



Society of Manufacturing Engineers Wabash Valley Chapter 275

December, 2006

In this issue:

SME Wabash Meetings . . .	1
Certification Corner	2
Wabash Membership	2
Internet Web sites	3
Question of the Month . . .	3
Wabash Officers	4
SME 275 newsletter	4
Meeting Photos	5
ASQ Quality Glossary	6

Upcoming Dates

- Dec. 7 Wabash meeting
- Jan. 11 Wabash meeting
- Jan. 25 Motorsports
Conference Indianapolis, IN
- Feb. 8 Wabash meeting
- Mar. 8 Wabash meeting
- Mar. 26-29 WESTEC
Los Angeles, CA
- Apr. 12 Wabash meeting
- May. 10 Wabash meeting
- May 22-24 EASTEC
W. Springfield, MA
- Jun. TBD Wabash golf outing

SME Wabash Valley 275 Meeting Schedule

SPECIAL ANNOUNCEMENT FOR THE DECEMBER 7 MEETING, RESERVATIONS SUGGESTED ASAP. SEE INFORMATION BELOW.

December 7, 2006, Thursday

7:00 PM Indiana State University, Madrigal Singers and dinner, at St. Stephens Episcopal Church, 215 N. 7th Street, Terre Haute, IN 47807.

This is a non-denominational event that is well worth attending. The cost is \$15 each for a value of about \$30 each, with the ASQ, ASM and SME groups paying the difference. **Reservations recommended ASAP**, because general tickets went on sale November 13. Availability on a first come, first served basis. Contact Roy Boissy (812) 237-8329 or arrangements@asqwabashvalley.org
Joint SME, ASM and ASQ meeting. Everyone welcome.

January 11, 2007, Thursday

Aleris Blanking and Rim Products, 1140 Crawford Street, Terre Haute, IN 47803. Park on the West side of the plant, between the building and the pond, which are on the North side of Crawford Street. Times will be given later.

Reservations required by Monday, January 8, contact Roy Boissy (812) 237-8329 or arrangements@asqwabashvalley.org
Joint SME, ASM and ASQ meeting. Everyone welcome.

January 25 - 27, 2007

SME Motorsports Indianapolis Conference & Exposition, Indiana Convention Center, Indianapolis, IN. More information is on the SME web site.

February 8, 2007, Thursday

Location is Richards Farm Restaurant, in Illinois, I-70 Exit 129, then South on Hwy 49. Go 1 mile, then turn left (East) on US 40. Go about 1/2 mile, then turn left at the first road, and continue to the barn.

5:30 PM Illinois time Social and registration

6:00 PM Dinner BBQ Pork Loin or Roast Turkey and dressing

7:00 PM Dr. LeRoy Franklin talk on Statistics

Dinner cost is \$10 each, students \$6 each. Reservations required by Monday, February 5, indicate meal choice and contact Roy Boissy (812) 237-8329 or arrangements@asqwabashvalley.org Joint SME, ASM and ASQ meeting. Everyone welcome.

March 8, 2007, Thursday

Novelis tour, 5901 North 13th Street, Terre Haute, IN 47805. Steel toed shoes required. Safety glasses and earplugs will be provided. This is the former Alcan facility. Times will be given later.

Reservations required by Monday, March 5, contact Roy Boissy (812) 237-8329 or arrangements@asqwabashvalley.org Joint SME, ASM and ASQ meeting. Everyone welcome.

March 26 - 29, 2007

SME WESTEC, Los Angeles, CA. More information is on the SME web site.

April 12, 2007, Thursday

Student donation night. Times and location will be given later.

Reservations required by Monday, April 9, contact Roy Boissy (812) 237-8329 or arrangements@asqwabashvalley.org Joint SME, ASM and ASQ meeting. Everyone welcome.

May 10, 2007, Thursday

Challenge X update, Rose-Hulman Institute of Technology

Times and location will be given later.

Reservations required by Monday, May 7, contact Roy Boissy (812) 237-8329 or arrangements@asqwabashvalley.org

Joint SME, ASM and ASQ meeting. Everyone welcome.

May 22 - 24, 2007

SME EASTEC, W. Springfield, MA. More information is on the SME web site.

June, 2007

Golf outing at the Country Club of Terre Haute, 57 Allendale Street, Terre Haute, IN 47802. Picnic to follow after the golf outing. Times will be given later.

For reservations, contact Roy Boissy (812) 237-8329 or arrangements@asqwabashvalley.org Joint SME, ASM and ASQ meeting. Everyone welcome.

Certification Corner

If you are interested in participating in a study group for the CMfgE - Certified Manufacturing Engineer, please send an e-mail to smewabash@yahoo.com and provide your contact information. The tentative plans are to start up in January, 2006, and take the exam in April or May.

More information on all SME Certifications may be found at <http://www.sme.org> then click on Professional Development drop down menu Certification. More information on the SME Lean Certification may be found by then clicking on Lean Certification, from that page.

SME Wabash Valley 275 Membership

Wabash Valley currently has 44 members, including one Life member, 33 Senior members, and 4 Student members.

If you know of a SME member that is in the Terre Haute area, but is not a Wabash Valley member, please ask them to consider joining Chapter 275.

Internet Information and Web Sites

SME members can access previous Manufacturing Engineering articles at no cost. To find an article, go to the SME International web site at <http://www.sme.org>. In the Search box at the right, click on the down arrow to the right of Search Entire Site by Keyword, and select Manufacturing Engineering Articles.

In the Enter item # or keyword field, enter words that you would like to search for, as an example, Lean Six Sigma, then click on Search. In this case, four articles are found. Click on Magazine / Journal Articles and you will see the following articles:

[Benefitting from Six Sigma](#). Manufacturing Engineering - 2003 - Vol 130/No 2, pp 53-59

[Freudenberg-NOK's Lean Journey](#). Manufacturing Engineering - 2002 - 2002, Vol 128/No 1, pp 34-45

[Jetting to Success](#) Manufacturing Engineering - 2003 - Vol 130/No 5, pp 97-102

[Lean Initiatives and Lean Learning](#) Manufacturing Engineering - 2003 - Vol 130/No 5, pp 115-119

If you click on an article, you will see a brief description. If you click on Add to Order, it will be added to your shopping cart. When you are done, click on Check Out. You can login or create an account for online shopping. Then follow the checkout process. Although there is no charge for the articles, SME does charge a shipping and handling fee.

You can update your shopping cart or remove items, if done before the final payment step.

Relevant Internet Web Sites

SME Wabash Valley, Chapter 275
<http://chapters.sme.org/275/>

SME Indiana State University, Chapter S089
<http://chapters.sme.org/s089/>

SME International
<http://www.sme.org>

ASQ Wabash Valley, Section 0919
<http://www.asqwabashvalley.org/>

ASQ International
<http://www.asq.org>

ASM Wabash Valley
<http://chapters.sme.org/275/asm.htm>

ASM International
<http://www.asminternatinal.org>

Question of the Month

What are the requirements to become a SME Senior Member and a SME Life Member?

If you think you know the answer, send an e-mail to smewabash@yahoo.com. The first person with the correct answer will have their name listed in next month's newsletter.

The answer will be given next month.

Answer for November's Question

What are SME Blue Books?

SME Blue Books provide SME members with an outstanding reference of timely information about the implementation of advanced manufacturing technology. In particular, Blue Books focus on enabling technologies that promote a more competitive manufacturing environment. SME encourages you, as a manufacturing professional, to prepare a document for publication as an SME Blue Book.

Titles of recent articles include:

2006

Requirements Engineering and Management for Manufacturing

2005

Capturing a Competitive Edge Through Digital Shape Sampling & Processing (DSSP)

2004

Connected Value Stream Taxonomy

Enterprise Integration in Japan

2003

Cost Engineering: The Practice and the Future

Toward the Information Utility: Service-Oriented Architectures in the Next-Generation Manufacturing Enterprise

Information Security and Manufacturing: Issues and Directions

More information about SME Blue Books is at:
<http://www.sme.org/cgi-bin/communities.pl?/communities/casa/bluebookpdf.htm&&SME&>

SME Wabash Valley Officers for 2006

Hank Leonhardt, Chair
Michael Hayden, Vice Chair
Bill Wortman, Secretary
Wes Richardson, Treasurer

You may send an e-mail to any of the above individuals by sending to smewabash@yahoo.com and including the name of the person you wish to contact. Place SME Wabash Valley in the Subject line. Your e-mail will be forwarded to the indicated person.

James K. McNeely, Membership Consultant
Natalie Lowell, Member Relations Manager
Ronald P. Harrelson, Member Council Representative

The SME Wabash Valley Newsletter newsletter is a publication of SME Wabash Valley, Chapter 275, located in Terre Haute, Indiana.

Articles, comments or other feedback may be sent to:

Wesley Richardson, Newsletter Editor
10037 E. Flesher Avenue
Terre Haute, IN 47803-9638
smewabash@yahoo.com

Deadline for submitting information for the December newsletter is November 20.



Dr. Uwe Hansen Explains Theory of Steel Pan with a Spring Wave



Indiana State University Percussion Ensemble and Steel Band playing Pans

ASQ Quality Glossary

<http://www.asq.org/glossary>

E

Edwards, George D. (deceased): First president of ASQ. Edwards was noted for his administrative skills in forming and preserving the Society. He was the head of the inspection engineering department and the director of quality assurance at Bell Telephone Laboratories. He also served as a consultant to the Army Ordnance Department and the War Production Board during World War II. Edwards was an ASQ Honorary Member.

Effect: What results after an action has been taken; the expected or predicted impact when an action is to be taken or is proposed.

Effectiveness: The state of having produced a decided upon or desired effect.

Efficiency: The ratio of the output to the total input in a process.

Efficient: A term describing a process that operates effectively while consuming the minimum amount of resources (such as labor and time).

Eighty-twenty (80-20): A term referring to the Pareto principle, which was first defined by J. M. Juran in 1950. The principle suggests most effects come from relatively few causes; that is, 80% of the effects come from 20% of the possible causes.

Electric data interchange (EDI): The electronic exchange of data between customers and suppliers and vice versa.

Employee involvement (EI): A practice within an organization whereby employees regularly participate in making decisions on how their work areas operate, including making suggestions for improvement, planning, goal setting and monitoring performance.

Empowerment: A condition whereby employees have the authority to make decisions and take action in their work areas without prior approval. For example, an operator can stop a production process if he or she detects a problem, or a customer service representative can send out a replacement product if a customer calls with a problem.

EN 46000: Medical device quality management

systems standard. EN 46000 is technically equivalent to ISO 13485:1996, an international medical device standard. So few differences exist between the two that if an organization is prepared to comply with one, it may easily comply with the other as well.

EN 9100: An international quality management standard for the aerospace industry (see AS9100).

Environmental Auditors Registration Association (EARA): Merged with the Institute of Environmental Management and the Institute of Environmental Assessment to form IEMA.

Ethics: The practice of applying a code of conduct based on moral principles to day-to-day actions to balance what is fair to individuals or organizations and what is right for society.

Exciter: See "delighter."

Expectations: Customer perceptions about how an organization's products and services will meet their specific needs and requirements.

Experimental design: A formal plan that details the specifics for conducting an experiment, such as which responses, factors, levels, blocks, treatments and tools are to be used.

External customer: A person or organization that receives a product, service or information but is not part of the organization supplying it. (See also "internal customer.")

External failure: Nonconformance identified by the external customers.

F

Facilitator: A specifically trained person who functions as a teacher, coach and moderator for a group, team or organization.

Failure: The inability of an item, product or service to perform required functions on demand due to one or more defects.

Failure cost: The cost resulting from the occurrence of defects.

Failure mode analysis (FMA): A procedure to determine which malfunction symptoms appear immediately before or after a failure of a critical parameter in a system. After all the possible causes are listed for each symptom, the product is designed to

eliminate the problems.

Failure mode effects analysis (FMEA): A procedure in which each potential failure mode in every subitem of an item is analyzed to determine its effect on other subitems and on the required function of the item.

Failure mode effects and criticality analysis (FMECA): A procedure that is performed after a failure mode effects analysis to classify each potential failure effect according to its severity and probability of occurrence.

Feedback: Communication from customers about how delivered products or services compare with customer expectations.

Feigenbaum, Armand V.: The founder and president of General Systems Co., an international engineering company that designs and implements total quality systems. Feigenbaum originated the concept of total quality control in his book, *Total Quality Control*, published in 1951. The book has been translated into many languages, including Japanese, Chinese, French and Spanish. Feigenbaum is an ASQ Honorary Member and served as ASQ president for two consecutive terms.

Fishbone diagram: See "cause and effect diagram."

Fitness for use: A term used to indicate that a product or service fits the customer's defined purpose for that product or service.

Five Ss: Five terms beginning with "S" utilized to create a workplace suited for visual control and lean production. *Seiri* means to separate needed tools, parts, and instructions from unneeded materials and to remove the latter. *Seiton* means to neatly arrange and identify parts and tools for ease of use. *Seiso* means to conduct a cleanup campaign. *Seiketsu* means to conduct *seiri*, *seiton*, and *seiso* at frequent, indeed daily, intervals to maintain a workplace in perfect condition. *Shitsuke* means to form the habit of always following the first four Ss.

Five whys: A technique for discovering the root causes of a problem and showing the relationship of causes by repeatedly asking the question, "Why?"

Flowchart: A graphical representation of the steps in a process. Flowcharts are drawn to

better understand processes. The flowchart is one of the "seven tools of quality."

Focus group: A group, usually of 8 to 10 persons, that is invited to discuss an existing or planned product, service or process.

Force field analysis: A technique for analyzing the forces that aid or hinder an organization in reaching an objective. An arrow pointing to an objective is drawn down the middle of a piece of paper. The factors that will aid the objective's achievement, called the driving forces, are listed on the left side of the arrow. The factors that will hinder its achievement, called the restraining forces, are listed on the right side of the arrow.

14 Points: W. Edwards Deming's 14 management practices to help companies increase their quality and productivity: 1. create constancy of purpose for improving products and services, 2. adopt the new philosophy, 3. cease dependence on inspection to achieve quality, 4. end the practice of awarding business on price alone; instead, minimize total cost by working with a single supplier, 5. improve constantly and forever every process for planning, production and service, 6. institute training on the job, 7. adopt and institute leadership, 8. drive out fear, 9. break down barriers between staff areas, 10. eliminate slogans, exhortations and targets for the workforce, 11. eliminate numerical quotas for the workforce and numerical goals for management, 12. remove barriers that rob people of pride of workmanship, and eliminate the annual rating or merit system, 13. institute a vigorous program of education and self-improvement for everyone and 14. put everybody in the company to work to accomplish the transformation.

Frequency distribution (statistical): A table that graphically presents a large volume of data so the central tendency (such as the average or mean) and distribution are clearly displayed.

FS 9100: A quality management standard developed by the FS 9000 Association for the financial services industry.

Function: A group of related actions contributing to a larger action.

Funnel experiment: An experiment that

demonstrates the effects of tampering. Marbles are dropped through a funnel in an attempt to hit a flat surfaced target below. The experiment shows that adjusting a stable process to compensate for an undesirable result or an extraordinarily good result will produce output that is worse than if the process had been left alone.

G

Gain sharing: A reward system that shares the monetary results of productivity gains among owners and employees.

Gantt chart: A type of bar chart used in process planning and control to display planned work and finished work in relation to time.

Gap analysis: The comparison of a current condition to the desired state.

Gatekeeper: A timekeeper; in team meetings, a designated individual who helps in monitoring the team's use of allocated time.

Gage Repeatability & Reproducibility (GR&R): The evaluation of a gauging instrument's accuracy by determining whether the measurements taken with it are repeatable (there is close agreement among a number of consecutive measurements of the output for the same value of the input under the same operating conditions) and reproducible (there is close agreement among repeated measurements of the output for the same value of input made under the same operating conditions over a period of time).

Geometric dimensioning and tolerancing (GD&T): A method to minimize production costs by showing the dimensioning and tolerancing on a drawing while considering the functions or relationships of part features.

George M. Low Trophy: The trophy presented by NASA to those NASA aerospace industry contractors, subcontractors and suppliers that consistently maintain and improve the quality of their products and services. The award, which was formerly called the NASA Excellence Award for Quality and Productivity, is given in two categories: small business and large business. George M. Low was the NASA administrator for nearly three decades.

Goal: A broad statement describing a desired future condition or achievement without

being specific about how much and when.

Golomski, William (deceased): ASQ past president and Honorary Member and president of W.A. Golomski and Associates, a technical and management consulting firm. He was an educator, consultant and author of more than 300 papers and 10 books. Golomski also co-founded the ASQ Food, Drug & Cosmetics Division, was founding editor of ASQ's *Quality Management Journal* and served on the initial judging panel for the Malcolm Baldrige National Quality Award. He developed quality systems in many industries.

Go/no-go: State of a unit or product. Two parameters are possible: go (conforms to specifications) and no-go (does not conform to specifications).

Good laboratory practices (GLP) or 21 CFR, part 58: 144 requirements that control the procedures and operations of toxicology laboratories.

Good manufacturing practices (GMP) or 21 CFR, parts 808, 812, and 820: Requirements governing the quality procedures of medical device manufacturers.

Grant, Eugene L.(deceased): Grant was part of a small team of professors assigned during World War II to introduce statistical quality control concepts to improve manufacturing production. He wrote many textbooks, including *Principles of Engineering Economy* and *Statistical Quality Control*, editions of which he co-authored with W. Grant Ireson and Richard S. Leavenworth. He was an ASQ Honorary Member and a professor of economics engineering at Stanford University.

Green Belt (GB): A business team leader responsible for managing projects and implementing improvement in his or her organization. An employee of an organization who has been trained on the improvement methodology of Six Sigma and will lead a process improvement or quality improvement team as part of his or her full-time job.

Group dynamic: The interaction (behavior) of individuals within a team meeting.