2020

समाचार पत्रों से चयित अंश

Newspapers Clippings

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COVID-19: DRDO's Contribution

R. REPUBLICWORLD.COM

Sun, 26 April 2020

'Covid response shows path to becoming regional power': CDS Gen Rawat on self-reliance

CDS General Bipin Rawat opined that India will have to be self-reliant if it wants to be a regional power, rather than being dependant on others nations

By Pritesh Kamathara

Amid the global Covid pandemic that has taken the world hostage, Chief of Defence Staff (CDS) General Bipin Rawat has opined that India will have to be self-reliant if it wants to be a regional power rather than being dependant on others, adding that the coronavirus pandemic has taught a lesson that India can become self-reliant if given a challenge.

"The way the Scientists and other agencies involved in medical research have come up with innovative ideas to produce medical equipment in the country, which we were so far importing, to help us tide over the crisis has been amazing," he said.

He highlighted how the scientists and other agencies have come up with indigenously manufacturing ventilators, Personal protection equipment (PPEs), facial mask and other equipment required in the battle against COVID-19.

"We were importing some components of N95 masks, but DRDO has come up with a different mask here, N99 mask, which I am told is superior to the N95," he asserted.

Speaking of throwing a challenge to indigenous industries and research sector for manufacturing defence arms, ammunition and equipment, he said, "We have been importing our weapons, equipment, ammunition from abroad. If we can give this challenge to our industry, to our academia, and to our own research and development organisations, I think we can start manufacturing our own ammunition, weapons and equipment. We will not have to be dependant on imports and the COVID has taught us a lesson that the time has come for us to be self-reliant."

"In times of crisis, nations will have to live by themselves. A country like India, if we are looking at becoming a regional power, we will have to support other nations and not be dependant on other nations," he added while stressing the need of inhouse manufacturing through Make in India initiative in order to be self-reliant and reducing imports for defence requirements.

He praised the way the health industry has come forward in the fight against the pandemic, and opined that the defence sector research and development can also come forward at the same pace when given a boost and some of the defence sector manufacturing has already started in India, added Rawat.

https://www.republicworld.com/india-news/accidents-and-disasters/covid-19-cds-bipin-rawat-iaf-pandemic-coronavirus-defence.html

THE TIMES OF INDIA

Sun, 26 April 2020

Defence Security Corps fights hunger

By Sunil Mungara

Hyderabad: The coronavirus-inflicted lockdown crisis turned the security personnel into hunger heroes. The Defence Security Corps (DSC) of the DRDO's premier lab Research Centre Imarat (RCI) have received allround praise for their noble gesture of providing food to the needy. Inspired by the turn of events, which left several poor and orphans without any food, the DSC incharge took the decision to distribute food packets to the people nearby.

"Initially, we began with 200 food packets and now we are distributing 400 packets. We are preparing food in our central kitchen at the RCI premises," sources told TOI on Saturday.

DSC is carrying out food distribution within a radius of five to 10 km from RCI. The security personnel are covering Balaji Mandir, Shivaji Colony, Mallepally and other nearby areas. "We are also supplying food packets to the senior citizens at an old age home in Ravirala," a defence official said, adding that the police are rendering selfless service during the lockdown crisis.

RCI scientists are contributing contributing cash and providing essential commodities like rice, dal and other ingredients. DSC plans to continue food distribution until May 3.

https://timesofindia.indiatimes.com/city/hyderabad/defence-security-corps-fights-hunger/articleshow/75384350.cms

COVID-19: DRDO/Indian Railway Contribution

Outlook
THE FULLY LOADED MAGAZINE

Mon, 27 April 2020

Northern Railway makes 1,500 PPE in a day, produces 10,000 since lockdown

New Delhi: with the production of a record 1,500 personal protective equipment (PPE) on Sunday, Northern Railway workshops have made 10,000 such essential life-saving gear for its doctors and paramedics since the nationwide lockdown began, officials said.

In a bid to meet the demand for PPE, the Northern Railway earlier this month got approval to make such coveralls from the Defence Research and Development Organisation (DRDO).

PPE suits are required by the medical staff while treating COVID-19 patients as a measure to avoid direct contact.

Personal protective equipment manufactured by Jagadhri railway workshop passed the test conducted by the DRDO on April 5 and has made 6,472 coveralls along with Kalka workshop till date.

The achievement becomes significant as the Northern Railway has produced 10,000 such coveralls, while all the other zonal railways together made 20,000 during the ongoing lockdown period.

The Indian Railways has planned to manufacture 1.30 lakh PPEs at its workshops across the country by May-end.

Northern Railway workshops have also produced 5,917 litres of sanitisers, 46,373 masks and converted 540 coaches into isolation wards during the lockdown period.

(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/northern-railway-makes-1500-ppe-in-a-day-produces-10000-since-lockdown/1815550

DRDO Technology

DEFENCE AVIATION POST

Your Connect To The World Of Defence And Aviation

Sun, 26 April 2020

The new Rustom-II UAV is loaded with new features ready for the First Flight

An improved version of the Rustom-II (Tapas) – a medium-altitude long-endurance unmanned aerial vehicle (UAV) – being developed by the Aeronautical Development Establishment (ADE), soon to take to the skies is ready.

The new platform being read for its first flight (AF-6A) will be the seventh from the Rustom-2 flight line. The sixth prototype (AF-6) of Rustom 2 crashed near the Aeronautical Test Range (ATR) at Chalakere (Chitradurga District, Karnataka) on 17 September 2019. (Air force stands for a frame.)

It has now been confirmed that the accident was caused by a transient and simultaneous link loss to the UAV. Return home mode. The platform was also confronted with a rough patch of turbulence beyond the capacity of the control law. Collision.

The behavior of UAVs is claimed to be according to the expected lines and design parameters. Sensor data was available to the ground station almost until its touchdown \ crash.

Establishment of Aeronautical Development (ADE), DRDO, Bangalore, Karnataka, India. A laboratory of Rustam-2 UAV. Was responsible for the design and development of. Hindustan Aeronautics Limited (HAL) was the lead integrator, while Bharat Electronics Limited (BEL) developed the ground control station for the UAV.

The fuselage of the drone was built by Taneja Aerospace & Aviation, an Indian-based manufacturer of aircraft structural assemblies. The wind tunnel test for Rustom-2 was done by Aarav Unmanned System, which is also based in India.

The Rustom-II MALE drone is based on the Rustom-H unmanned combat air vehicle and features light airframes. It has a length of 9.5 meters and an empty weight of 1,800 kg.

It is equipped with mid-set, high aspect ratio wings spanning 20.6 meters. The tail section is configured with a high-mounted horizontal tailplane with a traditional T-type vertical stabilizer.

The UAV's tri-cycle landing gear allows it to perform safe take-off and landing maneuvers on safe surfaces. The center of gravity has a single front wheel and two single-wheel main gears.

The Rustom-2 UAV includes a data link developed by Defence Research and Development Organization (DRDO) Defense Electronic Application Laboratory (DEL) that transmits ISR data, metaphors, and video collected by payload at its ground control station in a timely manner.

It can fly in autonomous or manual mode. The onboard flight control system allows UAVs to execute missions autonomously using waypoint navigation. The manual mode of operation is performed by an operator of the ground control station.

Rustom-II MALE Power for unmanned aerial vehicles comes from two NPO Saturn 36MT turboprop engines mounted under the wings. Each engine generates a thrust of 450 kg-forces (kg) and is mated to a three-blade propeller to provide increased maneuverability.

The UAV can fly at a maximum speed of 225 km / h and can bear up to 24 hours. It has the capability to operate on the line of sight range of 250 km. The drone has a maximum flight of 35,000 feet above sea level.

https://www.defenceaviationpost.com/2020/04/the-new-rustom-ii-uav-is-loaded-with-new-features-ready-for-the-first-flight/

DEFENCE AVIATION POST

Your Connect To The World Of Defence And Aviation

Mon, 27 April 2020

MWF-MK2: Has China's J-10 moment arrived for India

The J-10 started off as a Chinese attempt at reverse engineering a Pakistan bought US F-16. However it ended up being a modification of Israel's Lavi multi role fighter, Lavi program was cancelled in 1987 in Israel due to threatening from US. China purchased the blue print from Israel and developed J 10.

The J 10 is one of the Chinese backbone Fighter jet to perform defensive mission inside Chinese Air-space. The Chinese Air force operates more than 250 J 10 variants which comprises more than twelve squadron of Fighter's with 70% of service availability at any given time. The J 10 is one of the Chinese designed Fighter jets based on the cancelled Israeli Lavi program. J 10 is a single engine multi role, which can be modified in future with newer Radar and power plants.

The J-10 has beyond visual range air combat and surface attack capabilities. Aircraft has 11 external hardpoints for a range of weapons. Alternatively it can carry target acquisition, navigation pods or auxiliary fuel tanks.

India took the harder route and allowed scientists and engineers continued working on long-delayed Light Class Tejas program which finally started to look like a complete product which can fight a war but by the time it had arrived many in the air force were wondering if Tejas can win a war for India due to incremental shift from light class fighters world over to medium weight fighter class.

Tejas Mk2 began initially has a small program where engine swap with more modern avionics and radar was planned. It was supposed to be quickly upgraded variant of the current Tejas Mk1 with no major design changes, other than a 0.5-meter fuselage plug which increased length of the jet but negated any ferry range due to additional weight and payload carrying capacity. Late Raksha Mantri Manohar Parrikar and HAL were able to convince IAF to instead place orders for Tejas Mk1A without need for engine swap to get all the equipment and avionics without need for Mk2 program which came as a blessing for ADA which now decided to work on improved Mk1 influenced design fighter jet in Medium class.

With the Indian Air Force's (IAF's) MMRCA program getting serially delayed and recast more than once, there was a feeling in various quarters that IAF need medium weight fighter. Thus, the IAF and the Aeronautical Development Agency (ADA) sat down to redefine the Tejas Mk2 with more elaborate modifications such that it could function as a medium weight fighter for ground attack roles while continuing to be nimble in the air to air (A2A) role.

In fact, the version of the Tejas Mk2 currently envisaged has been rebadged as the Medium Weight Fighter or (MWF) and is being designed as a replacement for the Mirage 2000 with a view to surpassing its capabilities in almost every respect

https://www.defenceaviationpost.com/2020/04/mwf-mk2-has-chinas-j-10-moment-arrived-for-india/

DEFENCE AVIATION POST
Your Connect To The World Of Defence And Aviation

Mon, 27 April 2020

India's new 600 km range BrahMos missile can spread panic in entire Pakistan

India and Russia have approved an extension to the range of the supersonic cruise missile BrahMos, doubling it to 600 kilometers, according to an official with the Indian Ministry of Defence (MoD).

The official pointed out that the range of the joint venture missile can now be increased because of India's entry into the Missile Technology Control Regime (MTCR), which provides the country with opportunities for foreign collaboration on the missile technology.

The two countries came to agreement Oct.26 at a meeting here of the 16th Intergovernmental Commission on Military-Technical Cooperation, co-chaired by Indian Defence Minister Manohar Parrikar and his Russian counterpart, Gen. Sergei Shoigu.

The increased range of the BrahMos will double the standoff engagement range to 600 kilometers for practically every platform that uses the cruise missile. Currently, the BrahMos is warship-launched and land-based, while the air version is still in the testing phase and likely will be adopted by year end.

"With 300-kilometers range, the BrahMos had to be deployed relatively closer to the intended area. Now there would be greater flexibility in terms of deployment areas, thereby imparting surprise," according to Rahul Bhonsle, a retired Indian Army brigadier and defense analyst.

The BrahMos cruise missile project is produced by India-based BrahMos Aerospace, set up in 1998, and is a joint venture between India's Defence Research and Development Organization (DRDO) and Russia's NPO Mashinostroyenia.

According to a scientist at DRDO, "only very minor changes in software and hardware are required" to increase the range.

An Indian Navy official backed this claim. "BrahMos is a re-engineered version of [the] Russian P-800 Oniks/Yakhont anti-ship missile, and no major modification is required to achieve 600-kilometers range," the official said.

Bhonsle agrees that the range of the BrahMos missile currently in use has a 600-kilometer range.

https://www.defenceaviationpost.com/2020/04/indias-new-600-km-range-brahmos-missile-can-spread-panic-in-entire-pakistan/

COVID-19: Defence Forces Contribution

hindustantimes

Mon, 27 April 2020

Armed Forces understand their responsibility in fight against Covid-19: CDS Gen Bipin Rawat

Covid-19: CDS General Rawat said that strict directions have been issued to the armed forces on social distancing, wearing of masks and ensuring that people who need to be isolated remain in quarantine

New Delhi: General Bipin Rawat, the Chief of Defence Staff (CDS) says that the armed forces understand their responsibility in the fight against coronavirus disease (Covid-19) and have to ensure that they remain safe to support the people of the country.

"As armed forces, we understand our responsibility that at this time when the nation is fighting against Covid-19 menace, the defence services must operate beyond the mandate and come to the support of our people and government in whatever way we can," General Rawat told ANI in an exclusive interview on Sunday.

He added that for the forces to support the country, they have to first ensure that 'we remain safe from Covid-19.

"In order to do so, we have to first ensure that we remain safe from Covid-19 because if our own sailors, soldiers and airmen get affected by this virus, how are we going to support our people," he added.

General Rawat said that strict directions have been issued to the armed forces on social distancing, wearing of masks and ensuring that people who need to be isolated remain in quarantine.

Twenty five Indian Navy personnel and eight Army personnel including two doctors and one nursing assistant have so far tested positive for coronavirus.

According to Navy sources, the reported cases are asymptomatic and were traced to one sailor who tested positive on April 7. Twenty of these sailors are from INS Angre, a shore establishment in Mumbai. The navy men have been admitted in naval hospital INHS Asvini in Mumbai's Colaba after testing positive for the novel coronavirus.

Speaking about the Covid-19 cases in military, General Rawat said discipline and patience has helped the armed forces in preventing the spread of disease.

"Covid-19 has affected the three services in a very limited number. I would say that this is the discipline and patience which has helped us in preventing the spread of the menace," he said.

The CDS said that armed forces personnel have downloaded the Aarogya Setu app and if anyone contracts the disease, authorities would be able to pick up the case very soon and ensure that the disease doesn't spread.

With Covid-19 cases spreading at a fast rate across the country, the army has said all its personnel will be classified as 'green' (who have completed 14 days of quarantine), 'yellow' (those who need to undergo 14 days quarantine) and lastly, 'red' (who are symptomatic and require isolation and further treatment in Covid hospitals).

Referring to the nationwide lockdown, in place till May 3, General Rawat said that this is not the time to be impatient.

"We do know when the country is under lockdown and (when) people are told to stay indoors, they tend to become impatient. This is not the time to be impatient. Patience is very important to

ensure that we remain disciplined. Maintaining discipline in armed forces is not very difficult as we are accustomed to be in discipline but to maintain patience is the need of the hour," he said.

On the operational preparedness of the armed forces, the CDS said that India's military is capable of undertaking any operational task assigned to it.

"Whatever budget has been given to us, we must spend it pragmatically, avoiding any wasteful expenditure. We don't see any major drop in our operational preparedness as far as the three services are concerned," General Rawat said.

"Covid-19 has taught us a lesson that the time has come to be self-reliant."

In India, when we are looking at becoming a regional power, we'll have to support others and not be dependent on others. It becomes important we support Make in India (programme) and ensure that whatever (weapons systems) we are importing, gradually we get it through Make in India," General Rawat said.

https://www.hindustantimes.com/india-news/armed-forces-understand-their-responsibility-in-fight-against-covid-19-cds-gen-bipin-rawat/story-Q9lIg60rPBpwbcZFyVuA6H.html

DEFENCE AVIATION POST
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Mon, 27 April 2020

PM giving timely instructions to Army, Navy, Air Force to deal Covid-19 crisis: CDS Bipin Rawat

Amid the nationwide lockdown to contain Covid-19 pandemic, the Indian Army, Navy, and Air Force have been given specific instructions to handle the Covid-19 crisis by Prime Minister Narendra Modi, Chief of Defence Staff General Bipin Rawat said.

In an exclusive interview to India Today, General Bipin Rawat spoke about the preparedness of the tri-services and how the coronavirus pandemic has taught a lesson to the defence sector.

Bipin Rawat said the cabinet secretaries are holding meetings and discussions on how to handle the situation, following which instructions are being given out to the Indian Army, Navy and Air Force by the Ministry of Health.

"From time to time, instructions are coming from the Prime Minister to all the three armies to deal with the novel coronavirus. The cabinet secretaries are holding meetings and instructions are being given to the three armies by the Ministry of Health," Bipin Rawat told India Today.

Bipin Rawat said, "The defense minister has also spoken to the Commander-in-Chief of the tri-services and reviewed the preparedness of the army."

Rawat said few of the officers, who have been infected with novel coronavirus, have been quarantined. He, however, added that no soldiers posted at the border have been infected so far.

"Till now, our soldiers are posted on the border. There has not been a single case. None of our naval ships and submarines and the Air Force have been infected by the corona yet," Bipin Rawat said.

Bipin Rawat said the training of the tri-services is going well and have not been affected due to the Covid-19 crisis, even though there might be "financial difficulties".

https://www.defenceaviationpost.com/2020/04/pm-giving-timely-instructions-to-army-navy-air-force-to-deal-covid-19-crisis-cds-bipin-rawat/

the pioneer

Mon, 27 April 2020

CDS Gen Rawat wants India to be self-reliant to be a regional power

New Delhi: A day after Prime Minister Narendra Modi urged countrymen to become self-reliant in the wake of coronavirus pandemic and Defence Minister Rajnath Singh asked the Services to spend the funds prudently, Chief of Defence Staff (CDS) General Bipin Rawat on Sunday said India will have to be self-reliant in order to become a regional power.

Making this point here, he gave the example of Indian health and pharmaceutical industry which stepped up in a major way when the pandemic hit the country and was now indigenously producing ventilators and medicines. Rawat asked the defence industry to take a leaf out of the health industry's book. His remarks come in the backdrop of India importing more than 70 per cent of its military hardware and listed as one of the biggest buyers of weapons in the world.

Rawat said India will have to be self-reliant to become a regional power and said key lessons thrown up by the crisis include the Indian industry rising to the occasion and called for making the best of the situation after the pandemic challenge recedes. He also said "discipline and patience" helped the defence services in checking the spreading of virus adding the novel coronavirus has affected Army, Air Force and Navy in a "limited manner".

On the lessons imbibed during the ongoing challenge, he said "the way these scientists, medical agencies involved have come up with ideas to produce the equipment required in the country, which we were so far importing, has been amazing."

"In a short span of four to six weeks, we started manufacturing ventilators in the country. There are some key lessons for us in the defence services. We have been importing ammunition from abroad... but if this challenge is thrown to academia, we can make it in the country. The time has now come to be self-reliant. In times of crisis, countries will have to be self-dependent," he told ANI. "If we are looking at becoming a regional power, India will have to support other nations. The manner in which the health industry has come forth, I am sure that the defence sector can come forward at the same pace," Rawat asserted.

Modi, in his video conference interaction with the sarpanch on Friday, exhorted the youth to be self-reliant and said "Coronavirus has sent so many challenges our way, but we must always learn from the situation we are in in life. It has given us a lot to think about and taught about the way we act. It has made it absolutely clear that we have to depend only on ourselves for our survival."

On the role of the armed forces in the present times, Rawat said defence services must operate beyond the mandate to support the people and government. He also stressed the need to first ensure the well-being of the personnel "because if our own sailors, soldiers and airmen get affected by this virus, how are we going to support our people. That is why we have issued very strict directions on social distancing, wearing of masks and ensuring that people who require to be in quarantine remain in quarantine."

This note of caution by the CDS came at a time when the Army has nearly 15 cases of positive coronavirus while the Navy has 26. Rawat said the pandemic has affected the Army, Air Force and Navy in a limited number adding patience and discipline helped the forces in checking the spread of virus.

https://www.dailypioneer.com/2020/india/cds-gen-rawat-wants-india-to-be-self-reliant-to-be-a-regional-power.html

नवभारत टाइम्स

Mon, 27 April 2020

कोरोना संकटः बचत के लिए CDS ने सुझाए तीनों सेनाओं को कई उपाय

कोरोना वायरस महामारी (Coronavirus Pandemic) की वजह से उपजे हालातों के मद्देनजर सेनाओं ने खर्च को कम करने के लिए कहा गया था। अब सीडीएस जनरल बिपिन रावत (CDS Bipin Rawat) ने इसके लिए कुछ उपाय सुझाए हैं।

पूनम पाण्डे

हाइलाइट्स

- ***ऑफिसर्स मेस, कुक हाउस और यूनिट मेडिकल फैसिलिटी की बिल्डिंग में कटौती***
- ***टैंक रखने के लिए अब कंकरीट के नहीं टिन के गैराज***
- ***रक्षा मंत्री ने कोरोना संकट के दौरान तीनों सेनाओं से खर्च कम करने के लिए कहा था***

नई दिल्ली : कोरोना संकट काल (Corona Crisis) के दौरान बजट का सही इस्तेमाल और खर्चे कम करने के लिए मिलिट्री अफेयर्स डिपार्टमेंट ने आर्मी, नेवी और एयरफोर्स को कई कदम उठाने का कहा है। इसमें ऑफिसर्स मेस, कुक हाउस, यूनिट मेडिकल फैसिलिटी की बिल्डिंग में कटौती के साथ ही गैराज बनाने में भी बचत करने को कहा गया है। रक्षा मंत्रालय के तहत कुछ महीनों पहले ही मिलिट्री अफेयर्स डिपार्टमेंट बना है, जिसे चीफ ऑफ डिफेंस स्टाफ जनरल बिपिन रावत (CDS Bipin Rawat) हेड कर रहे हैं।

बिपिन रावत (फाइल फोटो)

ऑफिसर्स मेस को किया जाए कम

कोविड-19 (Covid-19) के इस दौर में सभी मंत्रालयों से बचत करने को कहा गया है। तीनों सेनाओं यानी आर्मी, नेवी और एयरफोर्स को भेजे गए एक ऑर्डर में सीडीएस की तरफ से कई तरीके बताए गए हैं। इस ऑर्डर में कहा गया है कि ऑफिसर्स मेस स्टेशन के आधार पर होंगे। अभी ऑफिसर्स मेस हर यूनिट के होते हैं। आर्मी के एक सीनियर अधिकारी ने कहा कि कई ऑफिसर्स मेस में 2-4 अधिकारी ही खाना खाते हैं और अगर स्टेशन के आधार पर मेस होंगे तो एक्स्ट्रा बिल्डिंग का कुछ और इस्तेमाल हो सकता है।

कुक हाउस की संख्या कम की जाए

एक दूसरे अधिकारी ने कहा कि इससे यह भी फायदा होगा कि मैन पावर की बचत होगी। लेकिन उन्होंने साथ ही यह भी कहा कि यह हर स्टेशन की जरूरतों को देखते हुए किया जाना चाहिए, सब जगह की स्थितियां अलग हैं। हर यूनिट मेस को बंद नहीं किया जा सकता। ऑर्डर में कुक हाउस की संख्या कम करने को भी कहा गया है। कुक हाउस उस जगह को कहते हैं जहां जवान खाना खाते हैं। अभी हर कंपनी का अपना कुक हाउस होता है। एक यूनिट में 3 से 4 कंपनियां तक होती हैं। ऑर्डर में कहा गया है कि प्रति यूनिट दो कुक हाउस बनाए जाएं।

जेसीओ क्लब को भी 50 फीसदी कम किया जाए

इसी तरह जेसीओ क्लब भी 50 फीसदी कम करने को कहा गया है। जेसीओ क्लब जेसीओ के लिए होते हैं जहां वह खाना खाते हैं। आर्मी के एक अधिकारी ने कहा कि पीस स्टेशनों पर ज्यादातर ऑफिसर और जवान भी परिवार के साथ रहते हैं इसलिए इनकी संख्या कम करने से कोई दिक्कत नहीं होगी, बल्कि मैन पावर का सही इस्तेमाल होगा और

फालतू खर्च बचेगा। ऑर्डर के मुताबिक यूनिट के अलग एमआई रूम, फैमिली वेलफेयर सेंटर न बनाकर यह स्टेशन के होंगे। एमआई रूम का मतलब मेडिकल रूम होता है।

टैंक के लिए टिन का गैराज

ऑर्डर में कहा गया है कि टैंक और दूसरे आर्म्ड वीइकल के लिए अब कंकरीट का गैराज नहीं बनेगा। इन्हें रखने के लिए टिन का गैराज बनाया जाएगा। साथ ही आर्मी के ट्रक, जीप जैसे दूसरे वीइकल के रखने के लिए टेंपरेरी शेड्स बनेंगे। एडिमिनिस्ट्रेटिव ब्लॉक में अभी ऑफिसर्स की गाड़ियों पार्क करने के लिए कवर्ड पार्किंग है, ऑर्डर में कहा गया है कि एडमिनिस्ट्रेटिव ब्लॉक में कवर्ड पार्किंग नहीं बनाई जाएगी, खुली पार्किंग होगी, क्योंकि गाड़ियां कुछ वक्त के लिए ही रहती हैं। ऑर्डर में कहा गया है कि सालाना मिलने वाली रकम से कोई साइन बोर्ड भी नहीं बनाया जाएगा। सीडीएस ने तीनों सेना हेडक्वॉर्ट्स से इस तरह के और भी उपायों की पहचान करने को कहा है।

रक्षा मंत्री राजनाथ सिंह ने कहा था- खर्च कम करने के लिए सेनाएं उठाएं कदम

कोरोना के इस संकटकाल में रक्षा मंत्री राजनाथ सिंह (Defence Minister Rajnath Singh) ने तीनों सेनाओं यानी आर्मी, नेवी और एयरफोर्स से कहा था कि वह कोरोना वायरस के इस दौर में खर्च कम करने के लिए जरूरी कदम उठाएं। उन्होंने तीनों सेनाओं के कमांडर्स इन चीफ से विडियो कॉन्फ्रेंसिंग के जरिए बात करते हुए कहा था कि कोरोना की वजह से इकॉनमी पर भार पड़ा है। इसलिए फाइनैंशल रिसोर्स संभलकर इस्तेमाल किए जाएं।

https://navbharattimes.indiatimes.com/india/coronavirus-outbreak-cds-bipin-rawat-suggested-several-measures-to-the-indian-army-navy-and-airforce-for-saving/articleshow/75390143.cms

THE NEW INDIAN EXPRESS

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Exemptions not enough to defend projects from corona

Like many other industries, the lockdown has hit the defence manufacturing sector hard despite essential works in the sector exempted from restrictions

By Ramu Patil

Bengaluru: Like many other industries, the lockdown has hit the defence manufacturing sector hard despite essential works in the sector exempted from restrictions. "It will have a 10-15 per cent impact in terms of delays in delivering products or services," said a source in a defence public sector undertaking.

An assessment of the impact and strategies to deal with it will be discussed only after the lockdown is completely lifted, sources added.

In defence PSUs, works on most projects were stopped after the lockdown was imposed and they shifted their focus to keeping essential operations and helping the administration in fighting COVID-19.

Small private manufacturers are the worst hit. "Nearly 90 percent of work is stopped," said Prasad M J, co-founder of Bengaluru-based Accutech Enterprises that supplies components to HAL and many other Indian and foreign defence firms.

The Karnataka Government had earlier issued a circular allowing defence and aerospace firms to resume works, but those in the industry claimed there was no clarity and it was not possible for most of them to restart work due to the lockdown, the sources said. Companies like Accutech had stopped their works a day before the nationwide lockdown was announced on March 24 as there was a lot of uncertainty and most of their employees went to their native places after state government imposed lockdown in some places, including Bengaluru.

Prasad said the state industries department has allowed them to resume work. “Most of our employees cannot return to Bengaluru due to restrictions and we are in the process of getting required permissions,” he said. Former Chief of Training Command, Indian Air Force, Air Marshal (Retd) B K Pandey said the effect will be serious and across the board, from small and medium enterprises to big firms. “Small companies that supply components to big firms will be in serious trouble. It is a question of their survival. They can’t continue to be viable. “Stating that the lockdown may even delay the induction of new aircraft and systems into the forces, Air Marshal Pandey said, however, that it may not be a serious concern as such delays are common in the sector. On their part, many smaller companies may have to wait for the lockdown to end to resume operations. Once the lockdown is lifted, they hope to bounce back with increased vigour.

https://www.newindianexpress.com/cities/bengaluru/2020/apr/27/exemptions-not-enough-to-defend-projects-from-corona-2135753.html

NagalandPost
ONLINE EDITION OF NAGALAND'S FIRST & FOREMOST NEWS DAILY

Mon, 27 April 2020

IAF flies 2nd batch of BSL equipment

Dimapur: Second consignment for Bio-Safety Laboratories (BSL), along with technicians, reached Nagaland by Indian Air Force C-17 Globemaster.

The consignment, for both BSL-3 at NHAK Kohima and BSL-2 at Christian Institute of Health Sciences & Research (CIHSR) Referral Hospital, was received by district medical officials and CIHSR authorities.

BSL equipment ready to be off-loaded from IAF transport aircraft at Dimapur Airport Sunday. (Ababe)

“With this, work for setting-up the second biosafety laboratory at Referral Hospital Dimapur will also start immediately,” Nagaland chief minister Neiphiu Rio tweeted on Sunday.

Meanwhile, with work on setting up the State’s first Bio Safety Level-3 (BSL-3) laboratory at Naga Hospital Authority Kohima (NHAK) in full swing, officials informed that the lab was expected to be ready by second week of May.

Meanwhile, Health minister S. Pangnyu Phom in a tweet also informed that the “equipment for BSL-2 to be set up at Referral Hospital, Dimapur along with some additional instruments for BSL-3” reached Nagaland. “We ensure the latest achievement will immensely benefit our people in the long run,” he tweeted.

http://www.nagalandpost.com/iaf-flies-2nd-batch-of-bsl-equipment/214924.html

Mon, 27 April 2020

Beyond A triangular conception: The "Peninsula" Command

By R Adm Sudarshan Srikhande (Retd)

As reported in the media on 17 February this year—during a time when most of the world was yet not quite admitting that a global crisis might be around the corner—the Chief of the Defence Staff said that among other graduated steps being taken to steer the country towards Joint Theatre Commands (JTC), studies would be commissioned to formulate the contours, constituents and purposes of the so-called Peninsula Command. To quote a report (ET), "*The proposed peninsula command will be formed by merging the navy's western and eastern commands and will spread from the Sir Creek near the Arabian Sea to the Sunderbans in the Bay of Bengal.*"

One can assume that preliminary work on the form and functions of this planned command may have started in all three Service Headquarters (SHQs) and the newly set up Department of Military Affairs (DMA). This article delves into some aspects that could be considered to make such a command an effective and vital constituent of the nation's ability and capacity to be ready across the spectrum of conflict. The spectrum starts from the conditions of peacetime to inter-state war and the nuclear deterrence postures that span the entire bandwidth itself.

This author had suggested earlier what a possible road-map that leverages integration as input and enables jointness as output could look like. Among other things, a phased approach to setting up joint theatre commands as suggested such that by the end of six years, all such commands would be in place. By then, perhaps we could complete the necessary transition to the CDS exercising military command through the JTCs. Simultaneously, SHQs would be able to make the transition to the very important functions of "Raise, Train and Sustain" without which the JTCs would not have the bite required for the types of future warfare complexities we need to remain ready for. The pace at which these important transitions are actually made would, of course, depend on the directives that the government gives the DMA, MoD and SHQs. It could certainly be done earlier than my proposed period.

Naming Names!

- The name of this planned JTC, at least as a first cut, seems to be **"Peninsula Command."** One hopes it won't be institutionalised. Here are some reasons:
  - India's increasing interests and China's spreading power, presence and pursuit of its own interests make it imperative for India to be more expansively oriented. "Peninsula" has a connotation of a very limited triangular conception that may seem – perhaps unwittingly — a continental and defensive orientation of a perpetually bashful middle-power.
  - Fundamentally, a peninsula command cannot include the island territories of India, notably the Andaman and Nicobar Islands and consequently the A & N Command. The exclusion of ANC from this JTC could be counter-productive but there seems to be no indication in the open domain that this is under consideration. One hopes it is or will be.
  - A theatre that is oriented away from the contiguous, continental borders mainly with Pakistan and China ought to include the leverage that our islands provide. This leverage is geostrategic; it is military-strategic in both defensive and offensive strategies and operations.
  - Importantly, many Afro-Asian countries and others within the IOR littoral are more likely to look to a democratic, open India to step up in balancing China. There may be complex drivers for this, but the scale, open ambition, debt-traps and domestic political side-effects of Beijing's One Belt One Road (OBOR) have begun to worry several governments. Current concerns about the 'Viral' Silk Road may further exacerbate these anxieties and

with good reason. China, of course, will push its statecraft into an all-wheel-drive to counter the considerable negativity it may face. In the coming environmental change, Indian statecraft's DIME strategies (Diplomatic, Informational, Military and Economic) would also need to up their game. In all this, a fully geared, new JTC would be an important component of DIME in peace and of course, for deterring and fighting to win in conflict. The "S" for Security in SAGAR (Security and Growth for All in the Region) would benefit from more efficient husbanding in the years ahead.

- So, what would be a better name for such a JTC than perhaps the interim nomenclature above? Some thoughts:
  - Yes, the command would have a primarily oceanic orientation and, most significantly, the Indian Navy would contribute almost all its fighting resources to it. The same command would also allocate fighting forces to maritime operations that would be necessary for the support of the other commands, notably the one that deals with Pakistan. China would loom largest in its schematic, of course.'
  - It would thus be logical to call it the **Maritime Command**. One could suggest that this would have two main problems. First, all warfare would be multi-dimensional and therefore, joint. This is nothing new. War was always about attaining political objectives or preventing the enemy from achieving his. The political/policy dimension always ought to be paramount. In fact, neither is there anything new or novel about multi-dimensional, or hybrid or even grey zone warfare. Warfare has been multidimensional since land power and sea power collaborated. Then came airpower and now we may add the cyber and space dimensions. This intended command may often be predominantly maritime, but never exclusively so. It would be no more exclusively maritime than say, the Northern (or China-oriented command) may be exclusively continental or about landpower. Second, there would very rarely be a singularly maritime conflict. However, conflicts could have maritime dimensions of varying significance, opportunities, and possibly even centrality in a few cases. Third, accepting the realities of turf sensitivities, and of the pressures of fighting on other fronts and in other dimensions, it might take some time before the other Services feel totally at ease devoting resources to a "maritime" command. The advantage of this name does lie in its flexibility to mount operations using the oceans anywhere in the world; at least in theory. We will see that there is an option that incorporates this advantage while working around the other disadvantageous aspects discussed earlier.
  - The third name could be the **Indian Ocean** or even the **Indo-Pacific** or merely the **Oceanic Command.** The middle, i.e., Indo-Pacific could be ruled out because there is an American JTC of the same name. But that is the smaller issue. It is also not commensurate with the inclusion of say, the South Atlantic or the Mediterranean as a future area of interest; and third, the inclusion of the Pacific puts the onus of a fairly regular and considerable presence and operations in all periods of peace to justify the name. The simpler prefix, Indian Ocean, has the drawback of being restrictive in a manner not fundamentally different from calling it the Peninsula command. Besides, our interests exist, even at this moment in the Pacific, which becomes semantically excluded. Importantly, sea power provides leverage and influence which can be exceedingly important for a nation but oceans are ultimately enablers and an oceanic name to a command that sets its eyes on future interests, needs and methods may have similar problems that maritime or named oceans may have.
  - Therefore, the fourth possibility is to simply call it the **Southern Command**. Here are some possible factors in its favour:
    - It is dimensionally neutral. This would enable easier amalgamation of the Army's and IAF's existing southern commands to the extent determined as well as of the Coast Guard;
    - It could include any ocean areas and littorals, even those that may eventually point other than southwards.

- It would be in consonance with the very likely possibility of choosing cardinal and perhaps internal cardinal compass points like Northern, Western, South Western, Eastern Joint Commands (also Central, etc., as required) on the anvil.
- It would be no different from the very sensible system adopted by our military forefathers in every service for the single service commands that exist as of now.
- As a corollary, China too has named its joint theatres in a similar wayand with good reason as well.
- Finally, it remains simple enough for strategic and operational flexibility while not being restrictive as in "Maritime/ Peninsular" or problematic as in "Indian Ocean";"Oceanic" or "Indo-Pacific."

Functions and Strat-Operational Issues

A quick, but the macro-level point that I would like to suggest here is that in due course when the CDS is the war-fighting principal commander, and while he also remains the principal military adviser, he may benefit from having a VCDS and VCDF. The VCDS would help the "Integration" part and the longer-term issues of force planning, human resources, defence budgeting, Civil- Mil interface and those liaison and coordination aspects of "raise-train-sustain" that the current MoD (other than the DMA) and the SHQs would be responsible for. In essence, the VCDS could handle the DMA part on behalf of the CDS.

The Vice Chief of the Defence Force(s) [please see the reference to the Australian "Three Services but One Force" approach] could head the joint output functions that are the key to bring jointness into warfighting. The PM's 15th August speech seems very clear and unambiguous in that the government is looking ultimately at the armed forces to better address these output issues. I may add here that having a parallel, but an interconnected arrangement of a VCDS and VCDF under the CDS is only an outline proposal I am working on. However, further internal staff studies by all concerned would be very necessary to give it full meaning.

Naturally, a transition should avoid creating internal disruption as such. Therefore, initially, it seems very appropriate that the CNS and NHQ would be the lead agent in drawing up the functions, form and fit of this new JTC in conjunction with the DMA and other SHQs. One supposes there would be analogous lead agents for the Air Defence Command and so on. At appropriate times and in smooth steps, the military command could be transferred to the CDS via the VCDF and the Joint HQ.

The suggested Southern Command (SOUTHCOM) would be outward-oriented for furthering and protecting India's interests in which the seas and oceans are vital highways to our neighbours, trading partners, friends and adversaries. At all times and in all conditions, the SOUTHCOM (which must include the ANC in the final stages of the command being raised) will do its bit in the DIME rope of statecraft, especially in military diplomacy, multi-dimensional security, defence partnerships and economic well-being of India and our friends.

One supposes that a major portion, if not almost all of the navy's forces, will be under the primary operational responsibility of this theatre's commander. Significantly, and to illustrate, the theatre responsible for deterring and countering Pakistan would be under – say – a JTC called Western Command. In several ways, assets of SOUTCOM would be periodically assigned to it and would jointly train and exercise with it. Some quick-strike and coastal patrol naval assets could be permanently assigned to this WESTCOM, of course, but to be augmented as required. Likewise, there would be some IAF assets that would be on general permanent strength of the SOUTCOM and, depending on the tasking required, augmented by IAF assets and resources from other commands. The same rationale applies to Army assets.

The details are important but need not be gone into here. The late Colin Gray's guidance, "Geography is not joint but warfare is" is a very useful one. While the CDS and VCDF will be in the chain of military command, a future CNS would be fully engaged in the raise, train and sustain functions while having a say in the operational arena not as a commander, but as a military adviser and member of the Chiefs of Staff Committee.

From Teething Problems to Sharpening the Bite

There are bound to be teething problems in setting up this or any other JTCs. Yet, fundamentally, it is not something that takes us into uncharted waters. At its simplest, a JTC is a better way of handling the business of joint military outputs across the spectrum of peace and conflict. There is another maxim, if you will, that would help planners and decision-makers at all levels of government, but especially so, in the armed forces, which are required, more than anyone else to integrate the inputs and generate the joint outputs. The maxim could be simply stated: *If in doubt, think of what would be best for the nation!* The right answer will surely stare us in the face!

(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the official policy or position of BharatShakti.in)

Editor's Note

In this article, the author shares an analysis of the form, function and fit of the proposed Peninsula Command. He examines in detail why the nomenclature'Peninsula' may not be suitable and suggests options. Interestingly, and to further the arguments he made in his previous opinion piece of 20August 2019, he proposes that there be a VCDF (Vice Chief of Defence Force) as well as a VCDS under the CDS.

https://bharatshakti.in/beyond-a-triangular-conception-the-peninsula-command/

THE TIMES OF INDIA

Mon, 27 April 2020

Beijing's aggressive South China Sea push amid pandemic worries India, US

By Indrani Bagchi

New Delhi: Under cover of the coronavirus pandemic, China has ramped up its aggressive expansionism both in the South China Sea as well as the Indian Ocean Region, raising concern not only among its smaller neighbours but India and US as well.

Last Sunday, China renamed 80 geographical features in the South China Sea — standard names for 25 islands and reefs and 55 undersea geographic entities in a move that has worried the region, signalling that China was establishing sovereignty over parts of the South China Sea covered by a 9-dash line that is deemed illegal according to international law. The listed islands included Sanzhizai, an islet north of Yongxing Island in Sansha city, South China's Hainan Province.

The pandemic, according to sources here monitoring these movements, has not stopped China from pursuing its longer term strategic goals in the region. Indian security officials said on condition of anonymity, "We are one step away from it all but China's double standards with regard to its aggressive posture towards its smaller and weaker neighbours and an insistence that other countries remain sensitive to its concerns (like Taiwan, Tibet, etc) is becoming more evident."

This comes after Chinese ships rammed and sank a Vietnamese ship three days after Vietnam protested to the UN against China's sovereignty claims in the South China Sea. The Chinese action triggered protests from the Philippines to the US. Manila, going against Beijing in a move that raised eyebrows issued a statement saying, "our own similar experience revealed how much trust in a friendship is lost by it and how much trust was created by Vietnam's humanitarian act of directly saving the lives of our Filipino fishermen." US Secretary of State Mike Pompeo raised "Chinese "bullying" activities in the South China Sea that distract from current efforts to deal with the pandemic."

The Philippines, unusually, lodged two protests against China over violations of international law and Philippine sovereignty in the West Philippine Sea.

Last week, Japanese foreign minister Toshimitsu Motegi lodged a protest against China for sending its ships into Japanese territorial waters near the Senkaku Islands in the East China Sea. Japan contends that Chinese ships have intruded into Japanese waters, including on one occasion filing through the area for about 90 minutes.

In response, a US warship has sailed through the Taiwan Straits for the second time in a month. Last week, US warships even sailed through disputed waters off Malaysia, to deter Chinese ships which have been intimidating a Malaysian oil vessel for weeks. This was in response to Chinese aircraft carrier moving near Taiwan.

Abhijit Singh of ORF observed, "For three reasons, the crisis unfolding in the South China Sea has implications for India. First, Chinese militia operations have focused on the region's western end close to the Indian Ocean Region, targeting countries like Vietnam and Indonesia that India has a close political and military relationship with. Second, China's expanding presence in littoral coincides with a rise in Chinese activity in the eastern Indian Ocean, particularly the presence of Chinese research and survey vessels in India's EEZs. Thirdly, growing operations by China's deep-sea mining vessels, fishing fleets and intelligence ships in the Indian Ocean, an indication of Beijing's expanding economic and strategic footprint in India's natural sphere of influence. The bottom-line for Delhi is this: once China firms its grip over the South China Sea, it will use island outposts to power greater military power in the eastern Indian Ocean."

https://timesofindia.indiatimes.com/india/beijings-aggressive-south-china-sea-push-amid-pandemic-worries-india-us/articleshow/75393720.cms

DefenceNews

Mon, 27 April 2020

Saab flies new gan fighter radar

Saab has flown its active electronically scanned array (AESA) X-band radar in a Gripen fighter for the first time, the company announced on April 24. The flight took place at Saab's Linköping airfield on April 8. During the 90-minute sortie undertaken by a JAS 39D trials aircraft (serial 800), the radar was successfully tested against aerial targets of opportunity and a range of ground targets. Speaking to AIN, Anders Carp, senior vice president and head of Saab's Surveillance business area, noted that the radar demonstrated good capability and stability throughout the test mission.

"This is an important step in the development of our new fighter AESA radar," said Carp in a company statement. "We see great possibilities for the radar, and its modular, adaptable and scalable design means it can also be used for a range of other applications."Under current plans, Saab expects to continue initial radar trials for around three to four months, with Gripen 800 due to fly around 15 times with the new sensor. As part of the evaluation, the radar will be employed against fighter targets.

Saab has been at the forefront of AESA radar design employing gallium nitride (GaN) technology, having pioneered the technology with its latest iterations of the Giraffe ground- and sea-based radars, electronic warfare equipment, and with the Erieye ER S-band radar employed in the GlobalEye surveillance aircraft.

The new AESA array is made up of hundreds of transmit/receive modules (TRMs), each one essentially a mini-electronically scanned radar. Radars made with GaN semiconductors have better performance—notably in terms of electronic counter-countermeasures, small target detection and wider bandwidth—than most current AESA sensors that employ gallium arsenide (GaAs) TRMs, while consuming less power and generating less heat.

What is currently known simply as the "Saab AESA fighter radar" comprises the GaN array married to the back end of the PS-05/A Mk 4 mechanically-scanned radar that is the current option for the Gripen C/D. Saab has built virtually all of the elements of the radar itself, including the TRMs that are manufactured in a foundry at the company's primary radar design and production facility, the former Ericsson plant in Gothenburg. The company began ground-testing of the array well over a year ago.

In the Gripen installation, the array is fixed with Saab opting for this configuration due to its simplicity and reliability. The concept of using a repositioner was initially discarded as advanced digital processing can overcome most of the problems associated with radar performance at the outer edges of the scanning volume without adding the internal space required to accommodate a repositioning system. However, Carp commented that a repositioning system could be employed if trials showed that it was necessary.

The array is essentially the same as that which was ordered in late September 2018 for what Saab describes as an "undisclosed U.S. government customer". At the same time, however, the Pentagon announced the award of an $8.2 million contract to Saab USA for the research and development of an "active aperture array". The contracting agency was Naval Air Systems Command, with the array being intended for the Office of Naval Research and Office of the Secretary of Defense Foreign Comparative Testing Program. Saab has already flight-tested this array on another testbed in support of the U.S. program and delivered it to the customer earlier this year.

Saab claims that its new ITAR-free array is ready to go to market, and would take between 12 and 18 months to deliver given the need to complete development and testing, and to establish production. The radar has an obvious application as a retrofit for Gripen C/Ds, and could also be included as an option instead of the PS-05/A Mk 4 for new C/D sales, with the potential of revitalizing that aircraft's sales prospects. Other opportunities include other fighter types, particularly as an upgrade option.

The company sees opportunities for the X-band radar beyond fighters, including installation in advanced trainer and aggressor aircraft. Moreover, the radar has been designed in a modular fashion, and is scalable. This opens up a wide range of applications, including scaled-up radars of almost Erieye ER size for X-band surveillance. Ship- and UAV-based opportunities are also being studied.

For now there are no plans to equip the new-generation Gripen E/F with the GaN radar as the GaAs-based Leonardo ES-05 Raven is fully integrated for that requirement, but it could be substituted if a customer specified it. Saab also points out that the work being performed by the company on an AESA radar for the KF-X fighter in collaboration with South Korean industry is a separate project.

https://www.defencenews.in/article/Saab-Flies-New-GaN-Fighter-Radar-830323

THE HINDU

Mon, 27 April 2020

At the edge of a new nuclear arms race

The U.S.'s moves to resume nuclear testing, also signalling the demise of the ill-fated CTBT, could be the first signs

By Rakesh Sood

In mid-April, a report issued by the United States State Department on "Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments (Compliance Report)" raised concerns that China might be conducting nuclear tests with low yields at its Lop Nur test site, in violation of its Comprehensive Nuclear-Test-Ban Treaty (CTBT) undertakings.

The U.S. report also claims that Russia has conducted nuclear weapons experiments that produced a nuclear yield and were inconsistent with 'zero yield' understanding underlying the CTBT, though it was uncertain about how many such experiments had been conducted.

Russia and China have rejected the U.S.'s claims, but with growing rivalry among major powers the report is a likely harbinger of a new nuclear arms race which would also mark the demise of the CTBT that came into being in 1996 but has failed to enter into force even after a quarter century.

What does CTBT ban mean?

For decades, a ban on nuclear testing was seen as the necessary first step towards curbing the nuclear arms race but Cold War politics made it impossible. A Partial Test Ban Treaty was concluded in 1963 banning underwater and atmospheric tests but this only drove testing underground. By the time the CTBT negotiations began in Geneva in 1994, global politics had changed. The Cold War had ended and the nuclear arms race was over. The Union of Soviet Socialist Republics, or the USSR, had broken up and its principal testing site, Semipalatinsk, was in Kazakhstan (Russia still had access to Novaya Zemlya near the Arctic circle). In 1991, Russia declared a unilateral moratorium on testing, followed by the U.S. in 1992. By this time, the U.S. had conducted 1,054 tests and Russia, 715.

Negotiations were often contentious. France and China continued testing, claiming that they had conducted far fewer tests and needed to validate new designs since the CTBT did not imply an end to nuclear deterrence. France and the U.S. even toyed with the idea of a CTBT that would permit testing at a low threshold, below 500 tonnes of TNT equivalent. This was one-thirtieth of the "Little Boy", the bomb the U.S. dropped on Hiroshima on August 6, 1945 — its explosive yield was estimated to be the equivalent of 15,000 tonnes of TNT. Civil society and the non-nuclear weapon states reacted negatively to such an idea and it was dropped. Some countries proposed that the best way to verify a comprehensive test ban would be to permanently shut down all test sites, an idea that was unwelcome to the nuclear weapon states.

Eventually, the U.S. came up with the idea of defining the "comprehensive test ban" as a "zero yield" test ban that would prohibit supercritical hydro-nuclear tests but not sub-critical hydrodynamic nuclear tests. Once the United Kingdom and France came on board, the U.S. was able to prevail upon Russia and China to accept this understanding. After all, this was the moment of the U.S.'s unipolar supremacy. At home, the Clinton administration in the U.S. satisfied the hawks by announcing a science-based nuclear Stockpile Stewardship and Management Program, a generously funded project to keep the nuclear laboratories in business and the Pentagon happy. Accordingly, the CTBT prohibits all parties from carrying out "any nuclear weapon test explosion or any other nuclear explosion"; these terms are neither defined nor elaborated.

Why it lacks authority

Another controversy arose regarding the entry-into-force provisions (Article 14) of the treaty. After India's proposals for anchoring the CTBT in a disarmament framework did not find acceptance, in June 1996, India announced its decision to withdraw from the negotiations. Unhappy at this turn, the U.K., China and Pakistan took the lead in revising the entry-into-force provisions. The new provisions listed 44 countries by name whose ratification was necessary for the treaty to enter into force and included India. India protested that this attempt at arm-twisting violated a country's sovereign right to decide if it wanted to join a treaty but was ignored. The CTBT was adopted by a majority vote and opened for signature.

Of the 44 listed countries, to date only 36 have ratified the treaty. China, Egypt, Iran, Israel and the U.S. have signed but not ratified. China maintains that it will only ratify it after the U.S. does so but the Republican dominated Senate had rejected it in 1999. In addition, North Korea, India and Pakistan are the three who have not signed. All three have also undertaken tests after 1996; India and Pakistan in May 1998 and North Korea six times between 2006 and 2017. The CTBT has therefore not entered into force and lacks legal authority.

Nevertheless, an international organisation to verify the CTBT was established in Vienna with a staff of about 230 persons and an annual budget of $130 million. Ironically, the U.S. is the largest

contributor with a share of $17 million. The Comprehensive Nuclear-Test-Ban Treaty Organisation (CTBTO) runs an elaborate verification system built around a network of over 325 seismic, radionuclide, infrasound and hydroacoustic (underwater) monitoring stations. The CTBTO has refrained from backing the U.S.'s allegations.

Competition is back

The key change from the 1990s is that the U.S.'s unipolar moment is over and strategic competition among major powers is back. The U.S. now identifies Russia and China as 'rivals'. Its Nuclear Posture Review asserts that the U.S. faces new nuclear threats because both Russia and China are increasing their reliance on nuclear weapons. The U.S., therefore, has to expand the role of its nuclear weapons and have a more usable and diversified nuclear arsenal. The Trump administration has embarked on a 30-year modernisation plan with a price tag of $1.2 trillion, which could go up over the years. Readiness levels at the Nevada test site that has been silent since 1992 are being enhanced to permit resumption of testing at six months notice.

Russia and China have been concerned about the U.S.'s growing technological lead particularly in missile defence and conventional global precision-strike capabilities. Russia has responded by exploring hypersonic delivery systems and theatre systems while China has embarked on a modernisation programme to enhance the survivability of its arsenal which is considerably smaller. In addition, both countries are also investing heavily in offensive cyber capabilities.

The new U.S. report stops short of accusing China for a violation but refers to "a high level of activity at the Lop Nur test site throughout 2019" and concludes that together with its lack of transparency, China provokes concerns about its intent to observe the zero-yield moratorium on testing.

The U.S. claims that Russian experiments have generated nuclear yield but is unable to indicate how many such experiments were conducted in 2019. It suggests that Russia could be testing in a manner that releases nuclear energy from an explosive canister, generating suspicions about its compliance.

The New Strategic Arms Reduction Treaty (New START) limits U.S. and Russian arsenals but will expire in 2021 and U.S. President Donald Trump has already indicated that he does not plan to extend it. Instead, the Trump administration would like to bring China into some kind of nuclear arms control talks, something China has avoided by pointing to the fact that the U.S. and Russia still account for over 90% of global nuclear arsenals.

Current context

Both China and Russia have dismissed the U.S.'s allegations, pointing to the Trump administration's backtracking from other negotiated agreements such as the Iran nuclear deal or the U.S.-Russia Intermediate-Range Nuclear Forces (INF) Treaty. Tensions with China are already high with trade and technology disputes, militarisation in the South China Sea and most recently, with the novel coronavirus pandemic. The U.S. could also be preparing the ground for resuming testing at Nevada.

The Cold War rivalry was already visible when the nuclear arms race began in the 1950s. New rivalries have already emerged. Resumption of nuclear testing may signal the demise of the ill-fated CTBT, marking the beginnings of a new nuclear arms race.

(Rakesh Sood is a former diplomat and presently Distinguished Fellow at the Observer Research Foundation)

https://www.thehindu.com/opinion/lead/at-the-edge-of-a-new-nuclear-arms-race/article31439692.ece

DefenceNews

Mon, 27 April 2020

U.S. Navy accepts delivery of its most expensive destroyer

On Friday, the U.S. Navy accepted delivery of USS Zumwalt (DDG 1000), its most expensive destroyer ever. Zumwalt-class destroyers are the most lethal and sophisticated destroyers ever built. They provide deterrence and forward presence by bridging today's innovation with future technology.

Guided-missile destroyer USS Zumwalt is 100 feet longer and 13 feet wider than the Arleigh Burke-class destroyer at 610 feet long, providing the space required to execute a wider array of surface, submarine, and aviation missions. Observers will also notice the angular design of Zumwalt's hull and superstructure.

This event marks a major milestone of the dual delivery approach for USS Zumwalt, which achieved Hull Mechanical & Electrical delivery from shipbuilder General Dynamics' Bath Iron Works in May 2016. Raytheon Integrated Defense Systems was the prime contractor for the Zumwalt Combat System, and has lead activation and integration for Zumwalt class ships both in Bath, Maine and San Diego.

"Delivery is an important milestone for the Navy, as DDG 1000 continues more advanced at-sea testing of the Zumwalt combat system," said Capt. Kevin Smith, DDG 1000 program manager, Program Executive Office, Ships. "The combat test team, consisting of the DDG 1000 sailors, Raytheon engineers, and Navy field activity teams, have worked diligently to get USS Zumwalt ready for more complex, multi-mission at-sea testing. I am excited to begin demonstrating the performance of this incredible ship."

With delivery, USS Zumwalt joins the U.S. Pacific Fleet battle force and remains assigned to Surface Development Squadron One. In addition to at-sea testing of the Zumwalt combat system, DDG 1000 will also operate as a key enabler in the acceleration of new warfighting capabilities and rapid development and validation of operational tactics, techniques, and procedures.

Zumwalt-class destroyers maximize stealth, size, power and computing capacity –fielding an array of weapons systems and cutting-edge technologies to fight forces in the air, on and under the sea, and on land.

"Every day the ship is at sea, the officers and crew learn more about her capability, and can immediately inform the continued development of tactics, techniques, and procedures to not only integrate Zumwalt into the fleet, but to advance the Navy's understanding of operations with a stealth destroyer," remarked Capt. Andrew Carlson, the Commanding Officer of USS Zumwalt. "After sailing over 9000 miles and 100 days at sea in 2019, we are absolutely looking forward to more aggressive at-sea testing and validation of the combat systems leading to achievement of initial operational capability."

The USS Zumwalt is the first ship of the Zumwalt-class destroyers. The USS Michael Monsoor (DDG 1001) is homeported in San Diego and is undergoing combat systems activation. The third and final ship of the class, the future USS Lyndon B. Johnson (DDG 1002), is under construction at BIW's shipyard in Bath, Maine.

As one of the Defense Department's largest acquisition organizations, PEO Ships is responsible for executing the development and procurement of all destroyers, amphibious ships, special mission and support ships, and special warfare craft.

As CNBC previously reported, the Pentagon originally had hoped to get 32 of the Zumwalt-class warships but backed off the plan more than a decade ago after congressional criticism about costs.

While the Zumwalt-class destroyer costs more than $4 billion, the Arleigh Burke-class warships run about $1.3 billion apiece.

https://www.defencenews.in/article/US-Navy-accepts-delivery-of-its-most-expensive-destroyer-830330

Science & Technology

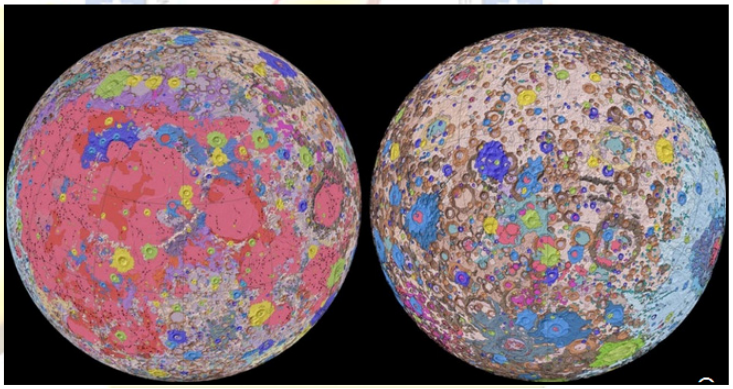
The Weather Channel

Mon, 27 April 2020

Scientists develop first comprehensive map of the Moon's surface

Scientists from the United States Geological Survey (USGS), in collaboration with NASA and the Lunar Planetary Institute, have developed the first-ever map of the Moon's entire surface. The new digital map is known as the 'Unified Geologic Map of the Moon.' It is the first comprehensive map made at a scale of whopping 1:50,00,000. The map was recently released by USGS.

The Moon is the Earth's only natural satellite and its formation dates back to about 4.5 billion years ago. The designing of such a sharp, comprehensive map is a breakthrough in the field of lunar studies as it can help scientists understand the Moon better.



Orthographic projections of the "Unified Geologic Map of the Moon" showing the geology of the Moon's near side (left) and far side (right) with shaded topography from the Lunar Orbiter Laser Altimeter (LOLA).

During October 2019, the Indian Space Research Organisation (ISRO) had released very high spatial resolution images of the Moon taken from the Chandrayaan-2 orbiter. The US space agency, NASA also released a visual dataset of lunar surface that can be used to create virtual experience of the Moon in games and other multimedia applications around the same time.

According to scientists involved in the mapping of the lunar surface state, the goal of this project was to create a resource for science research, analysis and to help extensive future missions to the Moon.

The first-of-a-kind digital map features the entire Moon's geology including the dark and bright splotches present on the lunar surface. The official USGS statement said that information from six Apollo-era regional maps was used to create the digital map, in addition to the updated data from recent satellite missions to the Moon.

The statement further added, "the existing historical maps were redrawn to align them with the modern data sets, thus preserving previous observations and interpretations—along with merging new and old data."

The digital map comprises about 43 geologic units mapped across the entire lunar surface. Further, the units are broken down into groups based on attributes and materials of craters, basins, terra, plains, Imbrium formation, Orientale formation, and volcanic units. According to reports, the different coloured regions on the map represent the elevations of the rock types.

Therefore, this new digital map consists of a unified description of everything present on the lunar surface including the rock layers of the Moon.

Apart from the data taken from past Apollo missions, scientists derived elevation data for the Moon's equatorial region from observations done by the JAXA's Terrain camera onboard mission Selenological and Engineering Explorer (SELENE).

In addition, NASA's Lunar Orbiter Laser Altimeter provided data to build the topography for the north and south poles of the Moon.

"This map is a culmination of a decades-long project," said Corey Fortezzo, USGS geologist and lead author in an official press statement. "It provides vital information for new scientific studies by connecting the exploration of specific sites on the moon with the rest of the lunar surface." According to space experts, the new map is a blueprint of the lunar surface and will play a vital role in planning future lunar exploration missions.

https://weather.com/en-IN/india/science/news/2020-04-27-scientists-develop-first-comprehensive-map-moon-surface

Mon, 27 April 2020

Spacecraft reveals Venus' super-rotation maintained by atmospheric tidal waves

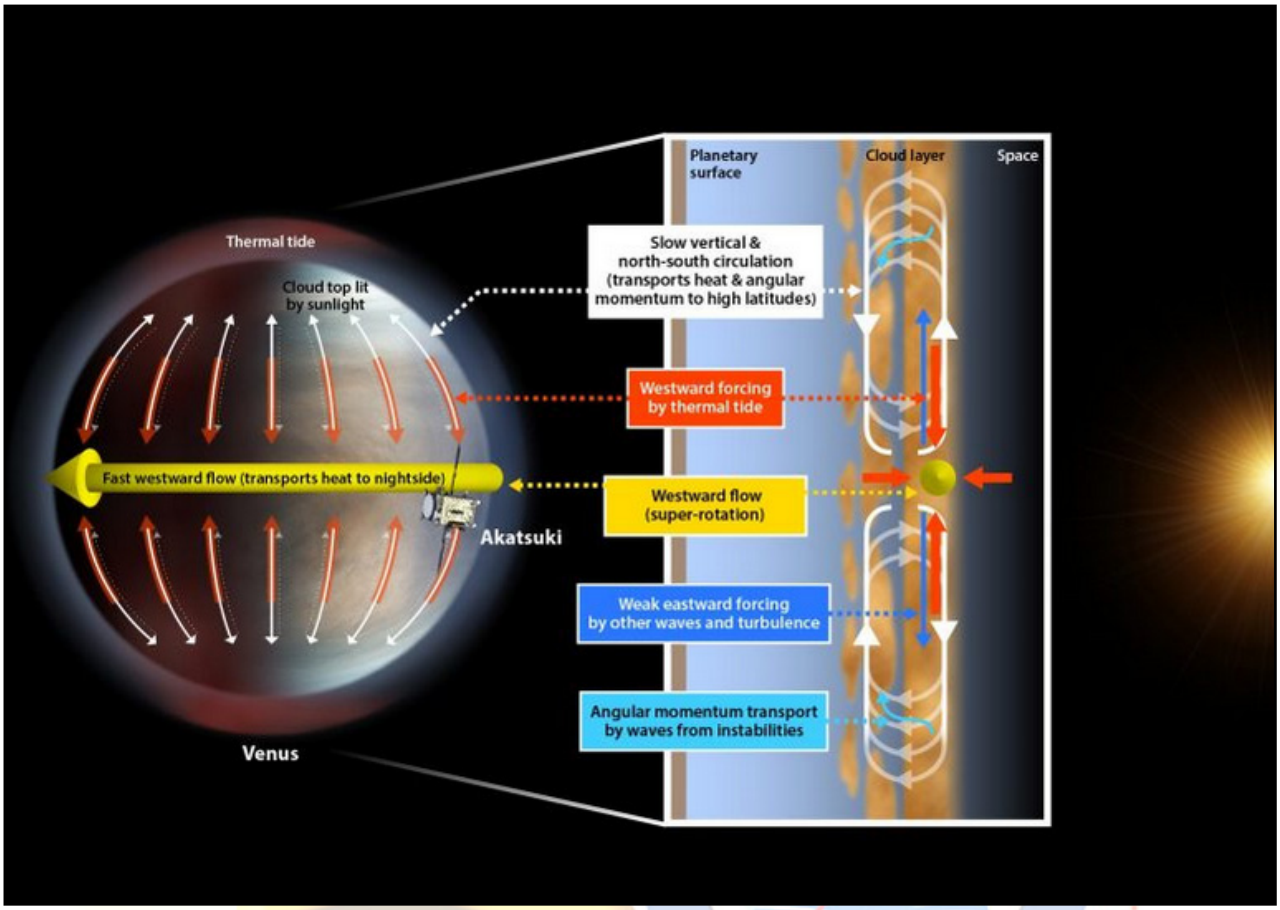
An international research team led by Takeshi Horinouchi of Hokkaido University has revealed that this 'super-rotation' is maintained near the equator by atmospheric tidal waves formed from solar heating on the planet's dayside and cooling on its nightside. Closer to the poles, however, atmospheric turbulence and other kinds of waves have a more pronounced effect. The study was published online in *Science* on April 23.

Venus rotates very slowly, taking 243 Earth days to rotate once around its axis. Despite this very slow rotation, Venus' atmosphere rotates westward 60 times faster than its planetary rotation. This super-rotation increases with altitude, taking only four Earth days to circulate around the entire planet towards the top of the cloud cover. The fast-moving atmosphere transports heat from the planet's dayside to nightside, reducing the temperature differences between the two hemispheres. "Since the super-rotation was discovered in the 1960s, however, the mechanism behind its forming and maintenance has been a long-standing mystery," says Horinouchi.

Venus – Computer Simulated Global View Centered at 90 Degrees East Longitude. Credit: NASA/JPL

Horinouchi and his colleagues from the Institute of Space and Astronautical Science (ISAS, JAXA) and other institutes developed a new, highly precise method to track clouds and derive wind velocities from images provided by ultraviolet and infrared cameras on the Akatsuki spacecraft,

which began its orbit of Venus in December 2015. This allowed them to estimate the contributions of atmospheric waves and turbulence to the super-rotation.



'The proposed system that maintains the super-rotation (yellow) of Venus' atmosphere. The thermal tide (red) towards the equatorial top enforces the westward super-rotation. The atmosphere is controlled by a dual circulation system: the meridional (vertical) circulation (white) that slowly transports heat towards the poles and the super-rotation that rapidly transports heat towards the planet's nightside. Credit: Planet-C project team)

The group first noticed that atmospheric temperature differences between low and high latitudes are as small as it cannot be explained without a circulation across latitudes. "Since such circulation should alter the wind distribution and weaken the super-rotation peak, it also implies there is another mechanism which reinforces and maintains the observed wind distribution," Horinouchi explained. Further analyses revealed that the maintenance is sustained by the thermal tide — an atmospheric wave excited by the solar heating contrast between the dayside and the nightside — which provides the acceleration at low latitudes. Earlier studies proposed that atmospheric turbulence and the waves other than the thermal tide may provide the acceleration. However, the current study showed that they work oppositely to weakly decelerate the super-rotation at low latitude, even though they play an important role at mid- to high latitudes.

Their findings uncovered the factors that maintain the super-rotation while suggesting a dual circulation system that effectively transports heat across the globe: the meridional circulation that slowly transports heat towards the poles and the super-rotation that rapidly transports heat towards the planet's nightside.

"Our study could help better understand atmospheric systems on tidally-locked exo-planets whose one side always facing the central stars, which is similar to Venus having a very long solar day," Horinouchi added.

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EurekAlert!

Mon, 27 April 2020

KIST develops high-performance ceramic fuel cell that operates on butane gas

Thin-film catalyst incorporation enables high-performance over butane fuel at 600°C or below. The technology considerably widens the application range of ceramic fuel cells that use portable fuel

A Korean research team has developed a high-performance ceramic fuel cell that can operate on butane fuels. Since butane can be liquified and thus can be stored and carried easily, the new technology is expected to expand the application range of ceramic fuel cells to portable and mobile applications such as electric cars, robots and drones. Previously, ceramic fuel cells had only been considered for application to large-capacity power generation systems due to their high-temperature operation.

The Korea Institute of Science and Technology (KIST, https://www.nst.re.kr/nst_en/member/03_02.jsp) announced that Dr. Son Ji-Won's research team at KIST's Center for Energy Materials Research had developed a high-performance, thin-film-based ceramic fuel cell that could operate at mid-to-low temperatures below 600 °C using butane fuels.

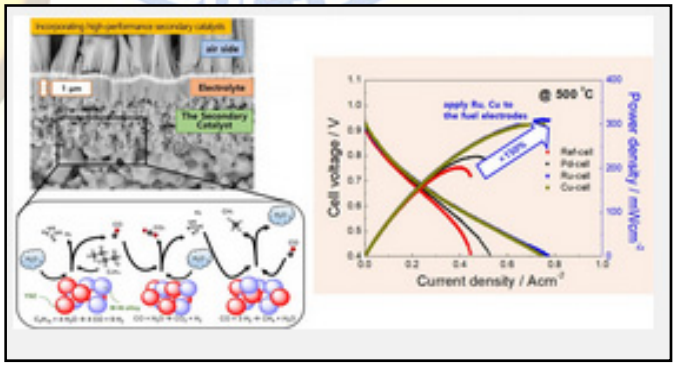

IMAGE: When the nickel catalyst of ceramic fuel cells is used with hydrocarbon fuels, such as methane, propane, and butane, the carbon generated during fuel conversion is deposited on the surface... view more

Ceramic fuel cells are a type of high-temperature fuel cell that operates over 800 ?. This high temperature allows the use of inexpensive catalysts, such as nickel, in contrast to low-temperature fuel cells, such as polymer electrolyte fuel cells, which use high-priced platinum catalysts to supplement their low catalytic activity. Another major advantage of high-temperature fuel cells is that they can various fuels other than pure hydrogen, such as LPG and LNG with low emission due to high efficiency. However, ironically, even though high-temperature fuel cells use inexpensive catalysts, their operation requires expensive refractory materials and manufacturing technologies. Another limiting factor is that their system on-off process takes a long time due to the characteristics of high-temperature operation, which restrict their application to large-scale stationary power generation systems.

Many research teams around the world have worked on thin-film-based ceramic fuel cells, which can operate at low temperatures without performance loss. Unfortunately, the problem is that lower-temperature operation causes ceramic fuel cells to lose one of their important advantages, that is, their ability to use various fuels. When the nickel catalyst of ceramic fuel cells is used with hydrocarbon fuels, such as methane, propane, and butane, the carbon generated during fuel conversion is deposited on the surface of nickel. This worsens seriously as the temperature lowers, leading to the failure of the cell operation.

Dr. Son Ji-Won's research team solved this problem by incorporating high-performance secondary catalysts, which can convert fuels more easily, by thin-film technology. Using alternating deposition of the secondary catalyst and the main catalyst layers, the team was able to effectively distribute the secondary catalyst at the nearliest parts of the fuel electrodes to the electrolyte. By this way, controlled incorporation of small amount but effectively positioned secondary catalysts was possible.

Using this procedure, the KIST research team was able to successfully apply secondary catalysts known for their high catalytic activity at low temperatures, such as palladium (Pd), ruthenium (Ru), and copper (Cu), to the nano-structure fuel electrodes. They confirmed the high-performance operation of the newly developed thin-film-based ceramic fuel cells at mid and low operation temperatures (500-600 ?), using butane fuel, which is a very affordable fuel.

"This research systematically examined the possible uses of hydrocarbon fuels in ceramic fuel cells operating at low temperatures," said Dr. Son Ji-won. "The use of the portable fuels like butane at lower operating temperatures would enable the development of smaller and integrated ceramic fuel cell systems, which can be applied to portable and mobile power sources."

(The research was supported by Korea's Ministry of Science and ICT (https://english.msit.go.kr/english/main/main.do), and conducted as parts of projects on KIST's Future Fundamental Technology, Global Frontier Multiscale Energy Systems, and Climate Change Solutions. An article explaining the results of the research was published in the latest issue of Applied Catalysis B - Environmental, an international journal on environmental and chemical engineering (IF: 14.229, top 0.962% of JCR).

https://www.eurekalert.org/pub_releases/2020-04/nrco-kdh042320.php

जागरण

Mon, 27 April 2020

वैज्ञानिकों ने बताया कोरोना वायरस के चपेट में आने वाले लोगों की ये दो चीजें सबसे पहले होती हैं प्रभावित

नई दिल्ली: कोरोना वायरस ने पूरी दुनिया में कहर मचा रखा है। अब तक लगभग दो लाख लोगों की इस वायरस के संक्रमण से मौत हो चुकी है। दुनियाभर की रिसर्च लैब इस वायरस का टीका और दवा खोजने में लगी हुई हैं मगर अभी तक किसी को कामयाबी नहीं मिल पाई है। अमेरिका समेत दुनियाभर के तमाम देश जल्द से जल्द इस वायरस का इलाज खोजने में अपनी टीम को लगाए हुए हैं।

वैज्ञानिकों को नाक में उन दो खास प्रकार की कोशिकाओं (सेल्स) की पहचान करने में बड़ी सफलता हाथ लगी है जो संभवत कोरोना वायरस से सबसे पहले संक्रमित होती हैं।

वैज्ञानिक दिनरात कोरोना वायरस से बचाव के लिए टीके की खोज में रिसर्च कर रहे हैं। कभी किसी तरह से इलाज करने की बात कही जा रही है तो कभी किसी तरह से मगर किस चीज से इस वायरस का पूरी तरह से खात्मा हो पाएगा ये अभी तक किसी देश के वैज्ञानिक नहीं कह पाए हैं। अब देखना ये है कि वैज्ञानिक इस वायरस की काट के लिए टीका कब तक खोज लेते हैं।

खैर इस बीच वैज्ञानिकों की एक टीम ने ये पहचान करने में जरूरी कामयाबी हासिल कर ली है कि वायरस किस तरह से नाक के रास्ते हमारे शरीर के भीतरी अंगों में प्रवेश करता है और नुकसान पहुंचाना शुरू करता है। ब्रिटेन के वैज्ञानिकों ने इसका पता लगा लिया है। वैज्ञानिकों को नाक में उन दो खास प्रकार की कोशिकाओं की पहचान करने में बड़ी (सेल्स) सफलता हाथ लगी है, जो संभवतकोरोना वायरस से : सबसे पहले संक्रमित होती हैं। ये कोशिकाएं शरीर में कोरोना के दाखिल होने के लिए प्रवेश द्वार के तौर पर काम कर सकती हैं।

ब्रिटेन के वेलकम सेंजर इंस्टीट्यूट और नीदरलैंड की यूनिवर्सिटी मेडिकल सेंटर के शोधकर्ताओं ने नाक में गाब्लेट और सिलिएटेड सेल्स की खोज की। इन दोनों कोशिकाओं में उच्च स्तर पर इंट्री प्रोटीन होते हैं। इन प्रोटीन के उपयोग से कोरोना वायरस -कोविड)19) हमारे शरीर की कोशिकाओं में दाखिल होता है। उन्होंने कहा कि इन कोशिकाओं की पहचान होने से कोरोना संक्रमण की उच्च दर की व्याख्या करने में मदद मिल सकती है।

नेचर मेडिसिन पत्रिका में छपे अध्ययन से यह भी जाहिर होता है कि आंख, आंत, किडनी और लिवर समेत शरीर के दूसरे कुछ अंगों में भी इंट्री प्रोटीन होते हैं। अध्ययन में यह अनुमान भी लगाया गया है कि इंट्री प्रोटीन दूसरे इम्यून सिस्टम जीन के साथ कैसे नियंत्रित होते हैं। इन निष्कर्षों से कोरोना की रोकथाम के लिए नए लक्ष्यों को साधने के साथ उपचारों के विकास की राह खुल सकती है।

शोधकर्ताओं ने बताया कि कोविड-19 रोग की वजह बनने वाले वायरस को सार्स-कोवी-2 नाम से जाना जाता है। वायरस से सबसे पहले संक्रमित होने वाली नाक की कोशिकाओं की पहले पहचान नहीं हो पाई थी। वेलकम सेंजर इंस्टीट्यूट के शोधकर्ता वारडोन सुंग्नेक ने कहा, 'हमने रिसेप्टर प्रोटीन एसीई2 और टीएमपीआरएसएस2 पाए हैं, जो नाक समेत कई अंगों की कोशिकाओं में मौजूद होते हैं। ये प्रोटीन सार्स-कोवी-2 को सक्रिय कर सकते हैं।'

इसी वजह से जब कोरोना वायरस की पहचान हुई तो सभी को इससे बचाव के लिए अपने नाक और मुंह को ढककर रखने के लिए कहा गया क्योंकि जो लोग भी इसकी चपेट में आ रहे थे वो अपना नाक और मुंह खुला होने की वजह से संक्रमित हो रहे थे। फिर ये सिलसिला आगे तक चलता जा रहा था जिससे संक्रमित होने वालों की संख्या अब लाखों में पहुंच चुकी है। इसी वजह से तमाम देशों की सरकारों ने अपने यहां लॉकडाउन किया जिससे वायरस के संक्रमण को रोका जा सके।

लॉकडाउन का ही नतीजा है कि भारत के तमाम राज्यों में कोरोना के मरीजों की संख्या कम है। जिन प्रदेशों में इसके मरीज अधिक पाए जा रहे हैं वहां विदेशी यात्रियों का आना-जाना अधिक है, इनके माध्यम से भी दूसरे देशों से कोरोना का संक्रमण भारत पहुंचा जिसका खामियाजा वहां के लोगों को भुगतना पड़ रहा है।

खैर अब हर देश के वैज्ञानिकों के पास फिलहाल इस वायरस का टीका खोजने की ही जिम्मेदारी है, वो रात दिन तमाम तरह से रिसर्च करके इसका टीका बनाने के प्रयास में लगे हुए हैं। जो भी देश इस संक्रमण का टीका खोजने में कामयाबी हासिल कर लेगा इस समय उसे दुनियाभर में पूजा जाएगा। अमेरिका जैसा देश इस तरह के टीके को हाथोंहाथ खरीदने को आतुर है।

अमेरिका समेत अन्य कुछ देशों में मेडिकल सुविधाएं दुनिया के उच्चतर स्तरों में शुमार है उसके बावजूद वहां पर हजारों की संख्या में लोगों की मौत हो चुकी है, इससे एक बात ये भी सिद्ध हो गई कि इस वायरस के सामने एडवांस मेडिकल सुविधाएं भी फीकीं ही है, यदि पहले से बचाव नहीं किया गया तो लोगों की जान जाना तय है। वो इन देशों में देखने को मिल चुका है।

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