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Thu, 25 April 2019

Must focus on critical challenges to technical indigenisation: Nirmala Sitharaman

Sitharaman also advised those present to consider identifying Indian startups to realise the recommendations of the Task Force on Artificial Intelligence, for long term benefits

By Mayank Singh

New Delhi: Defence Minister Nirmala Sitharaman on Tuesday exhorted the Commanders of the Indian navy to delve deeper and focus into the “critical” areas of technology for indigenisation, where the country lags.

Speaking at the first edition of the Naval Commanders’ Conference of 2019 —scheduled from April 23-25 — Sitharaman urged the Navy to lead the military in capturing the ‘spirit of indigenisation’ and encouraged senior Commanders of the force to harness the experience of retiring Naval officials to strengthen institutional and indigenous capabilities in designing and developing components needed in warships.

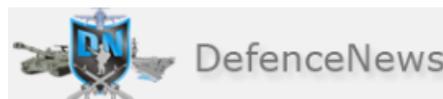
“The Defence Minister expressed satisfaction on Navy’s indigenisation process and said that time has come to focus on the critical technologies which the force needs and are difficult to procure from outside,” said a Naval officer who attended the event.

Sitharaman also advised those present to consider identifying Indian startups to realise the recommendations of the Task Force on Artificial Intelligence, for long term benefits. The conference is the apex forum within the service for interaction between the top brass. The Chief of the Naval Staff, with the Commanders-in-Chief, will review major operations, logistics, Human Resources, training and administrative activities undertaken during the previous six months and deliberate upon the course to be steered in the ensuing six months.

While she was speaking at the event, Sitharaman appreciated the naval force’s efforts in the Indian Ocean and the Indo –Pacific regions as well as in military diplomacy, humanitarian assistance and Disaster Relief, among others.

Sitharaman also put in a good word for the Indian Navy’s rapid transition from annual Theatre Level Readiness and Operational Exercise (TROPEX 20019) to operational mode, post the Pulwama attack when 40 CRPF Troopers were killed on 14 February this year.

<http://www.newindianexpress.com/cities/delhi/2019/apr/24/must-focus-on-critical-challenges-to-technical-indigenisation-sitharaman-1968357.html>



Thu, 25 April 2019

Should the Indian Navy worry about China's new warship?

China's massive naval parade at Qingdao on April 23 to mark the 70th anniversary of the creation of the People's Liberation Army Navy turned out to be an anti-climax as smog played spoilsport.

However, one ship among the 32 PLAN vessels on display triggered plenty of curiosity as its silhouette emerged through the smog—the first of China's Type 055 class destroyers.

The vessel, designated the Nanchang, is considered to be the largest surface warship, excluding aircraft carriers and amphibious assault ships, built in Asia. The Type 055 class destroyer has a length of 180 metres and displaces over 11,000 tonnes. In comparison, the Indian Navy's future destroyer, the INS Imphal, which was launched last week, has a displacement of 7,300 tonnes and length of 163 metres.

The INS Imphal is a ship of the Project 15B Visakhapatnam class and features modifications over the preceding Project 15A Kolkata class. Both the Project 15A and 15B class are derivatives of the Delhi class destroyers, designed in the late 1980s.

Moreover, the beam (width of the ship at its widest point) of the Nanchang is estimated to be over 20 metres, while the INS Imphal has a beam of around 17 metres. The difference in beam means the Nanchang has more space for equipment and also for future modifications.

According to various Chinese news outlets, the Type 055 Nanchang has 112 vertical launch cells for a variety of missiles meant for anti-air, anti-ship and land-attack purposes. Ships like the Imphal and Kolkata class have 32 Barak-8 missiles in ready-to-fire mode in vertical launch cells and 16 Brahmos anti-ship missiles. The Type 055 is expected to carry both supersonic anti-ship missiles and cruise missiles for attacking targets on land.

While the Type 055 can carry far more missiles, the Indian Navy's destroyers are considered on par with their Chinese counterparts in terms of electronics and weaponry. The Project 15A and Project 15B class ships use the Israeli MF STAR radar, which can detect targets over 450km away. The Type 055 class uses an 'X band' radar, mounted on a high mast, for detecting small, low-flying targets and a larger radar system fitted on its superstructure for long-range detection.

The Israeli-origin Barak-8 missile, while having a shorter range than the HHQ-9 system on the Type 055 destroyer, has an advanced radar seeker and a dual pulse rocket motor for higher probability of intercepting its target.

So, the Type 055 Nanchang is much bigger than the Indian Navy's destroyers, but in terms of quality of weapons and radars, it is more of an even match. However, the Indian Navy's biggest worry may well not be the Type 055 itself, but the rate at which China is building this and other classes of warships.

In 2018, the South China Morning Post had reported the PLAN had launched four Type 055 ships since 2017 and was building four more. A report on China's naval modernisation by the US government's Congressional Research Service in August 2018 quoted Chinese media reports that talked of a need for “at least 10” Type 055 class ships.

In 2018, the Pentagon's Annual Report to Congress on China's military noted that seven Type 052D class destroyers had been put into service and six more were being built. The Type-052D is roughly comparable in dimensions to the Project 15A and Project 15B class ships of the Indian Navy.

The same Pentagon report noted China had commissioned 24 Type 054A class frigates, which displace around 4,000 tonnes, and several more were being constructed. Interestingly, China is supplying Pakistan four Type 054A class ships. The Pentagon also noted that China had built more than 35 Type 056 class corvettes, small missile-armed warships that weigh less than 2,000 tonnes.

To understand the scale of Chinese naval construction, it would be prudent to understand when the first of these aforementioned ships were launched: the first Type 056 entered service in 2013, the first Type 054A frigate entered service in 2008 and the first Type 055 was launched in 2017. According to the China Power Project of the Center for Strategic and International Studies, “Between 2014 and 2018, China launched more submarines, warships, amphibious vessels and auxiliaries than the number of ships currently serving in the individual navies of Germany, India, Spain, and the UK.”

The China Power Project also identifies a key factor facilitating Beijing's frenetic build-up: China has

leveraged its world-beating commercial shipbuilding capabilities to the military space. The CSIS notes, “The same state-owned companies that dominate China’s commercial shipbuilding industry are also major players in the military space.”

Most major Indian Navy projects such as the Project 15A and 15B have faced delays due to issues in supply of components by vendors, integration of various systems and shipyard inefficiencies. The four Project 15B destroyers are three years behind schedule, caused in part by delay in delivery of equipment, including gas turbines, from Russia and Ukraine.

The Type 055 is likely to worry the Indian Navy not by the number of missiles it carries, but more for the fact that it is a symbol of China's naval shipbuilding prowess.

<http://www.defencenews.in/article/Should-the-Indian-Navy-worry-about-Chinas-new-warship-584322>



Wed, 24 April 2019

Why the \$8-billion Future Infantry Combat Vehicle project of the Indian Army continues to be delayed

Though the reason cited for putting the project under Make II category was to fast track the process of modernising the Armoured Vehicles of the Indian Army, now the long-delayed project will wait for the new government

By Huma Siddiqui

The fate of the \$8-billion (approx Rs 60,000 crore) Future Infantry Combat Vehicle (FICV) project for the Indian Army which has been getting delayed will now be decided by the next government. Sources have confirmed to Financial Express Online that the project that had been moved to the Make II category of the DPP-2016 last year in an effort to expedite it is stuck due to the lack of decision from both service headquarters and the Ministry of Defence (MoD).

The MoD has been pushing the industry to invest 90 per cent funds to develop the prototype of the FICV which is for modernising the Armoured Vehicles of the Indian Army; however, due to lack of any commitment from the end user there has been reluctance from the industry. Industry sources pointed out that there have been long delays as the MoD and the Service Headquarters have yet to decide on the requirement of the vehicles. Sources have said that there have been differences of opinion between the end user the Indian Army – and the MoD which has pushed the critical programme under the Make-II category.

As has been reported earlier, there has been divergence of views between the MoD and the Indian Army since last year related to the payment for this project. A senior officer had confirmed the same to Financial Express Online. Though the reason cited for putting the project under Make II category was to fast track the process of modernising the Armoured Vehicles of the Indian Army, now the long-delayed project will wait for the new government.

The FICV which is to be made in India is expected to have minimum 40% indigenous content. Companies including Titagarh Wagons, Reliance Defence and Engineering and Mahindra and Mahindra have sent their proposals to the MoD. Subject to approval some of the potential Original Equipment Manufacturers include Russian companies under the umbrella of Rosoboronexport, US-based General Dynamic and German Rheinmetall.

The FICV project was earlier approved under the Strategic Partnership (SP) model for the armoured vehicle segment under the ‘Make’ category according the DPP-2008 before being moved to Make II of DPP-2016. The DPP-16 states that in Make II category no funding is required from the MoD, whereas in the ‘Make’ category, the ministry has to provide 90% of funds up to the prototype stage. The

Chapter–III of DPP-2016 has specified that the ‘Make’ procedure for indigenous design, development and manufacture of defence equipment/ weapon systems was simplified in 2016.

Around 2,600 FICVs — with a life span of 32 years, are expected to replace the Army’s old Russian-origin BMP-2 infantry combat vehicles by 2025.

<https://www.financialexpress.com/defence/why-the-8-billion-future-infantry-combat-vehicle-project-of-the-indian-army-continues-to-be-delayed-lead-3/1556477/>



Thu, 25 April 2019

Weapons, wars and a cost-effective strategy

While we are on the cusp of joining the great power club, the technical edifice of our military power projection is shaky. For futuristic wars, we need plenty of front-end technology to remain confident in a tech-propelled warfare environment

By Bhartendu Kumar Singh

After the Balakot airstrikes, the role of weapons in the war strategy is being hotly debated. A major milestone was the downing of Pakistan’s F-16 by India’s vintage MiG-21. Similarly, memorable battles have been fought and won against technological odds in India’s military history. Nevertheless, superior weapons are being emphasised upon for technological preponderance, tactical advantage and overwhelming military strength. Consequently, there are demands for more imports of such weapons. However, while weapons with superior technology and lethality do matter, a cost-effective strategy warrants that in the long term these are domestically produced.

In the past, the necessity for superior weapons through the ‘imports’ gateway has impacted our weapons’ philosophy in several ways. One, two-thirds of the weapons are being imported without enabling sufficient scope for reverse engineering, design changes and qualitative improvements in imported weaponry to suit our requirements and optimise these costly imports. Two, the imports’ mechanism also leads to distortions in terms of demand-supply mismatches (procuring lesser number of weapons than intended due to prohibitive costs), temporal delays, qualitative (not getting technologically up-front products) and other specification issues. Inspection reports and field trials of imported weapons may not be enough to suit India’s diverse geographical topography. Three, there are always minor issues related to the procurement and supply of spare parts, maintenance issues, logistical support and operational preparedness. Foreign suppliers often exploit our vulnerability and dependence. Moreover, they are no match for the cost-effective comforts of similar services provided by the domestic military industrial complex (MIC).

If we analyse the economics of weapons’ technology, it becomes clear why India is compelled to perpetually import high-technology weapons. Externally, the producer-supplier countries have the advantage of in-built knowledge over importing countries due to familiarity of turf, ongoing R&D engagement with focus on improvisation of existing weapons and sharing of only ‘need to know’ technical knowledge with importing countries. India remains a victim of such structural defects in the international arms market where the weapons supplier firms and countries see us only as a Big Emerging Market (BEM) rather than a potential arms producer. We do not often get the best of technology and even the sporadic transfer of technology (ToT) is backwards by at least one generation.

Internally, our domestic MIC is small and monopolised by defence PSUs. Unlike other sectors of economy, the defence economy is still regulated with restricted space for independent and autonomous growth of private sector entrepreneurship. The MIC is also characterised by the bureaucratisation of

defence R&D, low salaries for the scientific fraternity and the absence of institutional linkages with the industry and services. While the investment in defence R&D is fairly good, overall investments in scientific education and R&D remain poor. Constrained economic conditions also mean little investments in the promotion of generic R&D. We can boast of very few universities and research institutes with top-class scientific research activities. These issues have repercussions through poor R&D culture, fewer number of patents and products and internationally cited research papers.

While we are on the cusp of joining the great power club, the technical edifice of our military power projection is shaky. For futuristic wars, we need plenty of front-end technology to remain confident in a tech-propelled warfare environment. Can we really import all the technologies in appropriate quantity and at the appropriate time? Further, can we really afford to pay through our nose since imported technologies extract a heavy price for patent development? Most importantly, can we really become a military power through large-scale weapon imports? We need to meditate on this. Unless we gear up, we would perpetuate our technological dependency on the international market, and in turn, our vulnerability would remain in situ.

The weaponry challenge for India is manifold. One, we need technological parity with China that has invested heavily in basic sciences' education and research and has gone miles ahead in the past four decades vis-a-vis our own negligent treatment of scientific disciplines. Two, we cannot afford numerical preponderance along with technological preponderance. The extra flab in services can be trimmed; money saved can be invested in technology. Concurrently, the force profile needs an incremental change with technical skills and knowledge to all arms of the services, including the infantry. Three, better civil-military synergy would lead to weapons being developed with lesser integration and adaptation problems and greater acceptability among the services. Every year, thousands of engineering and technical-background officers and men retire. They could be laterally deployed in the domestic MIC. This would enable better user specifications and responsive designs and may lead to an innovative technology and weapon culture as exists in countries like Israel.

The Balakot aftermath provides an opportunity to explore our technological prowess. We have political will through the 'Make in India' scheme and an implementational roadmap through the two upcoming Defence Industrial Corridors (DICs). We also have an assured domestic market. Most importantly, we have relative peace on our borders. We should use this scenario to strategise long-term and medium-term options. Minimal import philosophy, preference ordering, strong techno-nationalism, building our defence and offence capabilities through augmenting our strong areas (like missile systems) are some of the representative solutions. Most importantly, we need to make heavy investments in scientific education and research. Probably, there lies the potential for India's emergence as a true military power. (*Views are personal*).

<https://www.tribuneindia.com/news/comment/weapons-wars-and-a-cost-effective-strategy/763340.html>



Thu, 25 April 2019

Army to build tunnels to store ammunition

NHPC being roped in for the purpose

By Dinakar Peri

New Delhi: Indian Army is planning to construct underground tunnels for storage of ammunition along the border with China and Pakistan and Public Sector Undertaking NHPC Limited is being roped in for the purpose, army sources said.

“Indian Army is in the process of executing pilot projects for construction of semi underground and cavern type ammunition storage construction through NHPC Ltd., for which a Memorandum of Understanding (MoU) will be signed in the next few days,” an Army source said on Wednesday.

Underground storage offers improved safety, easier camouflage from enemy observation and satellite imagery and protection from enemy strikes like those seen during the aerial engagement on February 27, a day after the Balakot air strike when Pakistan Air Force jets targeted Indian army installations along the Line of Control (LoC). Major armies, including China and the U.S., already use underground ammunition storage, a second source observed.

These tunnels will be built in high altitude areas in the Northern and Eastern borders. Initially, four pilot projects would be taken up at four different locations along the Northern border and in Jammu and Kashmir at a cost of ₹15 crore, the source said. “These are expected to be completed within two years.”

As the conditions in the caverns are controlled, it ensures better safety of sensitive ammunition minimising accidental explosions. As part of the project, a number of caverns with storage capacity of 200 metric tonnes will be built in mountain folds in identified areas.

NHPC is being roped in for their technical expertise in the development of tunnels. The source said the Army had earlier tried tunnelling on its own in Sikkim and Tawang, but there were problems of seepage and dampness. It was then decided to bring in NHPC given their experience, the source added.

The Army had approached NHPC in November 2018 after which the company made detailed presentations on the modalities of executing the project. The four locations for pilot projects have been identified and work will begin once the MoU is signed.

The Army has debated the idea of underground storage of ammunition for a long time as it has several advantages compared to over ground storage. A range of ammunition used by the Army, ranging from bullets, rockets to anti-tank and surface to air missiles, can be stored in the caverns.

<https://www.thehindu.com/news/national/army-to-build-tunnels-to-store-ammunition/article26935120.ece>

THE ECONOMIC TIMES

Thu, 25 April 2019

Chinese submarine movements in Indian Ocean down, Pakistan Navy remains choked in

No sub movement since aborted bid in October; Pakistan vessels fail to make it for Qingdao fleet review

By Manu Pubby

New Delhi: Chinese submarine movements in the Indian Ocean Region have reduced significantly, with no detected presence since October last year when a deployment had to be aborted mid-way, due to a suspected technical fault, government sources have told ET.

While the Chinese 32nd escort task force is replacing the 31st in the Gulf of Aden on antipiracy duties, military watchers have been keeping a sharp eye on its submarines deployments, which had intensified starting 2013 with a nuclear submarine being spotted in the region.

Meanwhile, the Indian Navy has been maintaining operational deployment in the Arabian Sea since the Pulwama terror strike in February, virtually choking the Pakistan Navy and forcing it to stay close to the coastline.

The last Chinese submarine to be spotted was a conventional Yuan class submarine that made its way into the Indian Ocean through the Sunda Strait last October. Officials said that the submarine —

which was greeted by the Indian Navy as soon as it popped up in the region — showed signs of a technical fault as it sailed a significant distance to Colombo without submerging.

“The submarine was accompanied in the trip with a rescue vessel. They both stayed at Colombo for a few days and exited the region together through the Malacca Strait. The Chinese vessel was possibly facing some technical issues,” an official aware of the matter told ET.

Before that, the last spotting of a Chinese submarine in the region was in October 2017. Incidentally, the Indian Navy has been maintaining mission based deployments in the region since 2017, with ships being deployed at five areas of interest throughout the year.

India is also upgrading its antisubmarine warfare capabilities as military planners focus on acquiring expertise to counter the growing Chinese presence in the region. While the Boeing P8I aircraft have added significantly to the technical capabilities, India is also exercising with friendly nations such as Australia to exchange best practices and develop joint operational experience. However, signs of growing Chinese influence in the region is clear from its ‘submarine diplomacy’ over the past few years. Beyond the deployment and port visits by its nuclear powered boats to Sri Lanka and Pakistan, China supplied Bangladesh with its two submarines in 2017. The refurbished Ming Class boats are the first submarines to be operated by Bangladesh.

Continuing with its military relations with Pakistan, Beijing will be supplying it with eight new diesel electric attack submarines, four of which are to be manufactured in Karachi likely by 2028. These submarines, possibly of a new class, will be fitted with Air Independent Propulsion (AIP) systems that will enable them to stay underwater for days.

- Choked Pakistan fails to make appearance at China fleet review.
- The tempo of deployments post the Pulwana terror attack is being maintained even now, with ships, submarines and the aircraft carrier on operational deployment.
- This deployment has ‘choked’ the Pakistani Navy.
- Indian deployment could be the reason why no Pakistan Navy ship participated in the International Fleet Review of the Chinese Navy in Qingdao on Wednesday.
- Pakistan Navy has sent a team of officers for the review but no naval asset · Indian Navy Sips Kolkata and Shakti are in Qingdao for the fleet review.
- Pakistan Navy has sent a team of officers for the review but no naval asset · Indian Navy Sips Kolkata and Shakti are in Qingdao for the fleet review.

https://economictimes.indiatimes.com/news/defence/indian-battle-ships-take-part-in-chinese-navys-biggest-fleet-review-pakistan-gives-it-a-miss/articleshow/69019513.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst



Thu, 25 April 2019

China to build moon station in ‘about 10 years’

Beijing: plans to send a manned mission to the moon and to build a research station there within the next decade, state media reported Wednesday, citing a top space official.

China aims to achieve space superpower status and took a major step towards that goal when it became the first nation to land a rover on the far side of the moon in January.

It now plans to build a scientific research station on the moon’s south pole within the next 10 years, China National Space Administration head Zhang Kejian said during a speech marking “Space Day”, the official Xinhua news agency reported.

He also added that Beijing plans to launch a Mars probe by 2020 and confirmed that a fourth lunar probe, the Chang'e-5, will be launched by the end of the year.

Originally scheduled to collect moon samples in the second half of 2017, the Chang'e-5 was delayed after its planned carrier, the powerful Long March 5 Y2 rocket, failed during a separate launch in July 2017.

China on Wednesday also announced its Long March-5B rocket will make its maiden flight in the first half of 2020, carrying the core parts of a planned space station.

The Tiangong — or “Heavenly Palace” — will go into orbit in 2022, the China Manned Space Engineering Office said.

It is set to replace the International Space Station — a collaboration between the United States, Russia, Canada, Europe and Japan — which is due to be retired in 2024.

Beijing last week also said it would launch an asteroid exploration mission and invited collaborators to place their experiments on the probe.

The current Chang'e-4 moon lander carried equipment from Germany, the Netherlands and Sweden.

China now spends more on its civil and military space programmes than do Russia and Japan, and is second only to the United States. Although opaque, its 2017 budget was estimated at \$8.4 billion by the Organization for Economic Cooperation and Development.

<https://www.thehindu.com/sci-tech/china-to-build-moon-station-in-about-10-years/article26935628.ece>



Thu, 25 April 2019

"Marsquake": First Tremor Detected On Red Planet

*Marsquake: According to NASA's Bruce Banerdt, the quake detection
"marks the birth of a new discipline: Martian seismology."*

Paris, France: Scientists said Tuesday they might have detected the first known seismic tremor on Mars in a discovery that could shed light on the ancient origins of Earth's neighbour.

A dome-shaped probe known as SEIS landed on the surface of Mars in December after hitching a ride on NASA's InSight spacecraft.

Its instruments measure surface vibrations caused by weather but are also capable of detecting movement from deep within the planet -- so called "marsquakes" -- or those caused by meteorite impacts.

The French space agency Cnes, which operates SEIS, said it had detected "a weak but distinct seismic signal" from the probe.

The team hopes to be able to gather information about the activity at the centre of Mars, hopefully providing insight into its formation billions of years ago.

"It's great to finally have a sign that there's still seismic activity on Mars," said Philippe Lognonne, a researcher at Paris' Institut de Physique du Globe.

"We've waited for our first Martian quake for months."

According to NASA's Bruce Banerdt, the quake detection "marks the birth of a new discipline: Martian seismology."

The team said they were still working to confirm the cause of the tremor, picked up on April 6, and ensure it came from the planet's interior rather than wind or noise distortion.

It said three other similar but weaker signals of tremors had been picked up by the apparatus.

<https://www.ndtv.com/science/seis-discovers-first-marsquake-on-mars-may-shed-light-on-origins-of-red-planet-mars-2027589>

Business Standard

Thu, 25 April 2019

China's max capacity rocket to head for Moon in 2020

Beijing: China's largest carrying capacity Long March-5B carrier rocket is scheduled to make its maiden flight in the first half of 2020, according to the China Manned Space Engineering Office (CMSEO).

China has been creating a new line of launchers for advancing its space station plans, as well as bolstering its capability to land robots -- and possibly humans -- on the Moon.

March-5B is a new generation low-Earth orbit rocket that will carry the core capsule and experiment capsules of the Chinese space station, Xinhua news agency reported on Wednesday.

The Tiangong Space Station which mainly comprises of Core Capsule, Experiment Capsule I and Experiment Capsule II, is aimed to be a reliable operating space station to provide long-term support for the onboard astronauts.

The space station project will be implemented in three phases: key technology validation, construction and operation.

Six flight missions, including the maiden flight of the Long March-5B rocket and launch of the test core capsule, have been scheduled in the first phase, and launches of experiment capsules in the second phase. –IANS

https://www.business-standard.com/article/news-ians/china-s-max-capacity-rocket-to-head-for-moon-in-2020-119042400453_1.html