May
2020

समाचार पत्रों से चयित अंश
Newspapers Clippings

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

Volume: 45 Issue: 125 30 May 2020

रक्षा विज्ञान पुस्तकालय
Defence Science Library
रक्षा वैज्ञानिक सूचना एवं प्रलेखन केंद्र
Defence Scientific Information & Documentation Centre
मेटकॉफ हाउस, दिल्ली - 110 054
Metcalfe House, Delhi - 110 054

CONTENT

DRDO News

COVID-19: DRDO's Contribution

NORTHEAST NOW

Sat, 30 May 2020

Assam: Health minister Himanta Biswa Sarma inaugurates COVID-19 testing laboratory in Tezpur

Guwahati: Assam health minister Himanta Biswa Sarma on Friday inaugurated a 100-bedded Maternity and Child Health Wing of Kanaklata Civil Hospital in Tezpur.

This wing will be converted to a COVID-19 treatment facility bolster Assam government's fight against COVID-19.

Assam health minister Himanta Biswa Sarma inaugurating the MCH wing of Kanaklata Civil Hospital in Tezpur

The 100-bedded MCH wing along with accommodation for staff is located at Paruwa in Tezpur has been built at a total cost of Rs. 21.86 crore.

It will, however, at the moment be used as a COVID-19 treatment facility to treat asymptomatic patients in Sontipur district while symptomatic and more serious cases will be referred to Tezpur Medical College and Hospital, the other designated COVID-19 treatment facility in Sonitpur.

Earlier, Himanta Biswa Sarma visited Defence Research Laboratory and inaugurated the newly-created DRL Centre for COVID-19 testing facilities.

He was briefed by DRL director SK Dwivedi and his team of scientists.

The Assam government has initiated efforts with DRDO and ICMR to develop DRL-DRDO, Tezpur as one of the recognised centres for COVID-19 sample testing.

The health minister also held a meeting with medical superintendents and doctors at Tezpur Medical College and Hospital in the presence of Sonitpur district administration officials to discuss the preparedness to tackle COVID-19 in the district.

https://nenow.in/north-east-news/assam/assam-health-minister-himanta-biswa-sarma-inaugurates-covid-19-testing-laboratory-in-tezpur.html

NEWS LIVE
PUSHING NORTH EAST 24x7

Sat, 30 May 2020

Himanta Biswa Sarma visits Defence Research Lab at Tezpur

Guwahati: Assam health minister Dr. Himanta Biswa Sarma on Friday visited Defence Research Laboratory under Defence Research and Development Organisation (DRDO) at Tezpur. In a Tweet Dr. Sarma stated that a testing facility will soon start at the Defence Research Lab. He expressed hope the testing facility will bolster Assam's capabilities in the fight against COVID-19.

Minister Sarma was accompanied by his deputy Pijush Hazarika, Tezpur MP Pallab Lochan Das and several local MLAs.

He also held a meeting with Sonitpur district administration, medical superintendents and doctors at Tezpur Medical College and Hospital (TMCH) to discuss the arrangements to tackle COVID-19 pandemic.

https://newslivetv.com/himanta-biswa-sarma-visits-defence-research-lab-at-tezpur/

EXPRESS HEALTHCARE

Sat, 30 May 2020

UFlex develops PPE coverall in association with IIT-Delhi, INMAS

The protective coverall is made from combination of non-woven polypropylene fabric, further impregnated with anti-microbial PP coating through special process to increase breathability

UFlex has developed a personal protective equipment (PPE) coverall 'Flex Protect' in joint collaboration with IIT-Delhi and INMAS, DRDO, Delhi. Flex Protect that comes with four-layered protection and anti-microbial coating has been approved by The Defence Research and Development Organisation (DRDO) for use by the frontline health workers who are fighting the battle against COVID-19.

The protective coverall is made from a combination of non-woven polypropylene fabric and further impregnated with anti-microbial PP coating through a special process to increase the breathability. As compared to other PPE kits, the Flex-Protect Coverall Standard is made of 70 GSM which makes it very comfortable and flexible, and fit to be worn for long hours as well.

In Flex Protect Coverall Standard, there are four-layers of security starting with first zipper, followed by velcro, then second zipper, and finally a permanent seal tape. The edges of the PPE kit are secured with high strength seam cover that shields all the holes created during stitching. The coveralls are designed with double forearm, providing safety for the healthcare workers. The equipment comes with multi-layer fastening that seals all the inlet ways.

Listing the attributes and USP of the PPE coverall, N Siva Shankaran, Vice President-Packaging Business, UFlex commented, "Most PPE coverall available in the market are not breathable at all. The user sweats heavily due to perspiration and this causes a great deal of discomfort to them. Flex Protect has almost 30 per cent better breathability while also conforming

to ISO 16603 (resistance to blood and body fluids) which is mandatory against infection causing virus not to enter the coverall through the fabric."

Shankaran further added, "Breathability and ultimate protection by design are the USPs of Flex Protect. It is far superior to the fabric available in the market thereby giving utmost comfort and ultimate protection to the para-medical staff who are currently in great danger of contamination and discomfort."

The PPE coverall developed by UFlex and IIT-Delhi has been tested well for being anti-microbial. The South Indian Textiles Research Association (SITRA) has certified the fabric of PPE coverall being compliant with Dry Microbial Penetration Resistance Test thereby implying fabric's protection against infectious agents. The anti-microbial coating will help in eliminating the microbes which comes in contact with the surface of the coverall, thereby creating the first line of defence."

On achieving this feat, Jeevaraj Pillai, Joint President, Packaging and New Product Development, UFlex said, "With rising cases of corona and scarcity of PPE Coverall, UFlex and IIT-Delhi recognised the opportunity towards playing a vital part in battle against COVID-19. We synergised our expertise in developing a coverall that arrests the existing challenges in PPE coverall and elevating the security of healthcare and other frontline workers who wear these coveralls for hours together. With the launch of our PPE coverall that combines the advantages of longer wear and complete defence against coronavirus, we aim to make the world's citizens safe, by arming the frontline workers with Flex Protect coveralls. The approval from DRDO is hugely encouraging for us, adding impetus to our efforts."

On successful development of this revolutionary kit, Prof Harpal Singh, Head, Centre for Biomedical Engineering, IIT- Delhi said, "Centre for Biomedical Engineering, IIT, Delhi has worked very closely with UFlex, Noida on the development of breathable fabric to be used in Flex Protect Coverall. The response and reaction time in the development was fast and excellent and it is the endeavour of IIT to collaborate with industrial partners for research and development to strengthen the domestic industry capability for providing devices and products in times of national emergencies. IIT Delhi is happy to have UFlex as our industrial partner in this challenging project."

UFlex is participating in the tender of various government requirements to supply the PPE coveralls which will be retailed via chemists and e-commerce platforms.

https://www.expresshealthcare.in/news/uflex-develops-ppe-coverall-in-association-with-iit-delhi-inmas/421126/

India EducationDiary.com

Sat, 30 May 2020

Faridabad's APL Machinery takes make in India to new high with indigenously developed "UV-C disinfectant systems"

New Delhi: APL Machinery Private Limited, one of India's leading company in the Printing industry engaged in manufacturing of a full range of UV Coating & Curing Systems and Screen Printing Machines develops UV-C Disinfectant system- to fight the invisible enemy- COVID-19.

Launched alongside the webinar 'UV-C, Need of the hour, A virus-free world', Mr CP Paul, Chief Managing Director, APL Machinery Private Limited, Dr Harpal Singh, Head & Professor- IIT, AIMS, Dr Amit Tyagi, Scientist, DRDO and Mr. Sameer Kamboj, Founder, SKC World were the prominent speakers.

Manufactured in India, the APL UV-C Disinfectant system is exceptionally useful in rapid and chemical-free disinfection of viruses and bacteria; hygiene and infection control; fluorescent inspection; and tanning.

As it is super easy to operate with no recurring cost UV-C is a much-needed technology and can bring life back to normal in this pandemic. UV-C is a part of the ultraviolet light spectrum that can be used for disinfecting water, destroying harmful microorganisms in other liquids, on surfaces, on food products and in 'air'. With this technology, it is possible to kill more than 99.99% of all pathogens within seconds, without the addition of chemicals; thus, there are no harmful side effects.

With five different products namely UV-C BOX, UV-C Chambers, UV-C handheld disinfectant, UV-C Disinfection Conveyor and UV-C blaster, the UV-C Disinfectant system will help cater diverse sanitisation needs with reliable and fast results which will go a long way to help restore life to normal. Backed with proven experience and authorisation from DRDO and IIT, all products offer stable UV-C output, lowest mercury content, highest lamp quality.

"We are also offering tailor-made solutions as customers have access to get these UV systems customised in various sizes." Said Mr. CP Paul, Chief Managing Director, APL Machinery Private Limited.

Further elaborating about the five different products Mr CP Paul said, Ideal for all sectors, UV-C BOX, preserves the hygiene of tools, containers and any equipment. Since commonly used objects need to be disinfected to maintain high health and quality standards, with UV-C BOX, it is possible to perform the disinfection in a simple, immediate and safe way.

Next, UV-C chambers provide dry, highly efficient and chemical-free disinfection of FFP/ N95 masks, Respiration masks, Shoes, Cutlery, Glasses, Money, Plastic jars, mobile phones and many more.

Aimed to disinfect anything and everything, UV Disinfection Conveyor equipped with a UV disinfection zone, is designed to reduce microbiological contamination on the surface of foods, such as meat, fish, fruits, vegetables, seeds, packaging materials, pharmaceuticals and wherever disinfection and sterilisation are essential.

UV blaster, a UV based area sanitiser is useful for high tech surfaces like electronic equipment, computers and other gadgets in laboratories and offices that are not suitable for disinfection with chemical methods. The product is also useful for areas with a massive flow of people such as

airports, shopping malls, metros, hotels, factories, offices, etc. The UV based area sanitiser may be used by remote operation through laptop/mobile phone using Wi-Fi link. The sanitiser switches off on the accidental opening of a room or human intervention.

Headquartered in Faridabad, APL Machinery is an ISO and CE certified company that caters to Domestic & International market effectively through an established network of sales & service centres and foreign channel partners all over the world. APL is the first Company in India to bring the LED UV technology in India, which is the ultimate solution for UV printing and coating. APL has already installed many LEDUV systems in India. Keeping pace with the changing environment, technology and needs of the clients, the company's Research and Development unit are continuously focusing on developing tailor-made solutions and upgrading the existing ones.

https://indiaeducationdiary.in/faridabads-apl-machinery-takes-make-in-india-to-new-high-with-indigenously-developed-uv-c-disinfectant-systems/

Outlook
THE FULLY LOADED MAGAZINE

Sat, 30 May 2020

APL Machinery develops disinfection system to help fight COVID-19

New Delh: Faridabad-based APL Machinery, which manufacture equipment for the printing industry, on Friday claimed that it has developed a UV-C disinfection system which would help control coronavirus infection.

The disinfection system, produced locally, is useful in rapid and chemical-free disinfection of viruses and bacteria; hygiene and infection control, fluorescent inspection and tanning, the company said in a statement.

The UV-C Disinfectant system is easy to operate with no recurring cost.

UV-C is a part of the ultraviolet light spectrum that can be used for disinfecting water, destroying harmful microorganisms in other liquids, on surfaces, on food products and in ""air"".

With this technology, it is possible to kill more than 99.99 per cent of all pathogens within seconds, without the addition of chemicals; thus, there are no harmful side effects.

It is also backed by authorisation from DRDO and IIT, the company claimed.

(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/apl-machinery-developsdisinfection-system-to-help-fight-covid19/1850293

onmanorama

Sat, 30 May 2020

It's now or never: IAF Chief's Sulur speech is a wake-up call to all Tejas stakeholders

By Anantha Krishnan M

Bengaluru: The formation of the second Tejas squadron (No 18 Flying Bullets) at Air Force Station Sulur on May 27 was an historic event for the Indian Air Force (IAF), Hindustan Aeronautics Ltd (HAL), the Defence Research and Development Organisation (DRDO), private industries and many other national laboratories supporting India's home-grown military efforts.

It was also a very significant one for the Thiruvananthapuram-headquartered Southern Air Command (SAC), which has under its belt three fighter squadrons now – No 45 Sqn Flying Daggers, No Sqn 18 Flying Bullets (both at AFS Sulur operating Tejas) and No 222 Sqn Tigersharks (at AFS Thanjavur operating the Sukhois).

The two-hour-packed event held under tight social-distancing norms owing to COVID-19 restrictions, had many significant parts to it.

But what probably went under the radar was an inspiring speech made by Chief of Air Staff Air Chief Marshal Rakesh Kumar Singh Bhadauria.

Chief of Air Staff Air Chief Marshal R K S Bhadauria all set for a sortie on Tejas at AFS Sulur on May 27. With him is CO of No 45 Sqn Gp Capt Samarth Dhankhar. Photo: IAF

With the help of a Ministry of Defence official, Onmanorama accessed a video le of the speech that has inspired the air warriors, scientists, engineers involved with current and future aeronautical military programmes.

"This is probably the best speeches of an IAF Chief we have heard so far. It was very pointed and thought provoking. More than the speech, it was some directions for everyone. It was a wake-up call for all of us," said a Director of HAL, not wanting to be quoted.

Another official from Aeronautical Development Agency (ADA) said the talk had all ingredients as to what various stakeholders had to do to keep the indigenous flag flying high.

"It was a speech with a purpose," the official said, again not wanting to be named.

So what did the IAF Chief speak that touched a chord with everyone present at AFS Sulur?

Best boys in

Air Chief Marshal Bhadauria took off smoothly and said the No 18 Squadron Flying Bullets has been resurrected with the advance version of the Light Combat Aircraft Tejas with a great thought.

Figure 1 Chief of Air Staff Air Chief Marshal R K S Bhadauria hands over the ceremonial keys to No 18 Squadron CO Gp Capt Manish Tolani at AFS Sulur. Photo: IAF

"There are many firsts to the No 18 Squadron. This squadron was equipped with Ajeet, one of the initial indigenous

aircraft after Marut in the IAF inventory. When the Southern Air Command got its first fighter squadron in 1985, it was again Ajeet manufactured by Hindustan Aeronautics Ltd (HAL) that was part of it," the IAF Chief touched upon some uniqueness of the squadron.

The No 18 Squadron had moved there from Srinagar to SAC then. Later, they got converted to MiG-27 in 1989 at AFS Hindan. It got number plated in April 2016 and was resurrected in April at AFS Sulur.

"Your Squadron motto of 'Teevra aur Nirbhaya (Swift and Fearless) is apt in many ways. Teevra epitomised by Flying Officer Nirmal Jit Singh Sekhon (Param Vir Chakra awardee, posthumous) and Nirbhaya is what you will get with LCA Tejas. It is now up to the Commanding Officer and all the air warriors of No 18 Squadron to join the operations of IAF in full form at the earliest," he said.

He said the IAF has placed lots of trust in the new squadron members and they are the best men put on the critical job.

"You are amongst the best in the IAF so that you will have to operationalise the squadron at the shortest span of time. Tejas today what you are getting is the best in its class in the world. Take my word for it. It is for you now to study it, gain knowledge, understand its capabilities, maintenance aspects and know everything about the aircraft. With your brains, with your abilities to synergise and with networking you must ensure that Tejas continues to grow and increases its combat capabilities," he told the air warriors present there.

The CAS soon dived into the business end of the talk and thanked all stake-holders who played a part in making the Tejas a war-fighting machine.

Sustaining fleet key

He then turned his attention to the makers and designers of Tejas present there.

"I must also tell ADA, HAL, DRDO and others that there's a big responsibility coming your way as we grow the Tejas fleet. We must get the supply chain right, efficiency in provisioning of spares right and we must be able to maintain and sustain the fleet effectively," the IAF Chief said.

He said having inducted two squadrons of Tejas, now the most critical aspect for IAF is to maintain and sustain the fleet. He also urged all agencies to work together and proactively support the maintenance set-up.

He said IAF is transforming in its operational philosophy, in terms of training, networking, security, information and weapons.

"I assure you lot of work is happening in order to provide you the technology and capability edge as far as possible within the country. Only where it is absolutely essential we will seek some support from outside. So much is possible within our country and that is why our attention has shifted in a major way to indigenous manufacturing," he said.

Wake up and move on

Turning his focus to the industry, the CAS said that the Covid-19 has impacted the private sector, MSMEs and supply chain of DPSUs.

"We cannot sit back and take these as excuses or demoralising factors. We must get up and start moving. When I took over as IAF Chief I said we will do everything possible to support the industry. The two squadrons here is very must a testimony to what we have promised," he said.

He said IAF is keen to look two to three decades ahead with many home-grown systems set to join its fleet. He said the orders for 83 Tejas MK1As will be in soon while IAF's uninching support for LCA MkII and Advanced Medium Combat Aircraft (AMCA) would continue.

"Our vision is clear. For future fighters, host of radars, weapons, sensors and AI systems we will seek industry's support. We need 300-plus fighters and 70-plus HTT-40 trainers which we have indicated. The industry must move together to synergise and take advantages of all available opportunities. We should able to grab the opportunity and change the face of aviation industry in the country in the next 10 to 20 years. If we do not act now we would only lose time, opportunity and the capability as we go ahead," he said.

He said the IAF is clear with what it needs from indigenous sources in the next few decades.

"Working together is the key and I am confident that we will be able to improve production rates, timelines, reliability factors, cost-cutting measures and efficiencies across the board," he said.

Smart budgeting must

Admitting that budget will be cause of concern for everyone in future the IAF Chief called for innovative methods to tackle the problem.

"Budget will be an issue in the immediate future. Again budget constraints should not become an excuse for the industry to take off. Demand is what matters more. If you get together, there are innovate ways of doing budgeting for firm programmes. I would urge the industry partners to come together for budgeting with innovate ways and overcome this period of constraints and yet move forward," he said.

He signed off his compact speech again reminding both Tejas squadrons that they will become the core of IAF's growth in terms of combat capability for the future.

"As a core you need to grow and absorb the 83 new LCAs that will come up in the next decade and ensure that the combat capability is proliferated into the IAF in the right manner. I have no doubt when the opportunity arises these two squadrons will surprise the adversary with their capability and determination," he concluded.

Air Marshal TD Joseph, who is currently the Senior Air Staff Officer at Bengauru-based IAF Training Command, was present at the event as the Commodore Commandant of No 18 Squadron.

Tejas fans thrilled

When Onmanorama sought the reaction of Tejas followers across the globe using various social media tools, they were thrilled to see the addition of yet another squadron with a desi bird to the IAF fleet. The gist of select-few responses below:

- Tejas is a stepping stone for future projects and its future iteration like the MK2/MWF will be a game changer for Indian aviation. Tejas is the first step towards making IAF 'aatmnirbhar'. - Hitesh Adhikari, Uttarakhand
- The second squadron will bolster IAF operations and will act as a stimulant for seamless integration of Tejas Mk1A and Tejas MkII-2. - Ajayshree Singh Sambyal, Ph.D Scholar, University of Jammu.
- New Tejas squadron is good but I hope if HAL can partner with private industry to start a new line of production, we will be able to deliver 24 to 30 aircraft every year. - Ravi Lokwani, Postdoctoral research fellow, National Institute of Health, USA.
- There couldn't have been a better news than this. It's a delight that we are seeing a second squadron of LCA Tejas in the IAF. I really can't wait to see the bird touch the sky with glory. - Aditi Patwardhan, MBA student, Nagpur.
- It's such a proud feeling that the second squadron of the Tejas is being formed and I can't wait till it is completed and positioned at our northern borders. - Atul Singh, Research Analyst, Gurugram.
- The Tejas programme though behind schedule has enabled India to develop and master many technologies. It will serve as a springboard to accede late development of future variants. - Danny Saldanha, Chartered Accountant, Dubai.

(*The writer is an independent aerospace and defence journalist, who blogs at Tarmak007 and tweets @writetake.*)

https://english.manoramaonline.com/news/nation/2020/05/29/iaf-chief-sulur-speech-tejas-stakeholders.html

Sat, 30 May 2020

क्या है स्वदेशी न्यूक्लियर मिसाइल K-4? क्यों उसकी ताकत देख हुई चीन और पकिस्तान की बोलती बंद ?

K4 स्वदेशी तकनीकि से युक्त एक परमाणु संपन्न मिसाइल है जिसे भारत सरकार के **रक्षा अनुसंधान एवं विकास संगठन** द्वारा भारत डैनामिक्स लिमिटेड के साझा सहयोग से विकसित किया जा रहा है। यह एक SLBM (Submarine Launched Blastic Missile) है जो K सीरीज की दूसरी मिसाइल है। इसे हमारी स्वदेशी परमाणु पनडुब्बी आईएनएस अरिहंत श्रेणी के लिये बनाया जा रहा है।

यह मिसाइल लगभग 3500 **किमी** तक सटीक मार करने में सक्षम होगी। इस श्रेणी की पहली मिसाइल K15 सागरिका है जो वर्तमान में आईएनएस अरिहंत में लगी हुई है, जो 750 किमी तक मार करने में सक्षम है

K 4 मिसाइल श्रेणी के विकास सम्बन्धी इतिहास का अवलोकन

K श्रेणी मिसाइल का नाम हमारे पूर्व राष्ट्रपति एवं महान वैज्ञानिक भारत के मिसाइल मैन ***डॉ ए पी जे अब्दुल कलाम*** के नाम पर दिया गया है। इसके विकास में एक महत्वपूर्ण भूमिका है अग्नि-3 मिसाइल की।

पहले आईएनएस अरिहंत में अग्नि-3 मिसाइल को लगाने की योजना थी परन्तु इसमें बहुत सी तकनीकि समस्याओं का सामना करना पड रहा था। पनडुब्बी के लिए एक हल्की व छोटी मिसाइल चाहिये जो आसानी से फिट भी हो जाये और जिसकी मारक क्षमता भी अधिक हो।

इस श्रेणी के विकास का पथ यहीं से प्रशस्त हुआ। यह मिसाइल 12 मीटर लम्बी तथा 1.3 मी ब्यास के साथ 17 टन की है। ठोस ईधन वाले रॉकेट से चलने वाली ये मिसाइल लगभग 2 टन भार का विस्फोट ले जाने में सक्षम है। अभी इसका परीक्षण चल रहा है।

डीआरडीओ के अनुसार अब लक्ष्य इसकी अचूक मारक क्षमता हासिल करना है। इसका पहला सफल परिक्षण 24 मार्च 2014 में हुआ था। इसके अभी और कई परिक्षण हो चुके है और होने बाकी है, जिसके बाद इसे सफलतापूर्वक भारतीय नौसेना में शामिल कर लिया जाएगा।

अगर इसके भविष्य की बात करें तो इसमें भारत सरकार के अनुसार कुल चार मिसाइल का निर्माण होना है जिसमे से K 15 सागरिका पहले ही कमीशन हो चुकी है।

परीक्षण सम्बन्धी इतिहास

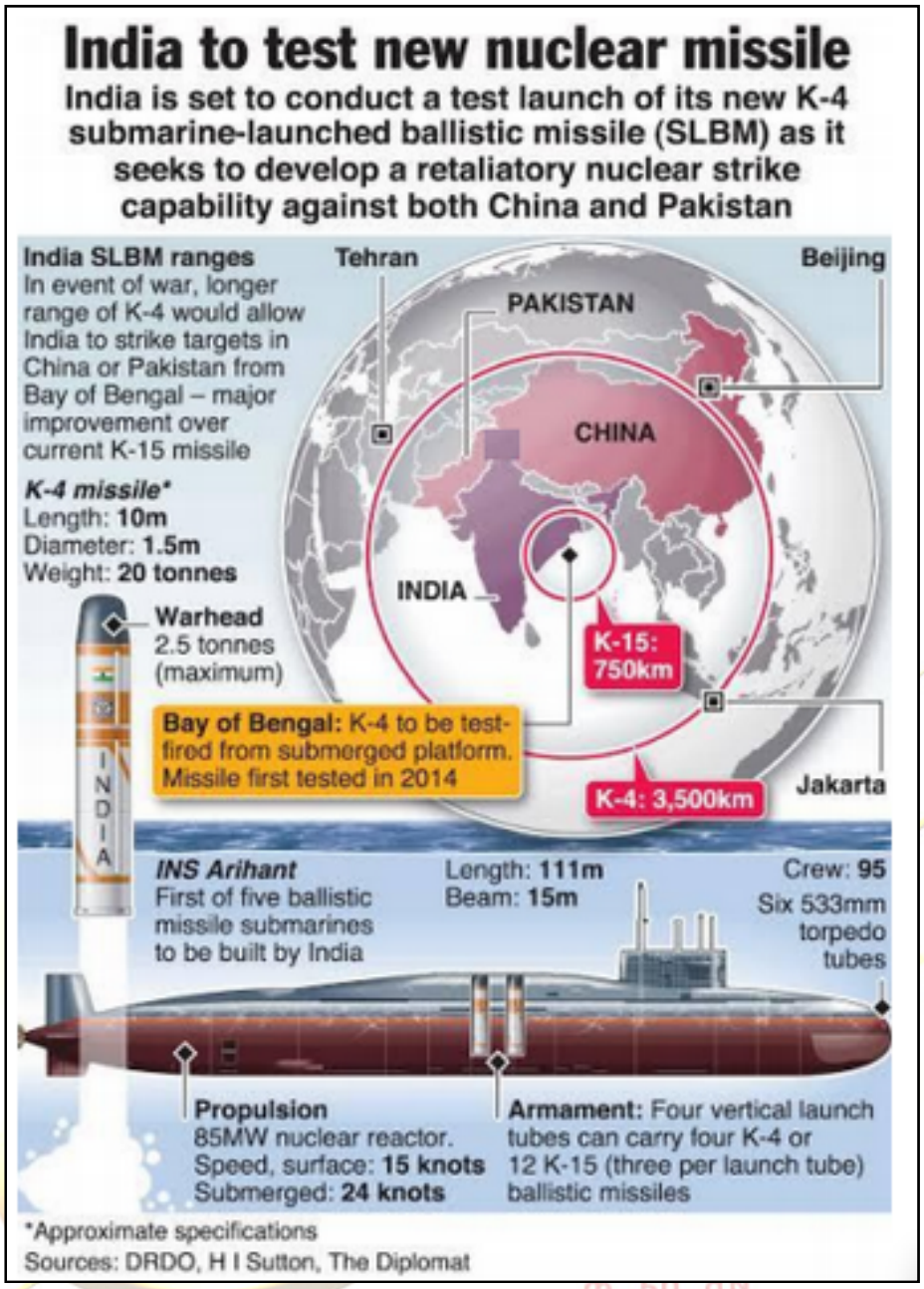
यदि K 4 मिसाइल के परिक्षण सम्बन्धी इतिहास की बात करें तो इसका पन्टून से परीक्षण पहले 2013 में होना था किन्तु कुछ कारणवश नहीं हो पाया। इसका पहला परिक्षण 24 मार्च 2014 को 30 मीटर की गहराई से हिन्द महासागर में विशाखापत्तनम के किनारे पर किया गया। यह परिक्षण पूर्णतया सफल रहा। इसमें मिसाइल हिन्द महासागर में लगभग 3000 किमी तक गयी। मई 2014 में इसके और परीक्षणों की घोषणा के साथ इसे नौसेना को सौप दिया गया।

TYPE	RANGE	WEIGHT
K 15 SGRIKA SLBM	750KM – 1000 KM	6-7 TON
*K 4 SLBM	3,500 KM	17 TON
**K 5 SLBM	5,000 KM	UNSPECIFIED
**K 6 SLBM	6,000 KM	UNSPECIFIED

31 मार्च 2106 को आईएनएस अरिहंत द्वारा विशाखापत्तनम के तट से 45 नॉटिकल मील पर एक और सफल परिक्षण किया गया। यह परिक्षण नकली भार के साथ रणनीतिक बल कमान के अधिकारियो द्वारा किया गया जिसका संचालन DRDO ने किया। इस परिक्षण की सबसे महत्वपूर्ण बात यह रही कि यह परिक्षण शून्य त्रुटी के साथ पूर्ण हुआ और अपने सभी मानकों पर शत प्रतिशत खरा उतरा। इसके साथ ही भारत ने वैश्विक स्तर पर पनडुब्बियो से लांच होने वाली शक्तिशाली परमाणु मिसाइल सम्पन्न देशो में अपना नाम दर्ज करवा लिया।

चीन और पकिस्तान को देखते हुए कितना सामरिक महत्व रखता है, K 4 मिसाइल?

वर्तमान समय में सिर्फ पाँच देशो के पास ही SLBM की तकनीकि है, जिनमे अमेरिका, रुस, फ्रांस, चीन, भारत और दक्षिण कोरिया है। परन्तु दक्षिण कोरिया के पास परमाणु चालित पनडुब्बी नहीं है और ना ही अधिक दूरी तक मार करने वाली मिसाइल। यदि भारत की भौगोलिक परिस्थिति का अवलोकन करें तो भारत तीन ओर से समुद्र से घिरा है। जहाँ अरब सागर में पडोसी पकिस्तान निरंतर सुरक्षा में सेंध लगाता है वही चीन हिन्द महासागर में समय-समय पर अपनी उपस्थिति दर्ज कराने आ ही जाता है।



यह ज्ञातव्य है कि दोनों ही देश भारत पर आक्रमण कर चुके है और आज भी निरंतर भारत की सीमाओं को इनसे खतरा बना रहता है। भारत यदि अपनी एक-एक पनडुब्बी क्रमशः अरब सागर, हिन्द महासागर, बंगाल की खाड़ी व प्रशांत महासागर में तैनात कर देता है तो इस मिसाइल की मारक क्षमता युद्ध में बहुत सामरिक लाभ दे सकती है और परमाणु चलित पनडुब्बी से लांच होने के कारण दुश्मन का इसे पकड पाना भी बहुत मुश्किल है।

चूकी परमाणु पनडुब्बी महीनों तक बिना सतह पर आये पानी में रह सकती हैं, इसलिए अरिहंत श्रेणी की परमाणु चलित पनडुब्बीयों में लगी स्वदेशी K 4 परमाणु मिसाइलें चीन और पकिस्तान के सामने हमेशा एक बहुत बड़ी बाधा बनकर खड़ी रहेंगी, और ये अपनी पूर्ण स्वदेशी तकनीकि के कारण युद्ध के समय एक बड़ा गेम चेंजर साबित होगी।

https://bnnbharat.com/what-is-indigenous-nuclear-missile-k-4-why-did-china-and-pakistan-stop-speaking-after-seeing-its-power/

Sat, 30 May 2020

Turbulence: How we almost lost Tejas

The three-day conference began with seven Army commanders and Principal Staff Officers being briefed about the situation in eastern Ladakh and other aspects of national security

On May 17, a group of Indian Air Force's finest were gathered around in a room buzzing with radio transmissions and lined with consoles. There was nervousness in the air and frowns on faces. Their day in Bengaluru had started according to plan. India would witness the performance of the Tejas fighter jet, their boss, Air Chief Marshal Arup Raha, would be flying in it for the first time, he would take over controls halfway into the 30-minute flight and the jet itself would be flown by ace pilot Group Captain Madhav Rangachari.

But as Group Captain Rangachari fired up the engines of the twin-seat trainer version, Air Chief Marshal Raha, from the rear seat threw up a surprise. He told the pilot he would take over completely — take off, check the jet's agility, throw it into dives, pick a 'target' and then return to Bengaluru's HAL airport. And as the group of stunned IAF officers in command & control stared into monitors, their boss shot off in the direction of Krishnagiri in Tamil Nadu, 90 kilometres away, picked a dam as the 'ground target', simulated a strike, tossed the jet around with one of the moves generating a body-crushing 5Gs and then headed back to Bengaluru for a smooth landing.

The Air Chief Marshal was flying after 17 years and in command & control many were looking around for chairs to sit. Because besides the relief, there was much joy. For those who had worked on the plane, this day was once a waking dream. Tejas, and its May 17 flight, is the result of over 30 years of work and through those three decades, the plane's engineers endured unending taunts and even threats of imprisonment.

Dr V.S. Arunachalam, a former scientific adviser to the defence minister and chief of DRDO remembers the day they almost lost the plane. "At one meeting in 1991, chaired by then Defence Minister Sharad Pawar, MP Suresh Kalmadi, said we should be sent behind bars because he had found large-scale misappropriation of funds. But Ratan Tata, who was invited to the meeting along with other industrialists had a contrary opinion. Tata told the minister that we had chosen the best technology and if for some reason the government wished to scrap the project, the Tata Group would take over and make the aircraft themselves. Pawar then decided to support us as many others had agreed with Tata," he says.

India's Light Combat Aircraft (LCA) programme (christened 'Tejas' by former Prime Minister A.B. Vajpayee later) began when Indira Gandhi was furious with the Soviets for playing truant while supplying spares for fighter aircraft. Soon, the challenge to make a jet for ourselves, fell on the shoulders of Dr Arunachalam and just about 300 others. They would face much of the bureaucratic hell Indian innovation was during its earliest years.

His successor, the late Dr A.P.J Abdul Kalam too, faced problems while steering the project. A major blow came in 1998 — after India's nuclear tests in Pokhran. Two companies —Lockheed Martin and General Electric — who had agreed to provide expertise to the LCA project pulled their engineers out after a US technology embargo. Their ejection turned the clock back by four years for the project.

The plane first flew on January 4, 2001. “One of the early jokes was that LCA stood for ‘Last chance for Arunachalam’. And when I took over (as Chief of DRDO), they said it was Last Chance for Aatre. Today, critics are all quiet,” says Dr Vasudev Aatre, who headed DRDO when ‘Tejas’ made that first flight 15 years ago.

Also, for Air Marshal Philip Rajkumar (Retd), who served as a formidable bridge between IAF and DRDO, and later as project director, the fact that Tejas clocked close to 3,000 hours without a single snag is a formidable achievement. He now wants more of these planes inducted as soon as possible.

He joins Air Chief Marshal Raha and many others who believe the Tejas has become, an asset. And to think we almost lost the plane to mountains of paperwork and Suresh Kalmadi’s accounting.

https://idrw.org/turbulence-how-we-almost-lost-tejas/#more-228257

Sat, 30 May 2020

MWF/Tejas MkII acronyms to be dropped by IAF by year-end

By Raunak Kunde

The upcoming fighter jet will no longer be called as Medium Weight Fighter (MWF) or as Tejas MkII Internally anymore and soon IAF and ADA will propose a New Project name for the aircraft so that it is not associated with the LCA-Tejas Program due to incremental additional capabilities the aircraft will come with.

ADA and MOD are still calling upcoming fighter jet in Medium Class as Tejas MkII in its Internal documents since original Mk2 program started as a re-engineering program for the Tejas Mk1 aircraft with a more powerful engine and since that has been dropped and a new design with higher weapons and combat range capabilities have been approved, it no longer can be called as Tejas Mk2 or LCA anymore.

Last Year in Aero India 2019, when the Scale model of the upcoming fighter was showcased it had Medium Weight Fighter (MWF) and Tejas MkII all over it and IAF plans to have a new name before the program takes off and it is likely by year-end a new name will be adopted.

https://idrw.org/mwf-tejas-mkii-acronyms-to-be-dropped-by-iaf-by-year-end/

ThePrint

Sat, 30 May 2020

More midair refuellers, UAVs — Bhadauria explains how IAF is bracing for new nature of war

In an interview to ThePrint, Air Chief Marshal R.K.S. Bhadauria says the IAF is not in favour of 'rigid theaterisation' as it will divide already scarce IAF combat assets and effort

By Amrita Nayak Dutta

New Delhi: The Indian Air Force (IAF) is set to launch a Request for Proposal (RFP) for six midair refuelling planes, even as it works to bolster its Unmanned Aerial Vehicle (UAV) fleet with fresh inductions and upgrades, Air Chief Marshal R.K.S. Bhadauria has said.

The IAF chief made the statement in an email interview to ThePrint, as he addressed queries about the force's preparations amid a changing nature of war that is likely to result in more aerial engagements.

He also said the IAF is not in favour of "rigid theaterisation" of the defence forces, which he claimed would divide the "already scarce IAF combat assets and effort". However, he clarified that the IAF is not against integration.

Air Chief Marshal RKS Bhadauria, chief of the Indian Air Force | File photo | ANI

'Specifications for midair refuellers ready'

Bhadauria said the IAF is set to float a request for proposal (RFP) to solicit bids for six midair refuellers.

The plans to address the shortage of Flight Refuelling Aircraft (FRA) have been worked out in a phased manner and short- and mid-term solutions are being looked at, he added.

"As a long-term measure, we have initiated the process of procuring six more FRAs. Draft ASQRs (Air Staff Qualitative Requirements) have been prepared and the RFP is likely to be floated soon," he said.

ASQRs refer to the desired specifications of the aircraft, as put forth by the buyer.

"The induction process will address the IAF requirement in the long term in keeping with the LTIPP (Long Term Integrated Perspective Plan (LTIPP)," he added. The LTIPP specifies the capabilities the armed forces desire to achieve over a period of 15 years. The current one outlines goals for the period between 2012 and 2027.

When inducted, the refuellers, also referred to as tankers, would prove to be a vital strategic asset and force multiplier as they will allow fighter jets to stay airborne longer.

This will be the IAF's third attempt to procure midair refuelling aircraft since 2007. The European Airbus 330 multi-role tanker transport and Russia-based Ilyushin's Il-78 had competed in the past two attempts, but the tenders were reportedly scrapped because of "price complications".

Currently, the IAF operates a fleet of six Russian Ilyushin-78 tankers that suffer from maintenance and serviceability issues, as pointed out in an August 2017 CAG report that studied the refuellers' operations between 2010 and 2016. The tankers were bought in 2003-2004 at Rs 132 crore per aircraft.

The IAF chief's comments come at a time when there are fears that the Covid-19 pandemic and the economic impact of the ensuing lockdown will take a toll on the defence budget, an even more worrying prospect amid longstanding concerns over what is seen as meagre allocations for the military in recent years.

IAF to induct more UAVs, upgrade existing fleet

The IAF, he said, is also looking to induct more UAVs and upgrade its existing fleet of remotely piloted aircraft (RPA).

"Various classes of RPAs, ranging from small/medium to medium altitude long endurance (MALE), high altitude long endurance (HALE) and unmanned combat aerial vehicles (UCAVs) are being considered," Bhadauria said, adding that options are available under Make in India too.

India's current drone fleet includes unarmed Heron and Searcher UAVs, both from Israel, that are used for reconnaissance, surveillance and intelligence gathering. The IAF also has a fleet of Israeli Harpy UAVs that can attack enemy radar positions and are self-destructing.

Domestic efforts to churn out UAVs include a strategic partnership agreement between state-run Hindustan Aeronautics Limited (HAL), Israel Aerospace Industries (IAI) and the Indian firm Dynamatic Technologies Limited (DTL), signed in February this year at the DefExpo. The partnership is aimed at joint manufacture of a high-endurance drone Heron Mark II, which will not be armed but could be converted into an armed UAV.

India is also working on getting the armed Predator-B High Altitude Long Endurance (HALE) drones for the three services from the US-based General Atomics.

Bhadauria said the IAF is constantly reassessing threats and balancing its force structure, weapons, technology and training methodologies to develop the desired capabilities.

"The IAF has combat capability across the spectrum of air operations. We are constantly upgrading our existing combat fleets and acquiring appropriate replacements for aircraft being phased out," he added.

"Our focus is primarily to achieve combat and technological edge compared to our adversaries and I can assure you that the IAF is fully prepared for suitably handling any future conflict."

IAF chief against 'rigid theaterisation'

Bhadauria, who has 4,270 hours of experience on fighter jets and transport aircraft, was commissioned as a fighter pilot in June 1980. A decorated officer who has been awarded the Vayu Sena medal (2002), the Ati Vishisht Seva Medal (2013) and the Param Vishisht Seva Medal (2018), he took over as IAF chief in September 2019.

In the interview, the IAF chief expressed reservations about plans to create theatre commands — integrated commands of the Army, Navy and Air Force that would subsume regional commands. He, however, said he is not against jointness or integration, but against rigid theatrisation "that will divide the already scarce IAF combat assets and effort".

In an interview with ThePrint earlier this month, Chief of Defence Staff General Bipin Rawat had said studies were underway on theatre commands are on and suggested that the Air Defence Command will be the first on the block. The command will function under the IAF, he said.

"A study team established to work on the contours of Air Defence Command is progressing well, which will synergise our air defence setup," Bhadauria added. "A similar approach would be followed to work out the optimum plan of joint commands or theatres that will achieve the desired integration."

Bhaudauria said an integrated operations room for UAVs will be operationalised soon to help achieve synergy. "It is part of the process of enhancing jointness," he added.

"The integration of UAV assets of the three services to be controlled from a joint operations centre will allow centralised tasking of all operational demands and decentralised execution of missions, thus enhancing efficiency," Bhadauria said. "All capabilities of UAV platforms of the services will be put to optimum utilisation."

https://theprint.in/defence/iaf-hunting-for-6-midair-refuellers-more-uavs-as-wars-moving-to-skies-says-chief-bhadauria/431713/

hindustantimes

Sat, 30 May 2020

UN Secretary General honours Indian Army Major Suman Gawani

Guterres said during her deployment with the UN Mission in South Sudan, Gawani mentored more than 230 Military Observers on conflict-related sexual violence and ensured the presence of women military observers in each of the mission's team sites

UN Chief Antonio Guterres on Friday honoured peacekeepers Major Suman Gawani from India and Commander Carla Monteiro de Castro Araujo from Brazil with the 2019 UN Military Gender Advocate of the Year Award, saying their "inspiring work" promotes equality in the forces.

Secretary General Guterres bestowed the award to Gawani and Araujo in a virtual ceremony, commemorating the International Day of Peacekeepers.

This is the first year the prestigious award has gone to a peacekeeper from India. (pib.gov.in/)

This is the first year the prestigious award has gone to a peacekeeper from India. Military Observer Gawani has recently completed an assignment in South Sudan. Araujo is working in the United Nations' Multidimensional Integrated Stabilization Mission in the Central African Republic.

Guterres underscored the essential role played by women peacekeepers for the success of UN peace operations.

He said Gawani and Araujo's "inspiring work has made a remarkable difference in promoting gender equality and empowering local women and your own colleagues." "Your contributions are proof that women peacekeepers are vital to peace and security everywhere," the UN secretary general said.

Guterres said during her deployment with the UN Mission in South Sudan, Gawani mentored more than 230 Military Observers on conflict-related sexual violence and ensured the presence of women military observers in each of the mission's team sites.

She also trained the South Sudanese government forces and helped them launch their action plan on conflict-related sexual violence.

Guterres also paid tribute to the military, police and civilian personnel who laid down their lives in the line of duty.

Four Indian peacekeepers and a civilian personnel were among the 83 military police and civilian personnel who were honoured posthumously with the prestigious Dag Hammarskjöld Medal for their courage and sacrifice in the line of duty.

Major Ravi Inder Singh Sandhu and Sergeant Lal Manotra Tarsem, who served with the UN Mission in South Sudan (UNMISS); Sergeant Ramesh Singh with the UN Interim Force in Lebanon (UNIFIL); Private Johnsion Beck with the UN Disengagement Observer Force (UNDOF) and Edward Agapito Pinto, who served in a civilian capacity with the UN Organization Stabilization Mission in the Democratic Republic of the Congo (MONUSCO) posthumously received the medals in the virtual ceremony.

The year 2020 marks the 20th anniversary of Security Council Resolution 1325 on Women, Peace and Security. The theme for the International Day of UN Peacekeepers this year is 'Women in Peacekeeping: A Key to Peace.' Guterres, who has been a staunch advocate for increasing the participation of women in UN peacekeeping, said with each passing day women peacekeepers help improve all aspects of peace operations and performance -- better access to local communities, prevent and reduce conflict, serve as role models for peers and others.

"In addition, we have seen that our operations are better able to build trust with those in need of protection when their staffing reflects the communities in which they serve. This is another reason why increasing the number of women in peacekeeping is so crucial," Guterres said, adding that peacekeeping is more effective for everyone when "we have more women peacekeepers at all levels, including in decision-making." "We will continue to do everything we can, including with our troop and police contributors, to reach this goal," he said India's Permanent Representative to the UN Ambassador T S Tirumurti, in his message on Peacekeepers Day, said Gawani "epitomises, in many ways, the rich values of Indian peacekeepers." Tirumurti honoured India's brave men and women who have served as peacekeepers selflessly in foreign lands to preserve international peace and security.

"Indian peacekeepers have been at the forefront of this effort. They have been widely admired for their bravery, professionalism and selfless service. But India's long standing UN peacekeeping contribution has not come without cost. India has lost more peacekeepers than any other member state of the United Nations," he said, in a video message.

Over the last 70 years, more than 160 Indian military, police and civilian personnel have lost their lives while serving in the UN missions around the world.

With the world battling the COVID-19 pandemic, Guterres said UN peacekeepers continue to protect vulnerable local populations, support dialogue and implement their mandates while fighting coronavirus.

"They are doing everything they can to be an integral part of the solution to this crisis while keeping themselves - and the communities they serve safe. But the virus is not the only threat that our peacekeepers face. Hostile acts, improvised explosive devices, accidents and diseases continue to take a heavy toll," he said, as he paid tribute to the 83 military, police and civilian personnel from 39 countries who lost their lives last year serving in the UN peace operations.

India is the fifth largest contributor of uniformed personnel to UN Peacekeeping.

It currently contributes more than 5,400 military and police personnel to the UN peacekeeping operations in Abyei, Cyprus, the Democratic Republic of the Congo, Lebanon, the Middle East, Sudan, South Sudan and Western Sahara as well as one expert to the UN Assistance Mission in Somalia.

https://www.hindustantimes.com/india-news/un-secretary-general-honours-indian-army-major-suman-gawani/story-OoxyUWAR9itqkFdvqkEq9M.html

Sat, 30 May 2020

BRD to convert IOC into FOC aircraft for Tejas Mk1 fleet

By Raunak Kunde

Air Chief Marshal RK Bhadauria wants Base Repair Depot (BRD) of the Indian Air Force (IAF) to carry out conversion of the first 16 IOC (Initial Operational Clearance) configuration aircraft from the first Squadrons to the FOC (Final Operational Clearance) configuration as seen in the

second squadron so has to maintain combat effectiveness of both the Tejas Mk1 Squadrons without relying on State-owned HAL 's LCA- Division team which it has relied on all these years for regular maintenance works of the first squadron.

Bhadauria wants BRD and Squadron level technicians to take over full maintenance activities of the LCA-Tejas Mk1 fleet henceforth and rely on HAL only for major maintenance activities like when they are due to for " Major Overhauls " as prescribed by the manufacture like IAF does for all other fighter jets in its fleet.

FOC (Final Operational Clearance) configuration will enable Beyond Visual Range capabilities on the first 16 aircraft and also clear other Air to Ground weapons which were not available with IOC configuration. Software upgrades to the Mission computer of the IOC aircraft will also expand its flight envelope clearance and usage of additional drop tank other fuel-related modifications and upgrades as told to idrw.org.

A major addition in the FOC configuration Tejas Mk1 aircraft has been the removable Mid-Air refueling probe which will not feature in the IOC Tejas Mk1 even after FOC conversion since it could require remapped fuel plumping and many changes to the internally hardware of the aircraft which IAF has decided to avoid at this stage and might be done at a later stage by HAL in separate contract work order. All 83 Tejas Mk1A will feature a removable Mid-Air refueling probe from the first aircraft onwards.

https://idrw.org/brd-to-convert-ioc-into-foc-aircraft-for-tejas-mk1-fleet/

hindustantimes

Sat, 30 May 2020

Army seeks to purchase land from J-K's Baramulla district administration

In the first such instance, the Army has approached Baramulla administration, evincing interest in buying 129 kanal (6.5 hectare) of land at Kreeri high ground at Tapperwari in Pattan area of the north Kashmir district, where the troops are already "temporarily stationed", defence sources said

Srinagar: After the revocation of Jammu and Kashmir special status with the abrogation of Article 370 of the Constitution last August, the Army has set out to buy land for its camps in the Valley.

In the first such instance, the Army has approached Baramulla administration, evincing interest in buying 129 kanal (6.5 hectare) of land at Kreeri high ground at Tapperwari in Pattan area of the north Kashmir district, where the troops are already "temporarily stationed", defence sources said.

They said the Quartermaster for Commanding officer of the 19 Infantry Division Ordnance Unit has written to the district administration, requesting it to inform if the administration wishes to sell the land to the Indian army.

The Army has sought the district administration reply by May 30, the sources added.

It is perhaps for the first time that the Army has directly written to the department concerned for purchasing land in the Valley.

Prior to the abrogation of Article 370 on August 5 last year, the defence estates officer would write to Jammu and Kashmir government for getting lease of the land required by the Army.

https://www.hindustantimes.com/india-news/army-seeks-to-purchase-land-from-j-k-s-baramulla-district-administration/story-vnBloOA1k5Fi4mhlSxXdEO.html

ThePrint

Sat, 30 May 2020

Naval helicopters will be Modi govt's first challenge in its 'atmanirbhar' push in defence

With HAL pushing for its inclusion in the programme, the Navy, which is desperate for utility helicopters, fears the project will be delayed

By Snehesh Alex Philip

New Delhi: The nearly $3 billion deal for Naval Utility Helicopter (NUH) could become the first challenge for the Narendra Modi government under the new 'atmanirbhar' initiative in the defence sector.

An India Navy Chetak Helicopter | indiannavy.nic.in

This is because the state-run Hindustan Aeronautics Limited (HAL) is pushing for its inclusion in the programme. The initiative is being pursued under a strategic partnership model focused on the Indian private industry meeting manufacturing needs through tie-ups with foreign vendors.

The Indian Navy, though, is worried that the whole programme will be delayed if HAL is brought in, which the Bengaluru-based firm denies. The Navy has been desperate to replace its Chetak of 1960s vintage with NUH.

The NUHs are to be utilised for multiple roles, including search and rescue, casualty evacuation and low-intensity maritime operations, besides torpedo drops.

The Navy had received eight responses to the Expression of Interest (EOI) issued in February last year as part of its plan to purchase 111 helicopters for Rs 21,738 crore.

HAL had submitted two bids at the time, one by itself and another through its joint venture with Russian Helicopters to produce the Kamov chopper, a Russian utility chopper.

Apart from the Navy, other private players have also objected to HAL's inclusion.

The Ministry of Defence is yet to clear the file for issuance of Request for Proposal (RFP) for selected vendors and may take a fresh look at the proposal to include HAL.

Defence sources said that the Defence Acquisition Council (DAC) had already considered the participation of HAL when it decided on pursuing the project through the strategic partnership (SP) model.

"Discussion in 2018 DAC for AoN (Acceptance of Necessity) regarding inclusion of HAL and then DAC directive to progress through SP model indicates that HAL is not to be included," a source said.

HAL says it has the tech but Navy needs to be clear

Speaking to ThePrint, Wing Commander Unni Pillai (Retd), executive director (CTP-RW) at HAL said, "The essence of SP Model is to bring in technology into the country that we don't possess."

He added that the transfer of technology (ToT) in the heavier weight lift class makes sense because HAL is still trying to design one.

"But getting something, which is in the same weight class as ALH (Advanced Light Helicopter), it does not make sense. Whatever they (Navy) are trying to get in is 1970 design," he added.

He argued that the foreign chopper "the same configuration as the ALH" will be nearly Rs 10-15 crore more."And then what happens is that the actual expenditure comes in every 5-7 years when the aircraft requires upgrades, including when new systems have to be put. And that is when the foreigners start bleeding us … we will keep paying money to people," he said.

The senior HAL official said "Atmanirbarta will never happen" if we depend on imports.

"If we have a design and needs to be done up to somebody's requirement, the two parties need to sit together. The Navy has never engaged HAL in what exactly they want. Initially, in the 1990s, they wanted a replacement for Seaking (helicopter) which is a 10-tonne class. They wanted all the equipment to be fitted on an ALH, which is a 5-and-half-tonne class. This is not possible.

"So now, what they want is a smaller utility class helicopter which is a five tonne class. We have something in that class. Whatever adaptation needs to be done will be done," he said.

Pillai underlined that the HAL's chopper meets the Navy's requirement. On the issue of folding blades, a requirement for Naval operations, he said HAL has segmented the blade.

"There are two bolts there. You remove one and it can be folded. It takes about six minutes to fold on the LUH (Light Utility Helicopter). On the ALH, we are planning to incorporate the same which we would be able to do at the same time," he said.

Asked about fears that HAL will not be able to deliver on time even if it is able to meet all requirements, he points to its performance in the last five years to say the state-run firm has delivered ahead of time.

"In ALH for example, the Army had placed an order and we delivered one year in advance. We are capable of delivering in advance," he said.

Navy's HAL problem

Defence sources told ThePrint that if HAL is included, it will erode the level playing field for private players since it already has government-funded infrastructure, which cross subsidises Transfer of Technology and indigenous content.

According to provisions in the Defence Procurement Procedure (DPP), HAL cannot be included at this stage since the process has already begun.

"If HAL has to be included, then DPP has to be modified and ratified by DAC followed by issuance of fresh Request for EOIs to OEMs (original equipment manufacturers) and SPs," the source explained.

As of today, the private companies have got a miniscule percentage of the overall orders to Indian companies placed by the Navy.

According to official statistics, since 2014, almost 95 per cent of the orders to Indian companies have gone to Defence Public Sector Undertakings and Public Sector Undertakings. HAL has an order book of approximately Rs 1 lakh crore, including that of Light Combat Aircraft.

Navy sources said that HAL was provided naval requirements from as early as 1990 to make a helicopter, but till date, the helicopter cannot meet requirements of the Navy.

"HAL will take another two years to meet blade folding capability. If at this stage HAL is included, the process will come to a halt as the Empowered Project Committee cannot clear ALH as a platform since it does not meet the quality requirements," another source explained.

The source added that a higher body like DAC will have to accord this dispensation.

"However, if this is accorded, then other helicopters will also be added in the fray. The whole process would need to be recommenced, delaying the project further while diluting the operational functionality of the NUH," the source said.

Air Vice Marshal Manmohan Bahadur (Retd) said all platforms have to meet the Navy's requirement for it to be considered. Automatic blade folding is an essential necessity which naval helicopters require since they operate from decks of ships.

"Also, HAL order books are loaded. The whole idea of strategic partnership is to allow Indian private industry to come forward and provide the services with an alternative R&D (research and development) and manufacturing line. This would help bring in real indigenisation that every government has been wanting to usher in," he added.

https://theprint.in/defence/naval-helicopters-will-be-modi-govts-first-challenge-in-its-atmanirbhar-push-in-defence/431680/

Sat, 30 May 2020

Indian Navy to receive first Sikorsky MH-60R Seahawk helicopters in 2020

The Indian Navy is scheduled to receive its first three Sikorsky MH-60R Seahawk multi-mission maritime helicopters later this year, Livefist reported. India signed a contract on Feb. 25 with the U.S to procure 24 Sikorsky MH-60R Seahawk maritime multi-mission helicopters for the Indian Navy earlier this year.

Lockheed Martin, the parent company of Sikorsky, was recently awarded a USD 905 million contract to deliver 24 MH-60Rs to the Indian Navy. The contract, being executed under the U.S. Foreign Military Sales (FMS) program, was awarded by the U.S. Navy's Naval Air Systems Command (NAVAIR).

According to the Pentagon contract announcement released at the time, three MH-60Rs are for the U.S. Navy and 21 MH-60Rs are for the government of India. With this, three MH-60Rs which were fully built and originally earmarked for the U.S. Navy will be supplied to India. According to the new Livefist report, these three airframes will be diverted for delivery to India, which is expected later this year, after stipulated modifications. The report added that the first of the remaining 21 helicopters will be delivered in Spring 2021.

Indian Navy's MH-60R helicopters will be based on the existing Royal Saudi Naval Forces (RSNF) MH-60R baseline with some modifications. The helicopters will replace the Navy's aging fleet of Sikorsky UH-3H Sea King and Westland Sea King Mk.42B helicopters. The MH-60Rs will provide the Indian Navy the capability to perform anti-surface warfare (ASuW) and anti-submarine warfare (ASW) missions along with the ability to perform secondary missions including vertical replenishment (VERTREP), search-and-rescue (SAR), and communications relay.

https://www.navyrecognition.com/index.php/news/defence-news/2020/may-2020/8492-indian-navy-to-receive-first-sikorsky-mh-60r-seahawk-helicopters-in-2020.html

THE HINDU

Sat, 30 May 2020

Missile park to be set up at INS Kalinga

Agneeprastha will capture glimpses of missile history from 1981 till date

By Sumit Bhattacharjee

Visakhapatnam: The foundation stone for a Missile Park named 'Agneeprastha' was laid at INS Kalinga by Cmde Rajesh Debnath, Commanding Officer, in the presence of Vice Admiral Atul Kumar Jain, Flag Officer Commanding-in-Chief, Eastern Naval Command, on Friday.

The Missile Park, once completed, will be dedicated to all the officers, sailors and support staff of INS Kalinga, who have served in this premier operation-support Base of the ENC since its establishment in 1981. The park also commemorates the award of the prestigious Unit Citation to INS Kalinga for the year 2018-19.

The park aims to capture glimpses of missile history of INS Kalinga since 1981 till date. The missile park will be set up with a replica of missiles and Ground Support Equipment (GSE) that showcase the evolution of missiles handled by the unit. The exhibits have been created from scrap/obsolete inventory which have been reconditioned in-house.

The main attraction is the P-70 Ametist, an underwater-launched anti-ship missile from the arsenal of the old 'Chakra' (Charlie-1 submarine) which was in service with the Indian Navy during 1988-91.

The park will also provide a one-stop arena for motivation and stimulation of inquisitive minds regarding the missiles and related technologies, from schoolchildren to naval personnel and their families.

https://www.thehindu.com/news/national/andhra-pradesh/missile-park-to-be-set-up-at-ins-kalinga/article31705928.ece

The Indian EXPRESS

Sat, 30 May 2020

China-India border tension discussed at Army meet

The three-day conference began with seven Army commanders and Principal Staff Officers being briefed about the situation in eastern Ladakh and other aspects of national security

New Delhi: Amid the tension between India and China along the Line of Actual Control (LAC) in east Ladakh, the first phase of the Army leadership's biannual conference came to a close on Friday. The three-day conference began with seven Army commanders and Principal Staff Officers being briefed about the situation in eastern Ladakh and other aspects of national security.

The conference was to be held in April but was delayed due to the Covid-19 pandemic and the lockdown. The second phase of the conference will take place in June-end. While this phase focused on human resources and logistical issues, the second phase will see detailed presentations for each Army command.

The Army said in a statement on Friday that "over three days, the Indian Army's apex leadership deliberated upon various aspects related to existing and developing security challenges".

The Army said in a statement on Friday that "over three days, the Indian Army's apex leadership deliberated upon various aspects related to existing and developing security challenges". It said "human resource management issues, studies pertaining to ammunition management, merger of co-located training establishments and merger of Military Training Directorate with HQ Army Training Command were also discussed".

The second phase is scheduled to be held from June 24 to June 27. While Defence Minister Rajnath Singh did not attend the first phase, he and Chief of Defence Staff General Bipin Rawat are likely to address the conference in June.

https://indianexpress.com/article/india/china-india-border-tension-discussed-at-army-meet-6433689/

THE HINDU

Sat, 30 May 2020

China home-built aircraft carrier conducting sea trials

The Shandong's commissioning last year by Chinese President Xi Jinping underscored the country's rise as a regional naval power at a time of tensions with the U.S. and others over trade, Taiwan and the South China Sea

Beijing: China's Defense Ministry said the navy's only entirely home-built aircraft is carrying out sea trials to test weapons and equipment and enhance training of the crew.

Ministry spokesperson Ren Guoqiang said Friday the exercises were being conducted as planned, apparently unaffected by the country's coronavirus outbreak.

The Shandong's commissioning last year by Chinese President Xi Jinping underscored the country's rise as a regional naval power at a time of tensions with the U.S. and others over trade, Taiwan and the South China Sea.

In this Dec. 17, 2019, file photo provided by Xinhua News Agency, the Shandong aircraft carrier is docked at a naval port in Sanya in southern China's Hainan Province. China's Defense Ministry said Friday, May 29, 2020, the navy's only entirely home-built aircraft is carrying out sea trials to test weapons and equipment and enhance training of the crew. | Photo Credit: AP

It is the second Chinese aircraft carrier to enter service after the Liaoning, which was originally purchased as a hulk from Ukraine and entirely refurbished.

Both are based on a Soviet design with a "ski jump" style flight deck for takeoffs rather than the flat decks used by much larger U.S. aircraft carriers. It is powered by a conventional oil-fueled steam turbine power plant, compared to the nuclear fuel American carriers and submarines use.

China is seen as striving to overtake the U.S. as the dominant naval power in Asia and already boasts the world's largest navy in numbers of vessels.

Beijing says aircraft carriers are needed to protect its coastline and trade routes, but they are also seen as backing up its claims to self-governing Taiwan and the South China Sea.

The highly secretive Chinese military was credited with aiding in the response to the epidemic in the epicenter of Wuhan earlier this year, but no information has been released about cases among military personnel or any change in the armed forces' readiness status.

The U.S. Navy, in contrast, saw a public controversy over the spread of the coronavirus aboard the USS Theodore Roosevelt and the firing of the aircraft carrier's skipper in April.

The Roosevelt was operating in the Western Pacific when the first crew members fell sick in late March. About 1,100 crew members eventually tested positive for the cornonavirus and one died. The ship was sidelined on Guam for nearly two months.

https://www.thehindu.com/news/international/china-home-built-aircraft-carrier-conducting-sea-trials/article31708129.ece

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

Sat, 30 May 2020

China's Navy is quickly modernizing: U.S. government report

For the past 25 years, the China's People's Liberation Army Navy (PLAN) has been steadily modernizing. As a result, it has become a formidable military force within China's near-seas regions, while it is now able to conduct a number of growing operations in more-distant waters including in the Western Pacific, the Indian Ocean and even in the waters around Europe.

According to a new Congressional Research Service Report released this month, this poses a major challenge to the U.S. Navy's ability to achieve and maintain wartime control of blue-water ocean areas of the Western Pacific. This is the first such challenge the U.S. Navy has faced since the end of the Cold War, as China's naval modernization efforts have substantially reduced the U.S. advantage.

The report, China Naval Modernization: Implications for U.S. Navy Capabilities Background and Issues for Congress, highlighted China's efforts, which encompasses a wide array of platform and weapon acquisition programs.

https://www.defenceaviationpost.com/2020/05/chinas-navy-is-quickly-modernizing-u-s-government-report/

Science & Technology News

BUSINESS INSIDER
INDIA

Sat, 30 May 2020

Space age 2.0 has kicked off — here are five ways that India's ISRO can capitalise on this window of opportunity

By Prabhjote Gill

- ***The second space age has given India a narrow window of opportunity to play on a level playing field with more advanced economies, like the US and China.***
- ***In order to fully capitalise on this, there are a few things that the Indian Space Research Organisation (ISRO) and the Department of Space (DoS) could work on.***
- ***Gateway House fellow, Chaitanya Giri, has made five recommendations on how India can become the powerhouse that it needs to be for the coming of the second space age.***

The first space age came and went, and India sorely missed the bus. The second space age is setting in, and this time around, history looks doomed to repeat itself. With the US and China on the 'brink of cold war', it could be an opportune moment for India to fill the gap.

It's a rare opportunity for emerging economies to compete with advanced economies on a level-playing field. However, there are at least six factors standing in India's way that could keep it from

taking advantage of this narrow window of opportunity, according to Gateway House fellow, Chaitanya Giri.

"Its [India's] space-exploration programme continues to be almost entirely noncommercial, operating within the confines of DoS [Department of Space]. Policymakers still do not view space exploration as an economy-boosting enterprise," he wrote in his paper outlining India's space exploration industry agenda.

Here are five things that India needs to do to capitalise on this opportunity:

India's space missions are isolated with the Department of Space

Space missions can no longer be looked at as a luxury. They dictate everything from last-mile broadband connectivity to navigation to monitoring the weather. However, space exploration is currently isolated as a mandate under the Department of Space. "There are vast, unmapped possibilities for additional cross-sectoral and inter-ministerial collaborations involving space exploration," explained Giri.

He recommends that ministries should identify their areas of interest in space exploration to initiate a back-and-forth between various departments, the private sector and public sector units to deliver and commercialise space technologies.

ISRO imports more than it makes at home

India currently imports more than 80% of its precision scientific instruments. The import dependency could have disastrous effects on India's R&D labs if exporting nations decide to increase their prices, impose sanctions, or if supply chain disruptions come into play due to wars or pandemics.

"The space agency should encourage indigenous commercialisation of precious instruments used in building payloads for space missions," says Giri. Not only would that reduce India's dependency on other countries, but it would also be a boost for the domestic economy while allowing the Indian Space Research Organisation (ISRO) to keep costs low for more complex space exploration missions.

India needs its own Deep Space Network

The US and China are currently caught in a war over supremacy in global telecommunications. This isn't limited to Earth but also involves Deep Space Networks (DSNs). "Typically, a DSN is a triad of large radio communication antennae that are placed at angles of 120 degrees from each other all around the Earth," explained Giri. As the planet rotates, the antennae communicate with interplanetary spacecraft without interruption.

Indian satellite-launch vehicles and satellites are currently dependent on ground-based services. For most of their major missions — including Chandrayaan 1, Mars Orbiter Mission and Chandrayaan 2 — ISRO relied on NASA's DSN triad across California, Spain and Australia.

"India, therefore, must initiate diplomatic engagements with friendly countries in the eastern and western hemispheres that can host two DSN antennae for it in addition to an existing 32-metre antenna located in Byalalu near Bengaluru," recommends Giri. With these antennae in place, it will be able to establish independent communications capabilities for distant interplanetary missions.

India's space programs need the private sector to pull its weight

Currently, the Department of Space has special research labs called 'Space Cells' but their scope is limited to what ISRO needs. "To overcome this deficiency, the Space Commission should form new 'Advanced Space Concepts Laboratories' (ASCL) with non-DoS public or private entities and ecosystems," said Giri — just like the US, Europe and Japan, which currently lead the world in space technology.

Nirmala Sitharaman already announced that ISRO's testing facilities will now be opened up to private players and that the space agency will also be sharing its treasure trove of geospatial data. While that may facilitate private sector participation, it's still a long way from having them actively participate in the research and development process.

To bring in private players, there need to be incentives

In order to encourage private sector participation, the government needs to incentivise them by providing risk coverage and legal support. Giri recommends tax deductions on capital expenditure on R&D activities, tax holidays of successful output and relief to space startups.

https://www.businessinsider.in/science/space/news/five-ways-india-isro-that-is-can-capitalise-on-the-window-of-opportunity-during-space-age-2/slidelist/76089803.cms#slideid=76101260

ScienceDaily

Sat, 30 May 2020

Anesthesia's effect on consciousness solved, settling century-old scientific debate

Surgery would be inconceivable without general anesthesia, so it may come as a surprise that despite its 175-year history of medical use, doctors and scientists have been unable to explain how anesthetics temporarily render patients unconscious

A new study from Scripps Research published Thursday evening in the *Proceedings of the National Academies of Sciences* (*PNAS*) solves this longstanding medical mystery. Using modern nanoscale microscopic techniques, plus clever experiments in living cells and fruit flies, the scientists show how clusters of lipids in the cell membrane serve as a missing go-between in a two-part mechanism. Temporary exposure to anesthesia causes the lipid clusters to move from an ordered state, to a disordered one, and then back again, leading to a multitude of subsequent effects that ultimately cause changes in consciousness.

The discovery by chemist Richard Lerner, MD, and molecular biologist Scott Hansen, PhD, settles a century-old scientific debate, one that still simmers today: Do anesthetics act directly on cell-membrane gates called ion channels, or do they somehow act on the membrane to signal cell changes in a new and unexpected way? It has taken nearly five years of experiments, calls, debates and challenges to arrive at the conclusion that it's a two-step process that begins in the membrane, the duo say. The anesthetics perturb ordered lipid clusters within the cell membrane known as "lipid rafts" to initiate the signal.

"We think there is little doubt that this novel pathway is being used for other brain functions beyond consciousness, enabling us to now chip away at additional mysteries of the brain," Lerner says.

Lerner, a member of the National Academy of Sciences, is a former president of Scripps Research, and the founder of Scripps Research's Jupiter, Florida campus. Hansen is an associate professor, in his first posting, at that same campus.

The Ether Dome

Ether's ability to induce loss of consciousness was first demonstrated on a tumor patient at Massachusetts General Hospital in Boston in 1846, within a surgical theater that later became known as "the Ether Dome." So consequential was the procedure that it was captured in a famous painting, "First Operation Under Ether," by Robert C. Hinckley. By 1899, German pharmacologist Hans Horst Meyer, and then in 1901 British biologist Charles Ernest Overton, sagely concluded that lipid solubility dictated the potency of such anesthetics.

Hansen recalls turning to a Google search while drafting a grant submission to investigate further that historic question, thinking he couldn't be the only one convinced of membrane lipid rafts' role. To Hansen's delight, he found a figure from Lerner's 1997 *PNAS* paper, "A hypothesis about the endogenous analogue of general anesthesia," that proposed just such a mechanism. Hansen had long looked up to Lerner -- literally. As a predoctoral student in San Diego, Hansen says he worked in a basement lab with a window that looked directly out at Lerner's parking space at Scripps Research.

"I contacted him, and I said, 'You are never going to believe this. Your 1997 figure was intuitively describing what I am seeing in our data right now,'" Hansen recalls. "It was brilliant."

For Lerner, it was an exciting moment as well.

"This is the granddaddy of medical mysteries," Lerner says. "When I was in medical school at Stanford, this was the one problem I wanted to solve. Anesthesia was of such practical importance I couldn't believe we didn't know how all of these anesthetics could cause people to lose consciousness."

Many other scientists, through a century of experimentation, had sought the same answers, but they lacked several key elements, Hansen says: First, microscopes able to visualize biological complexes smaller than the diffraction limits of light, and second, recent insights about the nature of cell membranes, and the complex organization and function of the rich variety of lipid complexes that comprise them.

"They had been looking in a whole sea of lipids, and the signal got washed out, they just didn't see it, in large part for a lack of technology," Hansen says.

From order to disorder

Using Nobel Prize-winning microscopic technology, specifically a microscope called dSTORM, short for "direct stochastical optical reconstruction microscopy," a post-doctoral researcher in the Hansen lab bathed cells in chloroform and watched something like the opening break shot of a game of billiards. Exposing the cells to chloroform strongly increased the diameter and area of cell membrane lipid clusters called GM1, Hansen explains.

What he was looking at was a shift in the GM1 cluster's organization, a shift from a tightly packed ball to a disrupted mess, Hansen says. As it grew disordered, GM1 spilled its contents, among them, an enzyme called phospholipase D2 (PLD2).

Tagging PLD2 with a fluorescent chemical, Hansen was able to watch via the dSTORM microscope as PLD2 moved like a billiard ball away from its GM1 home and over to a different, less-preferred lipid cluster called PIP2. This activated key molecules within PIP2 clusters, among them, TREK1 potassium ion channels and their lipid activator, phosphatidic acid (PA). The activation of TREK1 basically freezes neurons' ability to fire, and thus leads to loss of consciousness, Hansen says.

"The TREK1 potassium channels release potassium, and that hyper-polarizes the nerve -- it makes it more difficult to fire -- and just shuts it down," Hansen says.

Lerner insisted they validate the findings in a living animal model. The common fruit fly, drosophila melanogaster, provided that data. Deleting PLD expression in the flies rendered them resistant to the effects of sedation. In fact, they required double the exposure to the anesthetic to demonstrate the same response.

"All flies eventually lost consciousness, suggesting PLD helps set a threshold, but is not the only pathway controlling anesthetic sensitivity," they write.

Hansen and Lerner say the discoveries raise a host of tantalizing new possibilities that may explain other mysteries of the brain, including the molecular events that lead us to fall asleep.

Lerner's original 1997 hypothesis of the role of "lipid matrices" in signaling arose from his inquiries into the biochemistry of sleep, and his discovery of a soporific lipid he called oleamide. Hansen and Lerner's collaboration in this arena continues.

"We think this is fundamental and foundational, but there is a lot more work that needs to be done, and it needs to be done by a lot of people," Hansen says. Lerner agrees.

"People will begin to study this for everything you can imagine: Sleep, consciousness, all those related disorders," he says. "Ether was a gift that helps us understand the problem of consciousness. It has shined a light on a heretofore unrecognized pathway that the brain has clearly evolved to control higher-order functions."

Story Source:

Materials provided by **Scripps Research Institute**. *Note: Content may be edited for style and length.*

Journal Reference:

1. Mahmud Arif Pavel, E. Nicholas Petersen, Hao Wang, Richard A. Lerner, Scott B. Hansen. **Studies on the mechanism of general anesthesia**. *Proceedings of the National Academy of Sciences*, 2020; 202004259 DOI: 10.1073/pnas.2004259117

https://www.sciencedaily.com/releases/2020/05/200529150619.htm

ScienceDaily

Sat, 30 May 2020

New method to map cholesterol metabolism in brain

A team of researchers led by Swansea University have developed new technology to monitor cholesterol in brain tissue which could uncover its relation to neurodegenerative disease and pave the way for the development of new treatments

The research, published in the *Proceedings of the National Academy of Sciences* of the USA, shows the major locations of cholesterol in the brain and what molecules it can be converted to.

The brain is a remarkably complex organ, with cholesterol and its metabolites underpinning the brain's function. Dysregulated cholesterol metabolism is linked to a number of neurodegenerative disorders including Alzheimer's, Parkinson's, Huntington's disease, multiple sclerosis and motor neurone disease.

It is known that cholesterol is not evenly distributed across different brain regions; however, up until now there has been no technology available to map cholesterol metabolism in defined locations of the brain at microscopic levels, and to visualise how it changes in pathological niches in the brain.

Here, researchers describe an advanced mass spectrometry imaging platform to reveal spatial cholesterol metabolism in mouse brain at micrometre resolution from tissue slices. The researchers mapped not only cholesterol, but also biologically active metabolites arising from cholesterol turnover. For example, they found that 24S-hydroxycholesterol, the major cholesterol metabolite in the brain, is about ten times more abundant in striatum than in the cerebellum, two regions involved in different ways in voluntary movement and cognition.

The new technology comes from a decade of research at Swansea University where the team have worked out methods to reveal the different metabolites of cholesterol in very small quantities of the brain, as small as the tip of a ballpoint pen.

Professor William Griffiths, who co-led the study from Swansea University added: "Although our work was with a mouse, the technology can similarly be used in humans in a research lab or a clinical setting, and could have revolutionary value when linked to neurosurgery.

"Tissue excised during surgery could rapidly be profiled by our method in-clinic and used to distinguish healthy from diseased tissue, informing the surgeon on the next step of the operation."

Professor Yuqin Wang added: "This technology which precisely locates molecules in the brain will further our understanding of the complexity of brain function and how it changes in neurodegenerative disorders.

"Our results show that cholesterol turnover is particularly high in striatum, the area most affected in Huntington's disease. We will apply this method to find out how cholesterol metabolism is associated with this disease. This may lead to the development of new therapies to a disease which currently has no cure."

Story Source:

Materials provided by **Swansea University**. *Note: Content may be edited for style and length.*

Journal Reference:

1. Eylan Yutuc, Roberto Angelini, Mark Baumert, Natalia Mast, Irina Pikuleva, Jillian Newton, Malcolm R. Clench, David O. F. Skibinski, Owain W. Howell, Yuqin Wang, William J. Griffiths. **Localization of sterols and oxysterols in mouse brain reveals distinct spatial cholesterol metabolism**. *Proceedings of the National Academy of Sciences*, 2020; 117 (11): 5749 DOI: 10.1073/pnas.1917421117

https://www.sciencedaily.com/releases/2020/05/200529150612.htm

COVID-19 Research News

Fri, 29 May 2020

International community rallies to support open research and science to fight COVID-19

WHO and Costa Rica launch landmark COVID-19 Technology Access Pool

Geneva: Thirty countries and multiple international partners and institutions have signed up to support the COVID-19 Technology Access Pool (C-TAP) an initiative aimed at making vaccines, tests, treatments and other health technologies to fight COVID-19 accessible to all.

The Pool was first proposed in March by President Carlos Alvarado of Costa Rica, who joined WHO Director-General Dr Tedros Adhanom Ghebreyesus today at the official launch of the initiative.

"The COVID-19 Technology Access Pool will ensure the latest and best science benefits all of humanity," said President Alvarado of Costa Rica. "Vaccines, tests, diagnostics, treatments and other key tools in the coronavirus response must be made universally available as global public goods".

"Global solidarity and collaboration are essential to overcoming COVID-19," said WHO Director-General Dr Tedros Adhanom Ghebreyesus. "Based on strong science and open collaboration, this information-sharing platform will help provide equitable access to life-saving technologies around the world."

The COVID-19 (Technology) Access Pool will be voluntary and based on social solidarity. It will provide a one-stop shop for scientific knowledge, data and intellectual property to be shared equitably by the global community.

The aim is to accelerate the discovery of vaccines, medicines and other technologies through open-science research, and to fast-track product development by mobilizing additional manufacturing capacity. This will help ensure faster and more equitable access to existing and new COVID-19 health products.

There are five key elements to the initiative:

- Public disclosure of gene sequences and data;
- Transparency around the publication of all clinical trial results;
- Governments and other funders are encouraged to include clauses in funding agreements with pharmaceutical companies and other innovators about equitable distribution, affordability and the publication of trial data;
- Licensing any potential treatment, diagnostic, vaccine or other health technology to the Medicines Patent Pool - a United Nations-backed public health body that works to increase

access to, and facilitate the development of, life-saving medicines for low- and middle-income countries.

- Promotion of open innovation models and technology transfer that increase local manufacturing and supply capacity, including through joining the Open Covid Pledge and the Technology Access Partnership (TAP).

With supportive countries across the globe, C-TAP will serve as a sister initiative to the Access to COVID-19 Tools (ACT) Accelerator and other initiatives to support efforts to fight COVID-19 worldwide.

WHO, Costa Rica and all the co-sponsor countries have also issued a "Solidarity Call to Action" asking relevant stakeholders to join and support the initiative, with recommended actions for key groups, such as governments, research and development funders, researchers, industry and civil society.

WHO and Costa Rica co-hosted today's launch event, which began with a high-level session addressed by the WHO Director-General and President Alvarado in addition to Prime Minister Mia Mottley of Barbados and Aksel Jacobsen, State Secretary, Norway. There were video statements by President Lenín Moreno of Ecuador; President Thomas Esang Remengesau Jr., of Palau; President Lenín Moreno of Ecuador; , Michelle Bachelet, United Nations High Commissioner for Human Rights; Jagan Chapagain, Secretary General of the International Federation of Red Cross and Red Crescent Societies; and Retno Marsudi, Minister for Foreign Affairs for Indonesia. Leaders from across the UN, academia, industry and civil society joined for a moderated discussion.

To date, the COVID-19 Technology Access Pool is now supported by the following countries: Argentina, Bangladesh, Barbados, Belgium, Belize, Bhutan, Brazil, Chile, Dominican Republic, Ecuador, Egypt, El Salvador, Honduras, Indonesia, Lebanon, Luxembourg, Malaysia, Maldives, Mexico, Mozambique, Norway, Oman, Pakistan, Palau, Panama, Peru, Portugal, Saint Vincent and Grenadines, South Africa, Sri Lanka, Sudan, The Netherlands, Timor-Leste, Uruguay, Zimbabwe

Other international organizations, partners and experts have also expressed support to the initiative and others can join them using the website.

https://www.who.int/news-room/detail/29-05-2020-international-community-rallies-to-support-open-research-and-science-to-fight-covid-19

TIMESNOWNEWS.COM

Fri, 29 May 2020

Coronavirus: Mouse model mimics COVID-19 infection in humans, may help test drugs - Study

"A small animal model that reproduces the clinical course and pathology observed in COVID-19 patients is highly needed," said study co-senior author You-Chun Wang from NIFDC.

Beijing: Genetically modified mice infected with the novel coronavirus can reproduce features observed in human patients, according to a study which may lead to a new approach for testing potential COVID-19 drugs.

The study, published in the journal Cell Host & Microbe, used gene editing technology to create mice that make human angiotensin-converting enzyme II (hACE2).

According to the researchers, including those from the National Institutes for Food and Drug Control (NIFDC) in China, hACE2 is the receptor that the novel coronavirus, SARS-CoV-2, uses to enter human cells.

"A small animal model that reproduces the clinical course and pathology observed in COVID-19 patients is highly needed," said study co-senior author You-Chun Wang from NIFDC.

The animal model described in the study provides a useful tool for studying SARS-CoV-2 infection and transmission, Wang said.

According to the authors, their mouse model has several advantages compared with other genetically engineered mice that express hACE2.

In the current model, the scientists said, instead of being randomly inserted, hACE2 is inserted precisely into a specific site on the mouse genome, completely replacing the mouse version of the protein.

In addition, they said this process yielded a genetically stable model, with few differences among individual mice.

According to the study, the quantity of the coronavirus genetic material, RNA, in the lungs of mice created this way are much higher.

As a result, the scientists said the resulting distribution of hACE2 in various tissues better matches that observed in humans.

After being infected with SARS-CoV-2 through the nose, they said the mice showed evidence of robust viral RNA replication in the lung, trachea, and brain.

"The presence of viral RNAs in brain was somewhat unexpected, as only a few COVID-19 patients have developed neurological symptoms," said Cheng-Feng Qin, another co-author of the study from Academy of Military Medical Sciences (AMMS) in China.

SARS-CoV-2 S protein, which binds to hACE2 to enter host cells, was also present in the lung tissue and brain cells, the study noted.

The researchers also identified the major airway cells targeted by the virus.

"Our result provides the first line of evidence showing the major target cells of SARS-CoV-2 in the lung," said Yu-Sen Zhou, another study author from AMMS.

Over the course of the study, the scientists said the mice developed interstitial pneumonia, which affects the tissue and space around the air sacs of the lungs.

Due to this condition, they said there was an infiltration of inflammatory cells, the thickening of the structure that separates air sacs, and blood vessel damage in the mice.

Compared with young mice, the study said older mice showed more severe lung damage and increased production of cell signalling molecules called cytokines.

Taken together, the researchers said these features recapitulate those observed in COVID-19 patients.

When they administered SARS-CoV-2 into the stomach, two of the three mice showed high levels of viral RNA in the trachea and lung.

The S protein was also present in lung tissue, which showed signs of inflammation, the study said.

According to the researchers, the findings are consistent with the observation that patients with COVID-19 sometimes experience gastrointestinal symptoms such as diarrhea, abdominal pain, and vomiting.

However, the study noted that 10 times the dose of SARS-CoV-2 was required to establish infection through the stomach than through the nose.

The scientists said future studies using this mouse model may shed light on how SARS-CoV-2 invades the brain, and how the virus survives the gastrointestinal environment and invades the respiratory tract.

The hACE2 mice provide a small animal model for understanding unexpected clinical manifestations of SARS-CoV-2 infection, the researchers said, adding that they will also be valuable for testing therapeutics to combat COVID-19.

https://www.timesnownews.com/health/article/coronavirus-mouse-model-mimics-covid-19-infection-in-humans-may-help-test-drugs-study/598316?utm_source=relatedarticles&utm_medium=widget&utm_campaign=related

TIMESNOWNEWS.COM

Fri, 29 May 2020

Coronavirus research: India identifies 6 local vaccine candidates for COVID-19; top contenders in the race

India has identified six local vaccine candidates for COVID-19. Less than six months into the novel coronavirus outbreak, here's a look at the current state of vaccine and drug development across the world.

By Akhil Kadidal

Key Highlights

- ***The spotlight on vaccine research has never been more intense as the novel coronavirus continues to spread***
- ***Currently, there are more than 110 COVID-19 vaccine candidates in development around the world***
- ***Here's what we know so far about the coronavirus pandemic and vaccine research***

New Delhi: As the novel coronavirus pandemic persists across the world, researchers are working rapidly to produce a safe vaccine, which can help combat the COVID-19 disease caused by the SARS-CoV-2. More than 110 coronavirus vaccines are being developed globally with at least 10 candidates already in human trials. The Indian government on Thursday said that it has identified at least six local vaccine candidates with 30 groups trying to develop a safe and effective COVID-19 vaccine.

With some COVID-19 vaccine candidates, including US company Moderna's mRNA-1273 and CanSino Bio's Ad5-nCoV, showing promising results in early trials, experts are hopeful that we might have a vaccine by the end of this year. Dr Anthony Fauci, the US government's top infectious disease physician, told CNN in an interview that a COVID-19 vaccine could be ready as early as November and December. However, epidemiology warned that the coronavirus may never go away even after a vaccine is developed and deployed. Less than six months into the coronavirus outbreak, here's a look at the current state of vaccine development.

Coronavirus (COVID-19) vaccine research: Latest updates

Indian COVID-19 vaccine and drug development progress: On Thursday, Principal Scientific Adviser K VijayRaghavan said that about 30 groups in India are working to develop coronavirus vaccines. At least six vaccine candidates have been identified by India and about 10 drugs are being repurposed and are in different stages of tests for use in the treatment of COVID-19. At a press briefing on the development of drugs, vaccines and technologies for COVID-19 during the pandemic, he revealed that out of 30, 20 are working at a good pace. VijayRaghavan also added that the Council for Scientific and Industrial Research and the AICTE have embarked on a drug discovery hackathon.

GlaxoSmithKline's pandemic vaccine booster: Britain's firm GlaxoSmithKline Plc said on Thursday it plans to produce 1 billion doses of vaccine efficacy boosters, or adjuvants - an ingredient that makes vaccine wok better - next year for use in COVID-19 treatment. GSK's adjuvants have been shown to create a stronger and longer-lasting immunity against infections and can reduce the amount of protein required in a vaccine, making way for higher-volume production, Reuters reported.

"We believe that more than one vaccine will be needed to address this global pandemic and we are working with partners around the world to do so," GSK Global Vaccines President Roger Connor added.

The world's largest vaccine maker is working on its own vaccine against COVID-19 with French drugmaker Sanofi to fight the deadly illness, which has claimed at least 357,311 lives worldwide so far.

Novavax's vaccine: The American biotech company announced that it has begun human trials of its COVID-19 vaccine candidate, NVX-CoV2373, in Australia. Novavax said the phase 1/2 clinical trial will assess if its vaccine engineered from the genetic sequence of SARS-CoV-2 virus is safe and triggers an immune response in humans. The Maryland-based firm has bought a manufacturing plant from Serum Institute of India, the world's largest vaccine maker by volume. The firm aims to produce one billion doses of its Covid-19 vaccine next year.

Moderna's mRNA vaccine: Moderna's vaccine candidate against the novel coronavirus 'mRNA-1273' is among the top contenders in the race. The company is set to begin the phase 2 trial after its experimental vaccine showed positive results in the phase 1 clinical trial. Moderna reported that its mRNA vaccine produced protective antibodies against novel coronavirus in eight volunteers who received two doses of the vaccine.

CanSino Bio's Ad5-nCoV vaccine: Chinese company CanSino Biologics Inc said its experimental vaccine, dubbed Ad5-nCoV, was safe and generated an immune response in volunteers enrolled in phase 1 clinical trial. The experimental vaccine built using a weakened common cold virus (adenovirus) to deliver a fragment of genetic material from SARS-CoV-2 is currently in phase 2 trial.

Oxford's COVID-19 vaccine: Oxford University's vaccine 'ChAdOx1 nCoV-19' has reportedly entered advanced human trials. Researchers said clinical trials are progressing very well and they are now initiating studies to see how well the vaccine induces immune responses in older adults. The studies will also assess whether the vaccine can provide protection in the wider population. Oxford scientists said a million doses of their COVID-19 vaccine could be ready as early as September. The vaccine project is being run by the Jenner Institute and Oxford Vaccine Group.

https://www.timesnownews.com/health/article/coronavirus-vaccine-latest-update-indias-covid-19-vaccine-progress-gsks-adjuvant-tech-novavaxs-trial/598457

अमर उजाला

Sat, 30 May 2020

वैज्ञानिकों ने कोरोना वायरस का स्थिर संवर्धन करने में हासिल की सफलता

लाइफस्टाइल डेस्क, अमर उजाला, नई दिल्ली: वैज्ञानिकों ने कोरोना वायरस का स्थिर संवर्धन (कल्चर) करने में सफलता हासिल की है। वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद (सीएसआईआर) की हैदराबाद स्थित प्रयोगशाला आणविक जीवविज्ञान केन्द्र (सीसीएमबी) के वैज्ञानिकों ने मरीजों के नमूने से इसमें सफलता पाई।

प्रयोगशाला में वायरस के संवर्धन की क्षमता से वैज्ञानिकों को वैक्सीन विकसित करने और संभावित दवाओं के परीक्षण में मदद मिल सकती है। सीसीएमबी के वायरोलॉजिस्ट डॉ कृष्णन एच हर्षन के नेतृत्व में शोधार्थियों की टीम ने नमूनों से संक्रामक वायरस को अलग किया है।

दरअसल, कोरोना वायरस एसीई-2 रिसेप्टर प्रोटीन के साथ मिलकर मनुष्य के सांस लेने के मार्ग में एपीथीलियल कोशिकाओं को संक्रमित करता है। सांस की नली में एपीथिलियल कोशिकाएं प्रचुरता से एसीई-2 रिसेप्टर प्रोटीन को छोड़ती हैं। जिससे इस वायरस के मरीज की सांस नली में इंफेक्शन का खतरा बढ़ जाता है। ऐसे में वैज्ञानिक जब वायरस कल्चर करते हैं तो यह स्थिर होना चाहिए। इसका अर्थ है कि वायरस कल्चर (संवर्धन) लगातार होना चाहिए, इसलिए इसे स्थिर संवर्धन भी कहते हैं।

https://www.amarujala.com/india-news/covid-19-in-india-scientists-achieve-success-in-cultured-of-coronavirus