PROGRAM IN FOCUS:

FLUID MECHANICS ENGINEERING

Written by Valerie Muya

What is Fluid Mechanics Engineering?

As its name states, fluid mechanics engineering (FME) combines the principles of fluid mechanics, engineering and natural science to work in fluid-based mechanical systems. At the heart of it is fluid dynamics, which is the science of fluids in motion. Think about natural phenomena or technological applications that either completely or partially involves flow phenomena, hence its importance is out of the question.

Broken down, FME is a branch of physics which is linked with mechanical, civil and even chemical engineering. Its use is mainly seen in hydraulic and pneumatic systems. Imagine the underground pipelines which transport fluids; the construction and maintenance of these pipelines use the fundamental principles of FME. Pneumatics use pressurized gases to drive mechanical devices as with brake systems, power tools and sprayers.

Fluid mechanics research mainly involves theoretical considerations, experiments and simulations. Hence an all-round knowledge of the fundamental principles of FME, computational skills and practical understanding is needed to fully grasp the major.

Fluid Mechanics Engineering in everyday life

Try to picture a world without faucets, cars, air-conditioners, roller coasters, fans, or airplanes. Difficult right? FME makes all of these things possible. What links them all is the intricate network of pipes and valves where fluid can flow to keep them running. Virtually everything operates using this principle, even our own bodies – our veins are the pipes and our blood is the fluid! Fluid power is also commonly used in the robotics, aerospace, and construction industries.

Let's take a closer look at FME in everyday life:

Air-conditioners and Refrigerators

The fluids used in refrigerators and air-conditioners are known as refrigerants. The refrigerant absorbs the heat from the evaporator, which is at a low temperature and distributes that heat to the atmosphere, which is at a high temperature.

In air conditioners, the refrigerant absorbs room heat and throws it in to the atmosphere keeping the room cool. The whole process of refrigerators and air-conditioners depends on the use of a refrigerant.

Airplanes

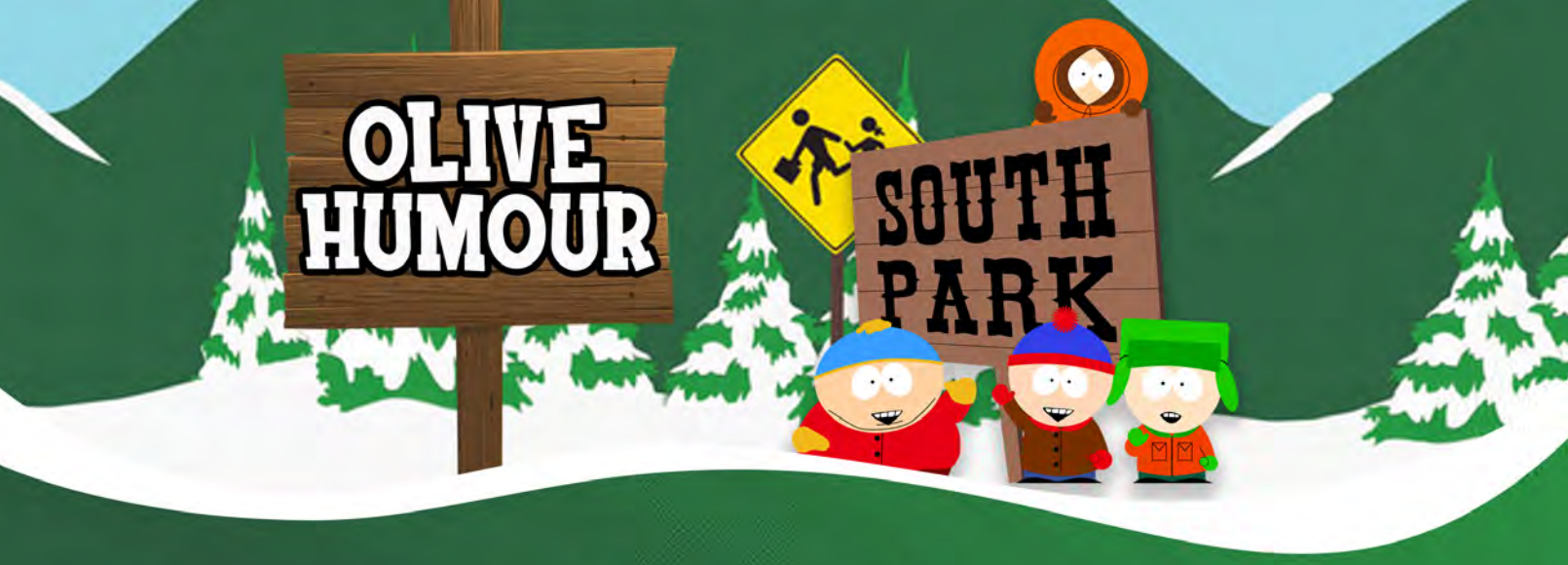
One of the most ordinary applications of Bernoulli's principle in FME is air flight. The airplane wing is curved from the top and flat from the bottom. While moving in sky, the air on the bottom moves slowly and builds more pressure on the bottom, and allows for the air on the top to move faster, which builds less pressure. This creates lift, which allows planes to fly. An airplane is also acted upon by a pull of gravity which faces lift, drag and thrust. Thrust is the force that allows the airplane to move forward while drag is air resistance that opposes the thrust force.

What does a fluid engineer do?

Fluid mechanical engineers combine their knowledge of fluid mechanics and engineering to design, repair, and maintain mechanical equipment that operate on fluid-based mechanism. A fluid mechanical engineer needs to be multi-skilled in:

- Computer skills to produce fluid mechanical models.
- Install and repair mechanical systems and equipment
- Have sound knowledge in order to inspect and test fluid systems
- Designing equipment for fluid-based operating systems

However this is just a small part of what a fluid mechanical engineer may be required to do on-field. FME is a broad field that encompasses all fluid related systems. A fluid mechanical engineer has the opportunity to specialize in one of the many smaller branches of FME. He/she my work in the design field as an engineer or architect, either in an engineering firm, power production facility or manufacturing plant. This is where their skills of design can be employed to design new equipment or create more effective fluid-based operating systems. They may also be employed in the drilling field where they set up the drilling systems used to remove oil and natural gas from the earth. A fluid engineer would be required to maintain the



JOKES

- Dear Math, I'm tired of trying to find your X. Just accept the fact that she's gone. Move on dude!

- C: What's the difference between tuna, a piano and a pot of glue?
  D: I don't know
  C: You can tuna piano but you piano a tuna
  D: Hehe and what about the glue
  C: I knew you would get stuck there. Haha

- **How much room does it take for fungi to grow?**

  As mushroom as it takes.

- **What did the mommy tomato say to the daddy tomato in the race?**

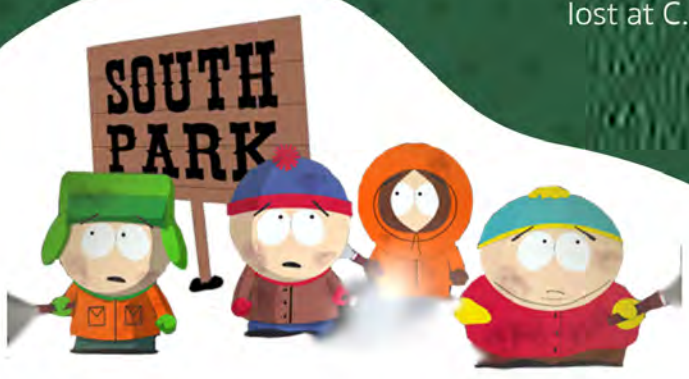
  C'mon! Ketchup!

- **Why couldn't the pirate learn the alphabet?**

  Because he was always lost at C.

- **Why do cows have hooves instead of feet?**

  Because of lactose. ou said it was H to O.



JUST MAYBE

Clad in leather jacket and shielding myself from the snowflakes, I ponder upon a saying I once read: "Each snowflake is a sigh heaved by an aggrieved woman. All the sighs drift up to the sky, gathering into clouds, then breaking into tiny pieces that fall silently on the people below. As a reminder of how women quietly endure all that falls upon them". As the snowflakes settles on the ground a thought wanders through my mind of women who have gone.

Oh, what did they have to endure? Clad in swarthy, calloused and haggard skin. Yes, their skin the colour of the earth. Their hearts harbored sorrow, happiness and most importantly strength. No one had to remind them of the strength they possessed but, if you looked deep into their eyes you would see a patch of happiness.

They figured contentment and joy were attainable thus found pleasure in little things; cooking for their families, combing and arranging their kinky hair, cleaning their houses and feeding their children.

I sometimes think and wonder what dreams they had. Would the world still be the same if they were granted the opportunity to pursue their dreams? Would war still be there? Will children still die from hunger? Huh, what stories they would have written and left for the world. But in a patriarchal world, they were merely victims of decisions. But I think of their smiles and get a nostalgic feeling.

And as the snow thaws, all I can do is hope they were happy. Maybe they were happy, just maybe.

Written by Bonve

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