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Not just Arjun, DRDO looking to get indigenous anti-tank missile on Russian T-90 tanks too

Two successful tests of the ATGM have been conducted on Main Battle Tank (MBT) Arjun over the past fortnight. DRDO is aiming for ATGM user trials by February

By Snehesh Alex Philip

New Delhi: Plans are afoot to make the indigenously developed laser-equipped anti-tank guided missile (ATGM), successfully fired twice from the Main Battle Tank (MBT) Arjun over the last fortnight, capable of being used on the Russian-origin T-90 tanks that have different guns, ThePrint has learnt.

With two successful tests, the Defence Research and Development Organisation (DRDO) is aiming for user trials of the ATGM by February next year.

Sources in the defence and security establishment said the trials so far have been carried out on the Arjun tanks, with a range of 3-4 km. The DRDO wants to test the ATGM at a 5km range to evaluate its efficacy.

“In the next stage, we will also be test-firing the missile with a warhead before the user trials, which should take place by February,” a source in the know said.

While the first two tests — on 22 September and 1 October — took place at the K.K. Ranges in the Armoured Corps Centre and School (ACC&S), Ahmednagar — the next would be at a bigger range, sources added.

The ATGM employs a tandem heat warhead to defeat explosive-reactive-armour (ERA)-protected armoured vehicles in ranges between 1.5 and 5 km.

It has been developed with a capability to launch from multiple platforms. The ATGM is currently undergoing technical evaluation trials through the 120mm rifled gun of MBT Arjun, and the DRDO also seeks to make it compatible with the 125mm smoothbore gun of the T-90s.

“Right now, it is meant for the 120mm rifled gun of the MBT Arjun. The plan is to make it compatible with the 125mm smoothbore gun of the T-90s,” a source said.

The Arjun saga

An order for 118 indigenously manufactured Arjun Mark 1-A ‘Hunter Killers’, with all-weather capability and better firepower and stability than the Arjun MBT, is yet to fructify.

Sources in the know said that the decision has been made and the process is on, despite the Covid-19 pandemic delaying it and the focus shifting on account of the ongoing tensions with China at the Line of Actual Control (LAC).



Indian Army soldiers atop a T-90 tank in Ladakh | Representational image | ANI

While the Army started inducting two regiments of Arjun MBTs in 2004, in 2010, it proposed an improved version, to be called the Mark II and equipped with over 80 improvements, including 15 major ones.

As reported by ThePrint earlier, in 2012, the DRDO offered the Arjun for trials with all the major enhancements, except one — a cannon-launched guided missile (CLGM).

The Army had insisted on having that capability, since other tanks like the T-90 also had it.

The DRDO engaged the Israelis and sourced the Lahat CLGM, which could conclusively hit targets between 2 and 5 kilometres away. The trials validated the CLGM's laser designator.

The Army, however, wanted a missile that could hit targets as close as 1.2 km.

The Israelis, who were first offered to develop this capability, took about a year to decide on producing it, but, by then, the DRDO had decided to go in for an indigenous CLGM.

Talks between the DRDO and the Army continued until March 2018, and it was finally agreed that the next batch of Arjuns, to be called Mark 1-A, would be supplied without the missile-firing capability.

However, V. Balamurugan, the director of the DRDO's Chennai-based Combat Vehicles Research and Development Establishment (CVRDE), had said in March that the missile could actually be integrated onto the Mark 1-A as the tanks start rolling out.

<https://theprint.in/defence/not-just-arjun-drdo-looking-to-get-indigenous-anti-tank-missile-on-russian-t-90-tanks-too/516663/>

Defence News

Defence Strategic: National/International



Mon, 05 Oct 2020

India has 'no first use' of atomic weapons policy against nuclear armed states: Shringla

India's annual resolution in the General Assembly on the Convention on the Prohibition of the Use of Nuclear Weapons, tabled since 1982, enjoys wide support and reaffirms that any use of nuclear weapons would be a violation of the UN Charter and a crime against humanity, the foreign secretary said

Edited By Sohini Sarkar

New Delhi: India espouses the policy of "no first use" of atomic weapons against nuclear weapon states and non-use against non-nuclear weapon states even as it backs global efforts towards strengthening the non-proliferation order, foreign secretary Harsh Shringla has said.

Shringla made the remarks while representing India at a high-level plenary meeting to commemorate the International Day for the Total Elimination of Nuclear Weapons on Friday.

Reiterating India's long-standing commitment to universal, verifiable and non-discriminatory nuclear disarmament leading to the complete elimination of nuclear weapons, he said: "We believe that nuclear disarmament can be achieved through a step-by-step process underwritten by a universal commitment and an agreed multilateral framework."

Elaborating on the country's nuclear doctrine, he said: "India espouses the policy of 'no first use' against nuclear weapon states and non-use against non-nuclear weapon states. India is a key partner in global efforts towards disarmament and strengthening the non-proliferation order."

India, he added, remains convinced of the need for meaningful dialogue among all states possessing nuclear weapons to build trust and confidence. The country's approach to nuclear disarmament is contained in its working paper submitted to the UN General Assembly's first committee in 2006 and to the Conference on Disarmament in 2007, he said.

India's annual resolution in the General Assembly on the Convention on the Prohibition of the Use of Nuclear Weapons, tabled since 1982, enjoys wide support and reaffirms that any use of nuclear weapons would be a violation of the UN Charter and a crime against humanity, Shringla said.

The country has also tabled an annual resolution in the General Assembly since 1998 on "reducing nuclear danger" that calls for urgent steps to reduce the risks of unintentional and accidental use of nuclear weapons, including "through de-alerting and de-targeting", he said.

India supports the start of negotiations on a "Comprehensive Nuclear Weapons Convention" at the Conference on Disarmament. "Without prejudice to the priority attached to nuclear disarmament, India remains committed to the immediate commencement of negotiations on a Fissile Material Cut-off Treaty in the CD...," he said.

UN Secretary-General António Guterres told delegates gathered to commemorate the event that "the world continues to live in the shadow of nuclear catastrophe". Progress towards total elimination of nuclear weapons has "stalled and is at risk of backsliding", he warned.

<https://www.hindustantimes.com/india-news/india-has-no-first-use-of-atomic-weapons-policy-against-nuclear-armed-states-shringla/story-tjPi4gFZvXbcM6Yl7PjlPP.html>



Foreign Secretary Harsh V Shringla was representing India at a high-level plenary meeting to commemorate the International Day for the Total Elimination of Nuclear Weapons on Friday. (ANI PHOTO.)



Amid conflict with China, Indian Army, Air Force prepare to fight wars jointly

Synopsis

The Army, which is deployed in eyeball-to-eyeball situations against the Chinese, is also regularly updating the Indian Air Force on the actual position on the ground to enhance their domain awareness and they have also planned some operations jointly in case the situation worsens further on the LAC, he said

LEH: Ten months after the creation of the post of Chief of Defence Staff and at a time when two National Defence Academy coursemates are heading the Army and the Air Force, the two forces are preparing to fight a war jointly against the Chinese forces opposite Eastern Ladakh sector.

As soon as one lands at the Leh airfield, one can see the Indian Air Force C-17s, Ilyushin-76s, and C-130J Super Hercules aircraft flying in with rations and supplies for the troops deployed on the forward locations opposite the Chinese forces.

"The instructions from the top at Air Headquarters are clear that whatever requirements are projected by the Army and other security forces here have to be fulfilled. The results are here for everybody to see," a senior Air Force commander posted in the Ladakh region told ANI about the combat support missions being carried out by his service.

Army Chief Gen Manoj Mukund Naravane and Air Force chief Air Chief Marshal RKS Bhaduria are coursemates from NDA days and have been thick friends since then.

An Army officer deployed in a forward area said the fact that these days, the Chief of Defence Staff Gen Bipin Rawat and the chiefs of two services meet often to discuss and plan the action against the Chinese forces is also helping at the field level where the two forces have been operating jointly.

The Army, which is deployed in eyeball-to-eyeball situations against the Chinese, is also regularly updating the Indian Air Force on the actual position on the ground to enhance their domain awareness and they have also planned some operations jointly in case the situation worsens further on the LAC, he said.

The effort can be seen on the ground as the forces are preparing to tackle both China and Pakistan along the Ladakh sector.

On the road from Leh towards the Line of Actual Control in Eastern Ladakh, one could see the Chinooks flying over the Indus river to provide supplies to the Army troops stationed on the front battling both the Chinese and the extremely harsh winters.

As soon as we reached close to the LAC to witness tank manoeuvres, we could see the Chinook and Mi-17V5s helicopters of the Air Force flying towards an Advanced Landing Ground (ALG) there to drop supplies including panels of shelters which are being erected in the border areas to tackle harsh winters.

"Thanks to the lift capability of our helicopters, we are in a position to lift and shift the container habitat to wherever it is required to be placed at very short notice," 14 Corps Chief of Staff Maj Gen Arvind Kapoor had told ANI during a visit to a prefabricated shelter for troops in Eastern Ladakh.

Indian Air Force's new acquisitions including the Chinook and the Apache attack helicopters are also playing key roles in the ongoing conflict with the Chinese.



Supplies are unloaded from an Indian military transport plane at a forward airbase in Leh, in the Ladakh region, September 15, 2020

"The Chinooks are supplying men and material to the border areas on a daily basis while the Apaches would come into the picture in a big way if the two sides get engaged in a tank battle in the high altitude wide valleys of the Indus and other rivers in the Eastern Ladakh sector," the official said.

Both Army and Air Force officials say that still there are areas where the two services can further improve their jointness but feel that by the time the border conflict with the Chinese gets over, the two forces would be better prepared for fighting wars jointly.

<https://economictimes.indiatimes.com/news/defence/amid-conflict-with-china-indian-army-air-force-prepare-to-fight-wars-jointly/articleshow/78476159.cms>



Mon, 05 Oct 2020

चीन को मुंहतोड़ जवाब देने के लिए संयुक्त रूप से तैयार हैं सेना और वायुसेना

**लेह हवाई क्षेत्र में भारतीय वायुसेना C-17s Ilyushin-76s और C-130J सुपर हरक्यूलिस विमान तैनात कर रखे हैं।
दोनों देशों के तनाव के बीच लगातार ये लड़ाकू विमान उड़ान भर कर दिन रात गश्त कर रहे हैं।**

By Dhyanaendra Singh

नई दिल्ली: दोनों देशों के तनाव के बीच पूर्वी लद्दाख में भारत पूरी तरह से किसी भी स्थिति से निपटने के लिए तैयार है। लद्दाख सेक्टर में इंडियन आर्मी और वायुसेना दिन रात दुश्मनों पर चौकस नजर रखे हुए हैं। दोनों सेनाएं विपरीत चीनी सेना के खिलाफ संयुक्त रूप से युद्ध लड़ने की तैयारी कर रही हैं।

लेह हवाई क्षेत्र में भारतीय वायुसेना ने C-17s, Ilyushin-76s और C-130J सुपर हरक्यूलिस विमान तैनात कर रखे हैं। दोनों देशों के तनाव के बीच लगातार ये लड़ाकू विमान उड़ान भर कर दिन रात गश्त कर रहे हैं। तैनात सैनिकों के लिए राशन आपूर्ति भी कर रहे हैं।

लद्दाख क्षेत्र में तैनात एक वरिष्ठ वायुसेना कमांडर ने समाचार एजेंसी एनआइ से बात करते हुए कहा कि वायुसेना मुख्यालय द्वारा साफ निर्देश दिए गए हैं कि सेना और अन्य सुरक्षा बलों द्वारा जो भी आवश्यकताएं हैं वो पूरी की जाएंगी।

फार्वर्ड एरिया में तैनात सेना के एक अधिकारी ने कहा कि इन दिनों रक्षा कर्मचारियों के प्रमुख जनरल बिपिन रावत और दोनों सेवाओं के प्रमुख अक्सर चर्चा करते हैं और चीनी सेना के खिलाफ कार्रवाई की योजना बनाते हैं, जो क्षेत्र स्तर पर भी मदद कर रही है। दो सेनाएं संयुक्त रूप से काम कर रही हैं।

समाचार एजेंसी एनआइ के अनुसार एलएसी के पास सेना के टैंक युद्धाभ्यास के लिए पहुंचे हुए हैं। इसके साथ ही वहाँ वायु सेना के चिनूक और Mi-17V5s हेलीकॉप्टरों को एक उन्नत लैंडिंग ग्राउंड (ALG) की ओर लगातार उड़ान भर रहे हैं।

हेलिकॉप्टरों की लिफ्ट क्षमता के लिए धन्यवाद देते हुए 14 कोर के चीफ ऑफ स्टाफ मेजर जनरल अरविंद कपूर ने समाचार एजेंसी एनआइ को बताया कि हम कंटेनर के निवास स्थान को ऊपर उठाने और स्थानांतरित करने की



स्थिति में हैं। इसके साथ ही चिनूक और अपाचे हेलीकॉप्टर सहित भारतीय वायुसेना के नए अधिग्रहण भी चीन के साथ चल रहे संघर्ष में महत्वपूर्ण भूमिका निभा रहे हैं।

<https://www.jagran.com/news/national-amid-conflict-with-china-indian-army-and-air-force-prepare-to-fight-wars-jointly-20833754.html>

live**mint**

Mon, 05 Oct 2020

India, China to hold talks on defusing LAC tensions next week

By Elizabeth Roche

- ***The composition of the Indian delegation for the next round of talks could remain the same as that of 21 September when the two sides met at Moldo on the Chinese side of the Line of Actual Control (LAC)***

Senior military commanders of India and China are expected to meet next on 12 October in an effort to strengthen a temporary truce and chalk out steps to defuse protracted tensions along their heavily militarized border.

The composition of the Indian delegation for the next round of talks could remain the same as that of 21 September when the two sides met at Moldo on the Chinese side of the Line of Actual Control (LAC). The Indian delegation was led by Lt Gen. Harinder Singh who heads the Leh-based 14 Corps that oversees security of the Ladakh sector. The delegation also comprised Lt Gen. P.G.K. Menon who is expected to succeed Singh on 15 October. For the first time, the last round of talks included a senior diplomat, Naveen Srivastava, who is in charge of the China desk in the foreign ministry.



The composition of the Indian delegation for the talks on 10 October could remain the same as that of 21 September. (PTI)

The 21 September talks yielded a joint statement—the first since the two delegations began the negotiations in June to end the border crisis that started in May when India detected multiple Chinese intrusions into Ladakh.

Key among the agreements reached in the last round of talks was that the two sides would “strengthen communication on the ground” and take steps “to avoid misunderstandings and misjudgements” leading to an aggravation of the situation on the ground.

While exchanging “candid” and “in-depth” views “on stabilizing the situation along the LAC in the India-China border areas”, the two delegations also agreed to “stop sending more troops to the frontline, refrain from unilaterally changing the situation on the ground, and avoid taking any actions that may complicate the situation,” the joint statement said.

The 21 September talks between the two delegations had “spoken of early and complete disengagement and de-escalation,” said Srikanth Kondapalli, a professor of Chinese Studies at Jawaharlal Nehru University. The two delegations could look at steps to ensure there were no local level skirmishes that could in turn impact broader bilateral ties, he said. Kondapalli also pointed to Chinese ambassador to India Sun Weidong’s comments at an online event ahead of China’s national day on 1 October which had seemed conciliatory in nature. “I suspect there will be hard bargaining by both sides (at the 12 October) meeting,” he said. “Winter is a common enemy and they may come up with some arrangement that is satisfactory to both sides,” he said when asked whether the upcoming meeting could lead to a partial pull-back of troops by both sides.

India and China had previously worked out some steps to disengage troops, said to be approximately numbering 100,000 on both sides of the border. But the initial plans ran aground after a violent clash between Indian and Chinese soldiers in Galwan on 15 June that resulted in the death of 20 Indian and an unknown number of Chinese soldiers. Tensions shot up again at the end of August with India securing vantage positions on the south bank of the Pangong Tso lake in Ladakh. Soldiers of the two sides fired warning shots in the air in two separate incidents in early September – the first such instances in 45 years – adding to the uncertainties.

However a meeting between the two foreign ministers S Jaishankar of India and Wang Yi of China seemed to set the stage for an uneasy calm that currently prevails. Indian Air Force chief Rakesh Kumar Singh Bhadauria last week described the situation as “not war, not peace.”

<https://www.livemint.com/news/india/india-china-to-hold-talks-on-defusing-lac-tensions-next-week-11601860572096.html>

साक्षी समाचार

Mon, 05 Oct 2020

Indian Air Force Day 2020: वायु सेना की स्थापना से लेकर राफेल की एंट्री, जानिए गौरवशाली इतिहास

- आठ अक्टूबर को भारतीय वायु सेना दिवस
- भारतीय वायु सेना की स्थापना 8 अक्टूबर 1932 को की गई थी
- इस साल वायुसेना 88वीं वर्षगांठ मनाएगी, हिंडन एयरबेस पर वार्षिक परेड

नई दिल्ली: 'नभ स्पृशं दीप्तम' ध्येय वाक्य के साथ भारतीय वायु सेना राष्ट्र की सुरक्षा के लिए हमेशा तत्पर रही है। सुरक्षा, चौकसी और युद्ध तीनों ही मोर्चे पर वायु सेना ने साबित किया है कि वह किसी भी परिस्थिति से निपटने के लिए तैयार रहती है। हर साल आठ अक्टूबर को वायु सेना दिवस मनाया जाता है। इस बार यह दिन और भी खास होगा, क्योंकि पहली बार वायु सेना दिवस की परेड में दुश्मनों की नौद उड़ाने वाले राफेल विमान शामिल होगा।

हर साल वायु सेना दिवस पर देशभर में कई कार्यक्रम आयोजित किए जाते हैं। इस साल वायुसेना 88वीं वर्षगांठ मनाएगी। गाजियाबाद में हिंडन एयरबेस पर वार्षिक परेड में विभिन्न विमानों को प्रदर्शित किया जाएगा। इस बार आकर्षण का मुख्य केंद्र राफेल विमान होगा। आइए जानते हैं भारतीय वायु सेना से जुड़ी कुछ अहम बातें, जिसे हर किसी को जरूर जानना चाहिए।

कब हुई थी वायु सेना की स्थापना

भारतीय वायु सेना की स्थापना 8 अक्टूबर 1932 को की गई थी। ब्रिटिश काल में आजादी से पूर्व इसे रॉयल इंडियन एयरफोर्स के नाम से जाना जाता था। आजादी के बाद इसमें से रॉयल शब्द हटाकर सिर्फ इंडियन एयरफोर्स कर दिया गया। भारतीय वायु सेना ने द्वितीय विश्वयुद्ध के दौरान भी अहम भूमिका निभाई थी। वायु सेना ने अब तक कई युद्धों में निर्णय भूमिका निभाई है।

भारतीय वायु सेना की कमानें

भारतीय वायु सेना में पांच कमानें हैं। पश्चिमी कमान, जिसका मुख्यालय दिल्ली में है, प्रयागराज में केंद्रीय कमान, शिलांग में पूर्वी कमान, जोधपुर में दक्षिण-पश्चिमी कमान और तिरुवनंतपुरम में दक्षिणी कमान है। ये पांचों कमानें



डिजाइन इमेज

अपने प्रशासनिक विभागों की सहायता से लगभग 20 हेलिकॉप्टर इकाइयों, 45 स्थायी-विंग स्क्वाड्रन और अन्य कई भूमि से हवा में मार करने वाली मिसाइल स्क्वाड्रनों की गतिविधियों पर नियंत्रण रखती हैं। लगभग 1,700 वायुयानों की देखभाल के लिए लगभग 1,20,000 कर्मी लगे हुए हैं।

वायु सेना से जुड़े अधिकारी

भारत के राष्ट्रपति भारतीय वायु सेना के कमांडर इन चीफ के रूप में कार्य करते हैं। वायु सेनाध्यक्ष, एयर चीफ मार्शल (ACM), एक चार सितारा कमांडर है और वायु सेना का नेतृत्व करते हैं। भारतीय वायु सेना में किसी भी समय एक से अधिक एयर चीफ मार्शल सेवा में कभी नहीं होते।

वायु सेना के पहले चीफ, एयर मार्शल

आजादी से पहले वायु सेना पर आर्मी का नियंत्रण होता था। एयर फोर्स को आर्मी से 'आजाद' करने का श्रेय भारतीय वायु सेना के पहले कमांडर इन चीफ, एयर मार्शल सर थॉमस डब्ल्यू एल्महर्स्ट को जाता है। आजादी के बाद सर थॉमस डब्ल्यू एल्महर्स्ट को भारतीय वायु सेना का पहला चीफ, एयर मार्शल बनाया गया था। वह 15 अगस्त 1947 से 22 फरवरी 1950 तक इस पद पर बने रहे थे।

गीता से लिया गया है आदर्श वाक्य

सभी सेना का अपना एक आदर्श वाक्य है। भारतीय वायुसेना का आदर्श वाक्य है- 'नभः स्पृशं दीप्तम्'। भारतीय वायु सेना का आदर्श वाक्य गीता के ग्यारहवें अध्याय से लिया गया है और यह महाभारत के महायुद्ध के दौरान कुरुक्षेत्र की युद्धभूमि में भगवान श्री कृष्ण द्वारा अर्जुन को दिए गए उपदेश का एक अंश है।

राफेल विमान पहली बार परेड में होगा शामिल

भारतीय वायु सेना के एक अधिकारी ने शनिवार को बताया कि हाल में शामिल राफेल विमान आठ अक्टूबर को वायु सेना दिवस की परेड में हिस्सा लेगा। वर्ष 1932 में भारतीय वायु सेना की स्थापना के उपलक्ष्य में वायु सेना दिवस मनाया जाता है। इस साल वायुसेना 88वीं वर्षगांठ मनाएगी। गाजियाबाद में हिंडन एयरबेस पर वार्षिक परेड में विभिन्न विमानों को प्रदर्शित किया जाएगा।

वायु सेना के एक अधिकारी ने बताया, “आठ अक्टूबर को वायु सेना दिवस की परेड में दूसरे विमानों के साथ ही राफेल विमान भी हिस्सा लेगा।” वायु सेना ने एक ट्वीट में कहा, “राफेल 4.5 पीढ़ी का लड़ाकू विमान है। दोहरे इंजन ओम्नीरोल के साथ हवाई टोही, सटीकता से वार, जहाज रोधी और परमाणु संपन्न, हथियारों से लैस है।” वायु सेना में औपचारिक रूप से 10 सितंबर को पांच राफेल लड़ाकू विमान शामिल किए गए थे।

<https://hindi.sakshi.com/news/guest-column/indian-air-force-day-2020-know-about-indian-air-force-history-and-importance-94566>

अमेरिका, रूस, जापान, ऑस्ट्रेलिया... दुश्मन बने चीन के लिए दोस्तों का साथ जुटा रही भारतीय नौसेना

Indian naval exercise with other countries: पिछले तीन महीनों में भारतीय नौसेना (Indian Navy) जापान, अमेरिका, ऑस्ट्रेलिया और रूस की नौसेनाओं के साथ युद्धाभ्यास कर चुकी है।

By Deepak Verma

चीन ने भारत के सामने जो चुनौती पेश की है, भारतीय नौसेना उसके लिए पूरी तरह तैयार है। पूर्वी लद्दाख में सर्वािलांस के लिए P-8I विमान भेजने से लेकर हिंद महासागर क्षेत्र, अरब सागर में भी नेवी के इंतजाम पुख्ता हैं। रणनीतिक रूप से महत्वपूर्ण पोतों और रूट्स पर जंगी जहाज निगरानी रख रहे हैं। इन सबके बीच भारत ने बाकी देशों की नौसेनाओं से भी अपने संबंध मजबूत किए हैं। ऐसे वक्त में जब चीन दुश्मनी पर आमादा है, भारत को दोस्तों का साथ चाहिए। जून महीने के बाद से नौसेना पांच अलग-अलग देशों की नौसेनाओं के साथ युद्धाभ्यास कर चुकी है। ये महज अभ्यास नहीं, पीपुल्स लिबरेशन आर्मी नेवी (PLA Navy) को साफ संकेत है कि समुद्री इलाकों में उसकी कोई भी गलती बहुत भारी पड़ सकती है।

बांग्लादेश संग युद्धाभ्यास कर रही नौसेना

भारतीय नौसेना ने बांग्लादेश की नौसेना के साथ मिलकर बंगाल की खाड़ी में अभ्यास किया है। दोनों देशों के बीच संयुक्त अभ्यास को 'बोंगोसागर' नाम दिया गया है। इस अभ्यास में भारतीय नौसेना के आईएनएस किलतन, आईएनएस खुखरी जैसे जहाज शामिल हुए।

हिंद महासागर में जुटे थे भारत-ऑस्ट्रेलिया के जंगी जहाज

सितंबर के आखिरी हफ्ते में भारत और ऑस्ट्रेलिया की नौसेनाओं ने हिंद महासागर में अभ्यास किया गया था। इस दौरान कई एडवांसड सरफेस और एंटी-एयर एक्सरसाइज को अंजाम दिया गया। भारत मित्र देशों के साथ पासेज एक्सरसाइज (PASSEX) आयोजित करता है।

तीन दिन तक चली JIMEX 2020

भारत और जापान की नौसेनाओं ने उत्तरी अरब सागर में 26-28 सितंबर तक अभ्यास किया। यह दोनों देशों के बीच हुए ऐतिहासिक समझौते के बाद पहला अभ्यास था। भारत और जापान ने लॉजिस्टिक्स सपोर्ट के लिए एक-दूसरे की सेनाओं को अपने-अपने बेस एक्सेस करने का समझौता किया है। भारत और जापान के बीच सैन्य अभ्यास को JIMEX कहते हैं।

जब बंगाल की खाड़ी में उतरे रूसी जहाज

भारत और रूस के जंगी जहाज सितंबर महीने की शुरुआत में दो दिन के लिए अभ्यास में जुटे रहे। बंगाल की खाड़ी में हुई इस एक्सरसाइज में कई तरह की एंटी-एयरक्राफ्ट ड्रिल्स, फायरिंग एक्सरसाइज और हेलिकॉप्टर ऑपरेशंस का अभ्यास किया गया। नौसेना की तरफ से इसमें गाइडेड मिसाइल डिस्ट्रॉयर रणविजय, स्वदेशी फ्रिजेट सहायि और फ्लीट टैंकर शक्ति के अलावा कई हेलिकॉप्टर्स शरीक हुए थे।



अमेरिका, रूस, जापान, ऑस्ट्रेलिया... दुश्मन बने चीन के लिए दोस्तों का साथ जुटा रही भारतीय नौसेना

अमेरिका के साथ लगातार हो रहा अभ्यास

चीन के खिलाफ भारत और चीन की नौसेनाएं एक ही रास्ते पर हैं। दोनों देशों के बीच, एक-दूसरे के बेच एकसेस करना का समझौता 2016 में ही हो चुका है। अप्रैल-मई में जब चीन ने पूर्वी लद्दाख में अपनी कारस्तानी शुरू की तो नेवी ने अमेरिकी नौसेना को अभ्यास के लिए बुलाया। जुलाई में अंडमान-निकोबार आइलैंड्स में अभ्यास हुआ। इसके बाद भी कई मौके पर अमेरिकी नौसेना के जहाज भारतीय नौसेना के जहाजों के साथ रहे। हाल ही में अमेरिका के P-8 पोसाइडन एयरक्राफ्ट ने पोर्ट ब्लेयर पर ईंधन भराया।

<https://navbharattimes.indiatimes.com/india/indian-navy-conducted-exercises-with-us-japan-australia-and-bangladesh-navies-to-signal-china/articleshow/78474624.cms>



Mon, 05 Oct 2020

INS Vikrant to be tested in waters this month, sea trials in December

The Harbour Trials of the IAC was completed in August this year. Sources said the Basin By Rajesh Abraham

Kochi: INS Vikrant, India's first Indigenous Aircraft Carrier (IAC), will undergo the Basin Trials, or testing in waters with its systems and equipment fitted, this month. Considered an important phase for the under-construction aircraft carrier, the Basin Trials were earlier planned for September but the Covid-19 pandemic and the subsequent lockdown slowed the pace of work.

If everything goes according to plan, the sea trials of the IAC will be held in December, sources said. The Indian Naval Ship Vikrant is expected to be inducted into the Indian Navy by the end of 2021. Chief of Naval Staff (CNS) Admiral Karambir Singh, during his visit to the Southern Naval Command headquarters in Kochi from September 14 to 18, had visited the Cochin Shipyard— along with other senior officers— to review the progress of the Indigenous Aircraft carrier, IAC-1. At an “advanced stage of construction”, the IAC-1 (technically, it can be called the INS Vikrant only after its induction into the Indian Navy) is the largest and most prestigious ship building project of the Indian Navy.



This handout photograph taken and released by The Indian Navy shows aircraft carrier INS Vikrant - India's largest indigenously built warship. (Photo | AFP)

When contacted for comments, the Navy spokesperson neither denied nor confirmed the development. The Harbour Trials of the IAC was completed in August this year. Sources said the Basin Trials were being held for proving the propulsion (move), transmission (electricity) and shafting systems. This can be tested only in water.

Major structural and outfitting work on the IAC, including major milestone activities like the starting of the Main Propulsion machinery and the trials of Power Generation machinery, was completed in February. It remains unclear if the theft of computer hardware components on board the IAC last September had delayed the progress of work. Two persons — one from Bihar and another from Rajasthan — have since been arrested for the theft. The National Investigation Agency sleuths have also recovered 19 of the 20 computer components stolen from the ship.

IAC to weigh 40,000 tonnes

The INS Vikrant will weigh around 40,000 tonnes and its fighters (MiG-29K) will operate on Short Take-Off But Arrested Recovery mechanism similar to the current carrier, INS Vikramaditya, with an angular ski-jump. Helicopters will be part of its aviation complement.

<https://www.newindianexpress.com/states/kerala/2020/oct/05/ins-vikrant-to-be-tested-in-waters-this-month-sea-trials-in-december-2205850.html>

**INDIA
TODAY**

Mon, 05 Oct 2020

Massive deployment at China's airbases, aerial exercises underway

There is massive deployment at the airbases belonging to China. Aerial exercises are also underway at the airbases

By Col Vinayak Bhat (Retd)

New Delhi: The Kashgar airbase in China's Xinjiang region, barely 475 km from Karakoram Pass, has seen hectic activity recently. India Today OSINT team had earlier analysed Chinese deployment of H-6 strategic bombers at the airport.

The dual use Kashgar airport has been in the news since the beginning of the Indo-China standoff. The first two H-6 bombers observed here in June were part of a non-permanent deployment with an eye on Indian forces in Eastern Ladakh. Latest satellite images of Kashgar airport reveal that the missiles loaded on the first two H-6s were KD-63 missiles. These are air-launched land-attack cruise missiles, providing precision strike capabilities.



The dual use Kashgar airport has been in the news since the beginning of the Indo-China standoff. (Photo via Chinese Internet)



(Photo: India Today)

India Today had also reported the arrival of another six H-6 bombers at Kashgar. However, recent satellite images suggest that the People's Liberation Army Air Force (PLAAF) has increased the strength further and made new deployments for longer duration and in more forward positions than previously known.



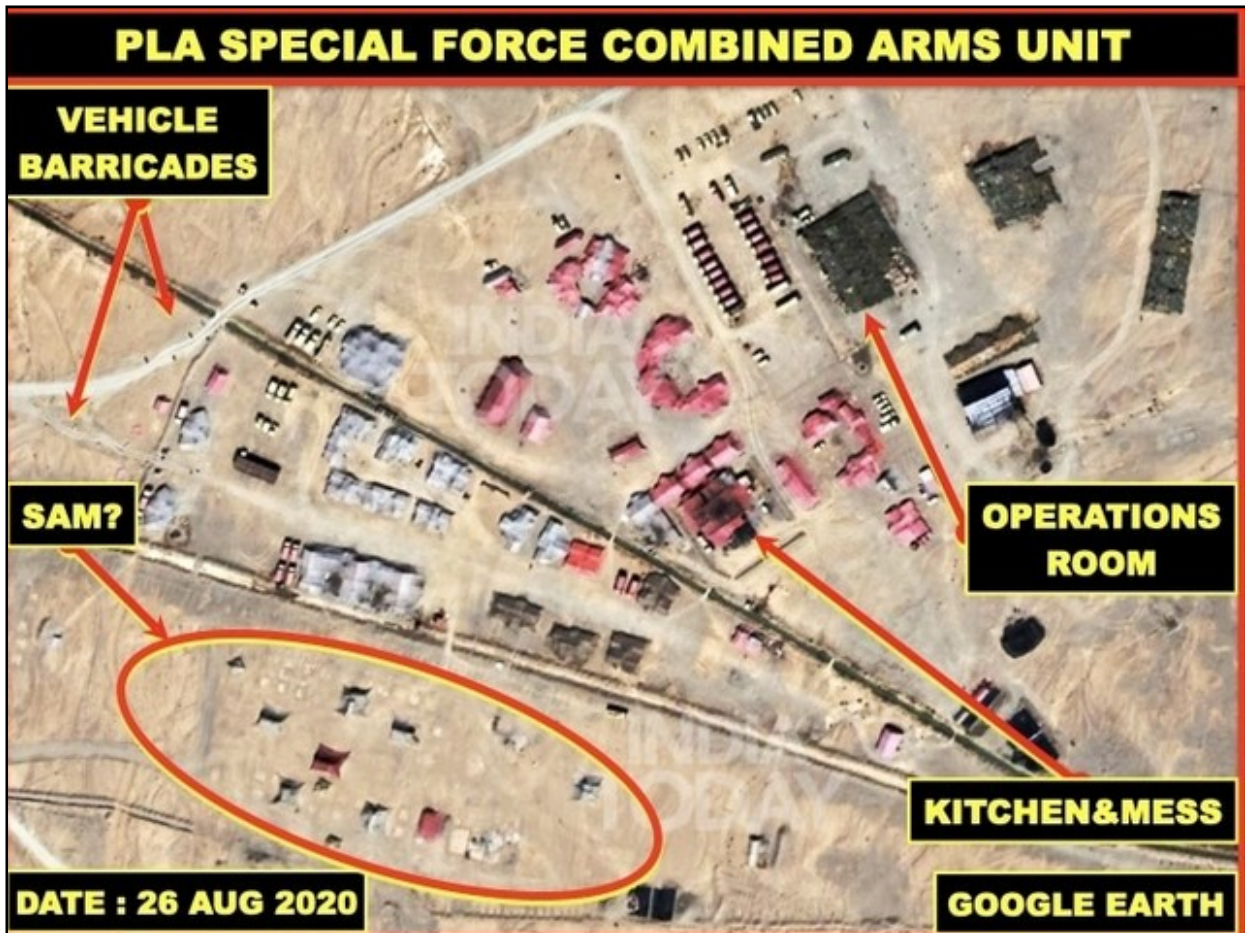
(Photo: India Today)

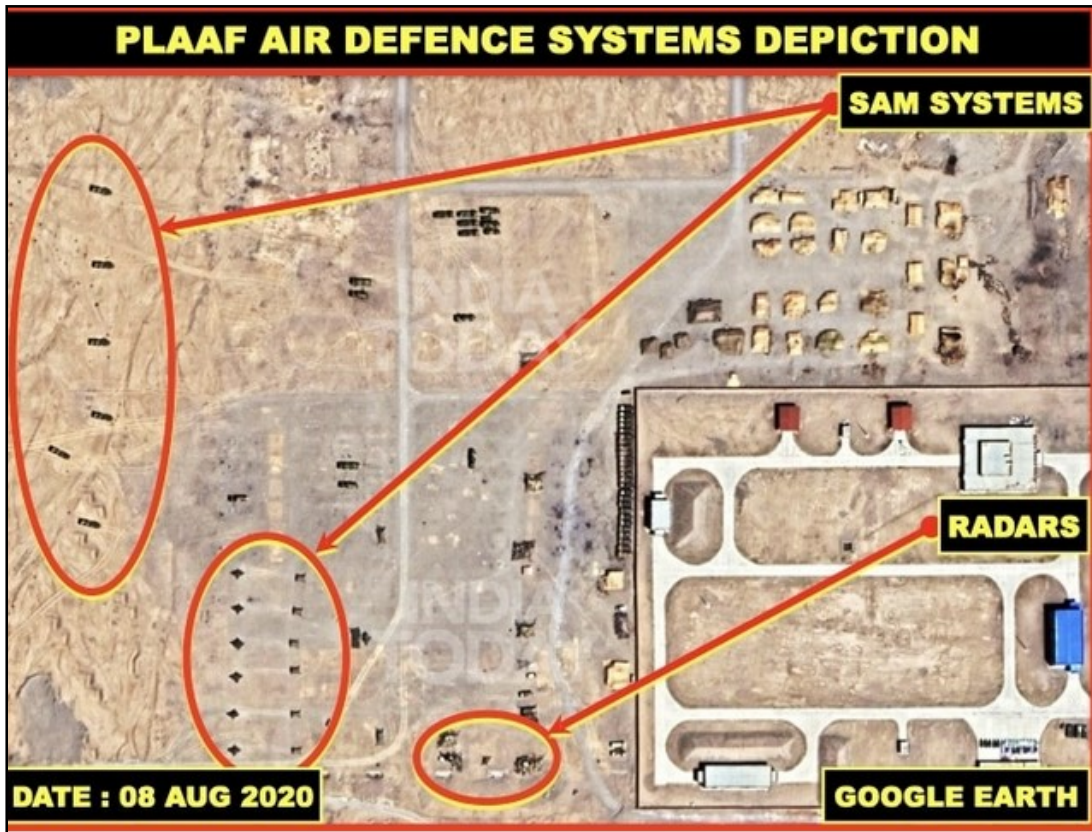


(Photo: India Today)



Photo: India Today)





(Photo: India Today)

The new deployments come in the wake of increasing tensions and agreements to stop inducting additional troops in Western Theater Command (WTC). The OSINT team analyses latest high-resolution satellite images to understand the possible air assault strategy behind PLA activities in WTC.

A new deployment of at least four and possibly eight H-6s has been noticed at Golmud airbase in central China, which again is a dual use airbase. Latest satellite images suggest that H-6H bombers seen at Golmud airbase were not armed as of August 26.

However, both the deployments at Kashgar and Golmud are possibly from the PLAAF's 108 Regiment under 36 Air Division located at Wugong. The Wugong deployment is known to specifically cater to emergencies that may arise keeping India in mind.

PLAAF's latest acquisition the Y-20 strategic transporter was earlier observed parked at the western end of Kashgar runway in June. This temporary deployment, reported by India Today, was assessed to be a trial for use in extreme weather conditions, possibly testing the load-carrying capacity.

The deployment of Y-20 strategic transporters was observed for more than 15 days from August 14 to September 3 at Golmud airbase.

The different locations the Y-20 aircraft were observed on satellite images during this deployment strongly suggest that they were trialling various types of loads prepared especially for an air assault, including artillery, air defence and infantry.

Heli assault

The high-resolution satellite images show a deployment of 18 helicopters parked in a Russian-style temporary heliport. The temporary heliport prepared at the eastern end of Golmud runway also has a small helistrap created in 09/27 direction.

A special forces combined arms unit with its complete paraphernalia is seen practicing deployment in an occupied environment with proper entry system complete with vehicle barricades on the road.

The unit has a large operations room, storage, cookhouses and living tents. A large number of support vehicles are seen parked nearby. The complete facility seen on satellite imagery indicates possible quick deployment practice, prepared as per helicopter loads.

The equipment, depicting artillery and air defence systems, with possibly Special Forces or infantry units, are possibly prepared as per Y-20 strategic transporter loads. A temporary kerbside pump is prepared for fuel oil and lubricants (FOL) distribution. There are at least five pumps, suggesting it will be a fast distribution system that can be connected with any FOL depot in minutes.

All these imply that China might be practising for a possible brigade-size air assault deep inside Indian territory to capture vantage areas to facilitate PLA advance. The brigade-sized force as observed on satellite imagery indicates preparation for the occupation of land much beyond the Chinese claim line.

<https://www.indiatoday.in/india/story/massive-deployment-at-china-s-airbases-aerial-exercises-underway-1728256-2020-10-04>

Indian scientists find method for early diagnosis of peptic ulcer-causing bacteria

Scientists at the S. N. Bose National Centre for Basic Sciences in Kolkata have found a method for early diagnosis of a peptic ulcer-causing bacteria with the help of a biomarker called 'BreathPrint' found in the breath

New Delhi: Scientists at the S. N. Bose National Centre for Basic Sciences in Kolkata have found a method for early diagnosis of a peptic ulcer-causing bacteria with the help of a biomarker called 'BreathPrint' found in the breath, the Department of Science and Technology (DST) said on Saturday.

The team of researchers at the SNBNC, an institute under the DST, recently spotted the new biomarker for diagnosis of helicobacter pylori in semi-heavy water (HDO) in exhaled human breath.

The team used the study of different water molecular species in human breath, also called 'Breathomics' method, to explore different water isotopes in human exhaled breath, according to a DST statement.

The stomach infection caused by Helicobacter pylori may turn serious if it is not treated early. It is usually diagnosed by the traditional and painfully invasive endoscopy and biopsy tests which are not suitable for early diagnosis and follow up.

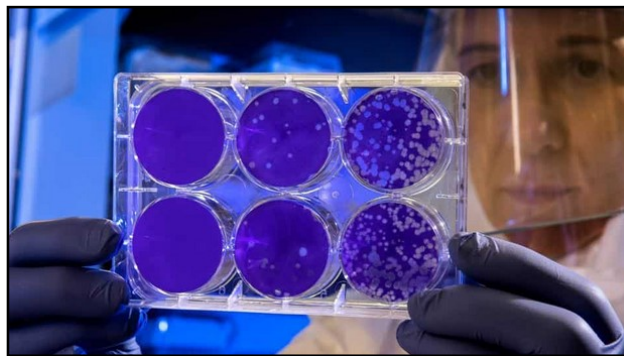
"Our gastrointestinal (GI) track plays a crucial role in water metabolism in the body. Water exists in nature as four isotopes.

"It is believed that any kind of impaired or unusual water absorption in our GI track may be associated with various gastric disorders or abnormalities like ulcer, gastritis, erosions and inflammation. But, so far, there has been no clear experimental evidence to support this," the statement said.

Experiments by the team has shown direct evidence of unique isotope-specific water metabolism in the human body in response to the individual's water intake habit. They have shown that different isotopes of exhaled water vapour are strongly linked with various gastric disorders during the process of human respiration, it said.

This work, funded by the Technical Research Centre (TRC) and supported by the DST, was recently published in the journal 'Analytical Chemistry' of the American Chemical Society (ACS).

The researchers have demonstrated that the isotopic signatures of unusual water absorption in the GI tract can trace the onset of various abnormalities.



The team used the study of different water molecular species in human breath, also called 'Breathomics' method, to explore different water isotopes in human exhaled breath. (Representational Image) (Unsplash)

The team has already developed a patented ‘Pyro-Breath’ device for diagnosis of various gastric disorders and *Helicobacter pylori* infection, which are under the process of technology transfer, it added.

(This story has been published from a wire agency feed without modifications to the text.)

<https://www.hindustantimes.com/science/indian-scientists-find-method-for-early-diagnosis-of-peptic-ulcer-causing-bacteria/story-uiK5Zv814JJ29OSI3Odgao.html>



Mon, 05 Oct 2020

How Do Quasiparticles Die? A Quantum Physics Whodunit

What causes quasiparticle death?

In large systems of interacting particles in quantum mechanics, an intriguing phenomenon often emerges: groups of particles begin to behave like single particles. Physicists refer to such groups of particles as *quasiparticles*.

Understanding the properties of quasiparticles may be key to comprehending, and eventually controlling, technologically important quantum effects like superconductivity and superfluidity.

Unfortunately, quasiparticles are only useful while they live. It is thus particularly unfortunate that many quasiparticles die young, lasting far, far less than a second.

The authors of a new Monash University-led study published recently in *Physical Review Letters* investigate the crucial question: how do quasiparticles die?

Beyond the usual suspect—quasiparticle decay into lower energy states—the authors identify a new culprit: *many-body dephasing*.

Many body dephasing

Many-body dephasing is the disordering of the constituent particles in the quasiparticle that occurs naturally over time.

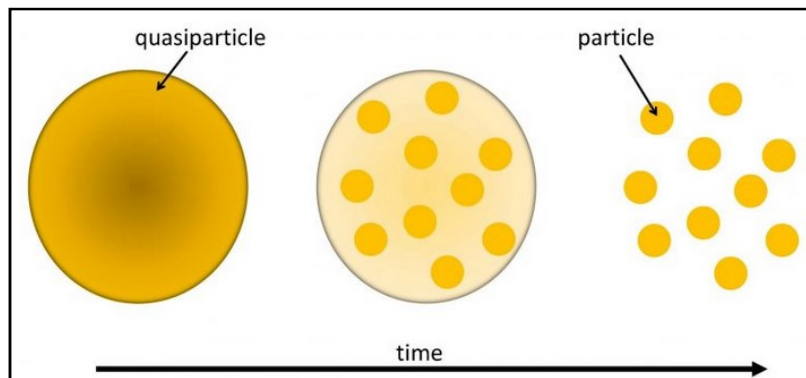
As the disorder increases, the quasiparticle’s resemblance to a single particle fades. Eventually, the inescapable effect of many-body dephasing kills the quasiparticle.

Far from a negligible effect, the authors demonstrate that many-body dephasing can even dominate over other forms of quasiparticle death.

This is shown through investigations of a particularly ‘clean’ quasiparticle—an impurity in an ultracold atomic gas—where the authors find strong evidence of many-body dephasing in past experimental results.

The authors focus on the case where the ultracold atomic gas is a Fermi sea. An impurity in a Fermi sea gives rise to a quasiparticle known as the *repulsive Fermi polaron*.

The repulsive Fermi polaron is a highly complicated quasiparticle and has a history of eluding both experimental and theoretical studies.



Over time, many-body dephasing kills the quasiparticle’s resemblance to a single particle. Credit: FLEET

Through extensive simulations and new theory, the authors show that an established experimental protocol—Rabi oscillations between impurity spin states—exhibits the effects of many-body dephasing in the repulsive Fermi polaron.

These previously unrecognized results provide strong evidence that many-body dephasing is fundamental to the nature of quasiparticles.

The study

Reference:

“Quasiparticle Lifetime of the Repulsive Fermi Polaron” by Haydn S. Adlong, Weizhe Edward Liu, Francesco Scazza, Matteo Zaccanti, Nelson Darkwah Oppong, Simon Fölling, Meera M. Parish and Jesper Levinsen, 24 September 2020, *Physical Review Letters*.

[DOI: 10.1103/PhysRevLett.125.133401](https://doi.org/10.1103/PhysRevLett.125.133401)

The study was led by the School of Physics and Astronomy, Monash University, with co-authors from the Istituto Nazionale di Ottica del Consiglio Nazionale delle Ricerche in Florence, Italy, and Ludwig-Maximilians-Universität in Munich, Germany.

As well as support from the Australian Research Council (Centre of Excellence and Future Fellowship programs), the authors acknowledge support from the International Max Planck Research School for Quantum Science and Technology, the European Research Council, the EU’s Horizon 2020 program, and Fondazione Cassa di Risparmio di Firenze.

Quasiparticles and cold-atom physics at FLEET

Haydn Adlong conducted the study in Dr. Jesper Levinsen and A/Prof Meera Parish’s group at Monash University, which investigates the behavior of large groups of interacting quantum particles, which can exhibit exotic behavior, such as superfluidity where they flow without encountering resistance.

This work expands our fundamental knowledge of quantum physics in systems ranging from cold atomic gases to solid-state semiconductors, and has the potential to underpin a new generation of near-zero resistance, ultra-low energy electronic devices, sought by FLEET.

Within FLEET, the study of ultracold atoms out of equilibrium falls under Research Theme 3.

<https://scitechdaily.com/how-do-quasiparticles-die-a-quantum-physics-whodunit/>

Govt plans to administer covid-19 vaccines to 20-25 crore Indians by July

By Leroy Leo

- *The Centre, along with states, is also preparing a list of priority population groups, especially frontline health workers, who would receive immunisation shots.*

New Delhi: The government plans to administer around 40-50 crore covid-19 vaccines to 20-25 crore Indians by July. The Centre, along with states, is also preparing a list of priority population groups, especially frontline health workers, who would receive immunisation shots, Union health minister Harsh Vardhan said on Sunday.

“The list of frontline healthcare workers includes government sector as well as private sector doctors, nurses, paramedics, sanitary staff, Asha workers, surveillance officers and many other categories of frontline workers who are involved in facing, testing and treatment of patients,” the minister said in his weekly ‘Sunday Samvad’ session.

The Centre has also asked the states to come up with a list of cold chain facilities for storage and distribution of vaccine doses down to the block level, he said.

“Our rough estimate will be to receive and utilise 400-500 million doses, covering approximately 20-25 crore people by July 2021. All this is still under various stages of finalisation,” he said, adding that the government is already looking at immunity data for covid-19 disease.

Currently, three vaccines are undergoing human trials in India, with Serum Institute of India conducting a seamless phase 2/3 trial of the candidate jointly developed by the University of Oxford and AstraZeneca plc. The other two vaccines, by Zydus Cadila and another jointly by Bharat Biotech International and Indian Council of Medical Research’s National Institute of Virology, are indigenously developed vaccines that are in a seamless phase 1/2 trial.

Apart from these three, Serum Institute is also expected to start the phase 2/3 trials of Novavax’s vaccine candidate in the second half of this month, while there are about half a dozen more indigenous vaccine in pre-clinical stage.

The Indian government is also keeping an eye on talks of the Russian Direct Investment Fund (RDIF) and Gamaleya Research Institute of Epidemiology for mass manufacturing of their Sputnik V vaccine by Indian companies. The government has earlier said that they would facilitate phase 3 trials in India.

Harsh Vardhan on Sunday said that the government is open to introducing foreign-developed covid-19 vaccine in India, provided they prove they are safe and efficacious for the Indian population.

“All vaccines that are shown to be safe, immunogenic and efficacious in clinical trials outside India need to undergo bridging studies to prove their safety and immunogenicity in the Indian population as well. Such studies are conducted with much smaller sample size and end quickly,” he said.



The drug maker aims to initiate phase I clinical trial of its COVID-19 vaccine in the United Kingdom by the end of this year (REUTERS)

Serum Institute's clinical trial in India, which is a bridging study, is enrolling only around 1,600 patients as compared to around 5,000 and above that AstraZeneca is enrolling each in countries like the UK, US and Brazil.

<https://www.livemint.com/news/india/govt-plans-to-administer-covid-19-vaccines-to-20-25-crore-indians-by-july-11601804979818.html>

Business Standard

Mon, 05 Oct 2020

Indigenous players on a slow and steady coronavirus vaccine race

Smaller players are bullish on playing crucial role in nation's vaccine infrastructure

While the leading vaccine candidates are in advanced stages of clinical trials, a handful of other indigenous players too are progressing slowly albeit steadily. Not only do these players feel that there would be a room for multiple Covid-19 vaccines in the market, but they may also play the crucial role in scaling up national production of the successful candidate.

The country's largest veterinary vaccine maker Hester Biosciences, for example, is foraying into the animal vaccine space with its Covid-19 vaccine candidate that it is developing in collaboration with the Indian Institute of Technology (IIT) Guwahati. The vaccine will be based on an avian virus based vector platform (avian paramyxovirus). Rajiv Gandhi, CEO and MD, Hester Biosciences said that they have taken up space for a laboratory at IIT Guwahati.



The animal or pre-clinical trials are yet to begin, but Gandhi feels that it is important to get things right. "There would be room for multiple vaccines in the market. Its important to do the job correctly," he said.

Similarly, a team of researchers led by IIT Bombay alumnus Dr. Prabuddha Kundu at Premas Biotech is developing a triple antigen vaccine and have successfully identified three major antigens as a recombinant novel coronavirus vaccine candidate.

According to Kundu, unlike single-protein vaccines currently under trials across the world, Premas Biotech has adopted a three-pronged approach to develop multi subunit vaccine.

The triple-antigen Covid-19 vaccine candidate, PRAK-03202, has produced neutralizing immune response in animal studies with Premas Biotech now being in talks with regulatory authorities for next phase.

Its animal study of the SARS-CoV-2 vaccine candidate consisted of 50 mice, divided into 10 cohorts dosed with 5, 10 and 20 micrograms of PRAK-03202. The vaccine candidate was generally well tolerated and safe at all doses, with no adverse events reported. The vaccine candidate was safe even at higher doses and generated a robust immune response against all three SARS-Cov2 antigens, SEM.

The company, which has its specialisation in protein therapeutics, is however, willing to go slow with the trials since it wants to ensure the efficacy of the vaccine candidate.

"We are in talks with regulatory to discuss phase one trials. We have put up the case to them on not only how our vaccine can be scaled up very quickly since large scale manufacturing of yeast is easily possible, it also has triple antigen which have already seen produce antibodies in mice against these three antigens. In next couple of months we should be conducting phase one. We are deliberating on whether we should do phase one and two or first conduct a good phase one and then move to later phases. We wanted to make sure we do it well first time rather than hurry," said Kundu.

With Premas claiming its production cycle of one week as the fastest among the world for the anticipated vaccine, the company said that it can make 20-30 million doses in a week since the system based of yeast is highly scalable.

On the other hand, Gujarat government arm Gujarat Biotechnology Research Centre (GBRC) has signed an MoU with Neuberger Supratech Reference Laboratory, Ahmedabad, a unit of Neuberger Diagnostics Private Limited - a startup in the pathlab chain segment - for developing Covid-19 recombinant vaccine and diagnostics. As part of the MoU, Neuberger Supratech has been looking for immune markers for the Covid-19 positive patients by using several of its in-house high throughput sequencing machines. The company declined to respond.

These smaller players are likely to play a key role when it comes to scaling up the manufacturing of the successful candidate. Gandhi said that his Nepal plant is operating at 25 percent capacity now, and they can easily use it to contract manufacture any candidate that emerges successful first. "We can also enhance the capacity easily without much investment. We will definitely chip in to scale up India's manufacturing of the Covid-19 vaccine," Gandhi said.

The large players have already indicated how they are re-purposing their existing capacities to make way for the Covid-19 vaccine. Some like Serum Institute of India are using the capacities for pipeline vaccines for Covid-19, while others Indian Immunologicals plan to use multi-product facilities to make the additional volumes for Covid-19.

https://www.business-standard.com/article/current-affairs/indigenous-players-on-a-slow-and-steady-covid-19-vaccine-race-120100400265_1.html

