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FIRST INDIGENOUSLY DEVELOPED AIRCRAFT CARRIER, SUBMARINE TO BE DISPLAYED

Display of Naval excellence

STATESMAN NEWS SERVICE
New Delhi, 20 January

In a record of sorts, the Naval band at the Republic Day parade this year would be led for the 18th time in succession by Ramesh Chand, Master Chief Petty Officer (Musician) – 1st Class.

The Naval Contingent of 144 young sailors would be led by Lt Cdr Anil Raina as Contingent Commander and three women officers, Lt Manisha K Takshak, Lt Cdr Chetna Sonsale and Lt Priyanka Chand as the Platoon Commanders.

The men in the marching contingent had joined the Indian Navy only in



August 2015. Having just passed out from the basic training establishment at INS Chilka, they will exhibit the results of their

five months of hard work in the Navy.

In keeping with the Indian Navy's Theme for 2016, "Empowering India

through Maritime Security and Indigenisation", the Naval tableau would signify the Navy's commitment towards en-

suring nation's maritime security and resurgence in 21st Century, through self-reliance and indigenisation. The tableau will display the new aircraft carrier Vikrant under construction at the Kochi Shipyard Limited, and the indigenously constructed submarine Kalvari by Mazgaon Dock limited at Mumbai.

Another feather in the Navy's cap would be that two women officers of the Navy Surgeon Lt Ambika Nautiyal and Lt Cdr Priya Jayakumar, would be unfurling the National Flag on 26 January and at the Beating Retreat on 29 January respectively.

The Hindu

21 January 2016

Design for second domestic aircraft carrier to be frozen by year-end

By Dinakar Peri

By the end of the year, India expects to freeze the design for the largest battleship ever built for the Indian Navy. It will also be one of the largest carriers across the world after the U.S. super carriers, which weigh about 1,00,000 tonnes. According to Navy sources, the Indigenous Aircraft Carrier (IAC-II) would be of



INS Vikrant under construction at the Cochin Shipyard.

65,000 tonnes, and will be capable of carrying over 50 aircraft. In comparison, displacement of INS Viraat is only 28,500 tonnes and INS Vikramaditya is 45,400 tonnes, both of which are of foreign origin and currently in service with the Indian Navy. The first indigenous aircraft carrier INS Vikrant weighing 40,000 tonnes is currently under construction at Kochi. The feasibility study for IAC-II has begun and will take about 8-10 months based on which the design will be frozen, a senior Navy official said on Wednesday. Given that this the first time a ship of such size will be built in India which involves development of several new technologies, design consultancy will be sought from foreign companies with expertise in carrier design and construction. Five countries have been identified for the purpose - the U.S., Russia, France, the U.K. and Italy - all of which currently operate carriers, the official added.

The Navy has issued a letter in July 2015 to identify the domestic shipyard for constructing IAC-II. Following that, a study group headed by Rear Admiral Surinder Ahuja, Assistant Controller of Carrier Project, has been set up to identify suitable Indian shipyards for construction of IAC-II and to arrive at the build strategy. The Navy aims to achieve 80 per cent indigenisation in the project. The critical factors which define a carrier are the number of aircraft, launch mechanism and propulsion which in turn determine the size and displacement of the carrier. While the launch mechanism would be Catapult Assisted Take-Off But Arrested Recovery (CATOBAR), the Navy said "modern technologies for launch and recovery will be considered," leaving room for incorporating Electro-Magnetic Aircraft Launch System (EMALS) technology of the U.S. On Vikrant, officials said it was in advanced stage of construction and was on course to be delivered by December 2018. "The plan is to begin sea trials by September 2017 and deliver by December 2018 after which aviation trails can start," the official added.

INS Viraat sets off on last tour of duty

By Rajat Pandit

High Operational Costs Force Retirement Of World's Oldest Running Aircraft Carrier . India's oldest warhorse may now be creaking at all her numerous joints but she is still game for a show of strength, a wee bit of power projection on the high seas for the last time. The 56year-old aircraft carrier INS Viraat has now set sail for what will be her last operational deployment. The 28,000-tonne INS Viraat, which embarked six Sea Harrier

OLD WARHORSE'S LAST JOURNEY

Nov 1959: Aircraft carrier HMS Hermes commissioned into British Royal Navy	May 1987: Commissioned into Indian Navy as INS Viraat
1982: HMS Hermes flagship of Royal Navy during Falkland war	2015: Defence ministry asks 9 coastal states if interested in converting INS Viraat into docked museum
April 1986: India buys second-hand carrier, gets it refitted at Plymouth	2016: INS Viraat slated for retirement



CHARACTERISTICS:

Displacement 28,000 TONNE	AIR ELEMENT: 26 combat aircraft during conflicts (Sea Harrier jump-jets & Sea King anti-submarine warfare helicopters)
Capacity OVER 1,500 PERSONNEL	POWERED BY: 2 steam turbine engines & 4 boilers (carrier burns 160 tonnes of fuel everyday)

MOTTO JALAMEV YASYA, BALAMEV TASYA (He who controls the sea is all powerful)

jump-jets as well as six Sea King and four Chetak helicopters from Goa on Wednesday, is headed for Visakhapatnam to take part in the International Fleet Review (IFR) from February 5 to 8. "This will be INS Viraat's last journey , a cross-coast deployment signalling the end of her yeoman service for India before she is retired later this year. On her way back to Mumbai, she will call on all major Indian ports as a final salute," said a senior officer on Wednesday . Originally commissioned in the British Royal Navy as HMS Hermes in November 1959, the 13-storey high carrier was inducted into the Indian Navy as INS Viraat on May 12, 1987. "Mother", as she is still affectionately called, packed quite a punch in her days of glory. She represented two acres of sovereign Indian territory cruising on the high seas, ready to unleash her fighters and other weapons against enemies in a jiffy . With age and high maintenance costs, the world's oldest operational aircraft carrier has lost most of its teeth. But the Navy has managed to cannibalise together six Sea Harrier jump-jets, which are always a sight to watch since they land vertically on the warship deck after

taking off from its angled ski-jump. Commanded by Captain Puneet Chadha, INS Viraat will be joined by the country's other carrier, the 44,570-tonne INS Vikramaditya with her integral MiG-29K fighters, for the IFR. But INS Vikramaditya, or the refurbished Admiral Gorshkov acquired from Russia in late 2013 after a \$2.33 billion refit, will have to soldier alone as the country's solitary carrier after that. The 40,000-tonne indigenous aircraft carrier or INS Vikrant being built at Cochin Shipyard will be ready for induction only by 2018-2019 at the earliest. India will then achieve its long-standing aim to have two fully-operational "carrier battle or strike groups" (CBGs), with their accompanying fighters, patrol aircraft, destroyers, submarines frigates and tankers. CBGs project raw combat power like nothing else. The US has 11 Nimitz-class nuclear-powered "super-carriers", each over 94,000-tonne and capable of carrying 80-90 fighters, deployed around the globe. China, too, is fast building new carriers after inducting the 65,000-tonne Liaoning in September 2011, even as it develops "long legs" with naval deployments spreading to the Indian Ocean and beyond. As reported by TOI earlier, the defence ministry has sought a response from all nine maritime states if any one of them has "a workable proposal" to convert INS Viraat into a docked museum. The Navy is even willing to handover a few old aircraft for display on its deck to make it a first-class museum. The Navy does not want INS Viraat to go the way of INS Vikrant, the country's first aircraft carrier that was acquired from the UK in 1961 and later decommissioned in 1997.

ET EXCLUSIVE Q&A - Existing And Perceived Threats Necessitate Boots On The Ground

As a result of Make in India, a large number of foreign OEMs have offered to form JVs with local cos to manufacture equipment in India.

General Dalbir Singh, the chief of one of the world's largest standing armies, which also commands one of the biggest budgets, believes that the Indian private sector has a strong role to play in modernisation efforts and reducing import dependence. In an interview to Manu Pubby and Deepshikha Hooda, the general spoke about ongoing procurement projects, future plans and the optimal mix of boots on ground and technology for meeting security challenges.

The government has undertaken several initiatives to encourage the indigenous defence industry to meet the equipment requirements of the army, including increasing foreign direct investment (FDI) to 49%.

Product development (for the military) is a technically challenging and professional task. It demands a deep understanding of all processes involved and requires substantial investment of time, money and resources. Industry, including the private sector and academia, can play a vital role in meeting the needs of the army. I am confident that Indian industry, including the private sector, has the capacity as well as the will to respond efficiently to the challenge, which is also an opportunity for them--the Make in India initiative. The move to increase FDI to 49% will also accrue several benefits, including a boost in defence research and development, a reduced dependence on imports for military hardware and enhancement of the technical skill sets of army operators and technicians.

How important is the Make in India initiative for the army, given your need for modernisation?

The initiative is beneficial in most of the areas of modernisation the Indian Army is looking at. Already, a large number of foreign original equipment manufacturers (OEMs) ranging from specialist guns, night sights, helicopters and missiles have offered to form joint ventures with Indian companies to manufacture defence equipment in the country. This will help bring in cutting-edge technology through transfer of technology. In fact, Army HQ has put in place an institutionalized mechanism for regular engagement with Indian industry to share our current and long-term needs of military technology, platforms and systems. The response from indigenous industry has been very encouraging.

Can you share details of two of the largest contracts under process by the army for future infantry combat vehicles and a futuristic battle tank that are to involve Indian industry.

On the Future Infantry Combat Vehicle (FICV), the project is being progressed under the Make (in India) category, an acceptance of necessity for which was obtained in October 2009. After a retraction of EoI (expressio of interest) in December 2011 five additional vendors requested for their inclusion in the list. The fresh EoI has been issued to all 10 empanelled vendors on 16 July, 2015. Further action would be initiated after studying their responses. In 2008-09, a need was felt to develop a new tank for the Indian Army, which would be inducted by 2027 and would form the mainstay of the Armoured Corps. The Future Main Battle Tank (FMBT) was initially proposed to be developed under the Make (in India) procedure, similar to the FICV. However, drawing lessons from the progress in the FICV case, an alternative option to develop the FMBT was examined. It was renamed as FRCV (Future Ready Combat Vehicle), as it is to be developed on a platform concept and be the base for a family of variants. Responses from 27 agencies have been received and are under evaluation. Our objective is to induct these during the next plan period (2017-2022).

There has been concern about the status of the army's air defence equipment? What plans are being moved to overcome the obsolescence of air defence systems in operation?

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ET EXCLUSIVE Q&A - Existing And Perceived Threats Necessitate Boots On The Ground

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The strategy is to have a judicious mix of surface-to-air missile systems (SAMs) and gun systems. The Army Air Defence is poised for a major upgradation and modernisation drive and a systematic and phased induction plan for various types of systems has been put into place. These cover the entire range and altitude bracket from very short range, short range SAMs to medium range missiles (MRSAM), besides quick reaction SAMs for armoured and mechanised forces. The army is also inducting an air defence control and reporting system which is based on state-of-the-art sensors and satellite-based communication systems. Also, the procurement of Akash, Three Dimension Tactical Control Radars, Low Level Light Weight Radars and upgrades of L-70 Gun and Schilka Mounts have fructified and delivery has commenced.

There have been suggestions to cut the size of the army and equip soldiers with more cutting-edge technologies, especially, given that the army's budget is lopsided in favour of revenue expenses.

The force level of the Indian Army is based on the overall threat perception for both existing and perceived scenarios. Currently, the strength of the standing army is around 1.23 million with the 'soldier' himself as a weapons system. While this has skewed the ratio of funds heavily in favour of 'revenue,' it is unavoidable since the nature of security challenges faced by us necessitates boots on the ground. There is a need to maintain constant vigil. Multiple threats faced by us are compounded by the inhospitable and unique terrain. These challenges require 'boots on ground' to guard the frontiers since the available technology may not be able to replace the man at all places. I feel that there is a requirement to have an efficient force, which is a balanced mix of size and technology enablers. This optimal force structure has to be custom made to our unique geography and security challenges.

The Hindustan Times

21 January 2016

India-France negotiations on 36 Rafale fighters 'in closing stages'

By Shishir Gupta

Negotiations between India and France on closing the deal for 36 Rafale multi-role fighters have entered their last, hectic phase. The two nations are now seeking simultaneous inking of the Inter-Government Agreement (IGA) and Commercial Contract during President Francois Hollande's Republic Day visit, now less than a week away. Top sources told Hindustan Times that France has this week indicated a maximum price of around 11.6 billion Euros for 36 fighters with full armament complement. That works out to Rs 85,000 crore for three squadrons. The French offer takes into account an annual inflation rate of around 5 per cent with deliveries beginning 2019. The ministry of defence has been instructed by defence minister Manohar Parrikar to lay out a detailed proposal to beat the price down to lower than what was on offer at the time Prime Minister Narendra Modi went to France last April. "In April 2015, it was decided that the price of each aircraft would be at least 10-20 per cent less than what was being offered by manufacturer Dassault to the UPA regime for the cancelled 126 MMRCA contract. This is a government-to-government sale, and not based on lowest bidder or tender. We have asked France to calculate inflation at 1.2 per cent annually from today's price with deliveries in 2019. This plus other discount should bring the price to around 8 billion Euros or Rs 55,000 crore for the 36 fighters," said a senior official. While Indian, French and Dassault officials are all in the Capital to close the commercial contract before Hollande arrives, New Delhi is clear that it will sign the IGA only with the commercial contract for the fighter deal. "French and Indian defence ministry officials are meeting today to close the commercial contract. We have not decided at this moment to buy additional Rafale fighters but could examine the possibility if the price is good. But this has nothing to do with the current negotiations," said the official. National Security Advisor Ajit Doval was in Paris for two days this month to discuss the Rafale deal and the modalities of the IGA. South Block sources said the 36 Rafale fighters will be specifically designed for Indian needs with the top-of-the-line AESA radar marking a quantum jump over existing multiple targeting capabilities. The nuclear-capable French fighter will add teeth to India's attack capability and replace the Russian Su-30 MKI as the IAF's main frontline fighter.

France to pitch for naval version of Rafale

A high-level French team is set to meet senior officials of the Navy soon to brief them about the naval version of fighter jet Rafale as India works on the design of its next indigenous aircraft carrier - Vishal. Defence sources said that during the meeting, the French side will give a presentation on the various aspects of the naval version of Rafale and the benefits it will bring at a time when the Air Force will operate Rafale too. The Air Force is set to acquire 36 Rafales under a government-to government deal. The development comes when the Navy is in the design phase for the next aircraft carrier. Sources said that India has written to four countries, including France, seeking proposals for the design of the aircraft carrier that will have over 50 planes on board. While India currently operates two aircraft carriers INS Vikramaditya and INS Viraat, the latter is set to be decommissioned soon. The country's first indigenous aircraft carrier Vikrant is already under construction in Kochi and is scheduled to be handed over by end of 2018. Sources said that one of the basis for the design will be the aircraft component of the carrier. "At this moment, we are doing with what we have," the sources said. The Navy will deploy MiG 29K fighter aircraft on Vikrant. However, it is not clear if the Navy will stick to MiG 29K or go in for a new aircraft for Vishal. As per the Navy's plan, Vishal would be a 65,000 tonnes aircraft carrier and will be about 300 metres long and about 70 metres in width. While the exact propulsion system for it has not been decided, sources indicated it could well be a nuclear one. "Given the long life cycle of a carrier, about 50 years, the cost of the nuclear propulsion will be recovered as nuclear means longer duration and better availability," sources said.



A talk with Mr Hollande

The Rafale deal is indeed the raison D'être of the busy French president's visit to new Delhi and it is vital for his failing popularity in France, while it is also important for Narendra Modi's credibility. A telling symbol of the closeness between India and France is the fact that for the first time since independence, foreign troops will participate in the republic day parade and the soldiers will be French, belonging to the 35th infantry regiment (35 RI), based in Belfort in eastern France.

The French have recently rediscovered their old Gaullish belligerent genes. The list of France's present military intervention outside its territory is long and the locations spread over two continents ~ Africa and the Middle-East. French troops are deployed in Syria (Ops Chammal, 3500 men); in Central African Republic (Ops Sanaris, 900 men); in the Sahel (Ops Barkhane, 3500 men) and in Libya (Ops Daman, 900 men) It is a lot for a country like France. To this should be added, 10,000 army personnel (Ops Sentinelle), participating in the security measures accompanying the state of emergency declared after the Paris terrorist attacks in November. While France has been at the forefront of the battle against 'terrorism', waging a long war against Al Qaida and the Islamic State, Delhi too has for years had firsthand knowledge of terrorism, though in India's case, the terror often comes from a neighbouring country; the country has not been engaged in outside military operations after the sad Sri Lankan episode. This shared concern between India and France over terrorism is one of the reasons why in December 2015, it was announced that President Hollande would be the Chief Guest on the occasion of the Republic Day celebrations: "This invitation conveys the excellent quality and dynamism of the strategic partnership between India and France, which will be further strengthened on this occasion. This visit will also follow on from the Paris Climate Conference, at which India played a decisive role in reaching an ambitious agreement," said the brief communiqué from the French Presidency. The French government was just recovering from the November 13 horrific attacks in Paris and was commemorating the killings of several journalists of Charlie Hebdo in December 2014, when attackers from the other side of the Indian border, stepped into the Pathankot airbase and created havoc for nearly three days. On January 4, France condemned "the attack perpetrated against the Indian military base in Pathankot", adding: "We extend our condolences to the victims' families as well as to the Indian government. France stands alongside India in the fight against terrorism." Terrorism, security and strategic dialogue will dominate the visit of the French President in Delhi, although it is clear that Hollande comes to India first and foremost to take the next step in the Rafale deal. During the last few weeks, both sides have been zealously working to seal an agreement on January 25, when the French President meets with Prime Minister Narendra Modi. President Hollande may also discuss the realizations of Le Corbusier, the French architect who built Chandigarh in the 1950s and 1960s or even the change of climate, for which France worked hard for several months in preparation of COP21 in Paris, but it will not be the main dish of the visit. But the 'deal' is far from being signed. While Defence Minister Manohar Parrikar recently remarked, 'it's closer to completion' and refused to go into the details, his French counterpart Jean-Yves Le Drian is quoted by Reuters saying 'nothing has been finalised as yet.' The sudden rush of Ajit Doval, the National Security Advisor to Paris 'to talk about terrorism', was part of the efforts to make the Republic Day a real success. During his talks in Paris, the NSA's brief was not only 'terrorism', but the purchase of 36 Rafales for the Indian Air Force. Hardly five days after Doval's return to Delhi, Le Drian is to fly to Delhi to 'save the deal' or 'fine-tune the agreement', depending on the optimism of the analyst. One positive sign is that the Modi sarkar recently reinstated with immediate effect, 'services' as an eligible option for offsets in defence deals. The Government amended the 2013 Defence Procurement Procedure (DPP-2013) just before the release of the revised DPP- 2015. It should be helpful to sort out the differences between Dassault Aviation and the Indian government over the offset obligations of the former. The Rafale deal is indeed the raison d'être of the busy French

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A talk with Mr Hollande

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President's visit to New Delhi and it is vital for his failing popularity in France, while it is also important for Narendra Modi's credibility. A telling symbol of the closeness between India and France is the fact that for the first time since Independence, foreign troops will participate in the Republic Day parade and the soldiers will be French, belonging to the 35th Infantry Regiment (35 RI), based in Belfort in Eastern France. While some participants will come from Afghanistan, others are already in India, where they participated in the Shakti-2016 joint exercises with the 2 Garhwal Rifles of the Indian Army in Bikaner. Defence spokesperson Lt Col Manish Ojha explained the context: "The size and scope of this combined exercise is unparalleled and will be characterized by regular, realistic, academic and natural exchange which would form a part of Shakti-2016. The broadened and unprecedented scope of the exercise stands as a testament to the wellknit people-to-people and military-to-military ties between France and India." The 35 RI is not an ordinary regiment. Presently associated with the 7 Armoured Brigade, it is one of the oldest French regiments, created in 1604. During its long history, the regiment was renamed several times, i.e. Anjou (in 1671) and Aquitaine (in 1753); later it participated in Napoleon's campaigns and earned laurels for its heroic actions during the battle of Wagram in 1809 and the Russian campaign in 1812. The regiment carries four citations on its flag earned during WWI: Alsace-The Ourcq in 1914, Champagne in 1915, Verdun in 1916 and Reims in 1918. More recently, the 35 RI was engaged in external operations in places like Afghanistan, Lebanon, Ivory Coast, Kosovo, Chad or Central African Republic; the 35 RI has also been extensively used for internal security operations in France. It is not only the best French infantry regiment, but also the best equipped unit with the latest gadgetry in its armoured vehicles. Its 1195 members are known as les gaillards, which could be translated as 'the tough guys' (though women soldiers also serve in the 35 RI). India is reciprocating the honour given to the Indian Army when its troops marched down the Champs Elysees on July 14, 2009 on the occasion of French Bastille Day. But that is not all; India is in the process of finalizing an order for three more French Scorpene submarines, after the construction of the first six presently built at the Mazagon Docks is completed. Next year, Delhi should issue a tender for six new-generation Stealth submarines; France is on the ranks for the tender. Navy chief Admiral Robin Dhowan recently announced: "[our] aim is to ensure the islands are not only well protected but also act as a strategic location for basing aircraft, warships and submarines. The proximity of A&N Islands to Malacca Strait makes them very strategic since they overlook busy sea lanes and choke points." Here too France would like to be on India's side. Hopefully, the cultural and other aspects of the relations will also be covered during the French President's visit. It is significant that Hollande will spend his first day in Chandigarh, the first 'Smart City' in India, created by a French man, Le Corbusier. A train ~ à grande vitesse (bullet train) ~ between the city of Le Corbusier and the Indian capital, as well as some mega solar energy collaboration is also on the cards. That would be very smart.

Delays disappointing, Indian policy needs to change: Iran

By Kallol Bhattacharjee



India's Iran policy is marked by unnecessary caution, Gholamreza Ansari, envoy of Iran, said on Wednesday, arguing for a new age in India-Iran relationship. "Following the nuclear deal, Iran has been mainstreamed in international affairs and India should appreciate that to bet on Iran is the right thing. In the past, India often advised patience on important projects. In the changed circumstances in West Asian region, India cannot follow the policy of patient waiting any more," Mr. Ansari said in his first public statement following the nuclear deal between Iran and western countries that led to the dramatic lifting of decades-old sanctions. "In my three years as the Ambassador of Iran, I have often been advised to be patient on big India-Iran projects. Does India want to wait for centuries before capturing the right opportunities?" Mr. Ansari said in an impassioned speech delivered at the India International Centre during a seminar on West Asian affairs. Guarantor of stability. The envoy said that Iran was the guarantor of stability in the West Asian region and would fight against the forces of instability that are responsible for violent extremism in Iraq, Syria and Libya. "Iran visualises a stable future for its neighbourhood and we will fight till the end to create and maintain stability in our region," he said while introducing the changes sweeping in West Asian region following the nuclear deal. Mr. Ansari said that mega projects such as the Chahbahar port upgradation, and international energy pipelines demand prompt Indian decisions. "I feel private companies in India are keen to move ahead in the Chahbahar port project but the government has not shown the same level of enthusiasm in the past." "Syria, Iraq and even Egypt need billions of dollars worth investments for reconstruction and recovery from the violent wars. The region urgently requires inclusive social and political structures. India, which has strong interest in the region, should express its concerns freely," he said.

Mail Today

21 January 2016

No food licences for defence canteens

By Neetu Chandra Sharma

Following requests from the Ministry of Defence, Union health ministry has exempted unit run canteens (URC) from the purview of Food Safety and Standards Authority of India (FSSAI) licensing. Following requests from the Ministry of Defence, Union health ministry has exempted unit run canteens (URC) from the purview of Food Safety and Standards Authority of India (FSSAI) licensing. Ministry of Defence asserted that these URCs in India are attached to the canteen stores department (CSD) depots which are licensed by FSSAI and follow all the requirements stipulated under Food Safety and Standards, 2006 (FSS) Act. URCs are attached to the CSD depots and function as a welfare measure for defence personnel. The miniscule profits earned by the URCs are also ploughed back for the welfare of the forces. "Following various representations from the Ministry of Defence, we have decided to exempt the URCs from the purview of the FSSAI licensing subject to some conditions," said a senior FSSAI official. FSSAI, under the health ministry, has exempted the URCs but has made it mandatory for CSD depots to ensure that all URCs under their respective control adhere to all the provisions of FSS Act rules and regulations. Also, all the URCs will display FSSAI license numbers. "The CSD depots were willing to take responsibility of food safety in respect of the URCs attached to each of them. The CSD depots have already taken FSSAI licenses (34 area depots and one base depot) and all the URCs buy food articles only from these depots. And, stringent protocols are enforced to ensure safety of food articles in all canteen depots run by the defence services," the official said.

US weighs tighter sanctions on North Korea if China fails to act

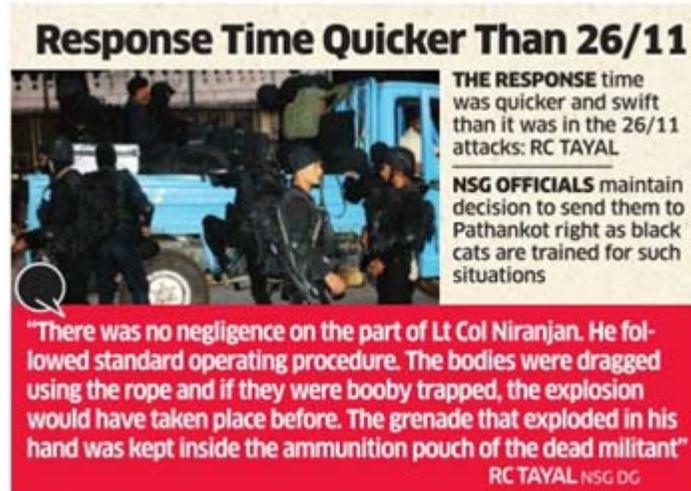
Choe Sang-Hun

SEOUL, South Korea: The United States and its allies will bolster sanctions and go on the defensive against North Korea in ways that China may not like if Beijing fails to lend greater support to efforts to curb the North's nuclear ambitions, a top U.S. diplomat said here Wednesday. The diplomat, Deputy Secretary of State Antony J. Blinken, made the warning a day before he planned to meet with Chinese officials in Beijing to pressure them to use their economic leverage over North Korea to force it to end its nuclear weapons program. "I think what we will be talking to China about is that we will, both in terms of sanctions and in terms of our defense postures, have to take additional steps in order to use the leverage we have in order to defend ourselves and our allies if North Korea doesn't change its behavior," Blinken said in an interview. Some of those steps "won't be directed at China, but China probably won't like them," he said. Blinken refused to go into detail. But he said that "everything is on the table," including so-called secondary sanctions, of the type the United States most recently used against Iran, which would target third-party countries doing business with North Korea. Last week, President Park Geun-hye of South Korea said her country would consider agreeing to the United States' deployment of its Terminal High Altitude Area Defense, or THAAD, missile system in South Korea to cope better with the North's growing nuclear and missile threats. China has vehemently opposed a THAAD deployment in South Korea, saying it would constitute a threat to its security. Secondary sanctions against North Korea, if put in place, would also affect China the most, because most of the North's external trade is with China or goes through the country. "I think China has an incentive to use its own leverage to achieve the result and thus make it less necessary for us and our partners to take steps that China may not like," Blinken said. For years, the United States has called on China to use its economic leverage to force North Korea to give up its nuclear weapons. But Beijing has been reluctant to put as much pressure on the North as Washington has wanted, because of fears that doing so would make the North more aggressive or even push its government to collapse. China considers neither situation to be in its strategic interest, analysts say. After the North conducted a nuclear test on Jan. 6, the United States and its allies, including South Korea and Japan, cited the test as proof that China had not done enough to curb the government it has supported for six decades. They urged China to agree that the U.N. Security Council should adopt a resolution authorizing "strong and comprehensive" sanctions against the North. Blinken also said Wednesday that the United States was working both unilaterally and with its allies to add other sanctions to any adopted by the Security Council. China, while condemning the North Korean nuclear test, has suggested that it is the Americans, not the Chinese, who are largely to blame for the North's pursuit of nuclear weapons. It has emphasized the need to start dialogue with the North, saying that the United States and other countries need to address "both the symptoms and root causes" of the North Korean nuclear issue.

NSG Unaware Ultras Inside Base When it Reached Pathankot

By Rahul Tripathi

ACTION TIME Commandos would have launched op from outside if they had known this earlier. The director-general of the National Security Guard, RC Tayal, who supervised the anti-terrorist operation in Pathankot, has said his organisation's response time to the attack was quicker and swifter than it was for the 26/11 attacks. "Because of the quick decision-making at the highest level, strategic assets of the Air Force



could be protected," Tayal told ET. Speaking for the first time to the media since the operation, he said that there were no command and control issues between Army, Air Force and NSG. "We were alerted at 6 pm and by 7 pm, it was clear that NSG will conduct the operations. By 10.15 pm, the NSG teams were inside the airbase." However, a top NSG source said the commandos would have preferred to have launched the operation against the militants from outside the air base had they were aware that four JeM terrorists were already inside. According to officials, the alert to NSG conveyed by the security agencies on

January 1 only said that suspected militants had entered Pathankot but there was no clarity on the targets, said an official familiar with development. "We were told about the presence of militants inside the air base at 11.30 pm on January 1, during the coordination meeting with Air Force, Army and Punjab police," said an official requesting anonymity. The militants attack inside the air base started at 3 am on the intervening night of January 1-2. According to sources, a team of 300 commandos in two batches of 150 black cats were moved for the Pathankot operation from New Delhi. The commandos after being told about the presence of militants inside the air base revised their strategy and one NSG team was stationed outside the air base while two teams remained inside. Among the two teams inside the air base, one was stationed near the strategic assets and second team was deployed at the place where families were staying. Counter-terror experts who were present at the air base also felt that it was because of NSG deployment that assets were saved. DG NSG termed the operations as "successful" as they managed to "defeat the main objective" of terrorist to destroy Air Force assets.

The Statesman

21 January 2016

KERRY WARNS SAUDI ARABIA, PAK AGAINST NUKE TRADE

Washington, 20 January: US Secretary of State John Kerry has warned both Saudi Arabia and Pakistan against indulging in trade of nuclear weapons, saying there will be "all kinds of NPT consequences" if Riyadh went ahead with any such plan. Such a strong warning from Kerry comes amidst media reports that Saudi Arabia is trying to buy nuclear weapons from Pakistan. Top Pakistani leaders have in recent weeks warned Iran of serious consequences if it attacked Saudi Arabia, which many analysts see a nuclear threat from Islamabad to Tehran. "Sure we've heard those things. But you can't just buy a bomb and transfer (a nuclear bomb)," Kerry said. "There's all kinds of NPT consequences. I mean, there are huge implications of that," Kerry said, referring to the strong nuclear Non-Proliferation Treaty (NPT). He was asked, "The Saudis (are) not even ruling out the possibility, given their concern about this nuclear deal with Iran, they could go forward and buy some maybe buy a nuclear bomb, maybe from Pakistan, you've heard those concerns." Pakistan is already under the radar of the international community for its previous nuclear proliferation activities and leaking the nuclear weapons technology to countries like Iran, Libya and North Korea. "Saudi Arabia knows, I believe, that that is not going to make them safer, nor is it going to be easy because the very things that Iran went through, they would then be subject to with respect to inspection, NPT and so forth," Kerry said.

At least 20 killed, dozens wounded as militants storm into Pakistan university

A security official said the death toll could rise to as high as 40 at Bacha Khan University in the city of Charsadda. Armed militants stormed a university in volatile northwestern Pakistan on Wednesday, killing at least 20 people and wounding dozens a little more than a year after the massacre of 134 students at a school in the area, officials said. A senior Pakistani Taliban commander claimed responsibility for the assault in Khyber Pakhtunkhwa province, but an official spokesman later denied involvement, calling the attack "un-Islamic". The violence nevertheless shows that militants retain the ability to launch attacks, despite a country-wide anti-terrorism crackdown and a military campaign against their strongholds along the lawless border with Afghanistan. A security official said the death toll could rise to as high as 40 at Bacha Khan University in the city of Charsadda. The army said it had concluded operations to clear the campus six hours after the attack began, and that four gunmen were dead. A spokesman for rescue workers, Bilal Ahmad Faizi, said 19 bodies had been recovered including students, guards, policemen and at least one teacher, named by media as chemistry professor Syed Hamid Husain. Husain reportedly shot back at the gunmen with a pistol to allow his students to flee. Many of the dead were apparently shot in the head execution-style, TV footage showed. The militants, using the cover of thick, wintry fog, scaled the walls of the university on Wednesday morning before entering buildings and opening fire on students and teachers in classrooms and hostels, police said. Students told media they saw several young men wielding AK-47 guns storming the university housing where many students were sleeping. "They came from behind and there was a big commotion," an unnamed male student told a news channel from a hospital bed in Charsadda's District Hospital. "We were told by teachers to leave immediately. Some people hid in bathrooms." Thirty five of the wounded remain in hospital, a local police official said late on Wednesday. **Contradicting claims** - The gunmen attacked as the university prepared to host a poetry recital on Wednesday afternoon to commemorate the death anniversary of Khan Abdul Ghaffar Khan, a popular ethnic Pashtun independence activist after whom the university is named. Vice Chancellor Fazal Rahim told reporters that the university teaches over 3,000 students and was hosting an additional 600 visitors for the poetry recital. Umar Mansoor, a senior Pakistani Taliban commander involved in the December 2014 attack on the army school in Peshawar, claimed responsibility for the Charsadda assault and said it involved four of his men. He told Reuters by telephone the university was targeted because it was a government institution that supported the army. However, later in the day, official Taliban spokesman Muhammad Khorasani issued a written statement disassociating the militants from the attack, calling it un-Islamic. "Youth who are studying in non-military institutions, we consider them as builders of the future nation and we consider their safety and protection our duty," the statement said. The reason for the conflicting claims was not immediately clear. While the Taliban leadership is fractured, Mansoor is believed to remain loyal to central leader Mullah Fazlullah. The Pakistani Taliban are fighting to topple the government and install a strict interpretation of Islamic law. They are loosely allied with the Afghan Taliban who ruled most of Afghanistan until they were overthrown by U.S.-backed military action in 2001. By afternoon on Wednesday, the military said all four gunmen had been killed. "The operation is over and the university has been cleared," Pakistan army spokesman General Asim Bajwa said. A security official close to the operation said he had seen the four gunmen's bodies riddled with bullets. He said none of the gunmen was wearing a suicide vest, but they carried guns and grenades. **RUMORS OF ATTACK** - Television footage showed military vehicles packed with soldiers driving into the campus as helicopters buzzed overhead and ambulances lined up outside the main gate while anxious parents consoled each other. Shabir Khan, a lecturer in the English department, said he was about to leave his university housing for the department when firing began. "Most of the students and staff were in classes when the firing began," Khan said. Several schools had closed early at the weekend around Peshawar, the capital of Khyber Pakhtunkhwa, after rumors circulated of a possible attack. The area has been on edge since the December 2014 massacre by six gunmen in Peshawar. Pakistan, which has suffered from years of jihadist militant violence, has killed and arrested hundreds of suspected militants under a major crackdown launched afterwards. The Peshawar school attack was seen as having hardened Pakistan's resolve to fight militants along its lawless border with Afghanistan. "We are determined and resolved in our commitment to wipe out the menace of terrorism from our homeland," Prime Minister Nawaz Sharif said in a statement after Wednesday's attack.

Unmanned Chinese helicopter completes South Pole flight

An unmanned Chinese helicopter has completed its maiden flight from the Great Wall Station in the South Pole photographing fauna and flora in the area. "Polar Hawk-2," which was developed by the Beijing Normal University, can operate for about one hour at a time at an altitude of up to 1,500 meters. The lithium-battery powered aircraft is highly efficient, quiet and has low emissions, said Cheng Xiao, head of the research team. During the hour's flight on Monday, the helicopter took over 350 high-quality photos. Since the station is located in the Fildes Peninsula, which is known for its changeable weather, there is a lack of clear satellite photos of the station, while pictures taken by the helicopter clearly show the station, said Cheng. China currently has four Antarctic research stations -- Taishan, Great Wall, Zhongshan and Kunlun.

The Hindu

21 January 2016

ISRO puts fifth GPS satellite in orbit

By Dennis S. Jesudasan

The space agency chairman describes blast-off as successful, says two more satellites will be launched by March. PSLV-C31 successfully put into orbit IRNSS-1E, the fifth satellite of the Indian Regional Navigation Satellite System (IRNSS) after its successful launch from the Satish Dhawan Space Centre (SDSC), SHAR, Sriharikota, on Wednesday morning. PSLV-C31 for the eleventh time used 'XL' version of PSLV. IRNSS-1E, with a liftoff mass of 1425 kg, carried navigation payload and ranging payload, according to an ISRO release. Some 19 minutes after it lifted off from Second Launch Pad of the SDSC at 9.31 am., PSLV-C31 placed the satellite in precise orbit. "PSLV C-31 rocket has successfully launched IRNSS-1E satellite in orbit," ISRO chairman A.S. Kiran Kumar said. However, many people waiting to watch the launch were disappointed, as the sky remained cloudy and they could catch only a glimpse of the soaring rocket for a few seconds. The configuration of IRNSS-1E is similar to that of IRNSS-1A, 1B, 1C and 1D launched by PSLV-C22, PSLV-C24, PSLV-C26 and PSLV-C27 in July 2013, April 2014, October 2014 and March 2015 respectively. The ranging payload of IRNSS-1E consists of a C-band transponder which facilitates accurate determination of the range of the satellite. IRNSS-1E also carries Corner Cube Retro Reflectors for laser ranging. Besides the deployment of the constellation of seven satellites, the ground segment comprises 13 Indian Range and Integrity Monitoring Stations, a IRNSS Network Timing Centre, a ISRO Navigation Centre and a Space Control Facility. IRNSS, an independent regional navigation satellite system, is designed to provide accurate position information service to users in India as well as the region extending up to 1,500 km from its boundary. The system is expected to provide a position accuracy of better than 20 metre in the primary service area.



SMOOTH LIFTOFF

Indian Space Research Organisation launched IRNSS-1E, the fifth of the seven-satellite Indian Regional Navigation Satellite System, into space on Wednesday

- PSLV C-31 rocket lifted the 1,425 kg satellite from Satish Dhawan Space Centre at 9.31 am
- 19 minutes into the flight, the PSLV rocket detached from IRNSS-1E
- This is ISRO's first launch of the year; chairman A.S. Kiran Kumar said it was a success
- Director of Satish Dhawan Space Centre P. Kunhikrishnan called the launch a "New Year gift" to the nation
- IRNSS is designed to provide accurate position information service to users in India and the region extending up to 1,500 km
- IRNSS-1E has a mission life of 12 years
- It was launched into a sub-geosynchronous transfer orbit with a 284 km perigee and 20,657 km apogee with an inclination of 19.2 degrees with reference to the equatorial plane

PHOTO: M. MOORTHY

Nasa turns to public to design arm for ISS flying robot

Washington, PTI: Nasa has sought submissions from the public in a new design competition that aims to add a robotic arm to its "free-flying robot" that will patrol the International Space Station (ISS). The US space agency wants its Astrobee robot to acquire new capabilities, including the ability to perch. Astrobee will succeed SPHERES - the three free-flying robots that have lived on the ISS since 2006 and are set to be replaced by 2017. Astrobee will have autonomous capabilities within the ISS, as it will take on a variety of tasks, especially those that are routine or time-consuming. The robotic arm on Astrobee "will be used for perching and interacting with small objects," Nasa said. Nasa has turned to the public for a chance to come up with an "alternative concept, which could provide complementary or enhanced capabilities." Registration for the contest 'Nasa System Architecture Task' began on January 14. Nasa will select 30 freelancers from the registrant pool who will develop system architecture for the project, RT.com reported. Those 30 will receive USD 10 and a detailed list of elements needed by Nasa. Finalists who achieve those requirements will get USD 100 each. Nasa wants freelancers to help them figure out multiple ways to approach creating a decomposed architecture of a complex system. Nasa will then crowd-source the designs created by the freelancers along with Nasa's own designs "using the wider pool of over 17 million freelancers on Freelancer.com."

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21 January 2016

Ninth planet may exist, say scientists

By Kenneth Chang

Two Caltech astronomers have reported that they had compelling signs of something that would definitely satisfy the current definition of a planet, where Pluto falls short. There might be a ninth planet in the solar system after all - and it is not Pluto. On Wednesday, two astronomers reported that they had compelling signs of something bigger and farther away - something that would definitely satisfy the current definition of a planet, where Pluto falls short. "We are pretty sure there's one out there," said Michael E. Brown, a professor of planetary astronomy at the California Institute of Technology. What Brown and a fellow Caltech professor, Konstantin Batygin, have not done is actually find that planet, so it would be premature to revise mnemonics of the planets just yet. In a paper in The Astronomical Journal, Professors Brown and Batygin lay out a detailed circumstantial argument for the planet's existence in what astronomers have observed - a half-dozen small bodies in distant, highly elliptical orbits. What is striking, the scientists said, is that the orbits of all six loop outward in the same quadrant of the solar system and are tilted at about the same angle. The odds of that happening by chance are about 1 in 14,000, Prof. Batygin said. A ninth planet could be gravitationally herding them into these orbits. For the calculations to work, the planet would be quite large - at least as big as Earth, and likely much bigger - a mini-Neptune with a thick atmosphere around a rocky core, with perhaps 10 times the mass of Earth. It would dwarf Pluto, at about 4,500 times its mass. Pluto, at its most distant, is 4.6 billion miles from the sun. The potential ninth planet, at its closest, would be about 20 billion miles away; at its farthest, it could be a trillion miles away. It would take from 10,000 to 20,000 years to complete one orbit around the sun. "We have pretty good constraints on its orbit," Brown said. "What we don't know is where it is in its orbit, which is too bad." Alessandro Morbidelli of the Côte d'Azur Observatory in France, an expert in dynamics of the solar system, said he was convinced. "I think the chase is now on to find this planet," he said. - New York Times News Service

2016: Year of Cyber Threat?

By Shadma Shaikh

There were many major cyber-security breaches in 2015. Through data breach, the identities of millions of people were exposed. Targeted attacks and internet crime list amongst the others. Cyber threat will grow in 2016 posing higher challenges for most organizations and individuals, industry experts and security firm reports reveal. Reports suggest an alarming increase in ransomware attacks. Typically, in a ransomware attack, attackers prevent or limit victims from accessing their own system /or data, forcing them to pay the ransom to grant access to their systems or to get their data restored. In many cases the attackers also encrypts files on user's system, thus denying access to files.

Ransomware targeting personal information - According to McAfee Labs threat report, number of new ransomware samples rose 58 per cent in the second quarter of 2015. The total number of ransomware samples grew 127 percent from second quarter of 2014 to the same time period in 2015. "While most ransomware attacks are on organisations, many attacks have also been witnessed on individuals recently," says Intel Security's APAC Chief Technology Officer Michael Sentonas. Using targeted attacks, such as, emails that look like they originate from trusted source, attackers are getting their malicious encryption tools into vulnerable systems. Encrypting data is just one step of it, Sentonas said. With personal information, such as pictures, ransomware attackers are now threatening individuals to go public with their private digital content. **Apple devices** - Apple devices are known for being a hard nut to crack. Users might need to watch out for security attacks this year. A security report by Symantec points out that the level of Apple-related malware infections has spiked, particularly in the past 18 months. Security researchers have also given a greater focus on vulnerabilities in Apple software, with a number of high-profile flaws uncovered in the past year. Apple device user's perception that Apple devices are "free from malware" opens up opportunities for cybercriminals to take advantage of these users, the report says.

Demand for Cyber Insurance - In 2016, many companies will turn to cyber insurance as another layer of protection, particularly as cyber-attacks start mirroring physical world attacks, says the Symantec report. Cyber insurance offers organizations protection to limit their risk. However, insurance companies will mature their offerings with qualifications, exceptions and exemptions, allowing them to refuse payment for breaches caused by ineffective security practices, points out the security report by Raytheon.

Mobile threats - As personal computers and servers get better protected, criminals are turning towards other vulnerable devices. The total number of mobile malware samples, according to the McAfee report, grew 17 per cent in Q2 of 2015. As India moves towards a mobile-only economy, hacks targeting mobile devices and new payment methodologies will impact payment security more than EMV, says a security prediction report by Raytheon's Websense Security Labs. The increase in non-traditional payment methods on mobile devices or via beacons and smart carts will open up the doors for a new wave of retail data breaches.

Internet of things - A security report for 2016 by FortiGuard says that the internet of things will become central to "land and expand" attacks in which hackers will take advantage of vulnerabilities in connected consumer devices to get a foothold within the corporate networks and hardware to which they connect. Under the evolving umbrella of mobile health, new care delivery models will move devices into the patient's home connecting through public networks and interlacing personal data with clinical information, thus increasing the vulnerability of these devices. The need for improved security on IoT devices, according to the Symantec report, will become more pressing in 2016.

A surgery centre that doubles as idea lab

By Natasha Singer

The centre is introducing novel healthcare approaches that significantly enhance its patients' experiences

Instead of waiting in a long line to register, patients at the Josie Robertson Surgery Centre will be handed plastic tracking badges that will broadcast their locations in real time, allowing intake coordinators to come directly to them wherever they are sitting. Inspired by modern hotel lobbies and co-working spaces, the family waiting room has semiprivate seating areas and mobile device charging stations. And for people who become antsy while their loved ones are in surgery, there is an Xbox nook for fitness activities. Operating rooms, too, incorporate "the most advanced technology," according to marketing materials, including the latest surgical robots and "super-high-definition monitors" to display anatomical imaging. Other innovations, while seemingly sensible, could have unintended consequences. For one thing, administrators intend to update the traditional practice of asking patients to walk around soon after surgery. They say they plan to use patients' locator badges as activity monitors, allowing medical teams to quantify and analyse the distances patients walk. It is a step that may make some patients feel more in control of their recovery - while others may feel more burdened by the added surveillance. "We don't know what the data means, because no one has ever measured it before," Dr Brett A Simon, an anaesthesiologist who is the director of the surgery centre, told me in an interview. Still, he hopes the novel data might eventually be used as a benchmark to help distinguish patients who are recovering on schedule from those who have pain or other symptoms that need to be managed. "Maybe there's a predictive value," Simon says. Or maybe, like billions of other data points collected by devices, the distance measurements will prove to be mere noise. Across the country, leading medical centres are trying new approaches to technology and information management with the aim of increasing efficiency, reducing costs and assuring health care quality. Because competition to attract patients is fierce, some of the same medical centres are also engaged in a marketing arms race to out-tech one another, promoting their new tools and systems with terms like "most advanced," "pioneering" and "cutting edge." But this race to innovation, bioethicists say, has created a grey area. While federal regulations require researchers to obtain patient consent for participation in clinical trials for novel drugs and devices, hospitals can freely enact internal quality improvement exercises without consent - even if there might be consequences for patient care. Medical centres typically do not inform patients every time they use them to test some new health app, or nursing staff reduction, or data analysis technique - changes that may or may not ultimately benefit the patient's health. "It is clearly a blurry space," says Nancy Kass, a bioethics professor who is the deputy director for public health at the Johns Hopkins Berman Institute of Bioethics in Baltimore. "It doesn't matter if it's quality improvement or research. The questions we should be asking are: Should we be talking about it? What should we be telling patients about it? What do we know about it that makes us think that it works? What do we know about it to suggest that it is safe, or might be risky, or have some uncertainties?" Administrators at the Josie Robertson outpatient surgery centre describe it as a laboratory for continuous improvement, a place where doctors, nurses and staff will be encouraged to rethink standard practices and try new techniques to improve patient care. This learning lab approach comes after a multiyear innovation effort at the main Memorial Sloan Kettering campus, also on the Upper East Side. A few years ago, administrators there instituted a quality improvement programme to determine which patients could be discharged the day after their surgeries, instead of spending several nights in the hospital. The effort was based on the premise that patients tend to recover better at home, where they are more comfortable and less likely to develop infections. So, teams of medical experts set about standardising certain routines, like the sets of tools surgeons used during prostate cancer surgery. And they identified certain traditional practices - like putting fluid drains in patients after prostatectomy operations - that could be eliminated without diminishing patients' health outcomes. With such efficiencies in place, doctors say they were able to safely shorten the recovery time to one night in the hospital for selected patients undergoing

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A surgery centre that doubles as idea lab

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certain breast, gynaecologic, head and neck, or prostate cancer surgeries. So far, about 10,000 patients have gone through the programme. But doctors typically do not tell patients that they have been selected for a more streamlined approach to surgical recovery, Simon says. That is because the actual surgery and medical treatments patients receive have not changed, just related practices. "We don't say to them, 'You are in this programme,'" Simon explained, "We say, 'This is what your care is going to be like.'" Starting next month, doctors at the Josie Robertson Centre will perform those cancer surgeries as short-stay outpatient procedures. And administrators say they plan to use the centre to further hone their approach, although Simon said they have not yet decided how they are going to explain the continuous improvement techniques to patients. Being transparent For instance, the surgery centre has done away with some standard medical practices - such as having a designated postoperative recovery unit where specialised nurses monitor patients coming out of anaesthesia. Instead, patients will go directly from surgery to private rooms where cross-trained nurses will monitor their recovery from anaesthesia. "The leadership saw this as an opportunity to be a little bit distant from the big-box academic medical centre, to test out new work flows, to test out new technology," Simon says. "It's a learning lab for new systems." In health care, however, newer does not necessarily mean better for every patient. If medical centres choose not to be transparent about how they are testing improvements, patients may never learn about results that may directly relate to their care. For instance, Memorial Sloan Kettering administrators have data indicating that elderly patients in the quality improvement programme had a higher chance of not being ready to go home the day after their surgeries. At the new centre, doctors will study whether additional measures, such as geriatric consults for patients over 75, will improve their chances of a shorter stay. The centre is clearly introducing novel health care approaches that may significantly enhance its patients' experiences. But given the fact that Memorial Sloan Kettering is a world-renowned institution that many other medical centres tend to follow, it seems remarkable that administrators there have yet to pioneer an equally innovative system for transparently communicating their improvement endeavours to patients. Simon says he is working on it. "We do want to communicate the things we are doing that are new and that improve the patient experience without making them feel alarmed or that they are experimental animals," Simon said. "I'm not sure we have 100 per cent figured out how to do that."

Deccan Herald

21 January 2016

JNU witnesses surge in research work

Pratik Kumar

NEW DELHI, dhns: Jawaharlal Nehru University says it has seen a surge in publication of research papers and books in the last five years, thanks to increase in student and faculty strength. One hundred and thirty three titles of books were published last year as compared to 121 in 2011, while number of published research papers have gone up from 482 to 965 during the corresponding period. JNU has introduced a single window search, a Google-like search facility, to track book related to a particular topic. According to the Vice Chancellor Sudhir Kumar Sopory, JNU is the first varsity in India to have the e-search facility, which is available in many high-ranking universities abroad. "One of my friends found 6,000 titles related to one keyword search. He told me, 'What will I do with so many books?' And he asked me to narrow down the search," Sopory said. He added the university is digitalising books on student and faculty demand. But the big push for publication of research and books came from hiring of new faculty members and increasing the intake of students, Sopory said. The faculty strength grew to 565 from 470 and students enrolment increased from 6,665 to 8,432, between 2011 and 2015. Currently, the university runs 76 research and 33 postgraduate-level courses. According to the university, it got Rs 36.35 crore as aid for 283 research project during 2014-15. The university awarded 404 PhDs, 603 MPhils and 37 MTechs last year. JNU publishes seven journals related to languages and cultural studies, international studies, diaspora studies, Sanskrit studies, etc. As a part of its recent initiative, the varsity last year organised virtual book discussion with two authors. The authors were chosen based on who the students wanted to interrogate, said Sopory. He claimed the varsity has put in place robust guidelines to curb plagiarism. JNU allows an open online access to all theses and dissertations, besides organising workshop on the issue of plagiarism,¹⁷ which is plaguing the many universities in the world.

Improve living and working conditions to wipe out TB

By Bharathi Ghanashyam

This article is about TB, but equally, it is not about TB. Despite the fact that India has the highest burden of tuberculosis in the world, this piece does not advocate for more money for the programme, nor does it make the usual arguments about how preventable it is and how it can be cured if detected on time, etc. What this piece attempts to do however is raise questions. Can India, on its way to super power status, claim with any conviction that it has addressed quality of life for all, regardless of their economic status or caste and creed? TB, the presence or absence of it in a society, is a great way to measure this. Rene' Jules Dubos, a microbiologist, pathologist and environmentalist who spent a large part of his life studying microbial diseases, wrote in his book, *The White Plague: Tuberculosis, Man, and Society*, "Tuberculosis is a social disease, and presents problems that transcend the conventional medical approach." While trying to comprehend what he might have meant, I recalled a remark by a geography teacher I once met, who lived in a jungle and worked in a tribal school. He had said, "The presence of even one tiger in a jungle indicates that the ecosystem, or the food chain of that jungle is intact. For a tiger to survive in a jungle, every other species has to be thriving and plentiful - flora, fauna and small game." When I apply that logic to TB, and relate it to Dubos' observation, it makes sense. While the tiger analogy indicates the health of a forest, the rampant presence of TB in a society, as it is in India, denotes the opposite and indicates that something is indeed very wrong with that society. The world follows some standard indicators to determine the state (healthy or otherwise), of people living in it. Maternal and infant health, nutritional status, life expectancy etc are just some of these. When measured, each of these give specific results - how many mothers died after childbirth, or how many children did not survive for long after birth etc. Measuring and interpreting the incidence of TB, however, can also point to a much wider canvas and actually hold a mirror to the kind of society we live in. For now, the image in the mirror for India is not pretty at all, and in the context of TB, it is even worse. Here's why. TB is an airborne, droplet infection. But everybody who inhales the infected droplets does not fall ill with TB. It is only the immune-compromised who do. The term immune-compromised simply means those whose immune systems have lost the ability to fight illness. Lack of nutrition, unhealthy living and working conditions such as poorly-ventilated houses and hazardous occupations, the presence of already debilitating diseases and lack of access to timely health care can reduce the ability of the body to fight disease, thus making it easy for TB to attack. **Basic indicators** - India's numbers for malnutrition, infant and maternal mortality and several other basic indicators are high. They don't need repetition here as they have been quoted so often. Combined with poverty, poor living and working conditions and lack of nutrition, these then become contributing factors for the spread of TB. The high numbers for TB in India are sure indicators that a large section of India's population lives with deprivation of all kinds. This reduces their immunity, thereby keeping TB alive and thriving among them. The circle is then perpetuated because they in turn spread the disease to others around them and the chain thereafter is endless. India's TB programme is largely dependent on curative services through the Revised National Tuberculosis Control Programme (RNTCP). If India is to do its bit to end TB by 2030, a goal spelt out by the Stop TB Partnership that world leaders have agreed to, this alone will prove inadequate. Much more needs to be done. Examples from developed nations are available, which show that TB can be eradicated through the improvement of living and working conditions. In his paper *Ethics, Tuberculosis and Globalisation*, Michael J Selgelid points out that even prior to the discovery of the TB bacterium and curative medication, TB mortality in countries such as England was already declining early in the 19th century. He also quotes Thomas McKeown (1988), who he says, has argued that TB's decline in wealthier nations is best explained by the improvement in living conditions-and, in particular, the improvement of nutrition-associated with industrialisation. Creating an environment hostile to the spread of TB means having the basics in place and providing quality of life for everyone at all times. This costs money. It means finding the linkages and ensuring they are addressed. It means respecting human rights. It means ensuring TB control is not entirely dependent on the pill as prevention is the key to eradication. There is potential for this to happen, if we were only to see the linkages. Can the freshly unveiled Start up India policy for instance, spell progress even for the most micro-enterprise which shows promise? The day all the little known innovators, whether they are making better bhel-puri or dosas, or running auto-rickshaws that provide sightseeing services too or the farmer who is attempting to go organic but doesn't know where his markets are, have the knowledge to use the benefits of the policy, India will really kick-start progress. Can Swachh Bharat really clean up India? If all this works, does TB have a choice but to go away? After all, well-fed people living in secure conditions are not ideal prey for TB. The mirror will then show a very pretty picture. And the tiger will thrive.

Skilling India: Mine the young workforce

By Manish Mohan

Prosperous countries with high GDP and per capita income tend to have high skill capital. This also translates to better quality of life and growth in the Human Development Index. As economies evolve from being commodity centric to knowledge centric, growth is increasingly dependent on availability of skills. Our country has a great opportunity in terms of its demographic dividend. While we are growing to be the most populous country, expected to overtake China between 2022 and 2028, the opportunity lies in the fact that we will also be the youngest country with the median age of population at 32. Almost 64 per cent of our population will be in the working age group by 2021. India is expected to have a workforce surplus of 47 million people against the workforce deficit in most large economies. In addition to being the youngest country, India is also expected to be the fastest growing economy. This year, we expect our economic growth rate to overtake that of China. India, therefore, is sitting on a huge opportunity of a large and young workforce surplus complemented by a fast growing economy. It is critical that India focuses on skill development both for economic growth as well as social development. A sure way to achieve inclusive and sustainable growth is to provide a mechanism to acquire skills, empowering the disadvantaged sections with skill development opportunities and developing a skill growth programme for continuous education and productivity enhancements. A skilled workforce aligned to industry needs will maintain the growth trajectory and competitiveness of various sectors of the Indian economy. However, the challenge ahead of us is equally huge. The enrolment in educational institutes drops by almost half at each stage of critical development of children and youth between age groups of 5-14 years and 15-19 years. Most of these drop-outs join the workforce, which results in its illiterate to semi-literate profile. Almost 64 per cent of our workforce is primary level educated or illiterate, leaving only 36 per cent with middle or higher level education. Even as our Gross Enrolment Ratio (GER) is rising over the years, the current GER suggests that almost 80 per cent of our youth never go to college. While the number of universities and educational institutes are rising, our teacher-student ratio is one of the lowest in the world. Additionally, in the working population of 15 to 29 years, only about 2 per cent receive any formal vocational training and 8 per cent receive non-formal vocational training. This is dismal when compared to other countries like Korea (96 per cent), Germany (75), Japan (80) and United Kingdom (68 per cent) where a large part of the working population receive formal vocational training. **Lack of skills** - The big challenge is that even if we push and create workforce that has formal education, will they be employable? A recent survey found that almost half our youth were not sure if their post-secondary education has improved their chances of finding a job. On the flip-side, in another survey of the industry, almost 40 per cent of employers say lack of skills is the main reason for entry-level vacancies. Employability of graduates of our current education system is a major concern. To overcome these challenges, it is imperative that skill training be mainstreamed into school and higher education system. As the government aims to impart skill training to 500 million people by 2022, it has launched many schemes that are focused towards building a strong base of skill training with mainstream education. The vocationalisation of school education, community college and B Voc schemes, Kaushal Kendras to encourage skill courses in colleges are some steps in the right direction. In addition, NSDC funded vocational training providers have been set up in the last few years to support this endeavour. For effective implementation of policies, on-ground programme management support is crucial to enable linkages between the stakeholders and ensure that the big picture is kept in mind. The use of technology should be used to enable scale, quality and consistency of training for high-demand entry and middle-level jobs. This training should primarily be developed with industry inputs since they are the main recipients of the workforce. Industry driven, technology enabled solution that is integrated into mainstream education will go a long way in preparing us to leverage the skilling-led opportunity ahead of us.