

# समाचार पत्रों से चयित अंश Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा  
A daily Current Awareness Service

Vol. 42 No. 268 01 December 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

## Army's lady officers test-fire missiles

By Ajit K Dubey



*Two women officers successfully launched the Akash missiles that hit their targets five times.*

AT A time when the armed forces are preparing to welcome women in more areas, for the first time in the country two women officers from the forces played a major role in the test-firing of a more potent version of the Akash surface to air missiles, which successfully hit their targets five times in the last four days. “Two lady officers played a crucial role in the successful launch of the missiles in the bestirring today that included Captain Sneha and one more lady officer from the Army Air Defence (AAD) Corps,” a source said.

Women have been getting inducted in the AAD since more than a decade now. They have been operating air-defence guns, such as the L-70 and are being trained for combat roles. The five successful test firings of the Akash surface to Air Missiles, which can strike down enemy aircraft and drones at a range of 30 km in the air were conducted by the Army units.

The ground force along with the Air Force would be operating these new missiles, which would be deployed along the China and Pakistan borders. As far as the tests are concerned, five Akash missiles while simulating different situations destroyed five different targets successfully and met the parameters for which they were being tested. The missiles have been equipped with new seekers, sources added. The targets were

deployed by teams of the Air Force and the Indian Army.

## IAF successfully conducts 1st air-to-air re-fuelling on indigenous aircraft

IAF conducted its first air-to-air re-fuelling successfully with the indigenous Airborne Early Warning and Control System (AEW&C) aircraft. The AEW&C in IOC configuration was handed over to the Indian Air Force (IAF) in February during Aero India, 2017 at Yelahanka Airbase in Bengaluru. The Airborne Surveillance System is a game changer in air warfare.

The AEW&C is a system of systems populated with state-of-the art active electronically scanned radar, secondary surveillance radar, electronic and communication counter measures, LOS (Line of Sight) and beyond LOS data link, voice communication system and self protection suite, built on an Emb-145 platform, having an air-to-air refuelling capability to enhance surveillance time.

A complex tactical software has been developed for fusion of information from the sensors, to provide the current air situation picture along with intelligence to handle identification or classification threat assessment to authorities here. Battle management functions are in-built to work as a network-centric system of Integrated Air Command & Control System (IACCS) node.

This system was developed and evaluated through collaborative efforts between DRDO and the IAF, with co-ordination for certification clearance and quality assurance by CEMILAC and DGAQA. AWACS is capable of operating as an Airborne Command and Control Centre for conducting offensive and defensive air operations. Meanwhile, in another major step in defence sector, the manufacturing facility of the Hindustan Aeronautics Ltd (HAL) has produced Sukhoi fighter jets which can be used to build the fifth-generation fighter aircraft if the government decides to go ahead with the proposed Indo-Russian joint venture.

## MAIL TODAY

Fri, 01 Dec, 2017

### Def min speeds up clearance process

For the smooth clearance of the acquisition proposals, the defence ministry has now started holding preliminary meetings before the defence acquisition council (DAC) meet to do away with any issues that come up during the actual meeting.

This helps in doing away with any issue related to the procurement related cases. Nowadays, the frequency of the DAC meetings has been increased as it is held every 15 days.

## THE ASIAN AGE

Fri, 01 Dec, 2017

### Our Navy needs underwater boost

*By Arun Kumar Singh*

*The original INS Kalvari was decommissioned a few years ago but its reincarnation will rejoin the Indian Navy on December 14.*

On December 4, Navy Day, President Ram Nath Kovind, vice-president M. Venkaiah Naidu, Prime Minister Narendra Modi, defence minister Nirmala Sitharaman along with the three service chiefs and bureaucrats are expected to attend the traditional tea party at Navy House in New Delhi.

A few days later, on December 8, the President will review a ceremonial parade at the naval base in Visakhapatnam where the President's Colours will be presented to the Submarine Arm of the Indian Navy on the 50th anniversary of its foundation day (the Indian tricolour was first hoisted on our first submarine INS Kalvari at Riga, Latvia, on December 8, 1967).

The original INS Kalvari was decommissioned a few years ago but its reincarnation will rejoin the Indian Navy on December 14, when the Navy is formally expected to commission the first French-designed Scorpene-class submarine (built by Mazagaon Docks Limited, Mumbai) as INS Kalvari, in the presence of the Prime Minister. Henceforth, five indigenous Scorpene-class subs will join the Navy, at the rate of one every year. As a former naval officer and submariner, I hope that the President, the Prime Minister and the defence minister will find time to spend a few hours underwater in a submarine as was done in the past by Prime Minister Rajiv Gandhi, President A.P.J. Abdul Kalam and defence minister George Fernandes. Given the recent tragic sinking of the 32-year-old Argentinean submarine ARA San Juan on November 15, 2017 with the loss of her entire crew of 44, it is vital that the Indian Navy gets funding for additional subs, more so as 11 of its 13 conventional subs have crossed their designed life of 25 years; eight of these are over 30 years of age.

With India joining the joint secretary-level talks in Manila last month for the proposed Quadrilateral, or "Quad", of the US, Japan, India and Australia, to ensure safety and freedom of seas, this basically maritime organisation, if it fructifies, will need India to increase the size of its largely home-built Navy by greatly

increasing its miserly naval annual budget of about \$5 billion (Chinese Navy budget is \$40 billion) starting with the next budget in February 2018.

I doubt if the proposed Quad would take the form of a military alliance, nevertheless it may result in sharing real-time intelligence and maritime domain awareness (MDA), cooperation in tracking Chinese subs and warships in the Indian Ocean along with possible coordination of activities to combat piracy and maritime terror. With or without the Quad, the Navy needs additional funds and political support.

I write this article with the experience of having visited and been briefed at ship, submarine, aircraft and missile-building facilities in India and abroad. One encouragement our domestic industry needs is long-term investment and economies of scale. It is my opinion that top priority should be given to the infrastructure development for maritime operations in our long-neglected and strategically-located Andaman and Nicobar, and Lakshadweep and Minicoy Islands.

While the Indian Navy is doing extremely well with about 44 indigenous ships and submarines (another 20 more are expected to be contracted for soon) in Indian shipyards, there exist some critical shortcomings. In my last article, Sitharaman's to-do list for next 16 months published in this newspaper on September 8, 2017, I had listed three items which would need urgent government approval for domestic production — viz conventional and nuclear subs (SSK, SSN, SSBN), mine counter-measures vessels and light (four tonnes) and medium (12 tonnes) multi-role ship-borne helicopters.

Indeed the Indian Navy, which has over the last 60 years built up a team of highly competent warship and submarine design specialists, now needs to consider inducting design specialists for aircraft, helicopter as well as the UAVs (unmanned aerial vehicles). And since Artificial Intelligence (AI) is the future of human progress and also warfare, it is vital for the Navy to create a cadre of AI specialists. Also, since I am unaware of the results of the Indo-US talks on building a 65,000-tonne aircraft carrier (IAC2) in India, with the latest electric propulsion and EMALS (electro-magnetic aircraft launch system), I have not written about it here. I am happy that the Navy has finally decided that IAC2 will not be nuclear-propelled.

I now come to some articles in the press criticising the Indian Navy for “abandoning” the indigenous light combat aircraft (LCA-Navy) jet fighter project, and sending an RFI (request for information) for 57 foreign twin-engine jet fighters needed to operate from the indigenous aircraft carrier Vikrant (IAC-1) when it becomes operational in 2021, and also for the planned IAC-2. The actual facts about LCA (Navy) are that the HAL-designed LCA Tejas, made for the IAF, was heavier by one tonne and the naval version which required additional modifications (a “drooped nose” for better pilot visibility and a strengthened undercarriage with tail hook for arrester wire landing system on a carrier) was two tonnes overweight.

Trials ashore on the Shore-Based Test Facility in Goa, which replicates an aircraft-carrier flight deck on land, indicated that the LCA (Navy) in its present form could not take off within the 195-metre deck runway space with any worthwhile load and neither could it land on the carrier. But true to its faith in indigenisation, the Indian Navy continues to fund the naval version of LCA Mk2 with a more powerful American engine GE 414, replacing the present GE 404 which powers the LCA Mk1.

Lastly, given the enormous in-house expertise available and capability built-up of domestic vendors for nuclear submarines, India urgently needs to commence domestic production of SSNs in a separate production line. The only Indian platform capable of stealthily tracking Chinese warships in the Indian Ocean and also patrolling in the western Pacific to deter China is the SSN. Hopefully, the February 2018 defence budget may bring good news for a home-built, balanced and three-dimensional Indian Navy.

***Vice Admiral Arun Kumar Singh retired as Commander-in-Chief of the Navy's Eastern Naval Command in 2007. A nuclear and missile specialist trained in the former Soviet Union, he was also DG Indian Coast Guard.***

## **N Korea will be totally destroyed, US warns**

*US wants China's Xi Jinping to impose strict economic sanctions on Pyongyang*

Warning that if it comes to war, North Korea will be "totally destroyed", the US has called on China to show leadership and cut off oil supplies to pressure Pyongyang following its latest missile test. US Permanent Representative Nikki Haley told the UN Security Council on Wednesday that North Korean dictator Kim Jong-un was bringing "the world closer to war" through his missile and nuclear provocations. "We have never sought war with North Korea," she said. "

And if war comes, make no mistake, the North Korean regime will be utterly destroyed." Haley said that many countries have made economic sacrifices to enforce strict sanctions against North Korea and put the main task of containing Pyongyang on China's shoulders.

"We now turn to (China's) President Xi (Jinping) to also take that stand," she said. "China must show leadership and follow through." Haley said that President Donald Trump had called Xi and asked him cut off oil supplies to North Korea. "China can do this on its own or we can take the oil situation into our own hands," she added. Explaining the importance of an oil embargo, she said that when China cut off oil supplies that country in 2003, Pyongyang came to the negotiating table.

Meanwhile, Trump's Principal Deputy Press Secretary Raj Shah told reporters: "We'll see future actions by the US and others and we're looking forward to applying as much pressure as we can to get to our ultimate goal, which is a denuclearised Korean Peninsula." At the Council meeting convened at the request of the US, Japan and South Korea, Under Secretary-General Jeffrey Feltman said the missile launched on Wednesday had travelled about 950 kilometres before falling into the sea in Japan's exclusive economic zone.

"The parameters indicate that if flown on a standard trajectory, the missile as configured would have had a range in excess of 13,000 kilometres," he added. There was unanimity at the Council in condemning the missile test, but not on the actions to be taken against Pyongyang. "Japan will never tolerate a nuclear-armed North Korea," the country's Permanent Representative Koro Bessho said. China's Deputy Permanent Representative Wu Haitao in effect rejected any new sanctions suggested by Haley, saying that Beijing was committed to finding a diplomatic solution that would not impact the North Korean people.

He urged the acceptance of a proposal made jointly by China and Russia that would require North Korea to suspend nuclear activity and the US and South Korea to halt joint military exercises in order to pave the way for talks. Russia's Permanent Representative Vassily Nebenzia said the latest missile test was cause for "deep disappointment" but accused the US and its allies of provoking Pyongyang with unplanned military manoeuvres and unilateral sanctions. Trump kept the war of words going while speaking at a meeting in Missouri ridiculing Kim as a "sick puppy" and "little rocket man".

"It is essential to take a step back and carefully weigh the consequences of each move, to revise the policy of mutual threat and intimidation because this policy only leads to consequences or goal that are opposite to those that are sought after," Ambassador Vassily Nebenzia told the Security Council on Wednesday. Over the past two and a half months, the US and its allies seem to have tried the patience of Pyongyang with their activities, including unplanned and undeclared military manoeuvres, or unilateral sanctions, he said. "The hostile moves forced North Korea to question the sincerity of the US to seek a peaceful settlement," Nebenzia said, adding that a comprehensive settlement will be difficult if Pyongyang feels that its security was threatened.

"It is clear that there was no military solution to the problems on the Korean Peninsula. "Sanctions against Pyongyang are an instrument aimed at involving it in constructive negotiations and should not be used to strangle North Korea economically or to intentionally worsen the humanitarian situation in the country.

"Unless the states in the region show their readiness to pay due attention to the political components of the resolutions containing sanctions, the situation will continue to deteriorate and move in a vicious circle.

"A search for a long-term solution can only be done through tireless and active diplomatic efforts. We call on all sides to immediately begin work on finding a formula for political and diplomatic settlement. We don't see any rational alternative to this path," the Ambassador added.

## MAIL TODAY

*Fri, 01 Dec, 2017*

### **N Korea may deal ‘fatal blow’ to Winter Games**

North Korea could deal a ‘fatal blow’ to the 2018 Winter Olympics in South Korea if it launches a missile before the event, a minister for the host country has warned. Unification Minister Cho MyoungGyon made the remarks as reports said annual South Korea-US military exercises might be postponed to avoid coinciding with the winter games and Paralympics in South Korea’s Pyeongchang.

“If the North provokes again at a time when the Olympic Games are imminent, it may deal a fatal blow to the Olympics,” he said at a forum in Seoul. “Therefore, it is important to stage the Pyeongchang Winter Olympics in a stable atmosphere”, he added. The world’s largest winter sports festival takes place from February 9 to 25 next year. The Paralympics are scheduled to begin on March 9. Both will be held in the mountainous resort town of Pyeongchang, 50 miles south of the border with North Korea.

The annual military exercises, codenamed Key Resolve/Foal Eagle, usually start late February or early March and run until the end of April. Tensions tend to rise during the drills, which are condemned by the North as rehearsals for invasion. North Korean dictator has invariably reacted angrily to the exercises, conducting own military drills, including missile launches. Yonhap news agency, quoting defence sources, said Seoul may request the postponement of the joint US-South Korea exercises to avoid overlapping with the Olympics. But the presidential Blue House said it has not discussed this or made any decisions on the matter.

North Korea on Wednesday launched a new intercontinental ballistic missile which it says will bring the entire US territory within range. The Hwasong-15 intercontinental ballistic missile was launched eastward from Pyongsong in North Korea’s South Pyongan Province. It flew for around 50 minutes, reaching an unprecedented altitude of 2,800 miles, before splashing down in the Sea of Japan around 620 miles away.

It marked the first missile launched since one was fired across Japan and into the Pacific Ocean on September 15. Donald Trump took a rhetorical shot at Jong-Un on Wednesday, calling him ‘a sick puppy’ for blasting an intercontinental ballistic missile in Japan’s direction.

The US also warned the North’s leadership will be ‘utterly destroyed’ if war breaks out and called on countries to cut all diplomatic and trade ties with North Korea — including Chinese oil supplies. On Wednesday, North Korea abruptly ended a 10-week pause in its weapons testing by launching what the Pentagon said was an intercontinental ballistic missile, possibly its longest-range test yet.

South Korea, a key US ally separated from the North by a militarised border, responded with shorter-range missile tests of its own. Daily Mail



■ Kim Jong Un with the newly developed Hwasong-15 missile in an undated photo released by North Korea's Korean Central News Agency.

REUTERS

## US scientists get closer to creating artificial life

Chicago: In a major step toward creating artificial life, US researchers have developed a living organism that incorporates both natural and artificial DNA and is can create entirely new, synthetic proteins. The work, published in the journal Nature, brings scientists closer to the development of designer proteins.

Previous work by Floyd Romesberg, a chemical biologist at Scripps Research Institute in La Jolla, California, showed it was possible to expand the genetic alphabet of natural DNA beyond its current four letters: adenine (A), cytosine(C), guanine (G) and thymine (T).

In 2014, Romesberg and colleagues created a strain of E coli bacteria that contained two unnatural letters, X and Y. In the latest work, his team has shown that this partially synthetic form of E coli can take instructions from this hybrid genetic alphabet to make new proteins. "This is the first time ever a cell has translated a protein using something other than G, C, A or T," Romesberg said. "It's the first change to life ever made."

Romesberg wants to use this expanded genetic alphabet to create new proteins that can treat disease.

In 2014, he formed a company called Synthorx Inc, which works on developing new protein-based treatments. “A lot of proteins you want to use as drugs get cleared in the kidney quickly,” he said. The new system would allow scientists to attach fat molecules to drugs to keep them in the body longer.

Romesberg knows the creation of semi-synthetic organisms might raise concerns of hybrid life forms spreading beyond the lab, but the system they use makes such an escape unlikely.

For example, in natural DNA, base pairs are attracted to each other through the bonding of hydrogen atoms. Romesberg’s X and Y bases are attracted through an entirely different process, which prevents them from accidentally bonding with natural bases. And because cells can’t make their own X and Y without the addition of certain chemicals, the semi-synthetic organisms can’t live outside a lab. Reuters