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Deccan Herald
26 Apr, 2016

Army chief seeks opinion on modification of INSAS

By Kalyan Ray

New Delhi: Army chief Gen Dalbir Singh on Monday sought suggestions from his top commanders on changing the calibre of indigenous Insas rifles, which is troubling the soldiers for years.

The infantry men in the Indian Army currently use 5.56 mm Insas rifles since 1994-95, despite several problems associated with the weapon such as jamming, overheating, magazines getting cracked in cold climate and automatic firing if the weapon falls to the ground by mistake.

Though the Ordnance Factory Board claimed to have rectified several of these problems, the army remained unhappy with the weapon and looked for an alternative abroad.

But with every foreign supplier failing to meet the technical criterion, the army is now left with little option but to fall back on a modified Insas.

At the five-day army commander's conference that gets underway here on Monday, Gen Singh asked his colleagues to share their opinions on the proposed modified Insas before fixing its specifications, sources said.

The Defence Research and Development Organisation, too, suggested improving the Insas.

The internal debate within the army on the calibre of the infantry weapons comes a month after Defence Minister Manohar Parrikar informed the Parliament that the Ordnance Factory Board has undertaken a project to develop yet another 5.56 mm calibre Insas rifles, with foldable butt, less than four kg weight and a range of 450 mt.

The army has earlier proposed rifles with interchangeable barrels for both 5.56 mm and 7.62 mm rounds for close combats and conventional armed conflicts.

This, however, seems to have been ruled out for the time being.

With no replacement of Insas in sight for another two-three years, the army now has the option to suggest modification of Insas rifles, sources said.

The initial requirement would be upwards of 60,000 pieces and the numbers are expected to rise.

The Tribune
26 Apr, 2016

Indian Army to have theatre commands like China

With China having re-structured its military commands in October last year, the Indian Army – the biggest of the three armed forces — has been told to work on a long-term integration with the IAF and the Navy to have joint commands.

The bi-annual Army Commanders' conference commenced in New Delhi today with the Army top brass listed to discuss a host of issues related to operations, threats and future planning.

Sources said China-style joint commands were a long-term plan and the top brass of all three forces had been told to discuss the issue among themselves. The IAF and the Navy have already completed their conferences. Defence Minister Manohar Parrikar visited one such joint command in Chengdu China on April 19.

A joint command, termed in military parlance as a 'theatre command' places the resources of all forces at the command of senior military commander. For example a 'theatre command' in the east

will integrate components of the IAF and the Army and also have flotilla of the Navy integrated with it. At present, the only joint command is in Andaman and Nicobar.

The Army Commanders' conference is the highest level 'Army conference' held to discuss current internal and external strategic issues, review of operational preparedness of the Army and aspects pertaining to training, administration, military technology and force modernisation. The conference will culminate on 30 April 2016.

Meanwhile, addressing the Army Commanders' conference, Army Chief General Dalbir Singh Suhag stressed the necessity to maintain a high degree of vigil and operational preparedness along disputed borders.

He complimented commanders and troops in successfully executing recent counter-terrorist operations, while displaying due restraint.

General Suhag, who visited the exercise Shatrujeet over the weekend in Rajasthan, stressed the necessity of speeding up the Army's modernisation and capability development initiative. He stressed all commanders to continuously monitor and maintain internal health, values and ethics in all formations and units.

What is theatre command

- A joint command, termed in military parlance as a 'theatre command', places the resources of all forces at the command of senior military commander. For eg, a 'theatre command' in the east will integrate components of the IAF and the Army and also have flotilla of the Navy integrated with it

Wider consultation for firm tie-ups

- Defence Minister Manohar Parrikar on Monday ordered a more comprehensive and wider consultation for laying down procedures to select Indian companies to be strategic partners with foreign companies to produce weapons, systems and military equipment in India

Business Standard
26 Apr, 2016

The way forward in military command

By Ajai Shukla

India would benefit from tri-service theatre commanders who report directly to the political leadership, as in the US

In a small amphibious training exercise called Jal Prahar that terminated last week, India's military paid token obeisance to the notion of tri-service command, which serious, warfighting militaries have embraced decades ago. Jal Prahar was conducted by the Andaman & Nicobar Command (ANC), India's only tri-service command - which means it owns assets from the army, navy and air force and is commanded, in turn, by general officers from all three services. It involved a hundred soldiers, a handful of amphibious assault craft mostly borrowed from the navy's eastern command, and three Jaguar strike aircraft that the Indian Air Force (IAF) kindly made available. The ANC, which military reformers established in 2001 in the forlorn hope that this might catalyse similar tri-service structures across the military, has failed spectacularly in achieving this aim.

While this sideshow played out in the Bay of Bengal, the army chief's attention was focused on the high-profile Exercise Shatrujeet, involving tens of thousands of army soldiers, practising mechanised warfare and live fire tank drills in the Rajasthan desert. True, there was a substantial air power component to Exercise Shatrujeet, but it was primarily an army exercise in planning and conception.

Meanwhile, early this year, the People's Liberation Army (PLA) of China adopted a tri-service credo in full, signalling its determination to undertake the deep systemic reforms needed to create an effective command structure that might someday credibly challenge the US. In Beijing, on February 1, the PLA's seven "military regions", traditionally led by the army, gave way to five geographic theatre commands (termed "battle zones") that will now function on a tri-service basis, incorporating elements from the PLA Navy and PLA Air Force.

In India, the woeful debate over tri-service structures has focused mainly on appointing a tri-service commander - a five-star "chief of defence staff (CDS)" recommended by a Group of Ministers (GoM) in 2001; or a four-star "permanent chairman chiefs of staff (PCCOS)", a half-way house solution proposed in 2013 by the Naresh Chandra committee. But there is little focus on the need to simultaneously restructure India's single-service theatre commands, merging 17 army, navy and air force commands into five-six tri-service commands. Creating a CDS/PCCOS to oversee long-range force structuring and to deliver single-point military advice to political leaders would unquestionably make the military leaner and more effective. But creating tri-service theatre commands is crucial for enhancing battlefield performance.

Opposition to tri-service structures comes not just from bureaucrats and politicians as the generals like to lament, but equally from within the military. Neither the army, navy or air force chiefs want a military boss (CDS) or even another equal (PCCOS). And they certainly do not want to relinquish control over their theatre commands, with these cutting edge units placed under some commander who reports elsewhere. But what really strangles tri-service babies at birth are ill-founded, political-bureaucratic apprehensions about concentrating military power in one hand. The ANC and the IDS were spared this fate only because they were adjudged too weak to threaten either the three services or the political-bureaucratic class.

If the whispered (and to the military, deeply offensive) need to "coup proof" the command structure is standing in the way of this reform, it can be addressed structurally by creating tri-service theatre commanders, who report directly to the political leadership, like in the US. The three service chiefs, with their combat units distributed between the theatre commanders, would be freed from command responsibility and mandated to focus on their respective services' manpower, equipping and training. These are currently given short shrift, with the chiefs weighed down by time consuming daily responsibilities of operational command. The non-operational commands - such as the three services' "training commands" and the air force's "maintenance command" could remain under the service chiefs. Operational commands like the Special Forces command, cyber command and the strategic forces command (the nuclear arsenal) could be hived off like the theatre commands.

Outside this command structure, the political leadership could select a five-star CDS, from any service, preferably on merit and trust rather than mere seniority, who would function as a "second opinion" military advisor. In many ways, this would mirror the US system, which has functioned admirably through inter-continental global challenges.

While distributing power between more commanders, this could be made palatable to the military by upgrading ranks - which would also somewhat flatten the military's unacceptably steep promotion pyramid. Each theatre commander, now handling independent, tri-service operational responsibilities, could be upgraded to four-star rank. The army, navy and air force chiefs would continue to be four-star generals, thus having a dozen four-star generals - including the commanders of five geographical theatres, the ANC, and the Special Forces, strategic forces and cyber commands. The five-star CDS would be a respected figurehead.

This would allow Prime Minister Narendra Modi to credibly lay claim to genuine military reform. While making multiple promises in its April 2014 election manifesto and in numerous public statements since, the National Democratic Alliance government has delivered only on populist promises: like One Rank, One Pension, albeit in a diluted form; and sanctioning a national war

memorial in New Delhi. On the promised structural reforms - like implementing tri-service command, involving the military in defence ministry decision-making; establishing a National Marine Authority to oversee coastal security; boosting defence R&D; improving border management, and setting up a Veterans Commission to look after retired soldiers - there has been little delivery.

Addressing the military's top commanders on December 15, Mr Modi declared: "We have been slow to reform the structures of our armed forces. We should shorten the tooth-to-tail ratio. And we should promote 'jointness' across every level of our armed forces. We wear different colours, but we serve the same cause and bear the same flag. Jointness at the top is a need that is long overdue. We also need reforms in senior defence management. It is sad that many defence reform measures proposed in the past have not been implemented. This is an area of priority for me."

Mr Modi is right, promises of reform have never been implemented, particularly the move towards tri-service command structures. He should now implement this priority.

The Sunday Standard
24 Apr, 2016

India's Biggest $25 Billion Defence Deal to Crash Land

By Pradip R Sagar

New Delhi: India has a record of sour defence deals. While the Rafael deal with France to buy 36 fighters jets at nearly `60,000 crore is stuck over a year despite announcement made by PM Narendra Modi during his Paris visit in April 2015, India's biggest defence buy with its old military hardware partner Russia threatens to crash. It is thrice bigger than the French deal and concerns 127 Fifth Generation Fighter Aircraft (FGFA) costing over $25 billion. `1,500 crore, which India has already paid for preliminary design of the aircraft, may go down the drain. It is the IAF—despite desperation to strengthen its combat fleet—that has put its foot down, citing differences with Russia, the co-developer of the FGFA project.

In an internal communication to the Ministry of Defence, the Air Headquarters has flagged at least 15 objections to the Fifth Generation Fighter Aircraft (FGFA), ranging from fighter's unreliable engine, poor stealth features, and inadequate radar to its high cost overrun. The letter sent last month has virtually grounded the entire program.

"Under the present scenario, only a political call can revive the program," a highly placed source said.

In fact, IAF went further to slam Russians for not giving access to the developed prototypes of the aircraft to its pilots. Moreover, it also expressed apprehension that the Russians would not share critical design information with India because they have deliberately reduced the Indian work share despite India's huge expenditure on the preliminary design. India's work share in FGFA research and development and other aspects of the multi-billion dollar project at the moment is nearly 10 per cent, even though Delhi is bearing 50 per cent of the project cost.

In 2007, the Congress-led UPA government had signed an inter-governmental agreement with Russia to co-develop the next generation FGFA. It was followed by the $295 million (`1,483 crore) preliminary design contract (PDC) in December 2010. The overall FGFA project cost for making all the 127 fighters in India was pegged at around $25 billion.

The preliminary design stage of the FGFA programme was completed in June 2013 based on a contract signed in December 2010 with the Russian side.

As per the Inter-Governmental Agreement (IGA) signed in October 2007, Hindustan Aeronautics Limited (HAL) is the designated implementation organisation from the Indian side. HAL is

supported by agencies, including Defence Research and Development Organisation (DRDO) and Council for Scientific and Industrial Research (CSIR).

The programme requires further $6 billion towards its research and development contract. Defence Minister Manohar Parrikar-led defence acquisition council has to give its approval for the R&D contract. It is believed that the delivery of FGFA to the IAF will begin only after nearly eight years from the start of the R&D contract.

"The ministry is in a dilemma over the future of the program after resistance from the IAF. But simultaneously, the Indian government has already spent a sizeable amount of Rs 1,500 crore on the program. And if the program does not make, spent money might go in waste," said an official. This deal created controversy during 2011, when a clause was inserted in violation of the defence procurement policy to give contract to Russia to provide International Private Leased Circuit (IPLC) bandwidth connectivity between Bangalore-Moscow-Irkutsk to lay communication lines between the two partners.

IAF's depleting combat strength has been a cause of concern as it is down to 34 fighter squadrons against 42 of its authorised strength based on certain projections in the next couple of years. IAF is getting four squadrons of Su-30 and subsequently indigenously built Light Combat aircraft Tejas is expected to fill the critical requirement of the force.

The Hindu
26 Apr, 2016

Parrikar meets industry bodies on defence partnership

Defence Minister Manohar Parrikar on Monday held deliberations with industry associations on the controversial 'strategic partnership' provisions to be incorporated under the new Defence Procurement Procedure (DPP) intended to build private sector expertise in key defence platforms such as ships, submarines, aircraft among others.

An industry official in the know of the discussions termed the meeting 'positive' and said industry was given a chance to present its views on the proposed model.

While no conclusion was reached, it was agreed upon to hold more meetings, the official said. More meetings would be held in the next one and half months and a proposal would be firmed up after that, he added.

Industry associations like CII, FICCI, ASSOCHAM, PHD Chamber of Commerce and DIIA were part of the discussions. While the new DPP 2016 has come into effect on April 2, the chapter detailing the guidelines on strategic partnerships is yet to be finalised. Mr. Parrikar had earlier said the issue of strategic partnerships and blacklisting norms would be finalised in a month or two.

With a view to take forward the 'Make in India' initiative in the defence sector, the government believes that strategic partnerships would lead the way under which one domestic private player would be identified for each critical category and that player would not be eligible to compete as a major player in another category.

The idea has generated mixed reactions from industry and observers with several terming it discriminatory.

The Pioneer
26 Apr, 2016

Securing the Indo-Pacific

India's evolving stance on the South China Sea

The mention of the South China Sea dispute in the joint communiqué issued by Russia, India, and China after their 14th annual trilateral meeting in Moscow this past week is an interesting development, indicating the evolving stance of all parties on the issue. This is the first time that the South China Sea dispute has been mentioned in an RIC statement, and it's easy to see why: Later this year, the Permanent Court of Arbitration in The Hague will be hearing a case on China's territorial dispute with the Philippines in the Spratly Islands, and many believe that there is a strong possibility that the decision may not go in favour of the Asian giant. Beijing does not even recognise the legitimacy of the PCA and continues to insist that all such disputes must be resolved bilaterally.

However, after the PCA ruled that it had jurisdiction over the case, and other major powers in the region and outside also publicly supported this stand, Beijing is now clearly seeking to strengthen its position before the hearings. Towards this end, it is seeking to make its stand more palatable to the international community by officially committing itself to maintain international law, while, at the same time, sticking with its bilateral-only position. It is in this context that one must view the RIC joint statement which on the one hand commits Russia, India and China to uphold the "principles of international law" by respecting the UN Convention on the Law of Sea, the Declaration on the Conduct of Parties in the South China Sea, and the Guidelines for the implementation of the DOC, while at the same time also states that "disputes should be addressed through negotiations and agreements between the parties concerned". This is a carbon copy of unilateral statements made by Chinese Government on the South China Sea issue. That Russia has toed the Chinese line is not surprising, given that only days before the meeting Russian Foreign Minister Sergei Lavrov had publicly supported a bilateral resolution of disputes as opposed to the internationalisation of disputes.

India's position though is little more complicated. In general, India, especially under Prime Minister Narendra Modi, has repeatedly highlighted the sanctity of international laws in such cases. It has also mostly sided with the Philippines and Vietnam in their territorial disputes against China. Hence, by now agreeing to sign a statement that legitimises the bilateral approach strikes a somewhat discordant note. This is moreso the case when one compares the RIC statement with the joint statement issued only days earlier by Defence Minister Manohar Parrikar and his US counterpart Ashton Carter. That statement expresses support for "a rules-based order and regional security architecture" and emphasises a commitment to "working together and with other nations to ensure the security and stability that have been beneficial to the Asia-Pacific for decades". This statement clearly favours an international mechanism over a bilateral one.

Deccan Herald
26 Apr, 2016

Russia-US tensions on the rise

By Eric Schmitt

Moscow's revised maritime strategies emphasise the need for its maritime forces to project power

Russian attack submarines, the most in 2 decades, are prowling the coastlines of Scandinavia and Scotland, the Mediterranean Sea and the North Atlantic in what Western military officials say is a significantly increased presence aimed at contesting US and NATO undersea dominance.

Admiral Mark Ferguson, the US Navy's top commander in Europe, said last fall that the intensity of Russian submarine patrols had risen by almost 50% over the past year, citing public remarks by the Russian navy chief, Admiral Victor Chirkov. Analysts say that tempo has not changed since then.

The patrols are the most visible sign of a renewed interest in submarine warfare by President Vladimir V Putin, whose government has spent billions of dollars for new classes of diesel and nuclear-powered attack submarines that are quieter, better armed and operated by more proficient crews than in the past.

The tensions are part of an expanding rivalry and military buildup, with echoes of the Cold War, between the United States and Russia. Moscow is projecting force not only in the North Atlantic but also in Syria and Ukraine and building up its nuclear arsenal and cyberwarfare capacities in what US military officials say is an attempt to prove its relevance after years of economic decline and retrenchment.

Independent US military analysts see the increased Russian submarine patrols as a legitimate challenge to the United States and NATO. Even short of tensions, there is the possibility of accidents and miscalculations. But whatever the threat, the Pentagon is also using the stepped-up Russian patrols as another argument for bigger budgets for submarines and anti-submarine warfare.

US naval officials say that in the short term, the growing number of Russian submarines, with their ability to shadow Western vessels and European coastlines, will require more ships, planes and subs to monitor them. In the long term, the Defence Department has proposed $8.1 billion during the next 5 years for "undersea capabilities," including 9 new Virginia-class attack submarines that can carry up to 40 Tomahawk cruise missiles, more than triple the capacity now.

"We're back to the great powers competition," Adm John M Richardson, the chief of naval operations, said in an interview.

Last week, unarmed Russian warplanes repeatedly buzzed a Navy destroyer in the Baltic Sea and at one point came within 30 feet of the warship, US officials said. Last year some of Russia's new diesel submarines launched 4 cruise missiles at targets in Syria.

Putin's military modernisation programme also includes new inter-continental ballistic missiles as well as aircraft, tanks and air defence systems.

To be sure, there is hardly parity between the Russian and US submarine fleets. Russia has about 45 attack submarines - about 2 dozen are nuclear-powered and 20 are diesel - which are designed to sink other submarines or ships, collect intelligence and conduct patrols. But Western naval analysts say that only about half of those are able to deploy at any given time. Most stay closer to home and maintain an operational tempo far below a Cold War peak.

The US has 53 attack submarines, all nuclear-powered, as well as 4 other nuclear-powered submarines that carry cruise missiles and Special Operations forces. At any given time, roughly a third of America's attack submarines are at sea, either on patrols or training, with the others undergoing maintenance.

US Navy officials and Western analysts say that American attack submarines, which are made for speed, endurance and stealth to deploy far from US shores, remain superior to their Russian counterparts.

The Pentagon is also developing sophisticated technology to monitor encrypted communications from Russian submarines and new kinds of remotely controlled or autonomous vessels. Members of the NATO alliance, including Britain, Germany and Norway, are at the same time buying or considering buying new submarines in response to the Kremlin's projection of force in the Baltic and Arctic.

But Moscow's recently revised national security and maritime strategies emphasise the need for Russian maritime forces to project power and to have access to the broader Atlantic Ocean as well as the Arctic.

Russian submarines and spy ships now operate near the vital undersea cables that carry almost all global Internet communications, raising concerns among some US military and intelligence officials that the Russians could attack those lines in times of tension or conflict. Russia is also building an undersea unmanned drone capable of carrying a small, tactical nuclear weapon to use against harbours or coastal areas, US military and intelligence analysts said.

And, like the United States, Russia operates larger nuclear-powered submarines that carry long-range nuclear missiles and spend months at a time hiding in the depths of the ocean. Those submarines, although lethal, do not patrol like the attack submarines do, and do not pose the same degree of concern to US naval officials.

Existential threat

Analysts say that Moscow's continued investment in attack submarines is in contrast to the quality of many of Russia's land and air forces that frayed in the post-Cold War era.

"In the Russian naval structure, submarines are the crown jewels for naval combat power," said Magnus Nordenman, director of the Atlantic Council's trans-Atlantic security initiative in Washington. "The US and NATO haven't focused on anti-submarine operations lately, and they've let that skill deteriorate."

That has allowed for a rapid Russian resurgence, Western and US officials say, partly in response to what they say is Russia's fear of being hemmed in. "I don't think many people understand the visceral way Russia views NATO and the European Union as an existential threat," Ferguson said in an interview.

In Naples, at the headquarters of the US Navy's European operations, including the 6th Fleet, commanders for the first time in decades are having to closely monitor Russian submarine movements through the maritime choke points separating Greenland, Iceland and the United Kingdom, the GIUK Gap, which during the Cold War were crucial to the defence of Europe.

Navy officials express concern that more Russian submarine patrols will push out beyond the Atlantic into the Mediterranean and the Black Sea. Russia has one Mediterranean port now, in Tartus, Syria, but Navy officials here say Moscow wants to establish others, perhaps in Cyprus, Egypt or even Libya. "If you have a Russian nuclear attack submarine wandering around the Med, you want to track it," said Dmitry Gorenburg, a Russian military specialist at the Center for Naval Analyses in Washington.

This month, the Defence Advanced Research Projects Agency christened a 132-foot prototype drone sea craft packed with sensors, the Sea Hunter, which is made with the intention of hunting autonomously for submarines and mines for up to 3 months at a time.

"We are not quite back in a Cold War," said James G Stavridis, a retired admiral and the former supreme allied commander of NATO, who is now dean of the Fletcher School of Law and Diplomacy at Tufts University. "But I sure can see one from where we are standing."

IN DEEP SEA: The USS Virginia, a Navy attack submarine at Gare Loch, Scotland. Russian attack submarines are prowling the coastlines of Scandinavia, Scotland, the Mediterranean Sea and the North Atlantic in what US military officials say is an increased presence. NYT

Deccan Herald
26 Apr, 2016

Obama rejects N Korea test offer

United Nations: The UN Security Council echoed international condemnation Sunday of a submarine-launched ballistic missile (SLBM) test by North Korea, while US President Barack Obama dismissed Pyongyang's offer of a nuclear moratorium.

Saturday's test, personally monitored by supreme leader Kim Jong-Un, was the latest in a series of provocative moves by Pyongyang that have further fuelled tensions on the divided Korean peninsula following the North's fourth nuclear test back in January.

A proven SLBM capability would take North Korea's nuclear strike threat to a new level, allowing deployment far beyond the Korean peninsula and the potential to retaliate in the event of a nuclear attack.

South Korea's defence ministry said the missile, fired from a submarine in the Sea of Japan (East Sea), flew around 30 kilometers and demonstrated clear technological progress from previous tests.

Hours after the launch, North Korean Foreign Minister Ri Su-Yong, speaking in New York, said Pyongyang would be willing to halt further nuclear tests if Washington announced an end to its joint military exercises with Seoul.

The annual drills always raise tensions on the Korean peninsula.

The US had flatly rejected the same moratorium offer made by the North in January last year, and Obama, currently on a visit to Germany, was equally dismissive this time around.

"We don't take seriously a promise to simply halt until the next time they decide to do a test," the president said, speaking in Germany.

"They're going to have to do better than that," he added. South Korea also waved off what it described as a "ridiculous attempt" to link sanctions-violating nuclear tests with regular military exercises.

The Economics Times
26 Apr, 2016

There's a Dragon in the Sea

By Sanjeev Sanyal

A brief history of China's geostrategic involvement in the Indian Ocean

China's growing geostrate gic presence in the Indian Ocean is now more than vi sible: the dual-use port in Gwadar, the naval base in Djibouti and so on. Interestingly , Chinese empires have tried to assert their influence in the region for over a thousand years. This is a brief history of these early attempts.

At the end of the 10th century , maritime trade boomed between the Song empire in China, the Cholas in India and the Fatimids in Egypt. There were two main sea routes: through the Strait of Malacca controlled by the Srivijaya of SumatraMalaya, and through the Sunda Strait controlled by the Javanese. Not surprisingly, the two were bitter rivals.

In 987 AD, the Srivijaya came under attack from the Javanese and requested the Song emperor for protection. Thus, China came to have influence in the region. The Srivijaya were soon using Chinese backing to expand. Around 1012, the Khmer king Suryavarman I sent an unusual gift to Rajendra Chola: his war-chariot. In the Indic cultural context, such a gift has great symbolic importance and it appears that the Khmers were trying to woo the Indians to counterbalance the Sino-Sumatran alliance.

In 1016, the Srivijaya defeated the Javanese and sacked their capital.This left Srivijaya in control of both sea routes and soon began to exploit the situation by exacting exorbitant tolls on merchant ships. The Indians responded. Rajendra Chola probably sent a small naval expedition to Sumatra in 1017 as a warning but returned in 1025 with a much larger fleet.

The fleet made its way into the Strait of Malacca and systematically sacked Srivijaya ports. Finally , the Cholas decisively defeated the main army in Kadaram (now Kedah province in Malaysia). The raid significantly diminished Srivijayan power.But remarkably , the Chinese did not do anything in support of their vassals. It is possible that the Chinese were just as annoyed at Srivijaya's rent extraction and had an understanding with the Indians.

China's One Liner

The Srivijaya, too, seem to have accepted their reduced status. They continued to send ambassadors to the Chola court and participated in a joint diplomatic mission to China. When a Chola naval fleet returned to Kadaram in 1068, it was in support of a Srivijaya king against his local rivals.

The Turkic conquest of India and the Mongol conquest of China and West Asia dissolved the old geopolitical equilibrium in the 13th century .In the beginning of the 15th century , however, a new Ming emperor decided to fund a series of grand voyages to the Indian Ocean. These were not voyages of exploration, but a display of geopolitical reach.

During 1405-33, the Chinese fleet would make seven voyages that would visit Southeast Asia, India, Sri Lanka, Oman and East Africa. Each voyage included giant `treasure ships' accompanied by hundreds of smaller vessels and as many as 27,000 men.The voyages were led by the Muslim eunuch admiral, Zheng He.

The first voyage was mostly for in formation-gathering. After that, the Chinese would use the fleet to push strategic interests. They would back the Thai against the declining Khmer empire. In India, they probably installed a new Samudrin in Calicut.

When Zheng visited Sri Lanka during the third voyage, he found the island in a state of civil war. The Chinese captured one of the claimants and took him back to meet the Ming emperor. He would

be sent back as part of a plan to ensure Chinese influence over the island. The Chinese would similarly intervene in a war of succession in Sumatra.

Perhaps the intervention with the most far-reaching historical implications was the support for the new kingdom of Malacca as a counterweight to the Hindu Majapahit of Java.The founder of Malacca was a prince called Parmeswara. The Chinese would provide him with systematic support and he made at least one trip to China to personally pay obeisance to the Ming emperor.

Interestingly , Malacca was also encouraged to convert to Islam. Although Zheng was a Muslim, this should be seen mostly as a geostrategic move to create a permanent opposition to the Hindus of Java.

Malacca prospered under Chinese protection while the Majapahit were steadily pushed back. This is the origin of the steady Islamisation of Southeast Asia. The Javanese princes who refused to convert eventually withdrew to Bali, where their culture is alive to this day .

Meanwhile, in China, the Confucian mandarins were suspicious of the power accumulated by the eunuchs through the navy . So, they deliberately undermined the navy .

The treasure ships were allowed to rot and the records of the voyages were suppressed.

Gone With the Ming

China would withdraw into centuries of isolationism and leave a vacuum in the Indian Ocean that would be filled by a completely unexpected source: the Portuguese. The Europeans would not only take control of the Indian Ocean but would soon turn up on China's doorstep.

As one can see, previous Chinese incursions in the Indian Ocean did have major geopolitical consequences. But China itself was unable to benefit from them. While one should not blindly extrapolate history into the future, it is a reminder to today's geostrategic thinkers of the Law of Unintended Consequences.

The Times of India
26 Apr, 2016

Beijing to build islet with airstrip in S China Sea

China on Monday said it will take “necessary action“ to uphold sovereignty in the disputed South China Sea amid reports that it may start a land reclamation project at a contentious shoal to oppose the US-Philippine military alliance in the strategically vital waters.

Hong Kong-based South China Morning Post quoted Chinese military sources as saying that China will start reclamation at the Scarborough Shoal in the South China Sea later this year and may add an airstrip to extend its air force's reach.

The PLA navy said Beijing would ramp up work to establish a new outpost 230km off the coast of the Philippines as the US and Manila drew their militaries closer together, the report said. “I haven't heard about what you mentioned“, Chinese foreign ministry spokesperson Hua Chunying said on Monday when asked about a report that it will start reclamation at the Scarborough Shoal in the South China Sea later this year. Beijing's action followed as China apprehend that the tribunal of the UN Convention on Law of Seas, hearing the petition of the Philippines will go against it, the Post said.

Deccan Herald
26 Apr, 2016

NASA to explore Saturn's moons for aliens

Washington: Nasa scientists have proposed deploying a robotic system to explore the exotic environment of the subsurface oceans of Saturn's icy moons that may potentially harbour life.

Several concepts have already been studied to explore the subsurface oceans of Europa and Enceladus using autonomous underwater vehicles (AUVs).

However, access to subsurface ocean remains to be an outstanding challenge, researchers said.

The proposed concept is to deploy a surface-to-subsurface robotic system, namely Icy-moon Cryovolcano Explorer (ICE), which will land on the surface of an icy moon, traverse to a cryovolcano, descend into its opening, perform in-situ science in the vent or crevasse, and ultimately deploy underwater vehicles to explore a subsurface ocean.

ICE involves three modules - Descent Module (DM), Surface Module (SM), and AUVs. DM carries AUVs and descends into a vent by using a combination of roving, climbing, rappelling, and hopping, like an experienced human alpinist.

The estimated gas density of an ejecting plume is sufficiently low, therefore its dynamic pressure would not be an obstacle for descent.

SM stays on the surface, generates power by radioisotope thermoelectric generator (RTG) and solar cells, and communicates with Earth. DM relies on the power and communication link provided by SM through a cable to minimise the size and weight.

It is a highly autonomous agent being capable of quickly responding to a dynamically changing environment, such as episodic eruption, and resiliently handling any anomalies under significant communication latency.

Once DM reaches the subsurface ocean, it launches the AUVs to explore the exotic environment that potentially harbours life.

ICE brings three unique benefits. First, it enables in-situ science in a cryovolcano vent. Although orbiters can perform in-situ science of plumes, relatively large dust grains are hard to reach orbital altitude.

Yet it is those mineral grains that carry rich information about the habitability of the subsurface ocean. Second, ICE enables the exploration of subsurface oceans by providing an access to it.

Third, it enables the operation of AUVs in subsurface ocean by providing three essential services: communication, localisation and power. Since water blocks radio waves, communication and localisation are particularly significant challenges for AUVs. DM of ICE communicates with AUVs though acoustic communication.

DM then transfers the data though an optic cable to SM, from which the data is transmitted to earth by radio.

The Asian Age
26 Apr, 2016

How drones could be the next-generation firefighters

Researchers in Nebraska tested a new tool on Friday that could eventually help in fighting grass fires — drones. A team from the University of Nebraska-Lincoln flew an unmanned aircraft over the prairie at the Homestead National Monument of America on Friday, dropping ping pong-like balls filled with a chemical mixture to ignite brush-clearing grass fires.

Local and federal officials are interested in the technology because it could help clear overgrown vegetation in rugged, hard-to-reach terrain, said Michael Johnson, a spokesman for the National Park Service.

The balls are filled with a chemical powder, potassium permanganate, before they're loaded into the drone. During flight, the aircraft pierces the ball with a needle and injects it with another chemical, glycol, before releasing it. The mixture ignites one to two minutes later. The technology is already used by helicopters to start controlled burns, but researchers note that the drone is cheaper and more portable.

“You could afford one of these on the back of your fire truck, whereas you probably can't afford to have a full-sized helicopter parked at your fire station,” said Carrick Detweiler, a member of the Nebraska research team.

The drone, which is about two feet wide with six rotors — is programmed to drop the balls in a preset pattern to control how the fire spreads. On Friday, the unmanned aircraft rose out of the grass and hummed toward the horizon through a smoky haze. Minutes later, it released the balls one at a time, sparking a series of small fires that quickly grew and merged into one.

Researchers hope the technology eventually could be used to set controlled fires in hard-to-reach places that would clear out brush and small trees and make it more difficult for wildfires to sweep through an area.

The drone is the fourth prototype created by the university's Nebraska Intelligent Mobile Unmanned Systems Laboratory. It carries up to 13 balls and drops them from roughly 65 feet in the air, and carries a little more than one pound of cargo. Depending on the software used, the drones developed so far have cost between $6,000 and $8,000 apiece, said Jim Higgins, a student who helped with the project.

The Times of India
26 Apr, 2016

Experts discover a new state of water molecule

Scientists, including one of Indian-origin, have unveiled unique and unexpected behaviour of water molecules that is unmatched by any known gas, liquid or solid states.

Researchers at the US Department of Energy's Oak Ridge National Laboratory (ORNL) described a new tunnelling state of water molecules confined in hexagonal ultra-small channels -5 angstrom across -of the mineral beryl.

An angstrom is 110-billionth of a metre, and individual atoms are typically about one angstrom in diameter.

The discovery , made possible with experiments at ORNL's Spallation Neutron Source and the Rutherford Appleton Laboratory in the UK, demonstrates features of water under ultra confinement in rocks, soil and cell walls. “At low temperatures, this tunnelling water exhibits quantum motion through the separating potential walls, which is forbidden in classical world,“ said lead author Alexander Kolesnikov. “This means the oxygen and hydrogen atoms of water molecule are `delocalised' and therefore simultaneously present in all six symmetrically equivalent positions in the channel at the same time. “ The existence of the tunnelling state of water should help scientists better describe the thermodynamic pro perties and behaviour of water in highly confined environments such as water diffusion and transport in the channels of cell membranes.

The neutron scattering and computational chemistry experiments showed that, in the tunnelling state, the water molecules are delocalised around a ring so it assumes a double top-like shape.First

principle simulations made by Narayani Choudhury showed that the tunnelling behaviour is coupled to the vibrational dynamics of the beryl structure.

"The kinetic energy of water protons obtained from the neutron experiment is a measure of their motion at absolute zero temperature and is about 30% less than it is in bulk liquid or solid water," Kolesnikov said.

The Indian Express
26 Apr, 2016

US 'Special 301' process on IPR a unilateral measure

India today accused the US of taking "unilateral measure" to pressurise countries to accept Intellectual Property Rights (IPR) protection beyond WTO obligations.

India today accused the US of taking "unilateral measure" to pressurise countries to accept Intellectual Property Rights (IPR) protection beyond WTO obligations.

"The Special 301 report issued by the US under their Trade Act of 1974 is a unilateral measure to create pressure on countries to enhance IPR protection beyond the TRIPS agreement," Commerce and Industry Minister Nirmala Sitharaman said in a written reply to the Lok Sabha.

She said India continues to be placed on the priority watch list under the US Special 301 on account of US' assessment of Indian IPR (intellectual property right) protection being inadequate.

Under the WTO regime, any dispute between two countries needs to be referred to the dispute settlement body of the WTO and unilateral actions are not tenable under this regime, she said adding Special 301 which is an "extra territorial" application of the domestic law of a country is inconsistent with the established norms of the WTO.

She said the government is committed to fully utilising all the flexibilities provided under the TRIPS agreement to protect domestic pharmaceutical sector from pressure exerted by foreign countries.

In a separate reply, the minister said as on April 1, as many as 2,37,671 patent applications are pending and awaiting disposal at different stages of processing in Patent Offices.

The highest number of applications are pending in Delhi office (88,297) followed by Chennai (78,405), Kolkata (39,911) and Mumbai (31,058).

Nirmala Sitharaman said the government is measures to make the patent application process more transparent.

She said that facilities for quick and efficient access to all types of data and information regarding patent processing are available on the official website for the benefit of users.

Dynamic utilities for knowing current status of patent applications and grant have been made available on the official website, she said adding e-register of patents containing all information including renewals, assignments and other legal status made available for public.

The patent office follows the queuing process strictly, she said.-----©*The Financial Express*