July
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DRDO Technology News

The EurAsian Times

Sat, 18 July 2020

Indian Army getting battle-ready; Now capable of air-dropping 'Heavy-Armory' right at China's doorstep

"As part of mandatory requirement prior to accord Bulk Production Clearance (BPC), a joint team of Indian Army, IAF and ADRDE conducted validation Trials at Agra today, on two systems, which were dropped from IL76 ac from an altitude of 600 mtrs at 280 kmph speed. The store landed safely with the help of a cluster of five large size parachutes (750 sqm each)," according to a release by DRDO

Post the deadly India-China border conflict at Galwan Valley and other contentious border regions, the Indian Army is plugging all the possible gaps against a potential confrontation with China.

Recently, as EurAsian Times reported, the Indian government granted the three services emergency financial powers of up to Rs 500 crore per procurement project to buy munitions due to escalating border tensions with China.

The special financial powers have been granted to acquire ammunition and latest defence hardware at short notice to enhance their operational preparedness along the LAC.

Under these special financial powers, India is planning to acquire for Heron drones, Spike anti-tank guided missiles (ATGM) and various other state-of-art defence equipment to counter Chinese aggression at the border.

To remain prepared for any possible confrontation with China and boosting 'Make in India' initiative, the Defense Research and Development Organization (DRDO) has meanwhile developed P7 Heavy Drop System which is capable of para dropping heavy weaponry and military equipment up to 7 metric tonnes directly in a war zone including high-altitude mountainous terrains.

The P7 Heavy Drop System was tested successfully at the Malpura Dropping Zone in Agra by the Indian Army, Indian Air Force and Aerial Delivery Research and Development Establishment (ADRDE) of the DRDO where an IL-76 aircraft dropped heavy military hardware from the height of 600 meters.

The system incorporates five large parachutes that deploy concurrently to bring sensitive and heavy military hardware to the ground. The P7 Heavy Drop System is totally indigenous and can be deployed using IL-76 aircraft, according to experts.

"As part of mandatory requirement prior to accord Bulk Production Clearance (BPC), a joint team of Indian Army, IAF and ADRDE conducted validation Trials at Agra today, on two systems, which were dropped from IL76 ac from an altitude of 600 mtrs at 280 kmph speed. The store landed safely with the help of a cluster of five large size parachutes (750 sqm each)," according to a release by DRDO.

"The system has been manufactured with 100 per cent indigenous ferrous/non-ferrous materials. Engineering textiles for Parachutes have been developed with the latest combination of Fluorocarbon and Silicon treatment to provide water/oil repellency and improved abrasion resistance," read the release.

https://eurasiantimes.com/indian-army-getting-battle-ready-now-capable-of-air-dropping-heavy-armory-right-on-china-border/

INDIA TODAY

Sat, 18 July 2020

PM Narendra Modi's Make in India gets boost with DRDO's P7 Heavy Drop System

P7 Heavy Drop System is capable of para dropping heavy machinery and equipment up to 7 metric tonnes from IL 76 aircraft directly in a war zone

By Siraj Qureshi

In line with Prime Minister Narendra Modi's 'Make in India' programme, Defense Research and Development Organization (DRDO) has developed P7 Heavy Drop System which is capable of para dropping heavy machinery and equipment up to 7 metric tonnes from IL 76 aircraft directly in a war zone.

The DRDO showcased its P7 Heavy Drop System in Agra on Thursday.

The system was tested successfully twice at the Malpura Dropping Zone in Agra by teams of experts from the Indian Army, Indian Air Force and Aerial Delivery Research and Development Establishment (ADRDE) of the DRDO on July 15, with the help of an IL-76 aircraft which dropped heavy equipment using this system from the height of 600 meters.

ADRDE Director Arun Saxena told IndiaToday.in that the system comprises five large parachutes that deploy simultaneously to bring the sensitive and heavy equipment to the ground. He said the P7 Heavy Drop System is totally indigenous and can be deployed using IL-76 aircraft.

This system has been made under the Make in India programme.

Arun Saxena said this system has been successfully tested several times earlier and this fresh testing was performed for its induction in the Indian defense forces. The Heavy Drop System was being manufactured by L&T, while the parachutes were being designed by Indian Ordnance Factory.

Social activist Vijay Upadhyay praised the alacrity with which the various arms of the Indian defense forces have come together to develop new weaponry in the Modi government.

He said PM Modi's continuous encouragement to the troops has done wonders to boost the morale of the forces and this was displayed several times in the past six years.

https://www.indiatoday.in/india/story/drdo-p7-heavy-drop-system-narendra-modi-make-in-india-1701430-2020-07-17

oneindia hindi

Sat, 18 July 2020

मेक इन इंडिया का नया कीर्तिमान, DRDO ने सेना के लिए तैयार किया हैवी ड्रॉप सिस्टम

By Ashutosh Tiwari

नई दिल्ली: प्रधानमंत्री नरेंद्र मोदी के ड्रीम प्रोजेक्ट मेक इन इंडिया प्रोग्राम को एक और बड़ी सफलता मिली है। जिसके तहत डीआरडीओ ने सेना के लिए हैवी ड्रॉप सिस्टम विकसित किया है। अभी तक ये टेक्नोलॉजी अमेरिका, रूस जैसे बड़े देशों के पास थी। इस सिस्टम से भारी से भारी वाहनों और हथियारों को आसानी से युद्ध क्षेत्र में एयर ड्रॉप किया जा सकेगा। इस सिस्टम का दो बार सफल परीक्षण किया जा चुका है।

रिपोर्ट के मुताबिक डीआरडीओ ने गुरुवार को अपने **P-7** हैवी ड्रॉप सिस्टम का प्रदर्शन किया। इसकी मदद से **7** मीट्रिक टन भारी मशीनरी और उपकरण युद्ध क्षेत्र में पहुंचाए जा सकते हैं। **15** जुलाई को डीआरडीओ, भारतीय सेना, वायुसेना, हवाई वितरण अनुसंधान और विकास प्रतिष्ठान **(ADRDE)** के विशेषज्ञों की टीम ने **IL-76** विमान की मदद से आगरा के मालपुरा ड्रॉपिंग जोन में इस प्रणाली का दो बार सफल परीक्षण किया। इस दौरान विमान ने **600** मीटर की ऊंचाई से भारी मशीनरी को गिराया।

ADRDE के मुताबिक इस प्रणाली में पांच बडे पैराशूट शामिल होते हैं, जो बड़ी मशीनरी और उपकरणों को जमीन पर लाने का काम करते हैं। इस सिस्टम को मेक इन इंडिया प्रोग्राम के तहत पूरी तरह से भारत में ही विकसित किया गया है। इसका पहले भी परीक्षण हो चुका है, लेकिन अब सेना को सौंपने से पहले इसका फिर से परीक्षण हुआ। हैवी ड्रॉप सिस्टम का निर्माण एलएंडटी द्वारा किया जा रहा था, जबकि पैराशूट भारतीय आयुध निर्माणी द्वारा डिजाइन किए जा रहे थे।

https://hindi.oneindia.com/news/india/drdo-developed-p7-heavy-drop-system-under-make-in-india-project-570284.html

ZEENEWS

Sat, 18 July 2020

Boost for Indian armed forces, DRDO develops P7 Heavy Drop System for para dropping military stores, ammunition, guns from IL-76 aircraft

This system is fully indigenous and being manufactured by L&T who makes the platform system, parachutes manufactured by Ordnance Factory, DRDO said

Edited By Ankita Bhandari

Agra: Defence Research and Development Organisation (DRDO) has developed P7 Heavy Drop System which is capable of para dropping military stores up to 7-ton weight class from IL 76 aircraft.

This system is fully indigenous and being manufactured by L&T who makes the platform system, parachutes manufactured by Ordnance Factory, DRDO said.

This system has been made under the Make in India programme.

"As part of mandatory requirement prior to accord Bulk Production Clearance (BPC), joint team of Indian Army, IAF and ADRDE conducted validation Trials at Agra today, on two systems, which were dropped from IL76 ac from an altitude of 600 mtrs at 280 kmph speed. The store landed safely with the help of cluster of five large size parachutes (750 sqm each)," according to a release by DRDO.

The system would be a force multiplier for armed forces, while enabling the rapid delivery of combat store in the far flung inaccessible areas.

"The system has been manufactured with 100 per cent indigenous ferrous/non ferrous materials. Engineering textiles for Parachutes have been developed with the latest combination of Fluorocarbon and Silicon treatment to provide water/oil repellency and improved abrasion resistance," read the release.

https://zeenews.india.com/india/boost-for-indian-armed-forces-drdo-develops-p7-heavy-drop-system-for-para-dropping-military-stores-ammunition-guns-from-il-76-aircraft-2296363.html

hindustantimes

Sat, 18 July 2020

Rajnath Singh watches military exercise by T-90 tanks at 11,000 ft in Leh

Rajnath Singh landed in Leh in the morning during his two-day visit to Ladakh and Jammu and Kashmir along with Chief of Defence Staff (CDS) General Bipin Rawat and army chief General Manoj Mukund Naravane

Edited By Meenakshi Ray

New Delhi: The Indian Army showcased its T-90 tanks and armoured combat vehicles as defence minister Rajnath Singh reviewed the situation at the border on Friday, over a month after 20 soldiers were killed in a clash with Chinese troops in eastern Ladakh's Galwan Valley.

Rajnath Singh landed in Leh in the morning during his two-day visit to Ladakh and Jammu and Kashmir along with Chief of Defence Staff (CDS) General Bipin Rawat and army chief General Manoj Mukund Naravane.

A video tweeted by news agency ANI showed army tanks carrying out military exercises in Singh presence in Stakna, a forward post where the troops also showed him their para dropping skills.

Army's T-90 tanks display their capabilities during Defence minister Rajnath Singh's Leh visit amid standoff with China(Twitter/@DefenceMinIndia)

The Indian Army had deployed six T-90 missile-firing tanks and top-of-the-line shoulder-fired anti-tank missile systems in the Galwan Valley sector in June.

The army's decision to deploy the T-90 Bhishma tanks was taken after the Chinese People's Liberation Army (PLA) had strengthened its positions on the river bed with armoured personnel carriers and troop tents.

He also interacted with the personnel of the Indian Army and Indo-Tibetan Border Police (ITBP) in Lukung post near Pangong Lake where Indian and Chinese troops are in the process of disengagement.

"Talks are underway to resolve the border dispute but to what extent it can be resolved I cannot guarantee. I can assure you that not one inch of our land can be taken by any power in the world," he said.

"If a solution can be found by talks, there is nothing better," he said emphasising on finding a diplomatic solution to the standoff.

"Recently what happened between troops of India and China at PP14, how some of our personnel sacrificed their lives protecting our border. I am happy to meet you all but also saddened because of their loss. I pay my tributes to them," he added.

The defence minister will go to Jammu and Kashmir on Saturday.

Singh was scheduled to visit Ladakh on July 3 but his visit was deferred.

"Leaving for Leh on a two day visit to Ladakh and Jammu-Kashmir. I shall be visiting the forward areas to review the situation at the borders and also interact with the Armed Forces personnel deployed in the region. Looking forward to it," the minister had tweeted in the morning.

On July 3, Prime Minister Narendra Modi had made an unscheduled visit to a forward post in Nimu in Ladakh earlier this month and interacted with the troops.

https://www.hindustantimes.com/india-news/indian-army-rolls-out-t-90-tanks-armoured-vehicles-during-defence-minister-rajnath-singh-s-leh-visit/story-DfJbFcib2UsEW5ILHbQi4J.html

THE HINDU

Sat, 18 July 2020

LAC standoff | No one can touch an inch of India's land: Rajnath Singh

The Defence Minister is on a 2-day visit to Ladakh and J&K

By Dinakar Peri

New Delhi: No country in the world can touch or occupy even an inch of India's territory, Defence Minister Rajnath Singh asserted in Ladakh on Friday.

Mr. Singh's comments came in the aftermath of standoffs with China on the border, including the killing of 20 Indian soldiers by Chinese troops in the Galwan Valley on June 15.

"The progress in the talks [with China] should lead to a resolution of the issue". However, there was no guarantee to what extent the issue would be resolved, he told troops at the Lukung Border Observation Post (BOP) near Pangong Tso.

Union Defence Minister Rajnath Singh during his visit to Ladakh to carry out a comprehensive review of the security scenario in the wake of the border standoff with China.

Mr. Singh was accompanied by Chief of the Defence Staff Gen. Bipin Rawat and Army chief Gen. Manoj Naravane.

Pictured holding a machine gun, he said India desired peace, not conflict. "But it's in our character that we have never tried to hurt the self-respect of any other country. However, if anyone tries to hurt India's self-respect, then we will not tolerate this in any circumstances and give them a fitting response."

Mr, Singh is on a two-day visit to Ladakh and Jammu and Kashmir to review the situation along the Line of Actual Control (LAC) and the Line of Control (LoC).

Battle drills

Upon arrival in Leh, Mr. Singh witnessed a high-altitude joint airborne exercise by troops, including some battle drills by troops of the Ladakh Scouts, a defence source said.

The exercise at Stanka near Leh showcased the application of integrated combined force in high-altitude terrain involving newer generation IAF helicopters and special forces in vertical envelopment and ground forces, including mechanised columns, effecting speedy link-up, the source stated.

Thereafter, Mr. Singh visited Lukung in eastern Ladakh, where he was briefed on the security situation and operational preparedness along the LAC as well as along the LoC in Kargil and Dras sectors, the Defence Ministry said in a statement.

Modi's visit

On July 3, Prime Minister Narendra Modi made a surprise visit to Leh and interacted with troops at Nimu.

Last week, troops of India and China undertook disengagement from the stand-off points at Galwan and Gogra and a partial disengagement at Hot Springs and Pangong Tso. Further steps on

disengagement were discussed at the fourth round of talks at the Corps Commander level on June 30 and they are yet to be taken forward.

In the afternoon, Mr. Singh reached Srinagar from Ladakh where he was briefed in detail about the situation on the LoC, in the hinterland and successful counter-terrorist operations by 15 Corps Commander Lt. Gen. B.S. Raju.

Later in the evening, Mr. Singh chaired a security review meeting, which was attended by the Lieutenant Governor of Jammu and Kashmir and other senior officials from the security forces, civil administration and intelligence agencies, the Ministry statement added.

https://www.thehindu.com/news/national/defence-minister-rajnath-singh-arrives-in-leh-to-carry-out-security-review/article32109065.ece

ThePrint

Sat, 18 July 2020

Photo from Rajnath Ladakh trip reveals two 'secret' special forces buys

Photo from Defence Minister Rajnath Singh's visit to Ladakh Friday reveals recent acquisitions made by the Army's Para Special Forces for battle edge

By Snehesh Alex Philip

New Delhi: The special forces of the three services — Para SF of the Army, Garud of the IAF, and Marcos of the Navy — are the most well-equipped units of the Indian armed forces. Some of the systems they use are in public knowledge, while others remain a secret.

A photograph from Defence Minister Rajnath Singh's visit to Ladakh Friday revealed two of the latest acquisitions made by the Para SF — Finnish sniper rifles and American ballistic helmets — that were not widely known.

Defence Minister Rajnath Singh with special forces personnel in Ladakh Friday | By special arrangement

The photograph shows the .338 SAKO sniper rifle. Made in Finland, it is considered to be one of the best snipers in the world. Sources told ThePrint that around 40-50 of the long-range sniper rifles were procured last year.

It is a manually-operated, bolt-action weapon. This sniper rifle is available in two versions — chambered for .300 Winchester Magnum (7.62×67 mm) and for .338 Lapua Magnum (8.6×70 mm) cartridges — and has a kill range of 1,500 metres.

This acquisition was in tandem with the purchase of two other sniper rifles by the Army last year — the Italian-made Beretta .338 Lapua Magnum Scorpio TGT and the American .50 Calibre M95 manufactured by Barrett.

While the Italian and American rifles are also used by regular soldiers posted in critical locations like the Line of Control (LoC), the Finnish sniper is meant exclusively for the Para SF, sources said.

Another item that sticks out in the picture is the helmet worn by an Army officer.

The helmet is the American-made Exfil High Cut Ballistic Helmet, which features a hybrid composite shell for increased strength with a unique geometry for optimal fit.

Sources said these helmets were also acquired in limited numbers for specialised units. The Army last month also began the process to acquire one lakh 'AK-47 protected' helmets — one of the largest procurements of these specialised ballistic helmets in the world.

According to the specifications laid down by the Army, the helmet should offer protection against the AK-47 7.62×39 mm Mild Steel Core and Hard Steel Core bullets from 10 metres.

A show for defence minister

During his visit, Defence Minister Rajnath Singh also witnessed a show of operational capability in Ladakh with integrated operations by the Para commandos, Apache attack choppers, C-130 J Super Hercules special operations aircraft, and armoured elements like the T-90 tanks.

The display also involved a 'Pathfinder Combat Free Fall' from a C-130J aircraft at 17,000 feet. A pathfinder drop is a freefall from an aircraft by a limited number of soldiers who recce the drop site and find a spot for others to land.

Soldiers also slithered down from Mi-17 V-5 choppers with combat air patrol provided by the Apache attack helicopter. This was part of a simulated raid, and involved linking up of the commandos with mechanised columns.

https://theprint.in/defence/photo-from-rajnath-ladakh-trip-reveals-two-secret-special-forces-buys/462968/

THE ECONOMIC TIMES

Sat, 18 July 2020

Indian Army seeks Ballistic Helmet with protection level against small arms fire

Total protection

The army requires Ballistic Helmet with desired protection level in lightest weight so that the soldier can operate with maximum combat efficiency during prolonged operations with adequate protection against Small Arms fire.

Representative Image

What's needed

Protection level against 7.62x39 mm MSC/ HSC bullets from 10 m. while being as light as possible. In terms of design, it should be an Advanced Combat Helmet (ACH)/ Personal Armor System Ground Troops (PASGT)/Modular Integrated Communications Helmet (MICH).

Ergonomics

The Ballistic Helmet must provide comfort for prolonged operations and provide 360 deg grip around the head. The inner padding must enable air circulation and resist bacterial infestation. Ease of adjustment and removal when required during prolonged operations.

Surface and interiors

The Ballistic Helmets must have a matt finish (without any shining surface). The colour of the helmet must be configurable as per user requirement. The padded interior must be modular and provide for ease of washing and drying.

Operational temperature

The Ballistic Helmet should be able to operate between temperature ranges from Minus 40 Degrees to Plus 55 Degrees Celsius without degradation in performance.

https://economictimes.indiatimes.com/news/defence/indian-army-seeks-ballistic-helmet-with-protection-level-against-small-arms-fire/total-protection/slideshow/77013510.cms

THE WEEK

Sat, 18 July 2020

Rajnath Singh reviews security situation in J-K

Srinagar: Defence Minister Rajnath Singh on Friday asked the armed forces to give a fitting reply to any "misadventure" by Pakistan as he reviewed the overall security scenario in Jammu and Kashmir with top military brass, officials said.

At a high-level meeting, the defence minister also asked the armed forces to maintain a strict vigil along the Line of Control (LoC) with Pakistan, they said.

Singh, accompanied by Chief of Defence Staff Gen Bipin Rawat, Army Chief Gen MM Naravane, arrived here in the afternoon following a visit to eastern Ladakh.

"The defence minister was briefed in detail about the situation on the Line of Control, in the hinterland and successful counter terrorist operations. He said that the country was proud of the valour and patriotic spirit of the soldiers," a senior defence ministry official said.

"He urged all to continue to work hard to ensure security both on the Line of Control and in the hinterland. He also impressed upon the commanders to maintain strict vigil along the Line of Control and remain prepared to give a befitting reply to any misadventure by the adversary," he said.

Later, Singh chaired a high-level security review meeting which was attended by Lt Governor of Jammu and Kashmir GC Murmu, Gen Rawat, Gen Naravane, Corps Commander of the Chinar Corps Lt Gen BS Raju, Director General of J and K Police Dilbagh Singh and several senior officials from the intelligence agencies and civil administration.

"The defence minister complimented everyone for great synergy and close coordination amongst the security forces and government agencies towards bringing back normalcy in the region and lauded their work in ensuring peace and security in J and K," the official said.

There have been increasing incidents of unprovoked ceasefire violations by Pakistan along the LoC in the past few months.

Earlier this month, India lodged a strong protest with Pakistan over ceasefire violations by Pakistani forces along the LoC and the international border, which officials said are primarily to push terrorists into Jammu and Kashmir.

Fourteen Indians were killed and 88 sustained injuries in more than 2,432 incidents of unprovoked ceasefire violations carried out by Pakistan forces till June, according to official data.

India has been maintaining that the unprovoked ceasefire violations are in contravention to the 2003 ceasefire understanding between the two countries.

Despite these concerns having been shared, including through the channel of Director General of Military Operations, the Pakistan forces have not stopped such activities, officials said.

(This story has not been edited by THE WEEK and is auto-generated from PTI)

https://www.theweek.in/wire-updates/national/2020/07/17/del99-rajnath-ld-kashmir--corrected.html

THE TIMES OF INDIA

Sat, 18 July 2020

In signal to China, Navy holds drill off Andaman and Nicobar Islands

By Rajat Pandit

New Delhi: The Indian Navy is conducting a major exercise off the Andaman and Nicobar archipelago, in a clear display of strategic intent against China amid the ongoing military confrontation along the border in eastern Ladakh.

The Indian naval manoeuvres come at a time when two American super aircraft carriers, USS Nimitz and USS Ronald Reagan, are conducting rare dual combat drills in the South China Sea, much to China's chagrin.

Sources on Friday said several Indian warships, including destroyers, frigates and submarines as well as maritime patrol aircraft, are conducting the exercise near the A&N archipelago, which dominates China's critical sea lanes transporting the bulk of its energy and other trade through the Malacca Strait.

The exercise, led by eastern naval fleet chief Rear Admiral Sanjay Vatsayan, is being conducted with warships and aircraft from both the Andaman and Nicobar Command (ANC) and the Eastern Naval Command (ENC) headquartered in Visakhapatnam. "Some warships deployed near the Malacca Strait are also taking part," said a source.

The eastern fleet exercise comes soon after TOI reported earlier this month that India was now finally looking to fast-track plans for basing additional military forces, along with developing the requisite infrastructure, in the strategically-located ANC.

The ANC, the country's only theatre command with all assets and manpower of Army, Navy, IAF and Coast Guard placed under one operational commander, can be used as an effective pivot to counter China's expanding footprint in the Indian Ocean Region as well as ensure security of sea lanes converging towards the Malacca Strait.

Sources said the submarine hunting Poseidon-8I aircraft, which are armed with deadly Harpoon Block-II missiles, MK-54 lightweight torpedoes, rockets and depth charges, are also taking part in the exercise from their base at the INS Rajali naval air station in Arakkonam (Tamil Nadu).

Indian and Japanese warships had carried out a small exercise near the Malacca Strait late last month. While Japan has become a regular participant in the high-voltage 'Malabar' naval combat exercise between India and the US since 2015, India is yet to take a decision on including Australia in the top-notch wargames.

TOI was the first to report in January that India was considering inviting Australia to take part in the Malabar exercise. If the move translates into reality, a military construct will firmly be added to the so-called 'Quad' countries that have a shared interest in building a free, open and stable Indo-Pacific against an aggressive and expansionist China.

https://timesofindia.indiatimes.com/india/in-signal-to-china-navy-holds-drill-off-andaman-and-nicobar-islands/articleshow/77028085.cms

Outlook
THE FULLY LOADED MAGAZINE

Sat, 18 July 2020

ITBP DG meets Uttarakhand CM; discusses infra development along China border

New Delhi: Indo-Tibetan Border Police (ITBP) Chief S S Deswal on Friday called on Uttarakhand Chief Minister Trivendra Singh Rawat in state capital Dehradun and discussed issues related to border infrastructure development, officials said.

The ITBP is tasked with guarding the 3,488-km long Line of Actual Control (LAC) with China and Uttarakhand shares about 350 kms of this front.

The meeting comes in the backdrop of a bitter stand off between Indian and Chinese troops at multiple locations in eastern Ladakh for over eight weeks since May 5.

However, following a series of diplomatic and military talks, the two sides began a mutual disengagement process at most of the friction points on July 6.

The force has deployed about 10 battalions, comprising over 10,000 personnel, in the hill state for border guarding duties and disaster rescue operations.

The ITBP Director General is on a two-day visit to the state during which he will also visit the academy of the border-guarding force in Mussoorie.

A senior official said during the meeting, Deswal informed the CM about pending proposals and progress made in developing road connectivity to border areas and ITBP posts and laying of electric lines in remote areas of this front.

Provision of fresh land for housing projects of ITBP and enhancing mobile connectivity in remote locations where the posts of the force are located were also discussed during the meeting, the official said.

The CM and the DG also discussed steps that can be taken to promote tourism in the state, including water sports and taking the services of the migrants who have returned to Uttarakhand in the wake of the coronavirus-induced lockdown, the official said.

The CM assured the ITBP chief that officials of the state government will work in coordination with the ITBP to speed up these border works, they said.

The force has bolstered its numbers all across the Sino-India border front in the wake of the recent military standoff and the ongoing disengagement between the two countries.

The about 90,000 personnel strong ITBP was raised in the aftermath of the 1962 Chinese aggression and it is trained in mountain warfare. PTI NES TDS TDS

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

https://www.outlookindia.com/newsscroll/itbp-dg-meets-uttarakhand-cm-discusses-infra-development-along-china-border/1897510?scroll

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

Sat, 18 July 2020

F-35 Lightning II:- Does India really want the American-Built Fighter Jet

The Indian Air Force (IAF) is considering the possibility of an order for the F-35 Lightning II Joint Strike Fighter, according to sources in the Ministry of Defence. With deliberations at an early stage, it is understood the IAF will be writing to ask for more information on the fifth generation fighter.

The F-35 Lightning II is a 5th Generation fighter, combining advanced stealth with fighter speed and agility, fully fused sensor information, network-enabled operations and advanced sustainment with the most powerful and comprehensive integrated sensor package of any fighter aircraft in history. The F-35's advanced stealth allows pilots to penetrate areas without being detected by radars that legacy fighters cannot evade.

If we take the impossibility aside that F-35 can't be delivered because numerous reasons to India, then still F-35 is not an option for India.

Why?

Look, the F-35 is a pretty good fighter jet, it doesn't matter how much we all criticize it, a plane that has a 20 + years of research and development behind and despite the fact that it still can't perform 60 % of the expectations put on it, it will evolve with time and replace most of the 4th generation fighters in the coming decade in numerous airforces.

But you have to keep it mind that defence purchases are not made based on ''how pretty or beautiful or outbreaking'' a plane is, instead every single airforce calculates it's own needs and threat perceptions, defence budgets.

Is it possible that India can do this with the F-35?

Neither this plane is build for that purpose, nor you can order with a tight budget of India 1,000 + F-35s in the coming years.

The Indian airforce is building it's structure about to guard the borders via air on such a large mass and second, being able to protect these borders with enough fighter jets against the incoming enemy fighters.

For what the F-35 is build?

Obviously it's advertised from the developer and the US establishment as a fighter jet which can do almost everything, the mulit-role fighter jet of the future, but in fact, most of these capabilities were lost with the time of development for one single important purpose: deep strike capability.

https://www.defenceaviationpost.com/2020/07/f-35-lightning-ii-does-india-really-want-the-american-built-fighter-jet/

JANES

Thu, 16 July 2020

Maritime variant of CASC's CH-5 MALE UAV conducts first test flight

By Gabriel Dominguez

The China Aerospace Science and Technology Corporation (CASC) announced on 15 July that it had carried out the first test flight of a maritime variant of its Cai Hong 5 (Rainbow 5, or CH-5) multirole medium-altitude, long endurance (MALE) unmanned aerial vehicle (UAV).

The company said in a statement published on its Weixin social media site that in the "recently" completed flight the development team verified the performance of the platform, the functionality of the payload, and electromagnetic compatibility of the entire system, adding that the trials "provided a good foundation" for future demonstrations of the platform's utility.

In a report about the trials published by the state-owned Global Times newspaper on 16 July CASC was quoted as saying that, compared with the standard CH-5, the new variant has been modified to cope with the maritime environment, particularly its ability to withstand high humidity and salinity, citing as an example the substitution of electrical connectors made of titanium to resist corrosion.

CASC announced on 15 July that is has carried out the first test flight of a maritime variant of its CH-5 MALE UAV.

The manufacturer also commented that the UAV is capable of carrying out surveillance and monitoring missions at sea and could host various payloads, including electro-optic sensors and wide-area search radars.

No further details were provided about the platform but recently released images of the UAV show a distinctive circular housing mounted beneath the fuselage, just forward of the wings, which appears likely to contain a surveillance radar that would provide 360° coverage. The platform was also shown fitted with what appears to be a chin-mounted electro-optic/infrared (EO/IR) sensor turret.

The report also implied that the trials had tested the transmission of radar data via the data link. These tests are assumed to have been successful as CASC was quoted as saying that the next phase would be to progress to trials in a sea environment.

The standard CH-5 features a lightweight, all-composite airframe structure that is 11.3 m-long. The company says the platform, which has a wingspan of 21 m, has a maximum take-off weight of 3,300 kg and an operating range of up to 250 km via line-of-sight control, which can be extended to 2,000 km when using satellite communication (satcom) datalinks.

Provision is made to carry weapons underwing, although some photographs of the maritime version that have appeared in online forums are pixelated to obscure any underwing mounting arrangements.

https://janes.ihs.com/DefenceWeekly/Display/FG_3263024-JDW

hindustantimes

Sat, 18 July 2020

QUAD is ready but no more free lunches for ASEAN on South China Sea

India has rejected the Chinese claims on South China Sea (SCS) by calling it a global commons and openly advocated its long held position of freedom of navigation and overflights

By Shishir Gupta

New Delhi: In September 2007 under the UPA-I regime, India, US, Japan, Australia, Singapore participated in Malabar Naval exercises in Bay of Bengal. This was before the concept of QUAD - US, India, Japan and Australia - was not even born but Chinese Communist Party (CCP) ruled Beijing sent demarche to all four countries and virtually blaming the exercises partners for targeting the Middle Kingdom. With the Indian Left parties badgering the Manmohan Singh regime already over India-US nuclear deal and not willing to earn the wrath of Chinese rulers, the naval exercise concept was dropped like a hot potato by all barring the US. Thirteen years later, India, Japan and Australia are again on the same cross-road with Chinese dragon breathing on Ladakh land borders with India, contesting Senkaku Islands with Japan, openly threatening Australia with trade war, and talking nuke missiles to exercising US navy in South China Sea (SCS).

USS Nimitz at 2007 Malabar exercises with Indian Jaguar fighters. China issued demarche to all participating QUAD countries plus Singapore. (File Photo/Courtesy: US Navy)

While the call on QUAD naval exercises is still to be taken, US Navy following the new maritime policy in SCS has sent a guided missile destroyer into the contested waters at Spratly islands as part of the freedom of navigation operation. USS Ralph Johnson is backed by two super carrier task forces led by USS Ronal Reagan and USS Nimitz, who are exercising in international waters off the Chinese coast.

With the Narendra Modi government not a believer in free lunches as the ASEAN regimes, India has rejected the Chinese claims on SCS by calling it a global commons and openly advocated its long held position of freedom of navigation and overflights. Even though the Russian trade to the port of Vladivostok passes through SCS, Moscow has been silent on the SCS issue given its perceived closeness to the Chinese authoritarian state. Australia and Japan have also bilaterally discussed the SCS issue and like ASEAN want America to be at the fore-front. The so-called Tiger economies of ASEAN talk against China behind closed doors to the QUAD but are virtually servile

before the Middle Kingdom as they do not have either the political or military heft to challenge China.

Although China is the first to call out any country opposed to its political and military objectives, the same cannot be said in reverse with exception of a few. And this is despite the fact that Beijing cavorts with most repressive regimes in the world like North Korea, Pakistan and lately Iran. It is this unchallenged belief that China today runs roughshod over most of the countries in the world, either through money or muscle power. The Chinese penetration into the democratic world through its US listed companies is a matter of extreme serious concern as is evident to Delhi with Indian Universities signing scores of MoUs with Chinese fronts without even understanding the cultural implications of the move. The story of Chinese infiltration into global telecom sector is so humongous that it requires another article in this paper.

The world seemed to be humouring China like an errant child prodigy till the Galwan flare-up took place on June 15. The US, which had decided not to spill any more American blood for global causes, also turned around and threw the SCS gauntlet and challenged the PLA Navy on high seas. While the PLA Navy looks formidable on the paper, China is still to gain expertise on carrier operations as landing a fighter on a moving floating deck in rough seas requires decades of experience. US Navy has it and so has Indian Navy.

The PLA Navy may have Russian made or copy destroyers but dealing with an Indian submarine in equatorial waters is a different cup of tea. The huge difference between surface and temperatures at sea depth, the refraction causes optical paradox and makes the task of detecting submarines very hard and perilous. To cut the long story short, the PLA Navy is unproven on high seas and the PLA Army has not fought a war since 1979. This holds as much truth as the political fact that the objectives of Chinese communist rulers are totally at variance with the democratic world at large.

While the middle-powers like India, Japan, Australia and South Korea have started to rise, it is the democratic world that needs to hold hands together to make China sombre to the global truth. Otherwise, like in 1999 Sci-Fi film, there will be only Mr Smiths left in the Communist matrix.

https://www.hindustantimes.com/world-news/quad-is-ready-but-no-more-free-lunches-for-asean-on-south-china-sea/story-Vx16PS5BHqYUtXqUWqf3OP.html

THE TIMES OF INDIA

Sat, 18 July 2020

Army to verify Chinese pullback over next 10 days

By Rajat Pandit

New Delhi: India will keep a close watch and carefully verify over the next 10 days whether Chinese soldiers pull back further for concrete "disengagement" between the rival troops in eastern Ladakh before discussing "de-escalation" at the next corps commander-level meeting.

The fifth round of talks between 14 Corps commander Lt Gen Harinder Singh and South Xinjiang Military District chief Maj Gen Liu Lin will be held after the "partial disengagement" at Pangong Tso and Gogra-Hot Springs, under way since the beginning of this month, "hopefully" leads to a "complete disengagement", top sources said.

"The People's Liberation Army (PLA), in the fourth round on July 14, indicated its willingness to move back further at Pangong Tso and Gogra-Hot Springs. But it's consulting its politico-military hierarchy. We will have to wait to see how much it translates into actual action on the ground," a source said.

This was reinforced by a rare official statement by the Indian Army on Thursday, which said India and China "remain committed to the objective of complete disengagement" but the stepwise process was "intricate" and would require "constant verification" at different stages. There is a

huge trust deficit between the two sides after the bloody clashes in Galwan Valley on June 15 and accounts for the Indian emphasis on verification.

The carefully worded statement came a day after the high-powered China Study Group, which includes national security adviser Ajit Doval, foreign minister S Jaishankar and Army chief Gen M M Naravane, reviewed the outcome of the July 14 talks and discussed the future strategy, as reported by TOI on Thursday.

The statement significantly did not mention the word 'de-escalation' to clearly imply that the mutual withdrawal of troops, tanks, artillery guns and other heavy weaponry from the 'rear areas' along the Line of Actual Control (LAC) is not on the cards for now.

'INTRICATE PROCESS'

- Rare Army statement says **complete disengagement** is an intricate process, **requires 'constant verification'** at different stages
- **'De-escalation' not mentioned**, implies mutual withdrawal from LAC 'rear areas' not planned for now
- Only disengagement at **PP-14 in Galwan Valley completed satisfactorily** so far

The foreign ministry on Thursday said the disengagement process currently under way was "specifically aimed at addressing face-off situations and close-up deployments" between the rival troops. "Both sides have agreed at specific points to re-deploy towards their regular posts on their respective sides of the LAC. These are mutually agreed reciprocal actions to be taken by both sides. It is an ongoing process," it said.

This mutual re-deployment should not be "misrepresented" since there is "absolutely no change" with respect to India's position. "Any unilateral attempts to change the status quo along the LAC are not acceptable," the ministry said.

Sources said only the troop disengagement at "Patrolling Point-14 (PP-14)" in Galwan Valley, the site of the June 15 clashes, has been fully completed to India's satisfaction till now, with all PLA troops withdrawing to their side of the LAC.

There is also substantial progress at the face-off sites at PP-15 and 17A in the Gogra-Hot Springs area, with the bulk of the rival troops mutually pulling back to create temporary no-patrolling zones extending 2-3 km. "A further pullback has been agreed to for complete disengagement in these areas," a source said.

The north bank of Pangong Tso, however, remains the major problem. PLA troops have so far only moved back from the face-off site at the "base" of "Finger-4" to "Finger-5" (mountainous spurs), without fully vacating the ridgeline that dominates the area.

India wants the PLA soldiers to move back by about 8km to their bases at Sirijap-I and II to the east of "Finger-8", where the LAC runs north to south. Indian troops have also moved back westwards towards their Dhan Singh Thapa post between "Finger-2" and "Finger-3".

Apart from the face-off sites, another major concern is the way the PLA is continuing to block Indian soldiers from going to their traditional "Patrolling Points 10, 11, 12 and 13" in the Depsang Plains — a strategically located tabletop plateau to the north of Galwan — after intruding deep into what India considers its territory. India is pushing for the "old norm" of not blocking each other's patrols to be restored in the Depsang area.

The eventual de-induction of the around 30,000 troops and heavy weaponry amassed by the two sides in the "depth areas" along the 1,597km frontier in eastern Ladakh is still nowhere on the horizon.

https://timesofindia.indiatimes.com/india/army-to-verify-chinese-pullback-over-next-10-days/articleshow/77008903.cms

businesswire
A BERKSHIRE HATHAWAY COMPANY

Sat, 18 July 2020

ExxonMobil, Georgia Tech and Imperial College London publish joint research on potential breakthrough in membrane technology

- ***Research published in international peer-reviewed journal, Science***

Irving, Texas--(BUSINESS WIRE)--Scientists from ExxonMobil, the Georgia Institute of Technology and Imperial College of London have published joint research on potential breakthroughs in a new membrane technology that could reduce emissions and energy intensity associated with refining crude oil. Laboratory tests indicate the patent-pending membrane could be used to replace some heat-intensive distillation at refineries in the years ahead.

Results of the research were published today in the international peer-reviewed journal, Science.

“Through collaboration with strong academic institutions like Georgia Tech and Imperial, we are constantly working to develop the lower-emissions energy solutions of the future," said Vijay Swarup, vice president of research and development at ExxonMobil Research and Engineering Company.

“Inspired by reverse osmosis technology that has reduced energy intensity tenfold for water purification, we decided to look into ways to use new materials for liquids separation, which if brought to industrial scale, could significantly reduce associated greenhouse gas emissions,” said Swarup. “This is one of many new materials ExxonMobil is researching to reduce energy intensity and CO_2 in our operations.”

The research successfully demonstrated that naphtha and kerosene—the primary components of gasoline and jet fuel—can be separated from light crude oil using pressure instead of heat, reducing emissions and energy consumption significantly compared to traditional, heat-based distillation methods.

Since 2014, the team of scientists has worked to identify advanced membranes to separate light shale crude oil using significantly less energy than used in typical refining processes. In the gasoline and jet fuel range, the membranes developed by the team are twice as effective as the most selective commercial membranes in use today.

“This membrane technology was developed by a diverse team of scientists and engineers using a ‘multi-scale’ approach that ranges from the molecular-scale to realistic membrane devices,” said Ryan Lively, the John H. Woody faculty fellow and associate professor in Georgia Tech’s School of Chemical & Biomolecular Engineering.

“It’s rare that chemists have the chance to participate in both inventing new molecules and applying them to solve real-world problems. In this case, it really took a whole village of differing expertise to bring to fruition a new approach for separating the components of crude oil using much less energy than before,” said M.G. Finn, Chair of the School of Chemistry & Biochemistry at Georgia Tech and a joint lead of the study along with Lively.

Additional research and development will be needed to progress this technology to industrial scale.

“We have the foundational experience of bringing organic solvent nanofiltration, a membrane technology becoming widely used in pharmaceuticals and chemicals industries, to market,” said Andrew Livingston, professor of chemical engineering at Imperial. “We worked extensively with ExxonMobil and Georgia Tech to demonstrate the potential scalability of this technology.”

Since 2000, ExxonMobil has invested approximately $10 billion in projects to research, develop and deploy lower-emission energy solutions. The company also continues to expand collaborative efforts with more than 80 universities, five energy centers and multiple private sector partners around the world to explore next-generation energy technologies.

The researchers on the technology as written in Science include Neel Rangnekar, J.R. Johnson, Scott Hoy and Benjamin McCool from ExxonMobil; Kirstie Thompson, Ronita Mathias, Ryan Lively and M.G. Finn from Georgia Institute of Technology; Daeok Kim, Jihoon Kim, Irene Bechis, Andrew Tarzia and Kim Jelfs from Imperial College London; and Andrew Livingston, concurrently with Imperial and Queen Mary University of London.

About ExxonMobil

ExxonMobil (XOM), one of the largest publicly traded international energy companies, uses technology and innovation to help meet the world’s growing energy needs. ExxonMobil holds an industry-leading inventory of resources, is one of the largest refiners and marketers of petroleum products, and its chemical company is one of the largest in the world. To learn more, visit exxonmobil.com and the Energy Factor.

About Georgia Tech

The Georgia Institute of Technology, located in Atlanta, Georgia, is a leading research university committed to improving the human condition through advanced science and technology. As a leading technological university, Georgia Tech conducts interdisciplinary research that contributes vital research and innovation to government, industry, and business. Georgia Tech provides a focused, technologically based education to more than 36,000 undergraduate and graduate students. For more information, visit www.gatech.edu.

About Imperial College London

Imperial College London is one of the world's leading universities. The College's 17,000 students and 8,000 staff are expanding the frontiers of knowledge in science, medicine, engineering and business, and translating their discoveries into benefits for our society. Imperial is the UK's most international university, according to Times Higher Education, with academic ties to more than 150 countries. Reuters named the College as the UK's most innovative university because of its exceptional entrepreneurial culture and ties to industry. http://www.imperial.ac.uk/

Cautionary Statement: Statements of future events or conditions in this release are forward-looking statements. Actual future results, including research plans, project timing and the impact and results of new technologies, such as efficiency gains and emission reductions, could vary depending on the outcome of further research and testing; the development and competitiveness of alternative technologies; the ability to scale pilot projects on a cost-effective basis; political and regulatory developments; and other factors discussed in this release and under the heading “Factors Affecting Future Results” on the Investors page of ExxonMobil’s website at exxonmobil.com.

Contacts

ExxonMobil Media Relations
972-940-6007
Imperial College London
Caroline Brogan
caroline.brogan@imperial.ac.uk
+44(0)20 7594 3415
Georgia Tech
John Toon
jtoon@gatech.edu
404-894-6986

https://www.businesswire.com/news/home/20200717005047/en/ExxonMobil-Georgia-Tech-Imperial-College-London-Publish

Devdiscourse
Discourse on Development

Sat, 18 July 2020

ARCI & Vehant Technologies co-develop UV Baggage Disinfection System

UVC based disinfection systems are known for their rapid disinfection capability, and the disinfection process is dry and chemical-free

New Delhi: Both domestic and international travel has been a major reason for the spread of the COVID 19 infection. Baggage, an inevitable part of travel involves handling by multiple people and can be contact points for the spread of the virus and should be disinfected quickly each time they change hands. With the increase in the passenger traffic at airports, railway stations and commercial establishments during the post-lockdown period, there is an immediate necessity for a rapid system for the baggage disinfection within few seconds to effectively fight against COVID-19.

The sensing mechanism in the chamber automatically detects the entry of any item into it and powers the system and disinfects the 360-degree surface of any baggage," said Mr Kapil Bardeja, CEO and Co-Founder, Vehant Technologies. Image Credit: Twitter(@PIBShillong)

In order to control the spread of infection through baggage, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad, an autonomous R&D Centre of Department of Science and Technology (DST), Govt. of India and Vehant Technologies, Noida has co-developed KritiScan® UV Baggage Disinfection System.

The compact UVC conveyor system developed can efficiently disinfect the baggage passing through the conveyor within a few seconds and is suitable for use in airports, railway and bus stations, hotels, commercial and private establishments for rapid disinfection of baggage.

UVC based disinfection systems are known for their rapid disinfection capability, and the disinfection process is dry and chemical-free. UVC irradiation at 254 nm is known for its germicidal properties where no chemical residues are left behind. UVC light, when irradiated on an infected surface, quickly disrupts the genetic material in the virus and thus inhibits its multiplication.

The Kritiscan UV advanced baggage disinfecting system has a specially designed motorized conveyor to guide the baggage into the disinfection tunnel, which uses UVC light (254 nm) with appropriate irradiance to inactivate microbes and viruses. The UV-C lamps used in the system are well shielded and hence pose no harm to staff or passengers in the vicinity of the system. However, any human intervention is strongly advised against when the UVC sources are on.

Dr G. Padmanabhan, Director, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) said, "ARCI with its past experience in UVC based disinfection systems provided inputs such as UV dosage levels and guidance in mapping the UVC intensities in the disinfection tunnel so that required intensity is available at all requisite locations. Vehant Technologies, with its prior experience and expertise in developing and producing KritiScan® UV Baggage Disinfection Systems, has been able to develop KritiScan UVC system in record time".

"Vehant Technologies has been working round the clock during this COVID-19 crisis with the sole aim of keeping people safe. Since baggage of the passengers can be a medium of the spread of the infection, we have jointly developed KritiScan® UV Baggage Disinfection system with ARCI.

The sensing mechanism in the chamber automatically detects the entry of any item into it and powers the system and disinfects the 360-degree surface of any baggage," said Mr Kapil Bardeja, CEO and Co-Founder, Vehant Technologies.

"A slew of innovations such as this are making travel safe in the time of virus to allow economic growth while fully addressing the health concerns," said Prof Ashutosh Sharma, Secretary, DST.

Systems can be deployed as per baggage size with various tunnel sizes for different purposes and locations and each model type being able to operate at different conveyor speeds. The system can efficiently disinfect the baggage within 8 seconds as compared to standard hand-held disinfection techniques. (With Inputs from PIB)

https://www.devdiscourse.com/article/science-environment/1133372-arci-vehant-technologies-co-develop-uv-baggage-disinfection-system

livemint

Sat, 18 July 2020

India's first COVID-19 vaccine: Covaxin human trial starts well. 10 updates

By Anulekha Ray

- ***Covaxin has been derived from a strain of the novel coronavirus isolated by the National Institute of Virology in Pune***
- ***ICMR has selected 12 sites to conduct the clinical trials of Covaxin***

As the novel coronavirus continues to spread around the world, scientists and researchers are scrambling to develop a vaccine to protect millions of people from infection. The human trial of Covaxin, India's first vaccine candidate against novel coronavirus infection, started last week. All India Institute of Medical Sciences in Patna and Post-Graduate Institute of Medical Sciences in Rohtak have begun the clinical trial of the COVID-19 vaccine candidate. The vaccine has been developed by the Hyderabad-based pharmaceutical company Bharat Biotech in collaboration with National Institute of Virology (NIV) and Indian Council of Medical Research (ICMR). The Drug Controller General of India (DCGI) earlier approved the biotech company to initiate the phase I and II human clinical trials.

Here are the things that we know so far about India's first indigenous COVID-19 vaccine candidate:

- Covaxin has been derived from a strain of the novel coronavirus isolated by the National Institute of Virology in Pune. Bharat Biotech developed an “inactivated" vaccine at its high-containment facility at Genome Valley in Hyderabad.
- “Once the vaccine is injected into a human, it has no potential to infect or replicate, since it is a killed virus. It just serves to the immune system as a dead virus and mounts an antibody response towards the virus," said the company.
- Covaxin underwent pre-clinical testing on animals to see if it is safe. "Results from these studies have been promising and show extensive safety and effective immune responses," the company earlier said.
- The human trials of Covaxin has begun at the All India Institute of Medical Sciences, Patna. AIIMS-Patna chose 10 volunteers to start the human trial of Covaxin.

- According to several reports, the first dose of the vaccine has been administered to the study participants. They will be given he second dose after an interval of 14 days. Once their schedule is complete, the volunteers will be examined thoroughly for any after-effects of the vaccine.
- The ICMR has selected 12 institutes to conduct these trials, including AIIMS in Delhi and Patna. Hyderabad's Nizam's Institute of Medical Sciences was one of the trial sites that received ICMR's letter. Only institutes with clinical pharmacology departments were selected for the trials of Covaxin.
- Covaxin will be tested on over 1,100 people in two phases. Bharat Biotech has planned to enroll 375 people in the first phase of clinical trials. Depending on the results of the first trial, the company has a plan to enroll 750 people in the second phase of trial.
- The human trial of India's first vaccine candidate has initiated in Rohtak's Post-Graduate Institute of Medical Sciences today. "Three subjects were enrolled today. All have tolerated the vaccine very well. There were no adverse efforts," said Anil Vij, health minister of Haryana.
- "India has a lot of capacity there — with the drug and vaccine companies that are huge suppliers to the entire world. You know, more vaccines are made in India than anywhere — starting with Serum Institute, that's the largest," said Bill Gates.
- "From India's perspective, we have two vaccine candidates. We are trying all out efforts to fast-rack it and it is the moral duty that there should not be a delay not even by a day for regulatory clearances for these vaccines so that we can break the transmission of the virus as soon as possible," said ICMR Director General Balram Bhargava.

https://www.livemint.com/news/india/india-s-first-covid-19-vaccine-covaxin-human-trial-starts-well-key-updates-11594977657239.html

india.com

Sat, 18 July 2020

COVID-19 vaccine update: Bharat Biotech's COVAXIN begins human trials, 'no adversities' so far

The Hyderabad-based pharma collaborated with the Indian Council of Medical Research (ICMR) and National Institute of Virology, Pune, to develop the vaccine candidate

Edited By Sharmita Kar

COVID-19 Vaccine Latest News**:** In a rather positive development amid the pandemic situation, Hyderabad-bassed Bharat Biotech has begun the human trials of COVAXIN, India's first indigenous vaccine candidate the coronavirus infection, and all three subjects so far have tolerated it well.

"Human trial with Corona vaccine (COVAXIN) of Bharat Biotech started at PGI Rohtak today. Three subjects were enrolled today. All have tolerated the vaccine very well. There were no adverse efforts," tweeted Haryana Health Minister Anil Vij on Friday.

Over the past 10 days, the Post Graduate Institute of Medical Sciences (PGIMS), Rohtak, has registered nearly 100 people wanting to be a part of the study that was approved by the Drug Controller General of India (DCGI) earlier this week.

The Hyderabad-based pharma collaborated with the Indian Council of Medical Research (ICMR) and National Institute of Virology, Pune, to develop the vaccine candidate. It was

developed at Bharat Biotechs BSL-3 (Bio-Safety Level 3) high containment facility, which is located in the Genome Valley.

Meanwhile, Ahmedabad-based pharmaceutical giant Zydus Cadila, the second firm to come up with an indigenous coronavirus vaccine, has also begun the crucial phase I and II of human trials after receiving the DGCI nod.

However, the company had earlier said that the completion of phase I and II trials may take up to three months.

https://www.india.com/news/india/covid-19-vaccine-update-bharat-biotechs-covaxin-begins-human-trials-no-adversities-so-far-4087545/

Outlook
THE FULLY LOADED MAGAZINE

Sat, 18 July 2020

"DBT's institutes accelerating development of COVID-19 vaccines, therapeutics and diagnostics"

New Delhi: Accelerating the work in various spheres to combat COVID-19, institutes under the Department of Biotechnology are developing research resources such as indigenous animal models, pseudo-viruses, clinical immunological assays and antibodies, a statement said on Friday.

DBT"s Translational Health Science and Technology Institute (THSTI), Faridabad, has established a hamster infection model for evaluation of antivirals, therapeutics and vaccines, it said.

The THSTI has also established panels of positive sera from symptomatic patients who tested positive for SARS-CoV-2 infection. These panels will find utility in validation of diagnostic kits.

"DBT institutes are developing research resources such as indigenous animal models, viral spike proteins, receptor binding domain peptides, pseudo-viruses, clinical immunological assays and antibodies for research for sharing with industry and academia," the statement said.

Similarly, DBT-ILS, Bhubaneshwar, has successfully established 17 in-vitro cultures of SARS-CoV-2 using vero cell lines, which is an important resource for anti-viral testing and validation of antiviral products.

A low-cost colorimetric PCR-based assay technology and an aptamer-based SARS-CoV-2 antigen detection technology developed by DBT-THSTI, were transferred to Genei and Molbio Diagnostics Pvt Limited. Similarly, in-house ELISA technology by the THSTI was also transferred to XCyton Diagnostics Limited.

THSTI has distributed over 2,500 sample aliquots in response to requests from industry, start-ups and academia, the statement added.

DBT"s Rajiv Gandhi Centre for Biotechnology also developed a low-cost viral transport medium and RNA extraction kit that is ready for commercial use.

"Biorepositories established at DBT-THSTI, Faridabad, DBT-RCB, Faridabad, DBT-ILS, Bhubaneshwar, DBT-InStem, Bengaluru, DBT-NCCS, Pune and DBT facility at ILBS New Delhi are fully functional. Sharing of Biospecimens accelerates COVID-19 related research towards development of kits, therapeutics and vaccines," the statement added.

Separately, the National Research Development Corporation (NRDC), a public sector undertaking under the Department for Scientific and Industrial Research (DSIR), has recommended 16 projects for funding in the area of testing, tracing and treatment of COVID-19 and the technologies selected for support are in the area of test kits, sanitizers, ventilators, PPEs, masks and COVID hospital effluent treatment.

Some of the institutions and companies selected are: IIT Delhi; Sahajanand Technologies Pvt Ltd Surat; IDEMI Mumbai; INM Indian Navy, Mumbai; Omix Research & Diagnostics

Laboratories Bangalore; VBRI Innovation Pvt Ltd New Delhi; FFDC Kannauj; CIBART, New Delhi; Rudrani Hospitality Solutions Delhi; LN Inditech Services Pvt Ltd, Bhubhaneswar and few academic institutions and individual innovators.

The NRDC is a public sector undertaking under the Council for Scientific and Industrial Research (CSIR).

The International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad and Vehant Technologies have co-developed Ultraviolet Baggage Disinfection which can be used at airports, railway stations, the statement said.

The ARCI is an institute under the Department of Science and Technology, while Vehant Technologies is a private entity.

(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/dbts-institutes-accelerating-development-of-covid19-vaccines-therapeutics-and-diagnostics/1897536

INDIA TODAY

Sat, 18 July 2020

Coronavirus vaccines in human trials: All you need to know about clinical studies

Novel coronavirus vaccines have entered or are entering human trials around the world. What does a human trial mean? What happens in these trials? Can you just walk in and take part in one? And, most importantly, how long does it take for vaccines to clear human trials and enter the world? We answer these and many other questions on what clinical, or human, trials are all about

By Dev Goswami

How long will it be till the world gets an approved vaccine for the novel coronavirus? The answer to that question, which is on top of everybody's minds, is entirely dependent on outcomes of several human trials currently underway around the world. At least 18 novel coronavirus vaccine candidates are currently being tested on humans. Several more -- including two Indian prospective vaccines -- are on their way.

The success of various human trials underway across the world will determine when a novel coronavirus (Covid-19) vaccine will be available for the world (Illustration by Bandeep Singh)

The Indian novel coronavirus vaccine candidates -- one developed by Hyderabad's Bharat Biotech and another by Ahmedabad-based Zydus Cadila -- began human trials mid-July. A human trial is the last stage of research in the development of a vaccine. However, human trials can take very long to complete, several years in some cases.

So, what do human trials entail? What are these 'phases' that we keep hearing about? And how long does it all take? Read on, as we break it down for you.

(The following information has been sourced from the Indian Council of Medical Research, Clinical Trials Registry - India, and other publicly available material on the websites of the World Health Organsiation and the US Food and Drug Authority)

What are human trials?

As is evident by the term, human trials are experiments of a drug or a vaccine on human beings. In the case of a vaccine, the individuals are perfectly healthy. The trials are conducted primarily to examine two aspects: A. Whether the vaccine or drug is safe. And, B. Whether the vaccine or drug does what it is intended to do -- induce immunity against a pathogen in the case of the former or treat a disease in the case of the latter.

Why are human trials needed?

The human body is unique. The only way to know how a drug or vaccine will perform in a human body is to actually test the remedy on humans. A human trial allows researchers not only to test a vaccine's efficacy but also find out whether it has any side effects. This information gives researchers a near real-world look at the performance of a vaccine -- they can then go ahead with production in case of good results or return to the drawing table in case of bad results.

When does a vaccine enter human trials?

For any drug or vaccine to be fit for experimentation on humans, the formulation first has to be tested in a laboratory and on animals. In this phase, known as pre-clinical trials, researchers aim to find out whether the drug or vaccine is safe enough to be tested on humans. Researchers also look for some signs that the drug or vaccine does what it is supposed to do. If pre-clinical trials show promising results, researchers then approach a regulatory body (in India, this is the Drugs Controller General of India) for approval to begin human trials.

Who governs human trials in India?

The Indian Council of Medical Research (ICMR), a British-era body, has an exhaustive list of guidelines for human trials. The 187-page document, titled National Ethical Guidelines For Biomedical And Health Research Involving Human Participants, was last updated in 2017 and covers every aspect of conducting a human trial. You can read the human trial guidelines here.

The body that actually oversees human trials in India is the Ministry of Health's Central Drugs Standard Control Organisation. This central agency is responsible for final approval of a new drug or vaccine that has been validated in human trials. The Drugs Controller General of India, which grants go-aheads for human trials, operates under the CDSCO.

At the ground level, every human trial is overseen by an Ethics Committee (EC). This committee is formed at the level of a medical institution -- usually a college or hospital. If the trial is being conducted at a non-medical location (for example, a private company's research centre) then that will be overseen by an Ethics Committee of a nearby hospital.

According to the ICMR, the Ethics Committee is responsible for granting approvals for a trial to begin at the institutional level and for ensuring that the human trial is based on sound scientific-statistical practices and follows high standards of ethics. The Ethics Committee has oversight over every aspect of a human trial.

Can anybody take part in a human trial?

No. Depending on what the human trial aims to achieve, researchers will decide who can and cannot take part. For example, a person who was or is a Covid-19 patient obviously cannot take part in a human trial for a novel coronavirus vaccine. That person may have developed natural immunity to the virus and so, cannot help in accurately judging the efficacy of a vaccine.

Similarly, a human trial for a drug that aims to treat a particular cancer will need to have patients who already suffer from that form of cancer.

And so, researchers draw up tightly controlled criteria to decide who can take part in a human trial. If you meet those criteria, you can volunteer to take part in a human trial.

You will be explained in simple terms all aspects -- particularly the risks -- of the study in which you're about to take part, following which you must provide "informed consent". With the consent you agree not only to take part in the trial, but also to follow specific directives such as avoiding a certain food item or drug, taking measures to avoid pregnancy, etc.

What happens to me in a human trial?

This will largely depend on the type of human trial in which you've participated. Generally, you will be randomly placed in either the 'experimental' group or the 'control' group. The experimental group gets the treatment that's being studied while the control group gets a treatment that's already been proven to be safe and effective.

This allows the researchers to compare the efficacy of an experimental drug or vaccine with an established treatment. However, since the novel coronavirus is a novel virus that does not have existing remedies, in human trials for a Covid-19 vaccine the control group will likely receive a 'placebo', i.e. a substance that does not affect your health in any way.

You will be administered either the experimental vaccine or a placebo, orally or through an injection, and will have your medical samples (blood, urine, etc) collected for tests. You will likely be given more than a single dose of the vaccine or a placebo, and will not know which one you're getting.

The ICMR's guidelines say that researchers must make efforts to inform you of the study's findings as and when they are completed.

Will I get paid for taking part in a human trial?

ICMR guidelines allow for payment in the form of reimbursements for expenses occurred by you owing to your participation in a human trial. The guidelines also allow for free additional, unrelated medical services for participants of a human trial study.

All these payments -- cash or kind -- will be monitored by the Ethics Committee overseeing the trial to ensure there is no "undue inducement", i.e. the promise of payment shouldn't be so attractive that you ignore the risks associated with the human trial.

In case you suffer any harm due to your participation in the human trial, you are supposed to be compensated.

What are the phases of a human trial?

By now you must have come across references to 'phase I', 'phase II' and 'phase III' in news articles talking about novel coronavirus vaccine research. These phases are simply different stages of human trials that test an experimental vaccine on an increasingly larger number of people (more on that later).

- In phase I human trials, the primary aim of researchers is to test whether an experimental vaccine is safe and can be tolerated by human beings. A secondary aim is to look for initial signs that the vaccine is producing some level of immune response.
- In phase II human trials, the focus shifts to examining how effective the vaccine is at producing the desired level of immune response. Researchers look for the most appropriate level of dose that induces the right amount of immune response. Participants are also monitored for possible side effects and, of course, overall safety.
- In phase III trials, researchers attempt to confirm the phase II findings and perfect their understanding of just how much protection an experimental vaccine is able to deliver. This is the crucial last stage of human trials where vaccine efficacy and safety is essentially triple-checked.
- The vaccine is now ready for use in the world and will be submitted for approval.
- There is another phase of clinical research to be performed after a vaccine is approved for public use. These are phase IV human trials, in which manufacturers and researchers basically keep a watch on the vaccine's impact in the real world. The safety and efficacy of the vaccine is continously monitored.

How many people take part in these trials?

There is no set international standard for how many volunteers should be part of a particular phase of a human trial. Generally, phase I has very few people while phase II and III have larger sets of people taking part. The United States Food and Drug Authority provides an estimate of what these numbers could look like. According to the agency:

- Phase I human trials can include between 20 to 100 volunteers
- Phase II trials can have up to several hundred people
- Phase III on the other hand can have a couple of thousand people taking part
- Phase IV, conducted after a drug/vaccine's launch, will have several thousand people being examined

So, how long does all of this take?

Years. Especially for vaccines. A failed vaccine, if used in the real world, will not build immunity in the best-case scenario or exacerbate a disease outbreak by causing more infections in the worst-case scenario. And so, vaccines need years of research and testing.

For example, it's been nearly four decades since HIV was discovered, and we still do not have a vaccine for the virus. And, the current record for the fastest development of a vaccine is for the mumps shot that is widely reported to have gone from development to human trials to approval in four years.

That's how long it has taken previously. But we don't really know what will happen with the Covid-19 vaccine. The novel coronavirus pandemic has held the world hostage and scientists are conducting research at frantic speed.

The current popular estimate is that a novel coronavirus vaccine will be ready for public use by mid or end next year. But even that, some experts have warned, is a highly optimistic timeline.

What's happening with the human trials of Indian coronavirus vaccine candidates?

There are two vaccine candidates in India that are currently in human trials. One of these vaccines is a traditional formulation developed by the Hyderabad-based Bharat Biotech in collaboration with the Indian Council of Medical Research. The other candidate, based on a radical technology, has been developed by the Ahmedabad-based private pharma major Zydus Cadila.

Bharat Biotech: Human trials of the Bharat Biotech vaccine candidate, Covaxin, began in mid-July. 375 people will take part in phase I trials while another 750 will be part of phase II trials. The researchers estimate that the combined phases of trials will take around a year and three months to complete.

Zydus Cadila: Zydus Cadila's coronavirus vaccine candidate, ZyCoV-D, also began human trials in mid-July. The combined phase I and phase II trials will have a total of 1048 people participating and are estimated to take up to a year to complete.

https://www.indiatoday.in/science/story/novel-coronavirus-covid-19-vaccine-human-trials-1701613-2020-07-17