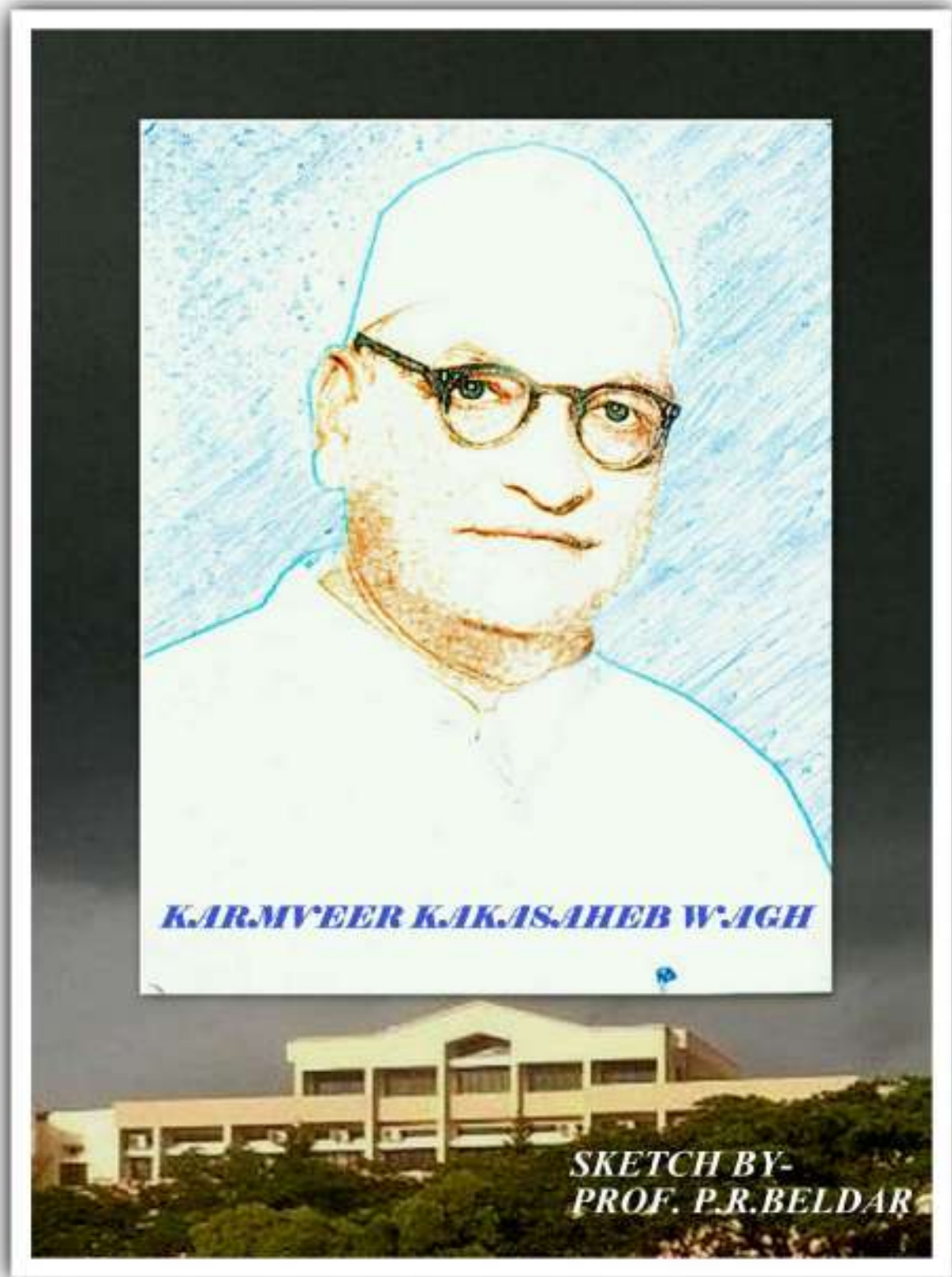




Mechage

Engineers Day Edition-2014

**MECHANICAL DEPARTMENT
K. K. WAGH INSTITUTE OF ENGINEERING
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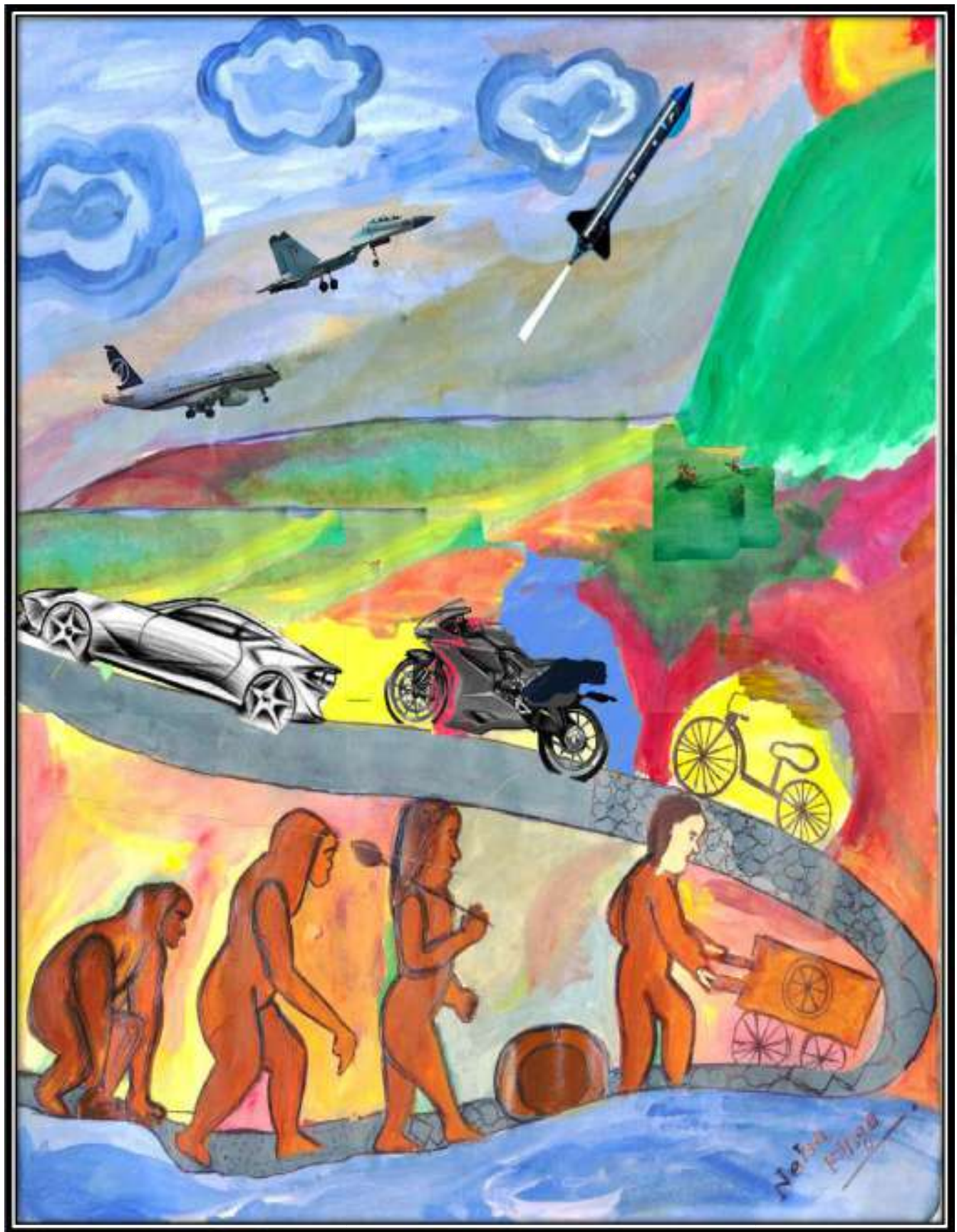
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संपादकीय

आदिमानव निसर्गाच्या कुशीत जन्मला, वाढला, विकसित झाला, निसर्गाचं अविभाज्य अंग बनला . वसुंधरेचं हे सर्वात सुंदर गोजिरवानं, लाडकं बाळ, तिच्या अंगाखांद्यावर बहरू लागलं, तिचा आधार घेऊन त्याने स्वतःला अत्यंत आधुनिक बनवले . आज या पहिल्या वहिल्या मासिकात हा प्रवास समजून घेण्याचा छोटासा प्रयत्न करूयात .

'मानव'युगाचा खरा जन्म झाला तो अश्मयुगापासून असे म्हणायला काही हरकत नाही . कारण इथेच माणसाला भावना आल्या, एकत्र राहणे आणि बुद्धीचा वापर करायची सवयही झाली होती . अन्न, वस्त्र निवारण आणि संरक्षण मिळवण्यासाठी माणूस नदीकाठी वस्तीने राहू लागला . एकीच्या आणि माणुसकीच्या या सवयीमुळेच आपण तग धरला होता हे मात्र आज आपण विसरत चाललो आहोत .

अश्मयुगानंतर आले ते धातुयुग . आधी चाकाच्या कल्पनेने माणसाने प्रगतीचा पाया घातला भरीव चाकापेक्षा आरे ह्यपेरकसह असलेले चाक वेगाने धावते आणि चाकावरची लोखंडी धाव झीज प्रचंड कमी करून त्यास टिकाऊ बनवते याची जाणीव मानवी बुद्धीची चमक दाखवते त्याचप्रमाणे कलेची जाणीव होऊन सांस्कृतिक कार्यक्रम करण्यास सुरुवात झाली . या वेगाने झालेल्या प्रगतीत न भूतो न भविष्यती : अशा संस्कृतीचा उदय झाला .

या विविध संस्कृतींमुळे अनेक मानवसमुह निर्माण झाले . वाढत्या संसारासाठी आपल्या सीमांचा विस्तार करू लागले, आपली हत्यारे अधिक प्रभावी बनवण्याचा प्रयत्न करू लागले आणि येथेच मला अभियांत्रिकीचे मुळ असल्याचे जाणवते . हळूहळू हे मूळ तग धरू लागले आणि वेळेच्या फिरत्या चाकावरोबर या विज्ञानरूपी कोंबाचे रूपांतर कल्पवृक्षात कसे झाले ते कोणाच्या लक्षातही आले नाही . सायकलीसारख्या साध्या यंत्रापासून माणसाने विद्युताच्या शोधापर्यंत केलेली प्रगती खरेच अवर्णनीय होती . स्टीफन्सनच्या चहाच्या किटलीतून जन्माला आलेली वाफेच्या इंजिनाची कल्पना ही ख-या अर्थाने दांडग्या विचारशक्तीचे उदाहरण देते हे विचारशक्तीचे अमृतच मग विज्ञानासाठी जादूच्या कांडीसारखे फिरले आणि दळणवळणाला प्रचंड वेग देउन गेले . या वेगाने होणा-या प्रगतीचे अनेक साक्षीदार आजही जागतिक आश्चर्याच्या रूपाने आपणांस खुणवताहेत .


याच प्रगतीचा अवास्तव गर्व म्हणून कि काय अनेक राष्ट्रांनी शक्तीप्रदर्शनाचा प्रयत्न सुरू केला आणि स्वतःला सिद्ध करण्याच्या या प्रयत्नात झालेली दोन जागतिक महायुद्धे हा मी विज्ञानाचा अपमान मानतो पण नाण्याची दुसरी बाजू म्हणून याच काळात प्रगतीचा वेग सर्वाधिक असल्याचे जाणवते म्हणजेच अधिक ताण आल्यावर माणूस वेगाने विचार करतो हे येथे दिसून आले (आणि कदाचित यातूनच प्रेशर कुकर प्रमाणे असलेली 'ENGINEERING' आणि त्यातूनच भातासारखे शिजून सत्वयुक्त होणारे 'ENGINEERS' यांची कल्पना विकसित झाली असावी .)

वास्तविक पाहता अश्मयुगातला हत्यारं बनवणारा मानव असो, मध्ययुगात लोखंडी वस्तू बनवणारा लोहार असो, गुफा कोरून शिल्प कोरणारा शिल्पकार असो किंवा 'विज्ञानाला आकार देणारा' वैज्ञानिक असो हे दुसरे तिसरे काही नसून अगदी पूर्वीपासून रूढीने विकसित झालेले 'श्रृंषणश्रृं' आहेत आणि म्हणूनच १५ सप्टेंबर रोजी होणा-या 'ENGINEERS DAY' साठी आम्ही हे पहिलं व हिलं मासिक या सर्व इंजिनियर्सला समर्पित करतो .

SHUBHAM B. SAWANT.

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WHEN GOD SINGS....

Song... collection of words, expression of feelings, relations of humans. Song has been a medium to express feelings. One of the greatest songs in history of humans is *Bhagwat Gita*, The Song of God. But what must be feelings which God is expressing through His song. Whom is he singing for? What is He singing about?

Spoken to Arjuna on battlefield of Kurukshetra this song has made humans throughout the world, to enter into deep state of serene spiritual perfection, to experience the ecstatic joy of eternal blissfulness, transformed life of every human who tried to understand it. Its transcendental vibrations enchanting and enlivening lives of every one who came in its contact.

- **"Time less" Wisdom:** - Our motherland has witnessed many great compositions like *Vedas*, *Puranas*, and *Itihasas* like *Mahabharat*, *Ramayan* and *Shreemad Bhagwatam* which incorporate boundless oceanic wisdom. But due to our busy lifestyle and time constrains, there is very less time to accesses such unending knowledge. So there is need of concise work that would comprise essence of such vast knowledge. *Bhagwat Gita* has a unique position in vast Vedic library. Vedic scriptures are compared to cow, Krishna to a cowherd boy milking cow, *Arjuna* as a calf and *Gita* as milk. Thus the *Gita* is considered essence of all the Vedic literature.
- **Appreciation by Great Personalities:** - *Bhagwat Gita* has been source of inspiration for many great personalities and scholars like Mahatma Gandhi, Ralph Waldo Emerson and Henry David Thoreau.
- **A Spiritual Manual:** - Whenever we buy a complex and intricate machine importance of an instruction manual cannot be underestimated for proper and safe operation of that machine. With increase in complexity and cost of machine it becomes obligatory to follow instructions in manual. Similarly *Bhagwat Gita* is compared to instruction manual for proper use of most complex machine known as "human".

Thus this song of knowledge, wisdom, compassion and love teaches us how to work, why to work. It gives us knowledge of absolute truth, of the sublime science spirituality and makes our life balanced and complete in true sense.

Ritesh Thakur

TE Mech

" अशी ती "

नात्यांना एकमेकांत गुंफून ठेवते ती
घराला घरपण देते ती....

आईच्या काळजाचा तुकडा अन् लाडकी ती भावाची
फुलाप्रमाणे जपलेली परी असते ती बाबांची....

तरीदेखील मनाला भासते एकच खंत
एखाद्या चिमुरडीचा जन्मास येण्याआधीच होतो अंत...!!

प्रगतीपथावर पदोपदी सहन करते ती अपमान
सवलती नको, आरक्षण नको, हवा तो सन्मान ...

वादळ निर्भयतेने झेलते, आहे तिच्यात सहनशीलता
नको ते श्रेष्ठत्व, हवी ती समानता ..

स्वच्छंदी पक्षाप्रमाणे उंच नभी उडायचंय
समाजात तिला ताठ मानेने जगायचंय...

मनस्वी जगण्यासाठी हवीय मुक्ती बंधनातून
बदल घडेल , तिच्याकडे पाहण्याच्या नव्या दृष्टिकोनातून...

रेणुका धर्मशाळे

SE Mech

NEED BECOMING GREED

Technology is the term referred for the various discoveries and there development in the various field such as Mechanical, Information, and Communication etc. ultimately for the betterment of mankind. Technology is being developed to reduce the efforts of the society. By the use of technology we are becoming more efficient. But as every coin has two side similar to this the use of technology has also its advantages and disadvantages also. We are very much addicted for the use of the technology. As a result of over usage of technology we are suffering from different problems.

Mobile / cell phones is a very important discovery in our society. The main of origin of mobile phone is Graham Bell's telephone from it the journey of evolution of the typical telephone started. And now it is rather than a mobile phone it becomes a smartphone now. The evolution doesn't stops here it is proceeding day by day. But as our generation is developing we are not only using the technology but also misusing and overusing it. Due to the over usage of mobile phones during driving, and other activities we have to face severe problems. The typical analysis and studies of such problems are briefly explained further.

Mobile / cell phone use while driving is common now. But no one amongst us known this. It is considered as widely dangerous due to the number of accidents are related to cell phones use while driving. There are various

jurisdictions have made the use of cell phones while driving is illegal.

PREVALENCE:-

The SAAQ conducted a study and survey in 2003. The overall study found that the overall relative risk of having an accident for cell phone users is **more than 1.38 times** as compared to the non cell phone users.

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**NO CELL PHONE
USE WHILE
DRIVING**

DISTRACTION RELATED ACCIDENTS:-

In September 2010, the United States National Highway Traffic Safety Administration (NHTSA)

released a report on distraction driving fatalities for 2009. And according to the major reports of the NHTSA the **major & very dangerous & viral distraction during driving a vehicle is the use of cell phones.** And according to their annual information **among 5474 distracted drivers around 995 and more were killed by the distraction caused by the cell phones.**

TEXTING:-



Now, a day's cell phones are widely used to operate social networking sites like Facebook, Whatsapp etc. This site offers us messaging facilities to us hence everyone can be stay connected by Texting. The texting is now a days becoming a global fashion. There are various scientific articles and analysis are published on the dangers of driving while sending a text message from a mobile phone. Or texting while driving is limited.

Sending text messages has a detrimental effect on a number of critical driving tasks. Specially **negative effect were seen in detecting and responding correctly to the road signs, detecting hazards,** time spent with eyes off the road and lateral position when receiving text message and the following distance showed no difference which causes collision which results in severe accidents.

Also, the **internet surfing** according to 2013 report causes distraction with mind of driver which **causes imbalance of the vehicle results in severe accidents.**

Now, we have to wake up and enhance everyone's thinking about excessive use of cell phones we have to motivate everyone **not to use the cell phones while driving for their & others safety.**

Everyone amongst us is agreed that **the cell phone is the main need of this modern generation.** But **by its excessive use it is becoming "CURSE" to our society.**

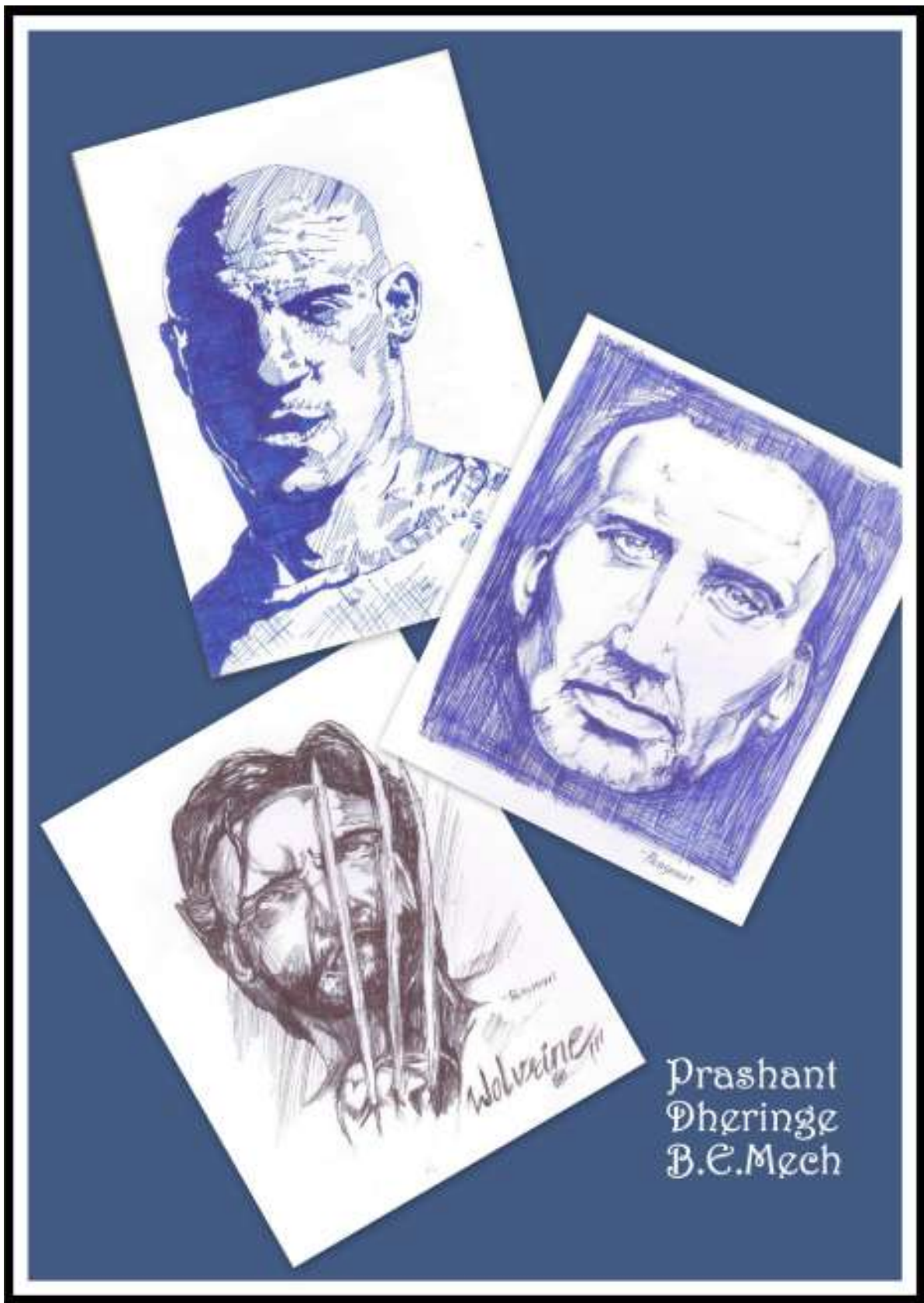
So, please don't use the cell phones during driving for **"OURS SAFTEY "!**

BECAUSE,

***"EXCESS MAKES
POISON"***

-PRATIK PAWAR

S. E. Mech



‘FROM THE HOSTEL’

Hello,

In this festive season, let me take you to the world of hostelites.

Hostel....a new home for outsiders or rather you guys call them the "non localites", a home where they are alone, away from those whom they love the most, away from the people with whom they have spent the early partrather the sweetest part of their lifeaway from the scoldings of their dearest Granny and grandpa.....away from the love of a mother and the care of father, away from mischiefs of little sisters and brother, and also from pranks of the elder brother/sister.....enter the hostel....their new home...just all alone...with a lot of mixed feelings, happiness, coupled with fear and homesickness...Just all alone. Handling these emotions and motions together for the first time.

As the parents did good bye, it's a new start for the guy. A journey on which he goes on all alone with the guidelines and blessings of his/her dear ones long way back at their Home sweet Home. Very first day usually starts up with getting up early and having a bath ...which he/she would rarely do for the rest of the hostel life

The morning is sort of scary, as for now, it's not the same... not your mom to wake you up, this time it should be your alarm tone...

First day at college, first lunch at the mess and first introductory session...its usually everyone loves...

Everyone finds friends of his choice as 'Birds of same wings flock together and thus starts the life of the Hostelite...

Though missing the old ones, we start to understand the new ones, those who have some emotions as we do, the same fear and the same excitement. As the time passes by, we find the friends which are just the perfect ones for us. Those who understand us our silence and our smile... celebrating birthdays together is just a way to make up for the vacant space for the members... enjoying weekends together... its just a part of running away from the loneliness of our heart...

As this is being the festive season lets talk about the Ganeshutsav at the Hostel. A festival...the whole hostel wait for.... Preparing and organizing the festival is really a hard job for all T.E. and S.E. students. Those 10 days of the utsav pass away just too fast.... 'Everyone is so engaged that they hardly find the time to give a look at the watch. The last day... Visarjan... of the almighty though painful... but is also a satisfaction for all those who have helped. Dancing to the music....all stress, tensions, fear flow away with the sweat and there is no tiredness at all...

This is the life of Hostelite... Though missing the dear ones, enjoys with the new ones... shares, laughs, cries and just lives the life at the new Home... The HOSTEL.....

-Sarang (S. M.)

S.E. Mech

Kalyani Khairnar
and
Pritam Bele



9873 KM IN 100 MIN...

Shanghai passenger to captain: Excuse me sir, how long until we reach San Francisco? I don't know if I have enough time to watch a movie. Captain: You might just make it. A little under two hours.

Rub your eyes but a headline in the South China Morning Post (SCMP) remains, "Shanghai to San Francisco in 100 minutes by Chinese supersonic submarine." That could be the case that results from ongoing research among scientists. Stephen Chen reported that China has moved a step closer to creating a supersonic submarine that could make the trip from Shanghai to San Francisco in less than two hours..

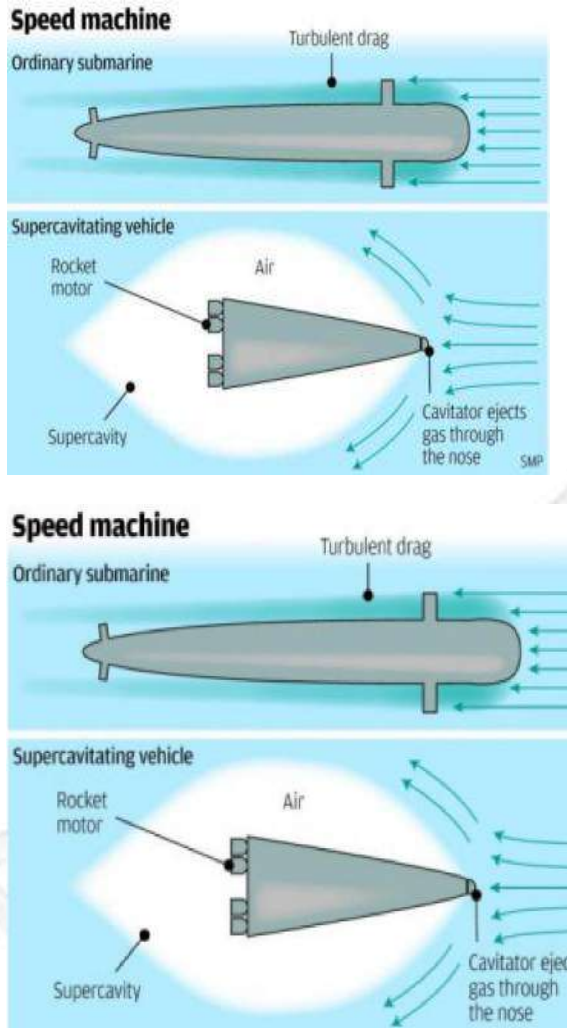
This could indeed be part of the future of underwater travel. Scientists in China are exploring how supercavitation could get people where they want to go. During the cold war, said Chen, the Soviet military developed supercavitation technology, which involves enveloping a submerged vessel inside an air bubble to avoid problems caused by water drag. "A Soviet supercavitation torpedo called Shkval was able to reach a speed of 370km/h or more - much faster than any other conventional torpedoes," he said.

A paper from Caltech by Victoria Sturgeon in 2001 titled Racing Through Water: Supercavitation referred to the Shkval torpedo as an underwater missile that shatters speed records by using a phenomenon known as supercavitation. She said that it was first explored in the 1940s. The interest in supercavitation is due to how it exploits a loophole that allows underwater travel with minimal drag. "In supercavitation," she explained, "the small gas bubbles produced by cavitation expand and combine to form one large, stable, and predictable bubble around the supercavitating object."

Then why has this concept of underwater travel in a bubble remained out of the limelight for so long? Sturgeon wrote that although supercavitation has been widely studied since the 1940s, many questions remain unanswered.

The SCMP highlighted two problems in supercavitation technology. First, the submerged vessel needed to be launched at high speeds, approaching 100km/h, to generate and maintain the air bubble. Secondly, it is difficult if not impossible to steer the vessel using conventional

mechanisms, which are inside the bubble, without direct contact with water. As a result, its application has been limited to unmanned vessels, fired in a straight line.



Li Fengchen, professor of fluid machinery and engineering, told SCMP that the group's approach differs from any other approach such as vector propulsion or thrust created by an engine. "By combining liquid-membrane technology with supercavitation," he said, "we can significantly reduce the launch challenges and make cruising control easier." Nonetheless, Li said many problems still needed to be solved before supersonic submarine travel became feasible.

Cheng said the group, whose research is ongoing, is hardly alone in exploring the possibilities of such modes of travel. He said many scientists worldwide are working on similar projects, but "the latest progress remains unclear because they are regarded as military secrets."

SHOEB R. MANSURI

S.E. Mech

FIFA

(INTERNATIONAL FEDERATION OF ASSOCIATION FOOTBALL)

WORLD CUP

No other sporting event captures the world's imagination like the FIFA World Cup. Ever since the first tentative competition in Uruguay in 1930, FIFA's flagship has constantly grown in popularity and prestige.

A group of visionary French football administrators, led in the 1920s by the innovative Jules Rimet, are credited with the original idea of bringing the world's strongest national football teams together to compete for the title of World Champions. The original gold trophy bore Jules Rimet's name and was contested three times in the 1930s, before the Second World War put a 12-year stop to the competition.



When it resumed, the FIFA World Cup rapidly advanced to its undisputed status as the greatest

single sporting event of the modern world. Held since 1958 alternately in Europe and the Americas, the World Cup broke new ground with the Executive Committee's decision in May 1996 to select Korea and Japan as co-hosts for the 2002 edition.

Since 1930, the 16 tournaments have seen only seven different winners. However, the FIFA World Cup has also been punctuated by dramatic upsets that have helped create footballing history - the United States defeating England in 1950, North Korea's defeat of Italy in 1966, Cameroon's emergence in the 1980s and their opening match defeat of the Argentinean cup-holders in 1990.... etc.

Today, the FIFA World Cup holds the entire global public under its spell. An accumulated audience of over 37 billion people watched the France 98 tournament, including approximately 1.3 billion for the final alone, while over 2.7 million people flocked to watch the 64 matches in the French stadiums. After all these years and so many changes, however, the main focus of the FIFA World Cup remains the same - the glistening golden trophy, which is the embodiment of every footballer's ambition.

This time it was in BRAZIL, the heaven place for football..The Brazilian was facing many problems with the government, but finally they stood forward & lead the WC2014 to success. It's been after 36 years that a FIFA WC was going to be

in Non-European country (after 1978-Argentina).

Also from 1998, it's common that for every WC there is an official song. Starting from Rickie Martin's "Cup of Life", this time it was "Ole Ole" by Pitbull & "La La" by Shakira.

Starting from Marcello's own goal to Mario Goetze's match-winning goal, it was a spectacular journey of the 2014 WC. GERMANY winning the title 4th time (West Germany 4 times-1954, 1974, 1990).



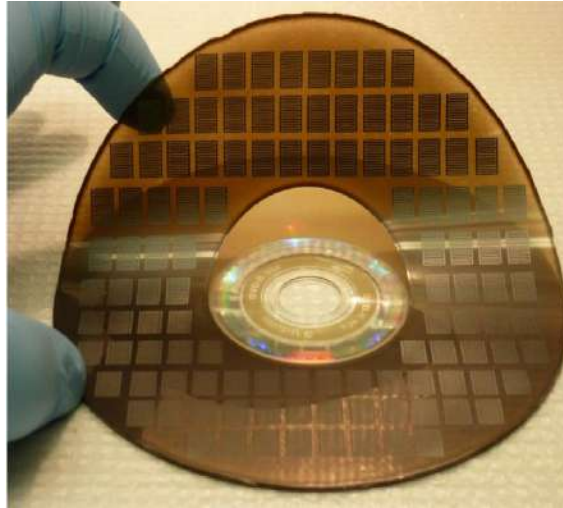
-SATHE PARIKSHIT

There are so many stars who came through their performance like Santos (Mexico), Rodriguez (Colombia), Messi (Argentina), Howard (USA), Neur (Germany).

T. E. Mech

And now every player is getting themselves ready for the next WC 2018 in Russia. So get yourself ready also.....!!

NANO-SUPERCAPACITORS FOR ELECTRIC CARS



Innovative nano material based supercapacitors have set a new market in automobile sectors, especially in electric cars. Electric cars are very much welcomed in Norway and they are a common sight on the roads of the Scandinavian country -- so much so that electric cars topped the list of new vehicle registrations for the second time. On the other hand countries like Germany are on a far way from electric vehicles. In the millions of vehicles in Germany merely 0.2% contributed by electric vehicles. The major obstacle en route to the mass acceptance of electric cars is the charging time involved. The time involved in refuelling in this case is very larger than the conventional gasoline vehicles. This is overcome by SUPERCAPACITORS which are fast charging and can therefore better support the use of economical energy in electric cars.

Taking traditional gasoline-powered vehicles for instance, the action of braking converts the kinetic energy into heat which is dissipated and unused, while generators on electric vehicles are able to tap into the kinetic energy by converting it into electricity for further usage. This electricity often comes in jolts and requires storage devices that can withstand high amount of energy input within a short period of time. In this example, supercapacitors with their capability in capturing and storing this converted energy in an instant fits in the picture wholly. Unlike batteries that offer limited charging/discharging rates, supercapacitors require only seconds to charge. Supercapacitors are known to possess high power density, whereby large amounts of electrical energy can be provided or captured within short durations, albeit at a short-coming of low energy density. The amount of energy in which supercapacitors are able to store is generally about 10% that of electrochemical batteries (when the two devices of same weight are being compared). During the storage process, the electrical energy is stored as charged particles attached on the electrode material. So to store more energy efficiently, light weight electrodes with larger, usable surfaces are

designed. Graphene electrodes significantly improve energy efficiency in numerous tests, the researcher and his team investigated the nano-material graphene, whose extremely high specific surface area of up to 2,600 m²/g and high electrical conductivity practically cries out for use as an electrode material. It consists of an ultrathin monolayer lattice made of carbon which greatly increases the surface area with the same amount of material. From this aspect, graphene is showing its potential in replacing activated carbon -- the material that has been used in commercial supercapacitors to date -- which has a specific surface area between 1000 and 1800 m²/g. The space between the electrodes is filled with a liquid electrolyte. Graphene-based electrodes together with ionic liquid electrolytes present an ideal material combination where we can operate at higher voltages. By arranging the graphene layers in a manner that there is a gap

between the individual layers, the researchers were able to establish a manufacturing method that efficiently uses the intrinsic surface area available of this nano-material. These electrodes have already surpassed commercially available one by 75 percent in terms of storage capacity. We can imagine that the cars of the future will have a battery connected to many capacitors spread throughout the vehicle, which will take over energy supply during high-power demand phases during acceleration for example and ramming up of the air-conditioning system. These capacitors will ease the burden on the battery and cover voltage peaks when starting the car. As a result, the size of massive batteries can be reduced.

BHUSHAN PATIL

T. E. Mech

सुखाची पहाट

जाईल सरून दुखाची रात
येईल नक्कीच सुखाची पहाट

युगायुगांची आहे ही
खडतर अंधारी वाट
अन आपसूकच पाणावले
जाती नयनाचे काठ
तरीही ठेवीन माझ्या
विश्वाचा कणा ताठ
जाईल सरून दुखाची रात
येईल नक्कीच सुखाची पहाट

का देवा तुजजवळ मी
माझे मन खोलावे?
अन मूक माझे मुख
असूनही आसवांनी सर्व बोलावे
तरीही सोडणार नाही
कधी धीराजतेचा हात
जाईल सरून दुखाची रात
येईल नक्कीच सुखाची पहाट

आत्मा नष्ट करणाऱ्या
दुखाने हृदय हे दाटले
संपणारे हे दुख नव्हे
अश्रू जरी आटले
तरीही जीवन सागरात
शोधेल एक आनंदात
जाईल सरून दुखाची रात
येईल नक्कीच सुखाची पहाट

KAUSTUBH JADHAV

T. E. Mech

THE TWO PRECIOUS DIAMONDS

There are only two things,
Which make a persons personality.
They may be good or something.
And there are only 'two precious
diamonds'
To build up this ability.
For our future, they help us to fight
Which makes us with confidence firm
and tight.
They are not our weaknesses,
But our strength.
Sometime they may blame us for our
Sins and censure,
But we should accept this thing as our
good path for sure.
These two like lamps with light,
To make us walk on the dark road,
This makes us bright,
And increases our knowledge more
abroad.
And also they care for us many times.
These are the two precious diamonds,
Which help us to shine before the
present world.
And they are no one else,
But our 'Mother and Father'.

MANGESH JOSHI

T. E. Mech

“HYBRID CAR TECHNOLOGY.”

Hybrid cars can simply be said the new step into auto industry. Hybrid cars are basically the cars with part battery electric and part conventional cars. These cars generally use two or more distinct sources of power to move on. Hybrid cars use both electric motors and a gas engine.

The energy used by electric motors in these cars is further stored in rechargeable batteries, hence hybrid cars are more fuel efficient and pollution free as well.

Functioning:

These cars are installed with amazing functioning as hybrid car has two motors, one is run by diesel or gasoline and other one by electric motor. Both these motors function together to make the car run. When the car gets slow speed the charge (current) is supplied through the electric motor while the power is supplied by high speed gasoline motor. Other than normal cars at the time of braking hybrids cars convert the excess kinetic energy into electricity which is stored into the battery.

Hybrid cars can be categorized as follows:

- Parallel Hybrid.
- Mild Parallel Hybrid.
- Power Split or SeriesParallel Hybrid.
- Series Hybrid.
- Plug-in Hybrid.
- Fuel Cell/Electric Hybrid.

Till the date the hybrid cars are not very frequently adopted, but these have great potential to overcast the car market. One more factor behind less adoption of hybrid cars could be their niche pricing. But the adorable part, these hybrid

cars compliment owner the best way with their pretty luxurious model, comfortable seats and rich interiors. The elite looks of these cars easily attract every car love



Toyota Prius, the most sold sedan hybrid car from Toyota across the globe now rolled Indian roads with its latest third version hybrid Toyota Prius Hybrid. This Toyota Hybrid is the latest Eco friendly vehicle in India.

This Hybrid car is available in two variants – Prius Z3 and Prius Z4 with a price tag of approx. 26.5 to 27.5 lacs respectively. **It is featured with crash safe body to minimize the effect of collision.** The interior and exteriors of Toyota Prius Hybrid is excellent, **it is the only hybrid car with lowest emission with fastest acceleration.** Toyota is all set to hit Indian road with its third generation Prius Hybrid in coming days.

Specifications:

It is available with three driving modes – power, eco and electric mode. Toyota Prius is powered with 1.8 ltr engine and 650 electric motor with 1798cc displacement, loaded with 4 cylinders, accelerates maximum power of 73 kw at 5200 rpm and a torque of 142hp at 4000rpm. The combined power output of the both the engine is 100kw. The electric motor alone generates a power of 60kw at torque of 207hp. When the driver chooses the combined driving mode the fuel efficiency increases to 35 percent. It is also powered with

automatic transmission. The engine in this new sedan hybrid car can be turned off automatically when you stop in traffic.

The interior of this all new Toyota Hybrid is featured with latest high technologies. It is designed with multi functional steering wheels, exceptional high quality audio system with 8 speakers for which the console can be managed from the steering wheel. Toyota prius is equipped with

air filter, now you can breath clean air inside your car. It is featured with user friendly multi display where the driver can have access to the speed and climate information as well. The boot space is exceptionally spacious, driver has got enough headroom and legroom. If in case Toyota plans to come up with 4th version of Toyota prius hybrid, that will be fastest car ever on road. A grand salute to Toyota for its innovation and design evolution.

GAURAV V. SURYAWANSHI

T. E. Mech

'MECHANICAL ENGINEERS STORY'

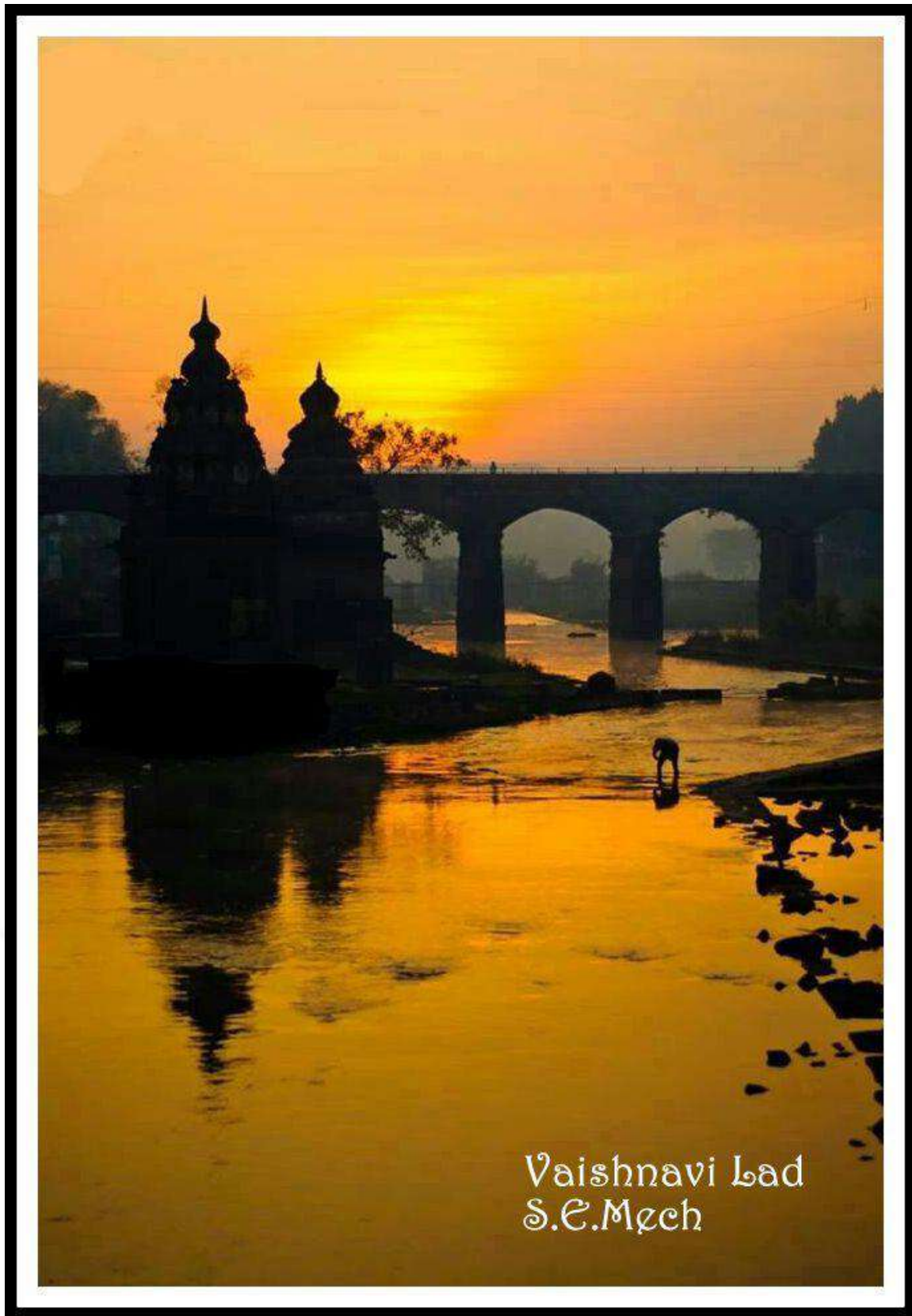
What it takes to be a Mech. Engg.? We entered the college with lot of dreams, With the first day, came the first shock: NO GIRLS. With this we started the great journey. First half of first year passed getting acquainted; Getting out of school mentality, exploring the campus; Second half entangled in draughters, t-squares, set square, sheets; Eventually ended by rewriting the drawing rules. Third was the sem of great transformation; Mastering the art of copying assignments, Getting famous for infamous acts; No matter lost only few marks. Then came the fourth sem, The of tech fests, seminars; We were the hearth of all the events; And were rated best till date. Fire began from fifth sem; Suddenly the class was rated the worst ever, And rebels had borned; Revolution started, superficially suppressed. Sixth sem saw new senses coming up, Desire to excel beyond academics grew; Explored unexplored areas; Ideas succumbed under the campus interviews. Finally te

last year started, Campus interviews came at large, Quickly we were being

absorbed in, The fairy tale had already started. Eighth sem: None of us know what was it. May we were in ecstasy, or in heaven, only He knows, We were the achievers of rare feet: NO GIRL IN WHOLE DEPARTMENT(curse turned into blessing)We knew it was unfair but we were the dictator.(the whole class acted as one thought)Disqualification was appreciated over defeat; The inter bong was stronger than ever, The last week of college saw us becoming different persons. All good things end, so did quality time. College gave us spirit, knowlegee, friends, Above all it made us the person whom the world calls MECHANICAL ENGINEER. The word will carry with our name. These all takes to be a Mechanical Engineer.

ROHAN JADHAV

T. E. Mech



Vaishnavi Lad
S.E.Mech

“LIFE” – AN ENDLESS WEB OF UPS & DOWN”

“As I sit here with the pen in my hand I wonder if I can write. It has been almost a year since I've been away from my stuff. I do write these days but just some questions, derivations & complex maths. Today I've no big story to tell, no awesome quotes to share or no gods oppose. Its just me and you isolated from world. Lets just think about ourselves and everyone else in the world. Now read this and stop everything else you're doing.

People say holding feelings in your heart is not easy. Which is true. Holding it is not easy at all. That happiness you felt when you lost someone you loved or those tears you shed on your failure. I surely know you can relate it to your life. You definitely can. The good days, The bad days. It happened, it passed. Somedays were easy, Someleft everlasting impression on us. There have been days when I felt like the unluckiest guy in the world, there have been days when everything I tried just ended up as total failure. But admist these times I never forgot the days when I was happy for no reason or the day when I was with the person whom I loved the most in my life. I've had my share of happiness and sadness and I know that you've had similar days too. Maybe worse than mine. Whenever I feel sad, I think to myself. If I didn't have a good reason to explain why I am having a good day, then I've no good reason to wonder the same on a bad day.

There have been times in our lives when the easiest option we could see was a suicide. But was it really the solution?- For a father and mother who have hopes from their child, for a sister who waits for you to return home and help her with some work and for a brother who wish to play or just mess with you. They don't see suicide as the solution.

“Sympathy is not what I look for, Connection of minds is what I wish.”

Things fall apart, people leave and plans fail, but that is just because there are new things waiting for you, new people about to enter your life and new improved plans coming in. What you've seen is just a small part of life and trust me the future holds a lot of surprises for you. And if you've bad days, accept them as part of life. Failure is inevitable, we all fail. We make mistakes, Sometimes big, Sometimes life changing mistakes. Love, Study, Friends, Family and Feelings are just a “PART” of life, they are not life. Then what is life?

Life is you, feeling everyday with consciousness experiencing every feeling witnessing pain and sorrows. Cherishing those beautiful moments and crying on those hard days. Life is you, feeling every breathe you take humming along that song you love and hanging out with that guy/girl you like a lot. Life is you, looking up the stars and thinking to yourself- “Damn! Why stars you are so high?”

Life is you, living for yourself. Life makes no sense without YOU.

“Life has just begun and it is beautiful”

Sometimes I wish I could break down life in simple equation which never failed and sometimes I wish I had superpower to control my destiny. But life doesn't go by my rule, it goes by no one's rule. One thing is certain happiness and sorrows both will come to you.

There were days when your friends and family were totally against you. There were days when you fell apart, there were days when you felt life the biggest failure on this planet. I've had these days too. But now that is just a past. Friends, Human beings, Aliens (if present) trust me, now is not the time to give up. Tomorrow is better than today. If not tomorrow then some other day is definitely gonna be better than the previous day but trust me, I know you'll cross this and you'll learn to be stronger and No, I'm not any different from you. I'm just like you.

GAURAV V. SURYAWANSHI

T.E. Mech

ENGINEERING HISTORY

Class test over, submission done, but do not expect fun, for study leave has begun!

Which books to refer, which notes to gather we tap all sources and run for all courses?

With full lengthy timetable we make, but that's just for satisfaction sake, care to follow it, we seldom take.

Theory is such a pain some subjects are so insane, but we have to bear this bane, because we don't want them.

Everything to crack, our brains have rack, a semester's work, in a month we pack.

We make grand resolutions, but that's just all in vain, for history has to repeat again!!!

Prof. NIKHIL R. KADAM

Mrunalini
Gorade
S.E.Mech



HOW TO WORK SMART IN YOUR JOB

What do you live for?

Work, Power, money?

What's the use,

Have you ever drilled your Mind?

Running around amidst Milling
Crowd,

Aren't you ever Bored of revolving
around?

When you gear up for a promotion

You are screwed and get just a
motion

From One office to another

Like a dummy toy fixture

Once a while you have moments
of Inertia

But your boss wants you fly to
Siberia

For a task which you think a trivialt's
not Horse power but the Modulus
of Elasticity

That determines your success and
Efficiency.

If your Modulus of Rigidity is too
high

Juniors with Young's Modulus will fly
high!

If you are in friction with your boss,

Someone with Lube and Coolant
will pass!

IF your short temper shows Flash
Point

You may soon be in Fire Point !

You may be good in details to nuts
and bolt

But if you can't handle those who
revolt

You will be rough-cut to size

and Soon you'll lay on surface-
finished!

You must constantly leverage on
your smartness

By never allowing the boss to reach
high Hardness!

You must be bearing in mind fully

That growth will be faster with a
Pulley!

ROHAN JADHAV

T. E. Mech

TEMPERATURE MATTERS

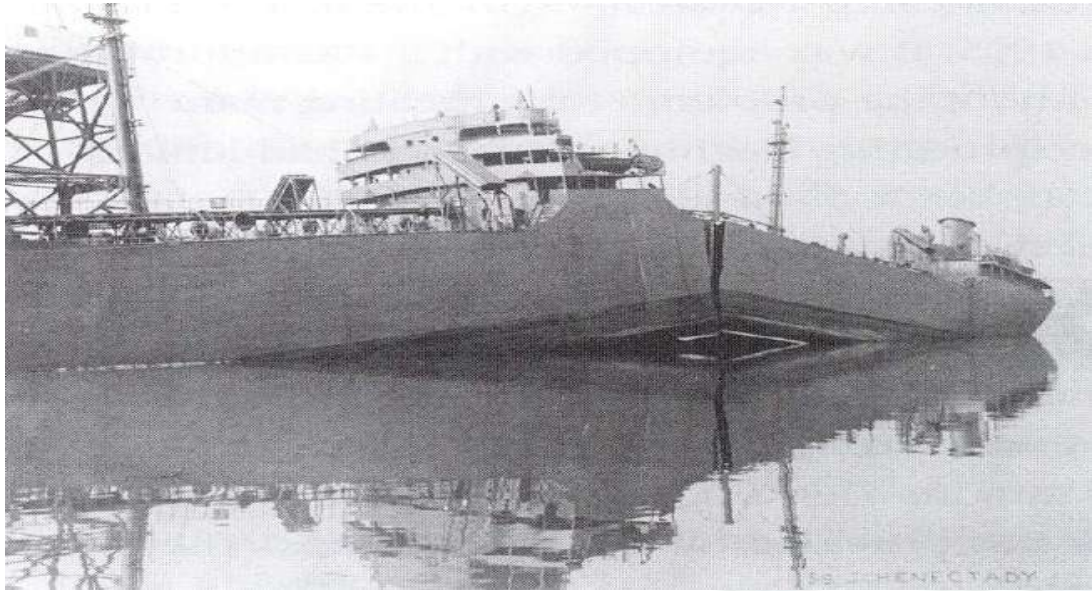
Liberty Ships were lightly armed cargo vessels built in the US for transporting desperately needed supplies across the U-boat infested Atlantic to a beleaguered Europe in WWII. Some 2700 vessels were built from 1942 until the end of the war. Such huge numbers were possible only through prefabricated all-welded construction to a standard design, together with a massive investment of capital, materials and workers. Towards the end of the programme one vessel was completed in less than five days. Eighteen American shipyards built 2,710 Libertys between 1941 and 1945, easily the largest number of ships produced to a single design.

At the start of the programme some 30% of Liberty Ships suffered catastrophic fracture. The general technological fraternity was unaware of Fracture Mechanics principles when these ships were designed, and the reason for the disastrous fractures was a mystery since conventional safety assessments were unremarkable and the extremely short lives ruled out conventional fatigue as the culprit. It later became clear that the failures *could* be attributed to:

- the all- welded construction which eliminated crack- arresting plate boundaries which are present in riveted joints
- the presence of crack- like flaws in welded joints performed by inexperienced operators pressed into service by the exigencies of the programme
- the use of materials whose low resistance to crack advance (toughness) was further reduced by low temperatures.

Recent recoveries from the Titanic suggest that poor steels in association with low temperatures might have contributed to that disaster too, although this vessel was riveted throughout.

During World War II, there were nearly 1,500 instances of significant failures. Many lives were lost due to these unexpected failures. Twelve ships, including three of the 2,710 Liberties built, broke in half without warning, though not necessarily so dramatically as the Schenectady. On 16 January 1943, she was moored at the fitting dock at Swan Island, in calm weather, shortly after returning from her sea trials. Without warning, and with a noise audible for at least a mile, the hull cracked almost in half, just aft of the superstructure. Suspicion fell on the shipyards which had often used inexperienced workers and new welding techniques to produce large numbers of ships in great haste. The Ministry of War Transport lent the British-built Empire Duke` for testing purposes.



Schenectady after breaking in two

The cause of the failures was discovered by Constance Tipper, an engineering professor at Cambridge. She found that the grade of steel used to make Liberty ships suffered from embrittlement, in which materials become brittle. *She discovered that the ships in the North Atlantic were exposed to temperatures that could fall below a critical point when the mechanism of failure changed from ductile to brittle, and thus the hull could fracture rather easily.* Because the hulls were welded together, the cracks could propagate across very large distances; this would not have been possible in riveted ships.

A crack stress concentrator contributed to many of the failures. Many of the cracks were nucleated at an edge where a weld was positioned next to a hatch; the edge of the crack and the weld itself both acted as crack concentrators. Also contributing to failures was heavy overloading of the ships, which increased the stress on the hull. Engineers applied several reinforcements to the ship hulls to arrest crack propagation and initiation problems.

The critical point is called as the 'transition temperature' and is the temperature (or range of temperature) at which the mode of fracture changes from ductile to brittle. It is now a predominantly considered factor in the building of ships.

So guess what, no more dramatic splitting of ships out of the blue!

ASHISH METKAR

S.E. Mech

LIFE WITHOUT ENGINEERS

“Without ENGINEERS, Science is just a philosophy .”

If we practically think about this sentence then it's 100% true . So readers, have you even imagined a life without Engineers ?

From morning , cup of coffee to your favourite evening sitcom , Engineer is a part of practically everything you do .

Waking up : Forget about waking up to your favourite tunes , weather reports or morning radio show as product of electronic engineer.

Getting ready : Unfortunately , you can't start your day with a shower and a clean glass of water without engineers, there would be no system to purify your tap water . Brushing your teeth chemical engineers created the plastic for handle of your colourful toothbrush .

Driving to work : Without the civil engineers around to build safe , smooth ,durable roads , you drive to work will be a hazardous trip and without mechanical and automobile engineers to design your car , your morning commute means walking to work .

Beginning the workday : Without computer engineers, when you have no computers. In fact, to be completely accurate , you really have no place to work as computer reduces the work and time with accuracy.

The work environment : Without engineers there would be no air conditioning, photocopying machines, conference calls, printers, emails or the most important World Wide Web.

Evening TV : Unfortunately, the evening TV shows you'd planned to enjoy are also out of the window....engineers designed your TV too.....and much much more...

It's amazing how many engineering achievements contribute to our quality of life.

-Mayur Mahajan

SE Mech

Life Without Engineers



Magur Mahajan
S.E. Mech

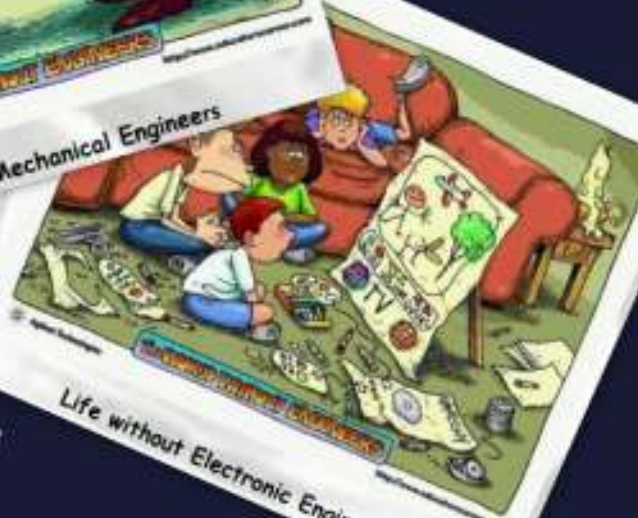
LIFE WITHOUT ENGINEERS



Life without Computer Engineers



Life without Mechanical Engineers



Life without Electronic Engineers

MAYUR MAHAJAN
S.E. Mech

Vaibhav Nandge
and
Vaishnavi Lad



S.E.Mech

PARADOXES OF LIFE

Taller buildings	➡ Short temper.
Bigger houses	➡ Smaller families.
More conveniences	➡ But less time.
More degrees	➡ Less sense.
More knowledge	➡ Less judgement.
More experts	➡ Less solutions.
Wider roads	➡ Narrow view points.
More medicines	➡ Less wellness.
Multiple possession	➡ Reduction in values.
Conquered outer space	➡ Not inner space.
Higher incomes	➡ Lower morals.
Fast food	➡ Slow digestion.
Fancier houses	➡ Broken families.

6 INSTRUCTIONS GIVEN TO A PENCIL.....

Your real value lies within.

Only when the within comes without will you be of any use.

For within to come without the process will be painful.

only you are in hands of proper writer will you be impact.

Wherever you go, will leave a impact positive or negative.

Even if you commit mistakes it can be erased and rewritten.

SURBHI SACHDEV

S. E. Mech



“NEW 'T-RAY' TECH CONVERTS LIGHT TO SOUND FOR WEAPONS DETECTION, MEDICAL IMAGING.”

A device that essentially listens for light waves could help open up the last frontier of the electromagnetic spectrum -- the terahertz range.

So-called T-rays, which are light waves too long for human eyes to see, could help airport security guards find chemical and other weapons. They might let doctors image body tissues with less damage to healthy areas. And they could give astronomers new tools to study planets in other solar systems. Those are just a few possible applications.

But because terahertz frequencies fall between the capabilities of the specialized tools presently used to detect light, engineers have yet to efficiently harness them. The U-M researchers demonstrated a unique terahertz detector and imaging system that could bridge this terahertz gap.

"We convert the T-ray light into sound," said Jay Guo, U-M professor of electrical engineering and computer science, mechanical engineering, and macromolecular science and engineering. "Our detector is sensitive, compact and works at room temperature, and we've made it using an unconventional approach."

The sound the detector makes is too high for human ears to hear.

The terahertz gap is a sliver between the microwave and infrared bands of the electromagnetic spectrum -- the range of light's wavelengths and frequencies. That spectrum spans from the longest, low-energy radio waves that can carry songs to our receivers to the shortest, high-energy gamma rays that are released when nuclear bombs explode and radioactive atoms decay.

In between are the microwave frequencies that can cook food or transport cell phone signals, the infrared that enables heat vision technologies, the visible wavelengths that light and color our world, and X-rays that give doctors a window under our skin.

The terahertz band is "scientifically rich," according to Guo and colleagues. But today's detectors either are bulky, need to be kept cold to work or can't operate in real time. That limits their usefulness for applications like weapons and chemical detection and medical imaging and diagnosis, Guo says.

Guo and colleagues invented a special transducer that makes the light-to-sound conversion possible. A transducer turns one form of energy into

another. In this case it turns terahertz light into ultrasound waves and then transmits them.

The transducer is made of a mixture of a spongy plastic called polydimethylsiloxane, or PDMS, and carbon nanotubes. Here's how it works:

When the terahertz light hits the transducer, the nanotubes absorb it, turning it into heat. They pass that heat on to the PDMS. The heated PDMS expands, creating an outgoing pressure wave. That's the ultrasound wave. It's more than 1,000 times too high for human ears to pick up.

"There are many ways to detect ultrasound," Guo said. "We transformed a difficult problem into a problem that's already been solved."

Though ultrasound detectors exist -- including those used in medical imaging - the researchers made their own sensitive one in the form of a microscopic plastic ring known as a microring resonator. The structure measures only a few millimeters in size.

They connected their system to a computer and demonstrated that they could use it to scan and produce an image of an aluminum cross.

The response speed of the new detector is a fraction of a millionth of a second, which Guo says can enable real-time terahertz imaging in many areas.

The system is different from other heat-based terahertz detection systems because it responds to the energy of individual terahertz light pulses, rather than a continuous stream of T-rays. Because of this, it isn't sensitive to variations in the outside temperature, Guo says.

The research is funded by the National Science Foundation and the Air Force Office of Scientific Research.

-GAURAV V. SURYAWANSHI

T. E. Mech

Pallavi Ghivande
S.E.Mech



TEENAGERS

Curiosity is present in
Each and every mind;
But there are some questions
Whose answers they can't find

Surrounding atmosphere always
Tries to give new information;
This is the time when they
Have to give their decision
Mind will tend to do it
Though it may be wrong;
It will not be of any use
If it is tried prolong

Correct decision on correct time
Leads to a bright future;
If the mind cannot be controlled
Then it devalues the culture

Always take the advice of elders
And do form with them a strong
bonding;
So that the problems can be avoided
Leading the situation to a happy
ending

TEJAS DESHPANDE

S. E. Mech

जीवन की भाग-दौड़ में -

जीवन की भाग-दौड़ में -

क्यूँ वक्त के साथ रंगत खो जाती है?
हँसती-खेलती ज़िन्दगी भी आम हो जाती है।

एक सवेरा था जब हँस कर उठते थे हम

और

आज कई बार

बिना मुस्कराये ही शाम हो जाती है!!

कितने दूर निकल गए,

रिश्तो को निभाते निभाते

खुद को खो दिया हमने,

अपनों को पाते पाते

लोग कहते हैं हम मुस्कराते बहुत हैं,

और हम थक गए दर्द छुपाते छुपाते

"खुश हूँ और सबको खुश रखता हूँ,

लापरवाह हूँ फिर भी सबकी परवाह करता हूँ.

मालूम है कोई मोल नहीं मेरा.....

फिर भी कुछ अनमोल लोगो से

रिश्ता रखता हूँ.....!

--- हरिवंशराय बच्चन

Collection-

SHOEB R. MANSURI

S.E. Mech

SEVEN FRIENDS OF HAPPINESS

DALE CARNEGIE'S FORMULA

1. Let's fill our minds with thoughts of peace, courage, health and hope, for our life is what our thoughts makes it!
 2. Let's never try to get even with our enemies because if we do, we will hurt ourselves far more than we hurt them. Let's never waste a minute thinking about people we don't like.
 3. Instead of worrying about ingratitude, let's remember that Jesus healed ten lepers in one day and only one thanked him. Why should we expect more gratitude than Jesus got?
- Let's remember that the only way to find happiness is not to expect gratitude but to give for the joy of giving. Let's remember that gratitude is a cultivated trait so if we want our children to be grateful, we must train them to be grateful.
4. Count your blessings- Not your troubles.
 5. Let's not imitate other. Let's ourselves and be ourselves for envy is ignorance and "Imitation is suicide".
 6. When fat hands use a lemon, let's try to make a lemonade.
 7. Let's target our own happiness by trying to create a little happiness for others. When you are good to others, you are best to yourself.

SIDDHARTH SHARMA

S. E. Mech



Abhishek Salekar, TE Mech

"कुणीतरी असावं"

कुणीतरी असावं
गालातल्या गालात हसणारं
भरलेच कधी डोळे
तर ओल्या अश्रूंना पुसणारं

कुणीतरी असावं
आपल्याला जाणून घेणारं
चुकलचं कधी आपलं
तर समजून घेणारं

कुणीतरी असावं
आपलसं म्हणणारं
येणाऱ्या सुख-दुःखात
सहभागी होणारं

कुणीतरी असावं
जीवनभर साथ देणारं
संकटात देखील
हात न सोडणारं

कुणीतरी असावं
आपल्याला जीव लावणारं
एका क्षणासाठी का होईना
आपल्यासाठी मरणारं...

दुनियादारी

या जगताचे अंगण तुमचे, कर्तृत्वाला रोगू नका
माझ्यासाठी दुनिया नाही असे कधी म्हणू नका
आयुष्याच्या खेळामध्ये, सुखावरोवर दुःखही
असते
हातामध्ये हात घालूनी, यशांमध्ये अपयशही येते
कोणीही नसतो पूर्ण चांगला, कोणीही नसतो पूर्ण
खरा
जणरितीचे मर्म जाणूनी, दुःखाने कधी खचू नका
उभे राहता संकट कुठले, मनाने कधी मिटू नका
झुंज झुंजणे आपल्या हाती रणांगणातून पळू नका
माझ्यासाठी दुनिया नाही असे कधी म्हणू नका .

-प्रतिभा निमसे

राजश्री घावटे TE Mech

GEOSTATIONARY COMMUNICATION SATELLITE

The Hughes Aircraft Company facilitates phone calls between continents

In 1945, in an article entitled “Extra-Terrestrial Relays,” British novelist Arthur C. Clarke described a way to bounce information off orbiting satellites so one side of the Earth could communicate with the other almost instantly. Although the idea had been put forward previously by the Russian scientist Konstantin Tsiolkovsky, it was Clarke’s detailed description that caught the attention of Harold Rosen of Hughes Aircraft Corporation. *In 1961 the project, called the Synchronous Communication Satellite program (or Syncom), was given funding to make it happen.*



A mere seventeen months later the satellite Syncom I was launched, but it stopped sending signals before it reached orbit. Syncom II, which followed in 1963, achieved a geosynchronous orbit(it traveled at an inclined angle, so was not stationary above one spot) but nevertheless proved the concept with a two way satellite call between President Kennedy in the United States and Prime Minister Abubakar Balewa in Nigeria. Syncom III finally achieved a true geostationary orbit in 1964 and transmitted live television coverage of the Tokyo Olympic Games to North America and Europe.

Today, due to the proliferation of satellite-building worldwide, establishing a satellite in geostationary orbit is not simply a matter of launching spacecraft as required. Satellites travelling at the same speed as Earth in geostationary orbit must all occupy a single ring 22,300 miles (35,800 km) above the equator. The satellites have to be spaced apart, so the number in geostationary orbit is naturally restricted. Those countries wishing to maintain satellite in the skies above their longitude, as well as those wanting to control airspace above the equator, are governed by an international allocation mechanism.

-Shubham B Sawant

T.E. Mech

“ACCIDENT AHEAD? NEW SOFTWARE WILL ENABLE CARS



TO MAKE COORDINATED AVOIDANCE MANEUVERS”

A road construction barrier falls over: The car driver can't avoid it, since there are cars on the lane next to him. In future, a new software program will enable cars to coordinate maneuvers together in dangerous situations.

A child runs across the street without paying attention to the traffic, just as a car approaches at speed. It's too late to slam on the brakes, and the driver can't swerve either, as there is another car on the neighboring lane. An accident seems inevitable. A new software program, that for the first time can help several cars to coordinate their movements together, could take the edge off such a situation in future.

The vehicles form a network via car-to-car communication and communicate automatically. "In dangerous situations, the cars can independently perform coordinated maneuvers without their drivers having to intervene. In this way, they can quickly and safely avoid one another," explains Thomas Batz, who developed the software together with his colleagues at the Fraunhofer Institute for Information and Data Processing IITB in Karlsruhe and at Karlsruhe University 's chair for interactive real-time systems.

For this system, the researchers are making use of cognitive automobiles that are autonomously driven for short periods of time. The vehicles are equipped with car-to-car communication and integrated sensors such as cameras, GPS and radar systems so that they can autonomously recognize their surroundings and avoid any potential obstacles. The vehicles form cooperative groups that can act in unison. These groups are made up of cars that are traveling in the same direction and are in radio range of one another. Since their speeds and destinations vary, they are constantly re-grouped. Every vehicle in a group automatically transmits its current position and driving situation to a car that has been designated as the group coordinator. This car gathers the information from all the other cars in its group and draws up a common relevant picture of the group's situation.

Sudden dangers, such as a child running onto the road, are recognized not only by the car directly affected but also by the group coordinator. If the car in question can neither brake nor swerve because there is another car on the lane to the right, the group coordinator steps in: It orders both vehicles to swerve to the right in a coordinated maneuver in order to avoid an accident with the child and a collision with one another. Unlike in current driver assistance

systems such as the anti-lock braking system (ABS), control of the car is taken over automatically. The system is currently under development: Its group formation function has already been implemented, and the researchers are now improving its ability to recognize and assess dangerous situations and to choose appropriate driving maneuvers.

GAURAV V. SURYAWANSHI

T. E. Mech



AIR BRAKES

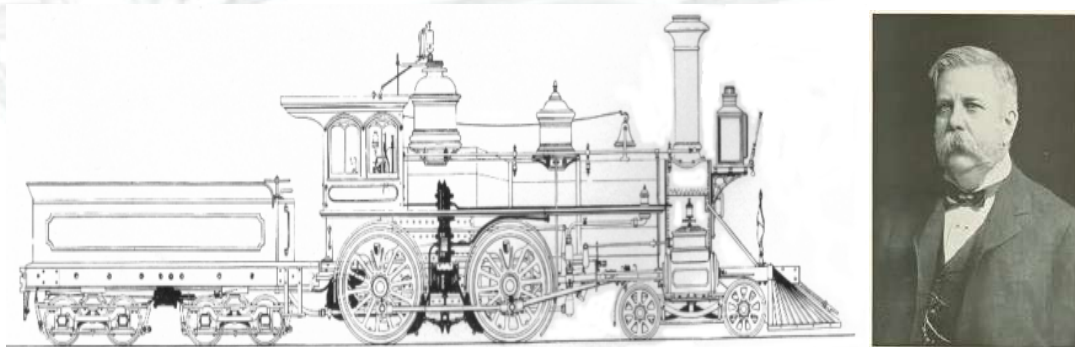
WESTINGHOUSE REVOLUTIONIZES RAIL SAFETY

Rail travel is one of the safest ways to get around in the modern age. The pioneer responsible for much of this safety record was visionary inventor and industrialist George Westinghouse (1846-1914)

Before he invented his revolutionary air brake, slowing and stopping a train was an exercise fraught with risk. Each separate car of train needed its own brakeman to manually operate brakes on its own set of wheels. Accidents caused by uncoordinated braking were frequent and Westinghouse realized that the poor safety of trains was holding up the whole industrialization of the United States.

He spent several years working on a replacement for brakeman's manual labor. Various models failed until, in 1868, he found a solution. He placed an air compressor inside train driver's cabin and connected long air hoses to it. These hoses traveled the length of train and were attached to brakes on each train carriage. This meant the driver could operate all the brakes on his own simply by allowing compressed air to pressurize the hoses that, in turn, provided the energy to activate the brake shoes. He obtained a patent for his air brakes in 1869 when he was just 22 years old, going on to found the 'Westinghouse Air Brake Company'- the first of 60 Westinghouse companies.

The air brakes quickly became industry standard and the vastly improved safety of trains meant they could travel much faster than before. By 1905 Westinghouse air brakes had been installed on more than two million train carriages as well as some 89,000 locomotive engines around the world.



George Westinghouse's Working Air Brakes

LOKESH SONAWANE

T. E. Mech

A BEAUTIFUL STORY

*A little boy went to a telephone booth which was at the cash counter of a store and dialed a number. The store-owner observed and listened to the conversation:

Boy : "Lady, Can you give me the job of cutting your lawn?"

Woman : (at the other end of the phone line) "I already have someone to cut my lawn."

Boy : "Lady, I will cut your lawn for half the price than the person who cuts your lawn now."

Woman : I'm very satisfied with the person who is presently cutting my lawn.

Boy : (with more perseverance) "Lady, I'll even sweep the floor and the stairs of your house for free."

Woman : No, thank you.

With a smile on his face, the little boy replaced the receiver. The store-owner, who was listening to all this, walked over to the boy.

Store Owner : "Son... I like your attitude; I like that positive spirit and would like to offer you a job."

Boy: "No, thanks,

Store Owner : But you were really pleading for one.

Boy : No Sir, I was just checking my performance at the job I already have. I am the one who is working for that lady I was talking to!" *

** This is called self Appraisal*** Give your best and the world comes to you!!!!

PRANJALI MIRGE

S. E. Mech

' मैत्री '

मैत्री पहावी करुन

जीवनात एकदा तरी....!!

मैत्रीच्या वाटेत नसावा

स्वार्थ आपुल्या पुरता,

भाव हवा निःस्वार्थ

एकमेकांना समजावण्याचा !!

मैत्री पहावी करुन

जीवनात एकदा तरी!!

मैत्री माझी प्रेरणा आहे,

मैत्रीच माझं जीवन आहे,

मैत्रीतच जगणे हे माझ्या

जीवन जगण्याचा एक भाग आहे !!

मैत्री पहावी करुन

जीवनात एकदा तरी!!

मैत्री असावी निर्मळ,

असावी ती पवित्र,

वाळूखालून जाणाऱ्या

स्वच्छ झर् यासारखी !!

मैत्री पहावी करुन

जीवनात एकदा तरी!!

- प्रेरणा बच्छाव

SE Mech

Neha Kinge,
S.E. Mech



GESTURE-CONTROLLED TRANSPORT

Gesture-controlled, autonomous vehicles may be valuable helpers in logistics and trans-shipment centers.....

Transporting big boxes, holding shopping bags, or carrying suitcases to the plane or taxi: Often, we would like to have a second pair of arms for routine work. Many flows of materials and goods at factories and workshops take place manually. An electrical "gofer" is needed, which is controlled by natural gestures, relieves the workers of heavy loads, and transports them independently. This is done by the assistance system FiFi of Karlsruhe Institute of Technology (KIT). It is now being tested in first industrial pilot applications.

"FiFi is an assistance system we developed to support man in his direct environment. It can be controlled in a contact-free manner," Project Head Andreas Trenkle, KIT, explains. The mobile platform equipped with a camera system is particularly suited for dynamic material flows at factories and workshops. These flows require high flexibility and are usually executed by man. Typical examples are high bay warehouses for car spare parts, consumer products of big online traders or deliveries of goods between departments of big companies.

So far, two versions of FiFi have been realized: One vehicle allows for the transportation of loads of up to 30 kg and has a base area of 50 x 50 cm. Another bigger vehicle developed by the industry partner Bär Automation can transport loads of up to 300 kg and even pull a cart. Via a camera system, FiFi three-dimensionally acquires the gestures of the user and executes his commands. For moving

FiFi or switching into the different modes of operation, no contact is required. FiFi follows the user and may approach him up to an arm's length for loading. When the user points to a line on the floor, FiFi independently moves along the line to the next station, where it is deloaded by the next user. A safety laser scanner prevents it from colliding with objects or people and allows for safe operation. By a gesture, a lifting system can be adjusted to various working heights.



In a first practical test, FiFi was operated successfully. Now, the assistance system is planned to be commercialized in the area of intralogistics. Together with the industry partner Bär Automation, FiFi was optimized for various applications in the logistics sector. Now, other pilot applications are planned. "FiFi helps workers perform their tasks more efficiently," Trenkle says. "It can also help design more workplaces in a senior-friendly manner by facilitating the transportation of light and heavy loads."

SHOEB R. MANSURI

S. E. Mech

'एकदा तरी ये.....'

आजही तुझ्यासाठी जीव का तळमळतो?

तुझ्या नसण्याने श्वास का घुसमटतो?

आठवणीने तुझ्या डोळे का हे पाणवतात?

तु नाहीस हे मन का मानत नाही

ए...आई...,एकदा तरी ये.....,

ए...आई...,एकदा तरी ये.....,

तु असतांना का नाही ग कळले मला ...

श्रावणबाळाच्या खोट्या वाटत होत्या ग कहाण्या,

तु नसशील माझ्यासोबत असा कधी

विचार पण नव्हता केला...

ए...आई...,एकदा तरी ये.....,

ए...आई...,एकदा तरी ये.....,

तुझ्या खुशीत सगळं विसरायला होतं ,

जगाशी लढणं सोप होत.

तु येऊन मला बळ दे, धीर दे...

ए...आई...,एकदा तरी ये....

ए...आई...,एकदा तरी ये.....!!!

पूनम चौधरी

S.E. Mech.



Industrial
Visits

S.T.
Workshop



Indian
Tool

Armstrong
Industry



TIME WAITS FOR NO MAN

The hospital was unusually quiet that bleak January evening, quiet and still like the air before a storm. I stood in the nurses' station on the seventh floor and glanced at the clock. It was 9 p.m. I threw the stethoscope around my neck and headed for Room 712, last room on the hall.

Room 712 had a new patient Mr. Singh. A man all alone. A man strangely silent about his family. As I entered the room, Mr. Singh looked up eagerly but dropped his eyes when he saw that it was only me, his nurse. I pressed the stethoscope over his chest and listened. Strong, slow, even beating. Just what I wanted to hear. There seemed little indication he had suffered from a slight heart attack a few hours earlier.

He looked up from his starched white bed. "Nurse, would you...." He hesitated, tears filling his eyes. Once before he had started to ask me a question but changed his mind. I touched his hand, waiting. He brushed a tear. "Would you call my daughter? Tell her I had a heart attack. A slight one. You see, I live all alone and she is the only kin I have." His respiration suddenly speeded up. I turned his nasal oxygen up to eight liters a minute. "Of course I'll call her," I said, studying his face.

He gripped the sheets and pulled himself forward, his face tense with urgency.

"Will you call her right away- as soon as you can?" He was breathing fast – too fast.

"I'll call her the very first thing," I said, patting his shoulder. I flipped off the light. He closed his eyes, such young eyes in his 50-year-old face. Room 712 was dark except for a faint night light under the sink. Oxygen gurgled in the green tubes above his bed. Reluctant to leave, I moved through the shadowy silence to the window.

The panes were cold. Below a foggy mist curled through the hospital parking lot. "Nurse," he called, "could you get me a pencil and paper?" I dug a scrape of yellow paper and pen from my pocket and set it on the bedside table.

I walked back to the nurses' station and sat in a squeaky swivel chair by the phone. Mr. Singh's daughter was listed on his chart as the next of kin. I got her number from the information and dialed.

Her soft voice answered.

"Miss Garima, this is Namrita, a registered nurse at the hospital. I'm calling about your father. He was admitted tonight with a slight heart attack and...."

"No!" she screamed into the phone, startling me. "He's not dying is he?"

"His condition is stable at the moment," I said, trying hard to sound convincing. Silence. I bit my lip.

"You must not let him die!" she said.

Her voice was so utterly compelling that my hand trembled on the phone. "He is getting the very best care."

"But you don't understand," she pleaded. "My daddy and I haven't spoken in almost a year. We had a terrible argument on my 21st birthday, over my boyfriend. I ran out of the house. I....I haven't been back. All these months I've wanted to get his forgiveness. The last thing I said to him was, 'I hate you.'"

"Her voice cracked and I heard her heave great agonizing sobs. I sat, listening, tears burning down my face. A father and daughter, so lost to each other. Then I was thinking of my own father, many miles away. It has been so long since I had said, "I love you." As Garima struggled to control her tears, I breathed a prayer. "Please God, let this daughter find forgiveness." "I'm coming. Now! I'll be there in thirty minutes," she said. Click. She had hung up.

I tried to busy myself with a stack of charts on the desk. I couldn't concentrate. Room 712; I knew I had to go back to 712. I hurried down the hall nearly in a run. I opened the door. Mr. Singh lay unmoving. I reached for his pulse. There was none. "Code 99, Room 712. Code 99. Stat." The alert was shooting through the hospital within seconds after I called the switchboard through the intercom by the bed. Mr. Singh had a cardiac arrest. With lightning speed, I leveled the bed and bent to his mouth, breathing air into his lungs. I positioned my hands over his chest and compressed. One, two, three, I tried to count. At fifteen I moved back to his mouth and breathed as deeply as I could. Where was help? Again I compressed and breathed. Compressed and breathed. He could not die! "O God," I prayed. "His daughter is coming. Don't let it end this way."

The door burst open. Doctors and nurses poured into the room pushing emergency equipment. A doctor took over the manual compression of the heart. A tube was inserted through his mouth as an airway. Nurses plunged syringes of medicine into the intravenous tubing. I connected the heart monitor. Nothing. Not a beat. My own heart pounded. "God, don't let it end like this. Not in bitterness and hatred. His daughter is coming. Let her find peace." "Stand back!" cried a doctor. I handed him the paddles for electric shock to his heart. He placed them on Mr. Singh's chest.

Over and over we tried. But nothing. No response. Mr. Singh was dead. A nurse unplugged the oxygen. The gurgling stopped. One by one they left, grim and silent. How could this happen? How? I stood by his bed stunned.

A cold wind rattled the window, pelting the panes with snow. Outside — everywhere — seemed a bed of blackness, cold and dark. How could I

face his daughter? When I left the room, I saw her against the wall by a water fountain. A doctor who had been inside Room 712 only moments stood at her side, talking to her, gripping her elbow. Then he moved on, leaving her slumped against the wall. Such pathetic hurt reflected from her face. Such wounded eyes. She knew. The doctor had told her that her father was gone. I took her hand and led her into the nurses' lounge. We sat on little green stools, neither saying a word. She stared straight ahead at the pharmaceutical calendar, glassed-faced, almost breakable looking. "Garima, I'm so, so sorry," I said. It was pitifully inadequate. "I never hated him, you know. I loved him," she said. "God, please help her", I thought.

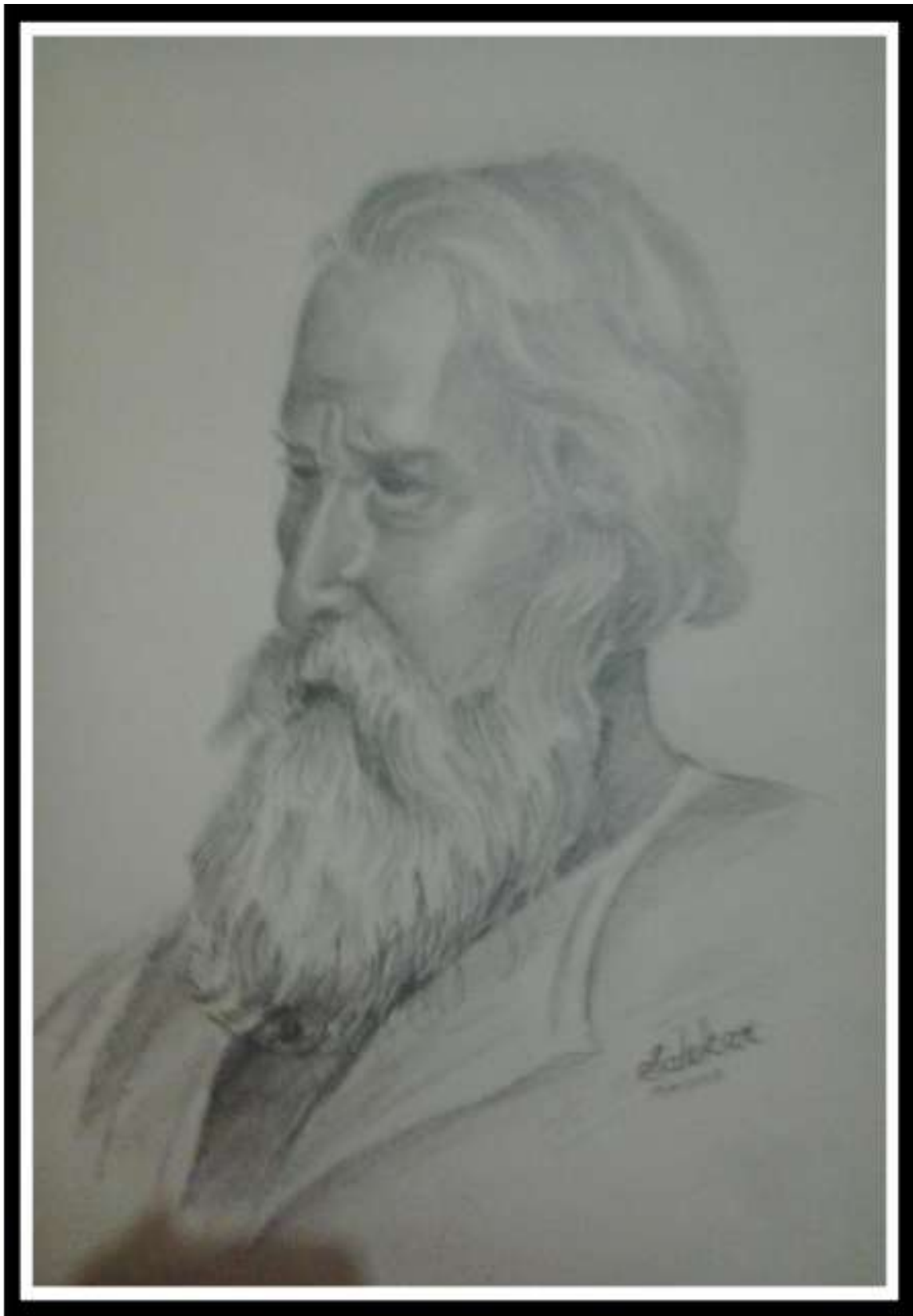
Suddenly, she whirled toward me. "I want to see him." My first thought was, why put yourself through more pain? Seeing him will only make it worse. But I got up and wrapped my arms around her. We walked slowly down the corridor to Mr. 712. Outside the door I squeezed her hand, wishing she would change her mind about going inside. She pushed open the door. We moved to the bed, huddled together, taking small steps in unison. Garima leaned over the bed and buried her face in the sheets. I tried not to look at her sad, sad good-bye. I backed against the bedside table. My hand fell on a scrap of yellow paper. I picked it up.

It read: "My dearest Garima, I forgive you. I pray that you will also forgive me. I know that you love me. I love you too. Daddy." The note was shaking in my hands as I thrust it to Garima. She read it once. Then twice. Her tormented face grew radiant. Peace began to glisten in her eyes. She hugged the scrap of paper to her breast. "Thank you, God," I whispered, looking at the window.

A few crystal stars blinked through the blackness. A snowflake hit the window and melted away, gone forever. Life seemed as fragile as a snowflake on the window. But thank you, God, that relationships, sometimes as fragile as snowflakes, can be mended together again – but there was not a moment to spare. I crept out of the room and hurried to the phone. I would call my father. I would say, "I love you."

Abhijeet Jadhav

TE Mech



ARTIFICIAL SATELLITE

The Soviet Union takes the first important step in the space age

The Soviet Union launched the first artificial satellite, Sputnik 1, on October 4, 1957, thus triggering the space race with the United States.

Sputnik 1 was a nitrogen-filled sphere about the size of the beach ball - 23 inches (58 cm) across – which orbited the Earth every ninety-six minutes. It had four long, wisplike aerals that transmitted information back to Earth. In November the same year, Sputnik 2 carried a living passenger, the dog Laika, into space. (It is thought that Laika only survived a few hours rather than the intended ten days because of stress and overheating.) By August 1960, when Sputnik 5 was launched, two dogs, forty mice, two rats and a collection of plants had been sent into orbit. The goal was the manned exploration of space.

The United States were taken horribly by surprise by the Soviet's achievement and responded by

pumping money into space research and founding NASA, the National Aeronautics and Space Administration. Soon near Earth space was being crisscrossed by a variety of artificial satellites.

Around forty countries have since manufactured and launched their own artificial satellites. About 3,000 useful satellites are thought to be orbiting Earth, along with 6,000 pieces of “space junk” (such as empty fuel tanks and rocket boosters). Although artificial satellites have orbited the moon, the sun, asteroids and planets, most are operated orbiting the Earth. They are used to study the universe, forecast weather, transmit telephone call, television broadcast and assist in sea and air navigation as well as military activities

Shubham Sawant

T.E. Mech

"कॉलेजचे दिवस"

office मध्ये बसल्या बसल्या विचार करत
होतो

हे दिवस चांगले की कॉलेजचे

जुगलबंदी चालू होती दोघांचीआता वेळ
कमी तेव्हा पैसा कमी...

आनंदी आता आहे का तेव्हा होते?

आठवता आठवता दुःखी होते...

तेव्हा रोड साइड जीन्स वापरायाचो

आता Ck, diesel धुळ खात पडल्या आहेत
माझ्या ...

तेव्हा समोसा दिसला की भूक शमायची...

आता पिझ्झा, बर्गरने सुद्धा ती नाही
लागायची....

office मध्ये बसल्या बसल्या विचार करत होते
हे दिवस चांगले की कॉलेजचे....

तेव्हा पैसे जमवून पेट्रोल भरायचो....

लांब लांब फिरायला जायचो....

आता tank फुल्ल असुनही.. Friends ला
मुकले

टपरीवरचा चहा CCD मधल्या coffee मध्ये
बदलला

पण हा फरक मनाला नाही पटला....

pco वरून बोलायला तेव्हा मजा यायची

आता postpaid mobile असुनही बोलायला
नाही कुणी ...

office मध्ये बसल्या बसल्या विचार करत
होते

हे दिवस चांगले की कॉलेजचे...

दिवास बदलले...general class मधून

business class झाला

पण फिरायला आता वेळ नाही उरला....

तेव्हा second hand का होईना desktop
असावा असे वाटत...

आजकाल branded laptop असुनही चालू
करावा नाही वाटत....

खरी मैत्री professional friends मध्ये
बदलली

पण त्याला तेव्हाच्या मैत्री ची सर नाही आली
....

office मध्ये बसल्या बसल्या विचार करत
होते..

हे दिवस चांगले की कॉलेजचे...

- मृणालिनी गोराडे SE Mech

STRENGTHENING INNER SELF

I try to tear my fear
As that was difficult for me to bear
I asked them to lend me their ear
But they merely told me to get out of there
So, now I am here to enforce my shear
Let you know my dear that my aim is near
So take care and have some beer
Because as I am on my top gear

Wadhai Shubham

SE Mech



MACHINES IN SANSRIT INDIA

We live in 21st Century and we are surrounded by machines. We have seen machines everywhere from our birth. A machine is a device consisting of fixed and moving parts that modifies mechanical energy and transmits it in a more useful form. According to this definition, our each need is completed with the help of machines. Machines are major part of our life. But this true for 21st Century, what about our old days? Is machines were helping human in very old times? – Yes. Machines are helping human beings from thousands of years, Main question is when first ever machine was used? Nobody knows the answer of this question. But we must know that very complex machines like cars, planes, ships are first used in 'India'. They were used in 5000-6000 years ago in ancient India.

Description of many machines are found in 'Vedas' like planes & ships. But this description is in very high quality Sanskrit, which is very difficult to understand in new era. But some 'Maharshi' or 'Rushi' wrote books on them & they are easier to understand. Definition of YANTRA (Machines) is given in 'Yantranavam'.

दन्दैश्चक्रेषु दान्दैश्च सरनिभ्रमणीदिभिः । शक्तेरुत्पादनं किं वा चालनं यन्त्रमुच्यते ॥

Which means, "system for generation of energy through motion or continuous rotation of shafts, wheels or wedges is called machines". We heard a 'Ramayana', in which Ravan kidnaps 'Sita' through a plane. We think that it was myth or just a story, nothing more than that. But that is true, 'Vimanas' (Planes) were present in ancient India. Each part of a plane is noted in 'Rigveda'; around 7000BC. Detailed study of planes are found in books like 'Yantrasarvasa', 'Vimanshastratam' & 'Vaimanik Shastram'.

Material selection, design of planes, wt. of planes, size & shape, projection for take-off, Height of flight, different safety instruments and weapons are given in this books. Some examples are also given like Tripura Vimana, Shakuna Vimana, Mercury coated plane.

With the study of this books, 'Sivaji Bapu Talpade' made first modern era plane. He flew that plane at Alibag (near Mumbai). 'Shahu Maharaj' & 'Lokmanya Tilak' were present for that event. But because of some accident that plane goes to "Write Brothers".

Similarly, Ships are also made in ancient India. With the help of this ships Indian Kings established their Kingdom from Indonesia to Africa.

There was many good books with amazing knowledge in 'Takshashila & Nalanda'. Which was burnt by utcome kings. Library of Takshashila university was burning for 3 Months. In which we lost ur many proofs about advancement & machines in ancient India.

Mohit Tanpathak

माझ्या आवडीतील एक व्हिडीओ

I Want More Time.....

कधी कधी काही गोष्टी सांगायला आपल्याला वेळच मिळत नाही. आपल्या जवळच्या माणसाबद्दलच्या भावना आपण वेळ न दवडता सांगायला हव्यात. कधी कधी आपली जवळची नाती कधीही हातात न येणाऱ्या फुलपाखराप्रमाणे निसटून जातात. म्हणून आयुष्यात येणाऱ्या प्रत्येक नात्याच, बंधाच ओझ समजण्यापेक्षा त्याला प्रेमाने जोपासाव, व प्रत्येक नात्याला वेळ द्यावा.

वडील-मुलगा यांच्या नात्यावर आधारित असलेला असाच एक video बघण्यात आला, हा थोडासा वेगळा video सुरु होतो तो एका संवादाने. एक वडील सांगत असतात, “मला आणखी वेळ हवा आहे; माझ्या मुलाला हे सांगण्यासाठी, कि मी त्याच्यावर खूप प्रेम करतो”. आणि या संवादादरम्यान तो मुलगा आणि त्याच्या वडिलांचे प्रसंग दाखविले आहेत. त्या मुलाची आई त्याच्या लहानपणीच जाते. तो जसा जसा मोठा होतो, तसा तसा त्याचा आणि त्याच्या वडिलांमधील संवाद कमी होतो. मुलाला संगीताची आवड निर्माण होते, वडीलांना ते पटत नाही. त्यांच्यात भांडण होतात, मुलगा घर सोडून निघून जातो. पुढे चालून तो संगीतकार होतो. तो त्याच्या मुझिक कॉन्सर्टची पत्रिका घरी पाठवतो. ते निमंत्रण वाचून वडील खुश होतात. सगळ काही विसरत ते त्यांच्या मुलाच्या कॉन्सर्टला जायला निघतात; पण वाटेतच त्यांचा खूप मोठा अपघात होतो. हॉस्पिटलमध्ये मृत्युच्या दारात उभं असताना, ते म्हणत असतात, “ मला थोडा वेळ हवा आहे, माझ्या मुलाला हे सांगण्यासाठी की माझं त्याच्यावर खूप प्रेम आहे.” आणि Video संपतो.

एका कोरिअन एन्सुरन्स कंपनीने तयार केलेली हि जाहिरात आहे, जाहिरातीसाठी खूप वेगळी थीम वापरली गेली आहे. या Video मध्ये, वडील-मुलगा या नात्यातील संवाद अतिशय चांगल्या पद्धतीने दाखवल्या गेला आहे. वडिलांचं मुलाप्रती आणि मुलाच वडिलांप्रती असणार प्रेम, या Video च्या माध्यमातून बरंच काही सांगून जात.

म्हणूनच आपल्या जवळच्या माणसांबद्दलच्या भावना आपण वेळ न दवडता सांगायला हव्यात.

Swati Halwar

THE SECRET TO LEARNING ANYTHING:

ALBERT EINSTEIN'S ADVICE TO HIS SON

Here comes a fine addition to history's greatest letters of fatherly advice from none other than Albert Einstein — brilliant physicist, proponent of peace, debater of science and spirituality, champion of kindness .

In 1915, aged thirty-six, Einstein was living in wartorn Berlin, while his estranged wife, Mileva, and their two sons, Hans Albert Einstein and Eduard "Tete" Einstein, lived in comparatively safe Vienna. On November 4 of that year, having just completed the two-page masterpiece that would catapult him into international celebrity and historical glory, his theory of general relativity, Einstein sent 11-year-old Hans Albert the following letter, found in Posterity: Letters of Great Americans to Their Children (public library) — the same wonderful anthology that gave us some of history's greatest motherly advice, Benjamin Rush's wisdom on travel and life, and Sherwood Anderson's counsel on the creative life. Einstein, who takes palpable pride in his intellectual accomplishments, speaks to the rhythms of creative absorption as the fuel for the internal engine of learning:

My dear Albert,

Yesterday I received your dear letter and was very happy with it. I was already afraid you wouldn't write to me at all any more. You told me when I was in Zurich, that it is awkward for you when I come to Zurich. Therefore I think it is better if we get together in a different place, where nobody will interfere with our comfort. I will in any case urge that each year we spend a whole month together, so that you see that you have a father who is fond of you and who loves you. You can also learn many good and beautiful things from me, something another cannot as easily offer you. What I have achieved through such a lot of strenuous work shall not only be there for strangers but especially for my own boys. These days I have completed one of the most beautiful works of my life, when you are bigger, I will tell you about it.

I am very pleased that you find joy with the piano. This and carpentry are in my opinion for your age the best pursuits, better even than school. Because those are things which fit a young person such as you very well. Mainly play the things on the piano which please you, even if the teacher does not assign those. That is the way to learn the most, that when you are doing something with such enjoyment that you don't notice that the time passes. I am sometimes so wrapped up in my work that I forget about the noon meal. . . .

Be with Tete kissed by your

Papa.

Collected by:- Kaustubh .S. Kulkarni

Regards to Mama.



“Imagination is more important than knowledge. For knowledge is limited to all we now know and understand, while imagination embraces the entire world, and all there ever will be to know and understand.” - **ALBERT EINSTEIN**

As we all know that “ Every Nut needs a bolt”. Hence we are trying to move the students further towards thir bright future; by publishing Mechage. I wish you have enjoyed this.

I would like to say special thanks to our respected HOD Prof. M. B. Murugkar. As you already observed that the contents in this magazine are not only study based but also related to knowledge and entertainment. The efforts of all commity members in the creation of this magazine are great. I wish that they will be always ready to support in further magazines also. I also wish that other students should help us further magazines, as we are the gears of tomorrow.

Try to remember one thing “ When the mechanical rests, the world rusts”. Hence try to do something new by participating in further creations.

Thanks to everyone who helped us to make this magazine successful.

Rohan Jadhav

आयुष्यात,

भग्न स्वप्नांच्या तुकड्यांना कवटाळून बसण्यासाठी मनुष्य आयुष्यात जन्माला आला नाही! माणसाच मन केवळ भूतकाळाच्या साखळदंडांनी करकचून बांधून ठेवता येत नाही! त्याला भविष्याच्या गरुडपंखांच्या वराच वरदानही लाभलेलं आहे

एखादे स्वप्न पाहण, ते फुलवण, ते सत्यसृष्टीत उतरावं म्हणून धडपडण, त्या धडपडीतला आनंद लुटण आणि दुर्दैवाने जरी ते स्वप्न भंग पावलं; तरी त्याच्या तुकड्यावरून रक्ताळलेल्या पायांनी दुसऱ्या, स्वप्नामागे धांवण; हा मानवी मनाचा धर्म आहे! आणि मनुष्याच्या जीवनाला अर्थ येतो तो यामुळेच!

स्वाती हलवार



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