Turbo Expo, 2007

USE ENERGY AND CLIMATE CHANGE TO KINDLE STUDENT INTEREST IN TURBOMACHINERY

Aside from the fact that Montreal was a fabulous location for the recent Turbo Expo conference, and that it did rain a lot, I had two basic takeaways. One has to do with the process and, the other, the content.

The process

I had the good fortune to sit at a table of students during the luncheon keynote speeches. In an attempt to involve them in the table conversation, I asked one of those open-ended questions: "What is the theme of the meeting?" Their response was "people."

Ten minutes later, Hany Moustapha, a senior manager of technology programs at Pratt & Whitney Canada and the executive conference chair, Turbo Expo 2007, said the same thing from the podium in his keynote address.

There you have it! It was people, but more specifically, young people.

The actual statement of intent was "Developing the Next generation of Global Gas Turbine Engineers." To add emphasis and as a vehicle for student-industry interaction, a Career Day was added to the conference agenda on the Sunday before.

As it turns out, I ran into the same group of students as the conference and exhibits were winding down, and I asked them whether the conference had achieved its objective. Unfortunately, I got a resounding "no!" The basic complaint was that there was no good way to recognize them as students, let alone to interact with our community, and they seemed frustrated by the experience.

En route home I ran into one of our society's dignitaries. His reaction was that there were over 1,600 papers presented, the implication being that the quality has suffered greatly because of the volume. This is not a new issue. The argument for limiting the number of papers in an effort to raise the standard through a competitive process has been an ongoing one. The opposing view is to allow a virtually unlimited number of papers built on the assumption that having a lesser standard on papers will encourage more participation, presumably by the younger engineers new to our ranks.

Both of these themes go to a similar intent — attracting new talent to our industry — and I share that general concern. These are noble thoughts, but they are not going to work as recruiting tools.

I do not think that the Turbo Expo, as an event, can really address the issue. Turbo Expo meeting sites typically require expensive travel, and the content is too advanced for undergraduate-level understanding and appreciation. Poster sessions have been proposed as a compromise and may work, but at the graduate level. They are beyond undergraduate awareness or capability.

If the industry is serious about attracting new talent to the industry, and it should be, it needs to develop a continuous recruiting process, not just naively sponsor unrelated recruiting events and think that it has done something. The principal thrust should be toward sophomore and junior-level students, and the goal must be to create an awareness of the importance of the industry, and how much fun it can be to work in.

As I recall, the key career decisions begin to take shape after the sophomore year, perhaps in conjunction with a summer job. They are refined during the junior year with a more career-oriented summer job, and then finalized with the actual career job search during the senior year.

We have two serious issues going for us that these students are keenly aware of: Energy and climate change. Our task is to help them make the link between these two issues, and a turbomachinery career. This would not be all that hard. We will find a receptive audience on both these issues, and these students are looking at ways to contribute.

Almost by definition, any such effort will need to include our educator members. Unfortunately, many of our turbomachinery gurus no longer interact at the undergraduate level on a regular basis, and any systematic approach needs to bridge this divide. Most schools do sponsor industry presentations at the sophomore level, but in practice, these programs end up as company promotions rather than industry awareness.

What should the ASME Turbo Expo education committee do if this is really the society's role?

Organize, provide resources and start small. It should:

- Target specific schools for initial undergraduate-level focus
- Identify educator lead contact and university team
- Identify an industry co-sponsor
- Develop standard presentation module(s) that explains what turbomachinery is and how it relates to energy and climate change
- Schedule and conduct career events on a regular basis
- Monitor and measure results

Our timing could not be more perfect. Many young folks think that "energy tech" might offer good career potential and are trying to determine how to participate. They have not made the connection to turbomachinery yet, but they are looking for guidance and direction.

The industry has a great story . . . but it needs to be organized.

The content

This year, environmental issues dominated the content in one form or another. Global warming, carbon capture and combustor issues were evident in many of the system-level presentations, and as one observed, the "power island" has become a secondary part of the overall power plant, and that the overall power plant looks a lot more like a chemical plant than anything else.

Steam turbines and steam turbine technologies, long thought to be fully mature, have experienced a technology renaissance. Materials and coating developments made in gas turbine technologies are now being considered for use in steam turbines, while flowpath improvements, developed using advanced Computational Fluid Dynamics methods, are now being applied to advances in steam turbines. TI

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