 तक 36 राफेल विमान शामिल हो जाएंगे। भदौरिया ने कहा कि पिछले कुछ दशकों ने हर संघर्ष में जीत हासिल करने में वायु शक्ति की महत्वपूर्ण भूमिका स्पष्ट रूप से स्थापित की है और इसी के मद्देनजर भारतीय वायुसेना की क्षमता में जारी वृद्धि काफी महत्व रखती है।

इससे पहले, वायुसेना प्रमुख ने परेड की समीक्षा की। उन्होंने कोविड-19 महामारी (Covid-19) के खिलाफ राष्ट्रीय लड़ाई में वायुसेना की महत्वपूर्ण भूमिका का भी जिक्र किया।

<https://zeenews.india.com/hindi/india/indian-air-force-undergoing-monumental-transformation-says-iaf-chief-rks-bhadauria/923724>



## Predator drones helping us to keep watch on 'vessels of interest': Navy

*The Indian Navy said that two Predator (MQ-9 Sea Guardian) drones are helping the maritime force enhance its surveillance all across the Indian Ocean region*

New Delhi: Amid the ongoing stand-off with China along the northern borders, the Indian Navy said that two Predator (MQ-9 Sea Guardian) drones are helping the maritime force enhance its surveillance all across the Indian Ocean region and keep a close watch on the 'vessels of interest' passing from there.

The two drones were leased by the Indian Navy from the US during the height of the clash in Ladakh's Galwan Valley to help the forces keep a close eye on the movement of the Chinese warships and other suspicious vessels.

During an interview with ANI, Navy Vice Chief Vice Admiral G Ashok Kumar said, "The long endurance of the MQ-9 Sea Guardian drones allows us to keep a watch on a large area and has helped us to enhance our maritime domain awareness. This also allows us to keep a close eye on any vessel of interest operating in the region."



Indian Navy Vice Chief Vice Admiral G Ashok Kumar

Asked if the 'vessels of interest' monitored by the predator drones included any Chinese warship or research vessels operating in the area, he said, "The drones are used to keep a watch on the potential adversaries but also the vessels of interest who are not following the rules. This may be from any country China or Japan or any country."

The officer said that the drones with their long endurance help the force keep a watch all along with the Indian Ocean Region, the Bay of Bengal and the Arabian Sea region.

The Indian Navy was the first force among the three services to go for the leasing option provided in the new Defence Acquisition Procedure to get the two drones from an American firm and deployed them at a Southern Navy base to keep a watch on the entire area looked after by the force.

The drones can fly for more than 35 hours at a stretch and can also hover over an area of interest or a ship for a long time to see what their activities are.

The Chinese Navy-affiliated Research vessels generally operate in the Indian Ocean region for surveillance activities and their activities are of interest to the Indian forces.

India is also processing the case for the acquisition of 30 more of these drones which will come armed with Hellfire missiles which will allow the taking down of any potential targets by the forces during its surveillance missions.

The project is at the moment being discussed at the Defence Ministry level and will need to be cleared by the Cabinet Committee on Security due to its enormous cost.

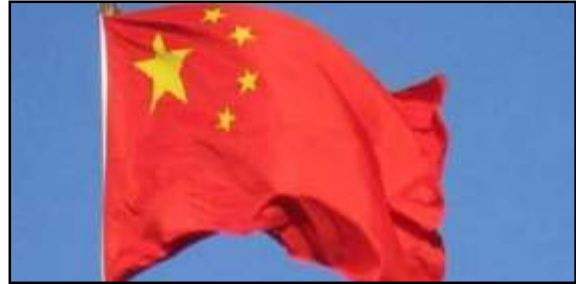
*(Only the headline and picture of this report may have been reworked by the Business Standard staff; the rest of the content is auto-generated from a syndicated feed.)*

[https://www.business-standard.com/article/current-affairs/predator-drones-helping-us-to-keep-watch-on-vessels-of-interest-navy-121061900177\\_1.html](https://www.business-standard.com/article/current-affairs/predator-drones-helping-us-to-keep-watch-on-vessels-of-interest-navy-121061900177_1.html)

## Chinese presence in Sri Lanka 'could pose a threat', keeping close watch: Indian Navy

*With the Chinese Navy getting new port projects in Sri Lanka, a top Indian Navy officer said that it 'could pose a threat' to Indian interests in the region*

With the Chinese Navy getting new port projects in Sri Lanka, a top Indian Navy officer said that it 'could pose a threat' to Indian interests in the region and there is a need to keep a close watch on such activities. In an interview with ANI, Navy Vice Chief Vice Admiral G Ashok Kumar said the Indian Navy is very well prepared to secure the maritime boundaries of the country and there is no way anyone can surprise us.



With the Chinese Navy getting new port projects in Sri Lanka, a top Indian Navy officer said that it 'could pose a threat' to Indian interests in the region. Image Source : PTI/REPRESENTATIONAL

"If you want to analyse whether it is a threat or not, it is a very difficult question. But the fact that when somebody is external to the region starts showing so much interest even though they might have rational reasons to do so as the majority of their energy sources pass through this region ... Is it a logical thing for nations to do, yes? Could that pose a threat to us, it could. We just need to ensure that it is being closely watched," he told ANI on Friday, responding to a query on whether China's getting hold of a new port in Sri Lanka could pose a threat to India.

Asked if the Indian Navy was keeping a close watch on such activities, he said, "Yes, on the entire region." The Chinese have been making inroads in Sri Lanka where they recently got a reclaimed port city near Colombo. Prior to that, they gained control over the Hambantota port which was built by them.

Responding to a query on whether the Chinese could surprise us through the sea route as they did along the northern waters last year, he said that after the 26/11 attack on Mumbai, India had taken a number of steps like installation of coastal security network and had enhanced surveillance capabilities.

"The chances of we getting surprised in the maritime domain to have reduced... we are much better prepared today than what we were a decade ago," the Vice Admiral said. He said that the Indian Navy is a capability-driven force and more strength would be added to it in form of new assets in the near future. (With ANI Inputs)

<https://www.indiatvnews.com/news/india/chinese-presence-in-sri-lanka-could-pose-a-threat-keeping-close-watch-indian-navy-713023>

## मुस्तैद: चीन की चालाकी पर ड्रोन से नजर रख रहा भारत, नेवी के वाइस एडमिरल बोले- लगातार बढ़ा रहे समुद्री सीमाओं की सुरक्षा

सार

समुद्र में चीनी युद्धपोतों और अन्य संदिग्ध जहाजों की आवाजाही पर नजर रखने में एमक्यू -9 सी गार्डियन ड्रोन कारगर साबित हो रहे हैं। भारत ने पिछले साल अमेरिका से यह ड्रोन लिया था। इंडियन नेवी इसके जरिए समुद्र में होने वाली गतिविधियों पर नजर रख रही है।

विस्तार

नई दिल्ली: भारत चीन पर रणनीतिक दबाव बढ़ाने के लिए समुद्री सीमाओं को मजबूत करने का प्लान कर रहा है। भारतीय नौसेना अपने बेड़े में 6 नए सबमरीन को शामिल करने की तैयारी कर रही है। नौसेना में नई सबमरीन के शामिल होने के बाद भारत की ताकत समुद्र में कई गुना बढ़ जाएगी। नौसेना के वाइस एडमिरल जी अशोक ने कहा कि सबमरीन किसी भी नौसेना के लिए बेहद महत्वपूर्ण होती है। ऐसे में एक साथ सबमरीन शामिल होना एक अहम फैसला है।



समुद्र में भारतीय नौसेना की ताकत - फोटो: ANI

दरअसल, हिंद महासागर क्षेत्र के उत्तरी सीमाओं पर चीन के साथ चल रहे तनाव पर भारतीय नौसेना चौंकना है। वाइस एडमिरल जी अशोक कुमार ने कहा कि प्रीडेटर ड्रोन से समुद्री सीमा पर बहुत दूर तक नजर रखी जा सकती है। उन्होंने कहा कि बंगाल की खाड़ी से लेकर पूरी समुद्री सीमाओं पर प्रीडेटर ड्रोन से नजर रखी जा रही है। यह चीन, जापान, श्रीलंका हर देश के जहाजों पर नजर रखने में सक्षम है। अब कोई हमें समुद्री सरहद पर नहीं चौंका सकता। भारतीय नौसेना ने कहा कि दो प्रीडेटर (एमक्यू-9 सी गार्डियन) ड्रोन पूरे हिंद महासागर क्षेत्र में समुद्री बल की निगरानी बढ़ाने में मदद कर रही हैं।

ड्रोन के जरिए समुद्र में रखी जा रही निगरानी

गौरतलब है कि पिछले साल लद्दाख की गालवान घाटी में भारत-चीन के बीच बढ़े तनाव को देखते हुए भारतीय नौसेना ने अमेरिका से दो ड्रोन लिया था। समाचार एजेंसी एएनआई को दिए एक इंटरव्यू में नौसेना के वाइस चीफ एडमिरल जी अशोक कुमार ने कहा कि एमक्यू -9 सी गार्डियन ड्रोन की लंबी रेंज होने से समुद्र के बड़े क्षेत्र पर नजर रखने में मदद मिलती है।

श्रीलंका बंदरगाह पर चीन के कब्जे से भारत सतर्क

श्रीलंका में नई बंदरगाह परियोजनाओं में चीनी नौसेना की मौजूदगी पर जब नौसेना के अधिकारी से पूछा गया तो उन्होंने कहा कि श्रीलंका में चीन के नए बंदरगाह पर कब्जा भारत के लिए खतरा पैदा कर सकता है। हालांकि नौसेना के वाइस चीफ एडमिरल जी अशोक कुमार ने कहा कि भारतीय नौसेना समुद्री सीमाओं को सुरक्षित करने में पूरी तरह से सक्षम है। भारत को कोई धोखा नहीं दे सकता। भारतीय नौसेना के जवान चीनी की चालाकी पर बारीक से नजर बनाए रहते हैं। चीन बार-बार समुद्र में अपना कब्जा जमाने की कोशिश करता रहता, लेकिन इसकी यह साजिश कामयाब नहीं हो पाती है।

<https://www.amarujala.com/india-news/indian-navy-vice-chief-says-predator-drones-helping-us-to-keep-watch-on-vessels-of-interest>

Sun, 20 June 2021

## Keel of the second frigate of additional follow-on ship of Project 1135.6 laid at GSL

*This project is being executed under the Intergovernmental Agreement (IGA) with Russia which is for two Advanced Missile Frigates for the Indian Navy and is part of indigenous shipbuilding program*

*By Huma Siddiqui*

Despite challenges posed by ongoing pandemic COVID-19, keel of the second frigate for the Indian Navy was laid at Goa Shipyard Ltd on Friday (June 18, 2021).

### **More about the second frigate & indigenous content**

It is a major import substitute project.

This project is being executed under the Intergovernmental Agreement (IGA) with Russia which is for two Advanced Missile Frigates for the Indian Navy and is part of indigenous shipbuilding program. In 2019, the contract for building these two frigates was inked between GSL and the Ministry of Defence (MoD).

To be built under the Make in India Initiative, a large number of major equipment is expected to be substituted by indigenous equivalents. The building material will be indigenous.

According to the Indian Navy, the entire hulls of the ships are also being built with indigenous steel — from SAIL.

Also sensors and communications will be indigenous, as well as the wiring and special cables.

### **What is the importance of Keel laying?**

It is a major milestone activity and symbolizes the formal commencement of the construction process of the ship.

Earlier this year, on Jan 29, 2021, the keel for the first Advanced Missile Frigate was laid and this ship will be delivered to the Indian navy in 2026, and six months later the second ship will be handed over.

The keel was laid by VADM G Ashok Kumar, Vice Chief of Naval Staff in the presence of Cmde B B Nagpal, NM Chairman and Managing Director, GSL. Others present during the virtual ceremony included Vice Admiral Kiran Deshmukh, Controller Warship Production & Acquisition (CWP&A), Cmde Sanjay Shrivastava, Cmde (SP), Directors, and other senior officials of the Indian Navy and GSL.

For the first time, vessels of vast complexity are being constructed in India. In his address during the ceremony, the VADM G Ashok Kumar, Vice Chief of Naval Staff said that several changes in the design will be incorporated in the ships to be constructed at the GSL. This is a huge milestone for the shipyard which has got involved in the large-scale indigenization in collaboration with the Indian industry.

These stealth frigates which are based on the design from Russia — Admiral Grigorovich-class (Project 1135.6) or advanced Talwar-class frigates, are expected to be fitted with the India-Russia BrahMos Missiles. This will be instead of the Russian 3M-54E Klub-N anti-ship missiles.

As per the contract between India and Russia, two frigates will be built in Russia at Yantar shipyard at Kaliningrad in Russia and two at GSL. These Talwar class frigates are expected to add more strength to the Indian Navy in the Indian Ocean Region (IOR).

As has been reported earlier by Financial Express Online in October 2018, these ships are powered by M90FR gas turbines which are designed and built by Zorya-Mashproekt based in

Ukraine. However, the Russian built frigates will come to India without the engines. The engines which are to be procured directly from Ukraine are expected to be fitted at the GSL.

Meanwhile, at the Russian shipyard, efforts are going on to make indigenous engines from this class of frigates.

GSL has been nominated by the government for the production of the frigates under Transfer of Technology Agreement with Russia.

### **Requirement of the Indian Navy**

Today, the navy needs around 24 frigates. However it is operating just 10.

As reported earlier, the 3,620-ton Admiral Grigorovich-class of Russia is an upgraded variant of the six Talwar-class frigates which were built for the Indian Navy between 2003 and 2013.

INS Teg and INS Tarkash, the first of the three frigates were delivered to the navy in 2012 and INS Trikand came in 2013.

<https://www.financialexpress.com/defence/keel-of-the-second-frigate-of-additional-follow-on-ship-of-project-1135-6-laid-at-gsl/2274469/lite/>

# ThePrint

Sat, 19 June 2021

## **Joint military command is the future but India can't rush into it**

*The amalgamation of 19 military commands into a cohesive joint or theatre command will be India's biggest defence reform. The challenge will be to take everyone along*

*By Snehesh Alex Philip, Edited by Prashant Dixit*

The ongoing Ladakh stand-off with China has taught us one thing – a unified military approach along with diplomatic and economic measures is the way forward.

When the Galwan clash happened a year ago, India pushed both the Air Force and the Navy into full operational mode besides ramping up the economic counter steps and increasing diplomatic push. The three Service chiefs and the Chief of Defence Staff, General Bipin Rawat, used to meet on a daily basis and jointly work out what needs to be done.

The end result was that China realised India is no pushover, even though the stand-off continues and the People's Liberation Army (PLA) still controls areas that India claims as its own.

Amid all the tension with China, silent work to reform Indian military went on – and the result is the proposal to amalgamate the 18 military commands (including the tri-services Andaman and Nicobar Command) into a few joint or theatre commands.

As the secretary of the Department of Military Affairs, General Rawat is mandated with “facilitation of restructuring of military commands for optimal utilisation of resources by bringing about jointness in operations including through establishment of joint/theatre commands”.

This massive change, which will be the biggest reform that the forces will see, will streamline the world's fourth largest military into a leaner and stronger cohesive fighting unit. It will also cut long-term costs because common resources and logistics would be pooled instead of each Service spending separately.



Representational image of an Indian Army convoy moving through Ladakh | Photo: ANI

But challenges remain. At a crucial meeting held last week on the concept note, it emerged that all stakeholders, including the three Services, are not on board on the exact structure of the joint or theatre commands. The Narendra Modi government is of the view that there should be more discussion on this.

Army chief General M.M. Naravane had in October 2020, while welcoming the integrated theatre commands, said that the process “needed to be deliberate, thoughtful and well-considered, and its fruition will take a number of years.”

Sources in the defence and security establishment say that since joint or theatre commands will have drastic and far-reaching implications on the military’s future war-fighting strategy, it is important that all stakeholders are completely on board.

### **The current plan**

As per the current plan, the 18 commands are to be brought together under five theatres — Northern Land Theatre (Jammu and Kashmir, Ladakh and Central sector) Western Land Theatre (Pakistan centric), Eastern Land Theatre, Maritime Theatre Command, and Air Defence Command. There could be one or two additional commands to look after logistics and training.

The first two to be rolled out are Maritime Theatre Command (MTC) and Air Defence Command (ADC).

The MTC will see a merger of the Eastern and Western naval commands besides getting elements from the Army and the Air Force. The plan is also to bring the Coast Guard assets from all five regions under its operational control. The MTC will be headed by a three-star Naval officer. It will also have one two-star officer from the IAF and a three-star from the Army.

Similarly, the ADC will be headed by a three-star IAF officer, along with a three-star Army officer and a two-star Naval officer.

The other theatres planned will be headed by three-star Army officers with elements from the IAF and Navy.

Also, the Border Security Force (BSF) is being planned to be part of the Northern Land Theatre and the Indo-Tibetan Border Police (ITBP) of the Eastern Land Theatre.

### **Concerns raised**

A heated debate within the defence establishment is on regarding the structuring of the theatre commands.

A number of issues have been raised. Will the theatre commands be based on challenges (China and Pakistan) or will there be one theatre command for the whole country?

The larger fear is that the theaterisation is heavily tilted in the Army’s favour with nomenclatures like “Land” not helping the cause.

It has also been pointed out that in case of a war with Pakistan, at least four theatres will come into action. In case of a war with China, at least four theatres will take part while the fifth, the Western Land Theatre, will be on high alert.

However, from the Chinese side, the Western Theatre Command will take care of the entire borders with India. The only additional theatre to get involved will be the one with naval assets – either Eastern, Southern or Northern Theatre.

The counter argument to the fear that multiple theatres would get involved in case India faces a war, is that there will always be a primary theatre of war and a secondary theatre and this has been taken into account while planning.

As per the theaterisation plan, all commands will have elements from all the three Services. The Navy assets are unlikely to see much division but the IAF assets will be. At present, the IAF assets are centrally controlled and operated through the Air Headquarters even though there are multiple Air Commands.

As per the proposed plan, each theatre will get its own IAF assets. There is a view that this will impact operational capability as the assets are limited and the fighter squadron strength is already very low — 30 squadrons against a sanctioned strength of 42.

Former Air Force chief ACM B.S. Dhanoa, while in office, has said that there can be only one theatre — India — and the focus should be on institutionalised structure of joint planning by the three Services.

While the Navy supports the creation of the Maritime Theatre Command, there are also voices within the force who say that there already exists the independent Western Naval Command and the Eastern Naval Command who look after their specific areas of operations.

“The equipment/assets of each Service is not large enough to be distributed up and locked in theatres. Forget the IAF, which anyway has a lower number of aircraft and surveillance equipment, even the Army had to push in additional reserves and additional equipment into the Northern Command during the ongoing standoff with China,” a source said.

Another source explained that China had been focusing on a new war-fighting strategy since the 1980s and it began by slowly cutting down the personnel strength and expenditure while increasing focus on indigenous technology for missiles, vessels and aircraft.

But China has the numbers and money to spend on more military assets and have specific theatres, something that India cannot afford to replicate.

Incidentally, with approximately 1.4 million personnel, the Indian Army has become the world’s largest ground force, pulling ahead of China, which cut down its strength by half and is instead focusing on its navy, air force and technology.

Some retired top military officers have written to concerned government positions against rolling out the theaterisation in its current format.

Another issue of concern is the question of who will head these theatres. As per the current plan, the theatre commanders will report to the CDS and the respective Service chiefs will become more administration- and training-oriented.

In the US and China, the theatre commanders report to the political leadership.

Some have also expressed concern of moving ahead with a concept without war gaming the plans and seeing how effective or ineffective the whole process is going to be.

Another school of thought is that the first step towards joint mashup should be joint training. The idea is that people need to learn and train together for them to plan and fight together.

#### **Fears expected but unified approach the way forward**

The concerns expressed by various quarters to the theaterisation was expected. The Modi government would need to handle it deftly because militaries are seldom open to change.

As Harsh V Pant and Javin Aryan wrote in October 2020, “the inter-services competition wherein each service zealously oversees its own assets and strives for a greater share of the defence budget and influence might prove to be an obstacle in creating synergy among the services.”

However, there is no doubt that while concerns and fears need to be understood and taken care of, a unified war-fighting strategy along with exponential capability increase in our cyber and space warfare is the only option going forward.

But given India’s limited experience with integrated command structures, I would go back to what the Army chief said, “The process should be deliberate, thoughtful and well-considered.”

There is no doubt that this journey may require a fair bit of mid-course corrections, but it is important to get off on a firm foundation. Views are personal.

<https://theprint.in/opinion/brahmastra/joint-military-command-is-the-future-but-india-cant-rush-into-it/680012/>

## IAF set to deploy Rafales in Hasimara for eastern front with China

By Rajat Pandit

New Delhi: The IAF has raised the second Rafale squadron, the 101 'Falcons of Chhamb and Akhnoor', in Ambala ahead of their formal induction at the Hasimara airbase in West Bengal for the eastern front with China.

With the first Rafale squadron, the 17 'Golden Arrows' fully operational at the Ambala airbase with its full complement of 18 fighters, the 101 squadron has been resurrected with five jets that have touched down in India, IAF sources said.

The remaining 13 of the 36 twin-engine Rafales, contracted under the Rs 59,000 crore deal inked with France in September 2016, are slated to arrive in batches before April next year. The IAF is "absolutely on target" on the Rafale induction plan, Air Chief Marshal RKS Bhadauria said on Saturday.



A Rafale squadron is to be stationed at Hasimara in North Bengal

"The formal ceremony for the 101 Squadron, which had earlier been 'number-plated' with the retirement of its old MiG-21 fighters, in Hasimara has been slightly delayed due to the Covid pandemic. But it will happen within a month or so," a source said. While Group Captain Rohit Kataria is the commanding officer of the 17 squadron, Group Captain Neeraj Jhamb 'Jammy' is heading the 101 squadron, he added.

Ambala and Hasimara were selected as the 'main operating home bases' for the 4.5-generation Rafales, though the omni-role fighters can operate from anywhere in the country as and when required.

Hangars, shelters, maintenance facilities and infrastructure for the Rafales have come up at both the airbases. The Hasimara airbase, close to the Sikkim-Bhutan-Tibet tri-junction, was established with Toofani aircraft after the 1962 war with China.

Along with the Russian-origin Sukhoi-30MKIs already deployed at air bases like Tezpur and Chabua, the Rafales will now add a greater combat punch against China in the eastern sector. With a combat range of 780 km to 1,650 km depending on the mission, the Rafales come armed with a deadly weapons package, advanced avionics, radars and electronic warfare systems to prevent jamming by adversaries and ensure superior survivability in hostile contested airspace, as was earlier reported by TOI.

The Rafales, for one, are armed with long stand-off weapons like the over 300-km range Scalp air-to-ground cruise missiles. They are also equipped with top-notch Meteor air-to-air missiles, which with a strike range of 120 to 150 km are better than any missiles currently carried by Pakistani or Chinese jets.

IAF had also ordered the Hammer air-to-ground precision-guided munitions for the Rafales, in a deal that came last year amid the ongoing military confrontation with China in eastern Ladakh. With a strike range of 20 to 70 km, the Hammer munitions are designed to destroy bunkers, hardened shelters and other targets in all terrain.

<https://timesofindia.indiatimes.com/india/iaf-set-to-deploy-rafales-in-hasimara-for-eastern-front-with-china/articleshow/83699361.cms>



## Navy team reaches U.S. for training on MH-60R helicopters

*24 of them were contracted during Donald Trump visit to meet critical shortage*

*By Dinakar Peri*

New Delhi: A team of 18 Navy personnel reached the U.S. for training on the MH-60R multi-role helicopters, 24 of which were contracted in a \$2.2-billion deal signed during the visit of then President Donald Trump in February 2020.

“Three helicopters are scheduled to be delivered to the Navy next month which will be used for training in the U.S. The first batch is likely to arrive in India by June 2022,” a defence official said. Training of the first batch of aircrew and technical crew, will commence at Pensacola, Florida and San Diego, the official said.

The helicopters built by Lockheed Martin are being procured under the ‘Buy (Global)’ category of the procurement procedure through the Foreign Military Sales route of the U.S. The deliveries are expected to be completed by 2025.

“MH-60R international partnerships continue — Indian Navy students arrived at Naval Air Station (NAS) Pensacola and North Island to commence training with two MH-60R helicopters while strengthening global partnerships,” the U.S. Naval Air Systems Command said on twitter.

The Navy is facing an acute shortage of helicopters on its frontline warships but procurement of new helicopters has been repeatedly delayed. A tender for 111 Naval Utility Helicopters (NUH) is being processed through the strategic partnership route of procurement procedure while there is a projected requirement of 123 multi-role helicopters. To address the shortfall in the interim, the Navy issued a Request for Information (RFI) for lease of 24 light helicopters in April.

The MH-60R helicopters can be effectively employed for offensive and defensive roles including anti-submarine warfare, anti-ship strike, low intensity maritime operations, search and rescue, over the horizon network centric operations and electronic warfare.

The MH-60Rs are a replacement for the Sea King 42/42A helicopters already decommissioned in the 1990s and are envisaged to operate from frontline ships and aircraft carriers providing them the critical attributes of flexibility of operation, enhanced surveillance and attacking capability.

<https://www.thehindu.com/news/national/navy-team-reaches-us-for-training-on-mh-60r-helicopters/article34866147.ece>



File photo of MH-60R helicopter. |  
Photo Credit: AFP

# India's delayed aircraft carrier plan raises concerns as China readies its third one

*China's Type 003 makes substantial progress, while Indian Navy operates with one*

*By Pradip R Sagar*

China's third aircraft carrier is on the fast track. Construction of the warship, known as Type 003 as it is yet to be named, has made "significant progress", according to the latest images released by a commercial satellite. The vessel—expected to be the largest surface combatant in the Chinese People's Liberation Army Navy (PLAN)—is scheduled to be launched before the year-end.

The development has made India's military planners more anxious as the Navy is operating with only a single aircraft carrier, while the construction of the second and the country's first indigenous aircraft carrier is constantly hit with speed breakers. The move to build the carrier, named INS Vikrant, started more than two decades ago in 1999.

This even as India was the first Asian country to acquire an aircraft carrier when it got HMS (His/Her Majesty's Ship) Hercules from the UK in 1961.



China's Shandong aircraft carrier | China's Ministry of National Defense

In 2012, China commissioned its first aircraft carrier Liaoning, while the second carrier, Shandong, was launched in 2019. Shandong is the first Chinese-made carrier; Liaoning was rebuilt on a gutted, unfinished Ukrainian aircraft carrier hull. Beijing is said to be further seeking to add at least two more carrier vessels.

According to naval observers, Type 003—under construction at Jiangnan Shipyard in Shanghai since 2018—"will have a flat-top flight deck with a catapult assisted takeoff, but arrested recovery" (CATOBAR) system to launch fighter jets with heavier payloads or more fuel.

It is expected that China's navy might develop Type 003 to nuclear-powered carriers at a later stage. It would put China with the US and France—the only two countries that currently operate nuclear-powered aircraft carriers.

After going through the high-resolution satellite images of the Chinese under-construction vessel, Type 003 will be configured with two starboard-side aircraft elevators similar to Shandong, noted the Centre for Strategic and International Studies, a Washington based think-tank.

However, the elevators on Type 003 are estimated to be larger, which could allow them to lift two aircraft simultaneously. France's Charles de Gaulle has two elevators and the US's Gerald R. Ford-class carriers have three elevators, all of which are capable of lifting two aircraft at a time.

Though the Chinese military is yet to announce any details of its third aircraft carrier, the Chinese state broadcaster, China Central Television (CCTV), expects the country's third aircraft carrier to make its public debut in 2021.

Talking about the status of the 40,000-tonne-INS Vikrant, a senior naval officer said they were hoping to get its delivery by early next year, as the project is getting delayed due to the Covid pandemic. However, the Cochin shipyard is ramping up its efforts to cover up for the time lost due to Covid restrictions. "Once it is handed over to the Navy, the carrier will go in for extensive sea trials along with aviation trials. And these trials will take about two years to get completed. The carrier is expected to be commissioned into the Navy by early 2024," said the officer.

The design of IAC Vikrant, which costs about Rs 3,500 crore, was initially approved by the defence ministry in 2003. But the construction began only in 2005 at the Cochin Shipyard.

Initially scheduled to be introduced in water by 2010, it was launched only in August 2013, after three years of delay. The deadline to deliver the warship was 2018, which was also delayed due to issues in procuring aviation equipment from Russia.

With its length of 260m, the warship would have two take-off runways and a landing strip with three arrestor wires capable of operating a STOBAR (short take off but arrested delivery) aircraft and a range of helicopters. Twenty MiG 29K fighter jets and 10 helicopters will be deployed on the aircraft carrier.

The INS Vikramaditya, the only aircraft carrier with the Navy, can carry over 30 aircraft, including MiG 29K, or Sea Harriers, Kamov helicopters, Sea King, ALH-Dhruv, and Chetak helicopters. With 22 decks and a capacity of 1,600 personnel, the ship can sustain itself in the sea for 45 days up to a range of over 13,000 km.

Currently, the Navy is in need of another aircraft carrier to bolster its defence and offensive capabilities as China and Pakistan are modernising their navies rapidly. But, the project to have a second carrier is still under debate due to its cost. Decision-makers in South Block are discussing developing islands into "strategic hubs" as replacement to aircraft carriers with "unsinkable" islands. CDS Gen Rawat suggested the development of the Andaman Nicobar islands as a shore-based facility and as an alternative for aircraft carriers.

While extending his support for an aircraft carrier, former Navy chief Admiral Arun Prakash, in an interaction with THE WEEK some time back, had said another aircraft carrier will be a powerful weapon for facing an aggressive China. "Hypothetically, if China decides to send three aircraft carriers into the Indian Ocean, then no amount of submarines, destroyers or frigates can tackle it. Aircraft carriers are the only answer to such a situation," he had said.

Currently, most of the powers in the world are operating or building technologically advanced aircraft carriers to safeguard their maritime rights and interests. There are a total of 41 active aircraft carriers in operation by 13 navies across the world. Supporters of the aircraft carriers maintain that major maritime powers, including the US, the UK, Russia, Italy and France, are operating carriers, with some navies having shown their interest in these. The Royal Navy commissioned a 65,000-tonne carrier HMS Queen Elizabeth and the second carrier, HMS Prince of Wales, is in its last leg of completion. The PLA Navy has a bigger aim to have a fleet of over 10 aircraft carriers by 2050.

<https://www.theweek.in/news/india/2021/06/19/indias-delayed-aircraft-carrier-plan-raises-concerns-as-china-readies-its-third-one.html>



Press Information Bureau  
Government of India

Ministry of Science & Technology

Sat, 19 June 2021 3:33PM

## A novel technology for coating carbon on lithium metal oxide electrode, can double battery life

Researchers have developed a non-expensive way to coat carbon on lithium metal oxide electrodes for lithium-ion batteries. The life of the lithium-ion cells prepared using these electrode materials is expected to be doubled due to protective carbon coating.

Lithium-ion batteries are the most commonly used power source for electric vehicles. However, its penetration to the daily usage against gasoline-based vehicles require drastic improvement in the lifetime and cost as well as mileage per charge. The active components of lithium-ion batteries are cathode, anode, and electrolyte. While commercial graphite is used as anode, lithium metal oxides or lithium metal phosphates are used as a cathode in Li ion battery. The electrolyte is a lithium salt dissolved in organic solvents. The capacity of the lithium-ion battery determines the mileage of the electric vehicle. Before the capacity reduces to 80%, the number of charging cycles determines the life of the battery.

Carbon being inert to most chemicals and stable under the operating window is the best choice of coating material to improve the cyclic stability of the active materials. Carbon coating on the active materials can double the lifetime of the lithium-ion cells. However, coating carbon on lithium metal oxide is very challenging, because of the difficulty involved in coating carbon during the synthesis of lithium metal oxide material in a single step.

To address this issue, researchers at the International Advanced Research Centre for Powder Metallurgy & New Materials (ARCI), an autonomous institute of the Department of Science & Technology, Govt. of India, have developed a technique to coat carbon in situ on lithium transition metal oxides in single step while synthesizing the oxide itself. Generally, carbon is coated on oxide materials using a second step, which is not uniform and is expensive as well. In ARCI method, a carbon precursor is trapped in between the transition metal hydroxide layers to minimize the reaction with oxygen even when heat-treated in the air during solid-state synthesis. Uniform carbon coating on the lithium transition metal oxides --LiNi<sub>0.33</sub>Mn<sub>0.33</sub>Co<sub>0.33</sub>O<sub>2</sub> (NMC111) was achieved through this technique.

The electrochemical performance of the lithium-ion cells constructed using carbon-coated NMC111 is at par with that of the commercial lithium-layered oxide cathodes. Superior cyclic stability of the carbon coated product with capacity retention of more than 80% after 1000 cycles of charging/discharging is demonstrated with an optimum carbon thickness matching commercial samples. The researchers at ARCI expect the electrochemical performance to improve further once the lab-scale batch process is replaced by the continuous process to enable the process to be commercially viable.

<https://pib.gov.in/PressReleasePage.aspx?PRID=1728532>

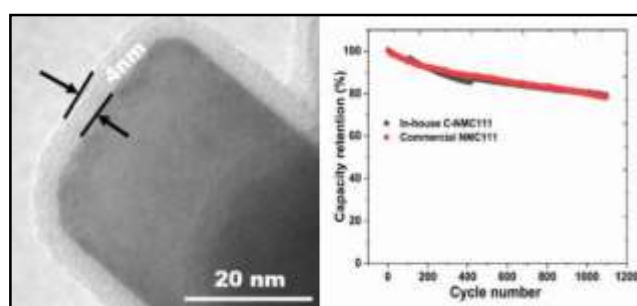
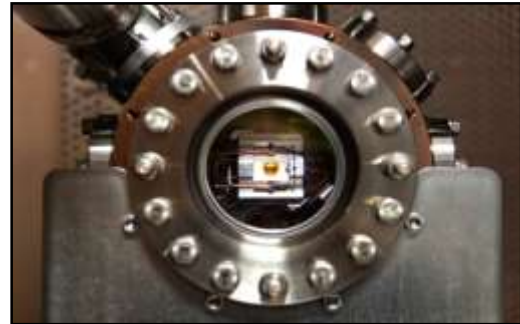


Fig.1 (left): A high resolution of transmission electron microscopy of one of the particles showing uniform carbon coating (right): Electrochemical characteristic of ARCI developed C-NMC111 in par with commercial material.

## Compact quantum computer for server centers

Quantum computers developed to date have been one-of-a-kind devices that fill entire laboratories. Now, physicists at the University of Innsbruck have built a prototype of an ion trap quantum computer that can be used in industry. It fits into two 19-inch server racks like those found in data centers throughout the world. The compact, self-sustained device demonstrates how this technology will soon be more accessible.

Over the past three decades, fundamental groundwork for building quantum computers has been pioneered at the University of Innsbruck, Austria. As part of the EU Flagship Quantum Technologies, researchers at the Department of Experimental Physics in Innsbruck have now built a demonstrator for a compact ion trap quantum computer. "Our quantum computing experiments usually fill 30- to 50-square-meter laboratories," says Thomas Monz of the University of Innsbruck. "We were now looking to fit the technologies developed here in Innsbruck into the smallest possible space while meeting standards commonly used in industry." The new device aims to show that quantum computers will soon be ready for use in data centers. "We were able to show that compactness does not have to come at the expense of functionality," adds Christian Marciniak from the Innsbruck team.



The centerpiece of the quantum computer: the ion trap in a vacuum chamber. Credit:

The individual building blocks of the world's first compact quantum computer had to be significantly reduced in size. For example, the centerpiece of the quantum computer, the ion trap installed in a vacuum chamber, takes up only a fraction of the space previously required. It was provided to the researchers by Alpine Quantum Technologies (AQT), a spin-off of the University of Innsbruck and the Austrian Academy of Sciences which aims to build a commercial quantum computer. Other components were contributed by the Fraunhofer Institute for Applied Optics and Precision Engineering in Jena and laser specialist TOPTICA Photonics in Munich, Germany.

### Up to 50 quantum bits

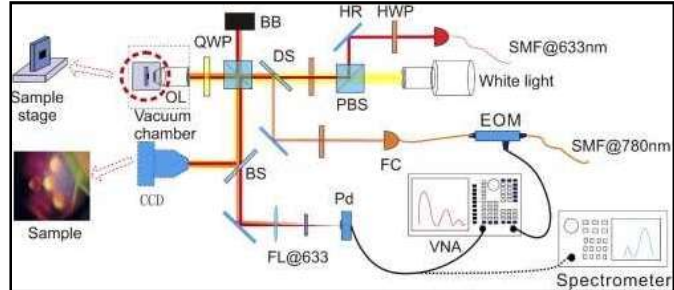
The compact quantum computer can be operated autonomously and will soon be programmable online. A particular challenge was to ensure the stability of the quantum computer. Quantum devices are very sensitive and in the laboratory they are protected from external disturbances with the help of elaborate measures. Amazingly, the Innsbruck team succeeded in applying this quality standard to the compact device as well, thus ensuring safe and uninterrupted operation.

In addition to stability, a decisive factor for the industrial use of a quantum computer is the number of available quantum bits. Thus, in its recent funding campaign, the German government has set the goal of initially building demonstration quantum computers that have 24 fully functional qubits. The Innsbruck quantum physicists have already achieved this goal. They were able to individually control and successfully entangle up to 24 ions with the new device. "By next year, we want to be able to provide a device with up to 50 individually controllable quantum bits," says Thomas Monz, already looking to the future.

**More information:** I. Pogorelov et al, Compact Ion-Trap Quantum Computing Demonstrator, *PRX Quantum* (2021). DOI: [10.1103/PRXQuantum.2.020343](https://doi.org/10.1103/PRXQuantum.2.020343)  
<https://phys.org/news/2021-06-compact-quantum-server-centers.html>

## Graphene drum: A new phonon laser design

Professor Konstantin Arutyunov of the HSE Tikhonov Moscow Institute of Electronics and Mathematics (MIEM HSE), together with Chinese researchers, has developed a graphene-based mechanical resonator, in which coherent emission of sound energy quanta, or phonons, has been induced. Such devices, called phonon lasers, have wide potential for application in information processing, as well as classical and quantum sensing of materials. The study is published in the journal *Optics Express*.



Schematic representation of an experimental setup for receiving and recording phonon radiation. Credit: National Research University Higher School of Economics

Using an analogy with photons, quanta of the electromagnetic spectrum, there are also particles of sound energy, phonons. In fact, these are artificially introduced objects in physics—quasi-particles, which correspond to vibrations of the crystal lattice of matter.

Some substances, when irradiated, emit photons of the same wavelength, phase, and polarization. This process, called stimulated emission, was predicted by Albert Einstein over a century ago and is the basis of the device we all know—the laser. The first lasers were constructed about sixty years ago, and they have become firmly established in our lives in various fields. A similar process, involving the emission of 'identical' phonons, underlies a device called, by analogy, a phonon laser, or saser. In fact, it was predicted at the same time as lasers, but only a few experimental realizations have been developed over a long period of time, and none of them have been widely used in the industry.

Magnesium ions, semiconductors, composite systems with microcavities, electromechanical resonators, nanoparticles, and many other substances and systems have been used as active media for phonon lasers over the last decade. Unlike previous studies, the present study used graphene to create coherent acoustic excitations. Due to the unique properties of graphene, such resonators can potentially be widely used.

The graphene resonator was produced by microlithography: a photo-sensitive polymer film is deposited on a silicon substrate. Using ultraviolet light, a certain structure is 'drawn' on the substrate, which subsequently allows the formation of a repeating system of micro-cavities by means of plasma treatment. The treated substrate is covered with a layer of graphene, and this system of 'drums' behaves like a resonator, i.e. it amplifies external vibrations if they are generated with a certain frequency.

If such a 'drum' is irradiated with laser light at a specific wavelength, photons are repeatedly reflected between the silicon backing and the graphene, thereby forming optical cavities where mechanical vibrations of the appropriate frequency are produced.

"Experimentally, we have examined a nanostructure, which is a fixed membrane made of a monatomic layer of carbon, or a graphene. Vibrations of atoms, or phonons, were activated in it through exposure to external optical radiation," says Arutyunov. "The research is expected to continue, as it is of considerable interest both for physics of ultra small objects and has the potential to create a new generation of quantum optomechanical sensors and transducers."

**More information:** Wei-Jie Li et al, Phonon lasing with an atomic thin membrane resonator at room temperature, *Optics Express* (2021). DOI: [10.1364/OE.423904](https://doi.org/10.1364/OE.423904)

**Journal information:** *Optics Express*

<https://phys.org/news/2021-06-graphene-phonon-laser.html>

## Stop-motion photons: Localized light particles on the road

Professor Alexander Szameit and his group of physicists from the University of Rostock, in collaboration with Professor Stefano Longhi from the Polytechnic University of Milan, discovered a novel and paradoxical behavior of light waves: Despite being tightly confined in a microscopic volume, a new kind of disorder allows optical signals to suddenly show up at far away regions. Such abrupt transport had previously been considered impossible, and challenges the current understanding of light waves. Their discovery was recently published in the prestigious journal *Nature Photonics*.

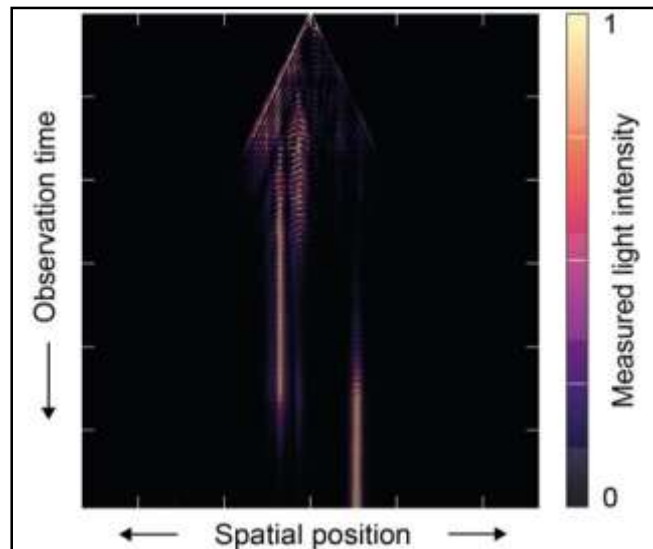
In 1958, Phil Anderson astonished the scientific community by predicting that an electrical conductor—such as copper—will suddenly lose its conductivity and turn into an insulator, as soon as its atomic lattice is perturbed beyond a critical level: In the jargon of physicists, "disorder" can bring the free motion of electrons to a halt and block any electrical current from flowing through a previously conductive material.

This so-called 'Anderson localization' lies outside the scope of classical physics, and only a quantum-mechanical treatment of electrons as both particles and waves can explain the metal-insulator transition resulting from it. Today we know that this effect, for which Phil Anderson won a share of the Nobel Prize in Physics 1977, applies in general: Disorder can likewise suppress the propagation of sound waves or even light beams.

Since college, the intriguing properties of light and its interaction with matter have fascinated Alexander Szameit. Just recently, the Rostock professor and his graduate students Sebastian Weidemann and Mark Kremer made a surprising discovery: Every realistic physical system inevitably exchanges energy with its environment, and, as soon this energy exchange becomes disordered, (light) waves can also become localized. This new class of disorder transcends the mechanism that Phil Anderson considered in 1958, since his calculations were based on the assumption that no interactions take place with the environment. Szameit explains: "In our experiments, we could clearly observe how light becomes focused into tiny regions in space, as soon as the energy exchange in the environment becomes randomized".

At first glance, these results appeared to be merely a generalization of the well-known suppression of transport. However, much to their surprise, the researchers soon discovered quite the opposite: "At first, we did not believe our eyes when we saw how the brightest light spot seemed to suddenly jump to an entirely different regions in space, again and again, even though conventional light propagation should have been suppressed entirely arrested by the disorder."

Responsible for this hitherto unknown behavior of light waves is the complex energy exchange with the environment. Prof. Szameit says, "Any remaining doubts vanished when were able to prove that this effect can shuffle around light signals between specific points in 5-kilometer-long



The figure shows the experimentally measured light propagation: Initially diverging light is intermittently focused into a tiny spatial region by disorder. After some time, the signal suddenly appears at an entirely different position, seemingly without having to traverse the intervening medium. Credit S. Weidemann, M. Kremer et al.

optical fiber." These pioneering results are a conceptual breakthrough for fundamental science, and the universal nature of the underlying mechanism may inform new techniques to shape not only the flow of light, but of acoustic or particle waves as well.

**More information:** Sebastian Weidemann et al, Coexistence of dynamical delocalization and spectral localization through stochastic dissipation, *Nature Photonics* (2021). DOI: [10.1038/s41566-021-00823-w](https://doi.org/10.1038/s41566-021-00823-w)

**Journal information:** *Nature Photonics*

<https://phys.org/news/2021-06-stop-motion-photons-localized-particles-road.html>

## COVID-19 Research News

TIMESNOWNEWS.COM

Mon, 21 June 2021

# Compounds that protect lung cells, may block COVID-19 virus: Study

*A recent study found a compound that may block the virus that causes COVID-19 from entering cells and protect the air cells (alveoli) of the lung*

Washington: Elovonoids, the bioactive chemical messengers made from omega-3 very long-chain polyunsaturated fatty acids, may block the virus that causes COVID-19 from entering cells and protect the air cells (alveoli) of the lung. The findings of the research conducted at Louisiana State University Health New Orleans Neuroscience Center of Excellence have been published in the journal *Scientific Reports*.

"Because the compounds are protective against damage in the brain and retina of the eye and the COVID-19 virus clearly damages the lung, the experiment tested if the compounds would also protect the lung," noted Nicolas Bazan, MD, PhD, Director of the LSU Health New Orleans Neuroscience Center, and senior author of the paper.

The research team tested Elovonoids (ELVs) on infected lung tissue from a 78-year-old man in petri dish cultures. They found that ELVs not only reduced the ability of the SARS-CoV-2 spike protein to bind to receptors and enter cells, but they also triggered the production of protective, anti-inflammatory proteins that counteract lung damage. The scientists report that ELVs decreased the production of ACE2. ACE2 is a protein on the surface of many cell types. ACE2 receptors act like locks on cells, and the SARS-CoV-2 spike proteins act like keys that open the locks letting the virus enter cells to multiply rapidly. They also demonstrated for the first time that alveolar cells are endowed with pathways for the biosynthesis of ELVs.

"Since SARS-CoV-2 affects nasal mucosa, the GI tract, the eye, and the nervous system, uncovering the protective potential of ELVs expands the scope of our observations beyond the lung. Our results provide a foundation for interventions to modify disease risk, progression, and protection of the lung from COVID-19 or other pathologies (including some types of pneumonia)," added Dr Bazan.

<https://www.timesnownews.com/health/article/compounds-that-protect-lung-cells-may-block-covid-19-virus-study/773286>



