

THE TIMES OF INDIA



SCHOOL SHOOTING WAS THE WORST DAY OF MY PRESIDENCY, SAYS OBAMA 22



TALIBAN EXECUTES 21 ABDUCTED COPS, ONE MAKES DARING ESCAPE 22

DHONI SLAMS UNBEATEN 113 AFTER TOP-ORDER COLLAPSE BUT INDIA LOSE 1ST ODI TO PAK 23



DON'T LET NIRBHAYA'S FIRE DIE



HOME THEY BROUGHT THE WARRIOR: Nirbhaya's body is taken from IGI airport to her family's residence for prayers before her cremation

PM, Sonia Receive Body; Mom Faints, Rushed To Hospital

Ordinance to firm up rape laws?
 Faced with angry protests for a change in rape laws, the UPA government is considering an ordinance — ahead of the budget session — to implement the recommendations of the Justice Verma panel set up to review the laws following the December 16 gang rape. **The Congress party, meanwhile, is reportedly looking at imprisonment up to 30 years and chemical castration of repeat offenders, according to several proposals in the works. TOI had, in its edition dated December 19, suggested chemical castration that makes a rapist incapable of sexual arousal, as part of a six-point action plan to tackle such heinous crimes. P 7**

Death penalty, P 10

Party for safety, P 5

200 cops fortify lanes, P 3

Alert policemen prevent another horror in bus

NARROW ESCAPE
 ▶ Girl boards bus from Khayala to Jai Vihar bus (in pic) around 10pm
 ▶ Accused sits next to her after bus empties out. Touches her inappropriately
 ▶ Girl begins to cry, asks driver to stop bus and let her get down
 ▶ By 11pm, bus reaches Mandi House. Driver asks cops for directions to Lajpat Nagar
 ▶ Alert cops spot girl and stop bus. After questioning girl, they arrest the accused
 ▶ Driver and conductor let off by cops but later terminated from service by authorities

Cops got suspicious, P 4

Harsher punishment for minors?

Death penalty, P 10

Party for safety, P 5

Many cancel New Year bashes, others to tone them down

IMMORTAL SPARK: Policemen stand guard outside the cremation ground at Dwarka on Sunday

Party for safety, P 5

NEWS DIGEST

- GMR impact: India curbs visa perks for Maldives**
 India has stopped Maldivians from availing visa on arrival for anything other than tourism, in what is seen as retaliation for the island nation scrapping its airport deal with GMR. Maldivians, who come to India for treatment, will now need valid medical visas or face deportation, New Delhi has warned. **P 7**
- Indian found dead at US store:** An Indian from Andhra Pradesh was found dead at the supermarket store he ran in Cincinnati, Ohio, on Sunday. G V Reddy, 48, had left India 12 years ago and is married to a software engineer. **P 22**
- West healthcare not all that better:** A first-of-its-kind Johns Hopkins study estimates a surgeon in the US leaves a foreign object such as a sponge inside a patient's body after an operation 39 times a week, shattering the image of the west as a safe healthcare option. **P 10**
- Aakash-3, with value-adds:** The third version of low-cost tablet 'Aakash' will have a SIM slot and more exciting apps, all within the existing price band — Rs 1,130 for students. **P 17**
- Train runs over 5 elephants:** Five elephants were run over by a speeding train in Ganjam district of Odisha on Saturday. A 40-year-old bed-roll assistant in the train was also found dead. **P 8**

The year social media came of age in India

E-Change In Govt-People Equation

Javed Anwer & Rukmini Shrinivasan | TNN

Sambhavi Saxena, 19, was at Jantar Mantar on December 25 protesting against Nirbhaya's brutal rape when Delhi Police swooped down, rounded her up along with other agitators and took them to the Parliament Street police station. Sambhavi fired tweet after tweet even as she was bundled into a van. She went on broadcast-

MEGA MOMENTS

NOV 19 | Nationwide furore after 2 girls are arrested in Maharashtra for questioning Mumbai shutdown following Bal Thackeray's death

OCT 30 | Businessman arrested for online comments against Kartik Chidambaram, son of P Chidambaram

OCT 8 | Robert Vadra, husband of Priyanka Gandhi, posted 'mango people at Banara republic' as his Facebook status update. He later deleted the account

OCT 30 | Shashi Tharoor told Narendra Modi on Twitter, "My wife is priceless" after the

Amplifier of unfiltered emotions | Frustrated by political marginalization and an indifferent regime, the middle class is expressing itself through the direct pipeline of social media, writes Santosh Desai | **P 19**

ing to the world all that was happening around her. "Illegally being held here at Parliament St Police Station Delhi w/ 15 other women. Terrified, pls RT," she tweeted. It worked. In a flash, more than 1,700 people retweeted her SOS. Social media analytics firm Favstar later said the message reached over two lakh people. Police later contested many of Sambhavi's claims. Yet, there was no denying it was her voice that was heard. Her tweets trig-

Property dealer's son abducted

Neeraj Chauhan | TNN

New Delhi: The 19-year-old son of a prominent property dealer was abducted in the early hours of Sunday, and a ransom of Rs 5 crore has been demanded, police sources said. A case has been registered.

The teenager was reportedly waylaid by the abductors when he was returning home to Hari Nagar from a party around 3am. Hours later, the family received a call for ransom. Sources said it was likely that somebody known to the family or the boy had tracked his whereabouts and abducted him.

Indian's killing in US hate crime

Chidanand Rajghatta | TNN

New York: A 31-year-old Hispanic woman has been charged with "second degree murder as a hate crime" after she admitted to pushing an Indian, Suanando Sen, onto the subway tracks two days ago. Erika Menendez faces life in jail if convicted. Menendez reportedly told the police she believed she had pushed a Muslim man "because I hate Hindus and Muslims ever since 2001 when they put down the twin towers..." **P 22**

Paharpur Presents... the Single-Row Condenser

Paharpur has inaugurated India's first Single-Row Condenser manufacturing unit at Savli, near Vadodara in Gujarat. Spread over an area of 46,000 sq m, this factory produces both single-row condensers as well as conventional, multi-row condensers.

With their special aluminium-clad oblong carbon steel tubes and high-efficiency, dimpled aluminium fins, single-row condensers are easier to maintain, take up less space and are more suited for large applications in the power industry. This new single-row condenser technology is complemented by Paharpur's rugged gearboxes, fans and other time-tested components.

For Paharpur, producer of world-class air-cooled steam condensers (ACCs) and a major innovator of ACC technology, the single-row condenser is yet another step in refining dry cooling technology in the country, so that power plants of any size can be located where they are needed, even if water is not available.

So get ready for this next generation of ACCs, get ready for the Single-Row Condenser...

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Experts warn of massive quakes in Himalayas

Temblors Of 8.5 Magnitude Predicted; Areas Along Range, Like India, Face Devastation

Singapore: In what can have huge implications for countries like India, scientists have warned of massive earthquakes of the magnitude 8 to 8.5 on the Richter scale in the Himalayas, especially in areas with their surface yet to be broken by a temblor.

A research team led by Nanyang Technological University (NTU) in Singapore has discovered that powerful earthquakes have left clear ground scars in the central Himalayas. This ground-breaking discovery has huge implications for the area along the front of the Himalayan Moun-



MOUNTAIN OF DISASTER?

tains, given that the region has a population density similar to that of New York City, researchers said in a statement.

Paul Tapponnier, a leading neotectonics scientist, said that the existence of such devastating quakes in the past means that quakes of the same magnitude could happen again in the region in future, especially in areas which have yet to have their surface broken by a temblor.

The study showed that in 1255 and 1934, two great earthquakes ruptured the surface of the earth in the Himalayas. This runs contrary to what

scientists previously thought.

Tapponnier said that by combining new high resolution imagery and state of the art dating techniques, they could show that the 1934 earthquake did indeed rupture the surface over a length of more than 150 km, essentially south of the part of the range that harbours Mount Everest.

This break formed along the main fault in Nepal that currently marks the boundary between the Indian and Asian tectonic plates — the Main Frontal Thrust fault.

Using radiocarbon dating of offset river sediments and

collapsed hill-slope deposits, the researchers managed to separate several episodes of tectonic movement on this major fault and pin the dates of the two quakes, about seven centuries apart.

Massive earthquakes are not unknown in the Himalayas, as quakes in 1897, 1905, 1934 and 1950 all had magnitudes between 7.8 and 8.9 on the Richter scale, each causing tremendous damage. But they were previously thought not to have broken the earth's surface — classified as blind quakes — which are much more difficult to track. **PTI**

Bored of eating? A talking fork to your rescue

London: Japanese researchers have developed a talking fork that speaks different words and plays bizarre sounds while a person eats.

The fork contains a micro controller, a speaker, amplifier and battery within its handle, and generates a variety of sounds depending on the type of food being eaten.

The sounds are apparently generated by the resistance value of the food as it is bitten off the fork — the noise it produces as she eats a chicken nugget sounds remarkably similar to a chicken clucking, the Daily Mail reported.

The fork is the concept of a research group from the Ochanomizu University in Tokyo. A video shows a woman enjoying bites of numerous types of foods as the fork produces some rather odd sound effects and even speaks to her.

When the lady in the video tucks in to a piece of tempura the fork proclaims "Garigori" and "shori" while a stick of cheese produces the word "Paku".

Apparently longer pieces



© cultura/Corbis

LANGUAGE OF FOOD

of food will cause the fork to produce multiple sounds and words while they are eaten.

As the lady licks ice-cream off it, it produces a rather high pitched and fast spoken "pakupaku".

Researchers from the Ochanomizu University in Tokyo aimed to inspire people to try different types of food and encourage a more varied diet, the report said.

They also suggest the fork be used as a communication tool for couples. **PTI**

SHORT CUTS

Alien-like skulls found at 1,000 year old cemetery

A number of alien-like skulls have been discovered in a 1,000 year old cemetery in Mexico. The finding initially stunned the researchers, however, upon closer inspection the skulls were found to be human skulls warped into strange, alien-like shapes. Scientists said the practice of deforming skulls of children as they grew was common in Central America, and these findings suggest the tradition spread farther north than had been thought.

Mystery behind itching solved:

Scientists have discovered nerve cells that deal solely with itching sensations in humans, a breakthrough which can lead to effective treatments for pain relief. The new findings are also important because they provide a target for new gen-next anti-itch medications. According to a new study, certain nerve cells are specialized to detect itchy sensations, and those receptors don't detect painful sensations.



ICY DIP: People dressed as Santa Claus swim in the ice-hole of a pond in the Siberian city of Novosibirsk on Sunday

Japan eyes asteroid study for its space mission in '14

New York: Building on its successful first round-trip mission to space rock Itokawa, Japan's space agency is readying to launch an ambitious new asteroid sampling probe in 2014.

The new space mission, Hayabusa2 is aimed at the asteroid 1999 JU3, a large space rock about 3,018 feet in length.

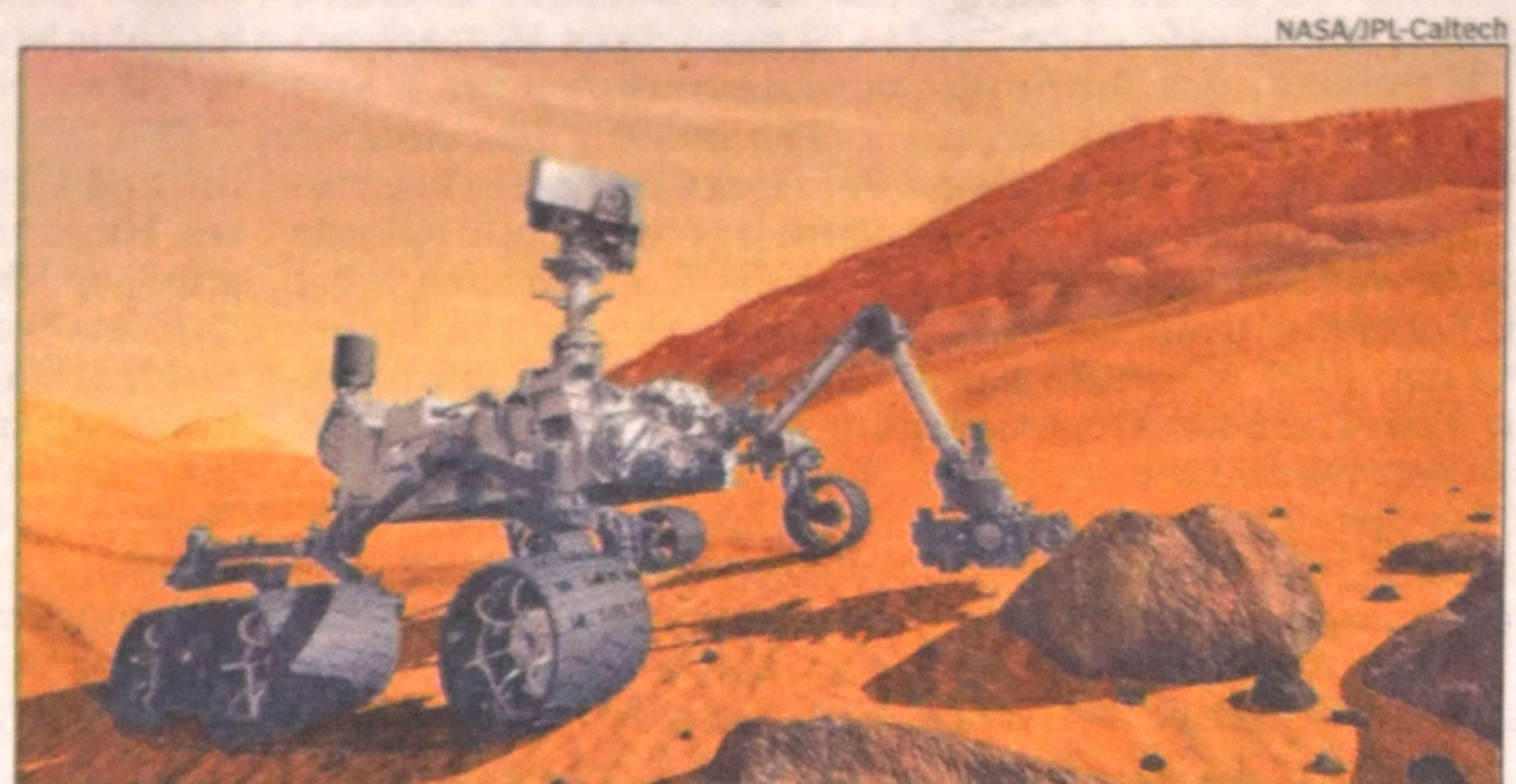
The mission is due to arrive at the asteroid in mid-2018, loiter at the space rock and carry out a slew of challenging firsts before departing the scene at the end of 2019, Space.com reported.

The Hayabusa2 spacecraft is scheduled to return to Earth with samples of asteroid 1999 JU3. The probe's name is Japanese for "Falcon2".

Officials with the Japanese Aerospace Exploration Agency (JAXA) said Hayabusa2, like its Hayabusa predecessor, will also involve a significant level of international cooperation.

The initial Hayabusa mission launched in May 2003 and returned samples of Itokawa — the first asteroid samples ever collected in space — in June 2010. Hayabusa2 is expected to stay with 1999 JU3 for 18 months, allowing ample time for observation and careful sample collection. **PTI**

Curiosity's next task: Trek Mars mountain



NASA/JPL-Caltech

NEW YEAR'S ROAD MAP

Pasadena (California): Since captivating the world with its acrobatic landing, the Mars rover Curiosity has fallen into a rhythm: Drive, snap pictures, zap at boulders, scoop up dirt. Repeat. Topping its to-do list in the new year: Set off toward a Martian mountain — a trek that will take up a good chunk of the year.

The original itinerary called for starting the drive before the Times Square ball drop on December 31, but Curiosity lingered longer than planned at a pit stop, delaying the trip. Curiosity will now head for Mount Sharp in mid-February after it drills into its first rock.

"We'll probably be ready to hit the pedal to the metal and give the keys back to the rover drivers," mission chief scientist John Grotzinger said. The road trip comes amid great expectations. After all, it's the reason the \$2.5 billion mission targeted Gale Crater near the Martian

equator. Soaring from the center of the ancient crater is a 3-mile-high peak with intriguing layers of rocks. Curiosity's job is to figure out whether the landing site ever had the right environmental conditions to support microbes. Scientists already know water flowed in the past thanks to the rover's discovery of an old streambed. Besides water, life also needs energy, the sun.

What's missing are the chemical building blocks of life: complex carbon-based molecules. If they're preserved on Mars, scientists figure the best place to hunt for them is at the base of Mount Sharp where images from space reveal hints of interesting geology. It's a six-month journey if Curiosity drives nonstop.

But since scientists will want to command the six-wheel rover to rest and examine rocky outcrops along the way, it'll turn into a nine-month odyssey. **ANI**

Docs rebuild human liver from a tissue of cow's heart

London: A woman from Liverpool, who was suffering from an incurable liver cancer, was saved by using a tissue from a cow's heart to rebuild her liver.

Michelle Morgan-Granger became one of the first to benefit from surgery that used the process known as xenotransplantation — animal organ donation, the Daily Mail reported. The 40-year-old woman, who was diagnosed with a rare form of liver cancer in October 2010, underwent a procedure to remove the tumour in her liver along with a large portion of her Inferior Vena Cava (IVC).

This blood vessel was reconstructed with a patch made from the outer lining of a cow's heart, a material called bovine pericardium.

Hassan Malik, a consultant hepatobiliary surgeon at Aintree University Hospitals NHS Foundation Trust, said Dr Granger's case was different because of the use of bovine material, as well as the fact that most of the IVC was removed. The pre-treated bovine material reduces the risk of infection and of blood clots.

The patient left the hospital 11 days after the surgery, and less than 18 months on, she is cancer-free. **ANI**

A cardboard helmet for safer bike rides

Washington: An Indian-origin researcher has designed a new lighter and safer bicycle-helmet entirely made up of cardboard.

The helmet 'Kranium' has been constructed from cardboard and designed by Royal College Art student Anirudha Surabhi, which promises to be 15% lighter than standard helmets, while absorbing up to three times the impact energy during a collision.

Surabhi was inspired to create the Kranium following a nasty fall from his bicycle which caused a cracked helmet and minor concussion, Gizmag reported.

The designer was also

struck by the woodpecker's ability to withstand repeated heavy impact, thanks to the bird's unique corrugated cartilage structure which separates beak from skull.

The Formula 1 team Force India is incorporating the Kranium technology into its own helmet design, the report said.

The Kranium is waterproof, and boasts some green credentials, due to it being manufactured from recycled paper. The helmet is designed to allow a degree of flexing to help absorb impact force, of which it can withstand up to three times as much as typical expanded polystyrene helmets. **PTI**