

May  
2020

# 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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Wed, 06 May 2020

## **Contactless hand sanitisation: How officials in PMO, Rashtrapati Bhawan, SC are keeping their hands sanitised**

*All government offices and residences of notable personnel, including Rashtrapati Bhawan, PMO, Supreme Court, Ministry of Home Affairs, among others have been equipped with DRDO and Riot Labz developed OakMist, contactless sanitizer dispenser which sprays alcohol-based hand rub sanitizer solution*

New Delhi: All government offices and residences of notable personnel, including Rashtrapati Bhawan, PMO, Supreme Court, Ministry of Home Affairs, among others have been equipped with DRDO and Riot Labz developed OakMist, contactless sanitizer dispenser which sprays alcohol-based hand rub sanitizer solution. Following an advisory on MHA for Lockdown's phase 3 on contactless sanitization, the product has been made available for masses today, and is available for pre-booking at <https://oakmist.com>

Named OakMist, the product is based on water mist aerator technology, which was developed for water conservation. The unit operates without contact and is activated through an ultrasonic sensor. A single fluid nozzle with low flow rate is used to generate aerated mist to dispense the hand rub sanitizer. This sanitizer the hands with minimum wastage. Using atomizer, only 5-6 ml sanitizer is released for 12 seconds in one operation and it gives the full

We frequently touch our eyes, nose, and mouth throughout the day. According to recent research, the number of times we touch our faces can be anywhere around 23 to 50 times per day. OakMist is a must for all establishments, commercial and noncommercial to ensure utmost safety against Coronavirus.

The unit has already been installed in major government offices including DRDO Bhawan, PMO, Ministry of Home Affairs, Ministry of Finance, Army offices, Supreme Court and other premises. "India's fight against the novel Corona can only be won by adopting healthy health habits, sanitization being prime of all. Riot Labs is taking this innovation across the length and width of the country." said, Shishir Gupta, Founder and CEO, Riot Labz.

<https://www.expresscomputer.in/indiaincflightscovid19/contactless-hand-sanitisation-how-officials-in-pmo-rashtrapati-bhawan-sc-are-keeping-their-hands-sanitised/54838/>

## DRDO & Riot Labz develop OakMist sanitizer

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<https://www.biospectrumindia.com/news/43/16384/drdo-riot-labz-develop-oakmist-sanitizer.html>



ज्ञान प्रसार एवम् विस्तार  
के 50 वर्ष

#SWARAJYA

## DRDO develops UV tower for rapid, chemical-free disinfection of coronavirus-prone areas

Defence Research and Development Organisation (DRDO) has developed an Ultra Violet (UV) Disinfection Tower for rapid and chemical-free disinfection of high infection-prone areas, the Ministry of Defence said in an official release.

Named UV Blaster, the equipment has been designed and developed by DRDO's Delhi-based Laser Science and Technology Centre (LASTEC) with the help of New Age Instruments and Materials Private Limited, Gurugram.

"The UV Blaster is useful for high tech surfaces like electronic equipment, computers and other gadgets in laboratories and offices that are not suitable for disinfection with chemical methods. The

product is also effective for areas with a large flow of people such as airports, shopping malls, metros, hotels, factories, offices, etc.” the MoD said in the release.

The UV based area sanitiser may be used by remote operation through laptop/mobile phone using wifi link, the release said.

The equipment has six lamps each with 43 watts of UV-C power at 254 nm wavelength for 360-degree illumination.

“For a room of about 12 x 12 feet dimension, the disinfection time is about 10 minutes and 30 minutes for 400 square feet area by positioning the equipment at different places within the room,” it added.

This sanitiser switches off on accidental opening of room or human intervention, the release added.

<https://swarajyamag.com/insta/drdo-develops-uv-tower-for-rapid-chemical-free-disinfection-of-coronavirus-prone-areas>



UV Disinfection Tower developed by DRDO (Pic Via PIB Website)

Goa Chronicle

Wed, 06 May 2020

## DRDO develops ultra violet disinfection tower for high infection prone areas

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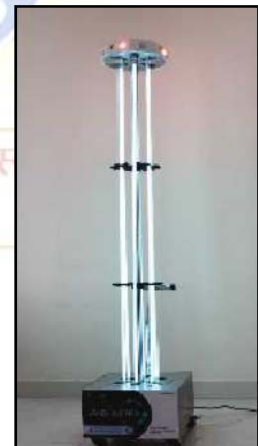
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This sanitiser switches off on accidental opening of room or human intervention. One more salient safety feature of the product is the key to arm operation, the release said.

<https://goachronicle.com/drdo-develops-ultra-violet-disinfection-tower-for-high-infection-prone-areas/>





Wed, 06 May 2020

## From zero, India now produces around 2 lakh PPE kits per day

*The highest single-day production of PPE kits, around 2.06 lakh kits, was recorded on May 2. However, on average, domestic production is about 1.5 lakh per day*

New Delhi: India, which was not manufacturing even a single personal protective equipment (PPE) kit, has now achieved an almost unrealistic goal of producing 2.06 lakh PPE kits daily within two months after the coronavirus outbreak.

The highest single-day production of PPE kits, around 2.06 lakh kits, was recorded on May 2. However, on average, domestic production is about 1.5 lakh per day.

A PPE kit consists of mask, eye shield, shoe cover, gown and gloves, which doctors and healthcare workers wear during the treatment of COVID-19 patients.

"It is very comforting to us that our in-house PPE kit production is increasing fast. On May 2, the country recorded maximum production of protective gears of about 2.06 lakh manufactured in a single day," a senior Health Ministry official told ANI.

"Earlier, there was no domestic manufacturing of PPE kit in the country and almost all of them were imported. Within a short span of time, India has been able to increase the daily production of PPE kits to about 1.5 lakh," he said.

"In January, there were only 2.75 lakh PPE kits (imported ones) available in the country. As of today, we have about 15.96 lakh PPE kits in the centre-state buffer stock," added the official.

The government has identified at least 110 domestic manufacturers of PPE kits in the country. However, only 52 companies are manufacturing PPE kits right now.

Companies like Alok Industries, JCT Phagwara, Gokaldas Exports, Aditya Birla, etc., are some of the domestic PPE kits manufacturers.

The Union Health Ministry official added: "As of now, the Central government has distributed about 21.32 lakh PPE kits to the Centre and state-run hospitals. At least 15.96 lakh PPE kits are in the Centre-State buffer stock."

Recently, the Empowered Group-3 of the Central government had informed that the total projected demand of PPE kits till June 2020 would be 2.01 crore.

Orders for 2.22 crore PPE kits have already been placed, of which orders to the tune of 1.42 crore have been placed with the domestic manufacturers and 80 lakh PPE kits are being imported.

Some government institutes like South India Textile Research Association (SITRA), Defence Research & Development Organization (DRDO) and Ordnance Factory Board are at the forefront of developing new technologies, materials, and testing facilities. DRDO has also developed new PU coated nylon/polyester for supply to domestic manufacturers.

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

<https://www.ndtv.com/india-news/coronavirus-from-zero-india-now-produces-around-2-lakh-personal-protective-equipment-kits-per-day-2223866>

## Savings from delayed foreign deals to push indigenous projects

*Source said that foreign equipment manufacturers are being approached to understand which programmes are likely to see delayed deliveries and the way forward would be to defer payments for late deliveries, without invoking the penalty clause*

By Manu Pubby

New Delhi: The defence ministry has initiated a process to identify potential savings that can be made this year due to delays in production orders placed on foreign companies and could channel some of the resources to fast-track indigenous programmes that hold the key to sustaining local industry.

Source said that foreign equipment manufacturers are being approached to understand which programmes are likely to see delayed deliveries and the way forward would be to defer payments for late deliveries, without invoking the penalty clause.

Once the exercise is complete, the ministry would be able to understand how much of its committed liability payments could be freed up this year and could be channelised for Make in India projects.

Several large ongoing programmes consume 90% of the defence capital budget, including the Rafale fighter jet deal, which is likely to see delayed deliveries by three to six months. With these large payments likely to be deferred, there is fresh focus on seven Make in India programmes that are in the final stages of signing and have the potential of sustaining more than 2,000 defence manufacturing units and MSMEs.

The largest of these is the Rs 39,000 crore order for 83 Light Combat Aircraft (LCA) that is currently awaiting a nod from the Cabinet Committee on Security (CCS).

The order for two regiments of Akash air defence missiles worth over Rs 6,000 crore is also in the final stages and could be fast tracked to be signed this year.

The third project that could be fast-tracked is the order for six regiments of Pinaka Multi Barrel Rocket Launchers (MBRL) that has been pending since 2017.



### Make-or-Break Situation

Seven Make in India projects that can be finalised this year hold key to sustaining industry. The local projects include:

#### 83 LIGHT COMBAT AIRCRAFT (LCA)



₹39,000cr

**GAINERS** At least 35% of the work to go to private Indian companies Dynamics, VEM Technologies and Alpha Design

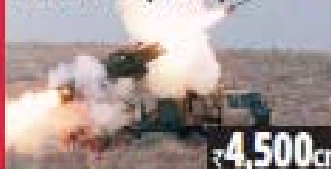
#### Seven squadrons of Akash air defence missiles



₹6,000cr

**GAINERS** Bharat Electronics, Bharat Dynamics, MSMEs

#### Six regiments of Pinaka Multi-Barrel Rocket Launchers (MBRL)



₹4,500cr

**GAINERS** Tata Aerospace and Defence and L&BCCL

On the shipbuilding front, four big projects hold the key to private sector yards making it out of the Covid-19 crisis. These include the order for eight Fast Patrol Vessels.

While combined, these programmes are worth much more than the capital budget, kick-starting them would require only a 10% advance payment that could be channelised from savings made from foreign payments.

<https://economictimes.indiatimes.com/news/defence/savings-from-delayed-foreign-deals-to-push-indigenous-projects/articleshow/75541978.cms>

## COVID-19: Defence Forces Contribution

# THE ASIAN AGE

Wed, 06 May 2020

## India's military: Standing up to or standing with the government

*In support of these frontline Covid warriors, the warriors in uniform are expressing their gratitude*

*By Gautam Moorthy*

In today's world of instant communications and instant opinions, almost everything that a government does or does not do attracts a point of view.

Debate is healthy, especially in a democracy, as differing opinions are a useful feedback tool for the government of the day to know whether the steps they have taken have met with applause or opprobrium.

The recent press conference of the Chief of Defence Staff, with the three service chiefs flanking him, the announcements made as well as the follow-up seen on Sunday, May 3, have been the subject of heated television debates, articles in print and discussions on the social media.

Most of the views that were expressed, especially that of a former Navy Chief, are antagonistic to this show of support by the armed forces. There is also an article comparing the CDS to Field Marshal "Sam" Manekshaw and quoting the late field marshal on the characteristics of a "yes man", and how a "yes man" is detrimental to any organisation.

In all this cacophony, the voice of the common man is being drowned out. However, before I come to that, the issue is not about the CDS being a "yes man" or not. The point that must be understood is that the armed forces of any nation should be in sync with the government of the day and should reflect its ethos.

The main role of the armed forces is operational. Nothing can change that, nothing will change that, and nothing can impinge upon that. Early on May 3, the Army lost four personnel, including the commanding officer of a Rashtriya Rifles battalion, in close combat with terrorists.

Such operations will continue, and the Army will continue to defend the country's interests wherever and whenever called upon to do so.



An Indian Navy helicopter showers flower petals on medics to applaud them at INHS Asvini in Mumbai on Sunday (PTI)



There is also another role for the armed forces that the nation sees on display on Republic Day and other occasions, that may or may not be seen by the civilian population. It is the ceremonial role the armed forces play when the occasion so demands. The press conference by the CDS and the follow-up actions pertain purely to the ceremonial role of the armed forces. Those who were expecting profound operational pronouncements from the CDS were naturally disappointed.

So also those who expected to hear what the armed forces were doing in fighting the epidemic, perhaps not realising that the armed forces act according to the directions of the government of the day and cannot usurp the responsibilities and duties of other wings of the government. The armed forces are only a backup in such situations and are not to be used in the forefront of this war.

What was conveyed by the CDS was that the armed forces would like to express their solidarity with the Covid warriors and how they would go about doing it. A prosaic pronouncement indeed, but one of huge significance, given what the country is going through today.

Thus, what is being seen is the armed forces' way of thanking the Covid warriors as the police, medical staff and civil administration are referred to. For over a month now, these people have been in the forefront of this battle against the virus, and yet at the same time ensured no breakdown of law and order as well as made certain the uninterrupted flow of essential goods and services. So, in support of these frontline Covid warriors, the warriors in uniform are expressing their gratitude.

The Army asked its bands to go to the medical colleges and play for the staff there; the Air Force organised flypasts by fixed-wing aircraft and showering of rose petals by helicopters, while the Indian Navy expressed its solidarity by lighting up the ships in harbour. How do these acts impinge upon the operational preparedness of the armed forces?

Financially, too, the flypasts are not "wasteful", as some would have us believe. They are just a coordinated effort of routine training of pilots that in any case goes on.

There is also the criticism that these acts are reserved for commemorative occasions only. The question that needs to be asked is if an act like lighting up ships is reserved for commemorative occasions, does it imply that it should not be done on other important occasions?

Today we are facing an unprecedented situation in the country, in fact across the world. If such acts of expressing solidarity with those fighting this battle are not important enough, then what is? These acts have captured the imagination of our country. All we need to do is surf the news channels and hear what those at the forefront of this war are saying, not the so-called experts who indulge in government-bashing every other day. The critics have missed the wood for the trees.

*(Lt. Gen. Gautam Moorthy (Retd) is a former DG Ordnance Services)*

<https://www.asianage.com/opinion/columnists/050520/indias-military-standing-up-to-or-standing-with-the-government.html>



Wed, 06 May 2020

## **Indian Navy launches 'Operation Samudra Setu' to bring stranded citizens home from Maldives**

*The Indian Mission in the Republic of Maldives is preparing a list of Indian nationals to be evacuated by Naval ships*

*By Mayank Singh*

New Delhi: Taking steps to evacuate Indians stranded overseas, the Indian Navy on Tuesday launched 'Operation Samudra Setu' (Sea Bridge) sending naval ships Jalashwa and Magar to the Port of Malè, Republic of Maldives.

"The Operation Samudra Setu will commence evacuation operations from 08 May 2020 as part of Phase-1," Navy officials said.

A total of 1000 persons are planned to be evacuated during the first trip, catering for coronavirus-related social distancing norms vis-a-vis the carrying capacity and medical facilities available onboard. The Indian Mission in the Republic of Maldives is preparing a list of Indian nationals to be evacuated by Naval ships and will facilitate their embarkation after the requisite medical screening.

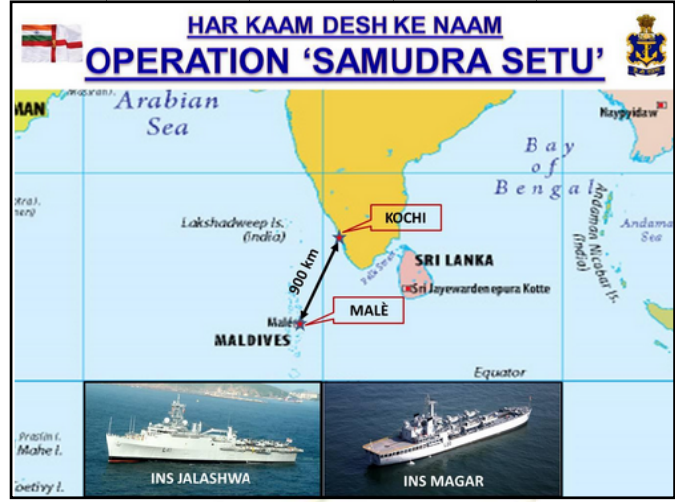
Sources informed that INS Jalashwa which is the bigger ship will reach Male on May 8 and INS Magar will reach on May 10. The Navy has been directed to make suitable preparations for their evacuation by sea.

INS Jalashwa (Landing Platform Dock or LPD) has a full load displacement of 17,521 tonnes and INS Magar (Landing Platform Tank) is an amphibious warfare vessel with a displacement of 5,750 tonnes. Both the ships are suitably provisioned for the evacuation operation.

The evacuated personnel would be provided with the basic amenities and medical facilities during the sea-passage. In view of the unique challenges associated with COVID-19, stringent protocols have also been stipulated.

The evacuated personnel will be disembarked at Kochi, Kerala and entrusted to the care of State authorities. This operation is being progressed in close coordination with Ministries of Defence, External Affairs, Home Affairs, Health and various other agencies of the Government of India and State governments.

<https://www.newindianexpress.com/nation/2020/may/06/indian-navy-launches-operation-samudra-setu-to-bring-stranded-citizens-home-from-maldives-2139651.html>



## नवभारत टाइम्स

Wed, 06 May 2020

### मालदीव में फंसे भारतीयों को वापस लाने के लिए नेवी ने किया ऑपरेशन समुद्र लॉन्च

भारतीय नौसेना (Indian Navy) ने विदेशों में फंसे भारतीय नागरिकों को वापस भारत लाने के लिए कवायद शुरू कर दी है। उसी के तहत नौसेना ने ऑपरेशन समुद्र सेतु लॉन्च (Operation Samudra Setu) किया है। मालदीव में 8 मई से यह ऑपरेशन शुरू हो जाएगा।

पूनम पाण्डे

हाइलाइट्स

- विदेशों से भारतीयों को वापस लाने के लिए मालदीव में 8 मई से यह ऑपरेशन शुरू हो जाएगा
- मालदीव में मौजूद इंडियन मिशन उन भारतीयों की लिस्ट तैयार कर रहा है जिन्हें वापस लाया जाएगा
- पहले ट्रिप में 1000 लोगों को वहां से वापस लाने की योजना है, सभी की पहले मेडिकल स्क्रीनिंग होगी
- शिप में सोशल डिस्टेंसिंग का पालन किया जाएगा, शिप में भी मेडिकल फैसिलिटी रहेगी

नई दिल्ली: भारतीय नौसेना (Indian Navy) ने विदेशों में फंसे भारतीयों को वापस लाने के लिए ऑपरेशन समुद्र सेतु लॉन्च (Operation Samudra Setu) किया है। नेवी का वॉरशिप जलशवा और वॉरशिप मगर मालदीव के माले पोर्ट

की तरफ रवाना हो गया है। विदेशों से भारतीयों के वापस लाने के अभियान के फेज-1 में मालदीव में 8 मई से यह ऑपरेशन शुरू हो जाएगा।

भारत सरकार के विदेशों में फंसे भारतीयों को वापस लाने के अभियान में नेवी को भी निर्देश दिए गए थे कि समुद्र के रास्ते लोगों को वापस लाने के लिए तैयारियां की जाएं। मालदीव में मौजूद इंडियन मिशन उन भारतीयों की लिस्ट तैयार कर रहा है जिन्हें नेवी के शिप के जरिए भारत वापस लाया जाएगा। इनकी पहले मेडिकल स्क्रीनिंग होगी। पहले ट्रिप में 1000 लोगों को वहां से वापस लाने की योजना है। इस दौरान सोशल डिस्टेंसिंग का पालन किया जाएगा और शिप में भी मेडिकल फैसिलिटी रहेगी।

भारतीयों को वापस लाने के लिए शिप में कुछ बदलाव भी किए गए हैं। समुद्र के रास्ते वापस आने पर यात्रियों को शिप में बेसिक सुविधा और मेडिकल हेल्प दी जा सकेगी। नेवी के एक अधिकारी के मुताबिक पूरा प्रोटोकॉल तैयार किया गया है ताकि हेल्थ का और संक्रमण न हो इसका पूरा ख्याल रखा जा सके। जिन लोगों को मालदीव से लाया जाएगा वह कोविड पहुंचेंगे।

सूत्रों के मुताबिक, नेवी ने दो शिप यूएई के लिए भी भेजे हैं। सूत्रों ने बताया कि यूएई के लिए नेवी के आईएनएस शारदुल और आईएनएस ऐरावत को भेजा गया है। यूएई पोर्ट पर एंट्री की औपचारिकता अभी फाइनल होना बाकी है। हालांकि जब तक शिप वहां पहुंचेंगे तब तक यह फाइनल हो जाएगा।

<https://navbharattimes.indiatimes.com/india/navy-launches-operation-samudra-to-bring-back-stranded-indians-in-maldives/articleshow/75557881.cms>

Defence Strategic: National/International



Wed, 06 May 2020

## Indian Army Chief General MM Naravane visits eastern field formations, reviews operational preparedness

*Indian Army Chief General MM Naravane visited various field formations in Eastern India from May 4 to May 5 May which included Sukna, Binnaguri and Panagarh*

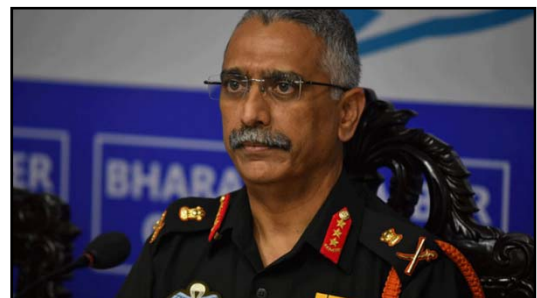
*By Ritesh Srivastava*

Kolkata: Indian Army Chief General MM Naravane visited various field formations in Eastern India from May 4 to May 5 May which included Sukna, Binnaguri and Panagarh.

During his two days visit, the Chief of Army Staff was briefed in detail by the formation commanders on the operational readiness of the formations and other important training and logistics issues.

The Chief of Army Staff interacted extensively with the troops deployed on the ground and took stock of the situation along the borders.

During his visit, Gen Naravane also inspected various facilities set up by the Indian Army in its effort to contribute significantly to the nation's fight against COVID-19.



General Naravane complimented the high state of operational preparedness as well as training standards and exhorted all ranks to continue the good work in these difficult times.

Gen Naravane had on May 4 said Pakistan is still following its "myopic" and "limited" agenda of pushing terrorists into Jammu and Kashmir, and India will respond appropriately with precision unless the neighbouring country gives up its policy of state-sponsored terrorism.

The chief of the 1.3 million-strong Army said India will give "proportionate response" to all acts of infringement of ceasefire and support to terrorism by Pakistan.

<https://zeenews.india.com/india/indian-army-chief-general-mm-naravane-visits-eastern-field-formations-reviews-operational-preparedness-2281369.html>

## नवभारत टाइम्स

Wed, 06 May 2020

### नई ब्रांच में नहीं आई महिला अधिकारी तो नेवी ने किया नोटिस में बदलाव

नेवी ने इस साल नई ब्रांच में महिला अधिकारियों के आने को लेकर नोटिस में बदलाव किया है, ताकि महिला अधिकारियों का इस ओर रुझान बढ़ सके। हालांकि, नेवी ने महिला अधिकारियों को ज्यादा मौके देने के लिए पिछले साल भी तीन नई ब्रांच में शिफ्ट होने का विकल्प दिया था, लेकिन किसी ने अप्लाई नहीं किया।

पूनम पाण्डे

#### हाइलाइट्स

- नेवी ने पिछले साल महिला अधिकारियों के लिए खोली तीन नई ब्रांच, पर नहीं आए वॉलंटियर्स
- पिछले साल के फीडबैक दो देखते हुए इस साल नेवी ने किया नोटिस में बदलाव
- पिछले साल म्यूजिशियन, स्पोर्ट्स और नेवी की मिलिट्री पुलिस में भी महिलाओं की एंट्री शुरू की थी
- दो साल पहले महिला अधिकारियों के लिए ज्यादा ब्रांच खोलने पर चर्चा शुरू हुई थी

नई दिल्ली: इंडियन नेवी में महिला अधिकारियों को ज्यादा मौके देने के लिए पिछले साल उन्हें तीन नई ब्रांच में शिफ्ट होने का विकल्प देना शुरू किया, लेकिन किसी भी महिला अधिकारी ने नई ब्रांच के लिए अप्लाई नहीं किया। अब नेवी ने इस साल नई ब्रांच में महिला अधिकारियों के आने को लेकर नोटिस में बदलाव किया है, ताकि महिला अधिकारियों का ध्यान इस तरफ आकर्षित किया जा सके।

#### तीन नई ब्रांच में मौके

दो साल पहले इंडियन नेवी में इस पर चर्चा शुरू हुई थी कि नेवी की महिला अधिकारियों के लिए ज्यादा ब्रांच खोली जानी चाहिए तब तय किया गया कि म्यूजिशियन, स्पोर्ट्स और प्रो-वोस्ट ब्रांच ( जो आर्मी की मिलिट्री पुलिस की तरह है) भी महिला अधिकारियों को विकल्प के तौर पर दी जा सकती है। इस प्रस्ताव को मंजूरी मिल गई। फिर नेवी ने 2019 में नेवी में पहले से तैनात महिला अधिकारियों को विकल्प दिया कि वे चाहें तो इन तीनों में से भी किसी ब्रांच को चुन सकती हैं।

हालांकि तब किसी भी महिला अधिकारी ने इन ब्रांच को नहीं चुना। अब नेवी ने इस साल फिर प्रो-वोस्ट ब्रांच के लिए नोटिस निकाला है। इस बार नोटिस में कुछ बदलाव किया गया है। नेवी के एक अधिकारी ने बताया कि पिछले साल जो नोटिस निकाला था उसमें अलग से महिला अधिकारी अप्लाई कर सकती हैं, यह नहीं लिखा गया था, न ही उसमें सिर्फ



पुरुष अधिकारी शब्द का इस्तेमाल किया गया था। जिसका मतलब था कि कोई भी (महिला या पुरुष अधिकारी) उसके लिए अप्लाई कर सकता है। लेकिन तब कोई भी महिला अधिकारी ने अप्लाई नहीं किया। इसलिए इस बार जो नोटिस निकाला गया है उसमें साफ लिखा है कि पुरुष और महिला दोनों अप्लाई कर सकते हैं।

### कमिश्ंड ऑफिसर्स के लिए, एंट्री के वक्त का ऑप्शन नहीं

नेवी के एक अधिकारी ने कहा कि इन तीन नई ब्रांच में कमिश्ंड ऑफिसर ही अप्लाई कर सकती हैं। इनमें महिला अधिकारियों के लिए लेटरल एंट्री खोली गई है यानी जो पहले से ही काम कर रही हैं उनके पास इन ब्रांच में शिफ्ट होने का विकल्प होगा। लेकिन नई एंट्री में अभी यह ब्रांच नहीं खोली गई है। नेवी में शॉर्ट सर्विस कमिशन के जरिए महिलाएं लॉ, ऑब्जर्वर, पायलट (एमआर), इंस्पेक्टर (एनएआई), लॉजिस्टिक्स, एटीसी, एजुकेशन और नेवल कंस्ट्रक्टर्स ब्रांच में हैं। इन ब्रांच में भी महिला ऑफिसर कमांडर बन सकती हैं जो आर्मी के लेफ्टिनेंट कर्नल रैंक के बराबर होता है।

नई खोली गई तीन ब्रांच के लिए भी कहा गया है कि यहां शिफ्ट होने पर भी वह अधिकतम इसी रैंक तक पहुंच सकती हैं। अभी नेवी में परमानेंट कमिशन के जरिए महिलाएं एजुकेशन, लॉ और नेवल कंस्ट्रक्टर्स कैडर में हैं। करीब छह साल पहले नेवी ने महिलाओं को कॉम्बेट रोल (लड़ाकू भूमिका) में भी शामिल किया। वह पी-8-आई, और आईएल-38 में ऑब्जर्वर हैं और डोनियर पायलट हैं। हाल ही में सुप्रीम कोर्ट ने महिलाओं को हर ब्रांच में परमानेंट कमिशन देने का निर्देश दिया है। नेवी में कॉम्बेट रोल में अभी करीब 60 महिला अधिकारी हैं। नेवी में अभी करीब 640 महिला अधिकारी हैं।

<https://navbharattimes.indiatimes.com/india/woman-officer-did-not-come-to-the-new-branch-the-navy-changed-the-notice/articleshow/75556808.cms>

THE FINANCIAL EXPRESS

Wed, 06 May 2020

## How unmanned aerial systems can help in fighting terrorists holed in civilian areas

*Indian Army has elaborated research requirements for drones as part of Surveillance and Targeting Systems, where drones are to form part of the multi-layer sensor grid network*

*By Huma Siddiqui*

The recent loss of brave soldiers, with the Commanding Officer leading from the front, is the true exemplary valour of Indian Army, but also an unfortunate consequence of continued terrorist attacks on our country. Mostly every effective search mission launched by Police or Indian Army to find terrorists results into the terrorists finding themselves trapped in a corner. Many a times, the local support available to the terrorists provide them awareness on the movement of the soldiers and help them escape.

“Keeping a close watch on these terrorists from a height using Unmanned Aerial Systems (UAS) (or aerial drones) can detect the intent of the holed up terrorists earlier, provide real-time information and help with the rescue plan for the civilian population caught up in the crossfire,” opines Milind Kulshreshtha, C4I expert.

“There is an urgent need for elaborate guidelines and procedures, along with standard drone training for exploitation of drones as part of Concept of Operations,” he suggests.



## **Weaponized UAS for Search & Attack**

As has been reported by the Financial Express Online, the Indian Army has been considering the utilization of weaponized UAS for Search and Attack operations for some time now.

“The drones have the flexibility of flying close to the target location, and this feature is highly beneficial especially when terrorists take up positions in the upper floors of high-rise buildings. With the use of weaponized drones (i.e. drones with explosive carrying capabilities), the hostile target itself can be annihilated. The weaponized drones are highly specialized flying gadgets, which have a secure remote triggering mechanism for the onboard explosive. In such operations, the drone too is sacrificed with the explosive going off, and is therefore popularly called ‘Kamikaze’ drones,” explains the C4I expert.

Such drones are always definite assets since, with their support, precious human lives of the soldiers are not endangered to a large extent especially in a close-quarter skirmish.

According to Kulshreshtha, “In such events, a small drone can maintain a visual on the target, has an ability to navigate so as to annihilate the target using onboard explosive. The explosives can remotely be triggered as soon as the target comes within Kamikaze’s radius of the kill. In case the target is moving (like running or in a moving vehicle etc.), such drones can also carry out a limited distance pursuit and ensure target elimination.”

### **Advantages of using Drones**

When house to house search is in progress, drones can be perched at a vantage point to ensure real-time situational picture of the dynamically evolving circumstances. Outlining the advantages of using drones, he says, “The drones have the flexibility to re-align and get in the best position to detect or attack the target, even with a possibility to create a diversionary explosion to dislodge the terrorists. A well-perched drone with a focus on the target can closely monitor terrorist movements with its day or night Infra-Red (IR) camera payload.”

“Further, a weaponized drone can be immediately dispatched to engage the target at the right opportune moment, while ground manoeuvre continues to progress. Drones can also keep watch or intercept various possible escape routes of the terrorist with a deadly consequence. As has been seen earlier, the dynamics of the ground situation is always unpredictable and may vary from thick jungle foliage to a congested housing lane.”

### **Drones for Surveillance and Targeting**

Indian Army has elaborated research requirements for drones as part of Surveillance and Targeting Systems, where drones are to form part of the multi-layer sensor grid network. The aim is to provide the Force Commander with real or near-real-time Situational Awareness information focused on the region of interest.

For this, various types of UAS systems are being considered like:- UAVs/UCAVs carrying payload like Electro-optic sensors, Electronic Warfare gadgets, Data-link repeaters etc.

Micro/Mini/Nano drones for covert reconnaissance missions, surveillance, intrusion detection and border patrol.

Even the smaller drones are capable of carrying special payloads like day or night cameras, explosives etc.

Swarms of Nano drones are being considered for Close-in Covert Autonomous Disposable Aircraft (CICADA), where these nano drones are dropped from an aeroplane to glide down to the target zone. This is used for Personal Reconnaissance so as to monitor enemy movements by transmitting back target data, pictures and videos to a close-by mobile Base Station.

<https://www.financialexpress.com/defence/how-unmanned-aerial-systems-can-help-in-fighting-terrorists-holed-in-civilian-areas/1949019/>



Wed, 06 May 2020

## Year on: Why Abhinandan is still off-limits to media?

By Rajesh Ahuja

Wing Commander Abhinandan Varthaman is an important person who can piece together what happened on morning of 27th February when he crossed Line of control and shot down a PAF F-16 later to be shot down by another F-16 in the area but the media gap self-imposed by the Indian Air Force (IAF) only shows how handicapped is Indian military services when it comes to information warfare where the Pakistani military has given free access to the Two Pilots who were flying F-16s to their media for propaganda purpose.

Pakistani account of that day has been published in International defense publications and pilots have been given free access to peddle their narrative about how they punished IAF for bombing Terror facilities at the Balakot, Irony of the Indian military is that not even other pilots who were up in the air and flying Mirage-2000 and Su-30MKI have been allowed to talk to media to give a clear picture of the event that day. Lack



of access to the pilots of the day has hampered the narrative which PAF has been able to build due to the absence of Indian counter directly from the man who was part of the aerial action that day.

Squadron Leader Minty Agarwal who was Fighter Controller with the Indian Air Force that day and was instrumental in guiding fighter aircraft to counter PAF jet was the only person who was allowed to be interviewed by Indian media where she confirmed events of the day and also punctured counterclaim made by the PAF that they shoot down Su-30MKI but the direct interview of the Pilots can help recreate what went wrong and what happened that day instead of letting PAF peddle its narrative freely and openly while IAF gags its Pilots.

Actual events of that day will come sooner or later when some of the pilots from that day retire and will go on to write a book or give media interviews to the but then it might be too late since it will mean a thousand lies of PAF will be considered Truth since it was set a long time ago and a thousand facts coming out later will not hold much importance after years down the line of the events.”

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<https://idrw.org/year-on-why-abhinandan-is-still-off-limits-to-media/#more-226911>



Wed, 06 May 2020

## Vivek Lall exits shows, Lockheed Martin not sure of F-21 deal with India

By Anita Desai

Vivek Lall, a prominent Indian American aerospace and defense expert, who played key roles in some of the major defense deals between India and the U.S., has resigned from Lockheed Martin “to spend more time with family,”. Lall has been under pressure for failing to secure more deals for the company and growing prospects of India ignoring procurement of F-21 (F-16V) for the Indian air force deal for 114 jets.

Lall had secured a deal for 24 MH-60 Romeo helicopters from Indian Navy for Lockheed Martin recently and was also actively following up with prospects of Indian Air force ordering additional C-130J Tactical Transporters but the pressure was on to secure biggest fighter jet deal of recent times with India and results weren't convincing enough with IAF Top Tier still desiring for the French Dassault Rafale fighter jet which already has been ordered in small batch as emergency purchase.



F-21 on offer is just a rebadged F-16V and not many are impressed by the what Lockheed Martin has to offer to India as in previous MMRCA tender, India had rejected F-16IN (Block 70) due in technical round and it was an only front runner when tried to procure fighter jets under SEF (Single Engine Fighter ) where the race was limited only with Saab's Gripen after India scrapped that too and allowed more fighter jets to compete which saw the entry of Sukhoi-35 and F-15.

IAF is yet to issue Request for Proposal (RFP) and there have been murmurs that entry of F-15EX by rival Boeing might complicate the situation for the F-21 on the offer and Lockheed is now considering offering its F-35A to India with limited technology transfer and local assembly rights for the aircraft as India tries to limit the purchase of defense equipment from foreign countries amid slowing of the economic activities due to COVID-19 situation in the county.

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<https://idrw.org/vivek-lall-exits-shows-lockheed-martin-not-sure-of-f-21-deal-with-india/#more-226879>





*Wed, 06 May 2020*

## **China's new stealth bomber expected to make first public appearance before end of year**

According to an unnamed source in the People's Liberation Army (PLA), China's new H-20 stealth bomber will likely make its first public appearance at the Zhuhai Air Show in November, assuming the event isn't cancelled by the COVID-19 pandemic.

The world could get its first peek at China's most advanced aircraft ever at the Zhuhai Air Show, a November venue where Beijing shows off its military might. The South China Morning Post, a Hong Kong-based publication, reported on Monday that the H-20 stealth bomber is expected to be completed this year and might be shown off as soon as November 2020. However, a number of factors could influence that decision, including the ongoing pandemic as well as the state of regional political relations.

"The Beijing leadership is still carefully considering whether its commission will affect regional balance, especially as regional tensions have been escalating over the COVID-19 pandemic," an unnamed military source told the Post. "Like intercontinental ballistic missiles, all strategic bombers can be used for delivering nuclear weapons ... if China claimed it had pursued a national defense policy which is purely defensive in nature, why would it need such an offensive weapon?"

The bomber is purported to have a maximum takeoff weight of at least 200 tons (400,000 pounds), a payload of up to 45 tons (90,000 pounds), a range of 5,000 miles (8,050 kilometers) and utilizes a "flying wing" design similar to that used by the United States' B-2 Spirit and B-21 Raider stealth bombers, the latter of which could also make a 2020 debut.

The PLA has often used the Zhuhai Air Show to show off its new technology. The J-20 "Weilong" stealth fighter was also seen for the first time at the 2011 air show, and the FC-31 experimental stealth aircraft debuted at the 2014 air show, which may or may not become the PLA Navy's new carrier-based fighter.

The H-20 will round out the PLA's sweeping new series of modern aircraft intended to replace the aging Cold War-era air fleet, some of which still uses Soviet designs built under license or reverse-engineered. Alongside the H-20 stealth bomber are the Y-20 transport aircraft, the Z-20 helicopter and the J-20 stealth fighter – together dubbed the "20 series" by observers.

Sputnik reported in early 2019 that Beijing was developing two stealth bombers: one, the Hong-20 or H-20, was confirmed by the PLA, but a second aircraft, dubbed the J/H-XX by observers, remains largely in the world of speculation.

The International Institute for Strategic Studies (IISS), a British military think tank, wrote in its annual report "The Military Balance" in February 2020 that the J/H-XX is likely a fighter-bomber somewhat analogous to the Lockheed Martin F-35 Lightning II. It is purported to be supersonic, with a combat radius of up to 1,250 miles (2,000 kilometers). Some unofficial art depicting the aircraft appeared on the cover of the May 2018 edition of Aerospace Knowledge, a Chinese publication, and the IISS description of the jet similarly assumes it to have a sleek silhouette with four tail surfaces similar to the failed Northrop/McDonnell Douglas YF-23 Black Widow.

One unnamed military source told SCMP on Monday the H-20 could make use of the Russian-made NK-321, built by Kuznetsov Design Bureau for Moscow's Tu-160 "White Swan" supersonic bomber. However, another said the bomber could get an upgraded Shenyang WS-10 engine, used by several fighters built by the Chinese design firm.

“The WS-10 is still a transitional engine for the H-20 because it is not powerful enough. The eligible replacement may take two to three years for development,” one of the sources said. “That’s why the American air force doesn’t care about the H-20, because it is not strong and powerful enough to cause any challenge to their B-2 and B-21 bombers.”Of course, neither the B-2 nor B-21 is supersonic, either. But, like both aircraft, the H-20 will carry nuclear weapons, which could help give Beijing a true nuclear triad. If so, China would join the ranks of Russia, India and the US as the only nations able to deliver a nuclear strike by submarine-launched ballistic missiles, intercontinental ballistic missiles and air-deployed nuclear weapons.

<https://idr.w.org/chinas-new-stealth-bomber-expected-to-make-first-public-appearance-before-end-of-year/#more-226869>



*Wed, 06 May 2020*

## **Boeing unveils first AI drone designed for Australian Air Force**

The Boeing aircraft manufacturer has presented the first three prototypes of an unmanned attack drone that is powered by artificial intelligence for the Royal Australian Air Force, the company’s Australian branch announced in a press release on Tuesday.

According to Boeing, the drone, dubbed Loyal Wingman, is the first aircraft to be designed, engineered, and produced in Australia for more than half a century with mass production starting by the middle of the decade. “This is a truly historic moment for our country and for Australian defence innovation,” Australian Prime Minister Scott Morrison said in the press release. According to Boeing, the Loyal Wingman drones will now be subject to rigorous ground and flight testing. Chief of the Royal Australian Air Force Air Marshal Mel Hupfeld praised the cooperation between the armed forces and the aircraft manufacturer.

This demonstrates the importance of the relationship Air Force has with Boeing Australia and defence industry more broadly. I look forward to exploring the capabilities this aircraft may bring to our existing fleet in the future,” Air Marshal Hupfeld said in the press release. In February 2019, the Australian government announced an investment of \$25.8 million in the project to produce the unmanned combat drone.

The Loyal Wingman unmanned aircraft can reportedly conduct intelligence missions on its own or provide support to manned aircraft.

<https://idr.w.org/boeing-unveils-first-ai-drone-designed-for-australian-air-force/#more-226855>



Wed, 06 May 2020

## लांच पैड पर लौटने में इसरो को लग सकता है लंबा वक्त

*श्रीहरीकोटा से इस वर्ष अभी तक एक भी प्रक्षेपण नहीं, सतर्कता के साथ दैनिक गतिविधियाँ शुरू  
राजीव मिश्रा*

कोविड-19 महामारी के कारण पूरे देश के साथ भारतीय अंतरिक्ष अनुसंधान संगठन (इसरो) भी लॉकडाउन से प्रभावित रहा लेकिन अब वहां दैनिक गतिविधियां शुरू हो गई हैं। हालांकि, इसरो को लांच पैड पर वापस आने और मिशन लांच करने में अभी वक्त लगेगा।

इसरो अध्यक्ष के.शिवन ने 'पत्रिका' को बताया कि गृह मंत्रालय की ओर से जारी दिशा-निर्देशों के तहत छूट दी गई है और दैनिक गतिविधियां शुरू हो चुकी हैं। यह पूछ जाने पर कि लगभग एक महीने से अधिक का समय कोरोना की भेंट चढ़ गया क्या इसका असर भविष्य के मिशनों पर पड़ेगा? इसरो अध्यक्ष ने कहा कि 'अभी हम इसका आकलन कर रहे हैं। अभी इस बारे कुछ नहीं सकते।' उन्होंने कहा कि जो समय नष्ट हुआ है उसकी भरपाई कैसे होगी इसपर कुछ समय बाद विचार करेंगे। फिलहाल दैनिक गतिविधियां शुरू हो गई हैं और गृह मंत्रालय के दिशा-निर्देशों का पूरी तरह पालन किया जा रहा है।

### लांच पैड पर लौटने में लगेगा वक्त

हालांकि, इसरो के उच्च पदस्थ सूत्रों का कहना है कि इसरो को लांच पैड पर वापस आने और उपग्रहों के नियमित प्रक्षेपण में लंबा वक्त लग सकता है। अगर सबकुछ ठीक रहा तो भी उपग्रहों के प्रक्षेपण में तीन से चार महीने का समय लग सकता है। संभवतः अक्टूबर-नवम्बर से पहले प्रक्षेपण शुरू नहीं हो पाएंगे। इसरो की प्राथमिकता भी अब वाणिज्यिक मिशनों को पहले लांच करने की रहेगी। जिन उपग्रहों के प्रक्षेपण के लिए विदेशी एजेंसियों से करार हुए हैं वे पहले लांच किए जाएंगे। वहीं, वैज्ञानिक मिशनों में विलंब हो सकता है।

### वैज्ञानिक मिशनों में विलंब संभव

इसरो निकट भविष्य में तीन वैज्ञानिक मिशनों के प्रक्षेपण की तैयारी कर रहा था जिसपर लॉकडाउन का प्रभाव पड़ा है। इनमें से देश का पहला मानव अंतरिक्ष मिशन 'गगनयान' प्रमुख है जिसे वर्ष 2022 तक लांच करने की योजना है। सूत्रों के मुताबिक फिलहाल इस परियोजना को रोक दिया गया है। उधर, रूस में अंतरिक्षयात्रियों के प्रशिक्षण का काम कोरोना के कारण अभी बंद है। दूसरा आदित्य मिशन है जिसे इस साल के अंत अथवा वर्ष 2021 के पहले उत्तरार्द्ध में लांच करने की योजना थी। इस परियोजना में फिलहाल ठहराव (पॉज) आया है। यह मिशन सूर्य कॅरोना, उसके प्रभामंडल, सौर लपटों, सूर्य के चुम्बकीय क्षेत्र और उसके प्रभाव आदि का विशेष उपकरणों से अध्ययन करने के लिए लांच किया जाना

है। इसे धरती के हैलो आर्बिट में लग्रांज-1 (एल-1) बिंदु के आसपास स्थापित किया जाना है। लेकिन, इस मिशन में अब विलंब की संभावना है। वहीं, चंद्रयान-3 मिशन की तैयारियां चल रही हैं। चांद के दक्षिणी ध्रुव पर चंद्रयान-2 के लैंडर विक्रम की सॉफ्ट लैंडिंग में मिली नाकामी के बाद 615 करोड़ की चंद्रयान-3 परियोजना पर कोई ब्रेक नहीं लगा है। इस मिशन के तहत केवल लैंडर और रोवर भेजे जाएंगे। इनके मॉड्यूल और प्रणोदन प्रणाली भी चंद्रयान-2 जैसी होगी।

### लॉकडाउन का व्यापक असर

इसरो सूत्रों के मुताबिक फिलहाल इसरो में सीमित कार्यबल ही काम कर रहे हैं। कोरोना लॉकडाउन के दौरान एक रोस्टर तैयार किया गया था जिसके तहत एक विशेष वर्ग (इ-ग्रेड से ऊपर) के सभी वैज्ञानिकों को कार्यालय आना था जबकि 'ए' से 'डी' श्रेणी तक के 33 फीसदी वैज्ञानिकों के लिए यह व्यवस्था की गई थी। हालांकि, लॉकडाउन के दौरान उपग्रहों के ट्रैकिंग आदि का कार्य मुख्य रूप से हुआ और इस दौरान इसरो के कुछ केंद्रों ने वेंटिलेटर आदि की डिजाइनिंग की। लेकिन, अब धीरे-धीरे सामान्य गतिविधियां शुरू हो रही हैं। लॉकडाउन से पहले 5 मार्च को नवीनतम भू-अवलोकन उपग्रह जीआइसैट-1 (जियो इमेजिंग सैटेलाइट-1) का प्रक्षेपण किया जाना था लेकिन 4 मार्च को उलटी गिनती से ठीक पहले आखिरी समय में टाल दिया गया। इसरो की इस साल कम से कम दो दर्जन से अधिक उपग्रह लांच करने की योजना थी लेकिन श्रीहरिकोटा इस वर्ष अभी तक एक भी उपग्रह लांच नहीं हो पाया है।

<https://www.patrika.com/bangalore-news/isro-may-take-a-long-time-to-start-launching-satellites-6069758/>

**GIZBOT** ENGLISH

Wed, 06 May 2020

## COVID-19 pandemic a boon for ISRO Chandrayaan-3, Gaganyaan missions?

*By Sharmishte Datti*

COVID-19 pandemic recently brought the entire country to a standstill. ISRO too halted the launch of satellites and preparations for various missions including the Chandrayaan, Chandrayaan-3, and others. However, now it looks like these missions might face a very uncertain future, more so because ISRO scientists are being forced to continue working from home.

### ISRO Chandrayaan, Chandrayaan-3 missions

The Chandrayaan-3, as the name suggests, was ISRO's next attempt to get a lander on the lunar surface. While the Vikram lander aboard the Chandrayaan-2 mission had a hard landing on the South Pole of the Moon, the Chandrayaan-3 mission is ISRO's next attempt to continue exploring the Moon.

Next up, the Gaganyaan mission is India's first manned mission, where handpicked astronauts were to be trained in Russia and sent to the lower-Earth orbit. The mission was scheduled for liftoff in December 2021.

### What happens to ISRO missions now?

Even during these uncertain times, ISRO's Gaganyaan and Chandrayaan-3 missions could have a bleak of hope. Already on a tight budget, these missions were facing many hurdles. However,

looking at the global scenario, the crude oil prices are going down and components are awaiting in factories, which makes future orders come at a bargain.

If ISRO could play its cards right, the COVID-19 pandemic could be in its favor. Let's take a look at the Chandrayaan-3 mission with a significantly lesser budget than its predecessor. The Chandrayaan-3 mission is expected to cost roughly Rs. 6.15 billion, which is much lesser than the Chandrayaan-2 mission at Rs. Rs. 9.7 billion.

What's more, the Chandrayaan-2 featured an orbiter, which can again be used in the Chandrayaan-3 mission. ISRO officials have already confirmed that the orbiter is in good condition and can continue operating for a few more years to come, which further helps save costs.

### **What happens after COVID-19 lockdown ceases**

In an earlier interview, ISRO Chairman K. Sivan said that ISRO was also in a lockdown like the rest of the country. There wasn't much they could do till the lockdown is lifted, even if the scientists are working from home.

Once the lockdown ceases, the mission preparations will continue in full swing, the astronauts for Ganagayan will resume training, and so. If all goes accordingly, we might have the missions not far away from the schedule.

<https://www.gizbot.com/news/covid-19-pandemic-a-boon-for-isro-missions-067500.html>

DESIDOC  
**SPACE**.com

Wed, 06 May 2020

## **China launches next-generation space capsule on Long March 5B rocket test flight**

*The rocket will launch China's space station, too*

*By Meghan Bartels*

China space agency completed a vital test launch today (May 5) when the first launch of its heavy-lift Long March 5B rocket went off without a hitch.

The Long March 5B rocket is a cornerstone of China's space exploration plans. The same vehicle will carry the country's Mars mission, dubbed Tianwen, that is scheduled to launch this summer. And the heavy-lift rocket is also necessary for launching modules of the new space station China plans to build. And then, there's the crew capsule.

Today's flight is an uncrewed test mission for that vehicle, with China particularly eager for data on the performance of its heat shield and parachutes, among other aspects of the unnamed capsule, according to SpaceNews. The capsule should be able to carry six or seven astronauts at a time, according to a statement from China Aerospace Science and Technology Corporation, a state-owned contractor for the space agency.

The Long March 5B is capable of lifting 25 tons of payload to low Earth orbit, a vital requirement for China's dreams of building a new space station. The rocket is also equipped with a fairing of larger diameter than the nation has launched before, a requirement for the modules under consideration.

Lift-off of today's mission occurred at 6 p.m. local time (6 a.m. EDT, 1000 GMT). About 8 minutes after launch, the rocket and capsule separated. Assuming the rest of the crew capsule's flight goes smoothly, today's success will open the door to a slate of 11 launches designed to facilitate space station construction, Zhou Jianping, chief designer for the crewed program, said in a statement.

The three-module space station, called Tianhe, is designed to focus on science, with a range of research possible in orbit, including astronomy, life sciences, materials sciences and combustion, Zhou added.

China has managed two space laboratories before: Tiangong-1, which launched in 2011, and Tiangong-2, which launched in 2016. The nation first launched its own astronauts, dubbed taikonauts, in 2003, but has not launched any crewed missions since 2016.

<https://www.space.com/china-long-march-5b-next-gen-space-capsule-launch-success.html>

## COVID-19 Research

# ThePrint

Tue, 05 May 2020

## Can't understand research jargon around Covid-19? Here's a basic primer to get you started

*There's a lot of scientific data flooding the internet on Covid-19. Before you begin reading them, here's the basics to understanding it.*

*By Sandhya Ramesh*

Bengaluru: The scientific community is struggling hard, day and night, to develop both a vaccine and a drug to treat Covid-19. But for the common reader like us, the results of such trials are particularly hard to follow due to the liberal use of medical terms. To understand how to interpret studies, ThePrint breaks down some of this jargon.

### Drugs

Drugs are chemical substances that can treat a disease and its symptoms. For Covid-19, there is no standard drug that does the job yet. In fact, till date, there is no known substance that can kill viruses in our bodies, like antibiotics do to bacteria. This means we are unlikely to find a cure for SARS-CoV-2 virus either. However, doctors are trying to treat it the way we treat HIV, i.e., treat the symptoms.

Drugs typically work to reduce viral load, or the numerical quantity of virus in a given sample of body fluid. They do so by inhibiting the mechanism with which a virus replicates. The function is similar to the antibodies our body produces to limit the replication of a virus within a body.

Sometimes viruses can be inactivated by tampering with their outer lipid (fat) coating, by washing hands with soap, for instance. This simply prevents the virus from being able to infect, but does not kill it.

To develop drugs and vaccines, we need medical trials and studies. The gold standard for a study is a double-blinded randomised control. Randomising, controlling, and blinding are the three important factors in establishing cause and effect for drugs.

### Randomisation

Randomisation is used to remove bias from unknown factors while testing drugs/treatments. People are randomly allocated to various groups, and then each group receives a different treatment before their results are compared.

The random allocation prevents a data set from being biased by factors such as sex, age, socioeconomic means, pre-existing conditions, etc, thus resulting in each group having a relatively good mix of all parameters.

For example, a group with disproportionately high number of diabetes patients is likely to have higher mortality, and this can skew the results of a trial.

The process of randomisation is never perfect and the groups are not homogenous (all following the same criteria), but it greatly reduces the chances that one group is substantially different from another.

The number of groups used for a test varies based on requirement. While one group is given the drug to be tested, another could be given a placebo, and a yet another made the control (where the factors are known).

### **Control group**

The control is the data set we we already understand. For most existing diseases, the control is typically a drug whose effects on the body we are already familiar with.

For new diseases such as Covid-19, the control is “standard care”, which includes steps like isolation, ventilators, oxygen, etc., without drugs.

Results from these different groups are compared to each other and against the control group to establish if the drug works, and how.

### **Blinding**

Blinding is the process in which the subject is unaware whether they are being given a drug or a placebo. Double-blinding is when the administrator or the doctor is also unaware of which treatment is being administered.

The process of blinding is followed to further reduce bias in how doctors assess a disease or how a patient assesses how they feel.

If everyone knows exactly what they're getting, it's called an open-label trial.

Covid-19 drug trials have so far been of all kinds, with varying results.

### **Trial Phases**

Trials occur in different phases too.

First comes the preclinical studies, which don't involve humans and show results in the lab, either in vitro or in vivo. In vitro is when the test is conducted in a petri dish or test tube, whereas in vivo is when the test is applied to an organism, such as animals.

If the preclinical study shows some success, researchers advance to the next phase — either phase 0 or I.

Phase 0 involves about 10 people, but most studies directly skip to Phase I, where about 20 to 100 people are used in trials. This phase is used to establish that a drug is safe for further trials.

Phase II trials involve around 100 to 300 patients, and are preliminary tests to see if the safe drug is also efficient. Once it shows promise, a Phase III trial is conducted, typically on a test group of up to 3,000 patients to check how effective a drug is.

Phase IV simply involves observing long term effects in the approved drug now being sold in the market.

### **Clinical Studies**

Clinical studies are broadly of two types — one where there is medical intervention to treat a disease, such as blinded randomised trials, and the other is an observational study, where there is no intervention and results of a drug are simply observed to find patterns.

For example, the administering of hydroxychloroquine (HCQ) to Indian healthcare workers is observational as it is prescribed indiscriminately to everyone and the results are not compared with a control.

Ideally, a control would have been another group of randomised healthcare workers who have equal exposure to the disease and have not taken HCQ.

It is also an observational cohort study, where the cohort — or the group of people making up the test subjects — are followed up with for extended periods of time until a desired result can be confirmed or rejected.

Trials and studies are validated and published after a peer-review process, where other experts in the field who are unaffiliated with the study, comb through it in detail to ensure that it is rigorous.

## Pre-prints

A lot of the scientific research we're seeing around Covid-19 is pre-prints uploaded to on the internet.

Pre-prints are early papers that are submitted online but haven't undergone the peer review process. As a result, a lot of badly done trails, full of bias, get just as much exposure as the good ones.

Assessing pre-prints requires extreme care and diligence to prevent the risk of scientific miscommunication during times of a pandemic.

<https://theprint.in/science/cant-understand-research-jargon-around-covid-19-heres-a-basic-primer-to-get-you-started/414108/>



Wed, 06 May 2020

# Does nicotine help fight COVID-19? The science behind a novel hypothesis

*Researchers in France have put forward a hypothesis that the presence of nicotine actually equips the body to fight COVID-19.*

*By Kabir Firaque*

New Delhi: Smoking kills. So does COVID-19, and if a smoker contracts the disease, conventional wisdom should suggest that he or she faces a higher risk of severe illness or death.

Now, researchers in France have turned that conventional wisdom on its head. They have put forward a hypothesis that the presence of nicotine actually equips the body to fight COVID-19. And they are conducting trials to test the hypothesis.

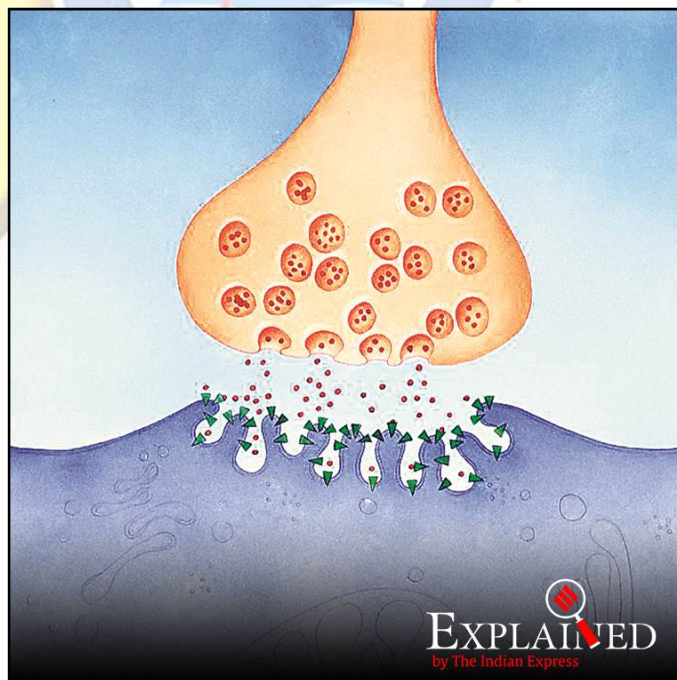
### What is the basis of the hypothesis?

It has been postulated by researchers from a number of leading French institutions — the government research institutes CNRS and Inserm, the hospital network Assistance Publique-Hôpitaux de Paris, Sorbonne University, Collège de France, and Institut Pasteur. They have described the hypothesis in a paper written for the journal *Comptes Rendus de Biologie de l'Académie des sciences*, and published a version on a pre-print server.

“The researchers’ hypothesis is based on the combination of two different but complementary scientific approaches,” Institut Pasteur said in a statement. One of these two approaches is based on a statistical analysis of COVID-19 deaths in a French hospital, and the other on the biochemistry of the human body.

### What is the statistics-based approach?

It draws from an observation of the proportion of smokers among patients who died of COVID-19. These were patients at Pitié Salpêtrière University Hospital, Paris. “In the hospitalised in-patients vs less severe out-patients, a smoking rate of 4.4% vs 5.3% was found, both very low against 25.4% in the general population.



Schematic diagram shows nicotine (or acetylcholine) binding to receptors in the cell (triangles). These receptors are at the centre of the hypothesis that the presence of nicotine helps resist the coronavirus SARS-CoV2. (Source: Institut Pasteur)



This finding has been confirmed by an independent study,” neuroscientist Jean-Pierre Changeux of Institut Pasteur said in an interview published by the European research initiative Human Brain Project.

The statistical study was led by Prof Zahir Amoura of the same hospital, together with Changeux. The two are among the authors of the study that describes the nicotine hypothesis. Changeux is also a pioneer in the study of a key chemical structure in the body, one that forms the basis of the second part of the hypothesis.

#### **What is this chemical structure?**

It is a kind of “receptor”. In the conversation around COVID-19, we have been hearing a lot about receptors. These are structures composed of protein, and they receive signals that may be integrated into the body. These signals can come from various substances, such as a hormone, a drug, or an antigen. For example, the surface of the human cell has receptors called ACE2, which open the door for the novel [coronavirus](#) SARS-CoV2 to enter the body.

At the centre of the nicotine hypothesis is a receptor that responds to nicotine as well as a chemical called acetylcholine. Hence its name: “nicotinic acetylcholine receptor”, abbreviated as nAChR. It is found in parts of the nervous system, muscle and certain tissues of organisms including humans. Changeux has researched this receptor for decades, with one paper dating back to 1965.



The widely accepted view is that the lungs of smokers are already compromised to various extents, hence they are likely to be more vulnerable to a disease that attacks the respiratory system. (Photo: Getty Images/Thinkstock)

#### **How does this receptor fit into the hypothesis about nicotine?**

Since nicotine is known to bind with the nAChR receptor, the second part of the hypothesis goes like this: If nicotine is present on the receptor, and the novel coronavirus arrives, then the nicotine would block the interaction.

In existing scientific knowledge, there is a possible pointer. The rabies virus is known to bind with the same receptor, and this interaction is driven by a sequence of genetic material that exists in the envelope around the rabies virus. “Amazingly there is a rather similar sequence in the envelope of SARS-CoV2. Its role is presently under investigation,” Changeux said in the interview.

#### **And how will the researchers test their hypothesis?**

Clinical studies are in progress, Institut Pasteur said. A Reuters report described the nature of the trial. It will involve groups of healthcare workers and patients wearing nicotine patches, and other groups wearing placebo patches. There will be 1,500 healthcare professionals in the trial, which will seek to assess whether those wearing the nicotine patches are more resistant to COVID-19 than those wearing the placebo patches.

#### **How does this hypothesis sit against conventional views about smoking?**

The widely accepted view is that the lungs of smokers are already compromised to various extents, hence they are likely to be more vulnerable to a disease that attacks the respiratory system. Some researchers have suggested, in fact, that the lower mortality rate among women patients of COVID-19 is a fallout of the fact that men tend to smoke more.

Again, the nicotine hypothesis involves the nAChR receptor, when SARS-CoV2’s main interactions are with a different receptor: ACE2. A study last month, in fact, looked at the expression of ACE2 among smokers and non-smokers. People who have smoked showed a 25% increase in ACE2 expression as compared to non-smokers, researchers reported in the American Journal of Respiratory and Critical Care Medicine. They suggested that smoking increases entry points for the novel coronavirus.

The Indian Express sent a mail to Changeux asking, among various questions, how far the cohort of COVID-19 patients in the statistical analysis of deaths was representative of the general population. He was yet to respond at the time of filing.

<https://indianexpress.com/article/explained/does-nicotine-help-fight-covid-19-the-science-behind-a-novel-hypothesis-6394013/>



Tue, 05 May 2020

## Coronavirus: Cyber-spies hunt Covid-19 research, US and UK warn

*The UK and US have issued a joint warning cyber-spies are targeting the health sector.*

*By Gordon Corera*

Hackers linked to foreign states have been hunting for information, including Covid-19 data and vaccine research, they say.

UK sources say they have seen extensive activity but do not believe there has been any data theft so far.

Those behind the activity are not named in the alert but are thought to include China, Russia and Iran.

The three countries have all seen major outbreaks of the virus but have denied previous claims of involvement in such activity.

The joint advisory says the UK and US are currently investigating a number of incidents in which other states are targeting pharmaceutical companies, medical-research organisations, and universities, looking for intelligence and sensitive data, including research on the virus.

Understanding how other countries are dealing with the Covid-19 crisis and progress in research has become a high priority for intelligence agencies around the world.

In a crisis, every state will want to use its intelligence capability to better inform itself.

And in a locked-down world, cyber-espionage is more practical than traditional human espionage, making it another field where an existing trend towards online working may be accelerated.

Analysts say they are seeing a particular rise in aggressive operations from a range of states at the moment.

And this has meant organisations that might not have considered themselves to be top targets for hackers from foreign states are now in their sights.

The UK's National Cyber Security Centre (NCSC) has been working with these organisations since the start of the crisis, to offer advice and protection.

And the new public advisory, issued jointly with its US equivalent, the Cyber-security and Infrastructure Security Agency (CISA), aims to further increase awareness of the threat.

"In today's world, there is nothing more valuable or worth stealing than any kind of biomedical research that is going to help with a coronavirus vaccine," senior US intelligence official Bill Evanina told BBC News last week.

At Tuesday's daily briefing, Foreign Secretary Dominic Raab said: "As well as providing practical advice, the UK will continue to counter those who conduct cyber-attacks.

"And we're working very closely with our international partners both to respond to the threats but also to deter the gangs and the arms of state who lie behind them."

UK authorities are understood to have offered advice to Oxford University, at the leading edge of developing a vaccine, and Imperial College in London, which has played a key role in the epidemiological modelling that has shaped policy responses.

The advisory warns cyber-spies are targeting supply chains and taking advantage of people remotely working, with a technique called password-spraying - in which they try to use commonly used passwords to access accounts.

And cyber-criminals could target healthcare providers, knowing they may be even more willing than usual to pay a ransom for the return of their data.

"Protecting the healthcare sector is the NCSC's first and foremost priority at this time and we're working closely with the NHS to keep their systems safe," operations director Paul Chichester said.

Meanwhile, Western spies will be focusing hard on China as they seek to understand what Beijing may know of the virus's origins - with the US administration pushing the theory it may have escaped from a lab - as well as looking for any data on the true extent of the outbreak in the country.

<https://www.bbc.com/news/technology-52551023>



Wed, 06 May 2020

## Coronavirus: Sewage study could predict second Covid-19 peak

*Analysing sewage could help scientists predict a second peak of Covid-19 up to two weeks before people become symptomatic.*

*By Caroline Evans*

A team from Bangor University has been looking at samples from water treatment works across Wales in a bid to trace how many people have been infected.

The team has previously tracked norovirus through the sewage system.

People start to shed the virus in faeces up to two weeks before the onset of symptoms.

Prof Davey Jones, who is leading the School of Natural Sciences study, said: "It may give us a two weeks window in which we can actually monitor whether Covid is going up or down in the population before it actually hits the hospitals."

He said it was an effective method for tracing viruses partly because it is possible to capture data on the majority of the population in a relatively cheap and simple way.

"We want to understand where and when Covid-19 infections are occurring within Wales," he said.

"So far what we've shown is that in north-west Wales the number of virus particles in the sewage is really, really low, suggesting there is almost no Covid-19 circulating in the population.

"In contrast in north-east Wales and south-east Wales the numbers of Covid-19 virus in waste water are really, really high suggesting they are infection hot spots at the moment."

He said the findings were in line with what they were expecting, given the numbers of confirmed cases in Wales.

"It's important to understand how many cases we have in the country, but it's also important to understand how many asymptomatic carriers that we have," he said.

"Those are the people who might have very mild symptoms or no symptoms at all. It could be that they are an important source of infection within the community."

He said in Wales about 75% of the population were connected to 21 individual treatment plants operated by Welsh Water.

"Looking at the genetic code of the virus we can see whether different parts of Wales have different areas being infected by different strains of the virus," he said.

"If we want to we could also drill into individual regions within a city such as Cardiff and evaluate whether different parts of the city are more infected than others."

Steve Wilson, managing director of waste water services for Dwr Cymru Welsh Water, said: "We are monitoring the amount of virus that's present in the community every week and actually over the last four to five weeks there has been a steady decrease in the amount of virus week on week.

"So it's an effective way of understanding whether the virus is spreading further or actually the lockdown and containment strategies we are all adopting is having the desired effect."

A similar study is [under way at Newcastle University](#).

A spokesperson for the UK government's Department for Environment, Food and Rural Affairs (Defra) said it was "actively engaging with the research community and government scientific advisers to investigate whether monitoring waste water could be used as a way of tracking the prevalence of the virus".

A Welsh Government spokesman said: "The research proposal has been shared with the technical advisory group and we are actively in dialogue with the research lead at Bangor University to discuss how the data can contribute to our understanding of the virus."

<https://www.bbc.com/news/uk-wales-52544247>

## अमर उजाला

Wed, 06 May 2020

### उम्मीद: ताजनगरी से दुनिया को मिलेगा कोरोना का इलाज, दवाओं का परीक्षण शुरू

*कोविड-19 के इलाज पर शोध कर रहा नेमिनाथ कॉलेज*

न्यूज डेस्क, अमर उजाला, आगरा: आयुष मंत्रालय और इंडियन काउंसिल ऑफ मेडिकल रिसर्च ने कोविड-19 के इलाज पर शोध करने के लिए कुबेरपुर स्थित नेमिनाथ होम्योपैथिक कॉलेज को अनुमति प्रदान की है। मंगलवार को कोरोना के मरीजों पर होम्योपैथिक दवाओं का परीक्षण शुरू किया गया। उम्मीद है कि ताजनगरी से दुनिया को कोरोना का इलाज मिलेगा।

पहले दिन एत्मादपुर के एचएफ मेडिकल कॉलेज में भर्ती कोविड-19 के 30 मरीजों को दवा दी गई। दो बार इन मरीजों का परीक्षण किया गया। कॉलेज के प्राचार्य डॉ. प्रदीप गुप्ता के मुताबिक नेमिनाथ होम्योपैथिक देश का यह पहला कॉलेज है, जिसको इस तरह की अनुमति मिली है।

कॉलेज ने कोरोना के मरीजों के इलाज के लिए दवाएं तैयार कर ली हैं। इन दवाओं की अनुमति भी कॉलेज प्रशासन को इंडियन काउंसिल मेडिकल रिसर्च से मिल चुकी है। दो सौ मरीजों पर दवा का परीक्षण किया जाना है।

दवा देने के बाद इन मरीजों की जांच साइंटिफिक पैथालॉजी की ओर से निःशुल्क की जाएगी। शोध सफल रहा तो आगरा से पूरी दुनिया को कोरोना उपचार मिल सकेगा।

<https://www.amarujala.com/uttar-pradesh/agra/ayush-ministry-given-permission-to-neminath-homeopathic-college-research-treatment-of-covid-19>

## इजरायल ने बना लिया COVID-19 का वैक्सीन, रक्षा मंत्री नफताली बेन्नेट ने किया दावा

**बेन्नेट के मुताबिक, कोरोना वायरस वैक्सीन के विकास का चरण पूरा हो गया है और शोधकर्ता इसके पेटेंट और व्यापक पैमाने पर उत्पादन की तैयारी कर रहे हैं**

इजरायल के रक्षा मंत्री नफताली बेन्नेट ने सोमवार को दावा किया कि इजरायल इंस्टीट्यूट फॉर बायोलॉजिकल रिसर्च ने महत्वपूर्ण उपलब्धि हासिल की है। इंस्टीट्यूट ने कोरोना वायरस का एंटीबॉडी बना लिया है। रक्षा मंत्री बेन्नेट के मुताबिक, कोरोना वायरस वैक्सीन के विकास का चरण पूरा हो गया है और शोधकर्ता इसके पेटेंट और व्यापक पैमाने पर उत्पादन की तैयारी कर रहे हैं।

रक्षा मंत्री के कार्यालय द्वारा जारी बयान के मुताबिक, बेन्नेट इजरायल के पीएम कार्यालय के अंतर्गत चलने वाले इजरायल इंस्टीट्यूट फॉर बायोलॉजिकल रिसर्च (IIBR) का दौरा कर चुके हैं। इसी दौरान उन्हें बताया गया कि यह एंटीबॉडी मोनोक्लोनल तरीके से कोरोना वायरस पर हमला करता है और बीमार लोगों के शरीर के अंदर ही कोरोना वायरस का खात्मा कर देता है।

### इंस्टीट्यूट के स्टाफ पर गर्व

बयान में कहा गया है कि कोरोना वायरस के एंटीबॉडी के विकास का चरण अब पूरा हो गया है। इंस्टीट्यूट इसे पेटेंट कराने की प्रक्रिया में है। इसके अगले चरण में शोधकर्ता अंतरराष्ट्रीय कंपनियों से व्यावसायिक स्तर पर इस एंटीबॉडी के उत्पादन के लिए संपर्क करेंगे। बेन्नेट ने कहा, 'इस शानदार सफलता पर मुझे इंस्टीट्यूट के स्टाफ पर गर्व है।' शोधकर्ताओं ने पहचान की है कि प्रोटीन मरीज के शरीर में वायरस खत्म करने में कारगर है। इंस्टीट्यूट जल्द ही अपनी खोजों के बारे में एक पेपर पब्लिश करेगा।

### मार्च में इजरायली न्यूजपेपर ने भी दी थी ऐसी रिपोर्ट

मार्च में इजरायली न्यूजपेपर Ha'aretz ने मेडिकल सोर्सज का हवाला देकर कहा था कि IIBR के वैज्ञानिकों ने वायरस के बायोलॉजिकल मैकेनिज्म और इसके गुणों को समझने में बड़ी सफलता हासिल की है। इसमें बेहतर डायग्नोस्टिक क्षमता, वायरस से संक्रमित लोगों के लिए एंटीबॉडीज का प्रॉडक्शन और वैक्सीन का विकास भी शामिल था। हालांकि मार्च में रक्षा मंत्रालय ने इस बारे में इनकार कर दिया था। उस वक्त मंत्रालय ने कहा था कि अगर कभी कुछ सूचना देने लायक होगा तो इसे बताया जाएगा।

अभी यह स्पष्ट नहीं है कि जिस उपलब्धि की बात बेन्नेट कर रहे हैं वह मार्च में सामने आई उस सूचना के ही आगे का भाग है या नहीं। बेन्नेट के बयान में यह भी नहीं बताया गया कि वैक्सीन का ह्यूमन ट्रायल हुआ है या नहीं। हालांकि IIBR ने कुछ क्लीनिकल ट्रायल किए हैं।

### 1952 में बना था इंस्टीट्यूट

IIBR की स्थापना Israel Defence Forces' Science Corps के हिस्से के तौर पर 1952 में हुई थी। बाद में यह एक नागरिक संगठन बन गया। यह तकनीकी तौर पर पीएमओ के सुपरविजन में आता है लेकिन इसका नजदीकी संपर्क रक्षा मंत्रालय से है।

<https://www.financialexpress.com/hindi/international-news/covid19-vaccine-israel-made-significant-breakthrough-in-developing-antibody-against-coronavirus-defence-minister-naftali-bennett-claims/1949062/>