

June
2020

समाचार पत्रों से चयित अंश Newspapers Clippings

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

Volume: 45 Issue: 146 24 June 2020



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

CONTENT

S.No.	TITLE	Page No.
DRDO News		1-2
COVID-19: DRDO's Contribution		1
1.	New 1,000-bed hospital in Delhi to be ready in next 10 days: Amit Shah	1
DRDO Technology News		2
2.	Indigenous production of fight category equipment at 45 pc, huge opportunity for MSMEs:Navy official	2
Defence News		3-22
Defence Strategic National/International		3-22
3.	Rajnath Singh goes arms shopping to Russia	3
4.	Military-level talks between India, China positive, consensus on disengagement in Ladakh: Indian Army	5
5.	Indian, Chinese militaries agree to disengage from friction points in eastern Ladakh: Sources	6
6.	India militarily stronger than China, capable of winning war in Himalayas: Report	7
7.	IAF airlifts dozens of tanks to Ladakh to beef up firepower	9
8.	India China news: Why Indian Air Force has intensified its Combat Air Patrols with fighter jets in Ladakh	10
9.	India increases tech surveillance on Ladakh LAC with Israeli Heron drones	11
10.	Army plans to place orders for more Excalibur ammunition for howitzers	12
11.	If IAF is ready for India-China Row, Why do emergency shopping?	13
12.	Equipping Indian Navy for war with focus on operational capabilities – synergy is key	15
13.	Make In India: भारतीय नौसेना के लिए 45 फीसद हथियार देश में ही तैयार हो रहे हैं	19
14.	Indian Army constructs Composite Bridge at Baghjan blowout site	20
15.	14-day quarantine waived for Army, Navy, Air Force amid India-China row, but riders apply	21
16.	HSL ties up with Turkish firm to build Fleet Support Ships	22
Science & Technology News		23-29
17.	ISRO gets Indian patent for liquid cooling and heating garment	23
18.	KIST develops eco-friendly, flame-retardant carbon plastic ideal for recycling	24
19.	Gear treated with 'forever chemicals' poses risk to firefighters	25
COVID-19 Research News		27-29
20.	French drugmaker Sanofi eyes approval of potential Covid-19 vaccine by first-half of 2021	27
21.	Oxford's COVID-19 vaccine trial in Brazil begins: Scientists say coronavirus jab may not work for older adults	28
22.	Covid-19 vaccine: AstraZeneca's pig trial shows promise with two shots	29

hindustantimes

Wed, 24 June 2020

New 1,000-bed hospital in Delhi to be ready in next 10 days: Amit Shah

Union home minister Amit Shah on Tuesday said that a 1000-bed full-fledged hospital with 250 ICU beds -- being developed by the Defence Research and Development Organisation (DRDO) and Tata Trust -- would be ready in the next 10 days for the treatment of the coronavirus disease (Covid-19) patients in Delhi

New Delhi: Union home minister Amit Shah on Tuesday said that a 1000-bed full-fledged hospital with 250 ICU beds -- being developed by the Defence Research and Development Organisation (DRDO) and Tata Trust -- would be ready in the next 10 days for the treatment of the coronavirus disease (Covid-19) patients in Delhi.

Shah made the announcement in a tweet, following up on his response to a news that Delhi chief minister Arvind Kejriwal had written to the home minister, requesting him to deploy nurses and doctors from the army and Indo-Tibetan Border Police (ITBP) at the 10,000-bed Covid care centre coming up at the Chhatarpur campus of spiritual organisation Radha Soami Satsang Beas.

In his response on Twitter, Shah said, "Dear Kejriwal ji, It has already been decided in our meeting 3 days back and MHA has assigned the work of operating the 10,000-bed COVID Care Centre at Radha Swami Beas in Delhi to ITBP. The work is in full swing and a large part of the facility will be operational by 26th Jun."

In another tweet, the home minister said, "Armed Forces personnel have been detailed for providing medical care and attention to Covid patients housed in the railway coaches in Delhi. 8,000 additional beds have already been placed at Delhi government's disposal for making Covid care centres, as per requirement."

Responding to Shah's tweet, Kejriwal thanked the home minister. "The armed forces, doctors, NGOs, central government and Delhi government - all agencies are working together for Delhi. I believe, together, we shall defeat coronavirus. Thank you for helping the Delhi government and the people of Delhi in such trying circumstances."

Delhi on Tuesday reported 3,947 fresh cases and 68 deaths. With this, the total number of infections in the city has reached 66,602 and 2,301 people have succumbed to the viral disease.

The Union home minister had held a series of meetings since June 14 with the Delhi government and the Delhi L-G on the city's preparedness to treat and contain the coronavirus disease. Several important decisions, including ramping up testing in the capital, capping the testing price and door-to-door survey for tracing the patients and their contacts were taken in these meetings.

<https://www.hindustantimes.com/cities/new-1-000-bed-hospital-in-delhi-to-be-ready-in-next-10-days-amit-shah/story-0mBxkQzOHlv3fK9eDWSJUN.html>

Indigenous production of fight category equipment at 45 pc, huge opportunity for MSMEs:Navy official

New Delhi: The indigenous production of "fight" category equipment, which includes weapons and radars, for the Indian Navy is nearly 45 per cent only and it is a huge opportunity for micro, small and medium enterprises (MSMEs) that can enhance their manufacturing, said a senior Navy official on Tuesday.

"Indian shipyards have already 130 ships and submarines. And further, 46 ships and submarines have been ordered for construction in our shipyards. It is a matter of pride that with the help of our stakeholders, almost 90 per cent of equipment in the "float" category and 65 per cent of the equipment in the "move" category is indigenous production," said Rear Admiral S N Alamanda at a webinar.

The "float" category encompasses all material, equipment and systems associated with the structures and fittings of the ship's hull. Equipment under the "move" category encompasses propulsion systems, power generation turbine engines, firefighting systems.

Equipment under the "fight" category encompasses all types of ship borne weapons and sensor systems that affect the combat capability of the ship.

"Our cumulative indigenous production in the "fight" category, which covers weapons, sensors, radars and advanced stealth technology, is presently relatively low close to 45 per cent," Alamanda noted.

"In fact, I see this percentage as a huge and a great opportunity for MSMEs to enhance their contribution to the Navy," he said at the webinar titled "Indigenisation and Modernisation requirements of Indian Navy" that was organised by the PHD Chamber of Commerce.

"In achieving this, our MSMEs will need to work out various options, including collaborating with large scale units and also interacting with the DRDO very closely," the Rear Admiral added.

Commodore R K Kamboj said at the webinar that indigenisation is required for equipment like aircraft landing systems, night vision equipment, multi function phased array radars, low frequency interception radars and surface to surface missiles.

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

<https://www.outlookindia.com/newscroll/indigenous-production-of-fight-category-equipment-at-45-pc-huge-opportunity-for-msmesnavy-official/1874804>

Rajnath Singh goes arms shopping to Russia

Amid the border stand-off with China, the defence minister visits India's old strategic ally

By Sandip Unnithan

New Delhi: Defence Minister Rajnath Singh arrived in Moscow on the evening of June 22 to attend the victory parade scheduled for June 24. He will represent India at the grand parade in Moscow's Red Square, which will commemorate the 75th anniversary of Russia's victory over Germany in World War II. Defence ministry officials said the visit will "strengthen the longstanding special and privileged strategic partnership between India and Russia".

It is Singh's line-up of three crucial meetings on June 23 that are far more significant given the ongoing border tensions between India and China and the fact that Moscow is New Delhi's largest arms supplier.

Singh will meet all the key people in Russia's vast military industrial complex—defence minister general Sergei Shoygu, deputy prime minister Yury Borisov, Sergey Chemezov, CEO of Rostec Corporation, and head of Rosoboronexport Alexander Mikheev. Both sides are yet to release details of these meetings, but key purchases of arms and ammunition are believed to be on the anvil.

Border tensions with China have been rising after the June 15 incident, where 20 Indian soldiers were killed in fierce hand-to-hand combat on the Line of Actual Control (LAC) in eastern Ladakh. It now emerges that the commanding officer of the Chinese unit was also killed in the skirmish between the Indian soldiers and troopers of the People's Liberation Army.

The Indian army and air force have moved key assets like tanks, artillery, fighter jets and helicopter gunships to the LAC with China. The government recently permitted each of the three services to buy arms and ammunition up to Rs 500 crore. Accompanying the defence minister to Russia are defence secretary Ajay Kumar and chief of integrated defence staff Vice Admiral Hari Kumar.

Nearly half of India's present military arsenal is of Russian origin. Consequently, all three services have drawn up emergency procurement lists to immediately purchase missiles and specialised ammunition for their Russian-origin fighter jets, tanks, warships and submarines.

That there was much more to the trip than the parade was known last week. The defence ministry informed Russian authorities of Singh's visit as late as the evening of June 19. The invitations were sent out to Prime Minister Narendra Modi and the defence minister in February this year. The high-level visit comes when relations between India and China are at the worst in decades. The Indian government believes this to be a unilateral move by China to alter the LAC and is clear that the Chinese troops will have to restore status quo—move to where they were, behind the LAC, on May 5.

Singh's high-profile visit will speed up purchases of urgently required arms. "Russia is one country in the world that will give you the arms and ammunition in the quantities that you want, virtually overnight," says a government official.

Russia is India's largest arms partner, with arms deals worth over \$10 billion in the pipeline (*see graphic*). Deals signed recently include a \$3 billion lease of a second Akula class nuclear-powered attack submarine from Russia, a \$950 million deal for two Krivak class frigates. Of immediate interest are two big-ticket deals. The first is for 33 combat jets from Russia—12 Su-30MKIs to be built in India and 21 MiG-29 fighter airframes to be refurbished and upgraded for \$1.4 billion. India also wants

deliveries of five systems of the S-400 air defence missile system to be speeded up. The first units of the \$5.4 billion system are slated for delivery in late 2021. The Russian side has conveyed that earlier delivery will be difficult given the need for training Indian crews to man the complex missile system.

INDIA-RUSSIA DEALS IN THE PIPELINE 



**AKULA CLASS
NUCLEAR-POWERED ATTACK
SUBMARINE**

\$3 bn or ₹21,000 cr
(to be delivered by 2026)
STATUS: Signed



**KAMOV KA-226
LIGHT UTILITY
HELICOPTERS**

JV between HAL and Russian helicopters for production
(200 Kamov Ka-226)
\$1 bn or ₹ 7,000 cr
STATUS: MoU signed in June 2018

AK-203
\$1.6 bn or ₹ 12,000 cr
(700,000 rifles)



Indo-Russian joint venture to make AK-203 rifles at an idle Ordnance Board Factory in Korwa
STATUS: Signed. JV to be established soon

4 KRIVAK CLASS FRIGATES

Two built in Russia, two to be built at the Goa shipyard

\$2.5 bn or ₹ 17,000 cr
STATUS: Signed



**18 ADDITIONAL SUKHOI
SU-30MKI AIRCRAFT**
\$700 mn or ₹ 5,000 cr
STATUS: Being negotiated

**21 MOTHBALLED
MIG-29 AIRFRAMES**

\$800 mn
or ₹ 5,600 cr
STATUS: Being negotiated



**10 KAMOV KA-31
AEW&C HELICOPTERS**
\$500 mn or
₹ 3,600 cr
STATUS: Approved.
Contract yet to be signed



<https://www.indiatoday.in/india-today-insight/story/rajnath-singh-goes-arms-shopping-to-russia-1691688-2020-06-23>

Military-level talks between India, China positive, consensus on disengagement in Ladakh: Indian Army

This was the second Commander-level meeting between the two nuclear-powered nations after the first one held on June 6 to diffuse tension at the Line of Actual Control

By Siddhant Sibbal

New Delhi: Following the marathon 11-hour military level meet between Indian and Chinese on Monday (June 22), the Indian Army on Tuesday said that Corps Commander level talks held at Moldo-Chushul was in 'cordial, positive and constructive atmosphere' and that both nations arrived at a 'mutual consensus' on disengagement.

Indian Army sources said that Indian and Chinese militaries arrive at a mutual consensus during Lt General-level talks to disengage from eastern Ladakh. It added that modalities for disengagement from all friction areas in eastern Ladakh were discussed at the meet.

This was the second Commander-level meeting between the two nuclear-powered nations after the first one held on June 6 to diffuse tension at the Line of Actual Control.

According to reports, in the meeting, the Indian delegation strongly raised with China the 'premeditated' assault by Chinese troops on Indian soldiers in Galwan Valley and demanded immediate withdrawal of Chinese troops from all friction points in eastern Ladakh, people familiar with the development said. The focus of the deliberations was on finalising modalities for disengagement of troops from various areas including Pangong Tso where the two militaries are on a bitter standoff for six weeks.

Tension between India and China escalated significantly in the region after 20 Indian Army personnel were killed by China's People's Liberation Army (PLA) in a violent clash in Galwan Valley on June 15 that New Delhi termed as a 'premeditated and planned action' by the Chinese troops.

However, the situation along the border deteriorated following the Galwan Valley clashes as the two sides significantly bolstered their deployments in most areas along the 3,500-km de facto border.

Meanwhile, Army Chief Gen MM Naravane on Tuesday left for Ladakh on a two-day visit to discuss with ground commanders the six-week standoff with the Chinese military and review India's overall military preparedness in the mountainous region, Army sources said. The Chief of the Army Staff will visit forward locations and interact with troops on the ground. He will hold talks with Lt Gen Harinder Singh, the commander of the 14 Corps that takes care of the sensitive border with China.

Last week, Air Chief Marshal R K S Bhaduria made a quiet visit to Ladakh and Srinagar air bases to review the Indian Air Force's preparedness to deal with any eventualities in the region.

On Monday, Lt Gen Singh held a nearly 11-hour meeting with Commander of the Tibet Military District Maj Gen Liu Lin in an attempt to lower the temperature between the two sides. In the meeting, the Indian delegation strongly raised with China the 'premeditated' assault by Chinese troops on Indian soldiers in Galwan Valley and demanded immediate withdrawal of Chinese troops from all friction points in eastern Ladakh, people familiar with the development said.



The Army has already sent thousands of additional troops to forward locations along the border in the last week. The IAF has also moved a sizeable number of its frontline Sukhoi 30 MKI, Jaguar, Mirage 2000 aircraft and Apache attack helicopters to several key airbases including Leh and Srinagar following the clashes.

The two armies were engaged in a standoff in Galwan and several other areas of eastern Ladakh since May 5 when their troops clashed on the banks of the Pangong Tso.

The situation in eastern Ladakh deteriorated after around 250 Chinese and Indian soldiers were engaged in a violent face-off on May 5 and 6. The incident in Pangong Tso was followed by a similar incident in north Sikkim on May 9.

Prior to the clashes, both sides had been asserting that pending the final resolution of the boundary issue, it was necessary to maintain peace and tranquillity in the border areas.

<https://zeenews.india.com/india/positive-and-constructive-indian-army-on-sino-india-corps-commanders-military-meet-in-moldo-chushul-2291475.html>

WWW.ECONOMICTIMES.COM
THE ECONOMIC TIMES

Wed, 24 June 2020

Indian, Chinese militaries agree to disengage from friction points in eastern Ladakh: Sources

On Monday, Lt Gen Harinder Singh, the commander of the 14 Corps, held a nearly 11-hour meeting with Commander of the Tibet Military District Maj Gen Liu Lin in an attempt to lower the temperature between the two sides

New Delhi: Indian and Chinese armies have arrived at a consensus to "disengage" from all friction points in eastern Ladakh at a marathon meeting of top military commanders of the two sides on Monday, official sources said. The talks were held in a "cordial, positive and constructive atmosphere" and it was decided that modalities for disengagement from all areas in eastern Ladakh will be taken forward by both the sides, they said.

On Monday, Lt Gen Harinder Singh, the commander of the 14 Corps, held a nearly 11-hour meeting with Commander of the Tibet Military District Maj Gen Liu Lin in an attempt to lower the temperature between the two sides.

The talks were held in the midst of escalating tension between the two countries following the violent clashes in Galwan Valley last week that left 20 Indian Army personnel dead.

"There was a mutual consensus to disengage. Modalities for disengagement from all friction areas in eastern Ladakh were discussed and will be taken forward by both the sides," said a source.

<https://economictimes.indiatimes.com/news/defence/indian-chinese-militaries-agree-to-disengage-from-friction-points-in-eastern-ladakh-sources/articleshow/76527092.cms>

India militarily stronger than China, capable of winning war in Himalayas: Report

In case of a war between India and China, experts believe that the Indian Army is likely to give a befitting reply to the Chinese troops

By Manish Shukla

New Delhi: Amid increasing tension between India and China following clashes in the Galwan Valley along the Line of Actual Control (LAC), India Army Chief General MM Naravane's visit to Ladakh holds a great significance.

In case of a war between India and China, experts believe that the Indian Army is likely to give a befitting reply to the Chinese troops. A report by Howard Kennedy School's Belfer Center for Science and International Affairs, published in March 2020, explains that Indian forces in the Himalayan range can defeat China's army and may prove the assessment of experts wrong that India lags behind China in the military strength.



A comparison of the troops of China and India shows that China has deployed a total of 200,00-230,000 ground forces under the Western Theater Command, Tibet, and Xinjiang Military districts. This apparent numerical near-equivalence with that of Indian regional ground forces is misleading. Experts say that a significant proportion of these forces will be unavailable, as they reserved either for Russian taskings or for countering insurrection in Xinjiang and Tibet.

The majority of forces are located further from the Indian border, posing a striking contrast with the majority of forward-deployed Indian forces with a single China defense mission.

The Indian Army divides its ground and air strike forces facing China into Northern, Central, and Eastern Commands. The Air Force is organized into Western, Central, and Eastern Air Commands. The total available Army strike forces near China's border areas are assessed to be around 225,000 personnel.

This incorporates the roughly 3,000 personnel attached to a T-72 tank brigade stationed in Ladakh and the estimated 1,000 personnel attached to a BrahMos cruise missile regiment in Arunachal Pradesh. For the Army, the total deployment near China's border areas is divided as; about 34,000 troops in the Northern Command; 15,500 troops in the Central Command; and 175,500 troops in the Eastern Command.

The report published on 'Strategic posture of China and India' states that the Western Air Force Command of the Chinese Air Force, PLA Air Force (PLAAF), which has operational control of fighter jets, close to the Indian border also suffers from a numerical disparity to the IAF. Unlike the tripartite organizational division of Chinese ground forces facing India, the Western Theater Command has assumed control of all regional strike aircraft. In total, this amounts to around 157 fighters and a varied drone armory.

The Indian Air Force has an estimated 270 fighters and 68 ground attack aircraft across its three China-facing commands. It is also expanding its network of Advanced Landing Grounds (ALGs), which constitute small air bases in the forward locations to provide staging grounds and logistics hubs for aircraft strike missions.

In the Western Air Command, the IAF possesses around 75 fighters and 34 ground attack aircraft, besides 5 ALGs close to Chinese Tibetan areas. The Central Air Command features around 94 fighters, 34 ground attack aircraft, and one ALG. The Eastern Air Command hosts around 101 fighters and 9 ALGs. The Eastern Air Command, which is deployed only to deal with China, alone has 101 fighter aircraft.

A comparison of the Air force of both countries suggests that China's J-10 fighter is technically comparable to India's Mirage-2000, while Indian Su-30MKI is superior to all theater Chinese fighters, including the additional J-11 and Su-27 models. China hosts a total of around 101 4th-generation fighters in the theater, of which a proportion must be retained for Russian defense, while India has around 122 of its comparable models, solely directed at China.

China, however, is ahead of India in terms of aerial drones. It has deployed over 50 drones against India which are capable of electronic surveillance ranging from reconnaissance to ground attack.

The most significant PLAAF forward air bases and airfields near Indian border areas—which will be pivotal in combat operations—are located at Hotan, Lhasa/Gonggar, Ngari-Gunsa, and Xigaze. Each hosts regular PLAAF detachments, and these are the nearest facilities to Indian targets in Kashmir, northern India, and northeast India. They are vulnerable to a dedicated Indian offensive. Ngari-Gunsa and Xigaze reportedly have no hardened shelters or blast pens for their aircraft, which sit in the open. Lhasa/Gonggar has recently developed hardened shelters able to protect up to 36 aircraft, while Hotan reportedly hosts “two aircraft shelters” of unknown capacity.

According to the report, an Indian early initiative to destroy or incapacitate these four bases—and achieve air superiority over them—would compel China to rely more upon aircraft from its rear-area bases, exacerbating its limited fuel and payload problems. Moreover, China lacks the redundancy and related force survivability compared to India in their comparative numbers of regional airbases.

The report sums up that India has a stronger regional air position, with “a large number of airfields in the east and west, so even if some airfields are down, operations can continue from other locations.”

To address its force shortfalls in the event of war, China could surge air and ground forces from its interior towards the border. However, experts suggest that the IAF's superiority would mean that critical logistical routes—such as airbases and military road and rail links—could be cut by bombing or standoff missile strikes, limiting the extent to which China's position could be reinforced.

The report further adds that 104 Chinese missiles could strike all or parts of India. These include about a dozen DF-31A and six to twelve DF-31 missiles capable of reaching all Indian mainland targets. Another dozen DF-21s hold New Delhi at risk, while the remaining missiles can target sections of India's northeast and east coast. As China deploys more road-mobile missiles over time, it will become easier to move further missiles from China's interior to new survivable positions within the range of India.

On the other hand, the bulk of India's missile forces are located closer to Pakistan than China. Ten Agni-III launchers can reach the entire Chinese mainland. Another eight Agni-II launchers could reach central Chinese targets. An estimated two squadrons of Jaguar IS and one squadron of Mirage 2000H fighters, totaling around 51 aircraft, are assessed to be tasked with nuclear missions. These aircraft could most likely reach Tibetan airspace equipped with nuclear gravity bombs.

India's professed goal has always been to field a credible second-strike capability. This assured retaliation doctrine depends on the creation of sufficient doubt in the adversary's calculus that a disarming the first strike would succeed, the report added.

<https://zeenews.india.com/india/india-militarily-stronger-than-china-capable-of-winning-war-in-himalayas-report-2291523.html>

IAF airlifts dozens of tanks to Ladakh to beef up firepower

First time since 1962 that tanks and mechanised elements urgently airlifted to Ladakh

By Vijay Mohan

Chandigarh: As military build-up on both sides of the Line of Actual Control (LAC) in eastern Ladakh continues, a constant stream of IAF heavy lift aircraft have airlifted dozens of additional tanks and armoured personnel carriers to the Himalayan heights for beefing up Indian firepower.

Amidst carrying out combat air patrols over Ladakh and maintaining operational readiness platforms at various airbases to scramble fighters, the IAF is using its American C-17s and Russian IL-76s freighters for carrying out multiple sorties out of Chandigarh and other places over the past weeks for the purpose.

Some elements of armoured formations based in the Western Sector, which include the newer T-90s, have been earmarked for the Ladakh frontier.

Prior to the current face-off with China, which witnessed extremely violent moments, India had three armoured regiments stationed in Ladakh, amounting to the equivalent of an armoured brigade.

The manner of concentration and employment of an armoured formation in high-altitude areas is a lot different than that in the plains, the tradition domain of mechanised forces.

“This is for the first time since 1962 that tanks and mechanised elements have been urgently airlifted to Ladakh to meet operational requirements and beef up offensive and defensive capabilities when both sides are locked in close confrontation,” an officer said.

“Tanks already stationed there were also airlifted over a period of time, but that was done under different conditions,” he added.

During the 1962 Sino-Indian war, the IAF had used the AN-12 transport aircraft to ferry six AMX light tanks of 30 Lancers, to Chushul, just south of the Pangong Tso lake, another flashpoint in the ongoing stand-off.

In the 1990s, the IAF began airlifting T-72 tanks and BMP-1/2 mechanised infantry combat vehicles in the IL-76 aircraft to Leh. The doctrine of deploying tanks in Ladakh saw a reversal subsequently, but was revived again with the forming up of three armoured units picking up in 2014

The Army’s perspective plans call for an armoured brigade each in the northern and eastern sectors along with three additional mechanised infantry battalions outfitted for high-altitude operations, but financial constraints have cast a deep shadow over the process.

China, on the other hand, is reported to have an armoured division and two motorised infantry divisions in Lanzhou Military Region opposite Ladakh and two armoured brigades and four motorised infantry divisions in Chengdu Military Region opposite Sikkim and Arunachal Pradesh. A division has three brigades.

Though mountainous and extremely rugged, there are some relatively flat areas in the Ladakh sector like Chushal and Demchok where tanks and armoured personnel carriers can be employed for defence as well as offence.

Besides adding to firepower, tanks also act as a deterrent. While the general altitude where tanks would be operating in Ladakh is 12,000-14,000 feet, the Army has carried out successful trials of driving up tanks to altitudes above 18,000 feet.

The employment of tanks in such a terrain and altitude also has some constraints. Rarefied air affects engine performance and freezing temperatures affect fuel and lubricants. Tank crew also requires special cold weather clothing.

<https://www.tribuneindia.com/news/nation/iaf-airlifts-dozens-of-tanks-to-ladakh-to-beef-up-firepower-102716>



Wed, 24 June 2020

India China news: Why Indian Air Force has intensified its Combat Air Patrols with fighter jets in Ladakh

Fighter aircraft have been stationed at advance air bases in Jammu and Kashmir, Haryana and Punjab

By Devanjana Nag

Days after India-China LAC clash that left 20 Indian soldiers dead, the Indian Air Force (IAF) has intensified its Combat Air Patrols (CAP) in Ladakh. According to an IE report, fighter aircraft have been stationed at advance air bases in Jammu and Kashmir, Haryana and Punjab. The CAPs ensure that a credible deterrence is maintained by the IAF in the skies. Some IAF sources were quoted in the report saying that the Chinese have bolstered the presence of offensive air platforms at their airfields in Tibet. A senior IAF official said that air defence elements have been brought in by the Chinese at various locations where the standoff is taking place. The official further said that the IAF has its counter-measures in place and fly CAPs as per the situation's demand.

A retired honorary captain of Ladakh Scouts, named Tashi Chhepal, who is also a Vir Chakra awardee of Kargil War, is settled in Leh. According to Chhepal, in the year 1999, Leh's Kushok Bakula Rimpoche airport last saw this kind of aerial activity since the air force was its base during the Kargil War. Otherwise, Leh is very calm and quiet, he said. Due to the novel coronavirus pandemic, tourists were also not coming for the last



couple of months. In the year 1962, IAF was not as strong as it is today, Chhepal said. Also, if need arises, IAF will provide full support to the Indian Army in the Galwan valley or any other place, as and when required, he added.

The CAPs ensure that a credible deterrence is maintained by the IAF in the skies.

A teacher at Tibetan Children's Village in Leh, Tsering Wangchuk was quoted in the report saying that every morning, the way in which fighter jets and choppers are doing sorties, people in Leh are fearful. But, he further mentioned that the people of Ladakh are extremely brave and patriotic. The fighter jets' noise also gives confidence to the people that they are absolutely safe, Wangchuk said. Earlier, just a few domestic air planes would land at the airport but these days, the airport is almost filled with IAF jets and choppers, he added.

Besides, keeping an eye on the situation in eastern Ladakh, a major concern for the IAF is observing the Line of Control with Pakistan. For example, the Skardu air base in the Gilgit-Baltistan area is very close. A senior officer claimed that they are seized of all these issues and are well prepared to deal with them. Thus, there is no cause for any alarm, he added.

<https://www.financialexpress.com/defence/india-china-news-why-indian-air-force-has-intensified-its-combat-air-patrols-with-fighter-jets-in-ladakh/2000886/>

India increases tech surveillance on Ladakh LAC with Israeli Heron drones

Along with the ITBP, specialised forces, trained over the past decades to fight on the northern front, have now been pushed up to the frontier

By Shishir Gupta

New Delhi: In a stand-off with a belligerent Chinese People's Liberation Army (PLA) at four points in East Ladakh, India has increased technical drone surveillance of the area even as the Indo-Tibetan Border Police (ITBP) has inducted more battalions into the sector to support army along the 3,488 km Line of Actual Control (LAC), government and military officials familiar with the matter said.

The decision to induct ITBP battalions in support of the army was taken on June 20 after Director General Military Operations, India, Lt General Paramjit Singh and Director General (ITBP and BSF) S S Deswal visited Leh to be briefed about the ground situation. The top security officials of Indian Government were briefed by the XIV Corps Commander Lt General Harinder Singh on the stand off with PLA.

India has also deployed its specialised high-altitude forces along LAC to repel any transgression in the western, middle or eastern sectors, the officials added.

With the Narendra Modi government giving a clear mandate to the Indian Army to repel any PLA transgression along the LAC, the military and the National Technical Research Organization (NTRO) have been asked to deploy more surveillance drones in the area so that the battle theatre becomes more transparent. While the army has been given clearance at the highest levels to acquire more drones, the Israeli Heron medium altitude long endurance drone currently being used by NTRO is providing technical surveillance of the area.

The Chinese PLA has the unproven armed drone Wing Loong in its inventory; India is also looking to acquire armed drones from either Israel or the US.

According to government officials familiar with the matter, the ITBP force accretion is being done to ensure that all 65 (some say 62) patrolling points along the 1547 km LAC in East Ladakh are fully patrolled, thereby not allowing PLA to expand the scope of its dispute with India by engaging in more areas. The ITBP operates under the Indian Army in the event of hostilities, and also undertakes joint patrols with the military in peacetime; it already has at least 7,000 men on ground. The joint briefing of DGMO, who has served as Corps Commander of Nagrota in J &K, and DG (BSF and ITBP) was done to ensure that the Indian forces are on the same page in case the red flag goes up.

Along with the ITBP, specialised forces, trained over the past decades to fight on the northern front, have now been pushed up to the frontier. Unlike the PLA, which moves in infantry combat vehicles that use paved metalled roads, the Indian mountain troops are trained in guerrilla warfare and in high-altitude combat, as demonstrated during the 1999 Kargil War.

“The art of mountain fighting is the toughest, as the cost of human casualties is 10 to each troop of the adversary sitting on a height. The troops from Uttarakhand, Ladakh, Gorkha, Arunachal Pradesh and Sikkim have adapted to the rarefied heights over centuries and hence their capability of fighting is close-quarter combats is without match. The artillery and the missiles have to have



Unlike the PLA, which moves in infantry combat vehicles that use paved metalled roads, the Indian mountain troops are trained in guerrilla warfare and in high-altitude combat, as demonstrated during the 1999 Kargil War. (Photo credit: Israel Aerospace Industries)

pin-pointed accuracy or else they miss the mountain target by miles,” said a former Indian Army chief.

The Tibetan plateau is flat on the Chinese side while the Indian side starts from K2 peak in Karakoram, to Nanda Devi in Uttarakhand, to Kanchenjunga in Sikkim, and Namche Barwa across Arunachal Pradesh border. “In mountains, it is not only difficult to capture territory but more difficult to hold it,” a China expert at South Block said.

The officials cited in the first instance said that India is willing to play the long game. “Our battalions lined up with armoured personnel carriers and artillery. India will not instigate or precipitate any skirmish but will reply to any transgression. The days of LAC nibbling are over. This is a battle of nerves and India is prepared to wait, come snow come sunshine,” said a senior minister who asked not to be named.

The officials added that the Modi government is unhappy that Chinese President Xi Jinping did not rein in PLA western theatre commander General Zhao Zongqi, who, according to China watchers, is keen on imposing the 1960 Eastern Ladakh map based on claims on Indian territory.

This map, in which China claims territory up to Kongka La, was unveiled by former Chinese premier Chou En Lai, who led the country during the 1962 conflict. Indian officials said that it was in an attempt to set aside historical baggage that Prime Minister Narendra Modi initiated the Wuhan and Mamallapuram summits so that the two leaders could promote the bilateral relations after the 73-day Doklam face-off in 2017.

While both India and China are diplomatically engaged to de-escalate the situation, the instructions to the ground forces are to not to allow any transgression by the PLA at any cost. “PLA soldiers use vehicles to reach their posts; our troops are trained to climb and then fight. Thanks to adversaries on western and northern borders, Indian infantry has learnt the art of fighting at the highest heights be it Siachen, Karakoram, Lipulekh or Thag la,” said a senior military commander who asked not to be named.

<https://www.hindustantimes.com/india-news/surveillance-shored-up-forces-added-in-ladakh/story-e1GBA1qGwodVr1lm2L4LMJ.html>

TIMESNOWNEWS.COM

Wed, 24 June 2020

Army plans to place orders for more Excalibur ammunition for howitzers

The development is taking place when the Chinese have also placed their artillery in rear positions along the Line of Actual Control along the Eastern Ladakh sector

New Delhi: After the government allowed the armed forces to go in for emergency procurements to do away with shortages of critical equipment, the Indian Army is planning to place an order for acquiring more Excalibur precision-guided Artillery ammunition which can hit targets at 50 km range.

The Excalibur ammunition was inducted last year by the Army to acquire the capability to hit enemy positions close to populated areas without causing collateral damage on the western sector under emergency financial powers.

"Now the financial powers have been again given to the armed forces and there are plans to place repeat orders for the Excalibur ammunition used by the Ultra Light Howitzers which can be deployed with ease on high altitude mountains," Defence sources told ANI.

After the last year's orders, the Army had started inducting the ammunition from America by October time frame and was fired at targets with pinpoint accuracy.

The development is taking place when the Chinese have also placed their artillery in rear positions along the Line of Actual Control along the Eastern Ladakh sector.

The Vice Chiefs of the three services have been given the financial powers up to Rs 500 crore per project to acquire the required weapon systems under fast track procedures needed to fill whatever shortcomings or requirement is felt.

The requirement of granting this power again to the forces was felt by the government after the Chinese aggression in Eastern Ladakh and the way they have deployed their troops in large numbers there along the Line of Actual Control (LAC).

Similar financial powers were given to the armed forces after the Uri attack and the Balakot aerial strikes against Pakistan.

<https://www.timesnownews.com/india/article/army-plans-to-place-orders-for-more-excalibur-ammunition-for-howitzers/610721>



Wed, 24 June 2020

If IAF is ready for India-China Row, Why do emergency shopping?

By Wing Commander Amit Ranjan Giri (Retd)

With the government clearing emergency purchases for armed forces in view of the escalating India-China border situation, the question arises, if the Indian Air Force (IAF) is prepared for war, as claimed by the Chief of the Air Staff (CAS) recently, why would an emergent purchase be resorted to?

The government recently empowered the forces to go ahead with the proposals for emergency purchases, as required, to prepare for any situation arising from the recent border conflict which resulted in the death of at least 20 Indian Army soldiers.

Why the Need for Emergency Purchases?

The government, a few years earlier, had also cleared the forces to maintain a stockpile of requirements for an intense 10 day war, generally called the 10i requirements. If these requirements were met, why would a sudden scurry for weapons and armaments be required now?

No nation, no matter how large its spending on war preparedness is, can never hoard all weapons and armaments in one go. This would result in the life depletion of stock in a short period of time, coupled with chances of obsolescence.

It is always a good idea to buy your stocks in batches. Weapons, after all, are always on sale as long as there is money in the pocket.

This procedure also keeps your spendings spread over a time period giving the economy a chance at revival, and your own industries an opportunity at development of the desired product.

What Would The IAF Buy?

Typically these emergency purchases are done from the revenue budget of the service under the special procurement powers of the Vice Chiefs' who decide what is the current requirement to fight the impending war.

The IAF would, in most probability, go in for arms and ammunition to boost its stock.

Missiles, bombs, rockets, strap on guidance kits for 'dumb' iron bombs to convert them into 'smart' bombs and a plethora of other smaller items, mostly of consumable nature. The bigger purchases of weapon platforms and machinery would, in most certainty, be left out of this shopping

cart. The proposed additional Su-30s and the MiG 29s would certainly not be through this code head, though the purchases are concurrent.

The Probable IAF Shopping Cart

If the shopping cart is being populated envisaging a conflict with China, then for sure one of the items in it would be bombs. Indigenous technology in producing bombs has grown, however, it is yet to suffice for a warlike situation.

Bombs varying from 100 to 500 kgs would definitely find a place depending on the present quantity available; these would, in all probability, be augmented with Spanish HSLD (High Speed Low Drag) bombs. Imagine the destruction caused by a single Su-30 raining 28 of the 250 kg class in one pass; also imagine the replenishment rate of these bombs each day per base.

All these bombs are in the 'dumb' category; in effect, they follow the normal trajectory after release and cannot be guided, add a guidance kit to these and voila you have a guided weapon with enhanced accuracy. These kits may be, the in-house 'Sudarshan' or the imported 'Paveway' or 'Griffin'.

Most Indian fighters are compatible with these bombs and may or may not require a designator pod like the Israeli 'Litening'.

Speaking of 'smart' bombs, the famed Crystal Maze and the Spice would definitely find a place in further orders. These would probably be boosted with the Russian origin KAB series of penetration weapons, which would give the Indian fighters targeting supply routes and bridges, a fair amount of advantage. This category, though called a guided bomb, technically falls somewhere in between a missile and a bomb, given their hybrid design. Their small circular error of probability, and the devastating penetration capability gives them the edge over conventional bombs with guidance kits.

Air-to-Air Missiles Stock Should Be Boosted

To keep the PLAAF intruders at a safe distance from the Indian installations, the present stock of air-to-air missiles would need to be boosted. These would be on order depending upon the type. Whilst the Mirage 2000 and its upgraded brother, the TE, use mostly the Magic and MICA class of missiles, the Russian platforms on the other hand carry the RVV AE, R 77 and the R 27 ER/ET class of missiles.

It is envisaged that some of these ordinances would definitely find their place in the Indian shopping cart.

The indigenously developed 'Astra' is yet to fructify, and if done in time and integrated, would reduce some load from this category of imports.

Amongst the other purchases envisaged would be anti-shiping missiles and the anti-radiation missiles for the Su-30s, to be used against ships and radars respectively.

The IAF Must Think Out of The Box to Have An Edge

The Maritime-role Jaguars carry the harpoons, a fair amount of which we have in adequate quantity, and can be boosted with stocks from the Navy if required. The Jaguar land attack cart is expectedly to be smaller, the American Sensor Fused Weapon has already been procured and is unlikely any further quantities would be released for India. These are anti-armour smart bombs to be used over the enemy armour concentrations. Other weapons for the Jaguar are common, and have already been factored in the earlier paragraphs.

In addition to these, the wish list of the IAF would also include the armament for aircraft front guns and some unguided rockets.

Another area that the IAF would do good to push, is to complete its ongoing upgradations and integration of systems on aircraft; the faster these are done the more effective the systems would be.

During the Kargil conflict, similar integration was done overnight with certain systems, like the fitment of GPS on board the MiG 23/27 and tinkering the Mirage 2000 onboard computer to

deliver certain bombs that had never been carried by it earlier. Out of the box thinking like this would definitely give the IAF an edge over its adversary.

(Amit Ranjan Giri is a Wing Commander (Retd) of the Indian Air Force. This is an opinion piece, and the views expressed are the author's own. The Quint neither endorses nor is responsible for them.)

<https://www.thequint.com/voices/opinion/india-china-border-conflict-war-preparedness-indian-air-force-emergency-shopping-wish-list>



Wed, 24 June 2020

Equipping Indian Navy for war with focus on operational capabilities – synergy is key

‘War is politics by other means’, said the 19th-century Prussian military strategist Carl von Clausewitz. In India, it appears that even ‘procurement for war’, is politics by other means. The pitfalls of this are dangerous for national prestige and security, and they stare us in the face especially in the kind of times that we are in now

By Commodore G Prakash, (Retd)

‘War is politics by other means’, said the 19th-century Prussian military strategist Carl von Clausewitz. In India, it appears that even ‘procurement for war’, is politics by other means. The pitfalls of this are dangerous for national prestige and security, and they stare us in the face especially in the kind of times that we are in now.

Every professional seeks the best of tools to ply his trade. The armed forces cannot be any different. But there is one criticality in the case of the armed forces, which is, that failure is no option for them. So, it is with much dismay that I watched the recent war of word triggered off by HAL once again entering the Navy’s long-running attempts to get Utility Helicopters (NUH). Somewhere among the discussions on the technicalities of the DPM, DAC, the sublime text of some Para 23 of Chapter II of the Defence Procurement Policy of 2016 (DPP-2016) etc, the criticality of the NUH for the Navy are lost for the common man.



Having handled the affairs of the ALH at Delhi in the initial three years from the first flight of the ALH (Navy), I had a ringside view of how things turned out.

An Excellent Example

I was lucky to operate from the Seaking Mk 42Bs from 1989, when they were brand new. Rightly called Flying Frigates, they could match Frigates in water for operational capabilities. Developed by Westland Helicopters, UK, to our operational specifications developed from 1978 and frozen by 1982, technically known as NSQRs (Naval Staff Qualifying Requirements), 20 helicopters arrived in India between 1988 and 1990.

NSQRs are written through an elaborate process. First, the threat to be addressed is identified, then the best method to optimally mitigate the threat is decided, what is available in the world is evaluated, the money available is considered and finally, the all-important Govt approval is obtained.

When they were born, the 42Bs were the best Multirole Helicopters (MRH) in the world. A true game-changer, it made the Navy proud and we who operated those aircraft felt like real kings of the sea. How else could one have felt, when one could get the entire Makaran coast on one screen, in graphic detail, with a single sweep of the Radar from 5000 feet up in the air? An Indian equivalent in the future was a legitimate fantasy.

A Great Plan Gone Bust

Having handled the affairs of the ALH at Delhi in the initial three years from the first flight of the ALH (Navy), I had a ringside view of how things turned out.

Here is a perspective.

Well understanding the timeless advantages of indigenisation, while pursuing the 42Bs, the Navy also laid down NSQRs for an Indian Multirole Helicopter. It is unrealistic to expect HAL, the lone Aircraft manufacturer in India, to make its maiden helicopter to the standards of established manufacturers like Westland, NSQRs were laid down for a smaller, lighter version. Like for the 42Bs, these too were developed from 1978 and frozen by 1982. The plan was that while the Navy maintained its operational superiority over adversaries with the 42Bs, HAL would make a light MRH, gain critical experience and then graduate to making the replacement for the 42Bs one day. With IAF and Army too needing indigenous helicopters, HAL was onto something big. It was an excellent plan. But it went bust, at least for the Navy.

Maritime Helicopters Are Different

Helicopters for use at sea, especially MRH, greatly differ from their cousins designed for use on land. Being the lone aircraft producer in India, it would have been great if HAL had understood these and worked towards developing proficiencies for use in the future. Here are some examples.

Rotor Hub & Blades

On land, a helicopter can approach for landing from any direction, turn into wind and land. But while landing on a moving ship, this freedom of direction is curtailed. This can be overcome to an extent, through the design of the blade system and the rotor head. Further, to reduce the workload of Pilots during prolonged hover or during landing/ take off, the rotor blades should not be connected directly on to the rotor hub. This is good only on land. The ideal construction of rotor blades for ship operations is the Articulated Blade System which damps inputs to the Pilot reducing his workload.

Boat Like Bottom

While engaged in Anti-Submarine Warfare, one of their staple roles, MRH operate at very low levels, hovering for hours. During prolonged hover, both its fine gas turbine engines are straining to hold up about 10 tons of weight defying gravity. Now, if any engine has a problem, the helicopter has to sit on the water. The Pilots can now attempt a tricky running take off with one engine, from the sea. For this to be practical, the bottom of the helicopter has to be like a boat's.

Extra Focus on Corrosion

Air at low levels at sea are salt-laden. Further, while in hover, helicopters get enveloped by a cloud of fine saltwater spray, which pushes highly corrosive salt into every little pore of the helicopter. To prevent corrosion, special materials are required in certain parts.

Folded Blades& Tail

Space on warships being premium, helicopters have to be made compact for stowage inside hangars. So, their blades, and in the case of larger helicopters, tails too, have to be folded. How compactly the blades be folded, also matters. Because, even when stowed safely inside hangars, helicopters and their blades could move in very violent seas and get damaged. So, they have to be compact, staying well within the confines of hangars, with some leeway for movement in violent seas.

Speed of Blade Spreading& Folding

Torpedoes being a great threat for ships, they have to be ever ready to accelerate fast and manoeuvre violently to outrun incoming torpedoes. However, ships cannot manoeuvre while launching or recovering helicopters, and for the period when blades are being spread or folded. Hence it is important that the entire process of bringing helicopters out from their hangars onto the flight deck, spreading their blades, launching them, recovering them, folding their blades and stowing them in hangars be expeditious. Every second saved is critical for the safety of the ship involved. This is best achieved if done automatically. The five massive 30 feet long blades of the

42Bs fold or spread in less than a minute, with a complex system involving pneumatics and hydraulics, operated by a single switch in the cockpit.

Helicopters operate during day and night from ships, regardless of rain, wind or waves. When they descend onto the deck for landing, the deck too comes up violently and impacts the helicopter's wheels as the ship lurches over waves. This requires unique features in the undercarriage system.

Basic Weight & Capacity Excess

Helicopters at sea need much excess capacity to carry several sensors that helicopters on land do not carry. Excess capacity is also required for the ability to assume different roles, by carrying different armament. Sufficient fuel is also required to get useful time on a mission, carrying weapons, which, if unused, have to be brought back. For this, the basic weight of the aircraft has to be kept strictly in check.

HAL Went for Scale

For a first-time manufacturer dealing with the differing requirements of the three services, we can't fault HAL for not having focused on the unique naval requirements in the initial years. Despite the Navy highlighting the fact that good maritime helicopters have to be designed primarily as maritime helicopters, HAL went for the majority requirement and produced a helicopter primarily designed for use on land. Converting this for use at sea was an inherently flawed idea. Similar was the case for an automatic blade fold system. Strong advice from the Navy to consult Westland, which had a well-proven system, was ignored. This, despite the Navy giving a written undertaking in 1992 that it will acquire 120 helicopters. An undertaking, which was given almost ten years before the first naval version flew. How much more can any customer show genuine support?

The Aftermath

At first flight, almost 20 years after the NSQRs were frozen, almost every NSQR was unfulfilled. And the subsequent journey has not been encouraging. The net result has been some loss of confidence in HAL over the years and an image of an entity that needs to improve customer relationship. This is bound to reflect in every interaction.

The NUH Story

Light utility helicopters are a godsend in war and peace. They are the ubiquitous 'Angels', on whom rests the great task of saving lives, through SAR. At sea, they are also used to move personnel and light loads from ship to ship, for limited weapon drops and surveillance. For an incredible 60 years, the Indian Navy has managed with the Chetak Helicopter, the Indian avatar of the French Allouette. Every member of the crew that flies this helicopter today must be awarded gallantry medals for just daring to fly them. The need for a replacement has been known for far too long. Formally, the current NUH case dates back to 2008.

HAL & NUH

Synergy among various arms of the state is critical for collective success. While retired Officers or professional watchers would comment on issues based on their past experience and knowledge, it is those currently occupying official positions, who should treat these as useful suggestions and work for the collective good. Hence it was heartening to see the CMD of HAL Bangalore himself giving an interview shared widely on media. Surely he meant well. But certain inaccuracies and insinuations in that interview were avoidable.

Elected governments in democracies have a tough job of spending money without attracting allegations. Naturally, they would make intricate systems, structures, and regulations for this. However, a pitfall of this is inordinate delays in procurement and loopholes for interested parties to hold up well-meaning processes. HAL's recent re-entry into the NUH case is one such case.

It was only after HAL had earlier admitted to not being able to meet the Navy's requirements for the NUH that the Navy opted for the NUH under the Govt's Strategic Partnership (SP) Model. The SP Model aims for the Indian Company chosen as the Strategic Partner to make a helicopter with more than 60% indigenous components. Compared to this, the 'indigenous' ALH still has only

37% of indigenous components. The NUH is actually the first project which has the potential to fulfil every gain that the SP model envisages. HAL re-entering the fray with a non-existent product, promising wonders in too short a time, may not be helpful. What the CMD mentioned as 'a couple of changes' required to meet the Navy's requirements, are actually work on engines and the rotor hub, which is akin to designing a new helicopter altogether. Moreover, these have been pending for over two decades.

What is to be achieved by scuttling the NUH through the SP model? Is it the emergence of a much-needed competitor, especially in the private sector? If yes, it is sad, because that is against the very aim of the SP model.

CMD HAL's words that the NUH being 'quite a big contract, (people) will be looking at it from a different angle', was avoidable insinuation. Further, by saying that the Navy was looking 'at some foreign OEM's aircraft, particularly one aircraft' and that 'specific NUH RFQ/ RFI was designed for that', he virtually cast aspersions on the wisdom, propriety and authority of the MoD. Moreover, the process of shortlisting and procurement is that of the Defence Acquisition Council headed by the RM and the Empowered Project Committee, with a very limited role of the Navy. The insinuation is therefore on the bureaucrat driven acquisition system, that too before the process has even begun.

Working Towards Victory

Down history victories have been claimed by the gloved hand that wields the sword and failures dumped on the rust at the cutting edge of the sword. It is the hand that must keep the sword sharp. The Navy and the MoD understands this and strive untiringly for it, despite the inherent limitations of processes. The fighting man has proven time and again that he will fight with whatever is available. What is promised in the future is of no use to him, as it doesn't scare the enemy in front of him.

Departments going by the advice of senior veterans who were rabidly anti-import while they were in service, even at the cost of operational efficiency, will have limitations in seeing the light. The motivations that drove them while in uniform, that too when they were directly responsible for conducting war, are only likely to be stronger now, creating blindness to the dire needs of operational efficiency. It is important to remember, that synergy is key.

(The author is a Specialist in Aviation and Anti Submarine Warfare. In his career spanning 35 years in the Navy he has held several Command and Staff appointments at sea and ashore. Views expressed are personal.)

<https://www.financialexpress.com/defence/equipping-indian-navy-for-war-with-focus-on-operational-capabilities-synergy-is-key/2000661/>

Make In India: भारतीय नौसेना के लिए 45 फीसद हथियार देश में ही तैयार हो रहे हैं

**तैरने वाली श्रेणी में 90 फीसद उपकरण देश में ही तैयार हो रहे हैं जबकि
चलने वाली श्रेणी में 65 फीसद उपकरण देश में ही बनाए जा रहे हैं।**

नई दिल्ली: भारतीय नौसेना के लिए युद्धक श्रेणी के 45 फीसद स्वदेशी उपकरण बनाए जा रहे हैं। इन युद्धक उपकरणों में हथियारों के साथ रडार भी बड़े पैमाने पर भारत में ही बनाए जाएंगे। नौसेना के एक वरिष्ठ अधिकारी का कहना है कि यह देश के सूक्ष्म, लघु और मध्यम उद्योगों (एमएसएमई) के लिए बहुत बड़ा अवसर है।

तैरने वाली श्रेणी' में 90 फीसद उपकरण देश में ही तैयार हो रहे हैं

रीयल एडमिरल एसएन अलमंदा ने मंगलवार को एक वेबिनार में कहा कि भारतीय जहाजों के जंगी बेड़ों के लिए पहले ही 130 जहाज और पनडुब्बियां हैं। हमारे जंगी बेड़ों के लिए और 46 जहाजों और पनडुब्बियों के स्वदेश में ही निर्माण का आर्डर दिया है। यह हमारे लिए बेहद गर्व की बात है कि 'तैरने वाली श्रेणी' में 90 फीसद उपकरण देश में ही तैयार हो रहे हैं जबकि 'चलने वाली श्रेणी' में 65 फीसद उपकरण यहां बनाए जा रहे हैं।

तैरने वाली श्रेणी' में जहाज के ढांचे और बनावट से जुड़े सामान, उपकरण आते हैं

'तैरने वाली श्रेणी' में जहाज के ढांचे और बनावट से जुड़े सामान, उपकरण और प्रणाली आते हैं, जबकि 'चलने वाली श्रेणी' में प्रपलजन सिस्टम, पावर जनरेशन टरबाइन इंजन आदि। युद्धक श्रेणी में जहाज में लगने वाले सभी तरह के हथियार, युद्धक उपकरण और सेंसर सिस्टम आते हैं। उन्होंने कहा कि अब युद्धक श्रेणी के 45 फीसद हथियार, सेंसर और रडार करीब अपने ही देश में बन रहे हैं। उन्होंने कहा कि यह देखते हुए लगता है कि एमएसएमई के लिए नौसेना के लिए काम करने का यह बेहतरीन अवसर है। इस विधा में काम करने के लिए हमारे एमएसएमई को हमारी बड़ी इकाइयों के साथ करार करने होंगे और डीआरडीओ से भी तालमेल रखना होगा।

होवित्जर तोपों के लिए और गोला बारूद मंगाएगी सेना

नई दिल्ली, एएनआइ : सरकार के सशस्त्र सेनाओं को आपात जरूरतों के लिए कम पड़ रहे अहम उपकरणों की खरीद की मंजूरी के बाद भारतीय सेना एक्सकैलिबर आर्टिलरी एम्युनिशन यानी होवित्जर तोपों के लिए और गोला बारूद खरीदने की योजना बना रही है। इन बेहद हल्की होवित्जर तोपों को ऊंची पहाड़ियों पर तैनात किया जा सकता है।

रक्षा सूत्रों के मुताबिक एक्सकैलिबर आर्टिलरी एम्युनिशन सटीक निशाना साधने और दुश्मन को तबाह करने में सक्षम है। ये बेहद घनी आबादी में भी दुश्मन के लक्ष्य को पूरी सटीकता से 50 किमी से ज्यादा दूरी से निशाना बना सकता है।

अमेरिका से खरीदी होवित्जर तोपों को भारतीय सेना में शामिल किया गया

पिछले साल अक्टूबर में ही अमेरिका से खरीदी होवित्जर तोपों को भारतीय सेना में शामिल किया गया है। यह बेहद सटीक निशाना लगाने वाली तोपें हैं जिनमें एक्सकैलिबर आर्टिलरी एम्युनिशन का इस्तेमाल होता है। अब सशस्त्र सेनाओं के पास फिर से वित्तीय ताकत आने से उन्होंने इसकी और खेंप मंगाने का फैसला किया है। यह फैसला तब लिया जा रहा है कि जब एलएसी पर चीनी सेना ने ऊंची चोटियों पर तोपों की तैनाती कर रखी है। लिहाजा भारत को भी ऐसा करने की जरूरत है।

<https://www.jagran.com/news/national-make-in-india-45-percent-weapons-for-indian-navy-are-being-prepared-in-country-20427300.html>

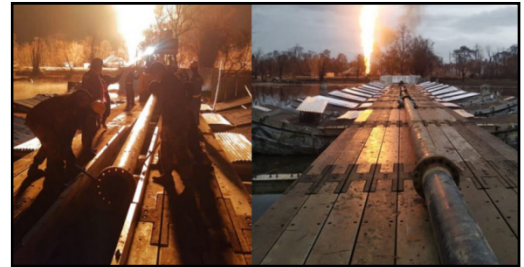


Indian Army constructs Composite Bridge at Baghjan blowout site

The administration had requisitioned assistance of the Indian Army for construction of the bridge at the incident site on June 14

Guwahati: Indian Army personnel on Monday finally completed the construction of a Composite Bridge at the blow out site of Well Number 5 in Baghjan Oil Field in Upper Assam's Tinsukia district.

Oil India Limited (OIL) on 14 June through the Civil Administration had requisitioned assistance of the Indian Army for construction of the bridge at the incident site. "The construction of this bridge was extremely critical for the task of controlling the fire, as it provides the only access to the experts to approach the well. The experts now plan to lay a heavy-duty pipeline over the bridge and create a water umbrella for dousing the fire", officials said.



The execution of this engineering feat was a challenging task that involved the mobilisation of 233 metric tons of bridging stores over 400 kilometers. 150 specially trained troops of Army undertook the task for construction under extremely risky and hazardous conditions in the vicinity of the raging fire with working temperatures exceeding 75 degrees celsius.

"Undaunted by the multitude of engineering challenges the Army constructed the bridge in a short time of 24 hours under heavy rainfall and extreme temperatures. The bridge has provided the much-needed impetus to the ongoing disaster relief efforts. A special team will continuously maintain the bridge and keep it afloat even in the harshest of conditions", officials further informed.

It needs mention here that a blowout occurred at Well no. 5 of the Baghjan oil field operated by Oil India Limited on May 27. On June 9, the oil well caught fire. The fire quickly spread to a larger area and burned down nearby trees, crops and houses. The fire also resulted in the death of two employees. This also caused protests in some parts of the state by environment activists, local residents, and students, placing immense pressure on OIL, which has reported losses in productivity owing to the blockades and bandhs.

<https://www.sentinelassam.com/north-east-india-news/assam-news/1-more-killed-due-to-floods-in-assam-over-36000-in-4-districts-affected-484506?infinitescroll=1>

14-day quarantine waived for Army, Navy, Air Force amid India-China row, but riders apply

New guidelines exempt personnel from 14-day quarantine if they are asymptomatic & have not come into contact with a Covid patient in 14 days

By Amrita Nayak Dutta

New Delhi: The Indian armed forces have revised the quarantine policy for members of the Army, the Navy and the Air Force amid their increased deployment in light of India-China tensions at Ladakh.

Soldiers who return from leave or temporary duties, or report for a new posting, will now be exempt from the mandatory 14-day quarantine unless a clear Covid-19 infection risk has been established.

According to the revised guidelines issued by the Directorate General of Armed Forces Medical Services Monday, exemption from quarantine may be considered if the personnel are asymptomatic and have not come into contact with a confirmed or suspected Covid-19 patient in the 14 days preceding their arrival at their base.

The guidelines cover all three branches of the military, the Army, the Navy and the Air Force. They were issued exactly a week after the clash between India and China at Galwan Valley in Ladakh that killed 20 Indian soldiers. It was reported Tuesday that the two sides have resolved to avoid a repeat of the Galwan Valley violence and decided to pursue step-wise de-escalation in Ladakh.

So far, members of three branches have been mandated to serve a 14-day quarantine following their return from leave and temporary duties, and while reporting for a new posting.

Speaking to ThePrint, a senior defence officer said, in the current scenario, there is always a requirement of having the maximum number of soldiers available for operational duties.

“On returning from leaves or other duties, the troops are in quarantine for 14 days. So, even though they are physically present, they are not available for operational requirements,” the officer added.

The revised policy was drafted on the recommendations of a board of officers after they reviewed the Covid-19 policies in place at a meeting. The recommendations of the board, sources said, were based on how the disease has evolved, evidence from global research, and the central government’s response to the pandemic.

Other conditions for exemption

The guidelines also suggest other conditions for exemption from quarantine: For example, if personnel have travelled from one station of duty to another without any halt in between, and used service transport or their own vehicle for the journey.

They can also avail of the exemption if they sign a self-declaration certificate validated by the commanding officer of their units.

The revised policy further says that testing will not be required for individuals before, during or after quarantine unless they exhibit symptoms. They state that temporary duties of less than seven days should be avoided unless absolutely urgent. Families or dependents of serving personnel will be quarantined on the basis of the policy in a given state, they add.

Another such concession was extended earlier this month to facilitate quick travel of the forces, in the days before the Galwan Valley clash. The Department of Military Affairs (DMA) allowed personnel stranded at various locations because of the limited transport available during the Covid-

19 lockdown a one-time relaxation to use private airlines to get back to their units. The relaxation will be available for a month, until 10 July.

<https://theprint.in/defence/14-day-quarantine-waived-for-army-navy-air-force-amid-india-china-row-but-riders-apply/447195/>



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

Wed, 24 June 2020

HSL ties up with Turkish firm to build Fleet Support Ships

After clouds of uncertainty, the Hindustan Shipyard Limited, which achieved a turnaround, is inching forward smoothly to sign a contract and begin construction of five Fleet Support Ships for the Indian Navy in collaboration with a Turkish shipyard.

The project is estimated between ₹ 10,000 crore and ₹ 14,000 crore. “After obtaining clearance from the Ministry of Defence, we are signing the contract with a shipyard based in Turkey and begin construction in collaboration with it by mid-2021,” HSL Chairman and Managing Director Rear Admiral (retd) L.V. Sarat Babu told The Hindu.



The HSL which planned to have a strategic partnership with Hyundai Heavy Industries dropped it earlier following the latter’s insistence on constructing the first ship in South Korea and procuring major components from the global shipping giant.

Each Fleet Support Ship will have a displacement capacity of 45,000 DWT.

Mr. Sarat Babu said as part of the contract, the ‘know-how and know-why’ from the foreign collaborator would be transferred to HSL to give a fillip to local MSMEs. The MSMEs specialising in fabrication, blasting, piping, cable installation and outfitting will be benefited.

Pontoon contract

In competitive bidding, the HSL recently bagged a prestigious contract for construction of semi-submersible pontoons worth ₹ 420 crore from the Navy. Mr. Sarat Babu said the pontoons were being used as platforms to undertake repair of ships and submarines.

<https://www.defenceaviationpost.com/2020/06/hsl-ties-up-with-turkish-firm-to-build-fleet-support-ships/>

ISRO gets Indian patent for liquid cooling and heating garment

The outer and inner layer of the garment are separated by a plurality of tubes configured to circulate a heat transfer fluid

Chennai: The Indian Space Research Organisation (ISRO) has got an Indian patent for its liquid cooling and heating garment (LCHG) that is suitable for space applications.

The patent is valid for 20 years from the date of application, that is, February 8, 2016, and was granted on June 19.

While ISRO is the patentee or patent owner, the four inventors are Srirangam Siripothu, Reshmi Balachandran, Saraswathi Kesava Pillai Manu, and Gurumurthy Chandrasekaran.

According to the patent papers filed by ISRO, the garment made of biocompatible fabrics and parts to provide comfortable body temperature and removal of sweat.

These garments find use in manned space flights and also for earth-bound operations such as firefighting, working in industries and the like, the Indian space agency said in its filings.

The close-fitting, single-piece garment covering the body, torso and limbs from neck to toe weighs between 1,000 to 3,000 g and has a front-entry zipper to be worn inside over which the flight or the space suit is to be worn.

According to ISRO, the garment has superior heat transfer efficiency and can be conveniently used for maintaining the body temperature of the wearer at levels suitable for the physiological performance required.

The LCHG controls the body temperature of the wearer comprising outer polymeric fabric tricot and inner polymeric fabric net in contact with the wearer's skin.

The outer and inner layer of the garment are separated by a plurality of tubes configured to circulate a heat transfer fluid.

The tube is arranged in such a way that it covers the entire body without any overlaps and remove maximum heat from the wearer.

The Indian space agency is working on an ambitious Rs 10,000-crore project 'Gaganyaan' to send three air force pilots into space for a week.

Four Indian Air Force pilots are undergoing astronaut training in Russia. Out of these, three will travel into space at a height of about 400 km.

<https://telanganatoday.com/isro-gets-indian-patent-for-liquid-cooling-and-heating-garment>

KIST develops eco-friendly, flame-retardant carbon plastic ideal for recycling

Non-toxic, flame-retardant composite material based on bio-epoxy made from plant-source tannic acid. 99% eco-friendly recycling within tens of minutes merely by dissolving in water

A flame-retardant carbon-fiber-reinforced composite material has been developed. Korea Institute of Science and Technology (KIST) announced that a research team from its Institute of Advanced Composite Materials, headed by Dr. Yong chae Jung used plant-originated *tannic acid to develop a flame-retardant **carbon fiber-reinforced plastic (CFRP), and also presented a method for its eco-friendly recycling.

*Tannic acid: A substance that is abundant in nature, tannic acid is a type of polyphenol that is usually synthesized by plants.

**Carbon fiber-reinforced plastic: An advanced lightweight composite material reinforced by carbon fiber, with high rigidity and high elasticity that is suitable for a wide range of applications.

CFRP, a composite material that contains carbon fiber, which is about four times lighter than steel yet 10 times stronger, is widely used in the aerospace, automotive, shipbuilding, and sports equipment industries. Structurally, CFRP is made up of carbon fiber and epoxy resin, which serve functions in this composite material similar to the respective roles that reinforcing rods and cement play in concrete structures. To achieve mechanical rigidity, the binding of carbon fiber and epoxy resin in CFRP must be strong. Moreover, CFRP must be fire-safe as it is used for purposes closely related to everyday life, e.g. use as a construction material. To induce these traits in CFRP, sometimes it is synthesized with additives.

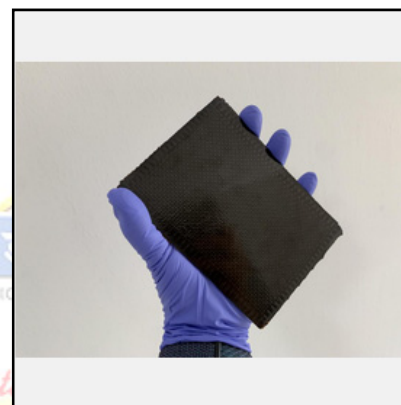


Image: KIST research team used plant-originated tannic acid to develop a flame-retardant carbon fiber-reinforced plastic (CFRP)

Due to its susceptibility to heat, CFRP had been made fire-safe by adding a ***halogen flame-retardant. However, the use of halogen in CFRP was banned worldwide, because it generates toxic substances when incinerated for recycling. As such, the task at hand was to make CFRP flame-retardant with the use of a non-toxic, safe material.

***Halogen: Elements that belong to Group 17 on the periodic table, including fluorine, chlorine, bromine, and iodine.

Jung Yong-chaе, head researcher at KIST's Institute of Advanced Composite Materials, sought to improve the mechanical rigidity and flame-retardance of CFRP with tannic acid, an eco-friendly substance. Tannic acid characteristically bonds strongly with carbon fiber. It also turns into charcoal when burned. Charred tannic acid functions as a barrier that blocks the inflow of external oxygen. By manufacturing epoxy resin from tannic acid and mixing it into carbon fiber, the KIST research team successfully developed a CFRP that is strong and flame-retardant.

Unlike conventional epoxy resin that is vulnerable to heat, epoxy resin made from tannic acid is flame-retardant and needs no additives. This means that the toxic substances generated when incinerating CFRP for recycling would no longer be a problem. Also, because conventional CFRP when burned decreased the performance of its epoxy resin, precluding complete recycling, the research team came up with a new recycling method.

By dissolving CFRP in water in a ****supercritical Fluid state - i.e. temperature and pressure over a set level - over 99% of the CFRP could be recovered without reduced carbon fiber performance. It was also found that epoxy resin when dissolved produced a substance called

*****carbon dots," which can be used as an electronic material (Optronics, Sensing, Bioimaging etc.). Unlike the method of recycling by incineration, which burns up epoxy resin leaving only the incomplete carbon fiber to be recycled, this new method of recycling enables the recycling of all components of a composite material.

****Supercritical fluid: A substance with a temperature and pressure above the critical level. Related to expandability of gas and dissolvability of liquid. Water and carbon dioxide are substances commonly used as supercritical fluids. Supercritical water can dissolve even gold.

*****Carbon dots: Carbon quantum dots, with carbon as their major element, have the characteristics of photoluminescence and a semiconductor, making them similar to inorganic quantum dots. Due to said characteristics, carbon quantum dots are being widely used in areas such as bio-imaging, sensors, light-emitting diode (LED) lighting, organic solar cells, and photocatalysts.

Head researcher Dr. Jung said, "We have created a composite material with an expanded range of application that is a dramatic improvement over conventional carbon fiber-reinforced plastic in terms of flame-retardancy, mechanical rigidity, and recyclability. These improved traits are significant in that they determine the range of application of said composite material." He added, "We will be reviewing the structure of this composite material to achieve even further improved properties and to further expand the range of its application."

The research, backed by the Ministry of Science and ICT, was conducted as an Institutional Research Program of the Korea Institute of Science and Technology. A journal article explaining the results of the research was published in the latest issue of Composite Part B: Engineering, the top international journal in the field of materials science and composite materials (top 2% of JCR).

(Disclaimer: AAAS and EurekAlert! are not responsible for the accuracy of news releases posted to EurekAlert! by contributing institutions or for the use of any information through the EurekAlert system.)

https://www.eurekalert.org/pub_releases/2020-06/nrco-kde061920.php

ScienceDaily

Wed, 24 June 2020

Gear treated with 'forever chemicals' poses risk to firefighters

Firefighters face occupational hazards on a daily basis. Now, new research shows they face additional risk just by gearing up

Summary: Researchers tested more than 30 samples of used and unused PPE from six specialty textile manufacturers in the United States and found them to be treated extensively with PFAS or constructed with fluoropolymers, a type of PFAS used to make textiles oil and water resistant

Fabric used for firefighter turnout gear tested positive for the presence of per- and polyfluorinated alkyl substances (PFAS), according to the study published in *Environmental Science and Technology Letters*, led by Graham Peaslee, professor of physics at the University of Notre Dame. Peaslee embarked on a more extensive study, after initial tests on gear samples showed significantly high levels of fluorine.

"When we ran our initial tests, the fluorine content was so high, there was little question as to whether or not we'd find PFAS in a larger sample of gear," said Peaslee. "Our primary concern -- as is always the case when it comes to these particular chemicals -- became how much of it is coming off the gear and getting into the environment?"

Peaslee's team tested more than 30 samples of used and unused personal protective equipment (PPE) from six specialty textile manufacturers in the United States and found them to be treated

extensively with PFAS or constructed with fluoropolymers, a type of PFAS used to make textiles oil and water resistant.

Firefighter's PPE or "turnout gear" is comprised of three layers -- a thermal layer, worn closest to the skin, covered by a moisture barrier designed for water resistance and the outer shell. Peaslee and his team found high concentrations of fluorine on the moisture barrier and outer shell. Some of these chemicals have the ability to migrate off treated surfaces and materials, meaning the PFAS in the moisture barrier and outer shell PPE could potentially contaminate the thermal layer and come in direct contact with skin.

"If they touch the gear, it gets on their hands, and if they go fight a fire and they put the gear on and take it off and then go eat and don't wash hands, it could transfer hand to mouth," said Peaslee. "And if you're sweating and you have sweat pores, could some of these chemicals come off on the thermal layer and get into the skin? The answer is probably." Peaslee's study is the first to identify this potential source of PFAS exposure in firefighting PPE and argues that more studies are needed.

Known as "forever chemicals" PFAS have been found in fast food wrappers and containers, nonstick cookware, child car seats and firefighting foams. The use of PFAS-based foam fire suppressants has been linked to the contamination of drinking water systems, leading the United States Department of Defense to switch to an environmentally safer alternative foam before 2023. In a previous study, co-authored by Peaslee, researchers found the chemicals accumulate in the body after entering the bloodstream, and PFAS have been linked to four of the top eight cancers which have been found more commonly in firefighters including testicular cancer, mesothelioma, non-Hodgkin's lymphoma and prostate cancer.

The study also presented evidence of the potential hazard of these chemicals in PPE in two other ways. Dust samples taken from a PPE distribution facility in one fire district also tested positive for fluorine, consistent with the ability of these chemicals to shed off the gear onto other surfaces. The team also observed fluorine transfer from the outer shell onto gloved hands upon handling, proving that this could be an exposure source from PFAS to firefighters.

"Further work needs to be done to assess the extent of this risk to firefighters," said Peaslee, an affiliated member of the Eck Institute for Global Health and the Environmental Change Initiative. "But until this risk is estimated, operational steps can be taken to minimize occupational exposure to these PFAS while still using the PPE to keep the firefighters safe on the job." Peaslee suggests that the long-term solution would be to find a healthier alternative to PFAS which can provide equivalent water resistance to the gear.

This is just the latest study in a building collection of literature highlighting the danger and persistence of PFAS in contamination of the environment and threat to public health.

Story Source:

[Materials](#) provided by [University of Notre Dame](#). Original written by Jessica Sieff. *Note: Content may be edited for style and length.*

Journal Reference:

1. Graham F. Peaslee, John T. Wilkinson, Sean R. McGuinness, Meghanne Tighe, Nicholas Caterisano, Seryeong Lee, Alec Gonzales, Matthew Roddy, Simon Mills, Krystle Mitchell. **Another Pathway for Firefighter Exposure to Per- and Polyfluoroalkyl Substances: Firefighter Textiles.** *Environmental Science & Technology Letters*, 2020; DOI: [10.1021/acs.estlett.0c00410](https://doi.org/10.1021/acs.estlett.0c00410)
<https://www.sciencedaily.com/releases/2020/06/200623145336.htm>

French drugmaker Sanofi eyes approval of potential Covid-19 vaccine by first-half of 2021

"We are being guided by our dialogue with regulatory authorities," Sanofi research Chief John Reed said in a televised address about the vaccine to hit by 2021

By Zaini Majeed

While drugmakers are racing to manufacture a safe and effective vaccine against coronavirus, French drugmaker Sanofi SA revealed that it is expecting the approval for the potential COVID-19 vaccine it is developing with Britain's GlaxoSmithKline Plc by the start of 2021, faster than the company anticipated. The company announced the accelerated time frame from the previous second half of 2021 manufacturing as said by GSK in April.

"We are being guided by our dialogue with regulatory authorities," Sanofi research chief John Reed said in a televised address that streamed online when asked about when the vaccines will hit the market. Further, the chief elaborated that the company was hosting a virtual research and development event for the same. While the time did not completely assure victory, Sanofi Chief Executive Paul Hudson said, the company was ahead in the race with Moderna Inc, the University of Oxford collaboration with AstraZeneca Plc to develop the vaccine, and an alliance of BioNTech and Pfizer vaccines.



Aiming at quality than speed

"There are companies moving faster, but let us be brutally clear, speed has three downsides," Hudson was heard saying about competition in a live-streamed interview. He added, "They are using existing work, in many cases done for SARS, it is likely not to be as efficacious and there is no guarantee on supply in large volumes." However, the company emphasized that the chances of success of the vaccine for them were higher than anybody else. As per a report, earlier, the chief medical officer of GSK was also quoted saying that the drug company was aiming at quality much more than the focus on speed.

In an official press release on the website, Sanofi emphasized that Translate Bio would receive over \$425 million as upfront payment and common stock equity investment, plus it is overall eligible to receive up to \$1.9 billion of potential milestones as well as tiered royalties by US Biomedical Advanced Research and Development Authority (BARDA) on worldwide sales of developed vaccines. Further, it added, Sanofi has "received exclusive worldwide rights to develop, manufacture, and commercialize infectious disease vaccines using Translate Biotechnology."

<https://www.republicworld.com/world-news/europe/sanofi-drugmaker-expects-approval-of-covid-19-vaccine-by-2021.html>

Oxford's COVID-19 vaccine trial in Brazil begins: Scientists say coronavirus jab may not work for older adults

Oxford University starts human trial of its potential COVID-19 vaccine in Brazil, even as scientists are worried that coronavirus jab may not adequately protect older adults

Key Highlights

- **Human trials with Oxford University's COVID-19 vaccine start in Brazil with 3,000 people**
- **Scientists say coronavirus vaccine may not adequately protect the elderly who are at a higher risk of severe illness from the disease**
- **At least 473,475 people in the world have now succumbed to the coronavirus infection**

New Delhi: A potential coronavirus vaccine developed by Oxford University and supported by AstraZeneca Plc started human clinical trials this weekend in Brazil with 3,000 people. According to sponsor Lemann Foundation, the vaccine will be tested on 2,000 health workers in Sao Paulo and 1,000 people in Rio de Janeiro. Scientists said they expect to launch the COVID-19 vaccine by the end of this year.

Earlier this month, Brazil's health regulator Anvisa approved human clinical trials for the Oxford-AstraZeneca's ChAdOx1 nCoV-19 (AZD1222) vaccine in the country, where the disease is still rife. Brazil is the first country outside the United Kingdom to begin testing the Oxford-developed adenovirus vaccine.

Meanwhile, scientists have warned that a vaccine against the novel coronavirus may not be effective in older adults who are most at risk of severe illness and death from COVID-19. Worldwide, the novel coronavirus has now claimed at least 473,475 lives and infected as many as 9,161,460 people worldwide.

COVID-19 vaccine may not adequately protect older adults

The SARS-CoV-2 virus can affect anyone, however, older adults and people with underlying medical conditions might be at a higher risk of becoming seriously ill from the respiratory illness. While scientists across the world race to develop a COVID-19 jab, health experts are worried about whether the coronavirus vaccines currently being developed may adequately protect the elderly. This may mean vaccinating others around them such as low-risk children to protect the elderly.

Prof Peter Openshaw, from Imperial and one of the members of the UK's Sage scientific advisory sub-group Nervtag, said administering the nasal spray flu vaccine to children who do not often get severe flu protects their grandparents, reported *The Guardian*.

"Sometimes it is possible to protect a vulnerable group by targeting another group and this, for example, is being done with influenza," he was quoted as saying, adding that in the past few years, the UK has been at the forefront of rolling out the live attenuated vaccine for children.

The report said that immunising those who are likely to be the first to get the vaccine such as healthcare workers would also help protect older people who have the most contact with them.

Openshaw told the House of Lords Science and technology committee that the Sage scientific advisory sub-group Nervtag is considering a paper on targeting different groups in the population with COVID-19 vaccines.

Arne Akbar, professor of immunology at UCL and President of the British Society of Immunology, noted scientists needed to find out what goes wrong with the immune system as people get older.

"One thing that's apparent, even in healthy older people, is that there's more inflammation all around the body. We need to understand where that inflammation is coming from. And this

baseline inflammation in older people is linked to frailty and many negative outcomes as we get older. And this seems to be exacerbated when you get a severe infection like Covid-19,” he said.

“But what is the source of the inflammation in the first place? That’s something that we really need to get to grips with.”

Pig trial of vaccine important

The committee took note of the effectiveness of vaccine in the elderly as Oxford University revealed successful trials of two doses of its candidate vaccine in pigs, which respond in a similar way to humans. Research released by the Pirbright Institute, working with the vaccine scientists, found that two doses produced a significantly increased antibody response than a single dose.

“Pigs are more physiologically similar to humans than some other animal models - for example, their body weight and metabolic rate - and are more accessible than studies using non-human primates,” professor Bryan Charleston, director of the Pirbright Institute, said.

Researchers said the findings in pigs is important, although it is not yet known what level of immune response will be needed to protect humans from novel coronavirus.

<https://www.timesnownews.com/health/article/oxfords-covid-19-vaccine-trial-in-brazil-begins-scientists-say-jab-may-not-work-for-older-adults/610982>

DESIC live**mint**

Wed, 24 June 2020

Covid-19 vaccine: AstraZeneca's pig trial shows promise with two shots

A trial of AstraZeneca's experimental COVID-19 vaccine in pigs has found that two doses of the Oxford University-developed shot produced a greater antibody response than a single dose, scientists said

By Kate Kelland

London: A trial of AstraZeneca's experimental COVID-19 vaccine in pigs has found that two doses of the Oxford University-developed shot produced a greater antibody response than a single dose, scientists said on Tuesday.

Research released by Britain's Pirbright Institute found that giving an initial prime dose followed by a booster dose of the shot elicited a greater immune response than a single dose —suggesting a two-dose approach may be more effective in getting protection against the disease caused by the new coronavirus.

The ChAdOx1 nCoV-19 vaccine was originally developed by researchers at the University of Oxford, who are now working with AstraZeneca on development and production.

The vaccine is already in mid-stage human trials, and AstraZeneca has said it hopes to have data showing efficacy later this year. Pigs are a useful research model for this type of vaccine and other trials have been able to predict vaccine outcomes in humans, particularly in studies of flu.

<https://www.livemint.com/news/world/covid-19-vaccine-astrazeneca-s-pig-trial-shows-promise-with-two-shots-11592904686034.html>



A lab technician extracts a portion of a COVID-19 vaccine (Photo: AP)

