

Engineers come in all stripes

I recently read Stéphane Cloutier's letter to the editor printed in the July/August edition of *Engineering Dimensions* ("Tough to stomach," p. 8). Bravo! I share the same sentiments. And I'd like to add that I've read more articles on PEO Presidents than I care to (don't take it personally, Pat). While I can appreciate the need to keep our membership abreast of regulatory issues that affect us, we also need to promote other issues and celebrate various accomplishments, in all fields of engineering.

For example, as a mechanical engineer working in the field of physical asset management, I have yet to read one article about engineering challenges and exciting technical developments pertaining to equipment reliability. I also work alongside process engineers and can't say I've read about "their world" in any of your articles either. This publication seems to be geared mainly to "consulting" engineers, yet engineers in industry are numerous, from R&D labs, to technical support, to operations, to management.

I am a member of the OIQ as well and thus am privy to a copy of their bi-monthly magazine, entitled *Plan*. Without getting into specifics, I enjoy reading this magazine. It covers a range of engineering fields, positions, and industries. I can't recall an issue that didn't have something of interest.

There was a time the only thing I would look forward to in *Engineering Dimensions* was the PEO salary survey. Sadly, even this has been taken away. Am I wrong in what I think this magazine should be about? Do I speak of a domain that now belongs solely to OSPE?

Jean-Pierre (J.P.) Pascoli, P.Eng.,
Temiscaming, QC

One that got away

Engineering enrolment is in decline in universities. The brightest students are going in different directions than engineering. This seems to be verified by engineering ranks being below 68,000 and accountant numbers exceeding 70,000 recently.

Although I eventually could not write the *Ontario Building Code* (OBC) exams because of poor health, I was busy preparing for the exams when my nephew, who had just graduated from engineering, was asking me questions. He wanted to work for my small firm. He had been told that the engineering profession was "self-regulating," but why was I studying for exams for the Ontario empire builders?

I mentioned that without passing the exams, even though I am dying from MS, I would not be able to certify my designs. I told him to prepare for the same thing in order to work for me...maybe he could do design work and certify work as a member of my firm.

My nephew has since decided against starting an engineering career. He continued on to achieve his PhD in economics and is now doing very well.

I believe my nephew might have stayed in engineering if a building inspector or a city building department official could have instructed a class, in third year, for instance. Future engineers could then be tested on all aspects of the OBC. This way, engineering graduates would be ready on graduation to write their OBC tests right away. They would also have learned to be subservient to building inspectors and building departments in their new profession.

Harold Gale, P.Eng., London, ON

No jurisdiction

The letter "Missing the point" (November/December 2006, p. 8) raises various issues,

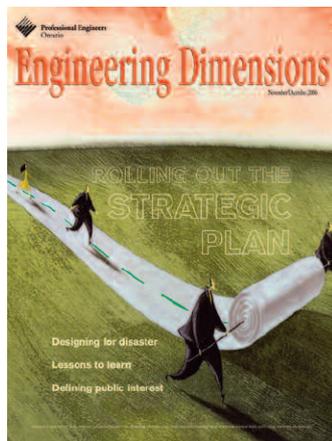
not all of which relate to PEO's complaints and discipline processes.

Regarding the complaints and discipline processes, the decision to publish discipline decisions generally rests with the discipline panel that hears a particular matter, so those that are published in *Gazette* are a subset of the discipline matters handled by PEO. Although true that the majority of discipline matters relate to civil/structural, and other building code matters, PEO's complaints and discipline process has also dealt with large, multi-national corporations, manufacturing, and intellectual property/copyright issues.

Unfortunately, PEO has no jurisdiction or authority under the *Professional Engineers Act* (PEA) to declare products as "unfit." Regulation of products is the responsibility of other agencies and/or government departments. Similarly, whistleblower protection already exists under several provincial statutes and within the Criminal Code of Canada. The PEA does not provide whistleblower protection, but PEO's guideline, *A Professional Engineer's Duty to Report*, does provide sound guidance to members on how to report situations they believe may endanger the safety or welfare of the public.

Regarding the real situation cited in the letter, product testing in and of itself is not the practice of professional engineering, although the setting of test specifications might fall within the practice. Also, it is a fact that the engineering judgment of a professional engineer can be overruled by a non-technical supervisor or management. In such circumstances, the engineer's obligation is to present clearly to the employer the consequences to be expected when the employer chooses to deviate from that engineering judgment. If the employer then still chooses to disregard the engineer's advice and the engineer believes the situation endangers the public's safety or well-being, the engineer should exercise the duty to report, using the PEO guideline to assist.

Roger Barker, P.Eng.,
deputy registrar, regulatory compliance



A ring does not an engineer make

Most engineering graduates wear an iron ring to remind them of the “obligation to live by a high standard of professional conduct,” as stated by the Seven Wardens ritual.

In the public’s view, this ring is worn by an engineer. But we all know that a large number of people who wear this ring are not engineers (yet). PEO has already defined who are engineers in this province, and is empowered by the government to do so. I think wearing the “engineering” ring by engineers and would-be engineers creates confusion for the public.

The Seven Wardens ritual, historically, is much older than PEO and that is why we’ve had the two systems running together for many decades. This shouldn’t prevent making some changes to better serve the goals of both organizations. I think we should redefine the wearer of the engineering ring as a licensed engineer in his or her province, as opposed to simply a graduate from a recognized engineering program.

Would that better represent the image of engineers and engineering in our society? Would that encourage more engineering graduates to become licensed engineers? I believe so. Let’s take action.

Amjad Farran, EIT, Ottawa, ON

An inconvenient truth

Only now was I able to read H. Douglas Lightfoot’s, Rae McLaren’s and Joseph Attia’s letters to the editor (*Engineering Dimensions*, July/August 2006, p. 9, September/October 2006, p. 10). To answer the first one: the Joule-Thomson (J-T) effect indeed causes cooling of most expanding gases; yet, helium, neon, and hydrogen are exceptions. They heat up while expanding. The reason is their very low J-T inversion temperatures, and their Cp values (Cp, of course, is ambient temperature dependent). All this follows from rather simple thermodynamic equations.

By simply stating that the (hydrogen’s) J-T effect’s consequences might be a matter of time and statistics, I certainly did not embark on fear mongering (lamentable title, by the way). Is the J-T effect

a sort of “inconvenient truth” somehow? It seems so to me. Replying to Mr. Attia: the J-T effect is no H-bomb yet; on the other hand, we are not talking about stationary situations and about “normal expansion,” as Mr. Attia suggests, but about a possible traffic mishap causing instant decompression. Mind you, there is plenty of oxidant (21 per cent O₂ in air) on the 401, outside the damaged valves and pressure tanks. And one more thing: The range of explosivity of hydrogen-air mixtures is enormous—4 per cent to 96 per cent. I also disagree with Mr. Attia that the dT/(-dp) of hydrogen is not enough for self ignition; such ignitions are known to occur. Hydrogen explosions are devastating, but I wish Mr. Attia never to experience any of them. Even if the J-T expansion had no

personal to me as its designer. Yet the infrastructure has served its time and purpose well and I concur that it is a failure in public policy that an alternative transport mode of equivalent capacity and service has not yet been planned to replace it.

While those who read Jack Welch’s personal story may cringe at Comrie’s choice of a public policy advocate, one cannot escape the message and, specifically, the teachable principles that Welch espoused. But facing reality or living in the past is not the sole failing of current engineers. All too often when I was President back in the 1980s I heard the same refrains, “if it ain’t broke, why fix it?,” or “continuing competence? ...for me?” And the bravado approach, “...the government can’t do

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Alexander Kobelak, P.Eng., Parksville, BC

time to heat up the decompressing hydrogen to self ignition in air, there are plenty of spark sources during a high-traffic crash. This is just obvious.

Andrew Block-Bolten, P.Eng., Pittsburgh, PA

Controlling destiny

The article by George Comrie in the November/December 2006 issue of *Engineering Dimensions* (p. 45) is, in my view, a classic, pragmatic assessment of PEO that should become mandatory study of every practising engineer and engineer-in-training. Its clarity, accuracy, and timeliness is the kind of wisdom that is seldom expressed openly.

In terms of public policy, Comrie mentions the demolition of the Gardiner Expressway, a facility that is rather

that to us!...we’re self-governing!” How politically naive for an honourable and learned profession.

PEO politics of the late 1970s and ’80s were characterized by self denial, attempts to subvert the governance process, internal bickering, and a we-they syndrome that seemed to grow each time a Council mentioned the dreaded words: “PEO mandate,” “continuing competence,” “disciplinary process” or “scope of practice.” Even the issue of fees was a safer topic to raise. A discussion of “service in the public interest” deteriorated when member factions recognized that such a concept did not necessarily protect their personal interests, which they saw as equal to or above the public interest. Strategic planning sessions were plagued, focusing on the

mundane issues and not in creating a vision to work and live by. We lacked the missionary zeal to convert the non-believers and it was like hand-to-hand combat, one member at a time. Yes, there was a failure in leadership, as Comrie indicated, in spite of the best efforts of many dedicated and capable people. I admit to my failure to advance the cause back then too...but I tried very hard.

What has impressed me about Comrie's approach, which he espoused as President, too, was to expose the profession to the "bigger picture." No profession can remain an island in a sea of constant change. My hope is that there is an era of enlightenment coming soon; otherwise, if we do not embrace some major changes, we will fade into the night.

How much have we changed in a quarter of a century? Sadly, I sense not enough.

Alexander Kobelak, P.Eng., Parksville, BC

No action

To all engineers who labour in the manufacturing sector, the letter by Ron Ruta, P.Eng., (*Engineering Dimensions*, November/December 2006, p. 8) has concisely and precisely summarized the plight and resulting lack of interest in PEO affairs.

His example of the contract test engineer highlights a daily problem for those who are not in the civil engineering field of endeavour. We do negotiate proprietary information, leading edge technology and globalization issues daily. We do not see any action from headquarters in Toronto. Rules and legal jurisdictions of contracts are often set in other countries and Canadian provinces.

Thank you, Ron Ruta.

Karl Morgenroth, P.Eng., London, ON

In shock

I have been a member of PEO for 55 years and thought that perhaps my reflections on my association might be of interest to the membership. When I graduated in 1951, it was almost taken for granted that graduates would join the association. So I was shocked to see that today only a small percentage of graduating engineers feel motivated to become official members of the engineering profession.

When I look back on my work experience, my engineering education was a prerequisite for most of the job descriptions that defined what I did for my employer. But I never fell into a category that our profession would define as a specialist. In fact, I was by nature and by involvement a "generalist." I never acquired or used a "stamp" to mark documents, but did sign my name with P.Eng. to give certain documents or studies a higher level of credibility.

As my career progressed, management became a higher percentage of my responsibilities, but as a technical manager, an ability to understand and evaluate the scientific aspects of the work of my subordinates was always a prerequisite. Gradually, I found that I was becoming a technical specialist, but only in the manufacturing processes and end uses of the products made by my company. In this regard, I was able to acquire patents on several inventions that were specific to the needs and products of my employer. It goes without saying that continued learning was a necessity, as the science that I acquired in university soon became dated, and technologies not even considered in school became commonplace and necessary to do the best job possible.

I see a weakness in the profession in not accommodating the "generalist" who starts with an engineering education and uses it to evolve into R&D, management, or other useful technology-based employment. I realize that it is impossible for the association to evaluate these engineers as their expertise becomes intricately entwined with technology that falls under the category of "company secrets." And yet, the results of their work encompass what we as a profession brag about as our contribution to society.

In summary, I have remained a dues-paying member of PEO because I am proud of what we engineers do and because I want to promote the profession and protect it and society in general from interlopers who would use the word engineer to fool the public. I take my hat off to those who volunteer to work with PEO to make it successful and wish them well in their endeavours.

Rod Bolton, P.Eng., Mississauga, ON

Letters to the editor are welcomed, but should be kept brief and are subject to editing. Publication is at the editor's discretion; unsigned letters will not be published. The ideas expressed do not necessarily reflect the opinions and policies of the association, nor does the association assume responsibility for the opinions expressed. All letters pertaining to a current PEO issue are also forwarded to the appropriate committee for information. Address letters to jcoombes@peo.on.ca.