

समाचार पत्रों से चयित अंश Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा
A daily Current Awareness Service

Vol. 43 No. 116 05 June 2018



रक्षा विज्ञान पुस्तकालय
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Defence corridor: Industrialists in Trichy told to upgrade machinery

Carrying forward the momentum in industries that are in euphoric state post the city being named in Tamil Nadu Defence Corridor, a slew of meetings and interactions hosted by trade bodies are underway here. In an interactive session between industrialists and experts in aerospace manufacturing sector conducted by the Confederation of Indian Industry (CII) Trichyzone on Monday, the local manufacturers were told to upgrade existing machinery to produce components with precision and high efficiency, as sought by armed forces.

Addressing the gathering of industrialists from various sectors including from heavy engineering and sheet metal fabrications, Dr K Tamilmani, former director general of DRDO (aero), said, “Special machinery might be required to ensure precision and efficiency in manufacturing defence products particularly in aerospace. Skill development of existing workforce should be upgraded for which the facilities like NIT Trichy will come handy for industrialists here.”

Stating that the investment would be high for manufacturing with precision, the former DRDO scientist said consortium approach of like-minded industrialists and frequent discussions would help manufacturers comprehend the strengths of Trichy based industrial ecosystem. While Coimbatore was cited to lead the way ahead in aerospace manufacturing, presence of government defence institutes here such as Ordnance Factory of Tiruchhirappalli (OFT) and Heavy Alloy Penetrator Project (HAPP) are touted to be helpful for industries here to garner contracts for manufacturing components that could be outsourced by institutes.

<https://timesofindia.indiatimes.com/city/trichy/defence-corridor-industrialists-in-trichy-told-to-upgrade-machinery/articleshow/64453189.cms>

DRDO lab in Pune contributed significantly to Agni 5 development

Two Pune based Defence Research and Development Organisation (DRDO) laboratories have played a significant role in providing key components to the nuclear-capable Long Range Ballistic Missile Agni-V, which on Sunday was successfully test-fired off the Odisha coast.

The surface-to-surface missile was launched with the help of a mobile launcher from Launch Pad 4 of the integrated test range (ITR) at Dr Abdul Kalam Island in the Bay of Bengal at 9.48 am, the DRDO sources told TOI on Sunday. PK Mehta, Director General of Armament Combat Engineering (ACE) cluster headquartered in Pune, told TOI on Sunday, “The canister launcher of the missile has been developed by Ahmednagar-based Vehicle Research and Development Establishment (VRDE) while high energy materials composition for boosters were developed by the High Energy Materials Research Laboratory (HEMRL).”

This was the sixth trial of the indigenously developed Agni 5 missile. The last trial of the missile was carried out in the month of January this year. Commenting on the results and flight performance of the missile, Mehta said, “The missile’s flight performance was excellent and has achieved desired results, which is a very positive sign for the country.” Currently, the country has four Agni series missiles with various ranges in its inventory. Agni-1 with 700 km range, Agni-2 with 2,000 km range, Agni-3 and Agni-4 with 2,500 km to more than 3,500 km range. All the tests of the missiles have been successful. The first test was conducted on April 19, 2012, the second on September 15, 2013, the third on January 31, 2015 and fourth on December 26, 2016. The last test was held on January 18, 2018.

<https://timesofindia.indiatimes.com/india/drdo-lab-in-pune-contributed-significantly-to-agni-5-development/articleshow/64451815.cms>

India wants 110 fighter jets; Boeing sees a 2 yr wait before deal is done

The tender for 110 combat aircraft mandates building at least 85% of the order locally

It could be another two years before India picks the winner of the world's biggest combat aircraft order, according to a senior Boeing Co. executive. Boeing is well placed in the race to supply the Indian Air Force with 110 fighter jets, Gene Cunningham, Boeing vice president of global defense sales, told Bloomberg News on Sunday on the sidelines of a security forum in Singapore. The company is a finalist in a separate competition to supply the Indian navy with 57 fighter jets. "We have gotten to know Indian industry, understand the Indian process," Cunningham said.

The tender for 110 combat aircraft mandates building at least 85 per cent of the order locally. The deal is likely to be at least \$15 billion. Boeing said in April that it would partner with state-run Hindustan Aeronautics Ltd. and Mahindra Defense Systems Ltd. to manufacture the F/A-18 Super Hornet in India at a new facility, which can also be used for other requirements. Other companies in the running include Lockheed Martin Corp., Saab AB and BAE Systems Plc. "We'll throw our hat into the ring," Alan Garwood, BAE's director for group business development, said in an interview on Sunday. "We've seen the requirement and we've said we'll put some sort of tender in."



The British defense and aerospace company makes the twin-engine Eurofighter Typhoon jet. Garwood said BAE had been making aircraft in India for 70 years, a key advantage given Prime Minister Narendra Modi's requirement that the new jets be made in India. "We have good relationships with industry and government there," Garwood said. Getting new aircraft is crucial for Modi as the South Asian nation faces increased risks from neighboring Pakistan and China at a time when the Russian MiG fighters -- India's mainstay -- are being phased out. The defense industry is a key part of Modi's "Make in India" policy, which aims to promote domestic manufacturing. After scrapping an order with Dassault Aviation for 126 Rafale jets worth \$11 billion in 2015, a process that took nearly a decade, Modi's administration bought 36 jets separately to speed up the process. Under the new tender, the winner will have to deliver the first jet within three years of securing the contract.

India had previously said that it was looking to replace its current fleet of combat aircraft with a single-engine jet, but subsequently announced that it would also consider twin-engine aircraft such as Boeing's twin-engine F/A-18 Super Hornet. Boeing's Cunningham said the change in direction meant that the timing of the Indian Air Force process was now about 12 months later than the Indian Navy. "Certainly today, the Indian Navy timeline will conclude sooner than the Indian Air Force," Cunningham said. "They would appear to us to be sequential, but I'm not assuming that they're related."

North Korea 'military reshuffle' raises eyebrows in Seoul

Seoul is monitoring developments in the North's military, it said Monday after reports Pyongyang replaced three of its top military officials ahead of a summit with the United States. President Donald Trump is due to meet with North Korean leader Kim Jong Un on June 12 in Singapore with Pyongyang's nuclear arsenal high on the agenda and reports said that the reshuffle could be aimed at taming the military. Late last month the North's state media revealed that Kim Su Gil had been appointed as director of the military's powerful General Political Bureau (GPB), replacing Kim Jong Gak.

Trump plays down chances of quick breakthrough as North Koreans bring letter

According to *Yonhap* news agency, which cited intelligence sources, the chief of the general staff Ri



Myong Su has also been replaced by his deputy, Ri Yong Gil. And defence minister Pak Yong Sik has been succeeded by No Kwang Chol, previously first vice minister, it added. The wholesale reshuffle would be unusual if confirmed, Seoul's unification ministry said. "We will monitor related developments," ministry spokesperson Baik Tae-hyun told reporters. Pyongyang's military, known as the Korean People's Army, is immensely influential in the North and a centre of power in its own right, symbolised by the way Kim is habitually flanked by generals on one side and civilians on the other when attending major ceremonial events. According to researchers at NK Leadership

Watch, the change at the top of the GPB "represents a continuation of tightening Party control over the KPA". The political bureau could be in a position to resist policy decisions by the leadership or try to profit from future South Korean economic aid, it said.

New twist to diplomatic dance: Trump says North Korea summit now on

But new GPB director Kim Su Gil was a "highly trusted" lieutenant of leader Kim Jong Un, it added, who appointed him to the Pyongyang party committee – once a powerbase for his uncle Jang Song Thaek – after having the older man executed for treason in 2013. Reports said the wider changes could be aimed at preventing objections in the North's senior military ranks to any sudden changes in the country's nuclear policy. No Kwang Chol, the new defence minister, was known as a 'moderate', *Yonhap* cited the intelligence source as saying. "The North appears to have brought in new figures... as the previous officials lacked flexibility in thinking," the source said.

MAIL TODAY

China spies on Indian warships as they leave Vietnam after naval exercise

China tried to snoop on India Navy warships as they left Vietnam, top sources have told India Today TV. A flotilla on Indian Warships comprising the newly inducted stealth anti-submarine corvette INS Kamorta, a tanker, were leaving Vietnam in the last week of May after exercising with the Vietnamese Navy when they spotted a Chinese warship "tailing them at a safe distance".

The Indian and Vietnamese Navy exercised in the last week of May. "The Indian Navy has had extensive interactions with Vietnam People's Navy, particularly in the field of training, repairs, maintenance and logistics support aimed at capacity building," the Indian Navy spokesperson had said. "We knew we were being tailed, but we were on international waters or global commons, and therefore took evasive measures," top sources told India Today explaining why India took no action.

The Indian flotilla was on their last leg of deployment when they noticed the Chinese warship "tailing" them. Earlier, Indian security agencies had warned New Delhi that China had put up its surveillance aircraft in the Tibet Autonomous Region (TAR) to keep an eye on Indian Air Force exercise, Gagan Shakti that simulated fighting China and Pakistan. The two-week exercise tested the IAF's ability in the fight in the Eastern front from dispersed airbases to evade threats. Besides radar and sonar signatures India feels China also tried to snoop and collect other electronic signatures of the Indian warships. "These data collected is used for swifter identification of warships," the officer added.

News Analysis: In S-400 deal, U.S. is the elephant in the room

Officials remain cautious on future of deal for the advanced missile system amid warnings from Washington

India's ambitions to procure the Russian-developed S-400 Triumph long-range air-defence system have landed New Delhi right in the middle of global strategic complexities. The S-400 is a complex military system

comprising several radars, command post, different types of missiles and launchers that can track several dozen incoming objects simultaneously from hundreds of kilometers away, launch counter-missiles within seconds and shoot them down with great efficiency.

Given its advanced capabilities, the weapon system has added a new strategic angle to ongoing stand-offs around the world — in Syria, between Saudi Arabia and Qatar, and in China and its neighborhood. As the Defence Ministry prepares to present the procurement proposal for the S-400 systems before the Cabinet Committee on Security (CCS), officials are divided on whether New Delhi

will push the deal through in the face of possible U.S. sanctions and warnings that it will adversely affect transfer of U.S. military technology. Government sources said New Delhi and Moscow have concluded the negotiations and the CCS note for a \$5.5-billion deal is being drafted. However, one Indian Air Force source said he was not sure if New Delhi would defy Washington and sign up for the missile system. "Ideally, the deal should be ready for the annual summit between the PM and President Putin" in October, a senior official said.

Douglas Barrie, Senior Fellow for Military Aerospace at the London-based International Institute for Strategic Studies, told *The Hindu* that concerns over the system were partly technical and partly political. "The S-400 (SA-21 Growler), when properly operated, is a potent medium-to-long-range surface-to-air missile system. To be most effective, however, it needs to be integrated with other air defence systems and components — such as radars — operated by the purchasing country. This however, presents problems if some

Military heft The Russian S-400 air defence missile system can track and shoot down about 80 simultaneous targets, including cruise, ballistic missiles, aircraft, UAVs, as well as ground-based targets. A look at the system

- **USP:** S-400 Triumph long-range air defence system consists of a surface-to-air missile that can attack UAVs, drones, cruise missiles
- **Range:** 400 km
- **Max. altitude:** 10,000 ft.
- **Max. speed:** 4,800 m/s
- **Deployment time:** 10 minutes

Specifications: Command control system, multiple radar units, automated from acquisition to final engagement

- Is widely considered as a fourth-generation system in terms of its combat capabilities



of these have been bought from the U.S. or potentially other Western states, where the required levels of integration will not be possible because of security concerns,” Mr. Barrie said. Frank O’Donnell, of the Belfer Center for Science and International Affairs at Harvard University and the Stimson Center’s South Asia program, however, said New Delhi was unlikely to be deterred from completing this purchase by the threat of U.S. sanctions.

“Indeed, Washington will likely soon withdraw this threat and quietly acquiesce to the purchase once Indian diplomats have the opportunity to explain to their U.S. counterparts how the S-400 acquisition supports the U.S.-India shared goal of enhancing regional capabilities to deter Chinese aggression,” Mr. O’Donnell said. In recent days, senior U.S. functionaries have made clear their stand on India’s proposal. Congressman Mac Thornberry, Chairman of the U.S. House Armed Services Committee, said in New Delhi last week that there was a “lot of concern in the U.S., in both the Administration and [U.S.] Congress over the S-400 system.”

Congressman Harry Cueller of House Appropriations Committee pointed out that India wants more technology sharing and co-production with the U.S. “The issue is: if we provide more technology and India buys the S-400, it raises concerns... it is about a third party and how they could access some of the technologies. We do have some concerns which we have conveyed at different levels in the Government,” he said. It is not just in India-U.S.-Russia relations that S-400 has become a contentious issue. It emerged last week that Saudi Arabia has threatened military action if its neighbour Qatar goes ahead with the proposal to acquire S-400 from Russia. The threat is part of communication between King Salman and the French President, according *Le Monde* newspaper. Qatar already under various sanctions by other Gulf States, because of its alleged funding of terrorism. S-400 deployment in the Syrian theatre and Turkey’s move to acquire them has all added new dimensions to the already complex global scenario.

Business Standard

Tue, 05 June, 2018

As China tension abates, Navy to send fewer warships for Exercise Malabar

The admirals say this year's exercise will involve unprecedented complexity, featuring enemy threats in all three dimensions, but especially underwater threats from submarines - a key Chinese strength

By Ajai Shukla

The Indian Navy is sending three surface warships and a surveillance aircraft to the annual US-Japan-India trilateral Exercise Malabar 2018, being held in Guam, in the Pacific Ocean. Last year, amid tensions with

MALABAR: SMALLEST INDIAN PRESENCE IN 5 YEARS						
	India	US	Japan	Total	Aircraft carriers	Remarks
2014	3	5	2	10	Nil	
2015	4	3	1	8	1	
2016	4	5	1	10	1*	Japanese helicopter carrier, JS Hyuga, also participated
2017	9	6	2	17	2*	Japanese helicopter carrier, JS Izumo, also participated
2018	3	6	4	13	2*	Japanese helicopter carrier, JS Ise, will also participate

*Japan's helicopter carriers embark vertical take off/landing fighter aircraft

China, it had sent thrice that number. “The Navy will be represented by two indigenously designed and built ships, the multi-purpose stealth frigate INS Sahyadri and anti-submarine warfare corvette, INS Kamorta, fleet tanker INS Shakti and a long range maritime patrol aircraft P-8I,” said an official Navy release on Monday.

In Malabar 2017, held in the Bay of Bengal, India had fielded aircraft carrier INS Vikramaditya and a Kilo-class submarine, in addition to seven other major warships. Malabar 2018 features no

Indian aircraft carrier or submarine, and relatively smaller warships. Malabar 2017 was held last July while Indian and Chinese troops were locked in a tense border stand-off in Doklam, at the India-China-Bhutan

border tri-junction near Sikkim. This year's reduced participation comes just six weeks after Prime Minister Narendra Modi's two-day "informal summit" meeting with Chinese President Xi Jinping in Wuhan, China.

Naval sources dismiss the notion of a "reduced commitment to Malabar". They said the Navy is not sending an aircraft carrier or submarine simply because Guam is too far away – almost 10,000 kilometres by sea. A senior officer said it would be undesirable to leave no aircraft carrier for India's defence. The admirals say this year's exercise will involve unprecedented complexity, featuring enemy threats in all three dimensions, but especially underwater threats from submarines – a key Chinese strength.

They point out that, for the first time, officers from all three navies will function as "sea riders" – or posted on other navies' warships. That means Indian Navy officers will obtain the unprecedented benefits of operating on the US Navy Los Angeles-class nuclear attack submarines and the highly regarded Soryu-class submarines of the Japanese Maritime Self Defence Force (JMSDF). Also, for the first time, the world's best three long-range maritime reconnaissance (LRMR) aircraft – the Indian Navy's Boeing P-8I, the US Navy's Boeing P-8A and the JMSDF's Kawasaki P-1 – will operate together.

Beijing regards Exercise Malabar as the military manifestation of a trilateral alignment between Washington, Tokyo and New Delhi, directed at containing China. Beijing has also opposed Australia's frequent requests to participate in Exercise Malabar, regarding that as amounting to a "Quadrilateral Alliance" of Asia-Pacific democracies. Chinese apprehensions about India joining a US-led, anti-China grouping have been inflamed by growing US-India naval cooperation, and by measures like the recent re-naming of the Hawaii-based United States Pacific Command (USPACOM) as the US Indo-Pacific Command. US Defence Secretary Jim Mattis explained that the renaming only took into account the actual geographical spread of USPACOM, "from Bollywood to Hollywood and from penguins to polar bears". Beijing was not amused.

On Monday, the defence ministry stated that the US Navy will participate in Malabar 2018 with six major warships: "Nimitz-class aircraft carrier USS Ronald Reagan with its air wing; two Ticonderoga class cruisers, USS Antietam and USS Chancellorsville; two Arleigh Burke class destroyers, USS Benfold and USS Mustin; a Los Angeles-class attack submarine and one long range maritime patrol aircraft P-8A." It said the JMSDF would be represented by Hyuga class helicopter carrier JS Ise with its integral helicopters; Takanami-class destroyer JS Suzunami; Akizuki-class destroyer JS Fuyuzuki, a P-1 LRMR aircraft and a submarine.

The participating Indian warships will reach Guam on June 7, for the Harbour Phase of the exercise, where the three navies will coordinate operating techniques and drills. Sea Phase, from June 11-16, will feature live aircraft carrier operations, air defence, anti-submarine warfare, surface warfare, visit, board, search and seizure (VBSS), joint manoeuvres and tactical procedures.