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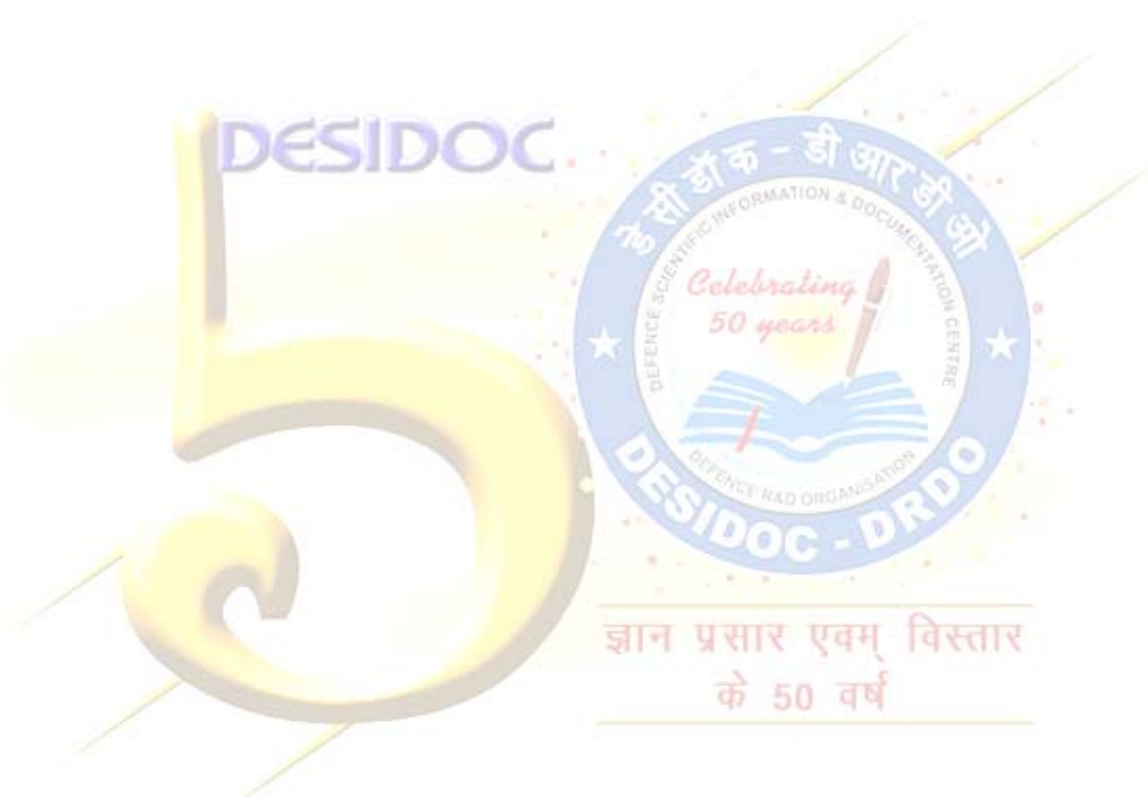
CONTENT

| S.No. | TITLE | Page No. |
|---|---|--------------|
| DRDO News | | 1-8 |
| COVID-19: DRDO's Contribution | | 1 |
| 1. | Godrej Aerospace develops & delivers to DRDO, first batch of 1000 Proportional Solenoid Valves | 1 |
| 2. | PPE production in India | 2 |
| 3. | कोविड-19 महामारी के खिलाफ रणनीति पर अंतरराष्ट्रीय वेबीनार में हुई चर्चा, कुमाऊं विवि के जैव प्रौद्योगिकी विभाग की पहल | 4 |
| 4. | कोविड-19 को पूरा विश्व मिल कर करेगा पराजित | 5 |
| DRDO Technology News | | 6-8 |
| 5. | DRDO starts work on Astra BVRAAM based Short range-Air Defence System | 6 |
| 6. | Indore: SGSITS plans virtual labs to promote startups, individual projects | 7 |
| Defence News | | 8-23 |
| Defence Strategic National/International | | 8-23 |
| 7. | India ups ante, signals to China it is ready for escalation | 8 |
| 8. | Amid India-China border tensions, IAF Chief visits Leh-Srinagar bases; fighter jets moved to forward airfields | 9 |
| 9. | Chinese action in Galwan Valley unacceptable, efforts underway to ensure peaceful resolution: IAF Chief Bhadauria | 10 |
| 10. | 'Won't let sacrifice of Galwan valley braves go in vain': IAF Chief pays tribute to martyred soldiers | 11 |
| 11. | Ladakh standoff: Indian Air Force put on high alert | 12 |
| 12. | किसी भी स्थिति से निपटने को तैयार, व्यर्थ नहीं जाएगा गलवान घाटी के शहीदों का बलिदान: IAF चीफ | 13 |
| 13. | Indian Army, Air Force on alert in Ladakh; attack helicopters, reconnaissance planes fly over Leh | 14 |
| 14. | Navy alert on China's designs on Andamans | 14 |
| 15. | चीन से तनातनी के बीच अंडमान-निकोबार द्वीप समूह को लेकर अलर्ट पर भारतीय नौसेना | 15 |
| 16. | How India military stacks up vis-a-vis Chinese defence forces | 16 |
| 17. | चीन ने लगाया अड़ंगा, लेकिन भारतीय सेना ने बना डाला गलवां घाटी में महत्वपूर्ण ब्रिज | 17 |
| 18. | Army low on stocks of 45 key items, 20 ammo stocks under critical 10(I) level | 18 |
| 19. | Air Force trainees complete training | 19 |
| 20. | Russia to deliver Sukhoi Su-30MKIs, Mikoyan-Gurevich MiG-29s to Indian Air Force in shortest timeframe | 20 |
| 21. | How the Galwan Valley tragedy can transform Himalayan geopolitics | 21 |
| 22. | Japan deployed missile at china border after its conflict with india | 23 |
| Science & Technology News | | 24-31 |
| 23. | Natural fluid injections triggered Cahuilla earthquake swarm | 24 |
| 24. | Study finds 'dark matter' DNA is vital for rice reproduction | 25 |

COVID-19 Research News

26-31

- | | | |
|-----|---|----|
| 25. | Siddha research papers throw light on efficacy of 'Kabasura kudineer' in managing COVID-19 | 26 |
| 26. | Covid-19 may infect respiratory centre of brain, suggests research | 28 |
| 27. | MMR vaccine could protect against the worst symptoms of COVID-19 | 29 |
| 28. | COVID-19 immunity: Studies show antibodies against novel coronavirus may last only for two-six months | 30 |



Godrej Aerospace develops & delivers to DRDO, first batch of 1000 Proportional Solenoid Valves

Kolkata, Jun 19: Godrej & Boyce, the flagship company of the Godrej group today announced that one of its businesses, Godrej Aerospace has made and delivered 1,000 Proportional Solenoid Valves, a critical component for making ventilators, for the Defense Research and Development Organization (DRDO).

The Proportional Solenoid Valve regulates the flow of oxygen based on the requirement of the patient in each breathing cycle, and is a critical component for the manufacture of ventilators and other medical devices.

Following the success of production of complex electro-magnetic valves for medical devices, Godrej Aerospace will now ramp up the manufacturing of different types of PSVs to meet current and future demand for critical medical and other equipment that are completely "Made in India". The business is drawing up plans for the international market as a new supply link in the global medical devices industry as companies look to re-engineer supply chains in the aftermath of Covid-19.

As the Covid-19 pandemic increased demand for ventilators and other life-saving devices across the country, Godrej Aerospace undertook the challenge to produce the entire Proportional Solenoid Valve for the first time in India.

Teams from DRDO, Aeronautical Development Agency (ADA) and Bharat Electronics (BEL) collaborated with engineers at Godrej Aerospace. The teams worked 24×7 and took just 10 days to start production under severe supply side and logistics constraints.

This included setting up a test-rig for prototypes based on DRDO designs. This was done with due focus on strict sanitization, safety and social distancing protocols for Godrej Aerospace employees.

Accepting the handover of the 1000th Valve in a digital ceremony, the Chief Guest Dr. G Satheesh Reddy, Secretary, Department of Defence R&D, Government of India, Chairman, DRDO and Director General, Aeronautical Development Agency said, "We're pleased to have partnered with Godrej Aerospace in the development and production of the first 1,000 ventilator valves in a very short time as these components are critical in saving lives in this tragic pandemic. Through the many decades of our association, Godrej has always been a reliable partner." "We encourage them to further ramp up production to serve beyond just our nation in such times and will support them as needed.

We'd like to congratulate the top management of Godrej, the production staff and shop floor workers and, the company's suppliers for going above and beyond, especially in such a difficult time," Dr Reddy said.

Anil G Verma, Executive Director and President, Godrej & Boyce, said, "Making the nation self-reliant has been a part of the DNA of Godrej since 1897 when we began manufacturing locks and soaps.

The hard work and meticulous planning of our teams at Godrej Aerospace has paid off and despite the lockdown in Mumbai, we were able to deliver 1,000 of these critical valves in a short time-span.

This success would not have been possible without constant guidance and encouragement from the DRDO, BEL, ADA teams as well as the collaboration of 22 supply chain partners who supported this important “Made in India” initiative answering their call of duty.” Surendra M Vaidya, Executive Vice President and Business Head, Godrej Aerospace added, “Our partnership with the DRDO in areas like defence, space missions and satellites spans over three decades. Based on DRDO design, the Proportional Solenoid Valves were developed and manufactured in 10 days. 1,000 valves have been shipped and we aim to further deliver 2,000 by the end of June. My heartfelt thanks to DRDO, ADA and BEL for their constant faith in us and India’s self-reliance in manufacturing of such critical components.” (UNI)

<https://www.dailyexcelsior.com/godrej-aerospace-develops-delivers-to-drdo-first-batch-of-1000-proportional-solenoid-valves/>

DU EXPRESS

Sat, 20 June 2020

PPE production in India

By Apoorya Iyar

Personal Protective Equipment (PPE), according to the World Health Organisation (WHO), comprises of garments used by the health care workers or any other person from getting infected. It generally consists of standard precautions: gloves, mask, gown. It includes face protection, goggles, and mask or face shield, gloves, gown or coverall, head cover, rubber boots in case it is blood, or high airborne infections.

Today, the whole world is in the middle of the “global war against the COVID-19 pandemic.” The manufacturing of the Personal Protection Equipment (PPE) has become a crucial gear required to protect the health and sanitation workers. India, for long, has had only a handful of domestic manufacturers; consequently, there was never sufficient amount to take care of the needs. So, the majority of the requirements for the medical fraternity was fulfilled through bulk imports.



Till 1st March, the country has had a negligible amount of PPE production. Earlier, there were only 50 companies that were certified for such products and even the types of equipment produced were not worthy enough to use it during the COVID-19 treatment. However, within two months, there has been a surge in production. By 5th May, the country was producing about 2.06 lakhs of PPE suits a day. Within two weeks, the production was doubled to about 4.5 lakhs of PPE kits. There has been an increase in the certifications for companies as well. More than 600 companies are now involved in production across the nation.

Some government institutes like Defence Research & Development Organization (DRDO), South India Textile Research Association (SITRA), and Ordnance Factory Board are the front runners in developing new technologies, materials, and testing facilities. DRDO has also developed new PU coated nylon/polyester for supply to domestic manufacturers. Arvind, The Trident Group, Welspun JCT Mills, and Shahi Exports are some of the domestic companies involved in the production.

Not only that, but about 200 women from a village in Andhra Pradesh have also restarted a defunct tailoring unit and are producing masks, shoe covers, and lab coats in bulk quantity. 15,000 masks, 6,000 shoe covers and 5,000 lab coats are being churned out and supplied to the state government.

Overall, the industry has grown more than 56 times according to a report by Invest India, a company set up by the government to facilitate investments. All these developments are in line with a statement made by the Prime Minister when he addressed the nation. It is indeed an opportunity in disguise during the crisis. More than \$300 million would have to be pooled out for the imports if there be no investments in this sector. This indigenous push for PPE manufacture is a good move for import substitution. According to the Apparel Export Promotion Council of India, the industry is expected to have a turnover of over \$60 billion by 2025.

If the industries work closely with the government, even significant improvements can take place in less time. A nudge from the government, an appeal to help the countries, and a great opportunity in times of crisis have done the job. Ministry of Textiles stated that several steps were being taken to ensure smooth steps and functioning of the industry. Not only that, but adequate attention is also being given to the quantity and the quality of the PPE coveralls, thereby making India the world's second-largest manufacturer of body coveralls, next only to China. Apart from that, body coveralls are allowed to be supplied by only certified players across the entire supply chain. Besides that, there has been proper procedure laid out for testing and certifying PPE body coveralls required for healthcare workers and other COVID-19 warriors.

PPE producing industry has been a tiny industry in India, with all the raw materials being imported from China. However, due to the pandemic, there was a considerable disruption in the supply chain. Hence, a domestic supply chain had to be created on a priority basis. Today, all the raw materials are available in India, except for sealing tapes. It gives a competitive edge over all other competitors such as Cambodia and Vietnam.

275 companies are currently certified under the DRDO for making medical coveralls. As per Invest India reports, today, India has an inventory of about 16 lakh PPE kits of all kinds, and there are 2.22 crore kits against firm orders by the industry. Bengaluru has become a major PPE hub, as about half of the production is done in that city. The rest of the production spread across the country — Tirupur, Koyampuththoor (Coimbatore), Vadodara, Ludhiana, Bhiwandi, Chennai, Ahmedabad, Kolkata, Noida, and Gurugram.

Although the demands for the PPE are at its peak during this time, it would inevitably shrink in the next couple of years. However, India cannot lose this opportunity because of the forecasts regarding the future. Currently, PPE is not allowed to be exported so that the domestic needs are first met. That is why the global market is still dominated by China, Vietnam, and Bangladesh due to the absence of a potential competitor.

“Vocal for local” motto to being used as much as possible. Only 30% of the production capacity is used by the 95 approved PPE producers due to the social distancing guidelines. Still, so much is being produced even though without the full capacity. Not only that, but there are also still about 300 of the certified companies that are awaiting their respective orders. The capacity is still underutilized and can be used to its fullest in the later times. However, this cannot be denied that these productions are possible only because of the lack of demand for fashion apparel from the international market.

Unfortunately, India should ensure that enough product is made so that export can also be done. There is an ocean of opportunities in this field. However, these opportunities will shrink with each passing day due to restrictions. Should, therefore, consider the economic and political dividends that timely PPE exports will generate in the post-COVID-19 era.

There has been an extraordinary demonstration by the Indian apparel industry's enterprises to rejig extensive production facilities to manufacture PPEs. Material, labour, and supply chains that were distorted were also repurposed to bring them to the line.

Self-reliance is an aspect that India feels proud of. It is essential to show the world that they are not being ignorant of their foreign policy and quickly working on the same.

<https://duexpress.in/ppe-production-in-india/>



liveuttaranchalnews.com

... be updated

Thu, 18 June 2020

कोविड-19 महामारी के खिलाफ रणनीति पर अंतरराष्ट्रीय वेबीनार में हुई चर्चा, कुमाऊं विवि के जैव प्रौद्योगिकी विभाग की पहल

नैनीताल: कुमाऊं विवि के जैव प्रौद्योगिकी विभाग के संयोजन में कोविड-19 महामारी के खिलाफ रणनीति (**strategies against Kovid – 19 pandemic**) विषय पर अंतरराष्ट्रीय वेबीनार आयोजन किया गया। जिसमें देश विदेश से लगभग 1200 प्रतिभागियों ने प्रतिभाग किया। कुमाऊं विश्वविद्यालय के कुलपति प्रोफेसर एनके जोशी उद्घाटन सत्र के मुख्य अतिथि थे। उन्होंने कोविड-19 के संबंध में अपने विचार प्रस्तुत किए। विभागाध्यक्ष प्रोफेसर वीना पांडे ने सभी अतिथियों एवं प्रतिभागियों का इस अंतरराष्ट्रीय वेबीनार में स्वागत किया। परिसर निदेशक भीमताल प्रोफेसर पीसी कविदयाल ने इस आयोजन को एक सकारात्मक पहल बताते हुए आर्थिक पहलुओं पर अपने विचार साझा किए। मुख्य वक्ता प्रोफेसर राकेश भटनागर कुलपति बनारस हिंदू विश्वविद्यालय वाराणसी ने कोविड 19 से संबंधित कई महत्वपूर्ण जानकारियां साझा कीं। उन्होंने इसके लिए चल रहे वैक्सीन निर्माण के प्रयासों से सभी को अवगत कराया।

विशिष्ट अतिथि निदेशक डीवेर हल्द्वानी डॉक्टर मधुबाला ने बहुत ही विस्तृत रूप से कोविड-19 के संक्रमण, उससे मानव शरीर में होने वाले परिवर्तन एवं रेडियोलॉजी से कॉविड 19 के उपचार की जानकारी प्रतिभागियों को दी।

डीयूटेन विश्वविद्यालय वियतनाम से डाक्टर आनंद नय्यर ने आर्टिफिशियल इंटेलिजेंस विषय पर विस्तृत जानकारी एवं इस महामारी से उत्पन्न परिस्थितियों पर आर्टिफिशियल इंटेलिजेंस से निदान के बारे में बताया जबकि इस्रायल से सम्मिलित हुए डाक्टर किस्ट्रोफर ने ग्रेफीन के उपयोग से कोविड 19 के बचाव सम्बंधित जानकारी प्रतिभागियों को दी। सभी अतिथियों प्रतिभागियों एवम् अधिकारियों ने जैव प्रौद्योगिकी विभाग के इस पहल की सराहना की तथा इस वेबीनार को अत्यंत उपयोगी एवं ज्ञानवर्धक बताया। कार्यक्रम का संचालन डा. तपन नैनवाल ने किया।

<http://liveuttaranchalnews.com/international-webinar-discussed-on-strategy-against-kovid-19-pandemic-initiative-of-department-of-biotechnology-of-kumaon-university/>

कोविड-19 को पूरा विश्व मिलकर करेगा पराजित

संस, भीमताल : कुमाऊं विवि के जैव प्रौद्योगिकी विभाग में कोविड-19 से निपटने के लिए गुरुवार को एक दिवसीय ऑनलाइन कार्यशाला आयोजित किया गया। जिसमें देश-विदेश के 12 सौ विज्ञानी जुटे रहे। देश-विदेश में हो रहे शोध और इस संक्रमण से आने वाले समय में जीवन और जीवन शैली में होने वाले परिवर्तन के बारे में जानकारी दी गई।



कार्यशाला का शुभारंभ सबसे पहले मुख्य अतिथि कुमाऊं विवि के कुलपति प्रो. एनके जोशी ने किया। उन्होंने कोरोना संक्रमण के तहत भारत और विदेशों में संयुक्त रूप से किए जा रहे अनुसंधान पर प्रकाश डालते हुए शीघ्र ही इसका निराकरण होने की आशा व्यक्त की। वरिष्ठ अतिथि बनारस हिंदू विवि के वाइस चांसलर प्रो. राकेश

- जैव प्रौद्योगिकी विभाग में एक दिवसीय ऑनलाइन कार्यशाला आयोजित
- हिंदू विवि, कुमाऊं विवि, वियतनाम और इसराइल के विशेषज्ञों ने दिए व्याख्यान

भटनागर ने कोरोना वायरस के संबंध में दवाओं पर हो रहे खोज के बारे में जानकारी दी। वरिष्ठ अतिथि निदेशक डिफ्रेंस इंस्टीट्यूट ऑफ बायो एनर्जी रिसर्च डॉ. मधुबाला ने कार्यशाला में संक्रमण के चलते जीवन में आने वाले समय में होने वाले परिवर्तन के बारे में चर्चा की। वहीं वियतनाम के ड्यूटेन विवि के विज्ञानी डॉ. आनंद नैयर, इसराइल के बिन गूरिआन विवि के सीनियर लेक्चरर डॉ. क्रिस्टोफर अरनुसेह, जैव प्रौद्योगिकी विभाग की विभागाध्यक्ष प्रो. बीना आदि ने संबोधित किया।



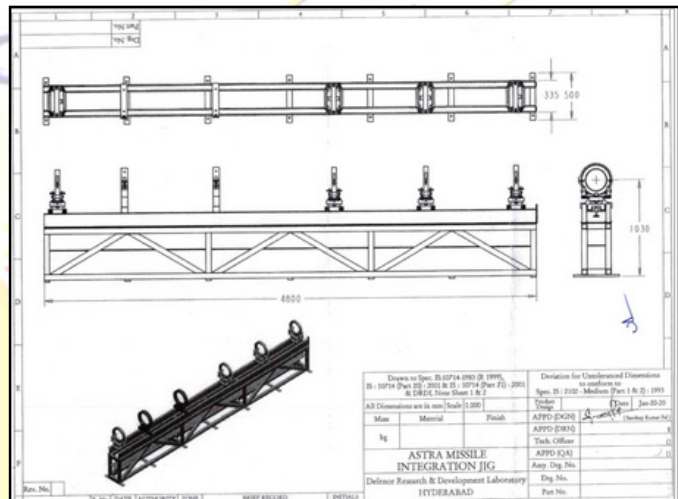
Sat, 20 June 2020

DRDO starts work on Astra BVRAAM based Short range-Air Defence System

By Raunak Kunde

Tender documents floated by State-owned DRDO shows that work on VL-SRSAM (Vertically Launched -Short-range Surface Air to Missile) System based on Astra beyond-visual-range air-to-air missile has begun and tender documents call for interested parties to submit bids of VL-SRSAM missile integration Jig.

idrww.org has been informed that VL-SRSAM will be developed in two variants for Air Force and Indian Navy. The air force will get high mobility Truck-mounted canister based VL-SRSAM and Navy will get Canister based VL-SRSAM for its frontline warships which will replace ageing Israeli supplied Barak-1 Point Defence interceptor missiles which were procured after India ended its Tri-service Trishul SRSAM program in 2006 due to technical issues.



Astra BVRAAM already has been tested from Ground-based Launchers in the past and according to DRDO does not require any modification and will maintain Commonality with the Air-to-Air missile variant and can operate in ground-to-air missions easily, so the missile system as a whole can be tested at much faster.

VL-SRSAM system will have autonomous capabilities with all-weather, Mobile, quick 360° launch capabilities for lock-on-before-launch (LOBL) and lock-on-after-launch (LOAL) capabilities. While DRDO is mum on the missiles range, but capabilities of a similar missile system should ensure at least 40-50 km in Astra Mk1 configuration and in future Astra Mk2, range will jump to 80km.

VL-SRSAM family will consist of Truck Mounted command and control unit which includes a Radar sensor and 4-6 Missile firing units and replenishments support Truck for the Air force variant, In Navy, VL-SRSAM variant will be integrated with main and secondary Radar system of the Warship for tracking and detection.

The air force is looking for VL-SRSAM ADS which can be transported by C-130 or IL-76 Transporters when required, VL-SRSAM will supplement stationary Akash short-range surface-to-air missile (SRSAM) system in IAF and for Navy, it will replace aging Barak-1 PDS to supplement LR-SAM system which has range of over 80+km. The Army will have QR-SAM and Akash as its SRSAM but it is not yet confirmed if Army will be interested in VL-SRSAM ADS.

<https://idrww.org/drdo-starts-work-on-astra-bvraam-based-short-range-air-defence-system/>

Indore: SGSITS plans virtual labs to promote startups, individual projects

By Tina Khattri

Indore: Imagine an engineer training sitting in his village during vacation and learning to prepare the strongest concrete with live experiments in local dialect, don't you think he might turn out to be a better engineer than the one reading about concrete?

With that in mind, Shri Govindram Seksaria Institute of Technology and Science (SGSITS) is planning to launch the first Virtual Lab powered by a state government institute from the next academic session.

This virtual lab featuring latest software will be available to students and professionals. For large scale experiments, it will have simulations and virtual reality.

For all students studying in Madhya Pradesh, the virtual lab will be available for free. Students of SGSITS will get directly free access to the lab.

Students of other engineering colleges will require the requisite accreditations to use the lab from their college. Launching of virtual lab for state engineering colleges is a major step for the state with the aim of promoting students to take up individual projects and supporting start-ups.

SGSITS director Dr Rakesh Saxena said, "Virtual lab aims to provide remote-access to Laboratories in various disciplines of science and engineering for students at all levels from undergraduate to research."

He added the concept of virtual lab has been limited to central govt funded technical institution Like Indian Institute of Technology (IIT), Defence Research and Development Organisation (DRDO), National Institute of Technology (NIT) and others.

"With virtual lab, we will be able to increase experiments and practical exposure from 10 per year to even 25 in a year," Saxena said. The virtual lab will provide videos and simulations for Computer Science, Mechanical Engineering, Electrical Engineering and Civil Engineering fields.

"We need to concentrate on experiments and core engineering fields i.e. mechanical, electrical and civil to truly make in India, otherwise we will still be stuck with importing over 85 percent machinery from China," Saxena said.

Rising need of virtual lab

A team of professors and students lead a survey with the renowned industrialists and companies in Madhya Pradesh. The team interviewed industrialists and sought suggestions for future of students.

Sharing the details of the survey, engineer Vivek Tiwari assistant professor, department of civil engineering and applied mechanics, said, "We discussed the future civil engineer employability and issues faced in the state."

The survey showed that most industries were looking for upgraded knowledge of latest software and soft skills in students. "Even now, students coming out colleges are accustomed to using outdated software, so they have to be trained again, where IIT and other institute students gain favour," Tiwari said.

Lab to help Covid-19 & Employability challenges

With many people losing their jobs, it will be a tough task for fresh graduates to secure a good position in a company following lockdown and economic crisis. "Students are also already facing



challenges and virtual lab is a step towards helping them,” Dr Vijay Rode, head of civil engineering department, said.

He explained that students till they graduate will have free access to the lab providing latest software of civil engineering field.

“Taking up freelance projects is a task for students, because they don’t have access to learning or using latest software, where virtual lab will provide the necessary resource,” Rode said.

He added that students can work on individual projects and even begin their entrepreneurial journey in the college with access to necessary resource in the lab.

Currently planned software to launch in the lab

- Structural Dynamics Lab
- Hydraulics and Fluid Mechanics
- Basic Engineering Mechanics and Strength of Materials Labs
- Transportation Engineering Lab
- Environmental Engineering Lab
- Virtual Smart Structures and Dynamics Lab
- Surveying Lab
- Soil Mechanics Lab
- Basic Structural Analysis Lab
- Fluid Mechanics Lab and many more

<https://www.freepressjournal.in/indore/indore-sgits-plans-virtual-labs-to-promote-startups-individual-projects>

Defence News

Defence Strategic: National/International

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50 वर्ष

Sat, 20 June 2020

India ups ante, signals to China it is ready for escalation

By Vicky Nanjappa

New Delhi: New Delhi has signalled that it is ready for escalation in the ongoing confrontation with China on the unresolved border.

India moved its fighter jets to the forward airbases facing China. This comes in the wake of Indian Air Force Chief R K S Bhaduria paying a visit to Leh and Srinagar airbases. These airbases are crucial for any operations to be carried out by the forces in Eastern Ladakh.

In the first leg of his visit, he was in Leh on June 17 and the following day the Air Chief visited Srinagar. Both bases are closet to Eastern Ladakh



area and are most suited to carry out any fighter aircraft operations in the terrain. Also India has a clear edge over the Chinese here, ANI reported.

On the other hand, the Air Force also moved its critical frontline assets including the Sukhoi 20 MKI, Mirage 2000 and Jaguar fighter aircraft fleet to the advanced positions where there can fly at a very short notice.

Further the Chinooks helicopters have been deployed in and around the Leh airbase to provide the capability of rapid troops transportation and inter valley troop transfer, in case any situation emerges. The American Apache attack choppers have also been deployed close to the areas where operations by ground troops are taking place at the moment.

Meanwhile a statement from the Chinese foreign ministry said that the Indian side promised on June 6 that they would not cross the estuary of the Galwan river to patrol and build facilities. The two sides would discuss and decide phased withdrawal of troops through the meetings between the commanders on the ground, the foreign ministry also said.

Shockingly, on the evening of June 15, India's front-line troops, in violation of the agreement reached at the commander-level meeting, once again crossed the Line of Actual Control for deliberate provocation when the situation in the Galwan Valley was already easing, and even violently attacked the Chinese officers and soldiers who went there for negotiation, thus triggering fierce physical conflicts and causing casualties.

The adventurous acts of the Indian army have seriously undermined the stability of the border areas, threatened the lives of Chinese personnel, violated the agreements reached between the two countries on the border issue, and breached the basic norms governing international relations, China also said.

<https://www.oneindia.com/india/india-ups-ante-signals-to-china-it-is-ready-for-escalation-3107841.html>

TIMESNOWNEWS.COM

Sat, 20 June 2020

Amid India-China border tensions, IAF Chief visits Leh-Srinagar bases; fighter jets moved to forward airfields

Twenty Army soldiers including a Colonel were martyred in a clash with People's Liberation Army troops on the intervening night of June 15 and 16 along the Line of Actual Control at Galwan Valley

New Delhi: Amid heightened tensions along the India-China border in Ladakh following the Galwan Valley clash earlier this week, Indian Air Force Chief RKS Bhadauria has visited Leh and Srinagar to review preparedness at the bases there.

The visit came as the Air Force was reported to have moved its various assets including fighter jets to forward bases and airfields following the spike in border tensions with China, after 20 Army soldiers including a Colonel were martyred in a clash with China's People's Liberation Army troops on the intervening night of June 15 and 16 along the Line of Actual Control at Galwan Valley.

News agency ANI reported that Air Chief Bhadauria paid a two-day hush-hush visit to the Leh and Srinagar airbases, which could host the most critical part of operations to be carried out by the IAF in eastern Ladakh in view of an eventuality.

The visit came as the top government leadership reviewed the situation at the India-China de-factor border following the Galwan Valley incident. It may be noted that India has lost its troops for the first time in 45 years along the LAC. An undisclosed number of Chinese soldiers are also

believed to have died in the violent hand-to-hand clash. Indian Army sources put the number of dead or injured on the Chinese side at around 43.

India has said that the Chinese carried out premeditated attack on Indian troops who had gone on a patrol to see whether the Chinese had disengaged from a standoff point near Patrolling Point 14 along the LAC. The Ministry of External Affairs has stated that the Chinese tried to unilaterally change the status of the LAC at Galwan Valley.

"The Air Force chief was on a two-day visit where he checked the operational readiness of all the platforms that have been moved to the area in view of the Chinese aggression along the LAC in the eastern Ladakh where more than 10,000 troops have been amassed by China," government sources were quoted as saying in the report.

The IAF Chief was in Leh on June 17 and in Srinagar on June 18. Both the Leh and Srinagar airbases are located close to the eastern Ladakh sector.

The IAF has officially not confirmed whether its chief visited Ladakh this week. IAF spokesperson Wing Commander Indranil Nandy only said "no comments" when asked about the visit.

The report said among the frontline assets moved to forward bases and airfields include Sukhoi-30MKI, Mirage 2000 and Jaguar fighter aircraft fleet. The assets have been moved to forward locations so keep them ready for operations that may be required at a very short notice.

The newly-acquired American Apache attack helicopters have also been deployed in Ladakh to provide support to the Indian Army which is guarding the LAC in view of the Chinese aggression.

Further, Chinook choppers have also been deployed in and around the Leh airbase to facilitate rapid troop movement in case such a situation emerges there.

<https://www.timesnownews.com/india/article/amid-india-china-border-tensions-iaf-chief-visits-leh-srinagar-bases-fighter-jets-moved-to-forward-airfields/608845>

hindustantimes

Sat, 20 June 2020

Chinese action in Galwan Valley unacceptable, efforts underway to ensure peaceful resolution: IAF Chief Bhadauria

Air Chief Marshal RKS Bhadauria visited Ladakh to review the Indian Air Force's preparedness in the sensitive sector where the force is operating its fighter jets and new attack and heavy-lift helicopters two days after the 20 men were killed in Galwan Valley

Edited By Meenakshi Ray

New Delhi: Air Chief Marshal RKS Bhadauria said on Sunday the "gallant action" of the 20 Indian Army personnel, who were killed in a violent face-off with Chinese troops in eastern Ladakh's Galwan Valley, have shown the forces' resolve to protect "India's sovereignty at any cost".

Bhadauria had made a low-key visit to Ladakh to review the Indian Air Force's (IAF's) preparedness in the sensitive sector where the force is operating its fighter jets and new attack and heavy-lift helicopters two days after the 20 men, including a commander, were killed in Galwan Valley.

The IAF chief visited the forward airbases—Leh on Wednesday and Srinagar on Thursday—at a time of increased Chinese military activity across the disputed Line of Actual Control (LAC) where Indian and Chinese troops have been caught in a tense confrontation for over seven weeks and efforts to de-escalate have failed.

“Please join me in paying tribute to Colonel Santosh Babu and his brave men who made the sacrifice while defending the LAC in Galwan Valley. The gallant actions in a highly-challenging situation have demonstrated our resolve to protect India’s sovereignty at any cost,” Bhadauria, the Indian Air Force (IAF) chief, said, according to news agency ANI.

He made the comments during the Combined Graduation Parade (CGP) at the Air Force Academy in Hyderabad.

“In spite of unacceptable Chinese action after agreements reached during military talks and the resulting loss of lives, all efforts are underway to ensure that the current situation at LAC is resolved peacefully,” Bhadauria said.

“The security scenario in our region mandates that our armed forces remain prepared and vigilant at all times. The development at the Line of Actual Control (LAC) in Ladakh is a small snapshot of what we are required to handle at short notice,” he said.

Tensions between India and China have increased after the June 15 Galwan Valley scrap that marked the first Indian casualties in a border clash with China’s People’s Liberation Army (PLA) since October 1975 when Chinese troops ambushed an Indian patrol in Arunachal Pradesh’s Tulung La sector and shot four soldiers dead.

<https://www.hindustantimes.com/india-news/chinese-action-in-galwan-valley-unacceptable-efforts-underway-to-ensure-peaceful-resolution-iaf-chief-bhadauria/story-tU4LWyjrORnzXLXFEvZUjL.html>



The Statesman Sat, 20 June 2020

‘Won’t let sacrifice of Galwan valley braves go in vain’: IAF Chief pays to tribute to martyred soldiers

As many as 20 Indian Army men including officers were killed in the face-off with Chinese troops in Galwan Valley at the Line of Actual Control in eastern Ladakh

New Delhi: Air Chief Marshall RKS Bhadauria on Saturday assured the nation that the India’s armed forces are determined to deliver and will “never let the sacrifice of the braves of Galwan valley go in vain”.

Speaking at the combined graduation parade at the Air Force Academy near Hyderabad, the IAF chief made it clear that India is well prepared and suitably deployed to respond to any contingency.

Security scenario in our region mandates that our armed forces remain prepared and vigilant at all times, he said and noted that the development at the Line of Actual Control (LAC) in Ladakh “is a small snapshot of what we are required to handle at short notice”.

He also urged the gathering to join with him in paying tributes to Colonel Santosh Babu and his brave men who made the sacrifice while defending the LAC in Galwan valley.

“The gallant actions in a highly-challenging situation have demonstrated our resolve to protect India’s sovereignty at any cost,” IAF chief RKS Bhadauria said.

He further stated that in spite of unacceptable Chinese action after agreements reached during military talks, resulting in loss of lives, “all efforts are underway to ensure that the current situation at LAC is resolved peacefully”.

An unprecedented violent clash took place in Galwan Valley at the Line of Actual Control in eastern Ladakh with Chinese People’s Liberation Army soldiers attacking a small group of Indian Army men on patrol, resulting in fatalities which included the commanding officer of the Indian Army.

As many as 20 Indian Armymen including officers were killed in the face-off while the Chinese side is learnt to have suffered over 40 casualties including dead and seriously injured.

According to an AFP report, the soldiers were not shot but were killed in hand-to-hand combat on Indian territory. The soldiers threw punches and stones at each other and the Chinese troops allegedly used rods and nail-studded clubs during the fight that lasted for hours until midnight on Monday.

The Combined Graduation Parade (CGP) was held to mark the successful completion of pre-commissioning training of flight cadets of various branches of Indian Air Force (IAF).

The event assumes significance as it is being held amid the ongoing tension with China.

<https://www.thestatesman.com/india/wont-let-sacrifice-galwan-valley-braves-go-vain-iaf-chief-pays-tribute-martyred-soldiers-1502901662.html>

Ladakh standoff: Indian Air Force put on high alert

Air Chief Marshal Bhadauria visited Leh and Srinagar air bases on July 17, two days after 20 Indian soldiers were killed in violent clashes with the Chinese People's Liberation Army troops

New Delhi: The Indian Air Force has been on high alert across Northern and Western borders with Air Chief Marshal R.K.S. Bhadauria personally visiting the forward location bases in Leh and Srinagar to see the preparedness on the ground.

"All fighter aircraft are put on high operational alert along the borders," sources said.

Air Chief Marshal Bhadauria visited Leh and Srinagar air bases on July 17, two days after 20 Indian soldiers were killed in violent clashes with the Chinese People's Liberation Army troops in Galwan Valley in eastern Ladakh region.

He went for a two-day visit to the forward bases and returned on Friday.



Air Chief Marshal RKS Bhadauria (Photo | PTI)

The force has moved its fighter planes across the forward locations and has directed all its men to remain on high alert.

Even Indian Navy has been put on high alert amid the ongoing tension between India and China.

On Thursday, 10 Indian Army personnel, including four officers, were released from the captivity of the People's Liberation Army. The Indian Army personnel were released after hectic negotiations with the PLA for three consecutive days.

Indian Army said on Thursday that there were no soldiers "missing in action" following the violent clash with the PLA troops on Monday night. The Ministry of External Affairs (MEA) also said that no Indian army personnel were missing.

The statement was made after 10 Indian soldiers, who were held in captivity from Monday night onwards, were released.

It is, however, not clear what led to Indians being taken into captivity by the PLA.

The clash on Monday night occurred on the south bank of Galwan river in which 20 Indian soldiers were killed.

Those were the first casualties faced by the Indian Army in a clash with the PLA since 1975 when an Indian patrol was ambushed by Chinese troops in Arunachal Pradesh.

Sources said Indian Army troopers were outnumbered by 1:5 ratio when they came under attack at patrolling point 14 along the Line of Actual Control.

China's PLA troopers "savagely attacked" Indian Army personnel, according to sources in the government with knowledge of the details of the incident.

"The numbers were stacked up against the Indian Army troopers. Yet, the Indian side decided to fight the PLA troopers. The Indian soldiers were outnumbered 1:5 by the Chinese troopers," the sources said.

China is also said to have used thermal imaging drones to trace the Indian Army soldiers scattered on the treacherous terrain before brutally attacking them.

"It was the deadliest attack carried on Indian Army personnel by the Chinese military personnel in our memory," the government sources said.

The Indian Army said the soldiers went to the spot where the clashes broke out without any animosity and were displaying friendly gestures to the Chinese side. They were there to check if the de-escalation agreement was being followed as promised.

Several Indian Army soldiers are still undergoing treatment.

<https://www.newindianexpress.com/nation/2020/jun/19/ladakh-standoff-indian-air-force-put-on-high-alert-2158762.html>

नवभारत टाइम्स

Sat, 20 June 2020

किसी भी स्थिति से निपटने को तैयार, व्यर्थ नहीं जाएगा

गलवान घाटी के शहीदों का बलिदान: IAF चीफ

हैदराबाद में इंडियन एयरफोर्स अकैडमी की पासिंग आउट परेड में हिस्सा लेने पहुंचे चीफ ऑफ एयर स्टाफ आरकेएस भदौरिया ने कहा कि गलवान घाटी में शहीद हुए जवानों का बलिदान व्यर्थ नहीं जाएगा।

Edited By Shreyansh Tripathi

हैदराबाद: चीन से तनातनी के हालातों के बीच शनिवार को हैदराबाद में इंडियन एयरफोर्स अकैडमी की पासिंग आउट परेड में हिस्सा लेने पहुंचे चीफ ऑफ एयर स्टाफ आरकेएस भदौरिया ने एलएसी पर वर्तमान हालात को लेकर खुलकर बात की। अकैडमी की पासिंग आउट परेड और कंबाइंड ग्रेजुएशन सेरेमनी को संबोधित करते हुए एयर चीफ ने कहा कि गलवान घाटी में शहीद जवानों का बलिदान व्यर्थ नहीं जाएगा।

अपने संबोधन की शुरुआत में एयर चीफ ने कहा कि मैं लद्दाख में शहीद हुए कर्नल संतोष बाबू और उनकी टीम के जवानों को अपनी श्रद्धांजलि देता हूँ। एक ऊंचे रणक्षेत्र की चुनौतियों के बीच वह जिस प्रकार अपनी वीरता का प्रदर्शन करते हुए शहीद हुए और देश की संप्रभुता की रक्षा की। तमाम समझौतों के बीच चीन की ओर से एलएसी पर की गई कार्रवाई के बावजूद हम सभी तनाव की स्थितियों को शांतिपूर्ण तरीके से सुलझाने की कोशिश कर रहे हैं।

किसी शॉर्ट नोटिस पर हम हर परिस्थिति के लिए तैयार

वायुसेना अध्यक्ष ने कहा कि हम जिन स्थितियों में अपने देश के साथ रहते हैं, उसकी मूल जरूरत यही होती है कि हम हर वक्त किसी भी स्थिति के लिए तैयार रहें। इसी तैयारी का एक छोटा सा नजारा हाल ही में देश ने लद्दाख के अग्रिम इलाकों में देखा भी है, जो ये बताता है कि हम किस तरह परिस्थितियों से किसी शॉर्ट नोटिस पर भी लड़ने के लिए सक्षम हैं। मैं देश को ये आश्वस्त करना चाहता हूँ कि हम किसी भी आपात स्थितियों से निपटने के लिए पूरी तरह से तैयार हैं और कभी भी गलवान घाटी में शहीद हुए जवानों का बलिदान व्यर्थ नहीं जाने देंगे।

<https://navbharattimes.indiatimes.com/state/other-states/hyderabad/sacrifice-of-troops-in-galwan-valley-will-not-go-in-vein-said-air-chief-rks-bhadouria/articleshow/76475983.cms>

Indian Army, Air Force on alert in Ladakh; attack helicopters, reconnaissance planes fly over Leh

The Indian Army and the Indian Air Force in Ladakh are on high alert amid heightened tensions with China. India TV's exclusive visuals from the cold desert show increased aerial activity in the area with the Indian Air Force flexing its muscles. Heavy lifter Chinook helicopter was seen doing rounds over Leh this morning along with the P-8 reconnaissance aircraft

The Indian Army and the Indian Air Force in Ladakh are on high alert amid heightened tensions with China. India TV's exclusive visuals from the cold desert show increased aerial activity in the area with the Indian Air Force flexing its muscles. Heavy lifter Chinook helicopter was seen doing rounds over Leh this morning along with the P-8 reconnaissance aircraft.

Attack helicopter Apache has also been spotted over Leh as the armed forces build up in the Galwan Valley region continues.

Divisional level talks between the Indian Army and the Chinese People's Liberation Army (PLA) have been ongoing and Maj Gen rank officers from both sides met at Patrol Point 14 yesterday.

The build-up along the LAC has been ramped up after the unprecedented clash that took place between the Indian Army and the Chinese PLA on Monday where 20 Indian soldiers including the Commanding Officer (CO) of the 16 Bihar regiment were martyred.



Indian Army, Air Force on high alert; attack helicopters, reconnaissance planes seen flying over Leh

<https://www.indiatvnews.com/news/india/indian-army-air-force-high-alert-ladakh-china-tension-galwan-valley-attack-helicopters-flying-over-leh-627410>

THE TIMES OF INDIA विस्तार
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Sat, 20 June 2020

Navy alert on China's designs on Andamans

By Jayanta Gupta

Kolkata: The recent incidents at Galwan and other parts on the LAC have got senior defence officials worried about the Andamans.

Many feel the archipelago, nearly 700 nautical miles from the mainland, remains at risk from People's Liberation Army Navy. The Chinese navy has been active in the region, surveillance has established. While most Chinese vessels, including submarines, have lurked close to India's territorial waters, some had to be driven away.

"The Galwan incident and PLA's build-up along LAC are indicative of China's mindset from the start. China doesn't want a full-scale conflict with India. In Galwan, they suffered casualties and this will be hard to digest for the Chinese. They will not try anything more at LAC but will look at other avenues. China has already launched artificial islands and floating landmasses that are actually military bases. Countries like China are on the lookout for islands they



can put to use strategically. In the Andamans, we have such islands but fail to understand their potential,” a senior Navy official said.

The Indian mainland is actually further away from A&N than South China Sea over which China claims control. Moreover, rushing in assets will require planning and have to be guided by the prevalent weather.

Senior Navy officers say the Andamans and Nicobar Tri-Services Command requires capital ships, including missile frigates and even destroyers. At least 3-4 P-8I long range surveillance and reconnaissance aircraft should also be deployed there for constant patrolling.

Vice-Admiral (retd) P K Chatterjee, former commander-in-chief, Andamans and Nicobar Command and the seniormost submariner in the country when he retired, believes the Andamans needs to be paid more attention.

<https://timesofindia.indiatimes.com/city/kolkata/navy-alert-on-chinas-designs-on-andamans/articleshow/76474557.cms>

नवभारत टाइम्स

Sat, 20 June 2020

चीन से तनातनी के बीच अंडमान-निकोबार द्वीप समूह को लेकर अलर्ट पर भारतीय नौसेना

चीन से तनातनी की खबरों के बीच नेवी के अफसरों ने अंडमान निकोबार द्वीप समूह की सुरक्षा को लेकर तमाम चिंताएं व्यक्त की हैं। अधिकारियों का मानना है कि एलएसी पर मात खा चुका चीन अब किसी और रास्ते से भारत को नुकसान पहुंचाने का प्रयास कर सकता है।

जयंता गुप्ता

हाइलाइट्स

- अंडमान निकोबार द्वीप समूह के आसपास समुद्री क्षेत्र पर सख्त निगहबानी
- नौसेना के अफसरों ने कहा- सुरक्षा की दृष्टि से तमाम संसाधनों का जल्द कराना होगा इंतजाम
- समुद्री इलाकों में बढ़ी है चीन की नौसेना की सक्रियता, अलर्ट पर भारतीय जवान

कोलकाता: चीन से बढ़ी तनातनी की खबरों के बीच वरिष्ठ रक्षा विशेषज्ञों और भारतीय रक्षा एजेंसियों के वरिष्ठ अधिकारी अंडमान-निकोबार द्वीप समूह की सुरक्षा के लिए चिंतित दिखाई दे रहे हैं। LAC पर जारी तनाव के बीच विशेषज्ञ अंडमान-निकोबार द्वीप समूह पर अधिक ध्यान देने पर जोर दे रहे हैं। इस बात को कहने वाले नेवी के कई वरिष्ठ अधिकारी भी हैं, जो कि यह मानते हैं पीएलए के नेवी फ्रंट खोलने पर अंडमान को खतरा हो सकता है। ऐसी स्थितियों में अंडमान निकोबार द्वीप समूह के आसपास के समुद्री इलाकों में नेवी पूरी सतर्कता बरत रही है।

भारतीय नौसेना के एक वरिष्ठ अधिकारी का कहना है कि गलवान घाटी में हुई घटना और पीएलए का रवैया देखकर ये पता चल चुका है कि चीन भारत से बड़े स्तर पर विवाद करने के मूड में नहीं है। गलवान घाटी में भारतीय सुरक्षाबलों ने चीन को जिस अंदाज में जवाब दिया है, उससे वह उस इलाके में तो कोई गलत हरकत करने से एक बार सोचेंगे।

चीन ने द्वीपों पर बनाए हैं अपने बेस

अधिकारियों का मानना है कि एलएसी पर मात खा चुका चीन किसी और रास्ते से भारत को नुकसान पहुंचाने का प्रयास करे इसकी आशंका बनी हुई है। चीन ने बीते दिनों कई द्वीपों पर अपने मिलिट्री बेस बनाने की शुरुआत की है और अब वह ऐसे और इलाकों की तलाश कर रहा है, जहां के द्वीप समूह का वह सामरिक स्थितियों में इस्तेमाल कर

सके। ऐसा हम भी कर सकते हैं और हमारे पास अंडमान में ऐसे द्वीप समूह मौजूद हैं, लेकिन हमने अब तक उनके महत्व को नहीं समझा है।

700 नॉटिकल माइल्स की दूरी

अधिकारियों का कहना है कि इंडियन मेनलैंड से करीब 700 नॉटिकल माइल्स दूर अंडमान निकोबार पर और ध्यान देने की जरूरत है। इस इलाके में चीनी पीएलए नेवी की सक्रियता पर नजर रखने के लिए तमाम संसाधनों को यहां भेजा जाना जरूरी है। कारण ये भी है कि अगर कोई आपात स्थिति होती है तो किसी भी असेट को यहां भेजने के लिए मौसम और समय की दुशवारियों का ध्यान रखना होगा। ऐसे में अंडमान में जल्द से जल्द ऐसे संसाधनों का इंतजाम करना जरूरी है, जिससे इस इलाके और समुद्री क्षेत्र की हाई लेवल सर्विलांसिंग समेत तमाम कामों को पूरा कराया जाए।

<https://navbharattimes.indiatimes.com/state/other-states/kolkata/indian-navy-on-alert-in-times-of-tension-of-line-of-actual-control/articleshow/76475730.cms>

hindustantimes

Sat, 20 June 2020

How India military stacks up vis-a-vis Chinese defence forces

The stand-off between India and China along the Line of Actual Control (LAC) in Ladakh region has created a tense situation at the international border

Edited By Amit Chaturvedi

New Delhi: The stand-off between India and China along the Line of Actual Control (LAC) in Ladakh region has created a tense situation at the international border. There have been efforts from both sides to defuse the tension but no breakthrough has been achieved so far.

Indications are that the situation might deteriorate further. So, it becomes important to compare the military might of the two countries. On paper, the Chinese military appears to be stronger than India. But in reality, Indian soldiers are better equipped to fight in extreme climates, according to an analysis published in HT's sister publication Hindustan.

It is a well-known fact that China spends more on the defence sector. In 2019, it allocated \$261 billion for the defence sector. In comparison, India spent a little over \$71 billion.

China might have more weapons, but India is ahead in terms of number of soldiers. India has around 34 lakh soldiers whereas China has 27 lakh. The Belfer Centre for Science and International Affairs in Harvard Kennedy School says that India's Air Force is more powerful than China's.

The Mirage 2000 and Sukhoi 30 that India have give Indian Air Force an edge over China's J10, J11 and Su-27 fighter jets. India also has all-weather multirole aircraft, whereas only the J10 in China has this capability.

India also has more experience in fighting wars than China. It has fought many wars with Pakistan over the years and won all of them. China, on the other hand, fought the last war in Vietnam in 1979.

When it comes to high altitude warfare, India is better prepared than China here too. There are many aircraft in India which are capable of flying at high altitudes, whereas Chinese pilots have to fly with limited supplies and fuel due to difficult weather conditions in their airbases near Tibet.

Both India and China are nuclear powered countries. What makes this comparison interesting is that India keeps on participating in war exercises with other big countries like the US, France, the UK etc. The Americans can help Indians with intelligence inputs in case the situation deteriorates

further. China, on the other hand, has been fighting many countries on too many fronts, the latest being on the spread of the coronavirus disease.

(Analysis done by Defence and strategy expert Major (Retd) Mohd Ali Shah for Hindustan Times' sister publication Live Hindustan)

<https://www.hindustantimes.com/india-news/how-india-military-stacks-up-vis-a-vis-chinese-defence-forces/story-OHXDNM1X3al4DBSohTgZRI.html>

अमर उजाला

Sat, 20 June 2020

चीन ने लगाया अड़ंगा, लेकिन भारतीय सेना ने बना डाला गलवां घाटी में महत्वपूर्ण ब्रिज

नई दिल्ली: भारत और चीन के बीच पिछले कुछ समय से जिस पुल के निर्माण को लेकर मतभेद बढ़ा था और जिसकी वजह से सोमवार को दोनों देशों की सेना के बीच खूनी झड़प हुई, उस महत्वपूर्ण पुल को भारतीय सेना के इंजीनियरों ने बृहस्पतिवार को पूरा कर लिया है।

सामरिक दृष्टि से भारत और भारतीय सेना के लिए महत्वपूर्ण इस चार खंभे और 60 मीटर वाले पुल के बनने से अब भारत कई मायनों में एलएसी में चीन के खिलाफ मजबूत और बेहतर स्थिति में पहुंच जाएगा। गलवां-श्योक नदी के संगम के पूर्वी दिशा में तीन किलोमीटर दूर और पेट्रोलिंग पॉइंट-14 से दो किलोमीटर पीछे बने इस बेली ब्रिज ने भारत को इस स्थान पर मजबूती देने का काम किया है।



बेली ब्रिज, गलवां घाटी - फोटो : File Photo

भारतीय सेना के फॉर्मेशन इंजीनियर द्वारा बनाए गए इस पुल के निर्माण कार्य को रोकने के लिए चीनी सेना (पीएलए) लगातार प्रयास कर रही थी और पिछले कुछ दिनों में इस इलाके में बढ़ते तनाव का मुख्य कारण भी यही पुल था। यही वजह थी पीएलए ने पूरी गलवां घाटी पर ही अपना दावा ठोक दिया था। हालांकि चीनी सेना के तमाम रुकावटों के बावजूद भारत की तरफ से निर्माण कार्य को रोका नहीं गया और कम समय में इसे बनाकर तैयार कर लिया गया।



बेली ब्रिज, गलवां घाटी - फोटो : File Photo

भारत के लिए महत्वपूर्ण

इस पुल के बनने के बाद भारतीय पैदल सेना (इन्फैंट्री) को ठंडी पहाड़ी नदी को पार करने में जहां आसानी होगी वहीं ये इस संवेदनशील क्षेत्र में भारत की पकड़ को भी मजबूत करेगा। इसके अलावा लेह के दरबुक से दौलत बेग ओल्डी (काराकोरम दर्रा के ठीक दक्षिण में स्थित अहम मिलिट्री बेस) तक बन रहे 255 किलोमीटर की रणनीतिक सड़क की रक्षा भी करेगा।

इस पुल की अहमियत को इसी से समझा जा सकता है कि एलएसी से करीब 7-8 किलोमीटर की दूरी पर स्थित भारतीय सेना के बेस कैंप (120 किलोमीटर कैंप) से सीमा पर पहुंचने में आसानी होगी और साथ ही इस इलाके में भारत की तरफ से तेजी से निर्माण कार्य किए जा सकेंगे।

भारतीय सेना के अधिकारियों ने एक अंग्रेजी अखबार से बताया कि चाहे कैसी भी परिस्थिति हो, वे अपने इलाके में निर्माण कार्य आगे भी तेजी से जारी रखेंगे।

गौरतलब है कि इसी हफ्ते सोमवार (15 जून, 2020) की रात को पेट्रोलिंग पॉइंट-14 के पास ही चीनी सैनिकों ने भारतीय सैनिकों पर पत्थर, कंटीली तारों और लोहे के रॉड से हमला कर दिया था, जिसमें भारत के 20 जवान शहीद हो गए थे और कई बुरी तरह घायल हुए थे। वहीं चीन की तरफ से अनाधिकारिक तौर पर 43 जवानों की मौत हुई थी।

<https://www.amarujala.com/india-news/despite-opposition-from-china-indian-army-engineers-built-important-bridge-in-galvan-valley?pageId=1>

THE TIMES OF INDIA

Sat, 20 June 2020

Army low on stocks of 45 key items, 20 ammo stocks under critical 10(I) level

By Chethan Kumar

The Army, which is at present seeing eye-ball to eye-ball with Chinese troops in Ladakh, has put at least 45 key items, including different types of ammunition, warm clothing meant for troops deployed in areas like Ladakh, man-landing parachutes among other things, on a critical list.

The army, through the department of defence production (DDP), has asked the Ordnance Factory Board (OFB) to ensure supply of these items on priority at a time more than 80,000 employees have threatened an indefinite strike in July.

DDP Documents reviewed by TOI show that the stocks of 20 of these critical items are ammunitions, which are below '10(I)' levels. This means that their present stocks are insufficient "to undertake 10 days of 'intensive' full-spectrum fighting." Of these 20 items, five ammunitions are those that the army not only gets from the ordnance factories, but also through imports, and the stocks are still not up to the desired levels.



Listing out another 21 items, the army said: "...The following items are likely to become critical in case of disruption of normal supply." These items include combat dress, 'Coat ECC' (coats meant for extreme cold conditions), ponchos and caps for glaciers, supply dropping equipment and man-parachute items.

Aside from this, the DDP has also pointed out the shortfall in supply of three artillery guns, indents for which were placed earlier. More than 167 such guns are yet to be delivered by the OFB, whose productions have been hit due to the Covid-19 pandemic. Also, there's also short supply of 196 mine-protected vehicles.

"There has been no supply of these items in the past three months with various ordnance factories having been diverted to produce Covid-19 related items, or remaining shut due to the lockdown restrictions," one source said.

The OFB, which received the note marked “most urgent” from the DDP on June 9, has since communicated the same to general managers of the 41 ordnance factories spread across the country, but employee federations representing the 80,000+ workers say they are firm on the indefinite strike, which is being called against the government’s decision to corporatise OFB.

“It is requested to hold discussions with federations, confederations, associations of OFB...and to convince them that the interest of the employee would be completely safeguarded in this process and the government would certainly hold formal discussions with all stakeholders in this regard,” the DDP communication to OFB reads.

All India Defence Employees Federation (AIDEF) general secretary C Srikumar, however, said that the strike ballot — a referendum to see if employees support the strike — conducted between June 8 and 17 has got a 99.9% support for the strike.

“The government, which convinced us in August last year to withdraw our strike saying it will negotiate, suddenly announced as part of its Covid-19 package that it has decided to corporatise OFB. We are not just fighting for employee interest but to save the industry as a whole. We have seen what happened to BSNL after it was corporatised, we don’t want ordnance factories to become like that as it would be against national interest,” he said.

The DDP, acknowledging the strike ballot, told OFB: “...It is requested to direct general managers of factories to hold discussions at their level with the employees. It is believed that such discussions would remove the apprehensions and reduce anxiety...OFB may also plan production of critical items given in the annexure in each factory such that defence production of the country is maintained.”

Sri Kumar said: “All ordnance employees are patriots, we have proved that in 1962 and many other occasions. So, we strongly urge the government to withdraw its decision on corporatisation and let us work peacefully in fulfilling the nation’s defence requirement. How can we work when our future is uncertain?”

<https://timesofindia.indiatimes.com/india/army-low-on-stocks-of-45-key-items-20-ammo-stocks-under-critical-10i-level/articleshow/76452799.cms>

THE HINDU

Sat, 20 June 2020

Air Force trainees complete training

Chennai: A total of 420 Air Warriors of the Automobile Technician, Automobile Fitter and Air Force Police of Mechanical Transport Training Institute (MTTI) and Air Force Police & Security Training Institute (AFP&STI) completed their 52 weeks of rigorous training successfully and will now join the main stream of Indian Air Force, a Defence press release said.

Three foreign nationals from Nepal and Afghanistan also underwent the training. Air Commodore Dinesh Singh Dagar, Air Officer Commanding Air Force Station Avadi, urged the air warriors to put sustained efforts towards the continuous enhancement of knowledge and skills by keeping themselves abreast with the latest changes, the release said.

<https://www.thehindu.com/news/national/air-force-trainees-complete-training/article31873849.ece>

Russia to deliver Sukhoi Su-30MKIs, Mikoyan-Gurevich MiG-29s to Indian Air Force in shortest timeframe

Russia is ready to deliver Sukhoi Su-30 MKI and Mikoyan-Gurevich MiG-29 fighter jets to India in the shortest possible timeframe. In a government to government deal which comes amidst the India-China border tension, the Indian Air Force (IAF) plans to order and induct 33 fighters - 12 Sukhoi Su-30 MKIs and 21 MiG-29s - from Russia

By Siddhant Sibbal

New Delhi: Russia is ready to deliver Sukhoi Su-30 MKI and Mikoyan-Gurevich MiG-29 fighter jets to India in the shortest possible timeframe. In a government to government deal which comes amidst the India-China border tension, the Indian Air Force (IAF) plans to order and induct 33 fighters - 12 Sukhoi Su-30 MKIs and 21 MiG-29s - from Russia.

WION has learnt that Russia is ready to assess the issue of early delivery even as the country is already helping the IAF in the MiG-29 modernisation programme. IAF got its first MiG-29 in 1985 and the modernisation will help increase combat capabilities of the MiG-29 fighters to a level comparable to the 4th Generation jets.



Post-modernisation MiG-29s will allow integration of Russian and foreign origin weapons including tracking of aerial targets in a wide range of flight speeds and altitudes, tracking of heat-contrasting air objects & perform “hidden” (without the use of radar) attacks on them. Modern materials and technologies for corrosion protection will increase the service life of MiG-29 fighters by up to 40 years.

The IAF commissioned its first squadron of Su-30MKIs armed with the supersonic BrahMos-A cruise missile in January 2020 at Thanjavur Air Force Station. The Su-30MKI based at Thanjavur are part of the 222 Squadron 'Tigersharks'.

In fact, the importance of Sukhoi jets can be gauged from the fact that it is the only IAF combat aircraft capable of launching BrahMos supersonic missiles.

At DefExpo India 2020 BrahMos Aerospace's representative told Russian RIA Novosti news agency that in two years IAF's Su-30MKIs would receive new missiles for use against airborne early warning aircraft. Thus the highly successful India-Russia joint venture which produced BrahMos, could enter the air-to-air missile domain.

The first contract to deliver Su-30MKI jets to the IAF was signed on November 30, 1996, in Irkutsk, Russia, between Rosvooruzhenie state intermediary company and the Indian Defence Ministry. It envisaged the delivery of 32 Su-30s, all of which were produced in 2002-2004.

Satisfied with the performance of the aircraft, the Indian Defence Ministry placed additional orders. In December 2000, both countries signed a contract for organising the licensed production of Su-30MKIs in India at the Hindustan Aeronautics Limited facilities. Then in 2012, another contract for technological kits of Su-30MKIs was signed as the Sukhois have proved to be a reliable and effective multirole heavy aerial combat platform for the IAF.

The Su-30MKI project has become one of the largest in the history of military cooperation of India with a foreign country and also has contributed to the sales of Su-30MK family aircraft to other countries.

Moreover, the programme has directly influenced the development of Su-30SM fighter jet, which is currently being delivered to the Russian Air Force and is also being offered at the international arms market as Su-30SME.

<https://zeenews.india.com/india/russia-to-deliver-sukhoi-su-30mkis-mikoyan-gurevich-mig-29s-to-indian-air-force-in-shortest-timeframe-2290911.html>

hindustantimes

Sat, 20 June 2020

How the Galwan Valley tragedy can transform Himalayan geopolitics

Ladakh will be key in the new Great Game. Reimagine its external and internal orientation

By P Stobdan

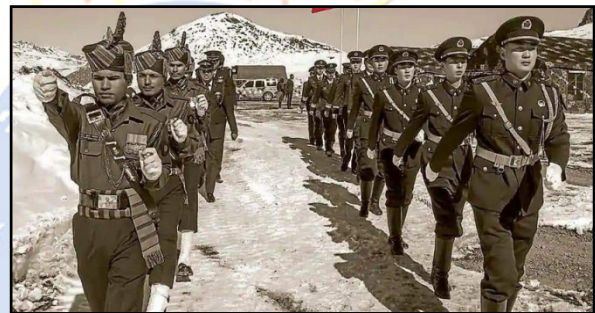
The brutal clash between Indian and Chinese soldiers on the night of June 15 has exposed the People's Liberation Army (PLA)'s well-planned design of stealthily wresting the entire Galwan Valley from India's control. It also carries a set of underlying messages and possibilities.

First, immediately after the incident, PLA's Western Theatre Command (WTC) issued a statement on June 16, claiming China's territorial "sovereignty" over the entire Galwan Valley. That was followed by a June 17 statement from Chinese foreign ministry spokesperson, Zhao Lijian, that echoed, in verbatim, WTC's line claiming China's sovereignty over the Galwan Valley area.

Second, it appears to have been triggered by local factors at a micro-level, with, at the most, instructions from WTC headquarters. Clearly, it is a case of a disengagement process not being handled properly at the local level and things going out of control. There have been other violent hand-to-hand clashes in this area since the 2017 Doklam standoff. It turned more violent this time with PLA using more lethal weapons, stones, boulders, rocks wrapped with barbed wire and wooden logs studded with nails.

A third, inter-related, point is that the top PLA officials of WTC seem to enjoy more autonomy than other Chinese military theatres. In this case, the Chinese government only seems to have endorsed WTC's line, which has a specific mandate or a direct and wider strategic direction from Beijing to alter the ground situation in consonance with China's national vision for western provinces ie Xinjiang and Tibet. It also has a larger focus agenda with regards to securing Chinese interests, including safeguarding China's ambitious Belt and Road Initiative (BRI)-related projects moving just north of the Karakoram Range. PLA views India's building of strategic roads in Ladakh as potentially causing disruption to the security of the BRI/Chinese Pakistan Economic Corridor (CPEC).

Fourth, the incident can either spark greater escalation or actually, counter-intuitively, lead to de-escalation. The Indian Army has lost 20 personnel, including a commanding officer in the vicious attack. This is the biggest military clash in over five decades and the risk of the border standoff escalating into a full-scale confrontation is clearly present. However, unconfirmed reports suggest the Chinese side too suffered "proportionate casualties", with at least 43 PLA personnel either dead or injured in the clash. If this is the case, then the balance of tragedies is established, and opens up the scope for further de-escalation to continue as agreed upon during military talks held on June 6.



India must respond to China's move, not just through military means but through a forward-looking strategic, economic and connectivity vision matching China's BRI project. (PTI photo)

What happens now also depends on the political will of the two countries. If the political relationship between India and China is not smooth, the Chinese party leadership may find it hard to control PLA, which is generally seen as more hardline on India. At the same time, the situation can still be brought under control by political and diplomatic interventions at a higher level. The clash has finally compelled both sides to open up talks at the foreign minister-level.

However, if China refuses to revert to a pre-standoff status quo position, India may be forced to evict PLA from the Indian side through a military intervention.

Whether there is escalation or not is also closely related to how the two sides tell the story of the incident to their people. The Chinese side is not giving the exact figure of casualties. We do not know if they are embarrassed or whether they want to hide the figures from their own people and underplay the incident to prevent escalation.

Where does this leave New Delhi?

India must respond to China's move, not just through military means but through a forward-looking strategic, economic and connectivity vision matching China's BRI project. It must think about reconnecting and resuming old trade links. Ladakh is a geostrategic axis or a pivot point for India to reach out to central Asia, Europe and Russia. The Dorbo-Shayok-DBO road should be called the Ladakh economic corridor. It should be India's approach to go beyond the Himalayas. Otherwise, India is destined to remain defensive in posture.

This, however, is contingent on India reworking the governance priorities in Ladakh. It is the locals who have the best understanding of the border. The region has already remained neglected for a long time due to Article 370 and 35A.

The way forward must have several components. First, the Ladakh administration should distribute the entire stretch of vacant land in eastern Ladakh (from Chumur to Karakoram) among the population of the Leh district for agriculture, horticulture and other economic activities.

Two, the government must expedite infrastructure airport/road network expansion in eastern Ladakh. The Indian Air Force must reactivate the Fukche/Loma airport for both civilian and military use. Attempts should be made to reopen and refurbish the old Chuchul airport base.

Three, authorities must re-populate the area with legal ownership to citizens and not leave the borderland vacant. The government must provide incentives for Changpa nomadic farmers presently settled in Leh (Kharnag-Ling settlement) to return to the borderland areas and encourage them to reactivate their nomadic Rebo herding skills. Security forces should be directed not to prevent their movement along the border areas.

Four, large-scale forestation and large-scale grass-sowing activities through aerial seeding and use of drip-irrigation technology must be undertaken. Five, NITI Aayog should prepare a defence-development plan for area development. And six, the Indian Army should revisit the idea of legalising the existing illegal border trade at specific places such as at Dhumtsele and Demchok.

Galwan has changed geopolitics in the Himalayas. India must step up.

<https://www.hindustantimes.com/analysis/restricting-chinese-imports-will-not-be-easy/story-RcDRLpgszZtoDaC7AHmFIJ.html>



Sat, 20 June 2020

Japan deployed missile at china border after its conflict with india

China has created war-like conditions not only in India but against its other neighbors. In addition to the South China Sea, it is also engaged in seizing areas of Japan and Taiwan. However, to respond to his intentions, India as well as Japan have created a mood. In addition to deploying its missile towards the border with China, Japan has also increased the number of army.

In view of China's war intentions, Japan is increasing its air defense. It will implement the Patriot Pac-3 MSE Air Defense Missile System deployment at four military bases by June this year. US-Japan News has cited that, "Pac-3 MSE is capable of countering any hit-to-kill." The current Patriot PAC-3 deployed in Japan has a maximum range of 70 km and has been increased to 100 km in the new version of the PAC-3 MSE. In December 2017, Lockheed Martin signed a \$ 944 million contract to deliver Patriot Advanced Capability-3 and PAC-3 missile segment enhancement missiles to the US and allied countries.



The upgraded PAC-3 MSE increases its firepower as well as increases its height and performance. The PAC-3 MSE is a high-velocity interceptor that detects incoming threats in advance. This includes tactical ballistic missiles, cruise missiles and aircraft. The missile uses hit-to-kill technology, which detects threats through kinetic energy.

<https://idr.org/japan-deployed-missile-at-china-border-after-its-conflict-with-india/#more-229491>

ज्ञान प्रसार एवम् विस्तार
के 50 वर्ष

Natural fluid injections triggered Cahuilla earthquake swarm

Summary: Scientists generated a catalog of 22,000 seismic events from a four-year period to reveal the structure of an active fault zone.

A naturally occurring injection of underground fluids drove a four-year-long earthquake swarm near Cahuilla, California, according to a new seismological study that utilizes advances in earthquake monitoring with a machine-learning algorithm. In contrast to mainshock/aftershock sequences, where a large earthquake is followed by many smaller aftershocks, swarms typically do not have a single standout event.

The study, which will be published on June 19 in the journal *Science*, illustrates an evolving understanding of how fault architecture governs earthquake patterns. "We used to think of faults more in terms of two dimensions: like giant cracks extending into the earth," says Zachary Ross, assistant professor of geophysics and lead author of the *Science* paper. "What we're learning is that you really need to understand the fault in three dimensions to get a clear picture of why earthquake swarms occur."

The Cahuilla swarm, as it is known, is a series of small temblors that occurred between 2016 and 2019 near Mt. San Jacinto in Southern California. To better understand what was causing the shaking, Ross and colleagues from Caltech, the United States Geological Survey (USGS), and the University of Texas at Austin used earthquake-detection algorithms with deep neural networks to produce a highly detailed catalog of more than 22,000 seismic events in the area ranging in magnitude from 0.7 to 4.4.

When compiled, the catalog revealed a complex but narrow fault zone, just 50 meters wide with steep curves when viewed in profile. Plotting those curves, Ross says, was crucial to understanding the reason for the years of regular seismic activity.

Typically, faults are thought to either act as conduits for or barriers to the flow of underground fluids, depending on their orientation to the direction of the flow. While Ross's research supports that generally, he and his colleagues found that the architecture of the fault created complex conditions for underground fluids flowing within it.

The researchers noted the fault zone contained undulating subterranean channels that connected with an underground reservoir of fluid that was initially sealed off from the fault. When that seal broke, fluids were injected into the fault zone and diffused through the channels, triggering earthquakes. This natural injection process was sustained over about four years, the team found.

"These observations bring us closer to providing concrete explanations for how and why earthquake swarms start, grow, and terminate," Ross says.

Next, the team plans to build off these new insights and characterize the role of this type of process throughout the whole of Southern California.

Story Source:

[Materials](#) provided by [California Institute of Technology](#). Original written by Robert Perkins. *Note: Content may be edited for style and length.*

Journal Reference:

1. Zachary E. Ross, Elizabeth S. Cochran, Daniel T. Trugman, Jonathan D. Smith. **3D fault architecture controls the dynamism of earthquake swarms.** *Science*, 2020 DOI: [10.1126/science.abb0779](https://doi.org/10.1126/science.abb0779)
<https://www.sciencedaily.com/releases/2020/06/200618150241.htm>

Study finds 'dark matter' DNA is vital for rice reproduction

Regions of DNA that give rise to non-coding RNA are required for proper development of plant reproductive organs

Researchers from the Okinawa Institute of Science and Technology Graduate University (OIST) have shed light on the reproductive role of 'dark matter' DNA - non-coding DNA sequences that previously seemed to have no function.

Their findings, published today in *Nature Communications*, have revealed that a specific non-coding genomic region is essential for the proper development of the male and female reproductive organs in rice.

"Rice is one of the major global crops and is the staple food in many countries, including Japan," said Dr. Reina Komiya, senior author of the research paper and associate researcher from the OIST Science and Technology Group. "Further research into how these genomic regions affect plant reproduction could potentially lead to increased productivity and more stable yields of rice."

Many previous developmental studies have focused on genes - the sections of DNA that provide instructions for making proteins. But in complex creatures like plants and animals, a large fraction of the genome - typically between 90-98% - doesn't actually code for proteins.

The vast expanse of this 'junk DNA' has long puzzled biologists, with many dubbing it the 'dark matter' of the genome. But recent research suggests that many of these non-coding genomic regions may have a function after all, giving rise to non-coding RNA.

Scientists have now identified numerous types of non-coding RNA, ranging from small molecules only 20-30 nucleotide bases in length to long molecules of over 200 nucleotides. Although studies show that non-coding RNA plays a vital role in the regulation of gene expression - the process where a gene's instructions are used to make RNA or protein - the precise function of each specific non-coding RNA remains poorly understood.

Dr. Komiya is particularly interested in reproduction-specific RNAs. "These are non-coding RNAs that are produced as the reproductive system forms. I wanted to uncover what role they play in the development of stamens and pistils, the male and female reproductive organs in plants."

Making mutants

In the study, Dr. Komiya's group focused on a reproduction-specific microRNA - a major class of small non-coding RNAs - called microRNA2118.

The scientists created mutant rice strains by deleting a region of the genome that contains multiple copies of the specific DNA sequence that gives rise to microRNA2118. They found that the mutant strains were sterile and showed abnormalities in the structure of the stamens and pistils.

"This means that the role of microRNA2118 in the proper development of the stamens and pistils is essential for plant fertility," said Dr. Komiya.

Revealing RNA and probing proteins

In order to delve deeper into how microRNA2118 controlled development of the anther, the scientists then identified which other molecules were affected by microRNA2118.

They found that microRNA2118 triggered the cleavage of long non-coding RNA, producing many tiny RNA molecules, called secondary small RNAs.

"Interestingly, these small RNAs were rich in uracil, one of the four nucleotide bases found in RNA, which is very unusual compared to other small RNAs," said Dr. Komiya. "We hope to find out the exact function of these small RNAs - and whether this difference in nucleotide composition is important - in further research."

The scientists also discovered that two Argonaute proteins that were only produced in the stamen were dependent on the presence of microRNA2118. Previous research has shown that Argonaute proteins team up with small RNAs to carry out many regulatory functions, such as silencing genes and cleaving RNA.

Dr. Komiya's group therefore proposes that the Argonaute proteins may interact with microRNA2118 to trigger production of the secondary small RNAs. The proteins may also interact with the secondary small RNAs to silence specific regions of the genome. The team hopes to elucidate exactly how the Argonaute proteins and secondary small RNAs affect development of the plant reproductive system in further research.

"Reproduction is an important phenomenon of passing genetic information to the next generation and is essential for maintaining a stable yield supply. However, development of the reproductive system is complicated, and many aspects remain unknown," concluded Dr. Komiya. "This study shows that non-coding RNAs, derived from regions of the genome that were thought to be non-functional, are vital for plant reproduction. Exploring non-coding RNAs further is an exciting and important area of research."

This research was supported by the Japan Science and Technology Agency (JST) Strategic Creative Research Promotion Project PRESTO (creation of next-generation basic technology for control of plant life phenomena in the field) and Grant-in-Aid for Scientific Research on Innovative Areas (RNA taxonomy).

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https://eurekalert.org/pub_releases/2020-06/oios-sf061720.php

COVID-19 Research News

THE  HINDU

Sat, 20 June 2020

Siddha research papers throw light on efficacy of 'Kabasura kudineer' in managing COVID-19

The ingredients are powdered and mixed with water, then boiled to make a decoction of one-fourth of its initial volume

Chennai: With a global race on to find a cure for the deadly coronavirus, teams of Siddha doctors in Tamil Nadu who dug deep into the traditional system of medicine have found 'kabasura kudineer' a herbal concoction to be effective in managing COVID-19 cases.

At least two research papers in Siddha, including one after the novel Coronavirus began to spread in Tamil Nadu in early March this year, claim kabasura kudineer is effective in managing the COVID-19 positive persons.

Kabasura kudineer is a herbal concoction, comprising dry ingredients of ginger, pippali, clove, cirukancori root, mulli root, kadukkai, ajwain and many other herbs.

The ingredients are powdered and mixed with water, then boiled to make a decoction of one-fourth of its initial volume.

Incidentally, the Tamil Nadu government has also been promoting its consumption to boost immunity, although it has made it clear that it is not a medicine to treat COVID-19.

A study on two groups of COVID-19 positive cases both primary and secondary contacts, numbering 84 in nearby Vellore claim the study may be taken as a preliminary evidence of the protection offered by the herbal drink and its prophylactic effect in high risk COVID-19 cases.

The study by Dr. V. Vikramkumar, Assistant Medical Officer (Siddha), Tirupattur district, S. Ganesh, Director, Directorate of Indian Medicine and Homeopathy in Tamil Nadu, M.P. Sivanarul, Tirupattur District Collector, P. Parthiban, Joint Director, Directorate of Indian Medicine and Homeopathy, Tamil Nadu, and others was conducted in April.

It found that those who received kabasura kudineer intervention tested negative for COVID-19 on April 6, 2020 and those not administered the herbal concoction tested positive.

From the chisquare test analysis and graphical interpretation it emerged that there is an association between the intake of the concoction and the patients' health status, according to the study.

Kabasura kudineer was distributed to 42 patients in quarantine facility at Agraharam in Tirupattur district.

At another facility in Jamiya College of Ambur taluk in the same district, Kabasura kudineer intervention was not resorted to for the subjects.

They were quarantined on April 1, 2020 and special attention was given to both groups.

No home-made food was given to them, but only that prepared and given by a supervision team.

For the treatment group, 60 ml of the concoction was administered daily after food to adults and 15 ml to children for 14 days.

Both groups comprised 42 patients each and their ages ranged between 3 and 70 years. All patients were quarantined on April 1, 2020.

A five-year-old male child in this group got relieved from dry cough after drinking four doses of kabasura kudineer under adult supervision.

Further, 10 patients got immediate relief from mild tiredness after the intake. No adverse effects were reported, according to the study.

Swabs for PCR for six cases (direct positive contact) on April 6 showed negative. Repeat sample tests on April 20 also showed negative results.

Secondary contacts tested on April 11, too, were negative. However they didn't develop any symptoms and no repeat tests were done.

In the control group all the cases were tested on April 6 and five primary contacts out of 42 tested positive and the others negative.

After 14 days quarantine period all others (secondary contacts) were out of symptoms and therefore no second testing was done for these cases.

Immediately after the COVID-19 pandemic was first reported from Wuhan, China, in December 2019, a team of Siddha doctors took up research on kabasura kudineer and Thonthasura Kudineer — the two Siddha formulations used against fevers due to respiratory infections.

Siddha medicine classifies disease and disorders into 4,448 types and has remedies for more than 64 types of fevers.

In a paper published in the Asian Journal of Pharmaceutical Research and Health Care in January this year, K. Pitchiah Kumar, State Licensing Authority, Directorate of Indian Medicine, Government of Tamil Nadu, K. Meenakshi Sundaram, Sanjeev Biomedical Research Centre and M.S. Ramasamy, through their study, demonstrated kabasura kudineer could be a potential Siddha medicine for COVID-19, provided further preclinical and clinical confirmatory studies were conducted.

Kabasura kudineer contained more active phyto constituents, the higher activity than in Thonthasura kudineer was observed, in the study on silico evidence for Corona Viral Drug.

Meanwhile, two pilot studies conducted in May and June 2020 by the National Institute of Siddha, Tambaram, here and SRM Medical College Hospital and Research Centre on the herbal concoction revealed that 99 per cent COVID-19 cases turned negative within five days.

<https://www.thehindu.com/sci-tech/health/siddha-research-papers-throw-light-on-efficacy-of-kabasura-kudineer-in-managing-covid-19/article31868238.ece>

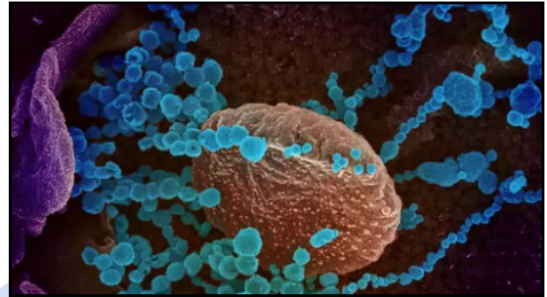
Covid-19 may infect respiratory centre of brain, suggests research

Report by researchers at CSIR is the first that highlights SARS-CoV-2 may target the PBC of the brainstem that controls respiration and causes respiratory collapse of Covid-19 patients, the statement added

New Delhi: A team of researchers at CSIR - Indian Institute of Chemical Biology (IICB), Kolkata has explored the neuro-invasive potential of Covid-19 and suggested that the virus may infect the respiratory centre of the brain, a statement said.

The researchers have also suggested that attention should be focused on the respiratory centre of the central nervous system to learn about mortality due to coronavirus.

The paper published in ACS Chemical Neuroscience and supported by Science & Engineering Research Board (SERB), a statutory body of the Department of Science & Technology (DST), implies that coronavirus could enter the human brain through the nose and reach the olfactory bulb of the brain. From there, the virus might infect PreBotzinger complex (PBC), the primary centre of the brain that controls the respiratory rhythm generation. This explains that collapse of the respiratory centre in the brain may be responsible for breakdown of Covid-19 patients.



This scanning electron microscope image shows SARS-CoV-2 (round blue objects), also known as novel coronavirus, the virus that causes Covid-19, emerging from the surface of cells cultured in the lab which was isolated from a patient in US. (Reuters Photo)

The team of researchers comprising Dr. Prem Tripathi, Dr. Upasana Ray, Dr. Amit Srivastava and Dr. Sonu Gandhi suggested that while the lung is one of the most infected organs, several other organs, including the brain, are also affected by Covid-19. This is the first report that highlights that SARS-CoV-2 may target the PBC of the brainstem that controls respiration and causes respiratory collapse of Covid-19 patients, the statement added.

The scientists have suggested that cerebrospinal fluid of Covid-19 patients and postmortem of the brain of the deceased should be assessed to better understand the route of SARS-CoV-2 entry and its spread to the respiratory centre of the brain.

The PreBotzinger complex functions as the primary respiratory oscillator and it has been proposed as a centre of respiration. It has been earlier shown that disruption of PBC causes lethality due to respiratory failure, suggesting its central role in respiratory rhythm generation. "It is possible that SARS-CoV-2 may shut down respiratory centre, and in turn breathing by infecting and destroying the PBC of the brainstem," it said, adding that this hypothesis needs to be validated for SARS-CoV-2.

Another recent study from a group of scientists at King's College London, UK highlighting that loss of smell was one of main symptoms of Covid-19 patients, hinting at the involvement of the same route through which coronavirus may enter the brain.

The study highlights that it is important to not only screen the Covid-19 patients for neurological symptoms but also further segregate when the symptom appears. The researchers have pointed out that while at present, the brain is not considered as the site of primary or secondary reason for death of a Covid-19 patient, attention needs to be focused towards the brain's respiratory centre. "Postmortem of brain of COVID-19 patients could be assessed to know the route of entry

and affected areas including detailed assessment of respiratory centre of the brain,” the statement added.

<https://www.hindustantimes.com/india-news/covid-19-may-infect-respiratory-centre-of-brain-suggests-research/story-HnqKDAmEEmLh3pquLdTDaM.html>



Sat, 20 June 2020

MMR vaccine could protect against the worst symptoms of COVID-19

Administering the MMR (measles, mumps, rubella) vaccine could serve as a preventive measure to dampen septic inflammation associated with COVID-19 infection, say a team of experts in this week's *mBio*, a journal of the American Society for Microbiology. Long-time collaborators and spouses Dr. Paul Fidel, Jr., Department Chair, Oral and Craniofacial Biology, and Associate Dean for Research, Louisiana State University Health School of Dentistry and Dr. Mairi Noverr Professor of Microbiology & Immunology at Tulane University School of Medicine in New Orleans co-authored the perspective article based on ideas stemming from research in their labs. Vaccination with MMR in immunocompetent individuals has no contraindications and may be especially effective for health care workers who can easily be exposed to COVID-19, say the researchers.

"Live attenuated vaccines seemingly have some nonspecific benefits as well as immunity to the target pathogen. A clinical trial with MMR in high-risk populations may provide a low-risk-high-reward preventive measure in saving lives during the COVID-19 pandemic," said Dr. Fidel. "While we are conducting the clinical trials, I don't think it's going to hurt anybody to have an MMR vaccine that would protect against the measles, mumps, and rubella with this potential added benefit of helping against COVID-19."

Mounting evidence demonstrates that live attenuated vaccines provide nonspecific protection against lethal infections unrelated to the target pathogen of the vaccine by inducing trained nonspecific innate immune cells for improved host responses against subsequent infections. Live attenuated vaccines induce nonspecific effects representing "trained innate immunity" by training leukocyte (immune system cells) precursors in the bone marrow to function more effectively against broader infectious insults.

In Dr. Noverr's laboratory, in collaboration with Dr. Fidel, vaccination with a live attenuated fungal strain-induced trained innate protection against lethal polymicrobial sepsis. The protection was mediated by long-lived myeloid-derived suppressor cells (MDSCs) previously reported inhibiting septic inflammation and mortality in several experimental models. The researchers say that an MMR vaccine should be able to induce MDSCs that can inhibit or reduce the severe lung inflammation/sepsis associated with COVID-19. Mortality in COVID-19 cases is strongly associated with progressive lung inflammation and eventual sepsis.

Recent events provide support for the researchers' hypothesis. The milder symptoms seen in the 955 sailors on the U.S.S Roosevelt who tested positive for COVID-19 (only one hospitalization) may have been a consequence of the fact that the MMR vaccinations are given to all U.S. Navy recruits. In addition, epidemiological data suggest a correlation between people in geographical locations who routinely receive the MMR vaccine and reduced COVID-19 death rates. COVID-19 has not had a big impact on children, and the researchers hypothesize that one reason children are protected against viral infections that induce sepsis is their more recent and more frequent exposures to live attenuated vaccines that can also induce the trained suppressive MDSCs that limit inflammation and sepsis.

The researchers propose a clinical trial to test whether the MMR vaccine can protect against COVID-19, but in the meantime, they suggest that all adults, especially health care workers and individuals in nursing homes get the MMR vaccine. "If adults got the MMR as a child they likely still have some level of antibodies against measles, mumps, and rubella, but probably not the myeloid-derived suppressor cells," said Dr. Fidel. "While the MDSCs are long-lived, they are not life-long cells. So, a booster MMR would enhance the antibodies to measles, mumps, and rubella and reinitiate the MDSCs. We would hope that the MDSCs induced by the MMR would have a fairly good life-span to get through the critical time of the pandemic."

Dr. Noverr was recently awarded a "Fast Grant" (part of Emergent Ventures at the Mercatus Center, George Mason University) to test the efficacy of MMR directly in a nonhuman primate model of COVID-19 infection.

<https://medicalxpress.com/news/2020-06-mmr-vaccine-worst-symptoms-covid-.html>

Firstpost.

Sat, 20 June 2020

COVID-19 immunity: Studies show antibodies against novel coronavirus may last only for two-six months

Nearly 8.5 million people have been reported to be COVID-19 positive in the world and over 4,56,000 have died of the disease within the past six months. Scientists all over the world are racing to find a vaccine that can save lives and halt the spread of the disease.

A vaccine helps your body generate immunity (antibodies) against a pathogen without you ever contracting the disease.

Various countries are even considering 'immunity passports' to allow people who have recovered from the infection to travel more freely.

However, the latest research on the subject suggests that immunity to SARS-CoV-2, the causative agent of COVID-19, may not last even a year.

Asymptomatic people show a decline in antibodies within 2-3 months

In a small study, done in China and published in the journal *Nature*, 37 asymptomatic patients of COVID-19 were assessed for the clinical and immunological features of the disease.

The study found that most asymptomatic people shed the virus for a median of 19 days, which was longer than that of the symptomatic group -- 14 days for those with mild symptoms. However, people who are asymptomatic do not have as strong an immune response as those who show symptoms.

The researchers also studied 37 asymptomatic and 37 symptomatic people for eight weeks after the patients were discharged from the hospital. The IgG levels declined in about 93 percent asymptomatic people and about 96.8 percent symptomatic people in the early convalescent (recovery) phase. Though the latter still had a higher number of IgG. IgG is the antibody that is responsible for long-term response against a pathogen.

About 81 percent of asymptomatic patients and 62 percent of the symptomatic ones had a reduction in neutralising antibodies. Neutralising antibodies are those that bind to the virus and stop the infection.

Immunity against common cold coronaviruses starts declining within six months

In another study done in Amsterdam, 10 people were followed up with for 35 years to study how their body reacts to coronaviruses that cause the common cold and for how long their immune system sustains antibodies against these viruses. There are about four coronaviruses that cause the common cold.

The study found that all individuals showed a significant reduction (about 50 percent) in their coronavirus antibody levels within six months and had reinfection within a year. The antibody levels dropped by about 75 percent in all people within 12 months. Half of the people had no immunity against the virus after four years.

The average age of the patients at the beginning of the study was between 27 and 40 years and by the end of the study, it was around 49 to 66 years.

The study concluded that if SARS-CoV-2 immunity also lasts for as long (since it is part of the coronavirus family and shares many characteristics), there is a high chance of reinfection among patients. However, for reinfection, a person has to be exposed to the virus again.

Also if this is the case with COVID-19 causing virus, serological testing for the infection would be useless if done a year after the infection and a vaccine for the virus may need to be given more frequently -- say, every six months to maintain sustained immunity.

<https://www.firstpost.com/health/covid-19-immunity-studies-show-antibodies-against-novel-coronavirus-may-last-only-for-two-six-months-8500911.html>



