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India, US set to ink logistics agreement, text of draft agreed

By Ajay Banerjee

Parrikar to be on three-day visit to US from Aug 29

India and the US are set to ink a historic agreement to allow exchange of ‘logistics’ enabling their militaries to use each other’s assets and bases for repair and replenishment of supplies. A formal agreement is on the cards during the three-day US visit of the Defence Minister Manohar Parrikar commencing August 29. The two sides had announced the in-principle decision on April 12 in New Delhi saying they had agreed “in principle to conclude a logistics exchange memorandum of agreement (LEMOA) in the coming months”.

Now the draft is ready and the two countries have agreed upon the text for the agreement, sources said. This will, however, not entail ‘positioning of US troops on Indian soil’. In April, Parrikar, at a joint press conference with US Defence Secretary Ashton Carter, announced the new agreement saying it would take few weeks for the draft to be ready. The LEMOA is not just expected to help the US, it will act as a vital tool for India as it expands its Naval footprint and outreach. The US has a string of bases in East Africa, Persian Gulf, Diego Garcia (Indian Ocean), The Philippines, Japan, Australia and Japan. Indian warships and planes can seek similar refuel and repair facilities at these bases on long deployments, which are very frequent nowadays.

The LEMOA will cover four aspects — training, exercises, port calls and the humanitarian assistance. Indian planes used refuelling facilities at Djibouti for evacuating Indian citizens from Yemen last year. Both countries will have to seek advance permission to seek facilities and it does not entail any permanent bases for the US in India like it has in countries like Japan. The LEMOA will be facilitator as earlier such matters of refuelling and repair were considered on a case-to-case basis.

The LEMOA is the new name for the Logistics Support Agreement (LSA), which the two countries have been discussing for over a decade. What has been Okayed is a re-jigged version of the LSA, a cast-in-iron framework, which the US was keen on getting India to sign. India had asked the US to make it India-specific, and not the standard LSA draft, which the US has with its allies like the UK. New Delhi will reserve have the discretion of withdrawing in case it feels the US had gone to war with a country which India sees as ‘friendly’.

The LEMOA provides for sharing military logistics use of each other’s bases for resupplies and refuelling. Since 2006, the US has been insisting on signing three pacts which it calls “foundational”. The other two, the Communication and Information Security Memorandum Agreement and the Basic Exchange and Cooperation Agreement, are still far away from being inked.



China warns India against deploying BrahMos missile

A “nervous” India’s decision to deploy Brah Mos cruise missiles along the frontier in Arunachal Pradesh poses a threat to China and will have a negative impact on the boundary dispute, the People’s Liberation Army (PLA) has said. The deployment of a special version of the missile with updated capabilities for stealth and mountain warfare could threaten Yunnan and Tibet Autonomous Region (TAR) provinces, located across the border from Arunachal Pradesh which is claimed by China, a commentary in the PLA Daily said. The move is beyond India’s “normal need for self-defence”, complained military naval engineer Cheng Yuyi, who wrote the piece in the mouthpiece of the world’s largest armed forces. The commentary was carried with the headline: “Playing tricks, they are bound to suffer the consequences.” “The deployment of the Brah-Mos

missile ... is bound to increase the competitiveness and rivalry in the Sino-Indian relationship and negatively impact the region,” the piece said. Cheng compared the BrahMos to “an agile cobra, poised for action in no time”, and said it to improve the “suddenness and effectiveness of attack by shortening the time gap between finding and hitting the target”.

The commentary came weeks after the cabinet committee on security, chaired by Prime Minister Narendra Modi, cleared the raising of a new regiment to be equipped with the advanced version of the BrahMos at a cost of more than Rs 4,300 crore. In the piece originally published in Chinese, Cheng wrote: “It’s not hard to see that behind India’s move this time is the ideology to counterbalance and confront. In recent years, the String of Pearls Strategy and the China Threat Theory has been making a great clamour inside India, reflecting the psychological state of extreme nervousness.”

The commentary noted other steps taken by India to beef up its capabilities along the border with China. It said the “Indian Army has been planning deliberately to form an advantageous military power on the border area by deploying advanced weapons such as SU-30MKI fighters, missiles and unmanned spy drones. However, the piece continued that the BrahMos missile would not be able to penetrate deep into China’s territory because of its 290-km range. The BrahMos is 8.4 metres long and weighs around 3,000 kg.

The Statesman
PEOPLE'S PARLIAMENT, ALWAYS IN SESSION

Tue, 23 Aug, 2016

S Korea-US drill shadowed by North

AGENCE FRANCE-PRESSE
Seoul, 22 August

South Korea and the United States kicked off large-scale military exercises today, triggering condemnation and threats of a pre-emptive nuclear strike from North Korea.

The two-week annual Ulchi Freedom drill, which plays out a full-scale invasion scenario by the nuclear-armed North, is largely computer-simulated but still involves around 50,000 Korean and 25,000 US soldiers.

The exercise always triggers a spike in tensions on the divided Korean peninsula, and this year it coincides with particularly volatile cross-border relations following a series of high-profile defections.

Seoul and Washington insist the joint military drills are purely defensive in nature, but Pyongyang views them as wilfully provocative.

The North Korean Foreign Ministry today condemned Ulchi Freedom as an “unpardonable criminal act” that could bring the



peninsula to “the brink of war”.

The Korean People’s Army (KPA), meanwhile, threatened a military response to what it described as a rehearsal for a surprise nuclear attack and invasion of the North.

North Korea’s frontline units were “fully ready to mount a pre-emptive retaliatory strike at all enemy attack groups involved,” said a spokesman for the KPA General Staff.

The slightest violation of North Korea’s territorial sovereignty would result in the source of the provocation being turned “into a heap of ashes through

Korean-style pre-emptive nuclear strike,” the spokesman said.

Pyongyang has made similar threats in the past, and actual retaliation to South Korea-US military drills has largely been restricted to firing ballistic missiles into the sea.

As the drill began, South Korean President Park Geun-Hye said a recent spate of headline-grabbing defections from North Korea signalled political turmoil in Pyongyang that could cause the leadership there to lash out against the South.

“It is increasingly possible that North Korea may

undertake various terror attacks and provocations... to block internal unrest, prevent further defections and create confusion in our society,” Park told a meeting of her National Security Council.

Her comments came a day after the Unification Ministry in Seoul urged all citizens to be on guard against possible North Korean assassination attempts on defectors and anti-Pyongyang activists in the South.

Park said the South Korean military was on high alert and would “vigorously strike back” in the event of any hostile action.

Analysts say there is a genuine risk of an unintended incident escalating into a military clash, given the current absence of direct communication between the two Koreas.

As tensions rose in the wake of North Korea’s fourth nuclear test in January, Pyongyang shut down the two existing hotlines with South Korea - one used by the military and one for government-to-government communications.

Japan, China, S. Korea to meet

Tokyo, Aug. 22: The foreign ministers of Japan, China and South Korea will meet this week in Tokyo, with their countries at odds over territorial disputes and a US missile defence system.

Japanese Foreign Minister Fumio Kishida, China's Wang Yi and South Korea's Yun ByungSe will have dinner on Tuesday before formal talks on Wednesday, Japan's foreign ministry said in a statement. They "will discuss trilateral cooperation as well as regional and global issues", it said. Among those issues are likely to be North Korea.

Japan and South Korea regularly condemn Pyongyang for its nuclear and missile development, but feel frustrated by what they see as a lack of pressure on the country by China, its longtime ally and economic lifeline.

The talks also come as Sino- Japanese tensions over a territorial dispute in the East China Sea rose this month, while China and South Korea have sparred over the planned deployment in the latter country of a US anti-missile system.

Japan and China are locked in a dispute over uninhabited islets in the East China Sea. Tokyo has lodged more than 30 protests since August 5, saying there have been about 30 intrusions by Chinese vessels into its territorial waters.



This star is 30 times bigger than Sun

Scientists have identified a young star in the Milky Way located 11,000 light years away from Earth and 30 times more massive than our Sun, which could help understand how the most massive stars form.

The star is still in the process of gathering material from its parent molecular cloud, and may be even more massive when it finally reaches adulthood, researchers said. Led by a team at the University of Cambridge, researchers identified a key stage in the birth of the massive star, and found that these stars form in a similar way to much smaller stars like our Sun — from a rotating disc of gas and dust.

In our galaxy, massive young stars — those with a mass at least eight times greater than the Sun — are much more difficult to study than smaller stars. This is because they live fast and die young, making them rare among the 100 billion stars in the Milky Way, and on average, they are much further away. "An average star like our Sun is formed over a few million years, whereas massive stars are formed orders of magnitude faster — around 100,000 years," said John Ilee from Cambridge's Institute of Astronomy, the study's lead author.

"These massive stars also burn through their fuel much more quickly, so they have shorter overall lifespans, making them harder to catch when they are infants," Ilee said.

The protostar that researchers identified resides in an infrared dark cloud — a very cold and dense region of space which makes for an ideal stellar nursery. However, this rich star-forming region is difficult to observe using conventional telescopes, since the young stars are surrounded by a thick, opaque cloud of gas and dust. Using the Submillimetre Array (SMA) in Hawaii and the Karl G Jansky Very Large Array (VLA) in New Mexico, researchers were able to 'see' through the cloud into the stellar nursery itself. — PTI

Three strains of fungi to help recycle rechargeable batteries

Organic acids generated by fungi can be used to extract lithium and cobalt, scientists said

Scientists have found a low-cost and environment-friendly method to recycle used rechargeable lithium-ion batteries, with the help of fungi. Old batteries often wind up in landfills or incinerators, potentially harming the environment. And valuable materials remain locked inside. Now, a team of researchers at the University of South Florida in the U.S. is turning to fungi to drive an environmentally friendly recycling process to extract cobalt and lithium from tonnes of discarded batteries. “The idea first came from a student who had experience extracting some metals from waste slag left over from smelting operations,” said Jeffrey A. Cunningham, the project’s team leader.

“We were watching the huge growth in smartphones and all the other products with rechargeable batteries, so we shifted our focus. The demand for lithium is rising rapidly, and it is not sustainable to keep mining new lithium resources,” he said. While other methods exist to separate lithium, cobalt and other metals, they require high temperatures and harsh chemicals. To drive the process, Mr. Cunningham and Valerie Harwood, both at the University of South Florida, are using three strains of fungi — *Aspergillus niger*, *Penicillium simplicissimum* and *Penicillium chrysogenum*. “We selected these strains of fungi because they have been observed to be effective at extracting metals from other types of waste products,” Mr. Cunningham said. “Fungi are a very cheap source of labour.”

The team first dismantles the batteries and pulverises the cathodes. Then, they expose the remaining pulp to the fungus. “Fungi naturally generate organic acids, and the acids work to leach out the metals,” Mr. Cunningham said. “Through the interaction of the fungus, acid and pulverised cathode, we can extract the valuable cobalt and lithium,” he said. Results so far show that using oxalic acid and citric acid, two of the organic acids generated by the fungi, up to 85 per cent of the lithium and up to 48 per cent of the cobalt from the cathodes of spent batteries can be extracted.

Paper-based device can spot substandard meds

Scientists have developed a simple, inexpensive paper-based device which can identify poor-quality or degraded medications within minutes. The developing world is awash in substandard, degraded or falsified medications, which can either directly harm users or deprive them of needed treatment, researchers said.

With internet sales of medications on the rise, people everywhere are increasingly at risk, they said.

Low-cost tool - “People who do not have access to the best-quality medicines also do not have as many resources to buy the analytical instrumentation to detect the quality problems,” said Marya Lieberman from University of Notre Dame in the U.S. “Instead of a \$30,000 instrument, we have developed a \$1 paper card. We designed the card so it would be as easy and inexpensive to use as possible,” said Ms. Lieberman.

Medications can be compromised in many different ways. For example, they may be bulked up with fillers, or they can degrade because they are stored improperly, researchers said. Identifying poor-quality medications is challenging, as inspectors may not know in advance what chemical adulterants or degradation products they need to look for, they said.

Bad-quality medications may also contain at least some of the active ingredient, so simply detecting the presence of the real medication is not enough to rule out issues. Ms. Lieberman developed the card along with Sarah Bliese from Hamline University. — PTI

MAIL TODAY

Tue, 23 Aug, 2016

Skill training for army spouses

NOW it is time for the army to make use of the Centre's major skill development push. Namita Suhag, wife of Army Chief General Dalbir Singh, on Monday launched one of its kind Army Skill Training Centre at Delhi Cantonment along with Skill Development Minister Rajiv Pratap Rudy. The centre can be used by the army spouses and wards to enhance their skill and raise the prospects of employability. The centre offers courses in IT-enabled services like beauty and wellness, apparel and handicraft.

New aerospace museum in city

AVIATION enthusiasts have good news to cheer about. The Indian Air Force will soon build a new aerospace museum near the Delhi international airport to showcase rich aviation history of the country. The current museum in the Palam Technical falls short of expectation. The swanky new museum, spread over 43 acres, is expected to be completed in three to five years. It will have large indoor and outdoor sections and aircraft in flying attitude.



Tue, 23 Aug, 2016

Coming, an Aerospace Museum

The IAF will construct an aerospace museum close to the Indira Gandhi International Airport to highlight India's rich aviation history. The Defence Ministry recently cleared the proposal and a final financial sanction is awaited. The museum will be ready in three to five years once the approval comes through.



Giving details of the proposed museum, IAF officials said here on Monday the centre is not only meant to preserve the glorious tradition of the force but also to create awareness amongst masses about India's rich aerospace heritage. They also believed the museum will be a popular tourist attraction and a landmark in the national capital.

Spread over 43 acres, the new museum will have extensive indoor and outdoor displays including huge aircraft parked and hanging in flying attitude with mural depicting the golden era.

A dedicated children's area will be part of the museum where children can enter cockpits of displayed aircraft and get the feel of flying controls. A video arcade would also be created. As per the plan, the internal displays would have a history section in which all IAF squadrons' history would be displayed along with aviation legends, major campaigns and wars fought by the IAF. Along with this history, major humanitarian assistance and disaster relief operations undertaken by the IAF would also be highlighted.

At present, the IAF has a museum near the technical area of Air Force Station Palam, which was established in 1967. The museum has an average footfall of 500 tourists daily and exhibits details about combat operations undertaken by the IAF depicting IAF's rich history since its formation in 1932 to present date, along with the display of various aircraft and equipment on the IAF's inventory, since its inception. The vintage aircraft on display include Spitfires and some other aircraft used during World War II.