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

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COVID 19: DRDO's Contribution

Sun, 02 May 2021

DRDO to set-up 4 oxygen PSA plants in Delhi by next week, Rajnath Singh told in review meet

Singh was briefed that nearly 600 additional doctors are being mobilised through special measures such as calling to duty those who had retired in the last few years. The Navy has deployed 200 Battle Field Nursing Assistants to assist in various hospitals, he was told

New Delhi: As the armed forces have requested that their recently retired medical personnel come forward to assist the civil administration in their regions and asked retired personnel to make themselves available for telemedicine, Defence Minister Rajnath Singh held a review meeting with the military top brass and other senior defence bureaucrats on the efforts to combat the pandemic.

DRDO said that four of its Oxygen Pressure Swing Adsorption (PSA) plants will be operational in Delhi by next week, as the capital continues to suffer from lack of oxygen in hospitals.

Singh was briefed that nearly 600 additional doctors are being mobilised through special measures such as calling to duty those who had retired in the last few years. The Navy has deployed 200 Battle Field Nursing Assistants to assist in various hospitals, he was told.

The National Cadet Corps (NCC) has deployed 300 cadets and staff at various locations in Maharashtra, Uttarakhand and Haryana, the Defence Ministry said in a statement. “A tele medicine service, to be operated by health veterans, will begin soon to provide consultation to those patients who remain at home”.

The Army, it said, “has made available more than 720 beds for civilians in various states” and Singh asked the Army to “share the details with local administration at the state and district levels”. The local military commanders have also been asked to “actively engage in assisting the civil administration”.

Further, DRDO’s 500-bed hospital coming up in Lucknow will be operational in the coming 2-3 days, Singh was informed, while another hospital in Varanasi will be ready by May 5.

DRDO Chairman G Satheesh Reddy said that “the first four out of 380 Oxygen PSA plants, being manufactured under PM Cares Fund, will be deployed in hospitals in New Delhi by next week”.

The statement mentioned that Singh “appreciated the logistics support being provided by the armed forces in transporting oxygen containers from abroad as well as within the country between places of consumption and production”.



DRDO Chairman G Satheesh Reddy said that “the first four out of 380 Oxygen PSA plants, being manufactured under PM Cares Fund, will be deployed in hospitals in New Delhi by next week”. (Photo: Twitter/@DefenceMinIndia)

The Air Force has carried out multiple sorties from Singapore, Bangkok, Dubai and within the country, and the Navy has dispatched four ships, two each to Middle East and Southeast Asia, to transport filled oxygen containers to India.

In 28 sorties from abroad, the Air Force has brought 47 oxygen containers with 830 MT of capacity, while from within the country, it has carried out 158 sorties, airlifting 109 containers with 2,271 MT capacity.

The Navy has deployed seven ships for the Samudra Setu 2 operation “for shipment of liquid medical oxygen-filled cryogenic containers and associated medical equipment from various countries”.

“The Navy and the Air Force have also supplied nearly 500 portable oxygen cylinders from their stores to various civilian hospitals,” the statement mentioned.

Defence Public Sector Undertakings (DPSUs) are procuring 28 oxygen plants and other medical equipment worth Rs 40 crore under CSR for supplying to various hospitals in states. Hindustan Aeronautics Limited (HAL) has set up a 250-bed hospital in Bengaluru, and another 250-bed hospital is being set up in Lucknow.

The meeting was attended by Chief of Defence Staff General Bipin Rawat, the service chiefs and Defence Secretary Ajay Kumar among other senior officers.

<https://indianexpress.com/article/cities/delhi/drdo-to-set-up-4-oxygen-psa-plants-in-delhi-by-next-week-rajnath-singh-told-in-review-meet-7298241/>

**INDIA
TODAY**

Sat, 01 May 2021

DRDO gives 75 oxygen cylinders with 10,000 litre capacity to Delhi govt, 40 to ITBP Covid centre

The Defence Research and Development Organisation (DRDO) has handed over 75 cylinders to the Delhi government and another 40 will be given to the ITBP-run Covid care centre in the city
By Abhishek Bhall

New Delhi: The Defence Research and Development Organisation (DRDO) has handed over 75 cylinders to the Delhi government and another 40 will be given to the ITBP-run Covid care centre in the city.

Each of these oxygen cylinders has a capacity of 10,000 litres and is expected to aid the growing demand of oxygen in Delhi as it witnesses a massive Covid surge.

“DRDO has handed over 75 cylinders to the Department of Health & Family Welfare, Government of NCT of Delhi, yesterday, 29th April 2021. Forty oxygen cylinders of the same capacity are being handed over to Cabinet Secretariat officials today, 30th April 2021, for utilisation at Sardar Patel Covid Care Centre at Radha Soami Satsang Beas (RSSB), Chhatarpur, New Delhi,” the DRDO has said.



DRDO has handed over 75 oxygen cylinders to the Delhi government. (Twitter)

Delhi has been hit hard with the acute oxygen shortage as hospitals run out of supplies, triggering panic across the city.

The oxygen cylinders supplied by DRDO are high pressure seamless cylinders certified by Bureau of Indian Standards and approved by PESO (Petroleum & Explosives Safety Organization), Government of India, which have been specially airlifted from Vadodara.

To meet the urgent requirement of oxygen in various parts of the country, DRDO is arranging big cylinders to fulfill the requirements of different hospitals. Efforts are being made to arrange many more such cylinders for different hospitals, DRDO said.

The Defence Research and Development Organisation (DRDO) will set up 500 oxygen plants under the PM Cares Fund within 3 months to augment oxygen supply across the country in wake of the Covid surge that is expected to further peak in the days to come.

Some of these will be installed at four Delhi hospitals and AIIMS Jhajjar by May 10.

The Medical Oxygen Plant (MOP) technology developed by DRDO for OnBoard Oxygen Generation for India's indigenous fighter jet, Light Combat Aircraft Tejas will also be used in these oxygen plants.

The oxygen plant is designed to produce 1,000 litres per minute and the system caters to 190 patients at a flow rate of 5 litres per minute and can charge 195 cylinders per day, the DRDO said.

Hospitals will be able to generate on-site medical oxygen, in a cost-effective manner with this oxygen plant rather than depending upon sourcing it from other places

<https://www.indiatoday.in/coronavirus-outbreak/story/drdo-gives-75-oxygen-cylinders-to-delhi-govt-itbp-covid-1796681-2021-04-30>



Sat, 01 May 2021

ऑक्सीजन की किल्लत से जूझ रही दिल्ली को डीआरडीओ ने 75 ऑक्सीजन सिलेंडर दिए

राजधानी दिल्ली बीते कई दिनों से ऑक्सीजन की किल्लत से जूझ रही है। ऐसे में अब डीआरडीओ ने 75 बड़े ऑक्सीजन सिलेंडर दिए हैं। डीआरडीओ के मुताबिक, हर एक सिलेंडर की क्षमता करीब 10 हजार लीटर है।

By नीरज राजपूत

ऑक्सीजन की किल्लत से जूझ रही राजधानी दिल्ली को डीआरडीओ ने 75 बड़े ऑक्सीजन सिलेंडर दिए हैं। इनमें से 40 सिलेंडर आईटीबीपी के कोविड हॉस्पिटल को दिए गए हैं। डीआरडीओ के मुताबिक, हर एक सिलेंडर की क्षमता करीब 10 हजार लीटर है।

डीआरडीओ के मुताबिक, इन सभी 75 सिलेंडर्स को दिल्ली सरकार के हेल्थ एंड फैमिली वेलफेयर मंत्रालय को सौंपे गए हैं। ये सभी सिलेंडर 80 लीटर पानी की क्षमता वाले हैं। इन्हें 130 'बार' तक प्रेशराइज किया जा सकता है, इसलिए एक सिलेंडर में करीब 10 हजार लीटर ऑक्सीजन भरी जा सकती है।



गुजरात के बड़ोदरा से एयरलिफ्ट कराया गया सिलेंडर्स को

डीआरडीओ ने इन सिलेंडर्स को गुजरात के बड़ोदरा से खासतौर से एयरलिफ्ट कराया है जिससे कि राजधानी दिल्ली में ऑक्सीजन की सप्लाई की किल्लत ना हो। खास बात ये है कि इनमें 40 सिलेंडर्स अकेले आईटीबीपी के राजधानी दिल्ली के छतरपुर स्थित सरदार पटेल कोविड केयर फैसिलिटी को दिए गए हैं।

डीआरडीओ के मुताबिक, इन 40 सिलेंडर्स को कैबिनेट-सेक्रेटेरिएट के अधिकारियों को सौंपे गए हैं। वहां 500 बेड होने के बावजूद ऑक्सीजन की कमी के चलते मरीजों की भर्ती कम की जा रही थी। आईटीबीपी के मुताबिक, शुक्रवार सुबह तक भी यहां 400 बेड पर ही मरीजों की भर्ती हो पायी है। लेकिन 100 बेड बिना ऑक्सीजन के खाली पड़े हैं।

सीनियर अधिकारियों ने भर्ती मरीजों से मुलाकात की

इस बीच शुक्रवार को आईटीबीपी के सीनियर अधिकारियों ने छतरपुर के राधा-स्वामी सत्संग व्यास ग्राउंड के इस हॉस्पिटल का दौरा कर वहां भर्ती मरीजों से मुलाकात की और सभी व्यवस्थाओं का जायजा लिया। आपको बता दें कि ऑक्सीजन की कमी के साथ साथ यहां भर्ती मरीजों ने डॉक्टर समय पर ना ने और सही इलाज ना मिलने की शिकायत की थी।

<https://www.abplive.com/news/india/delhi-drdo-gives-75-cylinders-to-the-capital-facing-the-shortage-of-oxygen-ann-1907728>



Mon, 03 May 2021

DRDO team finalises hospital site in Jammu

By Mohit Kandhari

Jammu: A high level team of DRDO officials finalised the location of the 500 bedded makeshift hospital for Covid-19 patients in Jammu near Yatri Niwas in Bhagwati Nagar area on Sunday. Despite expediting the paper work and raising logistics at war footing it will take at least another three weeks time to operationalise the facility.

After inspecting the location the DRDO team also attended a meeting with the Divisional Commissioner in Jammu.

During the meeting the DRDO officials projected their requirements and also discussed in detail the roll out schedule of the facility. According to official sources, the DRDO team briefed the officials of the UT administration about various aspects before launching the facility.

The DRDO is expected to handover the infrastructure with 125 bedded ICU facility, to the UT administration soon after establishing it.

The work is likely to begin by May 7 and the facility will come up by May 20. The staff and team of doctors and paramedics required to run the facility will be provided by the UT administration.

On the other hand, 41 deaths due to covid 19 were reported across Jammu and Kashmir while 3571 fresh cases were detected taking the total caseload of active positive cases to 32421 on Sunday. According to the media bulletin issued by the Department of Information and Public Relations, "3571 new positive cases of novel Corona virus (COVID-19), 1150 from Jammu division and 2421 from Kashmir division were reported on Sunday. Also 41 COVID-19 deaths have been reported, 28 from Jammu Division and 13 from Kashmir Division.

Moreover, 1453 more COVID-19 patients have recovered and discharged from various hospitals including 605 from Jammu Division and 848 from Kashmir Division.

Meanwhile, the UT administration has also constituted a Crisis Management Group (CMG) to monitor the rapidly evolving COVID-19 situation and take preventive, control and mitigating measures.

The 5 member CMG will consist of the Chief Secretary as Chairman, and FC (Finance), FC (Health), PS (Home) and PS (PWD). The PS to LG will be a special invitee. It will interact with other officers and medical specialists as necessary.

The CMG will meet daily, and more often if necessary, to Review the rapidly evolving COVID-19 in terms of cases, testing rates, positivity, mortality, recovery, hospital occupancy and other parameters.

<https://www.dailypioneer.com/2021/india/drdo-team-finalises-hospital-site-in-jammu.html>

THE TIMES OF INDIA

Sat, 01 May 2021

Uttar Pradesh: Back in action, Yogi reviews work at DRDO's Covid hospital

By Neha Lalchandani

Lucknow: Chief Minister Yogi Adityanath, shortly after being declared Covid negative by doctors on Friday, visited the under construction temporary Covid hospital at Awadh Shilp Gram on Shaheed Path which is being set up by the Defence Research and Development Organisation (DRDO).

The hospital, to be named after former PM Atal Bihari Vajpayee, is expected to be functional by early next week. During his visit, Yogi reviewed progress of work and gave directions to complete the project at the earliest. The 500-bed facility will have 300 ICU beds. The hospital was initiated by home minister and Lucknow MP Rajnath Singh about two weeks ago to meet the shortage of beds for Covid patients.



CM Yogi Adityanath at Awadh Shilp Gram, the site of DRDO hospital

Meanwhile, Yogi said that a special panel of medical experts should be constituted to create awareness about the use of oxygen and injections like Remdesivir. This, he said, was necessary to curb hoarding of the lifesaving drugs and remove any shortage from the market.

“Hoarding of oxygen and essential drugs like Remdesivir in homes is creating panic and leading to their shortage. There is a need to spread awareness and inform people about their correct usage amid the Covid scare,” the CM said.

He also asked officials to ensure that medical experts explain the correct procedure of administering medical oxygen to patients, especially those in home isolation. In an appeal to doctors, Yogi said that they should follow protocols for recommending Remdesivir as “rampant recommendation has led to a shortage across the whole country and has increased its sale in the black market”. To address the shortage of health workers, the CM has said that retired doctors, para-medical staff and medical students in their final years can be deployed by hospitals to increase manpower in hospitals.

“Many of those who had emerged victorious in the battle against Covid-19 are willing to serve patients. In this context, in order to increase the manpower at hospitals, experiences of retired doctors, lab technicians and paramedical staff along with retired personnel of the armed forces can be availed,” he said.

<https://timesofindia.indiatimes.com/city/lucknow/back-in-action-yogi-reviews-work-at-drdos-covid-hosp/articleshow/82335537.cms>

ट्रायल सफल: भर्ती के लिए तैयार डीआरडीओ कोविड अस्पताल, योगी ने आईसीयू वार्ड व अन्य तैयारियों का लिया जायजा

सार

अवध शिल्पग्राम में बने डीआरडीओ के कोविड अस्पताल में शुक्रवार को उस वक्त चहलकदमी बढ़ गई, जब मुख्यमंत्री योगी आदित्यनाथ निरीक्षण के लिए पहुंच गए।

विस्तार

लखनऊ: अवध शिल्पग्राम में बने डीआरडीओ के कोविड अस्पताल में शुक्रवार को उस वक्त चहलकदमी बढ़ गई, जब मुख्यमंत्री योगी आदित्यनाथ निरीक्षण के लिए पहुंच गए। उन्होंने अस्पताल का ट्रायल लिया और तैयारियों का भी जायजा लिया। साथ ही दो दिन में भर्ती शुरू करने के निर्देश दिए। वहीं, अस्पताल का 24 घंटे का ट्रायल सफल रहा।

डीआरडीओ के कोविड अस्पताल में पहुंचे डीएम अभिषेक प्रकाश ने सैन्य अफसरों से कोविड मरीजों के प्रोटोकॉल की जानकारी ली। इसी बीच पुलिस कमिश्नर डीके ठाकुर आ गए और सीएम का अमला अस्पताल का निरीक्षण करने पहुंच गया। शुक्रवार को ही मुख्यमंत्री की कोविड रिपोर्ट निगेटिव आई। इसके बाद उन्होंने डीआरडीओ के इस अस्पताल की तैयारियों को परखा।



डीआरडीओ कोविड अस्पताल - फोटो : amar ujala

500 में से 300 आईसीयू बेड

डीआरडीओ कोविड अस्पताल 500 बेड का है, जिसमें 300 आईसीयू बेड हैं। शुक्रवार को ही डीआरडीओ की टीम ने आईसीयू वार्ड के एडवांस लाइफ सपोर्ट सिस्टम का ट्रायल किया। इसमें बेड पर लगे मॉनिटर, ऑक्सीजन की आपूर्ति जांची गई। अस्पताल में सेना के तीनों अंगों के बड़े अस्पताल से आए विशेषज्ञ डॉक्टरों ने ट्राएज भवन की कमान संभाल ली है और रविवार से यहां मरीजों की भर्ती की तैयारी है। मुख्यमंत्री ने ट्राएज भवन का दौरा किया। यहां गेट नंबर चार से आकर एंबुलेंस कोरोना मरीजों को उतारेगी। सैन्य डॉक्टरों ने मुख्यमंत्री को बताया कि ट्राएज भवन में सभी मरीजों की स्क्रीनिंग होगी। यह एक तरह से इमरजेंसी के रूप के काम करेगा। स्क्रीनिंग के बाद ही मरीजों को जरूरत के मुताबिक आईसीयू वार्ड में शिफ्ट किया जाएगा। मुख्यमंत्री ने आईसीयू वार्ड के अलावा मशीनों की कार्यप्रणाली भी देखी।

ये सुविधाएं मिलेंगी अस्पताल में

डीआरडीओ के कोविड अस्पताल में ट्राएज भवन में 25 बेड होंगे। महिला व पुरुष रोगियों के अलग शौचालय होंगे। जर्मन हैंगर में 212 बेड का ऑक्सीजन वार्ड होगा। प्रशासनिक भवन के पास डॉक्टरों का विश्राम स्थल होगा, जहां सैन्य चिकित्सक रुकेंगे। लांड्री और मोच्युरी भी बनाई गई है तथा 20 हजार लीटर का ऑक्सीजन टैंक लगाया गया है। वहीं, इतनी ही क्षमता का एक टैंक और शनिवार को लगाया जाएगा। फार्मसी व लैब की भी सुविधा रहेगी।

तीन शहरों से आएंगे 25 विशेषज्ञ

अवध शिल्पग्राम में बने कोविड अस्पताल में सेना के तीन शहरों से आईसीयू के 25 विशेषज्ञ डॉक्टर आएंगे। दिल्ली स्थित सेना के सबसे बड़े रेफरल और रिसर्च अस्पताल से भी डॉक्टर आएंगे।

वहीं, 80 मिलिट्री नर्सिंग सर्विस के अधिकारी भी ड्यूटी देंगे। प्रदेश सरकार भी डॉक्टर व पैरामेडिकल स्टाफ तैनात करेगी।

ऐसे होगी मरीजों की भर्ती

डीआरडीओ के अवध शिल्पग्राम कोविड अस्पताल में मरीज सीधे भर्ती नहीं हो सकेंगे। कोविड कमांड सेंटर से सीएमओ प्रशासन की ओर से भेजे जाने वाले मरीजों को ही यहां भर्ती किया जाएगा। उम्मीद जताई जा रही है कि 20 प्रतिशत बेड सेना के पास होंगे, जबकि 80 प्रतिशत कमांड सेंटर के हवाले रहेंगे।

<https://www.amarujala.com/lucknow/drdo-covid-hospital-ready-for-corona-patients-admission-from-saturday-in-lucknow>

अमर उजाला

Mon, 03 May 2021

पांच मई से शुरू हो सकता है डीआरडीओ कोविड अस्पताल

लखनऊ: अवध शिल्पग्राम में बने डीआरडीओ के कोविड अस्पताल में रविवार को डॉक्टरों की एक टीम पहुंच गई। टीम ने चल रहीं तैयारियों का जायजा लिया। साथ ही पूरे दिन मशीनों का ट्रायल चला।

हालांकि कुछ काम बाकी रहने के कारण अस्पताल पूरी तरीके से तैयार नहीं हो सका है। अब अस्पताल का शुभारंभ पांच मई को हो सकता है। मालूम हो कि मुख्यमंत्री योगी आदित्यनाथ ने बीते शुक्रवार को निरीक्षण के बाद इस अस्पताल को जल्द चालू करने के निर्देश दिए थे।

अवध शिल्पग्राम अस्पताल में सेना के तीन शहरों से आईसीयू के 25 विशेषज्ञ डॉक्टर आने थे, जिसमें से एक शहर की टीम रविवार लखनऊ पहुंच गई। अन्य डॉक्टरों की टीम दिल्ली स्थित सेना के सबसे बड़े रेफरल और रिसर्च अस्पताल से आनी है।

अधिकारियों के अनुसार, मुख्यमंत्री ने दौरे के दौरान कई निर्देश दिए थे, उसी क्रम में तैयारियां चल रही हैं। रक्षा मंत्री राजनाथ सिंह अधिकारियों से संपर्क में रहकर इसका जायजा ले रहे हैं।

ऑक्सीजन आपूर्ति संबंधी कुछ ट्रायल के कार्य चल रहे हैं। ऐसे में मंगलवार को यदि इसका शुभारंभ नहीं हुआ तो पांच मई को इसे शुरू किया जा सकता है। उधर, हज हाउस में भी तैयारियां तेजी से चल रही हैं। एचएएल के सहयोग से तैयार हो रहे अस्पताल के कार्यों की प्रगति पर जिलाधिकारी अभिषेक प्रकाश नजर रखे हुए हैं।

बेड बढ़ाने की भी कवायद

केजीएमयू, टीएस मिश्र अस्पताल समेत अन्य अस्पतालों में बेड बढ़ाने की कवायद चल रही है। प्रभारी अधिकारी डॉ. रोशन जैकब के अनुसार, उन्होंने टीएस मिश्र के अलावा केजीएमयू, लोहिया अस्पताल व कुछ अस्पतालों का दौरा कर क्षमतानुसार बेड बढ़ाने की बात की है। इस क्रम में टीएस मिश्रा व केजीएमयू के साथ ही कुछ अन्य जगह सोमवार या मंगलवार से बेडों की संख्या बढ़ सकती है। इसका अपडेट पोर्टल पर मिलेगा।

टीएस मिश्र अस्पताल में ऑक्सीजन खर्च की हो रही निगरानी

टीएस मिश्र अस्पताल में ऑक्सीजन की खपत को लेकर कराए गए ऑडिट में कोई खास बात सामने नहीं आई है। इसके बावजूद प्रशासन ने ऑक्सीजन खर्च की निगरानी शुरू करा दी है। प्रभारी अधिकारी के अनुसार, कोशिश है कि ऑक्सीजन का सही उपयोग हो।

<https://www.amarujala.com/lucknow/drdo-covid-hospital-may-be-begin-from-five-may-lko-city-news-lko576606540>

लखनऊ: DRDO के बनाए कोविड अस्पताल में भर्ती होने वाले मरीजों के तीमारदारों को मिलेंगी ये सुविधाएं

जिलाधिकारी अभिषेक प्रकाश ने न्यूज़ 18 को बताया कि कोविड रोगियों (Covid Patients) का इलाज कराने के लिए उनके साथ आने वाले तीमारदारों को किसी भी प्रकार की असुविधा न हो इसके लिए यहां पर उनके रुकने हेतु, भोजन, स्वच्छ पेयजल, शौचालय इत्यादि की भी अलग से व्यवस्था की जा रही है

By अलाउद्दीन

लखनऊ: डीआरडीओ के जरिए उत्तर प्रदेश की राजधानी लखनऊ (Lucknow) के अवध शिल्पग्राम में तैयार किए जा रहे हाइटेक अस्पताल को लेकर जिलाधिकारी (डीएम) अभिषेक प्रकाश ने मुख्यमंत्री योगी आदित्यनाथ (Yogi Adityanath) के निर्देशों पर बड़ा ऐलान किया है। डीएम अभिषेक प्रकाश ने DRDO द्वारा बनाए जा रहे भारत रत्न अटल बिहारी वाजपेई कोविड अस्पताल (Covid Hospital) के स्पॉट विजिट के दौरान बताया कि कोविड रोगियों के तीमारदारों के लिए भी निशुल्क रुकने और भोजन का इंतजाम किया जा रहा है।



कोरोना रोगियों के तीमारदारों को लेकर की गई इस बड़ी घोषणा से न सिर्फ इलाज कराने वाले लोगों को सुकून मिलेगा बल्कि मरीजों को भी विश्वस्तरीय स्वास्थ्य सुविधा मिलेगी

अभिषेक प्रकाश ने न्यूज़ 18 को बताया कि कोविड रोगियों का इलाज कराने के लिए उनके साथ आने वाले तीमारदारों को किसी भी प्रकार की असुविधा न हो इसके लिए यहां पर उनके रुकने हेतु, भोजन, स्वच्छ पेयजल, शौचालय इत्यादि की भी अलग से व्यवस्था की जा रही है। उन्होंने साफ किया कि जल्द ही लखनऊ में डीआरडीओ द्वारा बनाए जाए अस्पताल के अलावा भी 2000 बेड विभिन्न अस्पताओं में अतिरिक्त फंक्शनल हो जाएंगे।

उन्होंने कार्यों और व्यवस्थाओं को अति शीघ्र पूर्ण करने के निर्देश संबंधित अधिकारियों को दिए हैं। जिलाधिकारी ने कहा कि यहां कोविड हेल्प डेस्क भी स्थापित की जा रही है। इसके साथ ही कोविड रोगी की स्थिति के विषय में भी तीमारदारों को अपडेट उपलब्ध कराने की व्यवस्था भी की जा रही है ताकि तीमारदारों को किसी प्रकार की असुविधा न हो। कोरोना रोगियों के तीमारदारों को लेकर की गई इस बड़ी घोषणा से न सिर्फ इलाज कराने वाले लोगों को सुकून मिलेगा बल्कि मरीजों को भी विश्वस्तरीय स्वास्थ्य सुविधा मिलेगी।

<https://hindi.news18.com/news/uttar-pradesh/lucknow-lucknow-drdo-constructed-covid-hospital-will-also-have-facilities-for-corona-patients-attendants-nodmk8-3574958.html>

वाराणसी: अस्थायी कोविड अस्पताल संचालन के लिए बीएचयू पहुंचे बेड, वेंटिलेटर

सार

500 बेड पर ऑक्सीजन, 250 बेड पर रहेगी वेंटिलेटर की सुविधा
सड़क निर्माण, बिजली, ऑक्सीजन आपूर्ति आदि का काम तेज
विस्तार

वाराणसी में बीएचयू में अस्थायी कोविड हास्पिटल का आधारभूत ढांचा तैयार होने के बाद बेड और वेंटिलेटर भी पहुंच गए हैं, जिनको लगाया जा रहा है। जिस तरह तेजी से काम चल रहा है, उससे यह कहा जा सकता है कि दस मई के बाद कभी भी इसका संचालन शुरू हो सकता है।

बीएचयू एम्फीथिएटर मैदान में डीआरडीओ की मदद से बनने वाले 750 बेड के कोविड हास्पिटल में जहां 500 बेड पर ऑक्सीजन की सुविधा रहेगी, वहीं 250 बेड पर वेंटिलेटर वाले मरीजों को भर्ती किया जाएगा। इधर दिल्ली से वेंटिलेटर और बेड सहित अन्य जरूरी सामान लेकर गाड़ियां बीएचयू पहुंच गई हैं। रविवार को दिन में बेड, वेंटिलेटर लगाए जाने की



प्रक्रिया भी जारी रही। इसके अलावा वाराणसी में रविवार को बीएचयू एम्फीथिएटर में डीआरडीओ की तरफ से अस्थाई ऑक्सीजन आपूर्ति सहित अस्थायी अस्पताल में चल रहा काम। - फोटो: अमर उजाला
अस्पताल संचालन के लिए सभी इंतजाम किए जा रहे हैं। अस्पताल में जाने के लिए सड़कों की मरम्मत कराने के साथ ही, बिजली, पानी सहित अन्य काम भी तेजी से चल रहा है।

एडिशनल सीएमओ ने लिया तैयारियों का जायजा

एडिशनल सीएमओ डॉक्टर संजय राय ने रविवार को बीएचयू पहुंचकर अस्थायी हास्पिटल में तैयारियों का जायजा लिया। इस दौरान भर्ती मरीजों को बेड, ऑक्सीजन, वेंटिलेटर सहित अन्य जरूरी सुविधाओं के बारे में मौके पर मौजूद अधिकारियों से बातचीत की। डॉक्टर संजय राय ने बताया कि एक साथ 750 बेड के हास्पिटल के शुरू होने से मरीजों को बड़ी राहत होगी। इस दौरान चीफ फार्मासिस्ट अनिल राय, राजबली समेत अन्य लोग मौजूद रहे।

<https://www.amarujala.com/uttar-pradesh/varanasi/varanasi-beds-ventilators-arrive-at-bhu-for-temporary-covid-hospital-operation?pageId=1>

DRDO supplies oxygen cylinders to Gandhi Hospital

Centre will assist TS govt in pandemic management: Kishan Reddy

Hyderabad: Union Minister of State for Home G. Kishan Reddy handed over 50 oxygen cylinders supplied by the Defence Research & Development Organisation (DRDO) to Gandhi Hospital Superintendent M. Raja Rao here on Sunday.

Mr. Reddy thanked Defence Minister Rajnath Singh and DRDO Chairman G. Satheesh Reddy for immediately responding to his request and converting the nitrogen cylinders used for missile development into oxygen cylinders. Another 50 cylinders will be coming in tomorrow, he said and urged citizens to help the governments break the transmission chain by practising social vaccine of wearing masks, maintaining social distancing and hand hygiene.

Dr. Raja Rao thanked the Minister for the equipment would go a long way in saving more people coming to the hospital for treatment. Mr. Reddy pointed out that with a 650-bed capacity, Gandhi Hospital is among the biggest healthcare centres treating COVID patients across the country.

Apart from patients from Telangana and Andhra Pradesh, it was also providing treatment to people from neighbouring States. “The Centre will assist the government here in pandemic management. I have also requested the Chief Secretary to provide a report on the oxygen and other requirements so that I can take it up further,” the Union Minister said.

He also assured to hold discussions with his Cabinet colleague Piyush Goel on the supply of drugs like Remdisivir to Telangana. He appealed to the people not to step out of home unless necessary and those who tested positive to remain in isolation.

<https://www.thehindu.com/news/cities/Hyderabad/drdo-supplies-oxygen-cylinders-to-gandhi-hospital/article34465754.ece>

DRDO supplies oxygen cylinders to Secunderabad Cantonment

Hyderabad: To help meet the urgent requirement of oxygen supply at hospitals and medical institutions in various parts of the country, the Defence Research and Development Organisation (DRDO) on Saturday supplied 50 oxygen cylinders from its resources to Secunderabad Cantonment.

The APJ Abdul Kalam Missile Complex, DRDO, in Hyderabad supplied a total of 200 oxygen cylinders on Saturday. Of the 200 cylinders, 100 oxygen cylinders were handed over to Andhra Pradesh and 50 each to Tirumala Tirupati Devasthanam (TTD) and Secunderabad Cantonment.

The cylinders are of 46.7 litres water capacity each and can be pressurised upto 150 bars. Each of these cylinders can store 7,000 liters of oxygen. These cylinders are high-pressure seamless cylinders certified by the Bureau of Indian Standards (BIS) and approved by PESA (Petroleum & Explosives Safety Organisation), Government of India, the defence ministry said.



Image used for representational purpose only

<https://timesofindia.indiatimes.com/city/hyderabad/drdo-supplies-oxygen-cylinders-to-cantt/articleshow/82347424.cms>



Press Information Bureau
Government of India

Ministry of Defence

Fri, 30 April 2021 6:01PM

Raksha Mantri Shri Rajnath Singh invokes special provisions & grants Emergency Financial Powers to Armed Forces to fight COVID-19 surge

Raksha Mantri Shri Rajnath Singh invoked special provisions and granted Emergency Financial Powers to the Armed Forces to empower them and speed up their efforts in tide over the current COVID-19 situation in the country, on April 30, 2021. These powers will help Formation Commanders to establish and operate quarantine facilities/hospitals and undertake procurement/repair of equipment/items/material/stores, besides provisioning of various services and works required to support the ongoing effort against the pandemic.

Under these powers, Vice Chiefs of Armed Forces including Chief Of Integrated Defence Staff To The Chairman Chiefs Of Staff Committee (CISC) and General Officer Commanding-in-Chiefs (GOC-in-Cs) and equivalents of all three services have been given full powers, whereas Corps Commanders/Area Commanders have been delegated powers up to Rs 50 lakh per case and Division Commanders/Sub Area Commanders and equivalents have been delegated powers up to Rs 20 lakh per case. These powers have been devolved initially for a period of three months from 1st May to 31st July 2021. These are in addition to the emergency powers delegated to the Medical Officers of the Armed Forces last week.

The emergency powers were sanctioned to the Armed Forces last year too when the COVID-19 pandemic first broke out. This had helped the Armed Forces tackle the situation faster and in an effective manner.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1715129>



पत्र सूचना कार्यालय
भारत सरकार

रक्षा मंत्रालय

Fri, 30 April 2021 6:01PM

रक्षा मंत्री श्री राजनाथ सिंह ने कोविड-19 से लड़ने के लिए विशेष प्रावधानों के तहत सशस्त्र बलों को आपातकालीन वित्तीय शक्तियां प्रदान कीं

रक्षा मंत्री श्री राजनाथ सिंह ने 30 अप्रैल 2021 को विशेष प्रावधानों का इस्तेमाल करते हुए सशस्त्र बलों को आपातकालीन वित्तीय शक्तियां प्रदान कीं ताकि उन्हें देश में वर्तमान कोविड-19 महामारी से लड़ने के प्रयासों के लिए सशक्त किया जा सके। ये शक्तियां फॉर्मेशन कमांडरों को महामारी के खिलाफ चल रहे प्रयासों के लिए विभिन्न सेवाओं और कार्यों के प्रावधान के अलावा क्वारंटीन सुविधाएं/ अस्पताल स्थापित और संचालित करने, उपकरण / वस्तुओं / सामग्रियों / दुकानों की खरीद और उपकरणों की मरम्मत के कार्य संबंधी गतिविधियों में मदद करेंगी।

यह संपूर्ण शक्तियां सशस्त्र बलों के उप प्रमुखों जिनमें चीफ ऑफ इंटीग्रेटेड डिफेंस स्टाफ टू द चेयरमैन चीफ्स ऑफ स्टाफ कमेटी (सीआईएससी), जनरल ऑफिसर कमांडिंग-इन-चीफ्स और तीनों सेवाओं में समकक्षों को दी गई हैं। जबकि कोर कमांडर/ एरिया कमांडरों को 50 लाख रुपये प्रति केस और डिवीजन कमांडरों/ सब एरिया कमांडरों और उनके समकक्षों को 20 लाख रुपये प्रति मामले तक के अधिकार दिए गए हैं। इन शक्तियों को शुरू में 1 मई से 31 जुलाई 2021 तक तीन महीनों की अवधि के लिए प्रदान किया गया है। ये पिछले सप्ताह सशस्त्र बलों के चिकित्सा अधिकारियों को सौंपी गई आपातकालीन शक्तियों के अतिरिक्त हैं।

पिछले वर्ष जब कोविड-19 महामारी पहली बार सामने आई थी, तब भी सशस्त्र बलों को यह आपातकालीन शक्तियां स्वीकृत की गई थीं। इसने सशस्त्र बलों को तेजी से और प्रभावी तरीके से स्थिति से निपटने में मदद की थी।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1715163>



Raksha Mantri Shri Rajnath Singh reviews efforts of MoD & Armed Forces in fight against second COVID-19 wave;

Mobilisation of additional health professionals, logistic support to facilitate supply of oxygen & setting up new oxygen plants are top priorities

Raksha Mantri Shri Rajnath Singh reviewed the efforts of Ministry of Defence and the Armed Forces to support the civilian administration in the fight against the current COVID-19 situation in the country, through video conferencing on May 01, 2021. The meeting was attended by Chief of Defence Staff General Bipin Rawat, Defence Secretary Dr Ajay Kumar, Chief of Naval Staff Admiral Karambir Singh, Chief of Air Staff Air Chief Marshal R K S Bhadauria, Chief of Army Staff General M M Naravane, Secretary Department of Defence R&D and Chairman Defence Research and Development Organisation (DRDO) Dr G Satheesh Reddy, Director General Armed Forces Medical Services (AFMS) Surgeon Vice Admiral Rajat Datta, Deputy Chief Integrated Defence Staff (Medical) Lieutenant General Madhuri Kanitkar and Additional Secretary (Defence Production) Shri Sanjay Jaju and other senior officials of MoD.

Shri Rajnath Singh was briefed that approximately 600 additional doctors are being mobilised through special measures such as calling to duty those who had retired in the last few years. The Indian Navy has deployed 200 Battle Field Nursing Assistants to assist in various hospitals. The National Cadet Corps (NCC) has deployed 300 cadets and staff at various locations in Maharashtra, Uttarakhand and Haryana. A tele medicine service, to be operated by health veterans, will begin soon to provide consultation to those patients who remain at home. Indian Army has made available more than 720 beds for civilians in various states. The Raksha Mantri directed the Army to share the details with local administration at the state and district levels. General Bipin Rawat suggested that local Military commands have to be actively engaged in assisting the civil administration.

Shri Rajnath Singh was briefed that the 500-bed hospital being set up DRDO in Lucknow will start functioning in the next 2-3 days. Another hospital is also being set up in Varanasi which is scheduled to be completed by 5th May. The DRDO Chairman said the first four out of 380 Oxygen PSA (Pressure Swing Adsorption) plants being manufactured under PM CARES fund will be deployed in hospitals in New Delhi by next week.

Raksha Mantri appreciated the logistics support being provided by the Armed Forces in transporting oxygen containers from abroad as well as within the country between places of consumption and production. While transport aircraft of the Indian Air Force (IAF) carried out several sorties from Singapore, Bangkok, Dubai and within the country, Indian Navy dispatched four ships – two to Middle east and two to South East Asia – to transport filled oxygen containers to India. As on May 01, 2021, IAF carried out 28 sorties from abroad, airlifting 47 oxygen containers with 830 MT of capacity, while from within the country, it carried out 158 sorties, airlifting 109 containers with 2,271 MT capacity. The Navy and the Air Force have also supplied nearly 500 portable oxygen cylinders from their stores to various civilian hospitals.

Defence Public Sector Undertakings (DPSUs) are procuring 28 oxygen plants and other medical equipment worth Rs 40 crore under CSR for supplying to various hospitals in states. Hindustan Aeronautics Limited (HAL) has set up a 250-bed hospital in Bengaluru. Another 250-bed hospital is being set up in Lucknow.

Shri Rajnath Singh reiterated that the Armed Forces should provide all necessary assistance to civilian administration and asked the officials of Ministry of Defence and the three Services to closely monitor the progress of various initiatives.

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1715366>



पत्र सूचना कार्यालय
भारत सरकार
रक्षा मंत्रालय

Sat, 01 May 2021 5:02PM

रक्षा मंत्री श्री राजनाथ सिंह ने कोविड-19 की दूसरी लहर के खिलाफ लड़ाई में रक्षा मंत्रालय और सशस्त्र बलों के प्रयासों की समीक्षा की

अतिरिक्त संख्या में स्वास्थ्यकर्मियों को जुटाना, ऑक्सीजन की आपूर्ति को सुगम बनाने के लिए लॉजिस्टिक सहायता देना और नए ऑक्सीजन संयंत्र स्थापित करना सर्वोच्च प्राथमिकता है

रक्षा मंत्री श्री राजनाथ सिंह ने 01 मई, 2021 को वीडियो कॉन्फ्रेंसिंग के जरिए देश में वर्तमान कोविड - 19 की स्थिति के खिलाफ लड़ाई में नागरिक प्रशासन की मदद करने के लिए रक्षा मंत्रालय और सशस्त्र बलों के प्रयासों की समीक्षा की। इस बैठक में रक्षा प्रमुख जनरल बिपिन रावत, रक्षा सचिव डॉ. अजय कुमार, नौसेना प्रमुख एडमिरल करमबीर सिंह, वायुसेना प्रमुख एयर चीफ मार्शल आर. के. एस. भदौरिया, थलसेना प्रमुख जनरल एम. एम. नरवाने, रक्षा (अनुसंधान एवं विकास) विभाग के सचिव और रक्षा अनुसंधान एवं विकास संगठन (डीआरडीओ) के अध्यक्ष डॉ. जी.सतीश रेड्डी, सशस्त्र बल चिकित्सा सेवा (एएफएमएस) के महानिदेशक सर्जन वाइस एडमिरल रजत दत्ता, एकीकृत रक्षा स्टाफ (मेडिकल) की उप - प्रमुख लेफ्टिनेंट जनरल माधुरी कानिटकर और अतिरिक्त सचिव (रक्षा उत्पादन) श्री संजय जाजू और रक्षा मंत्रालय के अन्य वरिष्ठ अधिकारी उपस्थित थे।

श्री राजनाथ सिंह को जानकारी दी गई कि पिछले कुछ वर्षों में सेवानिवृत्त हुए लोगों को ड्यूटी पर बुलाने जैसे विशेष उपायों के जरिए लगभग 600 अतिरिक्त डॉक्टरों की व्यवस्था की जा रही है। भारतीय नौसेना ने विभिन्न अस्पतालों में सहायता के लिए 200 बैटल फील्ड नर्सिंग सहायकों को तैनात किया है। राष्ट्रीय कैडेट कोर (एनसीसी) ने महाराष्ट्र, उत्तराखंड और हरियाणा के विभिन्न स्थानों पर 300 कैडेटों और कर्मचारियों को तैनात किया है। घर पर रह रहे रोगियों को परामर्श देने के लिए स्वास्थ्य सेवा से जुड़े वरिष्ठ कर्मियों द्वारा संचालित एक टेली मेडिसिन सेवा जल्द ही शुरू होगी। भारतीय सेना ने विभिन्न राज्यों में नागरिकों के लिए 720 से अधिक बिस्तर उपलब्ध कराए हैं। रक्षा मंत्री ने सेना को राज्य और जिला स्तरों पर स्थानीय प्रशासन के साथ संपूर्ण विवरण साझा करने का निर्देश दिया। जनरल बिपिन रावत ने सुझाव दिया कि स्थानीय सैन्य कमांड को नागरिक प्रशासन की सहायता के लिए सक्रिय रूप से जुटना होगा।

श्री राजनाथ सिंह को यह भी जानकारी दी गई कि डीआरडीओ द्वारा लखनऊ में स्थापित किया जा रहा 500 बिस्तरों वाला अस्पताल अगले 2-3 दिनों में काम करना शुरू कर देगा। एक और अस्पताल वाराणसी में भी स्थापित किया जा रहा है, जिसे 5 मई तक पूरा किया जाना है। डीआरडीओ के अध्यक्ष ने बताया कि

पीएम केयर फंड के तहत निर्मित होने वाले 380 ऑक्सीजन पीएसए (प्रेसर स्विंग एडसॉर्प्शन) संयंत्रों में से पहले चार को अगले सप्ताह तक नई दिल्ली के अस्पतालों में तैनात किया जाएगा।

रक्षा मंत्री ने सशस्त्र बलों द्वारा विदेशों से और साथ ही देश के भीतर उपभोग और उत्पादन के स्थानों के बीच ऑक्सीजन कंटेनरों के परिवहन में प्रदान की जा रही सहायता की सराहना की। भरे हुए ऑक्सीजन कंटेनरों को भारत लाने के लिए भारतीय वायु सेना (आईएएफ) के परिवहन विमानों ने सिंगापुर, बैंकाक, दुबई और देश के भीतर से कई उड़ानें भरीं और भारतीय नौसेना ने चार जहाजोंको - दो को मध्य - पूर्व और दो को दक्षिण - पूर्व एशिया - भेजा। भारतीय वायु सेना ने 1 मई, 2021 को 830 मीट्रिक टन क्षमता वाले 47 ऑक्सीजन कंटेनरों की ढुलाई करने के लिए विदेशों से 28 उड़ानें भरीं। जबकि देश के भीतर, इसने 158 उड़ानें भरकर 2,271 मीट्रिक टन क्षमता वाले 109 कंटेनरों की ढुलाई की। नौसेना और वायु सेना ने अपने भंडारों में से विभिन्न नागरिक अस्पतालों को लगभग 500 पोर्टेबल ऑक्सीजन सिलेंडरों की आपूर्ति भी की है।

रक्षा से जुड़े सार्वजनिक क्षेत्र के उपक्रम (डीपीएसयू) सीएसआर के तहत अलग - अलग राज्यों के विभिन्न अस्पतालों में आपूर्ति के लिए 40 करोड़ रुपये की लागत से 28 ऑक्सीजन संयंत्र और अन्य चिकित्सा उपकरण खरीद रहे हैं। हिंदुस्तान एयरोनॉटिक्स लिमिटेड (एचएएल) ने बेंगलुरु में 250 बिस्तरों वाला एक अस्पताल स्थापित किया है। 250 बिस्तरों वाला एक और अस्पताल लखनऊ में स्थापित किया जा रहा है।

श्री राजनाथ सिंह ने इस बात को दोहराया कि सशस्त्र बलों को नागरिक प्रशासन को सभी आवश्यक सहायता प्रदान करनी चाहिए। उन्होंने रक्षा मंत्रालय एवं तीनों सेवाओं के अधिकारियों से विभिन्न पहलों की प्रगति पर बारीकी से निगरानी रखने को कहा।

<https://pib.gov.in/PressReleasePage.aspx?PRID=1715443>

Indian Army needs innovation, not imitation to check-mate China in border conflict – Experts

By Jayanta Kalita

As the Indian Army plans to procure lightweight tanks in view of the protracted border conflict with China, experts are examining whether this is a knee-jerk reaction or it has long-term benefits.

Last week, The EurAsian Times reported that the Indian Army has issued a Request for Information (RFI) to acquire 350 indigenous light tanks that can easily maneuver at high-altitude battlefields and rival the much-publicized Chinese T-15 tanks.

After China swiftly deployed T-15 tanks and later VT-4 during the Ladakh standoff last year, New Delhi gave the green light to the emergency procurement of lightweight tanks. This led to a debate within India's defense circles on whether to import light tanks for quick use or to develop indigenous products.

One option that was looked at was the Russian 18-ton amphibious 'Sprut-SD' with its 125mm gun. A major advantage was its commonality of ammunition with the army's existing T-90 and T-72 tanks which are also of Russian origin.

Others had questioned whether India would choose domestic means and either approve already pitched DRDO plans to modify BMP-1 (an infantry fighting vehicle) or combine the K9 'Vajra' 155 mm self-propelled howitzer with DRDO designs. In the end, India decided to focus on its 'Make in India' scheme but with fresher proposals.

These developments have led to various expert opinions within the defense sector which recommend far-sighted policies.

Innovation Is The Key

Rather than a stand-alone light tank, the Army should go for a multi-purpose combat platform, Lt Gen H S Panag (Retd) wrote in ThePrint. This platform could have two basic variants — light tank and Infantry Carrier Vehicle (ICV)/Armoured Personnel Carrier (APC), and additional configurations for multiple combat/combat support tasks.

The American Stryker eight-wheeled armored vehicle, with its family of ten different vehicles on a common chassis, can be used as a model.

Lt Gen Panag also supports reforms in the current system of traditional divisions/brigades which he criticizes as inefficient and outdated. Combined Arms Battle Groups (CABG) can be used as the new system of formation in eastern Ladakh. Such a formation can combine an efficient proportion of infantry battalion and mechanized brigade.

In this restructured model, the light tanks will be integrated and augmented with medium tanks due to the varying terrain of Ladakh.

While the former has agility in passes (such as Rezang La and Rechin La) and the ridge line (such as Kailash Range) and is more suited for high altitude combat and amphibious operations (such as in Pangong Tso), the latter is befitted for the broader valleys and plateaus (such as the Chushul bowl, Tibetan plateau and Depsang Plains).

The narrow focus on Ladakh has been questioned by Lt General K. J. Singh (Retd) who pointed out the need for adaptability in any situation, preferably through a versatile weapon. His idea of a modular approach to set up a common chassis while mounting different variants on top, according to terrain and role echoes Panag's words.

As light tanks cannot carry troops, combat support and air defense through Infantry Combat Vehicles will need to be grouped together with light tanks, according to Major General Birender Dhanoa (Retd).

Additionally, we do need to figure out if light tanks are going to be applicable in the future battlefield that may or may not match what the establishment has in mind when they firm in the light tank requirement,” Dhanoa told ThePrint.

All these opinions show that India should not have immediate knee-jerk reactions to the present situation but far-sighted planning which takes into account future circumstances.

India should probably not fixate on getting what China has but think of ways to find the chinks in its armor or advanced technology which can complete out-do any adversary.

Nitin J Ticku a strategic analyst told the EurAsian Times – look at Turkey and what their drones did during the Armenia-Azerbaijan war. Even with the best of Russian-origin tanks and armored vehicles, the Armenians had no answer to Turkish Bayraktar tb2 drones that devastated their defenses.

Even if we look at the Soviet invasion of Afghanistan, the Americans equipped the Taliban with innovative stinger missiles to counter the then super-power – USSR and surprisingly Soviets had no answer to the US-origin missiles which eventually led to their withdrawal.

Innovation is the key, rather than imitating the opponents. If India wants to check-mate China in the border conflict, New Delhi needs to innovate instead of merely match tank for a tank, Ticku concluded.

<https://eurasianimes.com/indian-army-needs-innovation-not-imitation-to-check-mate-china-in-border-conflict-experts/>



Sun, 02 May 2021

Rafale + Rafael: How India’s military might has quadrupled with the induction of French, Israeli defense tech?

By Ayush Jain

Rafale and Rafael are the latest buzzwords in India’s military circles. And together, they could increase the country’s military might and ensure India’s dominance in South Asia and beyond.

To begin with, the French Dassault Rafales are the latest addition to the Indian Air Force’s (IAF) fighter fleet and the Israeli defense firm Rafael (not to be confused with Dassault Rafale) has provided the much-needed boost to India’s firepower by supplying various munitions.

The Indian Air Force’s 2019 Balakot airstrikes changed the geopolitical equation and projected India as an emerging Asian power willing to go the extra mile to combat terrorism.

The precision strike aircraft used by the IAF was a French Dassault Mirage-2000 armed with Israeli Rafael-made SPICE 2000 precision munitions. That time too, the French-Israeli amalgamation worked for the IAF and will continue to in the future.

The latest addition to Indian Air Force’s strike fleet, the French Rafale fighters, are manufactured by the same Dassault company which made the Mirage-2000.

A twin-engine omnirole combat aircraft, the Rafale is a 4.5 generation fighter jet with a delta wing and canard design capable of air supremacy, interdiction, aerial reconnaissance, ground support, in-depth strike, anti-ship strike, and nuclear deterrence missions armed with advanced weaponry including air-launched cruise missiles.

India had signed an order for 36 Rafales back in 2016 in a government-to-government deal for an estimated cost of €7.8 billion.

The Rafales are combat-proven and have been used extensively in Afghanistan and Libya. The aircraft are also being used in combating Jihadist Terrorists in Mali and against the Islamic State in Syria.

Earlier this month The EurAsian Times reported France is developing an advanced version of its Rafale fighter aircraft that would come with enhanced stealth, powerful electronic warfare systems, and new weapons.

The F4 generation of the Dassault Rafale is backed by an investment of \$2.3 billion by the French defense ministry, announced in January 2019.

According to defense journalist Younis Dar, the French company has even offered the F4 version to India, where the demand for the latest generation aircraft remains high.

Israeli Firm, Rafael

Rafael Advanced Defense Systems Ltd., or commonly known as Rafael, is an Israeli defense technology company, which develops and manufactures missiles and military technology.

These military products are advanced and have been combat-tested with robust operational history including the venerable Iron Dome air defense system and missiles like Python and Derby.

A variety of ammunition used by the Indian Air Force is made by Rafael, including Python air-to-air missiles, Derby beyond-visual-range air-to-air missiles (BVRAAM), spice bombs among others.

Recently, the IAF test-fired Python-5 and Derby AAM from its latest Tejas fighter jet, marking a significant achievement for the service. The IAF also operates SAM system based on these missiles named SPYDER (Surface to air PYthon and DERby).

Notably, SPYDER was used by the IAF to destroy a Pakistani drone during Balakot airstrikes. However, the next day, an Indian fighter jet mistakenly shot down a friendly Mi-17V5 over Kashmir.

Also, the Indian Army had been evaluating the Spike anti-tank and anti-personnel guided-missile made by Raytheon.

Nevertheless, the Israeli weapon systems have been an important asset for the Indian Air Force's strike inventory.

Not just the Indian Air Force, Rafael has been involved in various technological advancements like the Protector USV — the world's first Unmanned Surface Vehicle, and Trophy — the world's second operational active protection system, which was combat tested when it stopped an anti-tank missile launched from the Gaza Strip toward a Merkava Mark IV tank near Nir Oz.

These combat-proven and battle-hardened Israeli systems have been lauded worldwide and hold many records. For instance, the Iron Dome air defense system has achieved an effectiveness rate of over 90%.

This combination of Rafale and Rafael goes well with the enhancement of the Indian Air Force's strike capabilities, and we could surely see Rafale escorted by Rafael-made ammunition equipped Flankers and Mirages making for the most superior and lethal combination in South Asia.

<https://eurasianimes.com/rafale-rafael-how-indias-military-might-has-quadrupled-with-the-induction-of-french-israeli-defense-tech/>

US Oks sale of additional P-8I Patrol aircraft to Indian Navy worth \$2.42 Billion

The US has approved to sell \$2.42 billion worth of P-8I patrol aircraft to India, according to an announcement by the Defense Security Cooperation Agency (DSCA) on Friday.

“The State Department has made a determination approving a possible Foreign Military Sale to the Government of India of six (6) P-8I Patrol aircraft and related equipment for an estimated cost of \$2.42 billion,” the DSCA said.

The proposed sale, which has been sent to Congress for further approval, also includes GPS, anti-missile, and tactical radio systems among other related technologies intended for use with the aircraft.

The equipment is intended to help the US support its own foreign policy and national security objectives in the region in cooperation with India, which is a major US partner in the Indo-Pacific and South Asian regions.

As part of the proposed deal, India would also buy a number of subsystems, some apparently intended for previously ordered examples of the P-8I. The Indian Navy bought eight P-8I aircraft in 2009 and contracted for four more aircraft in 2016.

The P-8 is designed to conduct long-range anti-submarine warfare, anti-surface warfare, and intelligence, surveillance and reconnaissance missions. The P-8s also has a bomb bay that can drop sonobuoys and torpedoes, as well as hardpoints on its wings for anti-ship missiles.

India is a partner of increasing importance due to its population of 1.4 billion people and its fast-growing economy. It is also part of the Quadrilateral Security Dialogue, known popularly as “the Quad”, an informal group of four nations, that includes Australia, Japan and the USA, which periodically hold diplomatic talks.

<https://eurasianimes.com/us-oks-sale-of-additional-p-81-patrol-aircraft-to-indian-navy-worth-2-42-billion/>

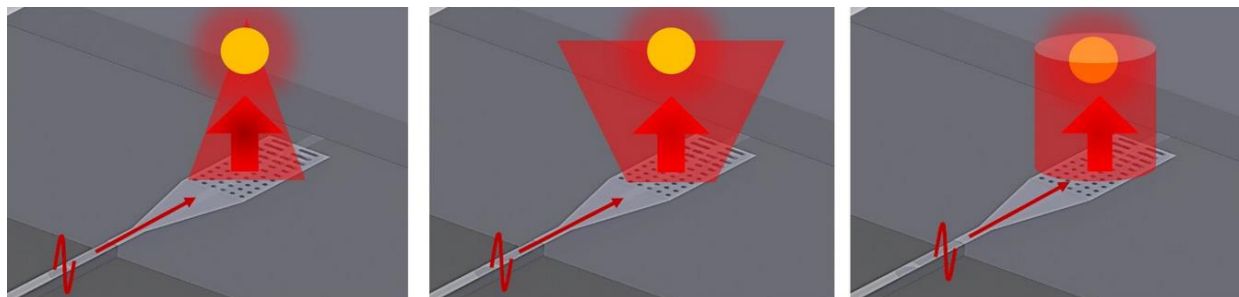
Nano flashlight could allow future cell phones to detect viruses, more

By Elizabeth A. Thomson

In work that could turn cell phones into sensors capable of detecting viruses and other minuscule objects, MIT researchers have built a powerful nanoscale flashlight on a chip.

Their approach to designing the tiny light beam on a chip could also be used to create a variety of other nano flashlights with different beam characteristics for different applications. Think of a wide spotlight versus a beam of light focused on a single point.

Scientists have long used light to identify a material by observing how that light interacts with the material. They do so by essentially shining a beam of light on the material, then analyzing that light after it passes through the material. Because all materials interact with light differently, an analysis of the light that passes through the material provides a kind of "fingerprint" for that material. Imagine doing this for several colors, i.e. several wavelengths of light, and capturing the interaction of light with the material for each color. That would lead to a fingerprint that is even more detailed.



Schematic of three different nano flashlights for the generation of, left to right, focused, wide-spanning, and collimated beams. Each could have different applications. Credit: Robin Singh

Most instruments for doing this, known as spectrometers, are relatively large. Making them much smaller would have a number of advantages. For example, they could be portable and have additional applications (imagine a futuristic cell phone loaded with a self-contained sensor for a specific gas). However, while researchers have made great strides towards miniaturizing the sensor for detecting and analyzing the light that has passed through a given material, a miniaturized and appropriately shaped light beam—or flashlight—remains a challenge. Today that light beam is most often provided by macroscale equipment like a laser system that is not built into the chip itself as the sensors are.

Complete Sensor

Enter the MIT work. In two recent papers in *Nature Scientific Reports*, the team describes not only their approach for designing on-chip flashlights with a variety of beam characteristics, they also report building and successfully testing a prototype. Importantly, they created the device using existing fabrication technologies familiar to the microelectronics industry, so they are confident that the approach could be deployable at a mass scale with the lower cost that implies.

Overall, this could enable industry to create a complete sensor on a chip with both light source and detector. As a result, the work represents a significant advance in the use of silicon photonics for the manipulation of light waves on microchips for sensor applications.

"This work is significant, and represents a new paradigm of photonic device design, enabling enhancements in the manipulation of optical beams," says Dawn Tan, an associate professor at the Singapore University of Technology and Design who was not involved in the research.

"Silicon photonics has so much potential to improve and miniaturize the existing bench-scale biosensing schemes. We just need smarter design strategies to tap its full potential. This work shows one such approach," says Robin Singh, lead author of both papers. Singh received the MS (2018) and Ph.D. (2020) from MIT, both in mechanical engineering.

The senior coauthors on the first paper are Anuradha Murthy Agarwal, a principal research scientist in MIT's Materials Research Laboratory, and Brian W. Anthony, a principal research scientist in MIT's Department of Mechanical Engineering. Singh's coauthors on the second paper are Agarwal; Anthony; Yuqi Nie, now at Princeton University; and Mingye Gao, a graduate student in MIT's Department of Electrical Engineering and Computer Science.

How They Did It

Singh and colleagues created their overall design using multiple computer modeling tools. These included conventional approaches based on the physics involved in the propagation and manipulation of light, and more cutting-edge machine-learning techniques in which the computer is taught to predict potential solutions using huge amounts of data. "If we show the computer many examples of nano flashlights, it can learn how to make better flashlights," says Anthony. Ultimately, "we can then tell the computer the pattern of light that we want, and it will tell us what the design of the flashlight needs to be."

All of these modeling tools have advantages and disadvantages; together they resulted in a final, optimal design that can be adapted to create flashlights with different kinds of light beams.

The researchers went on to use that design to create a specific flashlight with a collimated beam, or one in which the rays of light are perfectly parallel to each other. Collimated beams are key to some types of sensors. The overall flashlight that the researchers made involved some 500 rectangular nanoscale structures of different dimensions that the team's modelling predicted would enable a collimated beam. Nanostructures of different dimensions would lead to different kinds of beams that in turn are key to other applications.

The tiny flashlight with a collimated beam worked. Not only that, it provided a beam that was five times more powerful than is possible with conventional structures. That's partly because "being able to control the light better means that less is scattered and lost," says Agarwal.

Singh describes the excitement he felt upon creating that first flashlight. "It was great to see through a microscope what I had designed on a computer. Then we tested it, and it worked!"

This research was supported in part by the MIT Skoltech Initiative.

As a Principal Research Scientist in the Microphotonics Center and the Initiative for Knowledge and Innovation in Manufacturing (IKIM), Agarwal acknowledges her colleagues for providing the fertile intellectual environment for this work.

Additional MIT facilities and departments that made this work possible are the Department of Materials Science and Engineering, the Materials Research Laboratory, the Institute for Medical Engineering & Science, and MIT.nano.

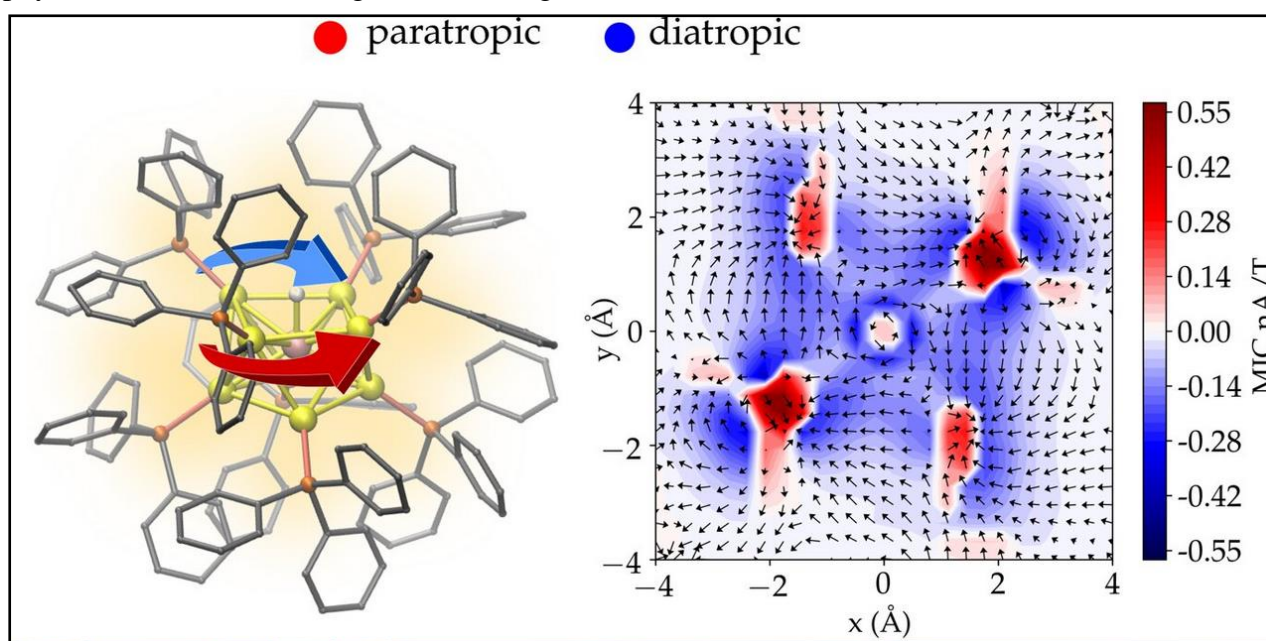
More information: www.nature.com/articles/s41598-020-76225-9 Robin Singh et al. Design of optical meta-structures with applications to beam engineering using deep learning, *Scientific Reports* (2020). DOI: [10.1038/s41598-020-76225-9](https://doi.org/10.1038/s41598-020-76225-9)

Robin Singh et al. Inverse design of photonic meta-structure for beam collimation in on-chip sensing, *Scientific Reports* (2021). DOI: [10.1038/s41598-021-84841-2](https://doi.org/10.1038/s41598-021-84841-2)

Journal information: *Scientific Reports*
<https://phys.org/news/2021-04-nano-flashlight-future-cell-viruses.html>

Researchers analyze circulating currents inside gold nanoparticles

According to classical electromagnetism, a charged particle moving in an external magnetic field experiences a force that makes the particle's path circular. This basic law of physics are exploited in designing cyclotrons that work as particle accelerators. When nanometer-size metal particles are placed in a magnetic field, the field induces a circulating electron current inside the particle. The circulating current in turn creates an internal magnetic field that opposes the external field. This physical effect is called magnetic shielding.



The atomic structure of a gold nanoparticle protected by phosphine molecules (left) and magnetic-field-induced electron currents in a plane intersecting the center of the particle (right). The total electron current consists of two (paratropic and diatropic) components circulating in opposite directions. Credit: Omar Lopez Estrada/University of Jyväskylä

The strength of the shielding can be investigated by using nuclear magnetic resonance (NMR) spectroscopy. The internal magnetic shielding varies strongly in an atomic-length scale, even inside a nanometer-size particle. Understanding these atom-scale variations is possible only by employing quantum mechanical theory of the electronic properties of each atom making the nanoparticle.

Now, the research group of Professor Hannu Häkkinen at the University of Jyväskylä, in collaboration with University of Guadalajara in Mexico, developed a method to compute, visualize and analyze the circulating electron currents inside complex 3D nanostructures. The method was applied to gold nanoparticles with a diameter of only about one nanometer.

The calculations shed light onto unexplained experimental results from previous NMR measurements in the literature regarding how magnetic shielding inside the particle changes when one gold atom is replaced by one platinum atom.

A new quantitative measure to characterize aromaticity inside metal nanoparticles was also developed based on the total integrated strength of the shielding electron current.

"Aromaticity of molecules is one of the oldest concepts in chemistry, and it has been traditionally connected to ring-like organic molecules and to their delocalized valence electron density that can develop circulating currents in an external magnetic field. However, generally

accepted quantitative criteria for the degree of aromaticity have been lacking. Our method yields now a new tool to study and analyze electron currents at the resolution of one atom inside any nanostructure, in principle. The peer reviewers of our work considered this as a significant advancement in the field," says Professor Häkkinen who coordinated the research.

More information: Omar López-Estrada et al. Magnetically induced currents and aromaticity in ligand-stabilized Au and AuPt superatoms, *Nature Communications* (2021). DOI: [10.1038/s41467-021-22715-x](https://doi.org/10.1038/s41467-021-22715-x)

Journal information: [Nature Communications](https://phys.org/news/2021-04-circulating-currents-gold-nanoparticles.html)
<https://phys.org/news/2021-04-circulating-currents-gold-nanoparticles.html>



Sat, 01 May 2021

Researchers develop compact on-chip device for detecting electric-field waveforms with attosecond time resolution

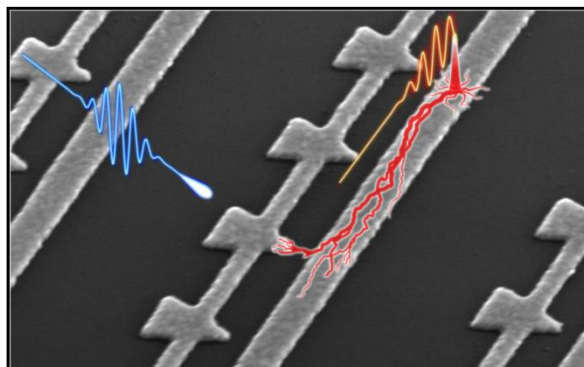
Understanding how light waves oscillate in time as they interact with materials is essential to understanding light-driven energy transfer in materials, such as solar cells or plants. Due to the fantastically high speeds at which light waves oscillate, however, scientists have yet to develop a compact device with enough time resolution to directly capture them.

Now, a team led by MIT researchers has demonstrated chip-scale devices that can directly trace the weak electric field of light waves as they change in time. Their device, which incorporates a microchip that uses short laser pulses and nanoscale antennas, is easy to use, requiring no special environment for operation, minimal laser parameters, and conventional laboratory electronics.

The team's work, published earlier this month in *Nature Photonics*, may enable the development of new tools for optical measurements with applications in areas such as biology, medicine, food safety, gas sensing, and drug discovery.

"The potential applications of this technology are many," says co-author Phillip Donnie Keathley, group leader and Research Laboratory of Electronics (RLE) research scientist. "For instance, using these optical sampling devices, researchers will be able to better understand optical absorption pathways in plants and photovoltaics, or to better identify molecular signatures in complex biological systems."

Keathley's co-authors are lead author Mina Bionta, a senior postdoc at RLE; Felix Ritzkowski, a graduate student at the Deutsches Elektronen-Synchrotron (DESY) and the University of Hamburg who was an MIT visiting student; and Marco Turchetti, a graduate student in RLE. The team was led by Keathley working with professors Karl Berggren in the MIT Department of Electrical Engineering and Computer Science (EECS); Franz Kärtner of DESY and University of Hamburg in Germany; and William Putnam of the University of California at Davis. Other co-authors are Yujia Yang, a former MIT postdoc now at École Polytechnique Fédérale de Lausanne (EPFL), and Dario Cattozzo Mor, a former visiting student.



As a laser illuminates these nanometer-scale devices (blue wave), attosecond electron flashes are generated (red pulse) at the ends of nanotips and used to trace out weak light fields (red wave). Credit: Marco Turchetti

The ultrafast meets the ultrasmall—time stands still at the head of a pin

Researchers have long sought methods for measuring systems as they change in time. Tracking gigahertz waves, like those used for your phone or Wi-Fi router, requires a time resolution of less than 1 nanosecond (one-billionth of a second). To track visible light waves requires an even faster time resolution—less than 1 femtosecond (one-millionth of one-billionth of a second).

The MIT and DESY research teams designed a microchip that uses short laser pulses to create extremely fast electronic flashes at the tips of nanoscale antennas. The nanoscale antennas are designed to enhance the field of the short laser pulse to the point that they are strong enough to rip electrons out of the antenna, creating an electronic flash that is quickly deposited into a collecting electrode. These electronic flashes are extremely brief, lasting only a few hundred attoseconds (a few one-hundred-billionths of one-billionth of 1 second).

Using these fast flashes, the researchers were able to take snapshots of much weaker light waves oscillating as they passed by the chip.

"This work shows, once more, how the merger of nanofabrication and ultrafast physics can lead to exciting insights and new ultrafast measurements tools," says Professor Peter Hommelhoff, chair for laser physics at the University of Erlangen-Nuremberg, who was not connected with this work. "All this is based on the deep understanding of the underlying physics. Based on this research, we can now measure ultrafast field waveforms of very weak laser pulses."

The ability to directly measure light waves in time will benefit both science and industry, say the researchers. As light interacts with materials, its waves are altered in time, leaving signatures of the molecules inside. This optical field sampling technique promises to capture these signatures with greater fidelity and sensitivity than prior methods while using compact and integratable technology needed for real-world applications.

More information: Mina R. Bionta et al. On-chip sampling of optical fields with attosecond resolution, *Nature Photonics* (2021). DOI: [10.1038/s41566-021-00792-0](https://doi.org/10.1038/s41566-021-00792-0)

Journal information: [Nature Photonics](https://www.nature.com/articles/s41566-021-00792-0)
<https://phys.org/news/2021-04-compact-on-chip-device-electric-field-waveforms.html>

New research: Besides initiating infection, coronavirus spike protein has key role in illness

The paper also finds that Covid-19 is a vascular disease, demonstrating exactly how the SARS-CoV-2 virus damages and attacks the vascular system (comprising the blood vessels) on a cellular level

New Delhi: Scientists have known for a while that SARS-CoV-2's spike proteins help the virus infect its host by latching on to healthy cells. Now, a major new study shows that the spike proteins also play a key role in the disease itself.

The paper, published on April 30 in the journal *Circulation Research*, also finds that Covid-19 is a vascular disease, demonstrating exactly how the SARS-CoV-2 virus damages and attacks the vascular system (comprising the blood vessels) on a cellular level. The findings help explain Covid-19's wide variety of seemingly unconnected complications, and could open the door for new research into more effective therapies, the Salk Institute said in a media release. Salk researchers collaborated with scientists at the University of California San Diego on the paper.

"A lot of people think of it as a respiratory disease, but it's really a vascular disease. That could explain why some people have strokes, and why some people have issues in other parts of the body. The commonality between them is that they all have vascular underpinnings," the Salk Institute quoted Professor Uri Manor, co-senior author of the study, as saying.

There's been a growing consensus that SARS-CoV-2 affects the vascular system, but exactly how it did so was not understood. Similarly, scientists studying other coronaviruses have long suspected that the spike protein contributed to damaging vascular endothelial cells, but this is the first time the process has been documented. So, the findings themselves aren't entirely a surprise. But the paper provides for the first time clear confirmation and a detailed explanation of the mechanism through which the protein damages vascular cells, the Salk Institute said.

In the new study, the researchers created a "pseudovirus" that was surrounded by SARS-CoV-2 classic crown of spike proteins, but did not contain any actual virus. Exposure to this pseudovirus resulted in damage to the lungs and arteries of an animal model—proving that the spike protein alone was enough to cause disease. Tissue samples showed inflammation in endothelial cells lining the pulmonary artery walls.

The team then replicated this process in the lab, exposing healthy endothelial cells (which line arteries) to the spike protein. They showed that the spike protein damaged the cells by binding ACE2 (a human protein). This binding disrupted ACE2's molecular signalling to mitochondria (organelles that generate energy for cells), causing the mitochondria to become damaged and fragmented. Previous studies have shown a similar effect when cells were exposed to the SARS-CoV-2 virus, but this is the first study to show that the damage occurs when cells are exposed to the spike protein on its own, the Salk Institute said.

"If you remove the replicating capabilities of the virus, it still has a major damaging effect on the vascular cells, simply by virtue of its ability to bind to this ACE2 receptor, the S protein receptor, now famous thanks to COVID. Further studies with mutant spike proteins will also provide new insight towards the infectivity and severity of mutant SARS CoV-2 viruses," Manor was quoted as saying.

<https://indianexpress.com/article/explained/covid-infection-coronavirus-spike-protein-7297338/>

