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समाचार पत्रों से चयित अंश Newspapers Clippings

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*Sat, 16 May 2020*

This DRDO Scientist's masks let the speech and hearing impaired communicate and smile. Here's how

To date, he has donated 50 such masks for free that can be washed and reused by people. Even the transparent sheets used in these masks are scratch-proof

By Rashmi Patil

When Vinod Karthavya came across one of his colleagues who is speech and hearing impaired, all he could think of were the challenges of communicating using the sign language if they cover their face with a mask. That's when he decided to design and stitch a unique mask for such people. Vinod who is an Assistant Scientist at DRDO and is a BPAC member says, "The COVID-19 pandemic has made the life of the specially-abled more difficult. We know that this pandemic will stay with us for more than a year and like everybody else, the hearing impaired people also need a mask. Therefore, I designed the Smile Mask that has is a combination of cloth and a transparent sheet. This transparent sheet allows the people to communicate through sign language or read lips even when they wear a mask."

Initially, Vinod tried stitching this mask by him self and it failed. He explains, "Last week when I tried stitching it, I could not get the shape right. It ended up in a round shape and did not fit properly on the face. Then I stitched it again but it did not cover the face properly. Later, I understood that the mask must be stitched in a curved shape. This time, it came out well, but the transparent sheet was sticking to the person's mouth, not allowing them to talk freely. I then approached my sister and a tenant and explained where I was going wrong. They helped me solve the error and ended up stitching a proper mask. They're both tailors."

Vinod had another challenge to face — fog formation on the sheet when people try to communicate. But he had a solution for that too. He found out that when you rub a normal dry soap on the sheet region and leave it for some time, it stops the formation of fog when people speak. "I tried doing it at home on the mask that I stitched and it worked. I was happy and satisfied that the ideas," he says.



Vinod Karthavya with his friend trying out the Smile Mask



Soon after stitching the mask, Vinod went online and made video calls to his friends who have speech and hearing impairment issues. He wore a mask and showed it to them of how it works. "They were happy to see this and smiled at me," he says. Hence, he decided to name it as 'Smile Mask'. "I gave these masks for free to 10 people. Later, I got in touch with the Karnataka Deaf Association Secretary who has given us an order for 500 masks. Apart from this, I got a call from a factory where only speech and hearing impairment people work. They have placed orders for 50 such masks," says Vinod who is busy juggling between office work, getting raw materials and coordinating with tailors to stitch masks.

When we asked him, if he gives these masks for free, he says, "I have given off 50 such masks for free. But I am thinking to charge a small amount for each mask when I get bulk order like this. While I will buy raw materials like clothes, elastic and transparent sheets from the money that I have, I will charge some money that will help me pay the salaries of tailors who are stitching these masks for me. This will give them happiness and a sense of satisfaction for their hard work."

<https://www.edexlive.com/people/2020/may/15/this-drdo-scientists-masks-let-the-speech-and-hearing-impaired-communicate-and-smile-heres-how-12039.html>

THE  HINDU

Sat, 16 May 2020

COVID-19 will reshape economy, says NITI Aayog member

Competitiveness will give India an R&D edge, says V.K. Saraswat at SRM webinar

By A.D. Ranjarajan

Tirupati: The COVID-19 pandemic might have brought the world to its knees, but will end up reshaping the economy in the future, asserted V.K. Saraswat, member of NITI Aayog.

Chairing a webinar on 'Post COVID-19: Resurgence of Indian Industries and R&D' organised by SRM AP on Friday, Dr. Saraswat dwelt on the capability of the Indian scientific community in epidemiological studies and stimulation through gene concepts and hailed scientific institutions, national laboratories and the pharmaceutical industry in the battle against the raging pandemic. Though he felt that the country had witnessed a delay in setting up test centres, and supply chain problems required a revamp and correction, Dr. Saraswat said he was optimistic that India would have an advantage in terms of cost, quantity and quality competitiveness post-COVID.

Applauding India's response to the pandemic, Defence Research and Development Organisation (DRDO) Chairman G. Satheesh Reddy said that the production of PPEs, masks and ventilators has increased exponentially, and the industry is exhibiting preparedness for newer sectors.

"We should have collaborations with the industry abroad, acquire technical know-how, and eventually become self-reliant," Dr. Reddy said.

SRM AP Pro Vice-Chancellor D. Narayana Rao, who moderated the event, saw an opportunity to build a new India. "It is evident that the world will shift from China to India for imports. For this, India has to build skilled manpower, infrastructure and dedicated industrial fast-track clearances," Dr. Rao said.

Shantha Biotech chairman emeritus K. Varaprasad Reddy stressed the need for India to reorient its state of preparation to combat similar situations in the future, demanding MNCs to share the research knowledge inferred in 'our land'.

Prasant Mohapatra, Vice-Chancellor (Research) at UC Davis, wanted the higher education sector to focus on innovation and investment in R&D higher than the current 0.85% of GDP. DST advisor Akhilesh Gupta wanted India to quadruple the present FTE to increase R&D spending to 2%. India Glycols president (R&D and Business Development) Rakesh Khandal suggested the use of traditional health systems like Ayurveda to improve immunity and combat COVID-19.

With the increased likelihood of education getting digitised in the future, IIT Hyderabad director B.S. Murty sought internet connectivity at affordable prices. IIT Madras professor Ashok Jhunjhunwala, IISc Bangalore Gautam Desiraju, IIT Kharagpur former director Damodar Acharya and NIIT University president V.S. Rao participated in the webinar from their respective remote locations.

<https://www.thehindu.com/news/national/andhra-pradesh/covid-19-will-reshape-economy-says-niti-aayog-member/article31596741.ece>



Fri, 15 May 2020

कोरोना से लड़ने के लिए DRDO की अनोखी मशीन, बिना छुए हाथ करे सैनेटाइज

अमित कुमार बाजपेयी

- सेंसर भांप लेता है बिना छुए हाथ की दूरी और सैनेटाइजर की छोड़ता है फुहार।
- राष्ट्रपति भवन, PMO, सुप्रीम कोर्ट आदि जगह लगी है ऑटोमैटिक मशीन।
- 5 सेकंड में केवल 5-6 मिलीलीटर सैनेटाइजर से पूरे हाथ की सफाई।



नई दिल्ली। कोरोना वायरस के कहर से जूझते भारत में अब तक इसके कुल केस 81,970 हो चुके हैं, जबकि 2649 लोगों की मौत हो चुकी है। देश में इसके प्रसार को रोकने के लिए लागू लॉकडाउन के अलावा इसकी वैक्सीन, टेस्टिंग किट पर भी काम हो रहा है। लेकिन इन सबके बीच इससे बचने के प्रमुख तरीकों में नियमित रूप से हाथ साफ करना और मास्क लगाना जरूरी है। इसी को ध्यान में रखते हुए डिफेंस रिसर्च एंड डेवलपमेंट ऑर्गनाइजेशन (DRDO) ने रायोट लैब के साथ मिलकर एक अनोखी हैंड सैनेटाइजर मशीन बनाई है, जो बिना छुए ही चुटकियों में हाथ सैनेटाइज कर देती है।

इस संबंध में DRDO अध्यक्ष के तकनीकी सलाहकार एस जोशी ने बताया कि संगठन ने एक कॉन्टैक्टलेस डिस्पेंसर विकसित करने के बाद इसे अपने मुख्यालय में लगाया है। यह मशीन बिना इसे छुए सैनिटाइजर छोड़ती है और आने वाले लोगों को कीटाणुरहित करने में मददगार है। इस ऑटोमैटिक हैंड सैनेटाइजेशन मशीन का नाम ओकमिस्ट (Oakmist) रखा गया है। राष्ट्रपति भवन, सुप्रीम कोर्ट, प्रधानमंत्री कार्यालय, गृह मंत्रालय समेत तमाम सरकारी दफ्तरों में इस मशीन का इस्तेमाल हैंड सैनेटाइजेशन के लिए किया जा रहा है। किसी वाटर आरओ मशीन जैसी नजर आने वाली इस मशीन में अल्कोहल बेस्ड सैनिटाइजर होता है, जो बिना इसे छुए ही दूर से हाथ सेंस करके बहुत तेजी से स्प्रे छोड़ता है सरकारी दफ्तरों में इसे स्थापित करने के बाद अब इसे आम जनता के लिए भी उपलब्ध करा दिया गया है। वाटर मिस्ट एरेटर तकनीक यानी पानी की फुहारे छोड़ने वाली तकनीक पर आधारित ओकमिस्ट मशीन को जल संरक्षण के लिए विकसित किया गया था। यह डिस्पेंसिंग यूनिट बिना संपर्क के काम करती है और इसमें लगा अल्ट्रासोनिक सेंसर इसे सैनेटाइजेशन शुरू करने का संदेश देता है। इसकी फुहार इतनी तेज होती है कि एक बार करीब 5 सेकेंड तक केवल 5-6 मिलीलीटर सैनेटाइजर छोड़ा जाता है। इस फुहार के जरिये लिक्विड बेकार नहीं होता और दोनों हाथों को पूरी तरह से सैनेटाइज करने लायक होता है।

इस संबंध में रायोट लैब के प्रमुख कार्यकारी अधिकारी शिशिर गुप्ता ने कहा कि यह यूनिट डीआरडीओ भवन, पीएमओ, गृह मंत्रालय, वित्त मंत्रालय, सेना कार्यालयों, सुप्रीम कोर्ट और अन्य परिसरों सहित प्रमुख सरकारी कार्यालयों में पहले ही लगाई जा चुकी है। कोरोना के खिलाफ भारत की लड़ाई को केवल स्वस्थ स्वास्थ्य आदतों को अपनाकर ही जीता जा सकता है और स्वच्छता सभी के लिए जरूरी है।

<https://www.patrika.com/miscellaneous-india/coronavirus-drdo-and-riot-labz-develops-no-touch-hand-sanitiser-6101459/>

ज्ञान प्रसार एवम् विस्तार
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Mathrubhumi

Sat, 16 May 2020

Keltron makes equipment to disinfect baggage of airline passengers

The baggage will be exposed to UV radiation once it passes through the tunnel of the equipment

Thiruvananthapuram: Keltron has prepared Ultraviolet Baggage Disinfectant in airports in the state to disinfect the baggage of passengers returning from foreign countries. The first equipment has been placed in Kannur airport. It will soon be placed in Thiruvananthapuram and Kozhikode airports as well.

The baggage will be exposed to UV radiation once it passes through the tunnel of the equipment. Only after this, the baggage will be taken to normal X-ray scanners. The disinfectant equipment will be linked to the baggage ramp.

Minister EP Jayarajan had instructed the public sector institutes in the state to locally produce the equipment required for COVID prevention activities. Following this, CSIR, ISRO, DRDO, HLL and Rajiv Gandhi Biotechnology centre held talks with the minister.

Keltron made the equipment with the technical assistance from Naval Physical and Oceanographic Laboratory (NPOL), which functions in Kochi under the Defense Ministry.

<https://english.mathrubhumi.com/news/kerala/keltron-makes-equipment-to-disinfect-baggage-of-airline-passengers-1.4761137>

DRDO Technology News



Sat, 16 May 2020

Why ADA proposed new design for Naval AMCA

In 2015, the Indian Navy decided it wants a twin-engine platform for its deck-based operations, the current single-engine configuration of the N-LCA Mk1 which has been used as a Tech demonstrator for the NLCA Mk-2 program was dropped after Aeronautical Development Agency (ADA) had completed design works on the Mk2 with improved payload and fuel carrying capacity and with 3 tonnes more Take off weight than the Mk1.

Change of heart from single-engine to twin-engine configuration for indigenous carrier-based fighter jet meant that Navy asked ADA to carry out feasibility studies to work on developing a Carrier-based fighter jet from the proposed 5th Generation AMCA program for the Indian Air Force (IAF), as told ADA did submit its reports to the Naval Head Quarters with a significant warning for converting current AMCA design into a Naval fighter jet.



REPRESENTATIONAL IMAGE

For the first time, people who know the contents of the feasibility report have confirmed to idrw.org that ADA had recommended Navy not to go for the conversion of AMCA design into Carrier-based Naval fighter after feasibility studies found too many shortfalls and compromised operational requirements and technical challenges which will not be able to meet requirements what Navy was looking for in 5th Generation fighter jet.

Undercarriage, fuselage, and changing landing gear design could have required considerable weight gain for the airframe thus limiting weapons and internal weapons carrying capability. ADA also had red-flagged technical challenges to deliver an aircraft without compromising its stealth characters.

The second set of technical challenges pointed put that even an Upgraded AESA UTTAM Radar could require highly improved sea search mode with new hardware and software requirement and new software for auto take-off and landing mode for aircraft carrier operations. ADA recommended a new design with higher Take off weight instead of converting AMCA design into Naval AMCA. A new design will be a clean slate 5th generation design optimized for Naval requirements.

Twin Engine Deck Based Fighter (TEDBF) which is a 4.5++ Generation fighter jet design for carrier-based fighter jet has been proposed to the Indian Navy due to technical challenges to develop a 5th Generation carrier-based fighter jet. Navy has accepted the initial proposal and the Navy and Defence Ministry will decide about it while IAF also has been offered a variant of the TEDBF known as Omni role combat Aircraft (ORCA) but IAF is yet to decide on that.

Persistent Problems with carrier-based F-35C which was based on the F-35A also suggests that using single airframe design for the multi-service requirement to save production cost also doesn't work that way and ADA mentioned this and problems it faced to convert LCA design into Naval LCA program as one of the major reasons to avoid the same mistake with Naval AMCA program and suggested developing a new clean slate stealth fighter based on technology developed for AMCA in 2030-40 and suggested TEDBF program to gain technology experience in development of carrier-based jets.

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<https://idrw.org/why-ada-proposed-new-design-for-naval-amca/#more-227492>



Sat, 16 May 2020

Should India cancel MMRCA to fund ORCA and AMCA?

By Satyajeet Kumar

With recent statement made by CDS Rawat about IAF planning to go Local for its fighter requirements, It is estimated that India will save nearly 30\$ Billions in cost to set up a local production line and in procurement cost for the winning candidate coming out of the MMRCA Tender for the purchase of 114 fighter jets with Transfer of Technology (TOT) along with a need to set up a local supply line for the spares and support once these jets are inducted in the airforce fleet.

IAF is already committed to the development of the newer and bigger Tejas Mk2 which is also known as Medium Weight Fighter in the Indian defense circle due to its 17.5-tonne Take of weight which puts it in the same weight class category as other Medium Weight Fighters. ADA which is a nodal design agency for the Tejas MK2 and Mk1 as now proposed development of 23.5 tonne Twin engined 4.5++ Generation fighter jet in the same league as Dassault Rafale for the air force called as Omni role combat Aircraft (ORCA) to act as a stop-gap measure before it develops 5.5 generation AMCA for the IAF.



Both ORCA and AMCA fighter jet programs are yet to be officially sanctioned for them to take off and ADA is yet to secure its finances from the government even after it had been granted basic seed money to start work on the basic design of the aircraft. Both ORCA and AMCA are sub-25-tonne weight class aircraft which ADA plans to develop parallelly and have the first flight of initial prototypes by 2025-26. ORCA if cleared will enter production from 2029-30 onwards and will be

borrowing heavily from the AMCA and Tejas MK2 project including several of the equipment from AESA Radar, Engine, and Cockpit instruments and EW equipment along with other subsystems.

Money which could have been required for the MMRCA program can be better utilized for the development of the ORCA and AMCA program which will allow local Micro, Small & Medium Enterprises to be established in India post-Chinese Virus situation where they are already reports that the small private sector companies won't be able to survive the economic conditions if defense production in India goes in cold storage. India needs to spend its money at home and further expands its private sector for the development of the Aerospace sector in the country and the present situation allows the country to be completely independent of foreign countries in the development of fighter jets.

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<https://idrw.org/should-india-cancel-mmrc-to-fund-orca-and-amca/#more-227491>

DESIDOC

THEWEEK

Sat, 16 May 2020

Tejas to beat Rafale, F-21? IAF switching to LCA, says Bipin Rawat

Rawat said induction of Tejas jets will help India emerge as a key defence exporter

The Indian Air Force's long-delayed plan to buy over 100 foreign-designed fighters has made little progress in the past two decades. The latest iteration of the plan came in April 2018, when the Indian Air Force formally launched a process to buy 114 fighters in a deal estimated to be worth around \$15 billion.

The Indian Air Force was also simultaneously negotiating with HAL to buy 83 units of the indigenously designed Tejas fighter at an estimated cost of \$6 billion. The Indian Air Force had already ordered 40 Tejas jets from HAL.

On Thursday, Chief of Defence Staff General Bipin Rawat indicated that the Indian Air Force was "switching" to the Tejas in place of foreign options.

In an interview to *Bloomberg*, Rawat said, "The Indian Air Force is switching that [order for foreign fighters] to the LCA. The IAF is saying, I would rather take the indigenous fighter, it is good."

Rawat argued that the induction of additional Tejas fighters will help India emerge as a key exporter of defence equipment, citing the "relatively low price" of the jets.

Rawat described the proposed move to buying indigenous Tejas fighters as a "shift to start using locally made weaponry". Rawat was quoted by *Bloomberg* as saying, "The defence forces will be using a lot more domestically produced goods, and there is an understanding there may be some quality issues in the beginning, but these will be improved."



(File) The Israeli Derby missile being test-fired from a Tejas | PIB

Rawat told *Bloomberg*, "The artillery guns, air defence systems and radars will all be indigenous systems as well. We are doing well with artillery guns and in air defence systems. We are also looking at ammunition manufacturing in our country in a very big way."

A possible switch to the Tejas in place of foreign fighters would be considered a major change in priority for the Indian Air Force. Seven aircraft were in contention for the contract for 114 fighters. These included a customised version of the US-designed F-16 called the F-21 and the French Dassault Rafale. In 2015, the Narendra Modi government cancelled a tender to buy 126 Rafale jets and instead opted for an outright purchase of 36 Rafale fighters from France.

Interestingly, in 2017, it was reported that the Indian Air Force had complained that the Tejas in its current configuration was "far behind" competitors like the F-16 and the Swedish Gripen. The Indian Air Force complained about parameters such as poor aerial endurance and weapons load and higher maintenance costs of the Tejas.

The 83 Tejas jets the Indian Air Force is buying will be of an improved MK1A configuration, which will have more capable electronics, radar and air-to-air refuelling capability. In addition, the DRDO is working on an advanced version of the Tejas, which was initially called the Tejas Mk2. In 2019, the Tejas MK2 project was renamed the Medium Weight Fighter. The Medium Weight Fighter will have design enhancements, a higher-thrust engine and more weapons carriage capability. However, the Medium Weight Fighter is expected to fly only by 2022.

In 2018, the Indian Air Force reportedly committed to buying 201 Tejas MK2 fighters if it met performance requirements. If such an order materialised, it would mean the Indian Air Force would have a total fleet of 324 Tejas jets.

While the Tejas is considered an indigenous fighter, many of its core systems are of foreign origin. The current Tejas variants use a General Electric F404 engine, while the Medium Weight Fighter will have the F414 engine from the same company. In addition, Tejas uses a British ejection seat and an Israeli-origin radar. The Tejas is also equipped with Russian and Israeli air-to-air missiles.

<https://www.theweek.in/news/india/2020/05/15/tejas-to-beat-rafale-f-21-iaf-switching-to-lca-says-bipin-rawat.html>

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Sat, 16 May 2020

भारतीय वायुसेना ने मानी PM मोदी की बात, स्वदेशी पर जोर देने के लिए इस कंपनी से खरीदेगी 83 जेट प्लेन

दो साल पहले भारतीय वायुसेना (Indian Air Force) ने 114 प्लेन के लिए इंटरनेशनल कंपनियों से टेंडर मंगवाए थे। लेकिन अब सरकार ने इन्हें घरेलू बाजार में ही तैयार कराने पर जोर दे रही है। इसके लिए सरकार ने देश में ही बने फाइटर जेट्स पर स्विच करने का प्लान बनाया है।

नई दिल्ली: पीएम नरेंद्र मोदी (PM Modi) ने 12 मई को देश के नाम अपने संबोधन में कहा था कि लोकल पर वोकल बनना है। यानी अब आत्मनिर्भर बनते हुए लोकल सामानों का इस्तेमाल बढ़ाना है। सरकार ने इसकी शुरुआत बेहद दिलचस्प ढंग से की है। दरअसल, दो साल पहले भारतीय वायुसेना (Indian Air Force) ने 114 प्लेन के लिए इंटरनेशनल कंपनियों से टेंडर मंगवाए थे। लेकिन अब सरकार ने इन्हें घरेलू बाजार में ही तैयार कराने पर जोर दे रही है। इसके लिए सरकार ने देश में ही बने फाइटर जेट्स पर स्विच करने का प्लान बनाया है।

83 जेट विमान खरीदेगी

चीफ ऑफ डिफेंस स्टाफ (Chief of Defence) बिपिन रावत ने एख इंटरव्यू में बताया कि एयर फोर्स देश में ही बने लाइट कॉम्बैट एयरक्राफ्ट (LCA) यानी हल्के लड़ाकू विमान, तेजस को एयरक्राफ्ट फ्लीट में शामिल करेगी। रावत ने कहा कि एयरफोर्स शुरुआत के 40 एयरक्राफ्ट (Aircraft) के पुराने ऑर्डर के अलावा 83 जेट विमान (Jet Aircraft) खरीदेगी। इसका वैल्यू 6 अरब डॉलर होगी।



IAF मानी मोदी की बात, स्वदेशी पर ज़ोर देने के लिए इस कंपनी से करेगी खरीदारी!

विदेशी कंपनियों के बजाय घरेलू कंपनियों को इसका ऑर्डर दिया जाएगा

रावत ने कहा कि एयरफोर्स हल्के लड़ाकू विमान का अब इस्तेमाल करेगी। यह पूछे जाने पर कि जेट के लिए ग्लोबल टेंडर कब जारी किए जाएंगे रावत ने बताया कि विदेशी कंपनियों के बजाय घरेलू कंपनियों को इसका ऑर्डर दिया जाएगा। रावत ने बताया कि ये जेट हिंदुस्तान एयरोनॉटिक्स लिमिटेड (HAL) से खरीदे जाएंगे।

<https://hindi.news18.com/news/business/india-air-force-to-buy-83-more-tejas-fighter-from-hal-instead-of-foreign-jet-promoting-local-se-vocal-hal-share-price-3116437.html>

Defence News

COVID-19: Defence Forces Contribution

THE FINANCIAL EXPRESS

Sat, 16 May 2020

Indian Navy patents low-cost unique PPE

While the patent procedure is in progress, the private firms too are being identified for manufacture of these highly user-friendly and low-cost PPEs to give an impetus to the indigenization efforts

By Huma Siddiqui

The Indian Navy has taken the initiative to manufacture Personal Protective Equipment (PPE) at Naval Dockyard with the involvement of Naval doctors, and successfully completed Testing and has got them validated by ICMR approved Testing Lab. This is the first time that a patent for PPE, an item which is very critical for those in the health sector is being filed.

According to the Indian Navy, “As a step further to facilitate the mass production of these PPE for all, have applied for a patent for the PPE design and materiel. This Naval PPE patent has further been filed by Intellectual Property Facilitation Cell of Ministry of Defence and Ministry of Science and Technology. The Naval PPE is unique in terms of specialized fabric researched and used to achieve better ‘breathability’ while meeting the stringent PPE Standards. This makes the PPE useful for medical staff working in hot and humid Indian climate.”

While the patent procedure is in progress, the private firms too are being identified for manufacture of these highly user-friendly and low-cost PPEs to give an impetus to the indigenization efforts. “Interested firms and startups are being encouraged to take up licensed production for the Indian market.”

Importance of PPEs in the fight against COVID-19

The PPEs are a must for all in the health care sector, as well as the patients, the visitors and now even the general public is looking for these to protect themselves while going to work.

With the support from the government multiple private agencies have commenced the work of importing specialized machines to manufacture standard PPE kits.

The PPEs which are being manufactured in the country have to meet the stringent standards as has been stated by the World Health Organisation (WHO). These PPE gowns have to be fluid repellent and sterile, along with a feature of either re-usable or disposable. Further, point of care risk assessment should be done by individuals where ever a potential of contact between an individual and the patient or patients' environment is likely to spread germs.



This Naval PPE patent has further been filed by Intellectual Property Facilitation Cell of Ministry of Defence and Ministry of Science and Technology. (Representative image/ File photo)

Indigenous Manufacturing of PPE & Specifications

To meet the high demand evolving in the medical environment, the Indian government too has given necessary directives so as to facilitate productisation of PPEs indigenously. As per the regulations, all items supplied need to be accompanied with a Certificate of analysis from national/international labs indicating minimum conformation to the laid down standards.

Due to the scarcity of coveralls, and risk versus benefit measure, as a temporary measure in the present situation of the global pandemic of COVID-19, the fabric that cleared/passed 'Synthetic Blood Penetration Resistance Test' (ISO 16603) and garment that passed 'Resistance to penetration by biologically contaminated solid particles (ISO 22612:2005)' can be too considered as the specification to manufacture.

The test for these two standards (ISO 16603 and ISO 22612:2005), can be performed in Indian laboratories and items can carry an expiry tag of five years.

Way Ahead for Indian MSMEs

In an effort to provide impetus to MSMEs and local industries, the initiative of Indian Navy to formally undertake the Transfer of Technology once the item is mature for production is considered to be the way ahead especially in times of this unstoppable pandemic.

Defence Minister Rajnath Singh in an interaction with the Defence Research and Development Organisation (DRDO), Ordnance Factory Board (OFB) and other stakeholders had urged them to make 'COVID protection technology available for private industry to use. However, critical items which will be required post-lockdown like gloves, masks, face shields, PPEs have not reached the commercial market.

"Walking an extra mile for the national interest, as is being demonstrated by Indian Navy can be the way ahead for true self-reliance for the country which has gone all out to control the spread of COVID crisis," stated an industry source.

Adding, "Prime Minister Narendra Modi had earlier this week urged all to focus on indigenization and this is the time when in an effort to ensure the true reflection of each of the major government agencies like OFB, DRDO, Science and Technology labs, filing of a patent for COVID related items should be made compulsory," recommended a senior officer.

With everyone involved in crisis handling, all acclaimed innovations should be supported with the patenting procedure for the availability of the necessary items commercially.

<https://www.financialexpress.com/defence/indian-navy-patents-low-cost-unique-ppe/1960498/>

Business Standard

Sat, 16 May 2020

Rajnath Singh approves Rs 400-crore defence testing infrastructure scheme

This is directed towards promoting indigenous defence capability, specifically amongst micro, small and medium enterprises and start-ups

By Ajai Shukla

New Delhi: To provide private sector defence and aerospace companies affordable facilities to test and validate weaponry they are designing, Defence Minister Rajnath Singh approved on Friday a Defence Testing Infrastructure Scheme (DTIS) with an outlay of Rs 400 crore.

Over decades, the Defence Research & Development Organisation (DRDO), the 41 Ordnance Factories (OFs) and eight Defence Public Sector Undertakings (DPSUs) have created sophisticated and costly testing facilities for firearms, ammunition, electronics and radar at government expense. The private sector will have access to such facilities too.

This is directed towards promoting indigenous defence capability, specifically amongst micro, small and medium enterprises (MSMEs) and start-ups.

“Defence Testing Infrastructure is often capital intensive requiring continuous upgradation, and it is not economically viable for individual defence industrial units to set up in-house testing facilities. The Scheme aims at setting up of Greenfield Defence Testing Infrastructure... as a common facility under private sector with government assistance, mainly in DICs (Defence Industrial Corridors),” state the DTIS guidelines.

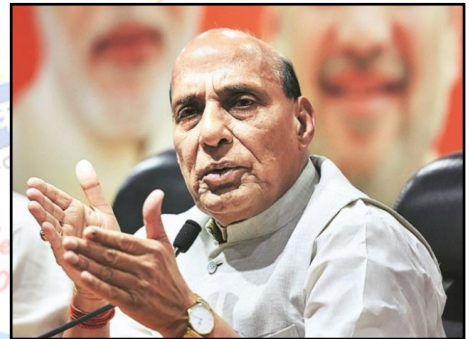
“While majority of test facilities are expected to come up in the two DICs (one in Tamil Nadu and the other in Uttar Pradesh), the scheme is not limited to setting up test facilities in the DICs only,” a defence ministry release clarified. The DTIS scheme, which will run for five years, envisages setting up six to eight test facilities in partnership with private industry.

Each such project will receive 75 per cent of its cost as government funding, while the remaining 25 per cent will be borne by a Special Purpose Vehicle (SPV) composed of Indian private entities and concerned state governments.

The SPVs, which will be registered under the Companies Act 2013, will be mandated to operate and maintain all the testing facilities, in a self-sustainable manner by collecting user charges. The equipment/systems tested will be certified as per appropriate accreditation.

The DTIS guidelines specify the establishment of testing facilities for drones and Unmanned Aerial Vehicles (UAVs), radar, electronics/telecom equipment, rubber testing, noise and shock testing, specialised driving tracks, ship motion testing, ballistics and blast testing, and environmental test facilities.

https://www.business-standard.com/article/economy-policy/rajnath-singh-approves-rs-400-crore-defence-testing-infrastructure-scheme-120051600065_1.html



This is directed towards promoting indigenous defence capability, specifically amongst micro, small and medium enterprises (MSMEs) and start-ups

Rajnath Singh commissions indigenously made Indian Coast Guard Ship 'Sachet', two interceptor boats

*It is for the first time in Indian maritime history that a
ship was commissioned through the digital medium*

By Abhishek Sharma

Union Defence Minister Rajnath Singh on Friday commissioned the Indian Coast Guard Ship (ICGS) Sachet and two interceptor boats (IBs) C-450 and C-451 in Goa via video conference.

The ICGS Sachet is the first in the series of five offshore patrol vessels (OPVs) and has been designed & built indigenously by Goa Shipyard Limited (GSL). It is fitted with state-of-the-art navigation and communication equipment.

According to an official press release from the Ministry of Defence, Singh hailed both ICG and GSL for this initiative and said, "The commissioning of these ships is an important milestone in India's coastal capability building process. Also, despite challenges like COVID-19, it is also a great example of our commitment and determination for the safety and security of the country. The rising power of 'our sea guard', ICG and Indian shipbuilding industry is a matter of pride for the country."



Photo: PIB

He also added that India's prosperity is dependent on the sea and being a responsible maritime power, oceans are priority of the government, he added.

The defence minister further expressed confidence that the Coast Guard Ships being inducted from Friday onwards will add to their strength and help in addressing the challenges related to maritime terrorism, drug trafficking, smuggling, maritime law enforcement and the search and rescue of threatened mariners.

Director-General of Indian Coast Guard Krishnaswamy Natarajan said the commissioning event proved that despite the hurdles posed by COVID19, the ICG moves ahead.

The 105-metre long 'Sachet' displaces approximately 2,350 tons and is propelled by two 9,100 KW diesel engines designed to attain a maximum speed of 26 knots, with an endurance of 6,000 nautical miles. The sustenance and reach, coupled with the latest equipment and systems, provides her with the capability to perform the role of a command platform and undertake tasks to fulfil the ICG charter.

The ship is designed to carry a twin-engine helicopter along with four high-speed boats and one inflatable boat for swift boarding and search & rescue operations. The ship is also capable of carrying limited pollution response equipment to undertake oil spill pollution response at sea.

Sachet is being commanded by Deputy Inspector General Rajesh Mittal and manned by 11 officers and 110 men.

It is for the first time in Indian maritime history that a ship was commissioned through the digital medium, maintaining strict protocol of social distancing in the backdrop of COVID-19 pandemic.

The IBs C-450 and C-451 are 30 metre long boats indigenously designed & built by Larsen & Toubro Shipyard Hazira, and fitted with latest navigation and communication equipment. The two

are capable of achieving speeds in excess of 45 knots and designed for high-speed interception, close coast patrol and low-intensity maritime operations.

The ships will be deployed extensively for Exclusive Economic Zone (EEZ) surveillance, coastal security and other duties as enshrined in the Coast Guard charter of duties.

With the commissioning of these ships, the ICG has reached a landmark 150 ships & Boats and 62 aircraft. Further, 40 ships are in various stages of construction at different Indian Shipyards and 16 advanced light helicopters are under production at Hindustan Aeronautics Limited, Bengaluru, which will provide the added strength to the surveillance capabilities of ICG to deal with the ever-dynamic maritime challenges.

<https://www.dnaindia.com/india/report-rajnath-singh-commissions-indigenously-made-indian-coast-guard-ship-sachet-two-interceptor-boats-2824917>

THE TIMES OF INDIA

Sat, 16 May 2020

Army will maintain combat readiness on fronts with China and Pakistan despite budgetary cuts due to Covid: Gen Naravane

By Rajat Pandit *Celebrating*

New Delhi: The 12-lakh strong Army will ensure its operational efficiency and combat readiness is not affected on the western and eastern fronts due to the fund crunch in wake of the coronavirus pandemic severely hitting government's finances, said Army chief General MM Naravane on Friday.

The Indian armed forces have to "remain alive" and cater for the scenario of a "two-front war" with China and Pakistan, even though the possibility is remote. The armed forces, in fact, are currently faced with a "two front plus half (terrorism and insurgency) plus half (Covid-19 pandemic) situation, said Gen Naravane, at a webinar organized by defence think-tank IDSA.

Noting there will be "some budgetary constraints this year", the Army chief said his force had already identified some activities, like the holding of major exercises and movement of battalions from one peace-time location to another, which can be deferred and re-prioritized.

The Army is "fully committed" to the ongoing thrust on "Make in India" and self-reliance in the defence production sector, instead of importing exorbitant weapon systems. "Whenever we have gone in for arms imports, we have done so to plug critical operational voids till indigenous weapons can be developed," he said.

Around 75% of the orders and contract inked for the Army last year, for instance, went to Indian companies. Admitting that the bulk were for defence PSUs and the Ordnance Factory Board factories, the Army chief said, "We should look to give more orders to the private industry in India."

The manpower-intensive Army is also trying to correct the problem of 80% share of its annual budget going for revenue expenditure (salaries and day-to-day operating costs), with only 20% being left for modernization.



But, he said, there was little option as of now because of two “very active borders” with China and Pakistan as well as heavy commitment in counter-insurgency and counter-terror operations in Kashmir and the northeast.

Proposals like the “tour of duty” (ToD), under which the Army plans to induct youngsters as officers and jawans for a three-year tenure, can help in cutting down the revenue expenditure and reduce the pension burden. “This is definitely an idea we can pursue,” said Gen Naravane.

TOI on May 13 had reported that the Army was finalizing the radical ToD proposal in the backdrop of the urgent need for cadre restructuring amidst the ballooning salary and pension bills adversely impacting military modernization.

The ToD scheme, if and when approved, will initially be launched with around 100 vacancies for officers and 1,000 for jawans. It will be a “voluntary military service” scheme, not to be confused with compulsory military conscription like in some countries like Israel.

<https://timesofindia.indiatimes.com/india/army-will-maintain-combat-readiness-on-fronts-with-china-pakistan-despite-budgetary-cuts-due-to-the-coronavirus-pandemic-gen-naravane/articleshow/75762458.cms>

नवभारत टाइम्स

Sat, 16 May 2020

दो नहीं कुल तीन मोर्चों पर दुश्मनों से निपट रही है सेना: आर्मी चीफ

Indian army: जनरल एमएम नरवणे ने कहा कि आर्मी को चीन और पाकिस्तान से ही लोहा नहीं लेना पड़ रहा है बल्कि वह दो अन्य आधे मोर्चों पर भी लड़ रही है। चीन और पाकिस्तान को तो हम जानते हैं लेकिन कौन हैं बाकी दो दुश्मन जिनसे सेना ले रही है लोहा।
पूनम पाण्डे

हाइलाइट्स

- कोविड-19 की वजह से इस साल इंडियन आर्मी को भी बजट का टोटा, खर्च में कटौती की कवायद
- आर्मी चीफ ने कहा कि एक साल के लिए मूवमेंट में की जाएगी कमी
- एक बड़े मूवमेंट में ही हो जाता है करीब 1 करोड़ रुपए का खर्चा
- बड़ी एक्सरसाइज जिसमें सैनिकों का मूवमेंट होता है वह भी नहीं होगी

नई दिल्ली: कोविड-19 की वजह से इस साल इंडियन आर्मी को भी बजट की कमी का सामना करना पड़ेगा। खर्च की कटौती के लिए तय किया गया है कि पीस स्टेशनों में तैनात आर्मी यूनिट का कार्यकाल एक साल और बढ़ा दिया जाएगा ताकि उनके मूवमेंट में होने होने वाले खर्च को बचाया जा सके। इस तरह के एक मूवमेंट में ही करीब 1 करोड़ रुपये का खर्चा आ जाता है। आर्मी के भीतर हर साल इस तरह के करीब 250-300 मूवमेंट होते हैं।

बड़ी एक्सरसाइज भी एक साल नहीं होगी

आर्मी चीफ जनरल एमएम नरवणे ने कहा कि इस साल बजट की कुछ कमी होगी, कितनी होगी यह अभी कहना जल्दबाजी होगी। उन्होंने कहा कि हमने पहले क्वार्टर में बजट का 20 पर्सेंट तक ही खर्च करने की सीमा बनाई है। लेकिन सैलरी और अलाउंस 100 पर्सेंट होगा इसमें कट नहीं होगा। साथ ही हम सुनिश्चित करेंगे कि हमारी ऑपरेशनल क्षमता



जनरल एमएम नरवणे

पर इसका कोई फर्क ना पड़े। एम्युनिशन और इसके स्टॉक पर कोई असर नहीं होगा। आर्मी चीफ ने कहा कि सैनिक हर साल इधर से उधर मूव करते हैं यह बहुत बड़े स्तर पर होता है। यूनिट इधर से उधर जाती हैं। हर साल 250-300 से ज्यादा ऐसे मूवमेंट होते हैं, जिसमें हर एक मूवमेंट में ही करीब 1 करोड़ रुपए का खर्चा आता है।

उन्होंने कहा कि जो यूनिट फील्ड एरिया में हैं, हाई एल्टीट्यूट, काउंटर इंसरजेंसी वाले एरिया में हैं उन्हें तो मूव करना ही पड़ेगा। लेकिन एक पीस स्टेशन से दूसरे पीस स्टेशन में यूनिट के मूवमेंट को हम एक साल आगे कर सकते हैं। जो जहां हैं उन यूनिट का कार्यकाल वहीं बढ़ा सकते हैं। आर्मी चीफ ने कहा कि सैनिकों की एक्सरसाइज में जहां एक लोकेशन से एक्सरसाइज एरिया तक बड़ी संख्या में मूवमेंट होता है, हो सकता है कि उसे भी हम एक साल ना करें। हालांकि इससे हमारी क्षमताओं पर असर नहीं पड़ेगा।

दो नहीं कुल तीन मोर्चों पर निपट रही आर्मी

टू फ्रंट वॉर (दो मोर्चों पर लड़ाई) से जुड़े एक सवाल पर आर्मी चीफ ने कहा कि अभी तो हमारे पास टू प्लस हाफ प्लस हाफ फ्रंट है। दो फ्रंट नॉर्डन और वेस्टर्न बॉर्डर, हाफ फ्रंट काउंटर इंसरजेंसी और हाफ फ्रंट कोविड-19। सेना जम्मू-कश्मीर और पूर्वोत्तर में आतंकवादियों और उग्रवादियों से निपट रही है। साथ ही कोविड-19 के खिलाफ लड़ाई में बढ़चढ़कर हिस्सा ले रही है।

डिफेंस पर होने वाला खर्च भी देता है जीडीपी में योगदान

आर्मी चीफ ने कहा कि जब सेफ और सिक्क्योर इनवायरमेंट होगा तभी ग्रोथ होगी। कई बार लोग कहते हैं कि डिफेंस में होने वाला खर्चा जीडीपी में योगदान नहीं देता। मैं इससे सहमत नहीं हूँ। डिफेंस पर होना वाला खर्चा भी जीडीपी में पूरा योगदान देता है। उन्होंने कहा कि पुलवामा अटैक के बाद शेयर मार्केट डाउन हो गया था लेकिन बालाकोट एयरस्ट्राइक के बाद जब साबित हुआ कि हम सुरक्षित माहौल दे सकते हैं तो शेयर मार्केट में भी उछाल आया। आर्मी चीफ ने कहा कि स्टेबल और सिक्क्योर माहौल जीडीपी ग्रोथ में योगदान देता है। उन्होंने कहा कि इसी तरह बीआरओ जो सड़क बनाती है उसमें 80 पर्सेंट से ज्यादा फंड लोकल इकॉनमी में ही जाता है।

<https://navbharattimes.indiatimes.com/india/indian-army-fighting-on-three-fronts/articleshow/75758636.cms>

अमर उजाला

Sat, 16 May 2020

घोड़ों की जगह अब टैंकों का होगा उपयोग, दुनिया में बची इकलौती घुड़सवार इकाई को हटाएगी भारतीय सेना

सार

- भारतीय सेना की 61वीं घुड़सवार सेना दुनिया में बची एकमात्र इकाई है
- सेना में यह 1953 से है मौजूद लेकिन 25 वर्षों से किसी ऑपरेशन का हिस्सा नहीं
- सेवानिवृत्त लेफ्टिनेंट जनरल डीबी शेकटकर समिति के सलाह से यह कदम उठाया गया है

विस्तार

नई दिल्ली: भारतीय सेना की 61वीं घुड़सवार इकाई के घोड़े वर्षों से आर्मी की शान शौकत बढ़ाते आए हैं। दुनिया में बची यह इकलौती घुड़सवार सेना है। लेकिन अब इसमें बड़े बदलाव की बात चल रही है। इसमें घोड़ों की जगह टैंक का उपयोग कर इसे नियमित बख्तरबंद रेजिमेंट बनाने की तैयारी चल रही है।

सेना के इस प्लान से इस युनिट के ही कुछ लोग खुश नहीं हैं। उनका मानना है कि यह एतिहासिक परंपरा को खत्म करने जैसा है।

प्रसिद्ध 61 वीं घुड़सवार इकाई को हटाने की वजह सेना की लड़ाकू क्षमता को बढ़ाना और अपने राजस्व व्यय को कम करना है। बता दें कि यह फैसला सेवानिवृत्त लेफ्टिनेंट जनरल डीबी शेकटकर समिति द्वारा की गई सिफारिश के आधार पर लिया जा रहा है। शेकटकर समिति के सिफारिश में इसे एक नियमित बख्तरबंद रेजिमेंट में परिवर्तित करने की बात कही गई है।

अधिकारी के अनुसार जयपुर स्थित इस घुड़सवार इकाई को टी -72 टैंकों से लैस किए जाने की संभावना है। एक और अधिकारी के अनुसार रेजिमेंट में कुल 300 घोड़े हैं। जिनमें जयपुर में 200 हैं और दिल्ली में कुल 100 हैं। और बदलाव के बाद ये सभी एक नए अश्वारोही नोड का हिस्सा बनेंगे।

विशेषज्ञ समिति का नेतृत्व करने वाले सेवानिवृत्त लेफ्टिनेंट जनरल डीबी शेकटकर ने कहा कि यूनिट के ट्रैक रिकॉर्ड की जांच के बाद ही 61 वीं घुड़सवार इकाई में बदलाव की सिफारिश की गई है।

शेकटकर ने आगे बताया कि इसने पिछले 25 वर्षों के दौरान किसी भी ऑपरेशन में हिस्सा नहीं लिया है। और फिलहाल इसका इस्तेमाल सिर्फ कार्यक्रमों में होता है और इसके जवान पोलो जैसे गेम में हिस्सा लेते हैं। उन्होंने कहा कि सेना में इसका उपयोग व्यवसाय के लिए नहीं किया जा सकता है।

बता दें कि सेना में 61वीं घुड़सवार इकाई 1953 से मौजूद है। फिलहाल राष्ट्रपति भवन में मौजूद राष्ट्रपति बॉडीगार्ड (PBG) के अलावा 61वीं घुड़सवार इकाई ही इकलौती घोड़े वाली सेना है। लेकिन अब इनकी जगह टैंक ले सकते हैं।

<https://www.amarujala.com/india-news/indian-army-world-only-61st-cavalry-unit-to-replace-horses-with-tanks>

THE TIMES OF INDIA

Sat, 16 May 2020

Four Rafales to arrive in India by July-end, India to gain edge over Pakistan, China in air

New Dehi: In a major boost to India's firepower in air, first four Rafale fighter aircraft would start arriving in India by July-end this year from France.

The delivery of the aircraft was earlier supposed to have been done by May end but this was postponed by two months in view of the Covid-19 situation in both India and France.

"The first four aircraft including three twin-seater trainer aircraft and one single-seater fighter aircraft would start arriving by the end of July at the Ambala airbase. The trainers will have the tail numbers of the RB series in honour of the Air Force Chief RKS Bhadauria who played a pivotal role in finalising India's largest-ever defence deal for 36 Rafale combat aircraft," defence sources told ANI here.

The first aircraft to be flown in is planned to be piloted by the Commanding Officer of the 17 Golden Arrows' squadron along with a French pilot, they said.

The aircraft on their way from France to India would be refuelled by a French Air Force tanker aircraft in the air before they make a stopover in the Middle East.

"From Middle East to India, there would be one mid-air refuelling done by the Indian IL-78 tanker before they land in India," sources said.

Sources said that the Rafales could have come directly from France to India but a 10-hour flight could have been stressful sitting inside a small cockpit.



Four Rafales to arrive in India by July-end, India to gain edge over Pakistan, China in air

The first batch of seven Indian pilots has also finished their training at a French airbase while the second batch would be going to France as soon as the lockdown measures are relaxed in both the countries.

Post lockdown, India received the first consignment of equipment from France when a cargo plane landed in Delhi last week and more equipment would arrive in the near future. India had signed a deal worth over Rs 60,000 crore with France in September 2016 for 36 Rafales to meet the emergency requirements of the Indian Air Force.

Air Chief Marshal Bhadauria was the Deputy Chief of Air Staff at that time and headed the Indian negotiation team for the deal which is the biggest ever in monetary terms in India. Armed with the long-range Meteor air to air missiles and SCALP, the Rafales would give India an edge over both Pakistan and China in terms of air strike capability.

Sources said the air to air and the air to ground strike capabilities of the Rafale cannot be matched by both China and Pakistan and the aircraft would give India an edge over both the rivals.

<https://timesofindia.indiatimes.com/india/four-rafales-to-arrive-in-india-by-july-end-india-to-gain-edge-over-pakistan-china-in-air/articleshow/75752004.cms>

hindustantimes

DESIDOC

Sat, 16 May 2020

IAF to get first batch of Rafale jets by July-end

The four fighters were supposed to fly to their home base in India in May 2020, but the plan was delayed due to the coronavirus disease (Covid-19) outbreak

New Delhi: The Indian Air Force is likely to get the delivery of the first batch of four Rafale jets from France by July-end, people aware of the developments said on Friday.

The four fighters were supposed to fly to their home base in India in May 2020, but the plan was delayed due to the coronavirus disease (Covid-19) outbreak. Confinement measures announced by France to battle the outbreak temporarily halted production at aircraft manufacturer Dassault Aviation's Merignac facility.

India ordered 36 Rafale jets from France in a deal worth Rs 59,000 crore in September 2016 as an emergency purchase to arrest the worrying slide in the air force's combat capabilities.

According to the delivery schedule, the first 18 jets (including the four in the first batch) are supposed to be delivered to the IAF by February 2021, with the rest expected by April-May 2022.

France handed over to India its first Rafale fighter during a ceremony attended by defence minister Rajnath Singh and his French counterpart, Florence Parly, in Merignac on October 8, 2019, which coincided with the IAF's 87th founding day.

<https://www.hindustantimes.com/india-news/iaf-to-get-first-batch-of-rafale-jets-by-july-end/story-7MsreyBC38Jq0twGHmU7zH.html>



The first Indian Air Force Rafale fighter jet takes off after the delivery ceremony at the factory of French aircraft manufacturer Dassault Aviation in Merignac near Bordeaux, France. (REUTERS)



Sat, 16 May 2020

Lockdown and Pandemic hits LCA-Tejas Production

By Raunak Kunde

State-owned HAL after lockdown has commenced its operations and production line of indigenous LCA-Tejas MK1 fighter jet was restarted but as per media reports it is not moving at the pace like before and the supply of some of the components from foreign suppliers are also hit due to Chinese virus situation.

SP-21 which now has been given new tail number SP-17 will be carrying out a few more mandatory flight test before it is handed over to IAF and SP-22 (SP-18) which has completed its integration and currently has been moved to Paint workshop to get a new paint coat before it commences Low and High-speed trial before it is cleared for the first flight by the first week of June.



SP-23 (SP-19) and SP-24 (SP-20) both are almost 80% and 70 % ready but are waiting for the supply of a few components that will push their first flights to July. Work on SP-25 (SP-21) is almost halted and likely to resume in June, while the assemble jig already has SP-31 (SP-27) for the integration work but the slow pace will affect the original delivery schedule.

Delays in delivery of first four FOC Certified Tejas Mk1 will also delay the creation of the Second Squadron of the LCA-Tejas in IAF which was initially planned in April, now likely in August or September.

(Note : Article cannot be reproduced without written permission of idrw.org in any form even for YouTube Videos to avoid Copy right strikes)

<https://idrw.org/lockdown-and-pandemic-hits-lca-tejas-production/#more-227460>



Sat, 16 May 2020

Ordnance factories to resume work as per local lockdown rules, 3 units in Pune to start from Monday

THE three ordnance factories in Pune — Ammunition Factory Khadki, High Explosives Factory and Ordnance Factory, Dehu Road — will start production activities from Monday with 33 per cent of the staff allowed on the premises at any given point. The ordnance factories across India will also start functioning in the coming days as per the directives and restrictions of local authorities and state government orders.

The main production activities in 41 ordnance factories across India were suspended from the last week of March following the nationwide lockdown. Personnel involved in only essential and skeletal services have been reporting to work in these factories. However, in the following days, some factories started producing safety utilities like hand sanitisers, PPE kits and other Covid relief items. Only these sections of the ordnance factories have been operational.

Mukesh Singh, general secretary of the defence workers' units Bhartiya Pratiraksha Mazdoor Sangh (BPMS), which is an arm of the Bharatiya Mazdoor Sangh, said, "Following recent guidelines of the Ministry of Home Affairs, the Ordnance Factory Board had directed individual factories to work towards the possibility of resuming production activities in adherence to local restrictions and state government orders. The general managers of the individual factories had written to competent authorities and work in factories will soon resume — in many cases with constraints. At some places, with 33 per cent and at other places with 50 per cent or full staff."

An order on resumption of work at the Ammunition Factory, Khadki (AFK), issued by the general manager, stated that after the reclassification of areas into micro-clusters in Khadki area, the premises of AFK is no more in the containment zone, and thus it has been directed that the factory will start operations with 33 per cent of the staff from Monday. The order also states that a roster should be prepared for allocation of 33 per cent of the staff and employees and officers should work accordingly. Work in High Explosives Factory in Khadki and Ordnance Factory Dehu Road is also expected to resume on Monday.

Officials said that resumption of work will be crucial to complete the work orders from the last financial year. It will also depend on whether units supplying raw materials are functioning to their full capacity.

A major chunk of the weapons, ammunition and supplies, not just for armed forces but also paramilitary and police forces, comes from the factories run by the Ordnance Factories Board, which is body under the Ministry of Defence. Their products include civilian and military-grade arms and ammunition, explosives, propellants and chemicals for missiles systems, military vehicles, armoured vehicles, optical devices, parachutes, support equipment, troop clothing and general stores items.

The network of OFB's 41 ordnance factories is supported by training and marketing centres, safety controller units, in entirety employs around 1.3 lakh people including 82,000 factory workers.

<https://idr.w.org/ordnance-factories-to-resume-work-as-per-local-lockdown-rules-3-units-in-pune-to-start-from-monday/#more-227475>

BREAKING
DEFENSE

Sat, 16 May 2020

US Navy rushes its sub-hunting helicopters to India, eye on China

"This really was one of the higher priorities the [Indian] navy had, to get these aircraft delivered," Tom Kane, director of Sikorsky's Naval Helicopter Programs, says. "I requested that the aircraft be made available on an accelerated basis."

By Paul Mcleary

Washington: The Indian and US governments were in such a hurry to get sub-hunting US helicopters into the hands of the Indian navy that the Americans gave up some of their own helicopters to fill a rushed delivery early next year.

"This really was one of the higher priorities the [Indian] navy had, to get these aircraft delivered," Tom Kane, director of Sikorsky's Naval Helicopter Programs told reporters this

morning. “I requested that the aircraft be made available on an accelerated basis. So I think there is an urgent need.”

The urgency stems from the decade-long process India has undergone to replace its aging fleet of British-made naval helicopters, as Chinese navy ships, underwater drones and so-called maritime militia civilian-flagged fishing boats spread further into the Indian Ocean.

With New Delhi in a hurry to begin getting the state-of-the-art helicopters into use, and the US government eager to pull India closer as a hedge against growing Chinese naval capabilities, the US Navy allowed Sikorsky to take three of its brand new MH-60R Sea Hawks and begin modifying them to Indian standards to deliver next spring. The Navy will receive new MH-60R's in a few years to replace them. The remaining 21 helicopters will be delivered in 2023 and 2024.

Most of the changes being made to the aircraft are in the communications and data sharing realm, Kane said. “They want the ability to talk to their satellites obviously, so there's an Indian indigenous SATCOM data link. Also, they can talk to their ships so there's a link to that they've asked us to install, and there's some other modifications like a floatation system, and other things that we'll have to [change] from the standard US Navy configuration,” he added.

The MH-60R was born to be a sub hunter, however, and that mission will remain central to the Indian configuration. “They'll come off the line as ASW [anti-submarine warfare] aircraft so they'll have the active dipping sonar,” the AN/APS-153 radar “and things that you would normally see on a US Navy configuration,” Kane said.

The deal is the largest contract Sikorsky has signed with the Indian government. Unlike most other programs, it's not subject to the “Make in India” effort launched by Indian Prime Minister Narendra Modi.

The company did not sign an offset agreement with India on the project, “so we will put more indirect work over in India,” Kane said. The Indian defense industry will also likely be involved in any maintenance and retrofit efforts on the aircraft in the coming years.

<https://breakingdefense.com/2020/05/us-navy-rushes-its-sub-hunting-helicopters-to-india-eye-on-china/>

The Forbes logo is displayed in a black rectangular box with white text. In the background, there is a large, semi-transparent watermark of the DRDO (Defence Research and Organisation) logo, which includes the text 'DRDO - DRDO' and 'DEFENCE R&D ORGANISATION'.

Sat, 16 May 2020

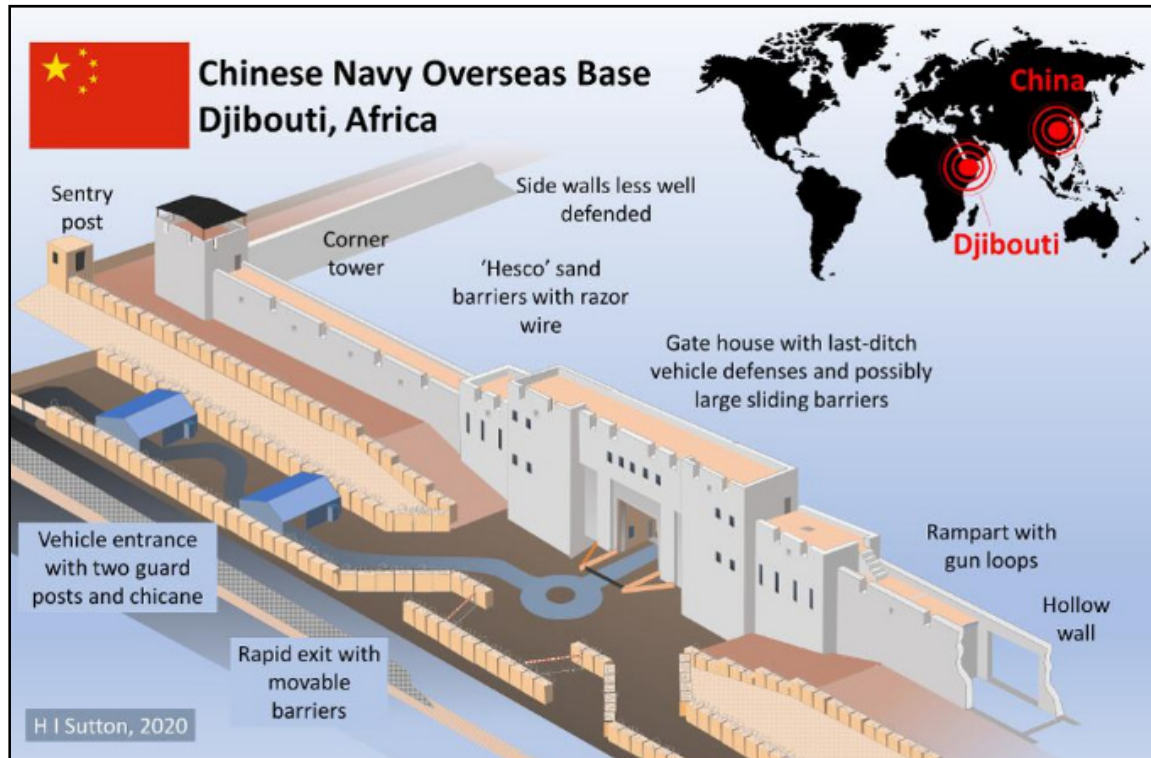
China's heavily defended fortress near the middle east and Indian Ocean

By H I Sutton

The Chinese Navy is building a string of overseas bases. So far the largest and furthest afield is in Djibouti on the Horn of Africa. This strategically-located base appears ready to receive large warships, maybe even aircraft carriers. One aspect of the base is particularly interesting: It is a modern-day fortress built from scratch. If the Communist country was hoping to give off non-imperialist vibes as it expands its presence overseas, then it may have chosen the wrong architects.

And it is not just castle aesthetics, the base really is designed to be highly defensible on a scale rarely seen, even in war zones. Construction of the walls started in early 2016, and was substantially complete by spring 2017. The base has been built up since.

Approaching by road, you first have to turn off the perimeter road and pass through a substantial automated outer gate. Turning 90 degrees, always good for slowing vehicles down, you then pass through two vehicle checkpoints and a chicane. Eventually the main gate is in sight. It appears to have last-ditch pop-up vehicle barriers and large concrete doors.



With its multiple layers of defense, thick walls and corner towers the base in Djibouti resembles a ..H I Sutton.

If you you tried to circumvent the vehicle route described above, you would face many layers of defense. First there is a high perimeter fence which separates the public road from the private perimeter road. Then there is another high fence with razor wire before you climb up a steep slope to the outer wall. This is made out of 'Hesco' style barriers with razor wire along the top. Hesco barriers are wire frames filled with giant sandbags. They are commonly used by Western forces in Afghanistan and Iraq as the main walls of fortified bases. Here they are relegated to just being an outer wall.

Inside the Hesco wall is the main wall built out of concrete. It has crenellations, meaning the up-and-down style battlements familiar from medieval castles. There are also gun loops, which are holes to fire weapons through. And there are tall towers on the corners.

Not every side of the base is defended equally, but there are substantial defenses on all sides. Even approaching from the water side of the base would require negotiating a series of security fences and guard positions. Inside the base itself there are a few more defensive positions.

An attack on the base would be responded to by the marines stationed there. Armored vehicles seen in the base include ZBD-09 infantry fighting vehicles and ZTL-11 assault guns. These are armed with an array of automatic cannons, anti-tank missiles and large caliber guns.

Other countries' military bases in Djibouti, such as the U.S. Navy's Expeditionary Base at Camp Lemonnier, also have physical defenses, but nothing that compares to the Chinese base.

So who are they defending against? This style of defenses are negligible against advanced adversaries. So it appears that the focus is on insurgents and local low-tech threats.

China does not have first hand experience of its bases being attacked in the way that Western forces have in Afghanistan and Iraq. But it may have learned from them. Yet it is hard not to see these defenses and draw parallels with ancient Chinese forts and of course the Great Wall of China.

<https://www.forbes.com/sites/hisutton/2020/05/15/chinas-new-fortress-near-the-middle-east-and-indian-ocean/#2aebd5ae4066>

ISRO units resume work in capital

It could be months before space missions achieve normalcy

By Tiki Rajwi

Thiruvananthapuram: The easing of COVID-19 lockdown restrictions has enabled critical units of the Indian Space Research Organisation (ISRO) here to resume work after nearly two months, albeit on a limited scale. But it could be several more months before space-related activities return to normal, officials say.

The Vikram Sarabhai Space Centre (VSSC), Liquid Propulsion Systems Centre (LPSC) and the ISRO Inertial Systems Unit (IISU) had asked the staff, except personnel required for essential services, to stay home from March 23.

Strict measures

Now, adhering to the guidelines issued by the Department of Personnel and Training (DoPT), the units have opened up the campuses to more of their staff, but the emphasis on disease containment measures remain stringent. All staff holding rank equivalent to deputy secretary and above have begun reporting for duty on a daily basis. As much as 33% of the remaining officers/staff have been directed to attend work.

Safety measures are strictly followed on the campuses. "Internal meetings are restricted to a few people. The duration of the lunch break has been increased to avoid crowding. Employees are encouraged to bring packed lunches so as to keep support staff to a minimum," an LPSC official says.

However, it could be months before the space missions achieve any semblance of normalcy, a senior official at the VSSC says.

Missions affected

The lockdown has forced the ISRO to put off two missions of the Polar Satellite Launch Vehicle (PSLV) and one of the Geosynchronous Satellite Launch Vehicle (GSLV). The lockdown has also affected future programmes including Gaganyaan, ISRO's ambitious human space flight mission.

"At the moment, much of the work is confined to internal activities on the campuses such as fabrication, R&D and mission studies. Major activities such as space missions continue to be hit due to the restrictions on inter-district and interstate travel and disruption of the supply chain," a VSSC official says.

During the lockdown the space facilities here have not remained idle. They had redirected their resources to combat COVID-19, which included the development of different ventilator models.

<https://www.thehindu.com/news/national/kerala/isro-units-resume-work-in-capital/article31593767.ece>

'Hot and messy' entanglement of 15 trillion atoms

Quantum entanglement is a process by which microscopic objects like electrons or atoms lose their individuality to become better coordinated with each other. Entanglement is at the heart of quantum technologies that promise large advances in computing, communications and sensing, for example detecting gravitational waves.

Entangled states are famously fragile: in most cases even a tiny disturbance will undo the entanglement. For this reason, current quantum technologies take great pains to isolate the microscopic systems they work with, and typically operate at temperatures close to absolute zero. The ICFO team, in contrast, heated a collection of atoms to 450 Kelvin, millions of times hotter than most atoms used for quantum technology. Moreover, the individual atoms were anything but isolated; they collided with each other every few microseconds, and each collision set their electrons spinning in random directions.

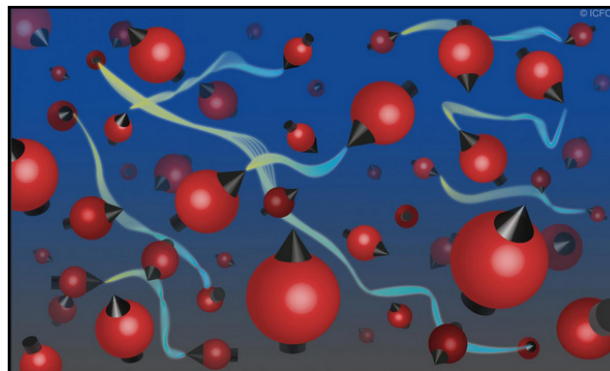


Image: Artistic illustration of a cloud of atoms with pairs of particles entangled between each other, represented by the yellow-blue lines. Image credit: © ICFO view more

The researchers used a laser to monitor the magnetization of this hot, chaotic gas. The magnetization is caused by the spinning electrons in the atoms, and provides a way to study the effect of the collisions and to detect entanglement. What the researchers observed was an enormous number of entangled atoms - about 100 times more than ever before observed. They also saw that the entanglement is non-local - it involves atoms that are not close to each other. Between any two entangled atoms there are thousands of other atoms, many of which are entangled with still other atoms, in a giant, hot and messy entangled state.

What they also saw, as Jia Kong, first author of the study, recalls, "is that if we stop the measurement, the entanglement remains for about 1 millisecond, which means that 1000 times per second a new batch of 15 trillion atoms is being entangled. And you must think that 1 ms is a very long time for the atoms, long enough for about fifty random collisions to occur. This clearly shows that the entanglement is not destroyed by these random events. This is maybe the most surprising result of the work".

The observation of this hot and messy entangled state paves the way for ultra-sensitive magnetic field detection. For example, in magnetoencephalography (magnetic brain imaging), a new generation of sensors uses these same hot, high-density atomic gases to detect the magnetic fields produced by brain activity. The new results show that entanglement can improve the sensitivity of this technique, which has applications in fundamental brain science and neurosurgery.

As ICREA Prof. at ICFO Morgan Mitchell states, "this result is surprising, a real departure from what everyone expects of entanglement." He adds "we hope that this kind of giant entangled state will lead to better sensor performance in applications ranging from brain imaging to self-driving cars to searches for dark matter."

A Spin Singlet and QND

A spin singlet is one form of entanglement where the multiple particles' spins--their intrinsic angular momentum--add up to 0, meaning the system has zero total angular momentum. In this study, the researchers applied quantum non-demolition (QND) measurement to extract the information of the spin of trillions of atoms. The technique passes laser photons with a specific energy through the gas of atoms. These photons with this precise energy do not excite the atoms but they themselves are affected by the encounter. The atoms' spins act as magnets to rotate the

polarization of the light. By measuring how much the photons' polarization has changed after passing through the cloud, the researchers are able to determine the total spin of the gas of atoms.

The SERF regime

Current magnetometers operate in a regime that is called SERF, far away from the near absolute zero temperatures that researchers typically employ to study entangled atoms. In this regime, any atom experiences many random collisions with other neighbouring atoms, making collisions the most important effect on the state of the atom. In addition, because they are in a hot medium rather than an ultracold one, the collisions rapidly randomize the spin of the electrons in any given atom. The experiment shows, surprisingly, that this kind of disturbance does not break the entangled states, it merely passes the entanglement from one atom to another.

Reference: 10.1038/s41467-020-15899-1

https://eurekalert.org/pub_releases/2020-05/iop-am051420.php



Sat, 16 May 2020

Scientists break the link between a quantum material's spin and orbital states

By Glenda Chui

In designing electronic devices, scientists look for ways to manipulate and control three basic properties of electrons: their charge; their spin states, which give rise to magnetism; and the shapes of the fuzzy clouds they form around the nuclei of atoms, which are known as orbitals.

Until now, electron spins and orbitals were thought to go hand in hand in a class of materials that's the cornerstone of modern information technology; you couldn't quickly change one without changing the other. But a study at the Department of Energy's SLAC National Accelerator Laboratory shows that a pulse of laser light can dramatically change the spin state of one important class of materials while leaving its orbital state intact.

The results suggest a new path for making a future generation of logic and memory devices based on "orbitronics," said Lingjia Shen, a SLAC research associate and one of the lead researchers for the study.

"What we're seeing in this system is the complete opposite of what people have seen in the past," Shen said. "It raises the possibility that we could control a material's spin and orbital states separately, and use variations in the shapes of orbitals as the 0s and 1s needed to make computations and store information in computer memories."

The international research team, led by Joshua Turner, a SLAC staff scientist and investigator with the Stanford Institute for Materials and Energy Science (SIMES), reported their results this week in *Physical Review B Rapid Communications*.

An intriguing, complex material

The material the team studied was a manganese oxide-based quantum material known as NSMO, which comes in extremely thin crystalline layers. It's been around for three decades and is used in devices where information is stored by using a magnetic field to switch from one electron spin state to another, a method known as spintronics. NSMO is also considered a promising candidate for making future computers and memory storage devices based on skyrmions, tiny particle-like vortexes created by the magnetic fields of spinning electrons.

But this material is also very complex, said Yoshinori Tokura, director of the RIKEN Center for Emergent Matter Science in Japan, who was also involved in the study.

"Unlike semiconductors and other familiar materials, NSMO is a quantum material whose electrons behave in a cooperative, or correlated, manner, rather than independently as they usually do," he said. "This makes it hard to control one aspect of the electrons' behavior without affecting all the others."

One common way to investigate this type of material is to hit it with laser light to see how its electronic states respond to an injection of energy. That's what the research team did here. They observed the material's response with X-ray laser pulses from SLAC's Linac Coherent Light Source (LCLS).

One melts, the other doesn't

What they expected to see was that orderly patterns of electron spins and orbitals in the material would be thrown into total disarray, or "melted," as they absorbed pulses of near-infrared laser light.

But to their surprise, only the spin patterns melted, while the orbital patterns stayed intact, Turner said. The normal coupling between the spin and orbital states had been completely broken, he said, which is a challenging thing to do in this type of correlated material and had not been observed before.

Tokura said, "Usually only a tiny application of photoexcitation destroys everything. Here, they were able to keep the electron state that is most important for future devices—the orbital state—undamaged. This is a nice new addition to the science of orbitronics and correlated electrons."

Much as electron spin states are switched in spintronics, electron orbital states could be switched to provide a similar function. These orbitronic devices could, in theory, operate 10,000 faster than spintronic devices, Shen said.

Switching between two orbital states could be made possible by using short bursts of terahertz radiation, rather than the magnetic fields used today, he said: "Combining the two could achieve much better device performance for future applications." The team is working on ways to do that.

<https://phys.org/news/2020-05-scientists-link-quantum-material-orbital.html>
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COVID-19 Research

ScienceDaily ० वर्ष

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Antiviral drug can speed up recovery of COVID-19 patients, study shows

An international team of researchers led by Dr. Eleanor Fish, emerita scientist at the Toronto General Hospital Research Institute, University Health Network, and professor in the University of Toronto's Department of Immunology, has shown for the first time that an antiviral drug can help speed up the recovery of COVID-19 patients.

According to the new study, published today in *Frontiers in Immunology*, treatment with interferon (IFN)- α 2b may significantly accelerate virus clearance and reduce levels of inflammatory proteins in COVID-19 patients.

The research team found that treatment with this drug, which has been used clinically for many years, significantly reduced the duration of detectable virus in the upper respiratory tract, on average by about 7 days. It also reduced blood levels of interleukin(IL)-6 and C-reactive protein (CRP), two inflammatory proteins found in COVID-19 patients.

Dr. Fish says that the research team considered IFN- α therapy for COVID-19 after they demonstrated interferon provided therapeutic benefit during the SARS outbreak of 2002 and 2003.

"Rather than developing a virus-specific antiviral for each new virus outbreak, I would argue that we should consider interferons as the 'first responders' in terms of treatment," says Dr. Fish.

"Interferons have been approved for clinical use for many years, so the strategy would be to 'repurpose' them for severe acute virus infections."

Boosting a natural defense mechanism

Interferons are a group of signaling proteins released by the human body in response to all viruses. As Dr. Fish explains, they are a "first line of defense."

They target different stages of a virus's life cycle, inhibiting them from multiplying. They also boost an immune response by activating different immune cells to clear an infection. Some viruses, however, can block this natural defense mechanism.

"But it is possible to override this block. If a virus blocks interferon production, then treating with interferon can offset this."

Study details

The researchers conducted this exploratory study on a group of 77 patients with COVID-19 in Wuhan, China. These patients were admitted to Union Hospital, Tongji Medical College, between January 16 and February 20, 2020. They represented moderate cases of the disease as none of the patients required intensive care or prolonged oxygen supplementation or intubation.

Despite the study's limitations of a small, non-randomized group of patients, the work provides several important and novel insights into COVID-19 disease, notably that treatment with IFN- α 2b can accelerate viral clearance from the upper respiratory tract and also reduce circulating levels of inflammatory factors that are associated with severe COVID-19.

Dr. Fish says a randomized clinical trial is a crucial next step. According to her, a clinical trial with a larger group of infected patients who are randomized to treatment or placebo would further this research.

In the meantime, the findings from this study are the first to suggest therapeutic efficacy of IFN- α 2b as an available antiviral intervention for COVID-19, which may also benefit public health measures by shortening the duration of viral clearance and therefore slowing the tide of the pandemic.

<https://www.sciencedaily.com/releases/2020/05/200515103925.htm>

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Oxford University's COVID-19 vaccine proves effective in monkeys, researchers await human trial results

Researchers involved with the ChAdOx1 nCoV-19 trials have said that the vaccine has shown signs of producing an immune response in rhesus macaque monkeys' immune systems against the deadly coronavirus

By Anushree Gupta

Key Highlights

- *Oxford University's vaccine candidate is one of the potential coronavirus vaccines undergoing human trials*
- *A study has found that the vaccine has proven effective in a small study of monkeys*
- *If the human trials in the UK are successful, the team plans to conduct further trials in Kenya*

New Delhi: One of the most potential coronavirus vaccine candidates around the world and the UK's biggest COVID-19 vaccine project, which is currently in its human trials, has shown promising results in monkeys.

According to a report in PTI, researchers involved with the ChAdOx1 nCoV-19 trials have said that the vaccine has shown signs of producing an immune response in rhesus macaque monkeys' immune systems against the deadly coronavirus, without any side effects.

The study is still to be peer-reviewed. However, it has stated that a single dose of vaccine was also effective in preventing any damage to the lungs and other organs severely affected by the novel coronavirus.

"We observed a significantly reduced viral load in bronchoalveolar lavage fluid and respiratory tract tissue of vaccinated animals challenged with SARS-CoV-2 (COVID-19) compared with control animals, and no pneumonia was observed in vaccinated rhesus macaques," the authors said.

According to the study, the researchers found that even when the monkeys were exposed to high levels of coronavirus, none of them developed viral pneumonia. They also did not see any signs where the vaccine made the animals more vulnerable.

The development is very encouraging for the vaccine as it is undergoing human trials currently. However, it still remains to be seen if it will be as effective in humans.

"These results support the ongoing clinical trial of the vaccine in humans, the results of which are eagerly awaited," said Dr Penny Ward, visiting professor in pharmaceutical medicine at King's College London. Sarah Gilbert, professor of Vaccinology at the University of Oxford's Jenner Institute, who is also leading the vaccine project had previously said that she was very confident that the vaccine will be ready by September.

"Of course, we have to test it and get data from humans. We have to demonstrate it actually works and stops people getting infected with coronavirus before using the vaccine in the wider population," she said.

Various pharma and drug giants are also partnering with the Oxford University team for the production of the vaccine.

"We're now starting to wait for an advocacy signal to see whether people who've been vaccinated don't get the disease, so that's the next step," said John Bell, professor of medicine at the University of Oxford.

The challenges for human trials

As the vaccine undergoes human trials, the team at Oxford University is facing a challenge that there may not be enough active disease in the community for the participants to catch the disease naturally. Researchers are continuing to make calculations around this as human trials progress in some regions of the UK.

If the trials are successful in the UK, the team aims to approach scientists in Kenya Medical Research Institute (KEMRI) and will also contact the Government of Kenya to get permission for trials in Kenya.

"We also want to make sure that the rest of the world will be ready to make this vaccine at scale so that it gets to populations in developing countries, for example, where the need is very great," Bell said.

The results of the human trial are eagerly awaited by researchers who hope that they will be available by next month. Healthcare workers who are on the frontlines of the pandemic were among the first batch of people to undergo trials in the UK.

The novel coronavirus has so far infected more than 4 million people around the world and claimed more than 300,000 lives.

<https://www.timesnownews.com/health/article/oxford-universitys-covid-19-vaccine-proves-effective-in-monkeys-researchers-await-human-trial-results/592457>