

समाचार पत्रों से चयित अंश Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा
A daily Current Awareness Service

Vol. 42 No. 191 12 September 2017



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

Mon, 11 Sep, 2017
(Online)

DRDO Tests 500 Kg General Purpose Bomb from Su-30MKI Aircraft

India's indigenously developed precision guided high speed low drag (HSLD) bomb weighing 500 kg has been successfully tested from the Su-30MKI aircraft in the western state of Rajasthan last week.

Developed by the Armament Research and Development Establishment (ARDE) of the state-owned Defense Research and Development Organization (DRDO), India's General Purpose Bomb 'PGHSLD-500' underwent flight trials during May-June 2017 released from Su-30mki aircraft at Air Force Station, Jodhpur, fitted on a hard point and was released from an altitude of 5 km to validate its separation performance and to estimate stability, DRDO newsletter states.

"During the carriage trials, the aircraft touched the carriage limits of 0.85 at 150 m altitude and completed 6.5 'g' and full roll manoeuvres. The structural integrity of the bomb was found satisfactory after the trials," DRDO said.

According to an official document, these bombs are effective against ground targets like railway yards/bridges, major installations, bunkers, runways and hardened targets. The bomb can be carried on various in-service aircraft like Jaguar, MiG and other advanced combat aircraft of the Indian Air Force.



Tue, 12 Sep, 2017

NS to meet service chiefs daily

Move to ensure quick decision-making in areas of strategic importance

Nirmala Sitharaman inducted into CCS, CCEA, CCPA

- *The government on Monday notified the induction of Defence Minister Nirmala Sitharaman into the all-powerful five-member Cabinet Committee on Security (CCS)*
- *Headed by PM Narendra Modi, other members of the committee are Home Minister Rajnath Singh, External Affairs Minister Sushma Swaraj and Finance Minister Arun Jaitley*
- *The CCS decides on each security-related issue of the country be it new weapons, new raising of forces, appointments of the top brass, military relations with other countries, among other aspects*
- *She will also be a member of the Cabinet Committee on Economic Affairs (CCEA) and the Cabinet Committee on Political Affairs (CCPA)*

Defence Minister Nirmala Sitharaman today issued a set of instructions under which she will meet the chiefs of three armed forces and the Defence Secretary on a daily basis.

The Ministry of Defence said the minister shall meet the three chiefs of the Indian Army, Indian Air Force and the Navy at morning meetings. A separate daily meeting with the Defence Secretary has been formatted. The ministry spokesperson said this was "a new practice for quick decision making".

To date, the chiefs of the three services used to be called by the Defence Minister as and when required or they could walk across to the chamber of the Defence Minister in South Block.

Sitharaman was today briefed by senior officials to familiarise with the activities and functioning of various activities of the forces and the ministry. Yesterday, the minister had seen operations of the IAF at Uttarlai, Barmer and Navy's flying operations at Dabolim, Goa.

Today, the minister laid special emphasis on the need to step up the pace of acquisition proposals. Towards ensuring time-bound and speedy disposal, it has been decided to hold Defence Acquisition Council (DAC) meetings on a fortnightly basis. The DAC is the highest decision-making body of the MoD.

Sitharaman has scheduled a range of meetings with the three Defence service chiefs to review Defence preparedness and allied issues of strategic interests.

Other areas of focus would be settling all outstanding land-related issues for infrastructure projects and matters relating to welfare of Defence personnel and their families.

Today, Sitharaman visited a forward area along the Indo-Pak border in Gujarat. The minister and Army Chief General Bipin Rawat flew in an IAF plane to Naliya air base in Kutch, Gujarat where she interacted with Indian Army troops.

पंजाब केसरी

Tue, 12 Sep, 2017

राष्ट्रीय सुरक्षा के लिए महत्वपूर्ण है सर क्रीक

गांधीनगर, (भाषा): रक्षा मंत्री निर्मला सीतारमण ने आज कहा कि पाकिस्तान से लगी गुजरात सीमा पर स्थित सर क्रीक राष्ट्रीय सुरक्षा, विशेष रूप से गुजरात की सुरक्षा के लिए बहुत महत्वपूर्ण स्थान है। सीतारमण ने कहा कि वह यह पता लगाने के लिए सर क्रीक का दौरा करेंगी कि गुजरात की सीमा की रक्षा के लिए और क्या करने की जरूरत है। उन्होंने कहा कि वह वहां तैनात सुरक्षा बलों का मनोबल बढ़ाने के लिए उनके साथ कुछ समय बिताएंगी। उन्होंने कहा, मैं आज सर क्रीक तक जाऊंगी ताकि यह देख सकू कि गुजरात



सीमा की रक्षा के लिए क्या करने की जरूरत है। सर क्रीक न केवल राष्ट्रीय सुरक्षा बल्लिक विशेष रूप से गुजरात की सुरक्षा के लिए बहुत महत्वपूर्ण है। उन्होंने कहा, हमारे सुरक्षा बल सर क्रीक में बहुत अच्छा काम कर रहे हैं। मैं उनके बीच कुछ समय बिताऊंगी और उनका मनोबल बढ़ाऊंगी। उन्होंने कहा, 2012 के गुजरात विधानसभा चुनाव के दौरान केंद्र (तत्कालीन संप्रग सरकार: सर क्रीक के बारे में कुछ करना चाहती थी। प्रचार के दौरान गुजरात के तत्कालीन मुख्यमंत्री नरेंद्र मोदी उसको लेकर चिंतित थे क्योंकि उससे गुजरात की सुरक्षा संबंधित थी।

Build that carrier, quick!

All of this year, the navy's proposal for building INS Vishal has gone back and forth between the defence secretary and the navy

By Ajai Shukla

The Duke of Wellington's description of the Battle of Waterloo — “The nearest run thing you ever saw in your life, by God!” — also describes the Sino-Indian stand-off at Doklam that ended last month in a mutual pullback. But we must also consider what might have happened had it come to hostilities, and the frank answer would be: Besides China's infrastructure and equipment advantages on the land border, India would have been caught short even in the theatre where it enjoys strategic advantage over China — the maritime domain in the Indian Ocean.

All of this year, the navy's proposal for building a second indigenous aircraft carrier, INS Vishal, has gone back and forth between the defence secretary and the navy. The ministry lets it be known that a hurried decision would be unwise, since an aircraft carrier is such a high-value platform that it would block badly needed procurements for the army and air force. Meanwhile, on March 31, underlining how much concern it really has for equipment procurement, the ministry surrendered ~7,000 crore of unspent capital funds — more than what it would have paid out last year had a contract been signed for building the carrier.

INS Vishal is set to be one of the military's most long-drawn procurements, with the navy itself having taken years to identify its precise requirements. After extensive consultations with the US Navy, India's admirals concluded they required a nuclear-powered aircraft carrier of at least 65,000 tonnes, embarking at least 50-55 aircraft and a high-tech electromagnetic catapult to launch aircraft quicker and with greater payloads than the ski-jump that currently equips Indian carriers. At the heart of a carrier battle group, which would include multi-role destroyers and frigates, the Vishal would be able to control swathes of the Indian Ocean or project power across the Indo-Pacific.

While the defence ministry goes back-and-forth over the Vishal, the navy makes do with a single carrier, INS Vikramaditya, which carries just 26 unreliable MiG-29 fighters and 10 helicopters — an insufficient capability to battle a serious foe. The first indigenous carrier, INS Vikrant, which Cochin Shipyard Ltd (CSL) is building with agonising slowness, will be ready for displays and galas by 2019, but for battle only by 2022-23. Given the eight year time overrun in building the Vikrant, CSL would surely take more than a decade to build INS Vishal, once the order is placed. And that seems nowhere in sight.

In contrast, China — latecomers to aircraft carriers — is vaulting ahead. Having learnt the ropes on a rebuilt Ukrainian carrier that it renamed Liaoning, the People's Liberation Army (Navy), or PLA(N), launched a second carrier in April, called the Shandong. Going by the speed with which China churns out warships, the Shandong should enter PLA(N) service in 2020. Chinese analysts say this will be followed by a state-of-the-art carrier, with capabilities similar to INS Vishal. Eventually, the PLA(N) would operate 5-6 carriers, while the Indian Navy operates three.

The power balance is shifting not just in platforms but also skills. An aircraft carrier is only as good as the experience and skill of its crewmembers, particularly those that operate its aviation complex. A large number of operating procedures — including space management, split-second launch procedures, deck discipline — make the difference between launching an aircraft every 30 seconds, and a launch interval of three minutes.

This is especially true of “catapult launches”, in which an aircraft is accelerated to take-off speed by a steam catapult under the carrier's deck. In the 1960s and 1970s, the navy operated the Sea Hawk fighter off the original INS Vikrant — developing catapult-launch skill sets similar to the US Navy today. In 1983, when the

“vertical take off and landing” Sea Harrier replaced the Sea Hawk, the navy’s skills at catapult launches began attenuating. The decisions to buy HMS Hermes (later INS Virat) and the Gorshkov (now INS Vikramaditya), both in the ski-jump launch tradition, and the decision to build the new INS Vikrant with a ski-jump, has killed India’s catapult launch tradition altogether. The new INS Vikrant will return to the catapult launch tradition, but navy skill sets would have to be built afresh.

Also dogging the INS Vishal is a tired old debate over whether aircraft carriers are an asset or liability in modern warfare. Like most military arguments, its roots lie in the battle for resources. Air forces the world over view the aircraft carrier as a navy intrusion into the aerospace domain. Air forces simplistically describe carriers as enormously expensive, floating airfields that could be sunk by a single torpedo or anti-ship missile. Air forces claim that shore-based fighters, with their ranges extended by mid-air refuelling, can strike maritime targets hundreds of kilometres away. Finally, opponents argue that aircraft carriers require an entire flotilla of warships to escort them, tying up destroyers, frigates, corvettes, submarines and minesweepers in essentially protective duties.

Then, there is submariners’ opposition to aircraft carriers — an internal navy contest for resources, framed as a strategic debate between “sea control” and “sea denial”. The aircraft carrier battle group is the prime instrument of sea control, dominating an area that could be thousands of kilometres away — e.g. shipping lanes in the southern Indian Ocean from/to the Horn of Africa — with its aircraft-based surveillance and strike capability, and the surface and sub-surface strike capability of its accompanying warships. The option of shore-based air support starts becoming less persuasive as the carrier’s operating area moves further into the ocean, but the “sea denial” option — predicated on submarines ambushing surface vessels on predicted routes — retains validity. Proponents of sea denial argue that a submarine fleet costs less than a carrier, spreads risk across a large number of platforms, while still denying the enemy the use of the sea lanes, choke points and harbours that the submarines interdict. What they seldom mention is that submarines cannot hope to achieve three-dimensional control over a large expanse of ocean, far from one’s shores, which is the basic task of a carrier battle group. There is also the question of vulnerability of submarines when they surface to charge batteries or communicate with their controllers.

In any case, the navy is not choosing between aircraft carriers and submarines — it needs significant capabilities in both. It has an expansive, internationalist mandate of protecting the global commons, responding to natural disasters and being a net security provider in the Indian Ocean. This is over and above the national wartime objectives of protecting two coastlines, projecting power across the Indian Ocean, and supporting the land battle through the maritime domain. The debate has been settled in the navy’s long-term maritime capability perspective plan, which specifies three aircraft carriers and a fleet of 24 submarines. It is time to start building these quickly, before the navy is embarrassed in war. Perhaps we should remind ourselves of another Wellington aphorism: “Wise people learn when they can; fools learn when they must”.



Tue, 12 Sep, 2017

India set for US defence secretary’s visit, aims to strengthen bilateral ties

The two sides will discuss stabilisation of Afghanistan in the context of trump’s speech that sought India’s active role in development of the Wartorn country

NEW DELHI: India and the US will further cement their bilateral defence cooperation, with Washington readying to expand the Defence Technology and Trade Initiative (DTTI) by jointly working on Intelligence, Surveillance and Reconnaissance (ISR), air and land systems, and hosting an Indian military liaison officer in its Hawaii-based Pacific Command. Ahead of US defence secretary James Mattis’s first visit to India from September 25-26, US deputy assistant secretary of defence Joseph Felter landed in India on Monday for a two-

day visit with a host of proposals to strengthen the bilateral partnership. This will be followed by secretary (defence production) Ashok Gupta's September 13 visit to Pentagon to expand the DTTI, as the Narendra Modi government eyes a fruitful relationship with Mattis.

During Mattis's visit, the two sides will discuss stabilisation of Afghanistan in the context of US President Donald Trump's speech that sought India's active role in the development of the war-torn country.

Apart from the threat faced from Taliban, both India and the US are afraid that a weak Afghanistan could become a base for Islamic State terrorists fleeing coalition and Russian bombings in Syria and Iraq.

India is prepared to contribute its share in Afghanistan by building infrastructure in support of Kabul and sharing intelligence on terrorist groups in the Af-Pak region with the US.

Apart from this, the US is willing to offer a liaison slot to Indian military at Hawaii in Pacific Command so that the two militaries remain constantly in touch with each other over developments with security implications in the region. Indian Ambassador to US Navtej Sarna visited the Pacific Command in Hawaii this month even though the American offer is still to be assessed. India and the US are jointly working on aircraft engines and aircraft carrier technologies under the DTTI. This will be expanded to include ISR, air and land military systems so that latest technologies could be shared between two sides. While the US is willing to offer aerial platforms and unmanned aerial platforms on the hardware front, New Delhi will first finalise the Guardian long range UAV deal before turning to a new platform.



Tue, 12 Sep, 2017

U.S. softens stance ahead of N. Korea resolution

Sanctions to target oil, textile industries

The U.N. Security Council is scheduled to vote late Monday on a new watered-down sanctions resolution against North Korea that eliminates initial U.S. demands to ban all oil imports to the country and freeze international assets of the government and its leader Kim Jong Un.

The draft agreed to late Sunday after final negotiations between the U.S. and China, the North's ally and main trading partner, also eliminates a U.S. proposal to authorize the use force to board nine named ships, which it said violated previous U.N. sanctions resolutions, to carry out inspections.

The draft, obtained Monday by The Associated Press, would ban North Korea from importing natural gas liquids and cap its import of refined petroleum products and crude oil. It would also ban all textile exports, a key source of hard currency.



Tue, 12 Sep, 2017

IIT quake warning system for N India

By Vishwa Mohan

Move Will Alert People in Seismic Cities

IIT-Roorkee, is looking to deploy an early earthquake warning system across all cities and towns in seismic-prone north India where people can be alerted about impending powerful tremors a few seconds in advance through sirens. The institute has already started installing sirens in select cities in earthquake-prone Uttarakhand after successfully completing its pilot project. About 100 sirens will be installed at public places in Dehradun and Haldwani.

TREMOR WARNING THROUGH SIRENS

- Sensors to be installed at various locations to detect **primary waves** (or initial tremors)
- **Primary waves travel much faster** and reach the target much ahead of the damaging seismic waves, giving a lead time
- An **on-site seismic monitor can quickly detect such waves** and transmit information to processing centres
- **Processing centres, in turn, can issue an earthquake warning** in real-time by sounding sirens
- Alerts can also be sent out through **mobile phones, TV and radio** to help prevent loss of life
- **Lead time of a few seconds to a minute can help take remedial actions** like vacating buildings and shutting down critical operations



“The institute has now been in touch with the Uttar Pradesh government for setting up required sensors and sirens in different towns cities of the state,” said M L Sharma of department of earthquake engineering, IIT Roorkee.

As part of its pilot project, which was started in 2015, IIT-Roorkee had deployed 84 sensors in seismic region of Garhwal Himalayas with the help of ministry of earth sciences (MoES). These on-site sensors stream data in real-time to a computer server at the Institute using the networks of BSNL and statewide area network of Uttarakhand. Sirens, connected to the server, have been fitted within the campus of IIT Roorkee to warn of an impending high magnitude earthquake in the region.

“The pilot was successfully completed (in March) and we have a working system within the IIT-Roorkee campus with sirens. Now, we are deploying the same for the first time for public use

in Dehradun and Haldwani,” said Sharma who is also the principal investigator of the project.

He noted that though predicting earthquakes is impossible, it is possible to save people living in distant cities through a simple warning system which will give them enough lead time to reach a safe open place in case of an impending earthquake.

“We are ready with the system. Any government in northern India, including Delhi, can approach us for setting up sirens to alert people about impending earthquake,” he said, adding that researchers have also been working on a model to alert people through their mobile phones. As many as 29 cities and towns, including Delhi and capitals of nine north and north-eastern states, fall under “severe” to “very severe” seismic zones.

The Statesman
PEOPLE'S PARLIAMENT. ALWAYS IN SESSION

Tue, 12 Sep, 2017

Scientists turn human skin into motor neurons

Scientists have converted skin cells from healthy adults directly into motor neurons without going through a stem cell state. The technique developed by researchers at Washington University in the US makes it possible to study motor neurons of the human central nervous system in the lab. Scientists working to develop new treatments for neurodegenerative diseases have been stymied by the inability to grow human motor neurons in the lab.

Motor neurons drive muscle contractions, and their damage underlies devastating diseases such as amyotrophic lateral sclerosis and spinal muscular atrophy, both of which ultimately lead to paralysis and early death. Avoiding the stem cell phase eliminates ethical concerns raised when producing what are called pluripotent stem cells, which are similar to embryonic stem cells in their ability to become all adult cell types, researchers said. Bypassing a stem cell state allows the resulting motor neurons to retain the age of the original skin cells and, therefore, the age of the patient.

Maintaining the chronological age of these cells is vital when studying neurodegenerative diseases that develop in people at different ages and worsen over decades. “In this study, we only used skin cells from healthy adults ranging in age from early 20s to late 60s,” said Andrew S Yoo, assistant professor at Washington University.



Tue, 12 Sep, 2017

Ultra-thin craft to wrap space debris

Resilient ‘sheet’ being developed by Aerospace Corporation

Scientists are developing an ultra-thin spacecraft that can remove space debris — which potentially threatens satellites or astronauts — by enveloping junk in the Earth’s orbit and dragging it through the atmosphere, causing it to burn up. The Brane Craft, being developed by U.S.-based Aerospace Corporation, is flexible and measures less than half the thickness of a human hair.

“It has to be bullet-proof, because a five-micron diameter particle can penetrate the main structural sheet, which is only 10 microns thick,” said senior scientist Siegfried Janson .

The spacecraft’s microprocessor and digital electronics are fabricated in such a way that if one component gets damaged, the others will continue to work.