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Sunil Lanba to be next Navy chief

New Delhi: Vice Admiral Sunil Lanba on Thursday has been appointed as the next Navy chief, who would take over from Admiral R K Dhowan on May 31.



Currently the commander-in-chief of the Western Naval Command in Mumbai, Lanba will remain Navy chief till May 2019. Under Admiral Lanba, the Navy is likely to witness strengthening of its underwater arm because a bulk of the Scorpene class submarines as well as the nuclear-powered INS Arihant with nuclear capable missile will be commissioned in his tenure. The first submarine, to be named INS Kalvari, would be commissioned around September. The first major warship to be commissioned under Admiral Lanba would be INS Chennai-the third Kolkata-class destroyer, constructed under Project 15A. The commissioning is likely around August-September.

Born on July 17, 1957, Lanba was commissioned on January 1, 1978 into the executive branch of the Navy and later commanded minesweeper INS Kakinada and frigate INS Himgiri. He also later became the executive officer of the aircraft carrier INS Viraat.

A navigation and direction specialist, he served as navigating officer on-board missile corvette INS Sindhudurg and frigate INS Dunagiri.

Before taking over as the commander-in-chief of the Western Naval Command, he was the commander-in-chief of the Southern Naval Command as well as the vice chief of the Navy.

The Economic Times
06 May, 2016

Part of 'Make In India' Push' - Germany Offers Govt-Govt Deal for NexGen Submarines

By Manu Pubby

In a departure from its traditional approach to business in India, Germany is for the first time offering a military deal under the government-government umbrella for its new-generation conventional submarines that have exceptional underwater endurance.

While in the past the German government had kept away from contracts being bagged by its arms industries in India, the HDW 214 submarines are being offered as a special case for Indian Navy's requirement of six boats, which are to be made in India at an estimated cost of over `60,000 crore.

Sources told ET that the formal proposal is being shared with the defence ministry in which the German government will give k assurances on fair price, technology transfer and quality .

Russian and French submarines are, too, competing for the mega P 75I project, which is likely to see a private sector yard in India carry out a major chunk of the work. India will be mandating Air Independent Propulsion (AIP) a technology that enables the submarine to remain underwater for

several days at a stretch instead of coming up to surface frequently to replenish oxygen needed to burn the fuel -for the submarines.

“The offer has certain assurances that the product will meet Indian requirements,” an official involved in the process told ET. Russia, which is developing its own AIP system, has already advised India to conclude the P 75I project under a government deal as it has too many complexities of technology transfer.

German company Thyssenkrupp Marine Systems that manufactures the submarine said it “is not in a position to comment on talks between the governments of the two nations“, but said it was interested in offering its 214 class boats with “robust transfer of technology , training and meeting offset obligations“.

“We define this as a `no-holds barred' transfer of technology in line with Modi government's `Make in India' push,” the company spokesperson said in response to a detailed questionnaire by ET.

The Hindu
06 May, 2016

India, Japan, U.S. to hold naval exercises

‘An acknowledgement of shared security concerns’

In a move that is sure to raise eyebrows in Beijing, four Indian warships will join the navies of the United States and Japan in the second half of June for the next edition of Malabar exercises east of Okinawa, a Japanese island.

Last December, India and the U.S announced formal expansion of the bilateral exercises into a trilateral format with the edition of Japan.

Official sources said that two stealth frigates, a guided missile corvette and a fleet replenishment tanker of the Indian Navy would take part in the exercises.

In September 2007, the navies of Australia, Japan and Singapore joined India and the U.S. in the Malabar exercises which forced China to issue a demarche to New Delhi. This is also not the first time these exercises will be held near Okinawa.

Former Navy Chief Admiral Arun Prakash said it showed that India has made up its mind to form some sort of partnership with Japan and the U.S. and termed the exercises an acknowledgement of the “shared security concerns”.

Australia has repeatedly expressed interest in joining Malabar on a permanent basis and the United States had been pushing its inclusion, but India has so far resisted the move so as not to antagonise China.

Business Standard
06 May, 2016

Reliance Defence gets 16 new industrial licences

Reliance Defence now has 27 licences, across the spectrum of defence equipment

Reliance Defence, a wholly owned subsidiary of Reliance Infrastructure, has received 16 industrial licences to manufacture of a wide array of high technology military equipment.

Among these are small arms, heavy weapons, armoured vehicles, ammunition, explosives, electronic warfare systems, missiles, unmanned aerial vehicles, directed energy weapon systems, laser systems for target destruction and C4I Systems for all defence platforms. Of the 16 licences, 11 pertain to land systems, three for naval systems and two on niche technologies across the defence spectrum.

With these, Reliance Defence now has 27 licences, across the spectrum of defence equipment. Reliance Land Systems, a wholly owned subsidiary of Reliance Defence, will be the lead venture for the manufacturing of missiles, explosives, heavy weapons, tanks and infantry carrier vehicles.

Reliance SED will be the lead entity for manufacture of electronic warfare systems, directed energy weapon systems and laser systems for target destruction. The company spokesman said the key programmes in these segments have a government budget allocation in excess of Rs 50,000 crore. The Indian Army will spend an additional Rs 50,000 crore over the next 10 to 15 years on different combat vehicles.

Reliance Defence also intends to address a large potential international market for combat Vehicles in West Asia, Africa and South America.

“Reliance Defence is aiming at developing an Infantry Combat Vehicle to not only address the domestic requirement but the global requirements, estimated at Rs 350,000 crore (\$50 billion),” he added. Reliance Unmanned Systems, another subsidiary of Reliance Defence, intends to target various requirements of the armed forces in this regard.

The Tribune
06 May, 2016

State to get Army land for projects

Centre decides to change force’s landholding rule

The government has decided to change the landholding rule of the Army allowing it to spare land for development projects in Jammu and Kashmir. The decision was taken at a meeting chaired by Home Minister Rajnath Singh and attended by Defence Minister Manohar Parrikar, Governor NN Vohra, National Security Adviser Ajit Doval and other senior officials.

The decisions taken earlier would be expedited, especially with regard to sparing land not required for operational reasons. “The Army has restructured its requirements which would make land available to the state government for development projects,” an official release said.

Sources said the state’s Chief Secretary would meet Defence Ministry officials to identify land and work out a proposal. The Army had in principle agreed during the Omar Abdullah regime to hand over the 139-acre “Tattoo ground” to the state but a final decision had to be taken by the Ministry of Defence.

The rehabilitation of Kashmiri Pandits in the Valley and identifying land for their resettlement also came up for discussion. Around 62,000 migrant families were displaced in the 1990s.

The Hindustan Times
05 May, 2016

China kicks off military drills in South China Sea, Indian Ocean

China kicked off military exercises in the disputed South China Sea, East Indian Ocean and West Pacific involving advanced warships, helicopters and “special warfare” soldiers in an apparent bid to flex its muscles.

Three naval ships of China’s Nanhai Fleet left a naval port in Sanya, Hainan Province on Wednesday, kicking off an annual combat drill, state-run Xinhua news agency reported.

The three ships include missile destroyer Hefei, missile frigate Sanya and supply ship Honghu.

They will later be joined by missile destroyers Lanzhou and Guangzhou, as well as missile frigate Yulin, which are now carrying out other duties.

With three helicopters and dozens of “special warfare” soldiers, the fleet will be separated into three groups that will sail to areas of the South China Sea, the east Indian Ocean and the west Pacific, to conduct varied drills.

The fleet will mobilise naval air force, garrison forces in the Xisha and Nansha islands, and forces of the Beihai Fleet along the way to take part in the drill.

The drill aims to enhance combat readiness and practise coordination between ships and aircraft, and other forces, the navy said.

China claims almost the whole of the South China Sea - a major shipping lane rich in natural resources, resulting in overlapping claims with several other Asian nations like Vietnam and the Philippines, Malaysia and Brunei.

They accuse China of illegally reclaiming land in contested areas to create artificial islands with facilities for military use.

Over half of the world’s commercial shipping passes through the Indo-Pacific waterways – including one-third of the world’s liquefied natural gas.

The Times of India
06 May, 2016

On May 9, Mercury will be a dot on solar disc

By Vishwa Mohan

You will have an opportunity to witness one of the rare astronomical events -a transit of Mercury across the face of the Sun -on May 9. And if you miss it this time, you would be able to see it from India only after 16 years on November 13, 2032.

The planet Mercury will appear as a dot on solar disc and will be visible from most parts of Asia except Japan and southeastern parts of the continent.

Though the duration of the event will be about 7 hours and 30 minutes, one would be able to see it from India for a maximum time of about 2 hours and 45 minutes from 4.41pm onwards.

“Depending upon the sun set time of different places in India, the observers located in the extreme east of the country (Port Blair) will see the event for about one hour from the beginning (4.41pm) while the ones located in the extreme west (Dwarka in Gujarat) will be able to see it for about 2 hours and 45 minutes from 4.41pm onwards,” said an official of the ministry of earth sciences.

Noting that it would be difficult to see the Mercury at transit over the sun's surface without optical magnification, the ministry said, “This event can be viewed with the help of binocular or telescope attached with proper solar filter or by making projection of the Sun's image on a white board by telescope.”

The ministry , in its note on the upcoming astronomical event, emphasised that the Sun should never be viewed with the naked eye, and therefore, the safe technique to observe is by using filter like black polymer or welding glass.

The last such astronomical event had occurred on November 6, 2006 when just the end of the event was visible from the extreme north eastern parts of India. The next transit of Mercury will take place on November 11, 2019 but the event will not be seen from India as it will begin after the sunset time of all places in the country .

“The transit of Mercury will thus be visible next time from India on November 13, 2032“, said the official.

The ministry explains that such a transit of Mercury over the disc of the Sun happens only when the Sun, the Mercury and the Earth are lined up in one plane.

It appears as a dot (black spot) on the solar disc because its angular size is very small compared to that of the Sun as seen from the Earth. The phenomena is a relatively rare one which occurs 13 or 14 times in a century . It occurs in the month of May and November.

Deccan Herald
06 May, 2016

Bats' flight technique could lead to better drones

Scientists have discovered that long-eared bats are assisted in flight by their ears and body, a finding that may help develop better drones in future, reports PTI from London.

Contrary to what researchers previously assumed, Christoffer Johansson Westheim and his colleagues at Lund University in Sweden show that long-eared bats are helped in flight by their large ears.

The findings improve our understanding of the bats' flying technique and could be significant for the future development of drones, among other things, researchers said.

"We show how the air behind the body of a long-eared bat accelerates downwards, which means that the body and ears provide lift," said Westheim.

"This distinguishes the long-eared bats from other species that have been studied and indicates that the large ears do not merely create strong resistance, but also assist the animal in staying aloft," Westheim said.

The findings entail a greater understanding of the flight technique of bats.

The Times of India
06 May, 2016

Drones may soon help ferry organs in India

By Chethan Kumar
Top Scientists Involved In `100Cr Project

For a patient awaiting a transplant, every second is crucial. Leading scientists have put their heads together for a project that will ensure speedy transportation of hearts and other vital organs. If all goes according to plan, Bengaluru will give India unmanned aerial vehicles (UAVs) -popularly called drones -to ferry organs.

“The main focus will be on transporting hearts as other organs can be preserved for longer after harvesting,” said Kota Harinarayan, the father of India's indigenous fighter Light Combat Aircraft (LCA).

The project will enable hospitals to cut down on the transportation time by more than 50% and save more lives.

While a kidney can be stored for 24 hours, a liver can be kept for 12-15 hours and a heart can be preserved for less than 10 hours. Currently , organs are largely transported via road -a green corridor is created for the smooth transit of ambulances.

Kota, along with another senior scientist K Ramachandra from the National Design and Research Forum (NDRF), who is spearheading the Rs 100-crore National Programme for Micro Air Vehicles (NP-Micav) and a few others in the US, is in the process of finalising details.

“Once the specifications from doctors and engineers are finalised -the first leg of the process is expected to be complete this week -we will take the project to the government for funding and clearance,” Kota said.

While Kota is a veteran aerospace scientist, Ramachandra and his team have experience in unmanned vehicle development and various technologies related to it.

“We have expertise in aerospace and UAV technologies. We've been in talks with multiple doctors in the country and some in the US to decide what kind of facilities are needed in the vehicle to keep the organ safe during transit,” Kota said. The team is looking at two possibilities -to build UAVs which have the technology to preserve the organ, especially the heart, or those which will carry the organ in a special box, as is done now.

Ramachandra said: “We have demonstrated several technologies as part of the NPMicav programme that was funded by the Centre. For this project, we are looking at a vehicle of the regular UAV size and not the micro size.” The vehicle, initial designs of which have been conceived, will be able to carry 250 grams of weight. “The challenge is to achieve a 100-km range, work on which is going on,” he said.

Given that UAVs can even fly at a height of 500 ft, they could even be used in traditional no-fly zones. But an approval from the DGCA will be required, which experts say is likely to be accorded if the technology is proven to be safe.

HOSPITALS, DOCTORS ON BOARD



➤ While UAVs are being used to deliver medical equipment during calamities, **hospitals and doctors have evinced interest in leveraging the technology to transport organs.** Fortis Hospitals, for example, is contemplating a pilot project

➤ Safety, both of the organ and the whole process of transportation itself (technical), say experts, is paramount and cannot be compromised. Dr Nandakumar Jairam of Columbia Asia Hospital said, “The move will certainly save time and prevent others from being inconvenienced (what happens in the case of green corridors). **It will be of great help, but one has to secure all the requisite clearances and ensure the vehicles can transport the organs to the right place without causing any stress to them**”

The Asian Age
06 May, 2016

‘Supervised’ robotic arm can perform soft-tissue surgery

A robotic machine has succeeded at stitching two segments of a pig’s bowel together, an advance for the tricky field of soft tissue surgery, researchers said on Wednesday.

The machine, called the Smart Tissue Autonomous Robot (STAR), does not replace the need for a skilled surgeon, but acts as a tool to improve the accuracy of stitching, said the report in the journal Science Translational Medicine.

The study showed STAR outperformed expert surgeons and a well-known robotic surgery tool already on the market, called the da Vinci robot, which is held in the surgeon's hand and used to perform surgeries such as hysterectomies through a few small incisions.

Until now, robotic surgeries have largely relied on the expertise of the surgeon and outcomes have varied according to the doctor's skill, researchers say.

Soft tissue is particularly complicated because it is malleable and moveable.

But being able to improve on such surgeries "could potentially reduce complications and improve the safety and efficacy of soft tissue surgeries, about 45 million of which are performed in the US each year," according to the study led by doctors at the Children's National Health System in Washington, DC and Johns Hopkins University in Baltimore, Maryland.

The STAR was tested on a procedure called anastomosis, which comes after a surgeon has cut open the patient's body and completed the main goal of the surgery — for instance by removing a tumour from the bowel — and is then reconnecting two sections, "like trying to put together a garden hose, which has been cut," explained co-author Ryan Decker.

Anastomosis is performed more than a million times each year in the United States, for surgery involving the intestines, as well urologic and gynecologic operations.

As many as 30 per cent of gastrointestinal anastomoses "are complicated by leakage, strictures, and stenosis," according to a statement from the Children's National Health System. For the current study, surgeons made fluorescent markings on the vessels to be sewn, and the robot followed them, showing it could make more consistent and evenly spaced stitches, or sutures, than a human surgeon, Decker told reporters.

"If you have a more consistent and a more, well-tensioned, evenly spaced suture around this garden hose, it's going to be able to withstand a higher burst pressure," Decker said.

"That's in fact what happened with our anastomosis. They were able to withstand a higher burst pressure than surgeons performing the same task."

The pigs survived the surgery and showed no complications a week later.

Researchers stressed that surgeons were keeping a close eye on the machine as it worked, and it could be quickly stopped if any error were to occur.

The STAR system is likely years away from widespread use. Researchers expect there will be a need for clinical trials to assess its safety in humans before it can be approved by regulators.

Deccan Herald
06 May, 2016

App can turn phone into remote-sensing device

Karen Anderson, university of exeter: We want to start using users' data for beneficial purposes such as community-led mapping

London: Researchers have created an app which could convert a smartphone into a self-contained remote sensing device, and help aid humanitarian rescue work in disaster-struck regions by using geographic data to map landscapes.

The android mobile phone application uses on-board sensors already within modern smartphones including the accelerometer, Global Positioning System (GPS), compass and camera, to generate ready-to-use spatial data when the device is suspended from lightweight aerial platforms such as drones or kites, researchers said.

The app gathers the data and allows the smartphone to operate autonomously, so that once airborne it can capture images according to the user's specification, they said.

"There are now more mobile devices than humans on Earth. This global distribution of devices offers a great opportunity for democratic mapping but until now, there have been no apps that exploit the comprehensive sensor sets in modern devices in this way," said Karen Anderson from University of Exeter in the UK.

"Currently the sensors on mobile phones harvest data about their users and send this information to third parties. We wanted to start using those data for beneficial purposes such as community-led mapping," said Anderson.

"Alongside recent developments with lightweight drones and a growing public appetite for open-source, free to use mapping data, we are excited to see the variety of mapping applications for which our new app will be used," she said.

The app is different from many others because it can be 'live-coded' which means that it is not fixed in its functionality, researchers said.

This allows the user to programme it to behave as desired and images can be captured according to strict criteria for example, when the phone arrives at a particular location, or when the camera is level and pointing in a particular direction, they said.

"As free/open source software, the app is accessible to anyone in the world with an android device, and means people can combine new sensor technology for their own uses with drones or kites in an open-ended manner," said Dave Griffiths from non-profit research organisation FoAM Kernow.

"We found that the best results were obtained when the phone was attached to a stable single line kite or to a gliding drone so as to limit the vibrations, but there will undoubtedly be a wide range of ways of capturing high quality data using this app and we are really keen to learn about the ways it is being used," said Griffiths.

The findings were published in the journal PLOS ONE.

Deccan Herald
06 May, 2016

'Security software can put computers at risk'

Toronto: Is the antivirus programme running on your computer really making your computers safer to use, say for online banking? New research shows security software might actually make online computing less safe.

Researchers examined 14 commonly used software programmes that claim to make computers safer by protecting data, blocking out viruses or shielding users from questionable content on the internet.

They found that these programmes were doing more harm than good.

"Out of the products we analysed, we found that all of them lower the level of security normally provided by current browsers, and often bring serious security vulnerabilities," said Xavier de Carne de Carnavalet from Concordia University in Canada.

"While a couple of fishy ad-related products were known to behave badly in the same set-up, it was stunning to observe that products intended to bring security and safety to users can fail as badly," said de Carnavalet.

At the root of the problem is how security applications act as gatekeepers, filtering dangerous or unwanted elements by inspecting secure web pages before they reach the browser, researchers said.

Normally, browsers themselves have to check the certificate delivered by a website, and verify that it has been issued by a proper entity, called a Certification Authority (CA).

But security products make the computer "think" that they are themselves a fully entitled CA, thus allowing them to fool browsers into trusting any certificate issued by the products, researchers said.

The findings have important implications not only for everyday computer users, but also for the companies producing the software programmes themselves, they said.

"We reported our findings to the respective vendors so they can fix their products. Not all of them have responded yet, but we hope to gain their attention," said Mohammad Mannan, Concordia University.

"We hope that our work will bring more awareness among users when choosing a security suite or software to protect their children's online activities," added de Carnavalet.

Deccan Herald

06 May, 2016

Anyone can try IBM's powerful quantum comp

Washington: IBM on Wednesday opened its quantum computer processor to anyone who wants to try what is expected to be a new kind of computing with enormously improved power and speed.

The cloud-based computing system will allow users to explore the technology, which scientists say may solve certain problems that are impossible to solve on today's supercomputers.

"This moment represents the birth of quantum cloud computing," said Arvind Krishna, senior vice president and director at IBM Research.

"Quantum computers are very different from today's computers, not only in what they look like and are made of, but more importantly in what they can do. Quantum computing is becoming a reality and it will extend computation far beyond what is imaginable with today's computers."

The company said anyone can run experiments on the computing platform by accessing its website connected to the IBM Cloud.

Quantum computing, an area of research for a number of big tech firms, differs from traditional digital computing due to the physics in which the computing device handles a calculation.

Unlike conventional or digital computers, quantum computers use quantum bits or "qubits" that can exist in multiple states simultaneously, offering the potential to compute a large number of calculations all at once, speeding up results.

While quantum computing is still in its infancy, scientists believe it could lead to huge improvements in artificial intelligence, transform materials science and allow for search or analysis of vastly larger quantities of data than can be handled by today's most powerful machines.

IBM said its quantum processor housed at its Watson Research Center is a first step toward building a universal quantum computer with far greater potential.

The company received a research grant last year from the US Intelligence Advanced Research Projects Activity (IARPA) to advance the building blocks for a universal quantum computer.

Roger Kay, analyst at Endpoint Technologies Associates, said at some point a quantum computer could analyze as many potential scenarios "as there are stars in the universe."