

Is there Poetry in Engineering ?

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Abstract

Attempts have been made to highlight that engineering is not a dry profession, it is a very colorful and exciting area. A true engineer is also a veritable artist, a poet with fruitful imagination. Art blooms side by side with engineering. Excellent real - life examples and convincing episodes are presented to illustrate that there is lot of poetry in engineering.

When many asked me this question and my answer to the same was an emphatic YES , most of my friends and colleagues have agreed to disagree. If I say that an engineer is also a poet of high imagination or is also a creative artist, then you shall also think twice to agree. Does engineering remind you of a huge workshop full of dust and sound loaded with heavy machines smelling grease (something like a coal-fired railway engine)? Does engineering remind you of tall, dirty chimneys that vomit multicolored (may I say , rainbow-colored) fumes and smoke to the air ? When you think of a Professor of Engineering, do you think of a silver-haired man sitting in front of his laptop with sleepy eyes, chewing equations after equations ? For most of you , the answer to these question would be YES. And , believe me, I shall not blame you either.

However, as a practicing and researching engineer and as a retired Professor of Engineering , it is my duty to correct mistakes (it is also my duty to locate mistakes, when others do not). Engineering, though is the most honorable profession of the world, is also the most misapprehended , most misinterpreted profession. Let me ask you a few questions :

1. Who designed Taj Mahal?

All the school students shall unanimously answer : *Shah Jahan*. Once again , I will not blame them since their school teacher shall give them full marks only if they say so. The hard fact is that Shah Jahan knew no architecture. He knew little about sculpture and he also didn't know how to design a monument. True, he financed the construction of Taj Mahal , but this unparalleled architectural wonder was designed and moulded by *Ustad Isa* (no doubt , it remains a painful fact that the reward he received from the emperor for this artistic excellence was that his right hand was chopped off ; Shah Jahan did not want Ustad Isa to build another monument so that Taj Mahal remains unique in the world).

2. Then, what do you call Ustad Isa? An artist , an architect ,an engineer or an sculptor?

My answer is that he is all of these. He was an artist ,he was also a gifted engineer and a gifted architect. World's most famous architectural engineers today look at Taj Mahal with envy, they envy that man, who created this engineering marvel with relative ease centuries ago.

3. Are you aware that Leonardo Da Vinci, the controversial painter of Monalisa was also an engineer par excellence?

It is true. He did design air crafts, much before Wright brothers invented them. Though his scientific inventions remained unattended and unacclaimed , it must be kept in mind that it is his artistic mind that propelled him towards such technological innovations.

4. *Thus, is it not true that art blooms side by side with engineering and technology?*

Very much true. A true engineer is more beauty conscious, more emotional and more sensitive than anybody else. He is an universal artist. It is the beauty of nature that enthalls him, motivates him to explore the wonders and secrets of the nature. He is perpetually restless. Restless that he has not been able to make the world around him more beautiful than it is now, restless that he has not been able to capture all exciting wonders of this exciting Universe. I am sure that you have all watched the ever – beautiful sunrise. When the beautiful yellow globe of sun rises above the horizon and the oscillating waves of the sea sparkle in the golden light, have you ever thought of the thermonuclear reactions taking place in the photosphere of the sun, ever thought of the incredible amount of thermal energy it radiates to the earth (around 200 trillion kWh per day), the millions of cosmic particles that get energized by these radiations ? As an engineer, these have always crossed my mind. Few years ago (in March, 2011) when I went to Philadelphia (USA) to attend an International Conference, I attempted to visit the magnificent Niagra falls. While watching this mammoth water fall (may be on the internet), have you tried to estimate the amount of hydrogen gas this enormous amount of water could release if dissociated, the millions of microbes that exist within this water body and the inexhaustible potential of hydroelectric power ? An engineer learns from nature, he enjoys the nature much more than anybody else.

5. *Will it be then true to comment that it is due to the engineers that life blooms on earth?*

Certainly yes. You don't have to go to a doctor unless you fall sick and remember , prevention is always better than cure (believe me , during the last four decades, I have been hospitalized only twice and that too much to my dislike). You don't have to go to a lawyer or legal practitioner unless you fight with each other. When there is social harmony, advocates go unemployed, when there is sound health in society, medical practitioners go unemployed. But, an engineer (I mean *engineer* and *not* engineering graduate) never remains unemployed. Without engineer, you cannot sustain your life on earth. A physician can only prescribe the medicine (usually in a handwriting that he only can read), while it is the engineer who synthesizes the medicine in the factory. An advocate could solve your land dispute , but to use your land for agriculture , you need fertilizers , pesticides, transgenic seeds which are products of engineer's workshop. Everything that you use in daily life, the food you eat, the water you drink, the house you live in , the vehicle you drive, the electronic gadgets that entertain you, the cosmetics and medicines you use ,the paper and books you handle, the dress you wear and to be precise, everything you can touch ,smell, see or imagine are the creations of engineering profession.

6. *Who is the most qualified engineer of the world ?*

You may say, difficult to answer. But my answer is spontaneous. It is Lord Brahma (if it all he exists) who has designed (or supposed to have designed) the most marvelous, the most optimized engineering system – the human body. Do you know what is the horse power of human heart ? It is 0.00148 HP. This tiny pump (whose wattage is only one-thousandth of a 1HP motor) pumps a visco-elastic fluid such as the human blood continuously through the enormously long blood vessels(whose uncoiled length exceeds 1000 kilometers) all through the day and all through the year.

7. *Can you spot any of your personal experiences to illustrate explicitly that an engineer is also a poet / artist ?*

OK, I can. Years ago, when I was a young engineering student and undergoing vocational training at J.K. Chemicals, Thane, I wrote "artificial sea" in one part of my training report. In the caustic- chlorine plant, rock salt is being dissolved in water in huge tanks (that are several meters in diameter and several meters in depth) by passing compressed air from the bottom. Inside the huge dissolution tank, there was enormous turbulence with a degree a froth getting formed at the surface and this reminded me of the lashing waves of the ocean (let me also confess that I received minus marks from the plant manager for using poetic language in an engineering report).

8. *Having said all the above, how many times each of us has consulted an engineer ?*

I am sure this is the invariable question that must have crossed your mind after reading my article (if at all you took the pains of reading the same). Agreed, most of you must have visited the doctor's chamber on one occasion or other for prescription, many of you must have approached an advocate to settle a property dispute, to materialize a divorce (which, today, is very difficult to obtain) or even to manage admission for your son to an engineering college. But, do you recall any occasion when you visited an engineer's or an engineering consultant's chamber seeking assistance? It remains a fact that an engineer's position in the society is quite above that of a layman. To digest that, permit me to spare

one of the hilarious (in fact, embarrassing) moment of my life, which I have, no doubt, shared many times with my students :

Once upon a time, I visited one of my friends who was then Professor of Aeronautical Engineering at one of the IITs (he is a retired man now). After we both have gulped the tea made by his wife (she used to make good coffee, but her tea often tasted like caustic soda solution), he offered to drop me at my hotel on his scooter. On the way , the scooter suddenly stopped, it refused to move. We pushed it to a dilapidated shed on the roadside, in front of which hung a board: AUTO - REPAIRING SHOP . A dark boy in dirty pants tightened a few screws, removed some, hammered some and finally the scooter was back in action. When I paid him , he asked me who my friend is (my friend had gone to the other side of the street for a cigarette). Since the term “aeronautical engineer” shall not mean anything to him, I told him he is the man who designs and constructs aircrafts. The boy’s jaws dropped :

“Sir , he who designs aircrafts has come to me for repairing his scooter ? ”

I had no answer.

ABOUT THE AUTHOR

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