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## Looking beyond the Rafale

*Even as the Indian Air Force gets ready to welcome its new acquisitions, ad hocism should give way to strategic thinking*

*By Angad Singh, Harsh V. Pant*

On October 8, 2019, the first Rafale fighter aircraft for the Indian Air Force (IAF) was handed over to Defence Minister Rajnath Singh in France. This milestone is the latest in a series of much-needed yet perennially delayed steps to bolster the IAF's combat capabilities. The IAF has historically been one of the best-equipped forces in the region, but has seen its advantage, particularly quantitative, against China and Pakistan narrow dramatically over the past two-odd decades. The IAF is today faced with the twin tasks of having to acquire technological superiority over its two adversaries, as well as mustering enough aircraft to head off any collusive misadventures.

On the technological front, the Rafale jet brings to the table an unprecedented air-to-air capability in the form of the MBDA Meteor missile, as well as a new long-range precision strike capability with the MBDA's SCALP air-launched cruise missile. The aircraft also finally provides the IAF with a combat platform that is more completely and tightly integrated by the original equipment manufacturer, rather than any number of modified and upgraded aircraft presently in service. The Indian government is paying top dollar to Dassault to not only modify and certify the aircraft to an exacting specification but also to stand by its reliability in service — something that has never been done with a fighter aircraft in Indian service to date.

Going by past operational experience and certain common factors in aircraft upgrade programmes and acquisitions such as the Rafale, some key aspects of IAF thinking are revealed. A preference for integrated and ideally self-contained electronic warfare suites, for example, along with a requirement for open architecture avionics are clear. The former is self-explanatory, while the latter would allow for integration of a range of imported and indigenous weaponry at a lower cost by doing the expensive flight trials in India itself.

### **Indigenous option**

Unfortunately, air power is an expensive business, and in a scenario where manpower and running costs consume the lion's share of the budget, the principal impediment to a comprehensive renewal of the IAF is a financial one. As such, lower capital costs and lower sustainment costs have to go hand in hand — it is simply not enough to argue that expensive western aircraft make up for their high upfront costs over lifetime sustainment. Enter the indigenous option — HAL's Tejas Light Combat Aircraft. Domestically produced and paid for mostly in rupees, it is not only fiscally attractive but also certainly good enough to replace the IAF's ageing MiG-21 and MiG-27 fleet as it stands. However, non-compliance with a 1980s Air Staff Requirement and low production rates continue to raise questions about the type's future. Notwithstanding these concerns, the IAF has committed to a large number of an upgraded evolution of the type incorporating a range of modern improvements such as an active array radar as well as fixes to problems identified early on, such as lack of a self-protection jammer. If this variant can be delivered cheaply and quickly, it will arrest the dramatic hollowing out of the IAF that is anticipated to take place around 2024-25, by which time some 100 aircraft could be withdrawn from service.

### **Budgetary support**

In the middle of the French import and the domestic LCA sits a fledgling tender for a third type of fighter — a foreign design to be made in India under the controversial Chapter 7 of the 2016 Defence Procurement Procedure (DPP). Where the budgetary support for a programme of 114

modern fighters, and indeed the ability of the country to establish and sustain two fighter manufacturers, will come from is not clear. Defence budgets have remained effectively flat for a long time, and with the economy flagging, an increase in capital outlay is not likely. Procurement funding will also necessarily have to compete with funding for research and development for upcoming domestic projects such as the redesigned LCA Mk.2 and fifth-generation Advanced Medium Combat Aircraft (AMCA).

Finally, even if all near-term procurements proceed to plan, there is still a ‘ramp up’ period to contend with — the training of air and ground crew, building of infrastructure and actually operationalising new types will pose their own challenges that will slow the effective rate of force accretion.

### **In the neighbourhood**

Meanwhile, the Pakistan Air Force (PAF) and China’s People’s Liberation Army Air Force (PLAAF) are not standing still. The PAF is saddled with a number of legacy issues that are similar to the IAF. However, with the Sino-Pak JF-17 available cheaply and in numbers, alongwith access to a wide range of Chinese weaponry developed for the type, Pakistan is well placed to recapitalise a significant proportion of its air force with a relatively modern aircraft. Development and production of the JF-17 can be extended to replace the PAF’s Mirage fleet at short notice as well, if so required. And as China ramps up its fifth-generation aircraft programmes and unit costs drop, there is little doubt these platforms will also find their way to Pakistan.

The PLAAF’s growth has been well documented. And in addition to a fourth and fifth generation re-equipment programme, the service benefits from a large number of force multipliers, including tankers, surveillance and control aircraft, and long-range bombers. While primarily oriented toward taking on the U.S. military in the Pacific and beyond, China’s formidable aerial arsenal cannot be ignored in New Delhi.

So as the IAF gets ready to welcome its new acquisitions, it should be clear about the challenges it faces at a time when India’s strategic and operational environment is undergoing a dramatic transformation. Ad hocism should give way to strategic thinking if these challenges are to be effectively met.

*(Harsh V. Pant is Director, Studies at Observer Research Foundation, New Delhi and Professor at King’s College London. Angad Singh is a Project Coordinator with the Observer Research Foundation)*

<https://www.thehindu.com/opinion/op-ed/looking-beyond-the-rafale/article29683464.ece>

## Cut imports, focus on indigenisation, says a top Indian Army officer

*While under the 'Make' process, the service headquarters will do the entire hand-holding and not make unreasonable demands, according to Naravane, it is time to become self-reliant*

*By Huma Siddiqui*

To reduce the import dependence, there is a need for higher spending on research and development (R&D) in the defence sector, says Indian Army officer.

Urging for more funds for R&D to meet future requirements, the Vice Chief of the Army Staff Lt Gen MM Naravane told the industry captains that “We have the capability but unfortunately we have not built upon it, or we have not changed with time.”

While under the ‘Make’ process, the service headquarters will do the entire hand-holding and not make unreasonable demands, according to Naravane, it is time to become self-reliant.

He was addressing the industry on Friday on the Make-II procedure of Defence Procurement Procedure (DPP) at a seminar on ‘ARMY MAKE PROJECTS – 2019’ jointly organized by Indian Army and industry body FICCI.

Under the Make-II, private sector companies can take up product development on their own and are allowed to pitch it to the services. Over the last couple of years, in an effort to get clearances by the Service Headquarters, criteria for taking up projects has been simplified. So far the Indian Army has put out around 32 projects under the Make II category for the private sector to take up and today another 11 projects were unveiled.

In his address, Lt Gen Raj Shukla, Director General, Perspective Planning, said that by September 2020, some of the solutions offered by the private sector will be inducted in the Indian Army.

For transporting rations and materials in inhospitable terrain, there are opportunities to use indigenous drones instead of the using mules for which the Indian Army spends Rs 400 on mules.

To encourage the private players and start-ups the service headquarters have set up the project facilitation teams which are the primary interface between the service and industry during the design and development stage.

These teams provide technical inputs, trial infrastructure and other facilities as required by the vendor.

Emphasizing that collaboration between industry and defence is the need of the day, Subhash Chandra, Secretary, Department of Defence Production (DDP), Ministry of Defence said that support will be extended to sort out industry concerns.

Chandra recommended that the MSMEs and start-ups need to be integrated into the defence manufacturing ecosystem.

<https://www.financialexpress.com/defence/cut-imports-focus-on-indigenisation-says-a-top-indian-army-officer/1735253/>

# To tackle UAV threat, BSF to buy anti-drone system

*Tenders for equipment that will detect multiple drones soon*

*By Anirudh Gupta*

Ferozpur: In order to combat the threat posed by unmanned air vehicles (UAVs) from across the border, the BSF will soon purchase a ground-based anti-drone system with a 360-degree surveillance mode equipped with radio frequency receiver, electronic-optical sensor and a jammer.

Sources said the tenders for the system would be floated soon. The easily deployable anti-drone equipment will be able to work day and night and able to detect multiple drones simultaneously.

In addition to procuring the state-of-the-art system, the BSF has also stepped up vigil and devised several other counter measures to deal with air intrusions in future.

“We had fired on the drones when these were sighted last time. Since then, no drone has been seen,” said a BSF official, adding that the troops manning the border had been directed to scan the skies regularly.



Rubbishing recent reports of the force ‘getting a nod’ to bring down the drones, the official said the option of opening fire in any such exigency was already available to them and was being exercised.

The sources said in places like Ferozpur and Amritsar where the cantonment was located close to the border, the drones were also used for tactical surveillance.

Apart from boosting its technological prowess, the BSF has also started sensitising the border residents about the need to identify drones or flying objects.

According to information, the Central and state security and intelligence agencies have also evolved a joint strategy to deal with any such misadventure along the border.

Though there have been no sightings of drones in the past few days, the security agencies are working out a strategy to prevent any possibility of arms and drug smuggling through the UAVs.

Last week, Punjab DGP Dinkar Gupta had also convened a meeting of various security establishments, including the Air Force, Military Intelligence, BSF, Intelligence Bureau, NIA besides other intelligence agencies.

The meeting was called following the seizure of a huge cache of arms, satellite phones and grenades from the modules backed by Pakistan-based handlers of Khalistan Zindabad Force which were dropped by drones.

<https://www.tribuneindia.com/news/to-tackle-uav-threat-bsf-to-buy-anti-drone-system/847246.html>

# Kashmir, drone threat from Pakistan top focus of 3-day army conference

*During the three-day conference, top officers of the Indian Army will discuss ways to prevent Pakistani drones from infiltrating India apart from analysing the security situation in Kashmir*

*By Abhishek Bhalla*

## **HIGHLIGHTS**

- *Top officers of Indian Army discussed ways to prevent Pakistani drones from entering Kashmir*
- *Army officers also reviewed the security situation in Kashmir*
- *They are likely to discuss about increasing age of retirement for certain specialised cadre*

New Delhi: Finding ways to stop Pakistan from using drones to airdrop ammunition and drugs in Kashmir valley was one of the key issues discussed on the first day of the three-day Army Commanders' Conference in New Delhi.

The heightened security challenges in Kashmir after the abrogation of Article 370 was another important issue that was on the agenda on Monday. It is likely that top officers of the Indian Army will be discussing plans and strategies to prevent such incidents on the second and third days of the conference as well.

An overall security analysis will be done focusing on the situation in Kashmir and the Line of Control (LoC) as Pakistan continues to make several attempts to push infiltration and use drones to airdrop ammunition, drugs, and counterfeit currency.

"Additional surveillance means to detect the use of drones and the situation in Kashmir will be among the important areas. There will also be HR issues like increasing the retiring age of soldiers that will be discussed," said an army official.

## **DRONES IN FOCUS**

The use of drones particularly in Punjab had recently alarmed security agencies. Punjab police busted a module linked Pakistan-backed Khalistan Zindabad Force involved in the dropping of arms and ammunition from drones. Four people were arrested in the case.

An army official said such use of drones has not been seen at the LoC and is restricted to the International Border (IB) till now. "If it is observed anywhere near the LoC it will be shot down."

The use of Artificial Intelligence (AI) for a more robust surveillance mechanism to detect such arms and ammunition laden drones will also be discussed. The army is looking at inducting systems for AI within the next two years as the roadmap for its implementation is being finalised.

The other key area of discussion will be on increasing the age of retirement of certain specialised cadre at the soldier level like nursing assistants, those working with electronic and mechanical engineering branches, drivers to name a few.

The proposal is to enhance it to the age of 55-58 and the modalities are still being discussed at various levels. Currently, soldiers retire in the age group of 35-37.

<https://www.indiatoday.in/india/story/kashmir-drone-threat-from-pakistan-top-focus-of-3-day-army-conference-1609405-2019-10-15>

Tue, 15 Oct 2019

## Bengaluru's IAF training command gets new Chief

Bengaluru: Air Marshal Arvindra Singh Butola took over as Air Officer Commanding-in-Chief of the Training Command here on Monday.

Butola is a recipient of the Vayu Sena and Vishisht Seva medals. He is an alumnus of the National Defence Academy and was commissioned in the Helicopter Stream of the Indian Air Force in June 1982. He is a Qualified Flying Instructor and Experimental Test Pilot and has flown over 6,700 hours on 21 different types of aircraft.

In a career spanning 37 years, Butola has held a number of command and staff appointments, which include Commanding Officer of a Frontline Helicopter Unit in J&K, Senior Flying Instructor and Advisor to the Nambian Defence Forces, Deputy Chief Test Pilot at Hindustan Aeronautics Limited, Station Commander of a premier Air Force Station in the Western Sector, Senior Officer-in-Charge, Administration, of an Operational Command, Assistant Chief of Air Staff, Operations (Transport and Helicopters) at Air Headquarters followed by Senior Air Staff Officer of an Operational Command. Prior to assuming the present appointment, he was Commandant of the prestigious Air Force Academy at Dundigal, Hyderabad.



<https://www.deccanherald.com/city/top-bengaluru-stories/bengaluru-s-iaf-training-command-gets-new-chief-768434.html>

Tue, 15 Oct 2019

## India-U.S. defence ties are set to flourish, says Consul General

*'Production of F-16 wings in India likely to begin next year'*

Visakhapatnam: The defence ties between India and the USA are all set to grow and we have a number of projects lined up, said US Consul General from Hyderabad Joel Reifman.

Speaking to the media after his visit to the USS Emory, which is on its port call in Visakhapatnam, on Monday, he said, "Both the countries have been into deals since long time and some of them such as the procurement of Apache helicopters is already in progress."

Mr. Reifman also said that the F-16 wings will now be produced in India and if everything falls in place the production will begin next year.

According to him, the US-India partnership is critical in this region and defence cooperation and collaboration plays an important role.

### **Tri-services exercise**

Mr. Reifman informed the media that the first ever US-India tri-services exercise involving the army, marines, air force and navy, will begin some time in November.

Though he termed the port call of USS Emory as a goodwill visit, he also added that it was part of the US-India defence cooperation gesture.

According to Captain Luckett, commanding officer of the ship, USS Emory is part of the US Pacific Fleet, and is S. Land or submarine tender ship.

The 645-foot vessel that displaces over 22,000 tonnes of seawater when fully loaded, carries over 500 crew members and officers, which includes about 100 women sailors and officers.

Describing the operational capacity of the ship, Captain Luckett, said it is the lead ship in its class and specialises in carrying consumables, electricity, water, ordnance, spares, medical and mails for its submarine fleet.

“As part of our port call we are in discussion with the Indian Navy’s submarine fleet on mutual cooperation and collaboration,” he said.

<https://www.thehindu.com/news/national/andhra-pradesh/india-us-defence-ties-are-set-to-flourish-says-consul-general/article29684165.ece>



*Tue, 15 Oct 2019*

## **China’s J-20 Fighter May Have Entered Mass Production With Increased Deployment**

China's J-20 stealth fighter jet may have entered mass-production following its induction into an “ace unit” of the People's Liberation Army - Air Force (PLA-AF).

With the J-20 fighter jets, the ace unit, which enjoys the honor of shooting down or damaging 59 enemy aircraft, will be able to better perform their duties of safeguarding national sovereignty, security and territorial integrity, Global Times quoted Shen Jinke, the spokesperson for the PLA –AF as saying Sunday.

In July this year, there were reports that the J-20 had been deployed to the country's Eastern Theatre Command, which overseas Beijing’s muscle-flexing over Taiwan and the South China Sea.

Last month, a formation of seven J-20s flew over Beijing in PLA-AF markings giving the clearest indication yet that the stealth jets, which Beijing considers a competitor to the US’ F-35, had completed its development program and was in active service with the nation’s air force.

The production number for the J-20s are not known but could run into hundreds over the next few years as China aims to retire older generation jets such as J-11 and stop imports of advanced jets from Russia.

While China considers the J-20 a match or more for the F-35, China’s closest adversary, Taiwan feels its recently ordered F-16V jets from the US are more than a match for the J-20, given their ability to network with other battlefield assets and their latest generation armaments.

<http://www.defencenews.in/article/China%e2%80%99s-J-20-Fighter-May-Have-Entered-Mass-Production-With-Increased-Deployment-737450>



## China reveals 'Harbin Z-20 helo', a clone of the American Seahawk Helicopter

China's state media has revealed details about the Harbin Z-20 medium-lift transport helicopter, two weeks after it made its debut at a military parade marking the country's 70th anniversary.

A fly-by-wire flight control system is among the features of the Z-20, according to Li Linhua, chief technology expert at the Helicopter Research and Development Institute of China's Aviation Industry Corporation, or AVIC, the Chinese state-owned aerospace and defense conglomerate of which manufacturer Harbin Aircraft Industry Group is a subsidiary.

Li added that the use of fly-by-wire technology reduces the Z-20's overall weight and makes it easier to fly, according to newspaper China Daily, which also quoted Chen Guang, vice general manager of AVIC's helicopter subsidiary Avicopter, as saying that the Z-20 was an indigenous product designed and built exclusively by AVIC.

Nevertheless, the Z-20, which is powered by a pair of turboshaft engines reportedly designated the WZ-10, bears a striking resemblance to the Sikorsky S-70 Black Hawk family in terms of general layout, aesthetics and size. China's People's Liberation Army operates the demilitarized version of the Black Hawk sold by the United States in the 1990s.

Rumors of the Z-20 program began as far back as 2013, and sightings of a likely prototype as well as satellite photos began soon after. Following a development and test phase, the Z-20 was reported to have entered limited service with the People's Liberation Army's aviation arm in late 2017 or early 2018.

The AVIC officials were speaking at the fifth China Helicopter Exposition in Tianjin, China. Army Z-20s were present at both the static and flying displays at the event, which took place Oct. 10-14.

Meanwhile, open-source imagery suggests China is also developing a maritime variant of the Z-20 for use on board the People's Liberation Army Navy's warships. Tentatively designated the Z-20F, photos of what appears to be the prototype airframe were recently posted online.

The photos show a gray Z-20 with modifications for shipboard operations, such as a cut-down rear horizontal stabilizer, and a tailwheel that has been relocated forward to the front of the tailboom, similar to the Seahawk helicopters of the U.S. Navy.

Possible equipment on board the prototype, which sported a nose-mounted air-data probe for flight tests, included a small belly radar housing as well as a pair of cheek-mounted housings that is likely to contain phased array radars when in service. A dorsal dome mounted behind the rotor hub is likely for satellite communication equipment.

The Z-20F is expected to perform anti-submarine warfare, search and rescue missions, and other shipboard operations on the Chinese Type 055 cruisers and aircraft carriers. The service has operated the smaller and more limited Harbin Z-9, itself a copy of the Eurocopter (now Airbus Helicopters) Dauphin on board its surface combatants.

The new type is also likely to embark on board some of the later Type 052D destroyers of China's naval force. At least seven ships of this class are under production at Chinese shipyards with a longer helicopter deck compared to earlier ships, to account for the larger footprint of the Z-20F compared to the Z-9.

<http://www.defencenews.in/article/China-reveals-Harbin-Z-20-helo,-a-clone-of-the-American-Seahawk-Helicopter-737451>

Tue, 15 Oct 2019

## Sino-Pak axis plans to sell arms to third countries like Nigeria and Myanmar

The Sino-Pak military axis is now eyeing export markets in third countries in India's neighbourhood and among New Delhi's traditional defence partners in Africa.

The subject of Chinese fighter aircraft and other military hardware supplied to Pakistan for exports to third countries figured high on the agenda of Pakistan Army chief's visit to Beijing last week, ET has learnt.

ET has also learnt that Pakistan plans to sell batches of JF-17 Thunder fighters that it has built with Chinese assistance to India's neighbour Myanmar and Nigeria, India's old defence partner in Africa.

Myanmar has already purchased four JF-17s through Chinese assistance. Pakistan also plans to export JF-17 to Malaysia and Azerbaijan as well as additional fighter jets to Nigeria, which now has three JF-17s, ET has learnt.

<http://www.defencenews.in/article/Sino-Pak-axis-plans-to-sell-arms-to-third-countries-like-Nigeria-and-Myanmar-737443>



Tue, 15 Oct 2019

## As part of Indian Navy's overseas deployment, first training squadron ships visit Tanzania

*During the visit, the ITS ships would be undertaking port calls at Dar Es Salaam on October 14 and Zanzibar from Tuesday*

New Delhi: As part of Indian Navy's overseas deployment, four indigenously built ships of its First Training Squadron Tir, Sujata and Shardul and Indian Coast Guard ship Sarathi, are visiting Tanzania from October 14-17, officials said Monday.

During the visit, the ITS ships would be undertaking port calls at Dar Es Salaam on October 14 and Zanzibar from October 15-17, they said. The senior officer of First Training Squadron is Captain Varun Singh, who is also commanding officer of INS Tir.

The Indian Navy's First Training Squadron, under the flag officer commanding-in-chief, Southern Naval Command based at Kochi, imparts training to officer cadets of the Indian Navy, Indian Coast Guard and those from friendly foreign countries, the Navy said in a statement.

The training curriculum includes subjects like seamanship, navigation, ship-handling, boat work and engineering, imparted on board the ITS ships, and sail training on board Navy's Sail Training Ships Tarangini and Sudarshini.



During the port call, the senior officer of First Training Squadron will call on various dignitaries and government officials of Tanzania and the Tanzanian People's Defence Forces. Professional interactions are planned with the Tanzanian People's Defence Forces towards enhancing co-operation. In addition, social engagements, sports events and exchange of best practices will be conducted between the two navies," the statement said.

Tanzania and India have traditionally enjoyed warm and friendly bilateral relations, sharing common values of democracy and development.

"There have been regular high-level exchanges and interactions in numerous fields between both countries. Bilateral defence cooperation is being progressed through regular interactions between the governments of the two countries," it said.

Indian Navy ships are regularly deployed overseas as part of its mission of building 'bridges of friendship' and strengthening international cooperation with friendly countries, it said.

<https://www.news18.com/news/india/as-part-of-indian-navys-overseas-deployment-first-training-squadron-ships-visit-tanzania-2345949.html>



Tue, 15 Oct 2019

## **Ex Eastern Bridge-V: Air Forces of India and Oman get ready for joint drill**

*Being one the oldest defence partners in West Asia, Oman has given India access to the port of Duqm for military and logistical support*

*By Huma Siddiqui*

A four day joint Ex Eastern Bridge-V between the air forces of India and Oman is scheduled to take off later this month.

This exercise is very important to help in deepening and consolidating military ties with the Gulf country and will also provide exposure to forces from both sides.

According to sources, the focus of Ex Eastern Bridge between the Indian Air Force (IAF) and Royal Air Force of Oman (RAFO) are expected to take part in joint air defence and offensive counter-air missions, and the levels of difficulty will be raised gradually.

The exercise, named "Ex Eastern Bridge – V" marks the fifth edition of the air force engagement between the two countries. The first such exercise was held in October 2009 at Jamnagar, when the IAF had sent in Jaguars and MiG-29 and RAFO too had despatched their Jaguars and personnel for the joint exercise

For the pilots of RAFO, flying over different terrains of India and changing weather has added to their experience compared to the flatbed desert in Oman.

Ex Eastern Bridge-V will also give a chance to the two sides experience each other's best practices in operational, maintenance and administrative procedures. Also, during the drill, they will learn more about long mission flights, mid-flight refuelling, air to ground bombing and other related missions.

According to the ambassador of Oman to India, Sheikh Hamad bin Saif bin, his country is the first country from the Gulf Cooperation Council (GCC) which formalized its defence ties with India and has started engaging in joint military exercises and since it is sharing the Indian Ocean has been participating in anti-piracy and security matters. And it also shares the Indian Ocean. Oman is also one of the first countries in the region to initiate tri-lateral exercises.

Being one of the oldest defence partners in West Asia, Oman has given India access to the port of Duqm for military and logistical support. And is also keen to get into joint venture with the Indian companies production of defence equipment under the Make in India Initiative.

<https://www.financialexpress.com/defence/ex-eastern-bridge-v-air-forces-of-india-and-oman-get-ready-for-joint-drill/1735240/>

# THE ECONOMIC TIMES

Tue, 15 Oct 2019

## India's 1st Naval drill with Bangladesh

### Maiden bilateral exercise

Two Naval ships from Bangladesh arrived in Visakhapatnam to take part in the maiden bilateral exercise of the Indian and Bangladeshi navies. "Bangladesh Navy Ships Ali Haider, a Type 053 frigate and BNS Shadinota, a Type 056 stealth guided missile corvette arrived Visakhapatnam this afternoon on a four-day visit to ENC to participate in the maiden Indian Navy(IN) - Bangladesh Navy(BN) bilateral exercise from Oct 12 to 16," an official statement read.

### Familiarising the 2 squads

The bilateral exercise includes professional interaction between the navies and visits to the Indian Naval training and maintenance facilities at Visakhapatnam. The exercise also includes air familiarisation of Bangladesh Navy aircrew and a 10-day training exercise between Indian Navy Marine Commandos and BN SWADS, the Navy said.



### About the CORPAT drill

Prior to arrival at Visakhapatnam, BN Ships undertook Coordinated Patrol (CORPAT) with IN Ships Ranvijay and Kuthar from 10 to 12 October. The second edition of IN - BN CORPAT in North Bay of Bengal increased the scope of joint exercises between the Indian Navy and Bangladesh Navy ships by sharing best practices in flying operations and other seamanship evolutions including vertical replenishment by integral helicopters of Indian Navy undertaking onboard BN ships.

### PM Modi & Hasina signed MoUs

The exercise comes days after Bangladeshi Prime Minister Sheikh Hasina's visit to India where a number of MoUs were signed between the two countries. A joint statement released after a bilateral between Prime Minister Narendra Modi, Sheikh Hasina said, "Both Prime Ministers welcomed the initiatives for the development of closer Maritime Security Partnership, and appreciated the finalisation of an MoU on Establishment of Coastal Surveillance Radar System in Bangladesh."

### An exercise to hone mutual cooperation

With a common territorial boundary of over 4,000 kilometres and a maritime boundary, the navies of both the countries aim to practice and hone their mutual cooperation whilst patrolling near the International Maritime Boundary Line (IMBL) during the current edition of CORPAT, it added.

<https://economictimes.indiatimes.com/news/defence/indias-1st-naval-drill-with-bangladesh/maiden-bilateral-exercise/slideshow/71577159.cms>

## US Navy submarine support ship arrives in Visakhapatnam on a two-day goodwill visit

ANI | Updated: **Oct 15, 2019 03:50 IST**

Ready Parenting  
Fashion Food Travel

Quirky Fitness Culture

Visakhapatnam (Andhra Pradesh) [India], Oct 15 (ANI): USS Emory S Land (AS-39), a United States Navy Submarine Support Ship arrived in Visakhapatnam on Monday on a two-day goodwill visit to Eastern Naval Command.

On arrival, the ship was given a traditional welcome with Navy Band in attendance.

The ship is being commanded by Capt Michael Luckett who has been deployed in support of submarine missions worldwide, an official statement read.

During the ship's stay at Visakhapatnam, professional interaction in the form of Subject Matter Expert Exchanges(SMEE) and cross visits are planned for exchange of knowledge and sharing best practices among the personnel from both the Navies.

"Officials from US Embassy New Delhi and US Consulate are expected to join the two-day programme and have official interactions with Naval and Civil Dignitaries. Informal engagements during social functions are planned in addition to official calls on senior officers of ENC," an official statement informed. (ANI)