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समाचार पत्रों से चयित अंश

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THE HINDU

Mon, 20 April 2020

DRDO to put up mobile viral research lab at ESIC Hospital

Two local companies identified to build the bio-safety level 3 lab

Defence Research & Development Organisation (DRDO), which has joined the battle against COVID-19 with gusto, is planning to introduce yet another novel facility — a viral research lab. It is going to be bio-safety level 3 lab with self-locking doors, negative pressure, high efficiency filters, ante-room etc.

Now that testing has become an important feature to control the pandemic spread, scientists say the clinical specimen inactivation should be performed in such a Bio-safety Level-3 (BSL3) laboratory as the pathogenicity of COVID-19 is not completely known yet.

Since constructing a permanent fixed bio-safety facility will take much time and resources, the premier defence lab has configured a mobile BSL3 with both bio-safety and flexibility urgently needed to handle the pandemic. Two local companies — ICOMM specialising in fabrication of shelters and iClean, a turnkey design and build company with years of experience in building the containment facilities — have been identified to build the lab.

Work is in progress at iClean to build mobile mobile BSL-3 lab for the ESIC Hospital in Erragadda to start screening patients immediately and it will also be useful for conducting research projects related to drug discovery, therapeutics and vaccine development in collaborations with other scientific organisations. "BSL3 lab is mandatory for live virus cultures and having this facility is the main criteria to get funding from research projects," they explained.

With viral outbreaks pretty frequent in the country, there is a need for timely diagnosis for an appropriate public health response to prevent any epidemics and this is where bio-safety labs play a key role in diagnostics. "This first of its kind mobile lab can be moved and scaled up quickly to speed up COVID-19 screening as we have only four BSL3 labs in the country," they informed.

This mobile lab can be put up at different places, is capable of screening 1,000 samples a day, provides safety to the personnel and helps identify unknown viruses causing significant morbidity in the community due to epidemics and/or potential agents for bio-terrorism. Public health authorities can also understand and conduct surveillance of existing and new viruses, develop diagnostic kits and undertake research for identification of newer genetically active/ modified agents, they added.

https://www.thehindu.com/news/cities/Hyderabad/drdo-to-put-up-mobile-viral-research-lab-at-esic-hospital/article31382643.ece

THE FINANCIAL EXPRESS

Mon, 20 April 2020

Coronavirus pandemic: DRDO ramps up the fight against COVID-19! Here's how

The DRDO had earlier developed Personnel Sanitisation Enclosure (PSE), sanitisers, personal protective equipment (PPE), detection kits as well as ventilators to better equip the country in dealing with the disease

By Bulbul Dhawan

Coronavirus in India: The Defence Research and Development Organisation (DRDO) has been continuously using the existing technology and developing products that would help the country tackle the COVID-19 pandemic more effectively. Earlier, it had created Personnel Sanitisation Enclosure (PSE), sanitisers, personal protective equipment (PPE), detection kits as well as ventilators to better equip the country in dealing with the disease. The DRDO has now enhanced its list of products and included two more technologies – automatic mist-based sanitiser dispensing unit and UV sanitisation box and hand-held UV device, the military research organisation said in a press release.

Automatic Mist-Based Sanitiser Dispensing Unit

The DRDO's Centre for Fire Explosive and Environment Safety (CFEES), Delhi, applied the mist technology it uses in fire suppression to develop an automatic sanitiser dispenser, a contactless unit which sprays alcohol-based handrub sanitiser to be used at the entrances of offices and buildings. The water mist aerator technology has been used in the dispensing unit and the technology was designed to conserve water.

The UV-C radiation warps the structure of the RNA, preventing the coronavirus from multiplying. (Image: DRDO)

The unit is activated without contact with the help of an ultrasonic sensor. The mist is dispensed from a single nozzle and the rate of flow is low in order to minimise wastage. The dispenser releases 5-6ml of solution over 12 seconds in one go, and the dispensation is in the shape of a cone so that both the hands are covered with the solution, the DRDO statement said.

The compact unit also has the option to fill it in bulk, hence making it more economical for the establishments, and can be mounted on a wall or kept on a platform. Moreover, an LED light illuminates the spray of the mist to indicate operation. A unit has been installed at the DRDO Bhawan.

UV Sanitisation Box and Hand-held UV Device

Two of DRDO's Delhi laboratories – Defence Institute of Physiology and Allied Sciences (DIPAS) and Institute of Nuclear Medicine and Allied Sciences (INMAS) – have developed sanitisation box and hand-held device, both based on Ultraviolet-C (UV-C) light, which consists of a shorter wavelength particularly good at destroying the genetic material in COVID-19, the DRDO release said. The UV-C radiation warps the structure of the RNA, preventing the coronavirus from multiplying, it added.

The DRDO press release said that sanitisation of items using the UV-C-based items would help users in avoiding the harmful effects chemical disinfection can have, adding that their technology is environment friendly and also contactless.

Furthermore, while the box has been designed for disinfection of personal items like mobile phones, purse, tablets, currency, office file covers, etc, the hand-held device can be used to disinfect objects such as chairs, food packets, postal delivered packages and files etc in office as well as the households.

https://www.financialexpress.com/lifestyle/health/coronavirus-pandemic-drdo-ramps-up-the-fight-against-covid-19-heres-how/1933164/

THE HINDU

Sun, 19 April 2020

COVID-19 | Assam to use PPE kits from China only if doctors are satisfied with quality, says Health Minister

The kits will be used only after getting them tested for quality at DRDO or any other lab recognised by the Central government, said the Minister.

The Assam government has decided to use the Chinese **Personal Protective Equipment** (PPE) kits after doctors are satisfied with their quality, in view of allegations of having imported them by bending rules.

State Health Minister Himanta Biswa Sarma had last week said Assam was the first State in the country to directly order 50,000 PPEs from China. He also said the Centre, which had earlier imported such kits separately, had been kept in the loop.

The PPEs had come directly in a cargo flight from Guangzhou to Guwahati on the evening of April 15.

However, reports that the Defence Research and Development Organisation (DRDO) had trashed the PPEs, have made the State government decide not to use them for now. Mr. Sarma said he checked with the DRDO, which denied having rejected the kits.

"We barely had around 2,200 PPEs when he had ordered them from China. We have about 1.5 lakh PPEs now, brought from different parts of India and will use the ones brought from China only after getting them tested for quality at DRDO or any other lab recognised by the Government of India," he said on Saturday evening.

The Minister said reports implying the poor quality of the imported PPEs created anxiety among the doctors and nurses in Assam.

He asserted that the State government did not pay for the imported kits. Some private parties made the advance payment on behalf of the government on the condition that they may not be reimbursed, he added.

"One of the parties has been asked to store the 50,000 kits. We will not force the doctors to wear those even if they pass the test. They have to be satisfied first," Mr. Sarma said.

https://www.thehindu.com/news/national/other-states/covid-19-assam-to-use-ppe-kits-from-china-only-if-doctors-are-satisfied-with-quality-says-health-minister/article31380834.ece

Mon, 20 April 2020

Test Pilots explains why Pilots are not cleared to fly above 1.6Mach on LCA-Tejas

By Karan Thakur

Harsh Varshan Thakur who is Test Pilot with India's State-owned aerospace and defence company Hindustan Aeronautics Limited (HAL), recently explained on Twitter, why LCA-Tejas which was engineered to fly at 1.8M has been tested till 1.6M and why it will never be cleared to Pilots to fly beyond that. This particular query how SAAB's Gripen has 2.0M speed while using the same GE's F-404 engine India's LCA-Tejas max speed is limited to only 1.8M prompted his response.

Thakur explains that simple pilot type intake design used on LCA-Tejas is what prevents LCA-Tejas to have engineered speed of 2.0M while to achieve this speeds, LCA air intakes could have to re-done and also employ intakes cones as seen in Mirage-2000 and Mig-21 which moves move in or out of the intakes to maintain the shockwave in its the proper position, ahead of the first stage of the engine and need to be adjusted by the pilot.

Lack of intakes cones in LCA-Tejas means a hassle-free operation for the Pilot but this new phenomenon is not limited to LCA-Tejas alone but many are countries are now limiting Mach speed on many modern fighter jets after intense study and data collected over the years of the max speed at different attitudes as pointed by Thakur, who gives an example how below 22000 feet altitude Mach speed over 1.6 is not possible and a plane flying at Mach 1.8 has the advantage of only 60knot when it is above 28000 feet altitude.

In the cold war era, Mach speed mattered the most only in getaway drive and little actually in the combat, also in the cold war era, jets were not made to last 6000 hours of airframe life nor were to be operational for 40 years. lower production cost in the 60-70s meant those jets with higher max speeds could barely last beyond 20 years before airframe stress and hairline fractures on the fuselage could have grounded them for good but when jets became more expensive due to avionics and improved technology, many countries start studies effect of high-speed stress on the airframe and it was concluded that unnecessary high speed which has little advantages in combat scenarios should be avoided to prolong the airframe life of the jets.

The LCA-Tejas airframe has been engineered to achieve 1.8Mach speed and it was supposed to be tested till that speed to achieve its specification mark but that could not be done due to fear of possible FBW failure and loss of control due to excessive vibrations at that speed and max speed achieved was 1.6Mach, which now has become the gold standard of max speed in new jets to maintain a long life of the airframe and to also avoid critical premature airframe failures.

India's next two fighter jet programs like Medium Weight Fighter and AMCA will also have Max speed of 1.8Mach, but this time engineers and its developers plan to test to its limit but Pilots will always be told to keep it below 1.6Mach.

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https://idrw.org/test-pilots-explains-why-pilots-are-not-cleared-to-fly-above-1-6mach-on-lca-tejas/#more-225532

COVID-19: Defence Forces Contribution

The Tribune

Mon, 20 April 2020

Army tests ability of new beyond-visual-range drone

Trial carried out for delivery of Covid-19 items

By Ajay Banerjee

New Delhi: In an important development, the Indian Army has successfully tested an indigenous UAV for autonomous delivery of load over Punjab.

The test was carried out for delivery of Covid-19 items.

Crucially, the test proved an ability to operate at far-off ranges, at beyond visual line of sight, meaning the drone was remotely controlled either by a radar or another bigger UAV above it, and possibly the payload the drone could carry.

On the morning of April 16, three such 'Made in India' drones were tested over three villages of Abohar in Fazilka district in South-western part of Punjab. The task was 'anti-Covid' operations and to deliver essential supplies, including masks, liquid-sanitiser and medical canisters, sources from the area have confirmed.

Sources said the Army coordinated these tests with the district administration, it is clear such operations can be on a large scale by increasing the number of drones and enhancing the endurance and payload of each drone. The Army uses a few bigger drones for surveillance.

The villages of Gobindgarh, Balluana and Malukpura are located at distance of up to 25 km from the launch point and fall beyond visual line of sight range from base. These tests would probably have been one of the first-of-its-kind in India with a large medical delivery cargo carried by autonomous drones.

As per sources, the crucial part was releasing the payload with pinpoint accuracy. It was made to fly over the earmarked dropping zone, made to descend to a suitable height and release its payloads. Sources from the ground confirm that the payloads were received in good order.

Entire operation did not involve any human contact at the village zone, meaning the coordinates were fed into the drone to drop the payload and return to its base. Such a drone could be used to

send supplies to small locality or a village without exposing the relief workers to people infected with the virus.

It can also transport back crucial blood samples and other supplies from isolated places. The civil administration which included the Tehsildar and the DSP of Abohar and elected members of the three villages participated in the trials. Load carriage UAVs operating at beyond visual line of sight ranges will prove very beneficial not only under the Covid-19 operations, but also to support humanitarian disasters all across India in the years ahead.

https://www.tribuneindia.com/news/nation/army-tests-ability-of-new-beyond-visual-range-drone-73344

Mon, 20 April 2020

This AI-enabled drone will help deliver essentials and more: See how it works

A startup at a village in Kochi has developed an Unmanned Aerial Vehicle (UAV) drone supported with artificial intelligence that can help combat COVID-19 by monitoring body temperature, supplying essential commodities and spraying disinfectants. The unmanned 'Garud' has been designed and engineered by AI Aerial Dynamics at the Maker village, which is India's largest electronic hardware incubator.

The indigenously made drone can monitor roads and bylanes, besides residential pockets and aerodromes that have been locked down across the country since March 25 in an effort to check the spread of the deadly coronavirus.

Also, the aerial vehicle can collect thermal data by using an array of IR sensors and advanced digital technology called EDGE (Enhanced Data rates for GSM Evolution), thus working as a means to combating the pandemic.

The vehicle can collect swabs and samples of people for COVID-19 test. It has the capacity to carry weight up to 60 kg, thus facilitating distribution of even essential commodities if there is an exigency.

'Garud' features a modern sprayer which can be used to shower disinfectants from above. It has also a loudspeaker for public announcements.

AI Aerial Dynamics founder-CEO Vishnu V Nath said besides the AI-supported engine, the fully-automated Garud has a high-resolution camera, a facility to carry weight and thermal scanner.

"The visuals it generates can zoom into specifics with centimetre-level accuracy. The images it captures will be simultaneously saved in the operating unit on the ground. If the vehicle loses range or exhausts battery (capacity: 150 minutes), it will fly down to the point of take-off," said Nath.

https://idrw.org/this-ai-enabled-drone-will-help-deliver-essentials-and-more-see-how-it-works/#more-225555

THE TIMES OF INDIA

Mon, 20 April 2020

Armed forces and military assets adequately protected from coronavirus, says Rajnath Singh

New Delhi: The fight against coronavirus pandemic is the "biggest invisible war" facing the humanity and India is confronting it with excellent synergy between all key organs of the nation, defence minister Rajnath Singh said on Sunday.

In an interview to PTI, Singh said a wide spectrum of measures has been put in place to insulate the three services and their strategic assets from the deadly infection while keeping them fully prepared to deal with any possible threats including along the borders.

Singh, who is also heading a Group of Ministers on Covid-19, said well-thought- out protocols are being implemented aggressively to keep the forces fighting fit so that they continue to play an active role in dealing with the national crisis along with the other agencies.

"The fight against Covid-19 is possibly the biggest invisible war in our lifetime; a war against humanity and having various impact on health and economic security of the nation.

"We as a nation are fighting the crisis on a war footing," he said.

The defence minister also dispelled apprehensions that the pandemic may have impacted India's operational preparedness. There were concerns after 26 Navy personnel serving in the Western Naval Command tested positive for the infection.

"The Indian armed forces are prepared for all contingencies and I can assure you that we are prepared to defend our sovereignty from adversarial forces in all scenarios in land, air and sea," he said.

To emphasise operational preparedness of the military, Singh said the Indian Army is carrying out "targeted strikes" on terror launch pads along the Line of Control in Jammu and Kashmir and eliminating Pakistani infiltrators.

The defence minster said expertise of armed forces in communications, supply chain management, medical support and engineering are being used to combat the pandemic in the country besides extending a helping hand to several friendly nations.

"There is excellent synergy between all organs of the government and the services are geared to deal with any challenge arising out of the current situation," the minister said.

Singh said armed forces are taking a series of measures like curtailing movement of troops, restricting leave, enforcing work from home, maintaining social distancing and decontamination of barracks as preventive measures.

"A mandatory 14-day quarantine period is being enforced for all personnel, if coming from outside their stations, irrespective of rank. In case of ships, strict monitoring of all sailors is being done and disembarkation at foreign ports is being authorised only in emergencies," he added.

He said special precautions are being followed at ships and submarines where it is difficult to strictly follow social distancing norms.

"Every rank has been told to maintain a contact diary on a daily basis. All collective training has been stopped. Barring a few essential branches such as operations and intelligence, personnel from all other branches have been directed to work from home," he said.

Soldiers deployed along borders, especially in remotest regions, are safest as they are cut-off from all likely carriers of disease, he said adding the government is ensuring their safety by deploying fresh troops in the areas who have been medically validated as having no symptoms of the infection.

"In my opinion, with the kind of discipline within the forces, the risk of spread of infection is very low. However we are prepared for all contingencies," Singh said.

"In battling such an outbreak, the forces primarily have to be fighting fit. Services are strictly adhering to all instructions and guidelines being disseminated by PMO, Ministry of Health and our own medical authorities," he added.

The minister also said that the government has directed leading Defence public sector undertakings to produce medical equipment like ventilators, masks, Personal Protective Equipment (PPEs) and other equipment to address the problem of their shortages.

"The activities undertaken to fight the Covid-19 pandemic are part of ministry level coordinated action plan. All three services are working in sync under the common guidelines and directions promulgated by the Chief of Defence Staff," said Singh.

"The latent medical capacity of the armed forces as also the geographical disposition of medical manpower and resources has facilitated in rendering prompt assistance to civil authority and to check the virus spread in the armed forces fraternity," he said.

https://timesofindia.indiatimes.com/india/armed-forces-and-military-assets-adequately-protected-from-coronavirus-says-rajnath-singh/articleshow/75235658.cms

DNA

Mon, 20 April 2020

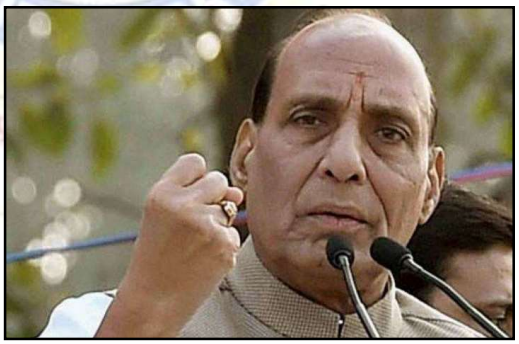
'It's a war against humanity': Defence Minister Rajnath Singh on COVID-19

He also said that it is a war against humanity and all government agencies are working in close coordination to defeat coronavirus

By Abhishek Sharma

As the nation continues to fight the coronavirus pandemic, Union Defence Minister Rajnath Singh on Sunday called it the biggest invisible war in lifetime. He also said that it is a war against humanity and all government agencies are working in close coordination to defeat coronavirus.

"Expertise of armed forces in communications, supply chain management, medical support and engineering being used: Rajnath Singh on COVID-19," news agency PTI quoted the Union Minister as saying.



Defence Minister Rajnath Singh

"Government directed leading DPSUs to produce medical equipment like ventilators, masks, PPEs and other equipment. Three services are strictly adhering to instructions by PMO, Health Ministry and their own medical bodies," he said.

The minister further said that the armed forces are taking preventive steps to ensure their safety from the virus.

"Mandatory 14-day quarantine being enforced for all personnel coming from outside any station, irrespective of rank. In case of ships, strict monitoring of sailors being undertaken; disembarkation at foreign ports authorised only in emergencies. Special precautions being taken on ships, submarines where it is difficult to strictly follow social distancing norms," he said.

"Every rank has been told to maintain contact diary on a daily basis; all collective training has been stopped," Singh further added.

The minister also informed that the personnel who do not have any symptoms of COVID-19 and have been medically validated are being posted on the borders.

https://www.dnaindia.com/india/report-it-s-a-war-against-humanity-defence-minister-rajnath-singh-on-covid-19-2821684

DECCAN Chronicle

Mon, 20 April 2020

India is fighting Covid-19 crisis on a war footing: Rajnath

Coronavirus crisis biggest invisible war, Armed forces and military assets adequately protected, says Rajnath Singh

New Delhi: India has put in place a robust mechanism to insulate the three services and their strategic assets from the coronavirus infection, Defence Minister Rajnath Singh said on Sunday, assuring that the military is fully prepared to defend the the country from "adversarial forces" though it was fighting the pandemic.

In an exclusive interview to PTI, Singh said the fight against the pandemic is the "biggest invisible war" in last several decades and India is acting on a war footing with proper coordination among all agencies concerned and support of people.

He said the Army, Navy and the Indian Air Force are strictly adhering to instructions issued by the Prime Minister's Office, the Health Ministry and their own medical bodies for protection against COVID-19.

"The fight against COVID-19 is possibly the biggest invisible war in our lifetime. A war against humanity and having various impact on health and economic security of the nation," he said.

"We as a nation are fighting the COVID-19 crisis on a war footing and all agencies of the government are working in close coordination. The armed forces are assisting the nation in its fight against coronavirus," Singh said.

Asked whether the pandemic has impacted operational aspects of the military, Singh said they are prepared for all contingencies and ready to defend India's sovereignty from adversarial forces in all scenarios.

Referring to the situation along the Line of Control in Jammu and Kashmir, the defence minister said India is dominating the enemy through targeted intelligence-based strikes on their launch pads.

"The Indian armed forces are prepared for all contingencies and I can assure you that we are prepared to defend our sovereignty from adversarial forces in all scenarios," he said.

His assertion comes amid apprehension about possible impact of the pandemic on the armed forces, particularly after 26 Indian Navy sailors were infected by the virus in the first such large-scale case of infection in the Indian military.

"As you would have gathered from the operations along the LoC (Line of Control) in the last two weeks, we are dominating the enemy through targeted intelligence based strikes on their launch pads and eliminating them before they set foot on Indian soil," the defence minister said.

Pakistan has been resorting to widespread ceasefire violations along the LoC at a time when India has been leading efforts to help the SAARC member nations in dealing with the coronavirus pandemic.

The Army has been adequately responding to Pakistani "misadventures" under its policy of "hot pursuit", a military official said.

On the role of armed forces in containing coronavirus pandemic, the defence minister said expertise of armed forces in communications, supply chain management, medical support and engineering are being used to combat it.

He also said that the government has directed leading defence public sector undertakings (DPSUs) to produce medical equipment like ventilators, masks, PPEs and other equipment to address the problem of shortages.

Singh said armed forces are taking measures like curtailing movement of troops, restricting leave and enforcing work from home to prevent spread of infection.

A mandatory 14-day quarantine period is being enforced for all personnel coming from outside any station, irrespective of rank, he added.

He said special precautions are being taken on ships and submarines where it is difficult to strictly follow social distances norms.

Soldiers deployed along borders, especially in remotest regions, are safest as they are cut-off from all likely carriers of disease, he said, adding the government is ensuring their safety by deploying fresh troops who have been medically validated as having no symptoms of the infection.

https://www.deccanchronicle.com/nation/current-affairs/190420/india-is-fighting-covid19-crisis-on-a-war-footing-rajnath.html

THE ECONOMIC TIMES
WWW.ECONOMICTIMES.COM

Mon, 20 April 2020

Army takes over Narela quarantine facility during daytime

This is the first time that the army has taken control of a civilian quarantine centre. From April 16, the army took the initiative of managing the facility from 8 am to 8 pm, relieving the Delhi government doctors and medical staff, who would run the facility during the night.

By Shaurya Karanbir Gurung

The army has taken over the daytime management of the Narela quarantine centre, which is one of the biggest such facilities in India for handling suspected coronavirus cases and has been housing close to 1,000 people linked to a religious congregation of the Tablighi Jamaat last month.

This is the first time that the army has taken control of a civilian quarantine centre. From April 16, the army took the initiative of managing the facility from 8 am to 8 pm, relieving the Delhi government doctors and medical staff, who would run the facility during the night. The army team comprises 40 personnel, including six medical officers and 18 paramedical staff. They have volunteered to stay within the premises.

A team of army doctors and nursing staff have been assisting the civil administration at the Narela centre since April 1. Initially, a team of four doctors, eight nursing assistants and seven security personnel were deployed for medical assistance at the facility. Additional army medical staff were also deployed to take over the screening process.

More than 1,200 people have been kept at this facility, largely including people linked to the Tablighi Jamaat's religious congregation at Delhi's Nizamuddin Markaz last month.

"Presently 932 members from the Markaz are being taken care in the facility and 367 out of them have been tested COVID positive," the army added.

More than 4,000 of the total 15,000 coronavirus cases in India are linked to the Nizamuddin Markaz event, the Health Ministry said on Saturday.

"Narela Quarantine Centre in Delhi is amongst the largest centres in the country for managing COVID suspects at Delhi. The centre was established by the Delhi Government in mid March 2020. Initially, 250 foreign nationals arriving from friendly foreign countries were kept in this centre. Later an additional strength of approximately 1000 more were brought here from Nizamuddin Markaz," the army said.

"The professional approach of the army medical team has won the hearts of inmates, who have been very cooperative and positive to the team, thereby, facilitating smooth handling of all medical procedures," it added.

"There has been tremendous synergy with the civil administration to run this entire facility. The army will continue to fight with resolve and determination to contribute wholeheartedly to the national efforts against the corona pandemic for the safety of all our citizens," the army said.

https://economictimes.indiatimes.com/news/defence/army-takes-over-narela-quarantine-facility-during-daytime/articleshow/75237407.cms

The Tribune

Mon, 20 April 2020

Army takes over management of India's largest COVID quarantine centre in Delhi

By Vijay Mohan

Chandiharh: The Indian Army has taken over the responsibility of managing the Narela Quarantine Center in Delhi during the daytime. The centre is among the largest in India for housing those suspected of having COVID-19.

"The army has taken the initiative to manage the facility completely under its arrangement from morning 8 AM to evening 8 PM pm and relieving the civil doctors and medical staff who are now required to manage the facility only during the night," a senior official from the Army's Western Command, Chandimandir, said here on Sunday.

An Army team, comprising of 40 personnel, including six medical officers and 18 para-medical staff, have volunteered to stay within the centre's premises. A small team of army doctors and nursing staff have been assisting the civil administration at the centre since April 1.

Presently, 932 members of Markaz Jamaat are being housed in the facility and 367 have tested COVID-19 positive, the official said.

The Army had received a request from the Home Ministry to take over the medical screening at the Narela quarantine camp.

The Narela Quarantine Center was established by the Delhi Government in mid-March. Initially, 250 foreign nationals, returning from foreign countries, were kept in this centre. Between March 31 and April 1, an additional strength of approximately 1,000 members of Tablighi Jamaat were brought here from Nizamuddin Markaz.

An Army medical team, including two doctors and two nursing assistants, was deployed at the Narela camp earlier. This was the first instance of Army doctors being deployed to help civil administration to help tackle the COVID-19 outbreak.

Narela, incidentally, happens to be the site of a battle that took place in January 1757 between the Maratha Army, led by Antaji Mankeshwar, and an advance column of Ahmad Shah Abdali's army, in which the Maratha Army had won.

Apart from providing medical cover with the civilian centre at Narela, the Army is also running its quarantine centres for civilians at Jodhpur, Jaiselmer and Manesar. This is in addition to quarantine centres set up at military stations for defence personnel. The other two services are also running their camps.

To cater for isolation and treatment (Including ICU-based care) for COVID-19 cases, orders notifying 50 Armed Forces hospitals as dedicated COVID hospitals and mixed COVID hospitals have been issued.

These hospitals have a combined bed capacity of 9,038 patients. Also, 100 medical officers from recruiting organisations are being detailed to work in hospitals where COVID wards are being established.

A list of retired AMC officers and paramedical staff has been readied who may be requested to volunteer for working in military hospitals at their current home stations in case the need arises. Forty-three officers and 990 paramedics have volunteered till date.

https://www.tribuneindia.com/news/nation/army-takes-over-management-of-indias-largest-covid-quarantine-centre-in-delhi-73315

INDIA TODAY

Mon, 20 April 2020

Coronavirus: Naval hospital ship Patanjali at forefront in fight against Covid-19 pandemic

With the discharge of these eight patients over the last few days, the Indian Naval Hospital Ship (INHS) "Patanjali" at Karwar in Uttara Kannada district is now attending the lone patient admitted on April 16 who is also responding favourably to the treatment

By Manjeet Singh Negi

New Delhi: The Indian Naval Hospital Ship (INHS) "Patanjali" at Karwar in Uttara Kannada district has been at the forefront in the fight against Covid-19 pandemic. The doctors have successfully treated eight out of nine patients from the district admitted there.

Acting on a request from the Karwar District Administration, the INHS Patanjali was prepared in every aspect within 24 hours to receive the first group of Covid-19 positive patients on March 28 after the nationwide lockdown was announced on March 25.

A team of three doctors, nine medical staff and nine support staff have ensured 24x7 care to the nine Covid-19 positive patients admitted so far.

A team of three doctors, nine medical staff and nine support staff has ensured 24x7 care to the nine Covid-19 positive patients admitted so far. (Photo: pib.gov)

Out of the nine patients admitted at the hospital, eight have been cured and discharged.

With the discharge of these eight patients over the last few days, the hospital is now attending the lone patient admitted on April 16 who is also responding favourably to the treatment.

In view of this responsibility, INHS Patanjali has made alternate arrangements for routine medical attention to the large population of service personnel and families dependent on the hospital.

https://www.indiatoday.in/india/story/coronavirus-naval-hospital-ship-patanjali-forefront-fight-covid-19-pandemic-1668645-2020-04-19

Mon, 20 April 2020

What India's Covid-19 fight means for its nuclear strategy

Springtime, a period of colourful blossoms, fresh leaves and outdoor festivals, was spent by all Indians in a state of national lockdown this year. In dealing with the challenge thrown up by Covid-19, India chose social distancing through an unprecedented countrywide shutdown. While this decision has nothing to do with nuclear weapons, interestingly enough, it signals something about the country's nuclear strategy. Two aspects particularly stand out: the credibility of its nuclear deterrence; and, the wisdom of its nuclear strategy.

Credibility of nuclear deterrence rests on a tripod. It comprises the knowledge of the presence of nuclear weapons, existence of requisite command and control structures, and exhibition of resolve to use the capability. Many within the country and outside have often raised doubts about the third leg of this tripod, questioning India's ability to take difficult decisions. This has particularly been suggested in the context of Pakistan's projection of a threat to use low-yield nuclear weapons in the battlefield.

In such circumstances, it is presumed that the loss to life and property would be small and mostly limited to military personnel and assets, and India would refrain from nuclear retaliation.

After the rather difficult decision that the Prime Minister took on the night of 24 March 2020 to order a complete nation-wide lockdown, such presumptions might need a rethink. The call to shut down an entire nation of India's size and population for three weeks, extended subsequently by another 19 days, could not have been an easy one. Besides, it had to be taken amidst a thick fog of uncertainty and without knowing whether it would turn out right or not. The only thing evident was that it would involve a serious disruption of lives, millions of which were already living on the edge, in a developing country.

The hard choice demonstrated the resolve of the leadership. Even more importantly, as 36, often otherwise fractious provincial administrations and over 1.3 billion diverse and argumentative Indians have largely moved collectively since then, indicates a national resolve. Political stability, when it rests on true democratic pillars, allows a nation to make and sustain difficult decisions with far greater public legitimacy than in more fragile, non-democratic states. Therefore, none of India's adversaries should be tempted towards first nuclear use by doubting its resolve to undertake nuclear retaliation.

Another factor that adds to the credibility of nuclear deterrence, as highlighted by India's handling of the current crisis, is the inherent strength of its economy and aspirational human resources. Even as the country bleeds while handling the health emergency, it has still taken upon itself the additional burden of grinding the economy to a halt. This is possible only when the country has faith in its socio-economic resilience and scientific and technological strength to get back on its feet. Additionally, the entrepreneurial spirit has risen to meet the challenges.

The decision to impose the lockdown, therefore, gives an indication of the innate capacity and forbearance of a young nation with ancient roots to withstand difficult times. None of India's adversaries must believe that the fear of economic pain would stop India from nuclear retaliation. The strategic depth offered by its size, economic resilience, human resource potential and democratic polity collectively undergird the strength to take tough calls.

Meanwhile, at a more philosophical level, the current situation brings out the inherent wisdom in India's approach towards nuclear weapons and the manner in which it pursues nuclear deterrence. India's nuclear doctrine is premised on the understanding that such weapons have a limited utility to safeguard the nation against nuclear blackmail or coercion. Therefore, India subscribes to a strategy of nuclear retaliation only, rather than believing in the first use of nuclear weapons. This allows India to stay with the idea of credible minimum deterrence and away from overinvesting in capabilities that may be needed for nuclear war-fighting such as weapons for battlefield use, delivery systems for counter-force targeting, or active defences for damage limitation.

The novel coronavirus that rages across the globe has shown up the limitations of isolationist and hyper-nationalist strategies in pursuit of a chimera of security. As political leaders experience a sense of vulnerability from a shared risk, this appears to be a good time to draw their attention to the folly of racing to build large nuclear arsenals and war-fighting capabilities to conduct so-called limited nuclear wars. Any crisis involving nuclear weapons would be a humanitarian disaster beyond imagination. The raging pandemic has provided us with some sense of what such disasters entail in terms of lives lost, economies wrecked, livelihoods destroyed and societies devastated. A nuclear disaster would additionally involve property losses in blasts and fires, related ecological consequences, and long-lasting radioactivity effects.

Till such time as nations are ready to universally eliminate these weapons, nations would do well to remember that nuclear weapons have a limited deterrent role and small arsenals can perform the task of deterrence effectively. India's nuclear strategy anchored in minimalism and no first use holds useful lessons for all. National resources, of India and others, would be better spent on human security and building habits of cooperation.

https://idrw.org/what-indias-covid-19-fight-means-for-its-nuclear-strategy/#more-225510

Defence Strategic: National/International

DefenceNews

Mon, 20 April 2020

Indian defence exports witness record growth

The figure published in an online 'dashboard' by the Ministry of Defense's Department of Defence Production (DDP) on April 14, 2020 represents a five-fold increase over the value of export approvals secured by the MoD just a few years ago. The data shows that India registered record-high defence export approvals worth INR 86.2 billion (USD1.1 billion) in fiscal year (FY) 2019–20, which concluded at the end of March. The dashboard, which was updated with the new figures on April 14, shows that the value of defence export approvals in FY 2019–20 was INR 8620.59 crore, a year-on-year increase of 4%, compared with the INR 8320.09 crore recorded in FY 2018–19, which represented a 78% increase over the INR 4682.36 crore in approvals registered in FY 2017–18. The value of export approvals in FY 2016–17 was INR 1521.86 crore billion.

Statistics published on the dashboard also show that the vast majority of defence export approvals have been secured by India's private sector. They also show that the private sector's growth in exports has increased strongly in recent years.

In FY 2019–20, India's private sector was attributed with 93% of defence export approvals in terms of value, with the remainder secured by state-owned defence public sector undertakings (DPSUs). In FY 2018–19, the private sector secured 89% of all export approvals. In FY 2017–18 and FY 2016–17 the private sector was attributed with 68% and 13% respectively.

This represents another success story for PM Modi's visionary 'Make in India' initiative. The provision of 'Make' category of capital acquisition in Defence Procurement Procedure (DPP) is a vital pillar for realising the vision behind the 'Make in India' initiative of the Government, by fostering indigenous capabilities through design & development of required defence equipment/product/systems or upgrades/sub-systems/components /parts by both public and private sector industry/organization in a faster time frame. There are two subcategories in this project: Make-I (Government Funded):

Projects under 'Make-I' sub-category will involve Government funding of 90%, released in a phased manner and based on the progress of the scheme, as per terms agreed between the MoD and the vendor. 2) Make-II (Industry Funded): Projects under 'Make-II' category will involve prototype development of equipment/ system/ platform or their upgrades or their sub-systems/ sub-assembly/assemblies/components, primarily for import substitution/innovative solutions, for which no Government funding will be provided for prototype development purposes.

About 50 Indian companies in the private sector have contributed to defence exports. Some of the major export destinations for defence products have been Italy, Maldives, Sri Lanka, Russia, France, Nepal, Mauritius, Sri Lanka, Israel, Egypt, the UAE, Bhutan, Ethiopia, Saudi Arabia, Philippines, Poland, Spain and Chile, etc. The major defence items being exported are Personal Protective items, Offshore Patrol Vessels, ALH Helicopter, SU Avionics, Bharati Radio, Coastal Surveillance Systems, Kavach MoD II Launcher and FCS, Spares for Radar, Electronic System and Light Engineering Mechanical Parts, etc.

https://www.defencenews.in/article/Indian-Defence-Exports-witness-record-growth-830248

नवभारत टाइम्स

Sun, 19 April 2020

जो ऑफिसर बेहद हाई पेंशन ले रहे हैं क्या थोड़ा इनकम टैक्स नहीं दे सकतेः सीडीएस

सैनिकों की विकलांगता पेंशन में इनकम टैक्स छूट खत्म करने वाले मामले में चीफ ऑफ डिफेंस स्टाफ (सीडीएस) जनरल बिपिन रावत ने कहा कि जो अफसर बेहद हाई पेंशन ले रहे हैं क्या वह थोड़ा इनकम टैक्स नहीं दे सकते।

पूनम पाण्डे

हाइलाइट्स

- ***सेना में विकलांगता पेंशन में इनकम टैक्स छूट खत्म करने का मामला***
- ***सीडीएस ने कहा जवानों और अफसरों की विकलांगता पेंशन में है भारी अंतर***
- ***जवान पूछते हैं कि क्यों है अंतर और क्या इस अंतर को कम नहीं कर सकते***
- ***सीडीएस ने कहा अंतर कम करने के लिए इनकम टैक्स में छूट खत्म करने का प्रावधान***

नई दिल्ली: सैनिकों की विकलांगता पेंशन में इनकम टैक्स छूट खत्म को लेकर चीफ ऑफ डिफेंस स्टाफ (सीडीएस) जनरल बिपिन रावत ने कहा है कि जो अफसर बेहद हाई पेंशन ले रहे हैं क्या वह थोड़ा इनकम टैक्स नहीं दे सकते। रक्षा मामलों की संसद की स्थाई समिति में जब यह मसला उठा तो जनरल रावत ने समिति को बताया कि जवानों और अफसरों की विकलांगता पेंशन में भारी अंतर है, जिसकी वजह से ऑफिसर और जवानों के बीच नाराजगी पैदा हो रही है, जिसे अफसर समझ नहीं रहे हैं।

अफसर और जवान की विकलांगता पेंशन में अंतर

सीडीएस जनरल रावत ने समिति को बताया कि विकलांगता पेंशन ब्रिटिश काल से शुरू हुई। फिर 1971 और उसके बाद 1985 और 1996 में इसमें कुछ बदलाव किए गए। इस तरह पॉलिसी बदलती रही है। उन्होंने बताया कि छठे पे कमिशन के बाद विकलांगता पेंशन रिटायरमेंट सैलरी का हिस्सा बन गई। यानी रिटायरमेंट से ठीक पहले जो आप सैलरी ले रहे हैं उस हिसाब से विकलांगता पेंशन तय हो रही है। जनरल रावत ने समिति को बताया कि इसकी वजह से अगर किसी अफसर को विकलांगता हो रही है और ठीक वैसी ही विकलांगता किसी जवान को हुई है तो भी दोनों की विकलांगता पेशन में बहुत ज्यादा फर्क है। यह फर्क कई बार चार गुना तक हो सकता है। सीडीएस ने आगे कहा कि ' जब मैं जवानों से मिलता हूं तो जवानों की तरफ से इस फर्क को लेकर शिकायत आती है कि क्यों यह फर्क है। इसका कारण यह है कि विकलांगता पेंशन आखिरी सैलरी का पार्ट है, जिसमें फर्क है।

अंतर कम करने का तरीका

जनरल रावत ने समिति से कहा कि जवान पूछते हैं कि क्या हम इस गैप को कम नहीं कर सकते तो यह (इनकम टैक्स में छूट खत्म करना) गैप कम करने का एक तरीका है। जनरल रावत ने कहा कि 'वे (अफसर) जो असाधारण रूप से हाई पेंशन ले रहे हैं क्या वह एक छोटा अमाउंट का इनकम टैक्स अदा नहीं कर सकते।' उन्होंने कहा कि इनकम टैक्स में छूट खत्म करना जवानों पर लागू नहीं होगा क्योंकि उनकी विकलांगता पेंशन के बावजूद वह 5 लाख रुपये के टैक्स दायरे में नहीं आते। साथ ही कहा कि हम यह नहीं कह रहे हैं कि किसी भी तरह से विकलांगता का शिकार हुए व्यक्ति को उसका ड्यू (देय) नहीं देना चाहिए। जिसे विकलांगता हुई है उसकी देखभाल सेना करती है, ऐसा नहीं है कि उन्हें एक्स्ट्रा पैसा देकर हम उन्हें खुद ही अपनी देखभाल करने के लिए कहते हैं। हम अब भी उन्हें मेडिकल केयर दे रहे हैं।

क्या है मामला

पिछले साल जून में वित्त मंत्रालय से एक आदेश जारी किया गया। जिसमें कहा गया कि विकलांग सैनिकों को मिलने वाली पेंशन पर अब इनकम टैक्स में छूट सिर्फ उन्हें ही मिलेगी जो अपनी विकलांगता की वजह से सेना में सेवाएं नहीं दे पा रहे हैं और विकलांगता के चलते नौकरी छोड़नी पड़ रही है। जो विकलांग सैनिक निश्चित सेवाएं देने के बाद सेना से रिटायर हुए हैं उन्हें इनकम टैक्स की छूट का लाभ नहीं मिल पाएगा। इस आदेश पर काफी विवाद हुआ। संसद में भी यह मामला उठा। कुछ पूर्व सैनिक इस आदेश के विरोध में अदालत भी गए हैं।

https://navbharattimes.indiatimes.com/india/those-officers-who-are-taking-very-high-pension-cannot-pay-little-income-tax-cds/articleshow/75237785.cms

moderndiplomacy

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Indian BMD Program: Strategic response of Pakistan

By Saba Hanif

New Delhi: India has put in place a robust mechanism to insulate the three services and their strategic assets from the coronavirus infection, Defence Minister Rajnath Singh said on Sunday, assuring that the military is fully prepared to defend the the country from "adversarial forces" though it was fighting the pandemic.

The South Asian region has remained fragile due to the hostile relations of India and Pakistan. The history of conflicts and wars generated a mistrust between the two countries. Owing to their strategic needs, India and Pakistan tested their nuclear devices in May 1998. Soon after the

induction of nuclear weapons, India initiated the ballistic missile defence program in 1999. India's indigenous program was divided into two phases; the first phase included Prithvi Air Defense (PAD) exo-atmospheric interceptor missile to cater the aerial threats outside the atmosphere between the altitudes of 50 to 80 km with the speed of Mach 5. Moreover, Advanced Air Defense (AAD) is to counter threats between the altitudes of 15 to 30 km along 'Swordfish' Long Range Tracking Radar (LRTR) developed jointly by India and Israel based on the Israeli Green Pine early warning and fire control radar, this radar was imported by India from Israel in 2001-2002. This two-tiered air defense system is aimed at neutralizing aerial threats at two stages; exo-atmospheric interception or mid-course and endo-atmospheric interception.

The Phase 2 missile defense system will be based on the AD-1 and AD-2 interceptor missile that are currently under development. These interceptor missiles will be hypersonic-having the speed of ballistic missiles with the maneuvering capability of cruise missiles- with the speed of Mach 6-7. Phases 2 missile systems are claimed to match the capability of "Terminal High Altitude Area Defense" commonly known as THAAD, developed by United States. In parallel, the radar to support Phase 2 interception will have 80% indigenous component, DRDO chief VK Saraswat told the press on May 15, 2011.

"Only some of the equipment's and consultancy would be provided by Israel".

In addition, India successfully tested Prithvi Defence Vehicle (PDV) indigenously developed by Defence Research and Development Organization in September 2018, designed to engage targets in exo-atmospheric region at the altitude of 50 km PDV is intended to replace Prithvi and Advanced Air defence systems of India.

In parallel, India has shown keen interest and has invested in cruise missile defence as well. One such development is Barak-8. Barak-8 is an Indo-Israeli surface-to-air missile (SAM), designed to defend against any type of airborne threat including aircraft, helicopters, anti-ship missiles, and UAVs as well as ballistic missiles, cruise missiles and combat jets. Both maritime and land-based variants of the system exist in Indian Navy and Indian Army respectively. Moreover, India's indigenously built Akash missile defence system also has the capability to "neutralize aerial targets like fighter jets, cruise missiles and air-to-surface missiles". The Akash surface-to-air missile was designed to intercept enemy's aircraft and missiles at a distance of 18 to 30 km.

In missile defence, Israel is an important ally of India. The Indian PM approved 2.5 billion dollars for purchasing medium-range surface-to-air missile system from Israel on February 22, 2017. Moreover, the Indian armed forces are already armed with Israel's Green Pine radars. Israel to supply advanced medium-range surface-to-air missile systems to India. The contract is worth $1.6 billion. Israel's joint venture with Indian companies is in consonance with "Make in India". In this regard, Russia has also helped India, New Delhi had concluded a deal with Moscow to purchase the four (some sources say five) regiments of S-400 advanced Air Defense Systems, which is a robust anti-access & area denial (A2/AD) asset. It is a fourth generation advanced air and missile defense system, designed to protect high-value military, political, and economic targets from ballistic and cruise missiles, and air strikes. According to the Russian defense sources the S-400 deliveries to India are likely to start by 2020.In parallel, New Delhi has been asking Washington for "the cooperation in the area of BMD as part of an emerging strategic partnership with the United States. These discussions subsequently even included the possible sale of the US Patriot-3 BMD system to India. However, both countries have no official stance on this.

The above mentioned advancements significantly increased the security dilemma for Pakistan. The question was what to do now? Shall Pakistan go for purchasing a BMD system? Can Pakistan afford this expensive system with a narrow economy? To address these concerns, Pakistan opted for a dynamic and cost effective approach and conducted successfully the test of a mediumrange, surface-to-surface, ballistic missile Ababeel, which uses the MIRV to deliver multiple conventional and nuclear warheads on January 24, 2017. The Ababeel range is 2,200 kilometers – three times the distance between Islamabad and New Delhi-having the capacity to engage multiple targets and thereby it would be very lethal for the Indian BMD shield. According to the official statement by

ISPR "Development of Ababeel weapon system is aimed at ensuring survivability of Pakistan's ballistic missiles in the growing regional Ballistic Missile Defence (BMD) environment."

In operational terms, ballistic missile defence systems are considered to be defensive as their purpose is to detect and intercept the incoming missiles. However, in South Asian context, induction by India has further increased the security dilemma for Pakistan. This can give a false sense of security to the Indian military and political leaders; motivate them to launch an offensive against Pakistan or intentionally initiate a conflict which will destabilize the strategic stability. The response of Pakistan is not only cost effective but credible as well. Since no BMD system can intercept multiple targets at once, the Ababeel can dodge and penetrate through the Indian BMD systems. Also, India has a huge country, defending whole of the country with a BMD is not feasible and affordable. Similar thinking prevails in India as well. Secondly, geography poses significant handicaps for Indian BMD, given the short flight times between the two countries which is around 4-6 minutes. Pakistan's MIRVs would make Indian investments in BMD even more indefensible as the process of detecting, deciding and launching an interceptor takes time.

The indigenous developments of India depicts their technological edge over Pakistan which is alarming. India prospering in military technology is a direct threat to Pakistan's security. Moreover, India's bilateral cooperation with countries like Israel, Russia and US conversely impacts Pakistan's interests. Lastly, the South Asian region is indulged in an arms race. India in pursuit of ambitious goals is constantly enhancing military capabilities, which not only conversely impacts Pakistan's security but also places South Asia on the verge of a major conflict. This may exceed beyond controllable situation and in worst case scenario may result in nuclear exchange. South Asia is in need of an arms control agreement which limits these development. It can be bilateral or may have a third party as on over-looking authority and to ensure the smooth implementation of the agreement.

https://moderndiplomacy.eu/2020/04/19/indian-bmd-program-strategic-response-of-pakistan/

Mon, 20 April 2020

India's astronaut trainees to face all probable eventualities: Glavkosmos DG Loskutov

By Anantha Krishnan M

The four Indian Air Force (IAF) Test Pilots selected for the Gaganyaan mission began their year-long training programme in Russia this February. This training will get them closer to the challenges they could encounter while undertaking the mission, expected to be in 2022. All the pilots are currently at the Gagarin Research & Test Cosmonaut Training Centre (GCTC) in Russia. In this edition of 'Gaganyaan Unplugged,' the third part of our series, Glavkosmos Director General Dmitry Loskutov shares some insights about the training with Onmanorama.

Glavkosmos is a subsidiary of the Russian State Space Corporation Roscosmos and has a contract with the Human Spaceflight Centre (HSFC) of the Indian Space Research Organisation (ISRO).

"Russia's tremendous expertise in human spaceflight makes our training programme the most complex and difficult one in the world. As a result of this, all the astronaut trainees will be ready to act adequately in any unexpected or emergency situation," says Loskutov.

Glavkosmos & India

Russia and India share a long history of cooperation in space exploration. The first Indian cosmonaut Rakesh Sharma flew aboard the Soviet Soyuz T-11 launched on April 2, 1984 as part of mission to help Soviet Union's allies and non-allied nations with manned and unmanned space missions.

Glavkosmos has also contributed to the cooperation of Russia and India. In 1988, the Indian satellite IRS-1A was launched from Baikonur, followed by the IRS-2B and IRS-1C satellites. Our company took an active part in those launches.

In 1991, we signed a contract for the development and delivery of a batch of cryogenic oxygen-hydrogen blocks for the third stage of the Indian GSLV rocket. Later, Glavkosmos also designed and supplied equipment for upgrading the cryogenic test facilities in Mahendragiri.

Today, we are working closely on the Gaganyaan programme, which is important for both India and Russia. It can become a great example of our cooperation in the 21st century.

Story so far

For all Soviet and Russian cosmonauts, training at the GCTC facilities was and continues to be obligatory. The active cosmonauts engaged in manned space missions take additional regular training courses.

Moreover, training at GCTC is a mandatory part of training for NASA, ESA, and JAXA astronauts before the flight to the International Space Station (ISS).

In fact, all people from abroad who flew to the Soviet space station Mir and later to the ISS were trained at GCTC.

Since 1978, GCTC has been active in the field of manned international programs. Among the cosmonauts trained at GCTC were representatives of Czechoslovakia, Poland, Germany, Bulgaria, Hungary, Vietnam, Cuba, Mongolia, Romania, France, India, Syria, Afghanistan, Japan, England, Austria, USA, Sweden, Spain, and the United Arab Emirates.

A total of 84 foreign cosmonauts and astronauts from 19 countries flew on Russian manned spaceships to the ISS and 33 cosmonauts flew to the Mir space station.

We continue this tradition and astronauts from the countries developing their national human space programmes come to Russia and train at GCTC.

Space Missions

Since its foundation in 1985, Glavkosmos has been involved in missions on launching foreign astronauts into space. First, it was done under the Interkosmos Programme, and then under separate agreements very similar to those reached between Glavkosmos and HSFC (ISRO).

The US businessman Dennis Tito is considered to be the first space tourist. ?e went on a spaceflight in April 2001. However, the first truly commercial spaceflight was that of the Japanese journalist Toyohiro Akiyama in December of 1990. The spaceflight was performed under the contract between Glavkosmos and Tokyo Broadcasting System.

In recent years, the flights of cosmonauts from Kazakhstan and UAE have been the most significant ones. In 2015, Aidyn Aimbetov, the first cosmonaut of the independent Kazakhstan, flew to the ISS. Glavkosmos contributed to the implementation of the contract between KazCosmos and Roscosmos.

The first astronaut from UAE Hazzaa Al Mansoori flew to the ISS and safely returned to Earth last October. The mission was also prepared with participation of Glavkosmos. All these astronauts were trained at GCTC too.

Challenges then & Now

The challenges and difficulties are probably still the same (compared to Rakesh Sharma's mission). The outer space continues to be a very hostile and dangerous place for us, the earthlings.

What has really changed from the times when Rakesh Sharma flew aboard the Soyuz T-11 is technology. The modern Russian manned ships have become safer, more comfortable and reliable; we use advanced space technologies in every module, block and unit of the Soyuz manned spaceship.

Moreover, since the space station Mir no longer exists and we all fly to the ISS – all that means that the preparation and training processes have consequently changed.

Humankind has already gained good understanding of the specifics of human stay in the low earth orbit (LEO), its difficulties, and the training necessary to overcome them. Now such things as travelling to the Moon, Mars, and deep space are a global challenge for all of us.

Astronauts Training

The training takes place at GCTC. The general training programme for the Indian astronaut trainees will last for one year, and I would like to emphasize that it is only the Russian part of their training and preparation; they will also be trained in India.

The process will include comprehensive medical and biological training combined with regular physical practice. The four astronaut trainees will also be studying in detail the systems of the Soyuz manned spaceship, all its parts and nodes.

They will also be trained for the case of abnormal landing of the descent module in various climate and geography zones, i.e., if the descent module lands in marshy or forested terrain in winter, or in a river, or sea.

During the scheduled flights aboard the Il-76MDK aircraft, they will be trained in short-term weightlessness mode. I am sure that all four of them have already experienced weightlessness, because they have served as Test Pilots.

During their training course, they will be taught to act rationally, to move and operate in weightlessness environment. The Il-76MDK airplane is specially designed and constructed for this purpose.

The four IAF Test Pilots will be also trained in special simulators that imitate working in outer space. That will be very useful during spacewalks for technical maintenance or for scientific experiments outside a space vehicle.

Interestingly, not only military pilots can become astronauts. Many go this way, which is quite pragmatic if we remember that Yuri Gagarin and the members of the first Russian corps of cosmonauts were fighter pilots. That makes sense since the training sessions are very similar.

But now-a-days there are a lot of cosmonauts and astronauts who have civil professions as their major background, they are not pilots at all.

Features of GCTC

Major activities of GCTC include organization of cosmonaut selection and training of cosmonauts, medical examination, post-flight medical maintenance and rehabilitation of cosmonauts, medical and biological experiments after spaceflights.

The training center also deals with development, arrangement, and modernization of ground-based facilities used for cosmonaut training.

GCTC also carries out research related to human spaceflight problems.

Combating COVID-19

We have set up the Pandemic Response Group at Glavkosmos from March 26 and have been monitoring the health status of all employees. This will not affect any of Glavkosmos' contractual obligations. The Indian astronaut trainees are in healthy and we have been constantly observing them. They are preparing for their exams independently. I can say that they have completed almost 25 per cent of the training programme.

https://idrw.org/indias-astronaut-trainees-to-face-all-probable-eventualities-glavkosmos-dg-loskutov/#more-225520

ScienceDaily

Mon, 20 April 2020

Light from stretchable sheets of atoms for quantum technologies

Largest spectral, color-tuning range from an atomically thin quantum system demonstrated

The researchers say their results, using an atomically thin material, hexagonal boron nitride, constitute a significant step forward in understanding light-matter interactions of quantum systems in 2D materials, and the journey towards scalable on-chip devices for quantum technologies. The study is published in *Advanced Materials*.

The ability to finely tune the colors of quantum light has been proposed as a key step in developing quantum network architectures, where photons, the fundamental building block of light, are exploited to serve as the quantum messenger to communicate between distant sites.

The scientists harnessed the extreme stretchability of hexagonal boron nitride, also known as "white graphene." to such an extent that they were able to demonstrate a world record for the largest spectral, color-tuning range from an atomically thin quantum system.

Lead author, UTS PhD candidate Noah Mendelson said that the demonstrated improvement in spectral tuning, by almost an order of magnitude, would spark interest within both academic and industrial groups "working towards the development of quantum networks and related quantum technologies."

"This material was grown in the lab at UTS with some atomic-scale 'crystal-mistakes' that are ultra-bright and extremely stable quantum sources.

"By stretching the atomically-thin material to induce mechanical expansion of the quantum source, this, in turn resulted in the dramatic tuning range of the colors emitted by the quantum light source," he said.

"As the hexagonal boron nitride was stretched to only a few atomic layers thick the emitted light started to change colour from orange to red much like the LED lights on a Christmas tree, but in the quantum realm," says UTS PhD candidate Noah Mendelson.

"Seeing such color-tuning at the quantum level is not just an amazing feat from a fundamental point of view, but it also sheds light on many potential applications in the field of quantum science and quantum engineering," he adds.

Unlike other nanomaterials used as quantum light sources, such as diamond, silicon carbide or gallium nitride hexagonal boron nitride isn't brittle and comes with the unique stretchable mechanical properties of a van der Waals crystal.

"We have always been amazed by the superior properties of hexagonal boron nitride, be they mechanical, electrical or optical. Such properties enable not only unique physics experiments, but could also open doors to a plethora of practical applications in the near future," says UTS Professor Igor Aharonovich, a senior author of the work and chief investigator of the ARC Center of Excellence for Transformative Meta-Optical Materials (TMOS).

The UTS team of experimental physicists, lead by Dr Trong Toan Tran felt that they were on to something very intriguing from the very first observation of the exotic phenomenon.

"We quickly teamed up with one of the world's leading theoretical physicists in this field, ANU's Dr. Marcus Doherty to try to understand the underlying mechanisms responsible for the impressive color-tuning range. The joint effort between UTS and ANU led to the complete understanding of the phenomenon, fully supported by a robust theoretical model, " Dr Toan Tran said.

The team is now preparing their follow-up work: realizing a proof-of-principle experiment involving the entanglement of the two originally different colored photons from two stretched quantum sources in hexagonal boron nitride to form a quantum bit or (qubit) -- the building block of a quantum network.

"We think that the success of our work has opened up new avenues for multiple fundamental physics experiments that could lay the foundation for the future quantum internet," concludes Dr Toan Tran.

https://www.sciencedaily.com/releases/2020/04/200416114533.htm

hindustantimes

Mon, 20 April 2020

Covid-19 outbreak: Govt sets up national vaccine task force

The main job of this task force will be to work as a bridge between academia, research institutions, and international collaborations in the field of drug testing and vaccine development

By Rhythma Kaul

New Delhi: The central government on Sunday constituted another national task force on vaccine development and drug testing having representatives from the ministry of Ayush (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy) among others as members.

The main job of this task force will be to work as a bridge between academia, research institutions, and international collaborations in the field of drug testing and vaccine development.

Doctors conducting Covid-19 test at Mahim Police colony during nation wide lockdown (Photo by Satish Bate/Hindustan Times)

"We are contributing towards drug research as there are many herbs known for their medicinal properties. It is a collaborative effort with CSIR, ICMR etc," said Ayush secretary Rajesh Kotecha.

The other members will be from the Indian Council of Medical Research (ICMR), department of science and technology (DST), department of biotechnology (DBT), council of scientific and industrial research (CSIR), defence research and development organisation (DRDO), directorate general of health services (DGHS) and drug controller general of India (DCGI).

"This task force will monitor the progress, not just in India but globally, happening in the field of vaccine development and drug trials. They will create a clinical cohort for long-term follow-up of people for achieving a better understanding of disease management. Bio specimens will be collected as part of the exercise, which will be different from the usual sample collection, for further drug and vaccine trials," said Lav Agarwal, joint secretary, health ministry.

The task force will be co-chaired by principal scientific advisory to the government of India, K Vijay Raghavan, and member (health) Niti Aayog, Dr Vinod Paul.

The DBT will be the central coordinating agency for vaccine development, and will focus on identifying different pathways in ensuring that work towards vaccine development is expedited.

he partial lockdown relaxation that will be given after April 20 will not be applicable to hot spot areas from where clusters or large outbreaks of coronavirus disease (Covid-19) have been reported.

"The states have been given a free hand to impose further additional measures according to local requirements as the local administration will be in a better position to take a call, depending on the conditions on the ground," said Agarwal.

The state governments are also scaling up efforts to create more dedicated Covid-19 hospitals and health centres. As of now, there are a total of 2,144 hospitals and health centres meant only for Covid-19 patients, of which 755 are big hospitals and 1,389 are Covid health centres for mild or asymptomatic patients. There are now 54 districts from 23 states and Union territories that have not

reported fresh cases during the last 14 days. Apart from the previous list, 10 new districts have been added.

The districts newly added to the list are Gaya and Saran in Bihar; Bareilly in Uttar Pradesh; Fatehgarh Sahib and Rupnagar in Punjab; Bhiwani, Hisar, and Fatehabad in Haryana; and Cachar and Lakhimpur in Assam.

https://www.hindustantimes.com/india-news/govt-sets-up-national-vaccine-task-force/story-AfXpEnE6854EenhTwQ7zNJ.html

hindustantimes

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Mohali's NIPER focusing on cutting-edge Covid-19 research

Besides research on models to identify drugs to treat fatal disease, options are being explored to set up a virus research lab on campus

By Hillary Victor

In a race against time, faculty members of the National Institute of Pharmaceutical Education and Research (NIPER) are, for the first time, researching models to identify drugs to treat Severe Acute Respiratory Syndrome – Coronavirus -19 (SARS CoV-2).

Options are also being explored to set up a virus research lab on campus.

The pharmacoinformatics faculty of the institute has initiated research work to model and simulate technologies that can help in the prevention and diagnosis of Covid-19 and also identify new drugs.

NIPER has also joined a consortium that includes the Post Graduate Institute of Medical Education & Research (PGIMER), Chandigarh, and The Central Drug Research Institute (CDRI), Lucknow, to repurpose existing medicines.

A biosafety level-3 lab specifically designed to work on deadly viruses while maintaining safety of scientists working on these is also being set up on the NIPER campus.

"This is for the first time that the institute is doing research on viruses. A multi-centric proposal has already been filed under The New Millennium Indian Technology Leadership Initiative (NMITLI) project, which is focused on developing new delivery mechanisms for therapeutic agents, being used currently in Covid-19 treatment," said Professor Saranjit Singh, acting director of NIPER Mohali.

NMITLI is the largest public-private-partnership effort within the R&D domain in the country.

Singh said the institute was mainly focused on delivering drugs through inhalation as Covid-19 affected the lungs.

On other initiatives, he said a few faculty members had joined national and international groups fighting against Covid-19. "One of our faculty members was recently invited to join a corporation in California, as part of their team for analytical work in a Covid 19 project that is being submitted for US Food and Drug Administration approval. The institute has already received proposals for a memorandum of understanding which is being reviewed," Singh said.

The institute was also initiating work in the ambitious area of discovering new drugs for anti-viral treatment. This is a long term goal as discovery of new medicine can take anything between six to 10 years. NIPER hopes to work in collaboration with the pharma industry to synergise the discovery of new drugs for viral diseases, he added.

Established in 1994 on 130 acres in Sector 67, NIPER is an Indian Public Pharmacy Research University and a part of seven schools under the Ministry of Chemicals and Fertilisers, government of India.

Isolation ward set up

The National Bioavailability Centre (NBC) at NIPER has also been prepared as an isolation/quarantine facility for Covid-19 patients. Every residential housing type (from 2 to 6) has nodal officers in charge equipped with personal protection equipment (PPE) kits, including masks, gloves and protective wear for head, eyes and feet for use in case anyone tests positive. The nodal officers have also been trained in wearing and removal of the items.

https://www.hindustantimes.com/cities/niper-focuses-on-cutting-edge-covid-19-research/story-hLY9EW4ONCW0hPq7HIg26M.html

THE TIMES OF INDIA

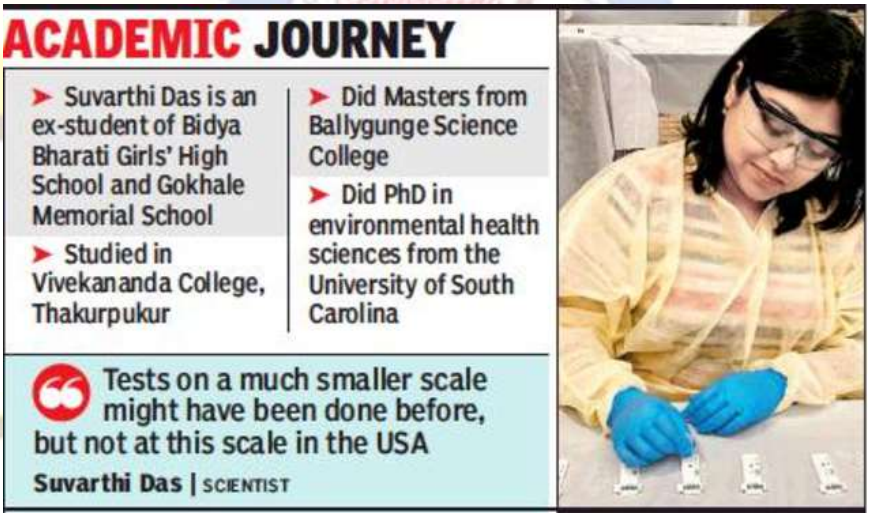
Mon, 20 April 2020

Scientist from Kolkata in US Covid-19 research teams

By Rohit Khanna

Kolkata: Suvarthi Das, a research scientist from Kolkata, became part of America's first large-scale immunity test against Covid-19 conducted in the Santa Clara county, California. The scientist, along with more than 300 doctors, researchers and health workers tested 3,200 people in Santa Clara to trace the disease back to its roots in the county. The mammoth exercise, first of its kind in America, will help devise sustainable mitigation methods and policies. Das was a postdoctoral researcher at Stanford Medical Center which led the study under infectious disease physician Eran Bendavid.

"The idea was to test antibodies of a large number of people and find out whether a huge percentage of the population had asymptomatic infections of Covid-19. We were also trying to find out if they have developed any herd immunity. Tests on a much smaller scale might have been done before, but not at this scale in the USA," she said.



Being a diabetic herself, it was not an easy call for Das. "There could always be accidental exposures. I needed to discuss the outcomes with my husband," she said.

"Interestingly, California receives travellers from China throughout the year and has direct flights from Wuhan. But it was not hit as bad as other hotspots like New York," said Das. "Maybe, early infections were treated as a bad flu and deaths were reported to be from pneumonia or respiratory failure," she added.

"We were also trying to find out an approximate timeline of the infection waves. If a person is exposed to the virus for seven days or less, IgM antibody appears in his blood in detectable quantity. If the duration of exposure is higher, the person might develop IgG — another type of antibody," Das said. Presence of IgM and IgG would help in finding out the "infection pattern".

Moreover, the screening can zero in on antibody-positive people who might be willing to be donors and their convalescent plasma can be used for Covid-19 treaatment. Finding a low percentage of antibody-positive people would point at several other possibilities. "It might mean

mass awareness or maintaining shelter-in-place and following social distancing guidelines might have worked. It will help in framing public health policies."

The Stanford University research team selected 3,200 participants through a random survey on Facebook and used rapid test kits to test them for two days. While the team was conducting tests in California, exponential growth of Covid-19 cases in the state was slowing down. "If a large part of population is found to be immune or we find asymptomatic patients with antibodies, then the mortality rates and total numbers might be greatly skewed, and Covid-19 might not seem so morbid," she added.

https://timesofindia.indiatimes.com/city/kolkata/scientist-from-kolkata-in-us-covid-19-research-team/articleshow/75243875.cms

THE HINDU

Mon, 20 April 2020

Coronavirus | COVID-19 drugs with less than 60% shelf life allowed to be imported

The importers should give an undertaking that the drug would be utilised or consumed before the expiry date.

In view of the **COVID-19 pandemic**, the Central Drugs Standard Control Organisation (CDSCO) has allowed import of drugs with a less than 60% residual shelf life on the condition that the importers shall have to give an undertaking that the drug would be utilised or consumed before the expiry date.

According to rules, the import of such drugs may be permitted after taking an undertaking from the importers by the port officers of CDSCO that the drug will be utilised or consumed before the expiry date and no part of it will be available for sale and distribution after its expiry, a circular issued to all port offices of CDSCO said.

"In the light of the present situation due to the COVID-19 outbreak, the health ministry has instructed to take various steps in order to ensure availability of a sufficient quantity of drugs in the domestic retail market, besides ensuring that the product conform to be of the prescribed specification. One of the steps is issuing immediate approvals to applications for registration, manufacture and import of pharmaceuticals.

"Further, we have received a representation from the industry association that there are challenges in the clearance at port offices due to the COVID-19 outbreak and many products are losing their shelf life and getting below the threshold of 60 per cent," the Drug Controller General of India (DCGI) said in a circular.

Therefore, it has been requested to relax the requirement of minimum 60% residual shelf life of all drugs, including vaccines and biological products, at the time of import for a period of three months until normal supply resumes, the circular added.

According to rule 31 of the Drugs and Cosmetics Rules, 1945, "No drug shall be imported unless it complies with the standard of strength, quality and purity," provided that the licensing authority shall not allow the import of a drug with a less than 60 per cent residual shelf life as on the date of import.

However, in exceptional cases, the licensing authority may, for reasons to be recorded in writing, allow the import of any drug with a lesser shelf life, but before its expiry.

https://www.thehindu.com/news/national/coronavirus-covid-19-drugs-with-less-than-60-shelf-life-allowed-to-be-imported/article31378997.ece