समाचार पत्रों से चयित अंश
Newspapers Clippings

दैनिक सामयिक अभिज्ञता सेवा

A Daily Current Awareness Service

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रक्षा विज्ञान पुस्तकालय, डेसीडॉक द्वारा प्रतिदिन समाचार पत्र चयित अंश सेवा उपलब्ध करायी जाती है। इस सामयिक अभिज्ञता सेवा का तात्पर्य डी. आर. डी. ओ. के वैज्ञानिकों को 15 भारतीय समाचार पत्रों में प्रकाशित महत्वपूर्ण समाचारों से अवगत कराना है। प्रतिदिन इन समाचार पत्रों से डी. आर. डी. ओ., रक्षा प्रौघोगिकियों, रक्षा नीतियों, अंतर्राष्ट्रीय संबंधों, विज्ञान तथा प्रौघोगिकी, पुरस्कार, राष्ट्रीय तथा अन्तर्राष्ट्रीय सम्मेलन एवं सामान्य श्रेणियों से संबंधित समाचार, संपादकीय एवं लेख चयन किये जाते है। इन समाचार पत्र चयित अंशों का डेटाबेस डी. आर. डी. ओ. के वैज्ञानिकों/कर्मियों के लिए द्रोणा नेटवर्क पर डेसीडॉक वेबसाइट में एकल खिडकी सेवा के अंतर्गत भी उपलब्ध है। इस डेटाबेस में उपलब्ध जानकारी को श्रेणी, शीर्षक में संकेत शब्द, लेखक के नाम एवं दिनांक द्वारा भी ढूंढा जा सकता है।

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The Newspapers covered in this service are:

दि एशियन ऐज	The Asian Age
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दि ट्रिब्यून	The Tribune
मेल टुडे	Mail Today
डीएनए	DNA

The Economic Times
11 Mar, 2016

Hot Startup - Technology to Defence's Rescue

VizExperts Startup offers turnkey tech solution to defense and paramilitary forces to plan and execute complex security operations

Gurgaon-based VizExperts's startup story is that of a pivot from a software services company operating in the area of 3D graphics to that into a product company when it launched its revolutionary Digital Sand Model in 2011 after investing a couple of years into research and development.

The product which is targeted at Indian defence and security organisations, is a combination of four different technologies, 3D graphics, gaming, simulation and GIS.“We saw that the future lies in converging these technologies, much as the dig ital camera now comes integrated into mobile phones,“ says C E O P r ave en Bhaniramka (in picture), a graduate in computer and ynformation Sciences from The Ohio State University, US.

T he problem it solves? When armed forces are flown from different regions to handle security operations in unknown terrains such as the recent Pathankot operation, it is extremely crucial for them to have accurate information of their own assets as well as that of your enemy--where their weapons are stationed, their movements etc. This is only possible through advanced technology solutions, however Bhaniramka found that although the army buys a lot of such technologies, but adoption is a huge challenge. “First, the armed forces are not IT savvy and often these products are so complex that they need to spend a month-long training to get started with the product,“ he says. Also, one of the ways VizExpert differentiates from large competitors such as US-based multi-billion dollar company ESRI is by providing integrated products that com bines technologies like simulation, gaming and GIS. Those from competitors need to be bought separately and putting them together is a huge challenge.

“With the Digital Sand Model, the defense personnel on a 32 inch PC, can locate their enemy, their assets etc, and plan their moves even before they reach there, resulting in significant saving of resources,“ says Bhaniramka.

Adoption was very tough initially though and the first breakthrough came in with a concept sale to the National Police Academy in 2010. The Hyderabad police used the solution for training of IPS officers on operational tactics. That was followed by orders from West Bengal Police and Infantry School, Mau. The star tup achieved the most recent success with the Border Security Force which will use the Digital Sand Model to improve situational awareness through 3D visualization of terrain data and online data from field formations, thus empowering them to keep a closer vigil of the country's border.

The bootstrapped startup which took off with initial investment of $100,000 finds scaling up its biggest challenge ahead. Since it deals majorly with the government, problems ring in when decision making at the top slows down. So is attracting talent with expertise in different technologies and aligning them to achieve a common goal.“One of the biggest challenges startups in selling defence products face is having enough capital to execute contracts, since most government departments do not pay in advance,“ says Arvind Lakshmikumar, CEO at defence equipment startup Tonbo Imaging.

What keeps VizExperts busy right now is finding more use-cases of the Digital Sand Model across other industries like civil aviation for air traffic control, disaster management, trans portation and logistics.

The Pioneer
11 Mar, 2016

India lacks fighter squadrons for 2-front war

The Indian Air Force (IAF) is not ready to fight a two-front war with Pakistan and China simultaneously due to depleting strength of its fighter jet squadrons, Vice Chief Air Marshal BS Dhanoa said here on Thursday adding the Government was duly apprised of this situation. At present the force has 32 squadrons as compared to sanctioned strength of 42. Each squadron has 18-20 jets.

“Our numbers are not adequate to fully execute an air campaign in a two-front scenario. Probability of a two front scenario is an appreciation which you need to do. But, are the numbers adequate? No. The squadrons are winding down,” Dhanoa said when asked if the IAF has the capability to fight a two-front war if it breaks out tomorrow.

Admitting this fact during a Press conference, he said the IAF has conveyed its concerns to the Government and it is seized of this problem and “the reason why the Government signed the 36 aircraft (Rafale) on is because of urgency that they felt because of the depletion in squadron numbers.”

He also said the IAF needs more multi-role combat aircraft (MMRCA)like Rafale adding “there are various avenues that are being explored. There is a requirement for us to buy a MMRCA class aircraft more than the 36 numbers that we have signed. Which platform may come in, that is something between us and the Government. We (both) will have to take a call.”

Dhanoa’s concerns came in the backdrop of IAF squadron strength coming down to 32 in comparison to the sanctioned strength of 42. Moreover, most of the jets of Russian origin are in the last stages of their operational life, like MIG21 and MIG-27s besides Jaguars. As of now 54 Mirage jets of French origin are undergoing mid life upgrade to increase it operational life. There are 260 Soviet-era single-engine MiG-21 and MiG-27 jets in the IAF fleet. The Air Force needs at least 400 additional jets over the next 10 years.

The Government is also exploring getting fighter jets through the ‘Make in India route’. A number of fighter jet manufacturers have approached the Defence Ministry with their plans to set up production plants here.

Deputy Chief of the IAF Air Marshal RKS Bhadauria said a decision on more aircraft will be taken only after the conclusion of the contract for 36 Rafale fighter jets. Asked how many more MMRCA type aircraft is the IAF looking at, Bhadauria said he would not like to go into numbers.

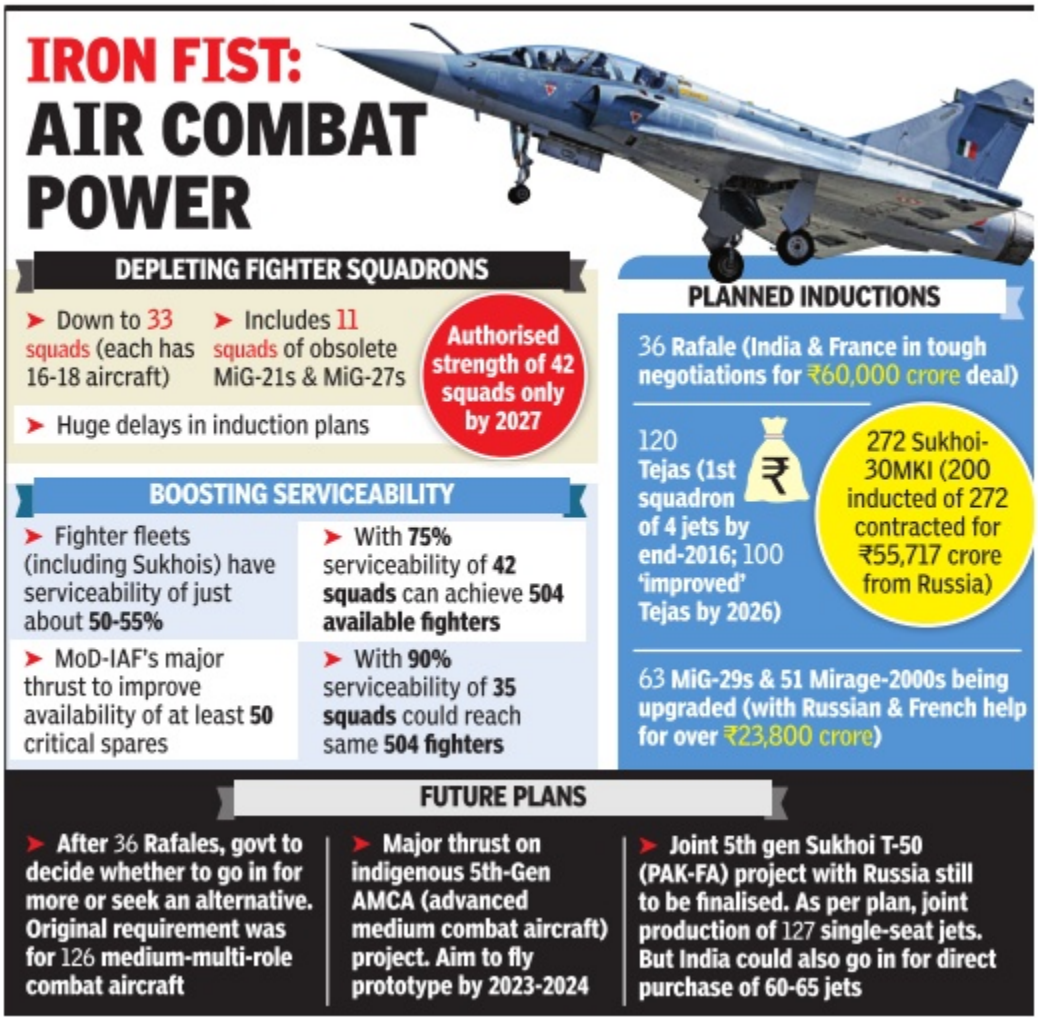
“I am not going into numbers. MMRCA, you are aware of total numbers (126 fighters). We are getting 36 out of that. So there is a leftover there and we will take a rather holistic view of overall numbers,” he said. The IAF officers said the Rafale will significantly enhance the capability of the IAF.

Talking about the low serviceability of the SU-30, Dhanoa said it is an issue. IAF has 150 SU-30 frontline fighter jets of Russian origin and plans to have a fleet of 270 in the next two to three years. However, serviceability ratio of the aircraft is very poor with the figure hovering around 55 per

cent. This means that out of 100 aircraft, only around 55 are available at a point of time with the rest being bogged down in service and maintenance.

Dhanoa said the Defence Ministry was monitoring this factor at the highest level and said the IAF is in favour of signing a long term material contract with Russia so as to have a quick turnaround," he said.

The Times of India
11 Mar, 2016



Business Standard
11 Mar, 2016

Iron Fist to showcase air force's war readiness

IAF claims its bases and equipment are 52% 'made in India'

Next week, at the Pokhran firing ranges in Rajasthan, the Indian Air Force (IAF) will let Pakistan and China know it is ready for war at short notice. In a massive firepower display, some two hundred IAF fighters will rain bombs and missiles on targets spread across the desert. Watching this will be a flock of defence and air attaches, flown down from Delhi for the spectacle.

This is Exercise Iron Fist 2016, a once-in-three-years firepower demonstration that is part of what strategists term "deterrence signalling". It is a shot across the bows of potential adversaries, to dissuade them from harming Indian national interests.

Briefing the media in New Delhi on Thursday, IAF vice-chief, Air Marshal Birender Dhanoa, cited former US president Theodore Roosevelt's famous exhortation, "Speak softly and carry a big stick".

Said Dhanoa: "Exercise Iron Fist 2016 demonstrates the business-end of the IAF; the Big Stick; our capability to deter."

The same message is sent out by the Iron Fist 2016 logo, which is: "Demonstrating the capability to punish. Weapons…On Target…On Time".

The IAF says Iron Fist 2016 will involve 181 aircraft demonstrating 69 missions. There will be 103 fighters, including the Tejas, Mirage 2000, Sukhoi-30, Jaguar, MiG-29, MiG-27, MiG-21 and the Hawk advanced jet trainer. Also on display will be 59 helicopters including the Mi-17V-5 transport helicopter, Mi-35 attack helicopter, and the Dhruv and Light Combat Helicopter.

Synchronised waves of fighters will fly in from different IAF bases across the western sector. This involves close coordination by the Integrated Air Command and Control System (IACCS), which would similarly direct fighters into various combat theatres during wartime.

Says Dhanoa: "The IAF will demonstrate in Exercise Iron Fist, its capability to fight an adversary's army, navy and air force… and to win a war both during day and night. [This] capability [has been] demonstrated only by our air force in the sub-continent. This is a major change that has taken place in the last 10 years."

Curiously, given the exercise's aim of deterrence signalling, the Pakistani and Chinese defence attaches to India will not have front row seats for Exercise Iron Fist 2016. In fact, the IAF confirms that neither country's representatives will even attend.

Defence ministry officials explain that Pakistani and Chinese attaches were not invited because those countries did not invite Indian defence attaches for their air exercises, even after New Delhi expressly conveyed interest in having them attend.

IAF sources confirm that, in December, the Indian air attache in Islamabad was kept away from the Pakistan Air Force's firepower display at the Sonmiani ranges, near Karachi. Similarly, the Indian air attache in Beijing was not invited to the Chinese air force's elite Golden Helmet exercise. Unusually, the IAF is playing the international spotlight over indigenous platforms. The Tejas light combat aircraft will display its excellent "swing role capability" by, in a single pass, delivering a laser-guided bomb to a ground target and firing an air-to-air missile at a simulated enemy fighter.

The Defence Research and Development Organization's (DRDO's) Akash surface-to-air missile, being deployed to defend IAF bases from enemy fighters, will demonstrate firing. So too will the DRDO's Astra air-to-air missile, which a Sukhoi-30MKI will fire at a simulated enemy that is "beyond visual range" (BVR).

The indigenous Light Combat Helicopter (LCH) will fire rockets at tank targets. The airborne early warning and control (AEW&C) system, which the DRDO unveiled at the Bahrain Air Show last month, will also be on display. This features Indian radar and command software, mounted on a Brazilian Embraer aircraft.

Dhanoa, walking the "Make in India" line, stated: "The IAF, contrary to popular belief has achieved significant indigenization. If you take an IAF base as a platform to project air power, akin to a naval ship, its total indigenous content is 52%. This includes all its aircraft, its missile systems, radar, communications network, infrastructure, and the IACCS that is indigenous developed, right from the design stage. This compares reasonably with a (war)ship having about 55% indigenous content."

While demonstrations like Iron Fist serve a deterrence purpose, the real training takes place in internal exercises like the IAF's recently concluded "Live Wire" exercise; or next summer's Red Flag exercise in the US, a major international event for which the IAF will be flying across four Su-30MKIs, four Jaguars, two C-17 Globemaster IIIs and two air-to-air refuellers.

Business Standard
11 Mar, 2016

Once again, pay panel disappoints armed forces

No country can afford to have armed forces with low morale, low self esteem and worst of all, a lower status in the society. A major issue affecting India’s armed forces today is economic disparity vis-a-vis other central services. Indian youth opting to join the armed forces as officers or men, are also looking for unquestioned respect, economic stability, assured career progression, good facilities of education and personality development for their families and above all “first among equals” status amongst various services in the country.

Lt Gen Harwant Singh (Retd), who has written extensively on the subject, recalls that the military has been persistently disadvantaged by successive Central Pay Commissions (CPC). In the first and second CPC, the military’s case was fielded by the ministry of defence (MoD). The third CPC wanted to hear the case directly from the military, but the MoD ruled against this on the grounds of discipline, a “patently absurd stance”, which the then top brass accepted. Further, the third CPC slashed the pensions of defence services from 70 per cent of last pay drawn to 50 per cent and elevated the civil servants’ pensions from 30 per cent to 50 per cent. But nearly 80 per cent of military men did not get even 50 per cent and instead got only 37 per cent because of shorter span of service and 50 per cent pension payable only after 20 years service. Thereafter, subsequent CPCs persistently disadvantaged the military vis-a-vis civil services. However, the third CPC dangled one rank, one pension (OROP) as an alternative to decrease in pensions from 70 per cent to 50 per cent. When subsequent CPCs tried to improve matters, MoD, the controller of defence accounts (CDA) stepped in to negate these. When the fourth CPC, as a sort of consolation for no OROP, gave rank pay up to the rank of brigadiers, the CDA conveniently deducted this amount from the basic pay, which in turn impacted a whole range of allowances as well. Nearly three decades later this case is yet to be fully resolved. The Supreme Court’s orders on payment of rank pay are yet to be fully implemented. Those who played this mischief on the defence services were neither exposed, nor held accountable.

The sixth CPC ruled that pension should be fixed at 50 per cent of the " minimum of the rank in the pay band corresponding", the civil bureaucracy mischievously rephrased this sentence to read, "minimum of the pay band corresponding". This put four different ranks i.e. lieutenant colonel, colonel, brigadier and major general in the same band (band 4) and the MoD placed all of them at the bottom of the pay band for the purpose of fixing pension. Thus a brigadier (with rank pay as admissible to him) got more pension than a major-general. Despite the Supreme Court's ruling, this too has not been fully resolved ten years later. In addition, the sixth CPC created over 40 anomalies, which CPC are still to be resolved. The 7th CPC report has yet again greatly disappointed the defence services.

Military service pay (MSP), granted in most countries for the unique and difficult conditions under which defence forces serve, is a substantial amount.

In India, MSP for defence forces amounts to less that 10 per cent of the pay, contrary to recommendations in the sixth CPC of 52 per cent of basic pay for officers and 62 per cent for soldiers. MSP has now also been removed for purposes of calculating house rent allowance (HRA) and transfer grants.

The glaring disparity in disability disposal is best illustrated by the case of two brothers Raj, the older brother who joined the Army and Rish, the younger brother, who joined the Border Security Force (BSF). In 2010 both Raj, with 7 years of service, and Rishi, with 5 years of service, were home on leave. They had gone to the market on a motor-cycle when they met with an accident, which resulted in both having their leg amputated. Sepoy Raj, whose injury was declared "neither attributable nor aggravated by service condition", as he was on leave and not on duty, got invalided out of service. And that too without pension as he had not completed 10 years of service. On the other hand his younger brother Constable Rishi, who enjoyed the protection under the provisions of Persons With Disability Act, 1995, continues to serve till he completes his prescribed length of service up to 57 years of age, after which he will earn all in service promotional benefits, annual increments etc and a staggering monthly projected disability pension of `3,58,909 and that too, income tax free.

There are many more intangibles, which are not known outside the services. To mention one, many families of soldiers serving in forward/field areas, who are residing in their villages/small towns, have to depend on local medical resources as military hospitals are too far away.

Despite past feedback and strong representation, Non Functional Upgradation (NFU) has not been granted to the defence and central armed police forces (CAPFs), whereas central civil cervices are assured NFU for up to additional secretary. However there was one bureaucrat member, who recommended NFU fully for defence services. This is one major compensation which if granted, will motivate armed forces officers to stay on in service and not opt for premature retirement owing to not being promoted to beyond colonel/equivalent rank, owing to the pyramidal promotion structure. Over the years, has the pyramid become an Eiffel Tower?

There are numerous attempts to falsely present a façade of satisfactory remuneration to defence personnel. The reality is that the pay disparity between armed forces personnel, particularly officers, and civil services, which government has compounded over the years, is bizarre. It is no wonder that the lure of the defence services has been withering over time. It was recently revealed in Parliament that as on July 1, 2015, the shortage of Army officers (excluding medical, dental and nursing officers) is 9106.

The Pay Commission graphs titled "Defence revenue expenditure and per cent share of revenue expenditure" (page 1196.1.20, 7th CPC) are a misrepresentation of facts, because only 0.01 per cent of defence officers reach Lt Gen rank are compared with 95 per cent of civil servants who reach additional secretary level. For 99 per cent of defence officers the civilian Group A officers overtake their military counterpart by the 15th year of service and by the 18th year of service a defence officer remains a colonel when an IAS officer would have become a joint secretary, equated to a major general. It should also be known that military officers' qualifying service commences on commissioning whereas the civilian commences his fully paid service from the training establishment itself. These are just some of the anomalies and disparities. While the recent tragedy of 19 Madras avalanche victims evoked countrywide concern, it is ironically not shared by babu log.

The Tribune
11 Mar, 2016

Trans-border tunnel in Jammu spurs quest for detection tools

India seeks Israel's knowhow to tackle tunnelling in sensitive zones

The discovery of a 30-foot-long and 10-foot-deep tunnel running through the international border (IB) in the RS Pura sector of Jammu district has highlighted the need for a tunnel-detection technology.

India has been finding it difficult to fulfil its plan to equip the new anti-infiltration system with a tunnel-detection technology. It has sought information on the tunnel-detection system from Israel, which claims to have used such technology to guard its borders and prevent cross-border attacks.

"The possibility of more tunnels being found along the IB cannot be ruled out. The BSF discovered the tunnel in the RS Pura sector only after a portion of the tunnel had caved in. But what if there is a tunnel made of concrete? India needs technologies to detect such tunnels," said a government official.

"The Israelis claim to have seismic technology and ground-penetrating radars. But these tools can only work up to a certain depth. They are useful for Israel which has a shorter border with the West Bank and Gaza strip as compared to our border (IB). It is yet to see how to use the radar technology along the Indian borders," said a security official.

A 2012 BSF committee, constituted to submit a report on patches along the IB where the water level is low and the soil is conducive to digging tunnels, said there were areas vulnerable to tunnelling in Jammu and Punjab.

The committee report said the radar technology would not be able to detect deep tunnels like the one found in Jammu in 2012 which was 30-foot-deep.

At present, the BSF has been using counter-measures such as driving tractors over areas vulnerable to tunnelling and second-tier deployment along the IB in Jammu. But even these measures cannot pinpoint the exact location of a tunnel.

Besides, the BSF believes persons (from Pakistan) may use underwater and aerial means to infiltrate into the country. "This could be done using machines to move under the surface of a river meandering between India and Pakistan," said the official.

Anti-infiltration system

The anti-infiltration system with the tunnel-detection technology, which India plans to procure, is called the Comprehensive Integrated Border Management Solution (CIBMS). It integrates sensors, communication, infrastructure, response, and command and control. It will be set up along the IB with Pakistan, including the unfenced gap. The CIBMS system has also been planned to counter infiltration with the use of technologies such as SONAR.

The Hindustan Times
11 Mar, 2016

No pregnancy for 4 yrs: IAF rider for first women fighter trainees

The air force has advised three trainees in line to become India's first female fighter pilots to put off motherhood for at least four years after they are commissioned into the force in June. IAF vice-chief Air Marshal BS Dhanoa told HT on Thursday that an advisory was issued to the women, who have made it to the last leg of their combat training. "Undisturbed training is required for a minimum of five years for fighter pilots to become combat-ready. That's the practice in all major air forces. The women are about to complete a year of training," said Air Vice Marshal NK Tandon. He stressed that it was an advisory and not a "no-pregnancy clause"

The Indian Air Force has advised its three women trainees, who are in line to become India's first female fighter pilots, to put off motherhood for at least four years after they get commissioned into the force in June.

IAF vice-chief Air Marshal BS Dhanoa told HT on Thursday that an advisory to avoid pregnancy was issued to the women training at an IAF facility near Hyderabad so that their schedule was not disrupted.

The women are preparing to head for the last leg of their combat training in June, a watershed in the IAF's 83-year history. "Undisturbed training is required for a minimum of five years for fighter pilots to become combat ready. That's the practice in all major air forces. The women are about to complete one year of training," said Air Vice Marshal NK Tandon, who is from the IAF's personnel branch.

He stressed the IAF had only issued an advisory to the women and it wasn't a "no-pregnancy clause".

As first reported by HT on December 17, the three women cadets had volunteered for the fighter stream and were selected for stage-II training on Kiran Mk-II planes at Hakimpet for six months. They had passed out of the Air Force Academy at Dundigal on December 19.

Stage-II training in the fighter stream at Hakimpet is critical as the performance of the cadets will decide whether they are fit for the final stage of preparation.

Bhawana Kanth, Mohana Singh and Avani Chaturvedi are the trainees who qualified for the fighter steam after it was thrown open to women in October 2015.

They will go to Bidar in Karnataka in June 2016 for stage-III training for a year on British Hawk advanced jet trainers, before they can fly supersonic warplanes.

As first reported by HT on November 22, six female cadets were taking a shot at becoming fighter pilots after the government approved an plan in October making them eligible to fly warplanes from June 2017, ending a rigid combat exclusion policy. However, only the three female trainees were selected for the fighter stream.

The Pioneer
11 Mar, 2016

China links India's bid to join nuke suppliers group with Pakistan

China on Thursday said it will not back India's bid alone to join the Nuclear Suppliers Group as "other states" are also aspiring to join the elite 48-member club and asserted that any decision on the inclusion of new members will be based on "consensus".

"Besides India, there are other non-NPT states who have expressed similar aspirations," Chinese Foreign Ministry spokesman Hong Lei told PTI, clubbing India alongwith Pakistan and other states who have not signed the Nuclear Non- proliferation Treaty (NPT).

He was responding to a query on Pakistan Prime Minister Nawaz Sharif's Advisor on Foreign Affairs Sartaj Aziz's recent comments in the Senate that China was helping Pakistan to stall India's bid to get Nuclear Suppliers Group (NSG) membership.

"This raises a question to the international community, that is whether or not non-NPT states can join the NSG," Hong said.

The Pioneer
11 Mar, 2016

China on High Alert after Philippines to acquire patrol planes

China on Thursday said it will go on “high alert” after the Philippines announced plans to acquire five Japanese planes to patrol the disputed South China Sea with Beijing warning Manila not to challenge its sovereignty over the waterway.

The Philippines will lease five aircraft from Japan to help patrol the South China Sea (SCS), President Benigno Aquino said. “We have noticed relevant media reports. China resolutely opposes the Philippines’ move if it aims to challenge China’s sovereignty and security interests,” Foreign Ministry spokesperson Hong Lei said.

“Meanwhile, China will be on high alert for Japan’s actions,” Hong said asking Japan not to meddle in the South China Sea.

“I want to reiterate that Japan is not a party directly concerned with SCS dispute. We will remain on high alert on its actions and urge Japanese side to mind its words and actions and refrain from undermining peace and stability of the region”, he said.

The Tribune
11 Mar, 2016

North Korea fires missiles, liquidates Seoul’s assets

North Korea fired two short-range ballistic missiles into the sea on Thursday in defiance of UN Security Council resolutions, as South Korean and US forces conducted massive war games.

The North also announced it had scrapped all agreements with the South on commercial exchange projects and would “liquidate” South Korean assets left behind in its territory.

North Korea has a large stockpile of short-range missiles and is developing long-range and intercontinental missiles as well. Thursday’s missiles flew about 500 km (300 miles) into the sea off the east coast city of Wonsan and probably were part of the Soviet-developed Scud series, South Korea’s defence ministry said.

Japan, which is within range of the longer-range variant of Scud missiles or the upgraded Rodong missiles, lodged a protest through the North Korean embassy in Beijing, Japan's Kyodo news agency reported. North Korea often fires short-range missiles when tensions rise on the Korean peninsula. Pyongyang gets particularly upset about the annual US-South Korea drills, which it says are preparations for an invasion. The US and South Korea remain technically at war with the North because the 1950-53 Korean War ended in an armed truce instead of a peace agreement.

Around 17,000 US military personnel are participating alongside some 300,000 South Korean troops in what South Korea's Defence Ministry has called the "largest-ever" joint military exercises. North Korea on Sunday warned it would make a "pre-emptive and offensive nuclear strike" in response to the exercises.

After the missile launches, North Korea announced it would "liquidate" South Korean assets in the Kaesong industrial and Mount Kumgang tourist zones.

In striking range, Japan lodges protest

- Two short-range ballistic missiles, believed to be part of the Soviet-developed Scud series, flew about 500 km (300 miles) into the sea off the east coast city of Wonsan
- Japan, within range of the longer-range variant of Scud missiles, lodged a protest through the North Korean embassy in Beijing; the US accused Pyongyang of "provocative rhetoric"
- North Korea also decided to "liquidate" South Korean assets, worth ($1.17 billion) in the Kaesong industrial zone and in the Mount Kumgang tourist zone — **©Reuters**

The Pioneer
11 Mar, 2016

Meaningless Aggression

Iran's 'destroy Israel' threats have got boring

Perhaps emboldened by the deal it has reached with the West on containing its nuclear programme, which it maintained was for peaceful use but which was contested by the US and others as veering towards the development of nuclear weapons, Iran has upped its belligerent ante. This is not a good sign and can result in a fresh spate of bad blood and suspicion in West Asia specifically and the world at large. In the most recent case, Iran test-fired two ballistic missiles, with "Israel must be wiped out" written all over the missiles — and in Hebrew for good measure.

Earlier, it had fired rockets and missiles despite stiff objections the US had raised, and said that nobody would be permitted to dictate terms to a sovereign country like Iran. While this is not the first instance of Tehran expressing its desire to eliminate the Jewish state, the timing is interesting. The test-firing with the objectionable message coincided with US Vice President Joe Biden's visit to Israel and his meetings with senior Israeli Government functionaries including Prime Minister Benjamin Netanyahu. Perhaps this is Iran's way of demonstrating to the world and those others that are on the same page as it is on the subject, that it has not compromised on its hope of annihilating Israel, regardless of the new, tentative relationship it is building with the West.

The sabre-rattling is futile; Israel is not going to be wiped off the world map by slogans written on Iranian military hardware — and this Iran has been doing earlier too. On the other hand, such provocative utterances serve to strengthen Israel's belief that Iran is not sincere about establishing peace in the region. Other nations that had been historically opposed to Israel's existence have over the years shed their aggression. While not all of these have become friendly to the Jewish state, they

are at least not perpetually at war with it — with some, such as Egypt, Syria and Jordan even establishing decent relations with Jerusalem, although this level fluctuates over issues. But Iran continues to remain defiant, possibly because it does not know what it will do with the militant outfit, Hezbollah, which it has nurtured over the years, if it ceases to be hostile to Israel.

The brazenness this time around was such that Biden was moved to respond (though without referring to the firing of the two missiles loaded with the destruct-Israel message) that “a nuclear-armed Iran is an absolutely unacceptable threat to Israel, to the region and the United States”. It is interesting that he should equate a threat to Israel as also being a danger to the US: This shows that, regardless of the cold vibes that US President Barack Obama shares with Netanyahu for a variety of reasons, there is no way Washington, DC will stand by passively if Tehran targets Israel. It's time Iran appreciates that the call for the destruction of a nation is an uncivilised way to settle disputes. In any case, such repeated threats have become boring.

The Asian Age
11 Mar, 2016

Iran says missile tests don’t violate nuclear treaty

Iran’s foreign ministry insisted on Thursday that the missile tests carried out by the country’s Revolutionary Guard this week do not violate Tehran’s nuclear deal with world powers or a UN Security Council resolution.

According to ministry spokesman, Hossein Jaberi Ansari, the missiles were “conventional defensive instruments and they were merely for legitimate defence,” the official IRNA news agency reported.

Iran’s Revolutionary Guard test-launched two ballistic missiles on Wednesday emblazoned with the phrase “Israel must be wiped out” in Hebrew a show of power by the Shiae nation, long an opponent of Israel. It was the latest in a series of recent tests, aimed at demonstrating Iran’s intentions to push ahead with its ballistic programme after scaling backing its nuclear programme under the deal reached last year with the US and other world powers.

Mr Ansari said the test-firing “did not defy the Security Council resolution” and added that Iran will continue its missile programme. However, he also said Iran will remain committed to its international obligations.

“The Islamic Republic of Iran will not compromise over its security and defensive power,” he said. A senior Revolutionary Guards commander has said that ballistic missile programme will not stop under any circumstances and that Tehran has missiles ready to be fired, according to Iranian state television.

Brig. Gen. Amir Ali Hajizadeh made his comments after the tests.

Meanwhile, US secretary of state John Kerry has called his Iranian opposite number to protest against the missile tests.

Iran and the US have no formal diplomatic ties, but Mr Kerry and foreign minister Mohammad Javad Zarif built a close working relationship.

The Statesman
11 Mar, 2016

Missile Test: Kerry Calls Zarif

US Secretary of State John Kerry has called his Iranian opposite number to protest Tehran's latest round of ballistic missile tests,a fresh bone of contention between the two sides. Iran and the US have no formal diplomatic ties,but Kerry and Foreign Minister Mohammad Javad Zarif built a close working relationship during negotiations for last year's nuclear accord between Tehran and world powers.

The US argues that a series of apparent missile tests breach the terms of a UN Security Council resolution and will result in new economic sanctions - either from Washington or the world body.

The Statesman
11 Mar, 2016

France Plans to Boost Military Reserve

France's defence minister is trying to recruit thousands more people to join the military reserve to boost anti-terrorism and other defence capacities.

Jean-Yves Le Drian says the military is aiming to increase the number of reservists from 28,000 today to 40,000 by 2018. The idea would be to have 1,000 reservists available on any given day able to deploy around the country.

“More than ever,we need reservists to confront the terrorist threat, unprecedented in scale and shape, weighing on national territory,”he said in a speech today.

The move is part of expanded defence spending announced since Islamic extremist attacks last year.

Deccan Herald
11 Mar, 2016

Stephen Hawking urges Britain to remain in EU

Renowned cosmologist Stephen Hawking was among 150 academics to declare support for Britain remaining in the European Union on Thursday in a letter that said leaving the bloc would damage science and research.

“If the UK leaves the EU and there is a loss of freedom of movement of scientists between the UK and Europe, it will be a disaster for UK science and universities,” the academics wrote in a letter to The Times newspaper.

The over 150 signatories are Cambridge scientists, mathematicians, engineers and economists and all are also fellows of the Royal Society, Britain’s leading scientific institution. Other signatories included Mart-in Rees, the Astronomer Royal and former president of the Royal Society, University of Cambridge physicist Athene Donald, and letter organiser Alan Fersht, a leading chemist.

Britain is due to vote on June 23 on whether to remain in the 28-member bloc. Opinion polls show that the campaign to remain within the EU is slightly ahead, but its lead over the “leave” campaign has narrowed in recent months.

In the letter, the scientists argued that science was vital for Britain's long-term prosperity and that membership of the EU had increased funding of science and allowed the country to recruit talented researchers from continental Europe.

"Investment in science is as important for the long-term prosperity and security of the UK as investment in infrastructure projects, farming or manufacturing; and the free movement of scientists is as important for science as free trade is for market economics," they wrote.

"First, increased funding has raised greatly the level of European science as a whole and of the UK in particular because we have a competitive edge," they wrote.

"Second, we now recruit many of our best researchers from continental Europe, including younger ones who have obtained EU grants and have chosen to move with them here. Being able to attract and fund the most talented Europeans assures the future of British science and also encourages the best scientists elsewhere to come here."

Deccan Herald
11 Mar, 2016

US to make rules-of-the-sky test must for drone users?

All US drone operators would for the first time have to prove they understand aviation reg ulations under a legislation introduced on Wednesday in the Senate.

A bill, setting policy for the Federal Aviation Administration includes several new drone provisions, including a requirement for unmanned fliers to pass an online test, according to summaries of the egislation released by the Senate commerce, science and transportation committee.

The measure is one of several provisions to improve drone safety ollowing a year of record reports of unmanned aircraft flying too close to planes and helicopters. The bill would also beef up enforcement of drone violations, require safety fea tures on drones and fund programs to intercept wayward drones near airports. While the FAA started this year to require all drone users to register with the agency , there's no test to ensure they understand restrictions, such as a prohibition on most flights within eight kilometers of an airport.

The Asian Age
11 Mar, 2016

US security experts test cyber skills in mock breach

Washington: The moment a US official pressed a computer key Tuesday, dozens of security experts who gathered in an underground control room girded themselves for a cyberattack — a drill meant to thwart the kinds of intrusions that have recently crippled health networks and retail giants.

The weeklong event run by the Homeland Security Department and hosted by the US Secret Service is now a decade old. But officials say this week's exercises are becoming more important as both the government and private sector have reeled from breaches of personal data.

More than 1,000 US cybersecurity professionals are participating in — and testing how well they respond to — a mock attack, said Gregory Touhill, a Homeland Security Department deputy assistant secretary for cybersecurity protection. They'll be working together for three days in Washington and across the nation.

Officials from five countries are also observing the exercise. The department would not disclose the countries involved.

Other participants include health companies, Internet service providers, telephone companies and retail organizations. The aim is to test human response and coordination, not necessarily the participants' technical skills.

"Retail and health care have been in the headlines — and, frankly, in the crosshairs for a lot of criminals," Touhill said. Household names like Target Corp., The Home Depot, UCLA Health Systems and Anthem Inc. have all faced recent cyberattacks that compromised millions of their customers' data.

US officials wouldn't detail the attack scenarios unfolding this week because they said it would tip off the drill's participants. But they said their event has one, overarching scenario, with roughly 1,000 smaller events — spurred by a phone call, an email or a news article — that could be indicators of an looming cyberattack.

Suzanne Spaulding, a top Homeland Security cyber official, said the "challenge is here and now." She pointed to a "nightmare" scenario last December, in which hackers attacked the Ukrainian electrical grid and cut power to about a quarter-million people.

During previous US-led tests, officials found what they called areas for improvement. Touhill said two areas from a previous tests are still being addressed, such as how security personnel share information effectively.

Secret Service Director Joseph Clancy described the event Tuesday as a way to stay one step ahead of criminals who've taken advantage of new and changing technology, and who have changed their own tactics.

"We're looking to find the failure points, to raise the bar in every scenario," Touhill said.

Recent attacks have also hammered the financial sector, in which a 2014 data breach at JPMorgan Chase affected more than 76 million households and 7 million small businesses. The bank said hackers may have stolen names, addresses, phone numbers and email addresses.

Meanwhile, US officials told Congress last year the Office of Personnel Management didn't take basic steps to secure their computer networks. That allowed to Chinese-linked hackers to steal private information about nearly every federal employee, as well as detailed personal histories of millions who had security clearances.-©IBN Live

Deccan Herald
11 Mar, 2016

India among nations most vulnerable to cyber attacks

Washington, PTI: India, along with China, Russia, Saudi Arabia and South Korea ranked among the nations most vulnerable to damaging cyberattacks, according to scientists, including those of Indian-origin.

The US ranked 11th safest, while several Scandinavian countries including Denmark, Norway and Finland ranked the safest, researchers said.

Data-mining experts from the University of Maryland (UMD) and Virginia Tech in US recently co-authored a book that ranked the vulnerability of 44 nations to cyberattacks.

"Our goal was to characterise how vulnerable different countries were, identify their current cybersecurity policies and determine how those policies might need to change in response to this

new information," said lead author V S Subrahmanian, a professor at the University of Maryland Institute for Advanced Computer Studies (UMIACS).

The researchers, including B Aditya Prakash, assistant professor at Virginia Tech in US conducted a two-year study that analysed more than 20 billion automatically generated reports, collected from 4 million machines per year worldwide.

The researchers based their rankings, in part, on the number of machines attacked in a given country and the number of times each machine was attacked.

Machines using Symantec anti-virus software automatically generated these reports, but only when a machine's user opted in to provide the data.

Trojans, followed by viruses and worms, posed the principal threats to machines in the US. However, misleading software (ie fake anti-virus programs and disk cleanup utilities) is far more prevalent in the US compared with other nations that have a similar gross domestic product.

The findings include economic and educational data gathered by UMD's Centre for Digital International Government, for which Subrahmanian serves as director.

The Statesman
11 Mar, 2016

NASA's next Mars mission in’18

NASA's InSight mission to study the deep interior of Mars is targeting a new launch window that begins May 5 2018, with a landing scheduled for November 26 that year. The spacecraft had been on track to launch this month until a vacuum leak in its prime science instrument prompted NASA to suspend preparations for launch. InSight's (Interior Exploration using Seismic Investigations, Geodesy and Heat Transport) will help study how rocky planets - including Earth - formed and evolved.

In Sight project managers proposed a plan to redesign the science instrument was accepted in support of a 2018 launch.

“The quest to understand the interior of Mars has been a longstanding goal of planetary scientists for decades. We're excited to be back on the path for a launch, now in 2018,” said John Grunsfeld, associate administrator for NASA's Science Mission Directorate in Washington.

NASA's Jet Propulsion Laboratory (JPL) will redesign, build and conduct qualifications of the new vacuum enclosure for the Seismic Experiment for Interior Structure (SEIS), the component that failed in December.

France's space agency, Centre National d'Etudes Spatiales (CNES) will lead instrument level integration and test activities.

The Pioneer
11 Mar, 2016

ISRO launches India's sixth navigation satellite

In its thirty fourth flight (PSLV-C32), ISRO's Polar Satellite Launch Vehicle successfully launched the 1425 kg IRNSS-1F, the sixth satellite in the Indian Regional Navigation Satellite System (IRNSS) on Thursday from Satish Dhawan Space port SHAR, Sriharikota. This is the thirty third consecutively successful mission of PSLV and the twelfth in its 'XL' configuration.

According an ISRO Press release after PSLV-C32 lift-off at 1601 hrs (4:01 pm) IST from the Second Launch Pad with the ignition of the first stage, the subsequent important flight events, namely, strap-on ignitions and separations, first stage separation, second stage ignition, heat-shield separation, second stage separation, third stage ignition and separation, fourth stage ignition and satellite injection, took place as planned.

After a flight of 19 minutes 34 seconds, IRNSS-1F Satellite was injected to an elliptical orbit of 284 km X 20,719 km inclined at an angle of 17.866 degree to the equator (very close to the intended orbit) and successfully separated from the PSLV fourth stage. After separation, the solar panels of IRNSS-1F were deployed automatically. ISRO's Master Control Facility (MCF at Hassan, in Karnataka) took over the control of the satellite. In the coming days, four orbit manoeuvres will be conducted from MCF to position the satellite in the Geostationary Orbit at 32.5 deg East longitude.

IRNSS-1F is the sixth of the seven satellites constituting the space segment of the Indian Regional Navigation Satellite System. IRNSS-1A, 1B, 1C, ID and IE, the first five satellites of the constellation, were successfully launched by PSLV on July 02, 2013, April 04, 2014, October 16, 2014, March 28, 2015 and January 20, 2016 respectively. All the five satellites are functioning satisfactorily from their designated orbital positions.

IRNSS is an independent regional navigation satellite system designed to provide position information in the Indian region and 1500 km around the Indian mainland. IRNSS would provide two types of services, namely, Standard Positioning Services (SPS) - provided to all users - and Restricted Services (RS), provided to authorised users.

A number of ground stations responsible for the generation and transmission of navigation parameters, satellite ranging and monitoring, etc., have been established in eighteen locations across the country. IRNSS-1G, the remaining satellite of this constellation, is scheduled to be launched by PSLV in April 2016, thereby completing the IRNSS constellation.

The Statesman
11 Mar, 2016

PSLV-C32PUTSIRNSS-1FINTOORBIT

The successfully launched satellite IRNSS-1F is the sixth among the seven satellite segment of IRNSS series which will pave way for India to develop its own indigenous Global Position System (GPS). The last one in the segment IRNSS-1G will be launched after the second week of April

PSLV-C32

Lift-off weight: 320 tonnes

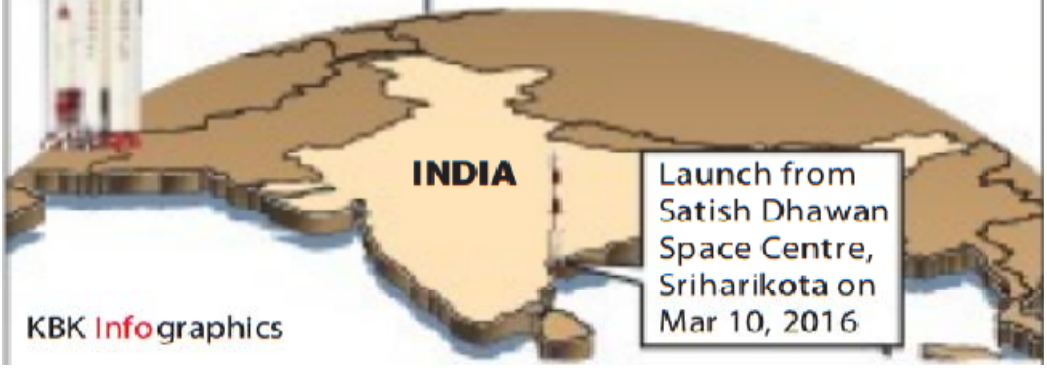
Height: 44.4 metres

Diameter: 2.8 metres

Stages: Four (solid and liquid propulsion alternatively)

IRNSS-1F

Orbit: Geostationary, at 32.5 deg East longitude
Lift-off mass: 1,425 kgs
Dry mass: 598 kgs
Physical dimensions: 1.58 m X 1.50 m X 1.50 m
Power: Two solar panels generating 1,660 W, one Lithium-ion battery of 90 Ampere-Hour capacity
Propulsion: 440 Newton Liquid Apogee Motor, twelve 22 Newton Thrusters
Mission life: 12 years



KBK Infographics

The Times of India
11 Mar, 2016

India to put 12 US satellites into space in 2016-17

India will launch 25 foreign satellites in 2016-17 using the Polar Satellite Launch Vehicle (PSLV). While 12 of these belong to the US, the remaining 13 belong to six countries -Germany , Canada, Algeria, Japan, Indonesia and Malaysia.

Sharing these facts in response to a question in Rajya Sabha, minister of state Jitendra Singh on Thursday said, “The PSLV with its string of successful flights has emerged as one of the most reliable launch vehicles in the world. Till date, 57 foreign satellites from 21countries have been succefully launched onboard PSLV , under the commercial arrangement between Antrix Corporation Limited and foreign clients.“

Under the agreement signed between foreign clients and Antrix, the commercial arm of Indian Space Research Organisation (ISRO), India will launch three satelli tes each of Algeria and Canada, four of Germany , one each of Indonesia, Malaysia and Japan and 12 of the Unied States in 2016-17.

In the last three years, from January 2013 till December 2015, the Indian Space Research Organisation launched 28 foreign satellites belonging to nine countries. During this period, it launched seven satellites of Singapore, six of the United Kingdom, fi ve of Canada, four of the US, two of Austria and one each of Denmark, France, Germany and Indonesia.

Singh said, “Antrix has earned revenue of 80.6 million euros through launch of these 28 international customer satellites.“

Deccan Herald
11 Mar, 2016

Scientists differ over GM mustard's performance

The genetically modified mustard, which is under the government's consideration for commercial release, yielded less in farmers' field when compared with popular varieties, a retired crop scientist has claimed citing new data, which has been contradicted by the developers.

The GM mustard, developed by scientists at Delhi University, was approved by the regulator, Genetic Engineering Appraisal Committee (GEAC) for commercial cultivation, but environment minister Prakash Javadekar held back on the decision.

A comparison of yield data between GM mustard and popular non-GM Indian varieties shows that all of them give higher yield. In four out of six cases, the increase is more than 22%. "Why do we need GM mustard, which the developers claim will yield more but in reality generate less. Non-GM mustard hybrids are equally good," said Sharad E Pawer, a retired crop scientist, who was associated with Nagpur University as a consultant on mustard development.

"Trials were conducted by Indian Council for Agriculture Research. We could not have rigged the data. This accusation itself shows how desperate some parties are to stop GM technology for hybrid seed production in mustard," Deepak Pental, former vice-chancellor of Delhi University and the leader GM mustard team told Deccan Herald.

"The mean yield of DMH-11 over 8 trials is 37% higher than that against varieties with whom the crop was checked. The facts presented by Pawar are distorted," said Pental.

Contesting Pental's argument, Pawar claimed when compared against currently used mustard varieties, DMH-11 performed poorly.

"The comparison should have been made with national hybrid checks. It has not been done in this case. Instead, the comparison has been shown with weaker varieties, which provide a false impression that the transgenic hybrid is a better performer," he wrote to Javadekar last month.

A crop biotechnologist from Bhabha Atomic Research Centre, Pawar is a fellow of National Academy of Agricultural Sciences and was associated with the National Dairy Development Board's projects on developing better mustard hybrids for years. Pental is one of India's leading scientists and a member of all Indian science academies.

Pawar asked the environment minister to investigate the trial data by an independent technical expert to save future embarrassment.

The Hindu
11 Mar, 2016

Finally, a bacterium that degrades polluting plastics identified

By R. Prasad

A bacterium species capable of breaking down plastic — polyethylene terephthalate (PET) — has been identified by a team of Japanese researchers. The bacterium uses two enzymes in sequence to break down the highly biodegradation-resistant polymer PET. The results are to be published on Friday in the journal *Science* .

Except for rare instances of two fungi that have been found to grow on a mineral medium of PET yarns, there are no reports any bacteria biologically degrading PET or growing on the chemically inert substance.

Shosuke Yoshida, the first author of the paper from the Department of Applied Biology, Kyoto Institute of Technology, Kyoto and others collected 250 contaminated samples from a PET bottle recycling site. They looked for microorganisms that relied on PET film as a primary source of carbon for growth. At first they identified a distinct microbial consortium that contained a mixture of bacteria species that degraded the PET film surface at 30 degree C; 75 per cent of the PET film surface was broken down into carbon dioxide at 28 degree C.

From the microbial consortium, the researchers isolated a unique bacterium — Ideonella sakaiensis 201-F6 — that could almost completely degrade a thin film of PET in a short span of six weeks at 30 degree C. “The PET film was almost fully degraded after six weeks at 30 degree C,” they note.

The bacterium degrades PET using two enzymes that act on it in sequence. First, the bacterium adheres to PET and produces an intermediate substance through hydrolysis. The second enzyme then works with water and acts on this intermediate substance to produce the two monomers — ethylene glycol and terephthalic acid — used for making PET through polymerisation.

PET has been littering the environment for the last 70 years and, in 2013, 56 million tonnes of PET were produced worldwide. Since PET came into being only 70 years ago, a pertinent question is how this distinct bacterium evolved or naturally selected in the environment. Also, is not clear what natural processes were at play for the two unique enzymes capable of breaking down PET in sequential steps to evolve.

The Hindustan Times
11 Mar, 2016

Bionic fingertip gives sense of touch to amputee

Zurich, March 10: A bionic fingertip has given an amputee the sensation of rough or smooth textures via electrodes implanted into nerves in his upper arm.

Scientists from EPFL (Swiss Federal Institute of Technology) and SSSA (Sant'Anna School of Advanced Studies, Italy) successfully allowed amputee Dennis Aabo Sørensen to receive this sophisticated tactile information in real- time.

The research, published in science journal eLife, says Sørensen is the first person in the world to recognise texture using a bionic fingertip connected to electrodes surgically implanted above his stump. The nerves in Sørensen's arm were wired to a machine with the fingertip attached to it. The machine then controlled the movement of the fingertip over pieces of plastic engraved with different textures, either rough or smooth. When the fingertip moved across the plastic, its sensors generated an electrical signal which was translated into a series of electrical spikes that mimic the language of the nervous system. This was then delivered to Sørensen's nerves.

"When the scientists stimulate my nerves I could feel the vibration and the sense of touch in my phantom index finger," said Sørensen.

"The touching sensations is quite close to when you feel it with your normal finger; you can feel the coarseness of the plates, and the different gaps and ribs."

The study states that Sørensen — who was blindfolded during testing — was able to distinguish between rough and smooth surfaces 96 per cent of the time.

Deccan Herald
11 Mar, 2016

Eye lenses grown from stem cells

Paris: People suffering vision loss may one day have new corneas and lenses grown from their own cells, and be spared the invasive transplants required today, according to research published Wednesday.

In papers published in the journal Nature, a research team said they had managed to engineer corneas from stem cells in the lab, while another regenerated lenses inside the human eye.

"These two studies illustrate the remarkable regenerative and therapeutic potential of stem cells," wrote Julie Daniels of the University College London Institute of Opthalmology, who analysed the work in a paper also carried by Nature.

To work perfectly the cornea and lens must be absolutely transparent. Sometimes, due to disease or ageing, these become opaque and need to be replaced with a donor or artificial transplant.

Such procedures are not foolproof, and in some cases the transplants are rejected by the recipient's body.

Stem cells offer hope as they can be taken from the patient's own body, thereby limiting rejection risk.

Stem cells are primitive cells that, as they mature, differentiate into the various specialised cells that make up the different organs.

Until a few years ago, the only way to obtain stem cells was to harvest them from human embryos, a controversial practice as it required the destruction of the embryo.

But now scientists have developed induced pluripotent stem cells, or iPSCs, which are mature cells turned back to an earlier, versatile state from which they can re-diversify.

For the first study, scientists in the United States and China developed a new way to remove and replace damaged eye lenses in people with cataracts.

The current surgical method leaves a large incision which can easily become inflamed.

In the new procedure, a team extracted the lens through a much smaller hole than the existing procedure requires, and also left behind many more naturally-occurring, lens-creating stem cells called LECs. These were stimulated into building a new lens.

The method was successful in rabbits and macaques, and later in 12 human children.

"Each year, more than 20 million cataract patients worldwide undergo treatment with less extraction and artificial... implantation," wrote the study authors.

Yet the current procedure "inadvertently destroys the integrity of the lens capsule and the very LECs that hold the regenerative key to lens restoration," they said.

"(We) have developed a new, minimally invasive surgical method that allows regeneration of a functional lens."

Cataracts are the leading cause of blindness in the world.

Dusko Ilic, a lecturer in stem cell science at King's College London, said the study was "one of the finest achievements in the field of regenerative medicine until now".

For the second paper, researchers in Japan and Cardiff used human iPSCs to create eye cells which they grew into healthy corneas in a lab dish and implanted into rabbits.

This achievement, too, was hailed, though experts pointed out the method remained too expensive and experimental to be a viable treatment just yet.

"Whether either of the reported therapies will lead to cornea or lens transparency that can be maintained in the long term remains uncertain," wrote Daniels.

The Times of India
11 Mar, 2016

Kidney transplant now possible from any donor

Doctors Alter Patients' Immune System to Allow Them To Accept Organs From Even Incompatible Donors

In the anguishing wait for a new kidney, tens of thousands of patients on waiting lists may never find a match because their immune systems will reject almost any transplanted organ. Now, in a revolutionary study, researchers have successfully altered patients' immune system to allow them to accept kidneys from an incompatible donor. Significantly, more of those patients were still alive after eight years than patients who had remained on waiting lists or received a kidney transplanted from a de ceased donor.

The method, known as de sensitisation, “has the potential to save many lives,“ said Dr Jeffery Berns, a kidney specialist and the president of the National Kidney Foundation, adding that the

procedure could mean the difference between receiving a transplant and spending the rest of life on dialysis.

Researchers estimate about half of the 1,00,000 people in the United States on waiting lists for a kidney transplant have antibodies that will attack a transplanted organ, and about 20% are so sensitive that finding a compatible organ is all but impossible. In addition, said Dr Dorry Segev, the lead author of the study, an unknown number of people with kidney failure simply give up on the waiting lists and resign themselves to dialysis, a difficult and draining procedure that can pretty much take over a person's life.

Desensitisation involves first filtering the antibodies out of a patient's blood. The patient is then given an infusion of other antibodies to provide some protection while the immune system regenerates its own antibodies. For some reason -exactly why is not known -the person's regenerated antibodies are less likely to attack the new organ, Segev said. But if the per son's regenerated natural antibodies are still a concern, the patient is treated with drugs that destroy any white blood cells that might make antibodies that would attack the new kidney .

The process is expensive, costing $30,000, and uses drugs not approved for this purpose. The transplant costs about $100,000. But kidney specialists argue that desensitisation is cheaper in the long run than dialysis, which costs $70,000 a year for life. The process might be suitable for living-donor transplants of livers and lungs too, researchers said.

The desensitization procedure takes time -for some patients as long as two weeks -and is performed before the transplant operation, so patients must have a living donor.

Clint Smith, one of the first patients who went through desensitization, had progressive kidney disease and in 2004 they stopped functioning. His sister-in-law donated a kidney to him, but after six and a half years, it failed. He went on dialysis, it was keeping him alive, but it was not a life. Then a nurse suggested that he ask Johns Hopkins about its desensitisation study and he qualified for the study. But he needed a donor and it came in the form of his wife's friend's husband.

That was four years ago, and Smith's new kidney is functioning and he is back to his normal active life.

The Times of India
11 Mar, 2016

Found: A way to make plastic from CO2 & agricultural waste

Scientists, including one of Indian origin, have discovered a new way to make plastic from carbon dioxide and agricultural waste and grasses that may dramatically lower carbon footprint of the plastic industry. The new technology could provide a low-carbon alternative to plastic bottles and other items currently made from petroleum, researchers said. Many plastic products are made from a polymer called polyethylene terephthalate (PET), also known as polyester. “The use of fossil-fuel feedstocks, combined with the energy required to manufacture PET, generates more than four tons of CO2 for every ton of PET,“ said Matthew Kanan, a professor at Stanford University Researchers, including graduate student Aanindeeta Banerjee, focused on an alternative to PET called polyethylene furandicarboxylate (PEF). PEF is made from ethylene glycol and a compound called 2-5-Furandicarboxylic acid (FDCA). “PEF is an attractive replacement for PET, because FDCA can be sourced from biomass instead of petroleum,“ said Kanan. The researchers have been experimenting with furfural, a compound made from agricultural waste that has been widely used for decades. About 400,000 tons are produced annually for use in resins, solvents and other products.

The Hindustan Times
11 Mar, 2016

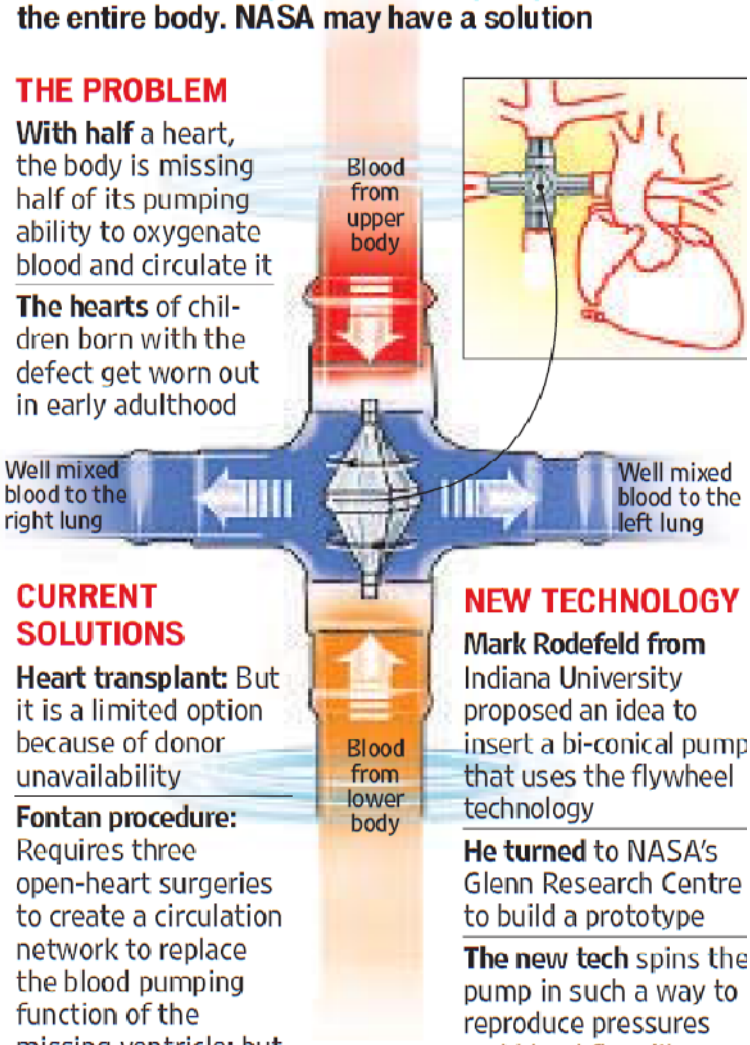
FINDING A BEAT

Every year, 1,500 children are born with half a heart, in which only one ventricle pumps blood to the entire body. NASA may have a solution

THE PROBLEM

With half a heart, the body is missing half of its pumping ability to oxygenate blood and circulate it

The hearts of children born with the defect get worn out in early adulthood



CURRENT SOLUTIONS

Heart transplant: But it is a limited option because of donor unavailability

Fontan procedure: Requires three open-heart surgeries to create a circulation network to replace the blood pumping function of the missing ventricle; but is a partial fix

NEW TECHNOLOGY

Mark Rodefeld from Indiana University proposed an idea to insert a bi-conical pump that uses the flywheel technology

He turned to NASA's Glenn Research Centre to build a prototype

The new tech spins the pump in such a way to reproduce pressures and blood flow like a ventricle would **(in pic)**

Deccan Herald
11 Mar, 2016

Yogesh Tyagi takes over as new DU VC

Tyagi says I will always work with honesty

New Delhi: Professor Yogesh Tyagi assumed office as the Delhi University vice chancellor on Thursday morning and held meetings with the DU Teachers Association and other teachers' groups, and former Vice Chancellors of the university.

He has succeeded Professor Dinesh Singh whose term ended last October.

Armed with bouquets, university officials made a beeline for the Viceregal Lodge, which houses his office.

"There could be mistakes as a vice chancellor, but I will always work with honesty. I will try to get views from everyone and move forward in the endeavour," Tyagi told reporters.

Described by many as a religious man, DU's 22nd VC performed a small ritual before taking charge of his office. He was accompanied by his mother on the day one.

"It was a totally different atmosphere today, the Viceregal Lodge was open and people from the university could go and meet the VC," DUTA president Nandita Narain said.

Former Delhi University vice chancellors Deepak Pental and Upendra Baxi also came to meet the new VC.

"You will be the VC who will see the centenary celebration of the varsity," Upendra Baxi told the new incumbent.

Tyagi was the dean at the Faculty of Legal Studies, South Asian University. He also had a teaching stint at the Jawaharlal Nehru University, from where completed his PhD in Legal Studies.

Another predecessor Deepak Pental asked him to be discerning, as he is set to pick his own team of administrators. Major reshuffles are on the cards, a university official said.

Good academicians

"Some of the good academicians will not run after administration, but only good academicians should be made a part of the administration," said Pental.

The vice chancellors of Jamia Millia Islamia, Gujarat University, Lucknow Law University were also present to welcome Tyagi.

Delhi University teachers also took to social media to welcome the new vice chancellor.

"Let's all welcome the new VC of DU professor Yogesh Kumar Tyagi with the hope that the prestige of academic and administrative works in the university will be restored under his leadership," said Professor Inder Kumar Kapahi.