

plummeted, particularly impulse purchasing, and so the bags were quietly returned and sales picked-up. The shareholders were happy – the environment was not.

Floods have occurred since the beginning of time and nature through experience is able to self-mitigate corrections with each occurrence. Perhaps the reason for the damages caused by the flood was many years of poor public policy and an unwillingness of government leaders to seek advice from and act upon the concerns and advice of professionals who have the specialized knowledge and experience. Allowing structures to be built adjacent to flowing water or in a known flood plain; clear-cutting of vast areas of forest in the mountains and foothills; removal of naturally created flood plains whose function was to act as reservoirs for excess water; funding bridges (economically) without the capacity to withstand cyclical high and fast water, are but a few examples of irresponsible public policy.

Our planet is a living biosphere from the highest altitudes to the greatest depths. Every component has a purpose and exists for a reason – perhaps for reasons that we do not and may never fully understand. Climate change is multi-factorial in etiology. Difficult decisions are on the horizon and it will take courage to change our current practices.

We must use our engineering skills and sense of responsibility to the world's population to ensure that all development and growth is in synchrony with the fundamental and inescapable nature of this planet. Most importantly we must communicate our engineering and scientifically proven concerns effectively to political and business decision-makers. Business and political agendas should not compromise our responsibilities as citizens, as professionals and as engineers to all on earth. ■

cess that resulted in signs being posted on the bridges of Rome.

We continue to be reminded that engineering is an iterative process. In this case, the iteration is a third of a century for the modern bridge and 20 centuries for the Roman built bridge. The Romans have no worries!

Should minimum cost be a (short-term) goal in such projects?

We wonder what the Roman signs say today, another 30 years later. Has anyone been to Rome recently?

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Experiential Learning Apprentissage par l'expérience

Legend of the Oil Plug

By **Elmer Bourque**

ONCE UPON A TIME a diligent NB Power employee called Mac strapped on his spurs and started climbing a pole. This happened somewhere in the southern lands of New Brunswick on a warm sunny day. The task of the day was to secure an oil sample from a transformer on a distribution feeder. Oil samples are taken from time to time to determine if the transformers are still in good shape or if soon they must be replaced. In those early days, the distribution voltage was 4000 volts. A high enough number to cause great respect to be given to equipment so energized.

The climb was successful. The oil sample was secured. With some oil now on his fingers, and the plug, the oil plug took on a life of its own and decided to evade the employee like a boy catching a fish with his bare hands. Being resourceful, Mac stuck his thumb immediately in the oil hole to prevent the oil from escaping.

The oil in the transformer guarantees that the current through it takes expected paths. Without the oil, the transformer will fail catastrophically, and this employee did not want such an event over his head... in more ways than one!

After the initial panic, he counted his blessings. He then resolved to make himself as comfortable as he could while maintaining his thumb on the oil opening. Visions of falling asleep on the job were not comforting. Going hungry then fleetingly came to mind, but these were thoughts he had to dispel, for the moment, in any case. Prayer probably was the only viable option that conserved energy while his bones were starting to feel the stress of the predicament.

Someone must have been at the heavenly controls, for this old man came sauntering down the road on his daily walk.

"Hello, I think I'm in trouble" Mac said. The old man replied "What seems to be the trouble?" As Mac explained as quickly as possible his predicament, he asked the old man if he could toss up the oil plug. Mac could see it, down at the bottom of the pole in the grass. The old man agreed, but he was old and his pitching arm was no longer what it used to be. He picked up the plug, mustered up all his strength and let her fly.

Well, Mac almost got it, and it went right on by. Just out of reach of the end of his fingers, and down it went again. Fortunately, he was able to turn his head fast enough to see it bounce and disappear into the longer grass. The old man looked in that space and could not find it. "Well, what now?" Mac thought silently. Just as things were looking pretty bad, the old man said, "I found it!"

To increase his chance of catching it, Mac took his hard hat and used it as a catcher's mitt. This met with success on the second toss. Now he had one thumb on the oil hole, occupying one hand, and another holding the hard hat, which of course contained the plug. There were no hands left to grab the plug and end this predicament. A few more litanies must have been forthcoming, as our Mac did make it down the pole in due course.

This event is certain to have taught Mac respect for the overwhelming force of gravity. To this day he still counts his blessings and has no doubt in the power of prayer! ■

Elmer Bourque (LSMIEEE) is currently associated with Kestrel Power Engineering of Toronto as a senior engineer. Following graduation he developed numerical control software for the New Brunswick Research and Productivity Council. In 1974, he joined New Brunswick Power where he worked for 31 years as a system performance engineer responsible for power system stability and proper control by commissioning and maintaining fault recording equipment, area generation control, generator excitation, stabilizers, and governor systems. He is recipient of the 2012 IEEE Canada J.J. Archambault Eastern Canada Service Medal.

N.Ed. "Experiential Learning" shares the real-life lessons of our readers that only experience can teach. If you have a tale to tell, then target it to our Managing Editor, Bruce Van-Lane, vanlane@ieee.org. It can be about your "schooling," or that of a colleague's – all we ask is that it be **true!**