

# समाचार पत्रों से चयित अंश Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा

**A Daily Current Awareness Service**



रक्षा विज्ञान पुस्तकालय  
Defence Science Library  
रक्षा वैज्ञानिक सूचना एवं प्रलेखन केन्द्र  
Defence Scientific Information & Documentation Centre  
मेटकॉफ हाऊस, दिल्ली 110054  
Metcalf House, Delhi-110054

## 2 M-777 ultra-light howitzers arrive

With the arrival of two M-777 ultra-light howitzer(ULH) guns here on Thursday, the Army is all set to acquire a modern artillery gun from the US after a gap of 30 years since the Bofors guns controversy. India and the US had signed the Government to Government deal for 145 howitzers last year worth over 737 million dollars(Rs2,400 crore).

The two guns, which arrived here, will fire 155mm ammunition and will go through pre-induction trials in Rajasthan next month. As per the contract, firing tables and range of the guns to be deployed in the mountain regions facing China will be calibrated during the trials. Following this process, three more guns will arrive in September and the formal induction will begin in March with five guns coming to the Army every month. The entire acquisition process of the 155mm39calibre guns is likely to be over by June 2021, officials said here.

Giving details of the delivery schedule, the officials said that India will acquire 24 guns off the shelf and the remaining howitzers capable of hitting targets ranging from 24 to 40 km will be assembled in India by private sector company Mahindra and Mahindra. The first two guns were brought to New Delhi in a chartered transport plane, they added.

The M-777 howitzers manufactured by BAE systems are light weight as they are manufactured of titanium and can be airlifted to inaccessible mountains of on the Eastern and Western fronts facing China in a short time. Most of the M-777 howitzers will form part of the Mountain Strike Corps now under raising for meeting any challenge from China.

Incidentally, the Defence Ministry last week inked another deal worth over Rs4,366 crores with Larsen and Toubro for supply of 100 self-propelled howitzers. The private sector company will manufacture these 155mm52 calibre tracked artillery guns called K-9Vajra-T in collaboration with South Korean firm Hanwha Tech Win and all the guns will be delivered to the Army within 42 months of signing the deal. These guns can fire beyond 45 kms and will move on tank-type tracks to accompany tanks and mechanised regiments to battle.

The Army was facing an acute shortage of modern artillery guns capable of firing long range for the last guns as acquisition came to a halt in the wake of the Bofors gun controversy in 1986. The Army's artillery modernisation plan envisages procuring 2,800 guns by 2027. The plan included procuring 1,580 towed guns, 814 truck-mounted guns, 100 tracked self-propelled guns, 180 wheeled self-propelled guns and 145 ultra-light howitzers.



## Blacklisted Kolkata lab tests raw materials for ordnance factories

*Indian Quality Controllers laboratory does not have necessary infrastructure or expertise: Sources*

Ordnance Factories have been sending raw materials and components of arms and ammunition for testing to a Kolkata laboratory that was last year blacklisted by National Accreditation Board for Testing and Calibration Laboratories (NABL) — a constituent board of the Quality Council of India.

Sources said the blacklisted Indian Quality Controllers laboratory does not have necessary infrastructure or expertise, but has been giving out reports and 'quality' certificates in bulk with an NABL logo. Not only ordnance factories, even vendors supplying materials to them have been obtaining certificates from the lab in North Kolkata, sources said.

Ordnance factories under the aegis of its corporate headquarters in Kolkata, Ordnance Factory Board (OFB), engage in defence production and is mandatory for them to test components at accredited labs after purchase.

“OFB would examine this issue and revert at the earliest after obtaining necessary inputs,” the board’s public relations officer told The Indian Express.

Speaking from New Delhi, former director general of Ordnance Factories, Sartaj Singh, said: “This is serious. According to procedure, tests had to be conducted only in labs approved by NABL. If what you say is true, then the reports cannot be accepted.” Ordnance factories, including those in Badmal (Odisha), Chanda (Maharashtra) and Cossipore Gun and Shell Factory (Kolkata), engaged the Kolkata lab even after it was blacklisted on September 29 last year. NABL sources said the lab was blacklisted after a “total system failure and gross negligence in technical aspects” was identified. The lab tested materials beyond its scope, sources said.

“Our organisation forcibly withdraws accreditation when there are strong anomalies and negligence. Accreditation status of Industrial Quality Controllers, Kolkata, has been placed under forced withdrawal category and the information to this effect has been already posted on the NABL’s website for customers and stakeholders. Necessary action will be taken if we find that our logo is being used,” said Anil Relia, CEO of NABL. “We have taken serious view of your information that the laboratory is testing critical items of ordnance factories and other government agencies,” read a statement by Srikanth R, joint director of NABL.

The proprietor of the lab, Sanjay Das, said, “Yes, it (accreditation) was withdrawn in September,” he said, refusing to elaborate further.

## THE ASIAN AGE

Fri, 19 May, 2017

# India, S’pore navies conduct joint exercise in S. China Sea

AGE CORRESPONDENT  
NEW DELHI, MAY 18

In conformity with India’s ‘Act East policy’ and a concerted effort to enhance the Navy’s outreach, a bilateral exercise between the navies of India and Singapore took off on Thursday in the troubled waters of South China Sea.

South China Sea has seen a lot of naval activity in recent times with the Chinese Navy’s growing assertiveness in the region.

Named Simbex-17 (Singapore-India Maritime Exercises), four Indian ships — Shivalik, Sahyadri, Jyoti and

### Countering China

■ Total four Indian ships and an anti-submarine aircraft will participate in the weeklong exercise

■ South China Sea has seen a lot of naval activity in recent times with the Chinese Navy’s growing assertiveness in the region

Kamorta besides one P8-I, a maritime patrol and anti-submarine warfare aircraft — will participate in the weeklong exercise.

The Singapore Navy is represented by RSN ships Supreme, Formidable and Victory and Maritime Patrol Aircraft Fokker F50 in addition to the RSAF F-16 aircraft.

Simbex is aimed at increasing interoperability between the Indian and Singaporean navies as well as developing common understanding and procedures for maritime security operations.

The current exercise includes wide-ranging professional interactions during the Harbour Phase scheduled from May 18 to May 20 and a diverse range of operational activities during the sea phase to be held from 21 May to 24 May.

The thrust of exercises at sea this year would be on anti-submarine warfare, integrated operations with surface, air and sub-surface forces, air defence and surface encounter exercises.

Besides SIMBEX with Singapore, the Navy exercises with 11 other national navies. The exercises are Malabar (USA and Japan), Indra (Russia), Varuna (France), Konkan (UK), Jimex (Japan), Slinex (Sri Lanka), Ibsamar (South Africa and Brazil), and Ausindex with Australia and Indonesia. Held since 1994, Simbex is the 24th edition of the annual exercise between the two countries.



Australian Border Force's largest patrol vessel Ocean Shield arrives at the Chennai port on Thursday. — PTI

### **India aims to boost trade ties with African nations**

#### *African Development Bank meet to be held in Gujarat*

India has extended credit totalling \$7.6 billion to African nations and aims to use the upcoming annual meeting of the African Development Bank in Gujarat this month to strengthen its trade ties with the continent.

As on March 31, 2017, India has extended 152 lines of credit to 44 African nations amounting to \$7.6 billion, Economic Affairs Secretary Shaktikanta Das said. The meeting will take place on May 22-26 in Gandhinagar, Gujarat.

Prime Minister Narendra Modi, who will inaugurate the meeting, had in the India-Africa Summit committed a \$10 billion line of credit to African nations.

The African Development Bank (AfDB) has 81 member countries, 57 of which are from Africa. India is among the other 24 non-regional members.

Indian companies have invested \$72 billion in African nations as of 2014-15, Mr. Das added, saying that this made up 20% of the total investment in those countries.

## चीन ने अब बनाया अटैक हेलीकॉप्टर

बीजिंग : सामरिक दृष्टि से भी दुनिया की महाशक्ति बनने को उद्यत चीन ने गुरुवार को अटैक हेलीकॉप्टर सार्वजनिक किया। विशेषज्ञों के अनुसार चीन ने निर्यात संबंधी मांग को देखते हुए इस हेलीकॉप्टर का विकास किया है, जो अन्य देशों के बनाए हेलीकॉप्टर की तुलना में सस्ता होगा। वैसे चीन की

सेना को भी बड़ी संख्या में इस तरह के हेलीकॉप्टर की जरूरत है। जेड-19 ई नाम का यह हेलीकॉप्टर सरकार के स्वामित्व वाली कंपनी एवीआइसी हार्बिन एयस्क्राफ्ट इंडस्ट्री ने तैयार किया है। परीक्षण के तौर पर गुरुवार को हार्बिन शहर के आकाश पर काफी देर तक इस हेलीकॉप्टर को उड़ाया गया।

**The Statesman**  
PEOPLE'S PARLIAMENT, ALWAYS IN SESSION

## US reviews Iran nuclear plan, orders sanctions

The US has said it will continue to waive certain economic sanctions on Iran's nuclear programme while simultaneously implementing a new set of sanctions related to the country's ballistic missile programme and monitoring its human rights abuses. "As we continue to closely scrutinise Iran's commitment to the Joint Comprehensive Plan of Action (JCPOA) and develop a comprehensive Iran policy, we will continue to hold Iran accountable for its human rights abuses with new actions," Stuart Jones, the Acting Assistant Secretary of State for Near Eastern Affairs Ambassador, said yesterday. It will implement a new set of sanctions related to Iran's missile programme continuing participation in the JCPOA.

"We urge our partners around the world to join us in calling out individuals and entities who violate international sanctions targeting Iran's human rights abuses," Jones said. The State Department communicated to the Congress that the US continues to waive sanctions as required to continue implementing the US sanctions-lifting commitments in the JCPOA. "This ongoing review does not diminish the US' resolve to continue countering Iran's destabilising activity in the region, whether it is supporting Syria's President Bashar al- Assad's regime, backing terrorist organisations like Hezbollah, or supporting violent militias that undermine governments in Iraq and Yemen," Jones said.

He said the US will never allow the regime in Iran to acquire a nuclear weapon. Jones statement coincided with the Department of Treasury's announcement of new sanctions related to Iran's ballistic missile programme. "Last month the Treasury Department imposed the first human rights-related sanctions designations against Iranian individuals and entities since December 2014, and we will continue to pursue initiatives around the world that uphold our core values of promoting and protecting human rights," he said. Jones said the Treasury Department is imposing new sanctions on Iranian defense officials, an Iranian entity, and a China-based network that supplied missile-applicable items to a key Iranian defense entity. "The action reflects concern with Iran's continued development of ballistic missiles, which is inconsistent with the United Nations Security Council Resolution 2231.

Iran continues to pursue missile-related technologies capable of delivering a nuclear weapon," Jones said. Lawrence Ward, a partner at international law firm Dorsey & Whitney, said that the announcement by the State Department to continue the US participation in the Iran nuclear deal is quite significant. US President Donald Trump, on the campaign trail, suggested that if elected his Administration might take a very different path towards Iran and might do so very quickly upon taking office, he said.

## इंसानों ने बना डाला धरती का रक्षाकवच

इंसानी गतिविधियों के पृथ्वी के प्रति अब तक नकारात्मक असर ही सामने आए हैं। यह पहली बार है जब इंसानों की कोई कारगुजारी धरती के लिए जीवनदायिनी साबित हो रही है। हाल ही में नासा के शोधयान वेन ऐलेन से मिली तस्वीरों से पता चला कि रेडियो तरंगों के माध्यम से इंसानों ने पृथ्वी से सुदूर अंतरिक्ष में एक रक्षा दीवार खड़ी कर दी है जो घातक अंतरिक्ष विकिरण से इंसानों और उसके ग्रह की रक्षा कर रही है। यह शोध स्पेस साइंस जर्नल में प्रकाशित हुआ है।

<h3>रेडियो तरंगों से बना कवच</h3> <ul style="list-style-type: none"> <li>● बेहद कम फ्रीक्वेंसी (वेरी लो फ्रीक्वेंसी या वीएलएफ) वाली रेडियो तरंगें जमीनी संचार केंद्रों से गहरे समुद्र में पनडुब्बियों से संपर्क साधने के लिए भेजी जाती हैं। इनमें से कुछ तरंगें अंतरिक्ष तक पहुंच जाती हैं।</li> <li>● यह तरंगें अंतरिक्ष में मौजूद कणों की गतिविधि को प्रभावित करती हैं।</li> <li>● लगातार इनके संपर्क में रहने से वे कण पृथ्वी के चारों ओर घेरा बना लेते हैं, जिससे अंतरिक्ष में मौजूद अत्यधिक ऊर्जा वाला विकिरण पृथ्वी तक नहीं पहुंच पाता। यही परत धरती की रक्षा कवच बनी हुई है।</li> </ul>	<h3>हटेगा विकिरण</h3> <ul style="list-style-type: none"> <li>● जहां इस कवच की बाहरी परत खत्म होती है, वही से वेन ऐलेन रेडिएशन बेल्ट (आवेशित कणों की परत) का अंदरूनी भाग शुरू होता है।</li> <li>● 1960 में जब वीएलएफ तरंगों का प्रसारण कम था तो इस बेल्ट का अंदरूनी भाग पृथ्वी के करीब था।</li> <li>● जैसे-जैसे वीएलएफ तरंगें बढ़ती गईं, यह बेल्ट पृथ्वी से दूर होता गया।</li> <li>● अगर वीएलएफ संचार न होता तो वेन ऐलेन बेल्ट पृथ्वी के ओर करीब आ जाता।</li> <li>● ऐसे में इन वीएलएफ संचार की मदद से पृथ्वी के पास मौजूद अतिरिक्त विकिरण को हटाया जा सकेगा।</li> <li>● मैसाचुसेट्स इंस्टीट्यूट ऑफ टेक्नोलॉजी और यूनिवर्सिटी ऑफ कोलोराडो इन तरंगों पर और शोध कर रहे हैं।</li> </ul>
--	--

**वेन ऐलेन शोधयान**  
नासा ने 2012 में दो वेन ऐलेन शोधयान लांच किए थे। इन्हें पृथ्वी के आसपास मौजूद इलेक्ट्रॉन और आवेशित कणों पर शोध करने के लिए भेजा गया था।



**The Statesman**  
PEOPLE'S PARLIAMENT, ALWAYS IN SESSION

## NASA probes bubble around Earth

NASA probes have spotted a man-made barrier around the Earth that prevents highenergy space radiation from reaching the planet, scientists say. Humans have long been shaping Earth's landscape, but now scientists have found that we can shape our nearspace environment as well. A certain type of communications - very low frequency (VLF) radio communications - have been found to interact with particles in space, affecting how and where they move. At times, these interactions can create a barrier around Earth against natural high energy particle radiation in space.

“A number of experiments and observations have figured out that, under the right conditions, radio communications signals in the VLF frequency range can in fact affect the properties of the highenergy radiation environment around the Earth,” said Phil Erickson, assistant director at the Massachusetts Institute of

Technology (MIT) Haystack Observatory in the US. VLF signals are transmitted from ground stations at huge powers to communicate with submarines deep in the ocean.

While these waves are intended for communications below the surface, they also extend out beyond our atmosphere, shrouding Earth in a VLF bubble. This bubble is even seen by spacecraft high above Earth's surface, such as NASA's Van Allen Probes, which study electrons and ions in the near-Earth environment. The probes have noticed an interesting coincidence - the outward extent of the VLF bubble corresponds almost exactly to the inner edge of the Van Allen radiation belts, a layer of charged particles held in place by Earth's magnetic fields. Dan Baker from the University of Colorado in the US coined this lower limit the "impenetrable barrier" and speculates that if there were no human VLF transmissions, the boundary would likely stretch closer to Earth.

Indeed, comparisons of the modern extent of the radiation belts from Van Allen Probe data show the inner boundary to be much farther away than its recorded position in satellite data from the 1960s, when VLF transmissions were more limited.



*Fri, 19 May, 2017*

## **ISRO gets Indira Gandhi Prize for 2014**

The Indian Space Research Organisation (ISRO) was on Thursday presented with the Indira Gandhi Prize for Peace, Disarmament and Development for the year 2014. The prize was presented to ISRO Chairman A.S. Kiran Kumar by former Prime Minister and Indira Gandhi Memorial Trust (IGMT) trustee Dr. Manmohan Singh.

The ISRO was selected for the prize in 2014 by a jury headed by Vice-President Hamid Ansari. It consists of a trophy made of banded Haematite Jasper, with a portrait of the late Prime Minister Indira Gandhi in Jaipur miniature paintings, a cash award of ₹ 1 crore and a citation, the IGMT said in a statement.

The citation read: "The International Jury... awarded the prize in recognition of its path-breaking achievements, culminating in the Mars Orbiter Mission and its contributions in strengthening international cooperation..."



*Fri, 19 May, 2017*

## **Indian scientist wins Dan David Prize**

Indian scientist Shrinivas Kulkarni has won the prestigious Dan David prize for his contribution in the field of astronomy. Kulkarni is a professor of astrophysics and planetary science at California Institute of Technology in Pasadena.

He is a leading figure in time-domain astrophysics across the electromagnetic spectrum who built and conducted the Palomar Transient Factory, a large-area survey of the night sky in search of variable and transient phenomena.

The \$1 million prize is a joint international enterprise endowed by the Dan David Foundation headquartered at Tel Aviv University. The honour will be conferred here on May 21. — PTI

## Scientists bring limitless blood supply closer to reality

Boston, May 18 (PTI) For the first time, scientists have generated blood-forming stem cells in the lab, an advance that brings them "tantalisingly close" to create a limitless supply of human blood to treat blood diseases.

Researchers, who used pluripotent stem cells that can make virtually every cell type in the body, said that the study may help create immune-matched blood cells, derived from patients cells, for treatment purposes.

"Were tantalisingly close to generating bona fide human blood stem cells in a dish," said George Daley, from the Boston Childrens Hospital in the US.

Although the cells made from the pluripotent stem cells are a mix of true blood stem cells and other cells known as blood progenitor cells, they are capable of generating multiple types of human blood cells when put into mice, researchers said.

"This step opens up an opportunity to take cells from patients with genetic blood disorders, use gene editing to correct their genetic defect, and make functional blood cells," said Ryohichi Sugimura, a postdoctoral fellow at the Daley Lab.

"This also gives us the potential to have a limitless supply of blood stem cells and blood by taking cells from universal donors. This could potentially augment the blood supply for patients who need transfusions," Sugimura said.

Since human embryonic stem (ES) cells were isolated in 1998, scientists have been trying, with little success, to use them to make blood-forming stem cells.

"This work is the culmination of over 20 years of striving," said Daley, who is also the dean of Harvard Medical School in the US.

In 2007, researchers generated the first induced pluripotent stem (iPS) cells from human skin cells through genetic reprogramming.

These cells were later used to generate multiple human cell types, such as neurons and heart cells - yet blood-forming stem cells remained elusive.

Researchers combined two previous approaches to successfully generate hemogenic endothelium, an early embryonic tissue that eventually gives rise to blood stem cells.

They then added genetic regulatory factors to push the tissue toward a blood-forming state.

Researchers identified five candidates (RUNX1, ERG, LCOR, HOXA5, and HOXA9) that were both necessary and sufficient for creating blood stem cells.

They transplanted the genetically engineered hemogenic endothelial cells into mice. Weeks later, a small number of the animals carried multiple types of human blood cells in their bone marrow and blood circulation.

These included red blood cell precursors, myeloid cells (precursors of monocytes, macrophages, neutrophils, platelets, and other cells), and T and B lymphocytes. Some mice were able to mount a human immune response after vaccination.

"Were now able to model human blood function in so- called humanised mice. This is a major step forward for our ability to investigate genetic blood disease," said Daley. PTI