



Chairman's Message

The first quarter has had many successful activities. These activities range from a tour at Genie Industries to a presentation of shock physics / ballistic machining. We have many other activities in the works but the big event this year is the annual meeting coming up at the end of May.

The chapter has many dedicated individuals helping with various activities and I would like to thank all those involved in making this year a success so far. There are a lot of resources and much synergism to be realized. We need more help. If you have an hour or two, get involved. We would like to see you at a monthly activity and there are plenty of other items that need to be completed to have a vibrant and world-class chapter.

One time a past officer asked me, "What's the point of belonging if you don't get involved?" After

thinking about it, I decided to get involved. It has been a learning experience but also gives a person a sense that this is a worthy activity that is well worth the effort.

Think about it.

Tim Bond,
Chapter 39 Chair

Seattle Chapter # 39 Welcomes the Following New Members

Bart Baranco
Barry Beyerlein
Andrew Cross
Joseph Gresser
Gene Lim
Bruce Moravec
Kathleen Muromoto

Scott Oppocher
Chris Patzman
Robert D. Salmond
Michael Standridge
Michelle Teigen
Jack Woods

Events and Meetings

C.ontinuing E.ducation for T.oday's E.ngineers

[C.E.T.E. Bellevue](#)

April 10-11, 2001
Meydenbauer Center
Bellevue, WA

[SME 2001 Annual Meeting & Manufacturing Leadership Forum](#)

May 29-June 3, 2001
West Seattle Hotel
Seattle, WA

Visit Our Local Student Chapters





PACCAR Technical Center Tour

--Submitted by Jim Lefevre

I am pleased that I was able to go on the tour of PACCAR. They were excellent hosts and made the tour of the PACCAR Technical Center an outstanding experience. In attendance was a group of students from Western Washington University's Department of Engineering Technology and they were accompanied by the department Chair, Professor Kathleen Kitto. We were served a box lunch while we viewed a film that described the work that goes on at the technical center. The PACCAR Technical Center has three main areas of operations: 1) product testing and validation, 2) consulting, and 3) advanced technology evaluation and development. The tour guides Rich Bergstrand and Tracey Smith fielded a multitude of questions from student SME members before the tour began. We learned that the Technical Center opened in 1985. Their main CAD software is Pro Engineer, although they use Unigraphics, they are moving toward Pro-E as their only CAD system. They use ANSYS for linear Finite Element Analysis, (FEA). They use their FEA models to locate areas to mount strain gages and then they physically test a part. They have the capability to record data in multiple channels in real time. With the results of their testing they are able to minimize the weight of a part while maintaining strength where it's needed. We were then given an in-depth tour of their material test labs where they have a spectrometer, optical microscopes, and two tensile testing machines. They also have a dart impact tester along with Rockwell and Brinnell hardness testing machines. In the electrical test area, we were shown some thermal environmental test chambers where parts are subjected to high temperatures and variable humidity to verify that components stand up to harsh operating conditions. They have a full-scale mock-up of a cab with a complete electrical system. While under power, thermal images are made of the wiring harness that reveal hot spots. Next we were shown an area with several large test chambers. One chamber can simulate high

temperature conditions up to 120° F with the capability to apply loads to the engine and test various systems in the truck. Another chamber is capable of temperatures of -50° F where they can throw snow at the truck while testing various systems. There were smaller test chambers where components and assemblies are subjected to salt water to test corrosion resistance. Finally, we went to the fatigue test area. There, we saw a cab mounted on a partial frame and the assembly was subjected to fatigue stress by hydraulic cylinders. The controller can be programmed to simulate various conditions.

Through the work that goes on at the PACCAR Technical Center, they are able to produce a product in a competitive market that is reliable, durable and meets the requirements of the customers and various governmental regulatory agencies. PACCAR is doing research to ensure that their products continue to meet these requirements as the requirements change over time.

I would like to thank the management of PACCAR for opening their doors to us and a special thanks to Rich Bergstrand and Tracey Smith for taking time to explain the inner working of their facility.

Book Review

Having just finished reading "Bowling Alone" by Robert D. Putnam, I have to agree with the main point that participation in various organizations is sinking to an all-time low. Mr. Putnam is a social scientist at Harvard University. The amount of research and data that went into this book leaves no doubt that he gave this declining level of

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involvement a very objective look. He allowed for differences between regions, race, sex, etc. and the bottom line is that organizations are losing what they need the most. The item that organizations need is human capital, such as an hour or two of your time, once or twice a month. The involvement levels are declining regardless of all other factors. One of the two larger points he makes for this decline is a generational difference between today's generation and their more civic-minded fathers and grandfathers. The second major cause is television. Robert Putnam's entire case is that today people are replacing human capital with financial capital so instead of volunteering for an organization, people are much more willing to write a check and be done with it. Robert Putnam does make good use of quotation and one of the better ones he uses is a direct quote from Yogi Berra. Yogi Berra once said, "If you don't go to somebody's funeral, they won't come to yours." See you at the next meeting and read the book. It's good.

Tim Bond
2001 Chair

Genie industries

On February 6th, Chapter 39 was extended an invitation to tour Genie Industries. Activities began with a slide show that showcased the Genie Product line. Tom Bligh, Vice President of Marketing, was available to answer questions from the audience.

The next stop was at the Scissors lift factory. Dave Lorang greeted SME members. Dave proceeded to give us quite an in-depth view of some of the opportunities that have been successfully answered as far as cutting tak time from the production cycle. With approximately 10 different models of just scissors lifts to fabricate and assemble, a person can see that Genie has the build process as close to an art form as one can get in this arena. As we walked through, one item that was evident was that genie was always trying out new ways of performing tasks. The

Manufacturing Engineers at Genie seem to be quite busy fine-tuning the build process.

Next stop was the Z-45 factory. Robert Russoff, Production Supervisor, showed us everything that goes on in that building to include the powder coating or wet painting of parts is done here as well as a 10-stage final assembly process. Robert also explained their final assembly, test, and audit procedures to us. What was interesting was the fact that they inspected those critical features, which were easily correctable at that time instead of letting it travel and trying to fix it after much more time was put into it. While two or three stages are used for audit tasks and other miscellaneous tasks, they actually have the final process for the Z-45 down to a 7-step process. The last step is a pretty rigorous test to verify all the systems work as required before customer delivery.

The Big Boom line was the last stop and assembles most all the stick booms. Mike Mitchell was very complete with his descriptions of the processes involved with that product line. One thing that all the guests definitely noted was the line stoppage that occurred as we there. It was an attention getting sound that could not be ignored and it is also interesting to note that the Mfg Engrs are tasked with responding to it ASAP and implementing a fix within 5 minutes.

The one thing that was evident in the three factories that we visited was the emphasis put on continual improvement. It is a way of life at Genie Industries and I am sure that they will continue to

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gain yet more market share as their desire to satisfy the customer in a specified time frame continues to be the main thrust of their efforts.

Chapter 39 of the Society of Manufacturing engineers would like to thank Genie Industries and all team members that made this an informative and fun tour of another manufacturer whose motto is "Continual Improvement".

WESTEC Photographs





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