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समाचार पत्रों से चयित अंश
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DRDO News

COVID-19: DRDO's Contribution

Outlook

Mon, 21 Sept 2020

Bihar reports 1,555 fresh COVID-19 cases; record 1.76 lakh samples tested in a day

Patna: The coronavirus caseload in Bihar went up to 1,68,541 after 1,555 new infections were detected, while the state tested a record 1.76 lakh samples for COVID-19 in a single day, the health department said in a bulletin on Sunday.

Three fresh fatalities were reported -- one each from Patna, Begusarai and Samastipur districts -- in the past 24 hours that took the death toll due to the disease to 864, the statement issued this evening said.

The bulletin said that 1,487 patients recovered from COVID-19, and the number of people who have recuperated so far is 1,54,443. The recovery rate in Bihar is 91.63 per cent now.

The state presently has 13,234 active cases.

A record 1,76,511 samples were tested for COVID-19 in the past 24 hours, taking the cumulative number of tests so far to over 57 lakh in the state.

The 1,555 new cases included 209 from Patna district, 101 from Muzaffarpur, 93 from Supaul and 73 each from East Champaran and Purnea, the bulletin said.

Meanwhile, the Muzaffarpur district administration and the Defence Research Development Organisation (DRDO) urged people to get themselves treated at a COVID-19 hospital set up recently by the defence agency.

The 500-bed makeshift hospital built by the DRDO in Muzaffarpur town started functioning from September 7, but only 70 patients have been admitted there so far, a statement by the district administration said.

Of them, 29 patients have already been discharged after recovering from the disease, it said.

"The number of COVID patients is very low at the makeshift hospital, probably because of a lack of awareness. They are going to private hospitals and medical colleges in large numbers for treatment," Lt Col Vikas, a DRDO official associated with the hospital, said.

World-class facilities are being provided at the hospital, he said.

Besides the DRDO official, Muzaffarpur District Magistrate Chandra Shekhar Singh appealed to the people of Muzaffarpur and its adjoining districts to avail the facilities at the hospital.

Health department sources said that with a caseload of 7,506 infections, Muzaffarpur district is at the second spot in terms of COVID-19 positive cases after Patna where the tally is 25,569.

Muzaffarpur district also reported 31 deaths due to the disease so far.

(Disclaimer: This story has not been edited by Outlook staff and is auto-generated from news agency feeds. Source: PTI)

https://www.outlookindia.com/newsscroll/bihar-reports-1555-fresh-covid19-cases-record-176-lakh-samples-tested-in-a-day/1939634

अमर उजाला

Mon, 21 Sept 2020

ATA WhAP बख्तरबंद जंगी वाहन पहुंचा लद्दाख, चीन से मुकाबले के लिए होगा परीक्षण, जानें इसकी खूबियां

पिछले कुछ हफ्तों में, भारतीय सेना चीन की पीपुल्स लिबरेशन आर्मी के खिलाफ किसी भी मुठभेड़ की तैयारी के लिए लद्दाख में अपने सबसे कुशल उपकरणों को तैनात करने के लिए पूरे दमखम के साथ काम कर रही है। मीडिया रिपोर्ट के मुताबिक भारत में डिजाइन और निर्मित किए गए सेना के सैनिकों के लिए आठ पहिये वाले बख्तरबंद जंगी वाहक वाहन का लेह में परीक्षण किया जा रहा है। यह वाहन स्वदेशी टाटा मोटर्स की Tata Wheeled Armoured Platform (टाटा व्हील्ड आर्मर्ड प्लेटफॉर्म) वाहन है।

DRDO-Tata WhAP - फोटो: Tata Motors (For Reference Only)

पूर्वी लद्दाख जैसे बहुत ऊंचाई वाले इलाकों में अपने सैनिकों को अत्यधिक मोबाइल बख्तरबंद सुरक्षा गाड़ियां उपलब्ध कराने के लिए भारतीय सेना को लंबे समय से ऐसी ही किसी जंगी वाहन की जरूरत है।

यह वाहन सर्दियों के दौरान उच्च-ऊंचाई वाले इलाकों में परीक्षणों से गुजरेगा। यह सैनिकों को ले जाने और रणनीतिक ऊंचाइयों पर भी प्रवेश करने में कारगर साबित हो सकता है। इसके अलावा, इस वाहन के इंजन और तोपखाने की कार्य प्रणाली का आकलन करने के लिए डेपसांग में परीक्षण किया जाएगा।

भारतीय सेना को पूर्वी लद्दाख क्षेत्र में सैनिकों की तुरंत आवाजाही के लिए बख्तरबंद जंगी वाहनों की आवश्यकता है, जहां चीन ने बड़ी संख्या में अपने बख्तरबंद जंगी वाहन तैनात किए हुए है। रिपोर्ट के मुताबिक इन नए तैनात वाहकों की एक सफल परीक्षण के बाद भारतीय सेना के लड़ाकू वाहनों के संचालन में जबरदस्त प्रगति कर सकती है।

क्या है टाटा व्हैप की खूबियां

टाटा व्हैप को डीआरडीओ प्रयोगशाला के साथ मिलकर विकसित किया गया है। हाल के दिनों में यह वाहन कई परीक्षणों से गुजरा है जिसमें हाई एल्टीट्यूड टेस्ट (उच्च ऊंचाई परीक्षण) शामिल हैं। यह Tata Defence Combat Wheeled Armoured Amphibious Platform (टाटा डिफेंस व्हील्ड आर्मर्ड एम्फीबियस प्लेटफॉर्म) पर आधारित है।

हो सकते हैं एयरलिफ्ट

इस वाहन की खासियत की बात करें तो ये पहिये वाले वाहन हैं जो बहुत तेज गति से चल सकते हैं। यह वाहन हलके होते हैं और वास्तविक नियंत्रण रेखा (LAC) में कई महत्वपूर्ण बिंदुओं पर एक साथ कई वाहन हवाई जहाज से एयरलिफ्ट कर पहुंचाए जा सकते हैं।

पानी में भी चलती है

टाटा व्हैप में Amphibious Drive Mode (एम्फीबियम ड्राइव मोड) दिया गया है, जिससे यह जमीन और पानी दोनों जगहों पर आसानी से चलाए जा सकते हैं। इसके साथ ही इसमें हाइड्रो-न्यूमैटिक स्ट्रट्स और स्वतंत्र सस्पेंशन मिलता है। टाटा व्हैप लगभग 10 से 12 लोगों को ले जा सकता है और इसे टोही वाहन, पैदल सेना वाहक, या रसद वाहक के रूप में इस्तेमाल किया जा सकता है।

सेना को मजबूती देगी

रिपोर्ट में यह भी बताया गया है कि इन वाहनों को पैंगोंग त्सो झील, चुमार और दौलत बेग ओल्डी में सशस्त्र बलों को मजबूत करने के लिए तैनात किया जा सकता है। इसके अलावा, इसे डीआरडीओ द्वारा डिजाइन किया गया है, जो सरकार द्वारा रक्षा क्षेत्र में आत्मनिर्भर बनने के लिए उठाए जा रहे कदमों को बयां करता है।

https://www.amarujala.com/photo-gallery/automobiles/auto-news/tata-drdo-whap-arrives-in-ladakh-will-be-tested-for-use-of-indian-army?pageId=6

the pioneer

Mon, 21 Sept 2020

Home Ministry stresses on border management

By Rakesh K Singh

New Delhi: The Union Home Ministry has stressed that border management along frontiers with Nepal, Bhutan and Myanmar should be emphasized as seriously as those along the borders with China and Pakistan.

Border guarding forces like Border Security Force (BSF), Indo-Tibetan Border Police (ITBP), Sashastra Seema Bal (SSB) and Assam Rifles have been asked to hold meetings with Union Home Secretary, Defence Research and Development Organisation (DRDO) and Bharat Electronic Limited (BEL) to identify technological solutions for improved border management. The decision was taken by Union Home Ministry Amit Shah on April 2 to review the progress of the recommendations made during his meeting with the border guarding forces late last year, officials said.

The move assumes significance as the frontiers along Nepal, Bhutan and Myanmar are considered friendly. Strengthening border management on the alignment with these countries could be seen in the backdrop of either China's footprint in these countries or Beijing's likely intent to provoke them in order to reduce Indian influence in the region.

In the backdrop of Doklam faceoff and Chinese designs, Shah was alerted and in a farsighted move sought prompt strengthening of border guarding mechanism, officials added.

https://www.dailypioneer.com/2020/india/home-ministry-stresses-on-border-management.html

Defence News

Defence Strategic: National/International

Hindustan Times

Mon, 21 Sept 2020

Indian Army strengthens hold over 20 strategic heights in Eastern Ladakh; Rafales to carry out sorties

Both sides reached the agreement to resolve the border row at a meeting between External Affairs Minister S Jaishankar and his Chinese counterpart Wang Yi on the sidelines of a Shanghai Cooperation Organisation (SCO) meet in Moscow on September 10

New Delhi: The armies of India and China are set to hold the sixth round of Corps Commander-level talks in the next couple of days to explore ways to defuse tension in eastern Ladakh even as India further bolstered its dominance in over 20 mountain heights around the friction points near the Pangong lake, government sources said on Sunday.

They also said that the IAF is set to use the newly-inducted Rafale jets to carry out sorties in Ladakh as part of the overall boosting of combat readiness in view of "provocative actions" by Chinese troops including the three incidents of shots being fired in the air in the last three weeks.

IAF's Rafale aircraft will conduct sorties in Eastern Ladakh as Army strengthens hold over 20 strategic points. (Ajay Aggarwal /HT PHOTO)

On the sixth round of Corps Commander meeting, the sources said a joint secretary-level officer from the Ministry of External Affairs is expected to be part of the Indian delegation as India is looking for some concrete outcome from the dialogue.

"It is set to take place in the next two days. There is a possibility that it may take place tomorrow (Monday) itself," said a source.

The main focus of the meeting is expected to be on the implementation of a five-point agreement reached between the two countries.

Both sides reached the agreement to resolve the border row at a meeting between External Affairs Minister S Jaishankar and his Chinese counterpart Wang Yi on the sidelines of a Shanghai Cooperation Organisation (SCO) meet in Moscow on September 10.

The agreement included measures like quick disengagement of troops, avoiding action that could escalate tensions, adherence to all agreements and protocols on border management and steps to restore peace along the Line of Actual Control (LAC).

The sources said the Indian Army also strengthened its dominance in over 20 strategic mountain heights around the northern and southern banks of Pangong lake as well as in the extended general area of Chushul in the last few days even as freezing conditions are gripping the area, the sources said.

The deployment of French-made Rafale jets in Ladakh came less than 10 days after they were formally inducted into the IAF.

At a ceremony in Ambala on September 10 where five Rafale jets were inducted into the IAF, Defence Minister Rajnath Singh said the induction of the fleet was crucial considering the

atmosphere being created along the frontier and that it is a "big and stern" message to those eyeing India's sovereignty.

Speaking on the occasion, Air Chief Marshal RKS Bhadauria had said induction of Rafale jets could not have happened at a more opportune time considering the security scenario. The Rafale fleet is stationed in Ambala air force station.

The multirole Rafale jets, built by French aerospace major Dassault Aviation, are known for air-superiority and precision strikes.

"The Rafale jets are flying around Ladakh," said a source without elaborating.

The IAF has deployed almost all its frontline fighter jets like Sukhoi 30 MKI, Jaguar and Mirage 2000 aircraft in the key frontier air bases in eastern Ladakh and elsewhere along the LAC. The IAF is also carrying out night time combat air patrols in the eastern Ladakh region.

The IAF has also deployed Apache attack choppers as well as Chinook heavy-lift helicopters to transport troops to various forward locations in eastern Ladakh.

The sources said the Army has made elaborate arrangements to maintain the current level of troops and weapons in all forward areas in eastern Ladakh and other sensitive high-altitude sectors in the harsh winter months when the temperature drops up to minus 25 degrees Celsius.

They said the situation remained tense in both southern and northern banks of the Pangong lake areas as well as in other friction points.

There have been at least three attempts by the Chinese People's Liberation Army(PLA) to "intimidate" Indian troops along the northern and southern bank of Pangong lake area in the last three weeks where even shots were fired in the air for the first time at the LAC in 45 years.

The situation in eastern Ladakh deteriorated after China unsuccessfully attempted to occupy Indian territory in the southern bank of Pangong Lake on the intervening night of August 29 and 30.

On September 7, Chinese troops unsuccessfully attempted to close in on the Indian position and even fired shots in the air in the Mukhpari area of Rezang-La ridgeline on the southern bank of Pangong lake.

As Jaishankar and Wang were to hold talks in Moscow, the Chinese military resorted to firing a barrage of "warning shots" into the air on the North Bank of Pangong lake to "intimidate" the Indian troops, Army sources had said.

India occupied a number of strategic heights on the southern bank of Pangong lake and strengthened its presence in Finger 2 and Finger 3 areas in the region to thwart any Chinese actions. China has been occupying the areas between Finger 4 and Finger 8. The mountain spurs in the area are called Fingers.

China has strongly objected to India's move. However, India has maintained that the heights are on its side of the LAC.

https://www.hindustantimes.com/india-news/indian-army-strengthens-hold-over-20-strategic-heights-in-eastern-ladakh-rafales-to-carry-out-sorties/story-MPufyYSGG0hoo6dCKUNThP.html

Live हिन्दुस्तान .com

Mon, 21 Sept 2020

चीन से तनातनी के बीच भारतीय वायुसेना की चाक-चौबंद तैयारी, लद्दाख में राफेल और मिराज ने भरी उड़ान

चीन से तनातनी के बीच भारतीय वायुसेना ने भी अपनी तैयारियों को चाक-चौबंद कर दिया है। हाल में वायुसेना में शामिल हुए राफेल विमान भी लद्दाख में उड़ान भर रहे हैं। वायुसेना सुखोई एवं मिराज विमानों को वहां पहले से ही तैनात कर चुकी है।

सूत्रों के अनुसार राफेल विमानों ने लद्दाख के आसपास के क्षेत्रों में रविवार को भी उड़ान भरी हैं। सरकारी सूत्रों ने भी इस बात की पुष्टि की है। कुछ मिराज विमान भी उड़ान भरते देखे गए हैं। वायुसेना ने विगत 10 सितंबर को अंबाला एयरफोर्स स्टेशन पर आयोजित एक समारोह में राफेल विमानों को वायुसेना में शामिल किया था। इससे पूर्व जुलाई के आखिर में फ्रांस से पांच राफेल विमान अंबाला पहुंचे थे।

राफेल विमान जब वायुसेना में शामिल किए गए थे, तब वायुसेना प्रमुख आरकेएस भदौरिया ने कहा था कि उन्हें सही वक्त पर वायुसेना में शामिल किया गया है। ये वायुसेना की ताकत में इजाफा करेंगे। उन्होंने यह भी कहा था कि गोल्डन एरोज (राफेल स्वाड्रन) को जहां भी तैनात किया जाएगा, वह हमेशा दुश्मन पर भारी पड़ेंगे। बीच में खबरें आई थीं कि चीन ने तिब्बत के क्षेत्र में पड़ने वाले कई हवाई अड्डों पर लड़ाकू विमानों की तैनाती की है, जिसके चलते भारत के लिए भी इस प्रकार का कदम उठाना जरूरी है। पिछले दिनों वायुसेना प्रमुख ने भी एलएसी के करीब स्थित वायुसेना केंद्रों का दौरा कर तैयारियों का जायजा लिया था।

भारत और चीन की सेनाओं के बीच कोर कमांडरों की छठे दौर की बातचीत आज मोल्डो में होने जा रही है। इसमें मुख्य रूप से पूर्वी लद्दाख में दोनों देशों के सौनिकों को पीछे हटाना और तनाव घटाने पर बनी पांच सूत्री सहमति के क्रियान्वयन पर मुख्य रूप से ध्यान केंद्रित किया जाएगा। सरकारी सूत्रों ने रविवार को यह जानकारी दी। उन्होंने बताया कि पूर्वी लद्दाख में वास्तविक नियंत्रण रेखा (एलएसी) से चीन की ओर मोल्डो में सुबह 9 बजे यह वार्ता शुरू होने वाली है। सूत्रों ने बताया कि भारतीय प्रतिनिधिमंडल में पहली बार विदेश मंत्रालय से एक संयुक्त सचिव स्तर के अधिकारी के इसमें हिस्सा होने की उम्मीद है। उन्होंने बताया कि भारत इस वार्ता में कुछ ठोस नतीजे निकलने की उम्मीद कर रहा है।

भारतीय सेना लद्दाख में 20 ऊंची चोटियों पर काबिज

भारतीय सेना पिछले कुछ वक्त में पूर्वी लद्दाख में पैंगोंग झील के निकट टकराव वाले क्षेत्रों के आसपास 20 ऊंची पहाड़ियों पर अपना कब्जा जमा चुकी है। सरकारी सूत्रों ने रविवार को यह जानकारी दी। चीन और भारत के बीच सोमवार को कोर कमांडर स्तर की छठवें दौर की वार्ता के पहले भारत की इस सामरिक बढ़त को बेहद महत्वपूर्ण माना जा रहा है।

भारत ने बर्फीले मौसम के बीच चुशूल के इलाके में भी पिछले कुछ दिनों से अपनी मौजूदगी बढ़ाई है, ताकि अपना प्रभुत्व कायम रखा जा सके। सूत्रों का कहना है कि सेना ने लद्दाख के सभी अग्रिम मोर्चों और संवेदनशील ऊंचाई वाले क्षेत्रों में सर्दियों के दौरान सैनिकों की मौजूदा संख्या और हथियार बनाए रखने के लिए आवश्यक इंतजाम कर लिए हैं। सर्दियों में यहां तापमान शून्य से 25 डिग्री तक नीचे चला जाता है। भारत ने पैंगोंग झील के दक्षिण किनारे पर सामरिक बढ़त वाली पहाड़ियों पर नियंत्रण के साथ फिंगर 2 और फिंगर 3 इलाके में सैन्य तैनाती और मजबूत की है। जबकि चीन ने फिंगर 4 से फिंगर 8 के बीच के इलाके पर नियंत्रण कर रखा है।

https://www.livehindustan.com/national/story-rafale-and-mirage-fly-through-ladakh-preparing-for-indian-air-force-amidst-escalation-from-china-3504644.html

जागरण

Mon, 21 Sept 2020

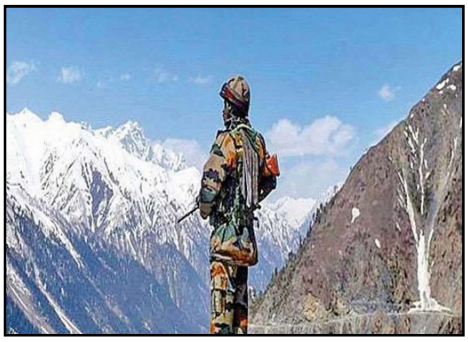
इस बार सर्दी के मौसम में भी लद्दाख में तैनात रहेंगे भारतीय सेना के जवान

इस बार सर्दियों के मौसम में भी भारतीय सेना लद्दाख के इलाके को छोड़ने को तैयार नहीं है। चीन के साथ चल रहे गलवन घाटी के विवाद के बाद सेना के यहां रहने की पूरी तैयारी कर ली है।

नई दिल्ली: चीन के साथ तनाव के बीच भारतीय सेना लद्दाख में किसी भी तरह की ढील नहीं देना चाह रही है। इस वजह से इस बार सर्दियों के मौसम में भी लद्दाख में अपनी तैनाती बरकरार रखेगी। भारतीय सेना वहां की दुर्गम परिस्थितियों में सर्दियां बिताने की पूरी तैयारी कर रही है। इसके लिए खच्चरों से ले कर बड़े विमानों तक, सेना ने वहां मौजूद हजारों सैनिकों तक रसद पहुंचाने के लिए अपने पूरे लॉजिस्टिक्स तंत्र को सक्रिय कर दिया है।

देश के इतिहास में अब तक का सबसे बड़ा अभियान

सेना के अधिकारियों का कहना है कि जिस तरह की तैयारियां की जा रही हैं वो देश के इतिहास में अब तक की सबसे बड़ी तैयारी है। बीते कुछ महीनों में जो सैन्य लॉजिस्टिक्स अभियान चला है वो देश के इतिहास में इस तरह के सबसे बड़े अभियानों में से एक है और इसके जरिए भारी मात्रा में गोला बारूद, उपकरण, ईंधन, सर्दियों के लिए रसद और खाने पीने का सामान लद्दाख तक पहुंचा दिया गया है। सामान पहुंचाने के लिए रणनीति के तहत काम किया जा रहा है।



इस बार सर्दियों के मौसम में भी भारतीय सेना लद्दाख के इलाके को छोड़ने को तैयार नहीं है। चीन के साथ चल रहे गलवन घाटी के विवाद के बाद सेना के यहां रहने की पूरी तैयारी कर ली है।

4 माह पहले ही शुरू कर दी गई थी तैयारी

सेना की ओर से लद्दाख इलाके में इस अभियान की शुरुआत बीते मई माह में ही कर दी गई थी, उस समय चीन की सेना के साथ सीमा पर विवाद गहराने लगा था। वैसे अभी भी दोनों देश सीमा विवाद का समाधान निकालने के लिए आपस में बातचीत कर रहे हैं लेकिन अभी तक कोई नतीजा निकला नहीं है। चीनी सेना पहले भारत की बात मानती है फिर वायदा खिलाफी कर देती है।

पहले दोनों देशों के बीच सीमा से हटने पर सहमति बनी थी, जब भारतीय सैनिक वहां से हट गए तो चीनी सेना इलाके में और आगे तक आ पहुंची। इसके बाद भारतीय सेना ने भी पीछे हटने से मना कर दिया। चीनी सेना की चालबाजियों को देखते हुए अब भारतीय सेना ने इस जोखिम भरी, ऊंचाई पर स्थित सीमा पर सर्दियों में भी तैनाती बनाए रखने की तैयारी कर ली है।

दोगुनी कर दी गई सैनिकों की संख्या

मालूम हो कि पूर्वी लद्दाख के इलाके में चीनी सेना के साथ भारतीय सैनिकों की झड़प हुई थी। बताया जाता है कि इस इलाके में औसतन 20,000 से 30,000 सैनिक तैनात रहते हैं। लेकिन मौजूदा तनाव की वजह से इस इलाके में सैनिकों की संख्या दोगुनी कर दी गई है। भारतीय सेना के अधिकारियों का कहना है कि भारत की ओर से यहां पर पहले इतने सैनिकों की संख्या नहीं बढ़ाई गई, जब चीन ने अपने सैनिकों की संख्या को बढ़ाना शुरू किया उसके बाद हमारी तरफ से भी तैनाती बढ़ाई गई। आज के समय में भारतीय सेना किसी भी स्थिति से निपटने के लिए अच्छे से तैयार है लेकिन ना वो तनाव को और बढ़ाना चाहती है और ना एक लंबा झगड़ा चाहती है।

4 माह तक बर्फ से ढक जाते हैं दर्रे

अधिकारियों ने बताया कि लद्दाख में तापमान माइनस पचास डिग्री से भी नीचे चला जाता है। ये जमाने वाली ठंड से भी काफी नीचे होता है। यहां सैनिकों की तैनाती अक्सर 15,000 फीट से भी ऊपर स्थित स्थानों पर होती है जहां ऑक्सीजन की कमी होती है।

लद्दाख के पहाड़ों के बीच के दर्रे हर साल करीब 4 महीनों तक बर्फ से ढंक जाते हैं, भारतीय सेना के योजनाकारों ने अभी से इलाके में 1,50,000 टन से भी ज्यादा सामान पहुंचा दिया है। सेना के 14 कोर के चीफ ऑफ स्टाफ मेजर जनरल अरविंद कपूर ने बताया हमें यहां पर जितनी भी रसद की जरूरत है उसे अभी से वहां पहुंचा दिया गया है।

लेह के पास बनाया गया गोदाम

लद्दाख के मुख्य शहर लेह के पास लॉजिस्टिक्स स्टोर बनाया गया है। यहां एक ईंधन, तेल और लुब्रीकेंट के डिपो में एक ढलान में हरे ड्रमों के ढेर रखे हुए हैं। पास ही में एक रसद डिपो में राशन के डब्बों और बोरों का ऊंचा ढेर लगा दिया गया है। लेह के पास एक और स्थान पर टेंट, हीटर, सर्दियों के कपड़े और ऊंचाई पर काम आने वाले उपकरण स्टोर करके रख दिए गए हैं।

अधिकारियों ने बताया कि इन सभी डिपो से सामान ट्रकों, हेलीकॉप्टरों और कुछ दुर्गम इलाकों में खच्चरों के जरिए लॉजिस्टिक्स बिंदुओं तक पहुंचाया जाता है। उन्होंने बताया कि लद्दाख जैसी जगह में ऑपरेशन्स लॉजिस्टिक्स की बहुत अहमियत है, पिछले 20 सालों में हमने इसमें महारत हासिल कर ली है। अब हम इन सब चीजों की बदौलत बहुत बेहतर स्थिति में युद्ध कर सकते हैं। सैनिकों को ऐसी ऊंची पहाड़ियों पर रूकने में भी कोई समस्या नहीं होगी।
https://www.jagran.com/world/china-india-china-tension-this-time-indian-army-soldiers-will-be-stationed-in-ladakh-even-in-winter-season-jagran-special-20772460.html

The Tribune

Mon, 21 Sept 2020

India, US to coexist in Indian Ocean for keeping out China

Reversal of the situation in 2013 when India fought tooth and nail to keep away US from entering into a security partnership with Maldives

By Sandeep Dixit

New Delhi: India on Sunday handed over emergency financial aid of $250 million to the Maldives, 10 days after the US signed an agreement with the island nation to develop military ties.

India has gone the extra mile to help the Maldives whose economy is projected to contact by 8 per cent this year. The RBI raised Treasury Bonds which were sold to the State Bank of India (SBI), Male, for handover to the Maldives government, the Indian Embassy said in a statement.

Sources said the two recent developments by US and India in this critical Indian Ocean island country will be the shape of things to come in India's neighbourhood to match Chinese deep pockets.

This was a reversal of the situation in 2013 when India fought tooth and nail to keep away the US from entering into a security partnership with the Maldives. The UPA government had then assessed that American entry would give rise to misgivings at a time when it thought India and China could co-exist in the Indian Ocean.

Earlier in 1983, the Indira Gandhi government had kicked up a row when the US sought to renew lease on a Sri Lankan transmitter. Located in Trincomalee, New Delhi thought the CIA also used it for intelligence gathering.

India was in an unfavourable situation in the Maldives after the 2013 elections when China began muscling in. The situation changed after an India-friendly regime won back power in 2018. But it was after the Galwan Valley clash that India tilted in favour of permitting the US to counter China with a defence framework agreement with the Maldives which will be fleshed out in due course, said the sources.

India has had an extra sympathetic attitude towards the Maldives during the pandemic. A medical team reached Male in March to help with Covid-preparedness, and nearly 12 lakh tonnes of medicines and 580 tonnes of food aid was provided.

Now, with the intention to deny space to China which has embarked on a worldwide Covid diplomacy, medical teams will be sent to the Maldives on short-term contracts to reinforce the health system.

https://www.tribuneindia.com/news/nation/india-us-to-coexist-in-indian-ocean-for-keeping-out-china-144051

Business Standard

Mon, 21 Sept 2020

India, China to hold sixth Corps Commander-level talks today: Report

India and China are scheduled to hold their sixth Corps Commander-level talks at the Chinese side of the Chushul/Moldo meeting point in the Eastern Ladakh sector to address the ongoing standoff

India and China are scheduled to hold their sixth Corps Commander-level talks on Monday at the Chinese side of the Chushul/Moldo meeting point in the Eastern Ladakh sector to address the ongoing military standoff there.

According to sources, Naveen Srivastava, Joint Secretary (East Asia) of the Ministry of External Affairs (MEA), will also attend the Commanders' Conference today.

The Corps Commanders of the two sides would be meeting after more than a month as both sides had been engaged in at least three firing incidents that have taken place along the Line of Actual Control (LAC).

The corps commanders would be meeting at the Moldo meeting hut opposite Chushul on the Indian side.

Representative image

The agenda and issues to be raised by the Indian side in the meeting were discussed and finalised during a high-level meeting attended by National Security Advisor (NSA) Ajit Doval, Chief of Defence Staff (CDS) General Bipin Rawat and Army Chief General Manoj Mukund Naravane last week on Friday.

India is likely to press for simultaneous disengagement and de-escalation by the Chinese side in the Eastern Ladakh sector during the meeting of two Corps Commanders.

The ground commanders had been talking to each other on an almost daily basis on the ground.

The talks are happening at a time when the Indian side has also occupied six major hill features which are helping the Indian Army to be in dominating positions on heights.

(Only the headline and picture of this report may have been reworked by the Business Standard staff; the rest of the content is auto-generated from a syndicated feed.)

https://www.business-standard.com/article/current-affairs/india-china-to-hold-sixth-corps-commander-level-talks-today-report-120092100190_1.html

Hindustan Times

Mon, 21 Sept 2020

Amid China's actions across Indo-Pacific, 2nd Quad meeting slated to be held in Tokyo in Oct

The members of the Quad, especially India, Japan and Australia, have also stepped up work on forging partnerships with like-minded countries in the region, or those with interests in the Indian Ocean, with an eye on China's increasing assertiveness and aggressiveness

Edited By Sohini Sarkar

New Delhi: The second ministerial meeting of the Quadrilateral Security Dialogue or Quad is expected to be held in Tokyo early next month, people familiar with developments said, with the meet coming against the backdrop of China's aggressive actions across the Indo-Pacific.

The meet will be held at a time when all four members of the Quad have serious differences with China – India is engaged in a border standoff in Ladakh, the Australian government has pledged to halt projects under the Belt and Road Initiative (BRI), Japan is worried about Chinese intrusions near the Senkaku Islands, and the US is engaged in a trade war.

There has been no official word on the Quad meeting, with the external affairs ministry only saying the four sides were in talks to decide the venue and timing. (HT FILE PHOTO.)

There has been no official word on the Quad meeting, with the external affairs ministry only saying the four sides were in talks to decide the venue and timing. The people cited above said the meeting is expected to be held in the Japanese capital in early October.

The members of the Quad, especially India, Japan and Australia, have also stepped up work on forging partnerships with like-minded countries in the region, or those with interests in the Indian Ocean, with an eye on China's increasing assertiveness and aggressiveness.

External affairs minister S Jaishankar said last week India and Japan were looking at cooperating on projects in Bangladesh and Myanmar as part of their efforts to work together in third countries.

India, Australia and France held their inaugural senior officials' trilateral dialogue, with the focus on building convergences in the Indo-Pacific, on September 9, the same day that India and Japan signed the Acquisition and Cross-Servicing Agreement (ACSA), a pact for reciprocal provision of supplies and services between their defence forces.

China has eyed the Quad, which was revived in 2017, with suspicion, especially after the grouping was upgraded to the ministerial level in September last year.

The upcoming Quad meeting will also be the first such high-level meet to be held in Tokyo since March, when the Covid-19 pandemic stopped virtually all travel by top government functionaries. Former Japanese Prime Minister Shinzo Abe had played a key role in the revival of the Quad and the holding of the meeting in Tokyo is expected to signal that his successor Yoshihide Suga is expected to continue with similar security and diplomatic policies, the people cited above said.

Senior officials of the Quad countries have held several virtual meetings during the pandemic to share experiences and coordinate on efforts to counter the Coronavirus.

https://www.hindustantimes.com/india-news/amid-china-s-actions-across-indo-pacific-2nd-quad-meeting-slated-to-be-held-in-tokyo-in-oct/story-glsVPEW6xCPQQqFdNK1B7H.html

Hindustan Times

Mon, 21 Sept 2020

PLA opens three fronts in South China Sea to distract the world from Ladakh

While both India and China have still to finalise the dates of military commanders' meeting with each asking for postponement once, PLA is continuing to build-up along the 1,597-km Line of Actual Control (LAC) in the western sector

By Shishir Gupta

New Delhi: Post the military flare-up at Galwan Valley, the People's Liberation Army (PLA) has mobilised four out of five of its military theatre commands with reports suggesting that live firing drills and exercises from the East China Sea, the Yellow Sea to the South China Sea to date were a distraction for its calculated aggression in Ladakh.

While both India and China have still to finalise the dates of military commanders' meeting with each asking for postponement once, PLA is continuing to build-up along the 1,597-km Line of Actual Control (LAC) in the western sector. After the India and China foreign ministers' meeting on September 10 in Moscow, a decision was taken to ask the military commanders to implement the total disengagement and then de-escalation agreement on the ground. The two sides are still to fix a mutually convenient date for the meeting but is expected in this week. It is understood that the meetings at the corps commanders' level will restrict itself to disengagement of forces post-April and the Depsang Bulge issue will be taken up at a separate divisional commanders' level.

According to a report in Nikkei Asian Review, PLA has mobilised its Southern Theatre Command, which oversees the South China Sea, Northern Theatre Command, which overseas Korean Peninsula, and Eastern Theatre Command, which oversees arch-rivals Japan and Taiwan.

According to a report in Nikkei Asian Review, PLA has mobilised its Southern Theatre Command, which oversees the South China Sea, Northern Theatre Command, which overseas Korean Peninsula, and Eastern Theatre Command, which oversees arch-rivals Japan and Taiwan. The newspaper said that just like the Chinese annexed Tibet in 1950s against the backdrop of its intervention in the Korean war, the present mobilisation was a distraction for a real stand-off in the Karakoram-Zanskar ranges of Himalayas. For the Ladakh operations, PLA's western theatre command has been fully mobilized with military districts of Xinjiang and Tibet fully involved in the aggression.

The Korean War in the 1950s also turned out to be a distraction for Jawahar Lal Nehru government and Indian diplomacy as they got involved in sorting out the North Korea issue leaving their own flanks in western and eastern sector open to Chinese military in 1962. PLA chose to attack India in 1962 when the entire world was diverted towards the Cuban missile crisis.

While India is engaging China through both military and diplomatic channels to resolve the current stalemate, the military commanders are prepared for the worst on all the borders and at sea. They know that distraction, diversion and deception are part of Chinese information warfare with psychological operations playing the lead role before the flag goes up.

By deploying three military commands against the US from South China to the East China Sea and test firing both DF-26 also called Chinese' Guam Killer and DF-21 D also called the Carrier Killer intermediate-range ballistic missiles in last week of August, the PLA is sending a message that it can take both US on its eastern and India on its western flank. The missile firing was to show-case Chinese capability to taken on the exercising USS Navy's supercarrier Ronald Reagan and Nimitz around the Chinese nuclear submarine base at Hainan Islands in the South China Sea.

Maybe the Ladakh incursion is a distraction for Chinese moves on Taiwan after Hong Kong and not the other way around.

https://www.hindustantimes.com/india-news/pla-war-drill-in-south-china-sea-a-distraction-for-ladakh-aggression-or-otherwise-analysis/story-I2IiROajJhYTeW0ZWyimFK.html

FINANCIAL EXPRESS
Read to Lead

Mon, 21 Sept 2020

INS Viraat's final journey! 57 glorious years of world's longest-serving warship in Indian Navy, Royal Navy

INS Viraat served in the Indian Navy for 30 long years. In March 2017, the glorious era of INS Viraat after being decommissioned at Naval Dockyard, Mumbai

By Debjit Sinha

New Delhi: INS Viraat has begun its brief voyage from Mumbai to Gujarat's Alang for one last time. Once INS Viraat reaches the shore of Gujarat, it will be broken and sold as scrap. As the Indian Navy bids adieu to the Aircraft Carrier, which has the distinguished record of providing the longest service in the world, we look at the indelible contributions of INS Viraat.

INS Viraat was commissioned into the British Royal Navy in November 1959 as HMS (Her Majesty's Ship) Hermes. The Centaur-Class aircraft carrier 27 years in the Royal Navy.

INS Viraat served in the Indian Navy for 30 long years. In March 2017, the glorious era of INS Viraat after being decommissioned at Naval Dockyard, Mumbai. The grand ceremony witnessed the presence of more than 1300 personnel who have served on board INS Viraat.

The then Chief of the Naval Staff Admiral Sunil Lanba was the Chief Guest for the ceremony. To commemorate "30 years of Glorious Service to The Nation" by INS Viraat, a Special Postal Cover was released for the Grand Old Lady of the Indian Navy.

INS Viraat holds the world record as mentioned in the Guinness Book of Records for being the longest-serving warship of the world.

INS Viraat holds the world record as mentioned in the Guinness Book of Records for being the longest-serving warship of the world. The ship which was the centerpiece of the Navy, housed the fighters Sea Harriers of INAS 300, popularly called "White Tigers", Anti Submarine aircraft Sea king Mk 42B – also known as "Harpoons" -, Sea King Mk 42 C and the SAR helicopter Chetak as an integral flight. The indigenous Advanced Light Helicopters 'Dhruv' and the Russian twin rotor Kamov-31 have also operated from the ship. The Sea Harrier fleet was decommissioned at Goa on 11 May 2016, the Ministry of Defence stated.

Under the Indian Flag, the ship has clocked more than 22,622 flying hours by various aircraft in the past three decades and has spent nearly 2,252 days at sea sailing across 5,88,287 nautical miles (10,94,215 KM). This implies that Viraat has spent seven years at sea, circumnavigating the globe 27 times. Since her inception, she has had a total of 80,715 hours of boilers running, the Ministry of Defence stated.

Viraat played a major role in Operation Jupiter in 1989 during the Sri Lankan Peacekeeping operation, after which she was affiliated with the Garhwal Rifles and Scouts of the Indian Army in 1990. She also saw action during Op Parakram in 2001-2002, post the terrorist attack on Parliament. The ship was instrumental in honing the art of flying operations from a carrier deck in

the Navy, which also resulted in the seamless induction of INS Vikramaditya and its integration with the fleet, the Ministry of Defence stated.

The ship has participated in various international joint exercises like Exercise Malabar (USA), exercise Varuna (French), Naseem-Al-Bahar (Oman Navy). She has also been an integral element of all annual theater-level exercises (TROPEX). The last operational deployment of Viraat was for the International Fleet Review (IFR 2016) off Vishakhapatnam in February 2016.

INS Viraat's motto was the Sanskrit phrase 'Jalamev Yashya, Balamev Tasya' (Who controls the sea is powerful). The ship had a maximum speed of 28 knots. It underwent three major refits during its three-decade-long service with the Indian Navy.

'Mother', as she was fondly referred to in the Navy, had been commanded by 22 Captains since 1987. She was the Flagship of the Navy since her inception. Around 40 Flag officers including five Chiefs of Naval Staff were raised and groomed in her lap.

INS Viraat's legacy as HMS Hermes under the British Royal flag was no less glorious. She was commanded by 13 Captains of the Royal Navy. Her role in Operation Mercy in 1974 and the Falklands War in 1982 are now textbook references for future navies.

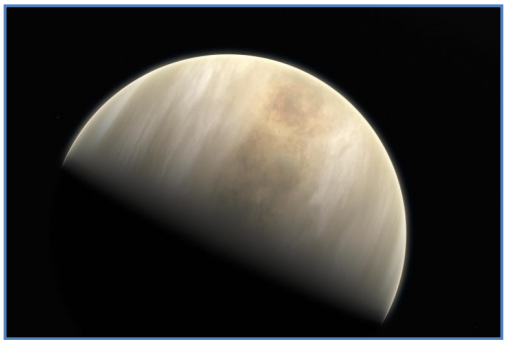
The legacy of INS Viraat will forever be remembered. After the decommissioning INS Viraat, the Indian Navy has been operating with INS Vikramaditya, the lone carrier which is already integrated with the fleet. India's first Indigenous Aircraft Carrier (IAC-I) INS Vikrant is under construction and will be inducted sooner rather than later.

https://www.financialexpress.com/defence/ins-viraats-final-journey-57-glorious-years-of-worlds-longest-serving-warship-in-indian-navy-royal-navy/2087988/

Mon, 21 Sept 2020

What is Phosphine and why does it point to extra-terrestrial life floating in the clouds of Venus?

An international team of astronomers recently announced the discovery of a rare molecule — phosphine — in the clouds of Venus. On Earth, this gas is only made industrially or by microbes that thrive in oxygen-free environments. Astronomers have speculated for decades that high clouds on Venus could offer a home for microbes — floating free of the scorching surface but needing to tolerate very high acidity. The detection of phosphine could point to such extra-terrestrial "aerial" life.



This artistic impression depicts our Solar System neighbour Venus, where scientists have confirmed the detection of phosphine molecules. The molecules were detected in the Venusian high clouds in data from the James Clerk Maxwell Telescope and the Atacama Large Millimeter/submillimeter Array, in which ESO is a partner. Astronomers have speculated for decades that life could exist in Venus's high clouds. The detection of phosphine could point to such extra-terrestrial "aerial" life. Credit: ESO/M. Kornmesser & NASA/JPL/Caltech

"When we got the first hints of phosphine in Venus's spectrum, it was a shock!" says team leader Jane Greaves of Cardiff University in the UK, who first spotted signs of phosphine in observations from the James Clerk Maxwell Telescope (JCMT), operated by the East Asian Observatory, in Hawaii. Confirming their discovery required using 45 antennas of the Atacama Large Millimeter/submillimeter Array (ALMA) in Chile, a more sensitive telescope in which the European Southern Observatory (ESO) is a partner. Both facilities observed Venus at a wavelength of about 1 millimeter, much longer than the human eye can see — only telescopes at high altitude can detect it effectively.

The international team, which includes researchers from the UK, US, and Japan, estimates that phosphine exists in Venus's clouds at a small concentration, only about twenty molecules in every billion. Following their observations, they ran calculations to see whether these amounts could come from natural non-biological processes on the planet. Some ideas included sunlight, minerals blown upwards from the surface, volcanoes, or lightning, but none of these could make anywhere near enough of it. These non-biological sources were found to make at most one ten thousandth of the amount of phosphine that the telescopes saw.

To create the observed quantity of phosphine (which consists of hydrogen and phosphorus) on Venus, terrestrial organisms would only need to work at about 10% of their maximum productivity, according to the team. Earth bacteria are known to make phosphine: they take up phosphate from minerals or biological material, add hydrogen, and ultimately expel phosphine. Any organisms on Venus will probably be very different to their Earth cousins, but they too could be the source of phosphine in the atmosphere.

While the discovery of phosphine in Venus's clouds came as a surprise, the researchers are confident in their detection. "To our great relief, the conditions were good at ALMA for follow-up observations while Venus was at a suitable angle to Earth. Processing the data was tricky, though, as ALMA isn't usually looking for very subtle effects in very bright objects like Venus," says team member Anita Richards of the UK ALMA Regional Centre and the University of Manchester. "In the end, we found that both observatories had seen the same thing — faint absorption at the right

wavelength to be phosphine gas, where the molecules are backlit by the warmer clouds below," adds Greaves, who led the study published today in Nature Astronomy.

Another team member, Clara Sousa Silva of the Massachusetts Institute of Technology in the US, has investigated phosphine as a "biosignature" gas of non-oxygen-using life on planets around other stars, because normal chemistry makes so little of it. She comments: "Finding phosphine on Venus was an unexpected bonus! The discovery raises many questions, such as how any organisms could survive. On Earth, some microbes can cope with up to about 5% of acid in their environment — but the clouds of Venus are almost entirely made of acid."

The team believes their discovery is significant because they can rule out many alternative ways to make phosphine, but they acknowledge that confirming the presence of "life" needs a lot more work. Although the high clouds of Venus have temperatures up to a pleasant 30 degrees Celsius, they are incredibly acidic — around 90% sulphuric acid — posing major issues for any microbes trying to survive there.

ESO astronomer and ALMA European Operations Manager Leonardo Testi, who did not participate in the new study, says: "The non-biological production of phosphine on Venus is excluded by our current understanding of phosphine chemistry in rocky planets' atmospheres. Confirming the existence of life on Venus's atmosphere would be a major breakthrough for astrobiology; thus, it is essential to follow-up on this exciting result with theoretical and observational studies to exclude the possibility that phosphine on rocky planets may also have a chemical origin different than on Earth."

More observations of Venus and of rocky planets outside our Solar System, including with ESO's forthcoming Extremely Large Telescope, may help gather clues on how phosphine can originate on them and contribute to the search for signs of life beyond Earth.

More information

This research was presented in the paper "Phosphine Gas in the Cloud Decks of Venus" published in *Nature Astronomy*.

The team is composed of Jane S. Greaves (School of Physics & Astronomy, Cardiff University, UK [Cardiff]), Anita M. S. Richards (Jodrell Bank Centre for Astrophysics, The University of Manchester, UK), William Bains (Department of Earth, Atmospheric, and Planetary Sciences, Massachusetts Institute of Technology, USA [MIT]), Paul Rimmer (Department of Earth Sciences and Cavendish Astrophysics, University of Cambridge and MRC Laboratory of Molecular Biology, Cambridge, UK), Hideo Sagawa (Department of Astrophysics and Atmospheric Science, Kyoto Sangyo University, Japan), David L. Clements (Department of Physics, Imperial College London, UK [Imperial]), Sara Seager (MIT), Janusz J. Petkowski (MIT), Clara Sousa-Silva (MIT), Sukrit Ranjan (MIT), Emily Drabek-Maunder (Cardiff and Royal Observatory Greenwich, London, UK), Helen J. Fraser (School of Physical Sciences, The Open University, Milton Keynes, UK), Annabel Cartwright (Cardiff), Ingo Mueller-Wodarg (Imperial), Zhuchang Zhan (MIT), Per Friberg (EAO/JCMT), Iain Coulson (EAO/JCMT), E'lisa Lee (EAO/JCMT) and Jim Hoge (EAO/JCMT).

An accompanying paper by some of team members, titled "The Venusian Lower Atmosphere Haze as a Depot for Desiccated Microbial Life: A Proposed Life Cycle for Persistence of the Venusian Aerial Biosphere," was published in *Astrobiology* in August 2020. Another related study by some of the same authors, "Phosphine as a Biosignature Gas in Exoplanet Atmospheres," was published in *Astrobiology* in January 2020.

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"Phosphine gas in the cloud decks of Venus" by Jane S. Greaves, Anita M. S. Richards, William Bains, Paul B. Rimmer, Hideo Sagawa, David L. Clements, Sara Seager, Janusz J. Petkowski, Clara Sousa-Silva, Sukrit Ranjan, Emily Drabek-Maunder, Helen J. Fraser, Annabel Cartwright, Ingo Mueller-Wodarg, Zhuchang Zhan, Per Friberg, Iain Coulson, E'lisa Lee and Jim Hoge, 14 September 2020, *Nature Astronomy*.

DOI: 10.1038/s41550-020-1174-4

"The Venusian Lower Atmosphere Haze as a Depot for Desiccated Microbial Life: A Proposed Life Cycle for Persistence of the Venusian Aerial Biosphere" by Sara Seager, Janusz J. Petkowski, Peter Gao, William Bains, Noelle C. Bryan, Sukrit Ranjan and Jane Greaves, 13 August 2020, *Astrobiology*.
DOI: 10.1089/ast.2020.2244

"Phosphine as a Biosignature Gas in Exoplanet Atmospheres" by Clara Sousa-Silva, Sara Seager, Sukrit Ranjan, Janusz Jurand Petkowski, Zhuchang Zhan, Renyu Hu and William Bains, 22 November 2019, *Astrobiology*.
DOI: 10.1089/ast.2018.1954

The European Southern Observatory (ESO) is the foremost intergovernmental astronomy organisation in Europe and the world's most productive ground-based astronomical observatory by far. It has 16 Member States: Austria, Belgium, the Czech Republic, Denmark, France, Finland, Germany, Ireland, Italy, the Netherlands, Poland, Portugal, Spain, Sweden, Switzerland and the United Kingdom, along with the host state of Chile and with Australia as a Strategic Partner. ESO carries out an ambitious programme focused on the design, construction and operation of powerful ground-based observing facilities enabling astronomers to make important scientific discoveries. ESO also plays a leading role in promoting and organising cooperation in astronomical research. ESO operates three unique world-class observing sites in Chile: La Silla, Paranal and Chajnantor. At Paranal, ESO operates the Very Large Telescope and its world-leading Very Large Telescope Interferometer as well as two survey telescopes, VISTA working in the infrared and the visible-light VLT Survey Telescope. Also at Paranal ESO will host and operate the Cherenkov Telescope Array South, the world's largest and most sensitive gamma-ray observatory. ESO is also a major partner in two facilities on Chajnantor, APEX and ALMA, the largest astronomical project in existence. And on Cerro Armazones, close to Paranal, ESO is building the 39-meter Extremely Large Telescope, the ELT, which will become "the world's biggest eye on the sky."

The Atacama Large Millimeter/submillimeter Array (ALMA), an international astronomy facility, is a partnership of ESO, the U.S. National Science Foundation (NSF), and the National Institutes of Natural Sciences (NINS) of Japan in cooperation with the Republic of Chile. ALMA is funded by ESO on behalf of its Member States, by NSF in cooperation with the National Research Council of Canada (NRC) and the Ministry of Science and Technology (MOST) and by NINS in cooperation with the Academia Sinica (AS) in Taiwan and the Korea Astronomy and Space Science Institute (KASI). ALMA construction and operations are led by ESO on behalf of its Member States; by the National Radio Astronomy Observatory (NRAO), managed by Associated Universities, Inc. (AUI), on behalf of North America; and by the National Astronomical Observatory of Japan (NAOJ) on behalf of East Asia. The Joint ALMA Observatory (JAO) provides the unified leadership and management of the construction, commissioning and operation of ALMA.

With a diameter of 15m (50 feet) the James Clerk Maxwell Telescope (JCMT) is the largest single dish astronomical telescope in the world designed specifically to operate in the submillimeter wavelength region of the electromagnetic spectrum. The JCMT is used to study our Solar System, interstellar and circumstellar dust and gas, evolved stars, and distant galaxies. It is situated in the science reserve of Maunakea, Hawai?i, at an altitude of 4092m (13 425 feet). The JCMT is operated by the East Asian Observatory on behalf of NAOJ; ASIAA; KASI; CAMS as well as the National Key R&D Program of China. Additional funding support is provided by the STFC and participating universities in the UK and Canada.

https://scitechdaily.com/what-is-phosphine-and-why-does-it-point-to-extra-terrestrial-life-floating-in-the-clouds-of-venus/

The Tribune

Mon, 21 Sept 2020

No significant SARS CoV-2 mutation in India; ICMR exploring saliva-based COVID-19 test: Vardhan

'Detailed results on mutations, evolution of the virus to be available in early October'

New Delhi: The ICMR is actively exploring saliva-based test for detection of COVID-19, Union Health Minister Harsh Vardhan said on Sunday and asserted that no significant or drastic mutation in strains of SARS-CoV-2 has been found in India till now.

During an interaction with his social media followers, Vardhan informed them the Indian Council of Medical Research (ICMR) has been conducting large-scale sequencing of nationally representative strains of SARS-CoV-2 virus collected for several months over different time-points.

Union Minister Harsh Vardhan. RSTV/PTI photo

Detailed results on mutations and evolution of the virus will be available in early October, he said.

Replying to queries during the 'Sunday Samvad' platform, Vardhan further said enough oxygen is being produced in the country and the health ministry is closely monitoring the situation.

According to a health ministry statement, he reminded everyone that the ministry had dispatched oxygen concentrators to rural parts of the country, to avert the logistic issues that have come to light.

About saliva-based test for COVID-19, Vardhan noted that the ICMR has validated a few tests, but no reliable test has been found and companies with tests approved by US-FDA have still not approached the Government of India.

He added that the country's apex health research body is actively exploring this test method and will inform as soon as reliable options are available.

Regarding the Centre's achievement of engineering polio eradication in India, he reminded the audience that coronavirus is a novel pathogen and unlike polio, literature for it is absent.

India's handling of disease outbreaks in the past such as SARS, Ebola and plague will play a major role in containing coronavirus, Vardhan said.

"The minister assured another (social media) follower that no significant or drastic mutations have been found in strains of SARS-CoV-2 in India (available in GISAID, global database), till now," according to the health ministry statement.

Vardhan said 155 families of COVID Warriors have claimed relief under the Pradhan Mantri Garib Kalyan Package: Insurance Scheme for Health Workers Fighting COVID-19. These include 64 doctors, 32 auxiliary nurse midwives and multipurpose healthcare workers, 14 ASHA workers and 45 other frontline workers who lost their lives.

He also noted that it would take a substantive amount of time for developing herd immunity to be able to cover about 70 per cent of the population. Hence the focus of the government is primarily towards putting together a strategy that combines containment and hospital management, the minister said.

Being a doctor himself, Vardhan answered questions on the clinical management of COVID-19 in great detail dispelling myths surrounding the use of hydroxychloroquine and plasma therapy in treating coronavirus patients. He also explained to his audience how coronavirus becomes fatal for the elderly and those with comorbidity.

He also sought to dispel fears caused by the suspension of trials of the Oxford-AstraZeneca vaccine candidate, saying vaccine development is a complex process and trials have restarted only after an independent investigative expert committee permitted them to proceed.

"He explained the difference between various vaccines under clinical trial in India and that since formulations, doses, route of administration are different for the vaccines, their mechanisms of action are also different.

"However, the desirable outcome of each vaccine is much the same, that is ensuring healthy individuals with immunity against the novel coronavirus," the statement said.

During the 'Sunday Samvad', he shared several tips for the mental wellbeing of senior citizens.

About concrete measures planned to handle public health emergencies in the future, Vardhan said, the 'Aatmanirbhar Bharat Abhiyan' will strengthen the nation to an extent where "we will be able to overcome any eventuality including another pandemic".

The health minister said 'Atmanirbhar Bharat' underlines the government's commitment towards increased investments in public health and other health reforms to prepare India for future pandemics.

A major proposal under consideration at the Expenditure Finance Committee level includes strengthening surveillance of infectious diseases and outbreak response including that for points of entry, the establishment of dedicated infectious disease management hospital blocks in district hospitals and Integrated Public Health Laboratories, he added.

Vardhan also spoke on the role of traditional medicine in the present context and informed those who attended the 'Samvad' event that the AYUSH Ministry has developed research protocols for validating claims of various Ayush practitioners for COVID-19 solutions although no formulation has been validated as a specific drug.

Vardhan also answered queries regarding India's plan to divert human resources to science and the role of government policy in achieving a clean environment witnessed during the coronavirus-induced lockdown. — PTI

https://www.tribuneindia.com/news/nation/no-significant-sars-cov-2-mutation-in-india-icmr-exploring-saliva-based-covid-19-test-vardhan-144059

Mon, 21 Sept 2020

Pulling the plug on the coronavirus copy machine

By Jorge Salazar

Key proteins used by coronavirus for its reproduction being modeled on NSF-funded Frontera supercomputer by Andres Cisneros research group of the University of North Texas. Research goals include finding ways to improve on COVID-19 therapeutic remdesivir. NSF-funded Frontera allocation awarded to Cisneros through the COVID-19 High Performance Computing Consortium.

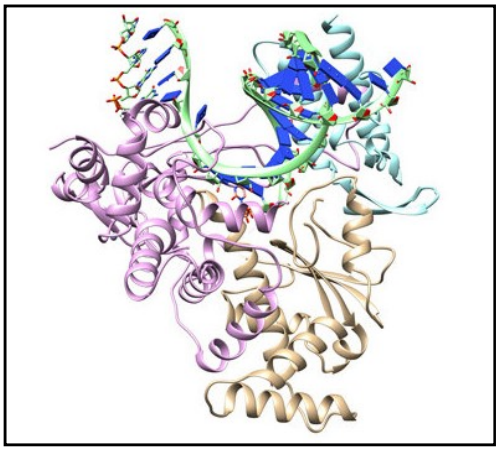
In May 2020, the U.S. Food and Drug Administration authorized the antiviral drug remdesivir for emergency treatment of COVID-19, one of only four therapeutics currently with this status. Remdesivir stops the chemical machinery that the coronavirus uses to copy itself, binding to an enzyme that does the assembly. While remdesivir has shown promise in helping patients recover from COVID-19, scientists are investigating ways to improve its effectiveness.

A team of scientists led by G. Andres Cisneros of the University of North Texas is modeling the key parts of the coronavirus that it uses to copy itself. The simulations are being done on the Stampede2 and Frontera supercomputers at the Texas Advanced Computing Center (TACC).

"We were very fortunate to be granted an allocation on Frontera to be able to work on investigating the mechanism of drugs that target two specific proteins in COVID-19," Cisneros said. His work investigates how remdesivir and other available drugs inhibit the proteins NSP-12 and the main protease, both enzymes the coronavirus needs for replication. "By looking at how these drugs do their work, perhaps this information can be used to improve upon them."

The NSP-12 protein puts together the nucleotides that make up viral RNA, abbreviated as A, U, G, and C, building complete sets of genetic material for new coronavirus copies. NSP-12 is actually part of a larger structure called the RNA-dependent RNA polymerase (RDRP) that copies the complete RNA. Remdesivir binds with RDRP, plugging up the machinery.

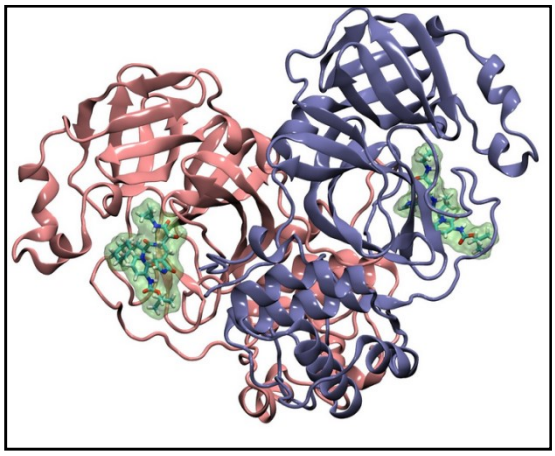
"We're investigating how this process happens," said Cisneros. "By doing this, perhaps there might be a way for us and other scientists to come up with ideas on whether and how remdesivir can be improved."



Antiviral drug remdesivir forms the main line of FDA-approved therapeutic defense against the COVID-19 virus. Researchers at the University of North Texas are using the Frontera supercomputer to model how remdesivir blocks coronavirus reproduction, in the hopes of developing improvements on the drug. Shown here are the crystal structures of the RNA-dependent RNA Polymerase ternary complex model with double stranded RNA and incoming remdesivir triphosphate. Credit: Cisneros Research Group, UNT

The other protein Cisneros is studying is called the main protease. It separates a polyprotein produced by SARS-CoV-2 translated from viral RNA into functional proteins that put 'meat' on its viral bones. Stop the protease, and you stop the virus from forming. This makes it a great drug target.

Cisneros explained that he uses the basic math and physics of Newton's equations and quantum mechanics to calculate the properties of the proteins, including everything relevant to its functioning, such as the RNA and water. An approach called classical molecular dynamics uses Newton's equations to simulate how the proteins move and interact dynamically in time. "We're talking about systems that we simulate that are in the hundreds of thousands of atoms," Cisneros said.



Another research target of the Cisneros group being modeled on Frontera is a protein called the main protease. It cleaves a polyprotein produced by the virus that build up the functional proteins of the copies of itself it generates. Crystal structure of the coronavirus main protease with bound Inhibitor shown here. Credit: Cisneros Research Group, UNT

He also simulates the chemical reactions inside the proteins to investigate how the drugs stop RDRP or the protease. A hybrid method called QM/MM (quantum mechanics/molecular mechanics) saves computational time and money by focusing more intently on interactions at the active site, using the more approximate straight molecular dynamics for everything else.

The Cisneros group developed and maintains a program called LICHEM that lets them use the QM/MM approach. "One of the features of LICHEM is that it allows us to use approaches for the classical mechanics part that include a better description of the physics that are happening between the molecules in the classical environment, specifically, the AMOEBA potential" Cisneros said. AMOEBA is developed by Pengyu Ren of UT Austin; Jay Ponder of the University of Washington; and Jean-Philip Piquemal at Sorbonne University in Paris with contributions from the Cisneros group for ionic liquids.

"Frontera, with not only compute power but the intercommunication between the nodes, allows us to run these QM/MM calculations with much higher, not only speed, but also throughput," Cisneros said. Frontera freed them to run multiple systems at a time. "In my group, I have five different scientists, graduate students and post docs, that are working on both of these systems, but in different pieces of the puzzle. All of them are able to access these resources. It's definitely very useful, and we very much appreciate the allocation."

What got Cisneros going was news in April of 2020 of the crystal structure of the SARS-CoV-2 RDRP being reported. "I contacted my group and told them that with this information, there's something we can do to help with the pandemic," he said.

Within two days of the news, Cisneros successfully proposed his research on coronavirus drug targets to the COVID-19 High Performance Computing Consortium. Dozens of national and international supercomputing facilities, industry, and organizations including TACC have volunteered their resources to the consortium in support of scientists' effort to combat the coronavirus.

The allocation was initially awarded just on TACC's Stampede2, the supercomputing flagship of the National Science Foundation (NSF) that's ranked 21st fastest in the world and #2 for academic systems according to the Top500. "Then we were contacted by TACC and grateful that we were granted access to Frontera. Now we have access to both systems, which is really great," Cisneros said.

The Frontera supercomputer is the #1 fastest academic supercomputer and #8 fastest worldwide. Both Frontera and Stampede2 are funded by the NSF.

"We're very happy with this system. We were able to transfer some of the knowledge that we had from Stampede2 to Frontera," Cisneros said. One of his recently graduated students, Erik Vazquez Montelongo, set up all of the calculations for LICHEM on Frontera based on what he learned on Stampede2. "That really has been a boon. Frontera for our calculations has been running really well. We're really happy with it."

One of the postdocs in The Cisneros Group, Sehr Nazeem-Kahn, generated the model for RDRP, the remdesivir and other drug candidates, all in the active site. With that in hand, they started running simulations.

"We were very happy to see that her model was actually very close to the experimental structure. That's really useful for us, because it validates the model that has been built by the group and shows that we are on the right track," he added.

Currently, Dr. Naseem-Khan is running molecular dynamics simulations of this model with remdesivir on Frontera. "We are also starting with our QM/MM calculations for RDRP. In the case for the main protease, there were structures that also needed to be modeled and subsequently were confirmed. That was also very satisfying," Cisneros said.

With that structure data, they're looking at six different inhibitor molecules. "One of those, we're already starting QM/MM calculations on Frontera, and another one on Stampede2," Cisneros said. If all goes well, he's hoping to get results in the next five to six months. "These are very expensive calculations," he added. "Also, running the analysis takes time. If we were to use just the resources at home, it would take several years."

https://phys.org/news/2020-09-coronavirus-machine.html

india.com

Mon, 21 Sept 2020

Majority of Covid-19 recovered complain of fatigue: Study

The findings showed that female gender and those with a pre-existing diagnosis of depression/anxiety were over-represented in those with fatigue

Edited By Anjali Thakur

In a major study, the researchers have shown that persistent fatigue occurs in more than half of patients recovered from Covid-19, regardless of the seriousness of their infection.

"While the presenting features of SARS-CoV-2 infection have been well-characterized, the medium and long-term consequences of infection remain unexplored," said study author Liam Townsend from St James's Hospital in Ireland.

For the study, the research team used a commonly-used scale to determine fatigue in recovered patients, called the Chalder Fatigue Score (CFQ-11).

They also looked at the severity of the patient's initial infection (need for admission, and critical/intensive care), and also their pre-existing conditions, including depression.

They also looked at various markers of immune activation (white cell counts, C-reactive protein, Interleukin-6, and sCD25). The study included 128 participants (mean age 50 years; 54 percent female) who were recruited consecutively at a median of 10 weeks following clinical recovery from SARS-CoV-2 infection. More than half reported persistent fatigue (52.3 percent; 67/128) at this point.

The researchers offered an outpatient appointment to anyone who had a Covid-19 positive swab test in their laboratory at St James Hospital. Of the patients assessed in this study, 71/128 (55.5 percent) were admitted to the hospital and 57/128 (44.5 percent) were not.

"Fatigue was found to occur independent of admission to hospital, affecting both groups equally," Townsend explained. There was no association between Covid-19 severity (need for inpatient admission, supplemental oxygen, or critical care) and fatigue following Covid-19. Additionally, there was no association between routine laboratory markers of inflammation and cell turnover or pro-inflammatory molecules (IL-6 or sCD25) and fatigue post-COVID-19.

The findings showed that the female gender and those with a pre-existing diagnosis of depression/anxiety were over-represented in those with fatigue."Our findings demonstrated a significant burden of post-viral fatigue in individuals with previous SARS-CoV-2 infection after the acute phase of Covid-19 illness," the study authors wrote.

This study highlights the importance of assessing those recovering from Covid-19 for symptoms of severe fatigue, irrespective of the severity of initial illness, and may identify a group worthy of further study and early intervention. It also supports the use of non-pharmacological interventions for fatigue management.

The study is scheduled to be presented at The ESCMID Conference on Coronavirus Disease (ECCVID), to be held online from 23-25 September.

https://www.india.com/lifestyle/majority-of-covid-19-recovered-complain-of-fatigue-study-4147051/