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Russia seeks ₹125 crore to carry out repairs on INS Chakra

By Dinakar Peri & Josy Joseph

Centre trying to fix responsibility for damage to nuclear submarine.

Russian authorities have demanded over \$20 million for rectifying the damage suffered by nuclear submarine *INS Chakra*, which was dry-docked last week, even as the government is seeking to fix responsibility for the accident.

According to defence sources, Russia has quoted \$20 million (approximately ₹125 crore) for fixing the nuclear submarine's front portion, which was damaged while the submarine was entering the harbour in Visakhapatnam. The details of the accident emerged in public in early October last year.

The developments around *INS Chakra* come even as the indigenously built nuclear ballistic missile submarine *INS Arihant*, which had suffered extensive damage because of human error over a year ago, is yet to be back to active sailing.

After extensive flushing and replacement of many of its pipes, *Arihant* was floated recently but sailing it will take more time, the defence sources said.

On *INS Chakra*, Russian officials have conveyed to India that they would be making all the replacement panels in their own facility and would not be using any Indian facilities.

The almost 5x5 ft. panels of the sonar dome would be brought to Visakhapatnam and fitted on to the leased submarine.

‘Nothing irreversible’

In an interview to *The Hindu* last week, Russian Ambassador Nikolai Kudashev said he was not aware when the nuclear submarine would sail again.

“As far as I know the submarine is under repairs

as of now but in the near future it is expected to be back in operation. There is nothing irreversible that happened there. That is what I am aware of,” he said.

The Defence Ministry did not respond to queries from *The Hindu*.

Meanwhile, government sources indicate that they want responsibility fixed for the damage suffered by *INS Chakra*.

As part of the firm stand taken by the government, it is believed to have put on hold the proposal to appoint Inspector General of Nuclear Safety Vice Admiral Srikant as the new Commandant of the New Delhi-based National Defence College (NDC), until responsibility is fixed for the *Chakra* mishap.

Vice Admiral Srikant is the senior most naval officer responsible for nuclear submarines. Lt. Gen. YVK Mohan moved out as NDC commandant early in January to take over as the General Officer Commanding IX Corps headquartered at Yol in Himachal Pradesh.

Costly affair
India leased the Akula-II class nuclear attack submarine from Russia for a 10-year period in 2011 for over \$600 million. It was inducted into service as *INS Chakra* in April 2012

THE DAMAGE

- *INS Chakra* suffered damage while entering the harbour in Visakhapatnam
- A large hole was formed in the sonar dome in the forward portion
- Damage to *INS Chakra* was reported in October 2017

KEY STATS

Weight:	Length:
8,140	114
tonnes	metres (approx.)

Grand entry: The induction of the submarine into the Navy in Visakhapatnam • FILE PHOTO

THE PROBE AND AFTER

- A Russian team visited India for a joint investigation in October 2017
- Russia has quoted \$20 million (approximately ₹125 crore) as the repair cost



Denying any specific knowledge of the Ministry's move, Navy officials admitted that a series of appointments in the Navy are currently waiting to be cleared by Defence Minister Nirmala Sitharaman and Vice Admiral Srikant's is also among them.



Tue, 13 Feb, 2018

India gets access to strategic Oman port Duqm for military use, Chabahar-Gwadar in sight

By Shubhajt Roy

This is part of India's maritime strategy to counter Chinese influence and activities in the region. This was one of the key takeaways of Prime Minister Narendra Modi's visit to Oman over the last two days.

In a strategic move to expand its footprint in the Indian Ocean region, India has secured access to the key Port of Duqm in Oman for military use and logistical support, top sources have told The Indian Express. This is part of India's maritime strategy to counter Chinese influence and activities in the region. This was one of the key takeaways of Prime Minister Narendra Modi's visit to Oman over the last two days. He met Sultan of Oman Sayyid Qaboos bin Said Al Said and an annexure to the Memorandum of Understanding on Military Cooperation was signed between the two countries. Sources said following this pact, the services of Duqm port and dry dock will be available for maintenance of Indian military vessels.

The Port of Duqm is situated on the southeastern seaboard of Oman, overlooking the Arabian Sea and the Indian Ocean. It is strategically located, in close proximity to the Chabahar port in Iran. With the Assumption Island being developed in Seychelles and Agalega in Mauritius, Duqm fits into India's proactive maritime security roadmap.

Recently, Duqm has seen a rise in Indian activities. In September last year, India deployed an attack submarine to this port in the western Arabian Sea. A Shishumar-class submarine entered Duqm along with naval ship INS Mumbai and two P-8I long-range maritime patrol aircraft. India gets access to strategic Oman port for military use, reconnaissance aircraft. The naval units were on a month-long deployment with the aim of enhancing surveillance and cooperation.

Following Modi's visit to Oman, the joint statement said the two sides noted that the MoU on Military Cooperation, signed in 2005 and renewed in 2016, has provided the general framework to strengthen bilateral defence ties. India and Oman noted that the MoUs on cooperation in maritime security and between Coast Guards of the two countries, signed in May 2016, have provided a firm foundation for deepening institutional interactions. "Both sides expressed satisfaction at the signing of an annexure to the existing MoU on Military Cooperation between the defence ministries," it said.

In August 2017, Oman signed an MoU with the United Kingdom that allowed the Royal Navy to use the Port of Duqm. The agreement allows UK access to facilities at Duqm, and among the vessels that will be allowed to dock at the port is the HMS Queen Elizabeth aircraft carrier, the largest ship in the British Navy.

The joint statement said the Indian side thanked Oman for facilitating operational visits by Indian Naval ships and aircraft as well as Indian Air Force aircraft to various ports and airports. "Recognising their common responsibility towards promoting regional peace and security, the two sides underlined the importance of further cementing bilateral strategic engagement, especially in the areas of security and defence," it said.

It also said that the two sides expressed satisfaction at the ongoing bilateral security collaboration in the fields of counter-terrorism, information-sharing and capacity-building, and the Prime Minister appreciated the support extended by Omani security agencies on "specific issues of security concern to India".

They agreed to provide further impetus to the robust defence relations, including through regular joint exercises by the three defence forces, training of Navy, Air and Army officials, as also cooperation in the area of coastal defence and through participation in defence exhibitions, the statement said.

The Port of Duqm also has a special economic zone, where about \$1.8 billion investments are being made by some Indian companies. The Adani group had signed an MoU with Duqm port authorities last year, but no investments have been made so far. "The Prime Minister expressed his admiration at the ongoing efforts and plans the Sultanate of Oman is making to diversify its economy and welcomed the invitation to Indian companies to invest in various sectors in the special economic zones of Oman, including SEZs in Duqm, Sohar and Salalah. He offered India's partnership and cooperation in areas of priority, such as minerals and mining, manufacturing, logistics, infrastructure, tourism, agriculture and fisheries, IT and IT enabled-services, skills development, innovation," said the joint statement.

In the context of strategic oil reserves near Duqm, it said the Prime Minister reiterated India's invitation to Oman to participate in building strategic oil reserves in India. "Sultan briefed the Indian Prime Minister on Oman's own initiative to create its strategic oil reserves in Ras Markaz near Duqm. The two sides agreed that there is broad scope for mutual cooperation in building their strategic oil reserves," the statement said.

Besides Sultan Qaboos, the Prime Minister met Deputy Prime Minister Sayyid Fahd bin Mahmoud al-Said, and Deputy Prime Minister for International Relations and Cooperation Affairs Sayyid Asa'ad bin Tariq Al Said.

He also visited a Shiva temple and the Grand Mosque, besides addressing the business community, before leaving for Delhi. During his meeting with Modi, Sultan Qaboos shared his views on turmoil in the region, especially in Yemen. The Prime Minister thanked him for his efforts in securing the release of captured priest, Father Tom, from Yemen last year.

"The two sides acknowledged the common threat posed by terrorism to peace and security and agreed to continue working together bilaterally, regionally and globally to counter this menace. They reiterated their strong condemnation of terrorism in all its forms and manifestations, wherever committed and by whomever, and declared that there could be no justification for any act of terrorism anywhere," said the joint statement.

The two sides also emphasised the need to "isolate the sponsors and supporters of terrorism" and agreed that the international community should take urgent action against all entities which support terrorism and use it as an instrument of policy.



Tue, 13 Feb, 2018

MoD Stands by Major; Pak Will Pay, Says Sitharaman

New Delhi: The Centre will stand by the Army and "shall not let anybody down," defence minister Nirmala Sitharaman said on the case registered against Major Aditya Kumar for the recent firing in Shopian. She also said that the Centre and the J&K government would work together to protect the Army.

"We stand by our proud soldiers and in call of duty if they have performed something it will have to contextualised. The MoD will possibly have to respond to the Supreme Court," she said when asked about the case in the Supreme Court. At a news briefing in Jammu on Monday, Sitharaman also said that she visited the Sunjuwan military station that was attacked by terrorists on Saturday and vowed to give a "befitting reply to Pakistan for its misadventure." Five army personnel and a civilian were killed in the attack.

She said that the terrorists belonged to the Pakistan based Jaish-e-Mohammed and were controlled by their handlers from across the border. Three terrorists were killed and a fourth, a guide, may not have entered the premises. "The JeM module...may have infiltrated some time back and there is a possibility they enjoyed local support," she said.

The noise around the Rafale deal

The Congress has accused the Modi government of causing ‘insurmountable loss’ of taxpayers’ money by signing the Rafale deal worth Rs 58,000 crores. It also claimed that the Anil Ambani-led Reliance Defence Limited had been unfairly picked to be the French firm’s Indian partner.

2000 Proposal was floated during Vajpayee's rein for advance jet fighters as part of modernisation of the Indian Air Force.	2014 A deal was negotiated for manufacturing in India under ToT by Hindustan Aeronautics Ltd, with work share agreement reached between Dassault and HAL for 30-70 per cent respectively. But this was cancelled by Modi.	2016 June 24: Modi government opened up the automatic route for FDI of up to 49%, requiring no prior approval from the Union cabinet or the Cabinet Committee on Security. September 23: Rafale deal for purchase of 36 fighter jets signed valued at ₹59,000 cr.
2007 Process initiated by then Manmohan Singh's government.	2015 After Modi came to power, India and France announced a government-to-government deal to acquire 36 Rafale jets in fly-away condition during Modi's visit to France.	October 3: Dassault and Anil Ambani-led Reliance Defence Limited group set up a joint venture to service 50% offset value of the deal.
2012 The UPA-II government zeroed in on Rafale jets and the deal was inked with Dassault for 126 multi-role combat aircrafts.		

The Congress alleged that the cost of each aircraft is three times more than what the previous UPA had negotiated with France in 2012. The Indian Air Force has been pushing for this because, Dassault could also help with upgradation of Mirage 2000 H fighter jets.

But what needs to be explained is the urgency behind making an emergency deal, when the previous government had already negotiated a cheaper, better, more comprehensive deal that would have given India many more jet fighters to fill the gap in defense preparedness. The 36 jets which are being procured on an emergency basis will be supplied only by 2019-22.



Pension to disabled soldiers: MoD relents

The Ministry of Defence, in a significant decision, is now working to withdraw all appeals filed in courts against disabled soldiers.

Defence Minister Nirmala Sitharaman, at a recent meeting of officials, had instructed that a formula be devised to withdraw appeals filed against grant of disability pension to soldiers.

In June last year, the MoD decided not to challenge court orders asking to give disability pension to its soldiers. The move affected hundreds who suffered disability during service or families of those who died

because of a disability while in service. However, the MoD had not issued instructions on pending cases in which appeals had been filed in courts even when soldiers had won in the Armed Forces Tribunal. — TNS

दैनिक जागरण

Tue, 13 Feb, 2018

चीन ने स्टील्थ फाइटर प्लेन वायुसेना में शामिल किया

बीजिंग, आइएनएस : चीन ने कहा है कि उसका स्टील्थ फाइटर प्लेन जे-20 वायुसेना में शामिल कर लिया गया है और अब वह युद्धक गतिविधियों में भाग लेने के लिए तैयार है। चौथी पीढ़ी के इस लड़ाकू विमान को अमेरिकी एफ-22 और एफ-35 विमानों का चीनी जवाब माना जा रहा है। विश्लेषकों के अनुसार जे-20 दो तरह की भूमिकाएं निभाने में सक्षम है। इससे हवा से हवा में युद्ध लड़ा जा सकेगा। आकाश से जमीन पर भी हमला किया जा सकेगा। स्टील्थ विमान को रडार से पकड़ने में मुश्किल आती है, इसलिए वह दुश्मन को चकमा देते हुए लक्ष्यों पर हमला



दावा, बदल गया एशिया-प्रशांत क्षेत्र में हवाई ताकत का संतुलन, रडार को चकमा देकर हमला करने में सक्षम

कर सकता है।

पीपुल्स लिबरेशन आर्मी की एयर फोर्स शाखा के प्रवक्ता शेन जिंके के अनुसार नया स्टील्थ विमान चीन की संप्रभुता की रक्षा की ताकत में इजाफा करेगा। 2017 में चीनी विशेषज्ञों ने हालात का विश्लेषण करने के बाद रिपोर्ट दी थी कि जे-20 को दुश्मन की हवाई पट्टियों

और महत्वपूर्ण सैन्य ठिकानों पर हमले के लिए इस्तेमाल किया जा सकता है। इसमें लंबी दूरी की हवा से हवा में मार करने वाली मिसाइलें फिट कर दी जाएं तो अमेरिकी हवाई ताकत के लिए चुनौती बन सकता है। अमेरिका के रिपब्लिकन टैंकरों व अर्ली वार्निंग प्लेन को भी निशाना बनाया जा सकता है। चीन के रक्षा विशेषज्ञ सोंग जोंगपिंग के मुताबिक जे-20 चीन को आकाश में चुनौती देने वाली ताकतों को जवाब देने का खास उपकरण बन सकता है। जोंगपिंग ने दावा किया है कि जे-20 की आमद एशिया-प्रशांत क्षेत्र में हवाई ताकत का नया संतुलन कायम करेगी।

THE HINDU

Tue, 13 Feb, 2018

How VR and machine learning may influence the artworks of our generation

By B Pradeep Nair

Virtual reality and machine learning are redefining art, and providing a new canvas for expression of thoughts and ideas

Artists and designers are no exception when it comes to taking the help of computer software and gadgets. Such is the power of technology that the way ideas are conceptualised and expressed has changed dramatically.

With the availability of high-end gadgets, there is a new generation of digital artists, who don't rely on conventional modes of pencil and paper. Technology has not only changed the way artists draw, but it has also ensured that their works are preserved longer and disseminated to a much wider audience easily.

Augmented reality, virtual reality, artificial intelligence, machine learning: they have all made their way into art and design. High-tech gadgets are no longer the preserve of geeks and nerds, resulting in 'democratisation of the power of creativity'. Anyone with a good smartphone can be a creative photographer, and anyone with a good 3D printer can manufacture an object with a design of his or her choice.

Artificial imagination

Some common applications for artists are: Paint, Photoshop, Apple Pencil, Corel Painter, Autodesk SketchBook, Artweaver, Rebelle.

There are apps like Google AutoDraw that aid people who like to draw but are not very good at it. All you have to do is, draw as best as you can; the software, using machine learning, will compare what you sketched, with what it has in its large database; pull out the one that matches what you have drawn, and replace your squiggly artwork with a more professional-looking one. Then there is Tilt Brush which allows you to paint in a 3D space with virtual reality.

Recently, Microsoft announced it was developing a ‘drawing bot’ that will sketch a drawing from words, which the company says, is more advanced than existing text-to-image applications. “Each image contains details that are absent from the text descriptions, indicating that this artificial intelligence contains an artificial imagination,” says a post on the Microsoft blog.

Amidst these progressive trends, one of the institutions that has embraced new technology is the Srishti Institute of Art, Design and Technology in Bengaluru. Geetha Narayanan, Founder-Director of the institution, says the relationship between art and technology is nothing new. Referring to the path-breaking innovation of the Lumiere movement in Paris in the mid-1800s, she says technology was used to put a moving image on the screen; it was done by the artist, not by the entertainment industry.

Srishti, in association with Adobe and Bangalore Metro Rail, is setting up a studio named ‘Envision AR-VR Lab’, at the Cubbon Park metro station in Bengaluru, which serves as a hub for artists, engineers, programmers, designers, musicians, directors, producers, hardware manufacturers and researchers to explore the intersection of art and technology.

“We envision this lab to be a lens to the public, to showcase the endless possibilities of science and technology, and how it can change the way we think, work and behave in our everyday lives,” says Sai Krishna Mulpuru, Faculty, Experimental Media and Arts Department at the institute.

“Unlike film and the traditional visual media, AR and VR have the flexibility to engage the audience to experience their own narratives in immersive environments. Envision Lab challenges the conventional approaches of design by bringing together science, technology, and new media to create multi-sensorial experiences in public spaces,” he adds.

3D Sound Lab

At the Srishti Institute, the artists are encouraged to explore scientific concepts and use technology. Pointing to an in-house assembled 3D printer, Yashas Shetty, Artist-in-Residence at Art Science BLR, Public Laboratory at the institute, says, “We built this from scratch. It took us six months to design, develop and assemble it. Since we built it from scratch, we can reconfigure the tool to suit our needs.”

Their latest innovation is a 3D Sound Lab, which Shetty reckons is the only one of its kind in India. There is a computer, an amplifier and as many as 30 speakers placed in different parts of the room. On moving the cursor over the screen, you hear the sound of a tumbler falling or rolling, from different speakers, giving one the effect of the sound travelling around the room.

Different sounds of the tumbler falling and rolling were recorded by an artist using a special eight-channel microphone. The sounds were fed into a computer, where an open-source software controls what sound should go into which of the 30 speakers. Shetty says it cost a couple of lakhs, which was donated by the Goethe-Institut. It took the team around two months to assemble the entire unit.

Does an artist need a basic knowledge of technology? “Yes,” asserts Shetty. “Because this is the new medium; this is the world you live with. It is like an accountant needing to know Excel. Or you needing to have an idea of how to use an app to book a cab to travel around.”

Mind vs machine

While technology has revolutionised art like it has many other fields, there are artists who think art and tech are immiscible. Traditionally, creativity has been perceived as an innately human process or function. High-end technological tools are considered ‘alien’, ‘corrupting’ the ingenuity of the human mind.

Traditionalists aren’t quite amused by the marriage of art and technology. Their doubts revolve around these aspects: When you use high-end technology, is your work a product of human imagination or a product of the imagination of the machine? Isn’t it odd for artists to dabble in science and technology, when they could work on creative thoughts and give expression to them?

Shetty clarifies: “Art is not a painting. It is not a sculpture. It is a way of living. It is a way of questioning things. Painting or sculpture is just an end product. Technology gives us the tool to question the existing norms, break frontiers.”

Referring to the art-tech combination as a ‘deep engagement with technology’, Shetty asserts that the way artists use gadgets is more important. “You must craft your own tools, so that you are a master of your tool, and not the other way round,” he says.

However, KA Soman, a member of the Kerala Lalithakala Akademi, is cautious when it comes to relying on gadgets.

He explains, “Technology has provided the advantage of speed and precision to the artist. But, there are several instances, where art has been sought to be manipulated in this way, which is never a welcome sign. Computer-assisted art is a separate class, distinct from the fine art which is original.”

What lies ahead

While traditional artists will continue to have a place of their own, how the bonding between art and technology will pan out is anybody’s guess.

Narayanan contends that art, design and technology are in a critical relationship. “Art has the imagination, design uses the insight, and technology is the enabler of complex but super-fast change,” she says.

In her view, there is a need for greater understanding of neuroscience in the application of creativity. “Because when you are competing with artificial intelligence, with automation, you need to know what is specifically human about us. You need to understand human consciousness, psychology, behaviour, and all other emotions, physiological dimensions, the impact of technology on the physiology of the brain. When an artist plays with automation or artificial intelligence or DNA, all of these allow for a completely new emergent future to arise,” she says.

Highlighting that real art must survive and establish its identity over and above virtual art, Soman suggests, “It’s better that technology gets more focused on commercial art, leaving more space for painters and artists to engage themselves with ‘real’ art, which is more within their creative domain than the other.”